

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

Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
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Introduction

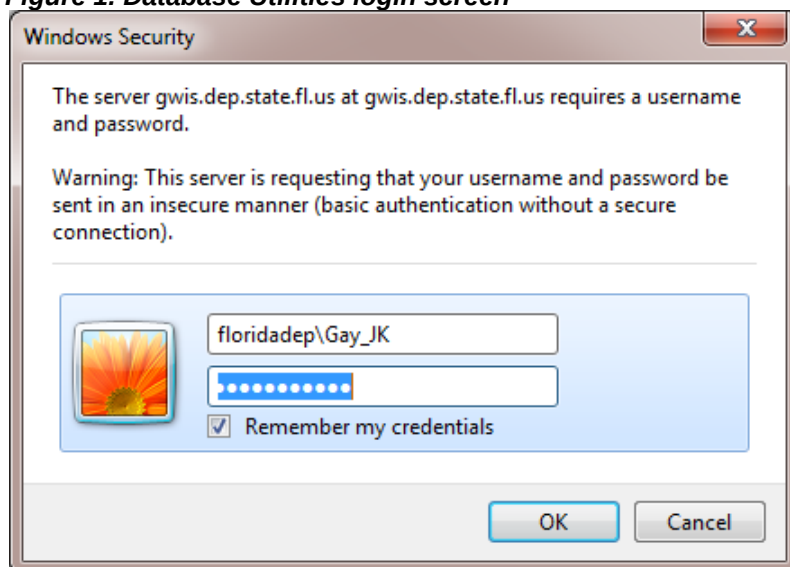
The Florida Department of Environmental Protection's (FDEP's) Watershed Monitoring Section (WMS) oversees two statewide water monitoring networks, the Status Network and the Trend Network. In each network, field parameters such as temperature and pH are collected regularly, along with water samples which 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 in order 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

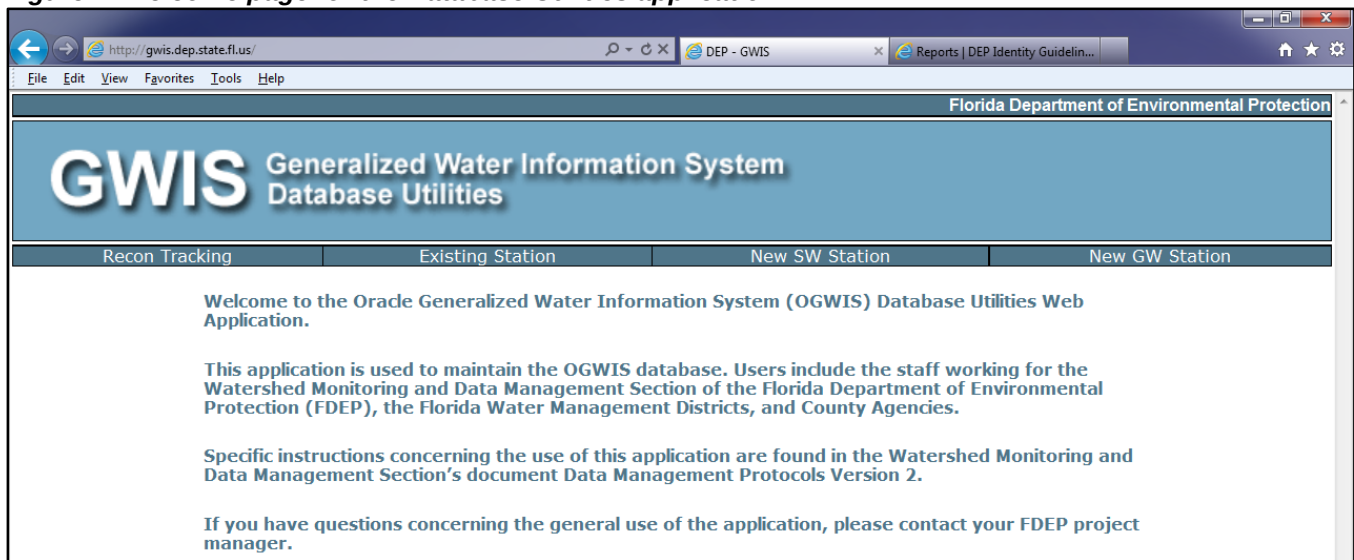
Open Internet Explorer and navigate to <http://gwis.dep.state.fl.us>. **FDEP employees will log in using the same username and password as their Outlook account** (Figure 1). Other clients should contact Theresa Bouie, Data Manager, at (850) 245-8012 or Theresa.Bouie@dep.state.fl.us to obtain login credentials. **Any problems or issues with existing data should be reported to Theresa Bouie.**

Figure 1. Database Utilities login screen



After login is complete, the following introductory screen will appear:

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/watershed%20monitoring/documents/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. Recon Tracking drop-down page

The screenshot shows a web browser window with the URL http://gwis.dep.state.fl.us/gwis_search.asp. The page has a blue header with the text "Florida Department of Environmental Protection" and "GWIS Generalized Water Information System Database Utilities". Below the header is a navigation bar with four tabs: "Recon Tracking", "Existing Station", "New SW Station", and "New GW Station". The main content area contains a form with the following fields:

Resource Type:

Reporting Unit:

Reporting Cycle:

Site Location Range: -

(Leave empty to return all records)

Submit Reset

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

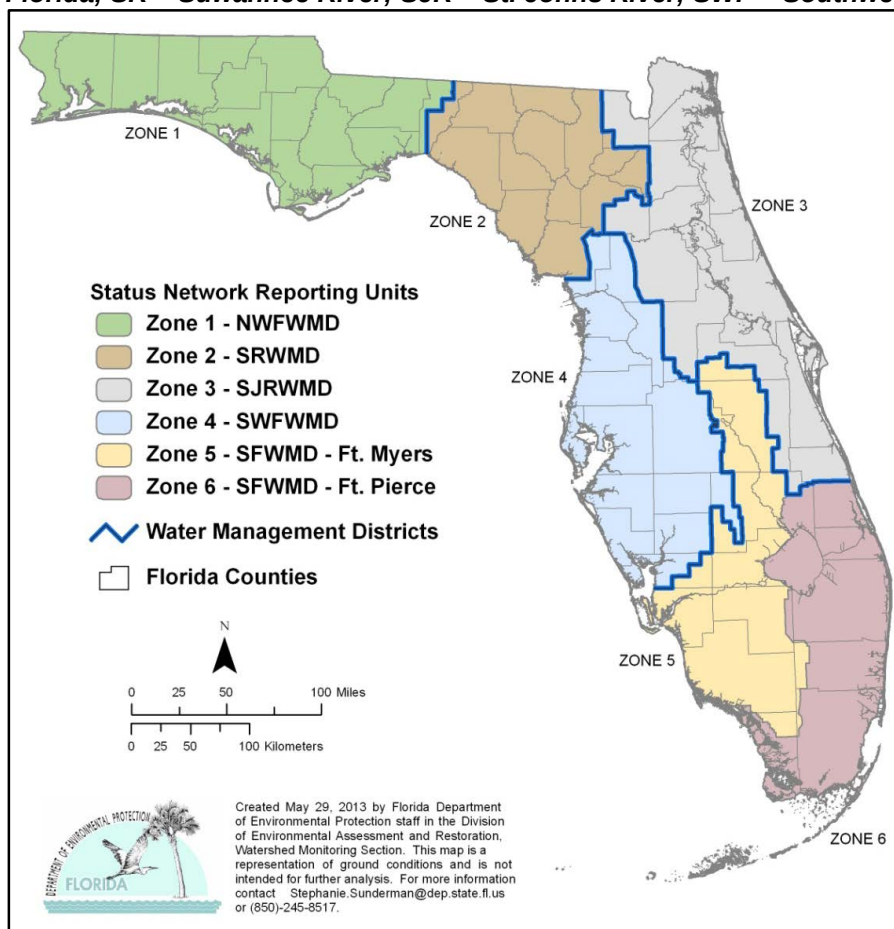
NOTE: The other resource types, such as *spring vent*, *low- and high-order stream*, and *estuary*, are not currently assessed under the Status Network.

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 (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 you may enter if you are interested in a specific site number. If left blank, all Status sites that match the chosen criteria will be listed.

Click **Submit** to accept your choices and begin reconnaissance. To clear your 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. The "Sampleable" column will be populated with "N/A". This is the column you update after you recon the site. In the example shown below, we have chosen Resource Type = Small Lake, Reporting Unit = Zone 1, Reporting Cycle = 7, and we left the Site Location Range empty.

Figure 5. Example list of Status sites to recon

RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z1-SL-7001	30° 39m 15.269422s	84° 13m 05.976793s	N/A	
Z1-SL-7002	30° 46m 08.418314s	86° 15m 48.524274s	N/A	
Z1-SL-7003	30° 33m 56.078932s	84° 41m 59.755398s	N/A	
Z1-SL-7004	30° 25m 40.135928s	85° 37m 44.860357s	N/A	
Z1-SL-7005	30° 39m 02.309907s	86° 37m 28.026982s	NO	
Z1-SL-7006	30° 50m 35.007133s	84° 57m 05.539582s	N/A	
Z1-SL-7007	29° 56m 20.663609s	84° 29m 21.75056s	N/A	
Z1-SL-7008	30° 22m 29.932712s	86° 19m 57.935489s	N/A	
Z1-SL-7009	30° 59m 19.588621s	86° 10m 39.559573s	NO	
Z1-SL-7010	30° 53m 45.17664s	85° 00m 31.70128s	N/A	
Z1-SL-7011	30° 29m 41.000013s	85° 49m 03.765731s	N/A	
Z1-SL-7012	30° 32m 26.111713s	84° 08m 47.327308s	N/A	
Z1-SL-7013	30° 54m 9.510715s	85° 57m 37.901629s	NO	
Z1-SL-7014	30° 34m 58.335697s	85° 16m 15.48469s	NO	
Z1-SL-7015	30° 28m 31.639885s	85° 40m 12.940453s	N/A	
Z1-SL-7016	30° 25m 30.57534s	84° 05m 33.333846s	NO	
Z1-SL-7017	30° 40m 12.029853s	86° 26m 45.95715s	NO	
Z1-SL-7018	30° 57m 31.506659s	85° 39m 08.320386s	N/A	
Z1-SL-7019	30° 06m 57.199353s	84° 23m 35.578154s	N/A	
Z1-SL-7020	30° 30m 43.61011s	85° 36m 17.308676s	NO	
Z1-SL-7021	30° 47m 06.545996s	86° 32m 12.871872s	N/A	
Z1-SL-7022	30° 50m 03.807098s	85° 01m 02.661418s	N/A	
Z1-SL-7023	30° 06m 45.298056s	85° 12m 16.059571s	N/A	
Z1-SL-7024	30° 29m 07.866482s	86° 26m 13.880288s	N/A	

Now, click on the **Random Sample Location** you wish to recon (e.g., Z1-SL-7001). A screen with extra information about the site will pop up:

Figure 6. Example recon tracking page for a specific site (Z1-SL-7001)

Florida Department of Environmental Protection

GWIS Generalized Water Information System
Database Utilities

Recon Tracking Existing Station New SW Station New GW Station

PK RANDOM SAMPLE LOCATION = Z1-SL-7001

County: LEON Quarter Quad: Q5434
WMD: NORTHWEST FLORIDA WMD HUC: OCHLOCKONEE
Random Latitude: 30° 39m 15.269422s Random Longitude: 84° 13m 05.976793s

Is Z1-SL-7001 sampleable? ☐ Yes ☐ No ☒ N/A

Exclusion Category:

Exclusion Criteria: (definitions):

Was Z1-SL-7001 sampled? ☐ Yes ☐ No Month: 7 Day: 26 Year: 2013

Comments:

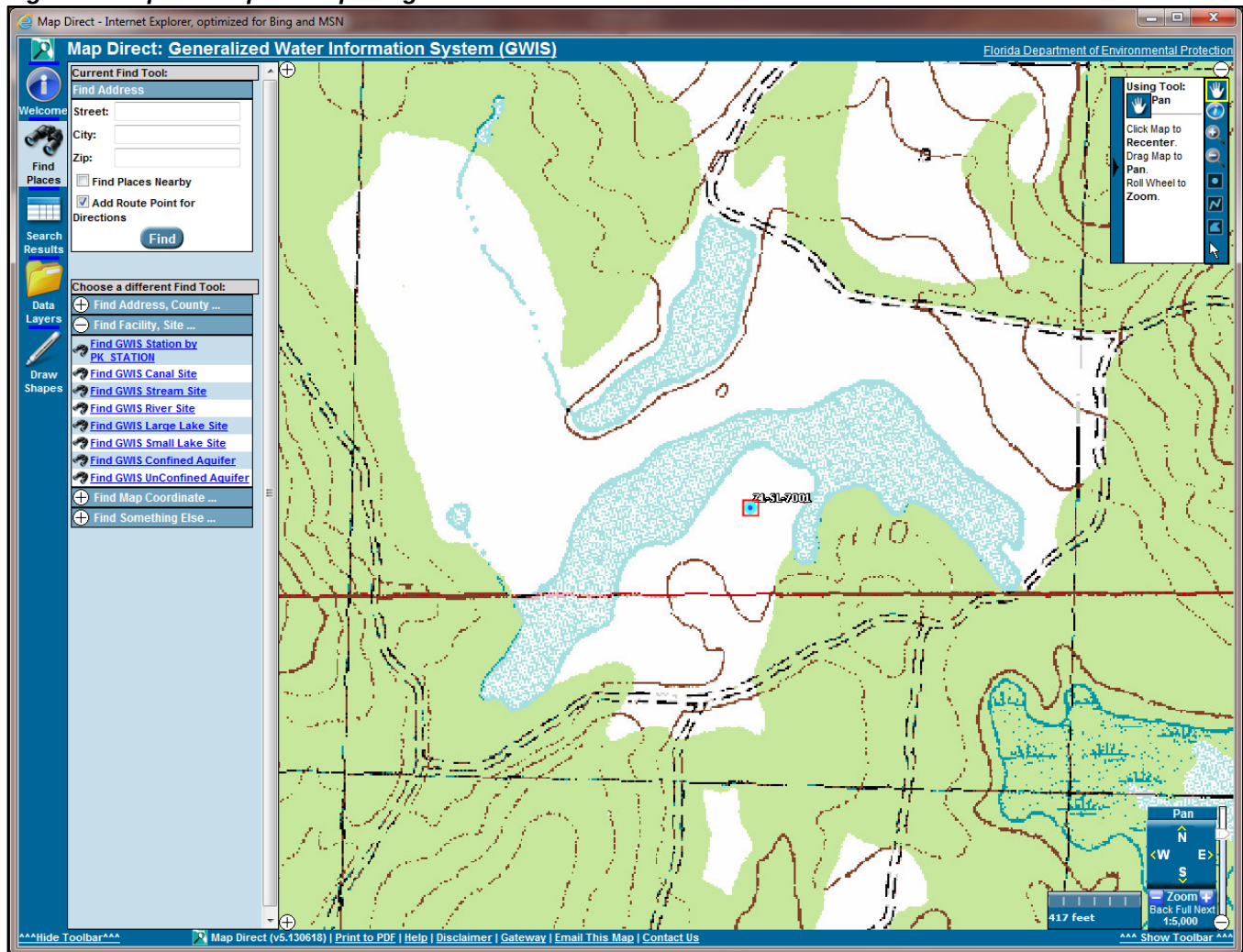
Save Reset

☐ Aerial Photo ☒ Quad Map ☐ No Image
Show Map

*****Note:** If you click 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 MapDirect Consolidated Application, which has many viewing options. You can view the site on top of an aerial photo, a quad map, or no background image. Quad Map is the default choice, 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/Watershed%20Monitoring/Documents/WMS-SamplingManual.pdf) and Sampling Manual (<http://publicfiles.dep.state.fl.us/DEAR/Watershed%20Monitoring/Documents/WMS-SamplingManual.pdf>) for examples of exclusions. **Figure 7** shows an example quad map image in MapDirect.

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



Take note of the different tabs on the left side of the screen. These tabs allow you to click on and off Data Layers, find specific features, or load shapefiles. The buttons on the right side of the map allow you to zoom in/out to assist in determining the exact location, the proximity to pollution sources like wastewater treatment plants, and access roads to the site. Useful tools at the bottom of the screen include **Help** and **Print to PDF**.

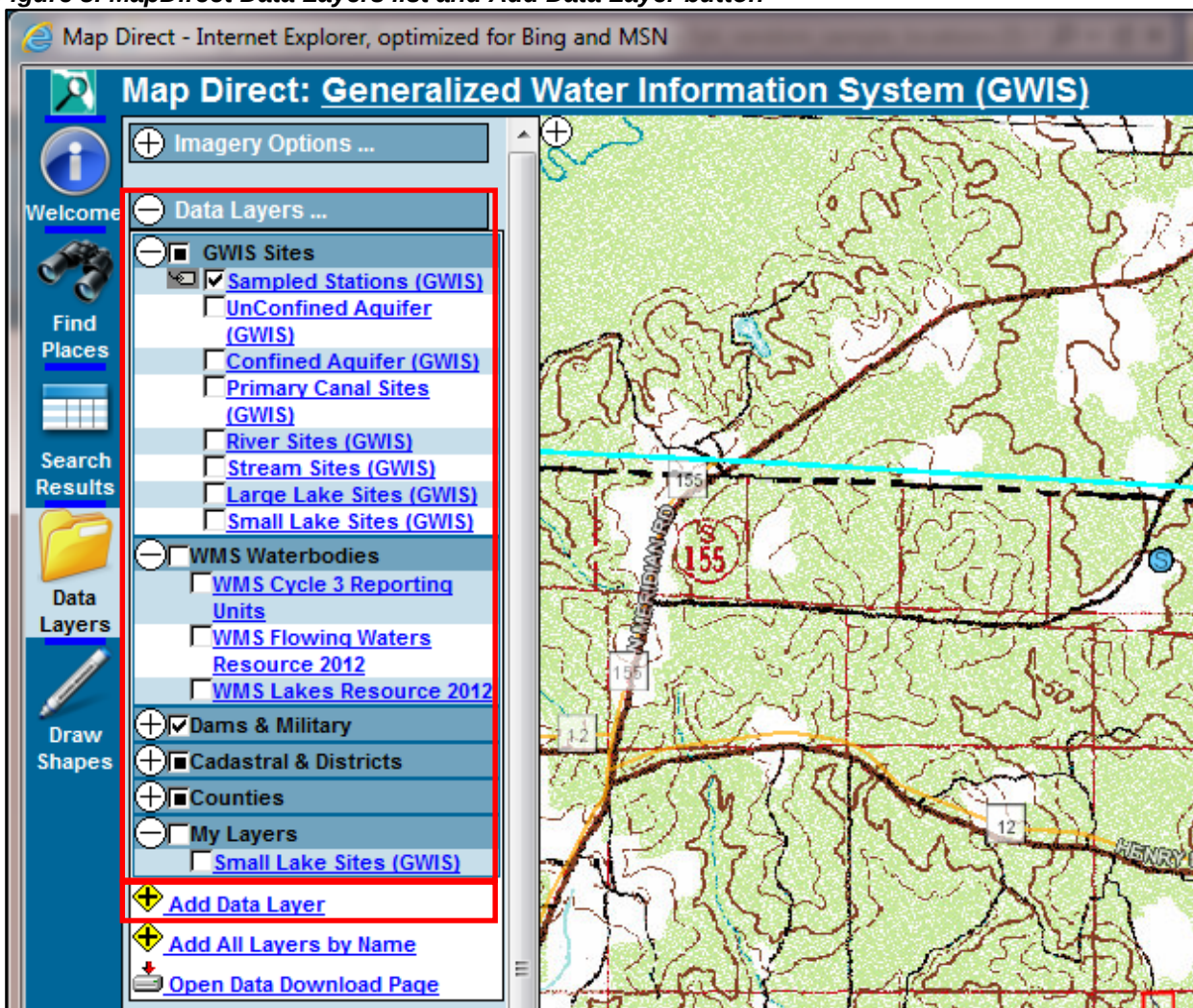
The icons that appear on the right-hand toolbar are explained on the next page. The functions of these can also be accessed by clicking **Help** at the bottom of the page. The Help menu contains a MapDirect Tutorial and Quick Start guide.

-  Pan tool: drags the image up/down or left/right.
-  Selection Box tool: identifies the layer or point within a rectangular box
-  Zoom In tool: magnifies the image
-  Zoom Out tool: opposite of Zoom In tool
-  Draw Points tool: add points to map
-  Draw Line tool: add lines to map
-  Draw Polygon tool: add shapes to map
-  Identify Point tool: Identifies the layer or point

Making Layers Visible

You can control which layers are displayed by clicking the check boxes next to their names in the **Data Layers** list. A commonly used layer is **Cadastral (Property Appraiser Parcels)**, located in the **Cadastral & Districts** category. In addition, you may search for a data layer by clicking **Add Data Layer** near the bottom of the list. Many of the WMS layers can be found by searching for “WMS”.

Figure 8. MapDirect Data Layers list and Add Data Layer button



Additional Functionality

To fully explore the functionality of MapDirect, click on the **Welcome** tab, and locate the **Help** block. The Help block contains the MapDirect Tutorial and MapDirect Quick Start.

Entering Recon Information

A. Surface Water

After determining whether the site is actually sampleable, you can update the information 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** (see **Figure 9**). If you mark a site as unsampleable, you must choose the reason from the **Exclusion Category** drop-down list. After choosing an Exclusion Category, select the appropriate **Exclusion Criteria**. To ensure that your Exclusion Category and Criterion are correct, click on the word **definitions**.

Figure 9. Example recon tracking page for an unsampleable surface water site

PK RANDOM SAMPLE LOCATION = Z1-SL-7001

County	LEON	Quarter Quad	Q5434
WMD	NORTHWEST FLORIDA WMD	HUC	OCHLOCKONEE
Random Latitude	30° 39m 15.269422s	Random Longitude	84° 13m 05.976793s

Is Z1-SL-7001 sampleable? ☐ Yes ☒ No ☐ N/A

Exclusion Category:

Exclusion Criteria:(definitions):

Was Z1-SL-7001 sampled? ☐ Yes ☐ No ☐ N/A

Month Day Year

Comments:

☐ Aerial Photo ☒ Quad Map ☐ No Image

A list of surface/ground water exclusion categories and criteria pops up (**Figure 10**). Please see the WMS [Sampling Manual](#) for the most up-to-date exclusions list.

Figure 10. Surface Water Exclusion Criteria and Definitions

GWIS Exclusion Criteria Definitions - Internet Explorer, optimized for Bing and MSN		
Category	Criteria	Description
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	STREAM/RIVER/CANAL RANDOM LOCATION LESS THAN 10 CM DEEP	CATEGORY PREVIOUSLY = OTHERWISE UNSAMPLEABLE
DRY	SMALL LAKE OR LARGE LAKE LESS THAN ONE METER DEEP	CATEGORY PREVIOUSLY = WRONG RESOURCE/NOT PART OF TARGET POPULATION
NO PERMISSION FROM OWNER	ACCESS DENIED BY PROPERTY OWNER	ACCESS DENIED BY PROPERTY OWNER. CATEGORY PREVIOUSLY = DENIED ACCESS
NO PERMISSION FROM OWNER	UNABLE TO OBTAIN PERMISSION FROM OWNER	CATEGORY PREVIOUSLY = UNABLE TO OBTAIN ACCESS
OTHERWISE UNSAMPLEABLE	OPEN WATER IN LAKE LESS THAN .1 HECTARE	
OTHERWISE UNSAMPLEABLE	UNSAFE SAMPLING CONDITIONS	
OTHERWISE UNSAMPLEABLE	FLOOD CONDITIONS (FLOW OUT OF BANKS) AT STREAM/RIVER/CANAL RANDOM LOCATION	
UNABLE TO ACCESS	UNABLE TO GET EQUIPMENT TO RANDOM LOCATION	SAMPLER CANNOT GET NECESSARY SAMPLING EQUIPMENT TO SITE. CATEGORY PREVIOUSLY = UNABLE TO OBTAIN ACCESS
UNABLE TO ACCESS	UNABLE TO REACH RANDOM LOCATION WITHIN THREE HOURS FROM ACCESS POINT	CATEGORY PREVIOUSLY = UNABLE TO OBTAIN ACCESS
UNABLE TO ACCESS	NO OPEN WATER AVAILABLE AT LAKE SAMPLING POINT	CATEGORY PREVIOUSLY = WRONG RESOURCE/NOT PART OF TARGET POPULATION, CRITERIA PREVIOUSLY = LAKE DOES NOT MEET EMAP LAKE DEFINITION (SMALL OR LARGE LAKE LESS THAN .1 HECTARE OPEN WATER)
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STREAM SEGMENT IS NOT CONNECTED TO WATERS OF THE STATE	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STREAM/RIVER ARTIFICIALLY ALTERED WITH LOSS OF SINUOSITY AND BOX CUT BANKS (NOT A PRIMARY CANAL).	STREAM/RIVER ARTIFICIALLY ALTERED WITH LOSS OF SINUOSITY AND BOX CUT BANKS, FUNCTIONS AS A CANAL. ADDED 3/19/2010.
WRONG RESOURCE/NOT PART OF TARGET POPULATION	DRAINAGE/IRRIGATION DITCH INCLUDED IN PRIMARY CANAL COVERAGE	ADDED WITH THE ADDITION OF CANALS AS A WATER RESOURCE, 12/13/11.
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	ESTUARY	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	RANDOM LOCATION FALLS OUTSIDE REPORTING UNIT (ZONE)	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	RANDOM LOCATION LIES AT OUTFALL OF FDEP PERMITTED FACILITY	SITE LIES AT THE OUTFALL POINT OF EFFLUENT ENTERING STATE WATERS (IN MIXING ZONE OK).
WRONG RESOURCE/NOT PART OF TARGET POPULATION	WATERBODY WITHIN FDEP PERMITTED FACILITY BOUNDARY	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	GIS COVERAGE INCORRECT, WATERBODY NOT PRESENT AT RANDOM LOCATION	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ARTIFICIAL LAKE, LAGOON, OR POND USED FOR AGRICULTURAL OR AQUACULTURE OPERATIONS	COMBINED AGRICULTURAL AND AQUACULTURE EXCLUSIONS INTO ONE
WRONG RESOURCE/NOT PART OF TARGET POPULATION	CURRENT OR HISTORIC MINING OPERATION	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ROADSIDE BORROW PIT	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	WETLANDS	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ESTABLISHED LAKE SIZE VIA BEST PROFESSIONAL JUDGEMENT IS LESS THAN FOUR HECTARES	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	ARTIFICIALLY CREATED LAKE OTHER THAN ESTABLISHED IMPOUNDMENTS	
WRONG RESOURCE/NOT PART OF TARGET POPULATION	STORMWATER TREATMENT AREAS	

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 your name and the date (**Figure 11**). If you have questions, please communicate with your WMS contact.

Figure 11. Example of a completed Recon Tracking page for an unsampleable surface water station

The screenshot shows the GWIS (Generalized Water Information System) Database Utilities interface. The page title is "GWIS Generalized Water Information System Database Utilities". The navigation bar includes "Recon Tracking", "Existing Station", "New SW Station", and "New GW Station". The main content area is titled "PK RANDOM SAMPLE LOCATION = Z1-SL-7001".

Form fields include:

- County: LEON
- Quarter Quad: Q5434
- WMD: NORTHWEST FLORIDA WMD
- HUC: OCHLOCKONEE
- Random Latitude: 30° 39m 15.269422s
- Random Longitude: 84° 13m 05.976793s

Is Z1-SL-7001 sampleable? ☐ Yes ☒ No ☐ N/A

Exclusion Category: WRONG RESOURCE/NOT PART OF TARGET POPULATION

Exclusion Criteria:(definitions): ARTIFICIALLY CREATED LAKE OTHER THAN ESTABLISHED IMPOUNDMENTS

Was Z1-SL-7001 sampled? ☐ Yes ☐ No ☐ N/A

Month: 8 Day: 9 Year: 2013

Comments: Site appears in aerial but not in quad map. Likely artificial impoundment. Juliana Gay Office Recon, 8/9/2013

Buttons: Save, Reset

Map Options: ☐ Aerial Photo ☒ Quad Map ☐ No Image

Show Map

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

NOTE: If you entered "No" to the question, "Is [the site] sampleable?", you will not be able to save 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). You can also add any pertinent comments at this time. Click **Save** to record your edits.

B. Ground Water

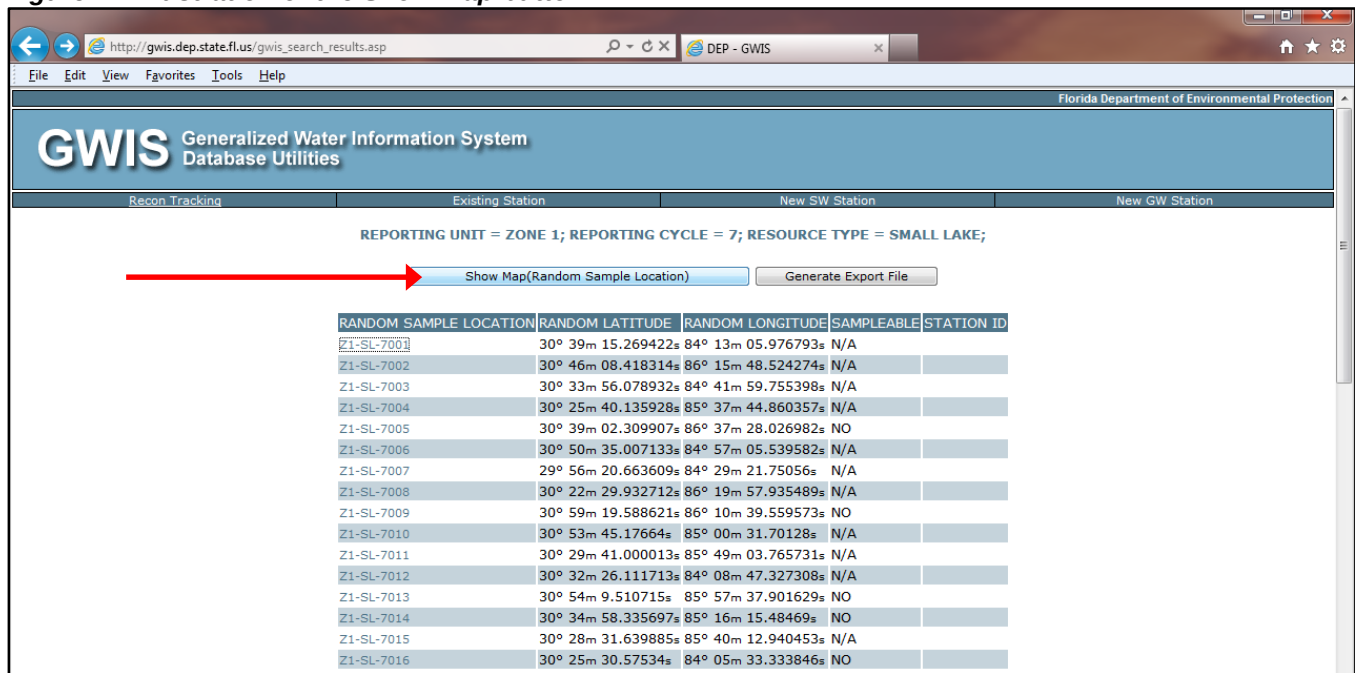
When you select Confined Aquifer or Unconfined Aquifer as the Resource Type, a list of wells that were selected as candidates for sampling will appear. To recon a ground water station, click **Show Map** at the bottom of the station screen, and review as you would for surface water. The [Recon Manual](#)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

Viewing All Sampling Sites in a Reporting Unit

Another feature of the Database Utilities MapDirect application is the ability to view all 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)** (see *Figure 12*).

Figure 12. Illustration of the Show Map button.



A map appears showing the random sites listed above, along with the past sampling sites from *all* water resources. The current site selections are indicated by light blue circle icons (Figure 13). Upon zooming in, you can see the past sampling points for all resources in the Reporting Unit (Figure 14). The historical sites are indicated by blue S icons. The historical sites 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. You may then click **options** to obtain useful information such as estimated address and driving directions.

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.

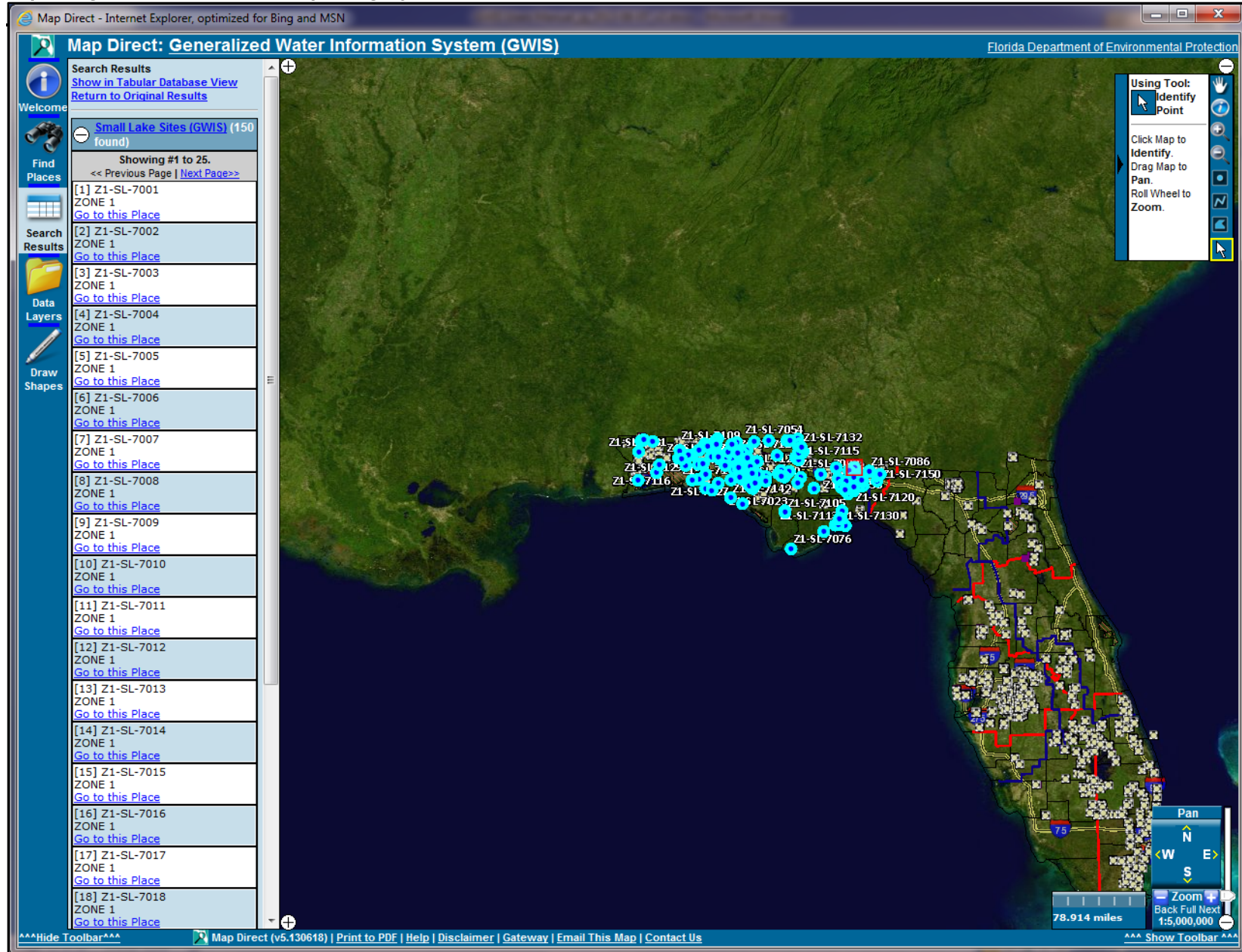
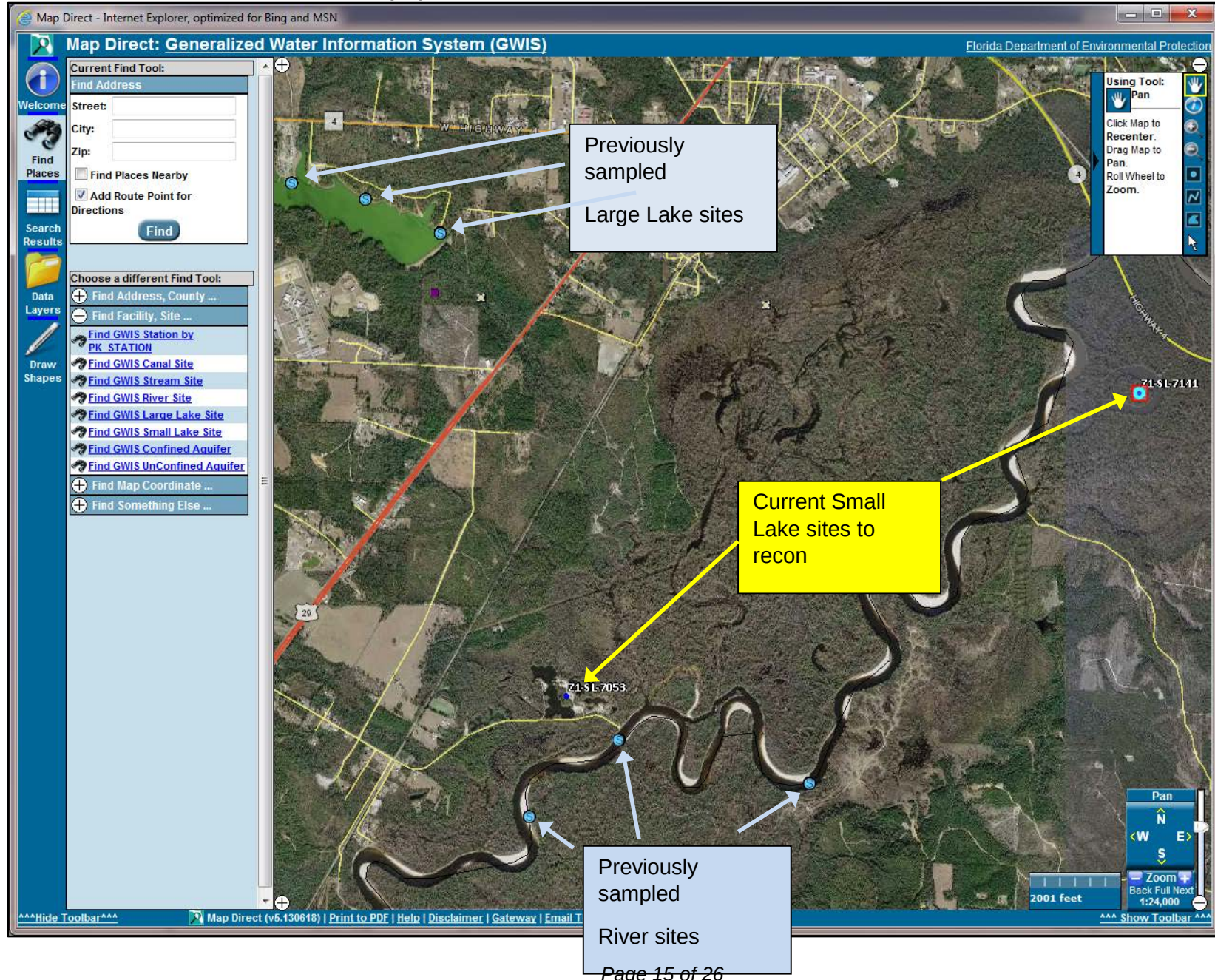


Figure 14. Zoom-in of the previous figure. Cycle 7 Small Lake selections are indicated with blue circles and site names (e.g., Z1-SL-7053). Historical sites from all resources are displayed with "S" icons.



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 manner¹ by either the WMS contact (See Contacts, page 24) 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

The screenshot shows a web browser window with the URL http://gwis.dep.state.fl.us/station_search.asp. The page title is "GWIS Generalized Water Information System Database Utilities". The navigation bar includes "Recon Tracking", "Existing Station" (highlighted with a red arrow), "New SW Station", and "New GW Station". The main form contains the following fields:

- Station Name:
- Status Random Site ID:
- Water Resource:
- Waterbody Name:
- County:
- Agency Maintaining Info:
- Hydrologic Unit:
- Florida Unique Well ID:

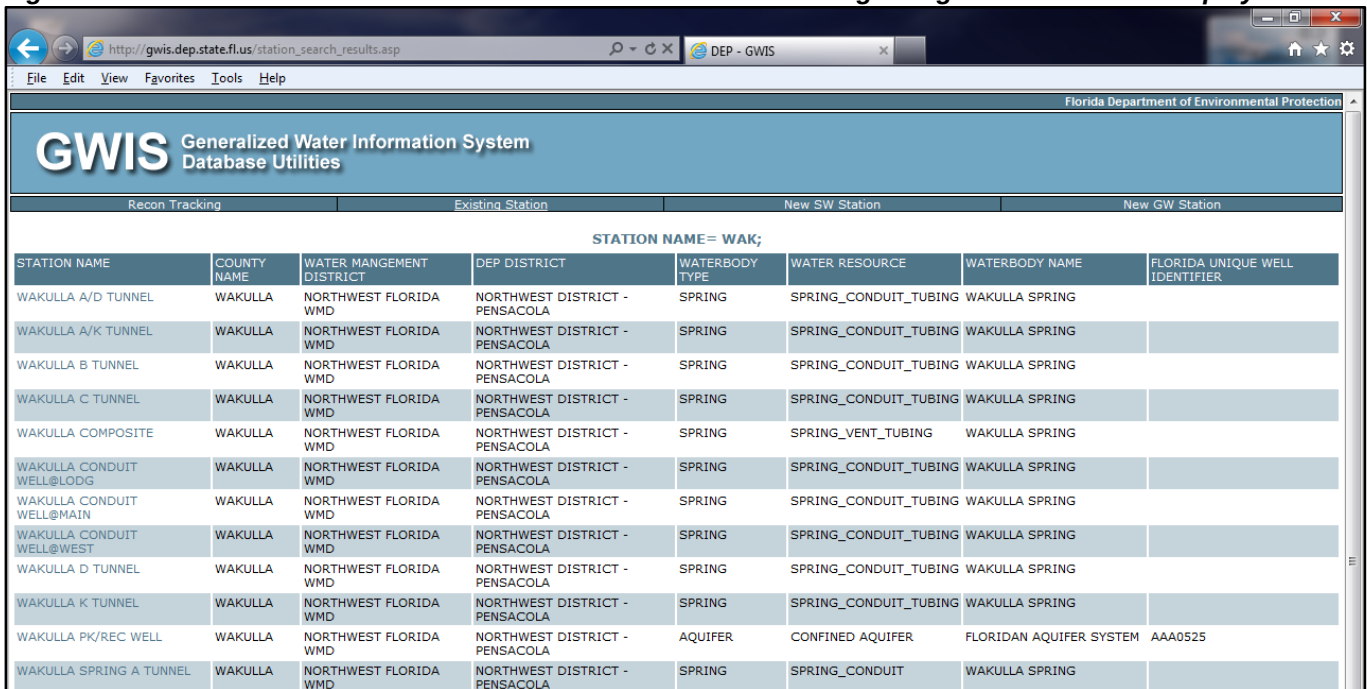
At the bottom of the form are "Submit" and "Reset" buttons.

There are several options for accessing site information:

1. If you know the station name, you can enter it into the **Station Name** field and click **Submit**. A list of stations with similar names will be shown. You may then click on the appropriate station name.
2. If you know the first letters or numbers of the Station Name but not the entire name, leave the rest of the field blank and the application will search for all stations with the beginning characters that you identified.
3. As an alternative, you may 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 sent to the sampling staff for review, but before the data are released.

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

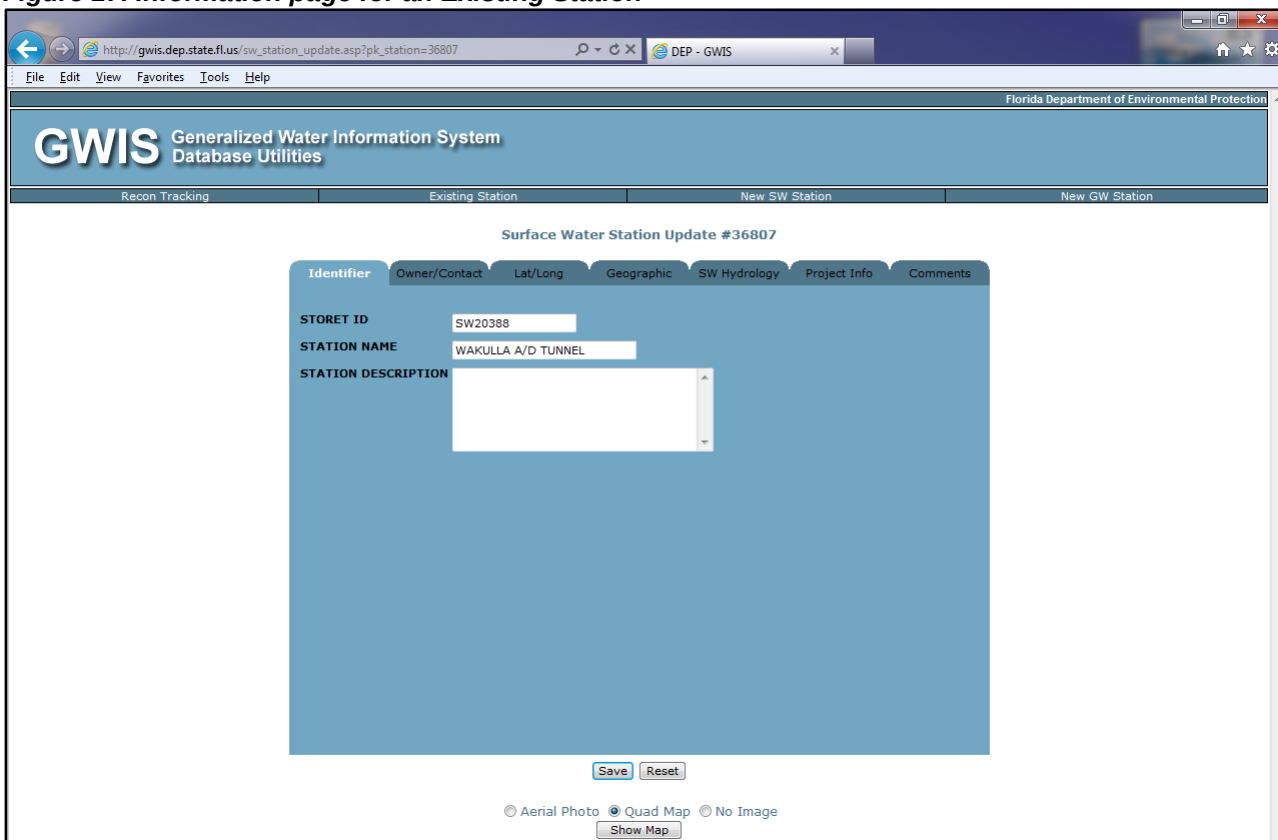


The screenshot shows the GWIS (Generalized Water Information System) search results page. The browser address bar shows the URL: http://gwis.dep.state.fl.us/station_search_results.asp. The page title is "Florida Department of Environmental Protection" and the main heading is "GWIS Generalized Water Information System Database Utilities". Below the heading, there are four tabs: "Recon Tracking", "Existing Station", "New SW Station", and "New GW Station". The "Existing Station" tab is selected, and the search results are displayed in a table. The table has a title "STATION NAME= WAK;" and contains 12 rows of station information. The columns are: STATION NAME, COUNTY NAME, WATER MANGEMENT DISTRICT, DEP DISTRICT, WATERBODY TYPE, WATER RESOURCE, WATERBODY NAME, and FLORIDA UNIQUE WELL IDENTIFIER.

STATION NAME	COUNTY NAME	WATER MANGEMENT DISTRICT	DEP DISTRICT	WATERBODY TYPE	WATER RESOURCE	WATERBODY NAME	FLORIDA UNIQUE WELL IDENTIFIER
WAKULLA A/D TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA A/K TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA B TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA C TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA COMPOSITE	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_VENT_TUBING	WAKULLA SPRING	
WAKULLA CONDUIT WELL@LODG	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA CONDUIT WELL@MAIN	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA CONDUIT WELL@WEST	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA D TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA K TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT_TUBING	WAKULLA SPRING	
WAKULLA PK/REC WELL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	AQUIFER	CONFINED AQUIFER	FLORIDAN AQUIFER SYSTEM	AAA0525
WAKULLA SPRING A TUNNEL	WAKULLA	NORTHWEST FLORIDA WMD	NORTHWEST DISTRICT - PENSACOLA	SPRING	SPRING_CONDUIT	WAKULLA SPRING	

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



The screenshot shows the GWIS station information page for an existing station. The browser address bar shows the URL: http://gwis.dep.state.fl.us/sw_station_update.asp?pk_station=36807. The page title is "Florida Department of Environmental Protection" and the main heading is "GWIS Generalized Water Information System Database Utilities". Below the heading, there are four tabs: "Recon Tracking", "Existing Station", "New SW Station", and "New GW Station". The "Existing Station" tab is selected, and the station information is displayed in a form. The form has a title "Surface Water Station Update #36807" and contains several fields: "STORET ID" (SW20388), "STATION NAME" (WAKULLA A/D TUNNEL), and "STATION DESCRIPTION" (a large text area). Below the form, there are "Save" and "Reset" buttons. At the bottom, there are radio buttons for "Aerial Photo", "Quad Map", and "No Image", and a "Show Map" button.

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 the either of these items must be changed on an established station please contact the Data Manager, Theresa Bouie, 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 company.

Figure 18. Illustration of the Owner/Contact tab. “Letter” is the final drop-down menu.

The screenshot shows the 'Surface Water Station Update #36807' form. The 'Owner/Contact' tab is active. The form contains the following fields:

Identifier	Owner/Contact	Lat/Long	Geographic	SW Hydrology	Project Info	Comments
OWNER NAME	BRIAN FUGATE					
PROPERTY OWNER	FDEP WAKULLA SPRINGS STATE PA					
MAIL ADDRESS	550 WAKULLA PARK DRIVE					
CITY	WAKULLA SPRINGS					
STATE	FL					
ZIP	32327					
TELEPHONE	8509260700					
CONTACT NAME	DEBRA HARRINGTON					
CONTACT AGENCY	FDEP					
CONTACT ADDRESS	2600 BLAIR STONE RD.					
CONTACT CITY	TALLAHASSEE					
CONTACT STATE	FL					
CONTACT ZIP	32399-2400					
CONTACT TELEPHONE	8502458232					
LETTER	None (dropdown menu open showing: None, None, Owner, Contact)					

Buttons: Save, Reset

Map options: Aerial Photo, Quad Map (selected), No Image, Show Map

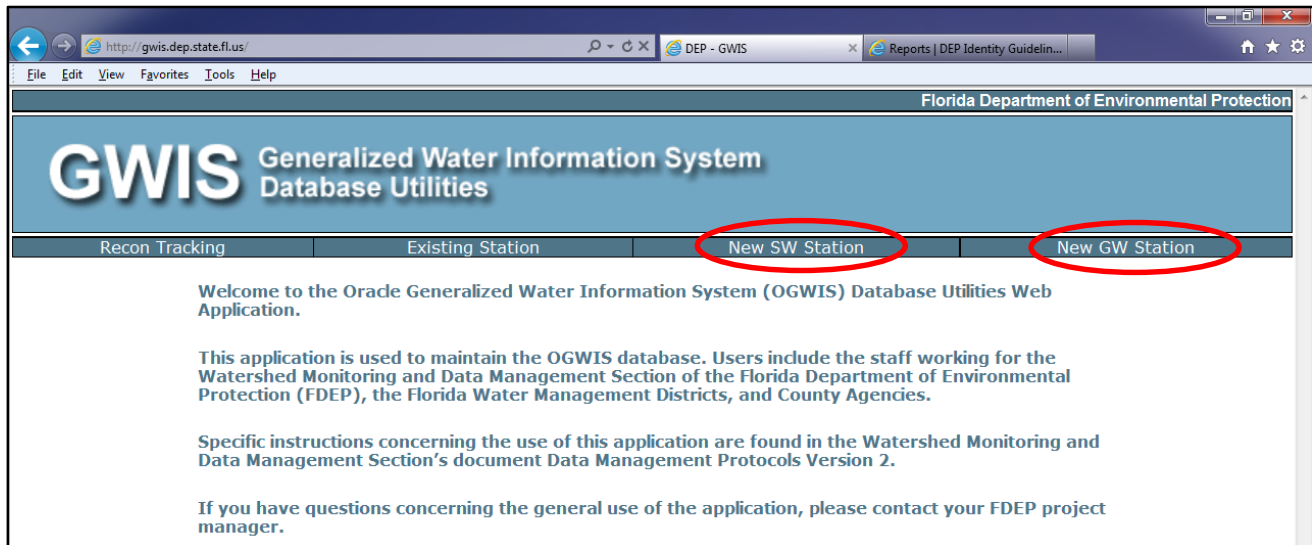
To change the name of a waterbody from “unnamed lake” or “unnamed river”, select the correct waterbody name from the drop-down list under the **SW Hydrology** tab, and click **Save**. For a comprehensive list of the information contained in each tab, see page 25.

Batch Updates to Existing Station Data

Requests for large-scale updates to station data should be made to the Data Manager, Theresa Bouie.

Adding a New Station

Only WMS staff have the correct permissions to add new stations manually. If you need to have a station added, please check with your 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**:



In each case, a tabbed form (Figure 19) appears. Enter required data (see next section for list of required fields) and click **Save**.

Figure 19. Add a New SW Station Page

Florida Department of Environmental Protection

GWIS Generalized Water Information System Database Utilities

Recon Tracking Existing Station **New SW Station** New GW Station

Identifier Owner/Contact Lat/Long Geographic SW Hydrology Project Info Comments

STORE ID

STATION NAME

STATION DESCRIPTION

Minimum Data Requirements for Stations

There are certain minimum data requirements for all stations, in order 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

If you wish to create an Excel file containing the information about each random sample location, click on the **Generate Export File** button, as seen below.

Florida Department of Environmental Protection

GWIS Generalized Water Information System Database Utilities

Recon Tracking Existing Station New SW Station New GW Station

REPORTING UNIT = ZONE 1; REPORTING CYCLE = 7; RESOURCE TYPE = SMALL LAKE;

Show Map(Random Sample Location) Generate Export File

RANDOM SAMPLE LOCATION	RANDOM LATITUDE	RANDOM LONGITUDE	SAMPLEABLE	STATION ID
Z1-SL-7001	30° 39m 15.269422s	84° 13m 05.976793s	N/A	
Z1-SL-7002	30° 46m 08.418314s	86° 15m 48.524274s	N/A	
Z1-SL-7003	30° 33m 56.078932s	84° 41m 59.755398s	N/A	
Z1-SL-7004	30° 25m 40.135928s	85° 37m 44.860357s	N/A	
Z1-SL-7005	30° 39m 02.309907s	86° 37m 28.026982s	NO	
Z1-SL-7006	30° 50m 35.007133s	84° 57m 05.539582s	N/A	
Z1-SL-7007	29° 56m 20.663609s	84° 29m 21.75056s	N/A	
Z1-SL-7008	30° 22m 29.932712s	86° 19m 57.935489s	N/A	
Z1-SL-7009	30° 59m 19.588621s	86° 10m 39.559573s	NO	
Z1-SL-7010	30° 53m 45.17664s	85° 00m 31.70128s	N/A	
Z1-SL-7011	30° 29m 41.000013s	85° 49m 03.765731s	N/A	
Z1-SL-7012	30° 32m 26.111713s	84° 08m 47.327308s	N/A	
Z1-SL-7013	30° 54m 9.510715s	85° 57m 37.901629s	NO	
Z1-SL-7014	30° 34m 58.335697s	85° 16m 15.48469s	NO	
Z1-SL-7015	30° 28m 31.639885s	85° 40m 12.940453s	N/A	
Z1-SL-7016	30° 25m 30.57534s	84° 05m 33.333846s	NO	
Z1-SL-7017	30° 40m 12.029853s	86° 26m 45.95715s	NO	
Z1-SL-7018	30° 57m 31.506659s	85° 39m 08.320386s	N/A	
Z1-SL-7019	30° 06m 57.199353s	84° 23m 35.578154s	N/A	
Z1-SL-7020	30° 30m 43.61011s	85° 36m 17.308676s	NO	

You will get a screen with all the recon data in pipe-delimited form (**Figure 20**). From the Internet Explorer Tool bar, click **File** → **Save As...** and navigate to the desired folder. Change the file name to one that reflects the contents of the file, and click **Save**.

Figure 20. Results of clicking the Generate Export File button

http://waterwebprod/gwis/output/459175885.txt

waterwebprod

```
pk_random_sample_location|station_id|resource_type|reporting_unit|reporting_cycle|waterbody_type|waterbody_name|agency_in_charge|sampleable|sampled
Z1-SL-7001|SMALL LAKE|ZONE 1|7|LAKE||N/A|303915.269422|841305.976793|30|39|15.269422|84|13|5.976793|LEON|73|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT - P
Z1-SL-7002|SMALL LAKE|ZONE 1|7|LAKE||N/A|304608.418314|861548.524274|30|46|8.418314|86|15|48.524274|WALTON|131|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT
Z1-SL-7003|SMALL LAKE|ZONE 1|7|LAKE||N/A|303356.078932|844159.755398|30|33|56.078932|84|41|59.755398|GADSDEN|39|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT
Z1-SL-7004|SMALL LAKE|ZONE 1|7|LAKE|ISLAND POND|N/A|302540.135928|853744.860357|30|25|40.135928|85|37|44.860357|BAY|5|NORTHWEST FLORIDA WMD|NORTHWEST DI
Z1-SL-7005|SMALL LAKE|ZONE 1|7|LAKE|LOST BOY POND|NO|303902.309907|863728.026982|30|39|2.309907|86|37|28.026982|OKALOOSA|91|NORTHWEST FLORIDA WMD|NORTHW
Z1-SL-7006|SMALL LAKE|ZONE 1|7|LAKE||N/A|305035.007133|845705.539582|30|50|35.007133|84|57|5.539582|JACKSON|63|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT
Z1-SL-7007|SMALL LAKE|ZONE 1|7|LAKE||N/A|295620.663609|842921.75056|29|56|20.663609|84|29|21.75056|FRANKLIN|37|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT
Z1-SL-7008|SMALL LAKE|ZONE 1|7|LAKE|HORSESHOE LAKE|N/A|302229.932712|861957.935489|30|22|29.932712|86|19|57.935489|WALTON|131|NORTHWEST FLORIDA WMD|NORTH
Z1-SL-7009|SMALL LAKE|ZONE 1|7|LAKE||NO|305919.588621|861039.559573|30|59|19.588621|86|10|39.559573|WALTON|131|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT
Z1-SL-7010|SMALL LAKE|ZONE 1|7|LAKE||N/A|305345.17664|850031.70128|30|53|45.17664|85|0|31.70128|JACKSON|63|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT - PE
Z1-SL-7011|SMALL LAKE|ZONE 1|7|LAKE|CARL POND|N/A|302941.000013|854903.765731|30|29|41.000013|85|49|3.765731|WASHINGTON|133|NORTHWEST FLORIDA WMD|NORTHW
Z1-SL-7012|SMALL LAKE|ZONE 1|7|LAKE|LITTLE ROBERTS POND|N/A|303226.111713|840847.327308|30|32|26.111713|84|8|47.327308|LEON|73|NORTHWEST FLORIDA WMD|NOR
Z1-SL-7013|SMALL LAKE|ZONE 1|7|LAKE||NO|305409.510715|855737.901629|30|54|9.510715|85|57|37.901629|HOLMES|59|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT -
Z1-SL-7014|SMALL LAKE|ZONE 1|7|LAKE||NO|303458.335697|851615.48469|30|34|58.335697|85|16|15.48469|JACKSON|63|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT -
Z1-SL-7015|SMALL LAKE|ZONE 1|7|LAKE|WOODY POND|N/A|302831.639885|854012.940453|30|28|31.639885|85|40|12.940453|WASHINGTON|133|NORTHWEST FLORIDA WMD|NORTH
Z1-SL-7016|SMALL LAKE|ZONE 1|7|LAKE||NO|302530.57534|840533.333846|30|25|30.57534|84|5|33.333846|LEON|73|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT - PENS
Z1-SL-7017|SMALL LAKE|ZONE 1|7|LAKE|KEMMONS POND|NO|304012.029853|862645.95715|30|40|12.029853|86|26|45.95715|OKALOOSA|91|NORTHWEST FLORIDA WMD|NORTHWEST
Z1-SL-7018|SMALL LAKE|ZONE 1|7|LAKE||N/A|305731.506659|853908.320386|30|57|31.506659|85|39|8.320386|HOLMES|59|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT -
Z1-SL-7019|SMALL LAKE|ZONE 1|7|LAKE|LITTLE ELLEN LAKE|N/A|300657.199353|842335.578154|30|6|57.199353|84|23|35.578154|WAKULLA|129|NORTHWEST FLORIDA WMD|N
Z1-SL-7020|SMALL LAKE|ZONE 1|7|LAKE|LITTLE GOLF POND|NO|303043.61011|853617.308676|30|30|43.61011|85|36|17.308676|WASHINGTON|133|NORTHWEST FLORIDA WMD|N
Z1-SL-7021|SMALL LAKE|ZONE 1|7|LAKE|JOHN STAFFORD POND TWO|N/A|304706.545996|863212.871872|30|47|6.545996|86|32|12.871872|OKALOOSA|91|NORTHWEST FLORIDA
Z1-SL-7022|SMALL LAKE|ZONE 1|7|LAKE||N/A|305003.807098|850102.661418|30|50|3.807098|85|12|6.61418|JACKSON|63|NORTHWEST FLORIDA WMD|NORTHWEST DISTRICT -
Z1-SL-7023|SMALL LAKE|ZONE 1|7|LAKE|JULIA, LAKE|N/A|300645.298056|851216.059571|30|16|45.298056|85|12|16.059571|GULF|45|NORTHWEST FLORIDA WMD|NORTHWEST D
```

Open Excel, click **Open**, and when the dialog box appears, navigate to folder where you saved the file. Make sure “All Files” is selected, instead of the default, “All Excel Files”. Select your file and click **Open**. Excel’s Text Import Wizard will pop up (**Figure 21**). Click on the **Delimited** button and then **Next**.

Figure 21. Text Import Wizard (Step 1 of 3)

Text Import Wizard - Step 1 of 3

The Text Wizard has determined that your data is Fixed Width.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

☒ **Delimited** - Characters such as commas or tabs separate each field.

☐ Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row: 1 File origin: 437 : OEM United States

Preview of file C:\Users\gay_jk\Desktop\459175885.txt.

pk_random_sample_location	station_id	resource_type	reporting_unit	reporting_date
1	Z1-SL-7001	SMALL LAKE	ZONE 1	7
2	Z1-SL-7002	SMALL LAKE	ZONE 1	7
3	Z1-SL-7003	SMALL LAKE	ZONE 1	7
4	Z1-SL-7004	SMALL LAKE	ZONE 1	7

Buttons: Cancel, < Back, Next >, Finish

Refer to **Figure 22** 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 22. Text Import Wizard, step 2 of 3

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☐ Tab

☐ Semicolon

☐ Comma

☐ Space

☒ **Other:** |

☐ Treat consecutive delimiters as one

Text qualifier: "

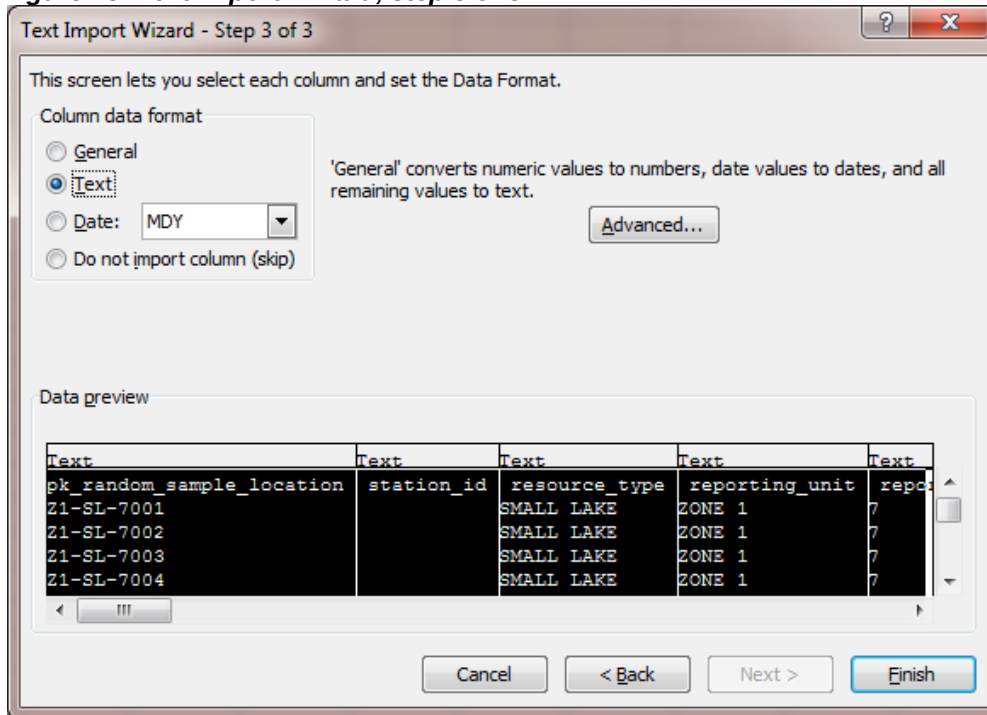
Data preview

pk_random_sample_location	station_id	resource_type	reporting_unit	reporting_date
1	Z1-SL-7001	SMALL LAKE	ZONE 1	7
2	Z1-SL-7002	SMALL LAKE	ZONE 1	7
3	Z1-SL-7003	SMALL LAKE	ZONE 1	7
4	Z1-SL-7004	SMALL LAKE	ZONE 1	7

Buttons: Cancel, < Back, Next >, Finish

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 23**). Then, click **Text** to format all columns as text.

Figure 23. Text Import Wizard, step 3 of 3



Click **Finish**. You will get a screen with the stations, resource, etc. in columns and rows. Now click **Save As... → Excel Workbook**. You can keep the same file name or change it. 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 of 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

Title/Description	Name	Phone	Email
Data Manager (GWIS Database Utilities Questions)	Theresa Bouie	(850) 245-8012	Theresa.Bouie@dep.state.fl.us
Environmental Administrator (Watershed Monitoring Section)	Gail Sloane	(850) 245-8512	Gail.Sloane@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)	Tom Biernacki	(850) 245-8515	Thomas.Biernacki@dep.state.fl.us
Zone 3 (St. Johns River Water Management District)	Tom Seal	(850) 245-8514	Thomas.Seal@dep.state.fl.us
Zone 4 (Southwest Florida Water Management District)	Kate Muldoon	(850) 245-8579	Kathryn.Muldoon@dep.state.fl.us
Zone 5 (South Florida Water Management District – Ft. Myers)	Stephanie Sunderman	(850) 245-8517	Stephanie.SundermanBarnes@dep.state.fl.us
Zone 6 (South Florida Water Management District – Ft. Pierce)	Stephanie Sunderman	(850) 245-8517	Stephanie.SundermanBarnes@dep.state.fl.us

Station Information

(* = 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