



# PHOENIX

Hanford On-line Environmental Information Exchange

<http://phoenix.pnnl.gov/>

## Functions and usage guide

**PNNL-SA-91758**

PNNL launched PHOENIX to enhance decision making processes at the Hanford Site by providing easy access to basic Hanford site characterization information in an intuitive map-based environment.

PHOENIX is a platform to which multiple widgets can be added to provide a wide range of analytical capabilities. Using web services, PHOENIX presents data managed by several different Hanford contractors through a single web portal. Because PHOENIX connects to several databases and services maintained by other contractors, functionality could be limited at times if those resources are unavailable.

The PHOENIX development team wants to make PHOENIX as useful to the Hanford community as possible. If you have any ideas, suggestions or comments please contact:

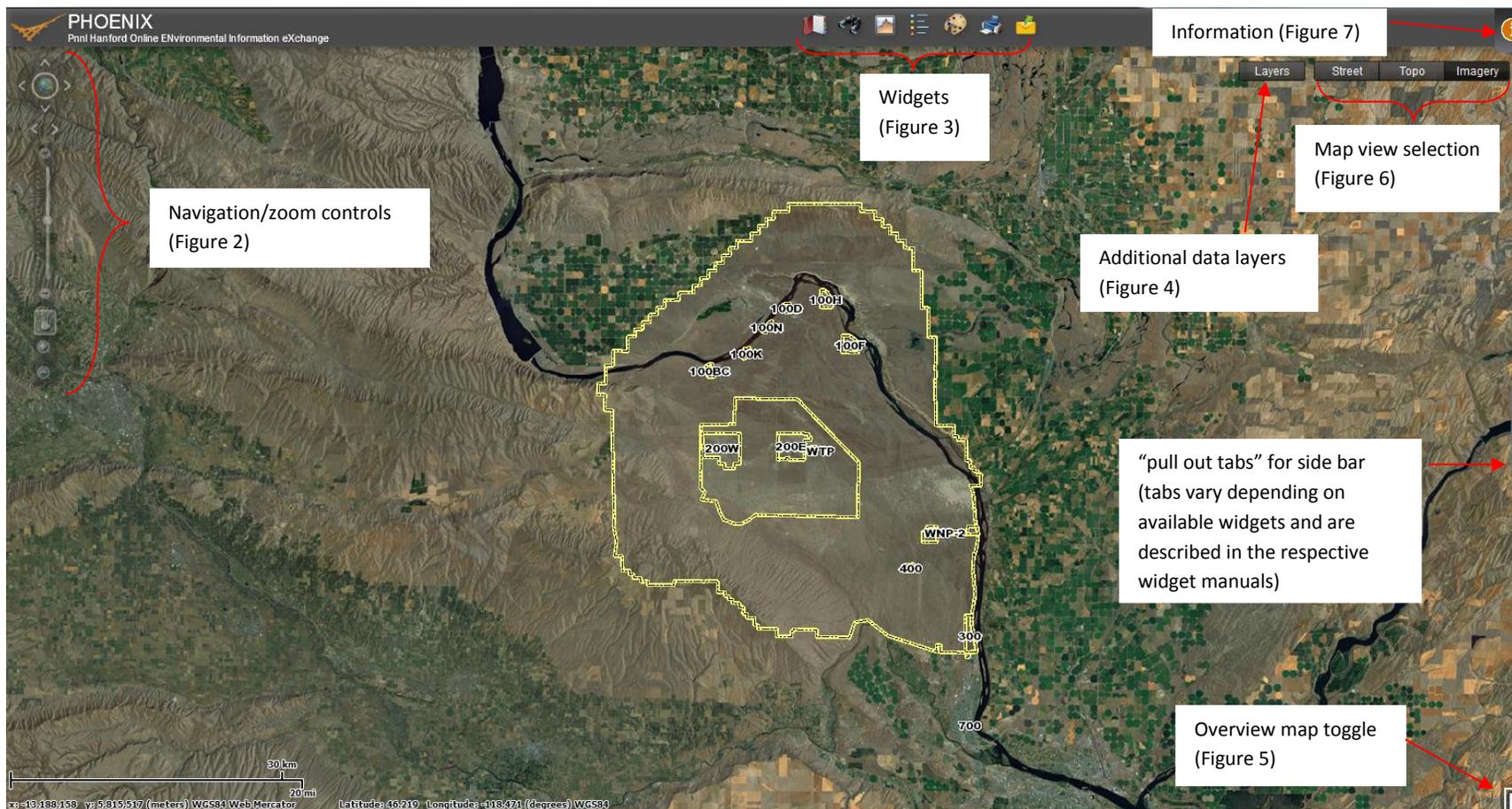
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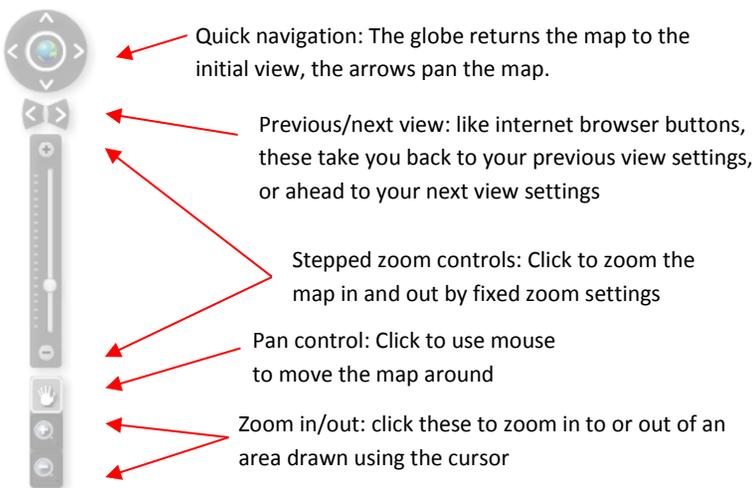


Figure 1. Basic PHOENIX controls

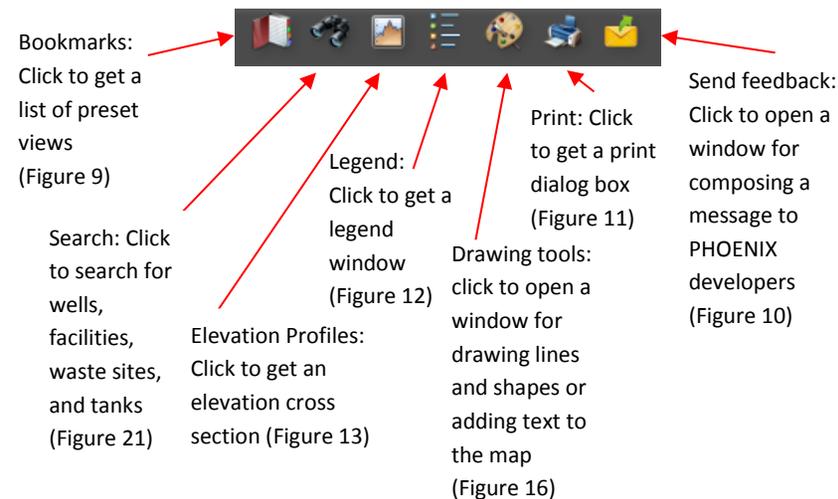




**Figure 2.** PHOENIX navigation/zoom controls. Note that the mouse wheel can also be used to zoom into and out of the map.

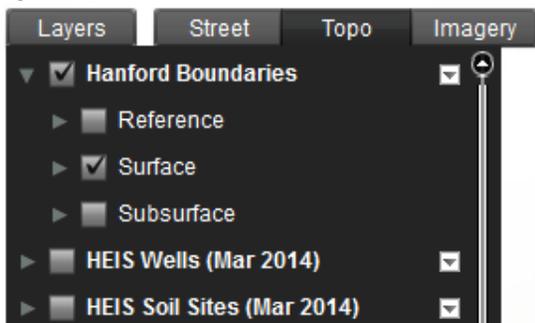


**Figure 3.** PHOENIX widget bar with basic widgets



Note: additional widgets may be present. These widgets have their own user's manuals.

**Figure 4.** Additional data layers are accessed by clicking the "Layers" button. This exposes a data tree. Clicking the check box next to nodes with bold text ("Hanford Boundaries" in this example) activates the child nodes ("Surface" in this example). Clicking the triangle to the left of a node expands it; clicking it again collapses it. The triangle to the right of the node contains a context menu for managing the layer's properties (Figure 8).

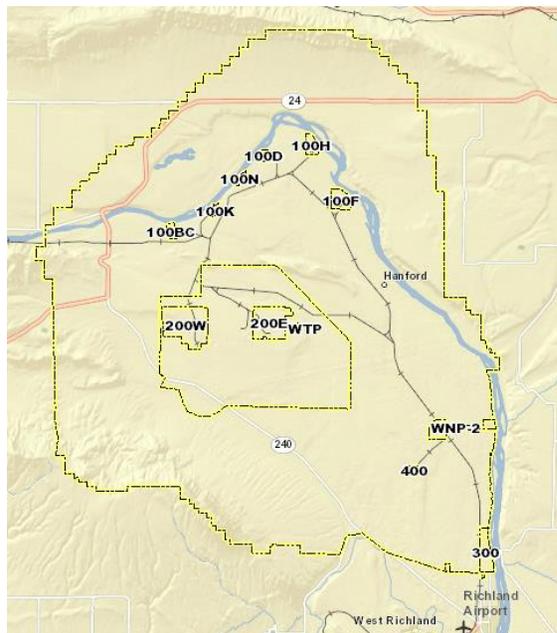


**Figure 5.** Overview map. The red box in the overview map shows the extent of the entire map being shown in the main view. Clicking on the red box and moving it around the overview map changes the main map view accordingly.

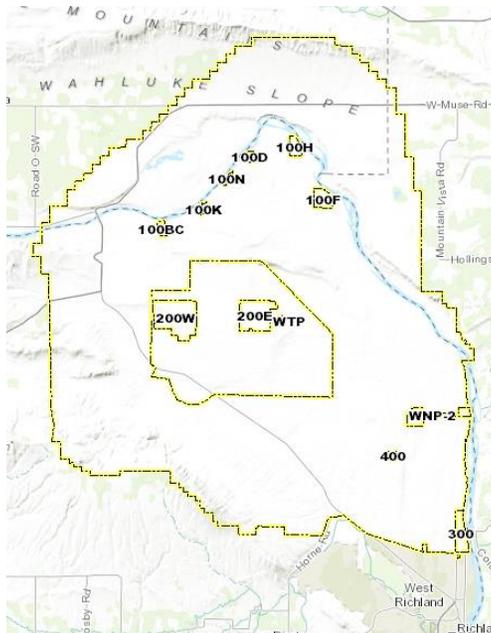




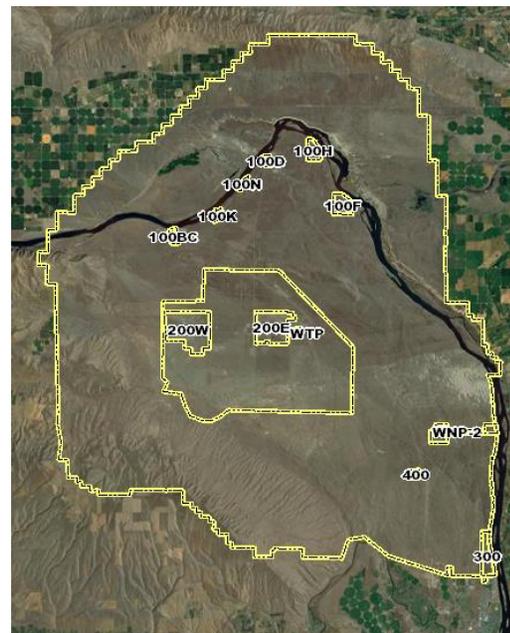
Figure 6. Comparison of “Streets”, “Topo” and “Imagery” views selectable from the Map View Selection Buttons (Figure 1)



Street View



Topo View



Imagery View



Figure 7. Information boxes

Click here for usage manuals for specific widgets

Click here for information about PHOENIX data sources

Click here for links to references for the TPA and regulations

Click here to read the PNNL Disclaimer

Click here for the general PHOENIX user's guide

Click here for a document containing several example use cases

PHOENIX  
Pnnl Hanford Online ENvironmental Information eXchange

Welcome Widgets Metadata References Disclaimer

PNNL launched the "Pnnl-Hanford Online ENvironmental Information eXchange" (PHOENIX) to improve public access to public data and to enhance decision making processes at the Hanford Site by providing query, analysis, visualization, and extraction tools for basic Hanford Site characterization information in an intuitive map-based environment.

Using web services, we are able to present information managed by several different Hanford contractors through a single web portal.

This project was co-funded by PNNL and DOE-RL Hanford Groundwater Project (Briant Charboneau).

User's Guide  
Example Use Cases

Pacific Northwest  
NATIONAL LABORATORY  
Proudly Operated by **Battelle** Since 1965

Widgets information box

These buttons will download widget-specific users' manuals. As new widgets are developed, more download buttons will be added.

Welcome Widgets Metadata References Disclaimer

Please download the instructions to learn how a particular widget operates, including what data are used and they are treated.

TPAWidget  
Ad-hoc Widget

Metadata information box

Hanford Environmental Information System (HEIS)

The Hanford Environmental Information System (HEIS) database is the official repository of data from soil, biota, atmospheric, miscellaneous material, surface water and groundwater samples at the Hanford Site. HEIS is required by the Tri-Party Agreement, which is a legally binding agreement among the Department of Energy, Washington State Department of Ecology and the U.S. Environmental Protection Agency (EPA).

For HEIS related inquiries, please contact:

Carl W. Connell, Manager, Environmental Database Systems  
Phone: (509) 376-3920  
Email: Carl\_W\_Connell@rl.gov

These buttons scroll through screens describing the data sources used in PHOENIX. Each Data source and related contact information is displayed in its own screen.

Welcome Widgets Metadata References Disclaimer

Navigation arrows



Figure 8. Layer management controls

Clicking this button opens and closes the menu.

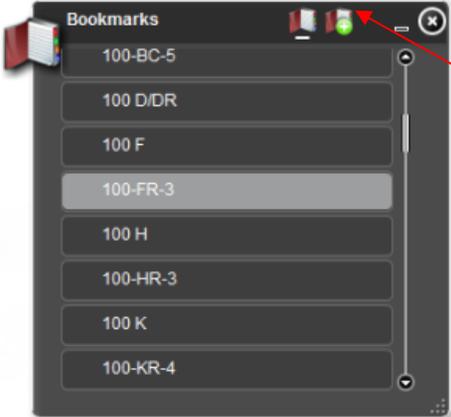
Clicking "Zoom to" resizes the map so that it encompasses the bounds of the selected layer.

Clicking "Transparency" opens a slider control next to this menu allowing the transparency of the selected layer to be changed in real-time.

Clicking "Move up" moves the selected layer upwards in the menu as well as in the layers on the map. If a layer is hidden by other overlying layers, clicking this will bring it toward the top and make it visible.

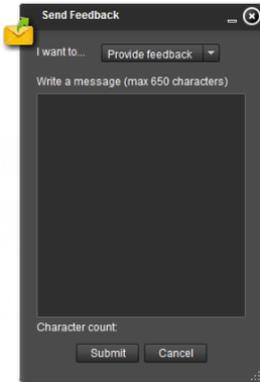
Clicking "Move down" moves the selected layer downwards in the menu as well as in the layers on the map. Moving the selected layer down will eventually hide it beneath the other layers.

Clicking "Description" opens a web page containing the technical details about the selected layer. Layer can also be downloaded in several formats (i.e. Google Earth, ArcMap).

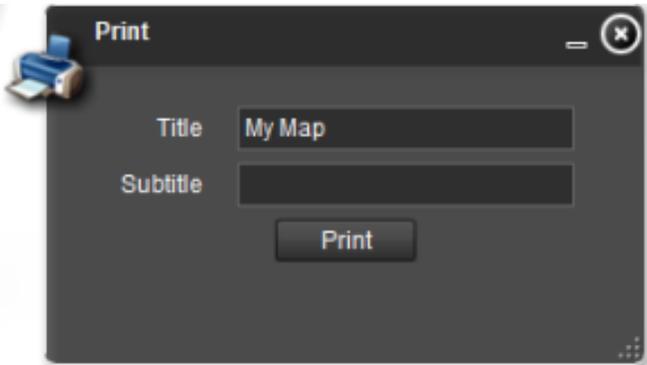


**Add bookmark button:** Clicking this button opens a window allowing the current location and zoom level to be saved for future use as a custom bookmark with a user defined name.

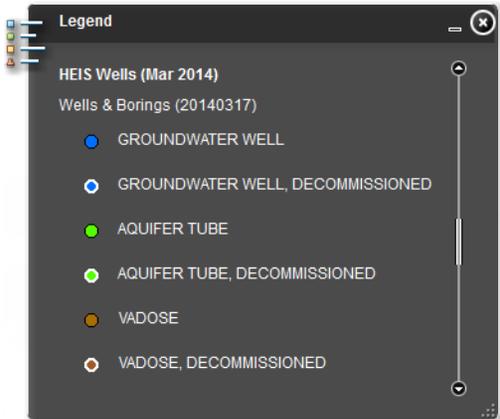
**Figure 9.** Bookmarks widget accessed through the Bookmarks button on the tool bar (Figure 3). Each bookmark is a pre-defined extent; clicking on the bookmark will center the map on that location and zoom to the defined extents.



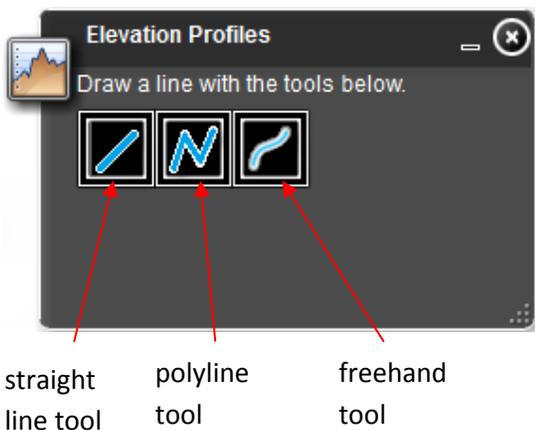
**Figure 10.** Send Feedback widget accessed through the Send Feedback button on the tool bar (Figure 3). The e-mail subject can be chosen from the drop down box and a message of up to 650 characters can be written in the text box. Clicking the Submit button sends the message to the PHOENIX support e-mail account.



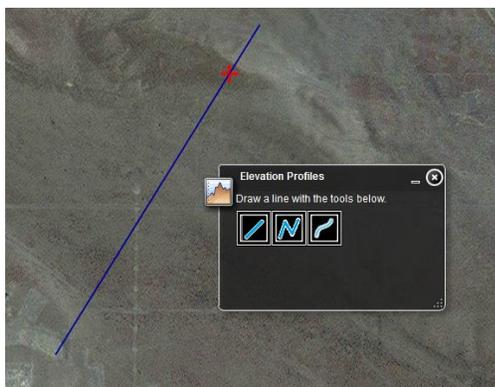
**Figure 11.** Print widget accessed through the Print button on the tool bar (Figure 3). The title and subtitle can be configured through this widget. The print widget will capture everything on the map, including user-added text and drawing annotations (Figure 16).



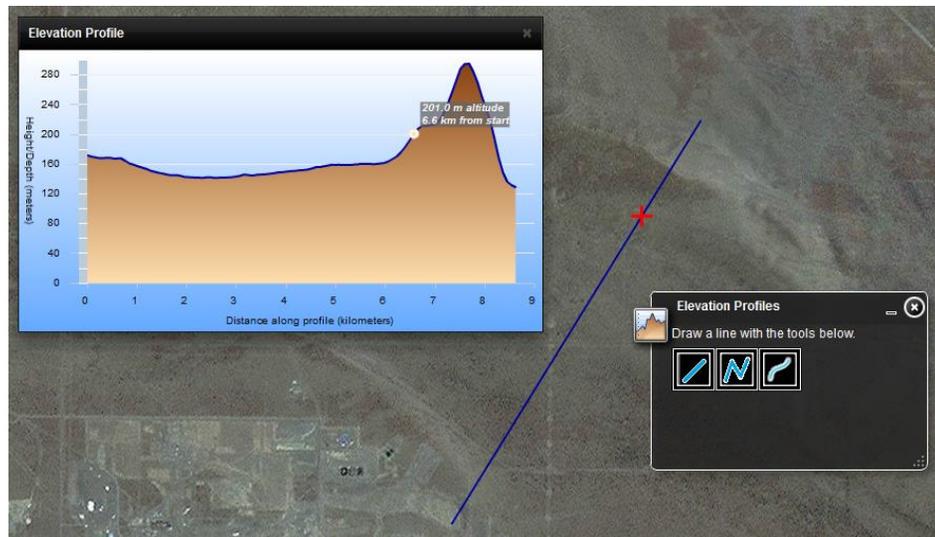
**Figure 12.** Legend widget accessed through the Legend button on the tool bar (Figure 3). The legend is dynamic and will automatically update as layers are turned on and off in the layer tree (Figure 4).



**Figure 13.** Elevation Profiles tool. Clicking one of the buttons allows you to draw a line on the map and produce an elevation cross section (Figure 14). Pop up hints provide instructions.



**Figure 14.** Drawing a line on the map in order to create an elevation cross section. When the line is complete, PHOENIX automatically creates and displays the cross section (Figure 15).



**Figure 15.** Elevation profile created by PHOENIX based on the user-drawn line in Figure 14. The line and profile are linked so that hovering the cursor over the profile produces a red marker on the line indicating its location. Hovering the cursor over the profile also produces a pop up with the altitude and the distance from the start of the line on the map.

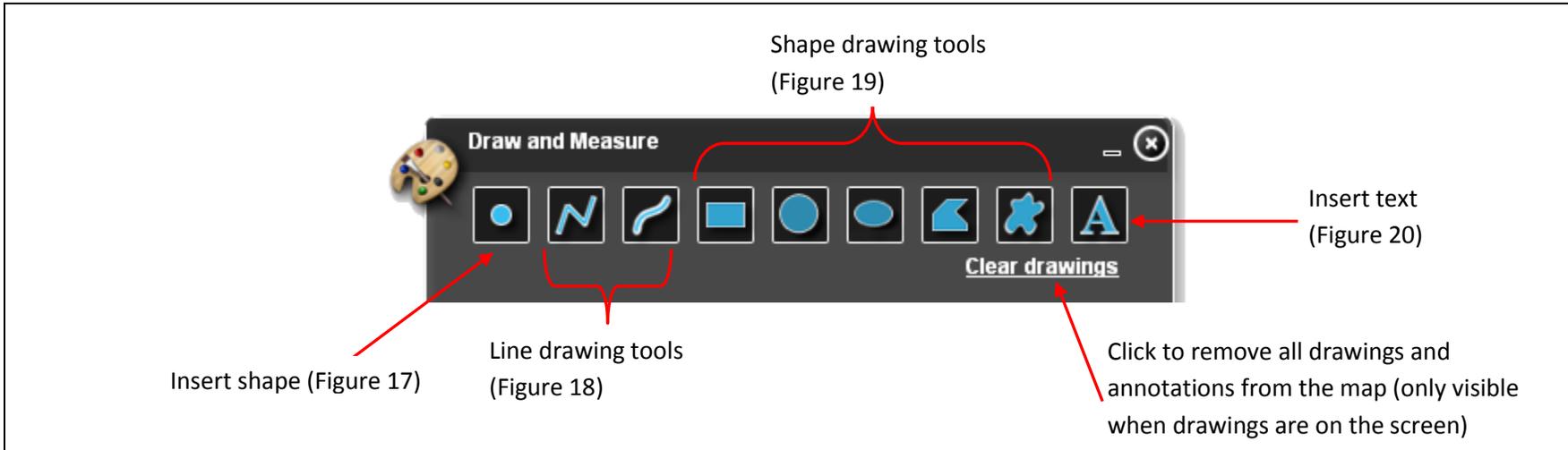


Figure 16 The draw and measure widget accessed by the draw and measure button on the tool bar (Figure 3).

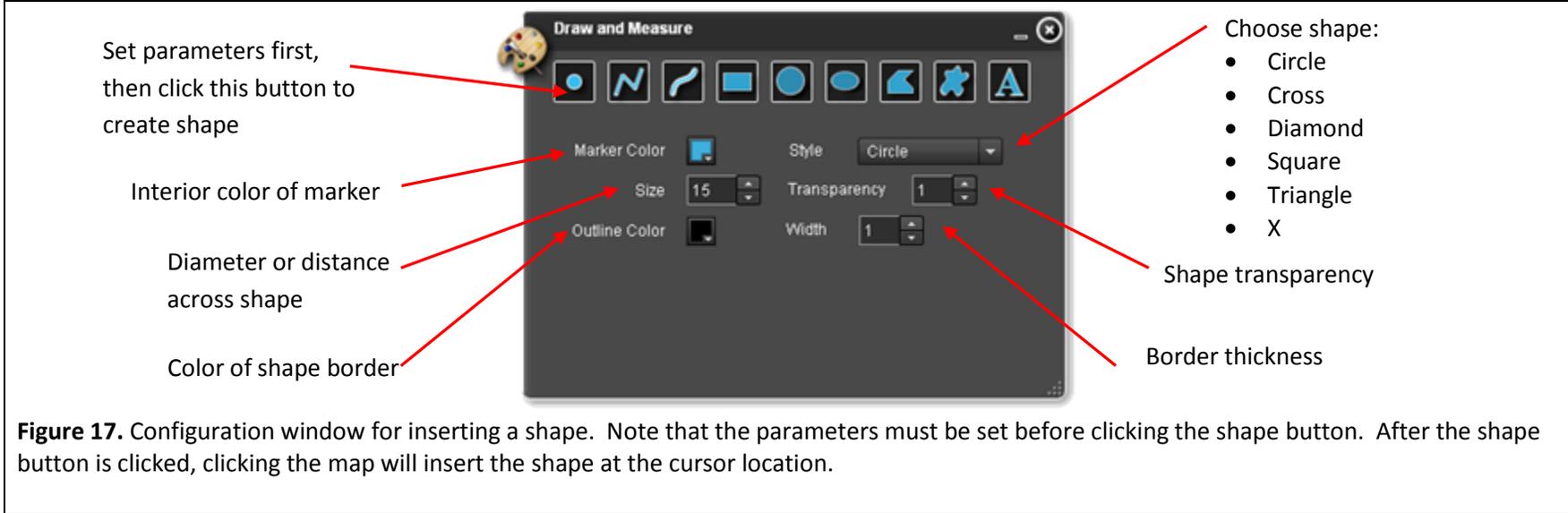


Figure 17. Configuration window for inserting a shape. Note that the parameters must be set before clicking the shape button. After the shape button is clicked, clicking the map will insert the shape at the cursor location.



Line color

Line width

Checking this box places the length of the line using the map scale and the units selected in the drop-down box

Choose line type:

- Solid
- Dash
- Dot
- Dash Dot
- Dash Dot Dot

Line transparency

Measurement units

**Figure 18.** Configuration window for drawing lines. Note that the parameters must be set before clicking one of the two line buttons. After a line button is clicked, the line can be drawn by clicking the map and following the pop-up instructions.

Interior color of marker

Shape transparency

Color of shape border

Checking this box places circumference (or perimeter) and area of the shape on the map

Choose shape fill style:

- Solid
- Backward Diagonal
- Cross
- Forward Diagonal
- Horizontal
- Vertical

Border thickness

Drop down boxes to select units for area and perimeter

**Figure 19.** Configuration window for drawing a shape. Note that the parameters must be set before clicking one of the 5 shape buttons. After a shape button is clicked, the line can be drawn by clicking the map and following the pop-up instructions.

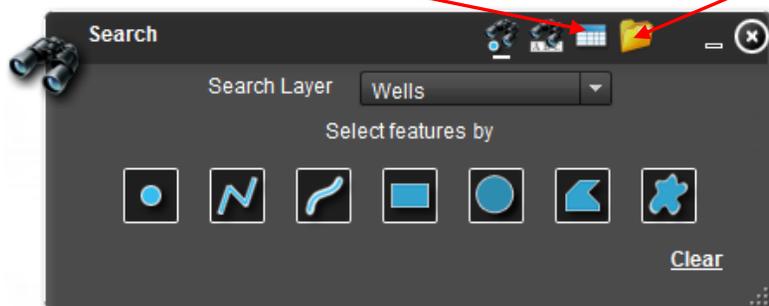


The image shows a software window titled "Draw and Measure" with a toolbar at the top containing icons for various drawing tools. Below the toolbar, there are three rows of controls for text: a "Text" input field, a "Font" dropdown menu set to "Arial", and a "Color" button. To the right of the "Text" field are three buttons labeled "B", "I", and "U". Below the "Color" button is a "Size" dropdown menu set to "20". Red arrows point from text labels to these controls: "Text to add to map" points to the text input field; "Font selection" points to the "Font" dropdown; "Text color" points to the "Color" button; "Font style" points to the "B", "I", and "U" buttons; and "Font size" points to the "Size" dropdown.

**Figure 20.** Configuration window for adding text to the map. Note that the parameters must be set before clicking the text button. After the text button is clicked, clicking the map will insert the text at the cursor location.



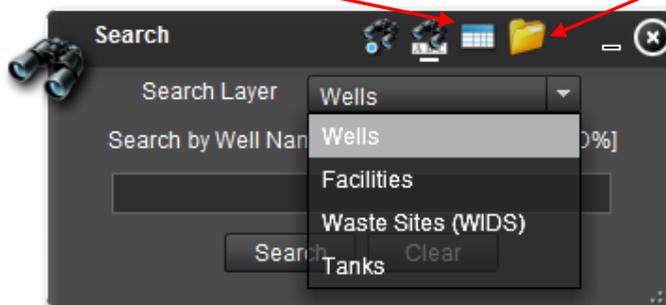
If the search finds results in the user-defined search area, the "Results" box will appear with all results listed. Click each individual result to zoom to the result area on the map and get detailed information about that specific result. Search results can be selected to export to MS Excel or .csv file.



Click "Export Results" to export selected results to either MS Excel or a .csv file.

**Figure 21.** Configuration window for searching for wells, facilities, waste sites, or tanks within a user-defined area. Use the drawing features to designate the extent of the search area. More information on the Search widget is provided in the Search Widget usage guide.

If the search finds results, the "Results" box will appear with all results listed. Click each individual result to zoom to the result area on the map and get detailed information about that specific result. Search results can be selected to export to MS Excel or .csv file.



Click "Export Results" to export selected results to either MS Excel or a .csv file.

**Figure 22.** Configuration window for searching for wells, facilities, waste sites, or tanks using a defined well ID, facility name, waste site ID, or tank ID. More information on the Search widget is provided in the Search Widget usage guide.