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Comments: To whom it may concern:

I grew up in Spearfish. And as a kid I would hike off trail through the understory often following sub canyons as I made upward progress. These sub canyons are unique in that they hold a moist cool climate, some of them never seeing more than a hair of sunlight during the day. There are springs that bubble out and feed moist mats of moss, thimble berry and soaring spruce. These are also unique plants, vestiges from the little ice age 15 thousand years ago. As the glaciers retreated and Paha Sapa warmed and dried the delicate moist loving plants were outcompeted by the hardier pine and drought tolerant perennials. As a child staring up into an old growth spruce canopy, with the smell of fertile dirt and the sound of a gargling spring, I've had many a transformational moment. Some of these moments helped me process emotional happenings in my life and others likely nudged me towards studying hydrology in graduate school. From my vantage point as both a boy that loved the canyon and as a scientist that studies water and its interaction with the ecosystem, I have several main concerns about this proposal.

Firstly, I believe a proper EIS should be performed. Drilling so many deep wells has risks associated with it. When creating a risk assessment groundwater model there are many parameters that we don't know down to a magnitude or more. And what is particularly difficult and as of yet unquantifiable is cracked or cave type geology. The limestone karst in Spearfish and surround aquifers has such amazing karst and is particularly susceptible to leaching hazardous native elements through watersheds and into drinking water. These 'tunnels' are notoriously difficult (as of yet impossible) to map and so hydrogeologists simply use large 'fudge factors' or use probably distributions to reduce uncertainty. At the very least, we should give serious consideration to the possibility of leaching into groundwater through an EIS and groundwater assessment, particularly due to the karst nature of the geology of the area.

Secondly, the amount of water that will be pumped into the wells will have to be hauled up Tinton Rd with large water trucks on an already dusty road. This will cause impacts to the hundreds of trail users that hike, run and bike the Tinton Trail complex. Getting outside to exercise, immerse oneself in nature and relax is seen by many psychotherapists as a health promoting modality and in an age of widespread mental and physical health issues should be taken very seriously.

Thirdly, as our environmental awareness grows we tend to find more things rather than fewer things to be cautious about. This suggests that we should be giving our due diligence and not speeding potentially harmful projects on our public lands. Yes, we shouldn't demonize industry, we need it. But I hope we can be cautious and not let chasing dollars sway our thinking, that it'll be alright because it's good for the economy. At what cost to the environment is it good for the economy? I feel this question needs to be better answered before the project continues.

Thanks so much for your time,

Brian