Produced Water Treatment & Reuse

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Produced Water Working Group Meeting
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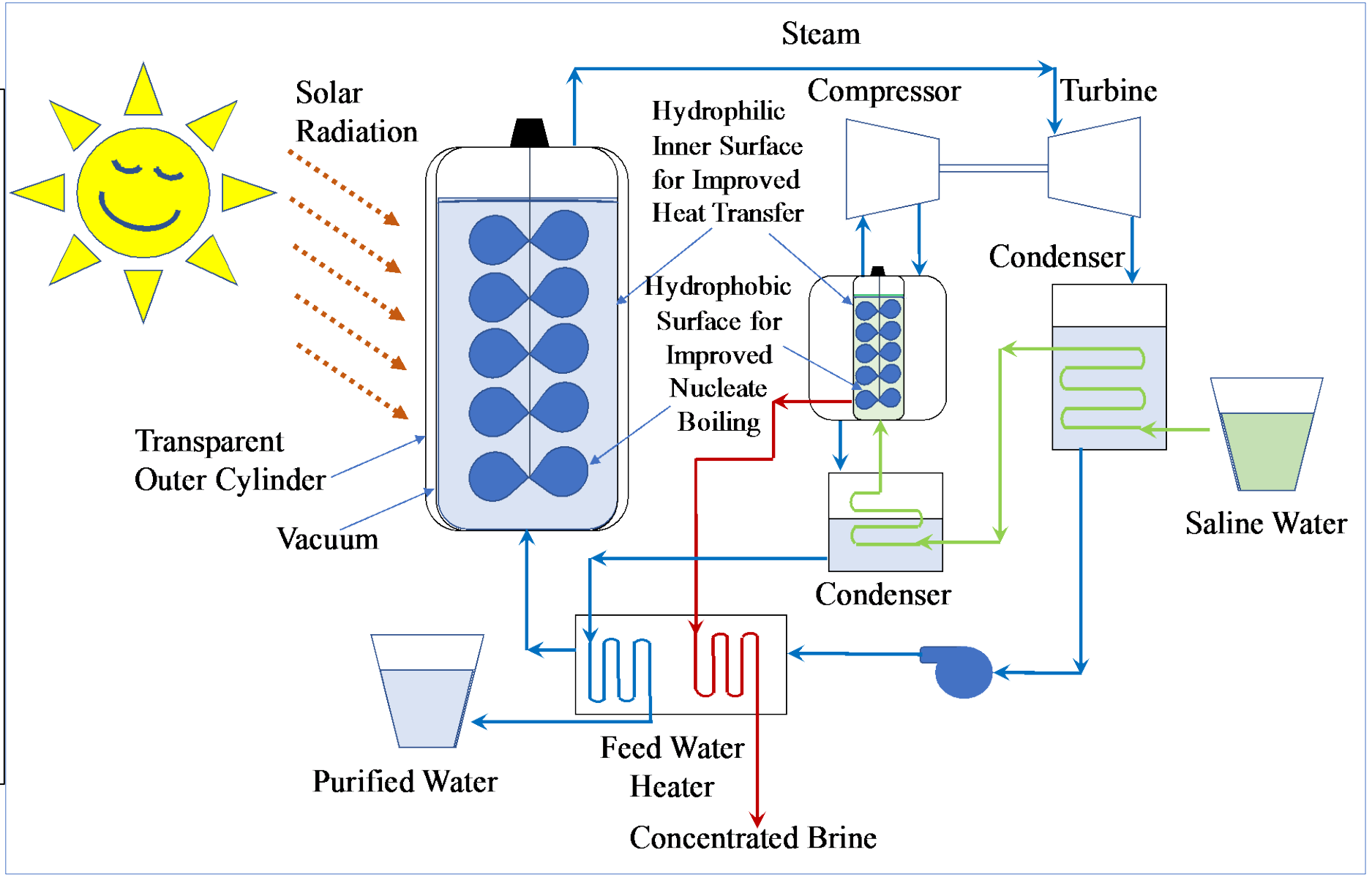
Solar Thermal Desalination with CHP

Investigators: Prem Bikkina & Khaled Sallam

BUREAU OF RECLAMATION

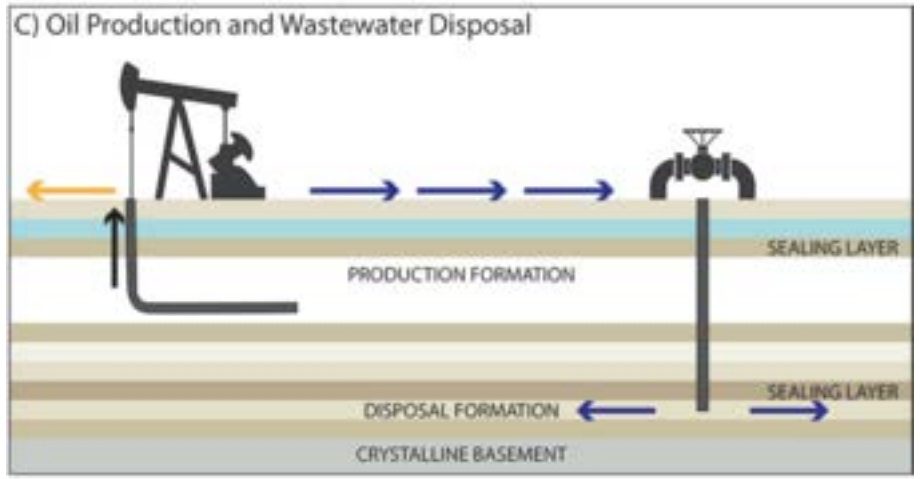
Nitro-Lift TECHNOLOGIES LLC

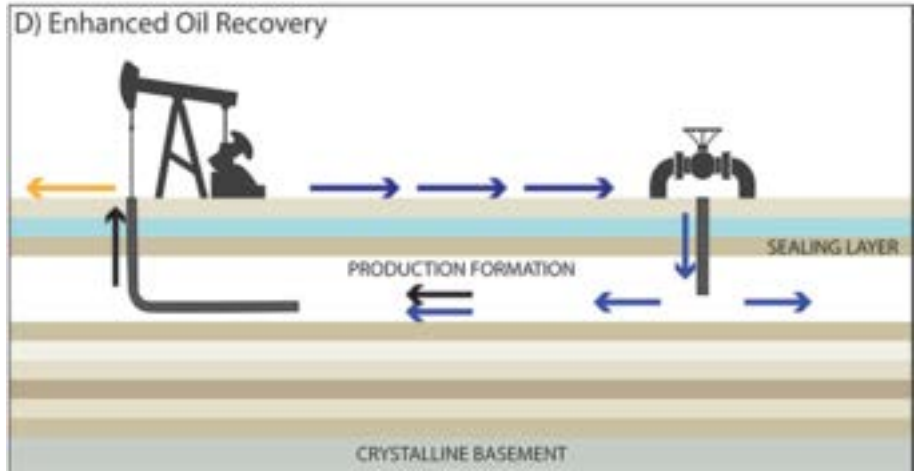
- High-energy demand and the associated cost is a major concern for thermal desalination technologies
- The high-energy requirement is mainly due to:
  1. The high latent heat of vaporization;
  2. Inefficient boiling process especially due to ‘boiling crisis’



High Salinity Carbonated Produced Water Flooding

Investigators: Prem Bikkina & Clint Aichele





Source: https://www.usgs.gov

- **High salinity carbonated produced water flooding for simultaneous Enhanced Oil Recovery, Carbon Sequestration, and Produced Water Disposal**

Tasks#

1. Selection of the compositions of high salinity carbonated produced water based on stability, bulk, and interfacial properties
2. Investigation of temporal evolution of rock and fluid properties, petrophysics, and rock/fluid interactions from atomic to core scales
3. Evaluation of the EOR potential of high salinity carbonated produced water flooding technology from pore to core scale at reservoir conditions

Thank you

Questions?