

Draft River Basin Plans – Groundwater Classification

WFD-GW-14 Chemical point source pressures – pollution prevention and control (PPC) regulated sites

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Water Framework Directive - Groundwater	Classification	
Chemical point source pressures – Pollution Prevention & Control (PPC) Regulated Sites	Reference: WFD-GW-14	
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1.0 Purpose

This paper describes the approach taken to assess the Water Framework Directive (WFD) chemical status of groundwater bodies with respect to impact from industrial sites regulated under Pollution Prevention and Control (PPC) regulations.

2.0 Background

The WFD requires that groundwater bodies must be classified as good or poor for both chemical status (in relation to a large range of pollution pressures) and quantitative status (in relation to groundwater abstraction pressures).

Potential impacts from selected PPC regulated sites have been considered in the context of three of the five tests that have been developed for groundwater body chemical classification, based on WFD requirements and guidance provided at an EC and UK level¹. The five tests consider groundwater chemical composition with respect to impacts on the groundwater body (including significant potable supplies), and on the ecological receptors which depend on it. The worst result from all five tests is taken as the overall chemical status result for each groundwater body.

In Northern Ireland certain industrial processes must be authorised under the Industrial Pollution Control (NI) Order 1997. The activities with the greatest pollution potential are known as Part A processes. For Part A processes (e.g. power stations, cement factories and chemical processes) a single authorisation covers releases to air, water and land - this is known as 'integrated pollution control'. In Northern Ireland there are two other categories of process - Part B and Part C processes. Authorisations for Part B and Part C processes cover releases to air only.

For sites operating under a PPC permit issued by the Northern Ireland Environment Agency, an environmental impact assessment report will have been produced for the site and associated processes as part of the authorisation process. A variety of monitoring will be in place for some/all of the different media and the sites will be inspected on a regular basis.

3.0 Classification

This assessment of Part A PPC authorised sites has been undertaken to support the following elements of classification:

Chemical Classification

- No significant diminution of surface water chemistry and ecology
- Impact on Groundwater Dependent Terrestrial Ecosystems (GWDTE's)
- Impact on Drinking Water Protected Area's

¹ UK Technical Advisory Group on the Water Framework Directive. Paper 11b(i): Groundwater Chemical Classification for the purposes of the Water Framework Directive. This paper can be downloaded from the www.wfduk.org web site.

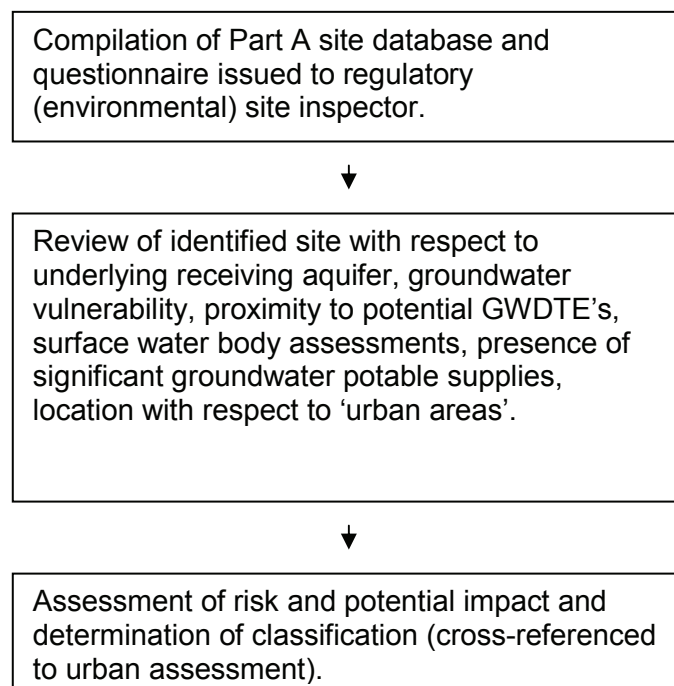
Given the size and nature of groundwater bodies currently delineated in Northern Ireland, it is considered that individual contaminated and polluting sites would be very unlikely to be of sufficient scale to impact general water quality across a groundwater body

4.0 Assessment Process

The following assessment process was undertaken, managed within a GIS-based project.

Part A PPC regulated sites were subjected to an initial assessment with regard to their hydrogeological setting and proximity to receptors such as abstractions, surface waters and designated ecological sites. In addition a questionnaire was issued to the relevant regulatory licensing officer to identify if there were any know significant groundwater management or pollution issues.

It should be noted that for potential GWDTE's (SPA, SAC, ASSI's and NNR'S) limited knowledge is currently available regarding their groundwater dependency and sensitivity to water chemistry changes. Where such sites occur within or near a PPC regulated site an opinion on potential for impact has been made by reference to the hydrogeological setting and information available from NIEA ecologists familiar with the sites. Similarly with surface water bodies, generally there is a lack of relevant monitoring data unless specific monitoring has been undertaken as part of the site specific investigation.



5.0 Confidence and Risk

This exercise has sought to identify and assess sites which could potentially be causing an impact on local groundwater or surface waters/GWDTE's. A determination has been made as to whether the groundwater body in which the site is located should be classed as "good" or "poor" status, with respect to impact on local groundwater quality and/or nearby receptors. This determination has been based on local knowledge of hydrogeological settings at identified sites and available site data/knowledge. Confidence in the assessment has been taken to be "low" for all bodies as there is generally only limited site specific monitoring data available and the exact hydrogeological setting at each site is not fully understood.

Although some of the sites identified may be relatively large industrial processes, their scale with respect to the overall groundwater body is minimal and only local impacts, if any, would be expected. For groundwater bodies with no identified sites (there may be other industrial sites not falling under Part A but which may represent some risk to local receptors) or where the setting and available site information suggests that risk to specific receptors is "low" a 'not at risk' determination has been made in this assessment. For groundwater bodies where there are known/suspected local impacts on groundwater beneath/adjacent to a site, an 'at risk' (low confidence) determination has been made but "good status" assigned unless a definite impact on a nearby receptor (surface water, GWDTE or DWPA source) has been identified.

6.0 Outcome

On the basis of the above assessment no groundwater body in Northern Ireland has been classified as being at "poor" status for this point source pressure. For most sites there are regulatory controls and sometimes monitoring in place designed to minimise the risk of water pollution.

7.0 River Basin Planning Cycle

There is the opportunity to undertake a more detailed review of site setting and site operation over the River Basin Plan period. This could involve review of reports held by NIEA submitted in support of PPC permissions and further discussion with NIEA site inspectors. In some cases there may be a requirement to undertake additional investigative groundwater monitoring to refine the risk assessment.