Notes on the provided groundwater data

contents

introduction

The following databases are offered:

- **Groundwater measuring points**
- **Chemical readings at groundwater measuring points**
- **Water levels at GW measuring points**
- **Catalog of communities •**

Catalog of substances •

Groundwater-dependent terrestrial ecosystems

In the Geoportal NRW (www.geoportal.nrw) you will find the basic information on these databases (contact person, license, etc.). This document describes some technical details that should make it easier for you to handle the data.

Scope

While the database of the groundwater measuring points is complete, only the measured values collected by the state of North Rhine-Westphalia itself and measured values from third parties who have agreed to the publication are made available. In the master data for each measuring point you will find information as to whether the publication of the measured values, broken down by water level and quality, h

In the case of the groundwater-dependent land ecosystems (GwaLöS), the area scenery of the 3rd inventory provided.

Restrictions

In the case of quality measuring points that are not on public property and for which there is no corresponding approval for complete data publication, the coordinates are made anonymous by not outputting the last two digits of the east and north values. Example:

gw_measuring point			
measuring point_id	Surname	e32	n32
010000010	SCHERPENSEEL NR 1	2935xx	56452xx
010000021	Bellinghoven No. 2	312776	5660432

At the measuring point *SCHERPENSEEL NR 1* , the coordinates are in the sense described above anonymized. At measuring point *Bellinghoven No. 2* , the coordinates are listed with their original values.

Currentness and update of the measurement data - measurement period

Both for the chemical measurement values and for the water levels, the complete time series are made available. The GwaLöS are compiled once in each management cycle at the beginning of the inventory. Therefore, an update is not necessary here.

format

The data is made available to you in two different formats: as csv files and as SQLITE™ databases1 . There are no differences in content between the formats. With a database viewer that can process SQLITE™ databases, you can easily select data in the provided databases.

The following files are available as zip archives:

filename	explanation
opendata.gw_messstelle.csv	All groundwater measuring points (approx. 71,000 data sets)
opendata.gw_chemier_messwert.csv	Chemical measurements (approx. 3.7 million data sets)
opendata.gw_wasserstand.csv	Water levels (approx. 20 million data sets)
katalog_gemeinde.csv	Catalog of parishes
katalog_stoff.csv	Catalog of fabrics
gw.sqlite	groundwater measuring points chemical readings Catalog Substance Catalog
gw_wasserstand_bis_1990.sqlite	Municipalities A table with the water levels up to the water year 1990 (7.6 million data sets)
gw_wasserstand_ab_1991.sqlite	A table showing water levels Water management year 1991 (12.7 million data sets)
gwaloes.shp	An ESRI shape with the geometries and factual data of the GwaLöS

The following applies to all csv files:

- UTF8 encoding •
  Column separator: semicolon. • All values are enclosed in double quotes. • The first row contains the names of the columns.
- Decimal point: point

- Date is displayed in the format yyyymmdd.

[1] The SQLITE™ database replaces the previously used "Access™ database" format. Unlike Access™ databases, SQLITE™ is a public domain relational database library (see https://www.sqlite.org).

documentation of the tables

Table GW_MEASING POINT

attribute	Display name	description
OBSERVATION_ WATER LEVEL	Water level observation by	*By whom is the water level observed?*
OPERATOR	operator	*operator of the measuring point*
E32	east value	*East value (spatial reference system ETRS89/ UTM32N)* *For quality measuring points that are not on public land, the last two digits of the E32* *Value not displayed and replaced by "xx".*
OWNER	owner	*owner of the measuring point*
INSTALLATION_LENGTH_CM	installation length	*length of pipe; includes the filtered section and the sump pipe.*
SETUP REASON	setup reason	
FILTERLENGE_CM	length filters	*Length of the filtered route*
RELEASE_CHEMISTRY	Publication of the chemical Measured values released?	*Yes No* *If "no", the chemical readings will not* *published.*
RELEASE_WSTD	publication of water level readings Approved?	*yes/ no If* *"no", the water levels will* *not be published.*
COMMUNITY_ID	No. community	*The municipality catalog contains the names of the municipality numbers.*
PROPERTY	property	*Is the measuring point on public or private land? Yes No*
QUALITY MEASUREMENT STATION	quality measuring point?	
GW_FLOOR	floor	
GWHORIZONT	groundwater horizon	
GWHORIZONT_ID	Abbreviation for GW horizon	
GWK_LAGE_AUF_ID	edition of groundwater bodies (Position)	
GWK_LOCATION_ID	groundwater body (location)	*Groundwater body in which the measuring point is located from the above-* *ground perspective.*
GWK_MONITORING_AUF_ID	Groundwater body (monitoring)	
GWK_MONITORING_ID	groundwater body (monitoring)	*The measuring point can* *observe a groundwater body that is not identical to the groundwater body in which it is located from the surface perspective.*

attribute	display name	description
GW LEADER	GW leader	
GWLEITER_ID	GW leader (abbreviation)	
HISTORISCHER_RUHE_WSP	historical still water level in the WFD chemical	*historical still water level in m below terrain*
IM_WRRL_MESSNETZ_ CHEMISTRY	monitoring network?	*Is the measuring point currently in the WFD Measuring network chemistry? (Yes No)*
IM_WRRL_MESSNETZ_ CHEMISTRY	In the WFD monitoring network for chemistry? *Yes No*	
IM_WRRL_MESSNETZ_ WATER LEVEL	In the WFD monitoring network Quantity? *Yes No*	
IM_WRRL_MESSNETZ_ WATER LEVEL	in the WFD monitoring network water level?	*Is the measuring point currently in the quantitative WFD measuring network? (Yes No)*
LABORATORY	LANUV laboratory	*Responsible LANUV laboratory*
MEASURING PROGRAM	measuring program	*Distinction between emitter, ground and raw water measuring points and after Operator (country, third party), depending on question (GWÜ, RWÜ) to select*
MEASURING POINT_ID	No. of the measuring point	
MEASURING POINT TYPE	design of the measuring point	
N32	north value	*North value (spatial reference system ETRS89/ UTM32N) For quality measuring points that are not on public land, the last two digits of the N32 Value not displayed and replaced by "xx".*
SURNAME	Surname	
TOP_FILTER_CM	Upper edge of filter	*Top of filtered line (cm above NHN2016)*
SL_NO	Technical Key	
SUMP PIPE LENGTH_CM	Length of sump pipe	*sump pipe length*
CYCLE_WATER LEVEL	Cycle water level	*rotation of water level monitoring*
LOWER_EDGE_FILTER_CM	lower edge of filter	*Lower edge of the filtered line (cm above NHN2016)*
WATER SPECIES	groundwater species	
WATER LEVEL MEASUREMENT POINT	Water level measurement point?	*Yes No*

Table GW_CHEMICAL_MEASVAL

attribute	display name	description
CURRENT_DATE	Last change	
LIMIT OF QUANTITATION	Limit of quantitation	
DATE_PN	Date of sampling inserted	
CREATE_DATE	on	
ORIGIN	Origin of the measured value	
UNIT OF MEASUREMENT	unit	
MEASUREMENT RESULT_C	measurement result	*The measurement result is displayed as text. A "<" sign indicates that the concentration is too low for a reading to be determined was.*
MEASUREMENT RESULT_NOTE	notice	*Note on the measurement result*
MEASURING POINT_ID	No. of the measuring point	
PNA_ID	No. Sampling order sample	
SAMPLE	material	
SL_NO	Technical Key	
SUBSTANCE_NO	Substance no.	*The fabric catalog contains the names of the fabric numbers.*
SEPARATION PROCESS	Separation method used *For example "total content" or "filtered"*	
PROCEDURE	procedure	*Analysis method used*
ON SITE	On-site measurement?	*Yes No*

Table GW_WASSERSTAND

attribute	display name	description
TRACK_M	racking	*distance between measuring point and LV surface*
CURRENT_DATE	changed on	
DATE_MEASUREMENT	date of measurement	
FLURABSTD_M	floor distance	*Distance between terrain and GW surface*
GOK_M	terrain elevation	*Height of the terrain (m NHN2016)*
NOTICE	Note on the measurement	*for example "dry"*
MEASURING POINT_ID	No. of the measuring point	
MPH_M	measuring point height	*Height of the measuring point (generally the upper edge of pipe) based on NHN2016 (Normal Height Zero 2016)*
SL_NO	Technical Key	
WATER HOURS_M	water level	*Groundwater surface in m NHN2016*
WWJ	water year	*Statistical designation; WWJ begins on November 1st. one year and ends on 31.10. of the following year.*

Table for the shape gwaloes.shp

attribute display name		description
FID		*ESRI internal key*
SHAPE		*geometry of the type polygon*
GWK_ID	number of groundwater body	
EDITION	edition	*The basis is the 2. Edition (07/01/2016) of the groundwater bodies*
CYCLE_NO	Inventory number	
SURNAME	Surname	*name of GwaLöS; is inherited from the underlying conservation area*
IDENTIFIER	identifier	Key of the underlying protected area
ORIGIN	origin	*origin of the record*
CREATED	date	
SL_NO	Technical Key	