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Imperial County Baseline Health Survey

Potential Impact of Geothermal Energy

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## I. INTRODUCTION

One of the major concerns in developing new energy sources is the potential impact on the health of people living near such developments. The gradual development of geothermal energy in Imperial County has offered the opportunity to obtain baseline health data on individuals living in communities which might eventually be exposed to noxious emissions from geothermal plants. The idea of such a study, of course, is to provide health data against which the results of future health surveys can be compared.

In addition to providing baseline health data the present study has served as an opportunity to formulate and test methods of measuring community health and methods of analyzing the data collected. The demonstration of existing differences between the communities with respect to both health and background variables points out the need to take into account such differences in future studies. Imperial County in particular offers experience in measuring and comparing health in two ethnic groups, Hispanic and Anglo, and in two languages, Spanish and English. Significant area differences occurring in ethnicity, language of interview, and other background variables (defined in this study as variable other than measurements of health) could result in area differences in health which the casual observer might attribute to the effect of differential exposure to geothermal plants.

The most important results of the present study are probably the description of the methods used and the computer tape, with documentation,

of the data obtained. These alone provide a basis for conducting future studies in the area and for analyzing and evaluating future results. The tabular and statistical results presented in this report are intended to demonstrate existing area differences in background and health variables and the relationship between selected background and health variables. Statistical tests are limited to  $\chi^2$  and Fisher's exact test, which have the advantage of being relatively easy to interpret. Their disadvantages are that the effect of several background variables at once cannot be examined, the relative contribution of several variables cannot be estimated, and attempts to stratify on several background variables leads to small cell values and a larger number of  $\chi^2$  values, some of which would be expected to be statistically significant by chance alone. Multivariate methods, such as multiple logistic, log linear, or discriminant analysis will probably later be applied to the data, but that is outside the scope of the present report.

## II. PURPOSE OF THE BASELINE COMMUNITY HEALTH SURVEY

Since community exposure to effluents from geothermal plants is at present virtually nil, this survey was not expected to reveal health differences related to such exposure. It was recognized, however, that differences might occur among the locations studied due to other health-related factors. If health differences between areas increase over time as geothermal energy is commercially developed, these differences may be related to increasing exposure to pollutants, or they may occur because of other time-related factors that are operating differentially in the two areas. However, if we are willing to accept that these time-related factors are operating in the same way (rather than differentially) in both areas, then any pre-existing area differences in health would be expected to stay the same. A change in the differences would support the hypothesis that geothermal energy is at least partly responsible.

The measurement of background variables in this survey provides a baseline for determining whether these vary over time and hence could account for changes in area differences in health. Such differences could, of course, also be due to other variables that are not measured by the questionnaire. The analysis of the current surveys pinpoints those that show a significant relationship to the health and annoyance measurements and that therefore would have to be taken into account in future surveys.

### III. METHODS

#### A. Choice of Study Areas and Sampling

The primary consideration in choosing study areas was to represent probable future differences in exposure to emissions from geothermal plants. In selecting these areas we considered the location of present drilling sites, planned drilling sites, the boundaries of the Known Geothermal Resource Area, and the locations for which drilling permits had been issued or applied for. Sparsely settled rural areas were not included for two reasons, the expense of interviewing would have increased, and it would have been difficult to evaluate their projected exposure in relation to the areas of more concentrated population. The two areas that were finally selected consisted of neighborhoods in five towns, with Brawley, Calipatria, and Heber representing potentially greater exposure than El Centro and Holtville. Each area, therefore, was represented by both large and small towns. Because of their relatively small size and homogeneity with respect to demographic and social characteristics within each town, the sampling frames in Calipatria, Heber, and Holtville included most of the residential area within the city limits of each. Residential areas within Brawley and El Centro were selected to represent relatively similar socioeconomic status based on appearance of housing. Areas representing extremes at both ends of the socioeconomic scale were excluded. Areas of the towns which were primarily business or industrial were excluded because of the difficulty of locating premises used for residence. For all five towns, sparsely populated areas on

the town perimeters were excluded for the same reason. Sampling ratios varied in each town depending upon the size of the study area and the sample size sought in each. In some the samples resulting were smaller than anticipated due to an unexpectedly large frequency of residents who failed to meet the screening requirements, vacant houses, or inability of the interviewer to contact an occupant or obtain an interview after repeated tries. In such cases, the original sample was augmented either by sampling more intensively than originally planned or by adding a comparable residential area to the sampling frame.

Within the boundaries of the defined study areas, systematic sampling of households was used with a random start on each block. For each town, as described above, the sampling ratio was determined by dividing the available households by the sample size desired. The sampling ratios varied from 1:4 to 1:9. Too small a sampling ratio would have reduced the efficiency of the interviewing, while too large a ratio would have increased the probability that an interviewed person might discuss the questionnaire with neighbors yet to be interviewed. In the small towns, for example, Heber, it was necessary to sample intensively to obtain adequate representation.

B. Selection of the Respondents Within Each Household

One adult (age 18 or over) was interviewed in each household. The first interviewer contact with an adult member of each household was used to complete an enumeration form and to select the respondent.

Information obtained on each household member included name, age, sex, and length of residence in the town. If none of the adults in the household had lived there for two years or longer, the household was not included in the sample. If the household was eligible for inclusion, a method was used to select the respondent which resulted in each eligible adult member having a more or less equal chance of being included, and which resulted in about equal proportions of respondents who represented the oldest, next oldest, etc. member of the household. If the person selected to be the respondent was present at the time of the enumeration, the interview could usually be completed then. Otherwise an appointment was made.

The enumeration form also included space for a record of calls to the household.

#### C. Formulation of the Questionnaire

The questionnaire used followed closely that developed for the study of the health effects of petrochemical pollution which was being conducted by the Epidemiological Studies Laboratory at the same time. Some questions on social functioning were omitted, and the annoyance section was expanded. Several demographic questions were added and others modified to fit the needs of the geothermal study. Most of the questions had been used in other studies, and pretesting of most of the questionnaire had been done for the petrochemical study.

D. Translation of Questionnaire into Spanish

Because of the large Hispanic population in Imperial County, it was necessary to have a Spanish translation of the questionnaire available for use by Spanish-speaking interviewers. The initial translation was done by a native South American through a Bay Area language school translation service. This translation was then reviewed and revised by an Anglo who is fluent in Spanish and by a University of California student from Mexico whose native language is Spanish. The final version was then reviewed by a Hispanic employee of the Imperial County Health Department and by the bilingual interviewers employed locally for the study. Our goal was to obtain a translation which used reasonably standard Spanish as spoken in Imperial County, using local colloquialisms where necessary. In addition, we tried to avoid unnecessary departures from the English version of the questionnaire.

E. Selection and Training of Interviewers

Interviewers were recruited within Imperial County. About half of the original group were bilingual in English and Spanish. Because some communities had larger proportions of Spanish-speaking respondents than others, and also because communities were separated by as much as 20 miles, it was not feasible to assign the same proportion of interviewers to each location. Ideally this is done in surveys to help minimize interviewer bias.

A one-week training period preceded the interviewing. This included discussion of the purpose of the study and the principles of epidemiologic interviewing, and item-by-item discussion of the questionnaire. Demonstration interviews were done by the trainers, and the interviewers then practiced with a trainer on a one-to-one basis and among themselves. The final step in the training was practice field interviews outside the study area. Discussion of problems and errors in interviewing technique or recording of responses were discussed whenever appropriate throughout the training period.

#### F. The Questionnaire

##### 1. Screening for participation

The first section of the questionnaire contains questions on age and residence designed to check eligibility for the study (already predetermined by the census form previously described) and to obtain additional information on residence to be used in the analysis of the data.

##### 2. Health

Health questions are of three types. The first of these asks for information about doctor's diagnosis for specific conditions, including date condition started and whether the respondent is currently bothered by or receiving treatment for it. This is

followed by a series of questions on symptoms during the past twelve months, and by questions on medical care, curtailment of activities, and medication within the past 30 days. The diagnostic information can be related to the residential history, used to pick up conditions related to the time period under study, and compared to symptoms to rule out those which might result from pre-existing conditions. Reported symptoms are probably a more useful measure than diagnoses since the symptom questions refer to the last twelve months and thus depend neither upon long-term memory nor upon the patient's interpretation of the doctor's diagnosis. Reporting of both diagnoses and symptoms, however, depend to some extent upon understanding of or at least familiarity with, the terms used. The use of questionnaires in two languages compounds this problem since the terms for symptoms and diagnoses may not be strictly equivalent.

The questions on medical care and medication are intended to yield additional, non-specific measures of health as well as supplemental information on symptoms and diagnoses.

### 3. Smoking

No attempt was made to obtain a complete smoking history; the questions were limited to amount of cigarette smoking for present and ex-smokers, age first started smoking, and number of years during which smoking occurred. No information was sought concerning pipe and cigar smoking. The intent of the smoking

history is not primarily to examine smoking as a health factor, but to provide a control variable in comparing health differences by area.

#### 4. Alcoholic beverages

Questions were asked concerning the frequency and intensity of beer, wine, and spirit consumption. As with the smoking questions, these are motivated primarily by the need for control variables. The questions were designed to distinguish between weekend, regular, and occasional drinkers, and, in addition, to obtain an estimate of amount of alcohol consumed.

#### 5. Annoyance reactions

Questions in this section are directed toward the measurement of reactions to odor and noise in terms of frequency with which they are noticed and the degree to which the respondent is bothered by them. They are adapted from those used previously in studies of community reactions to pulp mill odors. The section is introduced by general questions concerning satisfaction with the community and perception of community problems. The respondent is therefore given an opportunity to volunteer that odor and noise are annoyances within the community. Subsequent questions ask specifically about odor and noise which may have been noticed during the past six months. The interviews were timed so that the preceding six months would cover the time of year during which odors from various agri-

cultural sources are most apt to be present. A sequence of questions measures the frequency, intensity, and degree of annoyance experienced, as well as identifying the source and type of odor or noise. The questions concerning the amount of change noticed since the previous year are primarily for use in subsequent surveys to measure perceived change following the development of geothermal energy. Responses to the final questions, which concern self-assessment of the respondent's sensitivity to odor and noise, provide a crude measure of individual differences which might be useful in evaluating responses.

#### 6. Occupation

A complete employment history for each respondent would undoubtedly have been the best way of assessing the role of occupational exposure in causing health problems addressed in the questionnaire. Such a history, however, is difficult and time consuming to obtain and depends upon accuracy of memory and reporting. Terms used by the respondents in reporting occupation and industry may be difficult to interpret uniformly. Instead of attempting to obtain and interpret a detailed employment history, therefore, two types of questions were used. The first type asked for kind of business or specific company employed in, kind of work done, and duration of such work for both present and usual occupation. These were used primarily as measures of socioeconomic status. The second type consisted of two check lists to identify specific exposures to substances known or suspected to be hazardous

to health. Each respondent was asked whether he or she had worked for six months or more in any of twenty-one specified occupations or industries, or had any regular exposure to any of fourteen specified products either at a job or a hobby for six months or more.

#### 7. Personal characteristics

Standard demographic characteristics related to health were asked; these included age, sex, ethnic group, marital status, educational achievement, income, family members, housing, and urban or rural residence for most of life. Ethnic origin was considered of particular importance because of the large number of Hispanics living in Imperial County and its proximity to Mexico. Education, income, and size of housing in relation to number of occupants can be used to give an index of socioeconomic status. Questions on type of heating and fuel were directed toward controlling for possible exposures that might be related to health.

#### IV. STATISTICAL METHODS

Non-parametric tests were carried out for two purposes. The first was to see whether significant differences occurred between the two areas with respect to either the background or the health and annoyance variables. The second was to test for significant relationships between the health variables and the background variables.

For most comparisons two-by-two tables were constructed and  $\chi^2$  tests were carried out. When the  $\chi^2$  test gave a statistically significant result but at least one cell had an expected value of less than 5, Fisher's exact test was done.

As mentioned in the Introduction, multivariate methods such as multiple logistic, log linear, or discriminant analysis might provide a better way of looking at the relationships among the background and health variables. However, since the main purpose of the study was to obtain baseline data, such analyses were considered to be outside the scope of the present study.

V. RESULTS

A table showing details of the sample sizes and response rates appears in the Appendix. The final sample consisted of 441 households in Area A and 442 in Area B. Completed interviews were obtained for 87.0 percent of the eligible households in Area A and for 87.8 percent in Area B. These figures exclude, however, 26 households in Area A and 15 in Area B where Spanish was spoken. The households had initially been contacted by an English-speaking interviewer who had determined that a Spanish interviewer was needed. It had become increasingly difficult to persuade any of the interviewers to continue work in the 100°F and over temperatures which were occurring, and rather than hire and train new interviewers at this stage in the study, it was decided to omit these households from the sample. It is unlikely that a bias was introduced by doing this.

The presentation of the survey results is of two types. First, the percent of respondents with a given background characteristic or response to the health and annoyance questions is given by sex, for the two study areas. Second, the relationships between some of the important background variables and the health and annoyance responses are given. The latter together with the demonstrated area differences in background variables underline the importance of including these in follow-up surveys. If differences in background variables occur between areas, and if some of these background variables are significantly related to health and annoyance variables, obviously this must be taken into account in analyzing data gathered following geothermal energy development. Since important differences in responses to the health questions already exist between the two areas, analysis of results from future surveys must also take into

account these differences. Area differences in health variables may, of course, be a result of area differences in background variables or may be a result of other area-related variables not measured in the current study.

Lack of significant area differences in a background variable does not necessarily imply that these variables can be ignored in making comparisons between areas with respect to the health variables since the difference could still be large enough within the sample to affect health or annoyance measurements.

#### A. Area Differences in Background Variables

The ratio of males to females in the two areas is close, 1.11 for Area A, 0.94 for Area B, this is within the limits indicating that the difference between the ratios is likely to be due to sampling variation ( $\chi^2 = 1.30$  with one degree of freedom,  $p > .10$ ). However, since men and women are known to have significant differences in certain other background variables and in reported symptoms, diagnoses, and annoyance reactions, these are reported here separately by sex.

A brief description of area differences for the major background variables is given below. Many of these differences do not represent statistical significance within the framework of sampling theory. However, within the samples themselves relatively small differences in individual background variables could, when combined,

result in significant area differences in related health variables, particularly if interaction occurs.

The tables in the Appendix in many cases represent more detailed categories than the two-by-two tables on which significance test were done. Results of the significance tests are shown in separate tables.

#### 1. Age and Marital Status

Among both men and women, Area A is represented by a higher percent of individuals in the younger age groups than is Area B. This difference is more pronounced among women than among men. Fewer individuals in Area A are married and more have never been married, possibly partly due to a reflection of the age difference between the two areas. The area differences for percent less than age 40 and for percent never married were both statistically significant for women, but not for men.

#### 2. Percentiles of Number of Years Residence

The percentile values for number of years of residence in Imperial County and in the same town as current residence were similar for both areas and sexes. No significance tests were done.

#### 3. Ethnic Group and Language of Interview

Area A is represented by a larger proportion of Hispanics

than is Area B, and a larger proportion of interviews in Area A were conducted in Spanish. The ethnic difference was statistically significant for women; the difference in language of interview was significant for both men and women.

#### 4. Education and Occupation

Generally speaking, the educational level of school achieved is somewhat lower in Area A than in Area B. This difference is more pronounced among men than among women, and attains statistical significance for men. A greater proportion of both men and women in Area A are blue collar workers.

#### 5. Housing and Family Composition

Both men and women in Area A are more apt to live in single family detached homes, than are those in Area B. The family structure differs between the two areas, with Area A having more households with children (statistically significant) and generally more children per household.

#### 6. Type of Fuel, Heating, and Air Conditioning

Area differences occurred in the use of gas compared to electricity for both heating and cooking. Men in Area A more frequently reported use of centrally distributed gas for both heating and cooking (statistically significant),

when compared to electricity and other fuels. Women in Area A also more frequently reported use of gas for cooking, but not for heating. Central heating and air conditioning were slightly less frequently reported in Area A by both men and women.

#### 7. Smoking and Drinking

A larger proportion of both men and women in Area A have never smoked cigarettes; and for present smokers, the amount smoked is slightly less in Area A. However, for past smokers, the amount smoked is greater in Area B. Significance testing comparing percent who have never smoked cigarettes with those who have smoked cigarettes showed statistically significant area differences among women, but when present cigarette smokers were compared to all others, neither men nor women showed significant area differences. Area differences for consumption of alcoholic beverages were significant only for men who had never smoked.

#### 8. Present Occupation and Industry of Employment

Overall, Area A appears to be weighted toward less highly skilled, blue collar workers than does Area B. The only area differences that were statistically significant were for female non-household service workers (9.4% in Area A, 1.1% in Area B), for male employees in transportation, communication, and other public utilities (20.8% in Area A, 8.7% in Area B) and for male employees in public administration (4.0% in Area A, 10.7% in

Area B).

9. Exposure to Potentially Hazardous Substances, Occupations, or Industries

No statistically significant area differences occurred in either sex with respect to regular exposure to selected potentially hazardous substances or to employment in potentially hazardous occupations or industries. However, between 20% and 25% of the men had been exposed to each of the following categories: petroleum products; cutting, cooling, or lubricating oils; organic chemicals or solvents; herbicides; pesticides. Fewer women were exposed to such substances, about 10% to paints or lacquers, and about 5% to each of the following: organic chemicals or solvents; pesticides; petroleum products; herbicides.

Persons employed in selected occupations or industries also showed no statistically significant area differences. Among men, 22% had worked in construction for at least six months, 16% in welding, 9% in restaurant cooking, 7% in the chemical industry, and 6% in metal machining or processing. Other potentially hazardous occupations and industries were represented by fewer than 5% each. Ten percent of women had cooked in a restaurant for at least six months, and 4% had worked in hairdressing or cosmetology at least six months. All other occupations were represented by fewer than 2% each.

#### B. Area Differences in Health Variables

Area differences in health variables were tested separately by sex for smokers and non-smokers combined, and were retested within each of two smoking categories (never smoked, present or ex-smokers). The major differences are summarized in tables in the Appendix. Detailed results also appear in the Appendix. Health variables showing significant area differences when smoking categories were combined sometimes lost their significance when tested within the two smoking categories used, either because the area difference in the combined group merely reflected an area difference in smoking habits or because of the decrease in sample size resulting from stratifying the group by smoking category. The opposite situation occurs when significant area differences within smoking categories disappear when they are combined. This could result from the operation of other factors related to health or to area, or from a significant difference in one of the smoking categories being diluted by relative lack of difference in the larger. Use of different smoking categories for stratification, for example, present smokers and all others, or discriminating by amount of smoking, might give different results.

Summarized below are area differences for diagnoses, symptoms, and medical care, including medication. More detailed results are given in the tables in the Appendix.

One important question which is not answered in the present

report is to what extent area differences may reflect health response differences in Hispanics and Anglos as well as differences associated with language of interview. This will be a topic of a later report.

#### 1. Diagnoses

When analyzed separately by sex but for all smoking categories combined, no area differences in reported diagnoses achieved statistical significance at the 5% level. Those which came closest were hepatitis in women, jaundice in women, anemia in women, and heart attack in men.

These differences are summarized in Table B13 in the Appendix.

Note that the percent of men with heart attack was lower in Area A than in Area B; the other diagnoses mentioned above (all among females) were represented by larger percents in Area A than in Area B. Fisher's exact test was used only when at least one expected cell value was less than five and the chi squared test resulted in a probability low enough to be of interest (0.05 unless otherwise stated).

When the same data were analyzed within each of two smoking categories (never smoked, present or ex-smoker) no significant area differences occurred with respect to diagnoses reported by men. Area differences in women significant at the 5% level

were arthritis and rheumatism among those who had never smoked, and chronic bronchitis, hepatitis, and jaundice among present and ex-smokers. Table B14 in the Appendix summarizes these results and also shows area differences that were significant between the 5% and 10% levels.

## 2. Symptoms

Among men, area differences for both smoking categories combined were significant at the 5% level for tremors or uncontrolled movements. Among women, chronic irritation of the eyes, acne, and "other" skin conditions showed significance at the 5% level, and frequent indigestion or heartburn at the 1% level. These results are shown in Table B15 in the Appendix.

No area differences at the 5% level occurred among men who had never smoked, but male present or ex-smokers showed significant area differences in "other" lung or respiratory problems. Women who had never smoked showed area differences significant at the 5% level for shortness of breath, and at the 1% level for frequent indigestion or heartburn and for difficulty in sleeping. Women who were present or ex-smokers showed no significant area differences. These results are shown in Table B16 in the Appendix.

## 3. Visits to Medical Facility, Disability, and Medication

Respondents were asked about medication taken during the

past 30 days and whether any illness, pain, or health condition had caused them to stay in a hospital overnight or longer, visit a physician or medical facility, stay in bed all day, or miss any work or other usual activity. Men in Area A were less apt to have visited a hospital or medical facility ( $p = 0.002$ ) than were men in Area B and this difference was also statistically significant among present and ex-smokers but not among those who had never smoked (although a sizeable difference occurred among the latter). Significant area differences were not evident among women.

Both men and women shared significant area differences in medication during the last 30 days. Only two-thirds as many men in Area A had taken pain relievers, but this difference disappeared when statistical tests were carried out within the two smoking categories. Significantly fewer women in Area A had taken pain relievers, medication for indigestion or heartburn, and "other" non-prescription medicine. The significance of these differences held among female non-smokers, but not among present and ex-smokers. Significantly more women had taken cough medicine or cold remedies in Area A than in Area B, and this difference held among present or ex-smokers but not among never smokers. Among present and ex-smokers only, significantly more women in Area A had taken sleeping pills and "other" prescription medicine.

For each group of symptoms (eye, ear, skin, stomach and digestive system, lungs and respiratory system, kidneys and

bladder, allergies, muscles and nerve), the percent of respondents reporting no symptoms was tested against the percent reporting at least one symptom. The only significant area difference was for stomach and digestive problems among women ( $\chi^2 = 4.04$ , significant at the 5% level). No significance tests for area differences were done within smoking categories.

A tabulation of the number of symptoms reported per person indicated that fewer were reported in Area A than in Area B. Area differences were slight among women. No significance tests were done.

#### C. Area Differences in Annoyance Reactions

Odor and noise are two annoyance factors which have developed near geothermal plants in other areas. It is apparent from results of this survey that odor and noise are already present to a fair degree although they cause relatively little annoyance.

Detailed results of the questions on reactions to odor and noise are given by area and sex in the tables in the Appendix. Odor from feed lots was noticed by 38% of the respondents during the six months preceding interview. Feed lots were mentioned as a source of odor less frequently in Area A than in Area B, but among those who did notice it, was considered to occur more frequently and to be more bothersome by those in Area A. Odor from a nearby nitrogen plant was noticed by about 20% of the respondents in

Area B, where the plant was located, and by only 2% in Area A. Fertilizer as a source of odor was mentioned by about 3% of the respondents overall, and pesticides were mentioned by 23% in Area A and 11% in Area B.

Sources of noise mentioned were principally traffic and aircraft. Traffic noise was noticed by 22% of the respondents in Area A and 17% in Area B, and aircraft noise by 13% in Area A and 10% in Area B.

No significance testing was done on the results of the annoyance survey.

#### D. Comparison of Symptom Frequencies with Age, Smoking, and Drinking

In the surveyed group as a whole, the prevalence of each symptom was compared with age (above or below age 40), cigarette smoking (present smokers or other), and drinking (never or sometimes). For both sexes combined  $\chi^2$  tests were performed on the two-by-two tables. Of these three variables, age was related to many more symptoms than were cigarette smoking or drinking. Problems related to vision, hearing, skin, urinary tract, and prostate gland were significantly related to age, as were shortness of breath, frequent colds, loss of muscle strength, difficulty in walking and writing, frequent sore throat, painful or swollen joints, and loss of consciousness, fainting, or coma. It is hardly surprising that age is associated with these symptoms, but in terms of validating

the survey results the findings are reassuring. Cigarette smoking was significantly associated only with increase in frequency of urinating, dizziness, and frequent nausea. Surprisingly, no significant association was found between cigarette smoking and respiratory symptoms. This finding may partly reflect the combination of ex and present smokers into a single category. Drinking was associated with blurred or double vision, pain when urinating, kidney infection, asthma, hives, headache, dizziness, nausea, and unusual sensations like pins and needles.

Age, cigarette smoking, and drinking were also compared with responses to questions on medical care, illness, and medications. Age was not significantly related to illness or medical care within the last 30 days, but was significantly associated with use of tranquilizers and prescription medicine. Cigarette smoking showed no significant relationship to any of these variables, but drinking was related to missing work within the past 30 days for health reasons and to use of pain relievers and prescription medicine.  $\chi^2$  values for specific questionnaire responses are shown in the tables in the Appendix.

## VI. CONCLUSIONS AND RECOMMENDATIONS

It is obvious that health differences already exist between the two areas selected to represent presumptively different future exposure to geothermal plants. Hence future health differences must be evaluated in the light of these current differences. The differences between areas with respect to trends over time would seem to be an appropriate measure. Comparison of the results of future health surveys, however, with results from the present study will only be valid if the questionnaire and research methods are the same as those used in the present study.

Odor from sources other than geothermal resources is currently present, and at times rather intense, in parts of the Imperial Valley. These are associated mainly with feed lots and a nitrogen plant. Any future odors resulting from geothermal plants is likely to be slight compared to odor from these other sources (see also Jeffrey Hahn's report "Location of Odor Sources and the Affected Population in Imperial County, California").

The potentially exposed area (Area A) was composed of three sub-areas, and the unexposed area (Area B) was composed of two sub-areas. Even though we cannot predict with a high degree of certainty whether we have chosen the best combination of these sub-areas to represent future exposure differences, the possibility of recombining the sub-areas in a different way exists both with respect to the data from the current study and for future studies.

As mentioned earlier in the report, no attempt was made to adjust for multiple background variables when making the area comparisons of health. As time permits, some exploratory work will be carried out using multivariate methods to examine more closely the relative effects of the background variables on health and to adjust for them. To efficiently evaluate trends in health, statistical models might be developed with input representing both background and health variables for at least two points in time for the two areas. The output should then be a measure of relative changes over time in health, adjusting for both area and time-related differences in background variables.

The effect of ethnicity and language of interview has been examined only briefly, but is planned to be the subject of a later report.

Although not relevant to the Imperial Valley study in the strictest sense, a comparison of results of this survey with results of a similar survey in Contra Costa County would be possible and should prove to be instructive in evaluating the questionnaire. In addition, cross-tabulation of related questions can be done within the Imperial County surveys as a validation procedure.

## **A P P E N D I C E S**

- A. Tables**
- B. Enumeration Forms**
- C. Questionnaire**
  - 1. English**
  - 2. Spanish**
- D. Interviewer Cards: Ethnicity and Race**
  - 1. English**
  - 2. Spanish**
- E. Interviewer Instructions**

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A P P E N D I X   A

## APPENDIX A

### Tables

#### A. Background Variables

- A1. Sample Size and Response Rate by Area
- A2. Distribution of Population Sample by Age, Marital Status, Ethnic Group, and Language of Interview; Percents by Area and Sex
- A3. Percentiles of Number of Years Residence by Area and Sex
- A4. Educational Attainment, Percents by Area and Sex
- A5. Housing and Family Composition, Percents by Area and Sex
- A6. Type of Fuel and Heating, Percents by Area and Sex
- A7. Cigarette Smoking History, Percents by Area and Sex
- A8. Alcohol Consumption, Percents by Area and Sex
- A9.  $\chi^2$  Values for Area Differences in Background Variables
- A10. Present Occupation, Percent of Total Employed by Area and Sex
- A11. Present Industry Worked In, Percent of Total Employed by Area and Sex
- A12. Percent of Respondents with Regular Exposure to Selected Substances for at Least Six Months, Male by Area
- A13. Percent of Respondents with Regular Exposure to Selected Substances for at Least Six Months, Female by Area

A14. Percent of Respondents by Occupations or Industries Worked in for at Least Six Months, Male by Area

A15. Percent of Respondents by Occupations or Industries Worked in for at Least Six Months, Female by Area

B. Health Variables

B1. Percent Reporting Specific Diagnoses Ever, Percents by Area and Sex

B2-B9. Symptoms in Past Twelve Months, Percents by Area and Sex

- B2. Eye
- B3. Ear
- B4. Skin
- B5. Stomach and Digestive System
- B6. Lungs and Respiratory System
- B7. Kidneys and Bladder
- B8. Allergies
- B9. Muscles and Nerves

B10. Medical Care or Disability During Past 30 Days, Percents by Area and Sex

B11. Use of Medication During Past 30 Days, Percents by Area and Sex

B12. Percent Distribution of Respondents by Number of Symptoms Reported by Area and Sex

B13. Diagnoses with Area Differences Approaching Significance at the 10% Level, Within Sex

B14. Diagnoses with Significant Area Differences at the 10% Level, Within Sex and Smoking Categories

B15. Symptoms with Area Differences Significant at the 5% Level, Within Sex

B16. Symptoms with Area Differences Significant at the 5% Level, Within Sex and Smoking Categories

**C. Annoyance Variables**

**C1-C4. Odors Noticed During Last Six Months,  
Percents by Area and Sex**

- C1. Feed Lots**
- C2. Nitrogen Plant**
- C3. Fertilizer**
- C4. Pesticides**

**C5-C6. Noise Noticed During Last Six Months,  
Percents by Area and Sex**

- C5. Traffic**
- C6. Aircraft**

TABLE A1  
SAMPLE SIZE AND RESPONSE RATE

	Area A	Area B		
	Number	Percent of Sample	Number	Percent of Sample
<b>Sampling frame</b>				
Sample size	441	100.0	442	100.0
Vacant units	34	7.7	21	4.8
Occupants ineligible	29	6.6	33	7.5
Unable to contact	14	3.2	6	1.4
Refusals	35	7.9	54	12.2
Completed interviews	329	74.6	328	74.2
% of total sample size completed	74.6		74.2	
% completed of total sampling units available for interview*	87.0		87.8	
% refusals of total sampling units available for interview*	9.3		13.9	

\* Total number of sampling units available for interview excludes vacant units and units with occupants ineligible (63 for Area A, 54 for Area B).

Note: 26 households in Area A and 15 in Area B could not be interviewed due to unavailability of Spanish-speaking interviewers.

TABLE A2

**DISTRIBUITION OF POPULATION SAMPLE BY AGE, MARITAL STATUS,  
ETHNIC GROUP, AND LANGUAGE OF INTERVIEW**  
**PERCENTS**

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observation</b>	156	141	173	187
<b>Age</b>				
18-29	24.4	19.9	31.8	18.7
30-39	26.3	19.9	24.3	24.6
40-54	22.4	27.7	20.8	24.6
55 and over	26.9	32.6	22.5	32.1
Unknown	0	0	0.6	0
<b>Marital Status</b>				
Married	73.1	80.1	67.1	73.3
Separated/divorced	3.8	4.3	11.0	9.1
Widowed	5.8	5.0	6.9	13.9
Never married	17.3	10.6	14.5	3.2
Unknown	0	0	0.6	0.5
<b>Ethnic Group</b>				
White	55.8	64.5	50.3	70.1
Hispanic	38.5	29.8	48.6	29.9
Other	5.8	5.0	1.2	0
Unknown	0	0.7	0	0
<b>Language of Interview</b>				
English	82.1	95.0	77.5	86.6
Spanish	17.9	5.0	22.5	13.4

TABLE A3

## PERCENTILES OF NUMBER OF YEARS RESIDENCE

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Years in Imperial County				
Percentile				
25th	12.3	11.8	10.9	9.6
50th	21.8	22.4	22.4	20.7
75th	32.3	36.9	34.7	34.7
Years in Same Town				
Percentile				
25th	7.3	6.7	6.7	6.0
50th	14.5	15.6	16.8	16.2
75th	30.3	31.2	29.4	27.8

TABLE A4

EDUCATIONAL ATTAINMENT  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Education - highest grade completed				
Elementary-high school				
1st through 7th grades	16.8	10.6	19.4	14.1
8th grade	9.0	6.4	6.5	6.5
9th through 11th grades	17.3	12.1	11.7	13.5
12th grade	56.8	70.9	60.0	65.9
College				
1st - 3rd years	21.3	30.7	27.1	25.9
4th year	6.5	7.9	2.9	4.3
More than 4 years	7.1	8.6	9.4	5.4
Technical school-at least one year	13.6	21.5	10.1	19.9

NOTE: Six respondents who did not answer any of the questions on education were excluded from the denominators. For 33 who answered concerning elementary and high school, no answer for college or technical school was assumed to mean no years completed.

TABLE A5

HOUSING AND FAMILY COMPOSITION  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Percents				
Type of Housing				
Mobile home or trailer	2.3	0	0	0
Single family detached house	84.4	97.2	93.1	85.0
Multi-unit housing				
2-4 unit	0.6	0.7	3.0	3.7
5 or more units	2.9	2.1	1.7	3.2
Unknown	2.3	1.4	1.7	3.2
Number of children				
None	40.4	44.0	38.2	51.3
One	17.3	21.3	22.5	16.6
Two	21.8	19.1	17.3	15.0
Three	12.2	7.8	8.7	10.7
Four or more	8.3	7.8	12.1	6.4
Number of adults (a)				
None	0	0.7	1.7	2.7
One	11.5	8.5	13.3	21.4
Two	66.7	69.5	59.0	64.2
Three	13.5	16.3	16.8	8.6
Four or more	6.7	5.0	8.0	3.1
Median number of rooms	4.8	5.0	5.0	4.7

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(a) Age 18 or over.

TABLE A6

TYPE OF FUEL AND HEATING  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Fuel used most for heating				
Gas from neighborhood pipes	63.5	48.9	54.9	57.8
Electricity	29.5	46.1	39.9	41.7
Other or no fuel used	7.0	5.0	5.2	0.5
Fuel used most for cooking				
Gas from neighborhood pipes	57.7	42.1	52.6	45.5
Electricity	41.0	55.7	47.4	54.5
Other	1.3	2.2	0	0
Method of heating living quarters				
Central warm air furnace	44.5	46.8	44.5	51.9
Floor, wall, or pipeless furnace	16.8	27.0	18.5	22.2
Room heaters with or without flue or vent (gas, oil, or kerosene)	14.2	10.6	12.7	12.4
Built in electric units	7.7	5.7	8.7	5.9
Fireplaces, stoves, portable room heaters, other	11.6	7.8	8.7	4.4
No heat	5.2	2.1	6.9	3.2
Air conditioning	92.9	97.9	93.1	95.7

TABLE A7

CIGARETTE SMOKING HISTORY  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observation</b>	156	141	173	187
<b>Percents</b>				
Never smoked	44.2	33.3	69.4	58.3
Ex-smoker	21.1	29.8	10.4	16.0
Half a pack or less	2.6	5.0	5.8	8.0
About one pack	5.8	11.3	1.7	4.3
About 1½ packs or more	13.5	14.2	2.3	3.7
<b>Present Smokers</b>	34.6	36.9	20.2	25.7
Half a pack or less	13.5	12.1	8.7	12.3
About one pack	12.2	14.2	8.1	8.6
About 1½ packs or more	9.0	10.6	3.5	4.8
<b>Median number of years smoked</b>				
Ex-smokers	16.5	20.7	6.5	7.2
Present smokers	16.5	22.0	22.0	20.1
<b>Median Age Started</b>	17.2	18.1	20.0	18.0

TABLE A8

## CONSUMPTION OF ALCOHOLIC BEVERAGES

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Total</b>				
Alcoholic beverages				
Less than once a week	35.9	42.6	74.0	74.9
At least once a week	64.1	57.4	26.0	25.1
Never Smoked				
Alcoholic beverages				
Less than once a week	36.2	55.3	80.0	88.1
At least once a week	63.8	44.7	20.0	11.9
Present or Ex-Smokers				
Alcoholic beverages				
Less than once a week	35.6	36.2	60.4	56.4
At least once a week	64.4	63.8	39.6	43.6

TABLE A9

**$\chi^2$  VALUES FOR AREA DIFFERENCES IN BACKGROUND VARIABLES  
(1 DEGREE OF FREEDOM)**

	Male	Female
Age		
18-39 vs 40 & over	3.57	6.13*
Marital Status		
Married vs Other	2.05	1.46
Ethnic Group		
Hispanic vs Other	2.47	13.09**
Language of Interview		
English vs Spanish	12.01**	5.17*
Percentiles of Length of Residence	Not Tested	
Educational Attainment		
Less than 12th grade vs Other	6.16*	1.24
Present Occupation		
Blue collar vs White collar	3.55	0.29
Housing		
Single family detached vs Other	13.66**	5.88*
Family Composition		
No children vs Children	0.39	6.31*
None or one child vs More than one	1.78	2.04
Two adults vs One or more than two	0.27	1.03
Type of Fuel for Heat		
Gas vs Other	6.36*	0.29
Type of Fuel for Cooking		
Gas vs Other	7.44*	1.84
Type of Heating		
Central vs Other	0.20	1.95
Air Conditioning		
Yes vs No	4.00*	1.21
Cigarette Smoking		
Never vs Other	3.69	4.76*
Present vs Other	0.17	1.50
Alcohol Consumption		
Less than once a week vs at least once a week	1.38	0.04

\* Significant at 5% level.

\*\* Significant at 1% level.

TABLE A10

PRESENT OCCUPATION  
PERCENT OF TOTAL EMPLOYED

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observation	127	104	85	92
Professional, technical and kindred workers	10.2	12.5	21.2	15.2
Managers and administrators, except farm	15.0	23.1	2.4	6.5
Sales workers	6.3	4.8	9.4	7.6
Clerical and kindred workers	1.6	4.8	30.6	38.0
Craftsmen and kindred workers	15.7	19.2	1.2	2.2
Operatives, except transport	6.3	7.7	7.1	8.7
Transport equipment operators	12.6	5.8	2.4	0
Laborers, except farm	6.3	3.8	0	0
Farmers and farm managers, farm laborers and foremen	4.7	2.9	0	0
Service workers, except private household	18.1	11.5	9.4	1.1
Private household workers	3.1	3.8	16.5	20.7

NOTE: U.S. Bureau of the Census, 1970 Census of Population Alphabetical Index of Industries and Occupations

TABLE A11

PRESENT INDUSTRY WORKED IN  
PERCENT OF TOTAL EMPLOYED

	Male		Female	
	Area A	Area B	Area A	Area B
Number of Observations	125	103	86	92
Agricultural, forestry, and fisheries	27.2	21.4	14.0	7.6
Mining and petroleum and gas extractions	2.4	1.0	1.2	0
Construction	8.0	5.8	2.3	0
Manufacturing	5.6	9.7	4.7	5.4
Transportation, communication, and other public utilities	20.8	8.7	2.3	4.3
Wholesale and retail trade	16.8	22.3	23.3	27.2
Finance, insurance, and real estate	1.6	2.9	5.8	6.5
Business and repair services	3.2	3.9	0	1.1
Personal services	0	1.0	2.3	1.1
Entertainment and recreation services	10.4	12.6	40.7	37.0
Public administration	4.0	10.7	3.5	9.8

NOTE: U.S. Bureau of the Census, 1970 Census of Population Alphabetical Index of Industries and Occupations

TABLE A12

PERCENT OF RESPONDENTS WITH REGULAR EXPOSURE TO  
SELECTED SUBSTANCES FOR AT LEAST SIX MONTHS

## MALE

	Total	Area A	Area B
Number of observations	297	156	141
Substance			
Petroleum products such as gasoline, kerosene, or fuel oils	27.6	27.6	27.7
Cutting, cooling, and lubricating oils	22.2	22.4	22.0
Organic chemicals or solvents	21.9	21.2	22.7
Herbicides or weed killers	20.9	19.9	22.0
Pesticides or insect sprays	19.5	18.0	21.3
Paints or lacquers	14.1	12.8	15.6
Sawdust	14.1	11.5	17.0
Metal dust or fumes	7.7	7.1	8.5
Fibrous glass or glass wool	7.1	6.4	7.8
Asbestos	6.7	6.4	7.1
Sandblasting	4.4	5.1	3.5
X-ray or radioactive material	4.0	3.8	4.3
Asphalt	4.0	3.8	4.3
Coal dust	0.7	0.6	0.7

TABLE A13

PERCENT OF RESPONDENTS WITH REGULAR EXPOSURE TO  
SELECTED SUBSTANCES FOR AT LEAST SIX MONTHS

## FEMALE

	Total	Area A	Area B
Number of observations	360	173	187
Substance			
Paints or lacquers	8.6	8.7	8.6
Organic chemicals or solvents	5.6	4.6	6.4
Pesticides or insect sprays	5.3	5.2	5.3
Petroleum products such as gasoline, kerosene, or fuel oils	5.0	4.6	5.3
Herbicides or weed killers	4.2	3.5	4.8
X-ray or radioactive material	3.6	3.5	3.7
Sawdust	1.7	2.3	0.5
Cutting, cooling, or lubricating oils	0.8	0	1.6
Asbestos	0.8	1.2	0.5
Metal dust or fumes	0.8	0	1.6
Sandblasting	0.8	0.6	1.1
Coal dust	0.6	0.6	0.5
Fibrous glass or glass wool	0.6	1.2	0
Asphalt	0.3	0	0.5

TABLE A14

PERCENT OF RESPONDENTS BY OCCUPATIONS OR INDUSTRIES  
WORKED IN FOR AT LEAST SIX MONTHS

## MALE

	Both Areas	Area A	Area B
Number of observations	297	156	141
Occupation or industry			
Carpentry or other construction	21.5	19.9	23.4
Welding	16.2	14.1	18.4
Cooking in a restaurant	8.8	7.7	9.9
Chemical industry	6.7	6.4	7.1
Metal machining or processing	6.4	3.8	9.2
Shipyard	4.0	4.5	3.5
Mining other than coal	3.0	1.9	4.3
Insulation	3.0	2.6	3.5
Geothermal industry	3.0	1.9	4.3
Furniture manufacturing	2.0	1.9	2.1
Printing	2.0	1.9	2.1
Petroleum refining	1.7	2.6	0.7
Stone quarrying	1.3	2.6	0
Rubber manufacturing	1.3	0.6	2.1
Plastics manufacturing or processing	1.3	1.3	1.4
Foundry or smelter	1.0	1.3	0.7
Pulp and paper mill	1.0	1.3	0.7
Leather or shoe manufacturing	0.7	0.6	0.7
Hairdresser	0.3	0	0.7
Coal mining	0	0	0
Textile manufacturing	0	0	0

TABLE A15

PERCENT OF RESPONDENTS BY OCCUPATION OR INDUSTRIES  
WORKED IN FOR AT LEAST SIX MONTHS

## FEMALE

	Both Areas	Area A	Area B
<b>Number of observations</b>	<b>360</b>	<b>173</b>	<b>187</b>
<b>Occupation or industry</b>			
Cooking in a restaurant	10.0	12.1	8.0
Hairdressing or cosmetology	4.4	2.9	5.9
Leather or shoe manufacturing	1.7	1.7	1.6
Chemical industry	1.7	1.2	2.1
Printing	1.4	1.2	1.6
Textile manufacturing	1.1	0.6	1.6
Welding	0.8	0	1.6
Metal machining or processing	0.6	0.6	0.5
Shipyard	0.6	0.6	0.5
Insulation	0.6	0.6	0.5
Plastics manufacturing or processing	0.6	0	1.1
Foundry or smelter	0.3	0	0.5
Carpentry or other construction	0.3	0	0.5
Furniture manufacturing	0.3	0	0.5
Coal mining	0	0	0
Mining other than coal	0	0	0
Stone quarrying	0	0	0
Geothermal industry	0	0	0
Petroleum refining	0	0	0
Rubber manufacturing	0	0	0
Pulp and paper mill	0	0	0

TABLE B1

## PERCENT REPORTING SPECIFIC DIAGNOSIS EVER

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Diagnosis				
High blood pressure	16.7	21.4	15.0	16.6
Heart attack (a coronary)	2.6	6.4	2.9	2.2
Stroke	0.6	2.1	1.2	1.6
Chronic bronchitis	1.3	3.5	8.1	6.4
Emphysema	3.2	5.7	1.8	1.6
Tuberculosis	0.6	2.1	1.2	0
Asthma	7.1	5.0	6.4	5.9
Stomach or duodenal ulcer	9.0	13.5	5.2	9.6
Hepatitis	2.6	2.1	3.5	0.5
Liver cirrhosis	0.6	0	0	0
Jaundice	2.6	3.5	2.9	0.5
Colitis	1.3	2.8	1.7	3.2
Kidney stones	6.4	6.4	2.9	4.3
Kidney failure	1.3	0.7	0.6	1.6
Cataracts	5.1	6.4	5.2	3.2
Gout	2.6	3.5	0	1.1
Diabetes	4.5	5.7	4.6	7.5
Epilepsy	0	0	0.6	0
Anemia (low blood count)	0.6	1.4	20.2	13.4
Nervous breakdown	1.3	0.7	1.2	2.7
Psoriasis	0.6	0.7	1.2	1.1
Chronic dermatitis	0	1.4	0.6	0.5
Multiple sclerosis	0	0	0.6	0
Arthritis or rheumatism	10.9	12.8	15.0	20.3
Skin cancer	7.7	7.1	4.6	4.8
Leukemia	0.6	0	0.6	0
Any other cancer	3.8	3.5	2.9	4.3
Anything else	12.8	13.5	11.6	8.0

TABLE B2

**PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
EYE**

	Male			Female	
	Area A	Area B		Area A	Area B
<b>Number of observations</b>	156	141		173	187
<b>Symptoms</b>					
Eye infection	2.6	4.3		1.7	3.2
Chronic irritation of the eyes	7.1	7.1		12.7	5.9
Eye injury	5.8	3.5		2.9	2.1
Eye pain	3.8	4.3		4.6	4.8
Blurred or double vision	5.8	10.6		11.6	12.8
Sudden loss of sight	1.9	1.4		3.5	2.1
Anything else with your eyes	9.6	16.3		11.6	13.9
 No eye symptoms	75.0	70.2		66.5	72.2
 At least one symptom	25.0	29.7		33.5	27.7
One symptom	18.6	18.4		25.4	17.6
Two symptoms	3.2	7.1		4.6	6.4
Three symptoms or more	3.2	4.2		3.5	3.7

TABLE B3

**PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
EAR**

	Male			Female	
	Area A	Area B		Area A	Area B
<b>Number of observation</b>	156	141		173	187
<b>Symptoms</b>					
Pain in the ear lasting longer than one week	3.8	2.8		4.1	4.3
Ringing or buzzing	12.8	10.6		8.7	10.7
Loss of hearing	7.7	7.1		5.8	5.3
Drainage from your ears	0.6	2.1		1.2	1.6
Ear infection	2.6	4.3		4.0	7.0
Injury to an ear	1.9	2.4		0.6	1.6
Anything else with your ears	3.2	4.3		3.5	5.7
No ear symptoms	78.2	79.4		82.1	78.6
At least one symptom	21.7	20.6		17.9	21.4
One symptom	14.1	13.5		11.0	13.4
Two symptoms	5.1	4.3		4.6	5.9
Three symptoms or more	2.5	2.8		2.3	2.1

TABLE B4

PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
SKIN

Number of observations	Male	Female		
		Area A	Area B	
156	141	173	187	
Symptoms				
Skin infection	0.6	3.5	2.3	2.7
Rash	11.5	7.8	8.1	12.3
Skin cancer	3.2	5.0	1.2	3.2
Any other skin growth or tumor	2.6	4.3	2.9	1.6
Acne	3.8	4.3	9.8	4.3
Anything else with your skin	5.1	6.4	8.1	3.2
No skin symptoms	78.2	77.3	74.6	77.0
At least one symptom	21.8	22.7	25.4	23.0
One symptom	16.7	15.6	20.2	19.8
Two symptoms	5.1	5.7	3.5	2.1
Three symptoms or more	0	1.4	1.7	1.1

TABLE B5

PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
STOMACH AND DIGESTIVE SYSTEM

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observations</b>	156	141	173	187
<b>Symptoms</b>				
Frequent indigestion or heartburn	19.9	19.9	16.2	30.5
Stomach cramps or pain	8.3	7.1	11.6	15.5
Frequent diarrhea	2.6	4.3	5.8	8.0
Rectal burning or pain	3.2	1.4	1.2	3.2
Rectal bleeding	3.2	1.4	2.3	1.6
Change in bowel habits	2.6	2.8	3.5	3.7
Anything else with your stomach or intestinal system	3.8	2.1	6.4	3.7
No digestive symptoms	69.9	74.5	70.5	60.4
At least one symptom	30.1	25.5	29.4	39.5
One symptom	19.2	17.0	17.9	23.0
Two symptoms	8.3	4.3	6.9	9.1
Three symptoms or more	2.6	4.2	4.6	7.4

TABLE B6

**PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
LUNGS AND RESPIRATORY SYSTEM**

	Male			Female	
	Area A	Area B		Area A	Area B
Number of observations	156	141		173	187
Cough that lasted more than a month	3.8	7.1		8.1	7.5
Daily cough when you first get up in the morning	5.1	7.1		3.5	6.4
Shortness of breath that makes you stop your work or usual activities	7.7	10.6		6.4	8.0
Wheezing or whistling sounds in your chest	7.7	11.3		6.4	5.9
Repeated pain, pressure or tight feeling in your chest	5.8	4.3		4.6	5.9
More than three colds or upper respiratory infections	3.2	7.1		7.5	12.3
Anything else with your lungs or respiratory system	3.2	7.8		4.0	3.7
No respiratory symptoms	80.1	70.9		76.3	73.8
At least one symptom	19.9	29.0		23.6	26.2
One symptom	10.9	14.2		13.3	15.0
Two symptoms	4.5	8.5		6.9	5.3
Three symptoms or more	4.5	6.3		3.4	5.9

TABLE B7

PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
KIDNEYS AND BLADDER

Number of observations	Male	Area A		Female	
		Area A	Area B	Area B	Area B
156	141	173	187		
<b>Symptom</b>					
Pain when urinating	3.8	4.3	5.2	5.3	
Increase in frequency of urinating	5.8	4.3	9.2	9.1	
Trouble starting or stopping urinating	5.8	5.0	2.3	2.1	
Bladder cancer	0.6	0.7	0.6	0	
Blood in your urine	1.9	0	1.7	1.6	
Loss of bladder control	0.6	0	1.7	1.1	
Kidney infection	1.9	3.6	2.9	5.9	
Anything else with your kidney or bladder	2.6	6.4	5.8	4.3	
Prostate disease	2.6	6.4	NA	NA	
No kidney or bladder symptoms	86.5	80.9	84.4	84.0	
At least one symptom	13.5	19.1	15.6	16.1	
One symptom	9.0	12.8	7.5	7.0	
Two symptoms	2.6	3.5	5.2	5.9	
Three symptoms or more	1.9	2.8	2.9	3.2	

TABLE B8

PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
ALLERGIES

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Symptom				
Asthma or allergic cough	4.5	8.5	9.2	11.8
Hay fever	17.3	23.4	25.4	32.1
Hives or rash	6.4	5.7	5.8	8.0
Food allergies	4.5	2.8	4.6	6.4
Allergic headache	4.5	7.1	8.1	10.2
Any other allergies	5.8	9.2	14.5	11.8
No allergy symptoms	73.7	68.8	60.1	54.0
At least one symptom				
One symptom	16.7	17.0	22.5	27.3
Two symptoms	4.5	7.8	11.0	8.0
Three symptoms or more	3.8	3.5	4.0	7.0

TABLE B9  
PERCENT REPORTING  
SYMPTOMS IN PAST TWELVE MONTHS  
MUSCLES AND NERVES

	Male		Female	
	Area A	Area B	Area A	Area A
Number of observations	156	141	173	187
Symptoms				
Persistent tiredness or weakness	7.7	11.3	19.7	20.3
Loss of muscle strength	8.3	6.4	8.1	9.1
Paralysis	0.6	0	1.2	1.1
Numbness or loss of sensation	3.2	3.5	5.8	3.2
Tremors or uncontrolled movements	3.8	0	1.7	1.1
Difficulty in walking	3.8	5.7	5.2	4.3
Difficulty in writing with pen or pencil	1.3	4.3	3.5	4.3
Difficulty in sleeping	7.1	12.1	11.6	18.7
Dizziness	4.5	4.3	9.8	9.1
Frequent nausea	2.6	2.1	5.8	4.8
Persistent or frequent sore throat	1.3	1.4	4.0	2.7
Unusual sensations like pins or needles	1.9	3.5	4.6	5.9
Painful or swollen joints	5.8	11.3	11.0	10.7
Loss of consciousness, fainting, or coma	1.3	0	1.2	1.6
Repeated spells of feeling very upset, depressed or crying	3.2	2.1	10.4	10.7
Frequent or persistent headaches	3.8	5.7	13.9	14.4
Anything else with your muscles or nerves	2.6	4.3	3.5	3.7
No muscle or nerve symptoms	73.7	66.7	59.0	51.3
At least one symptom	26.2	33.3	40.9	48.7
One symptom	11.5	15.6	12.7	18.7
Two symptoms	5.8	7.8	6.9	10.2
Three symptoms or more	8.9	9.9	21.3	19.8

TABLE B10

MEDICAL CARE OR DISABILITY DURING THE PAST 30 DAYS  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Stay in a hospital overnight or longer	0.4	2.8	2.9	1.6
Visit a physician or medical facility	16.7	32.6	21.7	25.1
Stay in bed all day	4.5	7.8	6.9	5.3
Miss any work or other usual activity	7.7	9.2	8.7	6.4

TABLE B11

USE OF MEDICATION DURING THE PAST 30 DAYS  
PERCENTS

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Pain relievers	20.5	30.5	33.5	51.3
Cough medicine or cold remedies	7.1	5.7	15.6	7.5
Medicine for heartburn or indigestion	14.7	17.0	14.5	25.7
Laxatives	5.1	5.0	7.5	12.3
Tranquilizers	2.6	4.3	5.8	7.5
Sleeping pills	1.9	4.3	6.4	5.3
Antibiotics	8.3	9.2	11.0	7.0
Vitamins	33.3	40.4	54.3	56.7
Other prescription medicine	16.7	25.5	32.4	26.2
Other non-prescription medicine	14.7	14.9	8.7	16.6

TABLE B12

PERCENT DISTRIBUTION OF RESPONDENTS BY  
NUMBER OF SYMPTOMS REPORTED

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observations</b>	156	141	173	187
<b>Symptoms</b>				
None	28.2	22.0	18.5	16.0
1	17.3	19.9	17.9	17.1
2	12.8	13.5	12.1	12.8
3	12.8	8.5	10.4	11.8
4	7.7	3.5	6.9	5.3
5-9	16.0	22.1	23.6	24.5
10-14	2.6	9.2	5.8	7.5
15 and over	2.6	1.4	4.6	4.8
<b>Average number of symptoms reported per person</b>	2.9	3.8	3.9	4.2

TABLE B13

DIAGNOSES WITH AREA DIFFERENCES APPROACHING  
 SIGNIFICANCE AT THE 10% LEVEL  
 WITHIN SEX

	Area A	Area B	$\chi^2$	P	Fisher's Exact Test (p)
<b>Males</b>					
Heart Attack	2.6	6.4	2.58	0.11	NA
<b>Females</b>					
Hepatitis	3.5	0.5	NA	NA	0.06
Jaundice	2.9	0.5	NA	NA	0.11
Anemia	20.2	13.4	3.05	0.08	NA

NOTE: NA = not applicable. All  $\chi^2$ 's have one degree of freedom.

TABLE B14  
DIAGNOSES WITH SIGNIFICANT AREA  
DIFFERENCES AT THE 10% LEVEL  
WITHIN SEX AND SMOKING CATEGORIES

	Area A	Area B	$\chi^2$	p	Fisher's Exact Test (p)
<b>Males</b>					
None	--	--	--	--	--
<b>Females</b>					
Never Smoked					
Arthritis or rheumatism	12.5	22.9	4.32	0.04	NA
Stomach or duodenal ulcer	5.8	12.8	3.37	0.07	NA
Colitis	0.8	5.5	NA	NA	0.06
Diabetes	3.3	9.2	3.40	0.07	NA
Present or Ex-Smoker					
Hepatitis	7.6	0.0	NA	NA	0.02
Chronic bronchitis	18.9	7.7	3.68	0.06	NA
Jaundice	7.6	0.0	NA	NA	0.02

NOTE: NA = not applicable. All  $\chi^2$ 's have one degree of freedom.

TABLE B15

SYMPTOMS WITH AREA DIFFERENCES  
 SIGNIFICANT AT THE 5% LEVEL  
 WITHIN SEX

	Area A	Area B	$\chi^2$	p	Fisher's Exact Test (p)
<b>Males</b>					
Tremors or uncontrolled movements	3.8	0.0	NA	NA	0.03
<b>Females</b>					
Frequent indigestion or heartburn	16.2	30.5	10.18	0.001	NA
Chronic irritation of the eyes	12.7	5.9	5.04	0.02	NA
Acne	9.8	4.3	4.28	0.04	NA
Other skin problems	8.1	3.2	4.08	0.04	NA

NOTE: NA = not applicable. All  $\chi^2$ 's have one degree of freedom.

TABLE B16

SYMPTOMS WITH AREA DIFFERENCES  
 SIGNIFICANT AT THE 5% LEVEL  
 WITHIN SEX AND SMOKING CATEGORIES

	Area A	Area B	$\chi^2$	p	Fisher's Exact Test (p)
<b>Males</b>					
Never smoked					
None	—	—	—	—	—
Present or Ex-Smoker					
Other lung or respiratory problems	1.2	8.5	NA	NA	0.04
<b>Females</b>					
Never smoked					
Difficulty in sleeping	7.6	19.3	6.69	0.01	NA
Frequent indigestion	16.7	31.2	6.69	0.01	NA
Shortness of breath	3.3	10.1	4.26	0.04	NA
Present or Ex-Smoker					
None	—	—	—	—	—

NOTE: NA = not applicable. All  $\chi^2$ 's have one degree of freedom.

TABLE C1

**PERCENT REPORTING  
ODORS NOTICED DURING LAST SIX MONTHS  
FEED LOTS**

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observations</b>	156	141	173	187
Feed lot odor noticed	35.9	42.6	36.4	38.5
Every day	10.9	2.8	9.8	4.8
Once a week	11.5	12.8	5.8	13.4
Once a month	10.3	17.7	12.7	9.1
Less often	3.2	8.5	5.8	10.7
Don't know	0	0.7	0	0.5
<b>Bothered - amount</b>				
Very much	6.4	2.8	7.5	8.6
Moderately	8.3	11.3	13.3	8.0
Only a little	17.3	15.6	12.7	17.1
Not at all	3.8	12.1	2.9	8.6
Don't know	0	0.7	6.3	0.5
<b>Bothered - frequency</b>				
Almost every time	13.5	11.3	11.6	14.4
About half the time	12.2	5.7	16.8	6.4
Less often	6.4	13.5	5.2	10.2
Don't know	0	1.4	0	1.6

TABLE C2

**PERCENT REPORTING**  
**ODORS NOTICED DURING LAST SIX MONTHS**  
**NITROGEN PLANT**

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Nitrogen plant odor noticed	1.3	22.0	2.3	19.3
Every day	0	0	0.6	1.6
Once a week	0.6	5.7	1.2	3.2
Once a month	0.6	5.0	0	5.9
Less often	0	9.9	0.6	8.0
Don't know	0	1.4	0	0.5
Bothered - amount				
Very much	0	3.5	0	15.5
Moderately	0	6.4	1.7	11.8
Only a little	1.3	7.8	0	8.0
Not at all	0	4.3	0	19.3
Don't know	0	0	0.6	0
Bothered - frequency				
Almost every time	0.6	12.8	0	10.7
About half the time	0.6	2.1	0.6	1.6
Less often	0	4.3	0.6	4.3
Don't know	0	0	0	0

TABLE C3

PERCENT REPORTING  
 ODORS NOTICED DURING LAST SIX MONTHS  
 FERTILIZER

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Fertilizer odor noticed	3.8	2.1	2.9	3.7
Every day	0.6	0.7	0	0
Once a week	0.6	0	1.7	1.6
Once a month	2.6	1.4	0	0.5
Less often	0	0	1.2	1.6
Don't know	0	0	0	0
Bothered - amount				
Very much	0.6	0.7	0.6	1.6
Moderately	0.6	0.7	0.6	0.5
Only a little	2.6	0.7	1.2	1.6
Not at all	0	0	0.6	0
Don't know	0	0	0	0
Bothered - frequency				
Almost every time	1.3	1.4	1.2	2.7
About half the time	1.3	0	0.6	0.5
Less often	0.6	0.7	0	0.5
Don't know	0.6	0	0.6	0

TABLE C4

PERCENT REPORTING  
ODORS NOTICED DURING LAST SIX MONTHS  
PESTICIDES

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Pesticides odor noticed	21.8	9.2	24.3	12.8
Every day	1.9	0.7	7.5	1.1
Once a week	6.4	2.8	7.5	4.3
Once a month	7.7	2.8	7.5	2.1
Less often	5.1	2.8	0.6	4.3
Don't know	0.6	0	1.2	1.1
Bothered - amount				
Very much	3.2	2.8	8.7	2.1
Moderately	5.1	2.1	6.4	3.2
Only a little	10.3	2.8	8.7	5.9
Not at all	2.6	1.4	0	1.6
Don't know	0.6	0	0.6	0
Bothered - frequency				
Almost every time	7.7	4.3	13.9	5.9
About half the time	7.1	1.4	9.2	2.1
Less often	3.2	2.1	0.6	3.7
Don't know	0	0	0.6	0.5

TABLE C5

**PERCENT REPORTING  
NOISE NOTICED DURING LAST SIX MONTHS  
TRAFFIC**

	Male		Female	
	Area A	Area B	Area A	Area B
Number of observations	156	141	173	187
Traffic noise noticed	24.3	17.7	20.2	17.1
Every day	15.4	9.2	14.5	16.6
Once a week	7.7	5.7	5.2	0.5
Once a month	0.6	1.4	0	0
Less often	0.6	1.4	0.6	0
Don't know	0	0	0	0
Bothered - amount				
Very much	3.8	3.5	3.5	2.7
Moderately	9.0	4.3	6.4	4.8
Only a little	4.5	5.0	6.4	6.4
Not at all	7.1	5.0	4.0	3.2
Don't know	0	0	0	0
Bothered - frequency				
Almost every time	9.0	6.4	6.4	6.4
About half the time	5.1	3.5	5.2	3.2
Less often	3.2	2.8	4.6	4.3
Don't know	0	0	0.6	0

TABLE C6

**PERCENT REPORTING  
NOISE NOTICED DURING LAST SIX MONTHS  
AIRCRAFT**

	Male		Female	
	Area A	Area B	Area A	Area B
<b>Number of observations</b>	156	141	173	187
<b>Aircraft noise noticed</b>	16.0	14.2	11.0	7.5
Every day	4.5	3.5	4.0	0.5
Once a week	6.4	2.8	0.6	2.1
Once a month	2.6	5.7	4.0	0
Less often	2.6	2.1	1.2	4.8
Don't know	0	0	1.2	0
<b>Bothered - amount</b>				
Very much	1.3	2.1	0	1.6
Moderately	6.4	5.7	4.0	1.1
Only a little	2.6	1.4	4.0	2.7
Not at all	5.8	5.0	2.3	2.1
Don't know	0	0	0.6	0
<b>Bothered - frequency</b>				
Almost every time	2.6	5.7	4.6	3.2
About half the time	3.8	2.8	2.9	1.1
Less often	3.8	0.7	0.6	1.1
Don't know	0	0	0	0

**A P P E N D I X    B**

April/1979

COMMUNITY HEALTH STUDY  
CALIFORNIA DEPARTMENT OF HEALTH SERVICES

ID #

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**QUESTIONNAIRE NUMBER**

## LOCATION

## CENSUS TRACT

**DWELLING UNIT**

NAME

## TELEPHONE: ( )

**STREET ADDRESS**

**NUMBER ELIGIBLE RESPONDENTS**

**APT # OR DESCRIPTION**

6 1 2 3 3 4 5 6

## CITY

## DIRECTIONS

## RECORD OF CALLS

USE AS MANY LINES AS NECESSARY FOR EACH CALL

WHEN NECESSARY, USE BACK OF FOLDER FOR CONTINUATION OF CALL RECORD

SUGGESTED INTRODUCTION: Hello, I'm \_\_\_\_\_ from the California Department of Health Services. We're conducting a study of health and the quality of the environment in this community, talking to people from a scientifically selected sample of homes here.

In order to find out who, if anyone, at this address is eligible for interview I'd like to first get an idea of who lives at this household.

1. How many people live here who are 18 or older? \_\_\_\_\_
2. I'd like to list the people in order, from oldest to youngest. First, who is the oldest person living here? (the next oldest?)
3. Is there anyone else who usually lives here, like a roomer or boarder, or anyone else who is away temporarily?
4. **CODE, ASKING ONLY IF NECESSARY:** Is (NAME) a (man/boy) or (woman/girl)?
5. How old was (NAME) on (his) (her) last birthday?

**HAVE YOU ENUMERATED EVERYONE WHO:**

1. Lives here or is staying here and who has no other home, whether related or not?
2. Has a home elsewhere but who stays here most of the time?
3. Lives here but is away temporarily?

**DO NOT ENUMERATE:**

1. People away in Armed Forces;
2. College students home only weekends or less;
3. People away in institutions.

6. **ASK FOR EACH ADULT 18 YEARS OR OLDER:** How long (has/have) (NAME/you) lived in this town?

IF ONE YEAR OR MORE, ASSIGN "ELIGIBLE PERSON NO."

IF NO ADULT HAS LIVED IN THIS TOWN FOR AT LEAST ONE YEAR, TERMINATE INTERVIEW.

7. **CIRCLE NUMBER OF ELIGIBLE PERSONS (1-6) IN CHART BELOW AND ON FRONT PAGE.**  
**CIRCLE ELIGIBLE PERSON NUMBER IN CHART, USING TABLE INDICATED**

**IF NUMBER ELIGIBLE RESPONDENTS FROM ENUMERATION FOLDER IS**

**SELECT  
SAMPLE  
PERSON  
FROM  
CIRCLED  
TABLE**

TABLE	1	2	3	4	5	6+
A	1	1	1	1	1	1
B1	1	1	1	1	2	2
B2	1	1	1	2	2	2
C	1	1	2	2	3	3
D	1	2	2	3	4	4
E1	1	2	3	3	3	5
E2	1	2	3	4	5	5
F	1	2	3	4	5	6

(You) (NAME OF SAMPLE PERSON) (are) (is) the person we would like to talk with at this address. Is now a good time?

PERSON NO.	ENTER ELIGIBLE PERSON NO.	NAME	CIRCLE SEX	AGE ON LAST BIRTHDAY	YEARS IN THIS TOWN	COMMENTS
1			M F			
2			M F			
3			M F			
4			M F			
5			M F			
6			M F			
7			M F			
8			M F			
9			M F			
10			M F			
11			M F			
12			M F			
13			M F			
14			M F			
15			M F			

**RECORD OF CALLS (Continued)**

**A P P E N D I X   C**

**C1. ENGLISH QUESTIONNAIRE**



6. Has a doctor ever told you that you had any of the following?

\*IF YES:  
When did it first start?

Does it bother you now?

Are you being treated for it now?

	*YES	NO	YEAR	YES	NO	YES	NO					
A. High blood pressure	1 <input type="checkbox"/>	2 <input type="checkbox"/>	51	1 <input type="checkbox"/>	2 <input type="checkbox"/>	52-53	1 <input type="checkbox"/>	2 <input type="checkbox"/>	54	1 <input type="checkbox"/>	2 <input type="checkbox"/>	55
B. Heart attack (a coronary)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	56	1 <input type="checkbox"/>	2 <input type="checkbox"/>	57-58	1 <input type="checkbox"/>	2 <input type="checkbox"/>	59	1 <input type="checkbox"/>	2 <input type="checkbox"/>	60
C. Stroke	1 <input type="checkbox"/>	2 <input type="checkbox"/>	61	1 <input type="checkbox"/>	2 <input type="checkbox"/>	62-63	1 <input type="checkbox"/>	2 <input type="checkbox"/>	64	1 <input type="checkbox"/>	2 <input type="checkbox"/>	65
D. Chronic bronchitis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	66	1 <input type="checkbox"/>	2 <input type="checkbox"/>	67-68	1 <input type="checkbox"/>	2 <input type="checkbox"/>	69	1 <input type="checkbox"/>	2 <input type="checkbox"/>	70
E. Emphysema	1 <input type="checkbox"/>	2 <input type="checkbox"/>	71	1 <input type="checkbox"/>	2 <input type="checkbox"/>	72-73	1 <input type="checkbox"/>	2 <input type="checkbox"/>	74	1 <input type="checkbox"/>	2 <input type="checkbox"/>	75
F. Tuberculosis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	76	1 <input type="checkbox"/>	2 <input type="checkbox"/>	77-78	1 <input type="checkbox"/>	2 <input type="checkbox"/>	78	1 <input type="checkbox"/>	2 <input type="checkbox"/>	80
G. Asthma	1 <input type="checkbox"/>	2 <input type="checkbox"/>	81	1 <input type="checkbox"/>	2 <input type="checkbox"/>	82-83	1 <input type="checkbox"/>	2 <input type="checkbox"/>	84	1 <input type="checkbox"/>	2 <input type="checkbox"/>	85
H. Stomach or duodenal ulcer	1 <input type="checkbox"/>	2 <input type="checkbox"/>	86	1 <input type="checkbox"/>	2 <input type="checkbox"/>	87-88	1 <input type="checkbox"/>	2 <input type="checkbox"/>	89	1 <input type="checkbox"/>	2 <input type="checkbox"/>	90
I. Hepatitis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	91	1 <input type="checkbox"/>	2 <input type="checkbox"/>	92-93	1 <input type="checkbox"/>	2 <input type="checkbox"/>	94	1 <input type="checkbox"/>	2 <input type="checkbox"/>	95
J. Liver cirrhosis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	96	1 <input type="checkbox"/>	2 <input type="checkbox"/>	97-98	1 <input type="checkbox"/>	2 <input type="checkbox"/>	99	1 <input type="checkbox"/>	2 <input type="checkbox"/>	100
K. Jaundice	1 <input type="checkbox"/>	2 <input type="checkbox"/>	101	1 <input type="checkbox"/>	2 <input type="checkbox"/>	102-103	1 <input type="checkbox"/>	2 <input type="checkbox"/>	104	1 <input type="checkbox"/>	2 <input type="checkbox"/>	105
L. Colitis	1 <input type="checkbox"/>	2 <input type="checkbox"/>	106	1 <input type="checkbox"/>	2 <input type="checkbox"/>	107-108	1 <input type="checkbox"/>	2 <input type="checkbox"/>	109	1 <input type="checkbox"/>	2 <input type="checkbox"/>	110
M. Kidney stones	1 <input type="checkbox"/>	2 <input type="checkbox"/>	111	1 <input type="checkbox"/>	2 <input type="checkbox"/>	112-113	1 <input type="checkbox"/>	2 <input type="checkbox"/>	114	1 <input type="checkbox"/>	2 <input type="checkbox"/>	115
N. Kidney failure	1 <input type="checkbox"/>	2 <input type="checkbox"/>	116	1 <input type="checkbox"/>	2 <input type="checkbox"/>	117-118	1 <input type="checkbox"/>	2 <input type="checkbox"/>	119	1 <input type="checkbox"/>	2 <input type="checkbox"/>	120
O. Cataracts	1 <input type="checkbox"/>	2 <input type="checkbox"/>	121	1 <input type="checkbox"/>	2 <input type="checkbox"/>	122-123	1 <input type="checkbox"/>	2 <input type="checkbox"/>	124	1 <input type="checkbox"/>	2 <input type="checkbox"/>	125

CONTINUE WITH QUESTION 6 ON NEXT PAGE

6. Has a doctor ever told you that you had any of the following? \*IF YES: When did it first start? Does it bother you now? Are you being treated for it now?

	*YES		NO		YEAR	YES		NO		YES		NO		
	1	2	1	2		1	2	1	2	1	2	1	2	
P. Gout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	126	<input type="checkbox"/>	<input type="checkbox"/>	127-128	<input type="checkbox"/>	<input type="checkbox"/>	129	<input type="checkbox"/>	<input type="checkbox"/>	130
Q. Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	131	<input type="checkbox"/>	<input type="checkbox"/>	132-133	<input type="checkbox"/>	<input type="checkbox"/>	134	<input type="checkbox"/>	<input type="checkbox"/>	135
R. Epilepsy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	136	<input type="checkbox"/>	<input type="checkbox"/>	137-138	<input type="checkbox"/>	<input type="checkbox"/>	139	<input type="checkbox"/>	<input type="checkbox"/>	140
S. Anemia (low blood count)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	141	<input type="checkbox"/>	<input type="checkbox"/>	142-143	<input type="checkbox"/>	<input type="checkbox"/>	144	<input type="checkbox"/>	<input type="checkbox"/>	145
T. Nervous breakdown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	146	<input type="checkbox"/>	<input type="checkbox"/>	147-148	<input type="checkbox"/>	<input type="checkbox"/>	149	<input type="checkbox"/>	<input type="checkbox"/>	150
U. Psoriasis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	151	<input type="checkbox"/>	<input type="checkbox"/>	152-153	<input type="checkbox"/>	<input type="checkbox"/>	154	<input type="checkbox"/>	<input type="checkbox"/>	155
V. Chronic dermatitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	156	<input type="checkbox"/>	<input type="checkbox"/>	157-158	<input type="checkbox"/>	<input type="checkbox"/>	159	<input type="checkbox"/>	<input type="checkbox"/>	160
W. Multiple sclerosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	161	<input type="checkbox"/>	<input type="checkbox"/>	162-163	<input type="checkbox"/>	<input type="checkbox"/>	164	<input type="checkbox"/>	<input type="checkbox"/>	165
X. Arthritis or rheumatism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	166	<input type="checkbox"/>	<input type="checkbox"/>	167-168	<input type="checkbox"/>	<input type="checkbox"/>	169	<input type="checkbox"/>	<input type="checkbox"/>	170
Y. Skin cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	171	<input type="checkbox"/>	<input type="checkbox"/>	172-173	<input type="checkbox"/>	<input type="checkbox"/>	174	<input type="checkbox"/>	<input type="checkbox"/>	175
Z. Leukemia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	176	<input type="checkbox"/>	<input type="checkbox"/>	177-178	<input type="checkbox"/>	<input type="checkbox"/>	179	<input type="checkbox"/>	<input type="checkbox"/>	180
AA. Any other cancer (SPECIFY)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	181	<input type="checkbox"/>	<input type="checkbox"/>	182-183	<input type="checkbox"/>	<input type="checkbox"/>	184	<input type="checkbox"/>	<input type="checkbox"/>	185
BB. Anything else (SPECIFY)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	186	<input type="checkbox"/>	<input type="checkbox"/>	187-188	<input type="checkbox"/>	<input type="checkbox"/>	189	<input type="checkbox"/>	<input type="checkbox"/>	190

7. Now I'd like to ask you some questions about your health during the past twelve months.

Starting with your eyes -- during the past twelve months have you had any:

YES    NO

1   

2   

Eye infection

1   

2   

Chronic irritation  
of the eyes

1   

2   

Eye injury

193

YES    NO

1   

2   

Eye pain

1   

2   

Blurred or double  
vision

1   

2   

Sudden loss of  
sight

196

1   

2   

Anything else with  
your eyes

197

**SPECIFY**

8. Now about your ears -- during the past twelve months have you had any:

YES    NO

1   

2   

Pain in your ear lasting  
longer than one week

1   

2   

Ringing or buzzing

1   

2   

Loss of hearing

200

YES    NO

1   

2   

Drainage from  
your ears

1   

2   

Ear infection

1   

2   

Injury to an ear

203

1   

2   

Anything else with  
your ears

204

**SPECIFY**

9. Now about your skin -- during the past twelve months have you had any:

YES    NO

1   

2   

Skin infection

205

1   

2   

Rash

206

1   

2   

Skin cancer

207

YES    NO

1   

2   

Any other skin  
growth or tumor

208

1   

2   

Acne

209

1   

2   

Anything else with  
your skin

210

**SPECIFY**

10. Now about your stomach and digestive system — during the past twelve months have you had any:

YES		NO	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Frequent indigestion or heartburn		Rectal burning or pain	
<input type="checkbox"/> 211		<input type="checkbox"/> 214	
Stomach cramps or pain		Rectal bleeding	
<input type="checkbox"/> 212		<input type="checkbox"/> 215	
Frequent diarrhea		Change in bowel habits	
<input type="checkbox"/> 213		<input type="checkbox"/> 216	
Anything else with your stomach or intestinal system		SPECIFY	
<input type="checkbox"/> 217			

11. Now about your lungs and respiratory system — during the past twelve months have you had:

YES	NO	YES	NO
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
A cough that lasted more than a month		Wheezing or whistling sounds in your chest	
<input type="checkbox"/> 218		<input type="checkbox"/> 221	
A daily cough when you first get up in the morning		Repeated pain, pressure or tight feeling in your chest	
<input type="checkbox"/> 219		<input type="checkbox"/> 222	
Shortness of breath that makes you stop your work or usual activities		More than three colds or upper respiratory infections	
<input type="checkbox"/> 220		<input type="checkbox"/> 223	
Anything else with your lungs or respiratory system		SPECIFY	
<input type="checkbox"/> 224			

12. Now about your kidneys and bladder — during the past twelve months have you had:

YES	NO	YES	NO
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 2
Pain when urinating		Blood in your urine	
<input type="checkbox"/> 225		<input type="checkbox"/> 230	
Increase in frequency of urinating		Loss of bladder control	
<input type="checkbox"/> 226		<input type="checkbox"/> 231	
Trouble starting or stopping urinating		Kidney infection	
<input type="checkbox"/> 227		<input type="checkbox"/> 232	
Bladder cancer		Anything else with your kidneys or bladder	
<input type="checkbox"/> 228		<input type="checkbox"/> 233	
FOR MEN ONLY		SPECIFY	
<input type="checkbox"/> 229			
Prostate disease			

13. Now I want to ask you about any allergies you may have had. In the past twelve months have you had any:

YES    NO

1

2

Asthma or allergic  
cough

234

235

Hay fever

236

237

Hives or rash

YES    NO

1

2

Food allergies

238

239

Allergic headache

Any other allergies

SPECIFY

14. Finally, during the past twelve months have you had any of the following:

YES    NO

1

2

Persistent tiredness  
or weakness

240

241

Loss of muscle  
strength

242

243

Paralysis

244

245

Numbness or loss of  
sensation

246

247

Tremors or uncontrolled  
movements

248

249

Difficulty in walking

250

251

Difficulty in writing with  
a pen or pencil

YES    NO

1

2

Unusual sensations like  
pins and needles

252

253

Painful or swollen  
joints

254

255

Loss of consciousness,  
fainting, or coma

256

257

Repeated spells of  
feeling very upset,  
depressed, or crying

258

259

Frequent or persistent  
headaches

260

261

Anything else with  
your muscles and nerves

SPECIFY

Difficulty in sleeping

247

Dizziness

248

Frequent nausea

249

Persistent or frequent

250

Sore throat

**MEDICAL CARE**

Other than the first question, which will be found on the reverse side of this page, all other questions should be found on the front of this page.

15. During the past 30 days, has any illness, pain, or health condition caused you to:

\*IF YES: For how many days?  
YES NO

\*IF YES: For what problem?

A. Stay in a hospital overnight or longer? \*  
B. Visit a physician or medical facility?  
C. Stay in bed all day?  
D. Miss any work or other usual activity?

1  2   
257

258-259

260-261

262  
  267

263-264  
  268-269

265-266

272

273-274

275-276

16. During the past 30 days, have you taken any of the following medications?

YES NO

1  2   
  277

Pain relievers

280  
  278

Cough medicine or cold remedies

279  
  279

Medicine for heartburn or indigestion

280  
  280

Laxatives

281  
  281

Tranquilizers

282  
  282

Sleeping pills

YES NO

1  2   
  283

Antibiotics

284  
  284

Vitamins

285  
  285

Other prescription medicine

286-287

SPECIFY

288  
  288

Other nonprescription medicine

289-290

SPECIFY

290-296 Bla

## SMOKING

17. Have you ever smoked cigarettes regularly, that is, more than one cigarette per day for as long as a year?

\* 1  YES

2  NO  
297

IF NO, GO TO Q24A

\* 18. IF YES: How old were you when you first started smoking cigarettes regularly?

AGE  
298-299

19. Do you smoke cigarettes regularly now?

\* 1  YES

2  NO  
300

IF NO, GO TO Q22

\* 20. IF YES: How many packs per day have you usually smoked?

1  HALF A PACK OR LESS

2  ABOUT ONE PACK

3  ABOUT ONE AND A HALF PACKS

4  ABOUT TWO PACKS

5  MORE THAN TWO PACKS  
301

21. For how many years have you smoked cigarettes regularly?

YEARS  
802-803

GO TO Q24A

---

22. During the years you were smoking, how much did you usually smoke per day?

1  HALF A PACK OR LESS

2  ABOUT ONE PACK

3  ABOUT ONE AND A HALF PACKS

4  ABOUT TWO PACKS

5  MORE THAN TWO PACKS  
304

23. How many years did you smoke cigarettes regularly before you stopped?

YEARS  
805-806

**ALCOHOLIC BEVERAGES**

24A. How many days a week do you usually drink beer?

\*  
307 DAYS

\* IF LESS THAN ONCE A WEEK, CODE 0

IF NEVER, CHECK HERE  , AND GO TO Q25A

24B. When you do drink beer, about how many beers do you drink in a day?

NUMBER  
308-309

25A. About how many days a week do you usually drink wine?

\*  
310 DAYS

\* IF LESS THAN ONCE A WEEK, CODE 0

IF NEVER, CHECK HERE  , AND GO TO Q26A

25B. When you do drink wine, about how many glasses do you usually have in a day?

NUMBER  
311-312

26A. How many days a week do you usually have drinks like whiskey, vodka, or gin?

\*  
313 DAYS

\* IF LESS THAN ONCE A WEEK, CODE 0

IF NEVER, CHECK HERE  , AND GO TO Q27

26B. When you do have these drinks, about how many do you usually have in a day?

NUMBER  
314-315

27. In general how do you feel about living in this area? Do you rate it as good, fair, or poor?

1  GOOD  
 2  FAIR  
 3  POOR  
 4  DON'T  
 316

= GO TO Q30.

316

28. What are some of the things you like about living around here - things that you feel are advantages or that make this a good place to live?

1

317-318

29. Nowadays it is seldom that an area has advantages only. What about the things you don't like here? Would you say there is nothing at all you don't like, a few things, or many things?

1  NOTHING AT ALL      GO TO Q31

2  A FEW THINGS

3  MANY THINGS

4  DON'T KNOW      GO TO Q31.

30. What are some of the things you don't like about living here?

- 1 ODOR FROM GEOTHERMAL INDUSTRY  
320
- 1 ODOR FROM OTHER SOURCES  
321
- 1 OTHER TYPES OF AIR POLLUTION  
322
- 1 NOISE FROM GEOTHERMAL INDUSTRY  
323
- 1 NOISE FROM OTHER SOURCES  
324
- 1 CLIMATE  
325
- 1 OTHER  
326
- 1 DON'T KNOW  
327

31. Have you ever felt like moving away from this area?

1  YES  
2  NO  
3  DON'T KNOW

GO TO Q33.

TOP OF DO

32. When you felt like moving away, what was the reason?

1  ODOR FROM GEOTHERMAL INDUSTRY  
329  
1  ODOR FROM OTHER SOURCES  
330  
1  OTHER AIR POLLUTION  
331  
1  NOISE FROM GEOTHERMAL INDUSTRY  
332  
1  NOISE FROM OTHER SOURCES  
333  
1  CLIMATE  
334  
1  OTHER  
335  
1  DON'T KNOW  
336

33. If you could find a similar house (apartment) which would not be more expensive  
in another area, would you like to move there?

1  YES  
2  NO  
3  DON'T KNOW

GO TO Q35.

34. Why would you like to do this?

1  ODOR FROM GEOTHERMAL INDUSTRY  
338  
1  ODOR FROM OTHER SOURCES  
339  
1  OTHER AIR POLLUTION  
340  
1  NOISE FROM GEOTHERMAL INDUSTRY  
341  
1  NOISE FROM OTHER SOURCES  
342  
1  CLIMATE  
343  
1  OTHER  
344  
1  DON'T KNOW  
345

35. Is there anything here in the community that you think is harmful for you or your family?

1  YES

2  NO

3  DON'T KNOW

346

GO TO Q37.

36. What is this?

1  347 ODOR FROM GEOTHERMAL INDUSTRY

1  348 ODOR FROM OTHER SOURCES

1  349 NOISE FROM GEOTHERMAL INDUSTRY

1  350 NOISE FROM OTHER SOURCES

1  351 OTHER TYPES OF AIR POLLUTION

1  352 CLIMATE

1  353 OTHER

1  354 DON'T KNOW

37. Here are a few problems which different communities are facing. How would you rate each of these for (TOWN) today in terms of serious, somewhat serious, or not serious?

37a. Outbreaks of infectious diseases such as diarrhea and flu?

1  SERIOUS

2  SOMEWHAT SERIOUS

3  NOT SERIOUS

4  355 DON'T KNOW

38. Use of chemicals in agriculture and industry?

1  SERIOUS

2  SOMEWHAT SERIOUS

3  NOT SERIOUS

4  356 DON'T KNOW

39. Water pollution?

- 1  SERIOUS
- 2  SOMEWHAT SERIOUS
- 3  NOT SERIOUS
- 4  DON'T KNOW

357

40. Noise in the community?

- 1  SERIOUS
- 2  SOMEWHAT SERIOUS
- 3  NOT SERIOUS
- 4  DON'T KNOW

358

GO TO Q42.

41. What kind of noise are you thinking of?

- 1  NOISE FROM GEOTHERMAL INDUSTRY
- 1  NOISE FROM OTHER SOURCES
- 1  DON'T KNOW

359

360

361

42. Air pollution?

- 1  SERIOUS
- 2  SOMEWHAT SERIOUS
- 3  NOT SERIOUS
- 4  DON'T KNOW

362

GO TO Q44.

43. What kind of air pollution are you thinking of?

- 1  ODOR FROM GEOTHERMAL INDUSTRY
- 1  ODOR FROM OTHER SOURCES
- 1  OTHER TYPES OF AIR POLLUTION
- 1  DON'T KNOW

363

364

365

366

44. Are there any other problems you think are serious or somewhat serious for  
(TOWN) ?

1  YES

2  NO

3  DON'T KNOW  
867

What is this?

Anything else?

PROBLEM	SERIOUS	SOMEWHAT SERIOUS	NOT SERIOUS	DON'T KNOW
---------	---------	------------------	-------------	------------

a. \_\_\_\_\_ 1   
\_\_\_\_\_  
\_\_\_\_\_  
368-369 2   
368-369 3   
368-369 4   
368-369 870

b. \_\_\_\_\_ 1   
\_\_\_\_\_  
\_\_\_\_\_  
371-372 2   
371-372 3   
371-372 4   
371-372 873

c. \_\_\_\_\_ 1   
\_\_\_\_\_  
\_\_\_\_\_  
374-376 2   
374-376 3   
374-376 4   
374-376 876

45. I'm going to ask you some questions about odors that you might have noticed during the last six months. I don't mean household odors, but other odors in the community.

45a. Here at home, have you noticed any such odors in the last six months?

1  YES

2  NO

SKIP TO Q47.

3  DON'T KNOW  
377 SKIP TO Q47

45b. Where does it come from?

Any other odor?

CHECK BOX UNDER TYPE OF ODOR

GEOTHERMAL  
INDUSTRY

FEED  
LOTS

NITROGEN  
PLANT

PESTICIDES

378

382

386

390

45c. How often have you noticed this odor?

every day

1

1

1

1

once a week

2

2

2

2

once a month

3

3

3

3

or less often

4

4

4

4

DON'T KNOW

5

5

5

5

379

383

387

391

45d. Would you say it has bothered you?

only a little

1

1

1

1

moderately

2

2

2

2

very much

3

3

3

3

not at all

4  a

4  a

4  a

4  a

DON'T KNOW

5  a

5  a

5  a

5  a

380

384

388

392

GO TO NEXT SOURCE

IF "a" IS CHECKED FOR ALL SOURCES, SKIP Q46.

45e. How often has this odor bothered you?

Is it

almost every time

1

1

1

1

about half the time

2

2

2

2

or less often?

3

3

3

3

DON'T KNOW

4

4

4

4

381

385

389

393

Positive smell of the next source when mixed with any 2 of 3rd row will  
at least indicate the presence of 2nd row source. Which 2 unknowns will give this  
information will be determined by the following table.

Positive smell of the next source when mixed with any 2 of 3rd row will  
at least indicate the presence of 2nd row source. Which 2 unknowns will give this  
information will be determined by the following table.

Positive smell of the next source when mixed with any 2 of 3rd row will  
at least indicate the presence of 2nd row source. Which 2 unknowns will give this  
information will be determined by the following table.

Positive smell of the next source when mixed with any 2 of 3rd row will  
at least indicate the presence of 2nd row source. Which 2 unknowns will give this  
information will be determined by the following table.

FERTILIZER		OTHER SOURCE			UNKNOWN SOURCE		
		SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY
394		<input type="checkbox"/> 398-399	<input type="checkbox"/> 403-404	<input type="checkbox"/> 408-409	<input type="checkbox"/> 413-414	<input type="checkbox"/> 418-419	<input type="checkbox"/> 423-424
1		<input type="checkbox"/> 1					
2		<input type="checkbox"/> 2					
3		<input type="checkbox"/> 3					
4		<input type="checkbox"/> 4					
5		<input type="checkbox"/> 5					
395		400	405	410	415	420	425
1		<input type="checkbox"/> 1					
2		<input type="checkbox"/> 2					
3		<input type="checkbox"/> 3					
4	a	<input type="checkbox"/> 4					
5	a	<input type="checkbox"/> 5					
396		401	406	411	416	421	426

GO TO NEXT SOURCE  
IF "a" IS CHECKED FOR ALL SOURCES, SKIP Q46.

1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
397		402	407	412	417	422	427

46. You said the odors have bothered you. Do you think it's better, worse, or about the same this year as last year?

1  BETTER

2  WORSE

3  THE SAME

4  DON'T KNOW

450

47. Can you tell me about your general opinion about the problem of odor? Do you think odors in general are very annoying, annoying, or not too annoying?

1  VERY ANNOYING

2  ANNOYING

3  NOT TOO ANNOYING

4  DON'T KNOW

451

48. Do you think you are more sensitive than other people to odor, less sensitive than other people to odor, or about the same?

1  MORE SENSITIVE THAN OTHER PEOPLE TO ODOR

2  LESS SENSITIVE THAN OTHER PEOPLE TO ODOR

3  ABOUT THE SAME

4  DON'T KNOW

452

49. Do you think (TOWN) has more of a problem with odor than other towns of its size, less of a problem with odor than other towns of its size, or about the same?

1  MORE OF A PROBLEM WITH ODOR THAN OTHER TOWNS ITS SIZE

2  LESS OF A PROBLEM WITH ODOR THAN OTHER TOWNS ITS SIZE

3  ABOUT THE SAME

4  DON'T KNOW

453

50. I'm going to ask you some questions about noise that you might have noticed during the last six months. I don't mean household noise, but other noise in the community.

50a. Here at home, have you noticed any such noise in the last six months?

1  YES

2  NO

SKIP TO Q52

3  DON'T KNOW

464 SKIP TO Q52

50b. Where does it come from?

Any other noise?

CHECK BOX UNDER TYPE OF NOISE

GEOTHERMAL  
INDUSTRY

AIR-  
CRAFT

AGRICULTURE

455

459

463

467

50c. How often have you noticed this noise?

every day

1

1

1

1

once a week

2

2

2

2

once a month

3

3

3

3

or less often

4

4

4

4

DON'T KNOW

5

5

5

5

456

460

464

468

50d. Would you say it has bothered you?

only a little

1

1

1

1

moderately

2

2

2

2

very much

3

3

3

3

not at all

4

4

4

4

DON'T KNOW

5

5

5

5

a

a

a

a

461

465

466

469

467

GO TO NEXT SOURCE

IF "a" IS CHECKED FOR ALL SOURCES, SKIP Q51.

50e. How often has this noise bothered you?

Is it

almost every time

1

1

1

1

about half the time

2

2

2

2

or less often?

3

3

3

3

DON'T KNOW

4

4

4

4

458

462

466

470

stroke position (settled off right way) may be used and when off block may be used off right side when side

WOMEN

WOMEN

WOMEN

WOMEN

other location for moving and foods nothing to say may draw and other

specifying out of **OTHER SOURCE** involves you at least **UNKNOWN SOURCE**

What does it sound like?

SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY
<input type="checkbox"/> 471-472	<input type="checkbox"/> 476-477	<input type="checkbox"/> 481-482	<input type="checkbox"/> 486-487	<input type="checkbox"/> 491-492	<input type="checkbox"/> 496-497
1	1	WG	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
OT 476	477	478	483	488	493
473					

WOMEN

SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY
<input type="checkbox"/>	<input type="checkbox"/>	WG	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	a	a	a	a	a
474		479	484	489	494

GO TO NEXT SOURCE

IF "a" IS CHECKED FOR ALL SOURCES, SKIP Q51.

SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY	SPECIFY
<input type="checkbox"/>	<input type="checkbox"/>	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
475		480	485	490	495

51. You said the noise has bothered you. Do you think it's better, worse, or about the same this year as last year?

- 1  BETTER
- 2  WORSE
- 3  THE SAME
- 4  DON'T KNOW

506

52. Can you tell me about your general opinion about the problem of noise? Do you think noise in general is very annoying, annoying, or not too annoying?

- 1  VERY ANNOYING
- 2  ANNOYING
- 3  NOT TOO ANNOYING
- 4  DON'T KNOW

507

53. Do you think you are more sensitive than other people to noise, less sensitive than other people to noise, or about the same?

- 1  MORE SENSITIVE THAN OTHER PEOPLE TO NOISE
- 2  LESS SENSITIVE THAN OTHER PEOPLE TO NOISE
- 3  ABOUT THE SAME
- 4  DON'T KNOW

508

54. Do you think (TOWN) has more of a problem with noise than other towns of its size, less of a problem with noise than other towns of its size, or about the same?

- 1  MORE OF A PROBLEM WITH NOISE THAN OTHER TOWNS ITS SIZE
- 2  LESS OF A PROBLEM WITH NOISE THAN OTHER TOWNS ITS SIZE
- 3  ABOUT THE SAME
- 4  DON'T KNOW

509

**OCCUPATION**

1960-1961 BUDGET SURVEY

55. Are you presently employed in either a full or part-time job?

**\* YES    NO****IF NO, GO TO Q56a.****1  2** 

510

--	--	--

\* 55a. IF YES: What kind of business or company do you work for, that is, what do they do?

Job you're bld today

--	--	--

511-513

55b. What kind of work do you do?

--	--	--

514-516

Know to build shift one day 365 days a year work 1685

55c. How many years have you done this kind of work?

--	--

517-518

**OCCUPATION, Cont'd**

### Worship Services

56a. What kind of work, including work around the house, have you done most of your life?

1000

2000-2001

000 0 00 .04 13

— 1 —

三

519-521

of both of both of the principal stations in Montevideo, July 27, 1860.

IF SAME AS PRESENT WORK, SKIP TO Q57.

56b. What kind of business or company did you work for, that is, what did they do?

100

522-524

56c. How many years did you do this kind of work?

1000

1948

525-526

- 10 -

**527-529 Blank**

57. Have you ever worked for six months or more in any of the following occupations or industries:

READ EACH OF THE OCCUPATIONS AND INDUSTRIES LISTED BELOW AND CHECK THE APPROPRIATE BOXES.

YES      NO

 1 2 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550

Coal mining  
Other mining  
Metal machining or processing  
Welding  
Shipyard  
Stone quarrying  
Foundry or smelter  
Insulation  
Carpentry or other construction  
Furniture manufacturing  
Leather or shoe manufacturing  
Chemical industry  
Geothermal industry  
Petroleum refining  
Rubber manufacturing  
Plastics manufacturing or processing  
Textile manufacturing  
Hairdressing or cosmetology  
Pulp and paper mill  
Printing  
Cooking in a restaurant

58. Have you ever had any regular exposure to any of the following for six months or longer, either at a job or a hobby:

READ EACH ITEM LISTED BELOW AND CHECK APPROPRIATE BOXES.

YES	NO
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/>	<input type="checkbox"/> 551
<input type="checkbox"/>	<input type="checkbox"/> 552
<input type="checkbox"/>	<input type="checkbox"/> 553
<input type="checkbox"/>	<input type="checkbox"/> 554
<input type="checkbox"/>	<input type="checkbox"/> 555
<input type="checkbox"/>	<input type="checkbox"/> 556
<input type="checkbox"/>	<input type="checkbox"/> 557
<input type="checkbox"/>	<input type="checkbox"/> 558
<input type="checkbox"/>	<input type="checkbox"/> 559
<input type="checkbox"/>	<input type="checkbox"/> 560
<input type="checkbox"/>	<input type="checkbox"/> 561
<input type="checkbox"/>	<input type="checkbox"/> 562
<input type="checkbox"/>	<input type="checkbox"/> 563
<input type="checkbox"/>	<input type="checkbox"/> 564
<input type="checkbox"/>	<input type="checkbox"/> 565

Paints or lacquers

Organic chemicals or solvents

Asphalt

Petroleum products such as gasoline, kerosene, or fuel oils

Cutting, cooling, or lubricating oils

Pesticides or insect sprays

Herbicides or weed killers

Asbestos

Metal dust or fumes

Coal dust

Sawdust

Fibrous glass or glass wool

X-ray or radioactive material

Sand blasting

Other \_\_\_\_\_

SPECIFY

## PERSONAL CHARACTERISTICS

59a. SEX  1 CHECK ONE

MALE

FEMALE

568

59b. ETHNIC GROUP  SHOW CARD

Which of these ethnic or racial groups do you most closely identify yourself with?

CHECK ONE

1  WHITE

4  ASIAN

2  BLACK

5  OTHER

3  HISPANIC, MEXICAN-AMERICAN, MEXICAN, OR CHICANO

567

60. What is your marital status now? Are you:

CHECK ONE

1  Married

3  Widowed

2  Separated or divorced

4  Never married

568

61. What was the highest grade you completed in each of the following?

READ EACH CATEGORY AND CIRCLE HIGHEST GRADE COMPLETED FOR EACH.

A. Elementary and high school 0 1 2 3 4 5 6 7 8 9 10 11 12 569-570

B. College or university 0 1 2 3 4 5+ 571

C. Technical school 0 1 2 3 4 5+ 572

62. Have you lived most of your life in or near a big city or metropolitan area?

1  YES 2  NO 3  DON'T KNOW

573

**CHARACTERISTICS OF DWELLING UNIT**

NON-CONSTRUCTION DWELLINGS

**63. CHECK CATEGORY BEST DESCRIBING TYPE OF DWELLING UNIT, ASKING IF NECESSARY**

- 1 MOBILE HOME OR TRAILER
- 2 ONE-FAMILY HOUSE DETACHED FROM ANY OTHER HOUSE
- 3 ONE-FAMILY HOUSE ATTACHED TO ONE OR MORE HOUSES

**APARTMENT HOUSE OR BUILDING WITH THE FOLLOWING NUMBER OF LIVING QUARTERS****CHECK NUMBER DWELLING UNITS**

- 4 2-4       7 20-49
- 5 5-9       8 50 OR MORE
- 6 10-26

 575-576**67. How many rooms do you have in your living quarters not counting bathrooms?** 577-578**65. How many infants less than one year old live here?** 579-580**66. How many children ages one through 17 live here?** 581-582**67. How many adults 18 years and older live here?**

68. What kind of fuel do you use most for heating your house?

1  GAS FROM UNDERGROUND  
2  PIPES SERVING THE  
3  NEIGHBORHOOD

5  COAL OR COKE

2  GAS: BOTTLED, TANK,  
3  OR LP

3  ELECTRICITY

4  FUEL OIL, KEROSENE,  
5  ETC.

6  WOOD

7  OTHER FUEL

8  NO FUEL USED

583

69. How are your living quarters heated?

CHECK CATEGORY FOR TYPE OF HEATING USED MOST

1  STEAM OR HOT WATER SYSTEM

5  ROOM HEATERS WITH FLUE  
OR VENT, BURNING GAS, OIL  
OR KEROSENE

2  CENTRAL WARM AIR FURNACE  
WITH DUCTS TO THE INDIVIDUAL  
ROOMS, OR CENTRAL HEATING  
PUMP

6  ROOM HEATER WITHOUT VENT

3  BUILT-IN ELECTRIC UNITS

7  FIREPLACES, STOVES, OR  
PORTABLE ROOM HEATERS

4  FLOOR, WALL, OR PIPE-  
LESS FURNACE

8  SOME OTHER WAY

9  NO HEATING EQUIPMENT

584

70. Do you have air conditioning in your house?

1  YES

2  NO

585

71. What kind of fuel do you use most for cooking?

1  GAS FROM UNDERGROUND  
2  PIPES SERVING THE  
3  NEIGHBORHOOD

5  COAL OR COKE

2  GAS: BOTTLED, TANK  
3  OR LP

6  WOOD

3  ELECTRICITY

7  OTHER FUEL

586

4  FUEL OIL, KEROSENE, ETC

**SHOW CARD**

72. Looking at this card, would you give me the letter which best describes the total income for last year of your family members who live in this household. Include income from all sources, before taxes. If you live alone, consider yourself a one-member family.

1  A UNDER \$5000  
 2  B \$5000 - \$9999  
 3  C \$10,000 - \$14,999  
 4  D \$15,000 - \$19,999

5  E \$20,000 - \$24,999  
 6  F \$25,000 - \$29,999  
 7  G \$30,000 - \$39,999  
 8  H \$40,000 AND OVER

587

**BY OBSERVATION OF ROOM IN WHICH INTERVIEW TOOK PLACE:**

73a. IS THERE ANY EVIDENCE OF OPEN CRACKS, BROKEN PLASTER, OR HOLES IN THE INTERIOR WALLS OR CEILING?

YES  NO 1  2 

588

73b. IS THERE ANY EVIDENCE OF HOLES IN THE FLOORS?

589

73c. IS THERE ANY AREA OF BROKEN PLASTER ON THE CEILING OR INSIDE WALLS WHICH IS LARGER THAN THE SIZE OF THIS PAGE?

590

73d. IS THERE ANY AREA OF PEELING PAINT ON THE CEILING OR INSIDE WALLS WHICH IS LARGER THAN THE SIZE OF THIS PAGE?

591

Those are all the questions I have for you. Is there anything else that I haven't asked you about that you think is important?

In case I've forgotten to ask you something and my supervisor needs to call you back, may I have a phone number and a convenient time?

PHONE TIME ENDED AM  
PMBEST TIME AM  
PMENGLISH SPANISH 

28 592

**C2. SPANISH QUESTIONNAIRE**

HORA DE INICIACION \_\_\_\_\_ AM  
PM

CUESTIONARIO NO. \_\_\_\_\_

LUGAR  1

CENSO   2-4

I.D.    5-8

### ENCUESTA DE SALUD DEL CONDADO IMPERIAL

ABRIL 1979

#### EDAD

9-10

1. ¿Qué edad cumplió usted en su último cumpleaños?   AÑOS

2. ¿Cuál es la fecha de su nacimiento?   11-12   13-14   15-16

MES

DIA

AÑO

3a. ¿Cuánto tiempo ha vivido usted en el condado Imperial?   AÑOS

17-18

3b. ¿Cuánto tiempo ha vivido usted en (CIUDAD)?   AÑOS

19-20

3c. ¿Cuánto tiempo ha vivido usted en esta casa?   AÑOS

21-22

4. ¿Vive usted aquí todo el año  
o parte del año? 1  TODO EL AÑO 2  PARTE DEL AÑO

23

SI LA RESPUESTA ES TODO EL AÑO, PASE A LA PREGUNTA 5

4a. ¿Cuántos meses al año  
vive usted aquí?   MESES

24-25

26-49 A

#### SALUD

5. Ahora quisiera hacerle algunas preguntas sobre su salud. Estas comprenden preguntas específicas sobre síntomas que usted ha tenido, los diagnósticos que le dieron los médicos y preguntas generales sobre sus prácticas de salud.

En general, ¿cómo anda su salud en estos días? ¿Diría usted que su salud es muy buena, bastante buena o no muy buena?

1  MUY BUENA

2  BASTANTE BUENA

3  NO MUY BUENA

4  NO SABE

50

6. ¿Le ha dicho alguna vez un médico que usted tenía una de las siguientes enfermedades?

\*SI LA RESPUESTA  
ES SÍ: ¿Cuándo  
comenzó?

¿Le  
molesta  
ahora?

¿Está usted  
en trata-  
miento por  
esto ahora?

	*SÍ	NO	AÑO	SÍ	NO	SÍ	NO					
A. Alta presión de la sangre	<input type="checkbox"/>	1 2 <input type="checkbox"/>	51	<input type="checkbox"/>	1 2 <input type="checkbox"/>	52-53	<input type="checkbox"/>	1 2 <input type="checkbox"/>	54	<input type="checkbox"/>	1 2 <input type="checkbox"/>	55
B. Ataque al corazon (coronaria)	<input type="checkbox"/>	1 2 <input type="checkbox"/>	56	<input type="checkbox"/>	1 2 <input type="checkbox"/>	57-58	<input type="checkbox"/>	1 2 <input type="checkbox"/>	59	<input type="checkbox"/>	1 2 <input type="checkbox"/>	60
C. Derrame del cerebro embolio	<input type="checkbox"/>	1 2 <input type="checkbox"/>	61	<input type="checkbox"/>	1 2 <input type="checkbox"/>	62-63	<input type="checkbox"/>	1 2 <input type="checkbox"/>	64	<input type="checkbox"/>	1 2 <input type="checkbox"/>	65
D. Bronquitis crónica	<input type="checkbox"/>	1 2 <input type="checkbox"/>	66	<input type="checkbox"/>	1 2 <input type="checkbox"/>	67-68	<input type="checkbox"/>	1 2 <input type="checkbox"/>	69	<input type="checkbox"/>	1 2 <input type="checkbox"/>	70
E. Enfisema	<input type="checkbox"/>	1 2 <input type="checkbox"/>	71	<input type="checkbox"/>	1 2 <input type="checkbox"/>	72-73	<input type="checkbox"/>	1 2 <input type="checkbox"/>	74	<input type="checkbox"/>	1 2 <input type="checkbox"/>	75
F. Tuberculosis	<input type="checkbox"/>	1 2 <input type="checkbox"/>	76	<input type="checkbox"/>	1 2 <input type="checkbox"/>	77-78	<input type="checkbox"/>	1 2 <input type="checkbox"/>	79	<input type="checkbox"/>	1 2 <input type="checkbox"/>	80
G. Asma	<input type="checkbox"/>	1 2 <input type="checkbox"/>	81	<input type="checkbox"/>	1 2 <input type="checkbox"/>	82-83	<input type="checkbox"/>	1 2 <input type="checkbox"/>	84	<input type="checkbox"/>	1 2 <input type="checkbox"/>	85
H. Úlcera estomacal o duodenal	<input type="checkbox"/>	1 2 <input type="checkbox"/>	86	<input type="checkbox"/>	1 2 <input type="checkbox"/>	87-88	<input type="checkbox"/>	1 2 <input type="checkbox"/>	89	<input type="checkbox"/>	1 2 <input type="checkbox"/>	90
I. Hepatitis	<input type="checkbox"/>	1 2 <input type="checkbox"/>	91	<input type="checkbox"/>	1 2 <input type="checkbox"/>	92-93	<input type="checkbox"/>	1 2 <input type="checkbox"/>	94	<input type="checkbox"/>	1 2 <input type="checkbox"/>	95
J. Cirrosis hepática	<input type="checkbox"/>	1 2 <input type="checkbox"/>	96	<input type="checkbox"/>	1 2 <input type="checkbox"/>	97-98	<input type="checkbox"/>	1 2 <input type="checkbox"/>	99	<input type="checkbox"/>	1 2 <input type="checkbox"/>	100
K. Piel amarilla	<input type="checkbox"/>	1 2 <input type="checkbox"/>	101	<input type="checkbox"/>	1 2 <input type="checkbox"/>	102-103	<input type="checkbox"/>	1 2 <input type="checkbox"/>	104	<input type="checkbox"/>	1 2 <input type="checkbox"/>	105
L. Colitis	<input type="checkbox"/>	1 2 <input type="checkbox"/>	106	<input type="checkbox"/>	1 2 <input type="checkbox"/>	107-108	<input type="checkbox"/>	1 2 <input type="checkbox"/>	109	<input type="checkbox"/>	1 2 <input type="checkbox"/>	110
M. Cálculos renales	<input type="checkbox"/>	1 2 <input type="checkbox"/>	111	<input type="checkbox"/>	1 2 <input type="checkbox"/>	112-113	<input type="checkbox"/>	1 2 <input type="checkbox"/>	114	<input type="checkbox"/>	1 2 <input type="checkbox"/>	115
N. Deficiencia renal	<input type="checkbox"/>	1 2 <input type="checkbox"/>	116	<input type="checkbox"/>	1 2 <input type="checkbox"/>	117-118	<input type="checkbox"/>	1 2 <input type="checkbox"/>	119	<input type="checkbox"/>	1 2 <input type="checkbox"/>	120
O. Cataratas	<input type="checkbox"/>	1 2 <input type="checkbox"/>	121	<input type="checkbox"/>	1 2 <input type="checkbox"/>	122-123	<input type="checkbox"/>	1 2 <input type="checkbox"/>	124	<input type="checkbox"/>	1 2 <input type="checkbox"/>	125

CONTINÚE CON LA PREGUNTA 6 EN LA PÁGINA SIGUIENTE

6. ¿Le ha dicho alguna vez un médico que usted tenía una de las siguientes enfermedades?

\*SI LA RESPUESTA

ES SÍ: ¿Cuándo comenzó?

¿Le

completa  
ahora?

¿Está usted  
en trata-  
miento por  
esto ahora?

	*SÍ	NO	AÑO	127- 128	1	2	NO	SÍ	NO	SÍ	NO
P. Gota	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	126	<input type="checkbox"/>						
Q. Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	131	<input type="checkbox"/>						
R. Epilepsia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	136	<input type="checkbox"/>						
S. Anemia (recuento bajo de la sangre)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	141	<input type="checkbox"/>						
T. Colapso nervioso	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	146	<input type="checkbox"/>						
U. Psoriasis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	151	<input type="checkbox"/>						
V. Dermatitis crónica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	156	<input type="checkbox"/>						
W. Esclerosis múltiple	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	161	<input type="checkbox"/>						
X. Artritis o reumatismo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	166	<input type="checkbox"/>						
Y. Cáncer de la piel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	171	<input type="checkbox"/>						
Z. Leucemia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	176	<input type="checkbox"/>						
AA. Otro tipo de cáncer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	181	<input type="checkbox"/>						
BB. Otras enfermedades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	186	<input type="checkbox"/>						
ESPECIFIQUE											
ESPECIFIQUE											

7. Ahora quisiera hacerle unas preguntas sobre su salud durante los doce meses pasados.

Empezando por sus ojos - durante los últimos doce meses ha tenido usted?

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

1      2  
Infección en los ojos  
191  
Irritación crónica  
192 de los ojos  
Heridas en los ojos  
193

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Dolor en los ojos  
194  
Visión borrosa o doble  
195  
Pérdida repentina de la  
196 vision

Algunas otras molestias  
en los ojos

ESPECIFIQUE

8. Seguimos con sus óídos - durante los últimos doce meses ha tenido usted?

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

1      2  
Dolor de oídos por más  
198 de una semana  
Zumbido en los oídos  
199  
Pérdida del oído  
200

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Drenaje de los oídos  
201  
Infección en los oídos  
202  
Heridas en los oídos  
203  
Algunas otras molestias  
204 en los oídos

ESPECIFIQUE

9. Seguimos con su piel - durante los pasados doce meses ha tenido usted?

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

1      2  
Infección en la piel  
205  
Salpullido  
206  
Cáncer de la piel  
207

SÍ      NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Otro tipo de crecimiento  
208 o tumor de la piel  
Acné  
209  
Algunas otras molestias  
210 en la piel

ESPECIFIQUE

10. Ahora sigamos con su estómago y su sistema digestivo - durante los últimos doce meses, ¿ha tenido usted?

SÍ      NO

1     2

Indigestión o acidez  
211. frecuente

1     2

Calambres o dolores  
212. estomacales

1     2

Diarrea frecuente  
213

SÍ      NO

1     2

Ardor o dolor en el recto  
214.

1     2

Pérdida de sangre por el  
215 recto

1     2

Cambio en el movimiento  
216 intestinal

1     2

Algunas otras molestias en  
217 el estómago o en los  
intestinos

---

ESPECIFIQUE

11. Ahora sigamos con sus pulmones y sus vías respiratorias - durante los últimos doce meses, ¿ha tenido usted?

SÍ      NO

1     2

Tos de más de un mes  
218. de duración

1     2

Tos diaria cuando se  
219. levanta por las  
mañanas

1     2

Falta de respiración que  
220. le impide continuar su  
trabajo o actividades  
diarias

SÍ      NO

1     2

Sonidos de jadeo o silbido  
221. en el pecho

1     2

Dolor frecuente, presión o  
222. opresión en el pecho

1     2

Más de tres resfrios o  
223. infecciones de las vías  
respiratorias superiores

1     2

Algunas otras molestias en los  
224. pulmones o las vías  
respiratorias

---

ESPECIFIQUE

12. Ahora sigamos con sus riñones y la vejiga - durante los últimos doce meses, ¿ha tenido usted?

SÍ      NO

1     2

Dolor al orinar

1     2

Aumento de frecuencia  
225. en el orinar

1     2

Problemas al comenzar o  
227. cesar de orinar

1     2

Cáncer de vejiga  
228.

PREGUNTA SOLO PARA HOMBRES

1     2

Enfermedades de la próstata

SÍ      NO

1     2

Sangre en la orina

230

1     2

Pérdida del control de la  
231. vejiga

1     2

Infecciones renales

232

1     2

Algunas otras molestias en los  
233. riñones o en la vejiga

---

ESPECIFIQUE

13. Ahora quisiera preguntarle sobre las alergias que pudiera haber tenido. En los últimos doce meses ¿ha tenido?

SÍ	NO
<input type="checkbox"/>	<input type="checkbox"/> 2
<input type="checkbox"/>	Asma o tos alérgica
<input type="checkbox"/>	234
<input type="checkbox"/>	Fiebre del heno
<input type="checkbox"/>	235
<input type="checkbox"/>	Ronchas o erupción
<input type="checkbox"/>	236 cutánea (urticaria ó salpullido)

SÍ	NO
<input type="checkbox"/>	<input type="checkbox"/> Alergia a ciertas comidas
<input type="checkbox"/>	237
<input type="checkbox"/>	Dolor de cabeza alérgico
<input type="checkbox"/>	238
<input type="checkbox"/>	Otras alergias
<input type="checkbox"/>	239

ESPECIFIQUE

14. Por último, durante los últimos doce meses ¿ha tenido usted alguno de estos síntomas?

SÍ	NO
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/>	Cansancio o debilidad persistentes
<input type="checkbox"/>	240
<input type="checkbox"/>	Pérdida de fuerza muscular
<input type="checkbox"/>	241
<input type="checkbox"/>	Parálisis
<input type="checkbox"/>	242
<input type="checkbox"/>	Entumecimiento o pérdida de sensación
<input type="checkbox"/>	243
<input type="checkbox"/>	Tremores ó movimientos irrefrenables
<input type="checkbox"/>	244
<input type="checkbox"/>	Dificultad para caminar
<input type="checkbox"/>	245
<input type="checkbox"/>	Dificultad para escribir con lápiz o pluma
<input type="checkbox"/>	246
<input type="checkbox"/>	Dificultad para dormir
<input type="checkbox"/>	247
<input type="checkbox"/>	Mareos
<input type="checkbox"/>	248
<input type="checkbox"/>	Náuseas frecuentes
<input type="checkbox"/>	249
<input type="checkbox"/>	Dolor de garganta frecuente o persistente
<input type="checkbox"/>	250

SÍ	NO
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/>	Sensaciones inusuales como hormigueo
<input type="checkbox"/>	251
<input type="checkbox"/>	Articulaciones hinchadas o doloridas
<input type="checkbox"/>	252
<input type="checkbox"/>	Pérdida del conocimiento, desmayos o coma
<input type="checkbox"/>	253
<input type="checkbox"/>	Periodos frecuentes en que se siente muy agitado, deprimido o con deseos de llorar
<input type="checkbox"/>	254
<input type="checkbox"/>	Dolores de cabeza frecuentes o persistentes
<input type="checkbox"/>	255
<input type="checkbox"/>	Algunas otras molestias musculares ó nerviosas
<input type="checkbox"/>	256

ESPECIFIQUE

## ATENCIÓN MÉDICA

15. Durante los últimos 30 días, ¿ha sufrido usted alguna enfermedad, dolor o condición de salud que le haya obligado a:

SI LA RESPUESTA  
SI NO ES SI: ¿Por  
cuántos días?

SI LA RESPUESTA ES SÍ:  
¿Cuál fue su problema?

A. Quedarse en un hospital  
por una noche o más?

1 2 258-  
257 259

260-261

B. Visitar a un médico o una  
institución médica?

1 2 263-  
262 264

265-266

C. Quedarse en cama todo  
el día?

1 2 268-  
267 269

270-271

D. Faltar al trabajo o  
dejar de hacer una  
actividad habitual?

1 2 273-  
272 274

275-276

16. Durante los últimos 30 días, ¿ha tomado usted alguna de las siguientes medicinas?

SI NO  
1 2

277

Calmantes para el dolor

SI NO  
1 2

283

Antibióticos

278

Medicinas para la tos  
o resfrios

284

Vitaminas

279

Medicinas para la acidez  
o la indigestión

285

Otras medicinas  
recetadas

280

Laxantes

ESPECIFIQUE

286-287

281

Tranquilizantes

288

Otras medicinas no  
recetadas

289-290

282

Píldoras para dormir

ESPECIFIQUE

EL FUMAR

17. ¿Ha fumado cigarros regularmente, es decir, más de un cigarro diario durante un año?

\*  SÍ  NO

297

SI LA RESPUESTA ES NO, PASE A LA PREGUNTA 24A

\*18. SI LA RESPUESTA ES SÍ: ¿Qué edad tenía usted cuando comenzó a fumar cigarros regularmente primera vez?

EDAD

298-299

19. ¿Fuma usted cigarros regularmente ahora?

\*  SÍ  NO

300

SI LA RESPUESTA ES NO, PASE A LA PREGUNTA 22

\*20. SI LA RESPUESTA ES SÍ: ¿Cuántos paquetes por día fuma usted?

1  MEDIO PAQUETE O MENOS

2  ALREDEDOR DE UN PAQUETE

3  ALREDEDOR DE UN PAQUETE Y MEDIO

4  ALREDEDOR DE DOS PAQUETES

5  MÁS DE DOS PAQUETES

301

21. ¿Durante cuántos años ha fumado cigarros regularmente?

ANOS

302-303

PASE A LA PREGUNTA 24A

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22. Durante los años que fumaba, ¿cuánto fumaba usted generalmente por día?

1  MEDIO PAQUETE O MENOS

2  ALREDEDOR DE UN PAQUETE

3  ALREDEDOR DE UN PAQUETE Y MEDIO

4  ALREDEDOR DE DOS PAQUETES

5  MÁS DE DOS PAQUETES

304

23. ¿Por cuántos años fumó usted cigarros regularmente antes de dejar de fumar?

ANOS

305-306

BEBIDAS ALCOHÓLICAS

24A. Generalmente, ¿cuántos días por semana bebe usted cerveza?

\*  DÍAS  
307

\*SI MENOS DE UNA VEZ POR SEMANA, ANOTELO

SI NUNCA, MARQUE AQUÍ  , Y PASE A LA PREGUNTA 25A

24B. Cuando usted bebe cerveza, ¿aproximadamente cuántas cervezas se toma por día?

NÚMERO  
308-309

25A. Generalmente, cuántos días por semana bebe usted vino?

\*  DÍAS  
310

\*SI MENOS DE UNA VEZ POR SEMANA, ANOTELO

SI NUNCA, MARQUE AQUÍ  , Y PASE A LA PREGUNTA 26A

25B. Cuando usted bebe vino, ¿aproximadamente cuántos vasos bebe por día?

NÚMERO  
311-312

26A. Generalmente, cuántos días por semana bebe usted bebidas como whiskey, vodka, o ginebra?

\*  DÍAS  
313

\*SI MENOS DE UNA VEZ POR SEMANA, ANOTELO

SI NUNCA, MARQUE AQUÍ  , Y PASE A LA PREGUNTA 27

26B. Cuando usted bebe estas bebidas, ¿aproximadamente cuántas toma por día?

NÚMERO  
314-315

27. En general, ¿cómo se siente usted viviendo en esta área? ¿La considera usted buena, regular, o mala?

- 1  BUENA
- 2  REGULAR
- 3  MALA
- 4  NO SABE

316

PASE A LA PREGUNTA 30

28. ¿Cuáles son algunas de las cosas que le gustan de la vida en este lugar - cosas que usted cree ventajosas o que hacen que este lugar sea bueno para vivir?

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317-318

29. Hoy en día es poco frecuente que una área tenga sólo ventajas. ¿Cuáles son las cosas que no le gustan de aquí? ¿Diría usted que no hay nada que le disguste, pocas cosas o muchas cosas?

- 1  NADA PASE A LA PREGUNTA 31
- 2  POCAS COSAS
- 3  MUCHAS COSAS
- 4  NO SABE PASE A LA PREGUNTA 31

319

30. ¿Cuáles son algunas de las cosas que le disgustan de la vida aquí?

- OLOR DE LA INDUSTRIA GEOTÉRMICA  
320
- OLORES DE OTROS ORÍGENES  
321
- OTROS TIPOS DE CONTAMINACIÓN DEL AIRE  
322
- RUIDO DE LA INDUSTRIA GEOTÉRMICA  
323
- RUIDOS DE OTROS ORÍGENES  
324
- CLIMA  
325
- OTRAS COSAS  
326
- NO SABE  
327

31. ¿Ha tenido alguna vez deseos de mudarse de esta área?

- 1  SÍ
- 2  NO
- 3  NO SABE

328

PASE A LA PREGUNTA 33

32. Cuando usted tuvo deseos de mudarse, ¿cuál fue la razón?

- OLOR DE LA INDUSTRIA GEOTÉRMICA  
329
- OLORES DE OTROS ORÍGENES  
330
- OTRA CONTAMINACIÓN DEL AIRE  
331
- RUIDO DE LA INDUSTRIA GEOTÉRMICA  
332
- RUIDOS DE OTROS ORÍGENES  
333
- CLIMA  
334
- OTRAS RAZONES  
335
- NO SABE  
336

33. Si usted pudiera encontrar una casa (apartamento) similar que no fuere más cara (caro) en otra área, ¿le gustaría mudarse allí?

- 1  SÍ
- 2  NO
- 3  NO SABE

337

PASE A LA PREGUNTA 35

34. ¿Por qué le gustaría hacerlo?

- OLOR DE LA INDUSTRIA GEOTÉRMICA  
338
- OLORES DE OTROS ORÍGENES  
339
- OTRA CONTAMINACIÓN DEL AIRE  
340
- RUIDO DE LA INDUSTRIA GEOTÉRMICA  
341
- RUIDOS DE OTROS ORÍGENES  
342
- CLIMA  
343
- OTROS MOTIVOS  
344
- NO SABE  
345

35. ¿Hay algo aquí en la comunidad que usted cree que es dañino para usted o para su familia?

1

SÍ

2

NO

3

NO SABE

346

PASE A LA PREGUNTA 37

36. ¿Qué es?

OLOR DE LA INDUSTRIA GEOTÉRMICA

347

OLERES DE OTROS ORIGENES

348

RUIDO DE LA INDUSTRIA GEOTÉRMICA

349

RUIDOS DE OTROS ORIGENES

350

OTROS TIPOS DE CONTAMINACIÓN DEL AIRE

351

CLIMA

352

OTRAS COSAS

353

NO SABE

354

37. A continuación mencionamos algunos problemas que tienen varias comunidades.

¿Cómo consideraría cada uno de ellos en (CIUDAD)?

¿Serio, algo serio, o no serio?

37a. ¿Epidemias de enfermedades infecciosas tales como la diarrea y la gripe?

1

SERIO

2

ALGO SERIO

3

NO SERIO

4

NO SABE

355

38. ¿Uso de agentes químicos en la agricultura y la industria?

1

SERIO

2

ALGO SERIO

3

NO SERIO

4

NO SABE

356

39. ¿Contaminación del agua?

1  SERIO  
2  ALGO SERIO  
3  NO SERIO  
4  NO SABE

357

40. ¿Ruido en la comunidad?

1  SERIO  
2  ALGO SERIO  
3  NO SERIO  
4  NO SABE

358

PASE A LA PREGUNTA 42

41. ¿A qué ruido se refiere?

RUIDO DE LA INDUSTRIA GEOTÉRMICA  
359  
 RUIDOS DE OTROS ORÍGENES  
360  
 NO SABE  
361

42. ¿Contaminación del aire?

1  SERIO  
2  ALGO SERIO  
3  NO SERIO  
4  NO SABE

362

PASE A LA PREGUNTA 44

43. ¿A qué tipo de contaminación del aire se refiere?

OLOR DE LA INDUSTRIA GEOTÉRMICA  
363  
 OLORES DE OTROS ORÍGENES  
364  
 OTROS TIPOS DE CONTAMINACIÓN DEL AIRE  
365  
 NO SABE  
366

44. ¿Cree usted que hay otros problemas serios o un poco graves en (CIUDAD)?

1  SI

2  NO

3  NO SABE

367

¿Cuales son?

¿Alguna otra cosa?

PROBLEMA

SERIO

ALGO SERIO

NO SERIO

NO SABE

368-	<input type="checkbox"/>	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
369	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 370
371-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 373
372	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 376

374-  
375

REGALO

REGALO

REGALO

<div data-bbox="500 4555 530 4565</div

45. Voy a hacerle algunas preguntas sobre los olores que usted puede haber notado durante los últimos seis meses. No me refiero a los olores de la casa, sino a otros olores en la comunidad.

45a. Aquí en su casa, ha notado alguno de dichos olores en los últimos seis meses?

1  SÍ

2  NO

3  NO SABE

377

45b.

¿De dónde viene el olor?

PASE A LA  
PREGUNTA 47

PASE A LA  
PREGUNTA 47

¿Algún otro olor?

MARQUE EL ESPACIO DEBAJO DEL TIPO DE OLOR

INDUSTRIA GEOTÉRMICA	LOTES DE ALIMENTACIÓN	PLANTA DE NITRÓGENO	PESTICIDAS
<input type="checkbox"/> 378	<input type="checkbox"/> 382	<input type="checkbox"/> 386	<input type="checkbox"/> 390

45c. ¿Con qué frecuencia ha notado este olor?

todos los días

1

1

1

una vez por semana

2

2

2

una vez por mes

3

3

3

con menor frecuencia

4

4

4

NO SABE

5

5

5

379

383

387

391

45d. ¿Diría usted que le molesta?

soló un poco

1

1

1

moderadamente

2

2

2

mucho

3

3

3

no me molesta

4

4

4

NO SABE

5

5

5

380

384

388

392

<sup>a</sup>PASE A LA FUENTE SIGUIENTE  
SI SE HA MARCADO "a" PARA TODAS LAS FUENTES,  
NO HAGA LA PREGUNTA 46

45e. ¿Con qué frecuencia le ha molestado este olor?

casi todo el tiempo

1

1

1

casi la mitad del tiempo

2

2

2

menos

3

3

3

NO SABE

4

4

4

381

385

389

393

markeda cada pregunta. Pase a la pregunta siguiente cuando termine de marcar. Si se ha marcado en la pregunta anterior, pase a la pregunta siguiente. Si se ha marcado en la pregunta anterior, pase a la pregunta siguiente.

Siempre pase a la pregunta siguiente, excepto cuando termine de marcar la pregunta 46.

Siempre pase a la pregunta siguiente, excepto cuando termine de marcar la pregunta 46.

Algunas preguntas tienen más de una respuesta correcta. Marque las que sean correctas.

FUENTE DESCONOCIDA  
A que huele?

FERTILIZANTE	OTRA FUENTE			OTRA FUENTE		
	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.
394	398-399	403-404	408-409	413-414	418-419	423-424
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
395	400	405	410	415	420	425

FERTILIZANTE	OTRA FUENTE			OTRA FUENTE		
	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.
396	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	a	a	a	a	a	a
5	a	5	a	5	a	5
396	401	406	411	416	421	426

<sup>a</sup>PASE A LA FUENTE SIGUIENTE  
SI SE HA MARCADO "a" PARA TODAS LAS FUENTES,  
NO HAGA LA PREGUNTA 46

FERTILIZANTE	OTRA FUENTE			OTRA FUENTE		
	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.	ESPECIF.
397	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
397	402	407	412	417	422	427

46. Usted ha dicho que los olores le molestan. ¿Cree usted que la situación es mejor, peor o la misma este año que el año pasado?

1  MEJOR

2  PEOR

3  LA MISMA

4  NO SABE

450

47. ¿Puede darme su opinión general sobre el problema del olor? Cree usted que los olores en general son muy molestos, molestos o no tan molestos?

1  MUY MOLESTOS

2  MOLESTOS

3  NO TAN MOLESTOS

4  NO SABE

451

48. ¿Cree usted que es más sensible que otra gente al olor, menos sensible o igual de sensible que otras personas al olor?

1  MÁS SENSIBLE QUE OTRAS PERSONAS AL OLOR

2  MENOS SENSIBLE QUE OTRAS PERSONAS AL OLOR

3  IGUAL QUE OTRAS PERSONAS

4  NO SABE

452

49. ¿Cree usted que (CIUDAD) tiene mayores problemas con los olores que otras ciudades de su tamaño, menos problemas o los mismos problemas?

1  MÁS PROBLEMAS CON LOS OLORES QUE OTRAS CIUDADES DE SU TAMAÑO

2  MENOS PROBLEMAS CON LOS OLORES QUE OTRAS CIUDADES DE SU TAMAÑO

3  EL MISMO NÚMERO DE PROBLEMAS

4  NO SABE

453

50. Voy a hacerle unas preguntas sobre los ruidos que usted pueda haber notado durante los últimos seis meses. No me refiero a los ruidos de la casa, sino a otros ruidos en la comunidad.

50a. Aquí en la casa, ¿ha notado usted dichos ruidos en los últimos seis meses?

1  SÍ

2  NO  
PASE A LA  
PREGUNTA 52

3  NO SABE  
PASE A LA  
PREGUNTA 52

50b. ¿De dónde vienen los ruidos?  
¿Otros ruidos?

MARQUE EL ESPACIO DEBAJO DEL TIPO DE RUIDO

INDUSTRIA  
GEOTÉRMICA

TRÁFICO

AVIACIÓN

AGRICULTURA

455

459

463

467

50c. ¿Con qué frecuencia ha notado estos ruidos?

todos los días

1

1

1

1

una vez por semana

2

2

2

2

una vez por mes

3

3

3

3

con menor frecuencia

4

4

4

4

NO SABE

5  456

5  460

5  464

5  468

50d. ¿Diría usted que le molestan?

un poco

1

1

1

1

moderadamente

2

2

2

2

mucho

3

3

3

3

no me molestan

4  a

4  a

4  a

4  a

NO SABE

5  a 457

5  a 461

5  a 465

5  a 469

PASE A LA FUENTE SIGUIENTE

SI SE HA MARCADO "a" PARA TODAS LAS FUENTES,  
NO HAGA LA PREGUNTA 51

50e. ¿Con qué frecuencia le han molestado estos ruidos?

casi todo el tiempo

1

1

1

1

la mitad del tiempo

2

2

2

2

menos

3

3

3

3

NO SABE

4  458

4  462

4  466

4  473

replies are recorded in the following columns: **OTRAS FUENTES** (Other Sources), **FUENTE DESCONOCIDA** (Unknown Source), and **¿A que suena?** (What does it sound like?).

### OTRAS FUENTES

### FUENTE DESCONOCIDA

¿A que suena?

**ESPECIF.**

471-472

1	2
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1	
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2	
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4	
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5	
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1	
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2	
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3	
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4	a
---	---

5	a
---	---

**ESPECIF.**

476-477

1	2
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1	
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1	
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3	
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4	a
---	---

5	a
---	---

**ESPECIF.**

481-482

1	2
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1	
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1	
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3	
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4	a
---	---

5	a
---	---

**ESPECIF.**

486-487

1	2
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1	2
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2	
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1	
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2	
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3	
---	--

4	a
---	---

5	a
---	---

**ESPECIF.**

491-492

1	2
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1	
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2	
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4	
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5	
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1	
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2	
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3	
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4	a
---	---

5	a
---	---

**ESPECIF.**

496-497

1	2
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1	
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1	
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3	
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4	a
---	---

5	a
---	---

a PASE A LA FUENTE SIGUIENTE  
SI SE HA MARCADO "a" PARA TODAS LAS FUENTES,  
NO HAGA LA PREGUNTA 51

1	
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1	
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475

480

485

490

495

500

51. Usted dice que los ruidos le han molestado. ¿Cree usted que la situación es mejor, peor o casi la misma que el año pasado?

- 1  MEJOR
- 2  PEOR
- 3  LA MISMA
- 4  NO SABE

506

52. ¿Puede darme su opinión general sobre el problema del ruido? Cree usted que el ruido en general es muy molesto, molesto o no tan molesto?

- 1  MUY MOLESTO
- 2  MOLESTO
- 3  NO TAN MOLESTO
- 4  NO SABE

507

53. ¿Cree usted que es más sensible al ruido que otra gente, menos sensible o igual de sensible?

- 1  MÁS SENSIBLE AL RUIDO QUE OTRA GENTE
- 2  MENOS SENSIBLE AL RUIDO QUE OTRA GENTE
- 3  IGUAL DE SENSIBLE
- 4  NO SABE

508

54. ¿Cree usted que (CIUDAD) tiene mayores problemas con el ruido que otras ciudades de su mismo tamaño, menos problemas que otras ciudades de su mismo tamaño o el mismo número de problemas?

- 1  MÁS PROBLEMAS CON LOS RUIDOS QUE OTRAS CIUDADES DE SU TAMAÑO
- 2  MENOS PROBLEMAS CON LOS RUIDOS QUE OTRAS CIUDADES DE SU TAMAÑO
- 3  IGUAL NÚMERO DE PROBLEMAS
- 4  NO SABE

509

## OCCUPACIÓN

55. ¿Tiene usted actualmente un empleo de tiempo completo o parcial?

\*  SÍ

2

SI LA RESPUESTA ES NO,  
PASE A LA PREGUNTA 56a.

510

\*55a. SI LA RESPUESTA ES SÍ: ¿Para qué tipo de empresa o compañía trabaja usted, es decir, de qué se ocupan?

511-513

55b. ¿Qué tipo de trabajo hace usted?

514-516

55c. ¿Cuántos años ha trabajado usted en esto?

517-519

### OCCUPACIÓN (Continuación)

56a. ¿Qué tipo de trabajo, incluyendo las tareas de la casa, ha hecho usted durante la mayor parte de su vida?

1. The first step in the process of creating a new product is to identify a market need. This involves research into consumer behavior, market trends, and competitor analysis. The goal is to find a gap in the market that can be filled by a new product.

2. Once a market need is identified, the next step is to develop a product concept. This involves defining the product's features, benefits, and target audience. The product concept should be unique and differentiate it from existing products in the market.

3. The third step is to create a product prototype. This involves developing a physical or digital representation of the product. The prototype should be functional and reflect the product concept.

4. The fourth step is to test the product prototype. This involves conducting user testing and gathering feedback from potential consumers. The feedback is used to refine the product and address any issues or concerns.

5. The fifth step is to launch the product. This involves launching the product in the market and monitoring its performance. The product is promoted through various channels, such as social media, email newsletters, and partnerships with influencers.

6. The final step is to evaluate the product's success. This involves tracking sales, user reviews, and other performance metrics. The product is evaluated to determine if it met its initial goals and if it needs to be improved or discontinued.

519-521

56b. ¿Para qué tipo de empresa o compañía trabajó usted, es decir, de qué se ocupaban?

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522-524

56c. ¿Cuántos años hizo usted este tipo de trabajo?

525-526

57. ¿Ha trabajado usted por más de seis meses en cualquier de las siguientes ocupaciones o industrias?

LEA CADA UNA DE LAS OCUPACIONES E INDUSTRIAS DETALLADAS A CONTINUACIÓN Y MARQUE LOS ESPACIOS APROPIADOS en el que no se aplique cada actividad.

SI	NO	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	530 Minas de carbón
<input type="checkbox"/>	<input type="checkbox"/> 531 Otras minas	
<input type="checkbox"/>	<input type="checkbox"/> 532 Mecanización o transformación de metales	
<input type="checkbox"/>	<input type="checkbox"/> 533 Soldadura	
<input type="checkbox"/>	<input type="checkbox"/> 534 Astilleros	
<input type="checkbox"/>	<input type="checkbox"/> 535 Canteras	
<input type="checkbox"/>	<input type="checkbox"/> 536 Fundición	
<input type="checkbox"/>	<input type="checkbox"/> 537 Aislación	
<input type="checkbox"/>	<input type="checkbox"/> 538 Carpintería u otra construcción	
<input type="checkbox"/>	<input type="checkbox"/> 539 Manufactura de muebles	
<input type="checkbox"/>	<input type="checkbox"/> 540 Manufactura de cueros o zapatos	
<input type="checkbox"/>	<input type="checkbox"/> 541 Industria química	
<input type="checkbox"/>	<input type="checkbox"/> 542 Industria geotérmica	
<input type="checkbox"/>	<input type="checkbox"/> 543 Refinamiento de petróleo	
<input type="checkbox"/>	<input type="checkbox"/> 544 Manufactura de goma	
<input type="checkbox"/>	<input type="checkbox"/> 545 Manufactura o procesamiento de plásticos	
<input type="checkbox"/>	<input type="checkbox"/> 546 Manufactura de textiles	
<input type="checkbox"/>	<input type="checkbox"/> 547 Peluquería o cosmetología	
<input type="checkbox"/>	<input type="checkbox"/> 548 Fábricas de papel y pulpa	
<input type="checkbox"/>	<input type="checkbox"/> 549 Imprenta	
<input type="checkbox"/>	<input type="checkbox"/> 550 Cocina en restaurantes	

58. ¿Ha estado usted expuesto en un trabajo o en un pasatiempo a alguna de las sustancias que se detallan a continuación por seis meses o más? (rotuladas con)

SÍ      NO

<input type="checkbox"/> 1	<input type="checkbox"/> 2	551. Pinturas o lacas
<input type="checkbox"/>	<input type="checkbox"/>	552. Agentes químicos orgánicos o solventes
<input type="checkbox"/>	<input type="checkbox"/>	553. Asfalto
<input type="checkbox"/>	<input type="checkbox"/>	554. Productos de petróleo como gasolina, kerosene o aceites combustibles
<input type="checkbox"/>	<input type="checkbox"/>	555. Aceites para corte, enfriado o lubricación
<input type="checkbox"/>	<input type="checkbox"/>	556. Pesticidas o insecticidas en rociador
<input type="checkbox"/>	<input type="checkbox"/>	557. Herbicidas o matamalezas
<input type="checkbox"/>	<input type="checkbox"/>	558. Asbestos
<input type="checkbox"/>	<input type="checkbox"/>	559. Polvo o emanaciones de metal
<input type="checkbox"/>	<input type="checkbox"/>	560. Polvo de carbón
<input type="checkbox"/>	<input type="checkbox"/>	561. Aserrín
<input type="checkbox"/>	<input type="checkbox"/>	562. Fibra o lana de vidrio
<input type="checkbox"/>	<input type="checkbox"/>	563. Rayos X o material radioactivo
<input type="checkbox"/>	<input type="checkbox"/>	564. Pulido con arena
<input type="checkbox"/>	<input type="checkbox"/>	565. Alguna otra substancia

ESPECIFIQUE

CARACTERÍSTICAS PERSONALES

59a. SEXO

MARQUE UNO

1

MASCULINO

2

FEMENINO

566

59b. GRUPO ÉTNICO

MOSTRAR TARJETA

¿Con cuál de estos grupos étnicos o raciales se identifica usted?

MARQUE UNO

1  BLANCO

4  ASIÁTICO

2  NEGRO

5  OTRO

3  HISPANICO, MEXICANO-AMERICANO, MEXICANO, O CHICANO

567

60. ¿Cuál es su estado civil ahora? Es usted:

MARQUE UNO

1  Casado

3  Viudo

568

2  Separado o divorciado

4  Soltero

61. ¿Cuál fue el último grado que usted completó en cada uno de los siguientes?

LEA CADA CATEGORÍA Y MARQUE CON UN CÍRCULO EL GRADO MÁS ALTO COMPLETADO EN CADA UNO

A. Escuela primaria y secundaria 0 1 2 3 4 5 6 7 8 9 10 11 12

569-570

B. Colegio o universidad 0 1 2 3 4 5+ 571

C. Escuela técnica 0 1 2 3 4 5+ 572

62. ¿Ha vivido la mayor parte de su vida en o cerca de una ciudad grande o una área metropolitana?

1  SÍ

2  NO

3  NO SABE

573

CARACTERÍSTICAS DE LA UNIDAD DE VIVIENDA

63. MARQUE LA CATEGORÍA QUE MEJOR DESCRIBA EL TIPO DE VIVIENDA.  
PREGUNTE SI ES NECESARIO

- 1  CASA RODANTE O TRAILER
- 2  CASA PARA UNA FAMILIA, SEPARADA DE OTRAS CASAS
- 3  CASA PARA UNA FAMILIA, UNIDA A UNA O MÁS CASAS

CASA O EDIFICIO DE APARTAMENTOS CON EL SIGUIENTE NÚMERO DE UNIDADES DE VIVIENDA:

MARQUE EL NÚMERO DE UNIDADES DE VIVIENDA

4 <input type="checkbox"/>	2-4	7 <input type="checkbox"/>	20-49
5 <input type="checkbox"/>	5-9	8 <input type="checkbox"/>	50 o más
6 <input type="checkbox"/>	10-26		

574

64. ¿Cuántos cuartos tiene usted en su unidad de vivienda sin contar los baños?



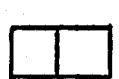
575-576



577-578



579-580



581-582

65. ¿Cuántas criaturas menores de un año viven aquí?

66. ¿Cuántos niños de uno a 17 años viven aquí?

67. ¿Cuántos adultos de 18 años y mayores viven aquí?

68. ¿Qué tipo de combustible es el que más usa usted para la calefacción de su casa?

1 <input type="checkbox"/>	GAS DE TUBERÍA SUBTERRÁNEA PARA EL SUMINISTRO DE LA COMUNIDAD	5 <input type="checkbox"/>	CARBÓN O COQUE
2 <input type="checkbox"/>	GAS: EMBOTELLADO, TANQUES, O LP	6 <input type="checkbox"/>	LEÑA
3 <input type="checkbox"/>	ELECTRICIDAD	7 <input type="checkbox"/>	OTRO COMBUSTIBLE
4 <input type="checkbox"/>	ACEITE COMBUSTIBLE, KEROSENE, ETC.	8 <input type="checkbox"/>	NO USA COMBUSTIBLE

583

69. ¿Qué tipo de calefacción hay en su vivienda?

MARQUE LA CATEGORÍA DE EL TIPO DE CALEFACCIÓN MÁS USADO

1 <input checked="" type="checkbox"/>	SISTEMA DE VAPOR O AGUA CALIENTE	5 <input type="checkbox"/>	CALENTADORES DE CUARTO CON TUBO O ABERTURA QUE FUNCIONAN A GAS, ACEITE O KEROSENE
2 <input type="checkbox"/>	CALDERA CENTRAL DE AIRE CALIENTE CON TUBOS A LOS CUARTOS INDIVIDUALES O BOMBA DE CALEFACCIÓN	6 <input type="checkbox"/>	CALENTADOR DE CUARTO SIN ABERTURA
3 <input type="checkbox"/>	UNIDADES ELÉCTRICAS EMPOTRADAS	7 <input type="checkbox"/>	CHIMENEAS, ESTUFAS O CALENTADORES DE CUARTO PORTÁTILES
4 <input type="checkbox"/>	CALDERA DE PISO, PARED O SIN TUBERÍA	8 <input type="checkbox"/>	OTRO TIPO DE CALEFACCIÓN
		9 <input type="checkbox"/>	NO HAY EQUIPO DE CALEFACCIÓN

584

70. ¿Tiene usted aire acondicionado en su casa?

1  SÍ      2  NO      585

71. ¿Qué tipo de combustible usa usted la mayoría de las veces para cocinar?

1 <input type="checkbox"/>	GAS DE TUBERÍA SUBTERRÁNEA PARA EL SUMINISTRO DE LA COMUNIDAD	5 <input type="checkbox"/>	CARBÓN O COQUE
2 <input type="checkbox"/>	GAS: EMBOTELLADO, TANQUES O LP	6 <input type="checkbox"/>	LEÑA
3 <input type="checkbox"/>	ELECTRICIDAD	7 <input type="checkbox"/>	OTRO TIPO DE COMBUSTIBLE
4 <input type="checkbox"/>	ACEITE COMBUSTIBLE, KEROSENE, ETC.		

586

**MOstrar LA TARJETA**

72. Mire usted esta tarjeta y digame cuál de las letras describe mejor el ingreso total del año pasado de los miembros de su familia que viven en esta casa. Incluya los ingresos de todas las fuentes, antes de los impuestos. Si usted vive solo, considérese una familia de un solo miembro.

1 <input type="checkbox"/>	A. MENOS DE \$5.000	5 <input type="checkbox"/>	E. \$20.000 - \$24.999
2 <input type="checkbox"/>	B. \$5.000 - \$9.999	6 <input type="checkbox"/>	F. \$25.000 - \$29.999
3 <input type="checkbox"/>	C. \$10.000 - \$14.999	7 <input type="checkbox"/>	G. \$30.000 - \$39.999
4 <input type="checkbox"/>	D. \$15.000 - \$19.999	8 <input type="checkbox"/>	H. \$40.000 Y MÁS

587

**OBSERVE EL CUARTO EN QUE SE DESARROLLA LA ENTREVISTA**

	SI	NO	
73a. ¿HAY EVIDENCIA DE GRIETAS, YESO CAÍDO O AGUJEROS EN LAS PAREDES INTERIORES O EL CIELORASO?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	588
73b. ¿HAY EVIDENCIA DE AGUJEROS EN EL PISO?	<input type="checkbox"/>	<input type="checkbox"/>	589
73c. ¿HAY ALGÚN ÁREA DE YESO CAÍDO EN EL CIELORASO O LAS PAREDES INTERIORES QUE SEA MÁS GRANDE QUE ESTA PÁGINA?	<input type="checkbox"/>	<input type="checkbox"/>	590
73d. ¿HAY ALGÚN ÁREA DE PINTURA CAÍDA EN EL CIELORASO O LAS PAREDES INTERIORES MÁS GRANDE QUE ESTA PÁGINA?	<input type="checkbox"/>	<input type="checkbox"/>	591

Estas son todas las preguntas que tengo para usted. ¿Hay algo más que no le haya preguntado que usted considere importante?

En caso de que me haya olvidado de preguntarle algo y mi supervisor necesite llamarlo nuevamente, ¿puede darme un número de teléfono y una hora conveniente para hablarle?

**TELÉFONO** \_\_\_\_\_

**HORA DE TERMINACIÓN** \_\_\_\_\_

AM

PM

**HORA CONVENIENTE** \_\_\_\_\_

AM

PM

INGLÉS  1

ESPAÑOL  2

592

A P P E N D I X      D

ENGLISH

Income Card

A. Under \$5,000

B. \$5,000-\$9,999

C. \$10,000-\$14,999

D. \$15,000-\$19,999

E. \$20,000-\$24,999

F. \$25,000-\$29,999

G. \$30,000-\$39,999

H. \$40,000 and Over

ENGLISH

Ethnic Group

A. WHITE

B. BLACK

C. HISPANIC, MEXICAN-AMERICAN  
MEXICAN OR CHICANO

D. ASIAN

E. OTHER

SPANISH

SPANISH

Income

A. MENOS DE-\$5.000

B. \$5.000-\$9.999

C. \$10.000-\$14.999

D. \$15.000-\$19.999

E. \$20.000-\$24.999

F. \$25.000-\$29.999

G. \$30.000-\$39.999

H. \$40.000-Y MAS

Ethnic Group

A. BLANCO

B. NEGRO

C. HISPANICO, MEXICANO-AMERICANO,  
MEXICANO O CHICANO

D. ASIÁTICO

E. OTRO

**A P P E N D I X   E**

## INTERVIEWER INSTRUCTIONS

### I. Introduction

This study is being conducted by the Epidemiological Studies Laboratory of the California State Department of Health Services to investigate the relation between environmental factors and health and annoyance reactions. Data are being collected by personal interview using a questionnaire which contains questions about health, annoyance, environmental exposures, and other factors which may be associated with health such as occupation, education, and living habits. The interviewing is expected to last about 4-6 weeks. The households selected to be included in the survey are in Holtville, Heber, El Centro, Brawley, and Calipatria.

### II. Training

A training session lasting about three days will be held at the beginning of the interviewing period. Administrative details, such as recording of hours and expenses, will be discussed. The interview questionnaire will be discussed in detail, item-by-item.

Practice interview sessions will be held so that you will become familiar with the questionnaire and will have a chance to practice handling difficult responses and recording answers. The final step in the training is to do some practice interviews in the field.

### III. Administration

#### A. Supervision

The director of the survey is Margaret Deane. The supervisor of the field is Madeline Thresh.

You will be given local phone numbers and addresses where they can be reached. In case of emergency, several staff members can be reached in Berkeley at (415) 843-7900. Larry Perry and Margaret Deane can be reached at extension 306. Dr. William Clark can be reached at extension 201.

### B. Work Hours and Time Sheets

Because of the need to maintain a good balance between travel time and interviewing time, all interviewers working on the Community Health Study will be responsible for completing a "full day of work" each day they go into the field. A full day of work is defined as 8 consecutive hours, plus time for meals, beginning from the time you leave your house, and ending when you return home. Generally, the 8 hours of a work day should begin at an hour that will put you in the field over the afternoon and evening hours. Any departures from this working schedule must first be cleared with the study supervisor prior to the time the odd hours are worked. You will be given a supply of time sheets to enter your hours worked by day.

### Security

Because interviewers will be in the field during evening hours, the study staff is concerned that all sensible precautions be taken to insure personal safety. Notification of police and sheriff's department personnel has been made in the communities where interviewers will be working. Because of the nature of the work day, all interviewers will be in their field area first during the daytime hours and will have the opportunity to become familiar with it then. Nevertheless, experience with similar field work in other studies has shown that by always taking a few simple precautions, you can increase your own safety and feeling of security. One such practice is to keep your car within sight and within a short walking distance of the houses you are visiting at all times. Further, many women interviewers have found it easier to leave their purse locked in the trunk of the car and to carry only the car keys along with the study materials.

During the time of year we will be in the field, it will be dark around 6:30 to 7:00 pm or later. If you do not have appointments made after it gets dark and if you do not feel safe walking around alone knocking on doors in a particular area without appointments, you should notify your supervisor the day ahead. She will make specific arrangements for another interviewer to meet you and go with you after dark.

### C. Travel Information

While working on the Community Health Study, you will use your own personal car, if possible, and be reimbursed for mileage. If absolutely necessary, we may be able to provide you with a rental car. Travel expenses, such as mileage, parking, etc., will be reimbursed through the use of the travel expense claim. A copy of this form is in the Exhibits section of this manual. It is very important that the claim be filled out completely and correctly. If it is not, the claim will be returned for correction, and this substantially affects the time it takes for reimbursement to you.

### D. Receiving and Turning in Assignments

You will receive assignments from the study supervisor on a daily basis at the beginning of the survey, possibly less frequently later in the survey. The supervisor will designate a time when you will come into the office. At that time, you will be responsible for turning in all work that you have completed along with a time sheet covering the hours worked. Should you find that the assignment that you have does not provide enough work for you to be productively engaged in the field until your next appointment with the supervisor, you should call the supervisor and make an appointment to receive additional assignments.

### E. Identification

Each interviewer working on the Community Health Study will have an identification badge with photograph which will be issued by the State. These ID badges will be issued at the briefing. Arrangements are being made to have photographs taken of each interviewer during the briefing. Both the Sheriff's Department and the Health Department in Imperial County have been notified about the study activities and have been provided with sample copies of both the ID badge and the letter to residents.

### F. Confidentiality

All interviewers will be required to read and sign a confidentiality statement. A copy of this statement and an explanation of the legal requirements on all staff regarding protection of confidentiality are enclosed in the Exhibits section. These will be your copies. Another copy will be given to you to sign at the time of the briefing and this copy will remain on file in the ESLS.

The purpose of the confidentiality statement is to remind you of the legal constraints on you to protect the identity and privacy of all respondents and to serve as a record that you have been informed about these requirements.

#### IV. Field Procedures

##### A. Supplies

Each interviewer will receive at the briefing a packet of forms and supplies needed for the field work. During the briefing we will go over each of the supplies and discuss their use.

A brief description of supplies follows:

maps - each interviewer will be given a map of Imperial County which includes maps of all towns where we are conducting the study except Heber.

enumeration folders - you will receive a supply of enumeration folders. These are numbered in sequence and must be kept and used in sequence.

questionnaires - the questionnaire will also be numbered with a four-digit number, but it is not necessary to use them in exact sequence. For purposes of keeping track of them, however, it would simplify things if you made some attempt to keep them in order.

letters to residents - you will have a large supply of these letters, which are to be used by you in introducing the study at the door.

time sheets -

consent forms - you will have a supply of these which are to be presented to the respondent at the time of the interview.

travel expense claims -

**B. Assignment of Households**

Your assignments will consist of a set of enumeration folders, each of which has a street address entered. The folder contains the instructions for selecting the person at that address who is to be interviewed. If no person in the household is eligible to be interviewed, this is indicated on the folder and it is returned to us. Under no circumstances is a different household or person to be substituted for the one specified. The interview can be conducted immediately or can be scheduled for a more convenient time. If you know that a street address you have been given belongs to someone you know, give the folder with this address back to the supervisor. Under no circumstances are you to interview anyone you know, since it is difficult in such a situation to keep the interview objective and it could be embarrassing to both interviewer and respondent.

**C. Conducting the Interview**

All interviews will be conducted in person, either at the time of the household enumeration or at a later time. The interview takes approximately 30 minutes. It will be very important, once an interviewer begins work in a block, to carry out all of the interviews in that block with as little delay as possible. We would like to give neighbors as little chance as possible to discuss the survey and their responses to the questions with each other. Undoubtedly this is bound to happen, but we can hope, by concentrated field work, to minimize its effects.

At the end of each interview, the questionnaire should be edited to make sure that all information is clear. Immediate editing is necessary so that omissions and errors in recording can be corrected or eliminated.

**D. Introducing the Study at the Door - Enumeration**

The inside pages of the enumeration folder contain both the questions and information you will need to enumerate the members of the household and a place to record this information. Nevertheless your first task, when someone answers the door will be to introduce both yourself and the study. There is a suggested introduction on the left inside page of the folder. This is simply a suggestion, and does not have to be followed word for word. It will be important for you to work out an introduction that you are comfortable with, so that you can make it sincerely and convincingly. You should use the material in the suggested introduction, however, as a guide to the type of information you should give about the purpose of the study.

When you are introducing yourself and the study, you should use the Dear Resident Letter. The most appropriate use of this letter will probably be to hand it soon after you introduce yourself to the person answering the door. The letter also contains some general information about the study, and will give the person looking at it additional information about who is conducting the study. The letter also serves as a means of gaining time, both for you and the respondent. The respondent needs to have a little time to evaluate what you are telling him, and looking at the letter provides this time.

The purpose of the introductory phase is to enable you to reach a point where you can ask the household enumeration questions. You can do this with anyone who lives there and who is capable of giving you the information. You should probably be wary of asking the questions of a child younger than an older teenager. Occasionally, parents may resent someone questioning their children, though the parents would be happy to speak with you. Ask to speak to a parent or find out when you can come back, if only younger children are at home.

If the person who answers the door does not speak English and you are not bilingual, explain that someone speaking Spanish will come later.

#### E. Question-by-Question Instructions for the Use of the Enumeration Folder

An example of a correctly filled out enumeration folder follows on the next pages. You can refer to it as you read through the instructions for conducting the enumeration. The questions should be asked as written.

Question 1: Self-explanatory. Any questions about whether a person lives there can probably be resolved by referring to the information in the box located just after Q 5. Record the answer to Q 1 on the line following the question.

##### Question 2:

Record

the name in the column on the right hand page labelled "NAME". If the respondent does not give you the names in the correct order, from oldest to youngest, simply put the forgotten names in the correct position between the others and reumber the person numbers in the left column.

**Question 3:** Self-explanatory. You don't need to record an answer, but if the question turns up an additional person, follow the instructions given above under Q 2 to record.

**Question 4:** Record the sex of each resident by circling the correct letter in the column on the right hand page labelled "CIRCLE SEX". Needless to say, M is for male and F is for female. If you are in doubt about the sex of any resident, ask Q 4. Be careful of names that could be either sex, such as Terry, Francis, etc.

**Question 5:** Ask Q 5 about each resident. It is very important that you ask Q 5 just as written. Q 5 is the first of the eliminator questions. The only people who will be eligible for possible inclusion into the sample are household residents who were at least 18 years old on their last birthday.

**Question 6:** This is the second eliminator question and is asked only about the residents who are at least 18 years old. In order to be assigned an "ELIGIBLE PERSON #", the household resident, aged 18 or more, must also have lived within the town for at least one year immediately preceding the interview. Only a street address that is in the particular town is an eligible address. Thus, if you are at a dwelling unit in El Centro and find that a resident has lived at the sample address for only three months, prior to which he lived at least nine months in the town, that resident can be assigned an Eligible Person #. If no one aged 18 or more can be assigned this number following Q 6, you should terminate at that time. Persons who meet all eligibility requirements should now be assigned the ELIGIBLE PERSON # in the column so labelled on the right hand page. See the example for an illustration of this.

**Question 7:** After you have assigned all eligible persons an ELIGIBLE PERSON #, your next step is to count the number of eligible persons. Using the chart at the bottom of the right hand page, follow the directions in Q 7 and circle the number of eligible persons in the top row of the chart and on the front page of the folder (see example). Then use the row (A through F) that is pre-circled on that particular enumeration folder to select the number of the "Eligible Person" to be interviewed at that dwelling unit. If the sample person is at home, you can proceed immediately with the interview. If he or she is not, or if the time is not convenient, set an appointment and return to complete the interview.

### The Interview

Once you have completed the enumeration and determined which of the eligible persons is the sample person who is to be interviewed, your only task is to complete the interview with that sample person. If the person to be interviewed is not the same as the person who gave the information for the enumeration, the study must be described again. In any case, the respondent must be given a copy of the Informed Consent to read before the interview starts.

If you discover that you know the person who is supposed to be interviewed, thank the person and explain that another interviewer will be assigned. If the respondent should be interviewed in Spanish, and you are not bilingual, try to make an appointment for a Spanish-speaking interviewer.

Before the interview is started, the respondent should be asked to read the Informed Consent. Under no circumstances can you substitute another person in the household for the sample person which the chart has designated. If a respondent asks why you cannot do this, you can explain that the procedure for selecting who is to be interviewed is pre-set to conform to the requirements of the statistical tests that will be performed with the data collected and that any changes would damage the validity of the results.

Preliminary counts of the population in the sample area indicate that we will need to interview essentially all of the eligible sample persons that we identify. The goal of the study is to complete 800 interviews. For this reason, we will have to make strenuous efforts to convert refusals and to reach people who are hard to find at home. You will be contributing to the success of the study if you can make every effort to avoid creating refusals. If you are just not getting anywhere at the door or in getting the interview, make every effort to leave an opening for someone else to come back. Sometimes the offer to give the respondent time to phone the contact persons listed on the Dear Resident Letter may help. Since you will be in the area, it will also be easy and convenient to offer to come back at a better time. Whatever you do, write complete notes of what happened on the record of calls so that when you or someone else goes back, you can be most effective.

## F. How to Answer Questions from Respondents About the Study

There are probably some common questions that you will be asked fairly often by people as you are talking with them about the study. It is always helpful if you have some idea of what you will say so that you do not accidentally give out inappropriate information and so that you feel comfortable in fielding such questions. The following examples are again not intended to be memorized and presented verbatim, but rather are suggestions that you should use and convert into something comfortable for you.

### 1. Sample Answers to Common Questions

#### What is this study really about?

As you will be able to see from the questions, the study is an attempt to learn something about people's evaluation both of their health and the environment they live in. The study is being carried out in several residential areas of Imperial County so that comparisons can be made about how people in different areas view these things.

#### Is this study related to air pollution and cancer or something like that?

Again, as you'll see from the questions, we ask about these things because they are examples of health or living problems that people might have. However, we're interested in a much broader range of things as well.

#### Why can't you go next door; that lady is home all day?

Your house and you, as the person to be interviewed, were picked by a predetermined random selection process. As someone selected in this way, your answers can be used to represent both you and other people in the community. If we substitute or in some way disturb this selection process, then that is no longer true.

#### Why are you interviewing in this community (neighborhood)?

We're not just doing the study in this community. The interviewing is being done in five different areas throughout Imperial County so that people's answers in different areas can be compared.

## 2. How to Handle Requests for Assistance

Because you are from the California Department of Health Services and because the study is in cooperation with the Imperial County Health Department, it may happen that a respondent may regard you as someone to turn to for help or advice regarding a medical, health or personal problem. Regardless of your personal concern or knowledge in the matter you are being asked about, it is important that you not make any recommendations or referrals or express any opinions about a course of action. The following exceptions apply, however, or you may always suggest that a person refer health or medical problems to the family doctor or another source of medical care. If the person indicates either that they have already tried to talk to their physician or if the problem is not a medical one, you may suggest that they call the Public Health nurse at the Imperial County Health Department for advice or referral.

## G. Conducting the Interview

### 1. Correct Interviewing Procedures

It is probably true that an interviewer may never behave exactly the same way with each respondent. Your manner and the way you discuss the survey will vary from person to person. It is possible to provide some general guidelines that should apply to almost all, if not all, interviewing situations. However, it is important that the questions be asked of each respondent in as much the same way as possible.

- a. Ask the questions exactly as worded and in the same order as shown on the questionnaire. Minor changes in wording can completely change the meaning of a question. Unless each interviewer asks the questions exactly as shown, the answers are meaningless. Survey research is based on the assumption that a questionnaire item will mean exactly the same thing to every respondent, and that every given response must mean the same thing when given by different respondents. In practice, of course, this is an impossible goal, but survey questions are drafted in such a way as to approximate the ideal as closely as possible. You should understand, then, that it is not correct to think that as long as you "get the information", you have collected any valuable data. The only answer that a researcher wants,

and can validly use, is the exact recorded response of a respondent to a questionnaire item read exactly as worded. This is the only kind of response that can correctly be added together with other responses, or averaged, or on which statistical operations can be performed.

Similarly, you must follow the sequence of questions. Never ask questions out of order unless you are given specific instructions to do so. When a questionnaire is constructed, careful attention is paid to the order in which questions are asked. This sequence provides good continuity from question to question and facilitates the interviewer's task. Also, one question may adversely affect other questions if asked out of sequence.

b. If the respondent volunteers an answer to a question (earlier in the interview) and you are absolutely certain that you know the answer, you may code the answer without asking. Generally, it is better to follow the rule that you will ask every question, unless asking it would be an intolerable awkwardness and would destroy rapport with the respondent. The reason for this is that it's very easy to mistakenly assume you know the answer to a question when you really do not. It's also the case that the respondent's answers to specific questions in the schedule may be different from information she tells you in general conversation. For instance, she may tell you "I've never worked a day in my life", but when you ask her the question about work, including volunteer work, she may, of course, give a yes response.

One good way to handle situations where you feel that the respondent has already given you the information in the course of answering earlier questions is to preface the question with a phrase like, "You have already said something about this, but let me ask you..." You may tell the respondent you're supposed to ask every question just as written and to ask her to bear with you. You should do this if she shows some irritation, and some respondents do, at being asked almost the same, or the very same, thing she thinks she has already told you.

c. When in doubt as to what is needed, get more rather than less information. If you get more data than we need, we can ignore it. But if you get less than we need, we must either call back the respondent or code "no answer". In order to avoid the unnecessary loss of important data, bear in mind the following rules:

- When in doubt whether to ask a question, ask it.
- When in doubt whether to probe for greater depth, probe.
- When in doubt whether to record, record.
- When in doubt whether to enter an explanatory, parenthetical note, enter it.

This does not mean that we want a lot of obviously irrelevant and/or unnecessary details. What it does mean is that in borderline cases, we would rather have you err on the side of giving us more rather than less than we need.

d. Strive to sound natural and conversational. A great deal of time and effort goes into making the questions sound the way most people talk. Try to relax and "say" them instead of obviously reading them. You should practice by actually reading the questions aloud so you will be able to ask them in a natural, neutral way. Even though some of the wording of the questions may not be the way you would say it, it's part of an interviewer's job to learn to read a question in a normal conversational tone.

It's also important to speak in a smooth, evenly paced manner. Many survey researchers feel that a pace of about 2 words per second is what you should strive for. It's tiring and stressful to have someone shoot questions at you in a fast, interrogative manner. Your goal is to make the respondent feel as little as possible like he or she is being tested or investigated.

e. Learn to look up at your respondent and to look interested while you are writing.

- f. Be sure to maintain a cordial, yet professional relationship with the respondent. A word of warning is in order here. As important as it is to establish a friendly relationship with a respondent, this can be overdone. Friendliness is desired, but a certain degree of formality and social detachment is better than maximum rapport. Where the relationship between interviewer and respondent is too friendly and intimate, the interviewer will excessively bias the respondent's answers. The respondent may become so concerned about the interviewer's opinion of him that he will tend to slant his responses to make the interviewer like or approve of him.
- g. Learn the purpose of each question. In order to do a good job of interviewing you must understand the kind of information we are trying to get by asking a question. Unless you understand its purpose, you will not be able to judge when a response is adequate and when you must probe for clarification or for additional information. You should study the question-by-question section of the Interviewer Instructions, which discusses each question in detail.
- h. Don't leave a question until you have an adequate answer or have determined that the respondent can't give a clearer answer.
- i. Don't accept a "Don't know" without probing at least once. When you ask a question, people often say "I don't know" just to give themselves time to formulate their ideas, or because they do not understand the question, or because they are trying to avoid answering what to them is a sensitive question. It's also possible, of course, that they simply don't know. If anyone says "Don't Know", therefore, record this answer but also probe "Well, what do you think?" or "I just want your best guess" or "Well, just approximately" to convey the notion that we're not insisting that they be 100% accurate.
- j. Never paraphrase a question. Sometimes the respondent may misinterpret or misunderstand a question, or may ask you what the question means. You should never paraphrase a question in order to make it more understandable to the respondent. It seldom happens that two interviewers would paraphrase in the same manner, and it is easy to understand how this could destroy the validity and accuracy of a survey. You should, rather, repeat the question exactly as it is worded. This will usually be enough to clear up any misunderstanding. If the respondent asks you what a question means, you can say "Just whatever it means to you".

k. Use neutral probes that do not suggest answers. Often the best probe is to repeat the question slowly. Some kinds of questions used in ordinary conversation must be avoided because they suggest answers.

Don't ask "Do you mean A or B?" This is not neutral because it suggests two possible answers, and there may be others which do not occur to the interviewer, but would occur to the respondent if she were left to her own devices.

Don't ask "Do you mean (such and such)?" because many people tend to say "yes" to any suggestion either because it's easy or because they think it's the right answer.

Don't summarize a respondent's answers. Even though you think you're summarizing what the respondent has already said, your interpretation may be correct, but you may be placing the emphasis on the wrong direction.

l. Watch your tone of voice and facial expressions. How you ask a question can be just as important as the wording of the question. Be careful that a tone of criticism does not creep into your voice.

The respondent should be made to feel that the interview situation is permissive. You should never indicate either verbally or by your expression that you approve or disapprove of an answer given by a respondent. Rather, neutrally accept and record whatever the respondent says.

m. Watch for irrelevant answers. Some people talk a great deal but talk off the point. Don't be misled by verbose answers which deal with a related but different subject. Before going on to the next question, ask yourself whether you have an answer to the question you actually asked.

n. Watch for vague answers. Some respondents find it hard to verbalize and may have difficulty expressing their ideas. When respondents take refuge in vague generalities, probe for examples to help them clarify their ideas.

o. Clarify one response before asking for more. "Anything else?" is an excellent probe for getting respondents to offer additional ideas on a subject. But before asking for other answers, use clarifying probes to encourage respondents to explain what they have already said. Clear up one response before asking for more.

## 2. How to Read the Question

- a. Read only those parts of the questions which appear in lower-case. All instructions to the interviewer are capitalized, and never read to the respondents.
- b. Read only those code categories which appear in the question unless the categories are in small type and are clearly part of the question. There is a specific instruction in the manual for those questions.
- c. Words in a sentence which are capitalized are never read. They remind you to substitute something else. For example: How long have you lived in TOWN ?

In asking the above question, you would not say "TOWN" but would substitute the name of the town in which the interview is being conducted.

## 3. Tips on Recording

It is always important that you indicate to the respondent the seating arrangements that you want to have. Most respondents do not know what to expect, and will wait for you to take the lead. Seat yourself across from, and not beside the respondent, so that he or she cannot see the questions or watch you recording the answers. There are some pages of the questionnaire with readily visible instructions to the interviewer about skipping questions, and the respondent should never see this. Also, respondents tend to stop talking when they see you check a box, or if they see that you've filled up all the space next to that question with writing. It's best, therefore, when you enter the respondent's home to say "Why don't you sit over there and I'll sit here" or something like this. If the only place for you to sit is at a table, hold your notebook on your lap, slanted so that the respondent can't see your recording.

Here are some suggestions, then, to help you record accurately and quickly.

- a. Be ready to write as soon as the respondent starts talking.  
Have your pencil poised to write the first word.

- b. Always use a black lead pencil. Never use a colored pencil or pen. Colored pencils will be used by the supervisor and coder and we want to be able to tell at a glance "who wrote what".
- c. Most questions are precoded, that is, there is a box to check for the response given. If the respondent's answer qualifies the precoded answer in any way, probe to get the respondent to pick one of the precoded answers. If the respondent still insists on using a qualifying remark along with the precoded answer, record the respondent's verbatim qualifying words. If the respondent gives an answer that is difficult to code -- or uncodable -- try to get it down verbatim, probing to encourage a choice and recording the probing process.

## H. The Questionnaire

Questions 1 through 3, age and residence history, also serve to recheck the eligibility of the sample person by asking again the information about age and length of residence.

Should you encounter a situation where the respondent, after being asked Q 1-3, turns out not to be eligible for interview, go back to the enumeration folder and ask the sample person the enumeration questions over again. Determine who, if anyone, can be assigned an Eligible Person #, crossing out your respondent and anyone else who is now not eligible. Reassign Eligible Person #'s based on the new information and go to the chart in the Enumeration Folder and determine who is your new Sample Person. Use the same circled Table you used before.

**Question 1:** This Q is straightforward except that it is essential that the respondent hear the entire question. It has been demonstrated that some people answer the question "How old are you?" differently from the question "How old were you on your last birthday?". Thus, if the respondent answers "I'll be 57", the correct probe is to repeat the Q - "Then how old were you on your last birthday?"

**Question 2:** Straightforward

**Questions 3a-c:** The answers to questions 3a-c must be in years and are to be entered in the two boxes labelled "YEARS". The rule for rounding off partial years is simply that anything under 6 months is rounded down and anything 6 months or more is rounded up. Vague answers such as "4 and 1/2 years" should be probed for "exactly how many years and months". Thus, you will enter "05" in the boxes for any answer between 4 years and 6 months and 5 years and 5 months. However, if the respondent has lived in the town for less than 12 months, a new respondent should be selected from the household.

**Question 4a:** Question 4a is intended to determine whether the respondent has only seasonal residence in the area, that is, whether he is regularly absent during part of the year. A general rule of thumb is that absence at the same time every year for more than one month would imply parttime residence.

**Question 4b:** If parttime residence is determined from Q 4a, ask Q 4b and round to the nearest whole number of months.

**Question 5:** Question 5 begins a series of questions, 5-14, that relate to the respondent's health. Q 5 is introductory to that series and also asks a very general question designed to focus on health status. Probe all answers that do not fit into the three categories of response offered in the question. For instance, "Oh it's not too bad" requires a probe. "Don't Know" should be probed and the respondent's answers indicated if it's checked.

**Question 6:** Question 6 begins on page 3 and continues over onto page 4. The question asks if a doctor has ever told the respondent he had such a condition. If he thinks he had it but it wasn't diagnosed by a doctor, check the "NO" box. Note the asterisks beside the "YES". These point you to a second series of three questions to be asked only about conditions a doctor has diagnosed. In the first question of this series, "When did it first start?" we're interested in when the respondent first perceived the condition as starting, not when it was diagnosed. If the respondent gives you an age, probe for year. "Does it bother you now?" refers simply to the respondent's perception and "now" does not mean this very minute. If necessary, you may probe, "By now I don't mean right this minute, but does it bother you now as opposed to only in the past?" The final question, "Are you being treated for it now?" similarly does not mean right at this minute. Also,

by treatment we don't necessarily mean a treatment by a physician. If the respondent does not know how to answer, you may probe, "Are you doing something at the present time to control or relieve the condition?

Since in this series of three questions about any condition diagnosed by a physician, we are interested in the respondent's perception, don't worry about inconsistency. It may be possible that he is not "bothered" by high blood pressure, for instance, because he is being treated for it. You should repeat Q 6 - "Has a doctor ever told you...etc." - often enough so that the respondent does not forget what is being asked about the condition you are naming. Certainly every time you receive a "Yes" and ask the series of three succeeding questions about the condition, you should repeat Q 6 before you list the next condition. Q 6AA and Q 6BB should be probed only once to specify the condition. "What?" or "What is it?" will suffice. It is not necessary to write details of a particular condition or to list several in Q 6BB.

Question 7  
through  
Question 14:

This series of questions asks more specifically about problems or conditions that the respondent may have with different organ systems. They are very straightforward, though there are several things for you to keep in mind as you ask them. First, note that each question in 7-14 asks about "during the past twelve months". This phrase is underlined in every question so that you emphasize it and so that the respondent recognizes the difference between what is being asked here and what was asked in Q 6 where we wanted to know of he ever had certain conditions. Second, it will be important, in Qs 7-14, to avoid interpreting or defining any of the conditions asked about. We are again interested solely in the respondent's perception of whether a condition has existed during the past twelve months. If he describes a condition to you and asks whether that qualifies as a "rash" or "difficulty in walking" or whatever, you should probe, "We're interested in whatever you think it is. Would you say that during the past 12 months you had....?" Again in this series of questions it is not necessary to probe the "Anything Else" questions beyond a simple "What is it?" We are not interested in a long list of symptoms and the "Anything Else" is there primarily to give the respondent a chance to report anything he feels is significant.

**Question 15:** This question and Q 16 asks about the past 30 days. Note that the asterisk that should be next to the "YES" column heading is slightly misplaced to the left. Note that the questions ask about doing any of the activities as a result of an illness, pain, or health condition. We're simply interested in what the respondent thinks about the event that caused him to do A through D. Thus, if he asks you in response to Q 15B, if an annual physical would count, you should probe, "Would you say that an illness, pain or health condition caused you to?" The contingency question "For how many days?" refers only to "how many days in the past 30 days".

**Question 16:** Straightforward. Remember we only want to know about medication taken in the last 30 days. Again, anything the respondent considers a medicine should be recorded as a "Yes" answer.

**Question 17:** Questions 17-23 are smoking questions. Q 17 is a screening question, and if the respondent answers "NO" to it, you skip the rest of the smoking questions altogether.

**Question 18:** Q 18 will be asked only of the respondents who say they have smoked regularly. Probe for a specific age at which regular smoking began and enter that age in years in the boxes. Show any comments and probes which cannot be entered into the boxes.

**Question 19:** Q 19 is another screener, and for respondent's who do not smoke regularly now, you skip to Q 22. Though regularly technically means more than one cigarette per day for as long as one year, simply ask the question as written. If the respondent raises any question about whether or not his smoking qualifies as "regular now" simply probe for and record all of the information about his current smoking habits. Do not check a "YES" or "NO" box in this case. For example, someone who smokes a pack of cigarettes a day during the week but nothing on weekends would not be a "regular" smoker in the strict sense of the definition. Nevertheless we would like to have this information recorded. If the respondent answers that he does not smoke regularly now, skip to Q 22.

**Question 20:** Q 20 is straightforward. The rule here is that if the amount the respondent reports that he smokes does not fit any of the categories, write down the amount and do not check any of the boxes.

**Question 21:** This question is meant to elicit the total number of years that the respondent smoked regularly.

**Question 22:** Follow the same rule as in 20 and write down any amounts that do not fit into the categories.

**Question 23:** See Q 21.

**Question 24:** Questions 24-26 are the alcoholic beverage consumption questions. Q 24A asks about beer. The question is straightforward. The only thing to watch is the instructions for Q 24A. Note that if the respondent answers that he never drinks beer, you do not enter a number in the box marked "DAYS". Rather you check the box in the instruction and go to Q 25A. If the respondent does drink beer, but drinks it less than 1 day per week, enter a "0" in the box marked "DAYS" and ask Q 24B.

**Question 25:** See Q 24.

**Question 26:** See Q 24.

**Question 27:** This is a general question leading into more specific questions about the environment. If the respondent answers the question in some way other than with one of the categories given, repeat the last part of the question placing emphasis on the words "good, fair, or poor". Note that a "poor" or "don't know" response requires skipping to Q 30.

**Question 28:** Write responses as nearly verbatim as possible. The probe "anything else?" should be used.

**Question 29:** If the respondent answers by giving specific examples, record these as responses to Q 30, but repeat Q 29 as "would you say there are a few things or many things you don't like here?" Note that "nothing at all" or "don't know" responses require skipping to Q 31.

**Question 30:** Do not read the response categories to the respondent. More than one category may be checked. If in doubt whether a response falls into one of the categories or should be marked "other", write it down. Use "anything else" as a probe until the respondent appears to have said all he is going to. If some of the categories have already been checked in response to Q 29, ask "You said you didn't like \_\_\_\_\_, are there any other things you don't like about living here?"

**Question 31:** Note the skip to Q 33 required by "no" and "don't know" responses.

**Question 32:** Similar to Q 30. Do not read the response categories to the respondent.

**Question 33:** Note the skip required by "no" and "don't know" responses.

**Question 34:** Similar to Q 30. Do not read the response categories to the respondent.

**Question 35:** Note the skip to Q 37 required by "no" and "don't know" responses.

**Question 36:** Similar to Q 30. Do not read the response categories to the respondent.

**Questions 37-43:** Read each question as given. If necessary, repeat the categories. For example, if the respondent answers, "I don't think that is much of a problem here", you may say, "Would you rate it as serious, somewhat serious, or not serious?" The question applies to the town in which the respondent lives and you should repeat the question if the respondent does not seem to be answering in terms of that town.

**Question 44:** Check the appropriate box, and for "yes" responses ask "What is this?" Write in the response and ask, "Would you rate this problem as serious, somewhat serious, or not serious?" Then ask, "anything else?"

Question 45:

This is not a question but is an introduction to questions 45a-e. Note that we are asking about odors that occur generally in the community, but not necessarily in the whole town. Thus, the question does not apply to odors from cooking, painting, burning trash, or applying fertilizer or pesticides by the respondent himself or a neighbor, but it does apply to odors from agricultural use of fertilizer and pesticides and to odors from a community garbage dump or burning of community refuse. If in doubt, record the response under "other source" or "unknown source" and explain.

Question 45a:

Note that "no" and "don't know" require a skip to Q 47.

Question 45b:

The basic question follows directly a "yes" response to Q 45a, and is "where does it come from?" The source mentioned is recorded by checking one of the boxes on the top line of the table, or by writing in the source under "other source", or by writing in the type of odor under "unknown source". If the respondent mentions more than one source or type of odor, enter each. Then ask "any other odor?" until no other odors are mentioned. Do not read the categories at the top of the column to the respondent. The three columns under "other source" are used to record any source that is not related to the geothermal industry, feed lots, the nitrogen plant, pesticides, or fertilizers. Some respondents may mention an odor but do not know where it comes from. Enter a description of the odor, asking "what does it smell like?" The double boxes in each column for "other source" and "unknown source" are not to be used but will be filled in later by coders.

Question 45c-e:

Notice that the response categories are not capitalized except for the "don't knows". This means that they are to be read to the respondent. Q 45c should read "Is it everyday, once a week, etc". The questionmark in 45d should be omitted so that the question reads, "Would you say it has bothered you only a little, moderately," etc. For a given source or type of odor, for example, feed lots, ask questions 45c-e before going on to the next source. If one of the boxes marked "a" is checked in 45d, the note tells you to go to Q 45c for the next source, since it would not make sense to ask question 45e. When the table has been filled out for all odors, check to see whether any boxes not marked "a" in Q 45d have been checked. If so, ask Q 46. If only "a" boxes have been checked, the note says to skip Q 46 since it would not make sense to ask it.

**Question 46:** If the respondent gives a response other than those listed, repeat the question.

**Questions 47&49:** These questions are intended to get some idea of each respondent's sensitivity to odor.

**Questions 50-54:** These questions are similar to the preceding questions on odor and the same rules apply. Note that some of the sources of noise listed are different from the odor sources.

**Question 55:** Question 55 is a screening question for Q 55a-c. If the respondent considers himself to be employed, ask Q 55a-c whether the employment is paid or unpaid. In other words, a housewife may report that she is now employed as a housewife and you should ask Q 55a-c about her current employment. Then ask Q 56a-c.

**Questions 55a-c:** Questions 55 a and b are occupation and industry questions which should be asked to elicit a complete job description. This question should be fully probed until you can see that someone else reading the answer would have a complete picture of the respondent as he performed at this job. Be careful of ambiguous descriptions such as engineer that do not provide enough information. Use "Tell me more" as a probe. Question 55c refers to "this kind of work" which can have been performed for more than one employer.

**Questions 56a-c:** These questions are asked of all respondents and concern the work they have done most of their life. Even if the respondent reports that she has never worked but has been a housewife, record this. It is not necessary to probe for industry if she answers "housewife" to this question. If the respondent responds that the kind of work he's done most of his life is the job he has now, which he has told you about in Q 55a-c, simply note this in Q 56a-c. Mark Q 56a-c clearly "See Q 55a-c."

**Question 57:** Straightforward. If the respondent is not sure whether a particular job was within the industry, write down what the job was and what the uncertainty is about.

**Question 58:** The key here is exposure for 6 months or more. The words "job or hobby" are to indicate that the exposure does not have to be only job related. If the respondent reports an exposure but says it was not through a job or hobby, probe "Was it regular exposure for 6 months or more?" If it was, check "YES".

**Question 59a:** Do not ask the respondent his or her sex. Simply check the appropriate box and go on to Q 59b.

**Question 59b:** You have a printed card labelled Question 59b: ETHNIC GROUP. Show this card to the respondent and ask the question. If the respondent says he is a mixture or doesn't know, repeat the question with emphasis on the phrase "most closely identify yourself with". The idea behind the question is to gain some information on health factors that might be related to genetic differences or to differences in life style, such as diet and type of medical care.

**Question 60:** Be sure to read Q 60 in its entirety to the respondent. The key word is "now".

**Question 61:** You should read Q 61 A, B, and C to all respondents. Don't assume that because the respondent has not finished high school, he has no college. If the respondent has attended a school which does not have number grades corresponding to those in the question, do not circle anything. Just record the respondent's answer. The "5+" in Q 61b should be used for work past the bachelor's degree.

**Question 62:** Do not define "big city". It's whatever the respondent considers it to be.

**Question 63:** This question is not necessarily asked of respondents. If you are unclear about the type of dwelling unit, ask about it now.

**Question 64:** This question asks about rooms, not counting bathrooms in the living quarters. Write down information about any partial, incomplete or atypical rooms if the respondent mentions them. Make sure that you record whether the number you have entered into the boxes includes these questionable rooms or does not.

Question 65: Straightforward. If you are in any doubt about whether to count an infant who is staying there, write down what the problem is about. Again, be sure you indicate whether any number you enter includes the problem infant or does not.

Question 66: Straightforward. See Q 65.

Question 67: See Q 65.

Question 68: The key word is "most". You should check only one answer - the fuel the respondent uses most to heat the house. It is not necessary to record any other fuels.

Question 69: Let the respondent describe the heating system, but be careful not to ask leading questions. If in doubt, write in the response and do not check a box.

Question 70: By air conditioning we mean any air conditioning unit, either built in (central) or a window unit. Fans do not count.

Question 71: See Q 68.

Question 72: You should hand the respondent the card as you read this question. Be sure that you have the card available so that you can reach it without pausing to look around for it. Make sure the respondent hears what you are asking. We want to know the category in which the combined income before taxes of all family members in the household fits. The income we are interested in is last years income (1978). Since we will be talking to people right around the income tax reporting period, this figure should be fresh in most people's minds. This income question is a standard one and most respondents do not have any problem with it. If you need to, however, at this point, you should reassure the respondent that this answer like all others is held in strictest confidence and that names, addresses, or other identifying data are never connected with answers.

Question 73a-d: This question is answered by your observation only. Under no circumstances should you ask the respondent anything about Q 73a-d. Q 73a refers to open cracks. We are not interested in the kind of hairline cracks that often appear in a painted wall, nor are we interested in tiny holes such as one made by a nail or tack where a picture formerly hung on the wall. A hole in the floor refers to a hole in the floor structure itself, not the rug or linoleum or tile.

Don't forget to read the final two paragraphs to the respondent. Record anything the respondent tells you that he thinks is important. It is not necessary to probe for "Anything Else?" but you should probe for clarity. Also, be sure to record anything unusual about possible callback arrangements or about the best time to call back.

All English questionnaires should be checked "English". All Spanish questionnaires should be checked "Spanish".

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