Generalized Water Information System (GWIS) Database Utilities User's Manual

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
December 2018

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Introduction

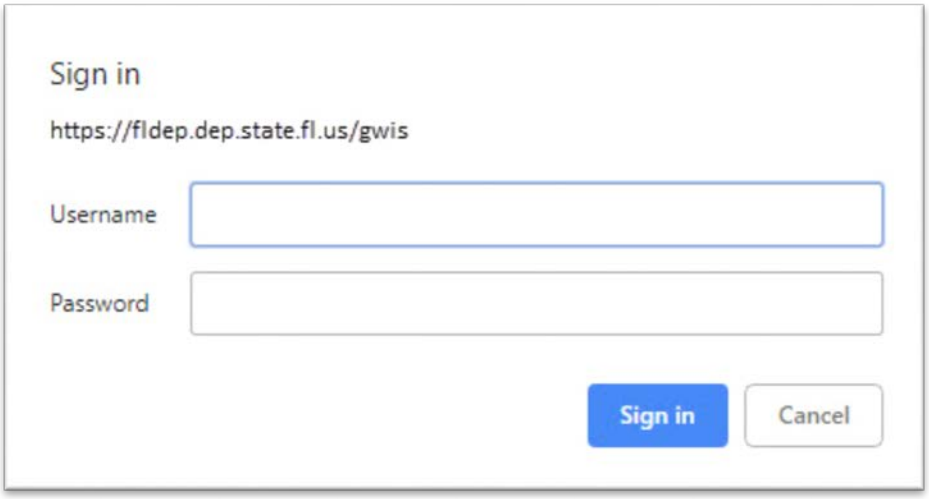
The Florida Department of Environmental Protection's (DEP's) Watershed Monitoring Section (WMS) oversees two statewide water monitoring networks, the Status Network and the Trend Network. In each network, field parameters such as temperature and pH are collected regularly, along with water samples which are analyzed in the laboratory. In the Trend Monitoring Network, the samples are taken from fixed surface and ground water sites, which allows for an assessment of long-term changes in specific waterbodies and wells. In the Status Monitoring Network, the sampling locations are chosen randomly to provide a statistically valid estimate of statewide water conditions.

Status and Trend site data (including locations, water resource types, and owners' contact information) are stored in an Oracle database called GWIS (Generalized Water Information System). An Internet application, GWIS Database Utilities, allows online access to the database. This manual guides users through the Database Utilities application and explains how to use it for site reconnaissance (recon), entering recon tracking data, and updating station information.

Accessing the Database Utilities Application

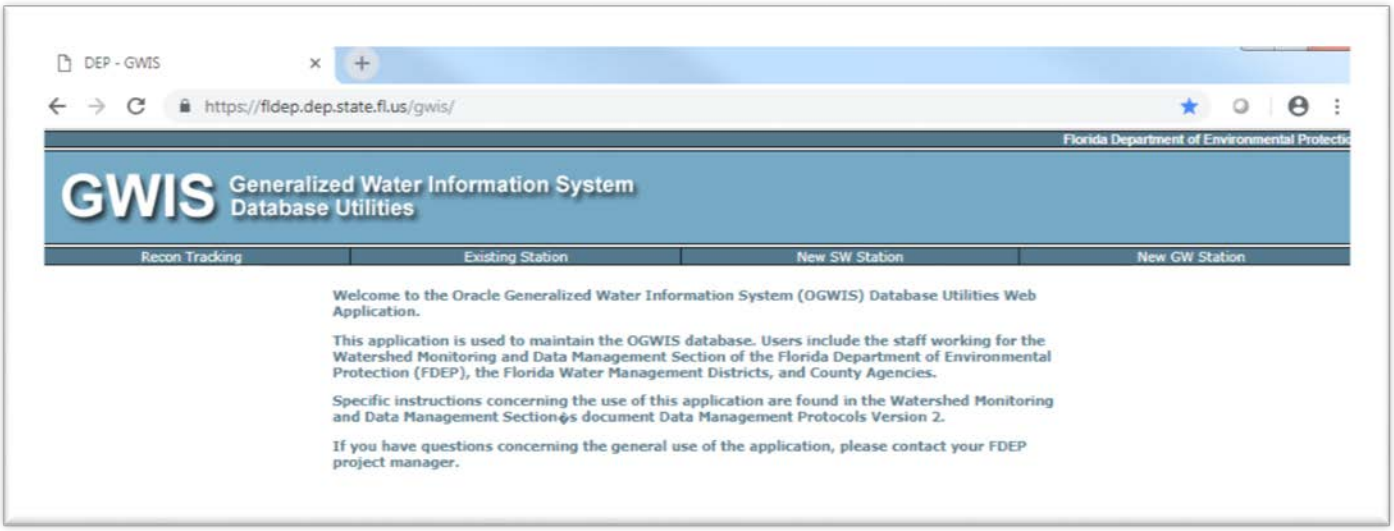
Open Google Chrome and navigate to https://fldep.dep.state.fl.us/gwis/. This application can also be used in Mozilla Firefox, but screenshots and instructions in this document are for Chrome. If prompted, **DEP employees will log in using the same username and password as their Outlook account** (***Figure 1***). Depending on the network configuration, the domain "floridadep\" may need to be entered before the username. Other clients should contact Liz Miller, WMS Data and Analysis Coordinator, at (850) 245-8512 or Elizabeth.Miller@dep.state.fl.us to obtain login credentials. **Any problems or issues with existing data should be reported to Liz Miller.**

Figure 1. Database Utilities login screen



After login is complete, an introductory screen will appear (***Figure 2***).

Figure 2. Welcome page for the Database Utilities application

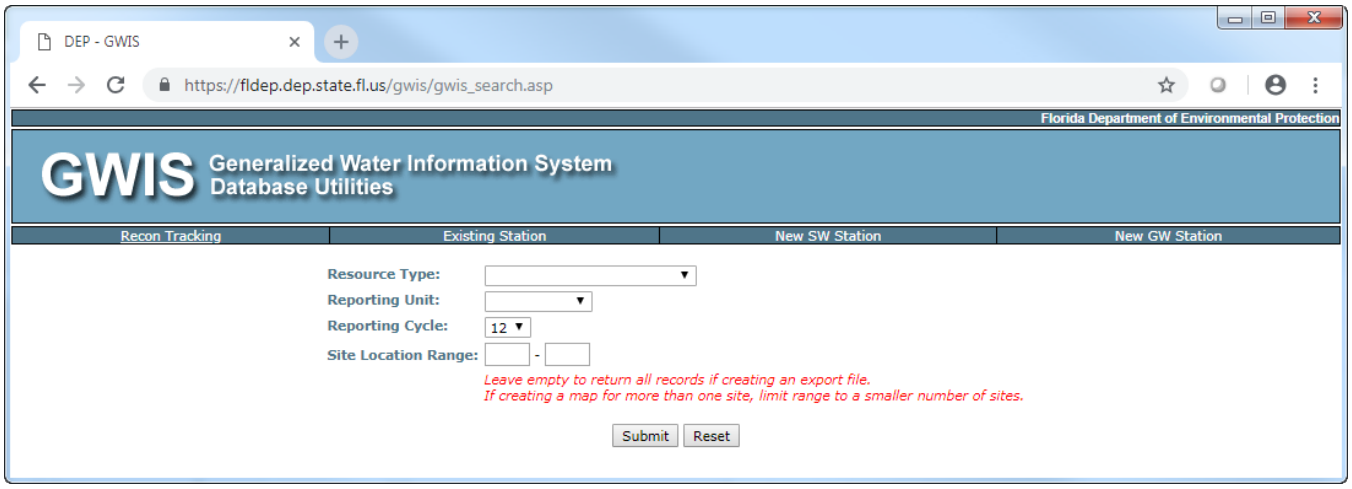


Reconning Sampling Sites

Because the Status Network sampling sites are chosen randomly, it is necessary to conduct reconnaissance ("recon" or "reconning") before collecting samples to ensure that the site is appropriate for sampling. **Recon Tracking** is a feature that allows the user to determine the locations of Status sites, to view aerial imagery and quad maps, and to enter information on whether the site can be sampled. Please see the Status Network Recon Manual at http://publicfiles.dep.state.fl.us/dear/DEARweb/WMS/Reports_Docs_SOPs/Standard%20Operating%20Procedures/Status%20Network%20Recon%20Manual/WMS-ReconManual.pdf for more guidance on conducting recon.

Begin by clicking **Recon Tracking** on the top left. This will bring up a page with several drop-down lists (***Figure 3***).

Figure 3. Recon Tracking drop-down menu page



Select the water Resource Type, Reporting Unit, Reporting Cycle, and (optional) Site Location Range of interest. These parameters are described below.

Resource Types that are currently sampled are:

Unconfined Aquifer
Confined Aquifer
Large Lake
Small Lake
Large River
Small Stream
Canal

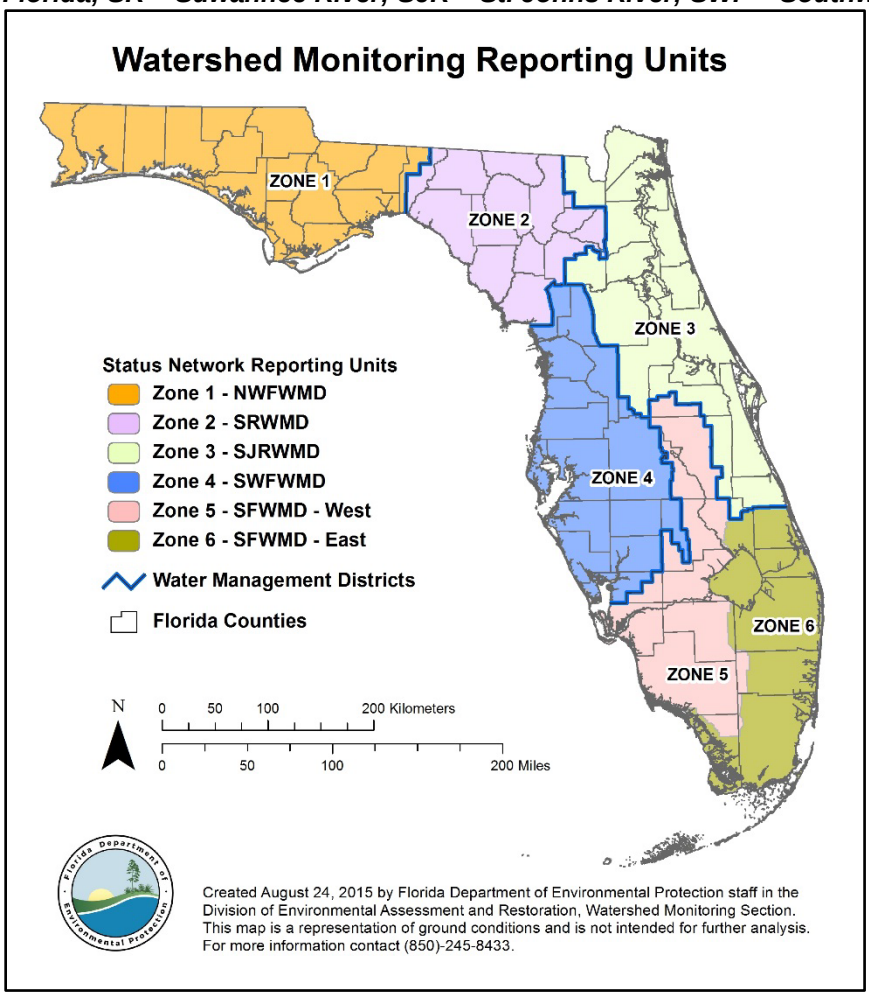
NOTE: The other resource types, such as *spring vent, low-* and *high-order stream,* and *estuary,* are not currently assessed under the Status Network.

Reporting Units are geographical regions of the state (see ***Figure 4***). The valid choices are currently:

Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6

NOTE: The other reporting units, such as *SFWMD-1,* were used in the years 2000-2008.

Figure 4. WMS Reporting Units (zones). The zones are equivalent to the state's five Water Management Districts (WMDs), with South Florida WMD divided into eastern and western zones. NWF = Northwest Florida; SR = Suwannee River; SJR = St. Johns River; SWF = Southwest Florida; and SF = South Florida.



Reporting Cycle refers to the year(s) in which the samples were collected:

Cycle 1: 2000-2003
Cycle 2: 2004-2008
Cycle 3: 2009
Cycle 4: 2010
Cycle 5: 2011
Cycle 6: 2012
Cycle 7: 2013
Cycle 8: 2014
Cycle 9: 2015
Cycle 10: 2016
Cycle 11: 2017 (and so on)

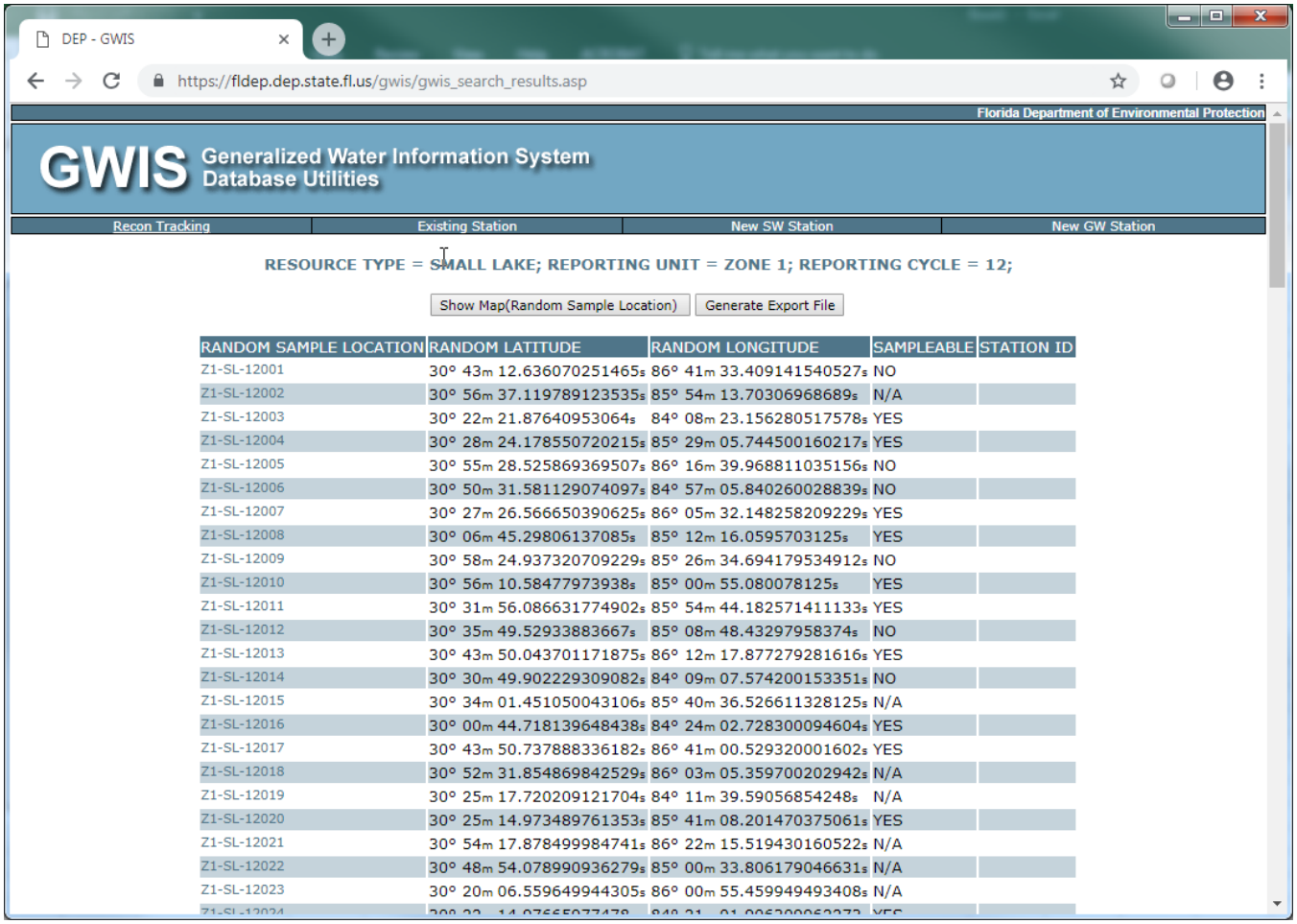
NOTE: The WMS adopted an annual Reporting Cycle in 2009. From 2000-2008, the Reporting Cycles lasted 4-5 years each.

Site Location Range is an optional input that one may enter if interested in a specific site number. If left blank, all Status sites that match the chosen criteria will be listed. Note the instructions in red. If preparing a recon spreadsheet, leave the Site Location Range empty. If creating maps, limit the number of sites to 50 or less. MapDirect cannot map all sites at one time.

Click **Submit** to accept choices and begin reconnaissance. To clear choices and start again, click **Reset**.

The list of Status sites corresponding to the chosen inputs will appear with the sample location, latitude and longitude (***Figure 5***). The "Sampleable" column will be populated with "N/A". This column is updated after the site is reconned. In the example shown below, Resource Type = Small Lake, Reporting Unit = Zone 1, and Reporting Cycle = 12 were chosen, and the Site Location Range was left empty.

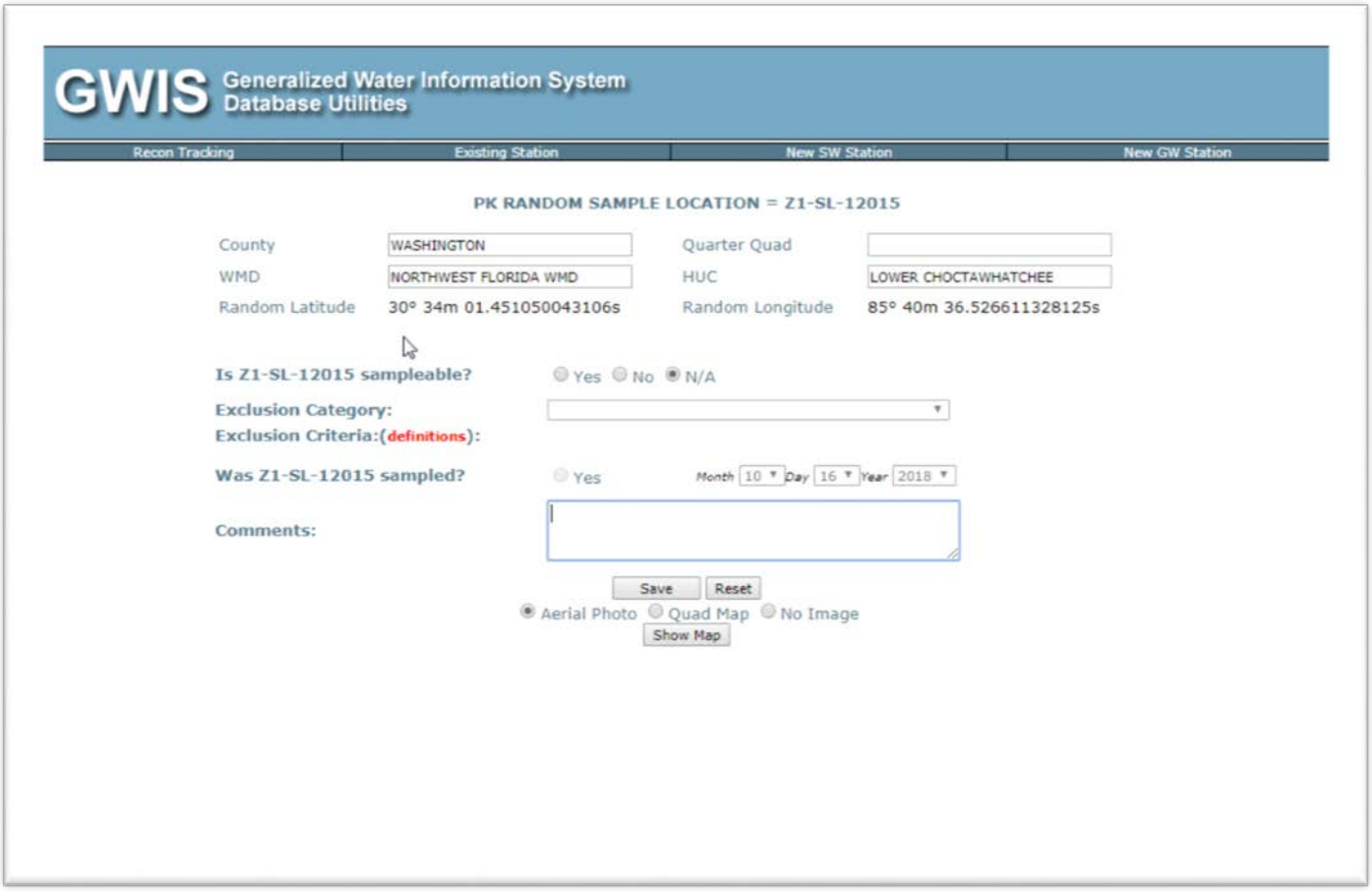
Figure 5. Example list of Status sites to recon



RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z1-SL-12001	30° 43m 12.636070251465s	86° 41m 33.409141540527s	NO	
Z1-SL-12002	30° 56m 37.119789123535s	85° 54m 13.70306968689s	N/A	
Z1-SL-12003	30° 22m 21.87640953064s	84° 08m 23.156280517578s	YES	
Z1-SL-12004	30° 28m 24.178550720215s	85° 29m 05.744500160217s	YES	
Z1-SL-12005	30° 55m 28.525869369507s	86° 16m 39.968811035156s	NO	
Z1-SL-12006	30° 50m 31.581129074097s	84° 57m 05.840260028839s	NO	
Z1-SL-12007	30° 27m 26.566650390625s	86° 05m 32.148258209229s	YES	
Z1-SL-12008	30° 06m 45.29806137085s	85° 12m 16.0595703125s	YES	
Z1-SL-12009	30° 58m 24.937320709229s	85° 26m 34.694179534912s	NO	
Z1-SL-12010	30° 56m 10.58477973938s	85° 00m 55.080078125s	YES	
Z1-SL-12011	30° 31m 56.086631774902s	85° 54m 44.182571411133s	YES	
Z1-SL-12012	30° 35m 49.52933883667s	85° 08m 48.43297958374s	NO	
Z1-SL-12013	30° 43m 50.043701171875s	86° 12m 17.877279281616s	YES	
Z1-SL-12014	30° 30m 49.902229309082s	84° 09m 07.574200153351s	NO	
Z1-SL-12015	30° 34m 01.451050043106s	85° 40m 36.526611328125s	N/A	
Z1-SL-12016	30° 00m 44.718139648438s	84° 24m 02.728300094604s	YES	
Z1-SL-12017	30° 43m 50.737888336182s	86° 41m 00.529320001602s	YES	
Z1-SL-12018	30° 52m 31.854869842529s	86° 03m 05.359700202942s	N/A	
Z1-SL-12019	30° 25m 17.720209121704s	84° 11m 39.5905685424 8s	N/A	
Z1-SL-12020	30° 25m 14.973489761353s	85° 41m 08.201470375061s	YES	
Z1-SL-12021	30° 54m 17.878499984741s	86° 22m 15.519430160522s	N/A	
Z1-SL-12022	30° 48m 54.078990936279s	85° 00m 33.806179046631s	N/A	
Z1-SL-12023	30° 20m 06.559649944305s	86° 00m 55.459949493408s	N/A	

Now, click on the **Random Sample Location** to be reconned (e.g., Z1-SL-12015). A screen with extra information about the site will pop up (***Figure 6***).

Figure 6. Example recon tracking page for a specific site (Z1-SL-12015)

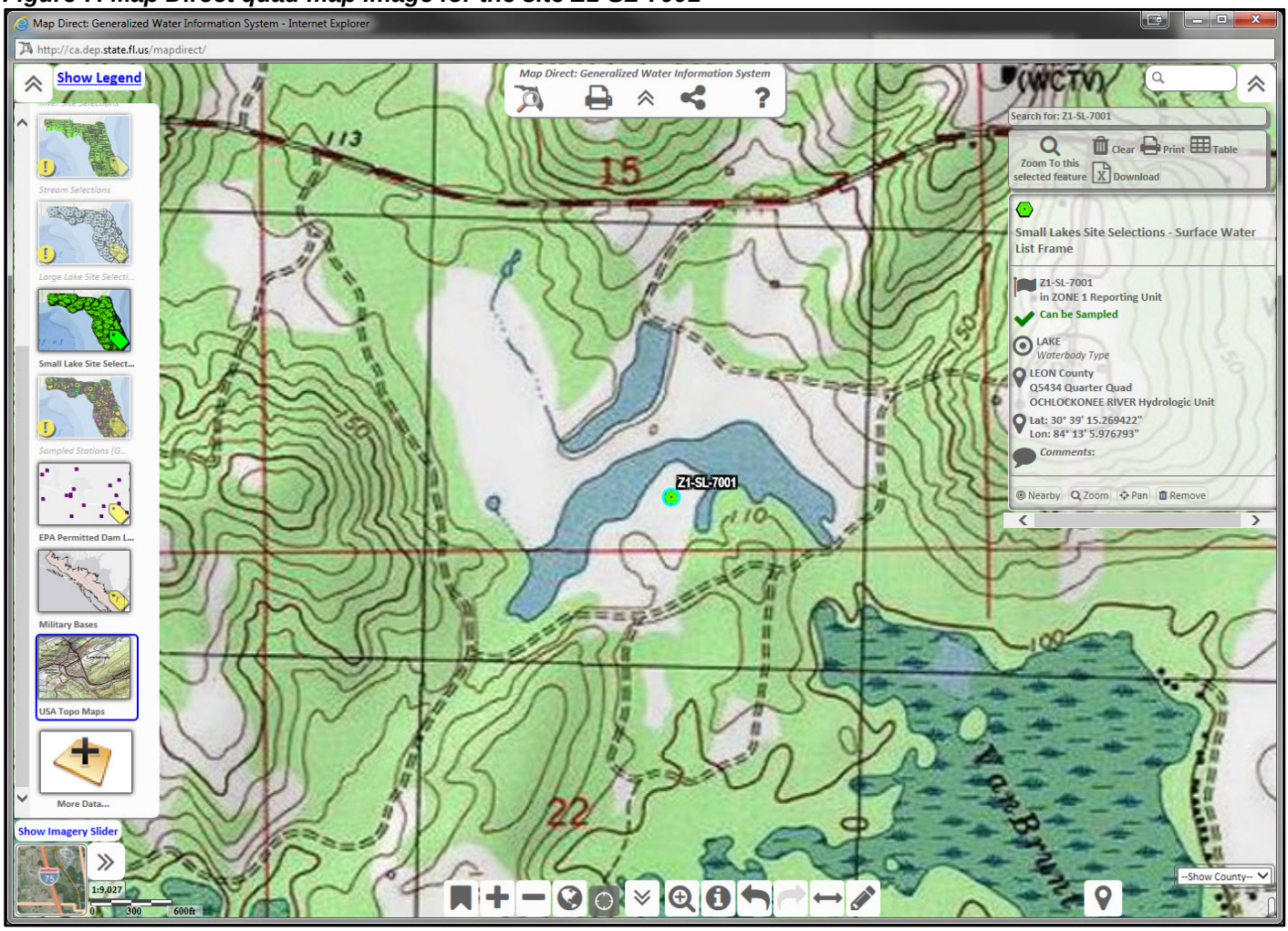


*****Note: If the user clicks on the back arrow, a screen saying that the "Webpage has expired" may show up. Click Refresh and then "Retry" to return to the original screen (*Figure 5*).**

To recon using a map of the site, click **Show Map**. This feature opens the Map Direct Consolidated Application, which has many viewing options. For more information on using Map Direct, refer to https://fldeploc.dep.state.fl.us/appdata/status/SolZ/sampling/mapdirect-handout-sep2018.pdf. The Map Direct Application defaults to displaying a basic topographic map as the background (base map). The user can change the base map using the controls at the bottom left of the screen to view the site on top of an aerial photo or no background image. Users can also display a more detailed Unites States Topographic Map (USA Topo Map) as the base map, or as a map layer using the controls at the top left of the screen. Making the USA Topo Map layer visible is recommended as it provides a first check in determining whether the site is an established/natural reservoir, or if it is manmade. Waterbodies that are manmade should be excluded from sampling. Please refer to the Recon Manual (http://publicfiles.dep.state.fl.us/dear/DEARweb/WMS/Reports_Docs_SOPs/Standard%20Operating%2

0Procedures/Status%20Network%20Recon%20Manual/WMS-ReconManual.pdf) and Sampling Manual (http://publicfiles.dep.state.fl.us/dear/DEARweb/WMS/Reports_Docs_SOPs/Standard%20Operating%20Procedures/Sampling%20Manuals/WMS-SamplingManual.pdf) for examples of exclusions. ***Figure 7*** shows an example quad map image in Map Direct.

Figure 7. Map Direct quad map image for the site Z1-SL-7001



Take note of the tools on the left side of the screen. These tools allow users to click on and off Data Layers and labels, or search for additional data layers to display. The buttons on the bottom of the map allow users to zoom in/out to assist in determining the exact location, and measure the distance to other features, such as access roads or potential pollution sources like wastewater treatment plants. Useful tools at the top of the screen include **Help, Print to PDF, and Map Sharing / Saving**.

Navigation and the icons that appear on the bottom toolbar are explained on the next page. The functions of these can also be accessed by clicking **Help** at the top of the page. The Help menu contains a Map Direct Tutorial and Quick Start guide.

Pan / Zoom using mouse and keyboard (enabled by default): Use the mouse to drag the image up/down or left/right. Zoom in / out by rolling the mouse wheel forward or backward. Zoom in by double clicking on a location or feature on the map, or by holding the shift key and drawing a box using the mouse and left mouse button.


Bookmark tool: Create bookmarks of map views. Return to previously created bookmarks.


Zoom In tool: Magnifies the image.


Zoom Out tool: Increases the map scale (opposite of Zoom In tool).


Zoom to Florida tool: Increases the map scale so that the entire state of Florida is visible.


Zoom to / Track Current Location tool: Displays the user's current location on the map (for use with GPS enabled devices).


Zoom In by Drawing a Box tool: Zooms to a box drawn using the mouse and left mouse button.


Identify tool: Identifies the layer or point.


Go Back tool: Returns to previous map view.


Go Forward tool: Returns to next map view (for use after Go Back tool).

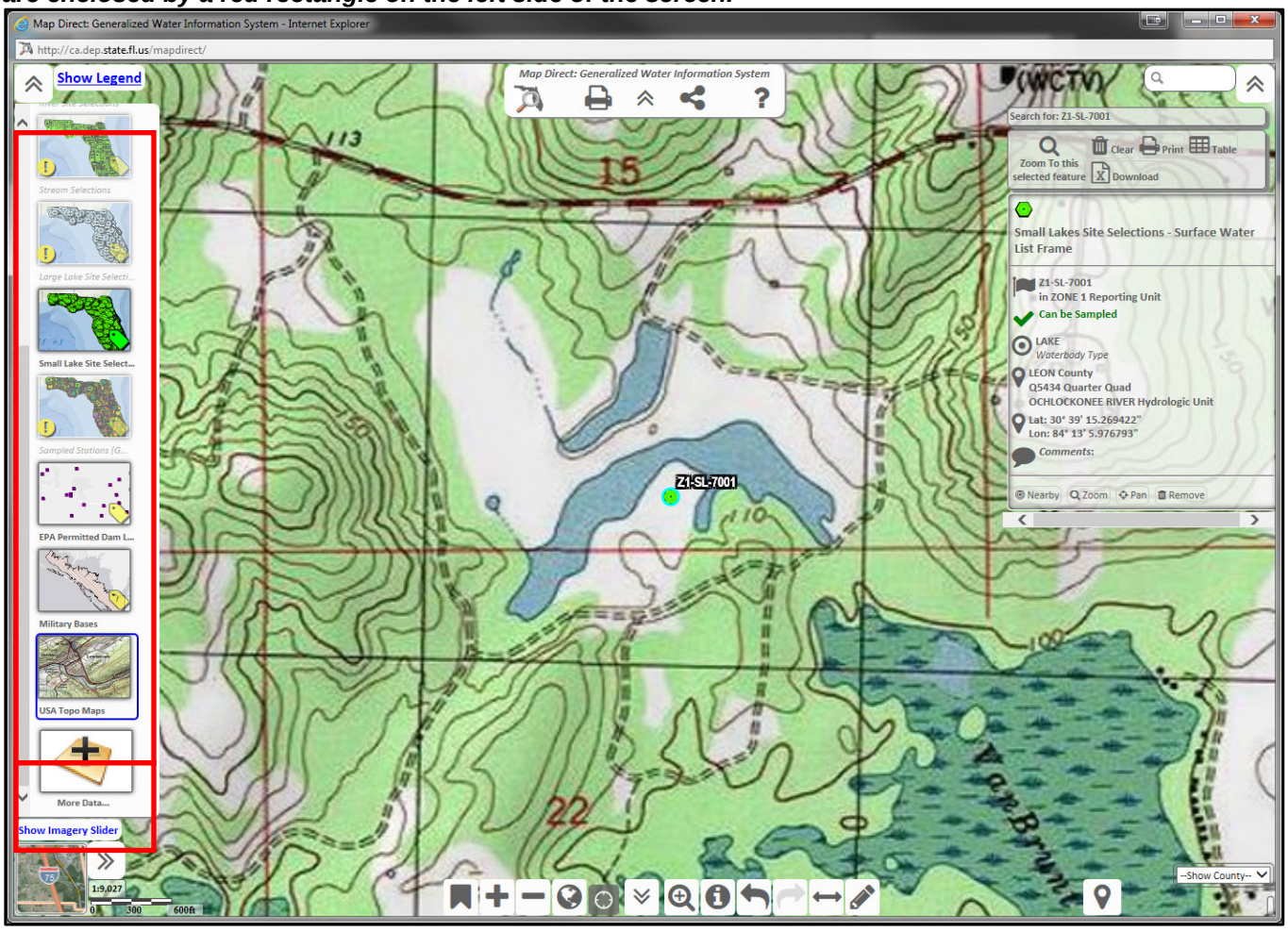

Measure tool: Measures distance and area of lines / polygons drawn by the user.


Draw Graphics tool: Allows user to draw shapes and text boxes on map.

Making Layers Visible

Users can control which layers are displayed by clicking the thumbnails in the **Data Layers** list (***Figure 8***). In addition, users may search for a data layer by clicking **More Data** near the bottom of the list. A commonly used layer is **Cadastral (Property Appraiser Parcels)**, located in the **Quick Topics for GWIS** or **Background Boundaries** categories. Many of the WMS layers can be found by searching for "WMS".

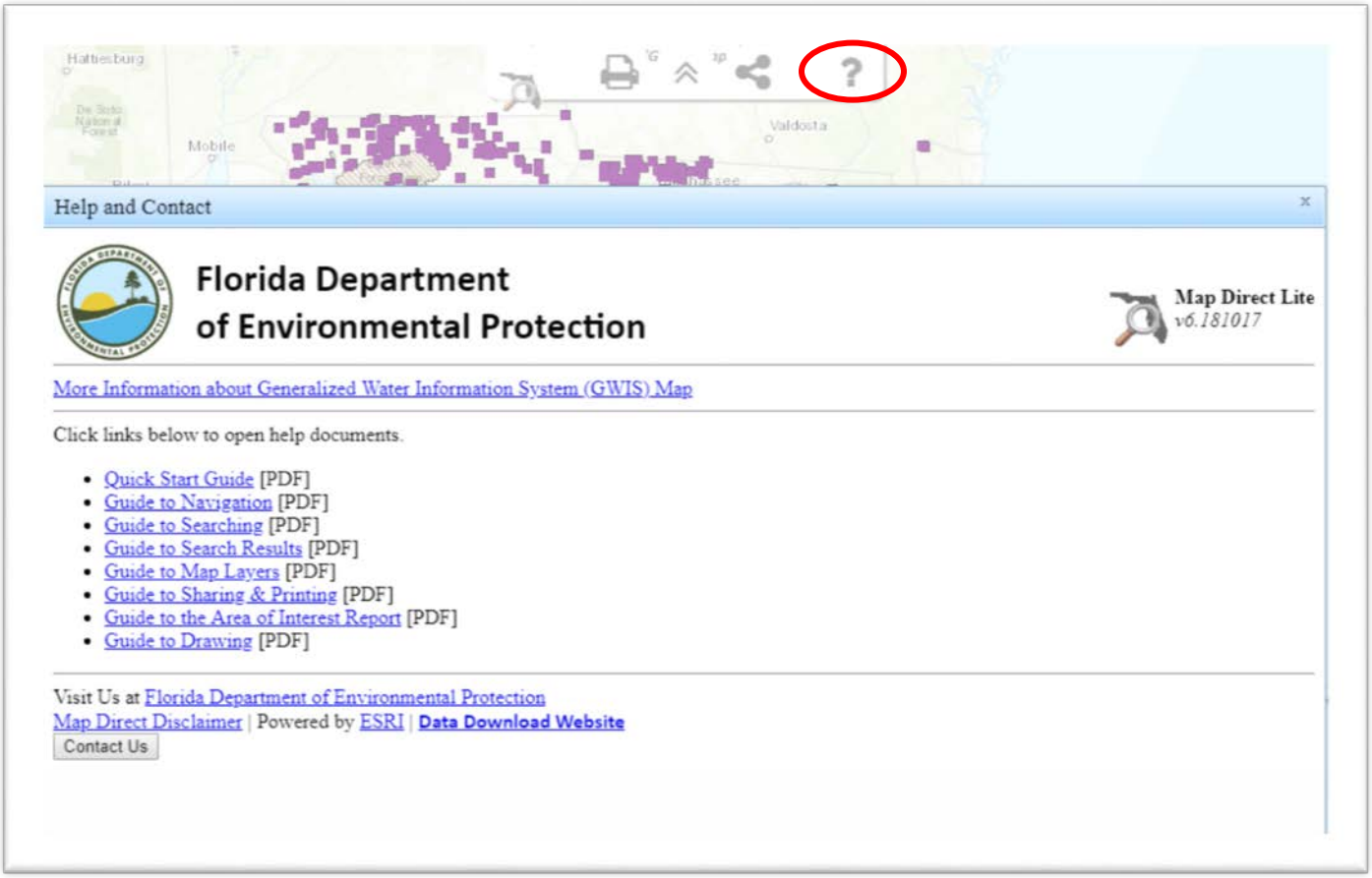
Figure 8. Map Direct Data Layers list and Add Data Layer button. The data layers list and data layer button are enclosed by a red rectangle on the left side of the screen.



Additional Functionality

To fully explore the functionality of Map Direct, click on the **Help** (question mark) icon near the top center of the page (***Figure* 9**). The Help icon will open a window that contains Map Direct Tutorials and a Map Direct Quick Start.

Figure 9. Map Direct Help Icon and Help Topics. The help icon is a grey question mark at the top right of the screen and is circled in red.



Entering Recon Information

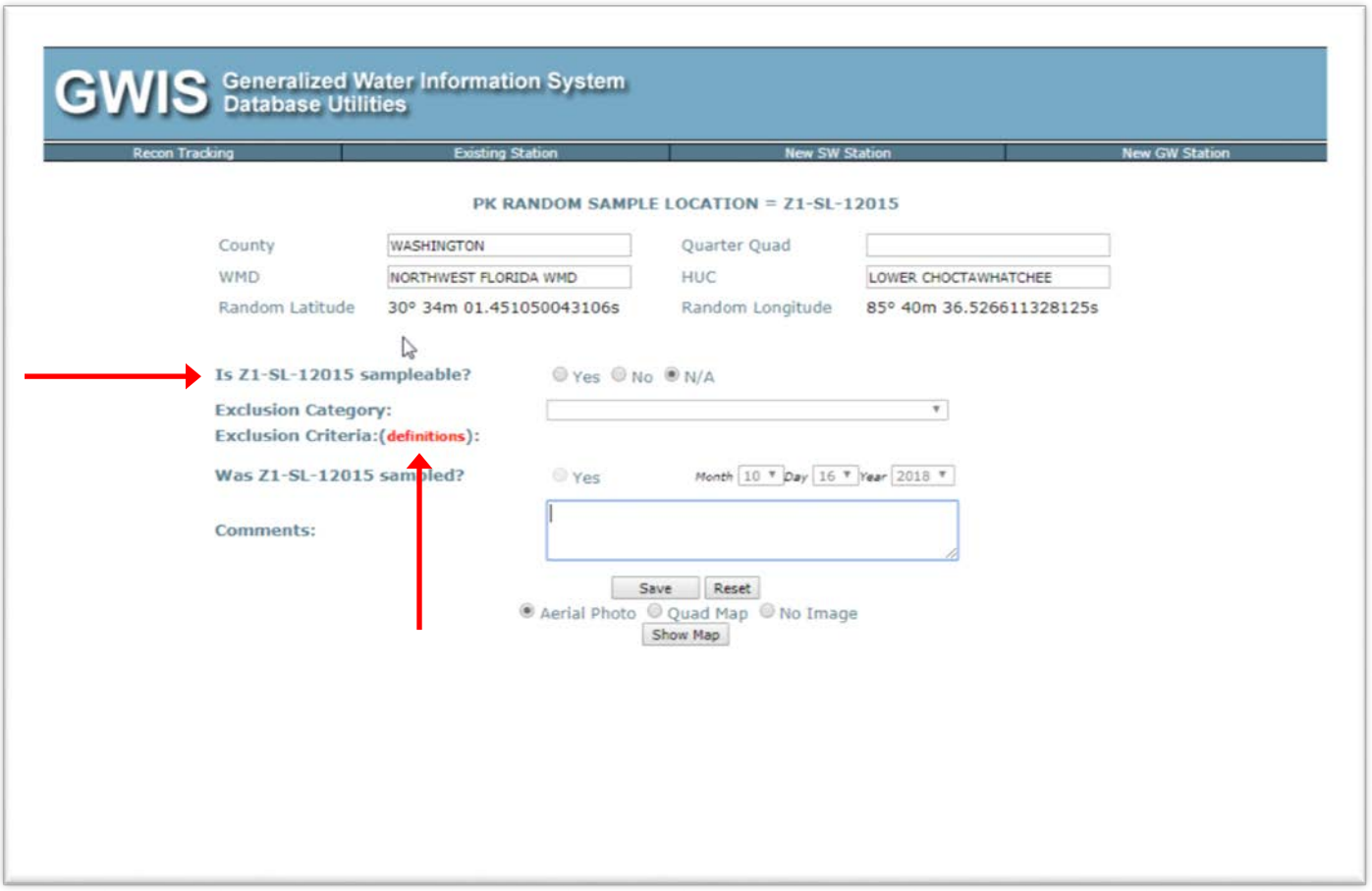
A. Surface Water

After determining whether the site is sampleable, information can be updated in the Database Utilities application. Until a station is reconned, the “Is [the site] sampleable?” field is marked “N/A”.

Case 1: Site is Not Sampleable

If the site is not sampleable, click **No** (***Figure 10***). If a site is marked as unsampleable, a reason must be chosen from the **Exclusion Category** drop-down list. After choosing an Exclusion Category, select the appropriate **Exclusion Criteria**. To ensure that the Exclusion Category and Criterion are correct, click on the word **definitions**.

Figure 10. Example recon tracking page for an unsampleable surface water site. Site Z1-SL-12015 is displayed as an example and is noted with a horizontal red arrow. The link for definitions of Exclusion Category and Exclusion Criteria is in red text and is noted with a vertical red arrow.



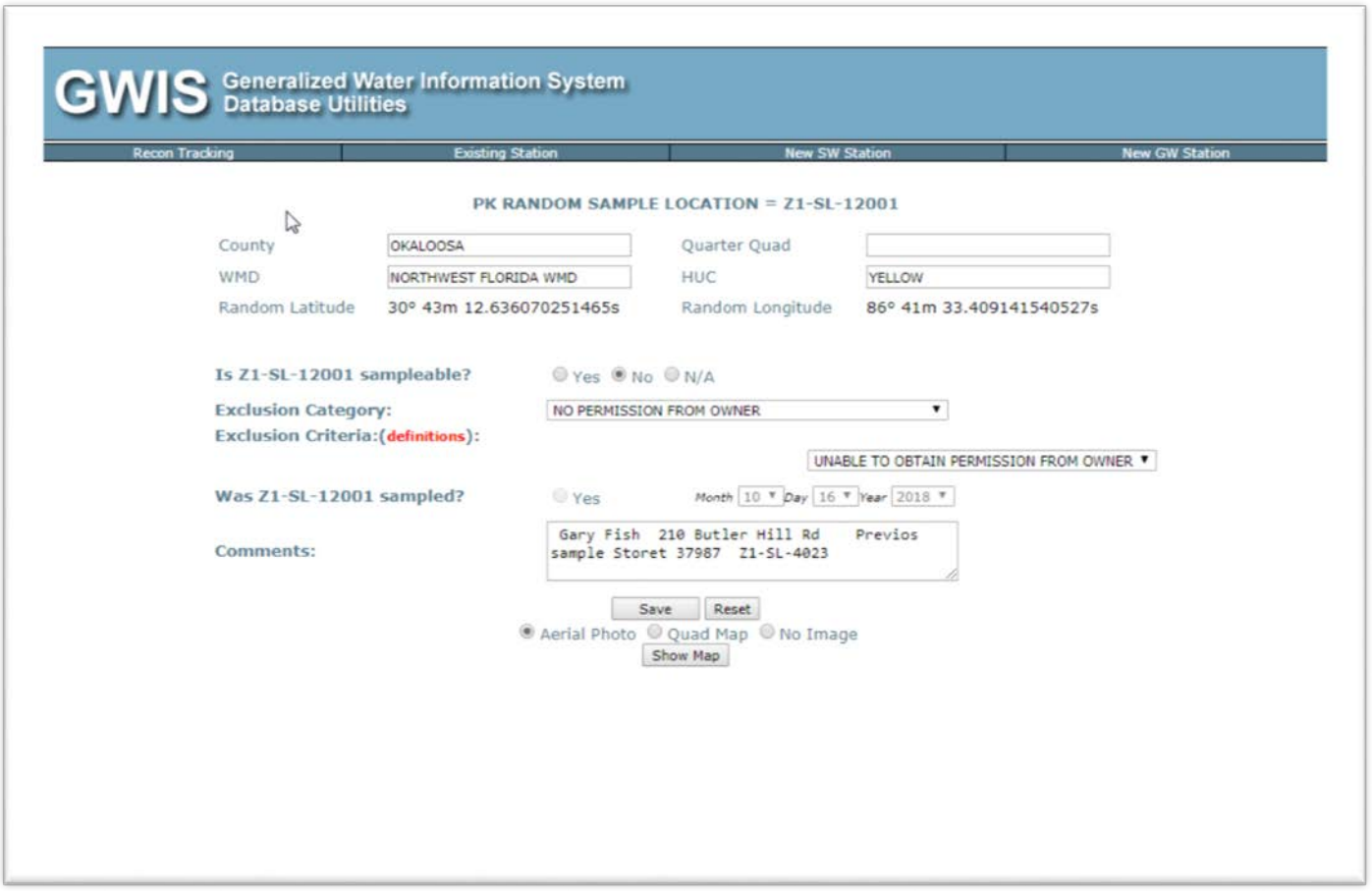
A list of surface/ground water exclusion categories and criteria pops up (Table 1. Surface Water Exclusion Criteria and Definitions). Please see the WMS Sampling Manual for the most up-to-date exclusions list.

Table 1. Surface Water Exclusion Criteria and Definitions. This is a two-column table with Exclusion Category in the first column and the associated Exclusion Criteria in the second column.

EXCLUSION CATEGORY	EXCLUSION CRITERIA
DRY	SMALL LAKE OR LARGE LAKE < 1 METER AT DEEPEST POINT
DRY	DRY DURING INDEX PERIOD, INCLUDES SMALL LAKE WATER < 4 HECTARES LARGE LAKE WATER < 10 HECTARES
DRY	STREAM/RIVER/CANAL FLOW POOLED AND DISCONNECTED AT RANDOM LOCATION
DRY	RANDOM LOCATION LESS THAN 10 CM DEEP
NO PERMISSION FROM OWNER	ACCESS DENIED BY PROPERTY OWNER
NO PERMISSION FROM OWNER	UNABLE TO OBTAIN PERMISSION FROM OWNER
OTHERWISE UNSAMPLEABLE	FLOOD CONDITIONS (FLOW OUT OF BANKS) AT STREAM/RIVER/CANAL RANDOM LOCATION
OTHERWISE UNSAMPLEABLE	UNSAFE SAMPLING CONDITIONS
OTHERWISE UNSAMPLEABLE	OPEN WATER IN LAKE LESS THAN 0.1 HECTARE
OTHERWISE UNSAMPLEABLE	LESS THAN 0.5 SQUARE METERS FREE OF ATTACHED VEGETATION AT SAMPLING POINT
UNABLE TO ACCESS	NO OPEN WATER AVAILABLE AT LAKE SAMPLING POINT
UNABLE TO ACCESS	UNABLE TO REACH RANDOM LOCATION WITHIN THREE HOURS FROM ACCESS POINT
UNABLE TO ACCESS	UNABLE TO GET EQUIPMENT TO RANDOM LOCATION (SAMPLER CANNOT GET NECESSARY SAMPLING EQUIPMENT TO SITE)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ARTIFICIALLY CREATED LAKE OTHER THAN ESTABLISHED IMPOUNDMENTS
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STORMWATER TREATMENT AREAS
WRONG RESOURCE/NOT PART OF TARGET POPULATION	WETLANDS
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ROADSIDE BORROW PIT
WRONG RESOURCE/NOT PART OF TARGET POPULATION	CURRENT OR HISTORIC MINING OPERATION WITHOUT RESTORATION
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STREAM/RIVER ARTIFICIALLY ALTERED WITH LOSS OF SINUOSITY AND BOX CUT BANKS (NOT A PRIMARY CANAL)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ARTIFICIAL LAKE, LAGOON, OR POND USED FOR AGRICULTURAL OR AQUACULTURE OPERATIONS
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ESTABLISHED LAKE SIZE IS < 4 HECTARES, VIA BEST PROFESSIONAL JUDGEMENT, (NOT “DRY”)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	GIS COVERAGE INCORRECT, WATERBODY NOT PRESENT AT RANDOM LOCATION
WRONG RESOURCE/NOT PART OF TARGET POPULATION	WATERBODY WITHIN FDEP PERMITTED FACILITY BOUNDARY
WRONG RESOURCE/NOT PART OF TARGET POPULATION	RANDOM LOCATION LIES AT OUTFALL OF FDEP PERMITTED FACILITY (SITE LIES AT THE OUTFALL POINT OF EFFLUENT OR IN MIXING ZONE)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	RANDOM LOCATION FALLS OUTSIDE REPORTING ZONE
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ESTUARY
WRONG RESOURCE/NOT PART OF TARGET POPULATION	CHANGING RESOURCE TYPE (INCLUDING RESTORATION AREAS) (RESOURCE TYPE WILL DEFINITELY CHANGE PRIOR TO SCHEDULED SAMPLING. EXAMPLE: IMPOUNDMENT OF A FORMER RIVER TO FORM A LAKE.)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STREAM SEGMENT IS NOT CONNECTED TO WATERS OF THE STATE
WRONG RESOURCE/NOT PART OF TARGET POPULATION	DRAINAGE/IRRIGATION DITCH INCLUDED IN PRIMARY CANAL COVERAGE

After entering the Exclusion Category and Criterion, please add a short statement to the **Comments** field describing why the site was excluded. Include the word “field” or “office” to denote the type of recon completed, as well as the name of the person performing the recon and the date (***Figure 11***). Questions should be directed to the appropriate WMS contact.

Figure 11. Example of a completed Recon Tracking page for an unsampleable surface water station. Site Z1-SL-12001 is displayed as an example.



Click **Save** to record the information or **Reset** to clear edits and begin again.

NOTE: If “No” was entered for the question, “Is [the site] sampleable?”, the recon information cannot be saved without entering the Exclusion Category and Criteria.

Case 2: Site is Sampleable

If the recon indicates that the site can be sampled, click **Yes**. After the site has been sampled, be sure to update the sampling date (it defaults to the current date), and add any pertinent comments at this time. Click **Save** to record edits.

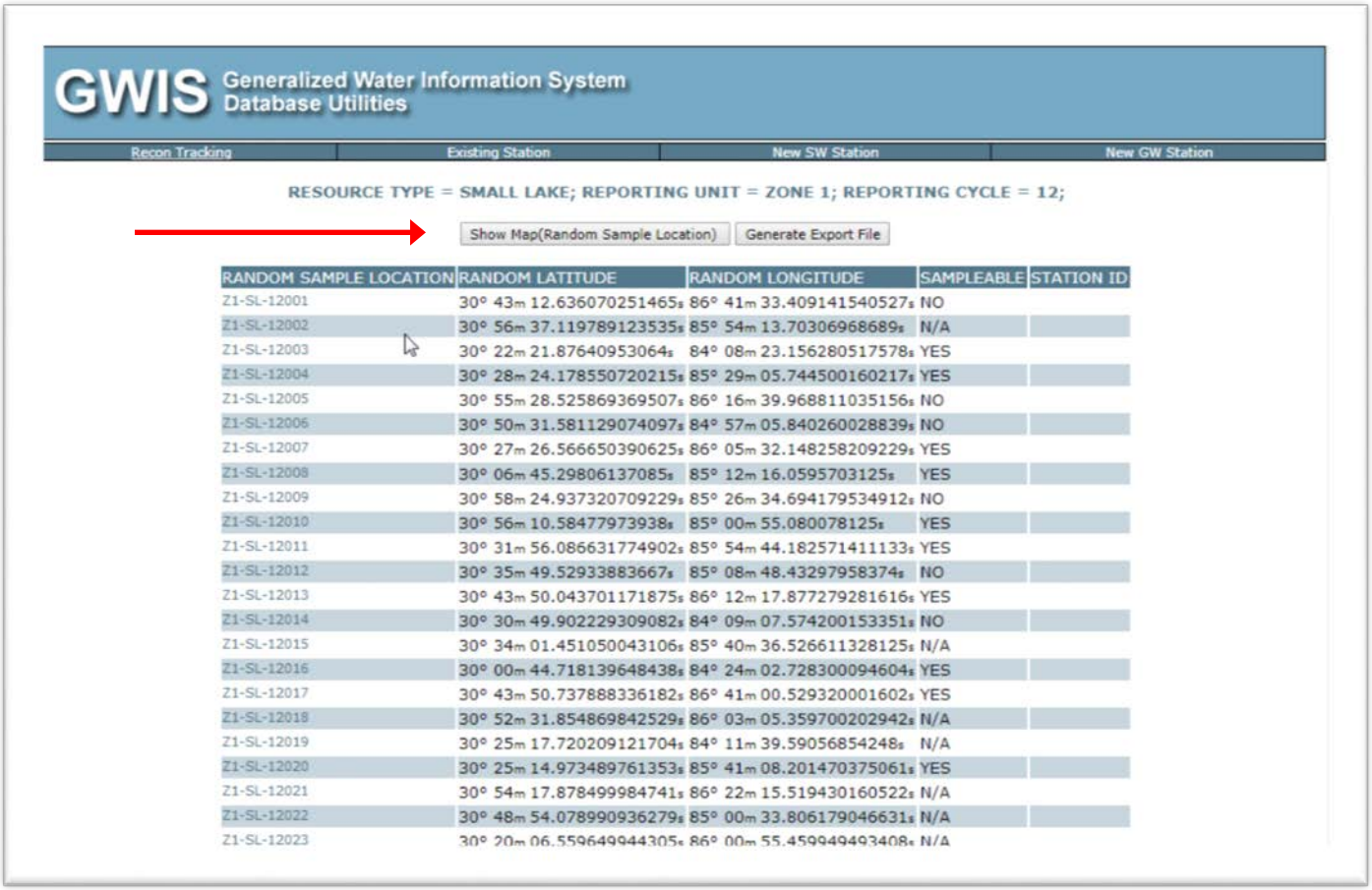
B. Ground Water

When Confined Aquifer or Unconfined Aquifer are selected as the Resource Type, a list of wells that were selected as candidates for sampling will appear. To recon a ground water station, click **Show Map** at the bottom of the station screen, and review as you would for surface water. The Recon Manual provides more details and examples. Be sure to click **Save** to record edits.

Viewing Sampling Sites in a Reporting Unit

Another feature of the Database Utilities Map Direct application is the ability to view current site selections along with previously sampled sites. If a waterbody/well was sampled in the past, this may provide evidence that it is sampleable during the current Cycle. To view the past and present sites, go to the list of random sampling sites and click **Show Map (Random Sample Location)** (***Figure 12***). Remember that all 150 surface water or 200 ground water sites cannot be mapped at one time. Limit the list of sites to 50 or less sites for mapping purpose.

Figure 12. Example list of Status Zone 1 small lake sites to recon with the 'Show Map (Random Sample Location)' button indicated by a horizontal red arrow.



RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z1-SL-12001	30° 43m 12.636070251465s	86° 41m 33.409141540527s	NO	
Z1-SL-12002	30° 56m 37.119789123535s	85° 54m 13.70306968689s	N/A	
Z1-SL-12003	30° 22m 21.87640953064s	84° 08m 23.156280517578s	YES	
Z1-SL-12004	30° 28m 24.178550720215s	85° 29m 05.744500160217s	YES	
Z1-SL-12005	30° 55m 28.525869369507s	86° 16m 39.968811035156s	NO	
Z1-SL-12006	30° 50m 31.581129074097s	84° 57m 05.840260028839s	NO	
Z1-SL-12007	30° 27m 26.566650390625s	86° 05m 32.148258209229s	YES	
Z1-SL-12008	30° 06m 45.29806137085s	85° 12m 16.0595703125s	YES	
Z1-SL-12009	30° 58m 24.937320709229s	85° 26m 34.694179534912s	NO	
Z1-SL-12010	30° 56m 10.58477973938s	85° 00m 55.080078125s	YES	
Z1-SL-12011	30° 31m 56.086631774902s	85° 54m 44.182571411133s	YES	
Z1-SL-12012	30° 35m 49.52933883667s	85° 08m 48.43297958374s	NO	
Z1-SL-12013	30° 43m 50.043701171875s	86° 12m 17.877279281616s	YES	
Z1-SL-12014	30° 30m 49.902229309082s	84° 09m 07.574200153351s	NO	
Z1-SL-12015	30° 34m 01.451050043106s	85° 40m 36.526611328125s	N/A	
Z1-SL-12016	30° 00m 44.718139648438s	84° 24m 02.728300094604s	YES	
Z1-SL-12017	30° 43m 50.737888336182s	86° 41m 00.529320001602s	YES	
Z1-SL-12018	30° 52m 31.854869842529s	86° 03m 05.359700202942s	N/A	
Z1-SL-12019	30° 25m 17.720209121704s	84° 11m 39.59056854248s	N/A	
Z1-SL-12020	30° 25m 14.973489761353s	85° 41m 08.201470375061s	YES	
Z1-SL-12021	30° 54m 17.878499984741s	86° 22m 15.519430160522s	N/A	
Z1-SL-12022	30° 48m 54.078990936279s	85° 00m 33.806179046631s	N/A	
Z1-SL-12023	30° 20m 06.559649944305s	86° 00m 55.459949493408s	N/A	

A map appears showing the random sites listed above, along with the past sampling sites from *all* water resources. The current site selections will appear with their labels turned on by default. Different

symbols are used for each resource. The symbols will be surrounded by hollow blue circles when selected (***Figure 13***). Upon zooming in, one can see the past sampling points for all resources in the Reporting Unit. If the past sampling points are not displayed, click the "Sampled Stations" layer button on the left side to make them visible. To view the legend for all visible layers, click the "Show Legend" button in the top left corner (***Figure 14***). The "Sampled Stations" layer includes sites that were sampled under the Status Network, Trend Network, and/or the now-discontinued Background / Very Intense Study Area (VISA) Networks. To display information about a site, click the Identify Point icon  , and then click on the symbol for that site.

Figure 13. Results of clicking the Show Map (Random Sample Location) button. In this case the inputs were: Resource Type= Small Lake, Reporting Unit = Zone 1, and Reporting Cycle = 7.

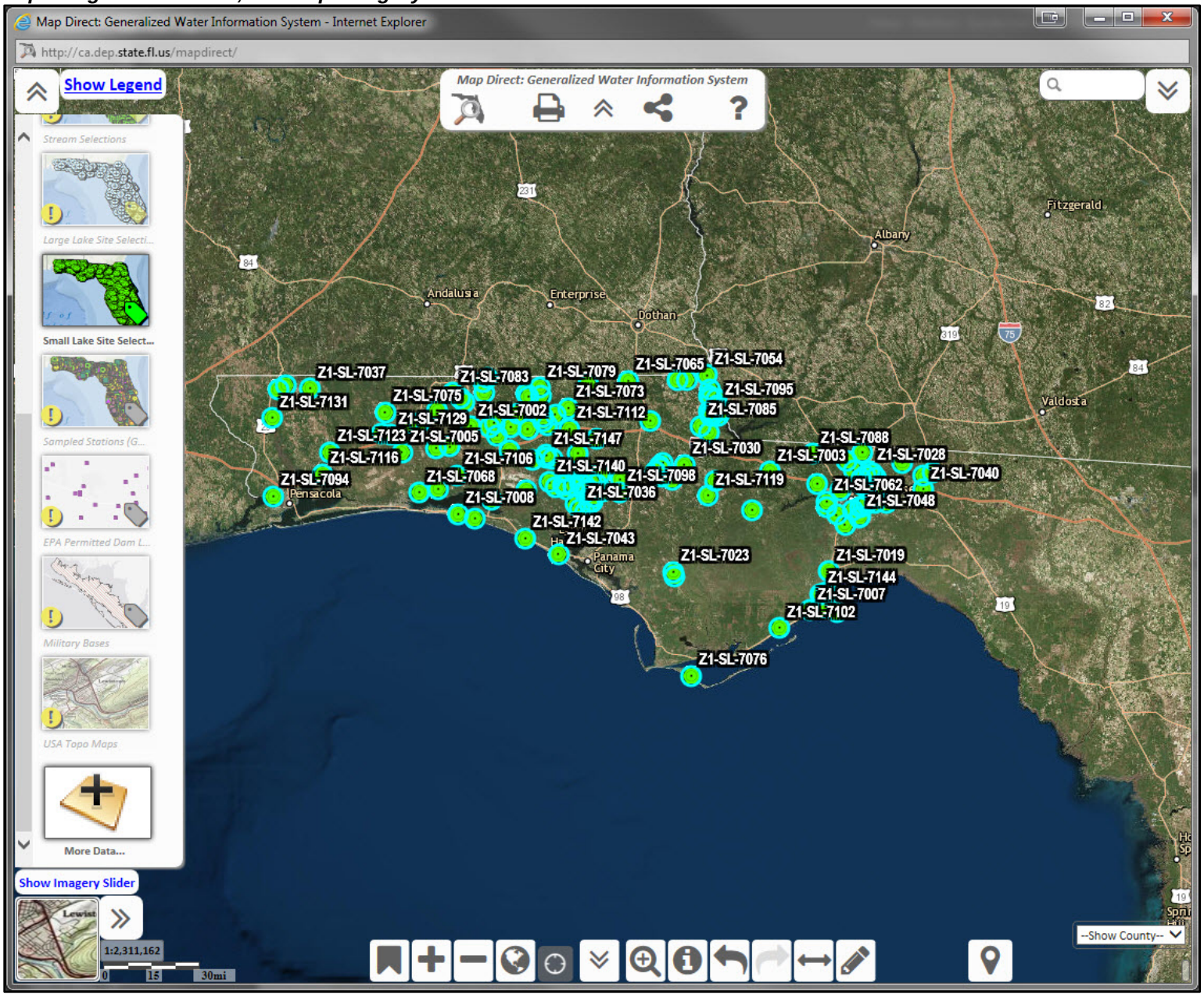
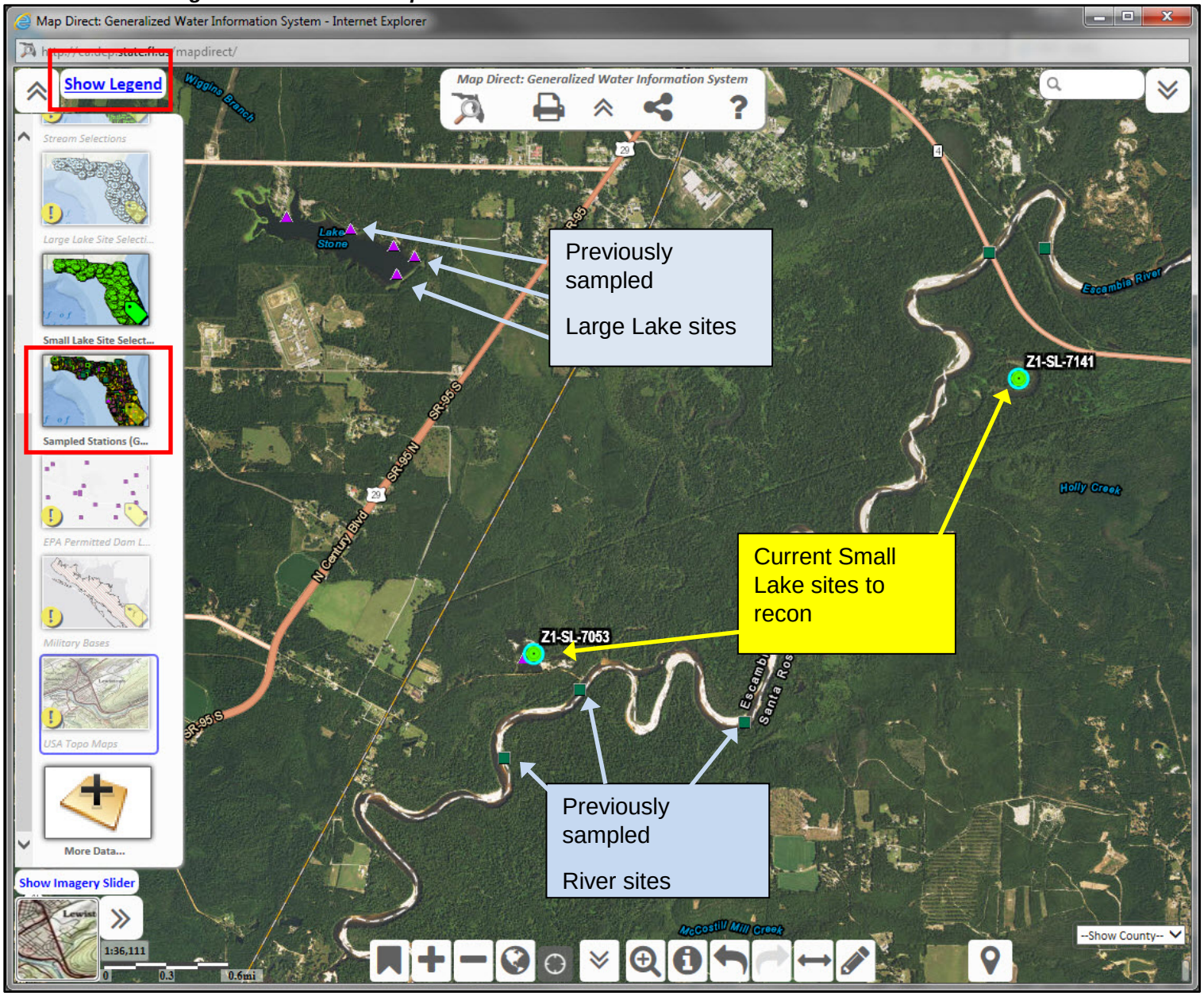


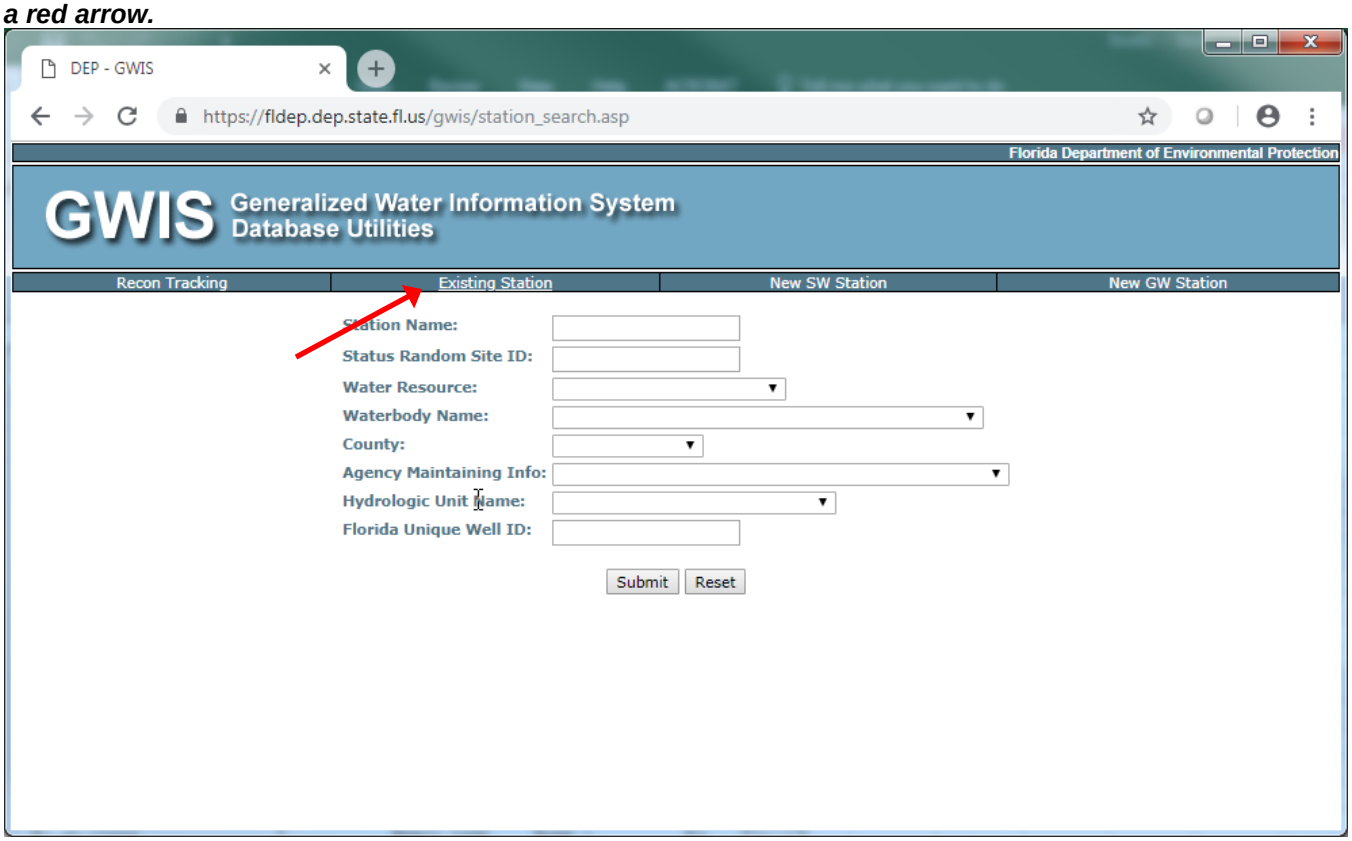
Figure 14. Zoom-in of the previous figure. Cycle 7 Small Lake selections are indicated with blue circles and site names (e.g., Z1-SL-7053). To display historical sites from all resources, click the "Sampled Stations" layer button on the left side. To view the legend for all visible layers, click the "Show Legend" button in the top left corner.



Updating Existing Station Information

Periodically, some of the data for a station may change (e.g., ownership of a well or phone numbers may change). Updates to reflect these changes should be made in a timely manner[1] by either the WMS contact (See Contacts, page 31) or the contracted sampling agency. To update information in the Database Utilities, click on **Existing Station** (***Figure 15***).

Figure 15. Click Existing Station to view or modify station information. Existing Station link is indicated by a red arrow.

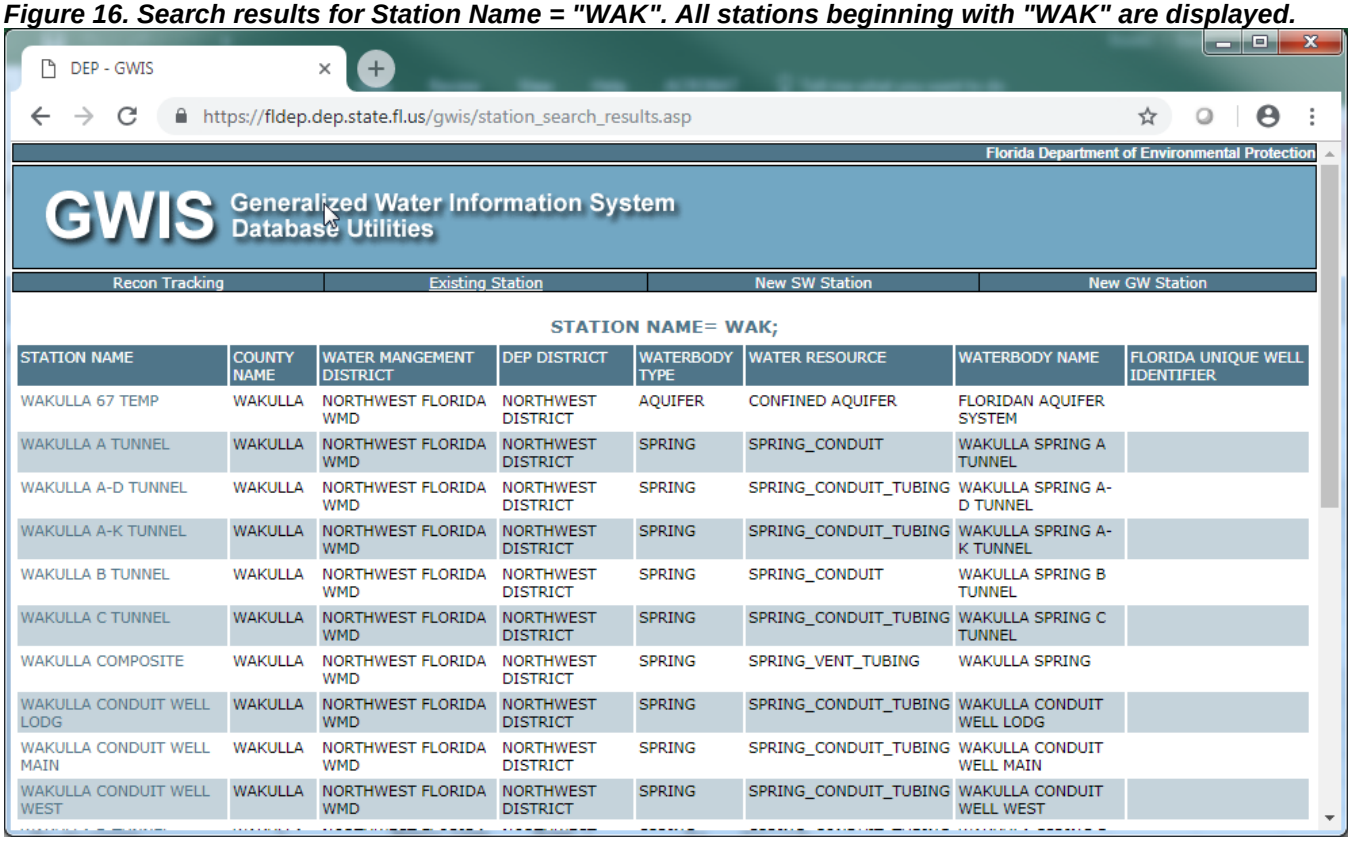


There are several options for accessing site information:

1. If the station name is known, enter it into the **Station Name** field and click **Submit**. A list of stations with similar names will be shown. Click on the appropriate station name.
2. If the first letters or numbers of the Station Name but not the entire name is known, leave the rest of the field blank and the application will search for all stations with the beginning characters identified.
3. As an alternative, select a Water Resource, County, FLUWID number, etc., to search for the site. Click **Submit**, and a list will show up as seen in ***Figure 16***.

[1] Ideally, this should be after the Lab and Field data are combined and made available for review, but before the data are released.

Figure 16. Search results for Station Name = "WAK". All stations beginning with "WAK" are displayed.



STATION NAME	COUNTY NAME	WATER MANGEMENT DISTRICT	DEP DISTRICT	WATERBODY TYPE	WATER RESOURCE	WATERBODY NAME	FLORIDA UNIQUE WELL IDENTIFIER
WAKULLA 67 TEMP	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	AQUIFER	CONFINED AQUIFER	FLORIDAN AQUIFER SYSTEM	
WAKULLA A TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT	WAKULLA SPRING A TUNNEL	
WAKULLA A-D TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING A-D TUNNEL	
WAKULLA A-K TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING A-K TUNNEL	
WAKULLA B TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT	WAKULLA SPRING B TUNNEL	
WAKULLA C TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING C TUNNEL	
WAKULLA COMPOSITE	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_VENT_TUBING	WAKULLA SPRING	
WAKULLA CONDUIT WELL LODG	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA CONDUIT WELL LODG	
WAKULLA CONDUIT WELL MAIN	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA CONDUIT WELL MAIN	
WAKULLA CONDUIT WELL WEST	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT	SPRING	SPRING_CONDUIT_TUBING	WAKULLA CONDUIT WELL WEST	

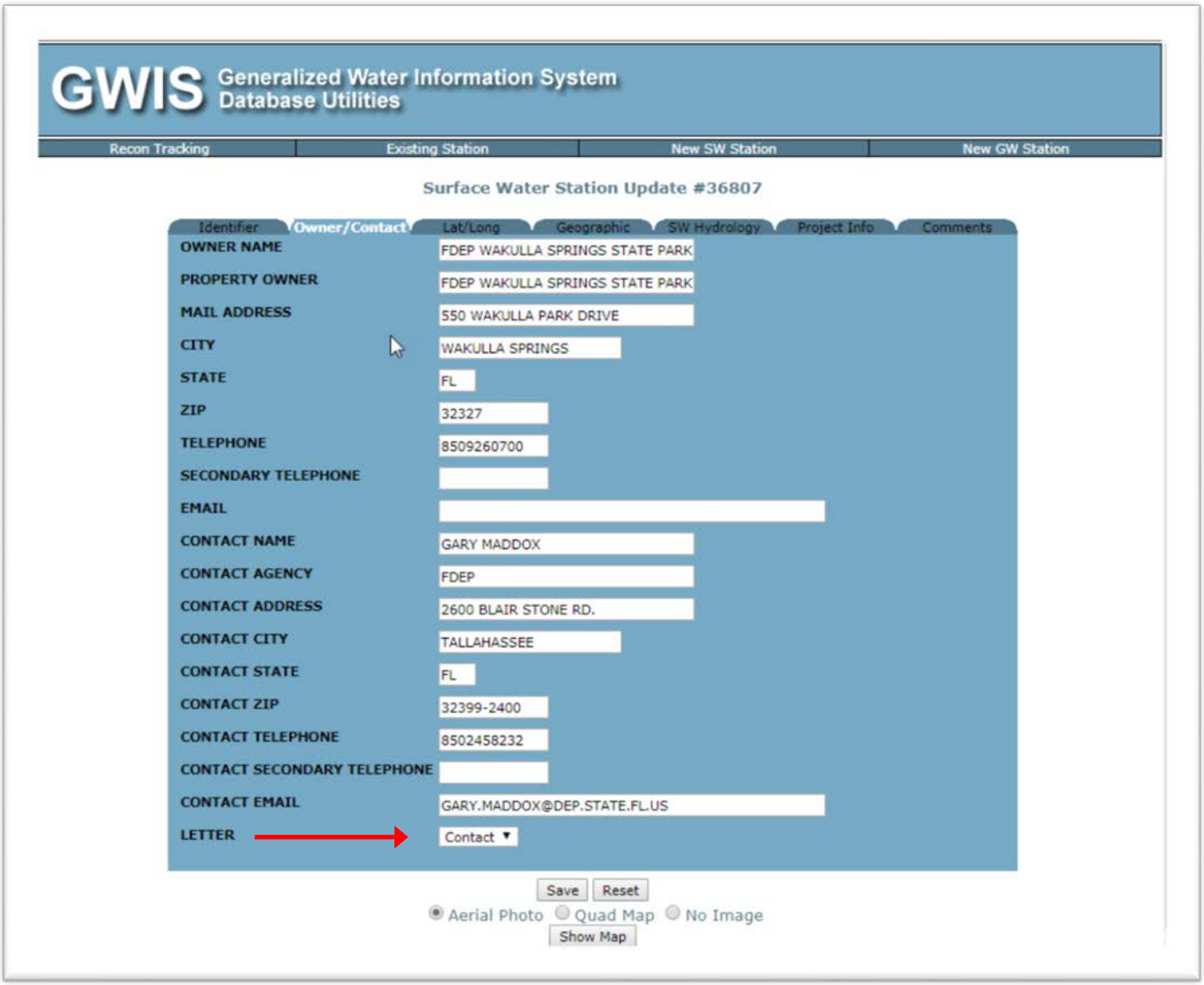
When the list appears, click on the appropriate station name. The station information will appear, as seen in ***Figure 17***. Fields that are shaded gray cannot be changed.

Figure 17. Information page for an Existing Station. Station 36807 is displayed as an example.

To update information in this screen, simply type in the new information over the old or blank field, and click **Save**. Please note that the STORET ID and STATION NAME should not change once a station is established. If for some reason either of these items must be changed on an established station, please contact the WMS Data and Analysis coordinator, Liz Miller, before making the change.

If an owner or contact requests monitoring information, click on the **Letter** drop down menu under the **Owner/Contact** tab (***Figure 18***). Select either Owner or Contact from the drop-down list. Click **Save**. This action lets the WMS contact know (via the Automated Data Management [ADM] interface) that he or she needs to send monitoring information to that person or organization.

Figure 18. Illustration of the Owner/Contact tab. "Letter" is the final drop-down menu and is indicated by a horizontal red arrow. Station 36807 is displayed as an example.



To change the name of a waterbody from "unnamed lake" or "unnamed river", contact the WMS GIS Analyst, Andy Woeber. Waterbody names are only assigned if they are officially added to the Geographic Naming Information System (GNIS)**.** For a comprehensive list of the information contained in each tab, see page 32.

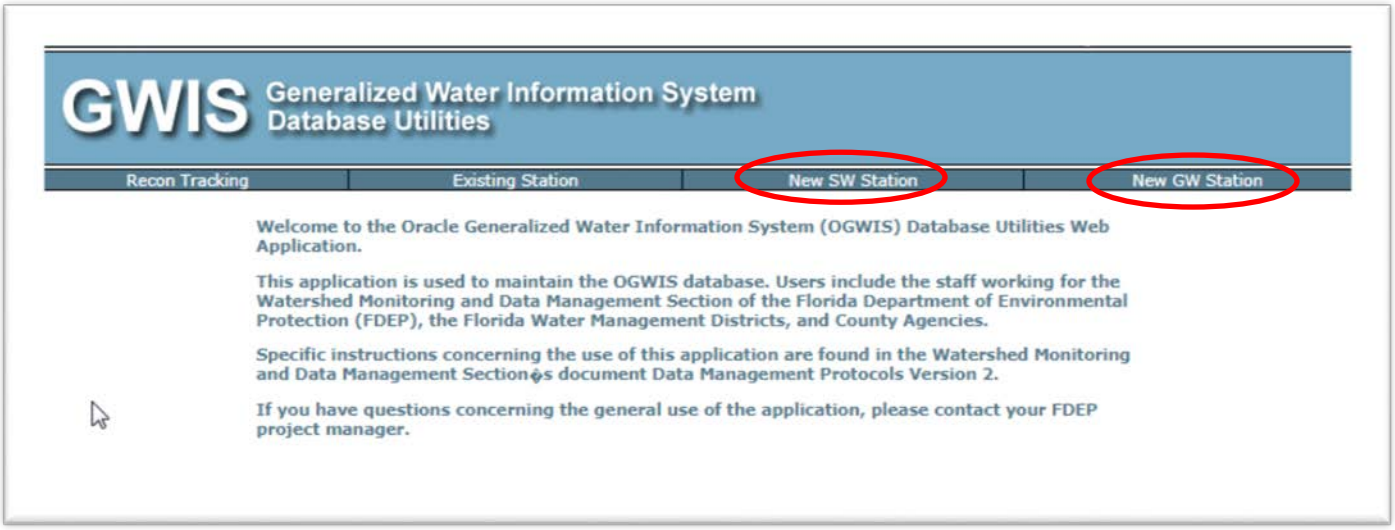
Batch Updates to Existing Station Data

Requests for large-scale updates to station data should be made to the Data and Analysis Coordinator, Liz Miller.

Adding a New Station

Only WMS staff have the correct permissions to add new stations manually. If a station needs to be added, please check with the appropriate WMS contact. Station addition should be done only with the Data Manager's permission. To add a new surface water (SW) or ground water (GW) station, select **New SW Station** or **New GW Station (*Figure 19*)**.

Figure 19. Click New SW Station or New GW Station to add a new station. Links are circled in red on the top right side of the image.



In each case, a tabbed form (***Figure 20***) appears. Enter required data (see next section for list of required fields) and click **Save**.

Figure 20. Add a New SW Station Page

Minimum Data Requirements for Stations

There are certain minimum data requirements for all stations, to save them to the database.

1. For a **ground water station (well)**, the following minimum information is required (as defined in the current Stations Table Data Dictionary):

- STATION NAME
- AGENCY
- WATERBODY NAME (aquifer)
- WATER RESOURCE (confined/unconfined)
- LATITUDE
- LONGITUDE
- LOCATION METHOD
- LOCATIONAL DATUM
- CASING DIAMETER (inches)
- CASING MATERIAL
- CASING DEPTH (feet below Land Surface)
- TOTAL DEPTH (feet below Land Surface)

- CONTACT INFORMATION
- DATA SOURCE.

2. For **surface water stations**, the following information is required:

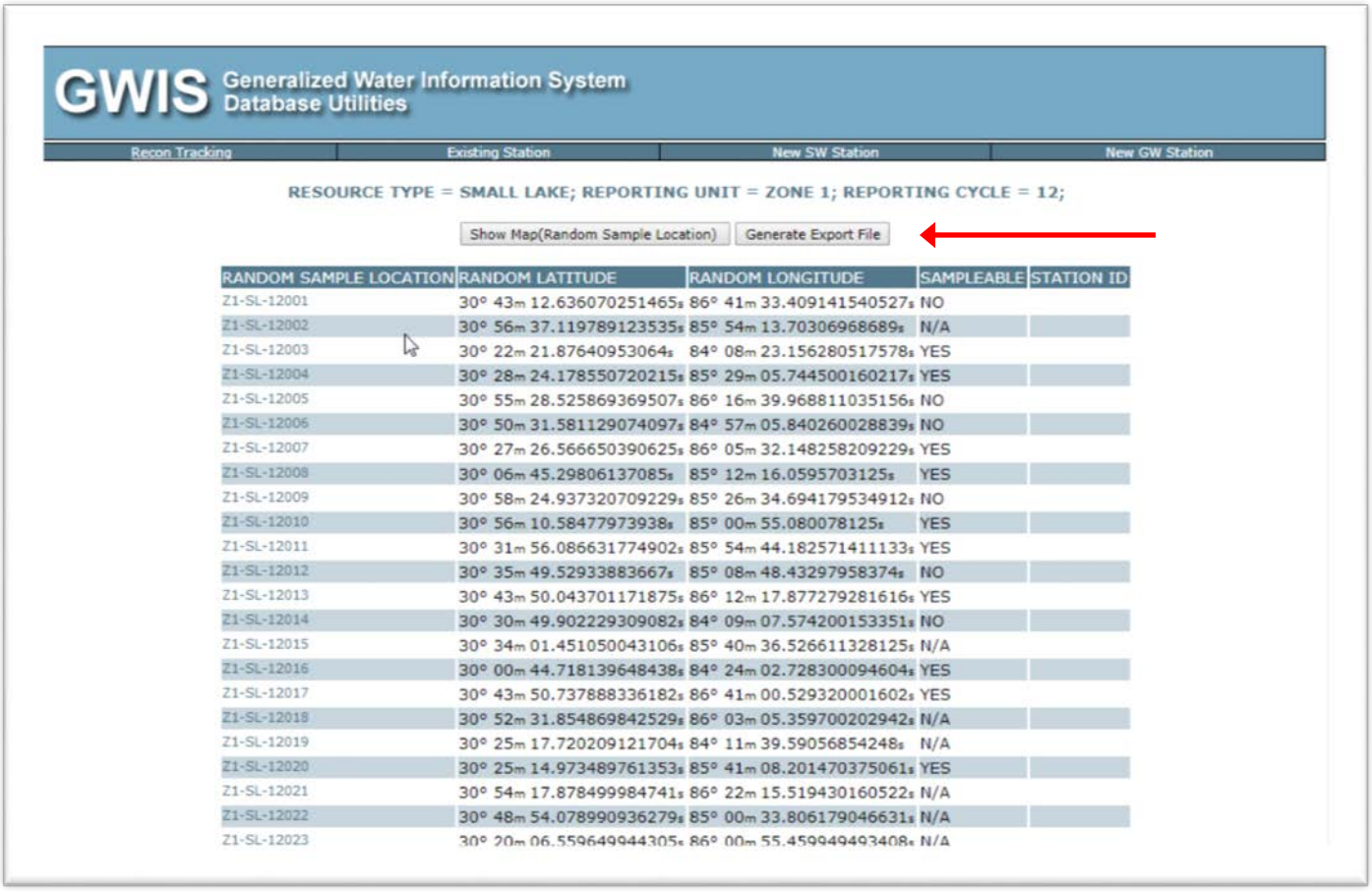
- STATION NAME
- AGENCY
- USGS HYDROLOGIC UNIT
- WATERBODY TYPE (stream/canal/lake)
- WATERBODY NAME
- WATER RESOURCE (small stream/large river/canal/large lake/small lake)
- LATITUDE
- LONGITUDE
- LOCATION METHOD
- LOCATIONAL DATUM
- CONTACT INFORMATION
- DATA SOURCE.

In addition to the above-mentioned data elements, the WMS contact or contracted sampling agency should make every effort to fill in as much information about the site as appropriate and possible.

Exporting Station Data

To create an Excel file containing the information about each random sample location, click on the **Generate Export File** button, located on the recon tracking search result page (***Figure 21***).

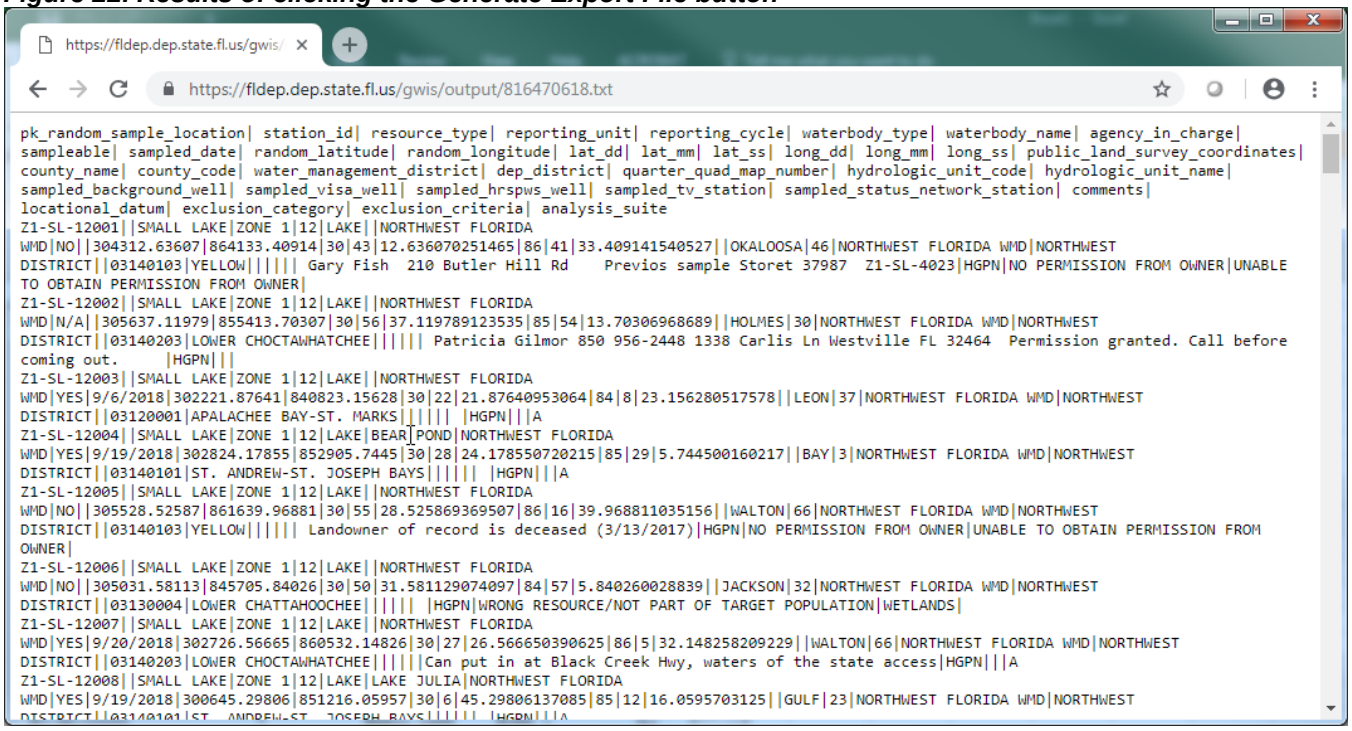
Figure 21. Click the 'Generate Export File' indicated by the red arrow to create the list of station information that can be imported into Excel.



RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z1-SL-12001	30° 43m 12.636070251465s	86° 41m 33.409141540527s	NO	
Z1-SL-12002	30° 56m 37.119789123535s	85° 54m 13.70306968689s	N/A	
Z1-SL-12003	30° 22m 21.87640953064s	84° 08m 23.156280517578s	YES	
Z1-SL-12004	30° 28m 24.178550720215s	85° 29m 05.744500160217s	YES	
Z1-SL-12005	30° 55m 28.525869369507s	86° 16m 39.968811035156s	NO	
Z1-SL-12006	30° 50m 31.581129074097s	84° 57m 05.840260028839s	NO	
Z1-SL-12007	30° 27m 26.566650390625s	86° 05m 32.148258209229s	YES	
Z1-SL-12008	30° 06m 45.29806137085s	85° 12m 16.0595703125s	YES	
Z1-SL-12009	30° 58m 24.937320709229s	85° 26m 34.694179534912s	NO	
Z1-SL-12010	30° 56m 10.58477973938s	85° 00m 55.080078125s	YES	
Z1-SL-12011	30° 31m 56.086631774902s	85° 54m 44.182571411133s	YES	
Z1-SL-12012	30° 35m 49.52933883667s	85° 08m 48.43297958374s	NO	
Z1-SL-12013	30° 43m 50.043701171875s	86° 12m 17.877279281616s	YES	
Z1-SL-12014	30° 30m 49.902229309082s	84° 09m 07.574200153351s	NO	
Z1-SL-12015	30° 34m 01.451050043106s	85° 40m 36.526611328125s	N/A	
Z1-SL-12016	30° 00m 44.718139648438s	84° 24m 02.728300094604s	YES	
Z1-SL-12017	30° 43m 50.737888336182s	86° 41m 00.529320001602s	YES	
Z1-SL-12018	30° 52m 31.854869842529s	86° 03m 05.359700202942s	N/A	
Z1-SL-12019	30° 25m 17.720209121704s	84° 11m 39.59056854248s	N/A	
Z1-SL-12020	30° 25m 14.973489761353s	85° 41m 08.201470375061s	YES	
Z1-SL-12021	30° 54m 17.878499984741s	86° 22m 15.519430160522s	N/A	
Z1-SL-12022	30° 48m 54.078990936279s	85° 00m 33.806179046631s	N/A	
Z1-SL-12023	30° 20m 06.559649944305s	86° 00m 55.459949493408s	N/A	

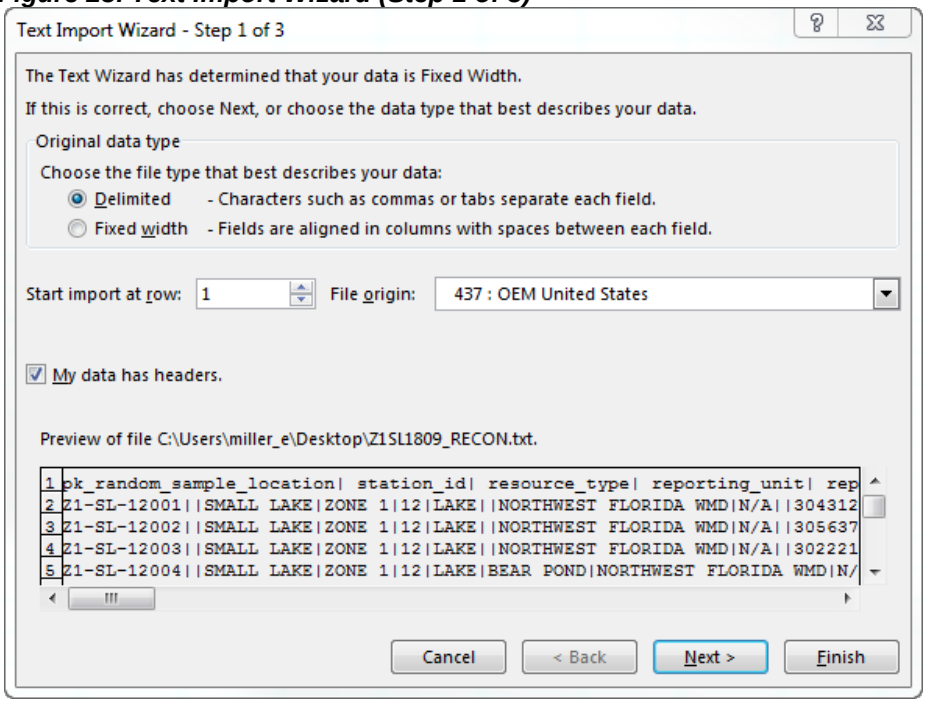
The recon data will display in the web browser in pipe-delimited form (***Figure 22***). From the Google Chrome Tool bar, click the Customize and control Google Chrome Icon (three vertical dots in the right-hand corner) and choose **More tools → Save page as…** and navigate to the desired folder. Change the file name to one that reflects the contents of the file, make sure the **Save as type:** is set to Text Document and click **Save**.

Figure 22. Results of clicking the Generate Export File button



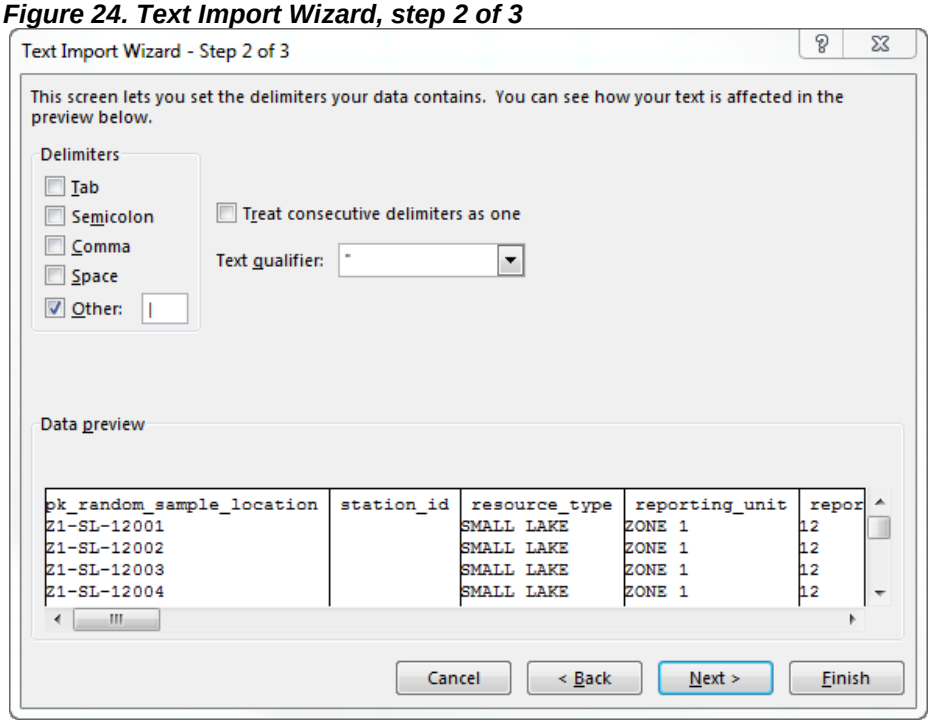
Open Excel, click **Open**, and when the dialog box appears, navigate to folder where the file was saved. Make sure “All Files” is selected, instead of the default, “All Excel Files”. Select file and click **Open**. Excel’s Text Import Wizard will pop up (***Figure 23***). Click on the **Delimited** button and the **My data has headers** box and then **Next**.

Figure 23. Text Import Wizard (Step 1 of 3)



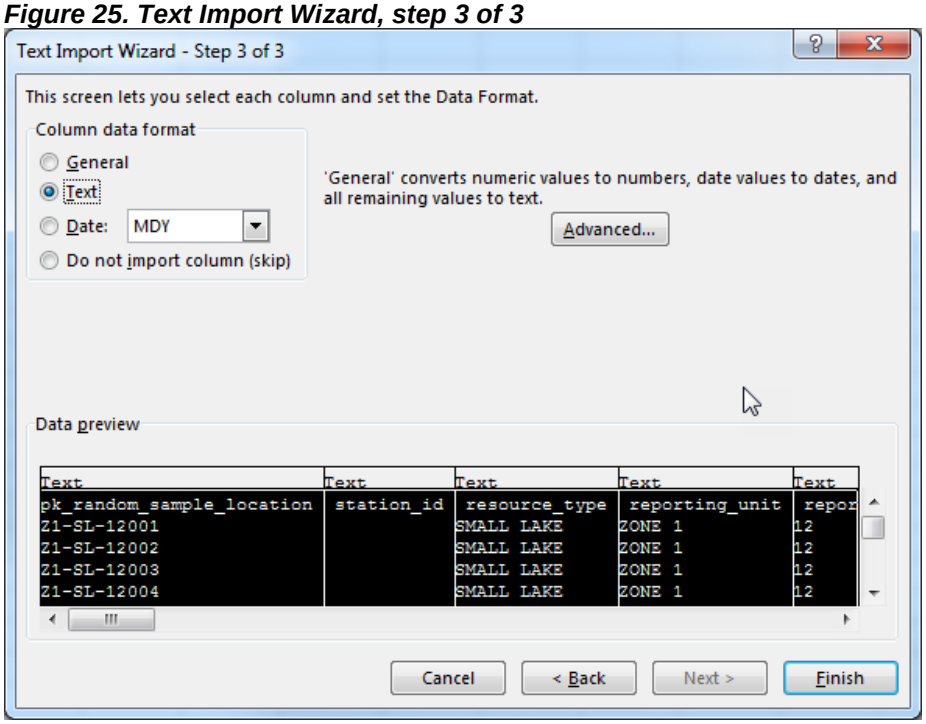
Refer to ***Figure 24***for the next step. Deselect the **Tab** button, and select the **Other** button. Press Shift and the pipe (|) key at the same time. This will put a | next to the Other box. Click **Next**.

Figure 24. Text Import Wizard, step 2 of 3



Select all columns by holding the Shift key and clicking on the first column, then scrolling all the way to the right and clicking the last column (all columns should be highlighted,***Figure 25***). Then, click **Text** to format all columns as text.

Figure 25. Text Import Wizard, step 3 of 3



Click **Finish**. A screen will appear with the stations, resource, etc. in columns and rows. Now click **Save As... → Excel Workbook**. Name the file as desired. Examples of data in the export file include:

- Resource type
- Reporting unit
- Waterbody type
- Agency in charge
- Random latitude
- Random longitude
- County name
- Quarter quad map number
- Hydrologic unit code
- Locational datum

NOTE: Please check the first column to ensure that it contains all the random sample locations. In addition, review the file to determine whether the data are wrapped due to the presence of a carriage return in the data.

Contacts – this is a four-column table with the title and organization/agency of the contact in the first column, the contact name in the second column, the contact phone number in the third column and the contact email in the fourth column.

Title/Description	Name	Phone	Email
Section Administrator (Watershed Monitoring Section)	Jay Silvanima	(850) 245-8507	James.Silvanima@dep.state.fl.us
Data & Analysis Coordinator (Watershed Monitoring Section)	Liz Miller	(850) 245-8512	Elizabeth.Miller@dep.state.fl.us
Data Manager (Watershed Monitoring Section)	Indira Pindi	(850) 245-8064	Indira.Pindi@dep.state.fl.us
Zone 1 (Northwest Florida Water Management District)	Tom Seal	(850) 245-8514	Thomas.Seal@dep.state.fl.us
Zone 2 (Suwannee River Water Management District) **and Zone 3** (DEP samplers)	Lori Balinsky	(850) 245-7544	Lori.Balinsky@dep.state.fl.us
Zone 3 (SJRWMD and Alachua County samplers) (St. Johns River Water Management District)	Tom Seal	(850) 245-8514	Thomas.Seal@dep.state.fl.us
Zone 4 (Southwest Florida Water Management District)	Lori Balinsky	(850) 245-7544	Lori.Balinsky@dep.state.fl.us
Zone 5 (South Florida Water Management District – West)	Carolyn Voyles	(850) 245-8321	Carolyn.Voyles@dep.state.fl.us
Zone 6 (South Florida Water Management District – East)	Carolyn Voyles	(850) 245-8321	Carolyn.Voyles@dep.state.fl.us

Station Information – this is a numbered list of the elements found in each tab of the existing or new station information display.

(* = required information) (** = Cannot be left blank, must be 'Yes' or 'No')

Station Information Tabs:

1. Identifier:
   - Station ID
   - STORET ID
   - Random Sample Location ID (for Status sites)
   - FL Unique Well ID (for ground water sites)
   - Station Name*
   - Station Description

2. Owner/Contact:
   - Owner Name
   - Property Owner
   - Mailing Address of Owner
   - Telephone Number of Owner
   - Owner E-Mail
   - Contact Name*
   - Contact Agency*
   - Contact Address*
   - Contact Telephone Number*
   - Contact E-Mail
   - Letter (requests for monitoring information)

3. Lat/Long:
   - Latitude (in degrees/minutes/seconds)*
   - Longitude (in degrees/minutes/seconds)*
   - Location Method*
   - Locational Datum*

4. Geographic :
   - County (determined based on lat/long)*
   - Water Management District
   - DEP District Office
   - TMDL Basin
   - Reporting Unit (for Status sites)

For Ground water Wells:

5. Hydro:
   - Water Body Name (name of aquifer)*
   - Water Resource (confined/unconfined)*
   - Hydrologic Unit Name (determined based on lat/long)*
   - Subaquifer
   - Grid cell
   - Top of Aquifer (depth in feet)
   - Bottom of Aquifer (depth in feet)
   - Log Availability

6. Hydro II:

Drill Date
Well Status (flowing, non-flowing, plugged, etc.)
Well Type
Construction Method
Lift Type
Total Depth (in feet below land surface)*
Casing Depth (in feet)*
Screen Begin Depth (in feet)
Screen End Depth (in feet)

7. Hydro III:
   Finish
   Screen Material
   Screen Diameter (in inches)
   Casing Material*
   Casing Diameter (in inches)*
   Land Surface Elevation (in feet)
   Measuring Point Elevation (in feet)
   Water Level Recorder
   Lead Weight

8. Project Info:
   Sampled TV**
   Sampled WQAS**
   Sampled Background**
   Sampled VISA**
   Sampled HRSPWS**
   Sampled Status**
   Data Source*
   Agency*

9. Comments

For Surface Water Sites:

5. SW Hydrology
   Water Body Name*
   Other Water Body Name
   Water Body Type*
   Water Resource*
   SW Class
   Hydrologic Unit Name (based on lat/long)*
6. Project Info
   Sampled TV**
   Sampled Status**
   Sampled WQAS**
   Data Source*
   Agency*

7. Comments