STATUTORY INSTRUMENTS.

S.I. No. 366 of 2016

EUROPEAN UNION ENVIRONMENTAL OBJECTIVES (GROUNDWATER) (AMENDMENT) REGULATIONS 2016

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I, SIMON COVENEY, Minister for the Environment, Community and Local Government, in exercise of the powers conferred on me by section 3 of the European Communities Act 1972 (No. 27 of 1972) and for the purpose of giving effect to Directive 2014/80/EU of 20 June 2014[1] amending Annex II to Directive 2006/118/EC of the European Parliament and of the Council on the protection of groundwater against pollution and deterioration hereby make the following Regulations:

(1) These Regulations may be cited as the European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016.

(2) In these Regulations—

"the 2010 Regulations" means the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010), as amended by the European Communities Environmental Objectives (Groundwater) (Amendment) Regulations 2011 (S.I. No. 389 of 2011) and the European Communities Environmental Objectives (Groundwater) (Amendment) Regulations 2012 (S.I. No. 149 of 2012).

(3) The 2010 Regulations are amended in Schedule 1 by the deletion of "The Radiological Protection Institute of Ireland".

(4) The 2010 Regulations are amended by the substitution of the following for Schedule 5:

[1]O.J. No. L182/52, 21 June 2014

Notice of the making of this Statutory Instrument was published in "Iris Oifigiúil" of 15*th July*, 2016.

"SCHEDULE 5

Groundwater Threshold Values

Parameter	Units	**Threshold Values for Chemical Status Tests** [1]				Overall Threshold Value Range
		Column 1 Test: Assessment for the presence of saline or other intrusions	**Column 2** Test: Assessment of adverse impacts of chemical inputs from groundwater on associated surface water bodies	**Column 3** [2] Test: Assessment of whether groundwater intended for human consumption in drinking water protected areas is impacted by pollutants and/or is showing a significant and sustained rise in pollutant levels	**Column 4** [3] Test: Assessment of the general quality of groundwater in a groundwater body in terms of whether its ability to support human uses has been significantly impaired by pollution	
Inorganic & Metals						
Electrical Conductivity	µS/cm @25°C	800	-	1875	1875	800 — 1875
Chloride	mg/l Cl	24	-	-	187.5	24 — 187.5
Sulphate	mg/l SO_4	-	-	-	187.5	187.5
Nitrate	mg/l NO_3	-	-	37.5	37.5	37.5
Nitrite	µg/l NO_2	-	-	-	375	375
Ammonium	µg/l N	-	65	-	175	65 — 175
Molybdate Reactive Phosphorus	µg/l P	-	35	-	-	35
Total Chromium	µg/l Cr	-	-	-	37.5	37.5
Chromium VI [4]	µg/l Cr	-	-	-	7.5	7.5
Arsenic	µg/l As	-	-	-	7.5	7.5
Lead	µg/l Pb	-	-	-	7.5	7.5
Mercury	µg/l Hg	-	-	-	0.75	0.75
Aluminium	µg/l Al	-	-	-	150	150
Zinc	µg/l Zn	-	-	-	75	75
Pesticides						
Atrazine	µg/l	-	-	0.075	-	0.075
Simazine	µg/l	-	-	0.075	-	0.075
MCPA	µg/l	-	-	0.075	-	0.075
Diuron	mg/l	-	-	0.075	-	0.075
Cypermethrin	µg/l	-	-	0.075	-	0.075
Bentazone	µg/l	-	-	0.075	-	0.075
Glyphosate	µg/l	-	-	0.075	-	0.075
Mecoprop	µg/l	-	-	0.075	-	0.075
Isoproturon	µg/l	-	-	0.075	-	0.075
2,4 Dichlorophenoxy-acetic acid	µg/l	-	-	0.075	-	0.075

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Dichlobenil	µg/l	-	-	0.075	-	0.075
2,6 Dichlorobenzamide	µg/l	-	-	0.075	-	0.075
Total Pesticides	µg/l	-	-	0.375	-	0.375
Organics						
Di (2-ethylhexyl) phthalate	µg/l	-	-	-	6	6
1,2 Dichloroethane	µg/l	-	-	-	2.25	2.25
Vinyl Chloride	µg/l	-	-	-	0.375	0.375
1,2 Dichloroethene	µg/l	-	-	-	0.375	0.375
Tetrachloroethene	µg/l	-	-	-	7.5	7.5
Trichloroethene	µg/l	-	-	-	7.5	7.5
Dichloromethane	µg/l	-	-	-	15	15
Tetrahydrofuran	µg/l	-	-	-	115	115
Methyl Tertiary Butyl Ether	µg/l	-	-	-	10	10
Benzene	µg/l	-	-	-	0.75	0.75
Toluene	µg/l	-	-	-	525	525
Total Petroleum Hydrocarbons [5]	µg/l	-	-	-	7.5	7.5
Benzo(alpha)pyrene	µg/1	-	-	-	0.0075	0.0075
Total Polycyclic Aromatic Hydrocarbons [6]	µg/l	-	-	-	0.075	0.075

Notes

[1] "Threshold values" have been established for pollutants that are causing a risk to groundwater bodies. Exceedance of a relevant threshold value at a representative monitoring point triggers further investigation to confirm whether the criteria for poor groundwater chemical status are being met. If the criteria for poor chemical status are being met by one or more of the test procedures in Schedule 7, then a body or a group of bodies of groundwater is classified as being at poor chemical status.

Threshold values are expressed as annual arithmetic mean concentrations.

[2] For the drinking water test, further investigation includes an assessment of significant and sustained upward trends in concentration of the relevant pollutant at the monitoring point.

[3] For the general chemical test, further investigation includes the aggregation of data from a representative group of monitoring points, comparison of the aggregated annual arithmetic mean concentration of the relevant pollutant with the threshold value and confirmation of significant impairment of the groundwater body's ability to support human uses. Threshold Values are derived from, in order of priority:

- Drinking Water Directive;
- WHO Guidelines for Drinking Water Quality;
- A drinking water standard established, following peer review, by a national authority in another country;
- An operational value based on the best available scientific information on the pollutant concerned.

[4] Although a drinking water standard of 50 μg/l exists for Chromium (non-hazardous), in relation to Chromium VI (hazardous) an equivalent drinking water standard does not exist in the Drinking Water Directive or the WHO Guidelines. However, a drinking water standard of 10 μg/l exists in California (California Department of Public Health — online Drinking Water Law Book), which equates to a threshold value of 7.5 μg/l.

[5] Sum of Total Petroleum Hydrocarbons including the volatile petroleum hydrocarbons (VPH) range and extractable petroleum hydrocarbons (EPH) range: hydrocarbons C2-C5 and hydrocarbons C6-C40 respectively.

[6] Sum of Total Polycyclic Aromatic Hydrocarbons including:

- anthracene
- benzo(*b*)fluoranthene
- benzo(*k*)fluoranthene
- benzo(ghi)perylene
- indeno(1,2,3-cd)pyrene
- naphthalene."

(5) The 2010 Regulations are amended in Schedule 6 by the insertion of the following after paragraph (3) of Part A:

"(4) When determining background levels, the following principles should be taken into account:

(*a*) the determination of background levels should be based on the characterisation of groundwater bodies in accordance with Annex II to Directive 2000/60/EC and on the results of groundwater monitoring in accordance with Annex V to that Directive. The monitoring strategy and interpretation of the data should take account of the fact that flow conditions and groundwater chemistry vary laterally and vertically;

(*b*) where only limited groundwater monitoring data are available, more data should be gathered and in the meantime background levels should be determined based on those limited monitoring data, and where appropriate by a simplified approach using a subset of samples for which indicators show no influence of human activity. Account should also be taken of information on geochemical transfers and processes, where available;

(*c*) where insufficient groundwater monitoring data are available and the information on geochemical transfers and processes is poor, more data and information should be gathered and in the meantime background levels should be estimated, where appropriate based on statistical reference results for the same type of aquifers in other areas with sufficient monitoring data."

(6) The 2010 Regulations are amended in Schedule 6 by the substitution of the following for Parts B and C:

"Part B

Minimum list of pollutants and their indicators for which the Agency must consider when establishing threshold values in accordance with Regulations 48 to 52 of these Regulations

(1) Substances or ions or indicators which may occur both naturally and/or as a result of human activities:

Arsenic
Cadmium
Lead
Mercury
Ammonium
Chloride
Sulphate
Nitrites
Phosphorus (total) / Phosphates[1]

(2) Man-made synthetic substances:

Trichloroethylene
Tetrachloroethylene

(3) Parameters indicative of saline or other intrusions[2]:

Conductivity

Part C

Information to be provided by the Agency with regard to the pollutants and their indicators for which threshold values have been established

The Agency shall provide to the Minister and the coordinating local authority of each river basin district information on the way the procedure set out in Part A of this Schedule has been followed for inclusion in the river basin management plans to be submitted in accordance with Regulation 13 of the 2003 Regulations.

In particular, the Agency will provide:

(*a*) information on the number of bodies or groups of bodies of groundwater characterised as being at risk, including the following:

(i) the size of the bodies,

[1] The Agency may decide to establish threshold values for either phosphorus (total) or for phosphates.
[2] With regard to saline concentrations resulting from human activities, the Agency may also decide to establish threshold values for sulphate and chloride in addition to conductivity.

(ii) each pollutant or indicator of pollution which characterises bodies of groundwater as being at risk,

(iii) the environmental quality objectives to which the risk is related, including the actual or potential legitimate uses or functions of the groundwater body and the relationship between the bodies of groundwater and the associated surface waters and directly dependent terrestrial ecosystems,

(iv) in the case of naturally-occurring substances, the natural background levels in the bodies of groundwater, and

(v) information on the exceedances where threshold values are exceeded;

(*b*) the threshold values, whether they apply at a national level, at the level of the river basin district or the part of the international river basin district falling within the territory of Ireland, or at the level of a body or group of bodies of groundwater;

(*c*) the relationship between the threshold values and each of the following:

(i) in the case of naturally-occurring substances, the observed background levels,

(ii) associated surface waters and directly dependent terrestrial ecosystems,

(iii) the environmental quality objectives and other standards for water protection that exist at national, Union, or international level, and

(iv) any relevant information concerning the toxicology, eco-toxicology, persistence, bioaccumulation potential, and dispersion tendency of the pollutants;

(*d*) the methodology for determining background levels based on the principles set out in paragraph 4 of Part A;

(*e*) the reasons for not having established threshold values for any of the pollutants and indicators identified in Part B;

(*f*) key elements of the groundwater chemical status assessment, including the level, method and period of aggregation of monitoring results, the definition of acceptable extent of exceedance, and the method for calculating it, in accordance with Regulations 33 to 36 and Regulations 39 to 43.

Where any of the data referred to in points (*a*) to (*f*) are not included in the river basin management plans, the Minister shall provide the reasons for this in those plans."

L.S.

GIVEN under my Official Seal,
7 July 2016.

SIMON COVENEY,
Minister for the Environment, Community and
Local Government.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Regulations amend the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010) to make further provision to implement Commission Directive 2014/80/EU of 20 June 2014 amending Annex II to Directive 2006/118/EC of the European Parliament and of the Council on the protection of groundwater against pollution and deterioration.

The substances and threshold values set out in Schedule 5 to S.I. No. 9 of 2010 have been reviewed and amended where necessary, based on existing monitoring information and international guidelines on appropriate threshold values.

Part A of Schedule 6 has been amended to include changes to the rules governing the determination of background levels for the purposes of establishing threshold values for groundwater pollutants and indicators of pollution.

Part B of Schedule 6 has been amended to include nitrites and phosphorus (total) / phosphates among the minimum list of pollutants and their indicators which the Environmental Protection Agency (EPA) must consider when establishing threshold values. These amendments address the considerable potential for nitrogen and phosphorus in groundwater to present a risk of eutrophication to associated surface waters and to directly dependent terrestrial ecosystems.

Part C of Schedule 6 amends the information to be provided to the Minister by the EPA with regard to the pollutants and their indicators for which threshold values have been established. The information provided will facilitate comparison of the chemical status assessment results across the European Union Member States and contribute to the potential future harmonisation of methodologies for establishing groundwater threshold values.

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