ENSU 1000 - Reflective Essay

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Before diving into environmental sustainability courses and research, my understanding was basic. I was aware of issues like pollution and climate change, but I didn't fully understand the broad extent that these issues affected. I was working at McDonald's for six years before returning to university, which left me sheltered in my understanding of these issues. At this time, I believed that climate change issues would be solved if billionaires stopped flying their private jets. I didn't recognize my own role in environmental sustainability, or how scientific research and community-level efforts could create meaningful change. I also didn't think much about how the packaging, food waste, or energy use in my workplace contributed to larger environmental issues, and that was just how things were.

Returning to university to study chemical biology, I saw the potential for science to help, but it was through my courses and research that my perspective truly began to shift. One key turning point was my project on "Determination of Trace Metals in Bee Pollen by ICP-MS." Under the supervision of Dr. Kingsley Donkor, I learned how industries like mining, while crucial for the economy, can have unintended consequences on the environment. By analyzing bee pollen, I could see how trace metals, released during mining activities, affect pollinators—an essential part of our ecosystem. This research shifted my thinking from seeing sustainability as a separate issue to realizing that it must be integrated into all aspects of industrial practice.

Courses like microbiology also changed the way I think about environmental sustainability. I never realized how microorganisms play such a vital role in sustainable solutions, like bioremediation and wastewater treatment, before I took these courses. The learning I gained here shifted my approach to sustainability from merely reducing harm to actively using natural processes to restore ecosystems. This was a critical shift in my thinking – sustainability isn't just about minimizing negative impacts; it's about finding solutions that work with nature at every level.

Presenting my research at the Canadian Mineral Analysts (CMA) 2024 conference in Kamloops was another important experience. It wasn't just about sharing my findings; it was about using my research to spark conversations in the mining industry about the environmental consequences of their practices. Presenting to professionals in the field helped me realize how vital it is to communicate the importance of sustainability in a way that resonates with those who may not always prioritize it. This experience made me more confident in using my research to influence industry practices and policy toward more sustainable methods.

These experiences have reshaped how I understand and approach environmental sustainability. I no longer view it as a separate issue to address, rather as a broad, interconnected issue that requires input from research, industry, and public policy. It is not just about minimizing harm – I've come to realize that real progress happens when sustainability becomes a fundamental value when working and thinking. In the future, I'll continue to focus on sustainability in my work, ensuring that I not only consider the direct impact of my actions but

also advocate for practices that can make a meaningful difference in environmental outcomes. By treating sustainability as a shared responsibility, I feel more confident in my ability to contribute to meaningful change.

Looking forward, I plan to bring sustainability into the center of my future academic and professional life. For example, as I pursue graduate studies at the University of Alberta, I plan to incorporate sustainability principles into my research project, where I am developing a new ionization source for liquid chromatography-mass spectrometry. This analytical chemistry instrument is very popular to use, so it would be beneficial to create an ionization source that uses less energy than what is currently used worldwide. I want my work to serve as a bridge between scientific research and practical environmental outcomes. Beyond graduate school, I have become more intentional about incorporating sustainability into my personal decisions, such as reducing my own lab waste and supporting science outreach events that promote environmental awareness in my community.

In summary, my journey through environmental sustainability courses and research has changed the way I think about and approach environmental issues. It's helped me connect my scientific work to real-world sustainability challenges, and I'm committed to applying what I've learned in the future to contribute to a more sustainable world. I've moved from my passive, sheltered view of sustainability when I worked at McDonald's to an active one after my time at Thompson Rivers University, where I make a conscious effort to integrate efforts into my daily

life. I am committed to continuing this work in the future through research, collaboration, and advocacy to help create a more sustainable future.