

Getting Started in the Bottled Water Business: *Source Water Development*

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Your natural spring, well or artesian well source may already be providing you with the “best water you’ve ever tasted” with little effort on your part. However, selling that same water for public consumption puts you under government scrutiny.

In order to have your source licensed, many states require that a hydrogeological report accompany the application. Anyone who is serious about getting into the bottled water business should contact a hydrogeologist who specializes in bottled water development.

Water matrix, regional geology, source location, federal, state and/or local legislation, supply and demand can greatly impact the value of the source. Preliminary analysis of the water and a professional site assessment early in your planning will help ensure a more efficient source development process.

A hydrogeologist will visit your source site to assess various factors such as:

- Water quality - preliminary analysis for relatively common parameters which may impact suitability for bottled water and treatment options. Preliminary analysis should include at least the following: Arsenic and other heavy metals, bromide, bromate, iron, manganese, nitrate, sodium, volatile organic compounds, pesticides, herbicides and coliform bacteria. Other information which can also be helpful at this stage includes: calcium, magnesium, potassium, chloride, sulfate, fluoride, bicarbonate, pH, total dissolved solids and alkalinity.

The outcome of the preliminary analysis is a key factor in determining if the potential source will be worth your investment.

- Geological setting surrounding the source of water - types of rock, surficial deposits, bedding orientation, faults, etc.
- Hydrology - amount of water available as impacted by flow rate, seasonal variations, and recharge area.
- Hazard determination - likelihood of surface water contamination or activities in the surrounding area which may lead to contamination such as landfills, illegal dumping, manure storage, etc.
- Determine “type” of water - classification water falls under according to FDA Standards of Identity (“Spring Water”, “Well Water”, “Artesian Water”).
- Logistical considerations - land available for development of satellite source, roadways and transportation routes in conjunction with local development ordinances.
- Development strategies - discuss plans for the type of source development which is best suited to the source based on all of the above mentioned criteria.

It is wise to follow a plan that has been prepared by a qualified hydrogeologist with bottled water experience. Many states have programs for licensing geologists who are qualified, through experience and training, to conduct geological evaluations. Make sure the reports from the hydrogeologist working on your project will be accepted by your state.

The costs involved in developing a water source for bottled water use generally ranges between \$60,000 and \$300,000 (possibly higher). These costs typically involve the hydrogeological report, engineering reports, storage tanks, disinfection equipment, roads, fencing, electrical, borehole, spring box and state licensing fees. Licensing fees vary based on the states in which your water will be sold.

The price at which bulk water is typically sold for bottled water use can range from \$.0125 per gallon to \$.06 per gallon. The price per gallon will be impacted by the volume of water being sold; proximity of the source to the plant or market; supply and demand in the area; and who installs and maintains the necessary equipment (source owner or bottler).

Starting the development process with all the facts up front can help you avoid costly mistakes down the road so our best advise would be to consult a professional.

Classification of water:

<u>Type of Source Water</u>	<u>Definition</u>
Spring Water	Flows naturally to the surface from a confined underground formation without any man-made assistance (may be collected via a borehole)
Borehole	Taps into the underground formation feeding a spring source (allows for better control over water withdrawal)
Well Water	Holes bored, or drilled, in the ground which tap into an underground aquifer
Artesian Well	Tap into a confined underground aquifer with a water level which stands above the water table (referred to as an "artesian head")

Key questions to be addressed:

1. What is the quality of the water?
2. What is the geology of the surrounding area?
3. What is the hydrology of the source?
4. Are any potential sources of contamination apparent?
5. What can I call the water ("Spring", "Artesian"...)?
6. What is the recommended course of action for development?

For more in-depth information or to discuss your specific needs, please feel free to call one of the following people who assisted us with the information in this article:

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www.aqua-source.com
www.bottlingsystems.com
800-233-5110

Other helpful websites:

International Bottled Water Association (IBWA)
www.bottledwater.org

Bottled Water Web
Arthur Von Weisberg
www.bottledwaterweb.com