

Section 6. Geohydrologic Units File Components

Sub-Section	Description
6.1	Source agency code (C4) MANDATORY
6.2	Site identification number (C1) MANDATORY
6.3	Record type (C748, C750) MANDATORY
6.4	Record sequence number or sequence number of parent (C721, C256) MANDATORY
6.5	Record sequence number of child (for AQFR only) (C742) MANDATORY
6.6	Person creating record (C466,C469)
6.7	Date and time created (C467,C470)
6.8	Person updating record (C468,C471)
6.9	Date and time of last update (C749,C751)
6.10	Record ready for Web (C871,C872)
6.11	Data dependent on record type

The GEOHYDROLOGIC UNITS record is used for recording geohydrologic data about the site. The record can be used to record as little as the principal aquifer, or as much as an entire log for the site. Each entry of this record describes a geohydrologic interval. The interval is not necessarily an entire formation or an entire aquifer. The following is a list of the component codes used in the GEOHYDROLOGIC UNIT data file.

Record Type	Description of Contents	Data Table Name
GEOH	Includes geohydrologic description and depth interval	gw_geoh_##
AQFR	Includes the water level and contribution	gw_aqfr_##

The related GEOHYROLOGIC UNIT records have two record types and form a parent/child relationship. GEOH is the parent record to related AQFR child records; the GEOH record must be established before any AQFR records can be entered. The first characters of the record are coded as follows:

6.1 Source Agency Code

(LGAGY/C4 - MANDATORY PRIMARY-KEY CHAR X(5) -- agency_cd):

This is the agency that reported the data. This code is mandatory and a part of the primary key. Data for the site will not be stored if this field is blank.

6.2 Site Identification Number

(LGID/C1 - MANDATORY PRIMARY-KEY CHAR X(15) -- site_no):

This is the 15-digit site identification (Site ID) number of the site to which the geohydrologic unit data applies. If the site has not been entered into the Sitefile, this operation must be completed before the geohydrologic unit data are input. The Site ID number is mandatory and a part of the primary key.

6.3 Record Type

(LGTYP/C748,C750 - MANDATORY SECONDARY-KEY CHAR X (4)):

The RECORD TYPE identifies the category of data included in the record. There are two categories with the GEOHYDROLOGIC data. This field is mandatory and is a secondary key. The categories are as follows:

Record Type	Description
GEOH	Geohydrologic units record C748
AQFR	Aquifers record C750

6.4 Record Sequence Number or Sequence Number of Parent

(LGSEQ/C721,C256 - MANDATORY PRIMARY-KEY CHAR X(3) -- geoh_seq_nu):

This is a number assigned at time of data entry to keep data by category in logical order. This number is mandatory and a part of the primary key. The component number for the record sequence number depends on the record type as follows:

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_seq_nu
AQFR	Aquifers record	geoh_seq_nu

6.5 Record Sequence Number of Child (for AQFR only)

(LGCSEQ/C742 - MANDATORY PRIMARY-KEY CHAR X(3) -- aqfr_seq_nu):

Each aquifers record described for a site must have a unique identifying number in this space. The numbers need not be in sequence, but each can be used only once for that site. The entry number is mandatory; aquifers record will not be stored if the field is blank. This field relates each aquifers record to the correct parent GEOHYDROLOGIC UNITS record, and the sequence number entered in this field must match the sequence number (geoh_seq_nu) of the related GEOH record.

6.6 Person Creating Record
(LGCUID/C466,C469 - CHAR X(8) -- geoh_cn or aqfr_cn):

This contains the user identification of the person creating the record. The user ID is entered automatically by the NWIS software. The component number for the person creating the record depends on the record type as follows:

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_cn
AQFR	Aquifers record	aqfr_cn

6.7 Date and Time Created
(LGCRDT/C467,C470 - CHAR X(14) -- geoh_cr or aqfr_cr):

This contains the date and time the record was created. The date and time are entered automatically by the NWIS software. The component number for the date the record was created depends on the record type as follows:

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_cr
AQFR	Aquifers record	aqfr_cr

6.8 Person Updating Record
(LGUID/C468,C471 - CHAR X(8) -- geoh_mn or aqfr_mn):

This contains the user identification of the person who last updated the record. The user ID is entered automatically by the NWIS software. The component number for the user ID of the person creating the record depends on the record type as follows:

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_mn
AQFR	Aquifers record	aqfr_mn

6.9 Date and Time of Last Update
(LGUPDT/C749,C751 - CHAR X(14) -- geoh_md or aqfr_md):

This contains the date and time when the data record was last updated. The date and time are entered automatically by the NWIS software. The component number for the date of the last update depends on the record type as follows:

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_md
AQFR	Aquifers record	aqfr_md

6.10 Record Ready for Web

(LGWBFQ/C871,C872 - CHAR X(1) -- geoh_web_cd or aqfr_web_cd):

This field contains the status and availability of a record for display on the World-Wide-Web. ‘Y’ is the default. Only records flagged with a ‘Y’ are made available on the Web. The codes and their descriptions are:

Code	Description
Y	Yes-Record has been checked and is ready for Web display.
C	Conditional-Record has not been checked. No Web display.
P	Proprietary Record. No Web display.
L	Local use only. No Web display.

Record	Description	Attribute Name
GEOH	Geohydrologic units record	geoh_web_cd
AQFR	Aquifers record	aqfr_web_cd

6.11 Data Dependent On Record Type

(LGDATA - CHAR X(152)):

These fields are described below for each record type.

6.11.1 Geohydrologic Units Record -- LGTYP = GEOH

Sub-Section	Attribute Name	Description
6.11.1.1	lith_top_va	Depth to top of interval (C91)
6.11.1.2	lith_bottom_va	Depth to bottom of interval (C92)
6.11.1.3	lith_unit_cd	Unit identifier (C93) MANDATORY
6.11.1.4	lith_cd	Lithology code (C96)
6.11.1.5	contrib._unit_cd	Contributing unit (C304)
6.11.1.6	lith_ds	Lithologic modifier (C97)

The geohydrologic units data records are entered following the instructions in sections 6.1 through 6.10. Here is a brief review for your convenience:

Source agency code
 Site identification number
 Record type (GEOH)

Record sequence number
 Person creating record
 Date and time created
 Person updating record
 Date and time of last update
 Record ready for Web

The geohydrologic units data record is used to provide descriptive information about the geohydrologic units. The entry of geohydrologic data is identified by coding "GEOH" in geohydrologic type of record. Enter the GEOH components as follows:

6.11.1.1 Depth to Top of Interval
(LGTOP/C91 - CHAR X(8) -- lith_top_va):

Enter the depth to the top of this unit, in feet below land surface.

6.11.1.2 Depth to Bottom of Interval
(LGBOT/C92 - CHAR X(8) lith_bottom_va):

Enter the depth to the bottom of this unit, in feet below land surface. This field should be specified for all units except the last one in the hole.

6.11.1.3 Unit Identifier
(LGAQFR/C93 - MANDATORY SECONDARY-KEY CHAR X(8) -- lith_unit_cd):

Enter the eight-character code identifying the unit using codes given in the "Catalog of Aquifer Names and Geologic Unit Codes used by the WRD." Codes are also given in the online file: */usr/opt/nwis/support/aageol.all.states* (ttthe terms BASEMENT and BEDROCK will be accepted as legal values.) The unit identifier is mandatory.

6.11.1.4 Lithology Code
(LGLITH/C96 - SECONDARY-KEY CHAR X(4) lith_cd):

Enter the code indicating the principal lithology of this unit. The codes are as follows:

Rock Term Abbreviation

Term	Abbreviation
Alluvium	ALVM
Anhydrite	ANDR
Anorthosite	ANRS
Arkose	ARKS
Basalt	BSLT
Bentonite	BNTN
Boulders	BLDR
Boulders and sand	BLSD
Boulders, silt, and clay	BLSC

Term	Abbreviation
Breccia	BRCC
Calcite	CLCT
Caliche (hard pan)	CLCH
Chalk	CHLK
Chert	CHRT
Clay	CLAY
Clay, some sand	CLSD
Claystone	CLSN
Coal	COAL
Cobbles	COBB
Cobbles and sand	COSD
Cobbles, silt, and clay	COSC
Colluvium	CLVM
Conglomerate	CGLM
Coquina	CQUN
Diabase	DIBS
Diorite	DORT
Dolomite	DLMT
Dolomite and shale	DMSH
Drift	DRFT
Evaporite	EVPR
Gabbro	GBBR
Glacial (undifferentiated)	GLCL
Gneiss	GNSS
Granite	GRNT
Granite, gneiss	GRGN
Gravel	GRVL
Gravel and clay	GRCL
Gravel, cemented	GRCM
Gravel, sand, and silt	GRDS
Gravel, silt and clay	GRSC
Graywacke	GRCK
Greenstone	GNST
Gypsum	GPSM
Hard pan	HRDP
Igneous (undifferentiated)	IGNS
Lignite	LGNT
Limestone	LMSN
Limestone and Dolomite	LMDM
Limestone and shale	LMSH
Loam	LOAM
Loess	LOSS
Marble	MRBL
Marl	MARL
Marlstone	MRLS
Metamorphic (undifferentiated)	MMPC
Muck	MUCK
Mud	MUD

Term	Abbreviation
Mudstone	MDSN
Other	OTHR
Outwash	OTSH
Overburden	OBDN
Peat	PEAT
Quartzite	QRTZ
Residium	RSDM
Rhyolite	RYLT
Rock	ROCK
Rubble	RBBL
Sand	SAND
Sand and clay	SDCL
Sand and gravel	SDGL
Sand and silt	SDST
Sand, gravel, and clay	SGVC
Sand, some clay	SNCL
Sandstone	SNDS
Sandstone and shale	SDSL
Saprolite	SPRL
Schist	SCST
Sedimentary (undifferentiated)	SDMN
Serpentine	SRPN
Shale	SHLE
Silt	SILT
Silt and clay	STCL
Siltstone and shale	SLSH
Siltstone	SLSN
Slate	SLTE
Soil	SOIL
Syenite	SYNT
Till	TILL
Travertine	TRVR
Tuff	TUFF
Volcanic (undifferentiated)	VLCC

**6.11.1.5 Contributing Unit
(LGCONT/C304 - CHAR X(1) -- contrib_unit_cd):**

Enter one of the following codes to indicate whether the unit is to be considered the principal aquifer. If this field is left blank, the edit program will value this component with a default of 'U' and will print a warning message to that effect.

Code	Description
P	Principal contributing aquifer (only one per site)
S	Secondary contributing aquifer
N	Contributes no water
Q	Aggregate of lithologic units
U	Unknown contribution

**6.11.1.6 Lithologic Modifier
(LGDESC/C97 - CHAR X(123)-- lith_ds):**

Enter the adjective modifiers needed to describe the rock type. This field is free form-- there are no assigned codes. If abbreviations are necessary, use meaningful abbreviations whenever possible. With the use of this field, and the field for primary lithology, nearly any rock type can be described satisfactorily.

Examples : for soft, chalky grey limestone
 Lithology: LMSN, modifier: GREY, SOFT, CHALKY
 or for a hard red sandstone, iron stained
 Lithology: SNDS, modifier: HARD, RED, FE STND

6.11.2 Aquifers Record -- LGTYP = AQFR

Sub-Section	Attribute Name	Description
6.11.2.1	aqfr_dt	Aquifer date (C95) MANDATORY
6.11.2.2	aqfr_static_lev_va	Aquifer static water level (C126)
6.11.2.3	aqfr_contrib_fc	Aquifer percent water contribution (C132)

The aquifer data records are entered following the instructions in sections 6.1 through 6.10. Here is a brief review for your convenience:

- Source agency code
- Site identification number
- Record type (AQFR)
- Sequence number of parent
- Record sequence number of child
- Person creating record
- Date and time created
- Person updating record
- Date and time of last update
- Record ready for Web

The aquifers record is a lower-level record within the geohydrologic units record. Data will not be stored in the aquifers record if any mandatory entry in the geohydrologic units record is missing. The aquifer record is used for entering hydrologic data about each unit if such data are available. The entry of the aquifer data is identified by coding "AQFR" in geohydrologic type of record. Enter the AQFR components as follows:

6.11.2.1 Aquifer Date

(CNAQDT/C95 - MANDATORY CHAR X(8) -- aqfr_dt):

Enter the date on which the aquifer data were collected. If the month or day are not known, enter blanks in the spaces. Use leading zeros for month or day less than ten, and specify all four digits for the year. Date is a mandatory entry; hydrologic data for the unit will not be stored if this field is blank.

6.11.2.2 Static Water Level

(CNAQSL/C126 - CHAR X(7) -- aqfr_static_lev_va):

Enter the static water level in this unit, if known, in feet below land surface. If the water level is above land surface, enter the head above land surface preceded by a minus sign (-).

6.11.2.3 Percent Water Contributed

(CNAQCN/C132 - CHAR X(3) -- aqfr_contrib_fc):

Enter the percentage of the total yield of the well that is contributed by this unit, if known. If part of the water that the well would otherwise produce is lost to this unit, enter the percentage of the water lost preceded by a minus sign (-).