



WHAT'S ON TAP?
Grading Drinking Water in U.S. Cities
June 2003

NEW ORLEANS, LA

New Orleans Earned a Water Quality and Compliance Grade of Good for 2000 and 2001

- New Orleans had no recent reported violations of current, pending, or proposed national standards during 2000 or 2001, according to available information.
- New Orleans water contains by-products of chlorine disinfection that may cause cancer and, potentially, reproductive and other health problems—including **trihalomethanes** and **haloacetic acids**, found at levels below national standards but substantially above national health goals, particularly on the West Bank in 2001.
- In 2001, New Orleans had a peak turbidity level that approached the new national standard; **turbidity** is a measure of the cloudiness of water and is used as an indicator that water may be contaminated with *Cryptosporidium* or other pathogens that present human health concerns.
- New Orleans occasionally has elevated levels of the pesticide **atrazine**, which can damage major organs and cause reproductive problems and cancer.

Noteworthy

- New Orleans city officials estimate major problems with aging pipes and infrastructure will necessitate “at least \$1 billion in repairs and improvements.”¹ Where that money ultimately comes from is not entirely certain, according to the executive director of the water and sewerage board.²
- An unsuccessful effort by the city to contract out management of the water system generated substantial

| NEW ORLEANS | |
|----------------------------------|----------------------|
| System Population Served | 564,620 ³ |
| Water Quality and Compliance | |
| 2000 ► Good | |
| 2001 ► Good | |
| Right-to-Know Report—Citizenship | |
| 2000 ► Poor | |
| 2001 ► Poor | |
| Source Water Protection | |
| Poor | |
| REPORT CARD | |

controversy. It resulted in a successful ballot measure requiring voter approval for private contracts in excess of \$5 million.⁴ Ultimately, the privatization effort failed in 2002.

New Orleans's Right-to-Know Reports Earned Grades of Poor for 2000 and 2001

- The reports were generally readable and highlighted information for people most likely to experience adverse health effects from water problems.
- The reports did not provide required information on arsenic, atrazine, barium, or cadmium levels; included misleading language about lead in city water; included no information about specific sources of pollution as the EPA requires; and did not discuss the health effects of regulated contaminants found at levels in excess of health goals.

New Orleans Earned a Source Water Protection Rating of Poor

The city’s source water, the Mississippi, is vulnerable to innumerable sources of industrial and agricultural pollution.

KEY CONTAMINANTS IN NEW ORLEANS'S WATER

The following contaminants have been found in New Orleans’s drinking water supply. For more information on health threats posed by specific contaminants, see Chapter 5.

MICROBIOLOGICAL CONTAMINANTS

Cryptosporidium

National Standard (MCL)

Treatment Technique (TT)

Draft Proposed New National Standard⁵

- <7.5 organisms/100 liters (average); no additional treatment
 - 7.5–100 organisms/100 liters (average); some additional treatment (>90% *Crypto* kill)
 - 100–300 organisms/100 liters (average); significant additional treatment (>99% *Crypto* kill)
 - >300 organisms/100 liters (average); advanced treatment (>99.7% *Crypto* kill)
- National Health Goal (MCLG)
0—no known fully safe level

National Requirements

Most large- and medium-size water utilities that use surface water are required to monitor for *Crypto* and report results in their right-to-know reports; they eventually may be required to use advanced treatment if significant levels are found.

1998 Levels

Maximum: 0.1 oocysts/100 liters in 1 of 12 monthly tap water samples⁶

1999–2001 Levels

No confirmed occurrences in finished tap water; no data provided on source water⁷

Cryptosporidium (*Crypto*) is a waterborne microbial disease that presents human health concerns, especially to individuals with weakened immune systems, including HIV/AIDS patients, the elderly, children, and people who have undergone organ transplants. New Orleans began testing for *Cryptosporidium* before it was required to do so, but more testing is needed to determine *Crypto* risks.

Total Coliform Bacteria

National Standard (MCL)

5% maximum in any month⁸

National Health Goal

0—no known fully safe level

1999 Levels⁹

East Bank: 1.1% in highest month, total coliform positive
West Bank: 0% in highest month, total coliform positive

2000 Levels¹⁰

East Bank: 0% in highest month, total coliform positive
West Bank: 1.3% in highest month, total coliform positive

2001 Levels¹¹

East Bank: 0.5% in highest month, total coliform positive
West Bank: 1.2% in highest month, total coliform positive

LEVELS PRESENT SOME CONCERN

Total coliform bacteria are microbial contaminants whose presence is a potential indicator that disease-causing organisms may be present in tap water. The federal standard allows up to 5 percent total coliform-positive samples per month. The health goal for any type of coliform bacteria is 0. So while the coliform bacteria finding in New Orleans is not viewed as serious, it may indicate some regrowth of bacteria in the water mains after the water leaves the treatment plant. Some studies suggest that serious regrowth problems may allow disease-causing pathogens to subsist in pipes. Rehabilitation and renewal of the water distribution system will help New Orleans's century-old system

ensure that bacterial problems in its pipes are addressed and prevented from becoming serious.

Turbidity

National Standard (TT) (in Nephelometric Turbidity Units, or NTU)

Filtered water

0.5 NTU 95% of the time (through 2001)

0.3 NTU 95% of the time (in 2002)

1 NTU 100% of the time (in 2002)

Unfiltered water

5 NTU maximum, 100% of the time

2000 Levels¹²

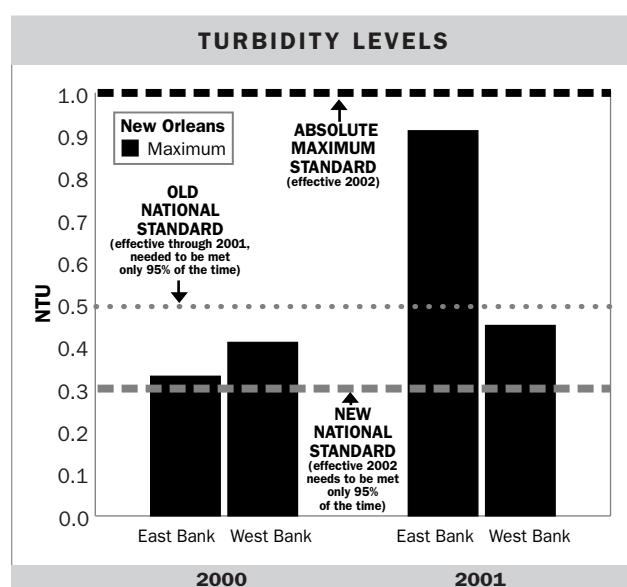
| | Maximum |
|-----------|----------|
| East Bank | 0.33 NTU |
| West Bank | 0.41 NTU |

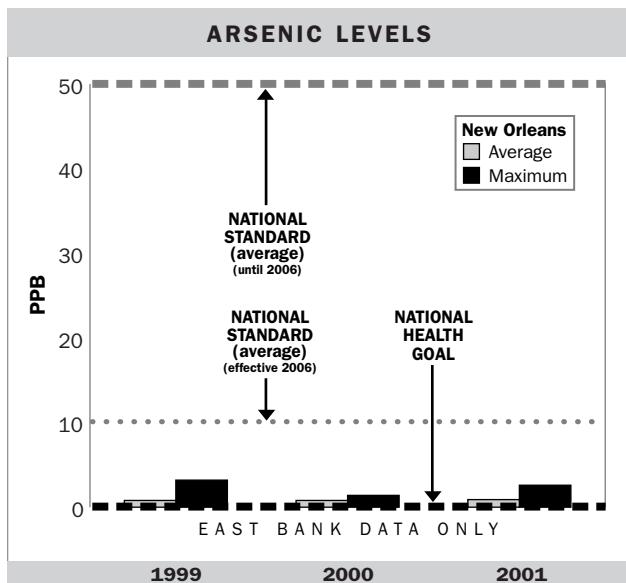
2001 Levels¹³

| | Maximum |
|-----------|----------|
| East Bank | 0.91 NTU |
| West Bank | 0.45 NTU |

LEVELS PRESENT HIGH CONCERN

Turbidity is a measure of the cloudiness of water and is used as an indicator that water may be contaminated with *Cryptosporidium* or other pathogens that present human health concerns. In addition, turbidity can interfere with water disinfection because it can impede the effectiveness of chlorine or other chemical disinfectants. New Orleans had a peak turbidity level extremely close to the new EPA standard. New Orleans's turbidity levels must be carefully monitored to be sure that filtration performance stays high and turbidity levels low to avoid potential problems with *Crypto* or other organisms in tap water.





INORGANIC CONTAMINANTS

Arsenic

National Standard (MCL)

50 ppb (average) effective through 2005
10 ppb (average) effective in 2006

National Health Goal (MCLG)

0—no known fully safe level

1999 Levels¹⁴ Average Maximum
East Bank 0.8 ppb 3.2 ppb

2000 Levels¹⁵ Average Maximum
East Bank 0.8 ppb 1.4 ppb

2001 Levels¹⁶ Average Maximum
East Bank 0.9 ppb 2.6 ppb

Arsenic—the product of mining and industrial processes, past use of arsenic-containing pesticides, and natural leaching or erosion from rock—is a known and potent human carcinogen that has been linked to a variety of other diseases. While the average arsenic level in the city's treated water is below the new EPA standard, it still poses a cancer risk of about 1 in 1,000, according to the National Academy of Sciences.¹⁷

Lead

National Standard (TT)

15 ppb (action level, at 90th percentile)¹⁸

National Health Goal (MCLG)

0—no known fully safe level

2000 Levels¹⁹

East Bank 0 ppb at the 90th percentile home
West Bank 1 ppb at the 90th percentile home

2001 Levels²⁰

| | |
|-----------|-----------------------------------|
| East Bank | 0 ppb at the 90th percentile home |
| | Maximum 5 ppb |
| West Bank | 0 ppb at the 90th percentile home |
| | Maximum 0 ppb |

Lead—which enters drinking water supplies from the corrosion of pipes or faucets—can adversely affect blood pressure, red blood cells, and kidney and nervous system function and, especially in infants and children, cause permanent brain damage, decreased intelligence, and problems with growth, development, and behavior. New Orleans's water is relatively hard, a characteristic that impedes the corrosion of pipes, which can leach lead. New Orleans's reported lead level is among the lowest of any major city reviewed for this report.

Consumers, particularly those with infants or young children, may want to test their water for lead; to find a laboratory, contact the Drinking Water Hotline, 800-426-4791. Or consumers may choose to flush faucets of lead by running water for approximately one minute before ingestion. (Excess water may be saved for plants or other uses.)

ORGANIC CONTAMINANTS

Atrazine

National Standard (MCL)

3 ppb (average)

National Health Goal (MCLG)

3 ppb

1999 Levels²¹ Average Maximum
East Bank 0.4 ppb 1.2 ppb
West Bank Average Maximum
 2.2 ppb²² 3 ppb

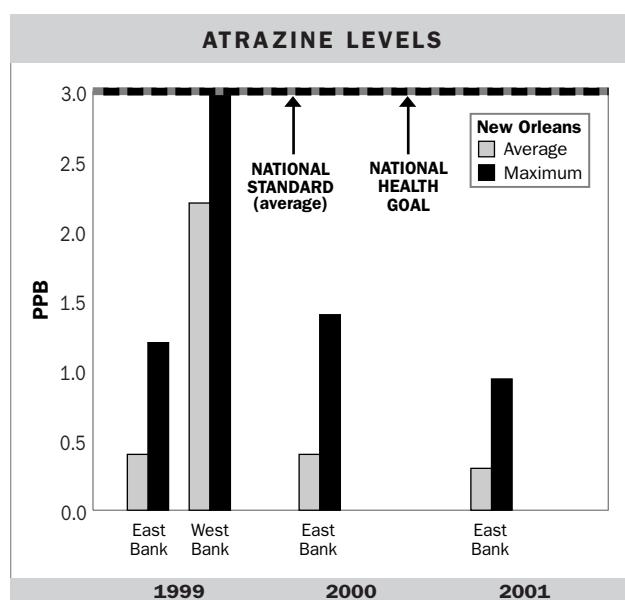
2000 Levels²³

East Bank Average Maximum
 0.4 ppb 1.4 ppb

2001 Levels²⁴ Average Maximum
East Bank 0.3 ppb 0.94 ppb

LEVELS PRESENT SOME CONCERN

Atrazine, a pesticide, poses health risks that include damage to major organs, potential reproductive problems, and possibly cancer.^{25, 26} Atrazine levels in New Orleans's tap water peaked at the national standard in 1999, but the annual average that year was below the national standard. Atrazine levels were lower in 2000 and 2001.



Haloacetic Acids

National Standard (MCL)

60 ppb (average) effective in 2002; no previous standard

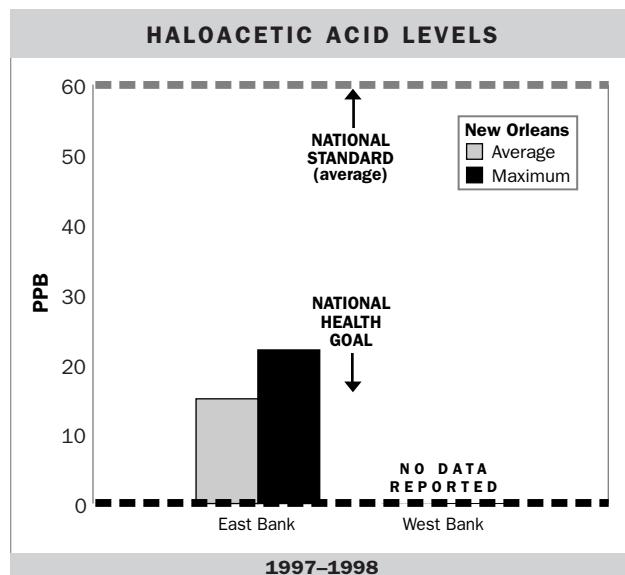
National Health Goal (MCLG)

0—no known fully safe level²⁷

| 1997–1998 Levels ²⁸ | Average | Maximum |
|--------------------------------|-----------------------|---------|
| East Bank | 15 ppb | 22 ppb |
| West Bank | No data ²⁹ | |

LEVELS PRESENT SOME CONCERN

Haloacetic acids (HAAs), by-products of chlorine disinfection, may cause cancer and, potentially, reproductive and other health problems. New Orleans's haloacetic acid levels in 2001 were below the national



standard that went into effect in January 2002. As discussed in Chapter 5, the EPA standard is not based exclusively upon health but rather is based on a weighing of health risks versus treatment options, costs, and other considerations. New Orleans's haloacetic acid levels are lower than those of many other cities reviewed in this report and, based upon the limited data provided, do not appear to present a major health concern.

Total Trihalomethanes

National Standard (MCL)

100 ppb (average) effective through 2001

80 ppb (average) effective in 2002

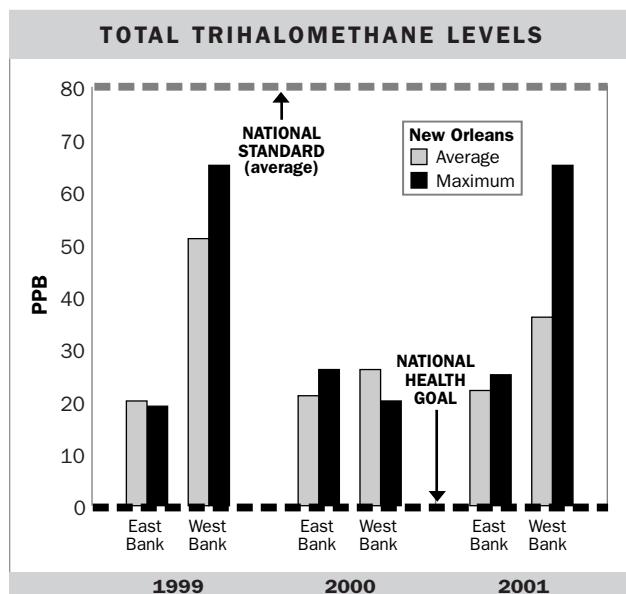
National Health Goal (MCLG)

0—no known fully safe level³⁰

| 1999 Levels ³¹ | Average | Maximum |
|---------------------------|---------|----------------------|
| East Bank | 20 ppb | 19 ppb |
| West Bank | 51 ppb | 65 ppb |
| 2000 Levels ³² | Average | Maximum |
| East Bank | 21 ppb | 26 ppb |
| West Bank | 26 ppb | 20 ppb ³³ |
| 2001 Levels ³⁴ | Average | Maximum |
| East Bank | 22 ppb | 25 ppb |
| West Bank | 36 ppb | 65 ppb |

LEVELS PRESENT SOME CONCERN

Total trihalomethanes (TTHMs)—contaminants that result when chlorine is used to treat drinking water and then interact with organic matter in the water—are linked with cancer and, potentially, to miscarriages and



birth defects. New Orleans's TTHM levels in 2001 were below the national standard that went into effect in January 2002. The EPA standard is not based exclusively on health but rather is based on a weighing of health risks versus treatment options, costs, and other considerations. New Orleans's TTHM levels are lower than those in many other cities reviewed in this report and do not appear to present a major health concern based upon the limited data provided (although the 1999 and 2001 peaks in West Bank water may be of some concern for pregnant women).

NEW ORLEANS'S RIGHT-TO-KNOW REPORTS

New Orleans's Right-to-Know Reports Earned a Grade of Poor for 2000 and 2001

On the good-citizen side of the ledger:

- The reports were generally readable and highlighted information for people most likely to experience adverse health effects from water problems.

On the could-be-a-better-citizen side of the ledger:

- The reports did not reveal levels of arsenic, atrazine, barium, and cadmium in city water. This is a violation of the EPA's right-to-know report rules. The failure to note arsenic and atrazine levels was of particular concern. Although the city's levels are not in violation of standards, they still present a cancer risk, and citizens would be better able to protect themselves if the right-to-know reports informed them of the pollutants' presence.
- The 2001 report implied that no lead was found in New Orleans tap water, stating, "Amounts detected . . . Lead: 0," and in a highlighted statement: "Is there lead in New Orleans's Tap Water? No lead was present in the treated water leaving our treatment plants." The report went on to assert that "it is not expected that water would pick up lead while traveling through pipes." Later the report stated, "Some homes may have lead levels higher than what is indicated by the results shown in the table if they have plumbing with lead solder or brass faucets containing lead." The report never acknowledged that once water arrives at consumers' taps—where EPA rules require lead testing—the substance has been found in the city's

own tests. In 2001, for example, some tested homes had lead levels as high as 5 ppb.³⁵ While EPA rules can be read to require that cities report only the 90th percentile lead level and the number of homes exceeding the action level for lead, New Orleans's report could have misled consumers to believe that no lead is found in tap water in New Orleans.

- The reports lacked maps showing New Orleans's source of drinking water or mapped or textual explanation of specific sources of pollution in New Orleans's source water. EPA rules require utilities to name known sources of any specific contaminant found in their tap water.³⁶ Even where EPA rules do not require such specific notice about a specific polluter, or where the specific polluter cannot be tied with assurance to a specific contaminant, EPA rules encourage water systems to highlight significant sources of contamination in the watershed.
- The reports did not discuss the health effects of certain regulated contaminants found at levels in excess of health goals. For example, no health effects information was provided on chlorination by-product chemicals or on radioactive contaminants. While EPA rules do not require such information, it would have been helpful to consumers.

THREATS TO NEW ORLEANS'S SOURCE WATER

New Orleans Earned a Source Water Protection Grade of Poor

The EPA's Index of Watershed Indicators (IWI) reports that New Orleans's watershed, the Lower Mississippi, has serious contamination problems and that it received an overall index rating of 5, on a 1 to 6 scale, with 6 as the worst rating.³⁷ Several forms of pollution are at work in this watershed, earning the city a Poor rating for source water protection.

According to the EPA, less than 20 percent of the watershed is of high enough quality to meet state-designated uses. In addition, serious conventional water pollution problems, loss of wetlands that cushion pollution loadings, and substantial numbers of major industrial polluters and sewage treatment plants discharging into the river upstream

all contribute to serious risks of contamination of the Lower Mississippi.³⁸

Second, the Mississippi watershed is highly susceptible to contamination from urban runoff, pollution that occurs when water passes through an urban environment, picking up particles, dirt, and chemicals before flowing into the area's water resources.

Finally, the Mississippi is affected by agricultural runoff. The EPA's "vulnerability indicator" for agricultural runoff potential shows a significant level of potential impact, with a moderate potential for nitrogen, pesticide, and sediment delivery from farm fields to rivers and streams.

PROTECTING NEW ORLEANS'S DRINKING WATER

The following are approaches to treating New Orleans's drinking water and information on how residents can help protect their local water.

Treatment Options Available for Contaminants of Greatest Concern

New Orleans could reduce disinfection by-products and other contaminants with additional treatment. For example, enhanced coagulation, activated carbon, and/or the use of an alternative primary disinfectant such as ozone or ultraviolet light could reduce disinfection by-product levels further. Moreover, ozone or ultraviolet light are far more effective than chlorine is at killing *Cryptosporidium* and some other resistant microbes. Synthetic organic compounds such as atrazine and other herbicides and pesticides, spills of petroleum products or other chemicals, as well as disinfection by-products are substantially reduced by the use of granular activated carbon (GAC). Some cities have installed GAC at a cost of

NEW ORLEANS

Sewerage and Water Board of New Orleans³⁹
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WATER UTILITY INFORMATION

about \$25 per household per year and have improved water quality, taste, and odor.

How Individuals Can Protect Source Water

Citizens can help protect the city's drinking water by working to protect its sources—both by conserving water in their daily lives and by getting involved in community decision making about water resources.

► **Attend meetings of the local water supplier**, the Sewerage and Water Board of New Orleans. Check the right-to-know report or call and ask for dates, times, and locations.

► **Get involved in source water assessment and protection** efforts by contacting the utility or find a state government contact by calling the Safe Drinking Water Hotline at 800-426-4791.

► **Learn more from these groups:**

- Louisiana Environmental Action Network (LEAN) at 225-928-1315
- Mississippi River Basin Alliance's New Orleans Office at 504-588-9008
- Clean Water Network, www.cwn.org

Peer reviewers for the New Orleans report included Wilma Subra and Willie Fontenot.

NOTES

1 "Rotting Sewer, Water Lines Tough Problems in Big Easy," *Chicago Tribune*, July 7, 2002, available online at www.win-water.org/win_news/070802article.html.

2 Ibid.

3 U.S. Environmental Protection Agency Safe Drinking Water Information Database (SDWIS), visited January 31, 2001, available online at www.epa.gov/enviro/html/sdwis/.

4 See Public Citizen, "Press Release: New Orleans Privatization Bid Rejected," October 16, 2002, available online at www.citizen.org/pressroom/release.cfm?ID=1241; Sewerage and Water Board of New Orleans, RFQ/RFP and associated materials, available online at www.swbno.org/rfq-rfp/CoverPage.htm.

5 See, EPA, Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Preproposal Draft Regulatory Language For Stakeholder Review, posted at www.epa.gov/safewater/mdbp/st2dis.html. The 1, 2, and 2.5 minimum log removal requirements are converted into percentage removals for simplicity. This rule has not been formally proposed in *The Federal Register*, but was agreed to by EPA, NRDC, public health groups, cities, and the water utility industry. See Ibid for the "FACA Stakeholder Agreement in Principle."

6 "A Report on the State of Tap Water in New Orleans: Quality Water 1999," Sewerage and Water Board of New Orleans, 2000.

7 "A Report on the State of Tap Water in New Orleans: Quality Water 2001," Sewerage and Water Board of New Orleans, 2002.

8 Note that the contaminant levels are presented as a percentage. Total coliform is regulated as a percentage of positive samples that are present in water. The national health standard of 5 percent means that if more than 5 percent of the utility's total coliform samples test positive, then the national health standard has been violated. To say that a sample tests positive is to say that there are total coliform bacteria present in the sample. Therefore, for compliance purposes, the utilities provide the percentage of total coliform samples that tested positive.

9 See note 6.

10 "Quality Water 2000," Sewerage and Water Board of New Orleans, 2001.

11 See note 7.

12 "A Report on the State of Tap Water in New Orleans: Quality Water 2000," Sewerage and Water Board of New Orleans, 2001.

13 See note 7.

14 Sewerage and Water Board of New Orleans, 1999 Results for New Orleans East Bank Distribution System Samples (FILE: 1999_DIST.XLS), obtained by NRDC under open records request.

15 Sewerage and Water Board of New Orleans, 2000 Results for New Orleans East Bank Distribution System Samples (FILE: 2000_DIST.XLS), obtained by NRDC under open records request.

16 Personal communication with Chris Holly, Sewerage and Water Board of New Orleans, August 23, 2002.

17 National Academy of Sciences, National Research Council, *Arsenic in Drinking Water: 2001 Update* (2001), available online at www.nap.edu/books/0309076293/html/. For a summary of the report, see <http://www4.nationalacademies.org/news.nsf/isbn/0309076293?OpenDocument>.

18 The action level standard for lead is different from the standard for most other contaminants. Water utilities are required to take many samples of lead in the tap water at homes they serve, including some "high-risk" homes judged likely to have lead in their plumbing or fixtures. If the amount of lead detected in the samples is more than 15 ppb at the 90th percentile (which means that 90 percent of the samples have 15 ppb or less), then the amount is said to exceed the action level. Under the complex EPA lead rule, a water system that exceeds the action level is not necessarily in violation. If a system exceeds the action level, additional measures such as chemical treatment to reduce the water's corrosivity (ability to corrode pipes and thus its ability to leach lead from pipes) must be taken. If this chemical treatment does not work, the water system may have to replace lead portions of its distribution system if they are still contributing to the lead problem.

19 "Quality Water 2000," Sewerage and Water Board of New Orleans. 2001. Please note that these data are from 1998, when the last lead survey required by law occurred.

20 Personal communication with Chris Holly, Sewerage and Water Board of New Orleans, August 23, 2002.

21 See note 14.

22 See note 6.

23 See note 15.

24 See note 16.

25 EPA, Consumer Fact Sheet: Atrazine," available online at www.epa.gov/safewater/dwh/c-soc/atrazine.html.

26 Ibid.

27 Some of the haloacetic acids have national health goals of 0 and others have nonzero goals. For the sake of simplicity and understandability, since there is a single haloacetic acid standard, and because it is essentially chemically impossible under normal conditions in tap water to create one regulated haloacetic acid without creating the others at some level, we have listed the national health goal as 0.

28 "A Report on the State of Tap Water in New Orleans: Quality Water 1999," Sewerage and Water Board of New Orleans, 2000 (the report does not identify the year of the testing but says these data were from the Information Collection Rule monitoring, which under the rule was conducted in 1997–1998).

29 According to the right-to-know report, monitoring data was only collected for the East Bank of New Orleans due to population size.

30 Total trihalomethanes (TTHMs) consist of a sum of the levels of four closely related chemicals—chloroform, dibromochloromethane, bromoform, and bromodichloromethane—which occur together at varying ratios when water is chlorinated. The latter two TTHMs have health goals of 0. The EPA promulgated and then withdrew (after a court decision) a 0 health goal for chloroform and has not yet issued a new goal for chloroform. Dibromochloromethane has a health goal of 60 ppb. Since water systems generally report only the combined TTHM level, and since it is essentially chemically impossible to create one trihalomethane in tap water without some level of the others, we list the health goal for TTHMs as 0.

31 See note 6.

32 See note 12.

33 While it may seem wrong that the average for the West Bank was higher than the maximum level, New Orleans says that this figure is correct. It is an anomaly created because the EPA allows water systems to report as the "average" the highest running annual average. The running annual average for 2000 included data from 1999 that was higher than the 2000 levels. As city officials explained it, "It may seem strange that the average is outside of the range of values (9–20) shown. This is because we are required to report the highest annual running average for the four quarters. It happens that in 2000 the highest annual running average occurred in the first quarter, which must be calculated with 1999 data, but 1999 data is not used to determine the range of values." Sewerage and Water Board of New Orleans, www.swbnola.org/ccr_page4.html.

34 "Quality Water 2001," Sewerage and Water Board of New Orleans, 2002.

35 See note 20.

36 See EPA regulations at 40 C.F.R. §141.153(d)(4)(ix), which provide that the right-to-know report must include "the likely source(s) of detected contaminants to the best of the operator's knowledge. Specific information about the contaminants may be available in sanitary surveys and source water assessments and should be used when available to the operator." While EPA allows reliance upon general lists of potential sources where the water system is not aware of the specific source of pollution or where the water system is aware of the pollution source, the rules require that polluter to be identified.

37 EPA, Index of Watershed Indicators, www.epa.gov/iwi/hucs/08070100/score.html and www.epa.gov/iwi/hucs/08090100/score.html.

38 Ibid.

39 See note 7.