

Kiersten Wilson
Colorado School of Mines
Word Count: 499

A beautiful summer day. Birds chirping in the pines. The hum of a peristaltic pump pulling groundwater from the subsurface lulls me to sleep. An occasional deer meanders by, casting an inquisitive glance before galloping off. But look closer: concentric barbed wire fences, perfectly spaced pines planted by a mechanical planter 25 years ago, and an abandoned neighborhood just beyond the outermost fence cast an ominous, invisible shadow across the site. The thick chemical smell from the capture bucket coats my nose, a reminder of the destruction that occurred here decades ago and its eternal environmental impacts. Chatter from the nearby road drifts over. Local tribe members walk and talk while their children whiz past on bikes, laughing. Every few weeks, the lawns where many of these families' homes once stood are mowed, yet the lots remain devoid of life or laughter.

In that moment, I realized that site remediation is not only about restoring land and water, but also about restoring justice. That understanding reshaped how I see the environmental field and my place within it. As a future site remediation engineer, I hope to embody our ethical responsibility to identify the intersections of environmental harm and social inequity. Across the country, hazardous waste sites are disproportionately located near low-income communities and communities of color. National programs, like Superfund, were created to protect human health and hold polluters accountable, yet cleanup timelines often span decades, or even indefinitely. During that time, residents live in quiet uncertainty. Justice delayed is not just a policy failure. It is a lived, daily burden carried by families who did not create the contamination but still inherited its consequences.

My academic, research, and internship experiences have prepared me for both the technical and human dimensions of this challenge. Through my studies in environmental engineering, I have built a foundation in contaminant fate and transport, hydrogeology, and remediation design, but also technical writing and ethics. As an undergraduate researcher working with destructive technologies for persistent contaminants, I saw how innovation can accelerate cleanup, but also that technology alone cannot build trust. During my environmental consulting internships, I observed the gap between dense technical presentations or memos and residents' concerns. When plans are inaccessible or poorly communicated, communities feel acted upon rather than partnered with, causing even well-designed remedies to falter under the weight of distrust.

As a future site remediation engineer, I hope to bridge that divide. Technically, I hope to design cutting-edge, efficient remediation systems that shorten cleanup timelines and protect human and environmental health. Ethically, I aim to ensure that affected communities are meaningfully involved in decision-making. Not simply informed, but empowered. That means translating risk assessments into clear language, listening to community priorities, and advocating for remedies that protect public health and cultural ties to the land. Environmental justice requires restoring opportunity, safety, and trust, not just removing contaminants. By combining rigorous engineering with intentional engagement, I hope to transform contaminated spaces into places where families can return, rebuild, and thrive.