

2018 WERC Design Contest FAQ

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Track 4: Environmental Public Health

Task 5: Removal of Carbamazepine from Wastewater

Q: For the bench-scale demonstration model, should the system treat 100 gallons per day or at a smaller scale?

A: Yes, you can do smaller scale. The model needs to be capable of treating 100 gallons per day, or 4.17 gallons per hour. The bottle also needs to be reliable therefore, it must be able to run for at least two continuous hours and treat an average of 4.17 gallons per hour. Ten gallons of water will be provided to each team, you need to treat 8.33 gallons in 2 hours of continuous operation.

Q: For the source-water characteristics, should the testing water be synthetic using DI to dissolve 25 ppm sucrose as carbon source and 1 ppm carbamazepine? Or other salt should be added?

A: For the bench scale model, the synthetic water can be DI with 25 ppm sucrose and one part per million carbamazepine.

Q: When choosing the treatment process, should we take consider into the degradation products of treatment processes? In many cases, the carbamazepine may become other organic compounds instead of being mineralized to carbon dioxide completely. Those degradation byproducts may have higher toxicity.

A: Degradation products are very important and may be more toxic than the parent compound. However, for the purposes of this demonstration project degradation products need not be considered

Q: What pressure will the water be supplied at the competition? Or will we have to provide a pump to simulate the water pressure coming from the city? If we must supply the pump will that be counted into our energy requirement?

If the pressure will be supplied by NMSU, what pressure will the influent be supplied at? Will we have to supply the influent stream?

A: If the teams are required to provide their own pump the power requirements for that pump will not be counted against the energy requirement. So, you could provide your own pump.