Search criteria and codes

Search criteria are criteria that you enter to select sites of interest. Codes describe data and aid in its interpretation. This page contains links to a comprehensive set of codes used by this site which can be used an an authoritative reference.

- Site Criteria | Site Inventory Codes | Time Series Codes | Groundwater Codes | Surface Water Codes | Water Quality Codes

Definitive list of USGS parameters

Site Criteria

Site criteria let you find sites of interest. Site criteria pages exist for current conditions, site information, surface water, groundwater and water quality data. Not all criteria listed below can be used for all data categories.

- **Agency code**

  The agency that is reporting the data. Agency codes are fixed values assigned by the National Water Information System (NWIS). A list of agency codes is available. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Altitude**

  Altitude of the site referenced to the specified Vertical Datum.

- **Altitude accuracy value**

  Altitude accuracy is mandatory when altitude is entered. Enter the accuracy of the altitude in terms of the possible error in feet. An accuracy of +/- 0.1 foot would be entered as ".1". Many altitudes are interpolated from the contours on topographic maps; accuracies determined in this way are generally entered as one-half of the contour interval.

- **Aquifer type**

  Groundwater occurs in aquifers under two different conditions. Where water only partly fills an aquifer, the upper surface is free to rise and decline. These aquifers are referred to as unconfined (or water-table) aquifers. Where water completely fills an aquifer that is overlain by a confining bed, the aquifer is referred to as a confined (or artesian) aquifer. When a confined aquifer is

penetrated by a well, the water level in the well will rise above the top of the aquifer (but not necessarily above land surface). Additional information is available.

- **CASRN**

  CAS Registry Number is a Registered Trademark of the American Chemical Society. CAS recommends the verification of the CASRNs through CAS Client ServicesSM.

- **Construction date**

  Date the well was completed.

- **County**

  The name of the county or county equivalent (parish, borough, etc.) in which the site is located. A list of codes is available. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Data type**

  All USGS data falls into one or more of these categories

Any Data type	Matches data for any available options
Current Conditions and Recent Daily Data	Current condition data is any data down to the 15 minute interval that has been transmitted in the last 120 days. Recent Daily-Value Data is the average daily value for a site and it is usually for the past year and a half of recorded values.
Surface Water	Water flow and levels in streams, lakes and springs.
Water Quality	Chemical and physical data for streams, lakes, springs, and wells.
Groundwater	Water levels in wells.

- **Drainage area**

  The area enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above that point.

- **File of site numbers**

  A previously saved file of USGS site identification numbers, in the format:

```
USGS 11447650
USGS 394523084582301
```

  The file may be prefixed by the agency code.

- **File of parameter codes**

  A previously saved file of parameter codes, in the following format:

```
01130   Minor and Trace Inorganics      Lithium, water, filtered, micrograms per liter
01131   Minor and Trace Inorganics      Lithium, suspended sediment, recoverable, micrograms per
01132   Minor and Trace Inorganics      Lithium, water, unfiltered, recoverable, micrograms per
```

  List of parameter code names, and help finding a code.

- **Groundwater site type**- subset of Site Type, site types used by groundwater

  The code indicating the type of site to which these data apply. The codes and their meanings are available.

- **Hole depth**

  The total depth to which the hole is drilled, in feet below land surface datum.
  Note: Not all groundwater sites have information on Hole Depth. Such sites will not be retrieved using this search criteria.

- **Hydrologic region**

  The contiguous United States is broken into 18 different major watersheds. Alaska, Hawaii, and Puerto Rico each have a separate watershed. Additional information is available.

- **Hydrologic unit code (HUC)**

  Hydrologic units are geographic areas representing part or all of a surface drainage basin or distinct hydrologic feature and are delineated on the State Hydrologic Unit Maps. Each hydrologic unit is identified by a unique number (HUC), and a name. Additional information is available.
  Note: Not all groundwater sites have been associated with a Hydrologic Unit. Such sites will not be retrieved using this search criteria.

- **(Internal) Site list**

  A previously saved file of USGS site identification numbers. This option should only appear on displays if the user is inside the USGS network.

- **Latitude-Longitude (Lat-Long) box**

  When looking at a map, consider a rectangle that encloses the area of interest to you. The maximum latitude and longitude define the upper-left corner, and the minimum latitude and longitude define the lower-right corner of that box. To find the approximate latitude and longitude try the USGS Earth Explorer. For the best results define the smallest practical latitude-longitude box that includes the area of interest; retrievals from unnecessarily

large latitude-longitude boxes (1x1 degree, for example) may yield many undesired sites.

Examples

Degrees-Minutes-Seconds	Decimal Degrees
100 59 01	100.91
45 09 34	45.11

- **Local aquifer (by code)**

  Local aquifers in the USGS water resources data base are identified by a geohydrologic unit code (a three-digit number related to the age of the formation, followed by a 4 or 5 character abbreviation for the geologic unit or aquifer name). Additional information is available. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
  Note: Not all groundwater sites have been associated with a Local Aquifer. Such sites will not be retrieved using this search criteria.

- **Local aquifer (by name)**

  Name of the aquifer. Also known as the geohydrologic unit. Additional information is available.
  Note: Not all groundwater sites have been associated with a Local Aquifer. Such sites will not be retrieved using this search criteria.
  Local aquifer codes and names are fixed values assigned by the National Water Information System (NWIS). A list of aquifer codes and names is available. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Multiple site numbers**

  A list of multiple site numbers separated by carriage returns (generated by pressing the ENTER key on your keyboard) are used to display many sites simultaneously. Each site in the USGS data base has a unique 8 to 15-digit identification number. You can search using an exact match or match using a partial number. To use an exact match you must include all of the digits including any leading zeros (0) that make up the complete site number. A site will not be found if the site number has a leading zero and it is not included in the string tested using an exact match.
  Note: The speed of the search using site numbers (and site names) is very fast using exact matches. The next fastest is matching from the beginning. Searches that match any part of the number (or name) are much slower.

- **National aquifer**

  National aquifers are the principal aquifers or aquifer systems in the United States, defined as regionally extensive aquifers or aquifer systems that have

the potential to be used as a source of potable water. Additional information is available

Note: Not all groundwater sites can be associated with a National Aquifer. Such sites will not be retrieved using this search criteria. A list of National aquifer codes and names is available. **[Tab-separated -- saved to file || Tab-separated to screen ||Tab-separated to screen sorted by state|| HTML to screen || HTML to screen sorted by state]**

- **Number of observations**

  Number of records found meeting a given criteria.

- **Parameter code/name**

  5-digit number used in the US Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent. List of parameter code names, and help finding a code.

- **Parameter groupings**

  Parameters are grouped into major categories of water-quality data. Each parameter belongs to one group only. Parameter codes associated with each group.

- **Period of record**

  Period of record for the data selected. You can enter either or both of the first date or end date to restrict search. The search is done against the first and last date of record for the given type of data, not against the actual data values. Thus, if a site has one sample collected on 1910-01-01 and all following samples collected between 1980-01-01 and 1990-01-01, and the search "first date" is 1950-01-01, this site will pass the test since the period of record for the site would be from 1910-01-01 to 1990-01-01. (**NOTE:** *checking data values explicitly, and not using a summary of the data is time consuming and is not supported currently.*)

  Dates can be entered in any of the following formats:

FORMAT	EXAMPLE
YYYY-MM-DD	2000-05-12
YYYY-M-D	2000-5-12
M/D/YYYY	5/12/2000
M D YYYY	5 12 2000
YYYYMMDD	20000512
YYYY.M.D	2000.5.12

- **Sample medium type**

Medium type refers to the specific environmental medium that was sampled and analyzed. Medium type differs from site type because one site type, such as surface water, could have data for several media, such as water, bottom sediment, fish tissue, and others. For a listing of the medium types look in the [Codes Help Section]

- **Site name/Local number**

  This is the official name of the site in the database. For well information this can be a district-assigned local number. Do **NOT** include "river", "lake", "creek" or other hydrological term. Search for "trinity" not "trinity river", or a complete or partial local number. All name searches are NOT case sensitive. **Note: Site name searches are the slowest way to find sites, and take 5 to 10 times longer than searches using the site number. The fastest site name search is matching from the beginning. Searches that match any part of the name are much slower.**

- **Site number**

  Each site in the USGS data base has a unique 8- to 15-digit identification number. Site numbers are assigned based on this logic. You can search using an exact match or match using a partial site number. To use an exact match you must include all of the digits including any leading zeros (0) that make up the complete site number. A site will not be found if the site number has a leading zero and it is not included in the string tested using an exact match. **Note: The speed of the search using site numbers (and site names) is very fast using exact matches. The next fastest is matching from the beginning. Searches that match any part of the number (or name) are much slower.**

- **Site number search on graphs**

  Each site in the USGS data base has a unique 8- to 15-digit identification number. Site numbers are assigned based on this logic.

- **Site type**

  The hydrologic setting of the site. **This is not equivalent to the type of data collected at the site.**
  [Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]

- **State/Territory**

  The name of the state or territory in which the site is located.

- **USEPA SRS**

  http://www.epa.gov/srs/

- **Update time**

  The Update time option provides the ability to select sites that have been updated or have received new/updated data within the specified interval. The available intervals for selection are dependent on the data type being queried. Note: While current-condition sites normally record data onsite every 15 minutes, the stored data are only transmitted to the web hourly.
- **Water quality method codes**
  Water Quality method codes are associated with one or many parameter codes. The method codes and associated parameters used in NWIS are available. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Well depth**

  The depth of the finished well, in feet below land surface datum.
  Note: Not all groundwater sites have information on Well Depth. Such sites will not be retrieved using this search criteria.

Site Inventory Codes

These codes document attributes of sites in the system.

- **Agency codes** (agency_cd) - The agency that is reporting the data. Agency codes are fixed values assigned by the National Water Information System (NWIS). **[Tab-separated -- saved to file || HTML]**
- **Altitude datum codes** (alt_datum_cd) - When Altitude is entered, the code is mandatory. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Altitude method codes** (alt_meth_cd) - When Altitude is entered, the code is mandatory. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Aquifer type code** (aqfr_type_cd) - Describes the type of aquifer(s) encountered by a site type of well (groundwater). **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **District code** - The Water Science Centers (WSCs) across the United States use the FIPS state code as the district code. In some case, sites and samples may be managed by a water science center that is adjacent to the state in which the site actually resides. For example a site may have a district code of 30 which translates to Montana, but the state code could be 56 for Wyoming because that is where the site actually is located.
- **Drainage Basin codes** (basin_cd) - The Basin Code or "drainage basin code" is a two-digit code that further subdivides the 8-digit hydrologic-unit code. The drainage basin code is defined by the USGS State Office where the site is located.
- **Hydrologic unit codes** (huc_cd) - The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique

hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Land net -** The Public Land Survey System (PLSS) is the surveying method used historically over the largest fraction of the United States to survey and spatially identify land parcels before designation of eventual ownership.
- **Lat/Long coordinate accuracy codes** (coord_acy_cd) - Indicates the accuracy of the latitude longitude values. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Lat/Long coordinate method codes** (coord_meth_cd) - Indicates the method used to determine latitude longitude values. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Lat/Long in DMS coordinate datum code** (coord_datum_cd) - Latitude/longitude (horizontal) coordinate datum. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Local aquifer codes** (aqfr) - The eight-character string identifying an aquifer. Codes are defined by the "Catalog of Aquifer Names and Geologic Unit Codes used by the Water Resources Division."
- **Local standard time flag** (local_time_fg) - Y for yes or an N for no to indicate whether the site is in an area that switches to Local Standard Time (Daylight Savings Time) for a part of the year.
- **National aquifer codes** - National aquifers are the principal aquifers or aquifer systems in the United States, defined as regionally extensive aquifers or aquifer systems that have the potential to be used as a source of potable water. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Map scale -** the map scale is given as a ratio (1:24000, 1:62500, etc) omitting figure "1" and colon. The remaining number is the scale. A 7 1/2-minute quadrangle (1:24000) would be entered as 24000; a county or other map of 2 inches to the mile would be entered as 31680.
- **Reliability codes** (reliability_cd) - Data reliability code is mandatory for spring, groundwater, and aggregate groundwater sites. Enter the code indicating the reliability of the data available for the site. Data will not be stored for the site if this field is blank. The code that best represents the reliability of the site's inventory data according to the reporting agency is what is entered. When in doubt, the data entry person always select the code that portrays the lesser confidence. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Site-Type Codes** (site_tp_cd) - A list of primary and secondary site types that can be associated with data collection sites. A site type is a generalized location in the hydrologic cycle, or a man-made feature thought to affect the hydrologic conditions measured at a site. All sites are associated with a primary site type, and may additionally be associated with a secondary site type that further describes the location. The exception to this rule is the Facility primary site type, which must always be associated with a secondary site type. The site type code incorporates these hierarchial distinctions. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **State and county Codes** (state_cd, county_cd) - State code. A two-digit

ANSI code (formerly FIPS code) as defined by the American National Standards Institute, to define States and equivalents. A three-digit ANSI code is used to define counties and county equivalents. A lookup table is available. The only countries with political subdivisions other than the US are Mexico and Canada. The Mexican states have US state codes ranging from 81-86 and Canadian provinces have state codes ranging from 90-98.

- **Time zone codes** (tz) - Time zone offset from GMT. An ANSI SQL/92 time zone offset string. Some examples are '-05:00' (Eastern), '+02:00' (Eastern Europe), and '+03:30' (India). **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Topographic setting code** (topo_cd) - Refers to the geomorphic features in the vicinity of the site. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Type of data collected** (data_types_cd) - This is a legacy field from the old WATSTORE days therefore the national consistency of the information/values stored in this field will vary. This field is actually a 30-POSITION ARRAY of characters.

Time Series Codes

- **Data Descriptor (DD)**

  A 3-digit number usually expressed as two digits that identifies a series of data values for one parameter at one location at a continuous-recording data site. The DD is the basis for selecting data for download or display as a list, table, or graph. Because more than one type of data may be collected or computed, many sites have multiple DDs.

Groundwater Codes

These codes document attributes unique to groundwater sites in the system.

- **Daily value qualification code**
- **Instantaneous value qualification code**
- **Instantaneous and daily value status codes**
- **Water-level site status codes** (lev_status_cd) - A code indicating the status of the site at the time the water level was measured.
- **Water-level accuracy codes** (lev_acy_cd) - A code indicating the accuracy of the water-level measurement. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Water-level approval-status codes** (lev_age_cd) - A code indicating the water-level approval status.
- **Water-level source codes** (lev_src_cd) - A code indicating the source of water-level data **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Water-level method codes** (lev_meth_cd) - A code indicating how the water level was measured. When a water level is entered, the code is mandatory. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Water-level date-time accuracy codes** (lev_dt_acy_cd) - A code

indicating the degree of precision for date/time of the water level measurement. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

Surface Water Codes

These codes document attributes unique to surface water sites in the system.

- **Channel evenness** - The code identifying the evenness of the channel. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Channel location code** - The code describing the relative location of the channel measurement section in comparison with the gaging station. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Channel material** - The code identifying the material of the channel (sand, gravel, silt, etc.) **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Channel stability** - The code identifying the stability of the channel (firm, soft, etc.) **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Daily value qualification code**
- **Discharge measurement quality code** - The code identifying a stream discharge measurement quality qualifier.
- **Flow adjustment code** - Describes how the sum of the channel discharges was adjusted to get the measurement discharge. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Horizontal velocity description** - Describes the velocity distribution across the channel. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Instantaneous value qualification code**
- **Instantaneous and daily value status codes**
- **Longitudinal velocity -** Describes the flow down the channel. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Measurement type** - Describes the method used to suspend or place the instrumentation into the water. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Peak streamflow special conditions**
- **Peak stage special conditions**
- **Rating control condition code** - Describes the condition of the rating control at the time of the measurement.
- **Stat codes** - The statistic code of all the unit values for the DD (data descriptor). Most common is 00011 (instantaneous), but some recorders sample the stream on some very frequent interval and report things like the minimums, maximums, and means of all the samples taken for a longer interval. So, for example, the recorder would output a set of values every 15 minutes that are the min., max., and mean of the values taken every 30 seconds during those 15 minutes. Data from recorders like those would use a statistic code such as 00001 (max), 00002 (min), or 00003 (mean) in the

DD. You can query by statistics code, statistics name, either explicitly or using a pattern.

- **Streamflow method** - Describes the method used to measure the discharge. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Velocity method** - Describes the method used to measure the velocity, and is only applicable to certain streamflow methods. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Vertical velocity description** - Describes the vertical velocity distribution within the cross-section. That is, whether the vertical distribution of velocity within the cross-section is mostly uniform, standard profile, or non-standard profile. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- Use incomplete data for statistics calculation - Compute statistics for months where data for some days of that month are missing.

Water Quality Codes

These codes document attributes unique to water quality sites in the system.

- **Body part codes** (body_part) - A part of the body of an organism. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Data quality indicator codes** (dqi_cd) - Indicates the review status of a result, controls whether the batch-update programs can overwrite a result, and affects the inclusion of a result in retrievals. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Fixed parameter codes** (fxd) - **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Hydrologic condition codes** (hyd_cond_cd) - A single alphanumeric character that identifies the height and change of the river or aquifer during a sampling. The codes and descriptions are: "A" Not determined, "4" Stable, low stage, "5" Falling stage, "6" Stable, high stage, "7" Peak stage, "8" Rising stage, and "9" Stable, normal stage. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Hydrologic event code** (hyd_event_cd) - A single alphanumeric character that identifies a weather event or other environmental event which may affect the quantity or quality of water in a river or aquifer during sampling. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Instantaneous and daily value status codes [Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Medium codes, descriptions, and definitions** (medium_cd) - The 3-character alpha code that identifies the material type and quality-assurance type of the sample. The first character of the code is the "super" medium, which describes the primary matrix of the sample. The second character is the sub-medium, which characterizes the sample type as a unique entity within the "super" medium category. The third character is used to designate whether a sample is an environmental or QC sample. A blank in position three denotes an environmental sample; a "Q" in position three denotes a QC

sample. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**

- **Method codes** (meth, parm_meth, cit_meth) - Water quality method codes. A method for calculating the value of a water quality parameter. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Parameter codes**
- **Parameter groups** - The definition of parameter groups was a collaborative effort between USGS and USEPA (Environmental Protection Agency). Some parameter groups have few or no entries stored by USGS, although these groups are used by USEPA.
- **Protocol organization codes** (proto_org) - Used to identify result-analyzing and sample-collecting organizations. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Remark codes** (remark_cd) qualify the result value. - **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Report level codes** (rpt_lev_cd) - A string of alpha characters that identify the analytical reporting level appropriate for the analytical method. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Sample type codes** (sample_type_cd) - **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Taxonomic unit** (tu) -http://www.itis.gov Legal taxon name and associated attributes for levels of taxonomic hierarchy structure from kingdom to genus. Genus, binomials/polynomials are identified.
- **Time datum reliability codes** (tm_datum_rlblty_cd) - Describes how well the time datum is known. For times entered prior to NWIS 4.3 (in 2003), there is no reliable means of determining the reliability, so the code is set to 'T'. For times entered after NWIS 4.3, the reliability should be known or estimated. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**
- **Value qualifier codes** (val_qual_cd) - Identifies specific exceptional or unusual characteristics of the measurement process used to determine a result. Value qualifiers provide additional information about the causes and possible direction of bias, and/or the magnitude of variability for the measurement. **[Tab-separated -- saved to file || Tab-separated -- display to screen || HTML]**