



THE UNFOLDING WIPP DEBATE IN NEW MEXICO

A SURVEY OF PUBLIC ATTITUDES
TOWARD SCIENCE, THE EPA, AND WIPP

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BY THE



UNM Institute for Public Policy
1805 Sigma Chi
Albuquerque, NM 87131-1121
(505) 277-1099

970101



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EXECUTIVE SUMMARY

The results presented in this report are based on a random phone survey of 566 adult New Mexicans during September and October 1996. Seventy-four percent of eligible households contacted agreed to participate in the survey. The margin of error for the statewide sample was roughly +/- 4%.

The survey asked respondents questions about the Waste Isolation Pilot Plant (WIPP) and related topics. This executive summary highlights some of the key findings in the report.

With regard to WIPP, 55% of all New Mexicans surveyed said that they would vote against opening WIPP if a referendum were held today. In response to another question, only 19% said that they thought WIPP was safe to use as it is; 23% thought it needed minor changes; 20% thought it needed major changes; and 27% said it was unsafe and should never be opened.

Answers to these questions varied considerably among different groups of respondents. Using a series of questions on science, the EPA, and facts about WIPP and radiation, respondents were placed into different categories.

- Those with the least knowledge about WIPP and radiation were far more likely to perceive WIPP as unsafe. For example, 54% of those with little knowledge of radiation's properties said that WIPP was unsafe and should never be opened; only 12% of those with the best understanding of radiation shared this view.
- Respondents who were less favorable toward the Environmental Protection Agency (EPA) were more skeptical of WIPP's safety: 53% of those with the least favorable view of the EPA said that WIPP should never be opened, compared to only 11% of those with the most positive view of the EPA.
- New Mexicans who expressed the least faith in the abilities, wisdom, and independence of scientists were more critical of

WIPP than their counterparts. Forty-six percent of those most skeptical of science thought WIPP should never be opened, but only 8% of those with the most faith in science agreed.

These data suggest that there is a strong connection between public opinion toward WIPP and related beliefs about science, the EPA, radiation, and WIPP. Nonetheless, respondents appeared to be willing to change their minds about WIPP depending on whether the EPA and independent oversight groups chose to identify WIPP as safe to open.

- If both the EPA and oversight groups agreed that WIPP was safe, 61% said they would support that decision.
- If the EPA decided that WIPP was safe but oversight groups disagreed, only 34% would support the EPA's decision.
- If both the EPA and the oversight groups decided that WIPP was unsafe, 77% of respondents would support the EPA's decision.

Compared to WIPP's opponents, those who initially supported WIPP were more likely to change their mind based on EPA and oversight group determinations. Seventy-four percent of WIPP supporters would oppose WIPP if the EPA and/or oversight groups found the facility to be unsafe, whereas only 37% of WIPP opponents would choose to support WIPP if it were deemed safe by EPA and the oversight groups.

INTRODUCTION

The development of the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico, has been a steady source of controversy in New Mexico for over two decades. The construction and opening of WIPP has been delayed repeatedly due to changing plans and lawsuits brought by the State of New Mexico and other parties. More than once, Congress has rewritten laws regulating WIPP, and each of these changes has come amidst criticism from either proponents or opponents of WIPP.¹ Critics of WIPP have sponsored public rallies and protests against the Plant, and the U.S. Department of Energy (DoE) has held public hearings, town meetings, news conferences, and other events to publicize it.² The stream of newsworthy events surrounding WIPP has provided New Mexico citizens with a regular diet of information about the Plant.

As the public debate over WIPP continues to unfold in New Mexico, the pattern or balance of the debate may change because of the changing events surrounding WIPP. In the past, the major player in the development of WIPP has been the DoE, which constructed WIPP and will operate it if the Plant opens. During the next year, however, the Environmental Protection Agency (EPA) will become the central federal agency, as it is charged with reviewing the DoE's WIPP Certification Compliance Application by October of 1997. While the EPA makes its evaluation, independent oversight groups (e.g., the WIPP panel of the National Academy of Sciences, the Environmental Evaluation Group, and environmental advocacy organizations) will be making their own evaluations of the DoE's application. Depending on the actions of the EPA and these oversight groups, the primary issues

¹ Two of the most important pieces of legislation regarding WIPP are the Waste Isolation Pilot Plant Land Withdrawal Act (US Congress, PL 102-579) and the Waste Isolation Pilot Plant Land Withdrawal Amendments Act in the National Defense Authorization Act for Fiscal year 1997, Subtitle F (PL 104-201).

² For government information on WIPP, see the Department of Energy's *Citizens' Guide* (November, 1996) and the Environmental Protection Agency's *EPA and the WIPP* (no date). More information and links to other websites are available at the official WIPP website, which is located at <http://www.wipp.carlsbad.nm.us>.

surrounding WIPP might change, and public opinion toward WIPP might shift one way or the other.

The purpose of this report is to gain insight into how the public currently views WIPP and related topics. Toward this end, this report presents the results of a recent public opinion survey that complements past research on WIPP conducted by the University of New Mexico's Institute for Public Policy (IPP). The survey asks new questions that focus on the EPA and its regulatory role regarding WIPP, and it asks a series of questions about the public's knowledge of the Plant. Responses to these questions will provide a rich portrait of the public's understanding and views of WIPP.³

SURVEY METHOD

The results presented in this report are based on a random phone survey of 566 adult New Mexican households.⁴ Telephone interviews were conducted across New Mexico between September 26, 1996 and October 10, 1996. The survey was conducted at the IPP Survey Research Center (SRC), which uses an eleven-station computer assisted telephone interviewing (CATI) system. Each station has a Macintosh computer connected to a central file-serving system with direct access to long-distance telephone lines. The final questionnaire is programmed into the CATI system to create an automated survey instrument with complex randomizations, respondent screening, and interview paths customized to each respondent's answers. Intensive training and careful supervision ensured the quality of every interview. During the survey, SRC supervisors used a "silent monitor" system to listen unobtrusively to telephone interviews and check the accuracy of each interviewer's entries.

To ensure the representativeness of the total sample of respondents participating in the survey, the IPP used a combination of random digit dialing, random respondent identification within

³ The most recent IPP publication on the subject is *Unfinished Business: New Mexicans' Views on the Waste Isolation Pilot Plant, 1990-1996* (Albuquerque: IPP, 1996). *Unfinished Business* summarizes the findings of six years of surveys, and it shows that there has not yet been a substantial change in public attitudes toward WIPP.

⁴ Respondents were randomly selected within households by asking for the adult in the household who had the most recent birthday.

households, and a customized database that recorded call attempts and scheduled interviews.⁵ A high response rate also ensured representativeness: overall, 74% of eligible households contacted agreed to participate in the survey. In addition, fifty-four respondents dropped out of an interview after it began; whenever possible, however, these respondents' answers were included in the final results.

ANALYTIC METHOD

Appendix A summarizes all the responses respondents gave to the questions asked. The body of the report presents some of the same data, but it focuses more on the relationships among the answers given, rather than the individual questions themselves.

Results are presented using correlations, regression equations, cross-tabulations, and descriptive statistics. Correlations and regression equations are employed to identify the key independent variables that differentiate responses among different groups of respondents, but these same results are sometimes presented as cross-tabulations. For example, rather than reporting the correlation between knowledge of radiation and views toward WIPP, response percentages to the WIPP questions are shown for each radiation knowledge level. This makes it harder to infer effect sizes, but it makes it easier for the reader to see the differences in attitudes among people with distinct levels of knowledge.

With few exceptions, this report discusses only variable relationships that are statistically significant. We use the conventional significance threshold of probability ($p < .05$), which means that the likelihood of a "false positive" is less than one-in-twenty. In other words, when we observe a statistically significant correlation in our survey sample, the odds are very good that this correlation also holds true for the target population (i.e., all New Mexico adults) that we sampled. The text of this report will show these significant relationships as differences in response percentages, rather than as correlations. In addition, we should note that the

⁵ Although it is more labor-intensive, the SRC makes up to ten attempts per phone number because some groups of respondents are harder to reach by phone than others.

statewide results and cross-tabulations presented in the report generally are based on analyses *excluding* “don’t know/no answer” (DK/NA) responses; Appendix A, by contrast, *includes* these DK/NA answers.

When an association between two variables is not statistically significant, it can mean either that there is no association in the target population *or* that the sample size was too small to detect the association (a “false negative”). The sample size used in the present study has enough statistical power to detect even relatively small statistical relationships, but whenever we refer to a subsample of fewer than 100 respondents, our tests will have sufficient power to detect only medium- and large-sized associations. Subsamples smaller than 25 would only have enough power to detect very large associations, so we do not make reference to subsamples of that size.

PREVIEW

The organization of the report follows a logical path from high to low abstraction. We begin by reviewing the public’s basic attitudes toward science and scientists, because these fundamental beliefs underlie much of what the public thinks about scientifically complex government projects, such as WIPP. Second, we review the public’s attitudes toward the EPA, which has responsibility for evaluating the DoE’s scientific findings regarding the Plant. Third, we identify some of the information that the public knows about WIPP, as these specific pieces of knowledge may also shape public attitudes toward the Plant. Finally, we review public opinion toward WIPP. We look both at aggregate public opinion and the different views held by various subgroups of the New Mexico population.

1. FAITH IN SCIENCE

Public opinion toward scientifically complex government programs depends, in part, on public attitudes toward science itself. A citizen with great faith in the cautious wisdom of scientists can be expected to trust the scientific research and engineering underpinning a newly constructed federal facility. By contrast, a person skeptical of the scientific method is likely to have little faith that such a facility is well-built or even well-conceived. To understand how the New Mexico public approaches WIPP, it is necessary to first take stock of these basic attitudes toward scientific research.

THE EXTENT TO WHICH THE PUBLIC TRUSTS SCIENCE

To assess the degree to which the New Mexico public trusts science, three statements were read to respondents (in a randomized order), and respondents said whether they agreed strongly, agreed, disagreed, or disagreed strongly with each one. Table 1 shows that agreement was most frequent (61%) for the statement, "When science interferes with nature, it often produces disastrous consequences." Fifty-six percent agreed that "scientists often fail to see how their actions can endanger human health and the environment," and a majority (54%) *disagreed* with the statement, "The delicate balance of nature is too complex for science to understand."

Table 1
Three Measures of Public Faith in Science

Statement	Agree	Disagree	Total
When science interferes with nature, it often produces disastrous consequences.	61%	39%	100%
Scientists often fail to see how their actions can endanger human health and the environment.	56%	44%	100%
The delicate balance of nature is too complex for science to understand.	46%	54%	100%

Pulling these results together, as many as three-in-five said that scientific projects often result in disaster, and a majority agreed that scientists are sometimes blind to this danger. On the other hand, a majority seemed to believe that scientists are able to grasp the complexity of nature. In sum, the New Mexican adults surveyed were divided in their views toward science, with the majority expressing more faith in scientists' intelligence than in their wisdom.

WHEN THE PUBLIC DISTRUSTS SCIENCE

This limited faith in science quickly erodes, however, if it appears that scientists are not conducting independent research. More than four-in-five (83%) of those surveyed agreed that “for scientists to do unbiased work, they must have independence from whoever funds the research.” When the same question was turned around and put in more stark terms, 53% agreed that “scientists are likely to give answers that are preferred by whoever pays them.” Summing these two results, a clear majority of respondents believe that scientists are only unbiased when independent from their employer (see Table 2).

Table 2
Public Attitudes toward the
Independence and Biases of Scientific
Research

Statement	Agree	Disagree	Total
For scientists to do unbiased work, they must have independence from whoever funds the research.	83%	17%	100%
Scientists are likely to give answers that are preferred by whoever pays them.	53%	47%	100%
For the most part, we can count on scientists to provide unbiased research on potentially hazardous facilities.	61%	39%	100%

When interviewers asked a more specific question about facilities such as WIPP, a majority of respondents said that in such a context, scientists are likely to remain neutral. Sixty-one percent of those surveyed agreed that “for the most part, we can count on scientists to provide unbiased research on potentially hazardous facilities.” From another perspective, though, this means that two-

fifths of New Mexicans doubt the neutrality of research scientists working on facilities handling hazardous waste.

THREE VIEWS OF SCIENCE

It is possible to combine the answers to these three questions with those discussed previously. A single index was created by averaging responses to the six items (after reversing the third item in Table 2).

Together, these questions provide a good indicator of the public's views toward science. Roughly dividing the scores on this index into three categories, 31% of respondents were categorized as "strong faith" (average score below 2.5), 32% were labeled "neutral" (average score between 2.5 and 2.75), and 38% were placed in the "skeptical" category (score over 2.75). These categories will be used in the discussions below to understand differences in public attitudes toward WIPP.⁶

IMPLICATIONS FOR THE WIPP DEBATE

The New Mexico public believes that independent scientists are capable of doing high-quality, unbiased research. At the same time, most New Mexicans believe that unfettered scientific projects can lead to disaster, and they fear that scientists underestimate the likelihood of their failure. Most New Mexicans currently trust the neutrality--but not necessarily the wisdom--of research scientists working on facilities like WIPP, but if the public came to believe that these scientists were not independent, that trust might decay.

⁶ These trichotomizations will be used throughout this report to compare low, medium, and high levels of knowledge or three attitude levels (e.g., unfavorable, neutral, and favorable). In every case, the boundaries for each of the three categories are drawn such that the three groups have roughly equal sample sizes. This facilitates the analysis of group differences.

2. THE EPA AND THE LIMITS OF PUBLIC DISCONTENT

The New Mexico public already has reason to associate scientific research with WIPP, because science has played a visible role in the selection of the Carlsbad site, the design and construction of WIPP, and now the evaluation of the safety of WIPP. By contrast, relatively little has been said about the EPA in relation to WIPP. Nonetheless, if one is to understand how the WIPP debate might unfold, it is necessary to study public attitudes toward the EPA because of its emerging role as chief regulator of the Plant. In coming months it is the EPA that will make the most important announcement regarding WIPP's safety.

Without any direct knowledge of how the public perceives the EPA, one might suspect that the public holds the same grudges against the EPA that it does against the federal government in general. In this view, the public is likely to believe that the EPA is exceedingly bureaucratic, unfeeling, and incompetent. To see whether the public's general dislike of government influences its view of the EPA, we asked New Mexicans a series of questions about the EPA.

PUBLIC CONTACT WITH THE EPA

First, we measured the degree to which respondents had any contact with the EPA in regard to WIPP. Fourteen percent of those surveyed said that they had read an EPA brochure or other written material about WIPP. Seven percent said that they had attended a public hearing or meeting regarding the WIPP facility.⁷

These may be overestimates, because it is rather difficult for respondents to recall the origin of a document or the sponsor of a particular meeting. Nonetheless, these data indicate that although *some* New Mexicans are aware of EPA's public outreach efforts, *the vast majority* of New Mexicans have had no contact with the agency in regard to WIPP.

⁷ Those who chose to attend said that they did so for one of three main reasons: out of concern for their personal safety; to criticize or support WIPP; or to learn more about the Plant.

PUBLIC EVALUATION OF THE EPA

These findings suggest that public attitudes toward the EPA in New Mexico generally have little to do with any direct contact with the EPA's activities regarding WIPP. In other words, New Mexicans' views of the EPA are more general, based on a broad range of EPA activities.

To find out more about New Mexicans' perceptions of the EPA with regard to WIPP, interviewers asked if respondents thought the EPA was competent, attentive, and sincere. The answer was clear:

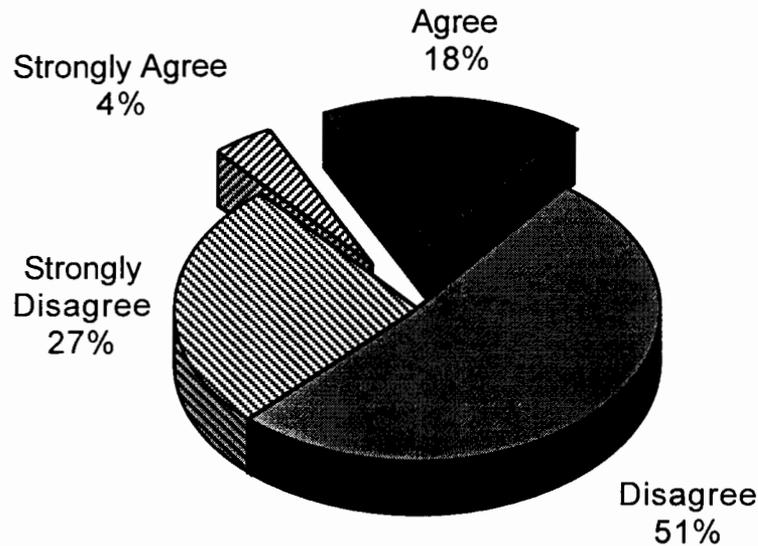
- Seventy-two percent of respondents agreed that “the EPA has the technical and scientific training necessary to evaluate the safety of the WIPP facility.”⁸
- Seventy-two percent of respondents agreed with the statement, “I trust that the EPA will take into account the concerns of New Mexicans like me when it evaluates the safety of the WIPP facility.”
- Seventy-one percent of respondents agreed that “when the EPA evaluates the WIPP facility, it will be motivated by genuine concern for protecting human health and the environment.”

CAN THE EPA WITHSTAND PRESSURE?

Such general goodwill, however, may break down under pressure. We asked respondents to consider circumstances under which the EPA might *not* act on its principles and take people's concerns seriously. Interviewers asked respondents whether they thought the EPA “would certify the WIPP facility to open *even if* the EPA learned that the facility *did* pose a threat to human health or the environment.” Figure 1 shows that fewer than one-in-four (22%) either agreed or strongly agreed that the EPA would certify WIPP even if the Plant appeared to be a serious hazard.

⁸ For the first of these three items, we should note that 13% of all respondents said that they “didn't know” or gave no answer (DK/NA), and those responses were excluded before calculating the percentage shown above. For the second and third items, only 2% and 4%, respectively, gave a DK/NA response.

Figure 1
Agreement/ Disagreement with the
Statement, 'The EPA would certify WIPP even
if it knew that WIPP threatened human
health or the environment.'



OVERALL FAVORABILITY TOWARD EPA

As with the science questions, it is possible to combine these four different questions about the EPA into a single measure of “favorability” toward the EPA’s regulatory role for WIPP. Trichotomizing the average responses, 26% of respondents were “less favorable” (average score below 2.75), 47% were “moderately favorable” (average score between 2.75 and 3.0), and 26% were “very favorable” (average score above 3.0).

IMPLICATIONS FOR THE WIPP DEBATE

New Mexicans have very positive feelings toward the EPA, viewing it as both competent and trustworthy. If the EPA *does* certify WIPP, few New Mexicans would believe that it did so despite knowing of any serious dangers posed by WIPP. In sum, the public trusts EPA’s judgment about WIPP’s safety.

3. WHAT THE PUBLIC KNOWS ABOUT WIPP

The aforementioned views of science and the EPA may play a role in shaping the public's attitudes toward WIPP, but New Mexicans' knowledge of WIPP is also a potentially important factor. A person may be critical of scientists and the EPA, yet happen to know key facts about WIPP that make her believe the Plant to be safe. The opposite is also true: a person may trust government and science yet believe that this particular federal facility is unsafe, despite what government scientists have said thus far. These anomalies could be explained by the specific facts that New Mexicans know--or *don't* know--about WIPP; knowledge or ignorance of certain details can override the influence of more basic attitudes on people's views toward WIPP.

BASIC KNOWLEDGE OF RADIATION

One piece of knowledge that may influence citizens' views toward WIPP is a basic understanding of radiation. To measure knowledge of radiation, interviewers asked three "true or false" questions, and misconceptions about radiation were common. Table 3 shows that 60% of New Mexicans agreed that man-made radiation is more toxic to humans than an equal dose of natural radiation, and 53% said that the body is not able to repair radiation damage. Only a third (32%) thought that man-made radiation has "resulted in new species of plants and animals."⁹

⁹ Respondents were able to answer "definitely true," "probably true," "probably false," and "definitely false." For answers broken down in that way, see Appendix A. Just as on grade school exams, true/false questions overestimate the number of respondents who know the answer; some percentage of answers are blind guesses that just happen to be correct.

Table 3
Answers to a True/False Radiation Quiz

Statement	Right Answer	Wrong Answer	DK/NA	Total
Even if the dose is the same, man-made radiation is more toxic to humans than naturally-occurring radiation.	31%	60%	9%	100%
The human body has the capability to repair tissue damage caused by exposure to radiation.	37%	53%	10%	100%
Since the detonation of the first atomic bomb, man-made radiation is known to have resulted in new species of plants and animals.	58%	32%	10%	100%

Note. The right answers are false (dose is the key variable, not source), true (e.g., healing from a sunburn), and false (only in the movies, thus far).

Combining answers to these three questions, 22% of respondents did not correctly answer any of the questions.¹⁰ Thirty-nine percent answered only one correctly, and 29% answered just two correctly. Ten percent of respondents correctly answered all three questions.¹¹

KNOWLEDGE OF WIPP'S BASIC DETAILS

Although only a small percentage of New Mexicans are familiar with the basic characteristics of radiation, a much larger percentage know some basic facts about WIPP. To measure New Mexicans' knowledge of WIPP, interviewers asked a series of questions, and these are reported in the same order they were asked.

Forty-eight percent of respondents knew that WIPP was located in the Carlsbad area in New Mexico. Another 8% knew that it was located in the southeastern or southern part of the state, and an additional 2% knew it was in New Mexico but could give no specifics.

¹⁰ This analysis treated DK/NAs and incorrect answers as the same thing--answers that indicate the respondent does not know the *correct* answer. Those respondents who had dropped out prior to answering all three of the radiation questions were excluded from this analysis.

¹¹ The scale used in the next section groups respondents as follows: 22% with "low" knowledge (none correct out of 3 questions); 68% with "medium" knowledge (1 or 2 correct); and 10% with "high" knowledge (all 3 correct).

Another 8% gave a wide range of answers, some of which were incorrect locations in New Mexico (e.g., Roswell, which is near Carlsbad). Only 33% said that they did not know where WIPP was located.

Even fewer did not know what would be stored at WIPP. Interviewers asked an open-ended question: "To the best of your knowledge, what will be stored at the WIPP facility?" Only 27% of respondents said that they did not know, 5% said it would be chemical waste, 3% said it would be "toxic" or "hazardous" waste of some sort, 5% said it was waste of some unspecified kind, and 3% said it would be fuel rods from nuclear power plants.

The remaining 58% of responses were all "radioactive waste." Of those 321 respondents who knew radioactive waste would be stored there, 2% said there would be some high-level waste, 21% said it would only be low- or medium-level radioactive waste, and the other 77% did not specify the grade of radioactive waste that would be stored at WIPP.

At this point, interviewers read a short description of WIPP's location and purpose: "The federal government built the WIPP facility near Carlsbad, New Mexico, for the purpose of storing radioactive waste from the production of nuclear weapons in the United States." Interviewers then asked, "To the best of your knowledge, did the WIPP facility become fully operational during the 1970s, during the 1980s, during the 1990s, or is the WIPP facility not yet open?"

Nearly two-thirds (63%) of respondents said that WIPP was not yet open, 22% did not know the answer, 7% said it had opened this decade, and 8% said it had opened prior to 1990. Of the 350 respondents who said WIPP had not yet opened, 54% did not know when it would open, 7% did not answer, 3% said it was scheduled to open this year, 27% said it would open next year, and 8% said it wasn't scheduled to open until some time after next year.

Interviewers then asked respondents a question about what would happen if WIPP *did* open: "If the WIPP facility becomes fully operational, trucks will transport radioactive waste to the WIPP facility. In a typical week, how many trucks do you think will make deliveries to the WIPP facility?" Fifty-eight percent of respondents did not dare to venture a guess on this question, but among those who did give an

answer, the median response was 12 trucks per week. The most common response was 10 trucks/week; the mean response, which gives greater weight to the extremely high guesses--was 88 trucks/week.¹²

According to the DoE, the number of trucks that will arrive at WIPP in a given week is scheduled to increase from 2 trucks/week in 1998 to 17 trucks/week in 2003.¹³ Given this wide range, a reasonably correct answer would be between 1 and 20 trucks per week. From this perspective, 63% of those who chose to answer the question gave a correct answer. Of all respondents, 27% gave a correct answer.

UNDERSTANDING WHO STUDIES AND REGULATES WIPP

In addition to these general details about WIPP, interviewers asked two questions about the agencies with important responsibilities regarding WIPP. First, interviewers asked respondents who they thought was "most directly responsible for conducting scientific research on the safety of the WIPP facility." Respondents chose from the list of public entities listed in Table 4, though the *ordering* of these choices was randomly determined for each individual respondent. Table 4 shows that the most common guess (33%) was the correct one--the DoE, which was followed by the EPA (22%) and "I don't know" (21%). Twenty-three percent gave a wide range of other guesses.

¹² Some of the estimates were quite high. Eighteen percent of the estimates given were 100 trucks/week or higher. Two percent were 1000 trucks/week or higher, including four estimates of 2000 trucks/week.

¹³ DoE, *WIPP Highway Shipment Routes in New Mexico and the United States* (February, 1996). The shipment schedule is displayed on page #496R:6944e.

Table 4
Public Perceptions of Who Is Responsible
for WIPP Research and Safety
Certification

Institution/Agency/Organization	Who Does Research	Who Decides If WIPP Is Safe
U.S. Dept. of Energy	33%	26%
U.S. Environmental Protection Agency	22%	28%
NM State Government	4%	10%
Dept. of Defense	10%	6%
NM Environmental Evaluation Group	5%	8%
U.S. Dept. of Transportation	4%	2%
I don't know	21%	19%
Total	100%	100%

Just as one-third of respondents gave the correct answer to this first question, so did 28% correctly identify the EPA as the entity “most directly responsible for conducting scientific research on the safety of the WIPP facility.” A nearly equal proportion of respondents (26%) guessed that the DoE had this responsibility, and 19% said they did not know the answer. Twenty-six percent guessed that one of the other listed entities had primary responsibility for deciding whether WIPP was safe to open.

Table 4 also shows responses to a second question, “To the best of your knowledge, who is most directly responsible for deciding whether WIPP is safe to open?” Twenty-eight percent of respondents correctly answered that the EPA had this responsibility, but a nearly equal proportion (26%) guessed that the DoE played this role. Nineteen percent said they did not know who had primary regulatory responsibility. In sum, roughly equal percentages of New Mexicans guessed that the DoE or the EPA had the most direct responsibility for evaluating the safety of WIPP.

OVERALL KNOWLEDGE OF WIPP

As with the radiation questions discussed above, we combined these responses into a composite knowledge index. Each correct response was given a value of one, and responses were summed across the six WIPP knowledge questions.¹⁴ Only 1% of respondents answered all six questions correctly; however, 12% got five correct, and 22% got four correct. Another 26% answered three questions correctly, 16% answered two correctly, 13% answered one correctly, and 11% answered none correctly. Put another way, 61% of respondents correctly answered three or more of the six WIPP knowledge questions.¹⁵

IMPLICATIONS FOR THE WIPP DEBATE

Most New Mexicans have a fair amount of knowledge about WIPP but less understanding of radiation, which is the most visible aspect of the WIPP project. Average New Mexicans know that radioactive materials are going to WIPP, but they do not know who is studying or certifying the safety of the transport and storage of those materials. In sum, New Mexicans' existing knowledge about WIPP shows that the public has already learned about WIPP through the media and other means, but there remains enough ignorance about WIPP--and especially the WIPP regulatory and oversight process--to justify a public information campaign on the subject.

¹⁴ Correct answers were as follows: correct locations were Carlsbad area, Southern or Southeastern New Mexico, Eddy County, New Mexico (no location), and answers that said it was "near"--but not in--another Southeastern city; correct storage answers were any answer specifying radioactive or atomic waste; correct opening date was "not yet open;" correct number of trucks/week was between 1 and 20; correct primary researcher was DoE; correct primary regulator was EPA. Respondents who dropped out before the last knowledge question were not given a score on this knowledge scale.

¹⁵ The scale used in the next section groups respondents into three categories: 40% with "low" knowledge of WIPP (0-2 correct answers out of 6 questions); 48% with "medium" knowledge (3-4 correct); and 13% with "high" knowledge (5 or 6 correct).

4. CURRENT PUBLIC OPINION TOWARD WIPP

Together, the preceding discussions provide a portrait of New Mexicans' general attitudes and knowledge base on topics related to WIPP. New Mexicans have a general faith in science but are suspicious of scientists who are dependent on a self-interested employer. By contrast, the New Mexico public has a positive image of the EPA and doubts that the agency would reach conclusions that conflict with its principles. We also saw that many New Mexicans have misconceptions about radiation, but the state's citizens have at least some basic knowledge about WIPP.

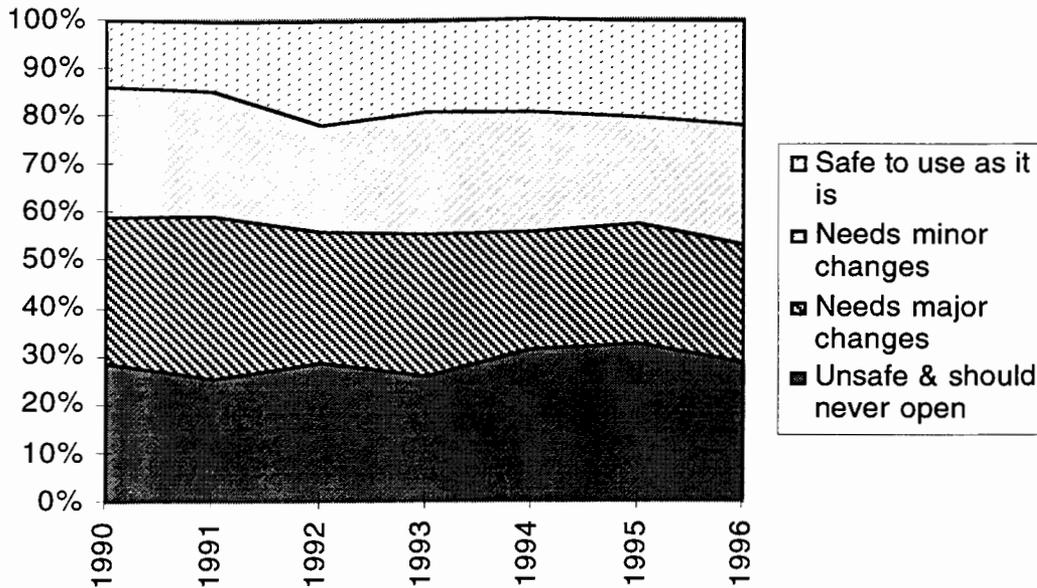
These attitudes and beliefs suggest that New Mexicans are probably not very favorable toward WIPP. First, New Mexicans are not familiar with radiation, but they know that the WIPP project will transport and store radioactive waste in New Mexico. Second, although many government scientists have reassured New Mexicans that the materials going to WIPP are unlikely to harm them, most citizens do not know who *conducted* the research on the subject. Third, although citizens trust the judgment of the EPA, few know that the agency has a significant regulatory role regarding WIPP. Most of those that do know of this role also understand that WIPP is not yet open--the Plant does not yet have a final certification from EPA, or anyone for that matter. These factors suggest that few New Mexicans know enough about WIPP and the research behind it to support opening it.

Previously collected data supports this general portrait of New Mexicans' opinions toward WIPP. Since 1990, the Institute for Public Policy has collected data on this issue in its periodic *Quarterly Profiles*. The standard question asked in these quarterly surveys is as follows:

There has been much controversy over WIPP, the Waste Isolation Pilot Plant in New Mexico, which is to serve as a permanent storage facility for low- and medium-level radioactive waste. Which of the following best represents your view? WIPP is: unsafe and should never be opened; unsafe but may be made safe with MAJOR changes; only slightly unsafe and can be made safe with MINOR changes; or WIPP is safe to use as it is?

Figure 2 shows the average annual responses to this question among New Mexico respondents. The figure shows that there has not been dramatic change in the responses given to this question, with a majority viewing the Plant as needing major changes or never being safe to open.

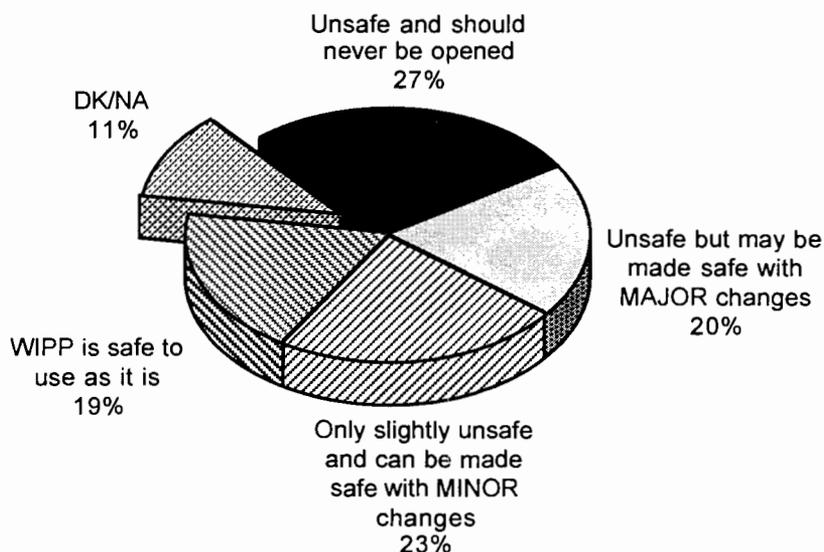
Figure 2
New Mexicans' Average Annual Views of
WIPP's Safety from 1990-1996



CURRENT ATTITUDES

Figure 3 shows that the present survey obtained similar results: only 19% of New Mexicans surveyed said that WIPP is “safe to use as it is.” Another 23% said that the facility could be safe to open with “minor changes.” Twenty percent said the Plant needed “major changes,” and 27% said it should never be opened.

Figure 3
New Mexicans' Views of WIPP's Safety



To check the accuracy of these findings, a second question was asked on the subject: “If a statewide vote were held today, and you could vote on whether or not the WIPP facility should be opened, would you vote to open the WIPP facility or not to open the WIPP facility?” In response, 55% were against opening WIPP, 39% supported opening it, 1% would not vote, and 5% gave DK/NA responses.

Removing the DK/NAs and collapsing response categories, these two questions elicited similar answers. For the first question, 53% said WIPP should not be opened or needed “major” changes, and in the second question, 59% of valid responses opposed opening WIPP. Regardless of the question wording, a majority of those surveyed clearly opposed opening WIPP.

Answers to the two questions were also similar for individual respondents. Fifty-one percent of those who would vote to open WIPP today said that it was safe to open already, 39% said it needed minor changes, and 9% said it needed major changes, and only 1% initially said it should never be opened. Of those who said they would vote against WIPP if a referendum were held today, 52% said WIPP should never be opened, 31% said it needed major changes, 15% said it needed minor changes, and only 1% initially said it was already safe to use.

VARIATIONS IN CURRENT ATTITUDES

Beyond this general finding, it is also possible to contrast the views of the different subgroups of respondents identified in previous sections of this report. Recall that we have delineated subgroups according to varying attitudes toward (a) scientists and (b) the EPA, as well as differences in knowledge of (c) radiation and (d) WIPP.

Table 5 shows that there is a striking pattern of differences within all four of these categorizations. The groups that show the strongest opposition to WIPP are those skeptical toward scientists, those least favorable toward the EPA, and those with less knowledge of radiation and WIPP. The counterparts of these groups had less severe concerns about WIPP's safety and were far more likely to support opening the Plant.

Table 5
Opinions toward WIPP within Different
Subgroups

Subgroup of Respondents	Percentage in Each Subgroup Who Say that WIPP Should Never Be Opened	Percentage in Each Subgroup Who Would Vote Against Opening WIPP
Skeptical toward Scientists	46%	72%
Neutral toward Scientists	24%	54%
Strong Faith in Scientists	8%	39%
Less Favorable toward EPA	53%	79%
Moderately Favorable toward EPA	20%	49%
Very Favorable toward EPA	11%	44%
Low Knowledge of Radiation	54%	82%
Medium Knowledge of Radiation	25%	54%
High Knowledge of Radiation	12%	38%
Low Knowledge of WIPP	43%	72%
Medium Knowledge of WIPP	28%	55%
High Knowledge of WIPP	9%	35%

Note. Only the response percentages shown in the right-hand column of this table are based on frequencies *excluding* DK/NA responses. For example, the table shows

that 72% of those skeptical toward scientists would vote against WIPP; the remaining 28% would vote for it.

For example, 46% of those categorized as “skeptical toward scientists” said that WIPP should never be opened, and 72% of the respondents in this category said they would vote against WIPP if a referendum were held today. By contrast, only 8% of those labeled as having a “strong faith in science” said that WIPP should never be opened, and only 39% of this group would vote against opening WIPP today.

Another way to look at these data is to break down “WIPP supporters” and “WIPP opponents” in terms of the four categorizations shown in Table 5. The patterns were not as striking, but WIPP proponents generally showed more faith in science, more favorability toward the EPA, greater knowledge of radiation, and greater familiarity with WIPP. For example, the modal number of correct answers among those respondents favoring opening WIPP was four, compared to three correct answers for those opposing WIPP.

VARIANCE AS EXPLANATION

The preceding discussion contrasted average public opinion in different groups to show how New Mexicans with different attitudes and beliefs vary in their perspectives on WIPP. One can look again at these differences as “explanations” for public opinion toward WIPP. For instance, if people with more faith in science are more supportive of WIPP, perhaps this faith--or the lack thereof--is one *explanation* for why New Mexicans hold the views they do toward the Plant.

Logit regression is a simple method for looking at the explanatory power of the variables studied thus far. Faith in science, attitude toward EPA, and knowledge of radiation and WIPP can all be combined into a single set of explanatory variables. The most appropriate dependent variable for such an equation is the dichotomous referendum question.¹⁶

¹⁶ Although the dependent variable in a regression equation is normally continuous, logit regression analysis permits the use of a dichotomous (0, 1) dependent variable. For the logit regression analysis, the four independent variables previously treated as trichotomies are returned to their continuous forms to increase their power. Jan Kmenta, *Elements of Econometrics* (New York: MacMillan, 1971), pp. 461-462.

Using this regression method, each of the four independent variables has a statistically significant relationship with the dependent variable. With those four variables, the model correctly predicts over 70% of the referendum votes on WIPP (see Table 6). One way to interpret this is as follows: 59% of those who voted in the referendum question opposed opening WIPP, so you could correctly predict 59% of all responses simply by guessing that a given respondent would oppose WIPP. If you also knew a given respondent's scores on the four variables in Table 6 (and you took those scores into account), your accuracy would improve from 59% to 70%.

IMPLICATIONS FOR THE WIPP DEBATE
 These data show that most New Mexicans oppose opening WIPP at present, and even some of WIPP's proponents still have concerns about its safety. WIPP's opponents are more skeptical of science, less favorable toward the EPA, and less familiar with radiation and WIPP itself; thus, scientists and the EPA may not be able to persuade some opponents of WIPP's safety. Opponents may reconsider their views, however, if given more information about radiation and WIPP. On the other hand, WIPP proponents might change their minds if scientists and/or the EPA came out against WIPP, since proponents hold both groups in high regard.

Table 6
Explanation of Opposition toward WIPP
Using Four Independent Variables

Independent Variable	Std. Error	Std. Coeff.	P-value
Faith in scientists	0.32	0.94	< .01
Favorability toward EPA	0.27	-1.28	< .01
Knowledge of Radiation	0.14	-0.65	< .01
Familiarity with WIPP	0.08	-0.27	< .01

Note. For the dependent variable, favoring opening WIPP was coded as "0" and opposing the opening was coded as "1." The model chi-square was 99.67, with four degrees of freedom (p < .001).

5. THE EFFECT OF EPA DECISIONS ON NEW MEXICO PUBLIC OPINION

Given New Mexicans' initial beliefs and attitudes toward WIPP, scientists, and the EPA, how will citizens respond to the decisions that EPA and diverse oversight groups reach in regard to WIPP during the coming year? If these events receive substantial publicity, they could have a dramatic impact on public attitudes toward WIPP.

To better understand the implications of these possible events, interviewers asked respondents to imagine three different hypothetical scenarios and how those scenarios would affect respondents' views. The order of the scenarios was random for each respondent, but each heard the same preface:

In 1992 an Act of Congress gave the EPA--the U.S. Environmental Protection Agency--the authority to decide whether or not the WIPP facility is safe to open. WIPP will not be opened unless the EPA agrees that WIPP meets EPA safety standards for radioactive and hazardous waste disposal. The EPA is scheduled to determine the safety of the WIPP facility in 1997.

This year, the U.S. Department of Energy is currently completing its scientific assessment of the impact WIPP will have on New Mexicans' health and their environment. Next year, the EPA will review these findings and decide whether or not WIPP is safe to open. Other groups will oversee the EPA's evaluation of WIPP, and these independent oversight groups will make their own, unofficial judgments about WIPP.

The following three questions ask how you would react to the decisions that the EPA and the independent oversight groups might reach about WIPP in the coming year.

EPA & OVERSIGHT APPROVAL OF WIPP

One possible scenario was presented as follows:

Imagine that next year the EPA decides that WIPP does meet all EPA safety standards, and most of the

independent oversight groups agree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision to certify the WIPP facility as safe to open?

In response, 19% of respondents said they would strongly support the EPA's decision, 42% said they would support it, 22% said they would oppose it, and 18% said they would strongly oppose it. In other words, even if the EPA and oversight groups both agree that WIPP is safe to open, 40% of respondents would still oppose opening WIPP.

When this figure is compared with the earlier WIPP referendum question, it suggests that this scenario might result in a significant drop in opposition to WIPP. Of those respondents who originally said they would oppose opening WIPP if a referendum were held today, 35% said they would support opening WIPP if the EPA and oversight groups said it was safe to open.

EPA APPROVAL AND OVERSIGHT DISAPPROVAL

A second scenario was one in which the EPA certified WIPP as safe but the oversight groups disagreed:

Imagine that next year the EPA decides that WIPP does meet all EPA safety standards; however, most of the independent oversight groups disagree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision to certify the WIPP facility as safe to open?

In this situation, only 11% would strongly support the EPA's decision to certify WIPP, 23% would support its decision, 37% would oppose it, and 28% would strongly oppose it. If the EPA said WIPP was safe but oversight groups disagreed, only 34% of respondents would support the EPA's decision.

Compared to the aforementioned referendum question, this figure shows a net drop in support for opening WIPP. Consistent with this general finding, 35% of those who would support opening WIPP today would *oppose* the EPA's decision to certify WIPP if the oversight groups disagreed with the EPA.

EPA DISAPPROVAL AND OVERSIGHT DISAPPROVAL

Finally, another possible scenario is one in which both the EPA and oversight groups determine that WIPP is not safe to open:

Imagine that next year the EPA decides that WIPP does not meet all EPA safety standards, and most of the independent oversight groups agree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision NOT to certify the WIPP facility as safe to open?

In this scenario, support for the EPA's decision was overwhelming: 39% would strongly support its decision to *not* certify WIPP, 38% would support it, 13% would oppose, and 9% would strongly oppose it. One implication is that even with the EPA and oversight groups labeling WIPP unsafe, 22% of respondents would appear to favor opening WIPP.

This scenario shows a dramatic drop in support for WIPP, but the opposition to the EPA's decision is not simply strident support for WIPP. Not surprisingly, 30% of those who would vote to open WIPP today would oppose the EPA's refusal to certify WIPP, but 18% of those who currently oppose WIPP would *also* oppose the EPA's decision. Those who would oppose the EPA's decision to *not* certify WIPP would appear to do so not only because of their views toward WIPP, but also based on other considerations, such as their view toward the EPA.

WHOSE OPINION MIGHT CHANGE?

In each of these three scenarios, some respondents said they would change their minds in response to the judgments reached by the EPA and oversight groups. Were these respondents any different from those that did not change their minds?

The first scenario gave WIPP opponents a reason to support opening WIPP. Those who initially opposed opening WIPP were more likely to change their mind if they had greater faith in science and the EPA. Fifty-seven percent of WIPP opponents with a strong faith in science supported the EPA's decision in this scenario, compared to 38% of those neutral toward science and 29% of those skeptical toward science. Similarly, 58% of those WIPP opponents very favorable toward EPA supported its hypothetical decision to open WIPP, as did 49% of

those moderately favorable toward EPA; only 17% of those less favorable toward EPA supported its decision in this first scenario.

In the second scenario, the EPA certified WIPP as safe to open, but the oversight groups disagreed. This ambiguous scenario created an opportunity for both opponents and proponents to change their minds. Forty-three percent of those initial WIPP supporters who were skeptical toward science sided with the oversight groups by opposing the EPA's decision, compared to only 37% of those WIPP supporters neutral toward science and 29% of those with a strong faith in science. Twenty-six percent of those initial WIPP opponents most favorable toward the EPA shifted their support to WIPP in this scenario--despite opposition by oversight groups; only 17% of WIPP opponents neutral toward the EPA sided with the agency in this scenario, as did only 3% of those less favorable toward the EPA.

In the third scenario, WIPP proponents had the opportunity to turn against WIPP in response to both EPA and oversight groups finding WIPP unsafe. The majority of all subgroups of WIPP supporters chose to oppose WIPP in this circumstance, regardless of their views toward scientists or the EPA.

In sum, those most persuadable were favorable toward EPA and scientists, but knowledge had no impact on the willingness to change one's mind. This is not surprising, because the scenarios that could induce cognitive change all hinged on the actions of the EPA and

IMPLICATIONS FOR THE WIPP DEBATE

New Mexicans appear willing to change their minds toward WIPP depending on the decisions reached by the EPA and independent oversight groups in the coming year. If the EPA certifies WIPP as safe to open, public opinion will tend to support the decision *only if* oversight groups are generally in agreement with the agency. On the other hand, if both the EPA and oversight groups determine that WIPP is unsafe, this will profoundly shift public opinion in New Mexico against WIPP. In general, those people most likely to change their minds are those predisposed to trust scientists and WIPP.

oversight groups, many of which consist of scientists. The only exception is that it was the skeptical WIPP proponents who were most likely to drop their support for WIPP when the oversight groups disagreed with the EPA and declared the Plant unsafe. Perhaps these respondents viewed this scenario as one that pitted government scientists against independent citizens; given their skepticism toward science, the respondents chose to side with the oversight groups, even though this meant changing their own assessments of WIPP's safety.

6. MULTIPLE PUBLICS AND THEIR DIFFERENT VIEWS

The preceding sections portray public opinion toward WIPP and how it varies among groups with different basic attitudes and beliefs toward scientists, the EPA, WIPP, and radiation. This final section complements earlier discussions by examining the variance in views toward WIPP among more traditional groupings of the New Mexico population. In these final analyses, we will see how views toward WIPP vary among men and women, Anglos and Hispanics, Democrats and Republicans, and citizens with different levels of political efficacy.

THE GENDER GAP

Men and women differ substantially in their views toward WIPP: only a third of women (33%) indicated that they would support opening the Plant if there were a referendum on the issue, but a slight majority of men (52%) would favor opening the facility. Among WIPP supporters, the views of women also appear to be more resistant to change than those of men: 68% of women supporting WIPP would change their minds in one or more of the scenarios discussed above compared to 79% of men favoring WIPP.¹⁷ The views of male and female WIPP

¹⁷ "Changing one's mind" is defined as follows: for WIPP supporters, it means supporting the EPA's hypothetical decision to *not* certify WIPP or opposing the EPA's hypothetical decision to certify WIPP; for WIPP opponents, it means supporting the EPA's hypothetical decision to certify WIPP or opposing the EPA's decision to *not* certify WIPP.

opponents were equally resistant to change; only 35% of women and 39% of men changed their minds to become in favor of WIPP.

ETHNIC DIFFERENCES

Anglo and Hispanic respondents also differed in their views. Exactly half of all Anglos supported opening WIPP, but only 28% of Hispanic respondents agreed. Seventy-two percent of Anglo WIPP supporters were willing to change their minds compared to 88% of Hispanic WIPP supporters. However, Hispanic WIPP opponents were *less* willing to change their minds than their Anglo counterparts: 32% of Hispanic WIPP opponents said they would change their minds, compared to 43% of Anglo respondents.

POLICY PREFERENCES AND PARTISANSHIP

Political party membership may also have been a factor in respondents' views toward WIPP. A majority of Republican respondents (59%) said that they would support opening WIPP if a referendum were held today, but WIPP supporters made up a small minority (31%) of Democrats. There were no significant differences, however, in the willingness of Democrats and Republicans to change their minds on the issue.

POLITICAL EFFICACY

Finally, there is one more difference we wish to examine, and that is that variance in views among people with different levels of "political efficacy." Political scientists use this term to refer to people's political enthusiasm or confidence. A person high in political efficacy views herself as knowledgeable and capable in the world of politics, whereas a person with low political efficacy feels powerless and overwhelmed by the complexity of political decision making.

We measured political efficacy with four questions widely used in political science. Interviewees were asked if they agreed or disagreed with the following items:

Sometimes politics and government seem so complicated that a person like me can not understand what's going on.
(disagreement = high efficacy)

I feel I could do as good a job in public office as most other people. (agreement = high efficacy)

People like me do not have any say about what government does. (disagreement = high efficacy)

Voting is the only way people like me can have any say about how the government runs things. (disagreement = high efficacy)

Responses were averaged (with three items reversed), and the average score was used to indicate a respondent's level of political efficacy. We then created three roughly equal efficacy groups by defining score ranges for low (1 to 2.3), medium (2.31 to 2.9), and high political efficacy (3 to 4).

Using these ranges, 34% of those low on the political efficacy scale said they would support opening WIPP if a referendum were held today, compared to 41% of those with medium efficacy and a majority (52%) of those with high efficacy. We also found that WIPP supporters with low efficacy were less likely to change their minds compared to those with high efficacy (22% versus 30%). By contrast, WIPP opponents with low efficacy were *more* likely to change their minds (72% versus 61%).

INTEGRATING EXPLANATIONS OF VIEWS TOWARD WIPP

Combining these results, it appears that WIPP's supporters and opponents differ in their views and their knowledge bases, but they also differ considerably along political and demographic lines. WIPP supporters are disproportionately male, Anglo, Republican, and high efficacy citizens. These factors may complement views toward science and the EPA and knowledge of radiation and WIPP by explaining more of the variation in New Mexicans' views toward WIPP.

To test that hypothesis, we conducted correlation and regression analyses. We began by examining the individual correlations between all independent variables and votes on the WIPP referendum question. Table 7 shows which of the variables discussed above had the strongest correlation with views toward WIPP. The valence of the correlation indicates whether the association was negative or positive, and the absolute value of the correlation indicates its strength. Correlations range in strength from 0 to 1, and in social science, a correlation of .10 is small, .30 is medium-sized, and .50 is large. The

general finding was that the variables discussed in earlier sections tended to have a stronger relationship with views toward WIPP than did the demographic and political variables introduced in this final section (political partisanship being the exception).

Table 7
Correlations between Opposition to WIPP and Selected Attitudinal and Demographic Variables

Variable	View on WIPP (0 = open, 1 = do not open)
Faith in science	-.30*
Favorability toward EPA	-.31*
Knowledge of radiation	-.31*
Familiarity with WIPP	-.29*
Sex (0 = female, 1 = male)	-.18*
Ethnicity (0 = Anglo, 1 = Hispanic)	.20*
Partisanship (0 = Dem, 1 = Rep)	-.28*
Traditional political efficacy	-.15*

Note. * < .05. Correlations were calculated using pair-wise deletion. All attitudinal and knowledge variables used in these analyses were continuous, not trichotomized into low, medium, and high.

To look at the combined importance of these variables, we created a logit regression equation using all eight independent variables listed in Table 7. Table 8 shows the individual coefficients for each variable, and as a group, they correctly predict over three-quarters (76%) of the referendum votes on WIPP. Comparing this to the earlier regression equation that used only attitudes toward science and EPA and knowledge of radiation and WIPP, this new equation resulted in an increase of 6% in predictive accuracy.¹⁸ In sum, demographic and efficacy variables explain only slightly more of the variance in WIPP

¹⁸ One difficulty in comparing these equations is the difference in the samples used. This equation used a smaller sample because of the exclusion of respondents who did not identify themselves as Anglo or Hispanic, those who were neither Republican nor Democrat, and so on. The addition of independent variables usually reduces the sample size because it increases the number of respondents who have "missing data" on one or more variables in the equation.

attitudes than do the attitudinal and knowledge variables introduced in the earlier sections of this report.

Table 8
Explanation of Opposition toward WIPP
Using Eight Independent Variables

Independent Variable	Std. Error	Std. Coeff.	P-value
Faith in science	0.44	0.86	.05
Favorability toward EPA	0.39	-1.31	< .01
Knowledge of radiation	0.19	-0.46	.01
Familiarity with WIPP	0.13	-0.37	< .01
Sex (0 = female, 1 = male)	0.33	-0.49	.14
Ethnicity (0 = Anglo, 1 = Hispanic)	0.37	-0.73	< .05
Partisanship (0 = Dem, 1 = Rep)	0.34	-0.89	< .01
Traditional political efficacy	0.41	-1.26	< .01

Note. For the dependent variable, favoring opening WIPP was coded as "0" and opposing the opening was coded as "1." As in the previous logit regression, all attitudinal and knowledge variables used in these analyses were continuous variables. The model chi-square was 97.32 with eight degrees of freedom ($p < .001$)

Although the demographic and political variables in Table 8 do not add much to the explanatory power of the first four variables in the table, this does *not* mean they are insignificant. In fact, their primary role may be indirect through their influence on prior beliefs about science and the EPA and knowledge of WIPP. For instance, respondents with low political efficacy have less favorable views toward the EPA and more faith in science than their medium- and high-efficacy counterparts.¹⁹

Respondents with different demographic and political backgrounds were also consistently different in their knowledge of WIPP and radiation. Table 9 shows that the most knowledgeable respondents tended to be men, those with high political efficacy, Republicans, and Anglos.

¹⁹ Attitude toward science means for low, medium, and high efficacy were 2.7, 2.6, and 2.5, respectively, with all comparisons significant in an unpaired *t* test ($p < .05$). For the attitude toward EPA scale, means were 2.8, 2.9, and 2.9, with only the low-medium contrast significantly different.

Table 9
Difference in Radiation and WIPP Knowledge
among Different Political and Demographic
Groups

Demographic/Political Group	Average Number of Correct Answers	
	Radiation Questions	WIPP Questions
Men	1.4	3.1
Women	1.2	2.5
Anglo respondents	1.4	3.1
Hispanic respondents	1.1	2.4
Republicans	1.5	3.0
Democrats	1.1	3.0
High-Efficacy respondents	1.5	3.1
Medium-Efficacy respondents	1.3	2.8
Low-Efficacy respondents	1.1	2.6

Note. The radiation and WIPP questions are the same ones shown earlier in the report; there were three radiation questions and six WIPP knowledge questions. Using unpaired *t*-tests, differences are significant ($p < .05$) for all comparisons except Dem/Rep on WIPP knowledge and low/high comparisons with medium efficacy on WIPP knowledge.

A NOTE ON CHANGING ONE'S MIND

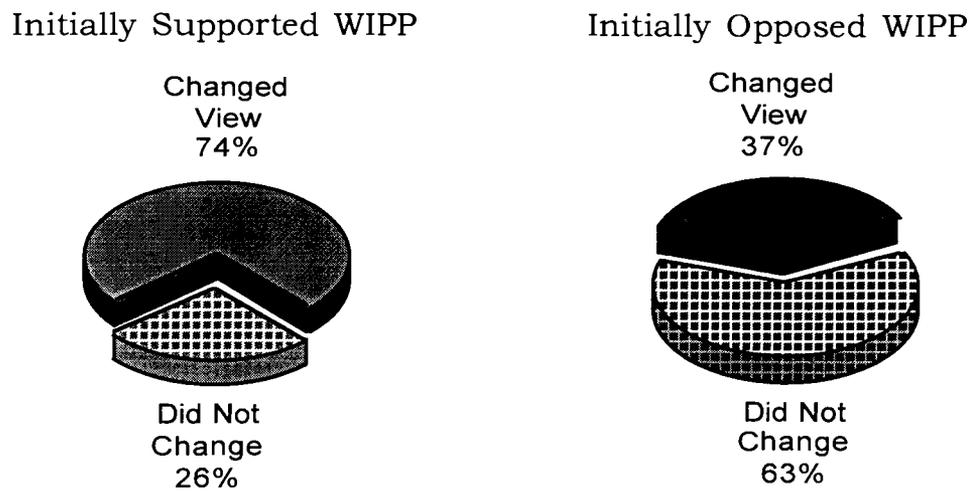
Although there were differences in the views toward WIPP among the different demographic and efficacy groups discussed above, there was relative stability in the willingness of these different groups to change their minds regarding WIPP. The more important contrast was between the resilience of WIPP supporters and opponents in response to

IMPLICATIONS FOR THE WIPP DEBATE

The average WIPP supporter is different from the average WIPP opponent in many respects: supporters are more often Anglo, male, Republican, and politically efficacious than their counterparts. Supporters are also different in that they are more likely to change their mind on the issue than are opponents. The latter fact is critical, because it implies that it will be easier to erode support for WIPP than to raise it any higher than its present level.

the three future scenarios. Figure 4 shows that 74% of WIPP supporters changed their mind in response to one or more scenarios, compared to only 37% of WIPP opponents. In other words, it appears that New Mexicans are more willing to change in the direction of perceived risk-avoidance than perceived risk-acceptance.

Figure 4
The Likelihood of Changing One's Mind
Broken Down by Support or Opposition to
WIPP



CONCLUSION

Taken together, these data provide considerable insight into the WIPP debate in New Mexico. First of all, a majority of the state population currently opposes WIPP, and even many proponents believe that WIPP still needs at least minor changes. Second, some opponents appear willing to change their minds, but only if they perceive that *both* the EPA and the diverse oversight groups agree that WIPP is safe to open. Third, *anything short of such agreement is likely to increase substantially the number of WIPP opponents*. Prospective support for WIPP in New Mexico is more tenuous than opposition, but the

course of events in the coming year could prove decisive in shifting the balance of public opinion.

Another implication of these data is that views toward WIPP are not independent of respondents' other attitudes and beliefs. Those who already support WIPP have more positive views of science and the EPA, and they tend to be more familiar with the properties of radiation and with WIPP itself. With regard to these attitude differences, these data show how people gravitate toward an opinion based on prior beliefs: those who had more faith in the competence and sincerity of scientists were more likely to form a positive opinion toward WIPP, whose advocates include many scientists and federal government employees. As for the knowledge difference, the people who chose to support WIPP are also those who have more familiarity with the Plant and the radioactive waste that is scheduled to be stored in it. In all likelihood, the greater familiarity is associated with less uncertainty and fear about the Plant.

The links between public opinion toward WIPP and prior attitudes and knowledge have a very real significance for the WIPP debate. To some extent, people's views toward WIPP are anchored in prior beliefs: these prior beliefs accounted for nearly a quarter of the variance in attitudes toward WIPP. Like a ship on a loose anchor, public opinion toward WIPP may shift on the ocean surface, but its movement is constrained by a heavy anchor.

Section 6 showed that views toward WIPP are also linked to demographic differences. Support and opposition to WIPP is divided along gender, ethnic, and political lines. These divisions suggest that many members of the New Mexico public have placed WIPP within a much larger category of issues that divide along these same lines: in this view, if supporting WIPP is an Anglo male Republican position, then opposing WIPP is the likely stance of Democrats, women, and Hispanics alike. Moreover, the prior beliefs that influence views toward WIPP appear to be hooked to even more fundamental demographic and political population characteristics. Metaphorically, the heavy attitudinal anchor that steadies views toward WIPP is itself embedded in an unyielding demographic reef.

Finally, section 6 also showed that WIPP proponents are generally more efficacious than WIPP opponents. Although opponents outnumber proponents at present, this difference in efficacy creates a greater balance between the two sides, because citizens with greater efficacy are more politically active and vocal. Previous studies on political efficacy have linked it to a wide range of political behaviors, but the most general finding is that a belief in one's political competence leads to effective political action. In other words, WIPP's supporters are outnumbered but they are, on average, more politically influential. A vocal minority of New Mexicans supporting WIPP may make public opinion *appear* to be shifting toward WIPP; alternatively, the active minority may be effective in *shifting* public opinion toward WIPP. Either way, the efficaciousness of WIPP's supporters could make a difference in the unfolding WIPP debate in New Mexico.

APPENDIX A: QUESTION WORDING & RESPONSE FREQUENCIES

The following tables show question names and wording for the major substantive questions in the survey instrument. For most questions, we show the number and percentage of respondents selecting the different response categories for each survey question. For some continuous variables, we show three measures of “central tendency”, including the mean (average score), median (score of the 50th percentile), and mode (most commonly reported score). Lists of verbatim responses for open-ended questions are not shown in this summary.

For most items, the target population was all New Mexico households, and this is the target population when none is specified. However, when interviewers posed a question to only a subset of the overall sample, the relevant target population is noted. For every target population, sample sizes are reduced by any missing data. Fifty-four respondents dropped out of the survey after beginning it; this had the greatest effect on questions toward the end of the survey. Do not confuse missing data with “DK/NA” and “Refusal” responses, which were coded as -99 and -98, respectively. Additional analytic notes, instructions to the interviewers, and implicit question prefaces are shown in brackets “[]” below.

LOCATION

To the best of your knowledge, where is the WIPP facility located?

#	Response Category	Count	Percent
1	Carlsbad area	271	48%
2	Southern/Southeastern NM or Eddy County	47	8%
4	New Mexico (no region specified)	11	2%
5	Nevada	0	0%
6	Arizona	0	0%
7	Western U.S. (no particular state)	0	0%
8	Somewhere else	46	8%
0	I don't know	187	33%
	No answer	0	0%
Totals		562	100%

STORAGE

To the best of your knowledge, what will be stored at the WIPP facility?

<<Verbatim response recorded>>

WHEN OPEN 1

The federal government built the WIPP facility in Carlsbad, New Mexico, for the purpose of storing radioactive waste from the production of nuclear weapons in the United States. To the best of your knowledge, did the WIPP facility become fully operational during the 1970s, during the 1980s, during the 1990s, or is the WIPP facility not yet open?

#	Response Category	Count	Percent
1	During 1970s	9	2%
2	During 1980s	34	6%
3	During 1990s	37	7%
4	Not yet open	350	63%
0	I don't know	121	22%
	No answer	4	1%
Totals		555	100%

WHEN OPEN 2

When is the WIPP facility scheduled to open?

#	Response Category	Count	Percent
1	WIPP is already open	1	0%
2	1996 (this year)	12	3%
3	1997	94	27%
4	1998	23	7%
5	1999	1	<1%
6	2000	5	1%
7	2001 or later	1	<1%
0	I don't know	190	54%
	No answer	23	7%
Totals		350	100%

Target Population: People who believe that WIPP is not yet open.

TRUCKS

If the WIPP facility becomes fully operational, trucks will transport radioactive waste to the WIPP facility. In a typical week, how many trucks do you think will make deliveries to the WIPP facility?

Descriptive Statistic

Mean	88
Median	12
Mode	10
Standard Deviation	288
Sample Size	242

Note. 324 of the 555 respondents asked this question declined to guess how many trucks would make deliveries to WIPP in a typical week. In other words, 58% of respondents did not choose to answer this question.

ACCIDENT

If one of the trucks carrying radioactive waste slid off the highway and tumbled down an embankment, how likely is it that the accident would cause harmful amounts of radiation to be released into the environment? Would you say it would be very likely, somewhat likely, somewhat unlikely, or very unlikely that such an accident would release harmful amounts of radiation?

#	Response Category	Count	Percent
1	Very likely	208	37%
2	Somewhat likely	127	23%
3	Somewhat unlikely	80	14%
4	Very unlikely	112	20%
0	I don't know	23	4%
	No answer	3	1%
Totals		553	100%

WHO RESEARCHES

Who is most directly responsible for conducting scientific research on the safety of the WIPP facility? Is it:

#	Response Category	Count	Percent
1	the U.S. Department of Energy	180	33%
2	the U.S. Environmental Protection Agency	120	22%
3	the New Mexico State Government	23	4%
4	the Department of Defense	57	10%
5	the New Mexico Environmental Evaluation Group	29	5%
6	the U.S. Department of Transportation	22	4%
0	I don't know	116	21%
	No answer	4	1%
Totals		551	100%

WHO CERTIFIES

To the best of your knowledge, who is most directly responsible for deciding whether WIPP is safe to open? Is it:

#	Response Category	Count	Percent
1	the U.S. Department of Energy	141	26%
2	the U.S. Environmental Protection Agency	151	27%
3	the New Mexico State Government	56	10%
4	the Department of Defense	31	6%
5	the New Mexico Environmental Evaluation Group	46	8%
6	the U.S. Department of Transportation	12	2%
0	I don't know	104	19%
	No answer	8	1%
Totals		549	100%

PREFACE 1

I am now going to read you a series of statements about radiation. Please indicate whether you think each statement is definitely true, probably true, probably false, or definitely false.

[The ordering of the next three questions was randomized.]

EQUAL DOSE

Even if the dose is the same, man-made radiation is more toxic to humans than naturally-occurring radiation.

#	Response Category	Count	Percent
1	Definitely false	76	14%
2	Probably false	92	17%
3	Probably true	206	38%
4	Definitely true	122	22%
	DK/NA	48	9%
Totals		544	100%

NEW SPECIES

Since the detonation of the first atomic bomb, man-made radiation is known to have resulted in new species of plants and animals.

#	Response Category	Count	Percent
1	Definitely false	129	24%
2	Probably false	186	34%
3	Probably true	111	20%
4	Definitely true	62	11%
	DK/NA	54	10%
Totals		542	100%

REPAIR BODY

The human body has the capability to repair tissue damage caused by exposure to radiation.

#	Response Category	Count	Percent
1	Definitely false	149	27%
2	Probably false	142	26%
3	Probably true	149	27%
4	Definitely true	52	10%
	DK/NA	52	10%
Totals		544	100%

WIPP1

There has been much controversy over WIPP, the Waste Isolation Pilot Plant in New Mexico, which is to serve as a permanent storage facility for low and medium level radioactive waste. Which of the following best represents your view?

#	Response Category	Count	Percent
1	Unsafe and should never be opened	146	27%
2	Unsafe but may be made safe with MAJOR changes	109	20%
3	Only slightly unsafe and can be made safe with MINOR changes	122	23%
4	Or, WIPP is safe to use as it is	102	19%
	DK/NA	61	11%
Totals		540	100%

WIPP VOTE

If a statewide vote were held today, and you could vote on whether or not the WIPP facility should be opened, would you vote:

#	Response Category	Count	Percent
1	To open the WIPP facility, or	209	39%
2	Not to open the WIPP facility?	295	55%
3	Would not vote	8	1%
	DK/NA	26	5%
Totals		538	100%

PREFACE 2

In 1992 an Act of Congress gave the EPA--the U.S. Environmental Protection Agency--the authority to decide whether or not the WIPP facility is safe to open. WIPP will not be opened unless the EPA agrees that WIPP meets EPA safety standards for radioactive and hazardous waste disposal. The EPA is scheduled to determine the safety of the WIPP facility in 1997.

This year, the U.S. Department of Energy is currently completing its scientific assessment of the impact WIPP will have on New Mexicans' health and their environment. Next year, the EPA will review these findings and decide whether or not WIPP is safe to open. Other groups will oversee the EPA's evaluation of WIPP, and these independent oversight groups will make their own, unofficial judgments about WIPP.

The following three questions ask how you would react to the decisions that the EPA and the independent oversight groups might reach about WIPP in the coming year.

[The ordering of the next three questions was randomized.]

EPA+ & OVER+

Imagine that next year the EPA decides that WIPP does meet all EPA safety standards, and most of the independent oversight groups agree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision to certify the WIPP facility as safe to open?

#	Response Category	Count	Percent
1	Strongly oppose	93	17%
2	Oppose	112	21%
3	Support	215	40%
4	Strongly support	98	18%
	DK/NA	15	3%
Totals		533	100%

EPA+ & OVER-

Imagine that next year the EPA decides that WIPP does meet all EPA safety standards; however, most of the independent oversight groups disagree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision to certify the WIPP facility as safe to open?

#	Response Category	Count	Percent
1	Strongly oppose	143	27%
2	Oppose	191	36%
3	Support	119	22%
4	Strongly support	58	11%
	DK/NA	22	4%
Totals		533	100%

EPA- & OVER-

Imagine that next year the EPA decides that WIPP does not meet all EPA safety standards, and most of the independent oversight groups agree with the EPA's decision. Would you strongly support, support, oppose, or strongly oppose the EPA's decision NOT to certify the WIPP facility as safe to open?

#	Response Category	Count	Percent
1	Strongly oppose	49	9%
2	Oppose	69	13%
3	Support	196	37%
4	Strongly support	202	38%
	DK/NA	15	3%
Totals		531	100%

PREFACE 3

Next I'd like to read you some statements regarding your views on the EPA. Please tell me if you strongly agree, agree, disagree, or strongly disagree with each of the following statements.

[The ordering of the next five questions was randomized.]

NM CONCERNS

I trust that the EPA will take into account the concerns of New Mexicans like me when it evaluates the safety of the WIPP facility.

#	Response Category	Count	Percent
1	Strongly disagree	45	9%
2	Disagree	94	18%
3	Agree	292	56%
4	Strongly agree	79	15%
	DK/NA	12	2%
Totals		522	100%

COMPETENT

The EPA has the technical and scientific training necessary to evaluate the safety of the WIPP facility.

#	Response Category	Count	Percent
1	Strongly disagree	32	6%
2	Disagree	94	18%
3	Agree	280	53%
4	Strongly agree	52	10%
	DK/NA	66	13%
Totals		524	100%

PROTECT HEALTH

When the EPA evaluates the WIPP facility, it will be motivated by genuine concern for protecting human health and the environment.

#	Response Category	Count	Percent
1	Strongly disagree	28	5%
2	Disagree	116	22%
3	Agree	285	54%
4	Strongly agree	70	13%
	DK/NA	22	4%
Totals		521	100%

EPA OPEN

The EPA would certify the WIPP facility to open even if the EPA learned that the facility did pose a threat to human health or the environment.

#	Response Category	Count	Percent
1	Strongly disagree	133	25%
2	Disagree	259	49%
3	Agree	90	17%
4	Strongly agree	18	3%
	DK/NA	25	5%
Totals		525	100%

CONGRESS OPEN

The U.S. Congress would pass a law opening WIPP even if the EPA found that the WIPP facility threatened human health or the environment.

#	Response Category	Count	Percent
1	Strongly disagree	167	32%
2	Disagree	233	44%
3	Agree	83	16%
4	Strongly agree	17	3%
	DK/NA	22	4%
Totals		522	100%

READ EPA

Have you read any brochures or written materials about the WIPP facility that were published by the U.S. Environmental Protection Agency?

#	Response Category	Count	Percent
0	No	423	81%
1	Yes	71	14%
	DK/NA	22	4%
Totals		520	100%

ATTEND MEETING

Have you attended any public hearings or public meetings regarding the WIPP facility?

#	Response Category	Count	Percent
0	No	484	93%
1	Yes	36	7%
	DK/NA	0	0%
Totals		520	100%

NO ATTEND

What is the main reason why you have not attended a public hearing or meeting regarding the WIPP facility?

<<Verbatim response recorded>>

YES ATTEND

What is the main reason why you attended a public hearing or meeting regarding the WIPP facility?

<<Verbatim response recorded>>

PREFACE 4

Next I'd like to read you some statements regarding your views on politics. Please tell me if you strongly agree, agree, disagree, or strongly disagree with each of the following statements.

[The ordering of the next seven questions was randomized.]

NO SAY

People like me do not have any say about what government does.

#	Response Category	Count	Percent
1	Strongly disagree	73	14%
2	Disagree	272	53%
3	Agree	123	24%
4	Strongly agree	41	8%
	DK/NA	9	2%
Totals		518	100%

VOTING

Voting is the only way people like me can have any say about how the government runs things.

#	Response Category	Count	Percent
1	Strongly disagree	46	9%
2	Disagree	200	39%
3	Agree	181	35%
4	Strongly agree	89	17%
	DK/NA	2	<1%
Totals		518	100%

COMPLICATED

Sometimes politics and government seem so complicated that a person like me can not understand what's going on.

#	Response Category	Count	Percent
1	Strongly disagree	40	8%
2	Disagree	181	35%
3	Agree	220	42%
4	Strongly agree	74	14%
	DK/NA	4	1%
Totals		519	100%

GOOD JOB

I feel I could do as good a job in public office as most other people.

#	Response Category	Count	Percent
1	Strongly disagree	29	6%
2	Disagree	211	41%
3	Agree	209	40%
4	Strongly agree	64	12%
	DK/NA	6	1%
Totals		519	100%

GOVT WILL HEAR

If a government agency does something I don't like, I make sure they hear about it.

#	Response Category	Count	Percent
1	Strongly disagree	19	4%
2	Disagree	170	33%
3	Agree	263	51%
4	Strongly agree	51	10%
	DK/NA	14	3%
Totals		518	100%

GEN INFLUENCE

On most issues, I believe that I can influence the decisions that government agencies make.

#	Response Category	Count	Percent
1	Strongly disagree	32	6%
2	Disagree	229	44%
3	Agree	228	44%
4	Strongly agree	25	5%
	DK/NA	5	1%
Totals		519	100%

WIPP INFLUENCE

I believe that I can influence the decisions that government agencies make specifically with regard to WIPP.

#	Response Category	Count	Percent
1	Strongly disagree	23	4%
2	Disagree	211	41%
3	Agree	225	43%
4	Strongly agree	38	7%
	DK/NA	22	4%
	Totals	519	100%

PREFACE 5

Next I'd like to read you some statements regarding your views on science and the environment. Please tell me if you strongly agree, agree, disagree, or strongly disagree with each of the following statements.

[The ordering of the next six questions was randomized.]

DISASTROUS

When science interferes with nature, it often produces disastrous consequences.

#	Response Category	Count	Percent
1	Strongly disagree	15	3%
2	Disagree	158	31%
3	Agree	271	53%
4	Strongly agree	58	11%
	DK/NA	12	2%
	Totals	514	100%

CAN'T UNDERSTAND

The delicate balance of nature is too complex for science to understand.

#	Response Category	Count	Percent
1	Strongly disagree	31	6%
2	Disagree	265	51%
3	Agree	166	32%
4	Strongly agree	38	7%
	DK/NA	14	3%
	Totals	514	100%

FAIL TO SEE

Scientists often fail to see how their actions can endanger human health and the environment.

#	Response Category	Count	Percent
1	Strongly disagree	22	4%
2	Disagree	201	39%
3	Agree	244	47%
4	Strongly agree	41	8%
	DK/NA	6	1%
Totals		514	100%

INDEPENDENCE

For scientists to do unbiased work, they must have independence from whoever funds the research.

#	Response Category	Count	Percent
1	Strongly disagree	8	2%
2	Disagree	74	14%
3	Agree	325	63%
4	Strongly agree	91	18%
	DK/NA	15	3%
Totals		513	100%

UNBIASED

For the most part, we can count on scientists to provide unbiased research on potentially hazardous facilities.

#	Response Category	Count	Percent
1	Strongly disagree	21	4%
2	Disagree	172	33%
3	Agree	281	55%
4	Strongly agree	24	5%
	DK/NA	15	3%
Totals		513	100%

DATA FOR \$

Scientists are likely to give answers that are preferred by whoever pays them.

#	Response Category	Count	Percent
1	Strongly disagree	16	3%
2	Disagree	214	42%
3	Agree	219	43%
4	Strongly agree	45	9%
	DK/NA	20	4%
Totals		514	100%

AGE

How old are you?

Descriptive Statistic

Mean Age	45 years
Median Age	44 years
Modal Age	36 years
Standard Deviation	17 years
Sample Size	557

EDUC

What is the highest level of education you have completed?

Response Category	Count	Percent
Don't know/No answer	1	<1%
Elementary or some high school	51	9%
High school graduate/GED	149	26%
Trade or vocational certification	9	2%
Some college/Associates degree	169	30%
College graduate, or	120	21%
Post-grad degree	67	12%
Totals	566	100%

ETHNICITY

From the following options, do you consider yourself to be:

Response Category	Count	Percent
Don't know/No answer/Refused	4	1%
White, non-Hispanic	277	54%
Asian	7	1%
Black	6	1%
Hispanic	129	25%
American Indian	27	5%
Something else	63	12%
Totals	513	100%

INCOME

I'm going to read you some broad income categories. Please STOP me when I get to the one which includes the estimated annual income for your household for 1995.

Response Category	Count	Percent
Don't know/No answer	26	5%
Less than \$10,000	36	7%
10 to 20	68	14%
20 to 30 or,	100	20%
30 to \$40,000	62	13%
40 to \$50,000	63	13%
50 to 60	35	7%
60 to 70	36	7%
70 to 80	27	6%
80 to 90	7	1%
90 to 100 or	8	2%
More than \$100,000	21	4%
Totals	489	100%

Note. Income is ascertained using three questions that narrow down a respondent's income to one of the categories listed above. The question wording shown above is the final question asked of respondents.

SEX

As part of the survey, I need to ask: are you male or female?

Response Category	Count	Percent
Female	325	57%
Male	241	43%
Totals	566	100%

APPENDIX B: REASONS FOR ATTENDING OR NOT ATTENDING PUBLIC MEETINGS ON WIPP

Those respondents who said that they had attended a public meeting on WIPP were asked the following question: "What is the main reason why you attended a public hearing or meeting regarding the WIPP facility?" Those who had *not* attended such a meeting were asked, "What is the main reason why you have not attended a public hearing or meeting regarding the WIPP facility?" This appendix shows the verbatim answers given to these two questions.

REASONS GIVEN FOR ATTENDING WIPP PUBLIC MEETINGS.

- Because I know the tribal lands that the WIPP facility is based in and I always had doubts on how safe it would be.
- Because I live here and I have children.
- Because I wanted to be part of the general public opinion.
- Because one of the main roads to the WIPP facility is through Santa Fe, US Highway 84 -285.
- Because we live close to Los Alamos, and I wanted to know what was happening, and because of all the radiation and nuclear waste up there, and all of the things happening.
- Concern with the transportation and storage of hazardous waste.
- Concerned with the psychological narrative that WIPP presents to the public.
- Curiosities about the future of WIPP.
- Each individual has the right and responsibility for looking after his own environment.
- Employment.
- General interest.
- Having grown up in Los Alamos, I'm acutely aware of the dangers of radiation. The government has a history of using quick fixes in disposing of radioactive waste without considering the long term consequences.
- I attended because I am interested in what is going on in our state of New Mexico. Later on down the line we would have Nuclear pollution.
- I just wanted to be more knowledgeable because I am definitely for WIPP to be opened.
- I thought it was dumb that they are going to put toxic waste around all those people in New Mexico. Since there are so many people here.
- I wanted to know what they were talking about.
- I was a guest of a person who was truly seeking information on it.
- I was just unsure about it until I was better informed.
- I was working at the Holiday Inn; I kinda listened to what they were saying a little bit.
- Interest in the subject.
- It was a retired teachers meeting, I was a member, and they just had it.
- It was incidental, it was not the reason why I attended the discussion.
- Just to get information and because I don't want it in New Mexico. I know too many people that have cancer near the sites. I don't believe the radiation is truly containable.
- Like to keep and see what's going on see how far they are getting.
- Safety human life.
- The work that I do is in the field and we have projects along St. Francis drive, and they would be transporting the material along this route. I have people that work along that route and I am concerned for their safety.
- To find out what it is all about because trucks are going to be driving through Santa Fe and I live here and wanted to know what is going on.
- To find out what they had to say and get more information.
- To learn more about what they were planning to do, and how they proposed to keep salt from corroding their containers.
- To see if it was safe.

To see what they were going to do.
To stay informed of the site. I was a citizen of Carlsbad and I want to stay educated on the site because I find it very interesting.
To support its successful opening and operation.

To try to learn about the WIPP program with my friend.
To understand more about it, to see what was going on.
Wanted information.

REASONS GIVEN FOR NOT ATTENDING WIPP PUBLIC MEETINGS.

A lack of time, and they are conducted out of my area that I know of.
All I know about WIPP is what I've learned through the media, and that's really not that reliable.
At school.
Availability.
Basically, I haven't heard about them. Their not widely publicized.
Basically, lack of knowledge about when they were going to be. They don't really inform us about it.
Because as Mark Twain said: A camel is an animal put together by a committee.
Because I believe we need the facility.
Because I did not know they were available.
Because I don't agree with any thing that they say.
Because I have never heard of anything about the WIPP Facility.
Because I have never heard of them.
Because I have two tiny children, and I never get further than the grocery store.
Because I haven't heard about any meetings.
Because I haven't heard about them.
Because I haven't known of any local meetings.
Because I never know where it 's held and I never know where to go.
Because I place it in the hands of those who deal with WIPP.
Because I trust the EPA.
Because I was unaware of them.
Because I wasn't aware of it and am never home (trucker).
Because it has not been well published or I have not read about it.
Because it's not in our town.

Because its not an issue that is on television or the radio it's not continuously out there.
Because of my work schedule.
Because of physical handicap, I can not attend.
Because there hasn't been any in the community.
Because they are not in our regional area.
Because they have not told me to.
Because they were all anti.
Because we haven't had any meetings here.
Because we just moved to New Mexico, and I was not aware of the issue.
Because whatever I say at the meeting is not going to change what they do.
Because where they hold them is in Santa Fe or in some other seaport. it's too far.
Because, I'm trying to earn my bachelors degree.
Boring.
Busy dealing with my life, my kids.
Busy doing other things.
Busy I guess, but I listen to some of the news.
Busy man no time to go to things like that.
Did not know about it.
Did not know about it.
Did not know about it. I don't go places. I am just a house wife.
Did not know of one.
Did not know of them.
Did not know there were any.
Did not know when they were.
Didn't have that much interest in it.
Didn't know about any.
Didn't know about it.
Didn't know they were having meetings. I had no knowledge that they were having meetings.
Didn't know when they were occurring.

Didn't know where it was.
Distance and job time interferes.
Don't have time really.
Don't have time.
Don't know about it at all.
Don't know that there has been one
around where I live.
Don't know when they have them,
where, or even if they have them in
Albuquerque.
Don't know.
Due to my work schedule.
Enough media coverage to keep me
informed.
Family troubles and family business three
deaths in family.
General apathy.
Hasn't been that important.
Have no idea where they are held.
Have not been informed of any.
Have not heard about any.
Have not heard about them.
Have not heard much about it.
Have not made the time. Has always been
a conflict and there is travel time
involved. The government does what
ever they want, that's the
discouraging part.
Have not seen one advertised.
Have three jobs and have not made the
time.
Haven't been aware of any in my area.
Haven't been aware of any.
Haven't been aware of one.
Haven't been here that long.
Haven't had any knowledge of it.
Haven't heard about it.
Haven't heard about them.
Haven't heard anything about the
meetings.
Haven't heard of any in my area.
Haven't heard of any, I'm too busy.
Haven't heard of any.
Haven't heard of any.
Haven't heard of one where I live.
I agree that it should be opened and I'm
not going fight it.
I am disabled and not able to drive very
much.
I am disabled. Transportation is a big
problem for me.
I am in a wheel chair and it is very hard
for me to attend anything.

I am pretty well tied up and have a sick
daughter in a coma and don't have a
lot of time to attend these hearings
and meetings they have on that.
I am very busy in my work.
I barely have time to take a shower, let
alone attend meetings.
I basically would not attend one of those
because I believe they shouldn't store
nuclear waste in any part of the
world.
I did not feel that it was important for me
to attend.
I did not know about it.
I did not know of any.
I did not know that there were any about
it for the public.
I did not know they had any.
I didn't of any available in the area.
I didn't even know they had them.
I didn't have time.
I didn't know about it.
I didn't know about them.
I didn't know anything about it.
I didn't know exactly where they were
held.
I didn't know that there were any in
Albuquerque. If there were some in
Albuquerque I would have attended.
If there was an accessible way to get
information about the WIPP site, then
I would read the material.
I didn't know there was any.
I didn't know they had them.
I didn't know we had any around here.
I didn't know when they were taking
place. And even then I wouldn't
know if I would go.
I didn't know where they were having
them. I've only lived here six
months. They're not adequately
advertising open discussions or
meetings in the north, especially in
Farmington.
I didn't know.
I didn't pay attention.
I didn't think that there was one close by.
I disagree with the fact that they have to
transport it all through the state of
NM. The places where the labs are
and the big money is, keep the waste
where its originated and the highways
should be widened or they should be
better highways. (sic).

I don't believe there are any in our area.
The ones that have been held are too far away for me to attend because of my work schedule.
I don't believe there has been one in the area.
I don't believe there were any local.
I don't believe they've had one here, but if they did I wasn't aware of it.
I don't believe we have had one in Alamogordo.
I don't disagree that we need a nuclear waste depository. I want to see them open the one in Nevada also. We have to do something about our nuclear waste. This thing has been studied to death. These extensive studies are unnecessarily delaying opening.
I don't feel a need for me to do that.
I don't feel it does any good because the government will do what they want to do.
I don't go out to much for anything.
I don't have a way to go anywhere.
I don't have a way to go.
I don't have any reason for attending one.
I don't have any time.
I don't have any transportation.
I don't have the time right now.
I don't have time.
I don't have time.
I don't have time.
I don't know about it.
I don't know enough about the thing.
I don't know I have information on it.
I don't know if there's been a meeting close by; I would be more concerned about local radiation. Actually I think the EPA will do what it wants to do. I don't know how loudly they listen to our voice; I guess it would be a waste of time to attend.
I don't know if they have had any in Silver City.
I don't know if they've had any around here in Las Cruces.
I don't know of any. As far as I know there haven't been any, in this area at least.
I don't know of where they are being held. I haven't seen any thing on television or read anything about

where the meetings are being held locally.
I don't know that there were any meetings in the town I live in.
I don't know that they've had any here in town.
I don't know when they were held.
I don't know where one is at.
I don't know where they are. Probably not any in my town.
I don't know why.
I don't know, I just haven't. I have a kid, it just limits me from doing a lot of stuff.
I don't quite understand it, and I am not too interested.
I don't recall one around here.
I don't think any have been held in my area.
I don't think I've seen one over in our part of the state.
I don't think in our small area, which is Truth or Consequences, New Mexico, that they have had any that have been adequately publicized.
I don't think it would do any good, in Washington they are going to do what they want anyway.
I don't think it's a major issue. I'm not an expert on WIPP and have to rely on other people's decisions.
I don't think that their meetings are really publicized.
I don't think there's very much here.
I don't think they have had any here.
I don't think we've had any here in Farmington, and if we have, I have not been aware of it. If I knew we were having one, I would definitely attend.
I don't think we've had one here.
I doubt if there is one in Tucumcari, and even if there was I probably wouldn't go.
I feel fairly confident that precautionary measures have been planned for.
I feel like I'm very busy, and I'm too tired at the end of the day to do anything.
I figure its down in Carlsbad and the government knows more then I do and will make that decision.
I figure that until they get it totally agreed upon, they're not going open it.

I get the info I need from different news sources.
I guess I haven't known when they would be held.
I guess I'm not informed on the specific dates and times.
I guess I've never really thought about it.
I have an environmental illness and I can't attend the meetings.
I have heard nothing about it.
I have just moved to Roswell and I don't know anything about it. I've only lived here two years.
I have never heard of any being held.
I have never known where and when they are held.
I have no idea if they hold any in this town.
I have not been aware of any.
I have not had the time because of my work.
I have not heard about any.
I have not heard anything about it.
I have not heard from anybody about this matter at all. This survey is the first that I've heard about it.
I have not heard of any meetings.
I have not heard of any.
I have not heard of any.
I have not heard of any.
I have not heard when they are being held.
I have other priorities.
I haven't been aware of any meetings.
I haven't been aware of one going on.
I haven't been included. I haven't been appraised of when or where they are.
I haven't been notified either by the mail or any type of brochure or flyer announcing any meeting.
I haven't had any time, because I'm trying to take care of myself because I'm going to have a baby.
I haven't had it in my interests to do so.
I haven't had time and I have not been here long enough to find out about it.
I haven't heard about it until now.
I haven't heard about them.
I haven't heard anything about it.
I haven't heard of any around here.
I haven't heard of any around this area.
I haven't heard of any here.
I haven't heard of any in the area.

I haven't heard of any kind of meeting.
I've been unaware of this issue until you called.
I haven't heard of any meetings.
I haven't heard of any, and I probably wouldn't go anyway.
I haven't heard of any.
I haven't heard of any.
I haven't heard of one that would be convenient to attend.
I haven't heard or been informed about them.
I haven't heard that they have held any, and we have only been here for a year.
I haven't known about them.
I haven't known of any in my area.
I haven't known of one near me.
I haven't paid any attention to it, to be honest.
I haven't physically been able to.
I haven't seen it published.
I haven't thought about it.
I just don't have time.
I just don't pay attention to the news.
I just haven't.
I just haven't.
I just moved here. I haven't gotten involved in much of anything yet.
I just moved out here actually.
I just moved to New Mexico; I don't even know what it is.
I just never thought of it.
I just never went.
I just read it in the newspaper and didn't feel it necessary to attend anything.
I just recently moved here.
I know a good deal about WIPP just from work.
I live far away from where ever they are.
I never even heard about it.
I never have been invited to.
I never heard anything about it.
I never heard anything about it.
I never heard of any or the WIPP facility.
I never heard of it and didn't know what's going on. This is a small town and I don't know if they hold things like that.
I never heard of them.
I never knew there was one.
I never know when they are being held.
I never know when they are being held.
I never really heard about any till now.

I really don't care about it.
I really don't have the time. I have six children and it makes it hard.
I really haven't known about the meetings. I don't know how effective I would be, I don't like to go out at night.
I really haven't paid much attention to it. I heard about it but I was not too interested in it. I didn't know what was going on.
I seen it on TV but I didn't know they had any meetings. I wasn't aware of anything other than what they had on TV. Send me brochures so I can read up on it.
I think I personally know a lot about the situation.
I think it's too political and my interest is not strong enough for me to create impact.
I think that they probably have it under control, they don't need my input that is what they are paid to do. I am not a nuclear physicist.
I think they're going to do what they're going to do, and my opinion is not important.
I trust that the EPA will do a good job. I used to work for LANL.
I used to work at engineering firm doing studies on the safety of WIPP and I got my information there.
I was never aware of the facility.
I was not aware that there were any.
I was not aware that there were meetings like that. How would I be aware?
How would they give that information to people like me? Am I supposed to get this information from the newspapers, television?
I was unaware of when they were being held. I didn't know anything about them.
I wasn't aware of it until right now.
I wasn't aware of the meeting.
I wasn't aware there were any in my area.
I wasn't particularly interested and I am also too old.
I work long hours.
I work twelve hours a day and six days a week, that probably has a lot to do with it.

I would suppose that I haven't thought about it. I doubt that my being there would make a difference one way or another. I really don't think that the general public will be of much benefit to the government because they will do what as they wish.
I'm busy.
I'm eighty and have cataracts and cannot drive at night. Most of these meetings are at night, so I can't attend. If they have them in the afternoon, it would be better depending on where I would have to drive. If it's out of the city of Alb., forget it.
I'm in a rural area, I don't get anything, no newspaper no nothing, other than the stuff that comes out on television.
I'm just too busy at home.
I'm not aware of its location.
I'm not aware where or when they are being held.
I'm not real concerned with it.
I'm not really interested in that.
I'm not sure it would increase my understanding of the situation.
I'm not that concerned about it.
I'm really not that concerned about it.
I'm sick, I had a stroke and I just can't go.
I'm sixty-nine years old and work many hours a week and public hearings will have to get along without me.
I'm too busy to deal with it on a day to day basis, and I hope that the public interest groups that are out there can deal with the problem.
I've attended a couple through Los National Lab for whom I work for. These meeting are not public.
I've been busy.
I've been pretty busy, and I wasn't aware of any.
I've been slightly handicapped and ill, so I haven't been keeping up on the topic.
I've never been invited.
I've never been involved in anything like that yet.
I've never heard about any.
I've never heard about it because I don't really live around here. I'm only a temporary resident.

I've never heard any advertisement about it.
I've never heard of a public notice for a meeting for this issue.
I've never heard of it.
I've never heard of it.
I've never heard of one.
I've not known where they are, and my husband is real sick. I'm not as young as I used to be.
I've only been here a month.
I've only resided here for about eight weeks, otherwise I probably would have made an attempt to participate in a meeting.
If the meetings have held, they have been held, they have been held in Santa Fe, Albuquerque. But I live in Taos.
If there was one I would go.
If they've had them in Las Cruces I wasn't aware of it.
Ignorance.
In my community we are too far away from any major cities. We don't have enough access to the meetings and the forums they have.
In this part of the country, there haven't been any. I would have to travel two-hundred or three-hundred miles in order to attend.
Inconvenience.
Inconvenient.
It doesn't really impact me because of geographic reasons.
It has been a large media event and because of this I do not need to attend a meeting that will give me the same information that I see on the TV.
It hasn't been a concern in the area I live in.
It hasn't been that big of a concern around this area.
It's a fraud.
It's a matter of convenience.
It's just too far away and I don't have time.
It's my health for one thing, I retired because I had a heart attack and had a triple bypass.
It's not in our immediate neighborhood, so I just didn't.
It's not on one of my need to do lists. It's not that it does not concern me, it's just that I haven't gotten around to it.

It's pretty hard for me to attend these meetings. They are usually and night and I don't go out at night.
Its because of the news media.
Just haven't attended.
Just haven't heard anything about it.
Just moved here.
Just moved to Albuquerque and haven't heard about any typical meeting.
Just not interested.
Lack of an intense enough interest to get involved.
Lack of free time.
Lack of information about the meetings.
Lack of information.
Lack of interest and I'm also too busy.
Lack of interest.
Lack of interest.
Lack of interest.
Lack of knowledge about them.
Lack of publicity.
Lack of time.
Lack of transportation and odd work hours.
Location, time, interest.
Location.
Mainly because I was working nights when they were having those meetings.
Most of the time I'm not aware of when and where they are. I have also not made a point to go to them.
Most of them were scheduled at times when I couldn't get out of work.
Mostly due to work.
Mostly is that I haven't been interested in it and have either been doctoring or working.
My brother-in-law works for the Department of Energy and I get my information from him.
My free time is spent with my family, because I have very little free time. I work six days a week ten hours a day, so I have little time with my family.
My recent citizenship as a New Mexico citizen. Before, I was in California.
My schedule and unaware of the times. I work a weird shift.
My schedule interfered.
My work schedule keeps me out of town.

Never hear about the information or,
about meetings. They don't talk much
about it.
Never hear about them.
Never heard about this.
Never heard of any.
Never heard of one.
Never heard of them or, when they're
coming out.
Never invited.
Never thought about it.
New to the area, and don't know much
about it.
No information about it.
No information was rendered where the
meetings would be held.
No interest.
No knowledge of a meeting in my area or
anywhere else.
No knowledge of it.
No meetings in this part of the state.
No notice. I Have not heard where they
are held. I have only heard that they
are improving the roads for it.
No notification that there was a meeting.
No particular reason.
No reason.
No time I guess.
No time.
None available in my area.
None close by.
None have been held in my area.
None in my area.
None in my area.
Not affected by a facility in Carlsbad.
Not aware of any to go to.
Not aware of any.
Not aware of them.
Not aware of when and where.
Not aware of WIPP.
Not aware when they were being held.
Not close to one when it was held.
Not enough info was sent out. Not
enough media coverage.
Not enough interest to make the time.
Not enough time.
Not enough time.

Not enough time.
Not informed.
Not knowing when or where the
meetings are.
Not knowing when or where they were.
Not nearby, hasn't been that big of a
news item so far.
Not really interested.
Not that activist in nature, prefer to get
my information from written material.
Not that interested.
Not that involved.
One hasn't been held here.
One person can't make a difference.
One, I may not have been in town, and
two, the proximity of the hearings
may not have been convenient.
Other priorities.
Post dramatic stress disorder.
Pretty much I didn't know.
Primarily there haven't been any that I
have been aware of in the
Alamogordo area. Also I have a two
year old and I wouldn't be willing to
travel at night to go to an out of town
meeting.
Priorities - other things are more
important.
Probably apathy.
Probably because I wasn't aware of any
going on in the area.
Probably because I work nights.
Probably didn't consider it important.
Probably laziness. I don't even know if
they have had meetings as Rosewell.
Schedule.
She has a husband with Alzheimer's and
it is 24 hours a day.
She has received information through the
media. It is so controversial and
would need something more concrete
to form a conclusion.
She never knew there were any.
Sometimes I don't know where they are
having it, and I probably haven't
made an effort to find out where they
are.
Somewhat encumbered in my walking.
Taking care of children.
The availability of the meetings.
The distance to the meetings, if there was
a meeting here in town I would
probably go to it if I was aware of it.

There are going to do what they are going to do regardless of what I do.
There are just too many other things going on in my life.
There has been no advertising of meetings, at least not in our community.
There has been none available in this community. In Otero county, that I'm aware of. Respondent added that fragmented last sentence.
There has not been any around this area.
There has not been any in the area.
There has not been any where I live.
There has not been one in this community, as far as I know. But I do not attend any public meetings along these lines.
There hasn't been a convenient meeting to attend.
There hasn't been anything around here about that, as far as I know.
There haven't been any in the Four Corners area.
There haven't been any meetings in my area.
There haven't been that many up in our area. I haven't been aware of any public meetings on WIPP within the last two to three years.
There really is not a reason.
They are not held at convenient times.
They aren't in my area.
They got to put it somewhere. Who cares.
They haven't had any in this area that I know of.
They haven't had any locally.
They haven't had anything around my area, and I'm not very informed on the subject.
They haven't had one very close to where I live. I haven't heard of one around here.
They never called me.
They never had one here.
They're too far away.
This is the first I've heard of it.
This is the first time I've heard about it.
Time constraints.
Time is inconvenient.
Time priorities.
Time...I've never even seen one advertised, quite frankly.

Time...The time is not available or convenient for me.
To my knowledge I haven't been aware of any.
Too busy.
Too busy.
Too much work with my own business.
Not enough time. I also have a high degree of trust for the people in charge of making the decisions about WIPP.
Transportation, health.
Unaware of their existence.
Unaware that they were occurring.
Uncle is gonna do what he wants anyway.
Unknown, not knowing or being busy when they were announced.
Usually a conflict in scheduling.
Varied working hours. Very often, I can't attend them.
Was not aware of them.
We don't have any here.
We have had no meetings in this town.
We haven't had any in Grants.
We haven't had any in our city that I know of.
We've only lived in NM 5 years and that was already being built when we moved here and I haven't heard of any open meetings.
Well as far as I know we haven't had any here.
What I read is all I know about it.
What's going to be done is going to be done.
When it was an intense issue here we moved to California.
WIPP is not in Albuquerque. If it was, I certainly would be more interested.
WIPP is probably the best place to store the stuff unless Russia wants it.
Work schedule.
Work schedules.
Work two jobs and have a family don't have time to go to those type of things.
Work.
Working overtime. I'm a mother of three.
Working.