

Selective Condensation and Evaporation using Precise Temperature Regulation (SCEPTER)

Technical Assistance Request

Our technical assistance request is broken into three parts:

1. Mitigating potential trace levels of radioactive elements in wastewater
2. Identifying for possible post-processing of water output
3. Use of test site at Brackish Groundwater National Desalination Research Facility

If we advance to the Design Phase, we plan to use the voucher for national labs on these requests.

1. Radioactive elements advice

Flowback and produced waster from unconventional oil & gas operations may contain Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) such as Uranium, Thorium, Radium, Potassium-40, and Lead-210. Our request from a national laboratory, such as Pacific Northwest National Laboratory (PNNL) or Idaho National Laboratory (INL), is technical assistance on the best practices for identifying the potentially radioactive material and guidelines on safe disposal of said material.

2. Post processing advice

The clean water output from our system may require some post-processing to become irrigation quality. The clean water produced by the SCEPTER technology will contain some contaminants. During the Design Phase we will identify and quantify those, and we will likely need technical assistance on the best way to remove those and upgrade our water ready for irrigation use.

3. Test site

We have teamed with the Brackish Groundwater National Desalination Research Facility (BGNDRF) to test our pilot plant. We received a Letter of Support (attached to our technical proposal) detailing their expected involvement. Based on BGNDRF's fee schedule our preliminary estimate for the total fees required for our testing is \$52,000. This includes 10 days of a level 3 scientist, 8 weeks of a level 1 technician, an exterior bay rental for 9 months, electrical power, and on-site groundwater. If we advance to the Design Phase we will use part of the voucher to obtain technical assistance from BGNDRF.

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