

Salt II

Publieke samenvatting / Public summary

Aanleiding

Salt precipitation increasingly hampers production in (maturing) North Sea gas wells. Deposition in porous media influences fluid and gas flows which in turn again influence the precipitation and deposition process. Improved understanding, predictive modelling and optimization of production strategies can help to increase gas production and reduce production costs for North Sea gas. In earlier projects the location and timing of salt precipitation in the near wellbore region was modelled in order to predict production decline, and the efficiency of remediation by fresh water washes. Constitutive relations were explored in preliminary experiments. The resulting model was used to analyze trends of salt precipitation and dissolution and its effect on flow. However, some of the key parameters are very difficult to assess directly and/or are associated with a high uncertainty. To improve our understanding of the actual precipitation and dissolution phenomena in porous media we propose to deduct the magnitude and uncertainty of these parameters from lab experiments and gas well production data.

Doelstelling

In this project we propose to 1. (Develop methods to) estimate key parameters and quantify their uncertainty to improve our understanding of salt precipitation, dissolution and their interaction with multiphase flow in porous media. 2. Develop and validate a method to predict salt precipitation and dissolution in porous media and their effect on gas flow.

Korte omschrijving

Projectinformatie / Project information

Projectnummer / Project number

TKITOET2017-01-UG

Subsidiebedrag / Grant amount

€ 156.542,00

Algemene informatie / General information

Penvoerder / Secretariat

TNO

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Laboratory experiments will be conducted to constrain the physical parameters for the constitutive relations and to explore the dependency of these relations on precipitated salt amounts. To enable estimation of the critical parameters from production data the current model needs to be extended to incorporate salt precipitation and dissolution phenomena inside the well bore.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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