THE BEST WAY TO KEEP OUR WATER SAFE

Once we stop relying on fossil fuels, we can forget about coal-related accidents.

2014 has been a bad year for drinking water. First, a coal industry chemical spill left West Virginia residents in nine counties with water so polluted they could only use it to flush their toilets. And now 82,000 tons of coal ash have found their way into a river that supplies drinking waterto parts of North Carolina and Virginia.

Coal ash, by the way, is what remains after coal is burnt for electricity. And it's chock full of stuff you don't want in your drinking water, like cadmium and arsenic.

In this case, Waterkeeper Alliance tested water samples taken from the Dan River following the recent spill. They found high levels of arsenic, chromium, and lead.

Waterkeeper Alliance Inc./Flickr

In a letter, Waterkeeper pointed out that these heavy metals are “bioaccumulative.” That means that while the authorities and the company that spilled the coal ash, Duke Energy, fumble to clean up the mess, these toxins will find their way into the web of life in the river and they will stay there for a long time.

Bioaccumulation occurs when microbes, plants, or other critters on the bottom of the food chain take in a contaminant. Let’s say it’s a type of small fish that takes in the toxic chemical. A larger fish might eat several of those small fish every single day — and along with them, it will accumulate the toxin from each of them. Then perhaps a bird of prey will eat several of the large fish. More and more of the chemical accumulates with each step up the food chain.

Maybe the concentration of the chemical will kill the top predator immediately — or maybe it won’t. But it might impact that animal’s ability to reproduce, or it could result in severe health problems for the animal’s young.

All the while, Duke Energy will be cleaning its coal ash out of the water (we hope) — but the damage is done for the species that have already consumed toxic chemicals and stored them in their own bodies.

By the way, humans are the top of the food chain, and we like to eat fish too. Hope you didn’t plan on fishing in the Dan River anytime soon. I wouldn’t.

Some will use this occasion to call for stricter regulation or more inspections. And that’s probably a really good idea, since apparently the coal industry cannot seem to keep its harmful byproducts out of our drinking water supplies these days.

But what about the other alternative? That is: getting our energy from sources that do not pose any risk for such disasters in the first place.

The obvious low-hanging fruit is efficiency. If your light bulbs or your refrigerator are twice as efficient as older models, then you still get all of your modern conveniences while using half as much energy. If you've got excellent insulation in your house, then you can use less power — and pay less money — to keep your home the same comfortable temperature.

Better yet are innovations that require no electricity at all, like designing homes to maximize natural light and to naturally keep warm in the winter and cool in the summer. And if you aren't remodeling your house, you could strategically plant deciduous trees near your home to block the sun in the summer while letting it through in the winter.

But in the end, the only real fix will be switching to sustainable technologies like wind and solar energy. Even a very efficient car still requires oil. After all, another name for a massive solar energy spill is "a sunny day" — and I prefer that to toxic drinking water.

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