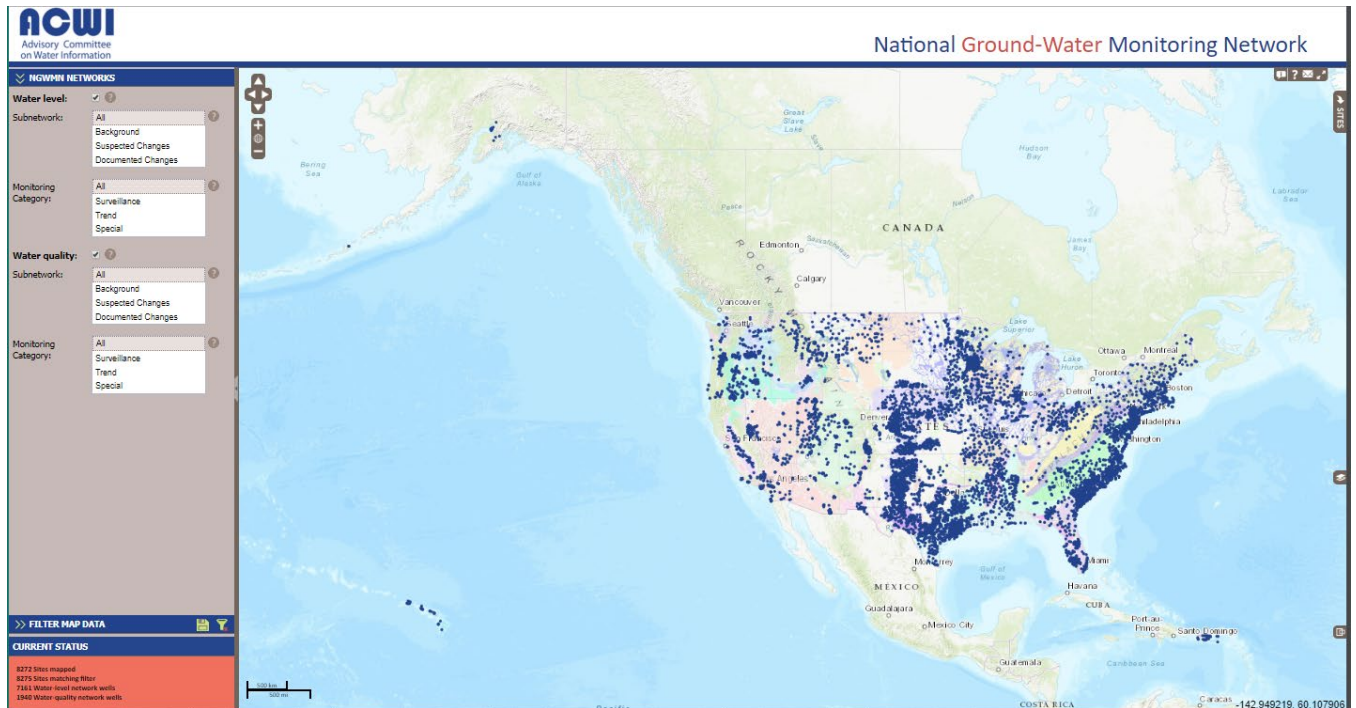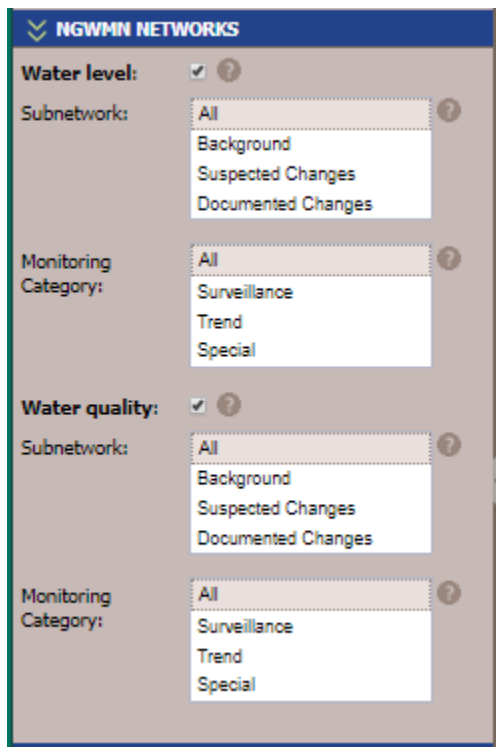# How to use the NGWMN Data Portal

The NGWMN Data Portal screen has two main sections: the selector bar on the left, and the map. The selector bar is used to select specific sites by network or attribute, useful when you are looking for specific kinds of data; the map is used to select sites by location and to preview and download data. The selector bar and the map are linked; the sites displayed on the map are those included in the current selection from the selection bar.

Selector bar

The selector bar has three main sections: the Network selector, the Filter selector, and the Current Status display. Changes made in the selector bar will automatically be reflected in the map and Current Status displays.

Network Selector

The network selector lets you focus on the network(s) and sub-networks appropriate to your data needs. The 'Water level' and 'Water quality' check boxes are inclusive; by default, both are checked, so that sites in either or both networks are displayed. You can refine your selection to a subset of the available sites by using the sub-network selectors, labeled 'Subnetwork' and 'Monitoring category'.


A complete explanation of the meaning and purpose of the networks and sub-networks can be found on the NGWMN informational page. The informational page can be reached from the 'Learn' button on the home page. You may click on the title, 'National Ground-Water Monitoring Network', to get there. You may also find more information about the options by clicking on the '?' buttons with in the selector bar.

Filter Selector

The filter selector allows you to restrict the site selection according to Principal Aquifer, Available Data, Site Type, State and County, Contributing Agency and Aquifer Characteristics. Each section of the Filter selector (except for Principal Aquifer) has a help pop-up (?) explaining how it may be used. The filter reset button can be used to clear all filters. The save filter button can be used to create a bookmark URL specific to the current filter selections, for easily repeating a search or to share a search. Within each of these filter sections you may select more than one option in a list by control-click or select several in a row by holding shift-click.
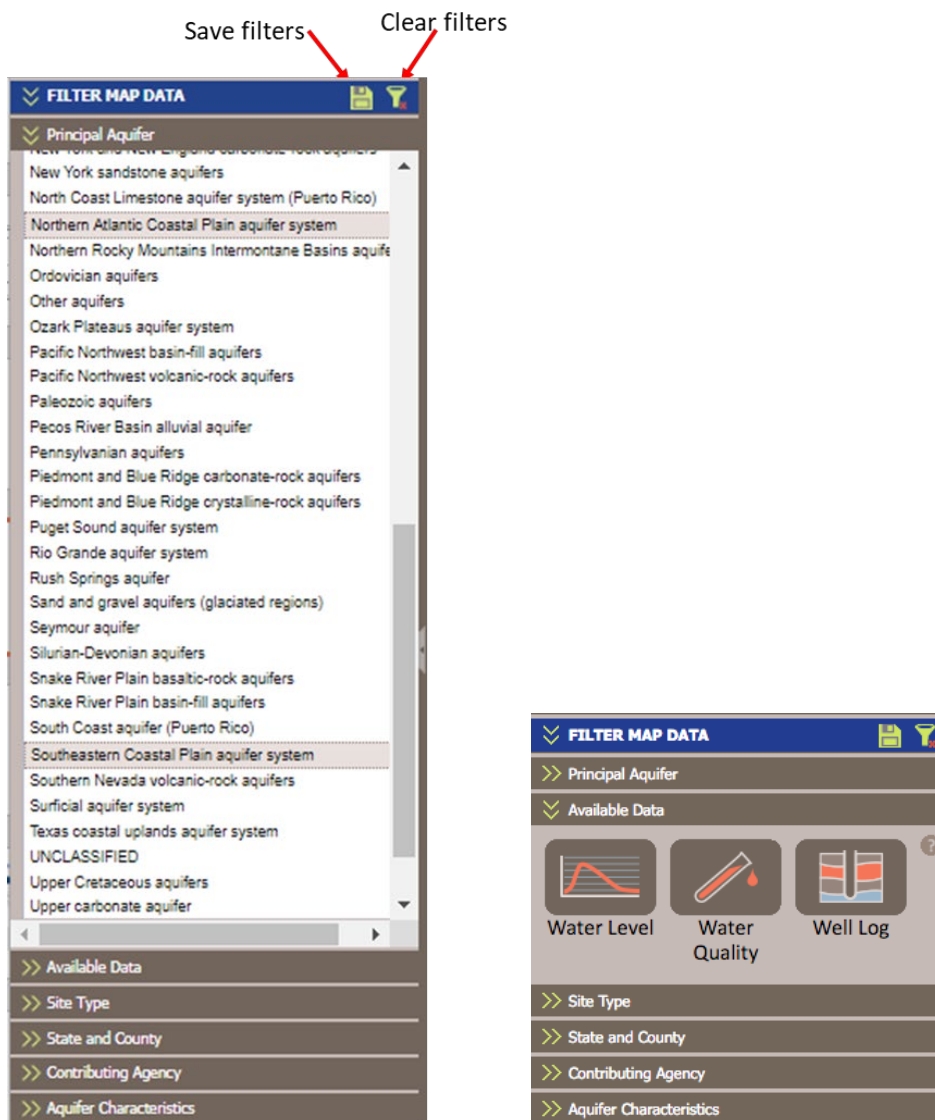
The 'Available Data' options are additive as they allow you to find sites with one or more types of data available (e.g. sites with water level data and a well log record).

Current Status Display

The 'Current Status' displays the number of wells in each of the networks currently displayed on the map.

CURRENT STATUS

1189 Sites mapped
1189 Sites matching filter
1109 Water-level network wells
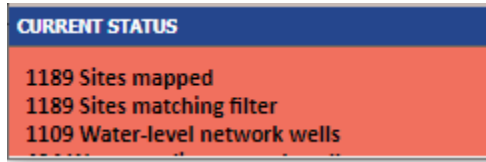
Using the Map Display

The parts of the Map Display are labeled on the figure below.
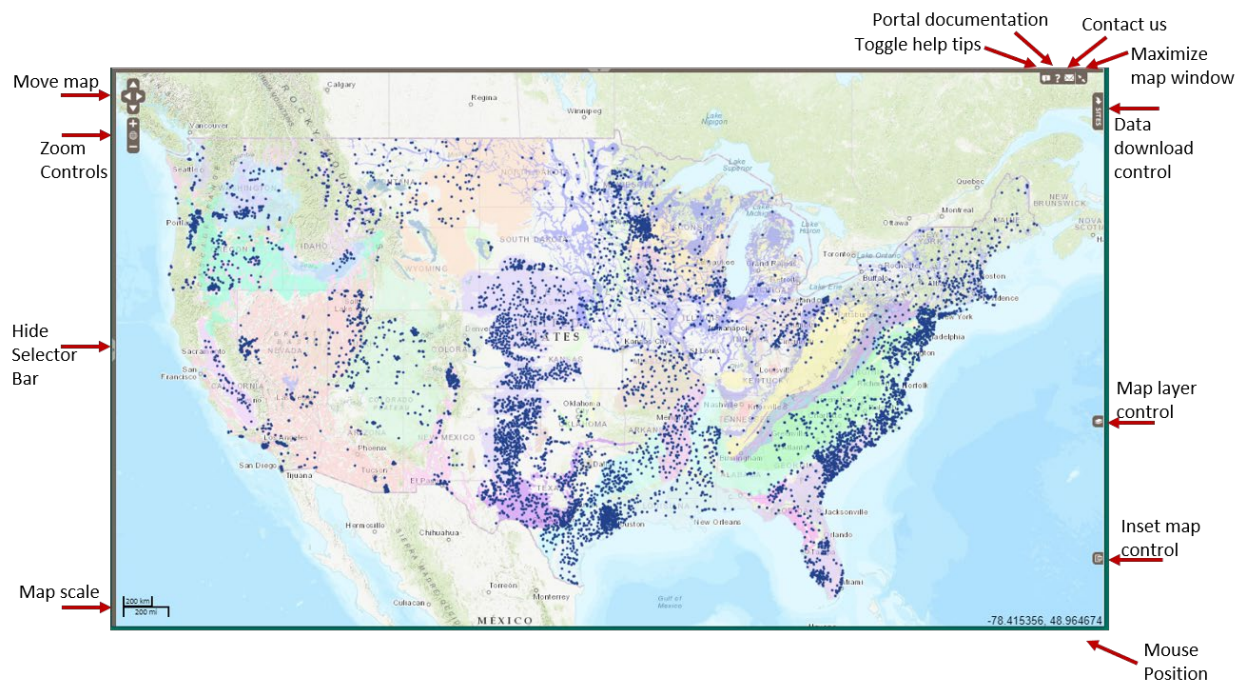
The current map scale is shown in the lower left corner of the display and the current mouse position in decimal degrees is shown in the lower right corner of the display.

To zoom in you can use the (+/-) zoom controls in the upper left corner of the display to do fixed zoom in or zoom out. The 'world' icon in the zoom controls automatically zooms to the selected sites. You can also use the scroll bar on our mouse to zoom in or out. You can specify a box to zoom to by positioning the cursor on one corner of a box, holding the 'Shift' key and moving the cursor to the opposite corner of a box.

To pan within the map you can use the 4 arrows in the upper left corner of the display or click and hold the mouse and move the cursor.

You can use the 'Hide Selector Bar' tool to toggle display of the Selector Bar.

Controls in the upper right of the display allow you to 1) Toggle help tips, 2) Show this documentation, 3) email data portal personnel, and 4) maximize the map display.

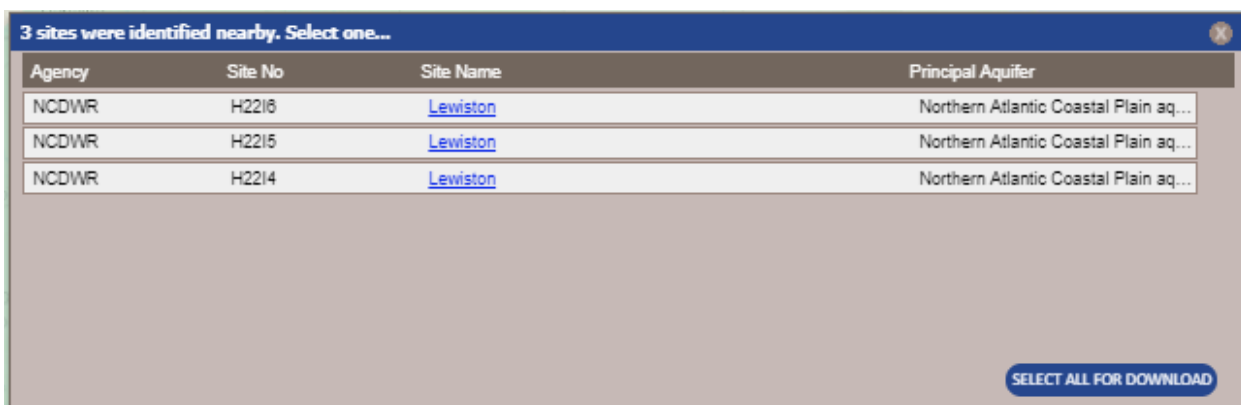The Sites tool is used to manage sites for downloading data. Once you have completed selecting a set of sites to download, you can use this tool to complete the download. More information on this tool will be described in a later section.

The Layers tool is used to control display of map layers. The default basemap the 'World Topo Map', this can be changed by selecting one of the other Base Layers. Both the 'Principal aquifers' and 'Alluvial aquifers' are displayed by default. These can be turned off and other Overlays can be selected. Site can be displayed using a color symbol showing how the most recent water level compares with long-term statistical medians by selecting 'Most Recent Water Level' instead of 'Default'.

Site Identify Window

The Site Identify Window is displayed when you select one or more sites from the map. If you click on a region of the map that has multiple sites in close proximity, you will see a window that lets you select one particular site from the proximate sites:

To select a subset of sites on the map position the cursor at a corner of a box and holding the 'Ctrl' key and move the mouse to the opposite corner of the box.

Agency	Site No	Site Name	Principal Aquifer
NCDWR	H22I6	Lewiston	Northern Atlantic Coastal Plain aq...
NCDWR	H22I5	Lewiston	Northern Atlantic Coastal Plain aq...
NCDWR	H22I4	Lewiston	Northern Atlantic Coastal Plain aq...

3 sites were identified nearby. Select one...

SELECT ALL FOR DOWNLOAD

You can identify a single site from this list with a double-click of the mouse. This will open a site page for that specific site in a separate tab in your browser. You can bookmark these pages for future reference.

Site Page

The Site Page has a hydrograph of water-levels at the site and a graphic and tabular display of well construction and lithology data for the site. The site page also has expandable sections for Summary, Water Quality, Water Levels, and Water-Level Statistics. The Data Provider section displays the icon for the NGWMN Data Provider. Clicking on the icon will take you to the Data Provider Page for the agency. This page will provide contact information, a description of the agency's networks, a list of NGWMN projects, a link to completed NGWMN reports, sections describing the site selection and classification for the network, and data collection and data management procedures.
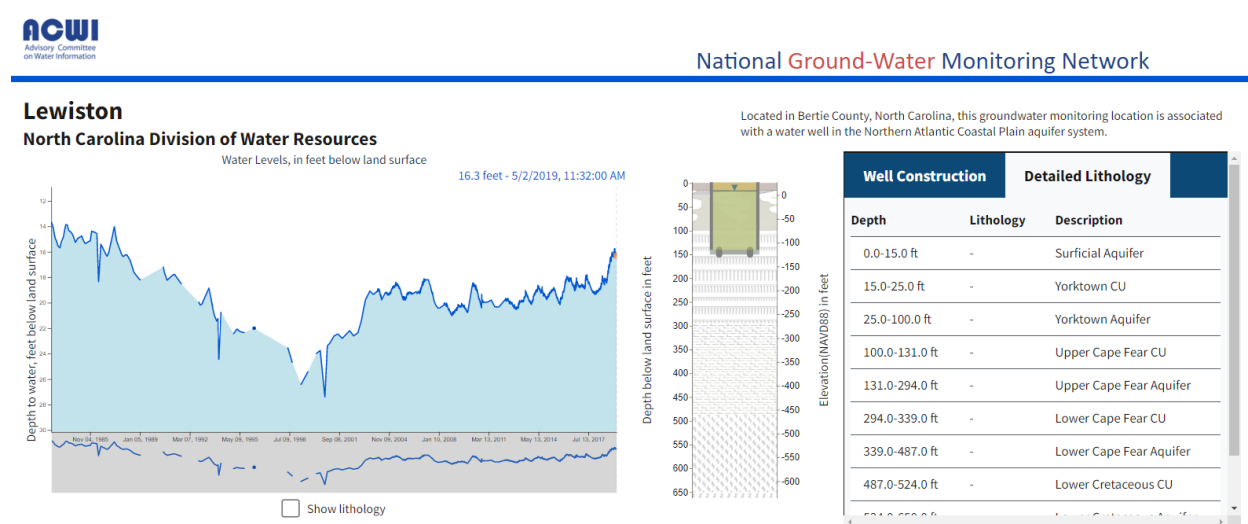
The hydrograph has a pane below it that shows an overview of the time series. Click on the ends of lower pane to move beginning and end of the upper graph to a time period of your choice. Moving the cursor along the hydrograph will display the individual data points in the graph (Depth to water and date/time).

The well graphic and table of well construction lithology data are linked. Select either the Well Construction the or Lithology Tab. Then hovering over a section in the table will show the corresponding unit on the well graphic.

The Summary section displays information about the site and NGWMN specific fields. This includes site name and number, location and other site information, aquifer information, and NGWMN subnetwork settings. The Additional Info link at the end of the table takes you to the agency's data page for the site directly.

Summary

Agency	North Carolina Department of Environmental Quality Division of Water Resources
Site Name	Lewiston
Site Number	H22I6
Site Type	WELL
Lat/Long (NAD83)	36.0516, -77.1947
Well Depth	150 Feet
Elevation (NAVD88)	27.134 ft
Latitude	36.051577
Longitude	-77.194707
Local Aquifer Name	Upper Cape Fear (Kucf)
National Aquifer Name	Northern Atlantic Coastal Plain aquifer system (S100NATLCP)
Aquifer Type	CONFINED
Water-Level Well Type	Trend
Water-Level Well Characteristics	Background
Water Quality Network	water_quality_network
Additional info	Link

Water Quality

Water Levels

Water Level Statistics

The Water-Quality section displays a table of water-quality data available for the site.

Water Quality ▬

Activity Start Date	Activity Start Time	Characteristic Name	Measure Value	Units	Detection Limit	Value Type	Sample Fraction	Method Name	Analytical Method System	Sample Method ID	Sample Method ID Context	Sample Method Name	Activity Type Code	Data Provided By
1999-09-08	00:00:00 EST	Specific Conductance	1024	uS/cm		None	unfiltered	YSI	None	Unknown	NCDWR	YSI	Unknown	NCDWR
1999-09-08	00:00:00 EST	Chloride	20	mg/l	0	None	unfiltered	titration	None	Unknown	NCDWR	YSI	Unknown	NCDWR
1999-09-08	00:00:00 EST	Salinity	0.5	ppth		None	unfiltered	YSI	None	Unknown	NCDWR	YSI	Unknown	NCDWR
2004-09-15	00:00:00 EST	Chloride	Not Detected	mg/l	28	None	unfiltered	titration	None	Unknown	NCDWR	titration	Unknown	NCDWR
2004-09-15	00:00:00 EST	Salinity	0.4	ppth		None	unfiltered	YSI	None	Unknown	NCDWR	titration	Unknown	NCDWR
2004-09-15	00:00:00 EST	Specific Conductance	839	uS/cm		None	unfiltered	YSI	None	Unknown	NCDWR	titration	Unknown	NCDWR
2007-09-24	00:00:00 EST	Chloride	Not Detected	mg/l	31	None	unfiltered	titration	None	Unknown	NCDWR	titration	Unknown	NCDWR
2007-09-24	00:00:00 EST	pH	10.55	None		None	unfiltered	YSI	None	Unknown	NCDWR	titration	Unknown	NCDWR
2007-09-24	00:00:00 EST	Salinity	0.2	ppth		None	unfiltered	YSI	None	Unknown	NCDWR	titration	Unknown	NCDWR

The Water-Level section shows a table of water-level data for the site. It displays the original data as reported by the agency and it's units and accuracy. It also displays the water-level mediated to Depth to Water in feet below land surface and water-level relative to NAVD88. Navigation controls at the bottom of each page allow you to navigate through the data.

Water Levels —

Sample Time	Original Value	Original Unit	Accuracy Value	Accuracy Unit	Data Provided by	Depth to water, feet below land surface	Water level in feet relative to NAVD88
2019-05-02T10:32:00-05:00	16.30	feet	0.01	feet	NCDWR	16.30	10.83
2019-05-02T06:00:00-05:00	16.29	feet	0.01	feet	NCDWR	16.29	10.84
2019-05-01T06:00:00-05:00	16.28	feet	0.01	feet	NCDWR	16.28	10.85
2019-04-30T06:00:00-05:00	16.27	feet	0.01	feet	NCDWR	16.27	10.86
2019-04-29T06:00:00-05:00	16.27	feet	0.01	feet	NCDWR	16.27	10.86
2019-04-28T06:00:00-05:00	16.21	feet	0.01	feet	NCDWR	16.21	10.92

...

2019-04-08T06:00:00-05:00	16.18	feet	0.01	feet	NCDWR	16.18	10.95
2019-04-07T06:00:00-05:00	16.20	feet	0.01	feet	NCDWR	16.20	10.93
2019-04-06T06:00:00-05:00	16.18	feet	0.01	feet	NCDWR	16.18	10.95
2019-04-05T06:00:00-05:00	16.21	feet	0.01	feet	NCDWR	16.21	10.92
2019-04-04T06:00:00-05:00	16.22	feet	0.01	feet	NCDWR	16.22	10.91

The Water-Level Statistics section shows both overall water-level statistics and monthly water-level statistics. Summary statistics include the lowest and highest water levels, the range of measurement dates, the number of measurements, years of records. The most recent water level for the site and the latest percentile for that measurement are also shown. The monthly water-level statistics are calculated using median monthly water-level data for the site. The statistics are not calculated if less than 10 years of data for the month are available. The Latest Percentile in the Summary table shows how the latest water level compares to the overall median water levels for the site for the month the measurement was made. In the example below, the latest value of 16.30 feet below land surface from May 2019 is higher than 82.14 percent of the median monthly water levels from the month of May for the 27 years of measurements from May.

Water Level Statistics   —

Overall Water Level Statistics (Depth to water, feet below land surface)

Lowest Water Level	Median Water Level	Highest Water Level	First Measurement Date	Last Measurement Date	Number of Measurements	Years of Record	Latest Value	Latest Percentile
27.40	19.14	13.65	1983-05-17	2019-05-02	4342	36.0	16.30	82.14

<center>Statistics Calculated 2019-07-17</center>

Monthly Water Level Statistics (Depth to water, feet below land surface)

Month	Lowest Median	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile	Highest Median	Number of Measurements	Years of Record
Jan	24.44	23.18	20.35	18.92	16.25	15.15	14.95	19	19
Feb	22.52	21.28	19.99	19.10	18.22	15.72	14.85	21	21
Mar	23.98	22.26	19.40	18.86	17.39	14.45	14.12	18	18
Apr	26.41	21.83	19.84	18.94	16.72	14.61	13.86	20	20
May	22.61	22.21	19.79	18.82	18.16	13.99	13.65	27	27
Jun	23.75	23.61	20.09	19.04	18.16	14.23	14.07	16	16
Jul	20.24	20.19	19.50	18.73	15.89	14.58	14.40	20	20
Aug	22.60	22.39	20.31	19.24	18.36	15.17	14.42	25	25
Sep	25.44	23.21	20.21	19.57	18.23	15.17	14.67	23	23
Oct	27.40	22.84	20.28	19.64	19.14	16.97	15.53	16	16
Nov	22.80	21.81	20.36	19.50	17.52	15.51	15.14	25	25

The Median Water Levels section shows the median monthly water levels for each month/year of record. These are used to calculate the Monthly Statistics in the table above. Navigation controls at the bottom of each page allow you to navigate through the data.

Year	Month	Median
2001	05	22.61
1995	05	22.27
2002	05	22.20
2009	05	20.33
2008	05	20.03
2013	05	19.88
2011	05	19.79
2012	05	19.78
2003	05	19.74
2004	05	19.58
2006	05	19.31
2010	05	18.97
2015	05	18.96
1993	05	18.86
2014	05	18.79

Data Download Control

The 'Site Selection' list, which slides out from the right side of the map, gives you the ability to control which sites you'd like to download NGWMN data for your selected sites.
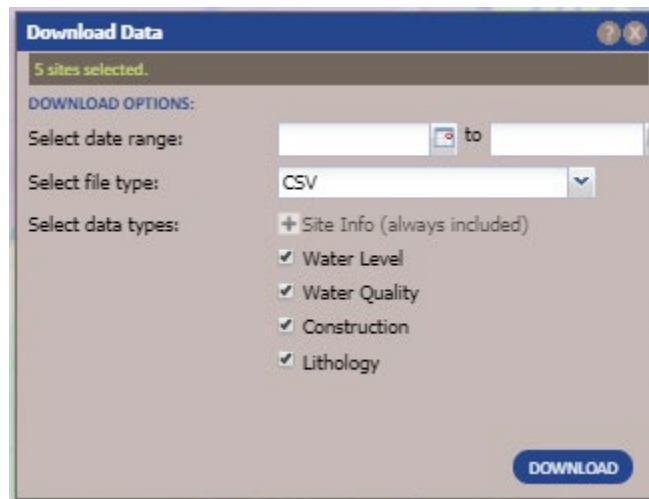
The 'Site Selection' list shows the Agency, Site, Site name, and what data types are available at each site. You can sort the site list by clicking on the column headers. You can individually select sites by clicking the box next to the site or you can select all sites by clicking the box in the upper left corner of the tool. You can select sites that you wish to remove from the download by selecting the sites and clicking the 'Remove Selected' button. The total number of sites selected is shown in the title of the tool.

A list of sites may be saved for easily repeating downloads by clicking 'Save List', copying the site text in the resulting pop-up into another text editing program. Data for these sites may later be downloaded by clicking the 'Upload List' button in the empty 'Site Selection' box and copying the previously saved text in the resulting box.
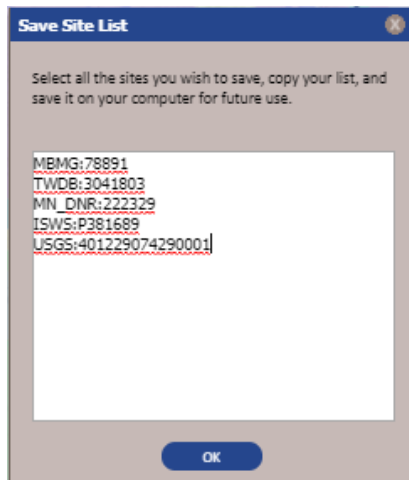
When the site list meets your needs, you can download the available data with the 'Download' button, which pops up a download window:

If you only want data for a specific date range (for water level or water quality data only), you can set a date range in this window; a blank beginning or end is unlimited. You can choose from CSV (comma-separated value) or TSV (tab-separated value) file formats and can choose which data types to download. The download will be a ZIP file holding a separate TSV or CSV file for each selected data type.