

Data Management Plan

Project: NCDWR-NGWMN New Data Provider and Persistent Data Service
Cooperative Agreement G16AC00021
Period 1/1/2016 - 12/31/2016
Award 12039661

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Types of Data

Three primary data types are of concern in this project. These consist of ground water levels, ground water quality analyses, and locational data. At this time, NCDWR provides persistent data to the NGWMN from 85 wells located at 40 state-wide monitoring stations. Principal aquifers monitored by these wells consist of the Surficial aquifer system, Castle Hayne aquifer, Northern Atlantic Coastal Plain aquifer system, Lower Cretaceous aquifers, and Piedmont and Blue Ridge crystalline-rock aquifers.

Water levels are recorded hourly using dedicated Onset Hobo dataloggers. Field technicians download data from the recorders quarterly, make manual water level tape downs, and calibrate the recorders, if necessary.

Water quality data are collected from discrete depth intervals within the aquifer upon well completion and on a two to three year cycle thereafter. Water quality sampling is preceded by purging three well volumes or until field parameters stabilize using a YSI meter. Water quality data consist primarily of pH, salinity, specific conductance, and temperature using a YSI meter, and chloride using Quantab test kits.

Prior to uploading water level and water quality data into NCDWR's portal, data are reviewed. Data meeting NCDWR quality standards are then uploaded to the appropriate database.

Security requirements are set by the Ground Water Monitoring Branch Program Manager and key staff are assigned varying levels of access to input or modify data or services based on program needs and other factors.

Accuracy of locational data will be accomplished using survey grade GPS equipment to determine latitude, longitude, and altitude. Accuracy and geodetic reference systems used by NCDWR are: state plane coordinates and latitude/longitude, <0.05 ft; altitude, <0.1 ft; horizontal datum, NAD83; altitude datum, NAVD88.

Data and Metadata Standards

Data are entered into NCDWR databases or the NGWMN Well Registry. NCDWR enters and stores data in the following databases:

<u>Data Type</u>	<u>Database Tables</u>
Ground Water Levels	gwb.dwr, gwb.dwrwatlev, gwb.dwrwatlevhourly
Ground Water Quality	gwb.dwrchloride
Well Logs	gwb.logs, gwb.logdata, gwb.resstafr
Well Location (Lat/Long/Altitude)	gwb.dwr

The NCDWR ground water monitoring network uses Oracle MySQL Enterprise Edition for database management. Internal database tables are used to maintain database quality control and allow for editing. Water level data meeting NCDWR standards are uploaded to public tables listed above.

Policies for Access and Sharing

All data collected for the project is available through the NGWMN Data Portal without restriction.

Policies and Provisions for Re-Use and Re-Distribution

There is restriction on the use of the data through the portal. Any data obtained through the portal and redistributed is expected to cite the original source of the data as NCDWR through USGS/NGWMN Cooperative Agreement G16AC00021.

Plans for Archiving and Preservation of Access

Paper copies of field forms used to collect data are scanned and stored by NCDWR. These data are included in regular system backups. These data and all databases are backed up at least weekly.