

Drinking Water in the News

A review of City of Houston
Drinking Water Quality
Rankings



Photo courtesy of Joshua Davis

City of Houston Drinking Water

- Serves City residents and other community public water systems.
- Mix of Surface Water (81%) and Ground Water (19%) as of 2009 CCR
 - Surface water supplied from San Jacinto and Trinity Rivers, through Lake Houston, Lake Conroe, and Lake Livingston.
 - Groundwater supplied from the Chicot and Evangeline Aquifers

City of Houston Drinking Water

Quality Concerns- Some recent quality concerns have made the news

- Radiation Levels (alpha particle activity)
- Third party rankings

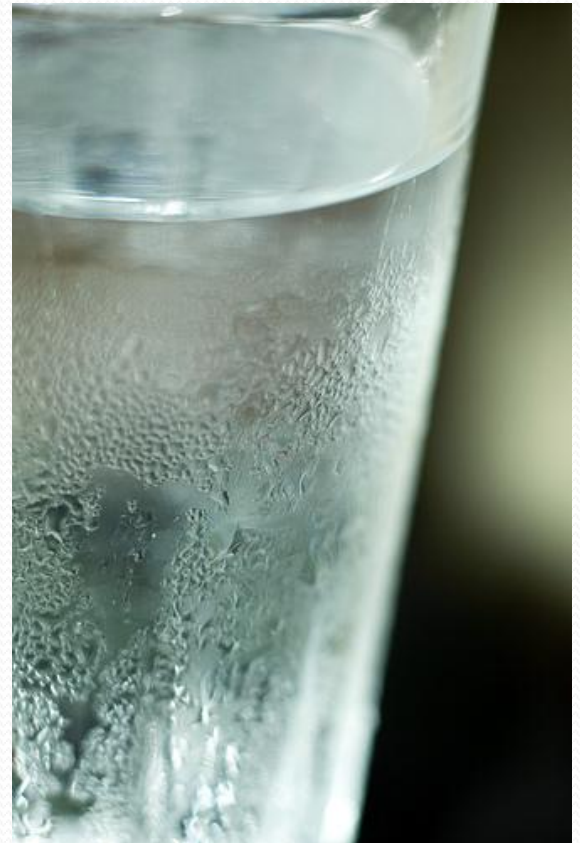


Photo courtesy of Jim Murphy

Third Party Ranking Reports

Daily Finance(website)-
financial investing site

24/7 Wall Street (website)-
financial investing site

Environmental Working
Group – non-profit 501(c)(3),
focuses on wide array of
environmental issues and lobbying.

Third Party Ranking Reports

Daily Finance

- Report on water quality around Country
- Cites studies that rank Houston as 6th worst
- Refers to 24/7 Wall Street, EWG rankings

Third Party Ranking Reports

24/7 Wall Street

- No actual report on website
- Based on EWG rankings
- No original data
- Has Houston as 6th worst in country

Third Party Ranking Reports

Environmental Working Group

- Actually collected data for study
- Has Houston as 6th worst in country
- Provides some methodology for their rankings

EWG Methodology

- Collected data from 2004-2009
- Source is compiled data from state health / environmental departments
- Represents 45 of 50 states, missing some major cities
- Requested review from AWWA, AMWA, (only three weeks given)



Photo courtesy of Flickr user SFlovestory

EWG Methodology

- Reviewed data for outliers, errors
- Assessed quality against:
 - Legal limits
 - MCL
 - MCLG
 - Etc.
 - “Health guidelines”
 - Cancer risk
 - Other (California and EPA)



Photo courtesy of Flickr user SFlovestory

EWG Methodology

California limits:

- Based on “no risk” over lifetime
- Do not consider cost/benefit or risk assessment like EPA reg.
- Set very high bar for water quality (well beyond legal limits)
- Potential skew results



EWG Ranking Methodology

- Looked at Cities > 250,000 pop.

Used three criteria:

- Total number of chemicals detected
- % of chemicals found that were tested for
- Highest avg. level of pollutants relative to limits or national average

Houston Report

Out of 22,083 tests (2004-2009):

- 46 “pollutants found”
- 18 chemicals over “health guidelines”
- 3 had exceeded “health standard”
 - Alpha particle activity (2 tests)
 - Total haloacetic acids (1 test)
 - Gross Beta particle (1 test)
- No EPA violations

Interpreting Houston's Findings

Detected Contaminants/Health Guidelines

- Based solely on detection
- Does not consider concentration
- Presence does not necessarily = problem
- “Health Guidelines” not intended to refer to single sample detections

Interpreting Houston's Findings

Alpha Particles - The City of Houston states:

- 6 of 78 wells had levels approaching regulatory standards
- 1 had an exceedance, this well not being used now
- Remaining 5 wells greatly diluted by mixing with surface water
- Levels in finished water meet standards

Interpreting Houston's Findings

Comparative Ranking

- Weighting not clear in methodology, seems to rely heavy on detections, potential bias
- “Detections” skewed by number of tests (22,083 versus 420 national avg.)
- Does not reflect current status (well OOS), averages, normal conditions, geographic scale differences

Interpreting Houston's Findings

Lessons to Learn

- Rankings are more usable when based on relative health risk
- Challenge of managing water quality grows as surface water expanded
- Country generally has good drinking water (worst ranked still meet standards)
- Current legal limits may not cover all potential health risks

Interpreting Houston's Findings

For further reading:

EWG Report -

<http://www.ewg.org/ourdrinkingwater>

Summary of report (Daily Finance)-

<http://www.dailyfinance.com/2011/01/31/ten-american-cities-with-worst-drinking-water/>