

# Groundwater Use for America

9/2010

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## Total

Groundwater (mgd—fresh, not saline) .....	79,600
Percentage of total water supply for nation.....	26.4%
Estimated annual economic value of pumped water <sup>1</sup> .....	\$20.09 bil. <sup>2</sup>

## Public Supply

Groundwater (mgd) .....	14,600
Percentage of total groundwater .....	18.3%
Percentage of total public supply .....	33.03%
Estimated annual economic value of pumped water.....	\$12.91 bil. <sup>3</sup>
Estimated value of installed well/pump infrastructure .....	\$3.73 bil. <sup>4</sup>

## Individual Household

Groundwater (mgd) .....	3,740
Percentage of total groundwater .....	4.7%
Percentage of total individual household supply .....	97.7%
Estimated annual economic value of pumped water.....	\$3.3 bil. <sup>5</sup>
Estimated value of installed well/pump infrastructure .....	\$64.31 bil.

## Irrigation

Groundwater (mgd) .....	53,500
Percentage of total groundwater .....	67.2%
Percentage of total irrigation.....	41.8%
Estimated annual economic value of pumped water.....	\$1.07 bil. <sup>6</sup>
Estimated value of installed well/pump infrastructure .....	\$6.0 bil.

## Livestock/Aquaculture

Groundwater (mgd) .....	3,200
Percentage of total groundwater .....	4.02%
Percentage of total livestock/aquaculture.....	29.3%
Estimated annual economic value of pumped water.....	\$64.0 mil. <sup>7</sup>

## Industrial, Self-Supplied (fresh)

Groundwater (mgd) .....	3,070
Percentage of total groundwater .....	3.86%
Percentage of total industrial .....	18.06%
Estimated annual economic value of pumped water.....	\$2.71 bil. <sup>8</sup>

## Mining (fresh)

Groundwater (mgd) .....	1,020
Percentage of total groundwater .....	1.28%
Percentage of total mining .....	44.16%
Estimated annual economic value of pumped water.....	\$20.4 mil. <sup>9</sup>

## Thermoelectric (fresh)

Groundwater (mgd) .....	510
Percentage of total groundwater .....	0.64%
Percentage of total thermoelectric.....	0.36%
Estimated annual economic value of pumped water.....	\$10.2 mil. <sup>10</sup>

(mgd = million gallons per day)

## Groundwater's Role in America's Economic Vitality

- 43.8%<sup>11</sup> of America's population regularly depends upon groundwater for its drinking water supply<sup>12</sup>
- 41,913,300 American residents served by privately owned individual wells<sup>13</sup>
- 88,032,021 American residents served by groundwater supplied community water systems<sup>14</sup>
- 13,249,000 occupied American households served by privately owned individual wells<sup>15</sup>
- 107,848 community supply<sup>16</sup> wells serving 40,025<sup>17</sup> American community water systems
- 17,688 nontransient, noncommunity water systems serving 5,415,937 people<sup>18</sup>
- 81,492 transient, noncommunity water systems serving 10,754,201 people<sup>19</sup>
- 407,913 irrigation wells used serving 97,690 farms<sup>20</sup>
- The U.S. bottled water industry used 5.34 billion gallons of groundwater in 2001<sup>21</sup>



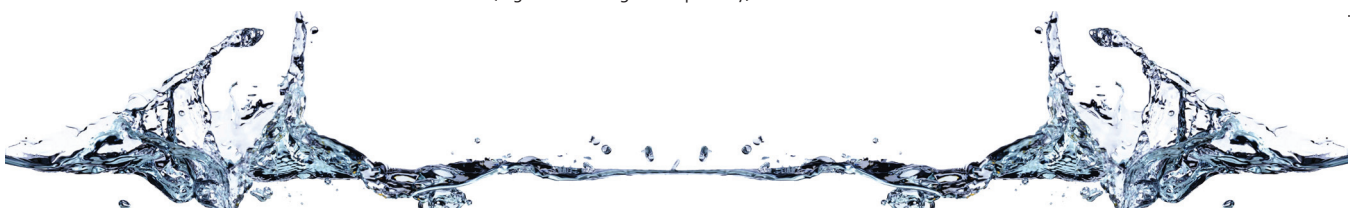
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# America's Groundwater Industry Employment

Men and women working to provide and protect America's groundwater resources for the benefit of people, business, and our environment.

## America's Contracting Employment

Drill and service water wells, install and service pumps, install and service point-of-use water treatment devices. This portion of the industry is characterized by small firms, many of which are multigeneration family-owned and operated.<sup>22</sup>

- 8,085 firms employ an estimated 44,358 people
- Annual estimated sales of \$2,466,137,000

## America's Scientists and Engineers Employment

Geologists, hydrogeologists, engineers, geochemists, geophysicists, microbiologists, regulators.

### Environmental Consulting<sup>23</sup>

NAICS 54162: Establishments primarily engaged in providing advice and assistance on environmental issues, such as the control of environmental contamination from pollutants, toxic substances, and hazardous materials.

- 9,747 firms employ an estimated 83,631 people
- Annual estimated sales of \$6,533.3 million

### Remediation<sup>24</sup>

NAICS 56291: Establishments include those engaged in remediation and cleanup of contaminated buildings, mine sites, soil, or groundwater.

- 3,833 firms employ an estimated 73,332 people
- Annual estimated sales of \$6,584.5 billion

### Government, Research Institutes, Universities and Colleges

- Hundreds more

## America's Community Water Systems Employment

Some 38,588 community water systems rely upon groundwater across the United States, and employ an estimated 211,989 professionals.<sup>25</sup>

## American Manufacturers and Wholesalers

In 2009, shipments of domestic water systems used for wells equaled 1,507,329 pumps valued at \$265,701,000.<sup>26</sup> Shipments of new machines used to drill water wells totaled 207 units at a combined value of \$119,417,000 in 2009.<sup>27</sup> Shipments of ground and groundwater source heat pumps, fossil fuel-saving technology, totaled 86,260 units in 2009, at a value of \$286,071,000.<sup>28</sup>

There are hundreds of firms employing thousands of individuals throughout the nation.

<sup>1</sup> Value of extracted water as a resource before the water is applied for noted economic use

<sup>2</sup> Sum of all estimates below

<sup>3</sup> Calculated by using value of \$0.0024227 per gallon for treated water from a Midwest utility; American Water Works Association, 2004

<sup>4</sup> Based on dollar values for wells and pumps reported in *Ground Water Contracting Industry Survey*, September 2003, ResearchUSA Inc.; same source for individual household and irrigation segments

<sup>5</sup> Calculated by using value of \$0.0024227 per gallon for treated water from a Midwest utility; American Water Works Association, 2004

<sup>6</sup> Calculated by using value of \$17.86 of direct agricultural impact per acre-foot of groundwater in Kansas, or \$0.0000548 per gallon; the Docking Institute of Public Affairs; *The Value of Ogallala Groundwater*, 2001, chapter 4

<sup>7</sup> Calculated by using the value of groundwater for irrigation

<sup>8</sup> Calculated by using the value of \$0.0024227 per gallon of treated water from a Midwest utility; American Water Works Association, 2004

<sup>9</sup> Calculated by using the value of groundwater for irrigation

<sup>10</sup> Calculated by using the value of groundwater for irrigation

<sup>11</sup> Resident population of U.S. 2005 was 296,410,404, U.S. Census, July 2005

<sup>12</sup> U.S. Geological Survey, October 2009 report on 2005 water use

<sup>13</sup> U.S. Geological Survey, October 2009 report on 2005 water use

<sup>14</sup> U.S. EPA, *FY2009 Drinking Water Factoids*

<sup>15</sup> American Housing Survey, U.S. Census, 2007

<sup>16</sup> U.S. EPA, 2004

<sup>17</sup> U.S. EPA, *FY2009 Drinking Water Factoids*

<sup>18</sup> U.S. EPA, *FY2009 Drinking Water Factoids*

<sup>19</sup> U.S. EPA, *FY2009 Drinking Water Factoids*

<sup>20</sup> U.S. Dept. of Agriculture, Farm and Ranch Irrigation Census, 2009

<sup>21</sup> Drinking Water Research Foundation, May 2005

<sup>22</sup> U.S. Census data for employee (1997) and nonemployee firms (2002)

<sup>23</sup> Barnes Reports: Environmental Consulting Services Industry (NAICS 54162); C. Barnes & Co., 2010 Edition.

<sup>24</sup> Barnes Reports: Remediation Services Industry (NAICS 56291); C. Barnes & Co., 2010 Edition

<sup>25</sup> U.S. EPA, March 2008, *2000 Community Water Systems Survey*

<sup>26</sup> U.S. Census, Current Industrial Reports – Pumps and Compressors, 2009

<sup>27</sup> U.S. Census, Current Industrial Reports – Mining and Construction Machinery, 2009

<sup>28</sup> U.S. Census, Current Industrial Reports – Refrigeration, Air Conditioning, and Warm Air Heating Equipment, 2009