

December 13, 2011

Attention: Doctor Angela Nugent

Subject: Advisory on EPA's Draft Technical Document entitled Considerations Related to Post-Closure Monitoring of Uranium In-Situ Leach/In-Situ Recovery (ISL/ISR) Sites

It is a privilege to submit comments on the above subject in reference to the draft report prepared by The EPA Science Advisory Board noted in the Federal Register on November 28, 2011.

My name is Art Dohmann. I am president of the Goliad County Groundwater Conservation District (GCGCD). GCGCD has been involved with a potential In-Situ uranium mining project in a drinking water aquifer in Goliad County since the beginning of borehole drilling in July 2006. GCGCD activities have included extensive hydrologic evaluation with professional consultants, testing the water quality in and around the permit area of many wells, and participating in a contested case hearing on the injection permit application. This participation has generated a large volume of data, all of which is available for public use.

In order to operate an In/Situ Uranium mining operation, an aquifer exemption is required from the EPA. One of several criteria for issuing an aquifer exemption in a drinking water aquifer is that the groundwater in the permit area is not of drinking water quality. The determination of whether the groundwater in the permit area is of drinking water is tied to water samples taken prior to mining.

In-Situ uranium mining is normally preceded by extensive borehole drilling to pinpoint the location of the ore body, as is the case in Goliad County. When extensive borehole drilling is in progress, the completion of a baseline monitor well in close proximity to one or more just completed boreholes negates any assurance that an accurate pre-mining water quality baseline can not be determined. An accurate pre-mining water quality baseline must be established using water samples taken prior to exploration or from wells completed away from exploration boreholes. The distance would need to be determined based on the drilling method used in drilling the boreholes and the hydrology of the aquifer.

The method of completion of the baseline monitor well is critical. A normal method of completion of a water well is to air jet the well after the screen and casing is installed. This air jetting is to clean the sediment from the screen area. This method will introduce oxygen (air is 21 percent oxygen) into the formation and there will be some activation of any uranium ore deposit that is present. This method was utilized in the Goliad County operation. The water test results from samples taken when exploration borehole drilling was in progress and from monitor wells that were air jetted clearly identified the presence of elevated levels of uranium in water samples taken shortly after the monitor wells were completed. Subsequent water quality samples taken 12 and 15 months after the first samples were taken and after exploration borehole drilling had stopped showed a large

decrease in uranium concentration and an increase in alpha and radium 226. This observation is consistent with the chemistry of uranium deposition and activation and with the release of daughter products from activated uranium. Unfortunately the daughter products do not re-deposit as is the case with the uranium. The method used to complete a baseline monitor well is critical as it has been shown that air jetting a well can liberate radionuclides which can erroneously classify the groundwater as not being of drinking water quality.

In summary, the most reliable time for taking an accurate baseline groundwater sample is to sample the groundwater prior to extensive exploration borehole drilling. In conjunction with this process is the development of a monitor well completion procedure that does not allow introduction of oxygen into the aquifer formation to be tested. If there is to be an accurate determination of the drinking water quality of the groundwater and the development of a true baseline for restoration, these two critical components must be addressed.

Art Dohmann