



The Springs of Denham Springs, Louisiana: Location, History, Water Chemistry, and Source of Water

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ABSTRACT

Approximately 100 to 150 years ago a series of hotels were built for tourists that considered the spring waters to be therapeutic. Currently, Spring Park includes some of these springs. This study included a search for springs within the park. Water samples from the springs were analyzed to see if spring water is different from city groundwater and interpretations were made on what is the source of the spring water.

On April 21, five additional seeps/springs found within a couple hundred feet of the spring the city marked off by a cement cistern. Springs were sampled in, April, June, and October. Water collected from each seep/spring and the current spring with a cement cistern around it. One unpreserved 50 ml sample later analyzed using an ion chromatography system for a series of anions. Another sample preserved with nitric acid 50 ml was later analyzed using an inductively coupled plasma-optical emission spectrometer for mainly a series of metals and other cations. Except for ions that have non-detection concentrations, concentrations of ions in seep water exceed that in city water from deep aquifer by often up to a factor of 60. Seep water has higher concentrations of aluminum, calcium, iron, magnesium, and manganese than city water than what is to be expected. In addition, seep water has concentrations of most ions far over those for any of the other more shallow aquifers in the Denham Springs area. This in particular true for chloride concentrations, which eliminates the possibility that seep water source is the underlying aquifers that make up the Southern Hills Aquifer System. This means surface water source is the likely source for the high chloride concentrations observed in the seep water. The likely source of surface water is Lake Maurepas water mixed in with more dilute Amite River, nearby groundwater and infiltrated rainwater.