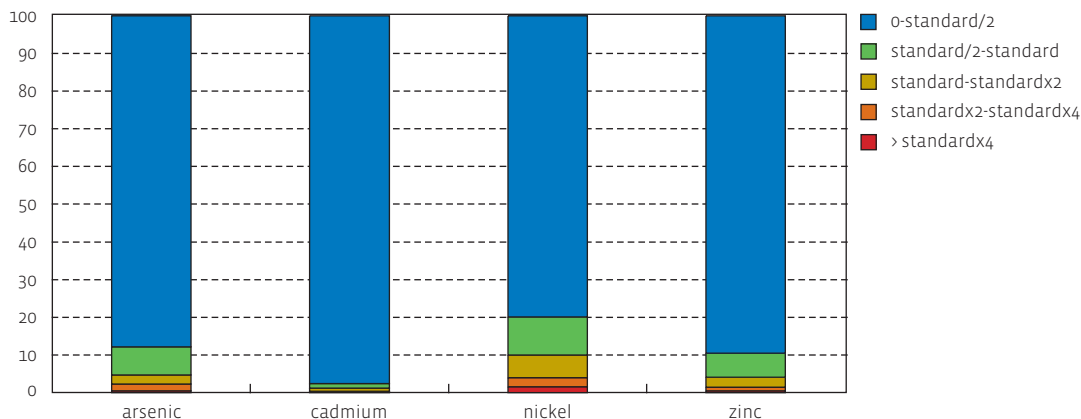




measurement points (%)

2006



soil remediation standard for arsenic: 20 µg/l, cadmium: 5 µg/l, nickel: 40 µg/l, zinc: 500 µg/l

Source: VMM

## Local circumstances are often decisive

The presence of heavy metal in the groundwater was investigated for the first time during 2006 for the whole of Flanders. Measurement points were divided into quality classes on the basis of the ratio to the soil remediation standard. To this end, at each groundwater depth (generally three measurement levels) the average annual concentration is determined. The maximum of the averages is then used.

Nickel in particular has a major impact on the groundwater quality of the upper (freatic) aquifers. In 2006, the maximum annual averages exceeded the soil remediation standard in 10 % of the measurement points. For arsenic and zinc that was the case in 5 % and 4 % respectively of the measurement points. Chromium, copper, lead and mercury give few problems as diffuse pollution sources.

It is not always clear whether it concerns pollution by external sources, naturally higher context values or the consequences of specific soil or sediment properties. Thus arsenic dissolves mostly in the deeper part of water bearing layers with more strongly reducing properties (iron reduction), whereas most of the measurements are made in the oxidation zone and therefore by definition detect arsenic less frequently or only in lower concentrations. Cadmium occurs less frequently, but higher concentrations in Flemish aquifers are almost always attributable to anthropogenic sources. Cadmium pollution is concentrated in the Campines region, especially in North Limburg. Nickel and zinc go into solution in acidic groundwater, especially in the oxidation zone of the aquifers. Higher nickel and zinc values are measured in the freatic bodies of groundwater in the Campines, which is related to the, mostly historical, industrial pollution together with the rather acidic groundwater. Higher nickel and zinc concentrations are also observed in the sands of the hilly region of West Flanders, possibly because of industrial or agrarian activities (e.g. zinc originating from liquid manure from pigs).