

## ANNEX II

### 2. GROUNDWATERS

#### 2.1. Initial characterisation

Member States shall carry out an initial characterisation of all groundwater bodies to assess their uses and the degree to which they are at risk of failing to meet the objectives for each groundwater body under Article 4. Member States may group groundwater bodies together for the purposes of this initial characterisation. This analysis may employ existing hydrological, geological, pedological, land use, discharge, abstraction and other data but shall identify:

- the location and boundaries of the groundwater body or bodies,
- the pressures to which the groundwater body or bodies are liable to be subject including:
  - diffuse sources of pollution
  - point sources of pollution
  - abstraction
  - artificial recharge,
- the general character of the overlying strata in the catchment area from which the groundwater body receives its recharge,
- those groundwater bodies for which there are directly dependent surface water ecosystems or terrestrial ecosystems.

#### 2.2. Further characterisation

Following this initial characterisation, Member States shall carry out further characterisation of those groundwater bodies or groups of bodies which have been identified as being at risk in order to establish a more precise assessment of the significance of such risk and identification of any measures to be required under Article 11. Accordingly, this characterisation shall include relevant information on the impact of human activity and, where relevant, information on:

- geological characteristics of the groundwater body including the extent and type of geological units,
- hydrogeological characteristics of the groundwater body including hydraulic conductivity, porosity and confinement,
- characteristics of the superficial deposits and soils in the catchment from which the groundwater body receives its recharge, including the thickness, porosity, hydraulic conductivity, and absorptive properties of the deposits and soils,
- stratification characteristics of the groundwater within the groundwater body,
- an inventory of associated surface systems, including terrestrial ecosystems and bodies of surface water, with which the groundwater body is dynamically linked,
- estimates of the directions and rates of exchange of water between the groundwater body and associated surface systems,
- sufficient data to calculate the long term annual average rate of overall recharge,
- characterisation of the chemical composition of the groundwater, including specification of the contributions from human activity. Member States may use typologies for groundwater characterisation when establishing natural background levels for these bodies of groundwater.

#### 2.3. Review of the impact of human activity on groundwaters

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*Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.*

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For those bodies of groundwater which cross the boundary between two or more Member States or are identified following the initial characterisation undertaken in accordance with paragraph 2.1 as being at risk of failing to meet the objectives set for each body under Article 4, the following information shall, where relevant, be collected and maintained for each groundwater body:

- (a) the location of points in the groundwater body used for the abstraction of water with the exception of:
  - points for the abstraction of water providing less than an average of 10 m<sup>3</sup> per day, or,
  - points for the abstraction of water intended for human consumption providing less than an average of 10 m<sup>3</sup> per day or serving less than 50 persons,
- (b) the annual average rates of abstraction from such points,
- (c) the chemical composition of water abstracted from the groundwater body,
- (d) the location of points in the groundwater body into which water is directly discharged,
- (e) the rates of discharge at such points,
- (f) the chemical composition of discharges to the groundwater body, and
- (g) land use in the catchment or catchments from which the groundwater body receives its recharge, including pollutant inputs and anthropogenic alterations to the recharge characteristics such as rainwater and run-off diversion through land sealing, artificial recharge, damming or drainage.

#### 2.4. Review of the impact of changes in groundwater levels

Member States shall also identify those bodies of groundwater for which lower objectives are to be specified under Article 4 including as a result of consideration of the effects of the status of the body on:

- (i) surface water and associated terrestrial ecosystems
- (ii) water regulation, flood protection and land drainage
- (iii) human development.

#### 2.5. Review of the impact of pollution on groundwater quality

Member States shall identify those bodies of groundwater for which lower objectives are to be specified under Article 4(5) where, as a result of the impact of human activity, as determined in accordance with Article 5(1), the body of groundwater is so polluted that achieving good groundwater chemical status is infeasible or disproportionately expensive.