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House Committee on Natural Resources and
Environment
Senate Committee on Environmental Quality

Effects of the Jefferson Island Storage and Hub
on the Chicot Aquifer

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Effects of the Jefferson Island Storage and Hub on the Chicot Aquifer

The Chicot Aquifer covers more than 20 parishes in south central and south west Louisiana and cover more than 9,000 square miles. The Chicot Aquifer is designated by the Environmental Protection Agency as a sole source aquifer. The Chicot Aquifer is the only available source of drinking water in southwest Louisiana. The Sole Source designation of the Chicot Aquifer was a result of a petition filed by the environmental organization Save Acadia's Water (SAW) from Acadia Parish. The Environmental Protection Agency held a public hearing and public comment period as a result of the SAW petition in 1987 and shortly after, 24 years ago, designated the Chicot Aquifer as a Sole Source Aquifer.

The Jefferson Island salt dome is the northern most surface expression salt dome of the Five Island domes in southwest Louisiana. The other domes consist of Avery Island, Weeks Island, Cote Blanche Island and Belle Isle. The Jefferson Island salt dome consist of two adjacent salt spines. Spine 1 is under Lake Peigneur and Spine 2 manifest the surface expression of Jefferson Island. The Chicot aquifer surrounds the salt dome and extends onto portions of the salt dome.

The Jefferson Island salt dome has been developed for salt, sulfur, oil and gas production and natural gas storage.

Salt mined 1919 to 1980 - mine flooded Nov. 20, 1980

Sulfur mined 1932 to 1936 - hundreds of wells

Oil and gas production 1938 to present - @ 275 wells

Natural gas storage 1994 to present-2 storage caverns in Spine 1

Negative Impacts on the Chicot Aquifer

The proposed expansion of the natural gas storage caverns and addition of storage caverns by Jefferson Island Storage and Hub will have negative impacts on the Chicot Aquifer.

1. The large quantity of Chicot Aquifer water that will be withdrawn and used to leach the caverns in the salt dome will become contaminated with salt and other minerals in the salt stock and wasted forever. The leached water will never be returned to the water cycle.

The use of Chicot Aquifer water for municipal, industrial, agriculture, etc. uses return the water to the water cycle after use.

2. The large quantity of Chicot Aquifer water that will be withdrawn from the aquifer for cavern leaching will result in

-aquifer draw down that will negatively impact other groundwater uses

-will increase saltwater intrusion

3. The injection to dispose of the water used to leach the salt caverns, has the potential to result in over pressurizing the aquifer.

Information Lacking

1. Salt domes have been documented to be associated with subsidence and the salt creeps. The current situations on, in and associated with the Jefferson Island Salt Dome are not being adequately monitored for subsidence and the impacts of creep on the Chicot Aquifer.

2. The current and past industrial activities in and on the salt dome are not being evaluated for the impacts on the Chicot Aquifer.

3. The current impacts are also not being evaluated for the cumulative and total impacts on the Chicot Aquifer.

Suspend the Permitting Process Until the Impacts of the Current Operations on the Chicot Aquifer are Totally Evaluated and Documented

Due to the need for additional evaluations of current impacts of the Jefferson Island Storage and Hub on the Chicot Aquifer, and the impacts of subsidence and creep of the salt on the Chicot Aquifer associated with the current salt dome storage caverns, the expansion of the current salt caverns and the addition of salt caverns for natural gas storage in the Jefferson Island Salt Dome must be suspended until the total impacts of the current operations on the Chicot Aquifer and surrounding environments can be totally evaluated.

In order to avoid adverse environmental effects of the proposed expansion, the existing environmental effects on the Chicot Aquifer by the Jefferson Island Storage and Hub must be clearly documented.

In too many locations where the Chicot Aquifer has become contaminated due to industrial, municipal, and agricultural activities, the state agencies have failed to evaluate the impacts. A quick fix, such as connecting water well users to municipal sources and abandoning contaminated wells is all that is done. The source or sources of contamination, the extent of contamination, contamination evaluation and remediation are frequently not performed.

In the case of the current natural gas storage caverns in the Jefferson Island Salt Dome, the impacts on the Chicot Aquifer and the salt dome have not been adequately evaluated and assessed. Moving forward with additional capacities in the existing caverns and the creation of additional caverns is not appropriate until the full extent of the environmental impacts of the current operations are known and these impacts used as a basis of evaluation and determination of the total environmental impacts of the proposed facilities.

The Chicot Aquifer is our only source of drinking water. Our only source of drinking water must be protected with all possible measures.