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Organization:

Title:

Comments: To whom it may concern,

I'm writing this letter concerning the proposed exploratory wells by Solitario Zinc Corporation in the Black Hills Forest of South Dakota. I have many family members that have or still live in this surrounding area and know this area well. I'm a geologist with over ten years of experience and a MS in geology. Much of my career has been focused in exploration and exploitation of mineral resources. This may seem ironic that I would be writing this letter, knowing I myself do this for a living but after examining the documents submitted by Solitario I have much concern over the simplification of the reservoirs (aquifers) and how they may communicate. Reservoirs such as the Mission Canyon with significant karsting are extremely transmissible reservoirs, this is obviously why it supplies much of the drinking water in the area. Overlapping this stratigraphy with a structurally complex area that surely has a substantial fracture network makes for an even more transmissible reservoir. This is great when looking for a domestic groundwater consumption source but if contaminated can be devastating with no way to contain the contamination. Each well will create a potential source of cross contamination with any and all formations once the wellbore has been drilled. Each well will present its own risks as the geology will be different; different TDS levels, changing hydrostatic, reservoir facies, fracture orientation.... and the list goes on. Some of the wells are extremely close to the main tributaries of Spearfish Creek. I'm sure a plan is in place for casing and cement to be run in each well but even these jobs have risk factors and fail at times. I believe there is a risk for induced fracturing (borehole breakout) during the drilling process as well, which is extremely difficult to fix if it occurs. These are just some of the concerns I have in the drilling process that could occur. Again, I would reiterate these wells are extremely close to homes and one of the main recreational and drinking water sources in all the Black Hills. There are always risks when drilling new wells, some are known risks and some you learn after the fact. I ask that you please consider these risks when considering this project.

Sincerely,

Matt Sebade