WFD reporting

Reporting on the River Basin Management Plans

- A user manual

Tools and services for reporting under RBMP within WISE

Reporting of the River Basin Management Plans

- A user manual

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Glossary of Terms

Term	Meaning / Definition
CA	Competent Authorities
DB	Database
GWB	Ground Water Body (schema)
GWMET	Ground Water Methodologies (schema)
GWST	Ground Water Monitoring Stations (schema)
MON	Monitoring (schema)
MS	Member State
PA	Protected Areas (schema)
POM	Programme Of Measures
RBD	River Basin District
RBDSUCA	River Basin District/Sub Unit/Competent Authorities (schema)
RBMP	River Basin Management Plan (schema)
SWB	Surface Water Body (schema)
SWMET	Surface Water Methodologies (schema)
SWST	Surface Water Monitoring Stations (schema)
WB	Water Body
WFD	Water Framework Directive
WISE	Water Information System for Europe
XML	Extensible Markup Language

1. Introduction

The purpose of this guidance is to provide support to the workflow for WFD reporting in 2010. Fundamental to the reporting process are the schemas which have been developed from the reporting sheets by WRc. All the schemas are available online from EEA's ReportNet. To facilitate the submission of information according to the schemas the following tools have been developed, which this tool addresses:

- Access database. This complements the schemas and organises the information into database tables. This tool can be used either to manage the information or just to understand the WFD reporting requirements.
- XML Conversion tool which generates the schemas fro the Access database
- QA/QC rules help ensure the information is filled out correctly. The QA/QC is run from the following:
    - ReportNet
    - Desktop validation tool.

1.1 Schemas

The reporting schemas are not dealt with in detail in this document. The schemas are available from this web page http://water.eionet.europa.eu/schemas/dir200060ec/resources/ along with supporting documentation.

1.2 Related documents

This is 'Document 1' providing support for the workflow. There are three other documents which provide additional support to the reporting process:

- **Document 2: Schema user guidance**
  http://water.eionet.europa.eu/schemas/dir200060ec/resources/
- **Document 3: Documentation of the changes to the schemas since the previous release**
  http://water.eionet.europa.eu/schemas/dir200060ec/resources/
- **Document 4: Guidance on the reporting of GIS information**
  http://water.eionet.europa.eu/schemas/dir200060ec/resources/

1.3 Getting help

All schemas, tools and supporting documents are available from this web page:

http://water.eionet.europa.eu/schemas/dir200060ec/resources/

If you need assistance on issues not addressed in this User Guidance please contact:

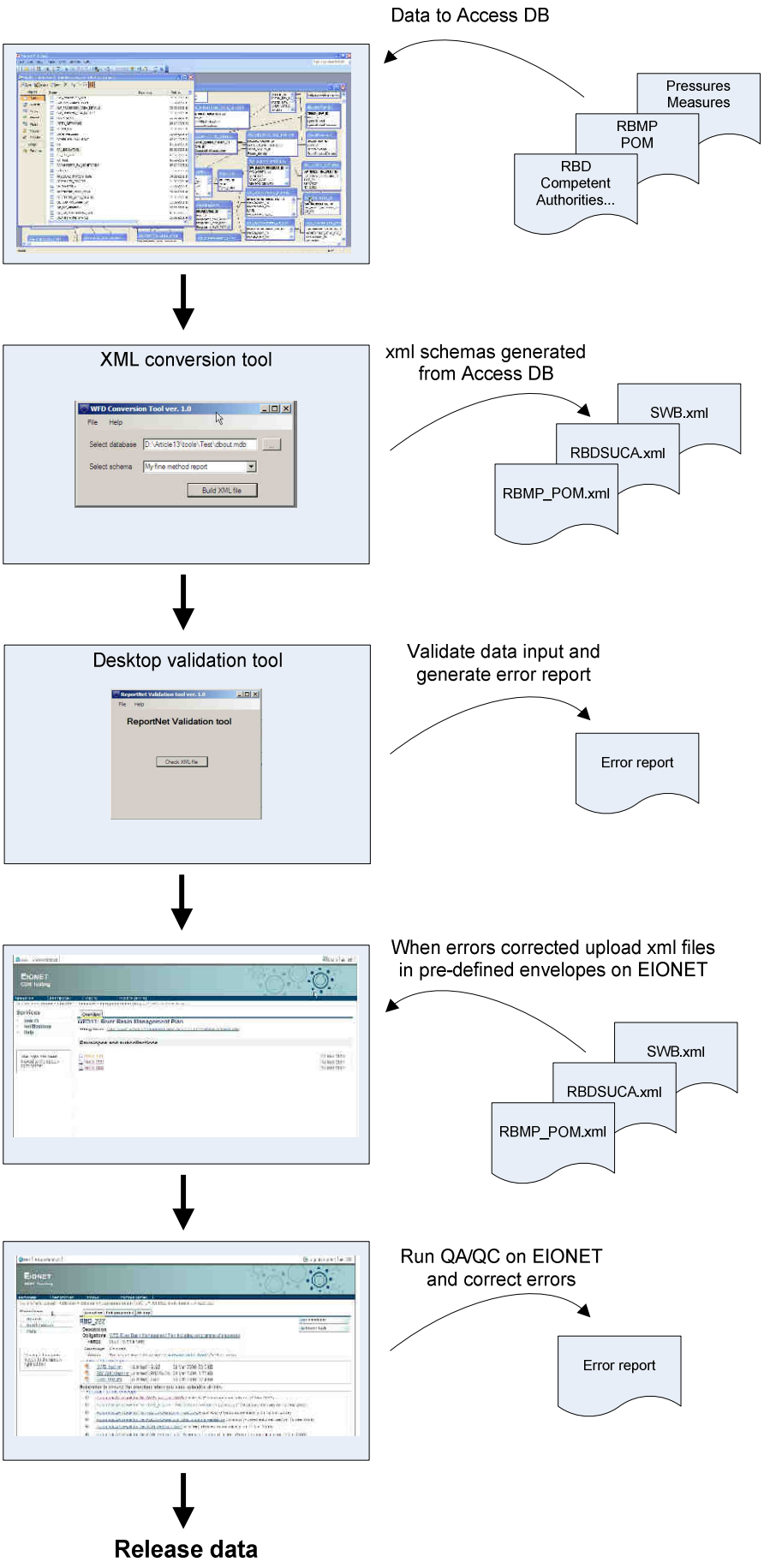
helpdeskWFD@atkinsglobal.com.

The helpdesk will assist you on any matter regarding the reporting of the WFD River Basin Management Plan including programme of measures by the deadline of 22nd of March 2010.

1.4 Overview of reporting steps

The main reporting steps are shown in the diagram below. The approach taken, depending on the tools and databases already available within the MS, can take different forms. Some MS are able to generate the XML files directly from their own systems and would therefore only be interested in the validation and upload steps. The reporting steps shown here are for MS where no local tools exist to easily build the xml files required for upload onto ReportNet.

1. **Access DB**: Structured around the agreed schemas (described in section x), this MS Access database can be used to import and structure MS data into the required format for the generation of the XML files.
2. **XML conversion tool**: This tool converts the data entered into the MS Access tool into the xml format required for reporting.
3. **Desktop validation tool:** This tool checks the quality of the data within the xml files generated. It uses the same rules as the validation tool within ReportNet, and will detect and report any errors in the xml files at an early stage (rather than waiting until you have generated and uploaded onto ReportNet all the xmls for an RBD, only to have to go back to the start to correct errors). This tool can therefore save you a lot of time. This tool could be the starting point for those MS generating the XML files directly from their systems.
4. **ReportNet upload**: Once the xml files have been generated, checked through the desktop validation tool, and no errors returned (or errors corrected), the files are ready to be uploaded onto ReportNet. There will be pre-defined envelopes for each RBD in all MS along with a national folder for the xml file containing information on national level (RBDSUCA) and other supporting documents.
5. **ReportNet QA/QC:** Once the xml have been uploaded into the various envelopes, it is recommended to also finally run the QA/QC facility on ReportNet to ensure that there are no errors remaining in the XML files. Once you are satisfied that no such errors occur, the files are ready to be released and a cover letter will be automatically generated verifying the date of the reporting along with a list of reported documents / files.


Data to Access DB
Pressures
Measures
RBMP
POM
RBD
Competent
Authorities...
XML conversion tool
WFD Conversion Tool ver. 1.0
File Help
Select database
Select schema
My fine method report
Build XML file
xml schemas generated
from Access DB
SWB.xml
RBDSUCA.xml
RBMP_POM.xml
Desktop validation tool
ReportNet Validation tool ver. 1.0
ReportNet Validation tool
Check XML file
Validate data input and
generate error report
Error report
When errors corrected upload xml files
in pre-defined envelopes on EIONET
SWB.xml
RBDSUCA.xml
RBMP_POM.xml
Run QA/QC on EIONET
and correct errors
Error report
Release data

2. MS Access WFD Database

2.1 Quick guide

A quick step by step guide for the advanced user who has experience in using previous similar reporting databases:

- Download the Access DB from http://water.eionet.europa.eu/schemas/dir200060ec/resources/
- Make a copy of the DB for each RBD you are reporting. (the data in RBDSUCA tables is common to all RBDs and therefore needs to be present in every DB used)
- Fill in the required information into the relevant tables (using the guidance provided in Appendix A)
- When all the data has been entered into the reporting database use the xml conversion tool to generate the xml files

2.2 Overview

The purpose of the WFD database is to present a data management structure which reflects the structure of the reporting schemas into which the required information can be collated to allow easy generation of the XML schemas. The database allows for manual entry using drop-down lists, but also bulk data import can also be used, depending upon the skill and the needs of the user.

In previous WISE reporting exercises (for WFD Articles 3, 5 and 8), similar MS Access 'Tools' / databases have been provided with a front end form for the MS to use when filling in the required data. In this reporting exercise for the RBMP, the Access DB will contain only the tables used to build the xml files (back-end only, no front end form). This is because entering the amount of data required in 2010 reporting using only forms would be a very lengthy and onerous task for most MS.

Diagrams to show how the various tables within the database inter-relate are provided in Appendix A. The table design contains a description of the data required in any specific field (same as the annotations in the schema design) along with drop down lists of data available to insert into fields where this is required.

The design of the Access DB is structured around the streamlined schemas as described in the "User Guide to the streamlined schemas" available from the link below:

http://water.eionet.europa.eu/schemas/dir200060ec/resources/

Where possible however, the database has been designed in a more simplified structure compared to the schema design.

The schemas link to each other through several identifying fields as shown in Figure 2.1 below. These linkages are also reflected in the design of the reporting DB. It is therefore recommended to fill in information into the DB in a certain order, which is given in the last part of Section 2.4

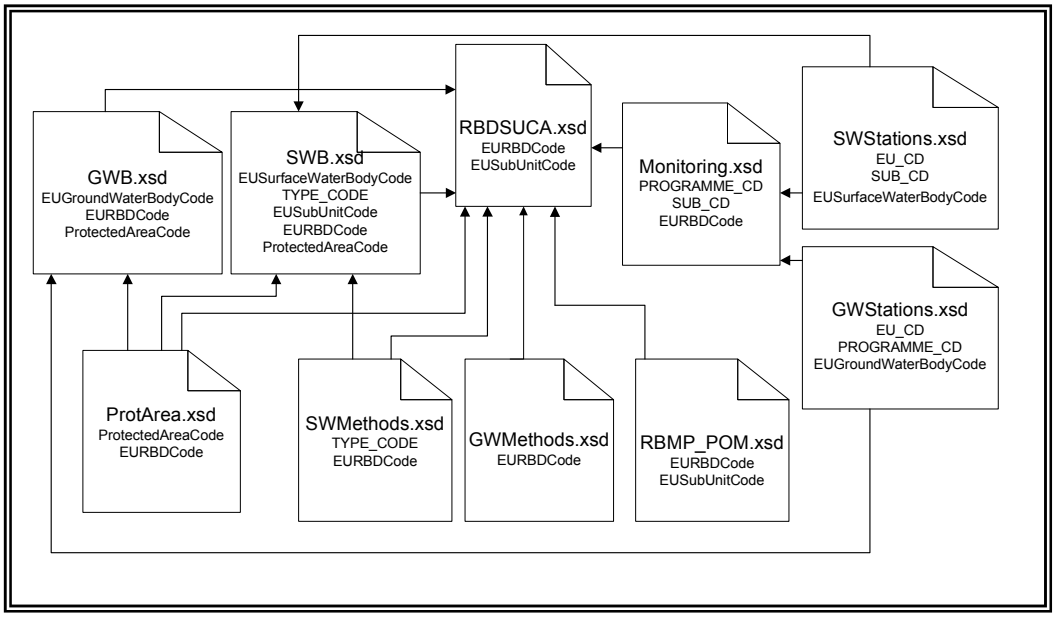


Figure 2.1 – Schema linkages

As you can see in Figure 2.1 above, all the schemas are linked directly or indirectly to the RBDSUCA schema – this will also be the case in the Reporting DB which is why the RBDSUCA tables should be copied into every RBD level DB

2.3 Download of Access database

The Access DB will be available for download at **http://water.eionet.europa.eu/schemas/dir200060ec/resources/** and is available in 2000 and 2003-2005 versions.

All the schemas are designed to contain information at an RBD level, except for the RBDSUCA schema which will contain information about all the RBDs within the MS.

The DB reflects this design and hence each reporting DB should contain data from only ***one*** RBD, along with the RBDSUCA schema (which needs to be common to all reporting DBs). A separate DB should therefore be created for every RBD in the MS and the RBDSUCA tables should be copied into every one of these DB as illustrated in Figure 2.2. The RBDSUCA tables can easily be identified within the database because the table names have the prefix RBDSUCA.

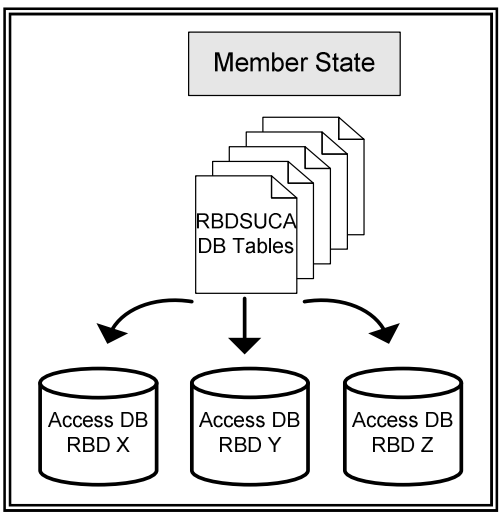


Figure 2.2 – RBDSUCA tables need to be copied into each reporting DB for the MS.

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2.4 Database design

2.4.1 Naming of the Tables within the Reporting Database

The Access database contains many tables. These tables have been structured to reflect the schema designs (Appendix A). The tables within the database are therefore related to one of the 10 individual schemas, and it is possible to see which schema each table relates to with the prefix to the table name as shown in the table below. For example, schemas linked to Protected Areas have a “PA” prefix to the table name.

Schema name	Database name	Example of table name
RBDSUCA	RBDSUCA	RBDSUCA_Competent_Authority
ProtArea	PA	PA_Protected_Area
SWB	SWB	SWB_Ecological_Exceedance
GWB	GWB	GWB_Background_Level
SWMethods	SWMET	SWMET_SystemB_RW
GWMethods	GWMET	GWMET_GW_Classification_Matrix
RBMP_POM	RBMP	RBMP_Public_Participation_Matrix
Monitoring	MON	MON_Programmes
SurfaceWaterMonitoringStations	SWST	SWST_Parameters_SW_Monitoring
GroundWaterMonitoringStations	GWST	GWST_GW_Monitoring_Station

Table 2.1 – Table naming and examples

In the same way that the schemas link to each other, so do the various tables within the reporting database. The linkages between the tables relating to any given schema can be seen in Appendix A.

Because of all these linkages, it is strongly advised to populate the tables in a certain order as you will not be able to enter some fields of data before you have entered others. This suggested order is also contained within Appendix A using colour coding of the tables.

2.4.2 Mandatory data

Tables within the database which contain mandatory information (as required in the Schemas and therefore the Directive) are marked with an asterix (*) and must be filled out. Within these mandatory marked tables, not all the fields are necessarily mandatory, so the ones that are, are again marked with an asterix (*) see **Figure 2.10.**

NOTE: Optional tables have mandatory fields but in the database these fields have not been marked with an asterisk. Refer to the schema to understand which information is mandatory. The validation tool will indicate any mandatory fields which have not been completed.

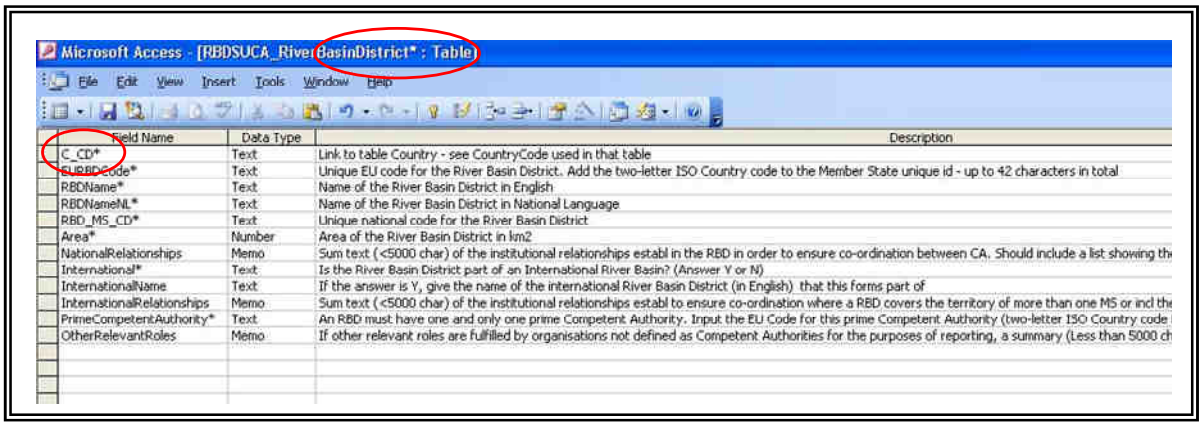


Figure 2.3 – Access DB table design showing mandatory tables.

2.4.3 Field descriptions

Every table within the database contains detail on what each field means (Description), and what format of data is required in the field. To view these, click once on the table and go to Design view. This description has been taken directly from the schema annotations, but in some cases where the description was too long for the field length the description has been truncated and you should refer back to the schemas themselves.

2.4.4 Text fields

Most of the fields within the DB are defined as text fields and an indication of number of characters allowed can be found in either the description field (table design view), in the general field settings or in the schema (xml) file (as illustrated below).

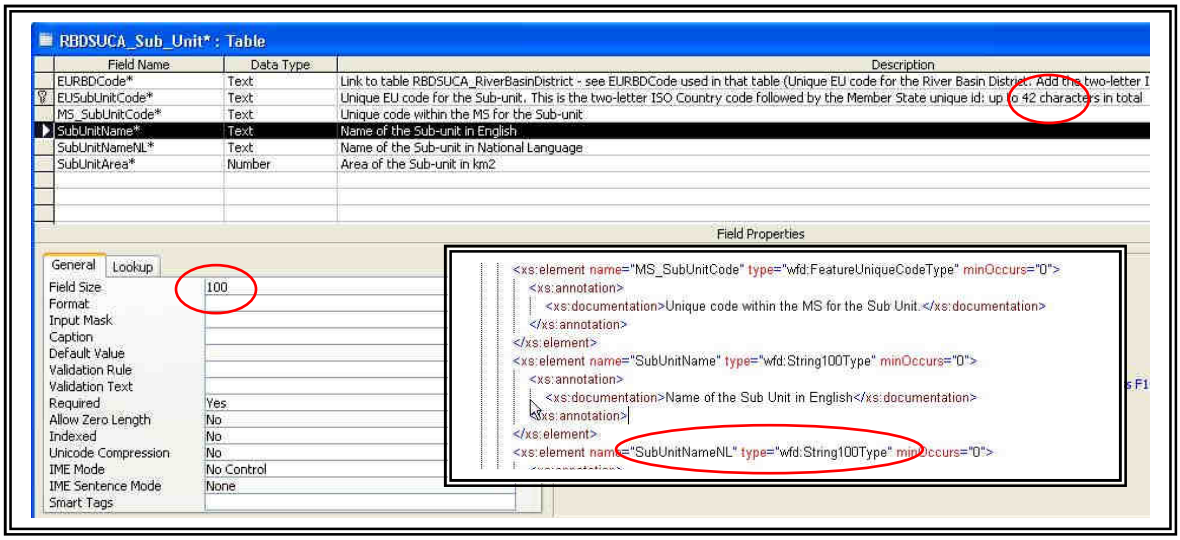


Figure 2.4 – Example of how to find text field size – in xml and db.

If text fields in the DB are defined as “Memo” the information on how many characters allowed will be available in both the xml file and in the text description.

2.4.5 Enumeration / Drop-Down Lists

All code lists defined in the schemas have already been incorporated into the DB, and are used to create drop-down lists where appropriate, e.g. country code (C_CD) list. This ensures that only valid codes are entered into the DB. Code lists are defined in the system schema WFDCommon and can also be found in section 4 of the User Guide to the streamlined schemas (ref http://water.eionet.europa.eu/schemas/dir200060ec/resources/.

2.4.6 Numeric fields

In some of the numeric fields it is possible to insert an exception. These will be available from a drop-down list in the DB:

-9999 = Unknown

-8888 = Yet to be measured

-7777 = Not Applicable

Percentages must be between 0 and 100 with 3 significant decimal places.

It will be possible to enter numeric data with decimals using both comma (2,75) and a period (2.75) separator. The XML conversion tool will translate all the comma separated data into period separated data.

2.4.7 Date and URL

Date format must be in the format yyyy-mm-dd and links (URL) to relevant documentation (must be a valid URL format).

Note: Not having date fields in the correct format causes the conversion tool to crash!

2.5 Simplification of the schema structure

The database represents the underlying structure of the schemas. However a literal translation would result in many more tables than there are in the database. This is because some streamlining has been undertaken to identify areas where a single table can hold information for multiple schema structures.

2.5.1 Tables holding information across all schemas

In the schema maps shown in Appendix A it can be seen that most of the schemas have two commonly occurring data levels to be filled with information:

- **“Attributes”data** - which holds information about who created the xml file, creation date etc; and
- **“Metadata_URL_at_RBD_level_Schema_dependent” data** - which holds data about additional information at a schema level. (note that this table is not needed for MON, SWST, GWST and RBDSUCA schemas).

This common data on attributes and metadata is reflected in the reporting DB through the tables “Attributes” and “Metadata_URL_at_RBD_level_Schema_dependent”. Therefore these tables hold information which is reported in different schemas.

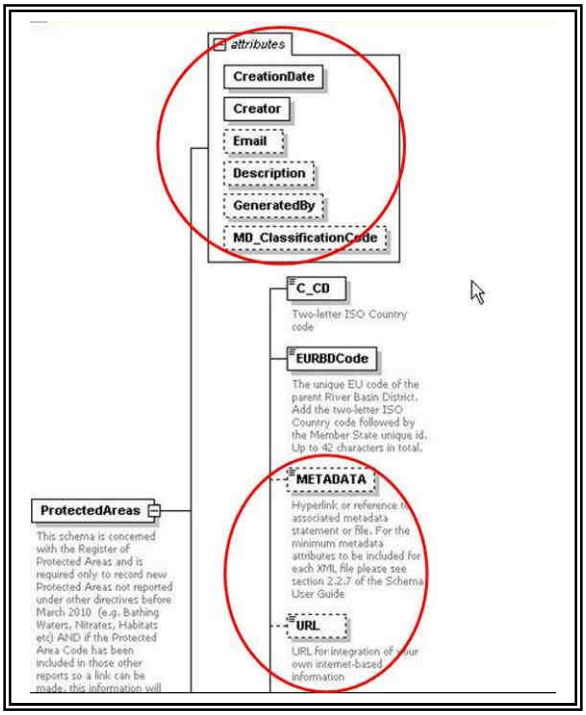


Figure 2.5 – Schema design to hold information about Attributes and Metadata and URL on schema level

2.5.2 Tables holding information for a repeated structure within a schema

There are also tables which hold multiple elements from within a single schema. For example, Schema SWMET and GWMET both have a special table SWMET_ReferenceLINKS and GWMET_ReferenceLINKS which summarizes all the reference documents. The tables are not physically linked to other tables but will have a drop-down list of tables from where it is possible to add additional reference documents as shown in Figure 2.7. In Appendix A are all links to these two tables shown.

An example of this is given in

Figure 2.6 below. Here, all the pressure types are merged into a dropdown list in the Access DB and the Associated Hyperlinks are all gathered in the table ReferenceLINKS where a dropdown list refers to both the table name and the pressure type.

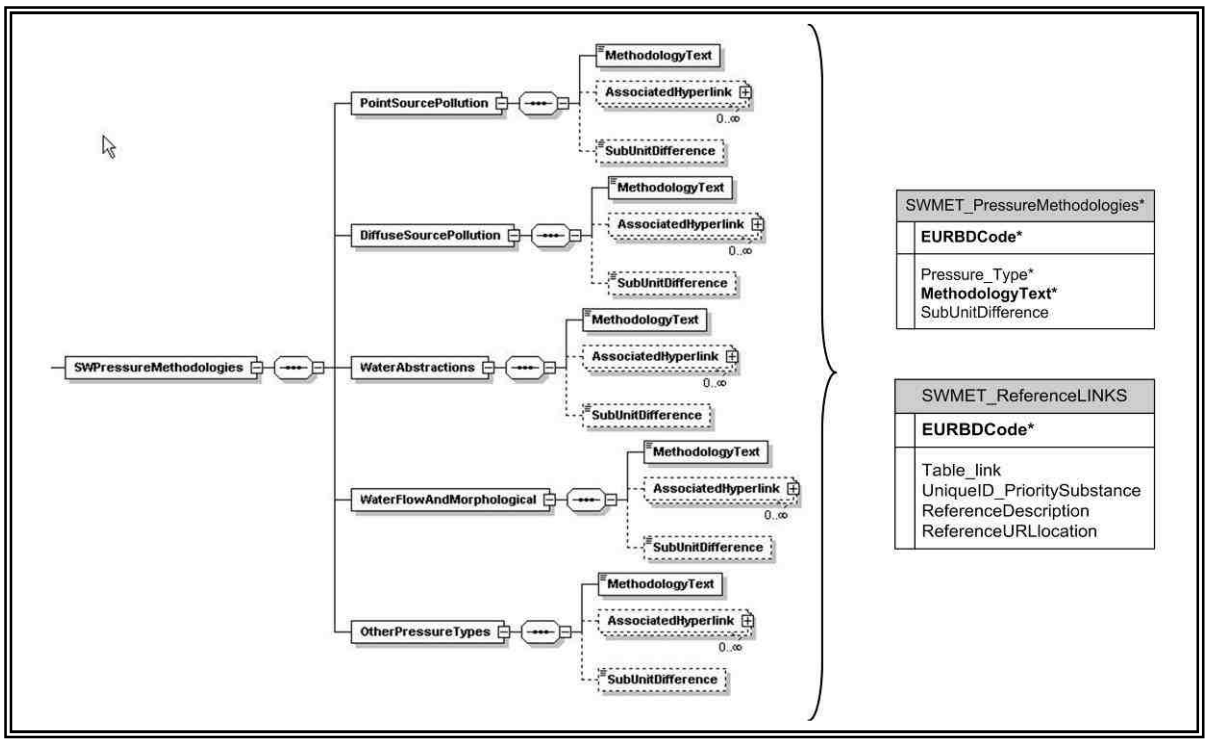


Figure 2.6 – Schema design translated into database design

	EURBDCode	Table_link	UniqueIDQE	UniqueID_PrioritySubstance	ReferenceDescription	ReferenceURLlocation
▶	DKRBD111	SWMET_ImpactMethodology			default_13	www.default_13.com
	DKRBD111	SWMET_ClassificationSystem			default_12	www.default_12.com
	DKRBD111	SWMET_DataGapsUncertainties			default_15	www.default_15.com
	DKRBD111	SWMET_EcologicalClassification/Coastal			default_14	www.default_14.com
	DKRBD111	SWMET_EcologicalClassification/Lakes		2	default_26	www.default_26.com
	DKRBD111	SWMET_EcologicalClassification/Rivers		3	default_28	www.default_28.com
	DKRBD111	SWMET_EcologicalClassification/Transitional		4	default_29	www.default_29.com
	DKRBD111	SWMET_ImpactMethodology		2	default_25	www.default_25.com
	DKRBD111	SWMET_InitiativesObjectives		1	default_24	www.default_24.com
	DKRBD111	SWMET_NonEuropeanStandards		1	default_23	www.default_23.com
	DKRBD111	SWMET_NonEuropeanStandards		3	default_27	www.default_27.com

Figure 2.7 – SWMET_ReferenceLINKS. A drop-down list with all tables where it is possible to add additional information in reference URL and description.

2.5.3 Linkage of low-level tables within the database

Most tables will be linked through unique identifiers given by the MS – e.g. EURBDCode, EUSurfaceWaterBodyCode– but some tables require the use of an auto generated unique ID from the "parent" table. Where this is the case, it is clearly stated in the description field within the tables and will also be marked in the table linkage diagrams in Appendix A. Drop-down lists make the information easier to fill in, as long as the 'parent' tables are filled in first.

In order for the tables within the DB to link to each other (in the same way that the schemas themselves link to each other), unique ID's are required in different tables to be referenced against the relevant data in other corresponding tables. For example:

- **SWMET_ReferenceLINKS table** - has two such columns named UniqueID_PrioritySubstance and UniqueIDQE. Both these codes are AUTO generated within the tables SWMET_NonEuropeanStandards and SWMET_EcologicalClassification respectively. These unique IDs are used to establish a link between the two tables. A drop-down list is available which for table SWMET_NonEuropeanStandards will be generated on the basis of the priority substances inserted into the table - see Figure 2.9.

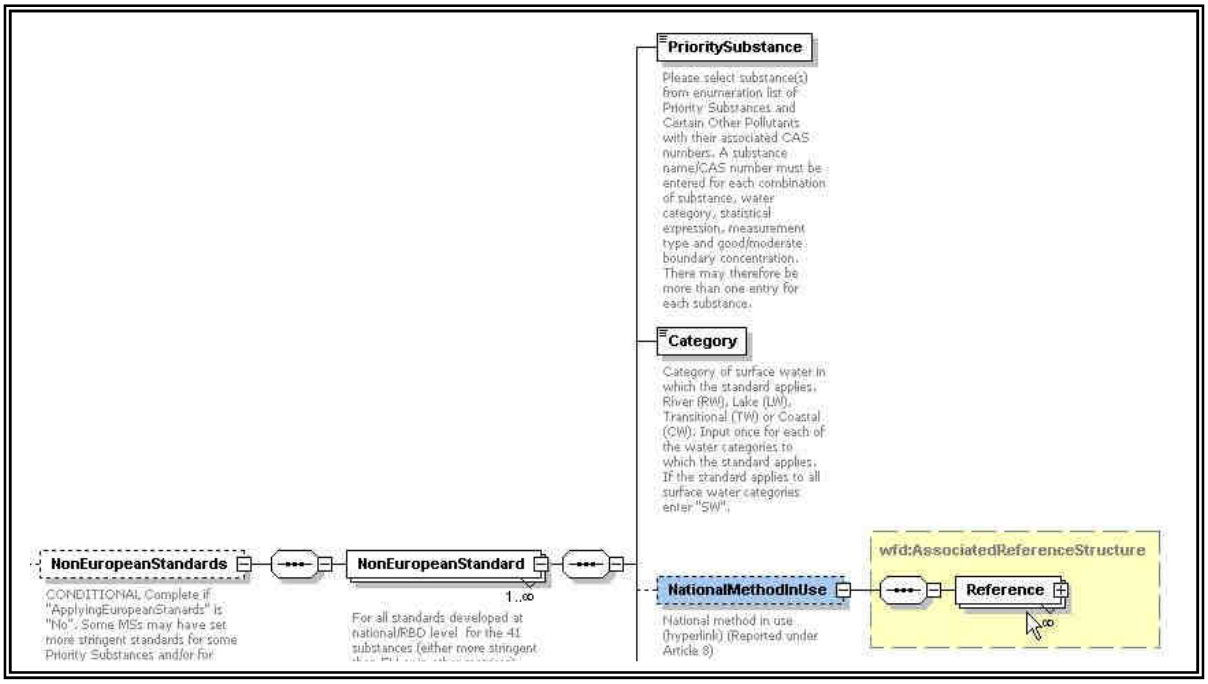


Figure 2.8 – Schema structure for SWMET which is reflected in the Access DB design through table SWMET_ReferenceLINKS

EURBDCode	Table_link	UniqueIDQE	UniqueID_PrioritySubstance	ReferenceDescription	ReferenceURLlocation
DKRBD111	SWMET_NonEuropeanStandards		3	default_28	www.default_28.com
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards				
DKRBD111	SWMET_NonEuropeanStandards		5	default_30	www.default_30.com

UniqueID_Priorit	PrioritySubstance	Category
1	107-06-2 1,2-Dichloroethane	RW
2	470-90-6 Chlorfenvinphos	RW
3	1582-09-8 Trifluralin	LW
4	7440-02-0 Nickel and its compound	TW
5	91-20-3 Naphthalene	CW

Figure 2.9 - SWMET_ReferenceLINKS.

An additional drop-down list will have to be used when establishing a link to the priority substances in table SWMET_NonEuropeanStandards. The drop-down list will be generated when a new priority substance is inserted in table SWMET_NonEuropeanStandards.

Figure 2.9 also shows how an automatically generated unique ID, like the one shown in Figure 2.9 (UniqueID_PrioritySubstance), is also found in some of the other schemas and is used to link two tables together (to reflect the schema linkages). The example in Figure 2.9 shows the 'child table' (SWMET_ReferenceLINKS) which has a drop-down box in the (UniqueID_PrioritySubstance field)

enabling the user to select the relevant Priority Substance from the ‘parent table’, which they would have previously populated.

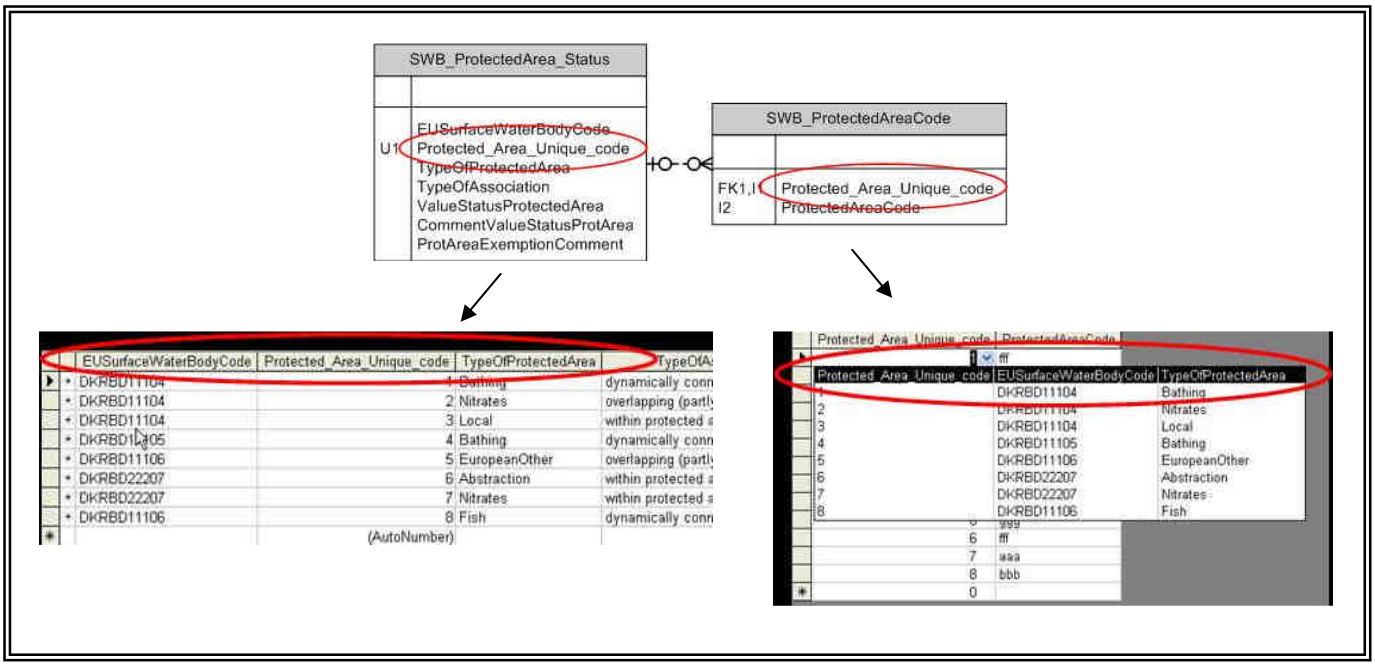


Figure 2.10 – Linkage of tables via unique ID’s (SWB schema).

Please notice that the parent table (SWB_ProtectedAreas_Status) will generate a unique code automatically and this code will have to be used in the child table (SWB_ProtectedAreaCode). The child table will have a drop down list with additional columns (here: EUSurfaceWaterBodeCode and TypeOfProtectedArea) from the parent table to give an indication of what the unique code will link to in the parent table.

2.6 Order of populating the tables

The fields that form the link between tables will also be, in most cases, drop-down lists and it is therefore a good idea to fill information into the tables in a certain order since these drop-down lists will be created as the data is filled in.

At a schema level it is recommended to fill information into the tables in the following order:

1. RBDSUCA tables
2. SurfaceWaterMethods (SWMET tables) and GroundWaterMethods (GWMET tables)
3. ProtectedAreas (PA tables)
4. SurfaceWaterBodies (SWB tables) and GroundWaterBodies (GWB tables)
5. Monitoring (MON tables)

6. SurfaceWaterMonitoringStations (SWST tables) and GroundWaterMonitoringStations (GWST tables)
7. RBMP_POM (RBMP tables)

Within each set of schema related tables, there is also a specific order to follow when populating the tables, which is given in Appendix A, defined by the colour coding.

2.7 Complex structure

It is not enough just to use the database to fill in the information. It should be used in conjunction with the schemas. This is because there are some complex structures with need to be followed else a validation error will occur. The following are important to note:

2.7.1 Conditional checks

The Conditional check is required in order to ensure that an element is populated where a previous element is set to a defined value. For example, in the RBDSUCA schema, if the 'River Basin District' element 'International' is populated with 'Y' then element 'InternationalName' is then required and must also be populated.

Conditional fields are clearly marked within the schemas themselves (with the word CONDITIONAL at the start of the description). It is important to understand which fields are conditional and therefore what other fields become required once a conditional field is populated. This will help you avoid validation errors.

2.7.2 Choice checks

In some cases you have a choice of what to report. For instance, it is mandatory to provide either Length of water body, OR area of water body. This is marked in the schemas by the symbol in Figure 2.11 . The Choice check is required in order to ensure that an element has been populated where a choice of attached elements is provided. In all cases, where an element requires a subsequent choice to be made from a series of attached elements, the choice options are set to minimum 1 and maximum 1, i.e. the validation routine should check that only one of the attached elements has been chosen and populated. For example, in the 'SWB' schema, one of either 'SurfaceWaterBody' element 'Area' or 'Length' must be populated, but not both.

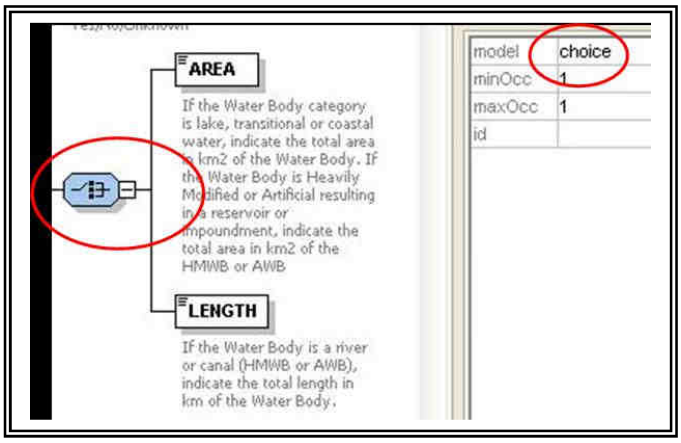


Figure 2.11 – How to identify a choice field in the schemas

3. Creation of xml files – The DB-to-xml conversion tool

3.1 Concept

The purpose of the DB-to-xml conversion tool is to allow Member States to generate the required xml files from their own data without any prior knowledge of xml formats and standards. However, database knowledge (including MS Access) and advanced data transformation skills are still needed to use the conversion tool.

The tool extracts the data from the tables in the Access database, described in Section 2 and generates the various RBMP schemas.

This tool does not carry out any validation of the data that is used to create the xml files, nor does it validate the xml file produced. Validation is performed with the desktop validation tool and / or in ReportNet (as described later in this document)

Please note that the xml conversion tool will only function with the database structure which has been built specifically in the WFD Access reporting database as supplied.

3.2 Computer Requirements

The DB-to-XML conversion tool requires the following;

- Windows XP or newer, 30 MB of free hard disk space and an 800x600 monitor (minimum).
- Microsoft .NET Framework 3.5 SP1 or higher. If .NET 3.5 SP1 is not already present, it will automatically be installed during the installation process. However the installation program itself requires at least Microsoft .NET Framework 2.0, see section 4.4.

Important: Running the Database to XML conversion tool requires a connection to the internet.

3.3 Installation / un-installation

3.3.1 Installation

The Database to XML conversion tool is installed through the internet from the URL below:

http://water.eionet.europa.eu/schemas/dir200060ec/resources/conversiontool/

It should be noted that the installation will only run from Internet Explorer, not from other browsers (e.g. FireFox).

As described in section 3.2 the installation will automatically include the Microsoft .NET Framework 3.5 SP1, if this is not already present. However, it should also be noted that installation of .NET requires local administrator access.

In order to run the installation program itself, you must have Microsoft .NET Framework 2.0 (at least) already installed. To determine what versions of the Microsoft .NET Framework is installed have a look in the folder C:\Windows\Microsoft.NET\Framework. Versions of the .NET framework will be in numbered folders.

If you do not already have .NET 2.0 or higher, it is recommended that you install the latest version of .NET, which at the time of writing is 3.5 SP1. This is available from the URL below:

http://www.microsoft.com/downloads/details.aspx?familyid=ab99342f-5d1a-413d-8319-81da479ab0d7

Each time the Database to xml conversion tool is started an automatic check for new versions will be performed. If an update is found, but installation is skipped, it can be installed manually later on.

Running the installation as well as the DB-to-xml conversion tool through a proxy server might cause problems. In this case your administrator must change the network configuration in order to remove the proxy for the following websites:

- http://water.eionet.europa.eu/schemas/dir200060ec/resources/conversiontool
- http://eionet.europa.eu

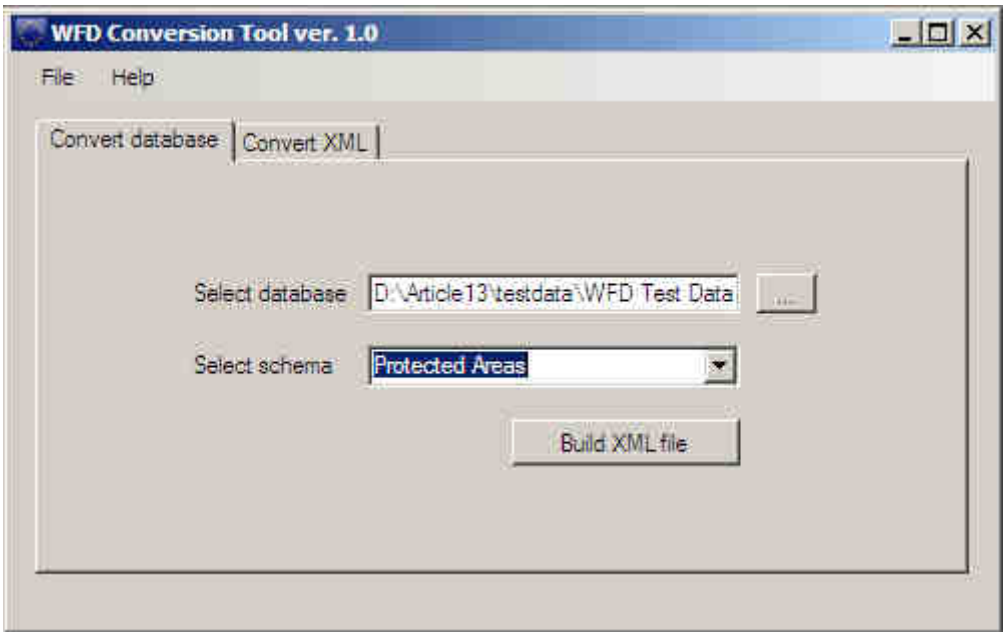
3.3.2 Un-installation

The DB-to-xml conversion tool has to be un-installed from the Control Panel.

3.4 Using the conversion tool

The DB-to-xml conversion tool is started from the start menu (Programs→ The European Commission → Database to XML conversion tool).

To generate an XML file, first select the relevant database (depending on the RBD) for which you want to generate the xml. By doing this, the tool performs a basic check to see which schemas can be generated (all schemas can be generated from the database described in section 2). The xml file to be generated is chosen and when the 'Build XML file' button is pressed - the application builds the file and then prompts the user to save the file as follows:



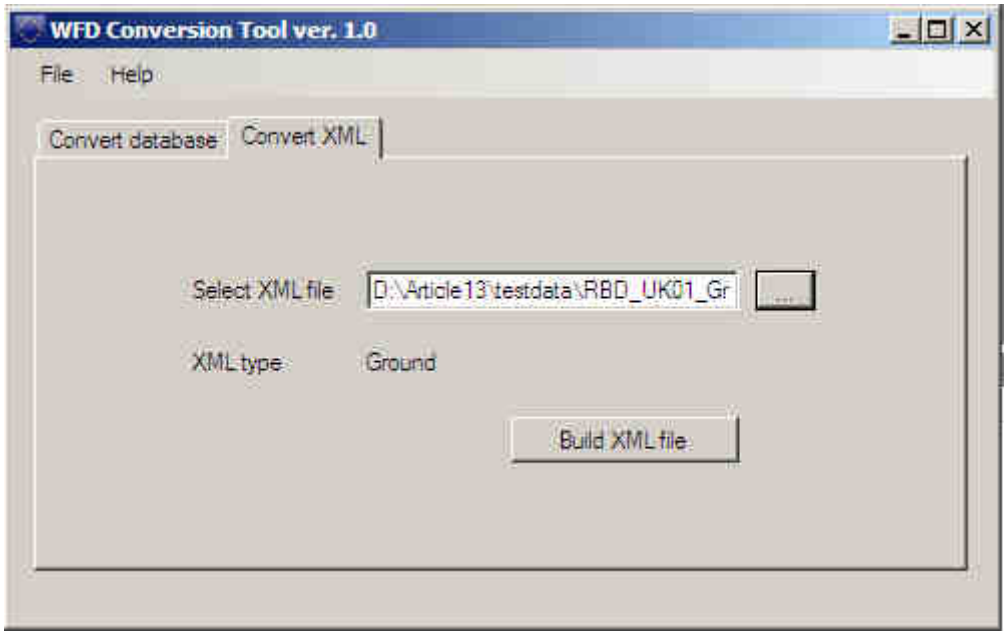
Note: The generation of XML files can take a long time if there is a lot of information to map between the database and the XML file.

As previously mentioned the conversion tool does not include any validation of the data. Therefore the generated xml file must be validated using the desktop validation tool (see section 4).

If the validation results in errors, it is important to verify whether the error exists in the database or in the nationally reported data. It is very important that the corrections are made in the national dataset, not just in the conversion tool database.

3.5 Update of Article 8 schemas

It is possible to submit previously reported Article 8 schemas under this reporting. However, there have been some small filed name changes and changes to enumeration lists which would cause the previously reported Article 8 schemas to error. Therefore functionality has been built into this tool which allows for the translation of the old files into the new.



4. Desktop validation tool

4.1 Concept

The purpose of the desktop validation tool is to allow the Member States to validate their RBMP data prior to upload to ReportNet CDR (where another similar level of validation is performed, based on the same rules). By undertaking this task prior to uploading your xml files onto ReportNet, you can correct any validation errors earlier on in the process and therefore repeating the task later on (it will save you time).

The validation tool implies that an xml file has already been generated. Thus, it is not possible to generate the xml file through the validation tool. If the xml file can not be generated directly from the MS national database, the MS Access Reporting DB / tool should be used followed by the DB-to-xml conversion tool.

4.2 Version 2.0 release September 2009

The validation tool was extended in September 2009 to allow the user to take advantage of XML file translations that have been set up in ReportNet to visualise the XML files. Visualisation of the XML file before submission is another form of validation.

The translations are specified as XSLT style sheets which the tool retrieves from ReportNet, then performs the translation and allows the user to print or save the output. The translations which have been set up are for translation to HTML, and for point files translation to KML so the files can be loaded into Google Earth.

Further guidance is provided in section 4.6.2

4.3 Computer Requirements

The desktop validation tool requires;

- Windows XP or newer
- 30 MB of free hard disk space
- an 800x600 monitor (minimum)
- Microsoft .NET Framework 3.5 SP1 or higher. If .NET 3.5 SP1 is not already present, it will automatically be installed during the installation process. However the installation program itself requires at least Microsoft .NET Framework 2.0, see section 4.4.

Important: Running the ReportNet desktop validation tool requires access to the internet.

4.4 Installation / uninstallation

4.4.1 Installation

The ReportNet desktop validation tool can be installed via the internet from the URL below:

http://water.eionet.europa.eu/schemas/dir200060ec/resources/validationtool

Please note that the installation will only run from Internet Explorer, not from other browsers (e.g. FireFox).

As described in section 4.2 the installation will automatically include the Microsoft .NET Framework 3.5 SP1, if this is not already present. However, it should be noted that installation of

.NET requires local administrator access and you may therefore need to contact your system administrator.

In order to run the installation program itself Microsoft .NET Framework 2.0 (or later) must be installed. To determine what versions of the Microsoft .NET Framework is installed have a look in the folder C:\Windows\Microsoft.NET\Framework, and if present, the versions of the .NET framework will be in numbered folders.

If you do not already have .NET 2.0 or higher, you are recommended to install the latest version of .NET, which at the time of writing is 3.5 SP1. This is available from the URL below:

http://www.microsoft.com/downloads/details.aspx?familyid=ab99342f-5d1a-413d-8319-81da479ab0d7

Each time the desktop validation tool is started an automatic check for new versions will be performed. If an update is found, but installation is skipped, it can be installed manually later on.

Running the installation of the desktop validation tool (as well as running the tool itself) through a proxy server might cause problems. In this case your administrator must change the network configuration in order to remove the proxy for the following websites:

- http://water.eionet.europa.eu/schemas/dir200060ec/resources/validationtool
- http://eionet.europa.eu

4.4.2 Uninstallation

The ReportNet desktop validation tool has to be uninstalled from the Control Panel.

4.5 Principles of validation

The purpose of the validation of an xml file is to check that it is complying with required xml schema form. It checks that the xml is well formed and the technical validation is met.

The first validation carried out checks that the xml is well formed (and adheres to the common structure rules outlined in section 6.1.

The second validation carried out checks that xml adheres to the complex structure as outlined in section 6.2.

The desktop validation tool only works if you have a connection to the internet, because the tool pulls down the latest version of the relevant schema directly from ReportNet. This ensures that any validation is always consistent with the latest version of the RBMP schemas.

4.5.1 Schema definition (schemaLocation)

The XML file should contain a reference to the schema definition file so that the validation can be undertaken. The reference is an attribute to the root element and consists of two parts – namespace and location

e.g. xsi:schemaLocation="http://water.eionet.europa.eu/schemas/dir200060ec http://water.eionet.europa.eu/schemas/dir200060ec/GWB_2p1.xsd"

For the validation tool to successfully retrieve the other validation rules from ReportNet then the schema definition needs to point at the schema held on ReportNet. The urls to the latest schema versions can be found at this location (Description='WFD Reporting'):

http://converters.eionet.europa.eu/do/uplSchemas

The first validation, described below, checks this definition.

4.5.2 Cross-schema and within-schema validation checks

The desktop validation tool checks the integrity of the xml files generated, in terms of data structure, format, and duplicates. This tool only performs these checks within each schema; it does not cross reference any given schema against another. Cross-schema validation checks are carried out in ReportNet only.

4.6 Using the validation tool

The desktop validation tool can be accessed through the Start menu on your desktop, simply go to Start → Programs → The European Commission → ReportNet desktop validation tool

4.6.1 Validating an xml file

To validate an xml file, click the “Check XML file” button (see Figure 12), browse to the relevant xml file you wish to validate and the validation is run as soon as OK is clicked.

Figure 12 The desktop validation tool

The main output from the validation tool is presented as shown in Figure 13.

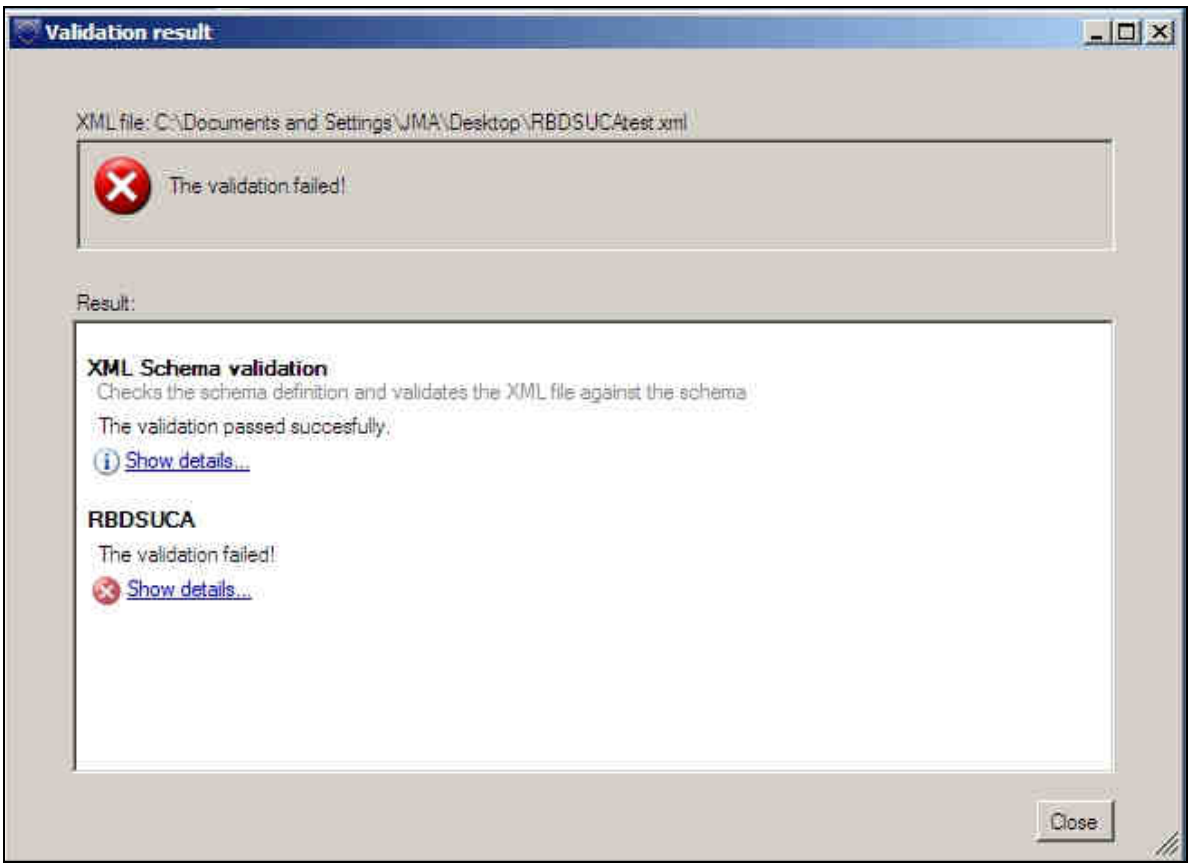


Figure 13 Result of validations

For each of the validations run the result is shown. The detailed reports are marked with the symbols below.

- The validation was not passed. The detailed report contains information about the validation including the errors found.
- The validation was passed with warnings. The detailed report contains information about the validation including the warnings (not shown).
- The validation was passed successfully. The detailed report contains additional information about the validation.

The detailed reports can be seen by clicking the “Show details…” link. This will open the report as shown below.

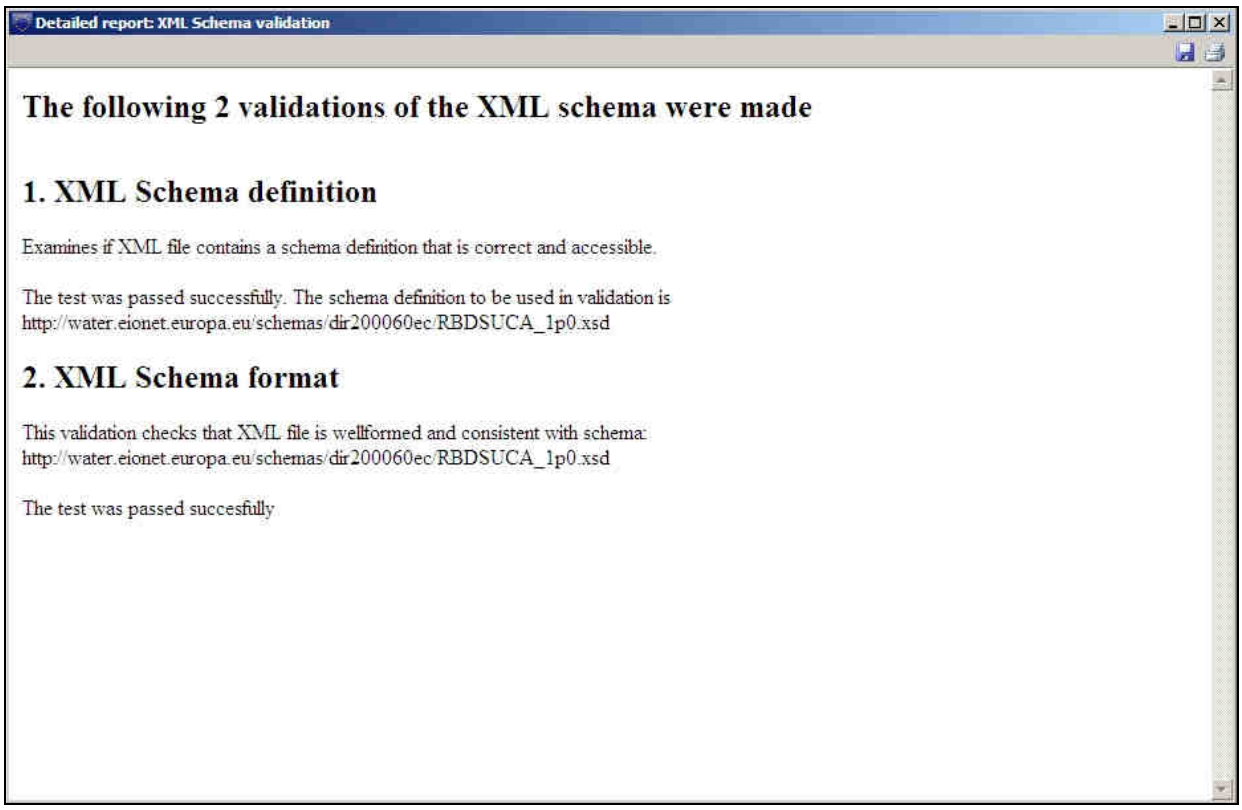


Figure 14 Example of desktop validation output (high level)

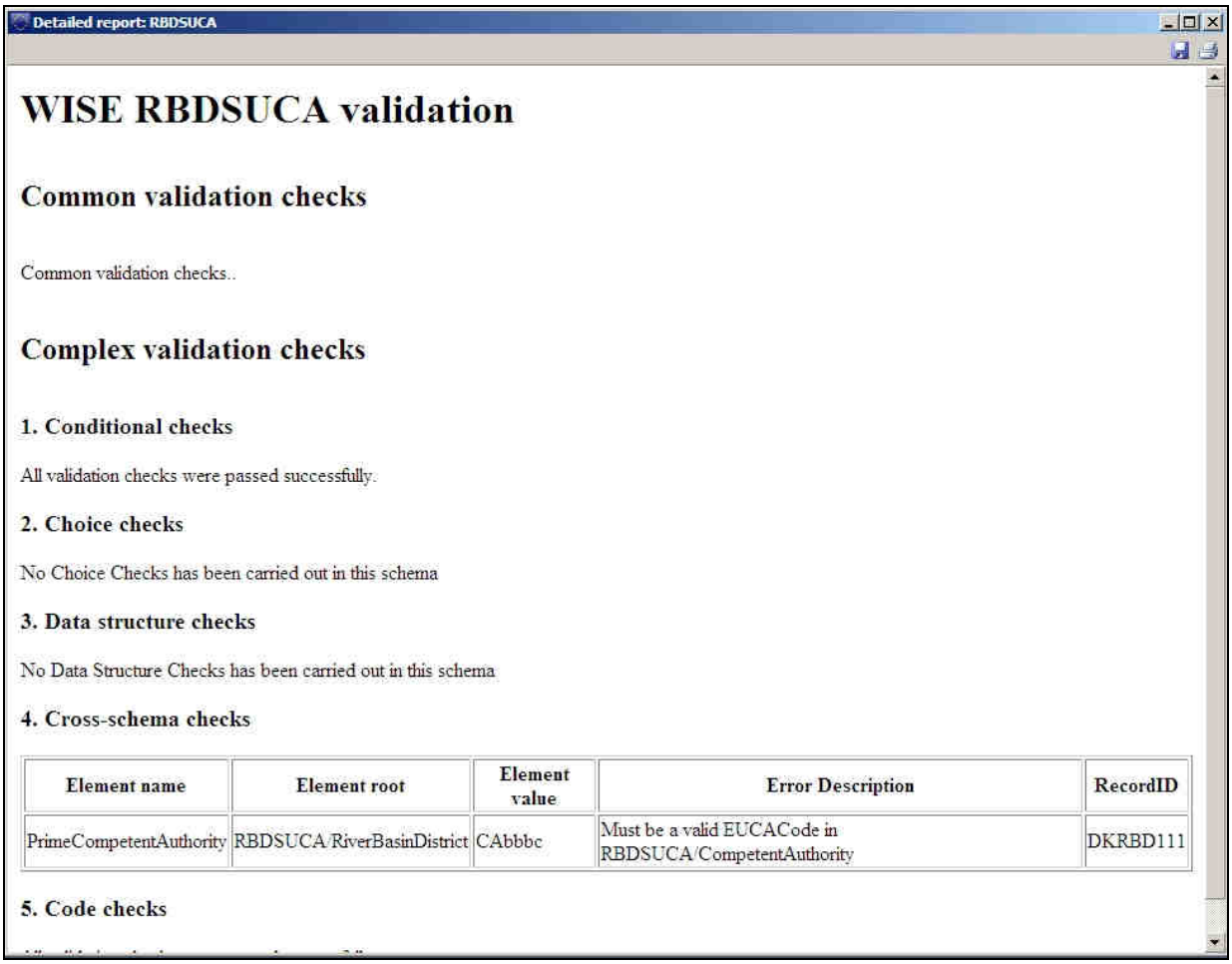


Figure 15 Example of desktop validation output (detailed)

The results of the validation can be saved and printed from the tool bar in the upper right corner.

4.6.2 Viewing an XML file

To view an xml file, click the “View XML file” button (see Figure 12) and browse to the relevant xml file you wish to view. When OK is clicked the tool will use the valid schema definition (see section 4.5.1) to retrieve the possible conversions which have been set up for this schema in ReportNet.

The conversions listed (see figure 16) with hyperlinks to View the files (if the size of the XML is less then 250kb) or to Save the files, from where they can be opened using the appropriate application by the user.

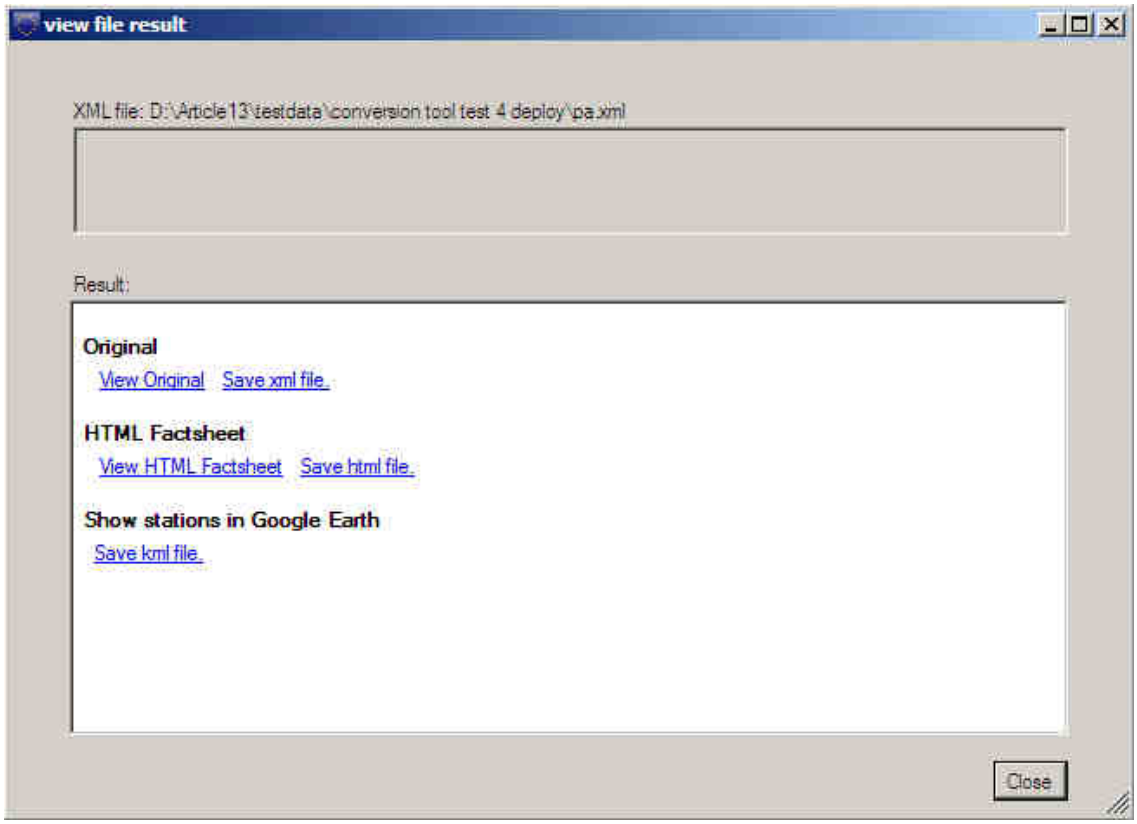


Figure 16 Example of desktop translation output

4.7 Understanding desktop validation output

If errors are reported under the first schema check – xml schema validation – the line number in the schema where the error was found and a description of the error itself are provided. The checks are typically those described in section 5. You should use a text editor (or similar viewer which gives line numbers - e.g. Notepad++) to display the xml schema and systematically work through the error list correcting as you go. Some examples of errors are:

Line	Error
13	The 'http://water.eionet.europa.eu/schemas/dir200060ec:LAT' element is invalid - The value '15N' is invalid according to its datatype 'http://water.eionet.europa.eu/schemas/dir200060ec/wfdcommon:CoordinateType' - The Pattern constraint failed.
14	The 'http://water.eionet.europa.eu/schemas/dir200060ec:LON' element is invalid - The value '43562656' is invalid according to its datatype 'http://water.eionet.europa.eu/schemas/dir200060ec/wfdcommon:CoordinateType' - The Pattern constraint failed.
16	The 'http://water.eionet.europa.eu/schemas/dir200060ec:Natural' element is invalid - The value 'ArtificialArtificialArtificialArtificialA' is invalid according to its datatype 'String' - The Enumeration constraint failed.
27	The 'http://water.eionet.europa.eu/schemas/dir200060ec:YesNo' element is invalid - The value 'B' is invalid according to its datatype 'http://water.eionet.europa.eu/schemas/dir200060ec/wfdcommon:YesNoCode' - The Enumeration constraint failed.

Figure 16 - example of validation error message

The format of the complex validation checks output is provided in section 6.4.

4.7.1 Correction of validation errors

If the validation results in errors, these must be corrected before uploading the xml file to Reportnet. **It is very important that the data are corrected in the source data, not just in the xml file**. See section 6.4 for an explanation on interpreting the error reports.

5. Uploading xml files onto ReportNet

5.1 A Quick guide

This quick guide outlines the Central Data Repository (CDR) delivery procedure in quick steps for the experienced ReportNet User:

1. Download the xml schemas and use your chosen method of generating the information to report against them (i.e. the Access reporting tool supplied, or another).
2. Use the desktop validation tool to check your data and correct any errors found.
3. Enter the Central Data Repository (CDR) by going to http://cdr.eionet.europa.eu
4. Click on the country for which you want to make the delivery
5. Go to: data collection→ European Union (EU) → obligations
6. Click on the subcollection → Water Framework Directive→ River Basin Management Plan including Programme of Measures reporting
7. Add a new envelope for the RBD wishing to report against (using the RBD code as the name of the envelope) or the RBDSUCA national level reporting and open the envelope.
8. Activate the task (upper right corner)
9. Upload xml files into the envelope
10. Check that everything is correct and meets your national quality requirements
11. Release envelope and QA and cover letter will automatically be generated.

5.2 Overview

To participate in the upload process, you need to first log in with your Eionet username and password by going to http://cdrtest.eionet.europa.eu/ and clicking on the top-right Login button.

If you do not have an Eionet username and password then please contact helpdesk@eionet.europa.eu

Navigate to the location where you want to upload data and create a new envelope for each RBD you are reporting.

If you already started this work and you want to be reminded of the URL of the envelope you are working on, or if you want to see what you can do next, consult the Global Worklist linked from the left-side grey button available from every page.

Whether your job implies drafting the delivery, inspecting the result or finalising the work, the way to start it, and also inform other users that you are executing that action, is to activate a task (e.g. Draft for creating/updating the delivery).

Activation reserves the envelope for you and prevents your colleagues from inadvertently corrupting the data. If you want to transfer the task to someone else, you can deactivate the envelope.

5.3 Creating the envelope

First you should login.

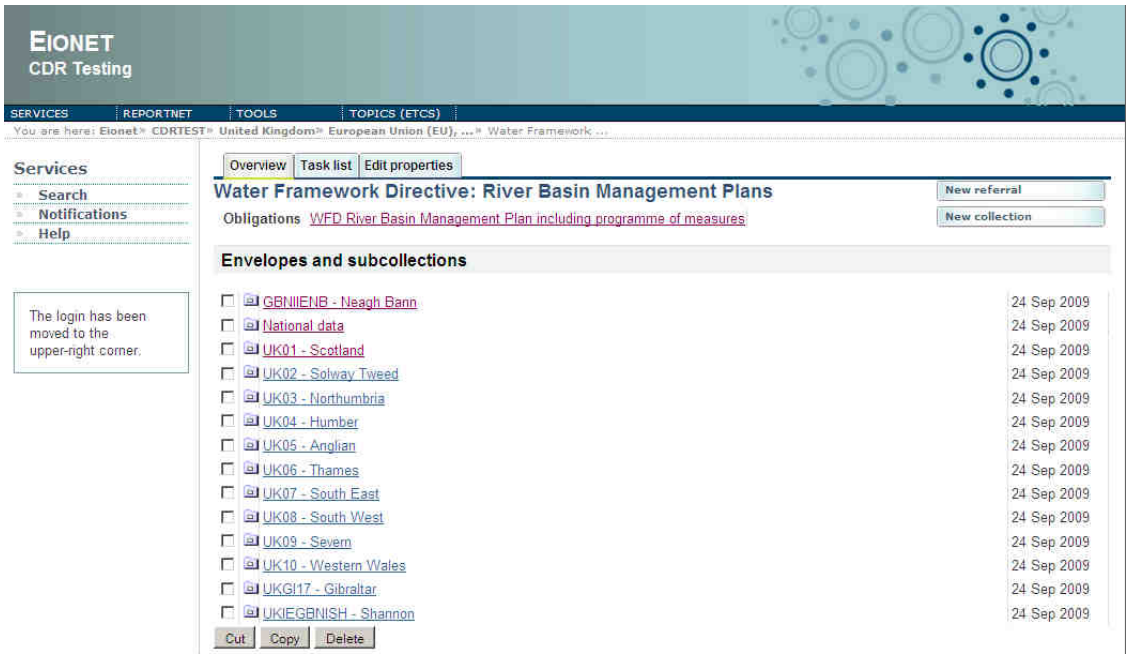
When you have navigated to the obligation ‘Water Framework Directive: River Basin Management Plans’ under European Union (EU) obligations, you will see that collections have been created

under the obligation for each River Basin District and one for 'National data' (RBDSUCA submission). (If the River Basin Districts are incorrect, please contact heldeskwfd@atkinsglobal.com for them to be corrected.)

In each of these sub-collections a grey button on the right side of the page saying "New envelope". Click on it to create a delivery envelope. Most of the necessary metadata is already filled out. You need to enter a title for the envelope (user choice) and the date, which is the reference date of the data you are reporting.

Then click on "Add". You now have an envelope that you must activate by pressing the 'Activate task' button and uploading files.

Note: The RBDSUCA schema is an exception in that it is reported at national level as it contains a list of the competent authorities, RBDs and sub-units. This will be in its own collection.



How CDR repository is set up with pre-created collections for reporting

5.4 Managing the envelope

After activation, you have reserved the envelope for yourself to work on. Other users will not be able to intervene until you:

- complete the task - in which case the system will move forward to the next step in the reporting process; or
- deactivate the task - from the corresponding right-side blue button which keeps the work already done and makes it possible for someone else to take over the task

It is possible to see if anyone else is working on a particular task by consulting the *Status* of the envelope:

To track progress of the upload task, take a look at the History tab of that envelope.

When you have activated a task, you will notice a new tab in the envelope. The system will automatically place you there. This is the activity tab. It contains the information and guidance necessary for you to carry out your task.

5.5 Uploading data onto ReportNet

To fulfil the reporting obligations you are required to upload the xml files relevant to each RBD and each schema.

The upload facility enables you to upload the xml files, and also add the required shapefiles (or where necessary a .zip file containing the shapefiles)

5.5.1 Naming convention for xmls to be uploaded

Submissions are made at the RBD level (except for one schema RBDSUCA at the national level) and the files should be named according to the following format:

[country code]_[EURBDCode]_[schema]_[dateYYYYMMDD].xml
e.g. DK_RBD444_GWB_20050911

Note: The RBDSUCA schema is an exception in that it is reported at national level as it contains a list of the competent authorities, RBDs and sub-units. The naming of this file follows the same convention, but without the EURBDCode.

5.5.2 Use of EU Languages

You may use any of the official EU languages to report in the free text fields. You are, however, requested to use only one language for the information within any single schema. It is not necessary to use the same language for all the schemas.

5.6 Checking data quality

Once you have uploaded your xml files, you need to check the quality of your data within Reportnet / EIONET.

The quality assessment (QA) consists of a set of rules checked against each individual report. It happens in two ways:

- During the drafting of the report into the envelope, QA is manually triggered by the user in order to fix possible errors at that stage; it is done by clicking the corresponding “QA” button next to each factsheet. During drafting, the QA result is not stored in the envelope, but is just displayed to the user on a web page. You can save it on your own PC if you wish for your records.
- After the data reporter completes the envelope, QA is automatically triggered by the system on all reports; in this case, the result is stored in the envelope as “Feedback” object; the rules checked are the same as in the case of manual QA.

Hint: the QA rules are available at http://converters.eionet.europa.eu/queriesindex.jsp

To start the QA, click on the 'Run QA' links next to your uploaded files. This will run a collection of quality assessment scripts and produce a report describing the specific tests carried out and the results. It can typically detect syntax issues, but won't know if your information makes sense in terms of the other schemas uploaded or not.

More detail on the specific QA functions is provided in chapter 6 of this document.

5.7 Understanding validation output in ReportNet

Validation in ReportNet can be run at two points. Manually after an XML file has been uploaded. (Buttons will appear next to the filename in the envelope "QA1" and "QA2"). Output from a manual validation is not saved anywhere, just displayed on-screen. Secondly when an envelope is released all the validations are run on all the submissted XML files in that envelope and the output is saved.

XML Schema validation checks "QA1"

The first schema check (QA1) is the xml schema validation which carries out checks that the XML file is well formed and simple validation checks as described in section 6.1.

Errors detected in this validation will be returned as a table within a texteditor file. The errors within the table will be labelled with the corresponding line and column numbers from the schema so you can easily find and correct the error within your schemas (example below).

Type	Position	Error message
ERROR	Line: 7, Col: 30	cvc-datatype-valid.1.2.1: 'this is not a url' is not a valid value for 'anyURI'.
ERROR	Line: 7, Col: 30	cvc-type.3.1.3: The value 'this is not a url' of element 'URL' is not valid.
ERROR	Line: 13, Col: 17	cvc-pattern-valid: Value '15N' is not facet-valid with respect to pattern '\-{0,1}[0-9]{1,2}\.[0-9]{1,5}' for type 'CoordinateType'.
ERROR	Line: 13, Col: 17	cvc-type.3.1.3: The value '15N' of element 'LAT' is not valid.
ERROR	Line: 14, Col: 22	cvc-pattern-valid: Value '43562656' is not facet-valid with respect to pattern '\-{0,1}[0-9]{1,2}\.[0-9]{1,5}' for type 'CoordinateType'.
ERROR	Line: 14, Col: 22	cvc-type.3.1.3: The value '43562656' of element 'LON' is not valid.
ERROR	Line: 27, Col: 21	cvc-enumeration-valid: Value 'B' is not facet-valid with respect to enumeration '[Y, N,]'. It must be a value from the enumeration.
ERROR	Line: 27, Col: 21	cvc-type.3.1.3: The value 'B' of element 'YesNo' is not valid.

Although QA1 performs the same checks as the desktop validation tool the error messages generated in reportnet validation are not written the same as those in the desktop validation tool. (This is because they use a different engine. Schema validation follows the W3C XML specification http://www.w3.org/TR/xmlschema-1/#concepts-schemaConstraints.)

These error messages are XML specified validation rules or constraints. Constraints have unique names and numbered parts. At the following link http://www.w3.org/TR/xmlschema-1/#concepts-schemaConstraints there is a reference in which any error messages can be looked up. As all errors relate to one of the following general rules https://svn.eionet.europa.eu/projects/Reportnet/wiki/SchemaValTec, it is easier to examine the element and if it is throwing an error, go through each criteria to see if that would throw a specific error. Reference to the original schema can also help pinpoint where the error is coming from.

Complex validation checks "QA2"

The second validation that is carried is the business rules as described in section 6.2

5.7.1 Cross-schema and within-schema validation checks

A check is also made between all submitted schemas within a MS to ensure that codes being used are valid and unique. However, this script can take a long time to run and because of the RBD level reporting there is no single trigger point to initiate it from. Therefore the script has been moved to the manual stage and carried out when all MS submissions have been made.

The script provides a summary report of the submission and any validation errors.

The are the cross-schema checks are described in section 6.4.

Essentially, the validation looks at all the XML files which have been submitted in all the envelopes under a Member State

5.8 Completing the envelope

When you click on

you submit your report to EEA.

You will not be able to modify any files in the envelope after you click this button.

The full automated QA process will run on your delivery and a feedback report will be posted to the envelope. EEA and the team responsible for the expert manual review will receive an automatic email that you have completed the envelope. The completion process also automatically generates a cover letter acknowledging receipt of the data uploaded to CDR, including a list of all files uploaded and their precise location within the CDR.

5.8.1 Restricted or confidential data

The ReportNet approach means that submitted data is made available for the public to see. However you can specifically restrict individual files from public view if this is your national policy.

To restrict viewing of a file, click on the filename in the envelope. This will lead you to a page showing you the metadata of the file. There you will see a check box which allows you to restrict public access to the file after the envelope has been completed. EEA and the team responsible for the expert manual review can still access all files.

5.9 Resubmissions

If you wish to make an amendment to any data already submitted (i.e. envelope released), you must resubmit the whole schema for that RBD. This means that if a MS corrects information for some water bodies using the SWB schema, the MS has to re-submit the full SWB file again, including information for all water bodies, not just those corrected. This file will replace the previous version. Within the RBD collection create a new envelope for the re-submission.

6. QA/QC

6.1 Common validation checks

The following checks are carried out for all elements within the schema.

6.1.1 Element types and maximum and minimum limits

Submitted data needs to conform to the data types that have been used for each element in the schema. The data types are as follows:

- String: all characters allowed. The maximum and minimum settings define the maximum number and minimum number of characters that are allowed.
- Integer: only integers are allowed. The maximum and minimum values define the maximum and minimum values that are allowed.
- Decimal: any number is allowed. The maximum and minimum values define the maximum and minimum values that are allowed.
- Percentage: must be between 0 and 100. The maximum and minimum values define the maximum and minimum values that are allowed.
- Date: must be a valid date in the format yyyy-mm-dd.
- URL: must be a valid URL format.

6.1.2 Data structure check

The Data structure check is required in order to ensure an element follows a certain structure or pattern as defined in the schema. For example, the 'Longitude' and 'Latitude' elements that feature throughout the schemas must have spatial co-ordinates conforming to a pre-defined structure \-{0,1}[0-9]{1,2}\.[0-9]{1,5}, i.e. first character can be '-', next two characters 0 to 9, next character '.', next 5 characters 0 to 9.

6.1.3 Required / Conditional / Optional elements

The data within the schemas may be Required, Conditional or Optional for the purposes of automatic validation.

The logic for determining whether an element is considered to be Required, Conditional or Optional is based on the minimum number of occurrences defined for that element and whether the element has been designated as Conditional. All elements that are Conditional are identified in the table in Appendix B and also in the annotation of the schemas themselves.

The logic used is as follows:

- Required: minimum occurrence is set to > 0.
- Conditional: minimum occurrence is set to 0 and there is a conditional check as described in the table in Appendix B.
- Optional: minimum occurrence is set to 0 and there is no conditional check described in the table in Appendix B.

6.1.4 Choice check

The Choice check is required in order to ensure that an element has been populated where a choice of attached elements is expected in the schema. In all cases, where an element requires a subsequent choice to be made from a series of attached elements, the choice options are set to minimum 1 and maximum 1, i.e. the validation routine should check that only one of the attached

elements has been chosen and populated. For example, in the 'SWB' schema, one of either 'SurfaceWaterBody' element 'Area' or 'Length' must be populated, but not both.

6.1.5 Multiple occurrences

There are instances when multiple occurrences of elements are required. These are required when the maximum occurrence set for an element is > 1.

The following options exist in the schemas:

- Minimum occurrence = 1, maximum occurrence = infinity: there must be at least 1 occurrence of the element (or sequence of elements) and there is no limit to the number of times that element (or sequence of elements) can be repeated.
- Minimum occurrence = 0, maximum occurrence = infinity: there may be no occurrences of the element and there is no limit to the number of times that element (or sequence of elements) can be repeated.
- Minimum occurrence = 1, maximum occurrence = n: there must be at least 1 occurrence of the element (or sequence of elements) and that element (or sequence of elements) can be repeated up to a maximum of n times.
- Minimum occurrence = 0, maximum occurrence = n: there may be no occurrences of the element and that element (or sequence of elements) can be repeated up to a maximum of n times.
- Minimum occurrence = n, maximum occurrences = n: there must be n occurrences of the element (or sequence of elements) and that element (or sequence of elements) can be repeated up to a maximum of n times.

6.1.6 Yes / No elements

There are elements that require a Yes / No answer. These must be checked to ensure that the correct codes have been used.

The WFD Common schema stores codelists that may be referred to by more than one element within the RBMP schemas. There are three Yes / No types that have been defined in the WFD Common schema:

- YesNoCode: Y, N.
- YesNoUnknownCode: Y, N, U, NA.
- YesNoNotApplicableCode: Y, N, NA.

Where Y= Yes, N=No, U = Unknown, NA = Not Applicable.

6.1.7 Code check

The Code check is the most common validation check and is required to ensure that, where relevant, valid codes are selected from the attached codelist defined in the WFD Common schema, or are selected from the enumeration list defined within the element itself, and that, in almost all cases, only one occurrence of the selected code exists in the data submission, avoiding the creation of duplicates. For example, element C_CD featuring throughout the schemas must be populated with a valid country code defined in the codelist 'wfd:CountryCodeType' within the WFD Common schema. Within the 'SWB' schema, the code used to populate the element 'Category' must be one of those defined in the enumeration list defined within the element. In both cases, only one item can be selected from the codelists, avoiding duplication.

Almost all codelists require the selection of a single, unique code for that element, with no duplicate selections permitted. However there are some instances described in the table in Appendix 1 where duplicate codes are permitted, for example:

- More than one of the same TypeOfProtectedArea code may be selected from the codelist wfd:ProtectedAreaType in SurfaceWaterBodies/SurfaceWaterBody/WaterBodyStatus/StatusProtectedAreas/SWProtectedAreaDetails.

Each item in the codelist attached to the element PressurePreventingGoodStatus must be selected and subsequent detail provided in NeedForSupplementaryMeasure in RiverBasinManagementPlan/POM1/SWNeedForSupplementaryMeasures/SWNeedForSupplementaryMeasure/NeedForSupplementaryMeasure/SupplementaryMeasures.

6.2 Complex validation checks

There are a number of more complex validation checks that should be made against specific elements in the submitted data.

6.2.1 Conditional check

The Conditional check is required in order to ensure that an element is populated where a previous element is set to a defined value. For example, in the 'RBDSUCA' schema, if the 'River Basin District' element 'International' is populated with 'Y' then element 'InternationalName' must also be populated.

6.2.2 Cross-schema/Within-schema check

The Cross-schema check is required to validate the content of an element declared in one schema against that of another schema. For example, in the 'SWB' schema, the element 'EURBDCode' must correspond to a valid 'EURBDCode' populated in the 'RBDSUCA' schema. All the schemas use codes which are listed in the RBDSUCA schema and checks are made to ensure only valid codes are used.

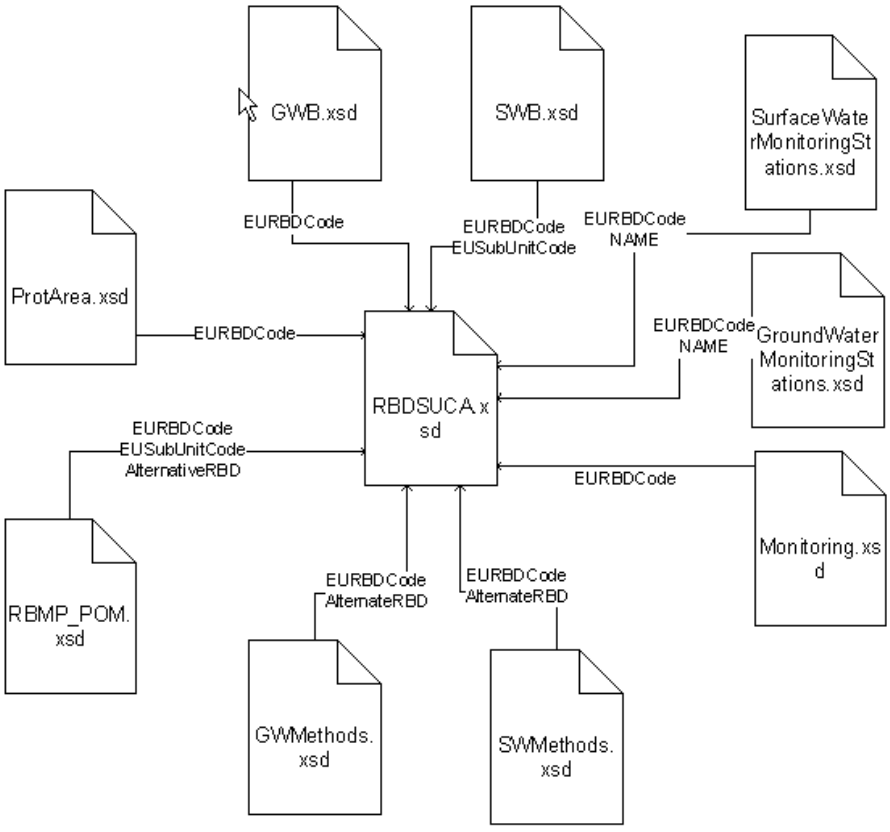


Figure 6.1: Checks against the RBDSUCA schema

Validation checks are also made between the other schemas.

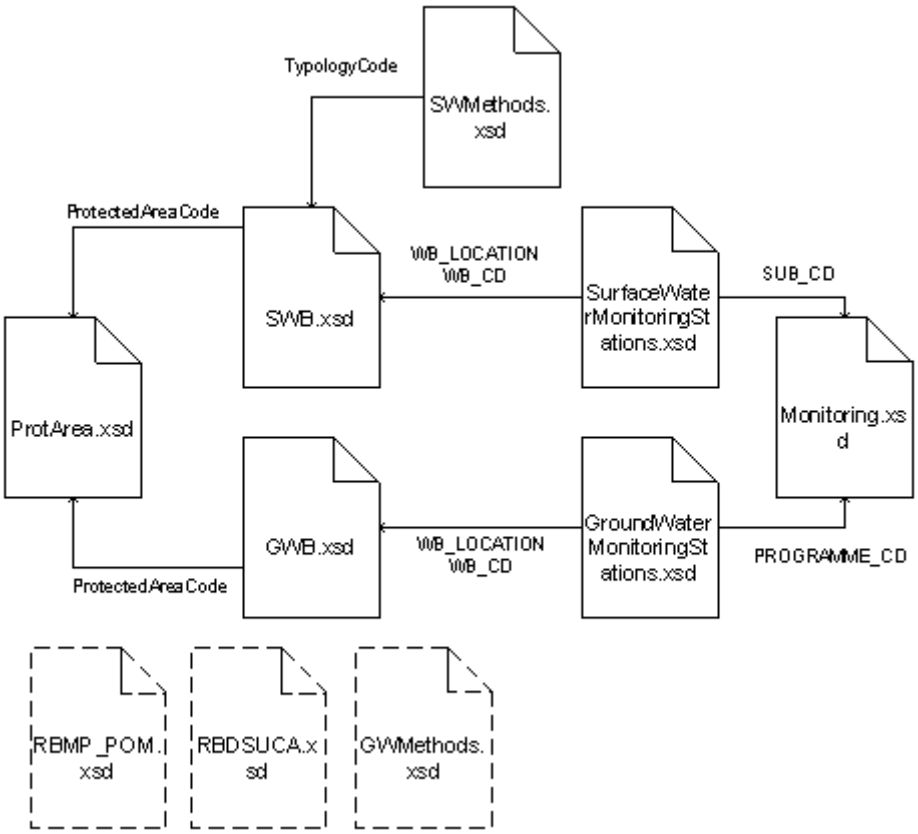


Figure 6.2: Cross-schema checks between the other schemas.

In addition, this check should be used to ensure that identifiers for River Basin Districts, Sub-units, Competent Authorities, surface water bodies, groundwater bodies, Protected Areas, surface water monitoring stations, groundwater moitoring stations and programme and sub-programme codes that are populated in an element as text, rather than selected from a static codelist, are only entered once and are unique within the MS (checking of duplicates).

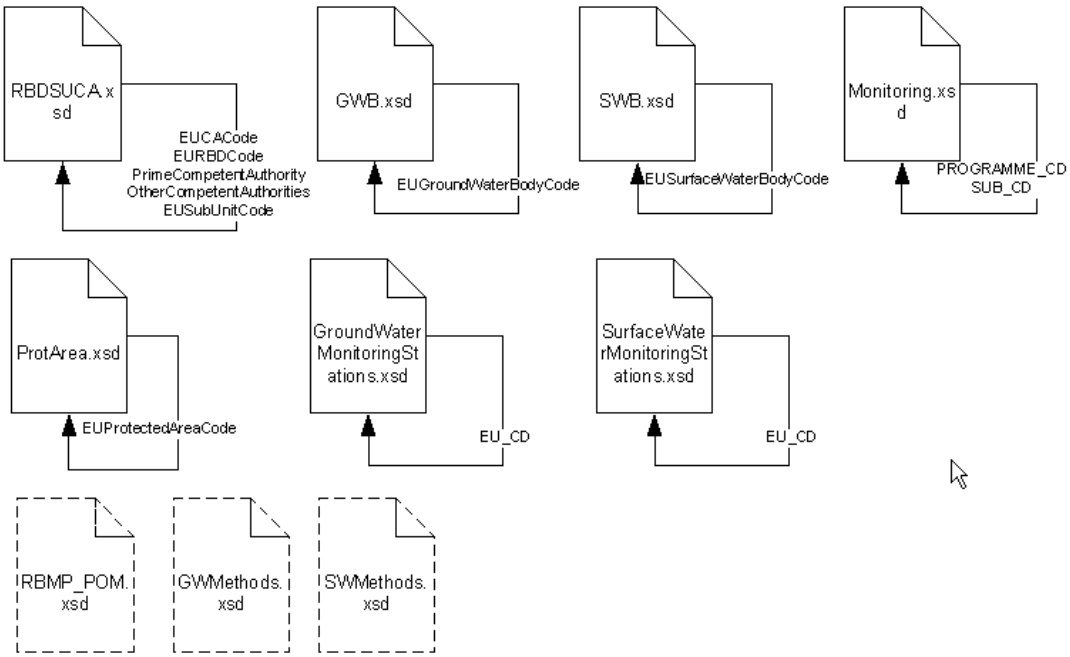


Figure 6.3 – Checks for duplicate codes

6.3 Complex validation checks by element

The table in Appendix B contains full details of the complex checks that are carried out on elements within the schemas in addition to the common validation checks described in the previous section. The overview of the complex checks identified have been described in the previous section. Note: Cross-schema checks are run as part of a manual process after MS has completed submission.

The complex checks in the Appendix are categorized according by the following:

1 = Conditional check.

2 = Choice check.

3 = Data structure check.

4 = Cross-schema check.

5 = Code check.

6 = External check.

6.4 Validation check output

The example below shows the validation error output and the information that is given to help determine where the error is:

Element name	Element root	Element value	Error Description	RecordID
PrimeCompetentAuthority	RBDSUCA/RiverBasinDistrict	CAbbbc	Must be a valid EUCACode in RBDSUCA/CompetentAuthority	DKRBD111

- Element name: The name of the element (tag) within the schema which has caused the error
- Element root: Where this element is found within the schema
- Element value: The value which has caused the error (if there is one)
- Error description: Why the error occurred
- RecordID: An ID of the record within which the error was thrown

To find the error requires some detective work because this type of validation does not provide line numbers. If the element value is provided then searching for that value in the XML would be the quickest approach.

6.5 Correction of validation errors

If the validation results in errors, these must be corrected.

It is very important that the data are corrected in the source data, not just in the XML file.

7. Documents and links

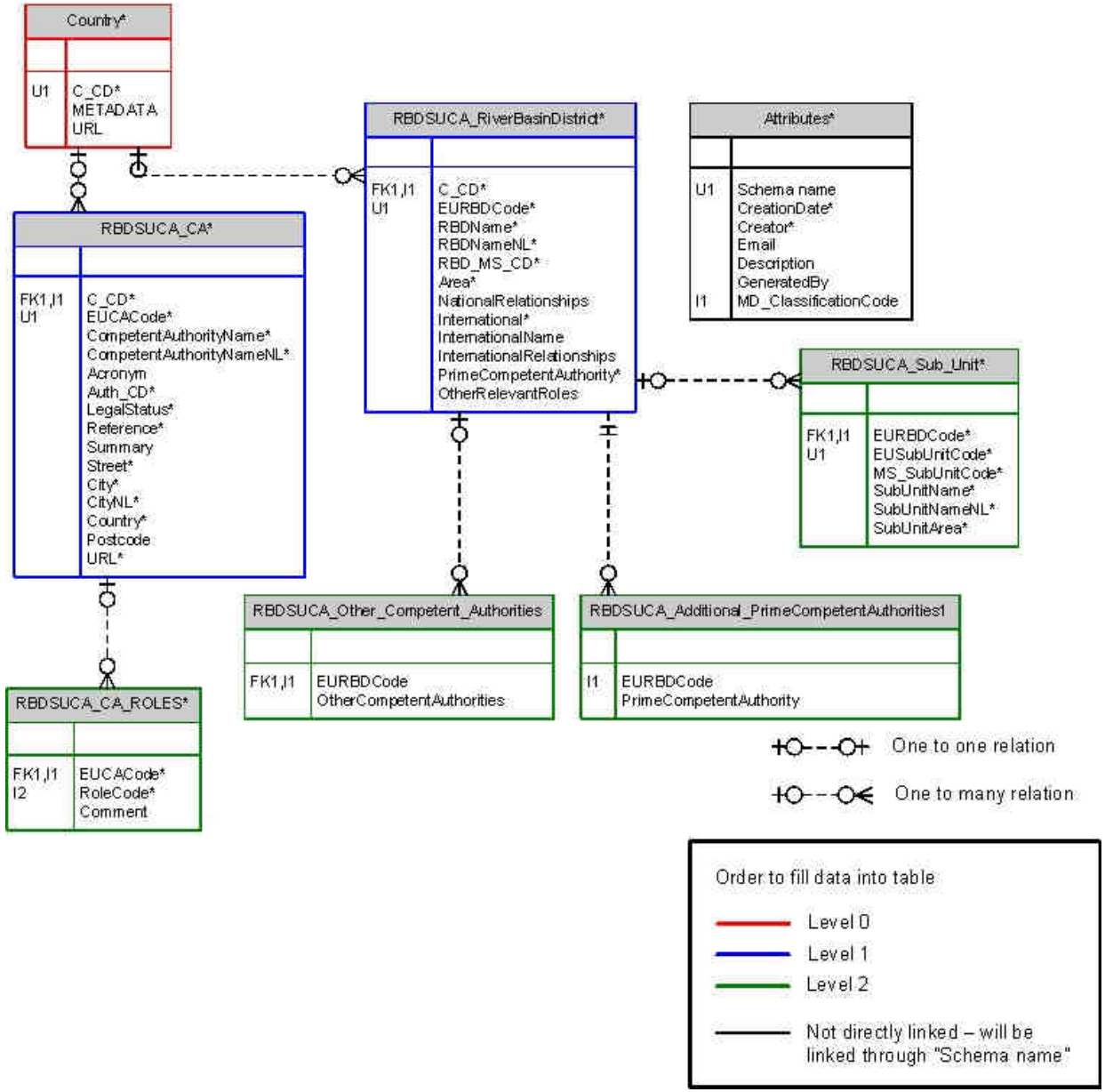
Guidance No 21 - Guidance for reporting under the WFD

Guidance No 22 - Updated WISE GIS guidance (Nov'2008)

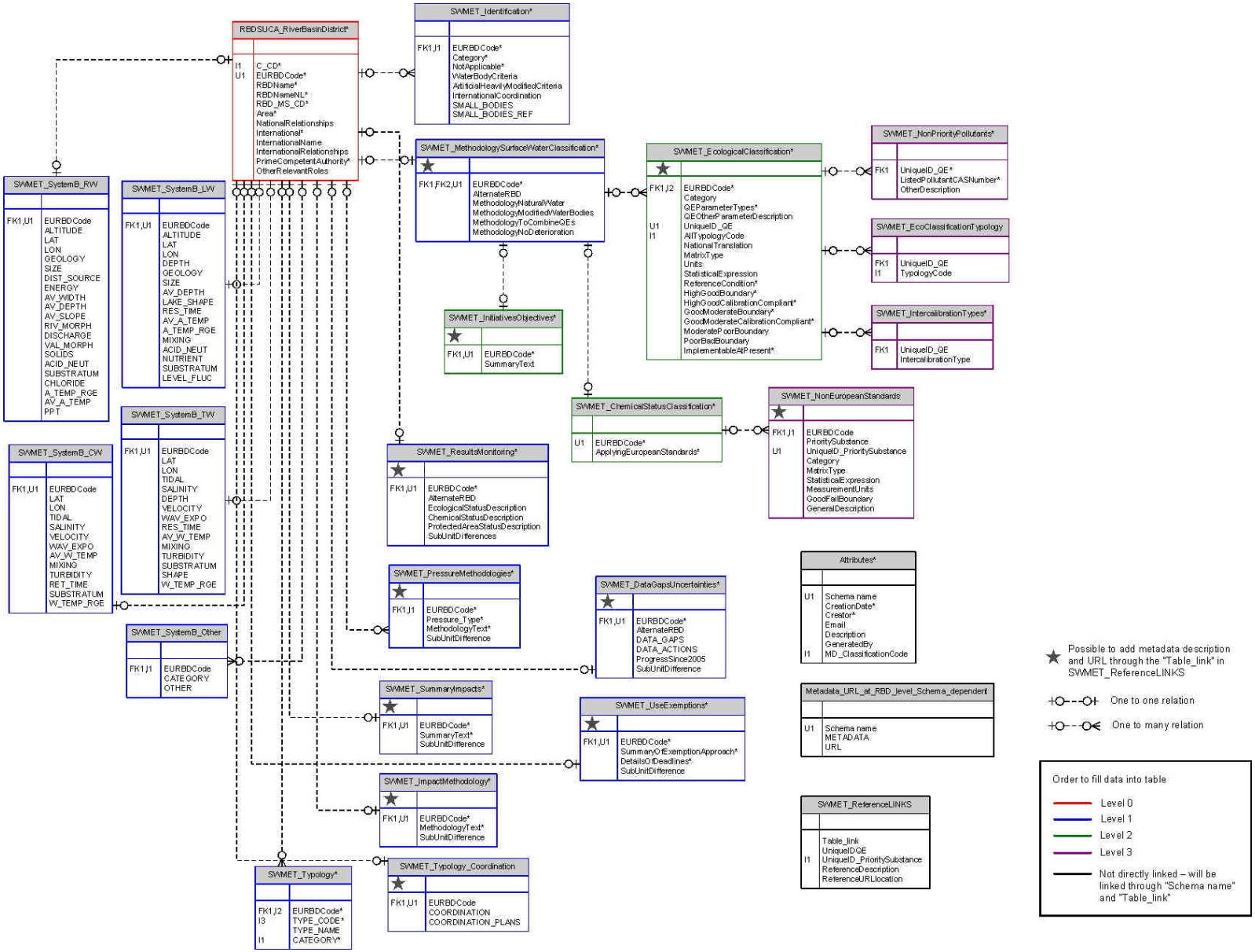
Appendix A

A.1 Tables linkages

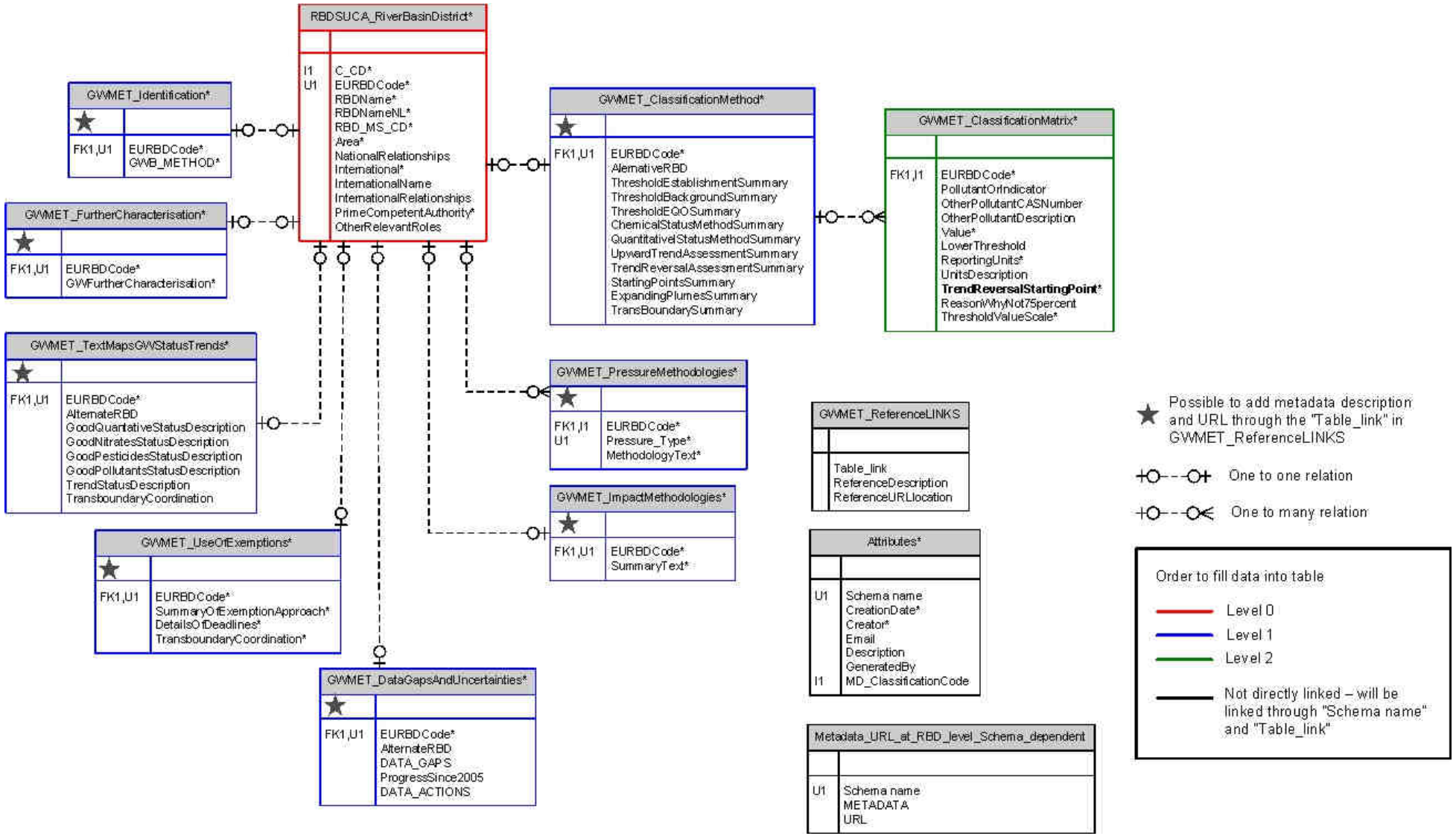
A.1.1 RBDSUCA


Country*
U1
C_CD*
METADATA
URL
RBDSUCA_RiverBasinDistrict*
FK1,I1
U1
C_CD*
EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
Attributes*
U1
Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1
MD_ClassificationCode
RBDSUCA_CA*
FK1,I1
U1
C_CD*
EUCACode*
CompetentAuthorityName*
CompetentAuthorityNameNL*
Acronym
Auth_CD*
LegalStatus*
Reference*
Summary
Street*
City*
CityNL*
Country*
Postcode
URL*
RBDSUCA_Sub_Unit*
FK1,I1
U1
EURBDCode*
EUSubUnitCode*
MS_SubUnitCode*
SubUnitName*
SubUnitNameNL*
SubUnitArea*
RBDSUCA_Other_Competent_Authorities
FK1,I1
EURBDCode
OtherCompetentAuthorities
RBDSUCA_Additional_PrimeCompetentAuthorities1
I1
EURBDCode
PrimeCompetentAuthority
RBDSUCA_CA_ROLES*
FK1,I1
I2
EUCACode*
RoleCode*
Comment
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Not directly linked – will be linked through "Schema name"

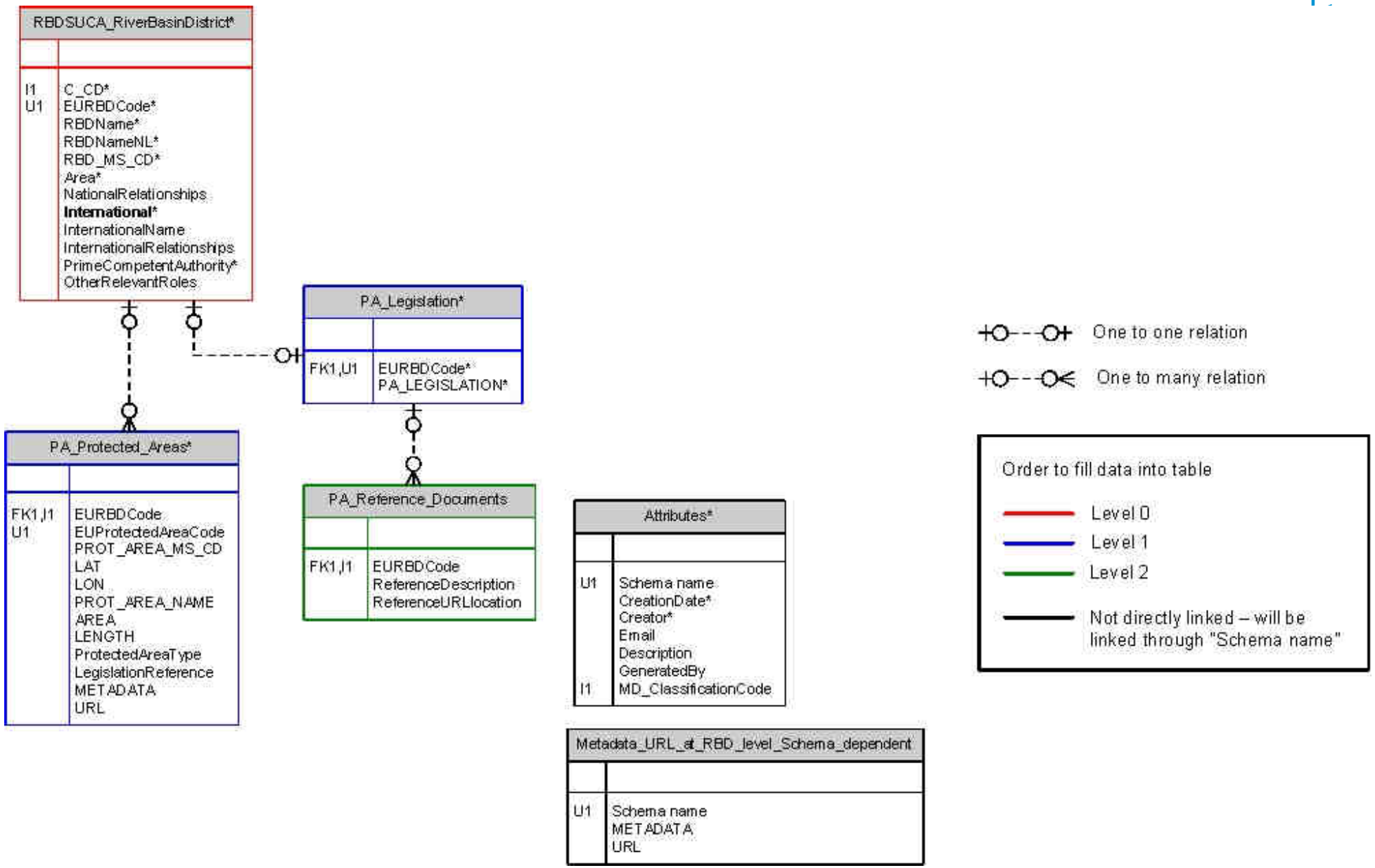
A.1.2 SWMET


RBDSUCA_RiverBasinDistrict*
SWMET_Identification*
SWMET_MethodologySurfaceWaterClassification*
SWMET_EcologicalClassification*
SWMET_NonPriorityPollutants*
SWMET_EcoClassificationTypology
SWMET_IntercalibrationTypes*
SWMET_InitiativesObjectives*
SWMET_ChemicalStatusClassification*
SWMET_NonEuropeanStandards
SWMET_SystemB_RW
SWMET_SystemB_LW
SWMET_SystemB_TW
SWMET_SystemB_CW
SWMET_SystemB_Other
SWMET_ResultsMonitoring*
SWMET_PressureMethodologies*
SWMET_DataGapsUncertainties*
SWMET_SummaryImpacts*
SWMET_UseExemptions*
SWMET_ImpactMethodology*
SWMET_Typology*
SWMET_Typology_Coordination
Attributes*
Metadata_URL_at_RBD_level_Schema_dependent
SWMET_ReferenceLINKS
Possible to add metadata description and URL through the "Table_link" in SWMET_ReferenceLINKS
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Not directly linked – will be linked through "Schema name" and "Table_link"

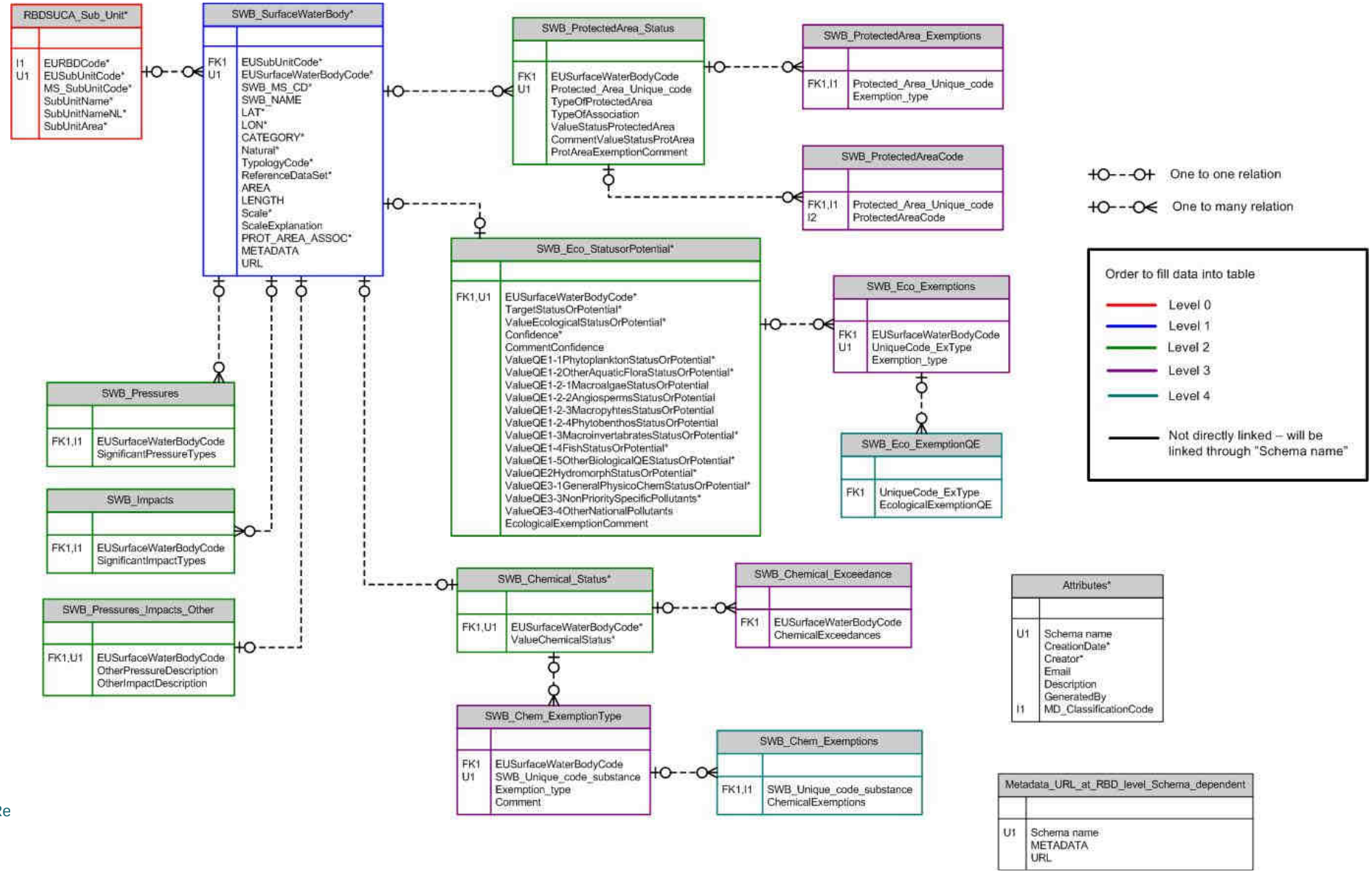
A.1.3 GWMET


RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
GWMET_Identification*
FK1,U1 EURBDCode*
GWB_METHOD*
GWMET_FurtherCharacterisation*
FK1,U1 EURBDCode*
GWFurtherCharacterisation*
GWMET_TextMapsGWStatusTrends*
FK1,U1 EURBDCode*
AlternateRBD
GoodQuantitativeStatusDescription
GoodNitratesStatusDescription
GoodPesticidesStatusDescription
GoodPollutantsStatusDescription
TrendStatusDescription
TransboundaryCoordination
GWMET_UseOfExemptions*
FK1,U1 EURBDCode*
SummaryOfExemptionApproach*
DetailsOfDeadlines*
TransboundaryCoordination*
GWMET_DataGapsAndUncertainties*
FK1,U1 EURBDCode*
AlternateRBD
DATA_GAPS
ProgressSince2005
DATA_ACTIONS
GWMET_ClassificationMethod*
FK1,U1 EURBDCode*
AlternativeRBD
ThresholdEstablishmentSummary
ThresholdBackgroundSummary
ThresholdEQOSummary
ChemicalStatusMethodSummary
QuantitativeStatusMethodSummary
UpwardTrendAssessmentSummary
TrendReversalAssessmentSummary
StartingPointsSummary
ExpandingPlumesSummary
TransBoundarySummary
GWMET_ClassificationMatrix*
FK1,I1 EURBDCode*
PollutantOrIndicator
OtherPollutantCASNumber
OtherPollutantDescription
Value*
LowerThreshold
ReportingUnits*
UnitsDescription
TrendReversalStartingPoint*
ReasonWhyNot75percent
ThresholdValueScale*
GWMET_PressureMethodologies*
FK1,I1 EURBDCode*
U1 Pressure_Type*
MethodologyText*
GWMET_ImpactMethodologies*
FK1,U1 EURBDCode*
SummaryText*
GWMET_ReferenceLINKS
Table_link
ReferenceDescription
ReferenceURLlocation
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
Possible to add metadata description and URL through the "Table_link" in GWMET_ReferenceLINKS
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Not directly linked – will be linked through "Schema name" and "Table_link"

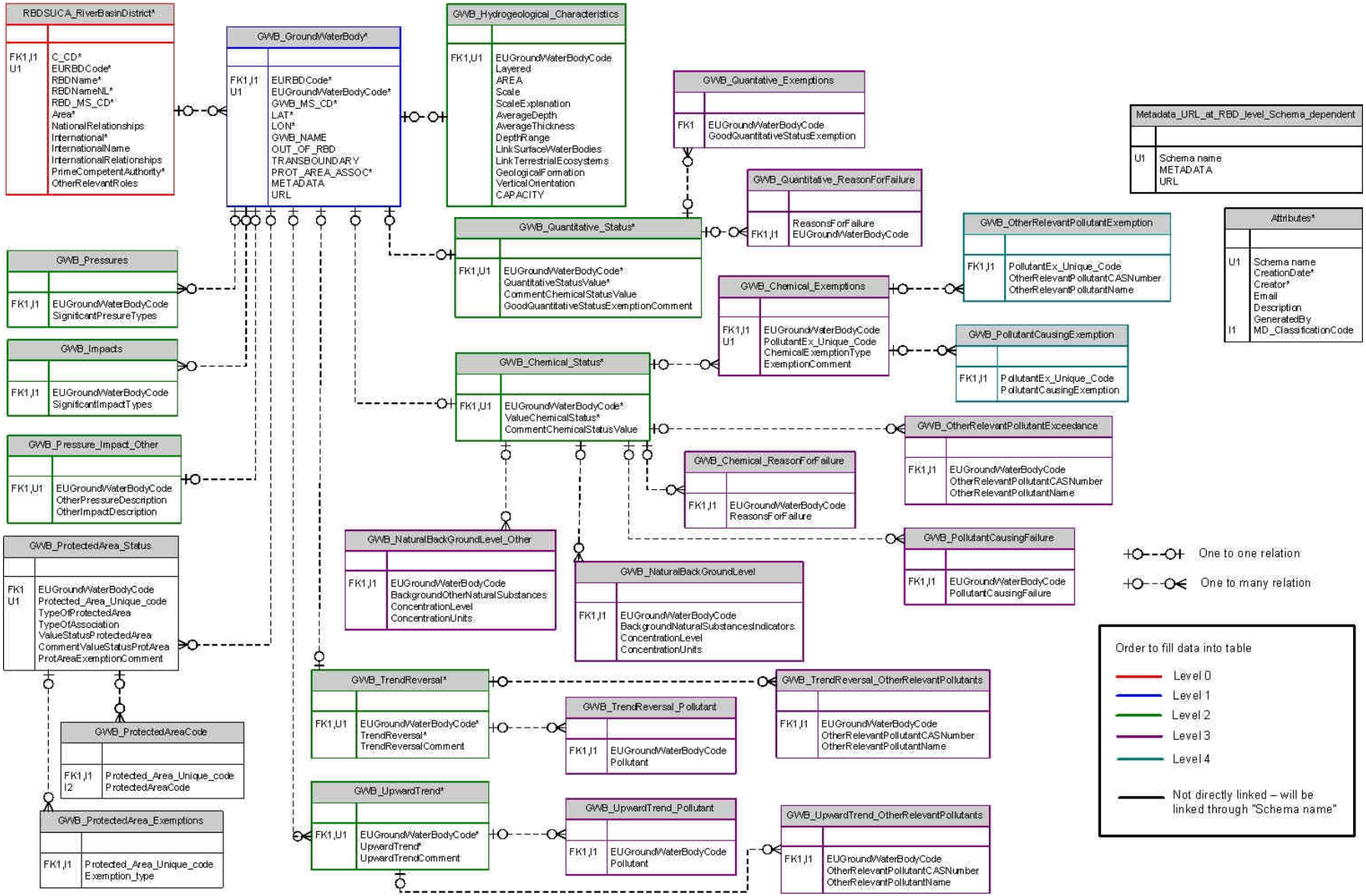
A.1.4 PA


RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
PA_Legislation*
FK1,U1 EURBDCode*
PA_LEGISLATION*
PA_Protected_Areas*
FK1,I1 EURBDCode
U1 EUProtectedAreaCode
PROT_AREA_MS_CD
LAT
LON
PROT_AREA_NAME
AREA
LENGTH
ProtectedAreaType
LegislationReference
METADATA
URL
PA_Reference_Documents
FK1,I1 EURBDCode
ReferenceDescription
ReferenceURLlocation
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Not directly linked – will be linked through "Schema name"

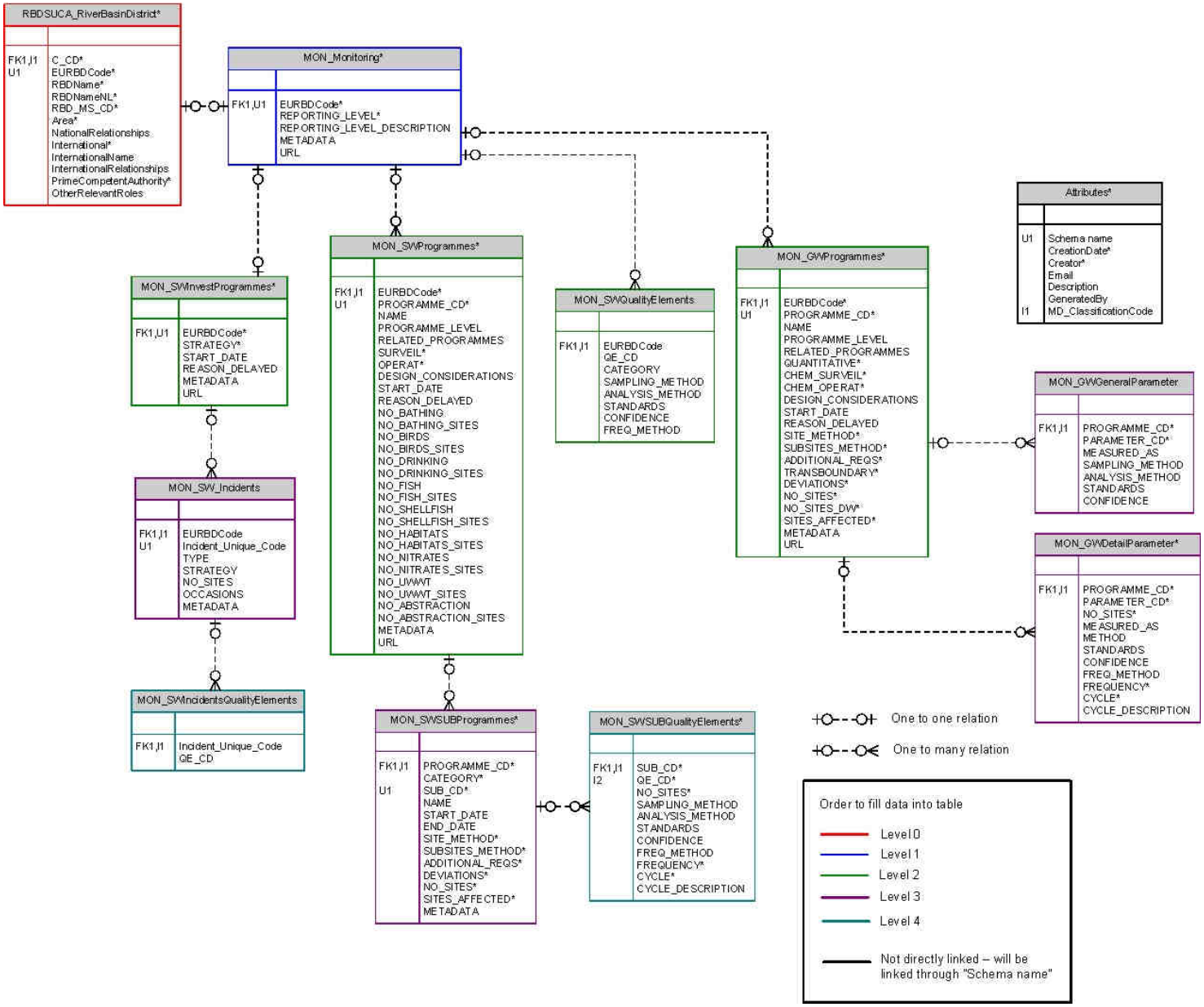
A.1.5 SWB


RBDSUCA_Sub_Unit*
I1 EURBDCode*
U1 EUSubUnitCode*
MS_SubUnitCode*
SubUnitName*
SubUnitNameNL*
SubUnitArea*
SWB_SurfaceWaterBody*
FK1 EUSubUnitCode*
U1 EUSurfaceWaterBodyCode*
SWB_MS_CD*
SWB_NAME
LAT*
LON*
CATEGORY*
Natural*
TypologyCode*
ReferenceDataSet*
AREA
LENGTH
Scale*
ScaleExplanation
PROT_AREA_ASSOC*
METADATA
URL
SWB_ProtectedArea_Status
FK1 EUSurfaceWaterBodyCode
U1 Protected_Area_Unique_code
TypeOfProtectedArea
TypeOfAssociation
ValueStatusProtectedArea
CommentValueStatusProtArea
ProtAreaExemptionComment
SWB_ProtectedArea_Exemptions
FK1,I1 Protected_Area_Unique_code
Exemption_type
SWB_ProtectedAreaCode
FK1,I1 Protected_Area_Unique_code
I2 ProtectedAreaCode
SWB_Eco_StatusorPotential*
FK1,U1 EUSurfaceWaterBodyCode*
TargetStatusOrPotential*
ValueEcologicalStatusOrPotential*
Confidence*
CommentConfidence
ValueQE1-1PhytoplanktonStatusOrPotential*
ValueQE1-2OtherAquaticFloraStatusOrPotential*
ValueQE1-2-1MacroalgaeStatusOrPotential
ValueQE1-2-2AngiospermsStatusOrPotential
ValueQE1-2-3MacropyhtesStatusOrPotential
ValueQE1-2-4PhytobenthosStatusOrPotential
ValueQE1-3MacroinvertabratesStatusOrPotential*
ValueQE1-4FishStatusOrPotential*
ValueQE1-5OtherBiologicalQEStatusOrPotential*
ValueQE2HydromorphStatusOrPotential*
ValueQE3-1GeneralPhysicoChemStatusOrPotential*
ValueQE3-3NonPrioritySpecificPollutants*
ValueQE3-4OtherNationalPollutants
EcologicalExemptionComment
SWB_Eco_Exemptions
FK1 EUSurfaceWaterBodyCode
U1 UniqueCode_ExType
Exemption_type
SWB_Eco_ExemptionQE
FK1 UniqueCode_ExType
EcologicalExemptionQE
SWB_Pressures
FK1,I1 EUSurfaceWaterBodyCode
SignificantPressureTypes
SWB_Impacts
FK1,I1 EUSurfaceWaterBodyCode
SignificantImpactTypes
SWB_Pressures_Impacts_Other
FK1,U1 EUSurfaceWaterBodyCode
OtherPressureDescription
OtherImpactDescription
SWB_Chemical_Status*
FK1,U1 EUSurfaceWaterBodyCode*
ValueChemicalStatus*
SWB_Chemical_Exceedance
FK1 EUSurfaceWaterBodyCode
ChemicalExceedances
SWB_Chem_ExemptionType
FK1 EUSurfaceWaterBodyCode
U1 SWB_Unique_code_substance
Exemption_type
Comment
SWB_Chem_Exemptions
FK1,I1 SWB_Unique_code_substance
ChemicalExemptions
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Not directly linked – will be linked through "Schema name"

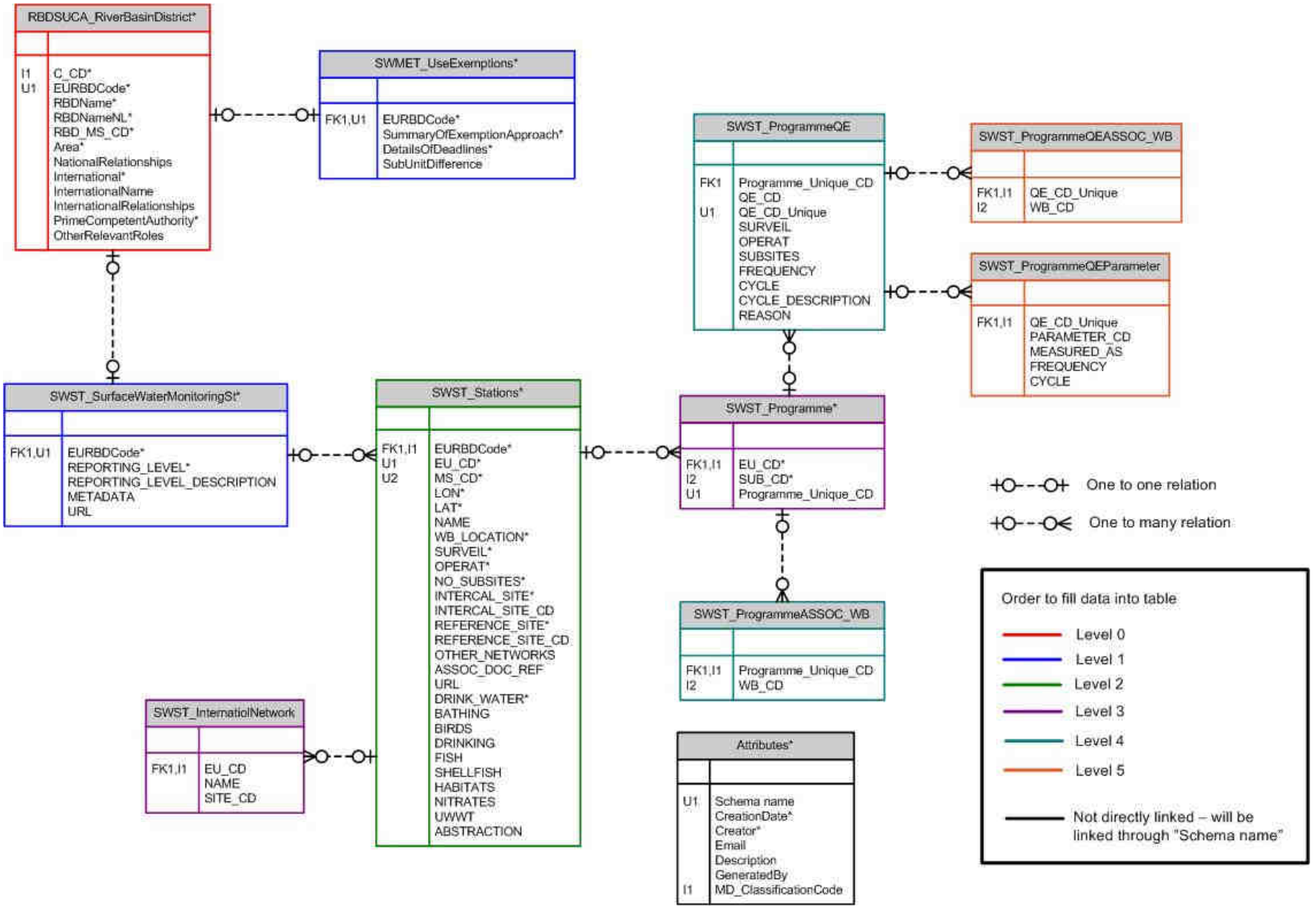
A.1.6 GWB


RBDSUCA_RiverBasinDistrict*
FK1,I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
GWB_GroundWaterBody*
FK1,I1 EURBDCode*
U1 EUGroundWaterBodyCode*
GWB_MS_CD*
LAT*
LON*
GWB_NAME
OUT_OF_RBD
TRANSBOUNDARY
PROT_AREA_ASSOC*
METADATA
URL
GWB_Hydrogeological_Characteristics
FK1,U1 EUGroundWaterBodyCode
Layered
AREA
Scale
ScaleExplanation
AverageDepth
AverageThickness
DepthRange
LinkSurfaceWaterBodies
LinkTerrestrialEcosystems
GeologicalFormation
VerticalOrientation
CAPACITY
GWB_Quantative_Exemptions
FK1 EUGroundWaterBodyCode
GoodQuantitativeStatusExemption
GWB_Quantitative_ReasonForFailure
FK1,I1 ReasonsForFailure
EUGroundWaterBodyCode
GWB_Quantitative_Status*
FK1,U1 EUGroundWaterBodyCode*
QuantitativeStatusValue*
CommentChemicalStatusValue
GoodQuantitativeStatusExemptionComment
GWB_OtherRelevantPollutantExemption
FK1,I1 PollutantEx_Unique_Code
OtherRelevantPollutantCASNumber
OtherRelevantPollutantName
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
GWB_Pressures
FK1,I1 EUGroundWaterBodyCode
SignificantPresureTypes
GWB_Chemical_Exemptions
FK1,I1 EUGroundWaterBodyCode
U1 PollutantEx_Unique_Code
ChemicalExemptionType
ExemptionComment
GWB_PollutantCausingExemption
FK1,I1 PollutantEx_Unique_Code
PollutantCausingExemption
GWB_Impacts
FK1,I1 EUGroundWaterBodyCode
SignificantImpactTypes
GWB_Chemical_Status*
FK1,U1 EUGroundWaterBodyCode*
ValueChemicalStatus*
CommentChemicalStatusValue
GWB_OtherRelevantPollutantExceedance
FK1,I1 EUGroundWaterBodyCode
OtherRelevantPollutantCASNumber
OtherRelevantPollutantName
GWB_Pressure_Impact_Other
FK1,U1 EUGroundWaterBodyCode
OtherPressureDescription
OtherImpactDescription
GWB_Chemical_ReasonForFailure
FK1,I1 EUGroundWaterBodyCode
ReasonsForFailure
GWB_ProtectedArea_Status
FK1 EUGroundWaterBodyCode
U1 Protected_Area_Unique_code
TypeOfProtectedArea
TypeOfAssociation
ValueStatusProtectedArea
CommentValueStatusProtArea
ProtAreaExemptionComment
GWB_NaturalBackGroundLevel_Other
FK1,I1 EUGroundWaterBodyCode
BackgroundOtherNaturalSubstances
ConcentrationLevel
ConcentrationUnits
GWB_NaturalBackGroundLevel
FK1,I1 EUGroundWaterBodyCode
BackgroundNaturalSubstancesIndicators
ConcentrationLevel
ConcentrationUnits
GWB_PollutantCausingFailure
FK1,I1 EUGroundWaterBodyCode
PollutantCausingFailure
One to one relation
One to many relation
GWB_TrendReversal*
FK1,U1 EUGroundWaterBodyCode*
TrendReversal*
TrendReversalComment
GWB_TrendReversal_Pollutant
FK1,I1 EUGroundWaterBodyCode
Pollutant
GWB_TrendReversal_OtherRelevantPollutants
FK1,I1 EUGroundWaterBodyCode
OtherRelevantPollutantCASNumber
OtherRelevantPollutantName
GWB_ProtectedAreaCode
FK1,I1 Protected_Area_Unique_code
I2 ProtectedAreaCode
GWB_UpwardTrend*
FK1,U1 EUGroundWaterBodyCode*
UpwardTrend*
UpwardTrendComment
GWB_UpwardTrend_Pollutant
FK1,I1 EUGroundWaterBodyCode
Pollutant
GWB_UpwardTrend_OtherRelevantPollutants
FK1,I1 EUGroundWaterBodyCode
OtherRelevantPollutantCASNumber
OtherRelevantPollutantName
GWB_ProtectedArea_Exemptions
FK1,I1 Protected_Area_Unique_code
Exemption_type
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Not directly linked – will be linked through "Schema name"

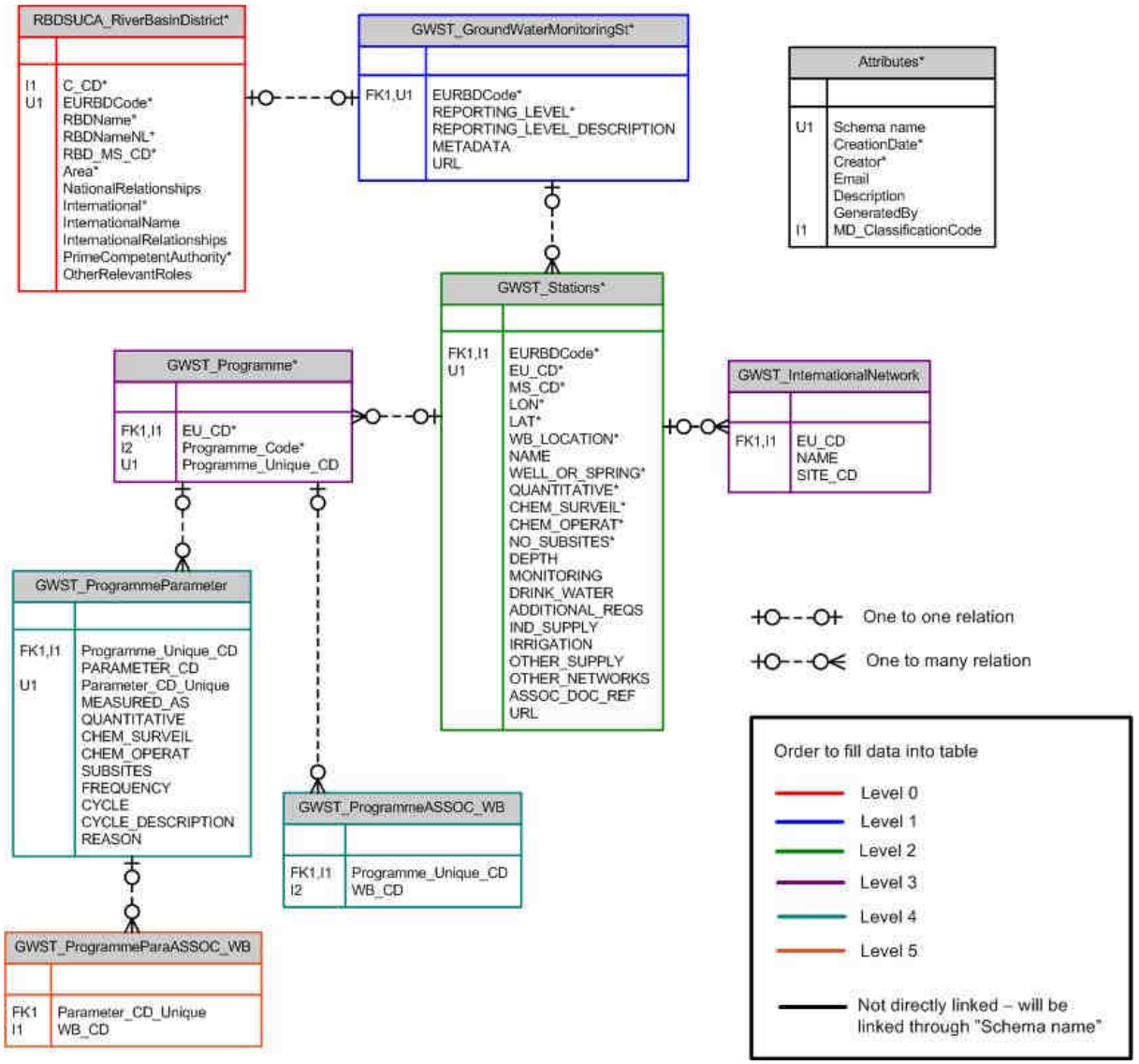
A.1.7 MON


RBDSUCA_RiverBasinDistrict*
FK1,I1 U1
C_CD*
EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
MON_Monitoring*
FK1,U1
EURBDCode*
REPORTING_LEVEL*
REPORTING_LEVEL_DESCRIPTION
METADATA
URL
MON_SWInvestProgrammes*
FK1,U1
EURBDCode*
STRATEGY*
START_DATE
REASON_DELAYED
METADATA
URL
MON_SW_Incidents
FK1,I1 U1
EURBDCode
Incident_Unique_Code
TYPE
STRATEGY
NO_SITES
OCCASIONS
METADATA
MON_SWIncidentsQualityElements
FK1,I1
Incident_Unique_Code
QE_CD
MON_SWProgrammes*
FK1,I1 U1
EURBDCode*
PROGRAMME_CD*
NAME
PROGRAMME_LEVEL
RELATED_PROGRAMMES
SURVEIL*
OPERAT*
DESIGN_CONSIDERATIONS
START_DATE
REASON_DELAYED
NO_BATHING
NO_BATHING_SITES
NO_BIRDS
NO_BIRDS_SITES
NO_DRINKING
NO_DRINKING_SITES
NO_FISH
NO_FISH_SITES
NO_SHELLFISH
NO_SHELLFISH_SITES
NO_HABITATS
NO_HABITATS_SITES
NO_NITRATES
NO_NITRATES_SITES
NO_UWWT
NO_UWWT_SITES
NO_ABSTRACTION
NO_ABSTRACTION_SITES
METADATA
URL
MON_SWSUBProgrammes*
FK1,I1 U1
PROGRAMME_CD*
CATEGORY*
SUB_CD*
NAME
START_DATE
END_DATE
SITE_METHOD*
SUBSITES_METHOD*
ADDITIONAL_REQS*
DEVIATIONS*
NO_SITES*
SITES_AFFECTED*
METADATA
MON_SWQualityElements
FK1,I1
EURBDCode
QE_CD
CATEGORY
SAMPLING_METHOD
ANALYSIS_METHOD
STANDARDS
CONFIDENCE
FREQ_METHOD
MON_SWSUBQualityElements*
FK1,I1 I2
SUB_CD*
QE_CD*
NO_SITES*
SAMPLING_METHOD
ANALYSIS_METHOD
STANDARDS
CONFIDENCE
FREQ_METHOD
FREQUENCY*
CYCLE*
CYCLE_DESCRIPTION
MON_GWProgrammes*
FK1,I1 U1
EURBDCode*
PROGRAMME_CD*
NAME
PROGRAMME_LEVEL
RELATED_PROGRAMMES
QUANTITATIVE*
CHEM_SURVEIL*
CHEM_OPERAT*
DESIGN_CONSIDERATIONS
START_DATE
REASON_DELAYED
SITE_METHOD*
SUBSITES_METHOD*
ADDITIONAL_REQS*
TRANSBOUNDARY*
DEVIATIONS*
NO_SITES*
NO_SITES_DW*
SITES_AFFECTED*
METADATA
URL
Attributes*
U1
Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1
MD_ClassificationCode
MON_GWGeneralParameter
FK1,I1
PROGRAMME_CD*
PARAMETER_CD*
MEASURED_AS
SAMPLING_METHOD
ANALYSIS_METHOD
STANDARDS
CONFIDENCE
MON_GWDetailParameter*
FK1,I1
PROGRAMME_CD*
PARAMETER_CD*
NO_SITES*
MEASURED_AS
METHOD
STANDARDS
CONFIDENCE
FREQ_METHOD
FREQUENCY*
CYCLE*
CYCLE_DESCRIPTION
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Not directly linked – will be linked through "Schema name"

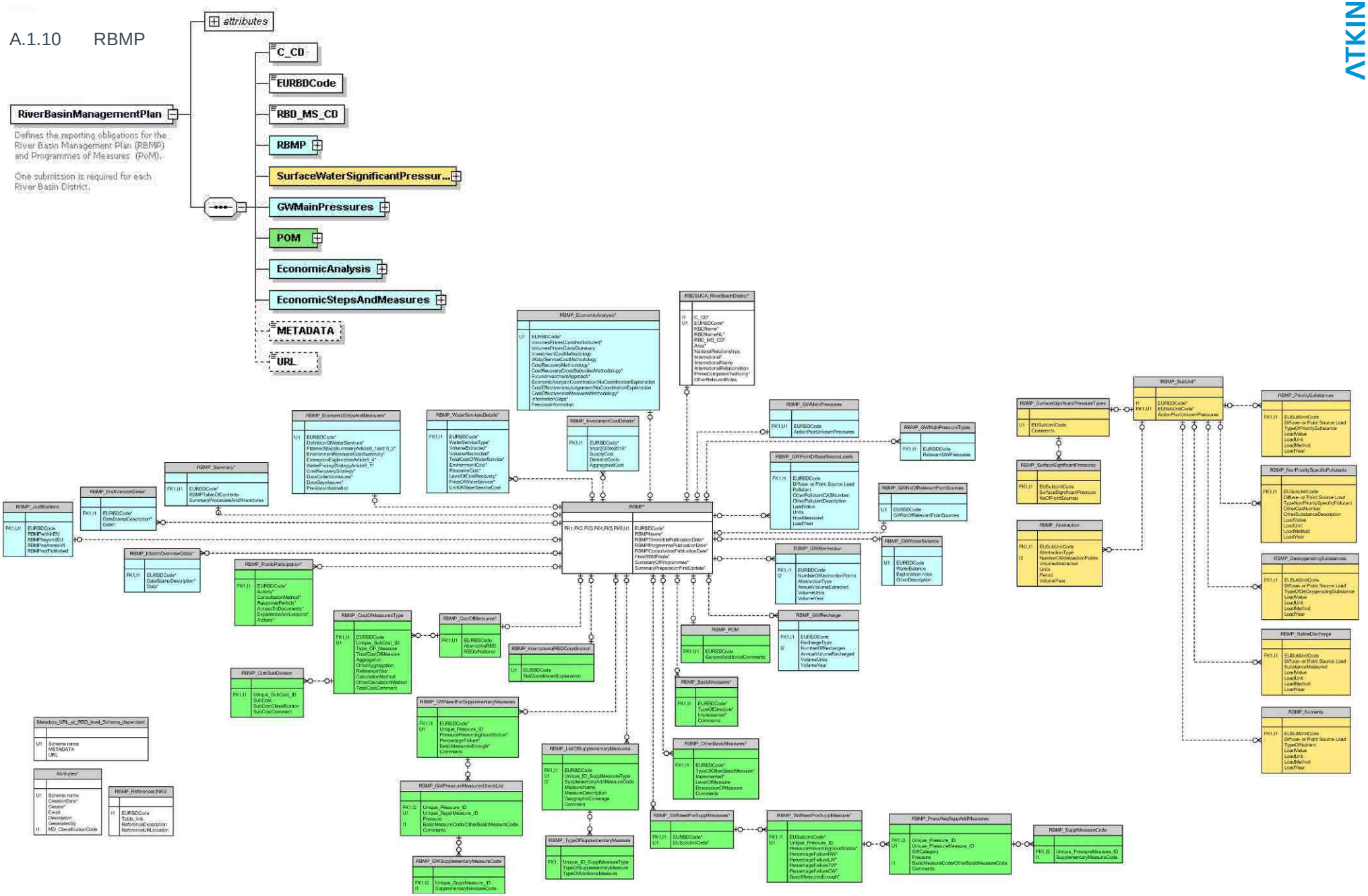
A.1.8 SWST

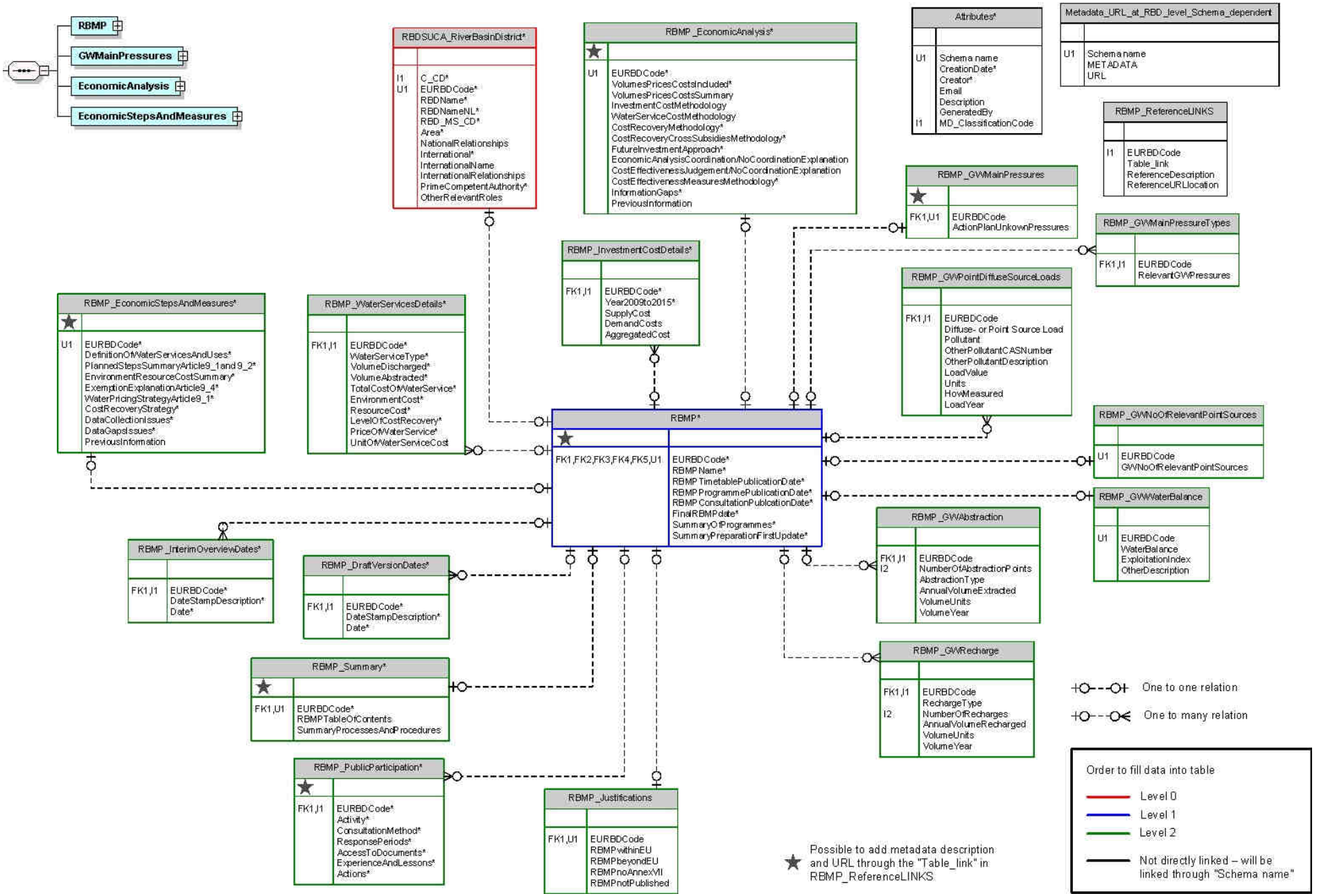

RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
SWMET_UseExemptions*
FK1,U1 EURBDCode*
SummaryOfExemptionApproach*
DetailsOfDeadlines*
SubUnitDifference
SWST_ProgrammeQE
FK1 Programme_Unique_CD
QE_CD
U1 QE_CD_Unique
SURVEIL
OPERAT
SUBSITES
FREQUENCY
CYCLE
CYCLE_DESCRIPTION
REASON
SWST_ProgrammeQEASSOC_WB
FK1,I1 QE_CD_Unique
I2 WB_CD
SWST_ProgrammeQEParameter
FK1,I1 QE_CD_Unique
PARAMETER_CD
MEASURED_AS
FREQUENCY
CYCLE
SWST_SurfaceWaterMonitoringSt*
FK1,U1 EURBDCode*
REPORTING_LEVEL*
REPORTING_LEVEL_DESCRIPTION
METADATA
URL
SWST_Stations*
FK1,I1 EURBDCode*
U1 EU_CD*
U2 MS_CD*
LON*
LAT*
NAME
WB_LOCATION*
SURVEIL*
OPERAT*
NO_SUBSITES*
INTERCAL_SITE*
INTERCAL_SITE_CD
REFERENCE_SITE*
REFERENCE_SITE_CD
OTHER_NETWORKS
ASSOC_DOC_REF
URL
DRINK_WATER*
BATHING
BIRDS
DRINKING
FISH
SHELLFISH
HABITATS
NITRATES
UWWT
ABSTRACTION
SWST_Programme*
FK1,I1 EU_CD*
I2 SUB_CD*
U1 Programme_Unique_CD
SWST_ProgrammeASSOC_WB
FK1,I1 Programme_Unique_CD
I2 WB_CD
SWST_InternationlNetwork
FK1,I1 EU_CD
NAME
SITE_CD
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Level 5
Not directly linked – will be linked through "Schema name"

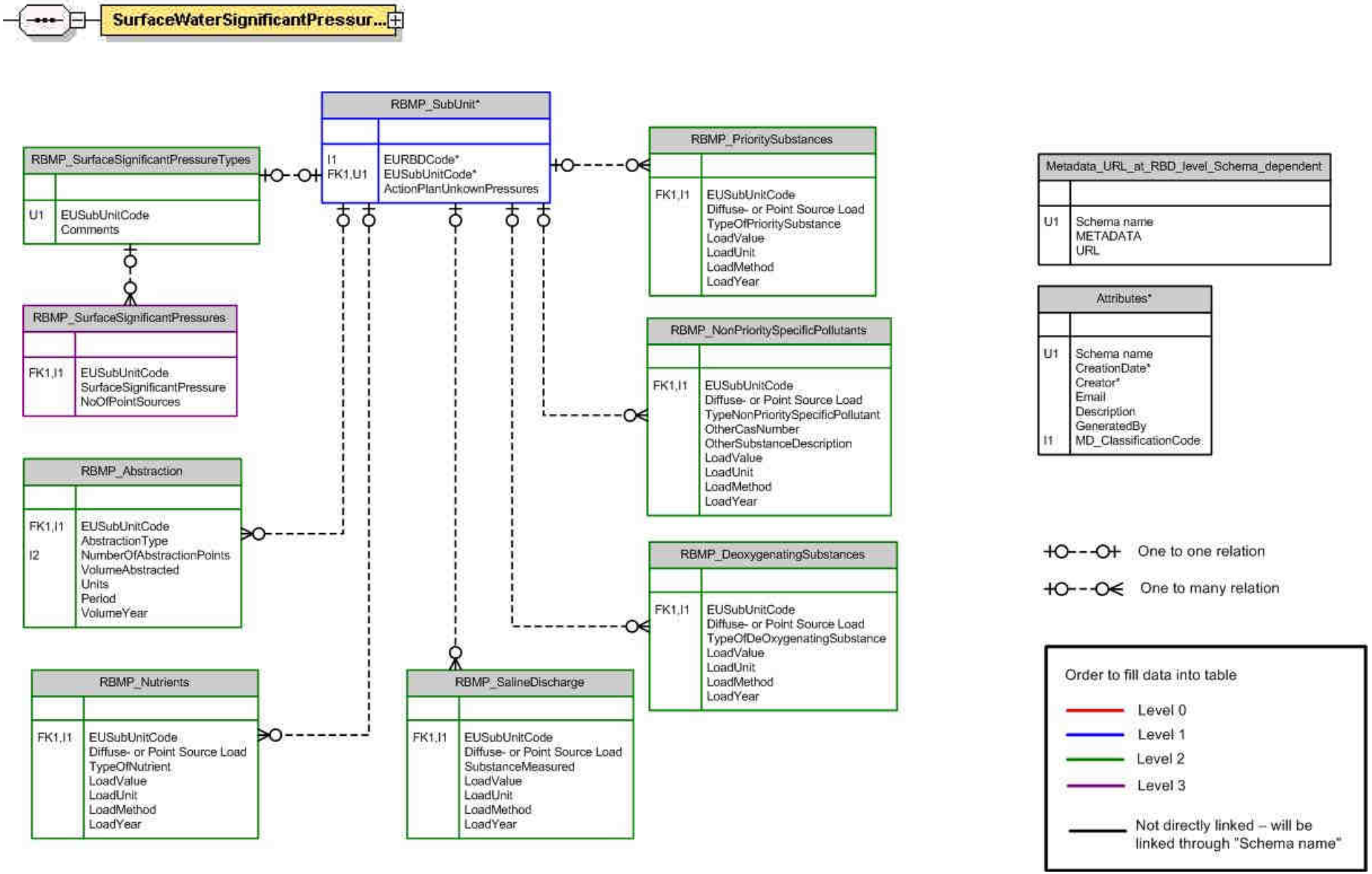
A.1.9 GWST

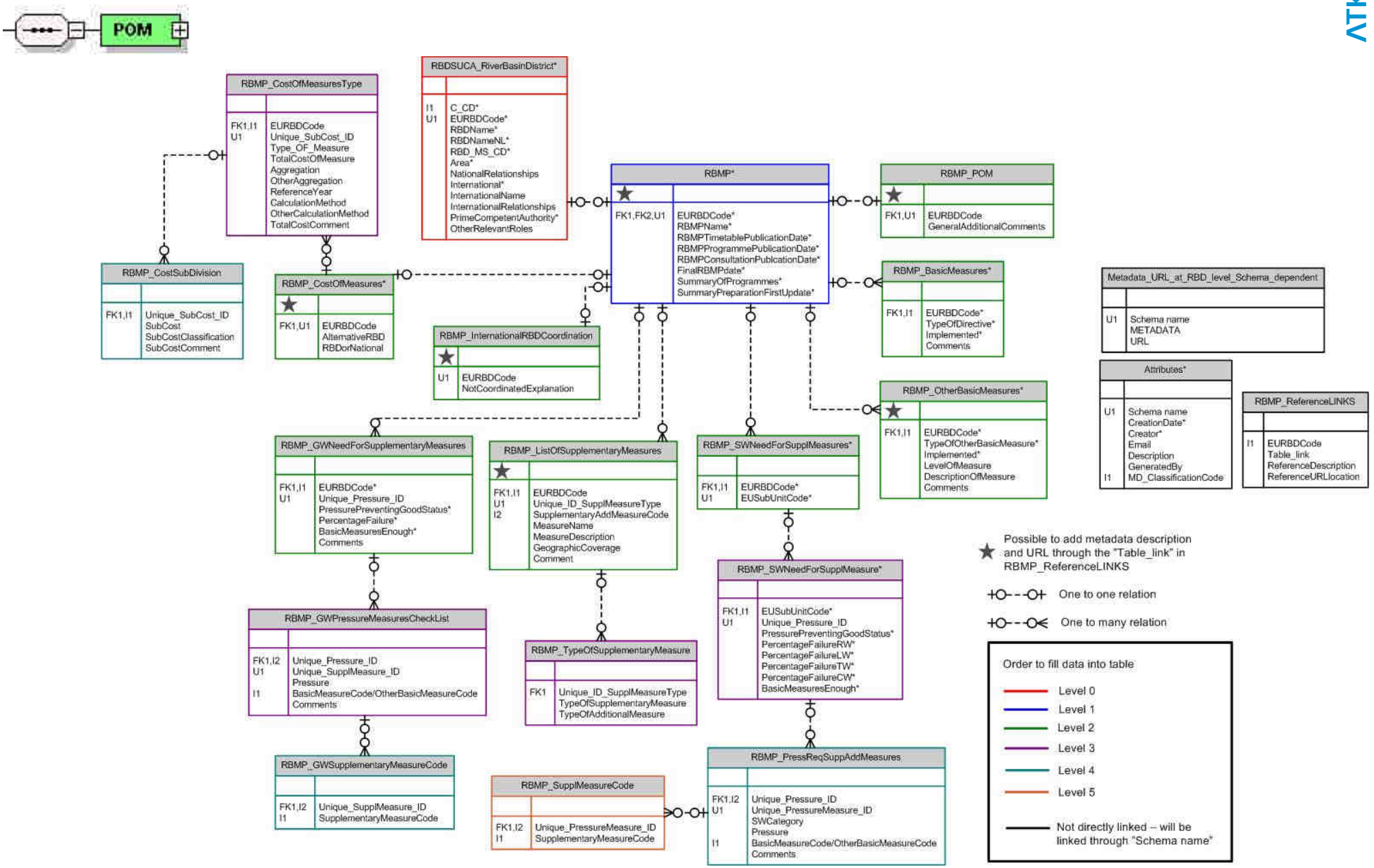

RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
GWST_GroundWaterMonitoringSt*
FK1,U1 EURBDCode*
REPORTING_LEVEL*
REPORTING_LEVEL_DESCRIPTION
METADATA
URL
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
GWST_Stations*
FK1,I1 EURBDCode*
U1 EU_CD*
MS_CD*
LON*
LAT*
WB_LOCATION*
NAME
WELL_OR_SPRING*
QUANTITATIVE*
CHEM_SURVEIL*
CHEM_OPERAT*
NO_SUBSITES*
DEPTH
MONITORING
DRINK_WATER
ADDITIONAL_REQS
IND_SUPPLY
IRRIGATION
OTHER_SUPPLY
OTHER_NETWORKS
ASSOC_DOC_REF
URL
GWST_Programme*
FK1,I1 EU_CD*
I2 Programme_Code*
U1 Programme_Unique_CD
GWST_InternationalNetwork
FK1,I1 EU_CD
NAME
SITE_CD
GWST_ProgrammeParameter
FK1,I1 Programme_Unique_CD
PARAMETER_CD
U1 Parameter_CD_Unique
MEASURED_AS
QUANTITATIVE
CHEM_SURVEIL
CHEM_OPERAT
SUBSITES
FREQUENCY
CYCLE
CYCLE_DESCRIPTION
REASON
GWST_ProgrammeASSOC_WB
FK1,I1 Programme_Unique_CD
I2 WB_CD
GWST_ProgrammeParaASSOC_WB
FK1 Parameter_CD_Unique
I1 WB_CD
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Level 5
Not directly linked – will be linked through "Schema name"

A.1.10 RBMP


attributes
C_CD
EURBDCode
RBD_MS_CD
RBMP
SurfaceWaterSignificantPressur...
GWMainPressures
POM
EconomicAnalysis
EconomicStepsAndMeasures
METADATA
URL
RiverBasinManagementPlan
Defines the reporting obligations for the River Basin Management Plan (RBMP) and Programmes of Measures (PoM).
One submission is required for each River Basin District.


RBMP
GWMainPressures
EconomicAnalysis
EconomicStepsAndMeasures
RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
RBMP_EconomicAnalysis*
U1 EURBDCode*
VolumesPricesCostsIncluded*
VolumesPricesCostsSummary
InvestmentCostMethodology
WaterServiceCostMethodology
CostRecoveryMethodology*
CostRecoveryCrossSubsidiesMethodology*
FutureInvestmentApproach*
EconomicAnalysisCoordination/NoCoordinationExplanation
CostEffectivenessJudgementNoCoordinationExplanation
CostEffectivenessMeasuresMethodology*
InformationGaps*
PreviousInformation
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
RBMP_ReferenceLINKS
I1 EURBDCode
Table_link
ReferenceDescription
ReferenceURLlocation
RBMP_GWMainPressures
FK1,U1 EURBDCode
ActionPlanUnkownPressures
RBMP_GWMainPressureTypes
FK1,I1 EURBDCode
RelevantGWPressures
RBMP_InvestmentCostDetails*
FK1,I1 EURBDCode*
Year2009to2015*
SupplyCost
DemandCosts
AggregatedCost
RBMP_GWPointDiffuseSourceLoads
FK1,I1 EURBDCode
Diffuse- or Point Source Load
Pollutant
OtherPollutantCASNumber
OtherPollutantDescription
LoadValue
Units
HowMeasured
LoadYear
RBMP_EconomicStepsAndMeasures*
U1 EURBDCode*
DefinitionOfWaterServicesAndUses*
PlannedStepsSummaryArticle9_1and9_2*
EnvironmentResourceCostSummary*
ExemptionExplanationArticle9_4*
WaterPricingStrategyArticle9_1*
CostRecoveryStrategy*
DataCollectionIssues*
DataGapsIssues*
PreviousInformation
RBMP_WaterServicesDetails*
FK1,I1 EURBDCode*
WaterServiceType*
VolumeDischarged*
VolumeAbstracted*
TotalCostOfWaterService*
EnvironmentCost*
ResourceCost*
LevelOfCostRecovery*
PriceOfWaterService*
UnitOfWaterServiceCost
RBMP*
FK1,FK2,FK3,FK4,FK5,U1 EURBDCode*
RBMPName*
RBMPTimetablePublicationDate*
RBMPProgrammePublicationDate*
RBMPConsultationPublcationDate*
FinalRBMPdate*
SummaryOfProgrammes*
SummaryPreparationFirstUpdate*
RBMP_GWNoOfRelevantPointSources
U1 EURBDCode
GWNoOfRelevantPointSources
RBMP_GWWaterBalance
U1 EURBDCode
WaterBalance
ExploitationIndex
OtherDescription
RBMP_GWAbstraction
FK1,I1 EURBDCode
I2 NumberOfAbstractionPoints
AbstractionType
AnnualVolumeExtracted
VolumeUnits
VolumeYear
RBMP_GWRecharge
FK1,I1 EURBDCode
RechargeType
I2 NumberOfRecharges
AnnualVolumeRecharged
VolumeUnits
VolumeYear
RBMP_InterimOverviewDates*
FK1,I1 EURBDCode*
DateStampDescription*
Date*
RBMP_DraftVersionDates*
FK1,I1 EURBDCode*
DateStampDescription*
Date*
RBMP_Summary*
FK1,U1 EURBDCode*
RBMPTableOfContents
SummaryProcessesAndProcedures
RBMP_PublicParticipation*
FK1,I1 EURBDCode*
Activity*
ConsultationMethod*
ResponsePeriods*
AccessToDocuments*
ExperienceAndLessons*
Actions*
RBMP_Justifications
FK1,U1 EURBDCode
RBMPwithinEU
RBMPbeyondEU
RBMPnoAnnexVII
RBMPnotPublished
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Not directly linked – will be linked through "Schema name"
Possible to add metadata description and URL through the "Table_link" in RBMP_ReferenceLINKS


SurfaceWaterSignificantPressur...
RBMP_SubUnit*
I1
FK1,U1
EURBDCode*
EUSubUnitCode*
ActionPlanUnkownPressures
RBMP_SurfaceSignificantPressureTypes
U1
EUSubUnitCode
Comments
RBMP_PrioritySubstances
FK1,I1
EUSubUnitCode
Diffuse- or Point Source Load
TypeOfPrioritySubstance
LoadValue
LoadUnit
LoadMethod
LoadYear
RBMP_SurfaceSignificantPressures
FK1,I1
EUSubUnitCode
SurfaceSignificantPressure
NoOfPointSources
RBMP_NonPrioritySpecificPollutants
FK1,I1
EUSubUnitCode
Diffuse- or Point Source Load
TypeNonPrioritySpecificPollutant
OtherCasNumber
OtherSubstanceDescription
LoadValue
LoadUnit
LoadMethod
LoadYear
RBMP_Abstraction
FK1,I1
I2
EUSubUnitCode
AbstractionType
NumberOfAbstractionPoints
VolumeAbstracted
Units
Period
VolumeYear
RBMP_DeoxygenatingSubstances
FK1,I1
EUSubUnitCode
Diffuse- or Point Source Load
TypeOfDeOxygenatingSubstance
LoadValue
LoadUnit
LoadMethod
LoadYear
RBMP_Nutrients
FK1,I1
EUSubUnitCode
Diffuse- or Point Source Load
TypeOfNutrient
LoadValue
LoadUnit
LoadMethod
LoadYear
RBMP_SalineDischarge
FK1,I1
EUSubUnitCode
Diffuse- or Point Source Load
SubstanceMeasured
LoadValue
LoadUnit
LoadMethod
LoadYear
Metadata_URL_at_RBD_level_Schema_dependent
U1
Schema name
METADATA
URL
Attributes*
U1
I1
Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
MD_ClassificationCode
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Not directly linked – will be linked through "Schema name"


POM
RBMP_CostOfMeasuresType
FK1,I1 EURBDCode
U1 Unique_SubCost_ID
Type_OF_Measure
TotalCostOfMeasure
Aggregation
OtherAggregation
ReferenceYear
CalculationMethod
OtherCalculationMethod
TotalCostComment
RBDSUCA_RiverBasinDistrict*
I1 C_CD*
U1 EURBDCode*
RBDName*
RBDNameNL*
RBD_MS_CD*
Area*
NationalRelationships
International*
InternationalName
InternationalRelationships
PrimeCompetentAuthority*
OtherRelevantRoles
RBMP*
FK1,FK2,U1 EURBDCode*
RBMPName*
RBMPTimetablePublicationDate*
RBMPProgrammePublicationDate*
RBMPConsultationPublcationDate*
FinalRBMPdate*
SummaryOfProgrammes*
SummaryPreparationFirstUpdate*
RBMP_POM
FK1,U1 EURBDCode
GeneralAdditionalComments
RBMP_CostSubDivision
FK1,I1 Unique_SubCost_ID
SubCost
SubCostClassification
SubCostComment
RBMP_CostOfMeasures*
FK1,U1 EURBDCode
AlternativeRBD
RBDorNational
RBMP_InternationalRBDCoordination
U1 EURBDCode
NotCoordinatedExplanation
RBMP_BasicMeasures*
FK1,I1 EURBDCode*
TypeOfDirective*
Implemented*
Comments
Metadata_URL_at_RBD_level_Schema_dependent
U1 Schema name
METADATA
URL
Attributes*
U1 Schema name
CreationDate*
Creator*
Email
Description
GeneratedBy
I1 MD_ClassificationCode
RBMP_ReferenceLINKS
I1 EURBDCode
Table_link
ReferenceDescription
ReferenceURLlocation
RBMP_OtherBasicMeasures*
FK1,I1 EURBDCode*
TypeOfOtherBasicMeasure*
Implemented*
LevelOfMeasure
DescriptionOfMeasure
Comments
RBMP_GWNeedForSupplementaryMeasures
FK1,I1 EURBDCode*
U1 Unique_Pressure_ID
PressurePreventingGoodStatus*
PercentageFailure*
BasicMeasuresEnough*
Comments
RBMP_ListOfSupplementaryMeasures
FK1,I1 EURBDCode
U1 Unique_ID_SupplMeasureType
I2 SupplementaryAddMeasureCode
MeasureName
MeasureDescription
GeographicCoverage
Comment
RBMP_SWNeedForSupplMeasures*
FK1,I1 EURBDCode*
U1 EUSubUnitCode*
RBMP_SWNeedForSupplMeasure*
FK1,I1 EUSubUnitCode*
U1 Unique_Pressure_ID
PressurePreventingGoodStatus*
PercentageFailureRW*
PercentageFailureLW*
PercentageFailureTW*
PercentageFailureCW*
BasicMeasuresEnough*
RBMP_GWPressureMeasuresCheckList
FK1,I2 Unique_Pressure_ID
U1 Unique_SupplMeasure_ID
Pressure
I1 BasicMeasureCode/OtherBasicMeasureCode
Comments
RBMP_TypeOfSupplementaryMeasure
FK1 Unique_ID_SupplMeasureType
TypeOfSupplementaryMeasure
TypeOfAdditionalMeasure
RBMP_GWSupplementaryMeasureCode
FK1,I2 Unique_SupplMeasure_ID
I1 SupplementaryMeasureCode
RBMP_SupplMeasureCode
FK1,I2 Unique_PressureMeasure_ID
I1 SupplementaryMeasureCode
RBMP_PressReqSuppAddMeasures
FK1,I2 Unique_Pressure_ID
U1 Unique_PressureMeasure_ID
SWCategory
Pressure
I1 BasicMeasureCode/OtherBasicMeasureCode
Comments
Possible to add metadata description and URL through the "Table_link" in RBMP_ReferenceLINKS
One to one relation
One to many relation
Order to fill data into table
Level 0
Level 1
Level 2
Level 3
Level 4
Level 5
Not directly linked – will be linked through "Schema name"

Appendix B

B.1 Complex validation checks

Key to Type of Check:

1 = Conditional check

2 = Choice check

3 = Data structure check

4 = Cross-schema check

5 = Code check

Element name	Element root	Type of Check	Description/Error message
Schema: RBDSUCA			
EUCACode	RBDSUCA	4	EUCACode must be unique within the MS.
EURBDCode	RBDSUCA/ RiverBasinDistrict	4	EURBDCode must be unique within the MS.
NationalRelationships	RBDSUCA/ RiverBasinDistrict	1	Must be populated if OtherCompetentAuthorities is populated.
InternationalName	RBDSUCA/ RiverBasinDistrict	1	Must be populated if International = “Y”.
InternationalRelationships	RBDSUCA/ RiverBasinDistrict	1	Must be populated if International = “Y”.
PrimeCompetentAuthority	RBDSUCA/ RiverBasinDistrict	4	Must be a valid EUCACode in RBDSUCA/CompetentAuthority.
OtherCompetentAuthorities	RBDSUCA/ RiverBasinDistrict	4	Must be a valid EUCACode in RBDSUCA/CompetentAuthority.
EUSubUnitCode	RBDSUCA/ RiverBasinDistrict/ SubUnits SubUnit	4	EUSubUnitCode must be unique within the MS.

Element name	Element root	Type of Check	Description/Error message
Schema: SWB			
EURBDCode	SurfaceWaterBodies	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
EUSurfaceWaterBodyCode	SurfaceWaterBodies/ SurfaceWaterBody	4	EUSurfaceWaterBodyCode must be unique within the MS.
EUSubUnitCode	SurfaceWaterBodies/ SurfaceWaterBody	4	Must be a valid EUSubUnitCode in RBDSUCA/RiverBasinDistrict/SubUnits/SubUnit.
TypologyCode	SurfaceWaterBodies/ SurfaceWaterBody	4	Must be a valid TypologyCode in RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/RiverEcologicalClassification or LakeEcologicalClassification or TransitionalEcologicalClassification or

Element name	Element root	Type of Check	Description/Error message
			CoastalEcologicalClassification.
ProtectedAreaCode	SurfaceWaterBodies/ SurfaceWaterBody/ StatusProtectedAreas/ SWProtectedAreaDetails	4	Must be a valid EUProtectedAreaCode in ProtectedAreas/ProtectedAreas. NB: Warning only as may have been reported through another directive.
ChemicalExceedances	SurfaceWaterBodies/ SurfaceWaterBody/ SurfaceWaterBodyStatus/ ChemicalStatus	1	Required if ValueChemicalStatus is less than good
SWProtectedAreaDetails	SurfaceWaterBodies/ SurfaceWaterBody/ StatusProtectedAreas	1	Required if PROT_AREA_ASSOC is "Yes"
ValueStatusProtectedArea and CommentValueStatusProtArea	SurfaceWaterBodies/ SurfaceWaterBody/ StatusProtectedAreas/ SWProtectedAreaDetails	1	Both fields must be populated if TypeOfProtectedArea = 'Article 7 Abstraction for drinking water'

Element name	Element root	Type of Check	Description/Error message
Schema: GWB			
EURBDCode	GroundWaterBodies	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
EUGroundWaterBodyCode	GroundWaterBodies/ GroundWaterBody	4	EUGroundWaterBodyCode must be unique within the MS.
ProtectedAreaCode	GroundWaterBodies/ GroundWaterBody/ ProtectedAreaDetails/ GWProtectedAreaDetail	4	Must be a valid EUProtectedAreaCode in ProtectedAreas/ProtectedAreas. NB: Warning only as may have been reported through another directive.
UpwardTrendPollutant	GroundWaterBodies/ GroundWaterBody/ GroundwaterStatus/ SignificantUpwardTrends	1	Must be populated if UpwardTrend = “Y”.
TrendReversalPollutant	GroundWaterBodies/ GroundWaterBody/ GroundwaterStatus/ TrendReversal	1	Must be populated if TrendReversal = “Y”.
ReasonsForFailure	GroundWaterBodies/	1	If Groundwater Body QuantitativeStatusValue is Poor

Element name	Element root	Type of Check	Description/Error message
	GroundWaterBody/ GroundwaterStatus/ QuantitativeStatus		select at least 1 reason for failure from the enumeration list.
ReasonsForFailure	GroundWaterBodies/ GroundWaterBody/ GroundwaterStatus/ ChemicalStatus	1	If Groundwater Body ChemicalStatusValue is Poor select at least 1 reason for failure from the enumeration list.
PollutantsCausingFailure	GroundWaterBodies/ GroundWaterBody/ GroundwaterStatus/ ChemicalStatus	1	If Groundwater Body ChemicalStatusValue is Poor define each of the pollutants or indicators of pollution that have caused the Groundwater Body to fail to reach good status
GWProtectedAreaDetails	GroundWaterBodies/ GroundWaterBody/ StatusProtectedAreas	1	Required if PROT_AREA_ASSOC is "Yes"
ValueStatusProtectedArea and CommentValueStatusProtArea	GroundWaterBodies/ GroundWaterBody/ StatusProtectedAreas/ GWProtectedAreaDetails	1	Both fields must be populated if TypeOfProtectedArea = 'Article 7 Abstraction for drinking water'

Element name	Element root	Type of Check	Description/Error message
Schema: ProtArea			
EURBDCode	ProtectedAreas	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
EUProtectedAreaCode	ProtectedAreas/ ProtectedArea	4	EUProtectedAreaCode must be unique within the MS.

Element name	Element root	Type of Check	Description/Error message
Schema: SWMethods			
EURBDCode	RiverBasinDistrictSWMethodologies	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
NotApplicable	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationRivers	4	If NotApplicable = “Y”, no river water bodies must be declared in the SWB schema.
IdentificationDetails	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationRivers	1	Must be populated if NotApplicable = “N”.
NotApplicable	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationLakes	4	If NotApplicable = “Y”, no lake water bodies must be declared in the SWB schema.
IdentificationDetails	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationLakes	1	Must be populated if NotApplicable = “N”.
NotApplicable	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationTransitional	4	If NotApplicable = “Y”, no transitional water bodies must be declared in the SWB schema.
IdentificationDetails	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationTransitional	1	Must be populated if NotApplicable = “N”.
NotApplicable	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationCoastal	4	If NotApplicable = “Y”, no coastal water bodies must be declared in the SWB schema.
IdentificationDetails	RiverBasinDistrictSWMethodologies/ IdentificationOfSurfaceWaterBodies/ IdentificationCoastal	1	Must be populated if NotApplicable = “N”.
AlternateRBD	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
TypologyCode	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/	4	Must be a valid TypologyCode in SurfaceWaterBodies/SurfaceWaterBody.

Element name	Element root	Type of Check	Description/Error message
	EcologicalClassifications/ RiverEcologicalClassification		
TypologyCode	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ LakeEcologicalClassification	4	Must be a valid TypologyCode in SurfaceWaterBodies/SurfaceWaterBody.
TypologyCode	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ TransitionalEcologicalClassification	4	Must be a valid TypologyCode in SurfaceWaterBodies/SurfaceWaterBody.
TypologyCode	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ CoastalEcologicalClassification	4	Must be a valid TypologyCode in SurfaceWaterBodies/SurfaceWaterBody.
NonEuropeanStandards	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWatersChemicalStatusClassification/ QE3-2PrioritySubstances	1	Must be populated if ApplyingEuropeanStandards = “No” or “Partially”.
AlternateRBD	RiverBasinDistrictSWMethodologies/ ResultsFromSurfaceWaterMonitoring	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
AlternateRBD	RiverBasinDistrictSWMethodologies/ SWDataGapsAndUncertainties	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
QEOtherParameterDescription	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ RiverEcologicalClassification ../LakeEcologicalClassification ../TransitionalEcologicalClassification	1	If the BiologicalQEParameter = 'QE1-5 Other Species' or the PhysicoChemQEParameter = 'QE3-1 Other' or the NonPrioritySpecificPollutants = 'Other', please describe the parameter used in the classification here.

Element name	Element root	Type of Check	Description/Error message
	../CoastalEcologicalClassification		
RiverIntercalibrationType	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ RiverEcologicalClassification ../LakeEcologicalClassification ../TransitionalEcologicalClassification ../CoastalEcologicalClassification	1	CONDITIONAL. FOR BIOLOGICAL QUALITY ELEMENTS ONLY.
RiverNationalTranslation	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ RiverEcologicalClassification ../LakeEcologicalClassification ../TransitionalEcologicalClassification ../CoastalEcologicalClassification	1	CONDITIONAL. FOR BIOLOGICAL QUALITY ELEMENTS ONLY.
NationalMethodInUse	RiverBasinDistrictSWMethodologies/ MethodologySurfaceWaterClassification/ SurfaceWaterClassification/ SurfaceWaterEcologicalClassification/ EcologicalClassifications/ RiverEcologicalClassification ../LakeEcologicalClassification ../TransitionalEcologicalClassification ../CoastalEcologicalClassification	1	CONDITIONAL National method in use if not reported previously under Article 8. **WARNING**

Element name	Element root	Type of Check	Description/Error message
Schema: GWMethods			
EURBDCode	RiverBasinDistrictGWMethodologies	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
AlternateRBD	RiverBasinDistrictGWMethodologies/ MethodologyGroundwaterClassification	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
AlternativeRBD	RiverBasinDistrictGWMethodologies/ TextMapsGroundwaterStatusTrends	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
AlternativeRBD	RiverBasinDistrictGWMethodologies/ GWDataGapsAndUncertainties	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
UnitsDescription	RiverBasinDistrictGWMethodologies/ MethodologyGroundwaterClassification/ ClassificationDetail/ ClassificationMatrix/ ClassificationItem/	1	Required if ReportingUnits is 'Other'
ReasonWhyNot75percent	RiverBasinDistrictGWMethodologies/ MethodologyGroundwaterClassification/ ClassificationDetail/ ClassificationMatrix/ ClassificationItem/	1	Required if TrendReversalStartingPoint is not 75%.

Element name	Element root	Type of Check	Description/Error message
Schema: RBMP_POM			
EURBDCode	RiverBasinManagementPlan	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
EUSubUnitCode	RiverBasinManagementPlan/ POM/ SWNeedForSupplementaryMeasures/ SWNeedForSupplementaryMeasure	4	Must be a valid EUSubUnitCode in RBDSUCA/RiverBasinDistrict/SubUnits/SubUnit.
SWPressureMeasuresCheckList	RiverBasinManagementPlan/ POM/ SWNeedForSupplementaryMeasures/ SWNeedForSupplementaryMeasure/	1	Must be populated if YesNo = “No”.

Element name	Element root	Type of Check	Description/Error message
	SupplementaryMeasures/ NeedForSupplementaryMeasure/ BasicMeasureEnough		
EUSubUnitCode	RiverBasinManagementPlan/ POM/ SWNeedForSupplementaryMeasures/ SWNeedForSupplementaryMeasure/	4	Must be a valid EUSubUnitCode in RBDSUCA/RiverBasinDistrict/SubUnits/SubUnit.
SupplementaryMeasureCode	RiverBasinManagementPlan/ POM/ SWNeedForSupplementaryMeasures/ SWNeedForSupplementaryMeasure/ SupplementaryMeasures/ NeedForSupplementaryMeasure/ BasicMeasureEnough/ SWPressureMeasuresCheckList/ PressureRequiringSuppAddMeasures	4	Must be a valid SupplementaryAddMeasureCode in RBMP_POM/RiverBasinManagementPlan/ POM/ListOfSupplementaryMeasures/SuppAddMeasure.
TypeOfSupplemantaryMeasure TypeOfAdditionalMeasure	RiverBasinManagementPlan/ POM/ ListOfSupplementaryMeasures/ SuppAddMeasure/	2	Either TypeOfSupplemantaryMeasure or TypeOfAdditionalMeasure must be populated.
GWPressureMeasuresCheckList	RiverBasinManagementPlan/ POM/ GWNeedForSupplementaryMeasures/ BasicMeasuresEnough	1	Must be populated if YesNo = “No”.
SupplementaryMeasureCode	RiverBasinManagementPlan/ POM/ GWNeedForSupplementaryMeasures/ BasicMeasuresEnough GWPressureMeasuresCheckList PressureRequiringSuppAddMeasures	4	Must be a valid SupplementaryAddMeasureCode in RBMP_POM/RiverBasinManagementPlan/ POM/ListOfSupplementaryMeasures/SuppAddMeasure.
AlternativeRBD	RiverBasinManagementPlan/ POM/ CostOfMeasures	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
CostDetails	RiverBasinManagementPlan/ POM/ CostOfMeasures	2	Either AlternateRBD or CostDetails must be populated.
EUSubUnitCode	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitItem/ SubUnitPressureDetail	4	Must be a valid EUSubUnitCode in RBDSUCA/RiverBasinDistrict/SubUnits/SubUnit.

Element name	Element root	Type of Check	Description/Error message
WaterBalance ExploitationIndex OtherDescription	RiverBasinManagementPlan/ GWMainPressures/ GWRelevantAbstractions/ WaterBalance	2	Either WaterBalance or ExploitationIndex or OtherDescription must be populated.
OtherCasNumber	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitPressureDetail/ PointSourceLoads/ NonPrioritySpecificPollutants/ NonPrioritySpecificPollutant	1	Required if TypeNonPrioritySpecificPollutant is set to "other"
OtherSubstanceDescription	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitPressureDetail/ PointSourceLoads/ NonPrioritySpecificPollutants/ NonPrioritySpecificPollutant	1	Required if TypeNonPrioritySpecificPollutant is set to "other"
OtherCasNumber	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitPressureDetail/ DiffuseSourceLoads/ NonPrioritySpecificPollutants/ NonPrioritySpecificPollutant	1	Required if TypeNonPrioritySpecificPollutant is set to "other"
OtherSubstanceDescription	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitPressureDetail/ DiffuseSourceLoads/ NonPrioritySpecificPollutants/ NonPrioritySpecificPollutant	1	Required if TypeNonPrioritySpecificPollutant is set to "other"
GWNoOfRelevantPointSources	RiverBasinManagementPlan/ GWMainPressures/ GWPointSourceLoads	1	Must be completed if the element ListItem contains information
LevelOfMeasure	RiverBasinManagementPlan/ POM/ OtherBasicMeasuresArticle11-3b-1/*	1	Only required if implemented = Y
DescriptionOfMeasure	RiverBasinManagementPlan/ POM/ OtherBasicMeasuresArticle11-3b-1/*	1	Only required if implemented = Y
SWPressureMeasuresCheckList	RiverBasinManagementPlan/ POM/	1	If answer to "BasicMeasuresEnough" is "No" then information is required

Element name	Element root	Type of Check	Description/Error message
	SWNeedForSupplementaryMeasures/ SWNeedForSupplementaryMeasure/ SupplementaryMeasures/ NeedForSupplementaryMeasure		
GWPressureMeasuresCheckList	RiverBasinManagementPlan/ POM/ GWNeedForSupplementaryMeasures/ GWNeedForSupplementaryMeasure/ SupplementaryMeasures/ NeedForSupplementaryMeasure/ BasicMeasuresEnough	1	If answer to "YesNo" is "No" then information is required
WaterServiceTypeOther	RiverBasinManagementPlan/ EconomicAnalysis/ WaterServicesDetails/ WaterServicesItem	1	If WaterServiceType = option C. then information required
InvestmentCostMethodology	RiverBasinManagementPlan/ EconomicAnalysis/ VolumesPricesCosts	1	Complete if the answer to 'VolumesPricesCostsIncluded' is Yes
WaterServiceCostMethodology	RiverBasinManagementPlan/ EconomicAnalysis/ VolumesPricesCosts	1	Complete if the answer to 'VolumesPricesCostsIncluded' is Yes
VolumesPricesCostsSummary	RiverBasinManagementPlan/ EconomicAnalysis/ VolumesPricesCosts	1	Complete if the answer to 'VolumesPricesCostsIncluded' is No
NoOfPointSources	RiverBasinManagementPlan/ SurfaceWaterSignificantPressures/ SubUnitPressureDetail/ SurfaceSignificantPressureTypes/ SurfaceSignificantPressureType	1	Complete if SurfaceSignificantPressure = ‘1 Point Source’
EconomicAnalysisCoordination	RiverBasinManagementPlan/ EconomicAnalysis	4	Provide information if the RBD is international NOT YET IMPLEMENTED
CostEffectivenessJudgement	RiverBasinManagementPlan/ EconomicAnalysis	4	Provide information if the RBD is international NOT YET IMPLEMENTED

Element name	Element root	Type of Check	Description/Error message
Schema: Monitoring			

Element name	Element root	Type of Check	Description/Error message
EURBDCode	MONITORING	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict
PROGRAMME_CD	MONITORING/ SWPROGRAMMES/	4	PROGRAMME_CD must be unique within the MS.
SUB_CD	MONITORING/ SWPROGRAMMES/ SWPROGRAMME/ SUB_PROGRAMMES/ SUB_PROGRAMME	4	SUB_CD must be unique within the associated PROGRAMME_CD.

Element name	Element root	Type of Check	Description/Error message
Schema: SurfaceWaterMonitoringStations			
EURBDCode	SURFACEWATERMONITORINGSTATIONS	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistrict.
NAME	SURFACEWATERMONITORINGSTATIONS	4	Must be a valid NAME in RBDSUCA
EU_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION	4	EU_CD must be unique within the MS.
WB_LOCATION	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION	4	EUSurfaceWaterBodyCode must be unique within the MS.
INTERCAL_SITE_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION	1	Must be populated if INTERCAL_SITE = “Y”.
REFERENCE_SITE_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION	1	Must be populated if REFERENCE_SITE = “Y”.
SUB_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION/ PROGRAMMES/ PROGRAMME	4	Must be a valid SUB_CD in MONITORING/SWPROGRAMMES/SWPROGRAMME/ SUB_PROGRAMMES/ SUB_PROGRAMME.
WB_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION/ PROGRAMMES/ PROGRAMME/ ASSOC_WB	4	EUSurfaceWaterBodyCode must be unique within the MS.
WB_CD	SURFACEWATERMONITORINGSTATIONS/ SURFACEWATERMONITORINGSTATION/ PROGRAMMES/	4	EUSurfaceWaterBodyCode must be unique within the MS.

Element name	Element root	Type of Check	Description/Error message
	PROGRAMME/ QUALITY_ELEMENTS/ QUALITY_ELEMENT/ ASSOC_WB		

Element name	Element root	Type of Check	Description/Error message
Schema: GroundWaterMonitoringStations			
EURBDCode	GROUNDWATERMONITORINGSTATIONS	4	Must be a valid EURBDCode in RBDSUCA/RiverBasinDistric
NAME	GROUNDWATERMONITORINGSTATIONS	4	Must be a valid NAME in RBDSUCA.
EU_CD	GROUNDWATERMONITORINGSTATIONS/ GROUNDWATERMONITORINGSTATION	4	EU_CD must be unique within the MS.
WB_LOCATION	GROUNDWATERMONITORINGSTATIONS/ GROUNDWATERMONITORINGSTATION	4	EUGroundWaterBodyCode must be unique within the MS.
PROGRAMME_CD	GROUNDWATERMONITORINGSTATIONS/ GROUNDWATERMONITORINGSTATION/ PROGRAMMES/ PROGRAMME	4	Must be a valid PROGRAMME_CD in MONITORING/GWPROGRAMMES/GWPROGRAMME.
WB_CD	GROUNDWATERMONITORINGSTATIONS/ GROUNDWATERMONITORINGSTATION/ PROGRAMMES/ PROGRAMME/ ASSOC_WB	4	EUGroundWaterBodyCode must be unique within the MS.
PROGRAMME_CD	MONITORING/ GWPROGRAMMES/ PARAMETERS/ PARAMETER	3	PROGRAMME_CD must be unique for that Member State.
WB_CD	GROUNDWATERMONITORINGSTATIONS/ GROUNDWATERMONITORINGSTATION/ PROGRAMMES/ PROGRAMME/ PARAMETERS/ PARAMETER/ ASSOC_WB	4	EUGroundWaterBodyCode must be unique within the MS.

Appendix C

C.1 Database to schema linkages

The link below is to a spreadsheet which explicity links the database tables to the corresponding nodes in the schemas.

http://water.eionet.europa.eu/schemas/dir200060ec/resources/WFD reporting v3 table schema list.xls