Co-op Job Summary

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Biological & Environmental Engineering

Ecology & Environment, Inc.

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I. Work Assignment

Ecology and Environment is an environmental consultancy based out of Lancaster, NY with many offices over the U.S. In Lancaster, there are two buildings: the headquarters building, and the Walden Avenue building, in which most engineering staff work from. I was assigned to the engineering team and worked closely with the engineers and geologists from the Walden building. I also had a chance to work with staff from the headquarters building, including environmental planners, editors, and GIS/IT staff.

A major project I worked on was analyzing the operations of a temporary drinking water treatment system to remove methylene chloride contamination in Cattaraugus County, New York. The water treatment plant was encountering problems with running at its intended capacity. I developed a spreadsheet to calculate dynamic and static head loss of the system and helped figure out at which capacity the plant will most efficiently run at given its current design restrictions. Another project I assisted with was providing calculations for a landfill design. Statics and mechanics calculations were applied to the design to ensure it would be safe to operate under severe weather conditions. I also had the chance to work on a project analyzing the efficiency of a groundwater treatment plant. I helped provide calculations to determine whether running pumps continuously or pulsing pumps would remove more contaminant mass from underground aquifers. This analysis will demonstrate to the EPA whether this unique approach of pump pulsing will remove more contaminant mass per volume. Statistical analysis was employed and graphical figures were generated to depict the results. Another major project I had worked on was calculating non-point source contaminant loading into nearby receiving waters using sampling and geographic data. Before remediation can take place, the nature and extent of contamination has to be characterized.

On my first day of work I was given an orientation by the Human Resources representative who visited campus for my interview and works with the Co-op office to coordinate the details of the Co-op. I was introduced to many different project managers who I worked with during my term. Depending on the project I was working on, I approached the respective project managers with questions or concerns.

II. Assessment of Learning and Development

Ecology and Environment is an environmental consulting firm that employs scientists and
engineers in many disciplines. Due to the nature of consulting, I was able to work on projects that directly relate to classic engineering as well as be exposed to the different aspects of consulting work such as more management or oversight oriented tasks. I was able to learn how a team of professionals from different disciplines are able to work together efficiently on a variety of different projects. I learned to ask different people for guidance depending on the nature of the task I was given. Being able to reach out to people with such a wide array of skills is something I really enjoyed about my work term. I was able to not only learn from people from different fields, but more importantly, people who have much more experience working in the real work than I have, something you cannot learn in the classroom. The next time I have a question about state groundwater standards, I would know to seek the help of a geologist. If I am concerned about how native plants will be affected by herbicides meant to treat invasive species, I would know to consult a wetland scientist or a biologist. With this new knowledge and experience, I have higher expectations for my summer work term.

III. Life Outside of Co-op
Finding housing in the Buffalo area was not a difficult task. I recommend looking around the University of Buffalo area as there is an abundance of student temporary housing there. However, I had to complete most of my paperwork electronically without seeing my apartment in person or meeting my landlord, which may concern some students in their housing search. The public transportation system is not the greatest here, especially if students are spoiled by the TCAT arriving every five minutes. I highly suggest owning a vehicle for Co-ops in this area. Aside from valuable work experience, I also learned how to drive (in the snow) and got my very first car. Many opportunities exist for social activities in downtown Buffalo. There are shops and restaurants in the Elmwood/Allentown districts. I have personally joined the local swing dance community. If one is seeking more things to do, Toronto is very close to Buffalo. Finding an apartment close to the UB campus was also a good idea; I was able to become friends with the grad students I live with.

IV. Evaluation
The best part of this job was definitely the insight it gave it on consulting as a career. Without this experience, I also would not have been able to work with professionals in so many disciplines. I was also able to work with people from different levels of management. It was very interesting to see how the company runs from different perspectives.

A feature I would change is housing and transportation. It would be really great if my company could providing housing and transportation or maybe provide help in seeking housing. Some companies provide subsidized housing or dorm-style housing to. I understand that the size of the company is a factor and I was able to successfully find housing by myself. The weather is also not particularly mild here and students should be
prepared for snowfall late November to early December. Driving in the snow is a different monster than driving on cement.

V. Acknowledgements
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