



# **$^{210}\text{Pb}$ in NORM from oil and gas exploration**

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## OBJECTIVE

The  $^{210}\text{Pb}$  is found in many sites of extraction system and production of oil and gas. The lead deposits can be transported through the two production systems, supported  $^{210}\text{Pb}$  and unsupported  $^{210}\text{Pb}$ . In this context, this work aims to highlight, through literature review, the two  $^{210}\text{Pb}$  deposit mechanisms.

## METHODOLOGY

The radionuclides and other minerals dissolved in the produced water, to reach the surface coprecipitate forming various wastes like scales inside the pipes.

The  $^{226}\text{Ra}$  and  $^{228}\text{Ra}$  are the radioisotopes most conspicuous among those that contribute to the radioactivity of scales. However, the equipment of gas processing plants are generally contaminated on the surface by  $^{210}\text{Pb}$  produced by decay of  $^{222}\text{Rn}$  which has high mobility.

In the case of supported  $^{210}\text{Pb}$ , the  $^{222}\text{Rn}$  can transit through the pipeline traversing long distances before decaying and form a deposit. The problem becomes more delicate because besides scales be “invisible” this emits low energy gamma radiation hindering the detection and evaluation in-situ.

## Thanks

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