Quality of Life and Energy Production in Wise County, Texas: An Illustrative Summary

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I wish to express my gratitude to the citizens of Wise County, Texas. I also want to extend a special thanks to Brooklynn Anderson who provided invaluable technical assistance while collecting, coding, cleaning, and entering the survey data.
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Introduction

This document provides an illustrative summary of the results obtained from a 2006 general population survey of individuals in Wise County, Texas.

The purpose of this document is to provide insights into the current social impacts associated with the exploration and production of natural gas in Wise County, Texas. Moreover, attitudes and behaviors of the citizens of Wise County, as well as information on selected individual-level characteristics are presented. Figures and tables are used to simplify presentation of the data. No conclusions or inferences are made. County leaders and members of the general public interested in statistical analyses and more detailed information should contact Dr. Gene L. Theodori at:

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Methodology

During the late spring and early summer of 2006, a survey questionnaire was mailed to a randomly selected sample of 800 households in Wise County, Texas. A cover letter explaining the purpose of the study and an addressed postage-paid return envelope accompanied the questionnaire.

To obtain a representative sample of individuals within residences, we stated in the cover letter that the questionnaire was to be completed by the adult in the household who celebrated his or her birthday most recently.

Approximately three weeks after the initial mailing, a reminder postcard was mailed to each sampled household that had not yet completed and returned the questionnaire. One week later a second wave of surveys was mailed. Then, approximately three weeks after the second mailing, a third and final wave was mailed.

The survey instrument, organized as a self-completion booklet, contained 42 questions and required approximately 60 minutes to complete. After three mailings, we received completed surveys from 299 individuals.
Wise County, Texas

Section I

Individual-Level Characteristics

Figures 1 through 15 summarize selected individual-level traits of the survey respondents. Included here are characteristics such as gender, age, marital status, ethnicity, level of education, employment status, household income, home ownership, length of residence in the county, land ownership, and mineral rights ownership.
Figure 1

Gender

- Male: 62.98% (n=182)
- Female: 37.02% (n=107)
Figure 2

Age

(n = 287)
Figure 3

Marital status
(n = 294)
Figure 4

Ethnicity

(n = 285)
Wise County, Texas

Figure 5

Level of education

- Did not complete high school: 7.93% (n=23)
- Completed high school or equivalent: 24.14% (n=70)
- Some college or post high school training: 31.38% (n=91)
- Completed associate's degree: 14.83% (n=43)
- Bachelor's degree: 11.38% (n=33)
- Graduate or professional training (beyond college): 10.34% (n=30)
Figure 6

Employment status

- Not employed: 12.36% (n=32)
- Employed full-time: 36.68% (n=95)
- Employed part-time: 50.97% (n=132)
Figure 7

Employed (part-time or full-time) in an occupation related to the natural gas industry

- No: 87.50% (n=140)
- Yes: 12.50% (n=20)
Figure 8

2005 household income
(n = 259)

Wise County, Texas
Figure 9

Home ownership in Wise County

98.62%  
n=286

1.38%  
n=4

Own home
Do not own home
Figure 10

Length of residence in the county
(n = 294)
Figure 11

Life-long resident of the county

- Yes: 13.64% (n=39)
- No: 86.36% (n=247)
Figure 12

Land ownership in Wise County

- 85.07% (n=245) Yes
- 14.93% (n=43) No
Figure 13

Ownership of mineral rights with land owned in Wise County

68.80%  
n=161

31.20%  
n=73

No  
Yes
Figure 14

Land currently being leased to gas industry operators by landowners who OWN mineral rights

- Yes: 79.17% (n=57)
- No: 20.83% (n=15)
Figure 15

Land currently being leased to gas industry operators by landowners who DO NOT OWN mineral rights

- Yes: 22.45% (n=33)
- No: 77.55% (n=114)
Section II

Quality of Life

Figures 16 through 19 illustrate residents’ perception of the overall quality of life in Wise County. Included here are past and present-day ratings of the quality of life, as well as the perceived effect on quality of life from the large-scale exploration and production of natural gas. In addition, residents’ likelihood of moving away from Wise County in the near future is summarized.
Figure 16

Overall, how would you rate the quality of life in Wise County today?

(n = 293)
Figure 17

Effects of exploration and production of natural gas in Wise County on quality of life

- More POSITIVE than negative effects: 29.12% (n=83)
- More NEGATIVE than positive effects: 25.61% (n=73)
- The positive and negative effects are ABOUT THE SAME: 24.91% (n=71)
- It is TOO EARLY TO TELL: 20.35% (n=58)
Figure 18

How would you rate the quality of life in Wise County BEFORE the large-scale exploration and production of natural gas began?

(n = 279)
Figure 19

Is it likely that you might move away from Wise County within the next 5 years?

- **No**: 79.09% (n=208)
- **Yes**: 20.91% (n=55)
Section III

Attitudes Toward the Exploration and Production of Natural Gas in Wise County

Figures 20 through 38 summarize residents’ attitudes toward the production and exploration of natural gas in Wise County.
Wise County, Texas

Figure 20

The natural gas industry is important to the local economy.

(n = 292)
Wise County, Texas

Figure 21

Natural gas industry operators in this area are too politically powerful.

(n = 276)
Decisions about natural gas-related development should be made solely on economic grounds. 
(n = 277)
Figure 23

Not enough information concerning the development of natural gas is being made available to the general public.

(n = 284)
Even when carefully controlled, natural gas development is likely to upset the quality of life in a local area.

(n = 283)
Figure 25

Too little attention is being paid to the social costs of natural gas development.

(n = 268)
Wise County, Texas

Figure 26

The natural gas companies have no compassion for our natural environment.

(n = 276)
Figure 27

Because industries have to be competitive, it is unfair to expect them to tell the public about their plans.

(n = 276)
Figure 28

All in all, the benefits of natural gas development for this area are greater than the costs.
(n = 273)

Strongly agree

Agree

Disagree

Strongly disagree

Percent
Decisions about natural gas development should be given to the effects on lifestyles and values of the people in this area.

(n = 273)
Natural gas operators MUST adopt and use more environmentally friendly drilling practices. 
(n = 281)
Wise County, Texas

Figure 31

Natural gas companies will do only what’s required by law.

(n = 273)
In the long run, I’m sure that people in this area will be better off if our natural gas resources are developed. 

(n = 284)
Figure 33

Natural gas operators are drilling and producing too close to homes and businesses.  
(n = 281)

Percent

Strongly agree

Agree

Disagree

Strongly disagree

Percent

0% 10% 20% 30% 40% 50% 60%
People who object to natural gas development in this area should move someplace else.  
(n = 278)
Figure 35

How do you feel about the drilling of more GAS WELLS in Wise County?

(n = 279)

Strongly favor

Neutral

Strongly oppose

Percent
How do you feel about the drilling of more DISPOSAL WELLS in Wise County? (n = 269)
Figure 37

How do you feel about the drilling of WATER WELLS in Wise County to provide water for the natural gas industry?
(n = 285)
Figure 38

How do you feel about the use of CITY WATER supplies by the natural gas industry?

\( n = 283 \)
Section IV

Potential Problems in Wise County

This section deals with residents’ perceptions of the potential problems in Wise County which may or may not be associated with the continued development of natural gas. Survey respondents were presented with 33 issues which may or may not be problems in Wise County. Respondents were asked to indicate whether they believe each issue currently is “no problem at all,” a “slight problem,” a “moderate problem,” or a “serious problem.” Respondents were then asked to indicate whether the seriousness of the problem is “getting better,” “staying the same,” or “getting worse” with the continued development of natural gas. The results are summarized below.

Figures 39a through 71a illustrate the perceived problematic extent of the issue today. Figures 39b to 71b illustrate the apparent seriousness of the problem with the continued development of natural gas.

For purposes of presentation, the issues were ranked from the perceived “most serious” to the “least serious” (see the Mean Score and coding notation).
Figure 39a

*Issue:* Use of illegal drugs  
(n = 266)

Mean: 3.361  
Standard deviation: 0.832  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 39b

Because of the development of natural gas, use of illegal drugs is:

- Getting better: 5.16% (n=13)
- Staying the same: 37.70% (n=95)
- Getting worse: 57.14% (n=144)
FIGURE 40a

**Issue:** Increased truck traffic  
(n = 276)

- **Mean:** 3.315  
- **Standard deviation:** 0.898  
  (coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 40b

Because of the development of natural gas, increased truck traffic is:

- Getting better: 2.70% (n=7)
- Staying the same: 20.08% (n=52)
- Getting worse: 77.22% (n=200)
Figure 41a

**Issue:** High tax rates

(n = 283)

<table>
<thead>
<tr>
<th>Percent</th>
<th>No problem at all</th>
<th>Slight problem</th>
<th>Moderate problem</th>
<th>Serious problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Mean: 3.237  
Standard deviation: 0.845

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 41b

Because of the development of natural gas, high tax rates are:

- 4.15% (n=11) Getting better
- 38.87% (n=103) Staying the same
- 56.98% (n=151) Getting worse
Figure 42a

**Issue:** Conditions of roads and streets (n = 285)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>0%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>20%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>30%</td>
</tr>
</tbody>
</table>

Mean: 3.165
Standard deviation: 0.902
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 42b

Because of the development of natural gas, conditions of roads and streets are:

- Getting better: 18.32% (n=50)
- Staying the same: 48.35% (n=132)
- Getting worse: 33.33% (n=91)
Issue: Depletion of aquifers
(n = 246)

Mean 2.931
Standard deviation 0.981
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, depletion of aquifers is:

- Getting better: 4.22% (n=10)
- Staying the same: 41.35% (n=98)
- Getting worse: 54.43% (n=129)
Figure 44a

**Issue:** Amount of freshwater used by gas producers

(n = 261)

![Bar chart showing the percentage of respondents facing different levels of problems with freshwater usage by gas producers.]({"image":null})

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

**Mean:** 2.870

**Standard deviation:** 1.070

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, amount of freshwater used by gas producers is:

- Getting better: 3.24% (n=8)
- Staying the same: 34.82% (n=86)
- Getting worse: 61.94% (n=153)
**Figure 45a**

**Issue:** Traffic accidents

(n = 276)

---

**Serious problem**

**Moderate problem**

**Slight problem**

**No problem at all**

---

**Percent**

0% 10% 20% 30% 40% 50% 60%

---

**Mean** 2.837

**Standard deviation** 0.949

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 45b

Because of the development of natural gas, traffic accidents are:

- Getting better: 3.86% (n=10)
- Staying the same: 47.10% (n=122)
- Getting worse: 49.03% (n=127)
Figure 46a

*Issue:* Water pollution
(n = 276)

<table>
<thead>
<tr>
<th>Problem Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious problem</td>
<td>30%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>20%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>10%</td>
</tr>
<tr>
<td>No problem at all</td>
<td>0%</td>
</tr>
</tbody>
</table>

Mean: 2.819
Standard deviation: 1.029

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, water pollution is:

- Getting better: 4.63% (n=12)
- Staying the same: 54.44% (n=141)
- Getting worse: 40.93% (n=106)
Figure 47a

**Issue:** Absence of zoning regulations  
(n = 260)

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

Mean: 2.742  
Standard deviation: 1.013  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, absence of zoning regulations is:

- Getting better: 14.29% (n=36)
- Staying the same: 63.49% (n=160)
- Getting worse: 22.22% (n=56)
Figure 48a

**Issue:** Crime

(n = 273)

Mean: 2.729
Standard deviation: 0.844

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, crime is:

- Getting better: 7.66% (n=20)
- Staying the same: 65.52% (n=171)
- Getting worse: 26.82% (n=70)

Pie chart showing the distribution of responses.
Figure 49a

**Issue:** Fire hazards  
(n = 269)

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

Mean: 2.617  
Standard deviation: 0.953

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 49b

Because of the development of natural gas, fire hazards are:

- Getting better: 11.51% (n=29)
- Staying the same: 55.95% (n=141)
- Getting worse: 32.54% (n=82)
Figure 50a

**Issue:** Land use conflicts  
(n = 258)

![Bar chart showing percent distribution of land use conflicts](chart)

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

**Statistical Details:**

- **Mean:** 2.581
- **Standard deviation:** 1.093

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Wise County, Texas

Figure 50b

Because of the development of natural gas, land use conflicts are:

- Getting better: 6.20% (n=15)
- Staying the same: 47.11% (n=114)
- Getting worse: 46.69% (n=113)
Figure 51a

**Issue:** Respect for law and order  
(n = 275)

Mean: 2.553  
Standard deviation: 0.955

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, respect for law and order is:

- Getting better: 9.09% (n=24)
- Staying the same: 21.97% (n=58)
- Getting worse: 68.94% (n=182)
**Figure 52a**

*Issue:* Effectiveness of city governments  
(n = 267)

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

**Mean:** 2.551  
**Standard deviation:** 0.942  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 52b

Because of the development of natural gas, effectiveness of city governments is:

- 75.00% (n=192) Staying the same
- 9.38% (n=24) Getting better
- 15.63% (n=40) Getting worse
**Figure 53a**

**Issue:** Effectiveness of county government  
(n = 269)

<table>
<thead>
<tr>
<th>Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>0%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>30%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Mean** 2.543  
**Standard deviation** 0.940  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, effectiveness of county government is:

- Getting better: 9.34% (n=24)
- Getting worse: 19.07% (n=49)
- Staying the same: 71.60% (n=184)
Figure 54a

**Issue:** Poverty
(n = 263)

<table>
<thead>
<tr>
<th>Perception</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>0%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>30%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>50%</td>
</tr>
</tbody>
</table>

**Mean:** 2.536
**Standard deviation:** 0.855

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, poverty is:

- Getting better: 20.40% (n=51)
- Staying the same: 69.20% (n=173)
- Getting worse: 10.40% (n=26)
Figure 55a

**Issue:** Environmental quality  
(n = 260)

- **No problem at all**
- **Slight problem**
- **Moderate problem**
- **Serious problem**

Mean: 2.515  
Standard deviation: 1.023  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, environmental quality is:

- Getting better: 6.10% (n=15)
- Staying the same: 50.81% (n=125)
- Getting worse: 43.09% (n=106)
Figure 56a

**Issue:** Loss of privacy
(n = 263)

- **Mean:** 2.452
- **Standard deviation:** 1.124

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Wise County, Texas

Figure 56b

Because of the development of natural gas, loss of privacy is:

- Getting better: 4.02% (n=10)
- Staying the same: 51.41% (n=128)
- Getting worse: 44.58% (n=111)
Figure 57a

Issue: Noise pollution
(n = 278)

- No problem at all
- Slight problem
- Moderate problem
- Serious problem

Mean: 2.450
Standard deviation: 1.001
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, noise pollution is:

- Getting better: 6.44% (n=17)
- Staying the same: 46.97% (n=124)
- Getting worse: 46.59% (n=123)
Figure 58a

Issue: Air pollution
(n = 274)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>0%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>20%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>30%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>10%</td>
</tr>
</tbody>
</table>

Mean: 2.434
Standard deviation: 0.993
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, air pollution is:

- Getting better: 5.00% (n=13)
- Staying the same: 56.15% (n=146)
- Getting worse: 38.85% (n=101)
Figure 59a

**Issue:** Availability of good jobs
(n = 269)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>50%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>30%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>10%</td>
</tr>
</tbody>
</table>

Mean: 2.279
Standard deviation: 1.089
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 59b

Because of the development of natural gas, availability of good jobs is:

- Getting better: 47.04% (n=119)
- Staying the same: 48.22% (n=122)
- Getting worse: 4.74% (n=12)
**Figure 60a**

**Issue: Too much residential development**

(n = 272)

- **No problem at all**
- **Slight problem**
- **Moderate problem**
- **Serious problem**

**Mean** 2.235  
**Standard deviation** 1.118  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, too much residential development is:

- Getting better: 10.67% (n=27)
- Staying the same: 56.52% (n=143)
- Getting worse: 32.81% (n=83)
Wise County, Texas

Figure 61a

*Issue:* Population growth
*(n = 270)*

![Bar chart showing the distribution of responses to the issue of population growth.]

- **No problem at all**
  - Percent: 30%
- **Slight problem**
  - Percent: 20%
- **Moderate problem**
  - Percent: 10%
- **Serious problem**
  - Percent: 0%

**Mean:** 2.181
**Standard deviation:** 1.070

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 61b

Because of the development of natural gas, population growth is:

- Getting better: 14.86% (n=37)
- Staying the same: 50.20% (n=125)
- Getting worse: 34.94% (n=87)
Figure 62a

**Issue:** Fire protection services  
(n = 270)

<table>
<thead>
<tr>
<th>Problem Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious problem</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>20%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>30%</td>
</tr>
<tr>
<td>No problem at all</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Mean:** 2.167  
**Standard deviation:** 0.990  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, fire protection services are:

- Getting better: 28.52% (n=73)
- Staying the same: 62.89% (n=161)
- Getting worse: 8.59% (n=22)
Figure 63a

*Issue:* Odors/fumes from drilling equipment  
(n = 266)

**Mean:** 2.128  
**Standard deviation:** 1.063  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 63b

Because of the development of natural gas, odors/fumes from drilling equipment are:

- Getting better: 9.35% (n=23)
- Staying the same: 57.32% (n=141)
- Getting worse: 33.33% (n=82)
Issue: Medical and health care services
(n = 280)

Mean: 2.118
Standard deviation: 1.000
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 64b

Because of the development of natural gas, medical and health care services are:

- Getting better: 34.47% (n=91)
- Staying the same: 54.92% (n=145)
- Getting worse: 10.61% (n=28)
**Figure 65a**

**Issue:** Light from gas drilling operations  
(n = 266)

![Bar chart showing the percentage of people experiencing different levels of the issue.]

- **No problem at all:** 30%
- **Slight problem:** 20%
- **Moderate problem:** 10%
- **Serious problem:** 40%

**Mean:** 2.102  
**Standard deviation:** 1.064

*(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)*
Figure 65b

Because of the development of natural gas, light from gas drilling operations is:

- Getting better: 9.68% (n=24)
- Staying the same: 58.87% (n=146)
- Getting worse: 31.45% (n=78)
Figure 66a

**Issue:** Gas well explosions
(n = 256)

Mean: 2.047
Standard deviation: 0.977
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, gas well explosions are:

- 10.04% (n=24): Getting better
- 69.87% (n=167): Staying the same
- 20.08% (n=48): Getting worse
**Figure 67a**

*Issue:* Quality of local schools  
(n = 280)

![Bar chart showing the distribution of responses to the issue of local schools.](chart)

- **Serious problem**
- **Moderate problem**
- **Slight problem**
- **No problem at all**

**Mean:** 2.043  
**Standard deviation:** 0.968

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, quality of local schools is:

- Getting better: 31.82% (n=84)
- Staying the same: 57.20% (n=151)
- Getting worse: 10.98% (n=29)
**Figure 68a**

*Issue*: Local police protection

(n = 280)

- **Mean**: 2.000
- **Standard deviation**: 0.998

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, local police protection is:

- Getting better: 21.05% (n=56)
- Staying the same: 69.17% (n=184)
- Getting worse: 9.77% (n=26)

[Pie chart showing the distribution of responses]
**Issue:** Disagreements among local residents
(n = 255)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious problem</td>
<td>0%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>10%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>30%</td>
</tr>
<tr>
<td>No problem at all</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Mean:** 1.996
**Standard deviation:** 0.839

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, disagreements among local residents are:

- Getting better: 8.90% (n=21)
- Getting worse: 19.07% (n=45)
- Staying the same: 72.03% (n=170)
**Issue:** Too much industrial development  
(n = 263)

![Bar Chart]

- **No problem at all:**
- **Slight problem:**
- **Moderate problem:**
- **Serious problem:**

---

**Mean**: 1.734  
**Standard deviation**: 0.885  
(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Figure 70b

Because of the development of natural gas, too much industrial development is:

- Getting better: 17.36% (n=42)
- Staying the same: 14.05% (n=34)
- Getting worse: 68.60% (n=166)
Figure 71a

**Issue:** Too much commercial development

(n = 263)

<table>
<thead>
<tr>
<th>Perception</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problem at all</td>
<td>60%</td>
</tr>
<tr>
<td>Slight problem</td>
<td>25%</td>
</tr>
<tr>
<td>Moderate problem</td>
<td>15%</td>
</tr>
<tr>
<td>Serious problem</td>
<td>10%</td>
</tr>
</tbody>
</table>

Mean: 1.653
Standard deviation: 0.908

(coding: 1 = no problem at all; 2 = slight problem; 3 = moderate problem; 4 = serious problem)
Because of the development of natural gas, too much commercial development is:

- Getting better: 12.66% (n=30)
- Staying the same: 72.15% (n=171)
- Getting worse: 15.19% (n=36)
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Section V

Actions Which May or May Not Have Been Taken in Response to the Exploration and Production of Natural Gas in Wise County

This section deals with eight actions which residents may or may not have taken in response to exploration and production of natural gas in Wise County. Survey respondents were asked to indicate whether or not they had engaged in such actions. Respondents were then asked to indicate their likelihood of engaging in such actions in the future. The results are summarized below.

Figures 72a through 79a illustrate the extent to which respondents had engaged in such actions. Figures 72b to 79b illustrate the likelihood of engaging in such actions in the future.
Figure 72a

**Action:** Attended a meeting to get information and learn more about the drilling and production of natural gas

- **Yes:** 17.39% (n=48)
- **No:** 82.61% (n=228)
Figure 72b

**Likelihood in the future:** To attend a meeting to get information and learn more about the drilling and production of natural gas

- **Not likely:** 40.15%, n=110
- **Somewhat likely:** 41.61%, n=114
- **Very likely:** 18.25%, n=50
**Figure 73a**

**Action:** Contacted a local elected official or governmental agency to complain about a natural gas drilling and/or production issue

- **Yes:** 15.94%  
  - n=44
- **No:** 84.06%  
  - n=232
Figure 73b

Likelihood in the future: To contact a local elected official or governmental agency to complain about a natural gas drilling and/or production issue

- Not likely: 53.33% (n=144)
- Somewhat likely: 32.59% (n=88)
- Very likely: 14.07% (n=38)
Figure 74a

*Action:* Voted FOR a political candidate because of his/her position on the drilling and/or production of natural gas

- Yes: 20.29% (n=56)
- No: 79.71% (n=220)
**Figure 74b**

*Likelihood in the future:* To vote FOR a political candidate because of his/her position on the drilling and/or production of natural gas

- **Not likely**
  - 48.52%
  - n=131

- **Somewhat likely**
  - 25.56%
  - n=69

- **Very likely**
  - 25.93%
  - n=70
Figure 75a

**Action:** Voted AGAINST a political candidate because of his/her position on the drilling and/or production of natural gas

80.36%  
*Yes*  
n=221

19.64%  
*No*  
n=54
Figure 75b

**Likelihood in the future:** To vote AGAINST a political candidate because of his/her position on the drilling and/or production of natural gas

- **Not likely**
  - 44.61%
  - n=120
- **Somewhat likely**
  - 27.88%
  - n=75
- **Very likely**
  - 27.51%
  - n=74
**Figure 76a**

*Action:* Attended a gas industry-sponsored meeting to get information and learn more about leasing options

- **7.97%**
  - **n=22**
- **92.03%**
  - **n=254**
**Figure 76b**

*Likelihood in the future:* To attend a gas industry-sponsored meeting to get information and learn more about leasing options

- **Very likely** (56.83%)  n=154
- **Somewhat likely** (32.84%)  n=89
- **Not likely**  (10.33%)  n=28
Figure 77a

*Action:* Attended a public meeting to OPPOSE the continued exploration and production of natural gas

- **Yes:** 5.09%  
  - n=14

- **No:** 94.91%  
  - n=261
Likelihood in the future: To attend a public meeting to OPPOSE the continued exploration and production of natural gas

- Not likely: 63.70% (n=172)
- Somewhat likely: 23.70% (n=64)
- Very likely: 12.59% (n=34)
**Action:** Attended a public meeting to SUPPORT the continued exploration and production of natural gas

![Pie chart showing 94.51% support and 5.49% opposition](chart.png)

- **Yes:** 94.51% (n=258)
- **No:** 5.49% (n=15)
Figure 78b

*Likelihood in the future:* To attend a public meeting to SUPPORT the continued exploration and production of natural gas

- **Not likely** (69.00%): n=187
- **Somewhat likely** (23.25%): n=63
- **Very likely** (7.75%): n=21
Figure 79a

**Action:** Wrote and mailed a letter to the editor of your local newspaper

- Yes: 5.82% (n=16)
- No: 94.18% (n=259)
Likelihood in the future: To write and mail a letter to the editor of your local newspaper

- Not likely: 71.85% (n=194)
- Somewhat likely: 21.85% (n=59)
- Very likely: 6.30% (n=17)
Section VI

Desalination of water

Desalination is a process by which salt and other contaminants are removed from the water produced in gas and oil operations. With desalination technology, such water is treated and purified, in turn, creating a beneficial freshwater resource that can be used in many different ways.

Figures 80 through 82 and Tables 1 and 2 summarize respondents’ level of familiarity with desalination and their attitudes toward the process.
How familiar are you with the process of desalination?
(n = 275)
### Table 1

A ranking of ways desalinated water from gas and oil field operations might safely be used

<table>
<thead>
<tr>
<th>Ways desalinated water could be safely used:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-use by gas and oil industry operators <em>(n = 269)</em></td>
<td>94.8%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Industrial use *(e.g., manufacturing, etc.) <em>(n = 268)</em></td>
<td>90.3%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Municipal uses *(e.g., watering golf courses and city parks, etc.) <em>(n = 266)</em></td>
<td>71.9%</td>
<td>28.1%</td>
</tr>
<tr>
<td>Home irrigation purposes *(e.g., watering lawns and shrubs, etc.) <em>(n = 268)</em></td>
<td>64.2%</td>
<td>35.8%</td>
</tr>
<tr>
<td>Irrigation of farmland and/or rangeland <em>(n = 266)</em></td>
<td>62.0%</td>
<td>38.0%</td>
</tr>
<tr>
<td>Maintenance of stream flows/reservoir levels <em>(n = 263)</em></td>
<td>37.6%</td>
<td>62.4%</td>
</tr>
<tr>
<td>Watering of livestock <em>(n = 263)</em></td>
<td>37.3%</td>
<td>62.7%</td>
</tr>
<tr>
<td>Aquifer recharge <em>(n = 253)</em></td>
<td>31.6%</td>
<td>68.4%</td>
</tr>
<tr>
<td>People’s drinking water <em>(n = 262)</em></td>
<td>16.0%</td>
<td>84.0%</td>
</tr>
</tbody>
</table>
Figure 81

What is your level of confidence that desalinated water from gas and oil field operations could meet HUMAN DRINKING WATER quality and purity standards?

(n = 278)
Figure 82

Should industry operators be required to desalinate water produced in the drilling and production of oil and natural gas?

- No: 17.46% (n=44)
- Yes: 82.54% (n=208)
Table 2
A ranking of who might be likely to buy desalinated water if available for purchase

<table>
<thead>
<tr>
<th>Who might be likely to buy desalinated water:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial users (n = 273)</td>
<td>82.4%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Farmers (n = 273)</td>
<td>47.3%</td>
<td>52.7%</td>
</tr>
<tr>
<td>Developers (n = 273)</td>
<td>41.4%</td>
<td>58.6%</td>
</tr>
<tr>
<td>Business owners (n = 273)</td>
<td>36.3%</td>
<td>63.7%</td>
</tr>
<tr>
<td>Ranchers (n = 273)</td>
<td>35.9%</td>
<td>64.1%</td>
</tr>
<tr>
<td>Municipal water systems (n = 273)</td>
<td>26.4%</td>
<td>73.6%</td>
</tr>
<tr>
<td>Rural water systems (n = 273)</td>
<td>19.0%</td>
<td>81.0%</td>
</tr>
<tr>
<td>Home owners (n = 273)</td>
<td>13.6%</td>
<td>86.4%</td>
</tr>
<tr>
<td>People like me (n = 273)</td>
<td>12.1%</td>
<td>87.9%</td>
</tr>
</tbody>
</table>
Section VII

Preparedness of Local Leaders

This final item (Figure 83) deals with residents' perceptions of the preparedness of local leaders for the large-scale exploration and production of natural gas in Wise County.
Figure 83

How prepared, overall, do you think LOCAL LEADERS were for the large-scale exploration and production of natural gas in Wise County?

(n = 284)
Note

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