FPA chemicals

Interim Report.

Our team decided to change the project; it will no longer be the same as the one shown on the "Proposal" page. Our change is due to the fact that the resources for this new idea will be easier to obtain and analyze. Our new project will focus on the scarcity of fresh water and the contamination of water. Water resource scarcity. Not enough clean water for human consumption, agriculture, hygiene/sanitation. Even though rivers are considered fresh water it is very harmful for the human body to be consumed. It can contain microorganisms like viruses, bacteria and parasites. There is still so much we need to learn about the chemistry of the water and biology of the harmful bacteria that can be found there. We currently already have many solutions for this problem in the small aspects, but not in the world wide aspect caused by population growth, pollution, and poor management. We want to find a way to get clean water easily for people who do not have access to already existing technology. We want people to no longer have to deal with seasonal water pollution because they lack these technologies.

One of the ways we have made progress on this new investigation is doing Research on the chemistry of river water (ex.Pecos River) this river contains lead and mercury, they are toxic heavy metals that cause multi-system damage, neurological damage, organ failure, gastrointestinal issues, reproductive problems and blood disorders. Even though they are considered fresh water it contains very high levels of salts. FPA chemicals, more commonly known as PFAS (Per- and Polyfluoroalkyl Substances), can be found mainly in the U.S. tap water is linked with health issues. This problem can be avoidable by new methods and less city pipe water distribution. However, in order to find this solution, we first need to analyze the river water and how these chemicals can be removed so that the water is purified and its consumption is no longer harmful.

The reason we initiated this change and what we expect by doing this is to learn more about the freshwater around us and how it can be harmful if consumed. We also want to learn how existing technologies can be adapted for use in other locations. We hope this will allow for greater access to non-toxic freshwater in small rural areas, as well as in areas that lack the necessary technology for a water purification system. Furthermore, we hope to identify harmful chemical components present in the water so that we can remove or modify them and prevent them from harming human health after consumption.

Sources:

- https://my.clevelandclinic.org/health/diseases/23420-mercury-poisoning
- https://www.epa.gov/pfas/pfas-explained
- https://scholarworks.sfasu.edu/cgi/viewcontent.cgi?article=1011&context=geology

- https://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms-causes/syc-20354717

- https://www.aquatabs.us/can-you-drink-river-water/?srsltid=AfmBOoqGS2DjpSxl8EHVVsAw1KmCHOxHh8-Avs8mhR7-bCUGKrl8ycks