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## Towards mitigating the scaling-induced injectivity impairment during PWRI

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Produced Water Reinjection (PWRI) offers an eco-friendly alternative to marine disposal for managing co-produced water. However, PWRI can lead to injectivity loss due to inorganic scale build-up that obstructs the fluid flow. In this study, we screened the mineral scales potentially precipitate during the reinjection process based on which we evaluated a commercial scale inhibitor's efficiency, alongside the combined impact of an acid, an oxidizer, and a chelating agent on scaling prevention. We developed a predictive model to simulate their inhibitory performance, providing an alternative to resource-intensive experiments<sup>1</sup>. The approach that is adopted in our study is presented in Figure 1.

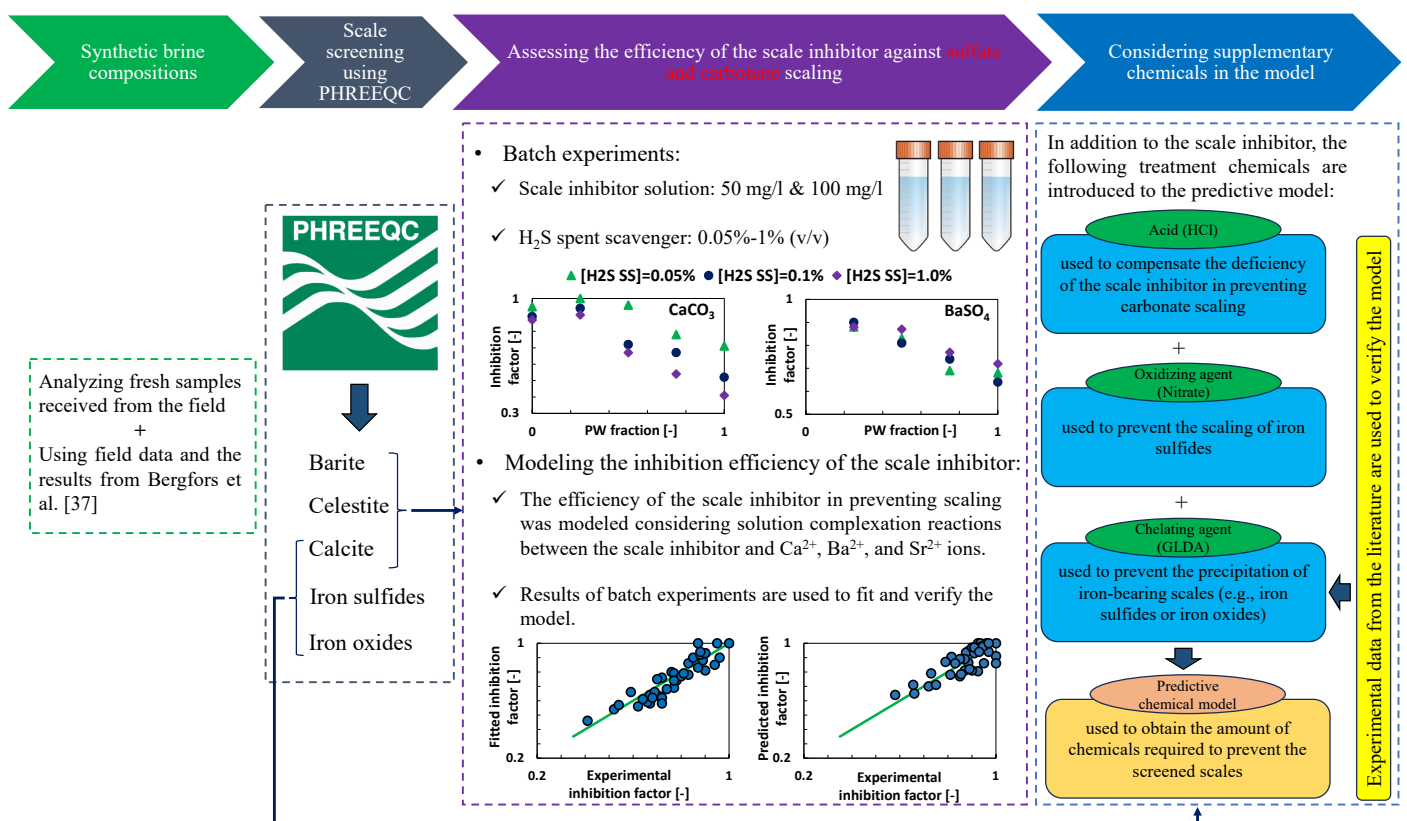


Figure 1. Schematic representation of sequential steps followed to accomplish the objectives of this study

1. Kermani, H. M., Bonto, M. & Nick, H. M. Chemical solutions for restoring scaling-induced injectivity impairment in offshore produced water re-injection. *Science of The Total Environment* **903**, 166597 (2023).



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