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Major: Chemical Engineering

Honors Thesis: 31st WERC Environmental Design Competition.

Summary: Participated in a group 6 chemical engineering students compete in WERC competition. We designed a process for wasted water from fracking process that consists of bench scale demonstration, full scale design, economic analysis. We then wrote the technical report, prepare poster and oral presentation for the competition judges. I was the quality coordinator of the team, one of my main responsibilities was to ensure the quality the group's intellectual products that it is adequate prior to be reviewed by the advisors, industrial and academic experts. At the beginning stage, I participated in the brainstorming process to come up with the design and experiments to conduct. I also responsible for the purchasing of a trinocular microscope which I researched and presented to our advisors and the department head for purchase, this helped the group accomplished the preliminary research of the project. In the experimenting phase of the project, I helped draft procedure and prepare materials needed to conduct the experiment. Along with fellow teammates, I conducted experiments and analyzed data to determine the next step of the project. I also worked on different process flow diagram for the testing apparatus and communicate the design to advisors for inputs and approvals. Once the process design is finalized, I helped constructing the bench scale apparatus and performed experiments to adjust chemicals dosages and improve the process. During the scale up phase, I worked on the process flow diagram that would be used for the competition, participate in economic analysis of the project, and contribute to writing and proofreading the technical report for the competition. In preparation for the competition day, I helped making the poster, the presentation, and necessary items for the team to compete. During the week of the competition, I participated in the lab demonstration and part of the group presented the poster; gave presentation and answer questions from the judges; assisted in the "flash talk" competition at the end of the competition. The result we obtained from the competition were first placed for the task we participated in and second place for the "flash talk" to sell out project. Overall, we have gained valuable experiences that will help us better prepare for professional careers, teamwork and lasting memories from this project.

Task details and technical report: See appendix.