Vivianite

Phosphate recovery

In the pursuit of circularity, we are working within the European LIFE project Phos4EU to research the recovery of phosphate from wastewater in the form of vivianite, iron (II) phosphate.

LIFE funding

Together with Waterschap Brabantse Delta as the main partner, AquaMinerals, and the Spanish water company Acciona as an international partner, Waterschapsbedrijf Limburg is participating in the Phos4EU project, which has been granted funding by the European LIFE programme. In 2027, Waterschap Brabantse Delta will put the first demo-scale vivianite recovery installation into operation. Thanks to the LIFE funding, Waterschapsbedrijf Limburg can now tackle more research questions. For this, a pilot installation with ViviMag technology has been set up at the Hoensbroek wastewater treatment plant (WWTP).

What are we researching?

In the earlier pilot, it was demonstrated that vivianite can be recovered from digested sludge. Now it is important to investigate how we can effectively recover this vivianite from digested and undigested sludge. How much can we recover? What is the yield, and can we increase it? Can we bring the recovered vivianite back to the market, and in what form? For example, as a direct fertilizer, for batteries, as a colourant for paintings or splitting the vivianite into a circular coagulant and phosphoric acid? With the latter solution we will make a great step towards circularity in the use of primary chemicals. AquaMinerals is researching these further applications. It is important that we recover and supply as much material as possible. We are investigating two types of sludge for this: non-digested sludge from the Hoensbroek WWTP and digested sludge from the Limmel WWTP. The LIFE project will be completed in mid-2028.

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Want to know more about vivianite recovery?

Our specialists are happy to share more information. Contact Saskia Hanneman: saskiahanneman@wbl.nl, or Wout Pannekoek: woutpannekoek@wbl.nl.

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