

ESM 223L Soil & Groundwater Quality Management Laboratory

Week	ACTIVITY	Comments
1	Discuss overall objectives of ESM 223 Lab Lab safety, haz. matl./waste management	All teams
2	Soil Vapor Extraction Air Sparging Intermittent Filtration	3 week rotation
3	Soil Vapor Extraction Air Sparging Intermittent Filtration	3 week rotation
4	Soil Vapor Extraction Air Sparging Intermittent Filtration	3 week rotation
5	No lab: overall discussion & turn in your lab reports for weeks 2-4	All teams
6	Pump & Treat/Air stripping Pump & Treat/HFM Pump & Treat/Mag-PCMA's	3 week rotation
7	Pump & Treat/Air stripping Pump & Treat/HFM Pump & Treat/ Mag-PCMA's	3 week rotation
8	Pump & Treat/Air stripping Pump & Treat/HFM Pump & Treat/ Mag-PCMA's	3 week rotation
9	No lab	All teams
10	No lab: overall discussion & turn in your lab reports for weeks 6-9	All teams

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Objective of the Laboratory Section of ESM 223:

The objective of the lab is to give you hands-on experience with a number of common soil and water treatment technologies. We will also have a couple of field trips, to see “the real thing” – although many times the action is underground and it is not as straightforward to understand what is happening. That’s why I’ve developed a number of experiments to give you a better feel for “How things work”. This is the main objective. After we collect the results from all the teams, you should get an idea of how different parameters control removal efficiency.

Modus operandi:

You will notice a “3 week rotation” for the various experiments. You will form small teams (usually 2 people, perhaps one with 3 people). Each team will do one of the experiments for an afternoon. First you will familiarize yourself with the equipment, the instruments, and the general objective of the experiment. Each team will run the experiment under different conditions (to be assigned by the master planner – me).

At the end of the rotation, the last team collects everyone’s results and completes the write-up of that particular experiment, sharing the results and conclusions with the other teams in a short presentation. Thus, instead of writing 6 different reports, you will only actively work on 2 reports (one for the last experiment of each rotation) and presentations, cutting down considerably on lab write-ups. I will of course give you feedback on the final reports of each experiment.