Environmental Engineer

Job Description

Environmental engineers use principles of engineering, chemistry, and biology to reduce the negative environmental impact of human systems. This translates to improvements in the health of both humans and ecosystems. Environmental engineers create sustainable solutions to improve conditions in societies such as pollution, water quality, and waste disposal.

Salary
Entry — $56,000
Middle — $74-87,000
Top — $102,000+

Core Tasks

- Conduct water chemistry and air pollution testing for corporations
- Review environmental investigation reports and maintain documentation
- Design infrastructure such as wastewater treatment and air regulation systems
- Advise corporations about procedures for ensuring sustainable practices
- Create detailed environmental models and predictions using CAD

Workplace / Environment

- **Work hours**
  Approx. 40 hours/week
  (At key milestones overtime work may be required to meet deadlines)

- **Environment**
  Mixed is common, with **planning, designing, permitting,** and **data analysis** taking place in the office. For **inspections** and **research**, environmental engineers **may go outside or visit other facilities**

- **Travel**
  Varies, but is more often in larger firms

Education / Prerequisites

Education Level
Bachelor's degree in engineering fields such as environmental, civil, or chemical

Licensing
Usually requires a professional engineering (PE) license

Pre-Job Preparation
Advanced courses in environmental science, math, physics, and chemistry as well as participation in environmental clubs. Real-world experience is preferred by employers

Experience

Soft Skills
- Problem-Solving
- Leadership
- Project Management

Technical Skills
- Calculation Software
- Modeling Software
- Environmental Regulation Knowledge

Career Path: Samayyah Williams

About Me

Process Engineer at Brightwater Treatment Plant – Former Environmental Engineer

Bachelor of Civil Engineering from Cal Poly Pomona; Master of Environmental Engineering from University of Michigan

High School Life

"I genuinely had **no idea** what I wanted to do when I graduated. I hit senior year, and all my friends around me were like, 'We're going to do this, we're going to do that,' and I didn't know what I wanted to do. I did career aptitude tests and I got random answers so I was like, 'None of that sounds super appealing.' Then, I started thinking about what my **hobbies** were at the time. One of the things I really enjoyed doing was doodling and drawing. I loved art. So I'm like, 'Alright cool, I'll go school and go into **cartooning**—I want to be an **animator**.'"

College Choices

"I started **drawing**, and I looked around me and realized, 'Oh, actually I'm really terrible at this—I should not do this.' But I liked chatting with young people and had a lot of family in education so I thought, 'Maybe I'll go be a **teacher**.' I started taking those classes and I realized, 'Oh, you can't just play with kids, you have to like, be responsible for these kids.' That's so much pressure! I couldn't be a teacher—I'm way too irresponsible for that. At this point, I'm still just trying to figure out what I like. I remember jumping from college to college because I liked so many different things and each college had a different type of major that they specialized in. I went from cartoons to education to astronomy."

"I eventually got to my final school, which was Cal Poly Pomona—it's a school in California that specializes in engineering and agriculture. One day, I was wandering around the school **talking to random professors**, and this one professor came up to me and said, 'Hey, I've got this project that one of my students has been working on but can't finish because she's about to graduate. Will you do it?' I was like 'Cool, why not?' It turns out that project was my introduction to **environmental engineering**. It was basically running my own tiny little pilot system. I was treating groundwater from our campus and removing a chemical using wood chips. So I did that, and I was like, 'Holy crap, this is awesome!'"

Into the Real World

"From there, I just kept going with it. I eventually graduated from Cal Poly Pomona with my Bachelors and went to grad school in Michigan, where I got my Masters in Environmental Engineering. I went on to work for an engineering firm in **Arizona** for about a year. It was a cool job, but it was really hot there, so I went looking for other jobs. I ended up getting hired here with **King County**, where I've enjoyed working with people and the work I'm doing."

About My Job

"The cool thing about being an engineer is that you get out of it what you put into it."

Pros

- "A pro about this job is being able to take something that's perceived as disgusting and turn it into something that's **useful and beautiful**."

- "You're going to keep **learning** until the day you stop working. Every day, you learn something new and they're discovering new things."

- "This job is **weirdly awesome** and gross because you're dealing with poop."

Cons

- "A con is being in more **meetings** than I thought I would have."

- "There's a lot of **studying** involved in preparing for these jobs and degrees, which can be a bummer, but you will use everything you learn."

Fieldwork

- "The cool part about being an engineer is that you can go out **into the field** and **talk to people** about the processes. Talking to people about the processes gives you insight as to how you need to change your design. There's nothing stopping you from being in the field and people actually like it when you're out there."

Office Work

- "There's a lot of **flexibility** in how much time you spend in the office, as opposed to the field. Work life is flexible."

Skills

- "**Communication** skills are really important. In every job, it's 'communicate, communicate, communicate.'"

- "Everything you study comes full circle—you're not wasting knowledge."

- "Don't be afraid to ask **questions**. The only way you get to be as smart as you are as an engineer is if you talk to people and ask questions."

Education/Experience

- "Definitely look for **internships**, and while you're in those internships, ask questions."

- "Take **classes**—I suspect that there's a little bit of knowledge that goes away, and then you ask yourself, 'Why didn't I take that class?'"

- "You're not going to stop **learning** because there's always going to be new discoveries in the field. It's a lot to keep up with, but then you get interested in it, start talking to people about it, and you learn more and more. There's no limit to how much you can learn."

The Future of **Environmental Engineering**

"I will safely say this is one of the most sustainable jobs, period."

"How environmental engineering evolves is going to be really interesting because there's always **new laws** about how clean the water has to be. The EPA is constantly making rules stricter and stricter. People like me have to come up with ideas about how to meet the demands from the EPA, and that's a challenge. Then, there's also tons of new technologies coming out saying things like, 'Hey, we built this thing that's gonna remove all of this chemical.' Then, you're like, 'Alright, prove it. Let's talk about it.'"

"There's always going to be **innovation** coming down the pipeline. There's always going to be this factor about how much we know about an environment, how much we're affecting it, and how we can meet the demand so we're not having as much of an impact as we were before. I will safely say this is one of the most sustainable jobs, period."