PHOENIX Tank Farms Application

PNNL-Hanford On-line Environmental Information Exchange

Tank Farms Web Application: http://phoenix.pnnl.gov/apps/tanks

Web Application Gallery: http://phoenix.pnnl.gov/

Functions and usage guide (PNNL-SA-98508, Rev. 8 - 6/8/2015)

The PHOENIX Tank Farms application is a joint effort between the Department of Energy Office of River Protection and the Pacific Northwest National Laboratory that provides a single access point to multiple data sets via standard web browsers. PHOENIX provides open and transparent access to current and historical data relevant to understanding the storage conditions of Hanford's tank waste.

The PHOENIX Tank Farms Application provides access to:

- Leak status and other basic information about SSTs and DSTs
- Historical and current in-tank sensor data: surface level, interstitial liquid level, temperature readings
- Atmospheric temperature and barometric pressure
- Tank/farm waste volume by phase (sludge, supernate, saltcake) and source
- Tank-specific inventory of key risk driving constituents
- Drywell gamma logging results for selected tank farms
- Tank volume and waste transfer history
- Trends in key groundwater contaminants (Central Plateau only)
- Multiple Hanford site GIS layers: facilities, waste sites, wells, etc.

The PHOENIX development team wants to make the PHOENIX Tank Farms Application as useful to the Hanford community as possible. If you have any questions, ideas, suggestions or comments please use the Feedback button or contact:

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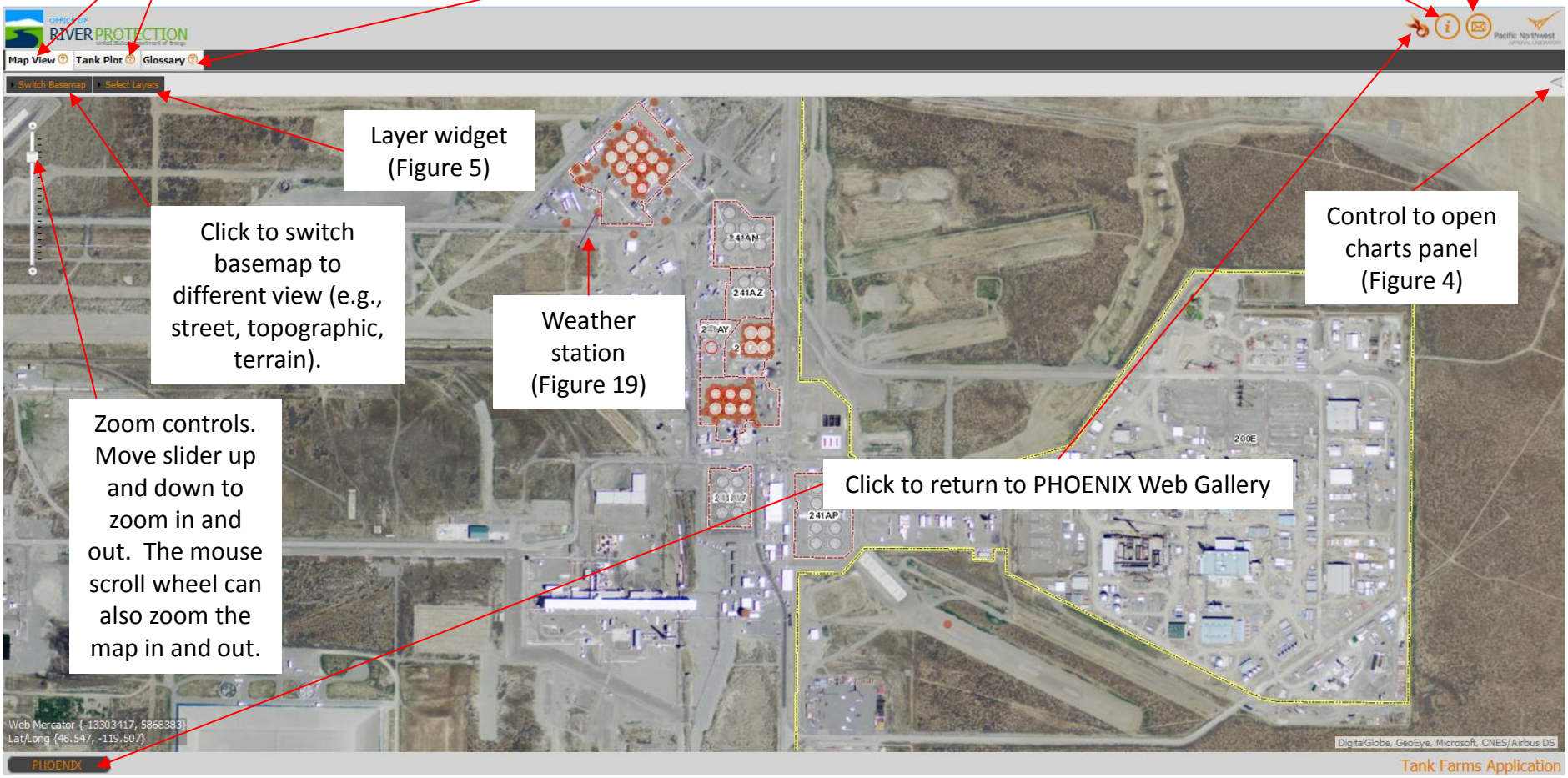
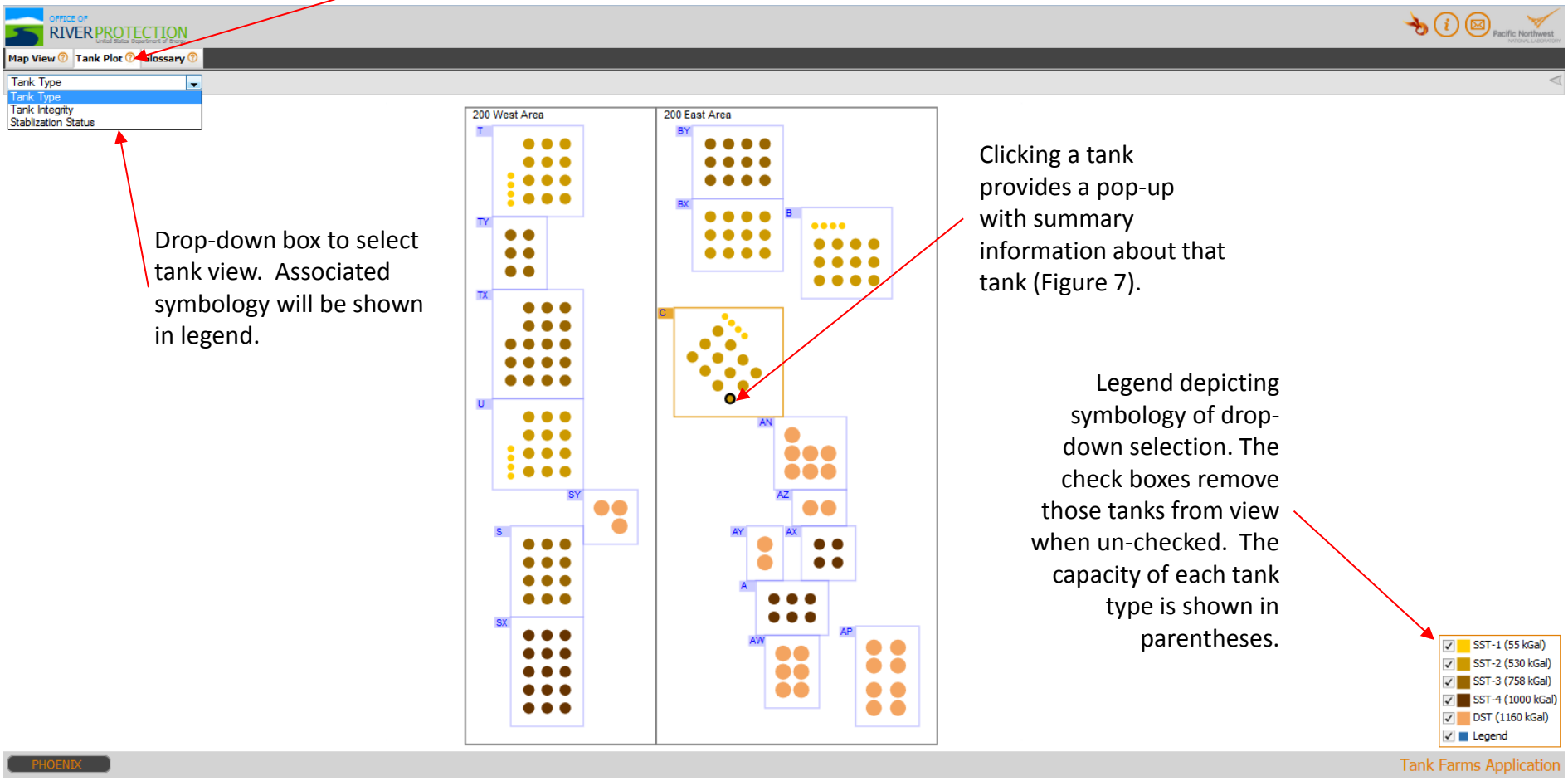


Figure 1. Initial map view highlighting basic application controls

Click the Question Mark icon to view the information widget to read more detailed information about the Tank Plot view.



Drop-down box to select tank view. Associated symbology will be shown in legend.

Clicking a tank provides a pop-up with summary information about that tank (Figure 7).

Legend depicting symbology of drop-down selection. The check boxes remove those tanks from view when un-checked. The capacity of each tank type is shown in parentheses.

Figure 2. Tank plot view highlighting basic application controls

Figure 3. Information widget

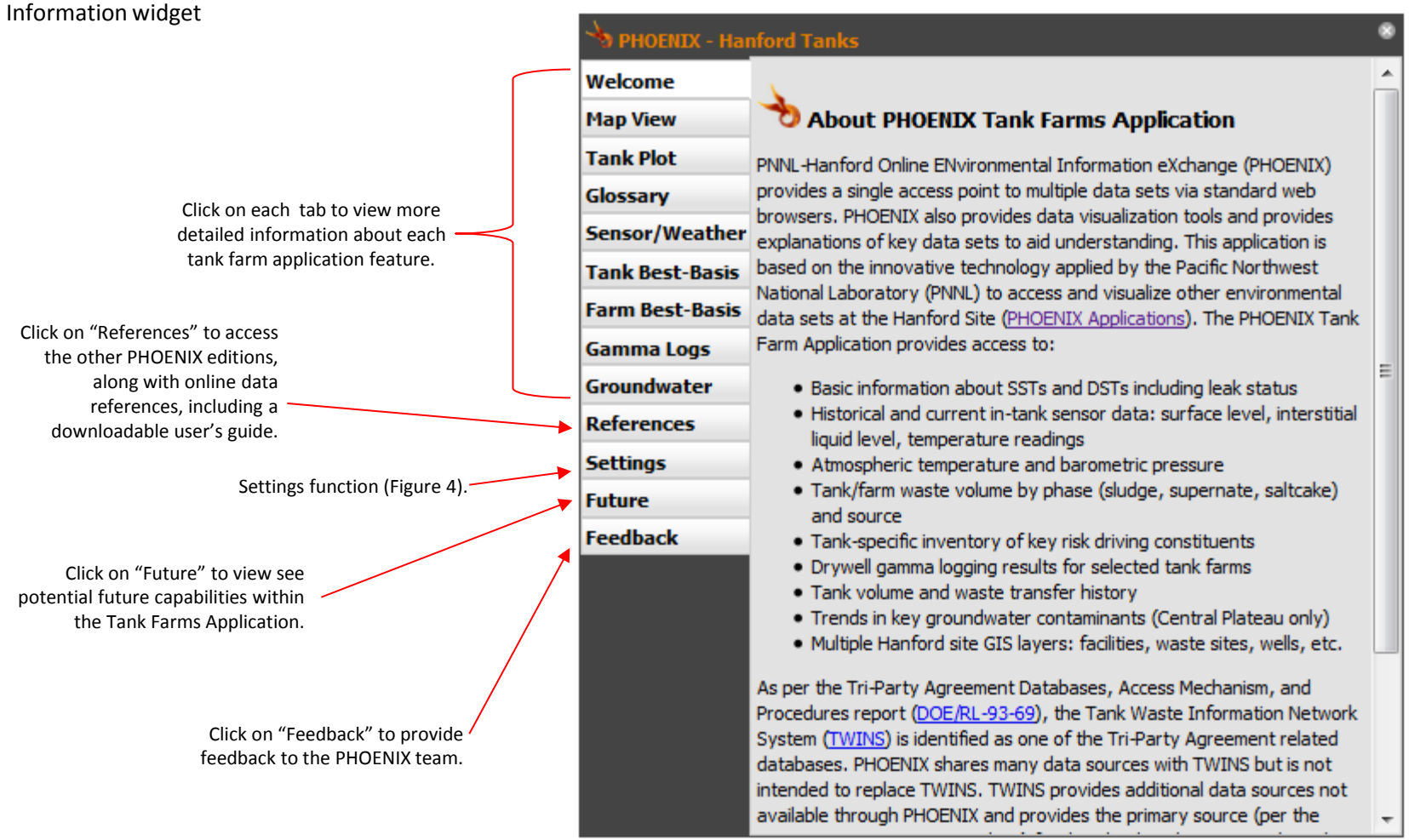


Figure 4. Settings function. Readings measured by monitoring stations in the Hanford Meteorological Monitoring Network.

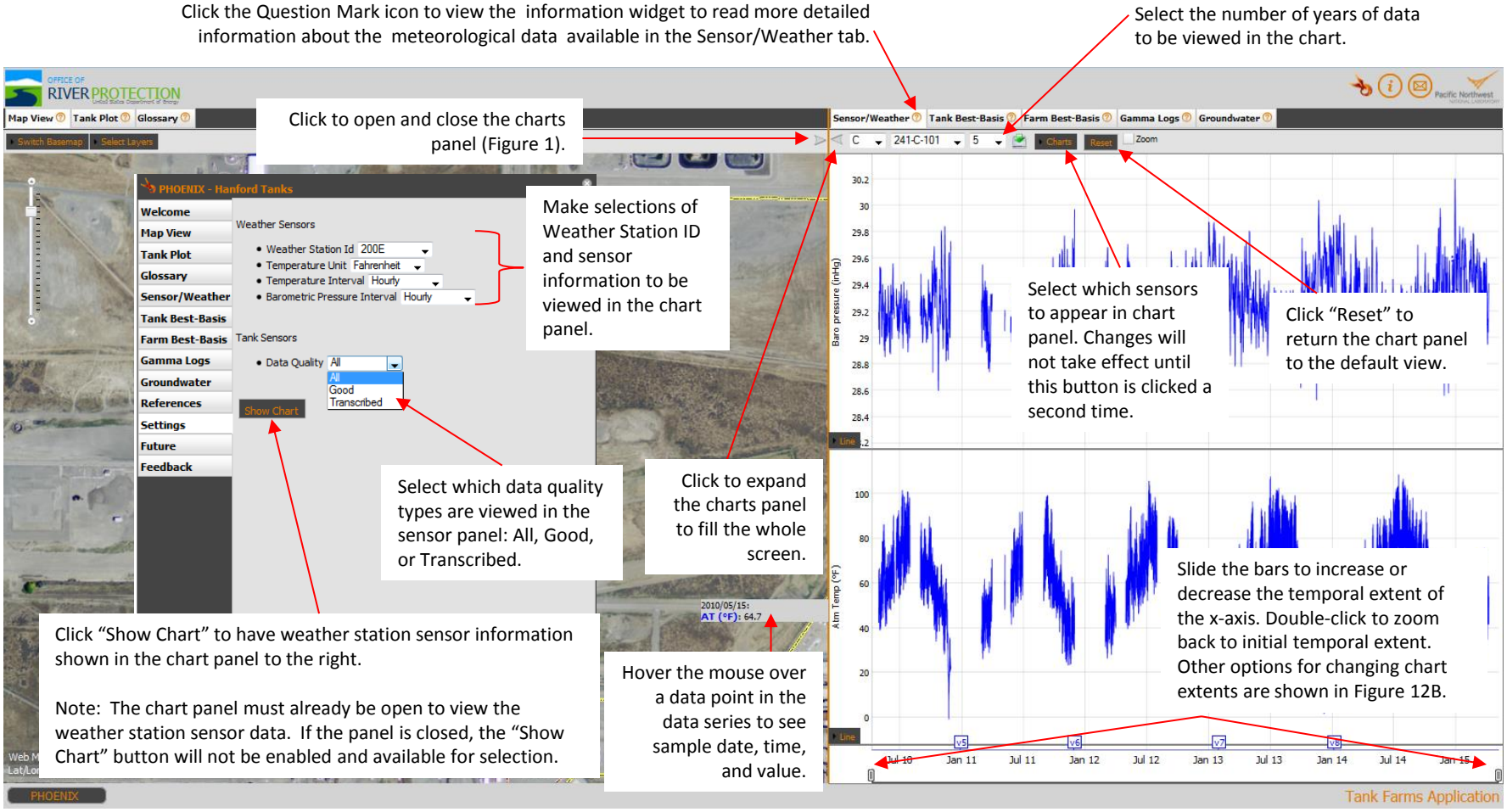
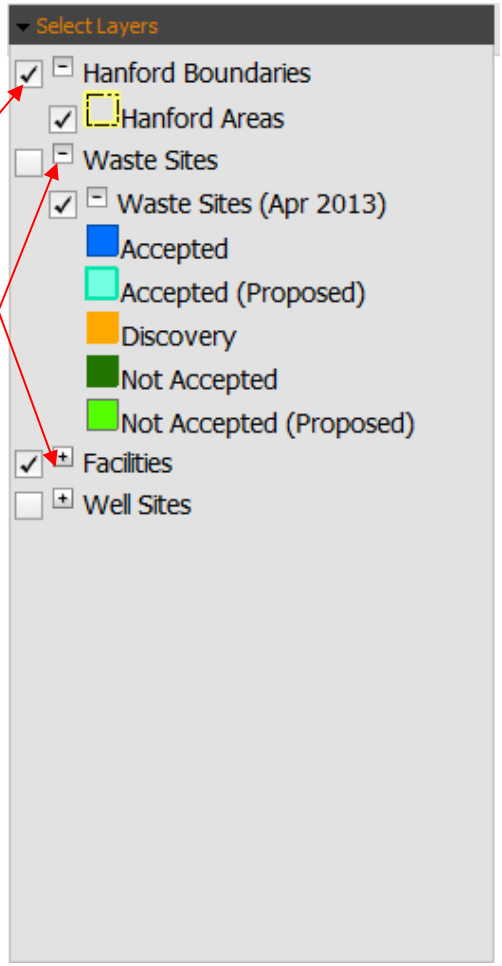


Figure 5. Layer widget



Check a box to show the layer. The parent layer must also be checked.

Clicking the "+" symbol expands the node to show all the child nodes; clicking "-" collapses it.

The layers widget also serves as a legend.

Figure 6. Map controls and features

Blue dots indicate groundwater wells. Clicking a well provides a pop-up with well information (Figure 16). Wells are only visible after zooming in to a certain extent.

Brown dots indicate boreholes or dry wells with available gamma log and concentration profile data. Clicking a well provides a pop-up with well information (Figure 14). Wells are only visible after zooming in to a certain extent.

Clicking a tank provides a pop-up with summary information about that tank (Figure 7).

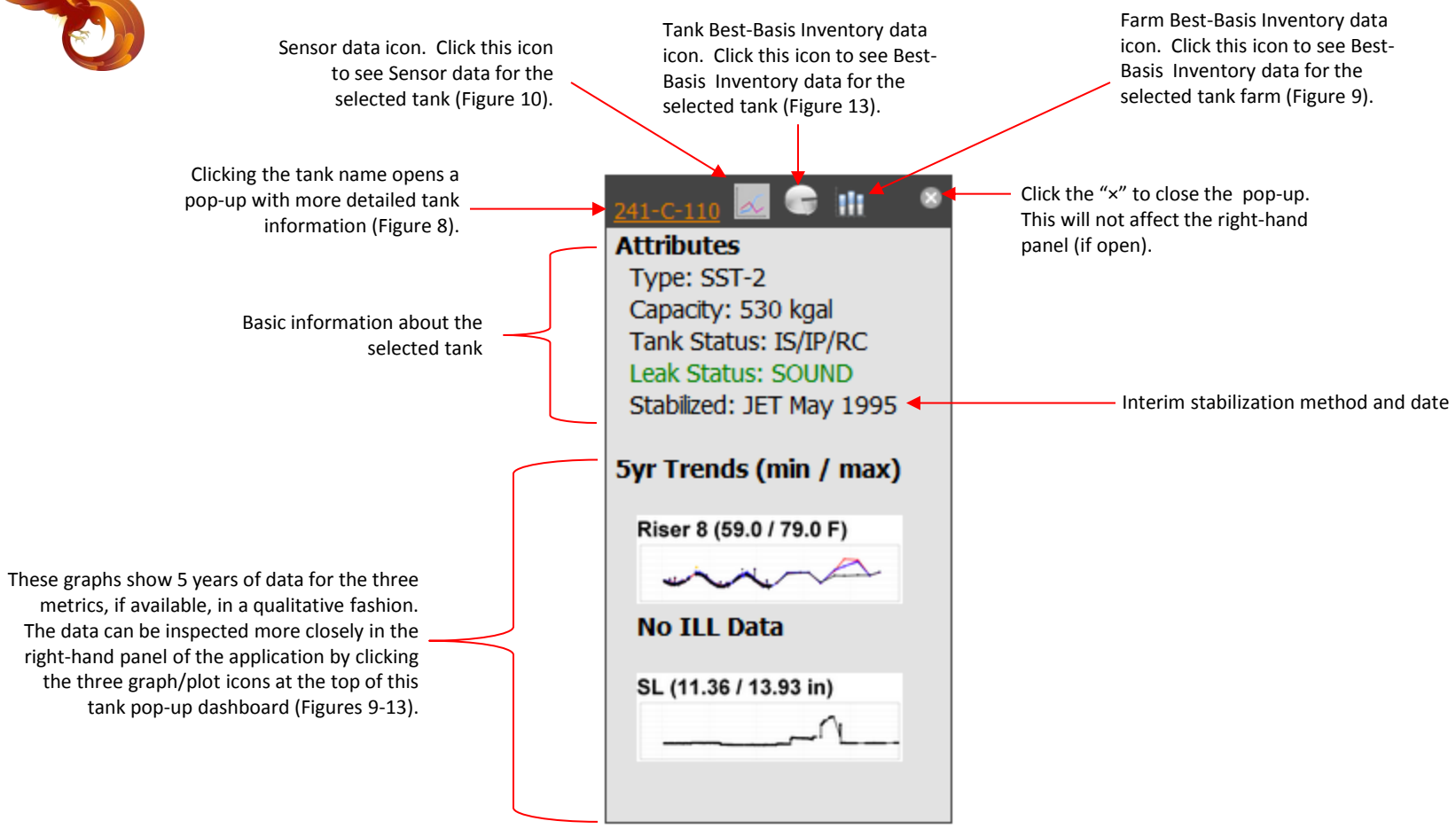
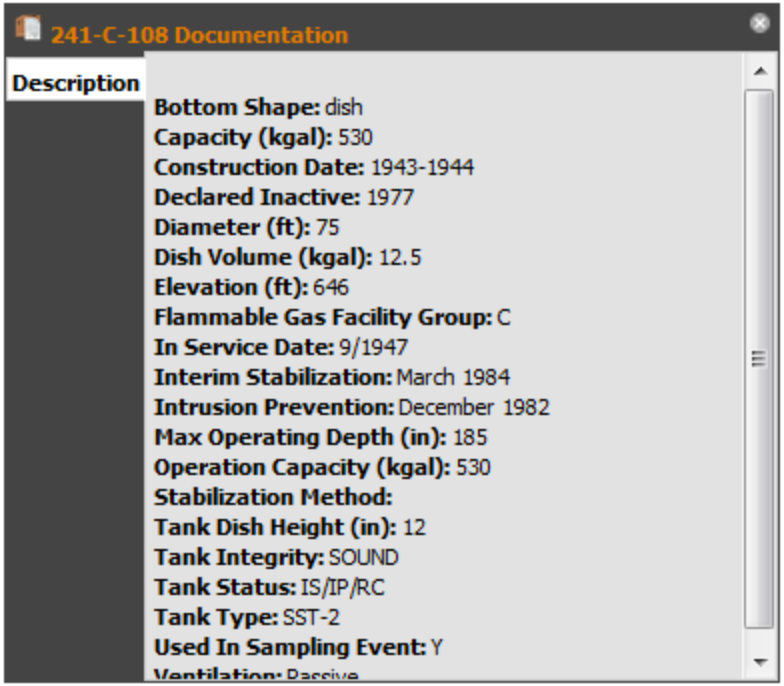


Figure 7. Tank pop-up

Figure 8. Detailed tank information pop-up. "Description" tab provides detailed information about the tank.



Select which tank farm to view Best-Basis Inventory data for from drop-drown menu.

Select which data/charts to view from drop-down menu.

Click the Question Mark icon to view the information widget to read more detailed information about the Farm Best Basis Inventory data.

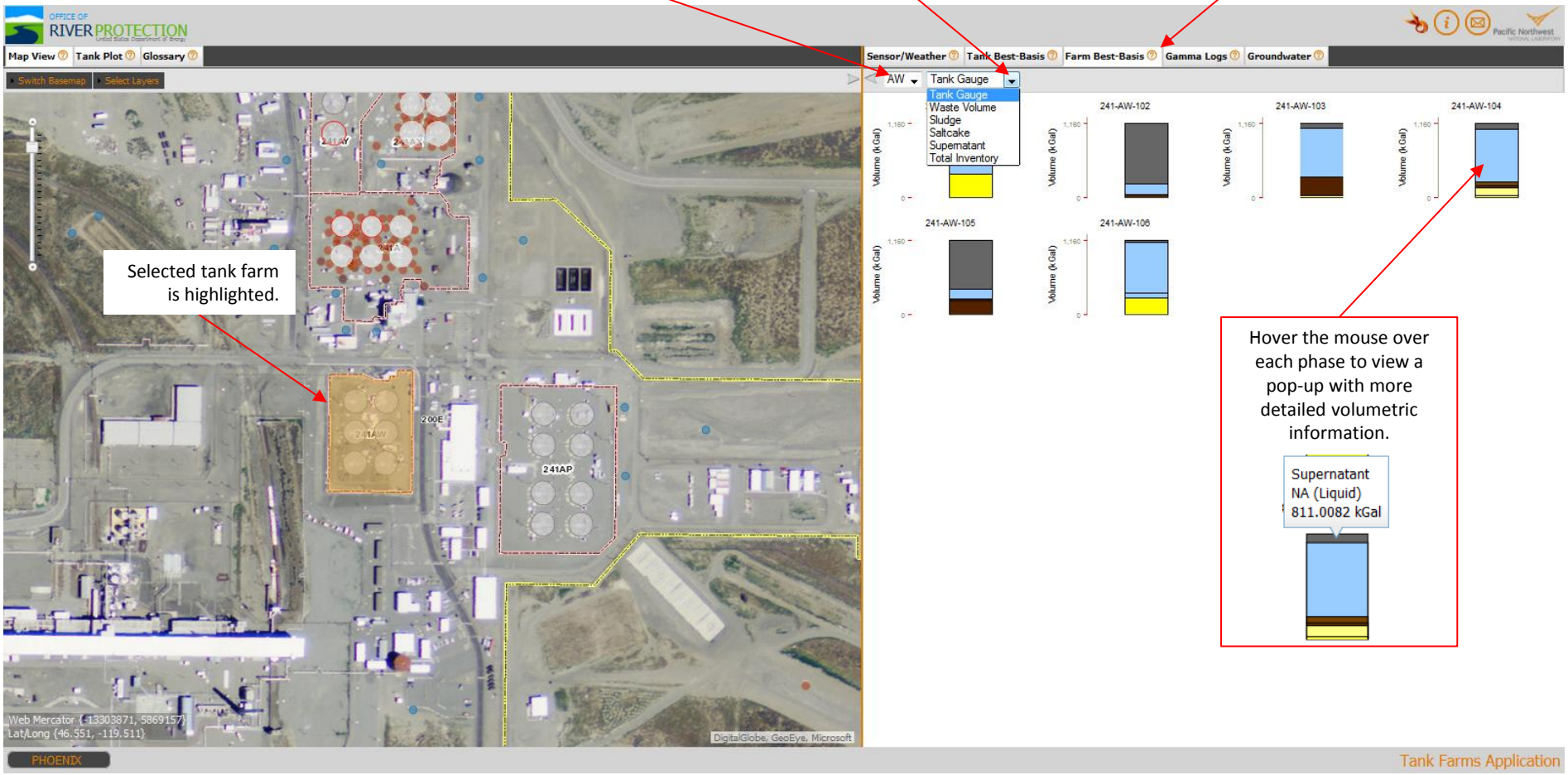


Figure 9. Farm Best-Basis Inventory chart panel

Select which tank farm and specific tank to view Sensor data for from drop-drown menus.

Click the Question Mark icon to view the information widget to read more detailed information about the tank Sensor data.

Select the number of years of data to be viewed in the chart.

Click the "Tank Info" icon to see corresponding chart data in tabular view (Figure 12A).

Select which sensors to appear in chart panel. Changes will not take effect until this button is clicked a second time.

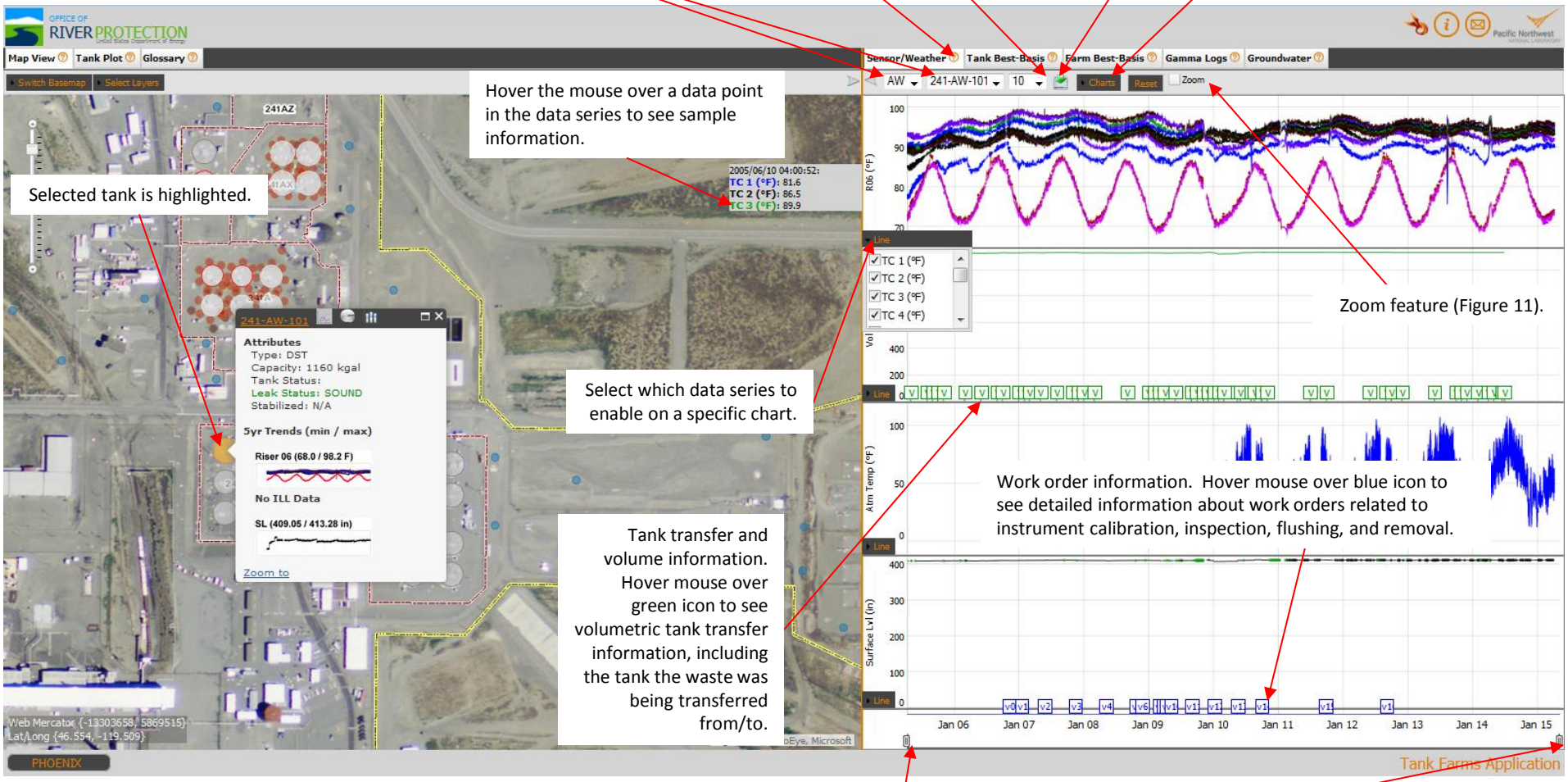


Figure 10. Sensor chart panel

When "Zoom" is unchecked, the charts in the panel are shown at an absolute scale (i.e. the operational depth of the tank for surface level).

When "Zoom" is checked, the charts in the panel are shown at a relative scale (see both the volume and surface level charts).

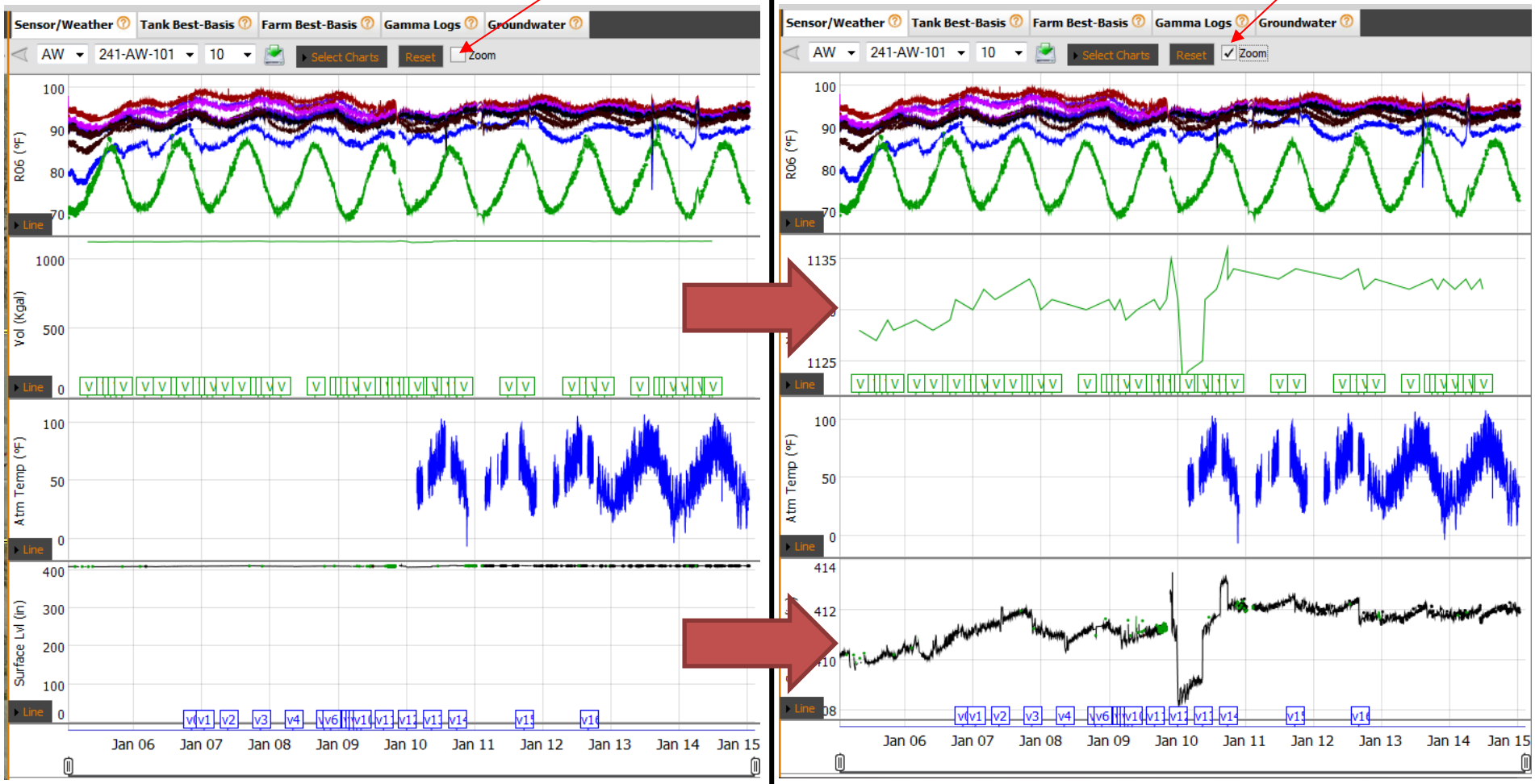
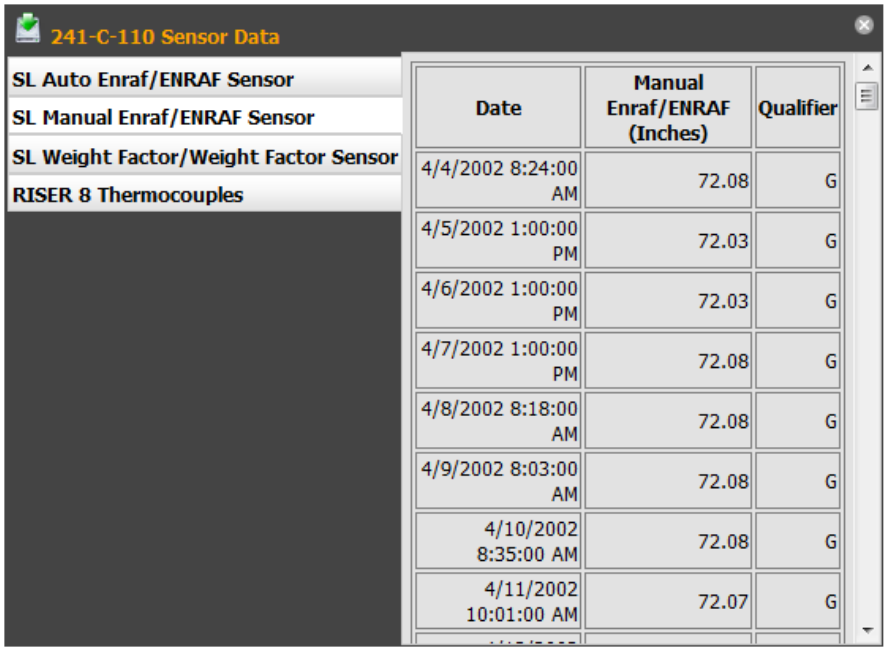


Figure 11. Zoom feature on sensor chart panel

Figure 12A. Tabular data view. Click through each tab on the left of the pop-up to view tab-specific data.

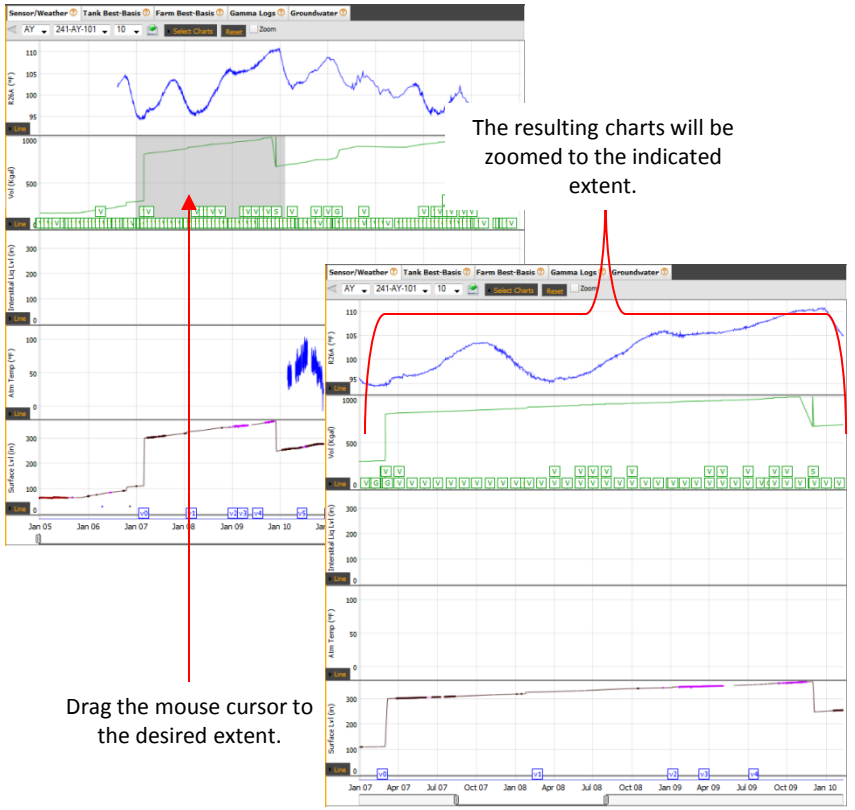


241-C-110 Sensor Data

- SL Auto Enraf/ENRAF Sensor
- SL Manual Enraf/ENRAF Sensor
- SL Weight Factor/Weight Factor Sensor
- RISER 8 Thermocouples

Date	Manual Enraf/ENRAF (Inches)	Qualifier
4/4/2002 8:24:00 AM	72.08	G
4/5/2002 1:00:00 PM	72.03	G
4/6/2002 1:00:00 PM	72.03	G
4/7/2002 1:00:00 PM	72.08	G
4/8/2002 8:18:00 AM	72.08	G
4/9/2002 8:03:00 AM	72.08	G
4/10/2002 8:35:00 AM	72.08	G
4/11/2002 10:01:00 AM	72.07	G

Figure 12B. Cursor zoom capability. Drag the mouse cursor to the extent of the data wished to be viewed. The resulting charts will be zoomed to the indicated extent. The cursor can be dragged to change the extent of either the x- or y- axis. Double-click to zoom back to initial temporal extent.



Select which tank farm and specific tank to view Best-Basis Inventory data for from drop-drown menus.

Click the Question Mark icon to view the information widget to read more detailed information about the Tank Best Basis Inventory data.

Date the data was published and last updated.

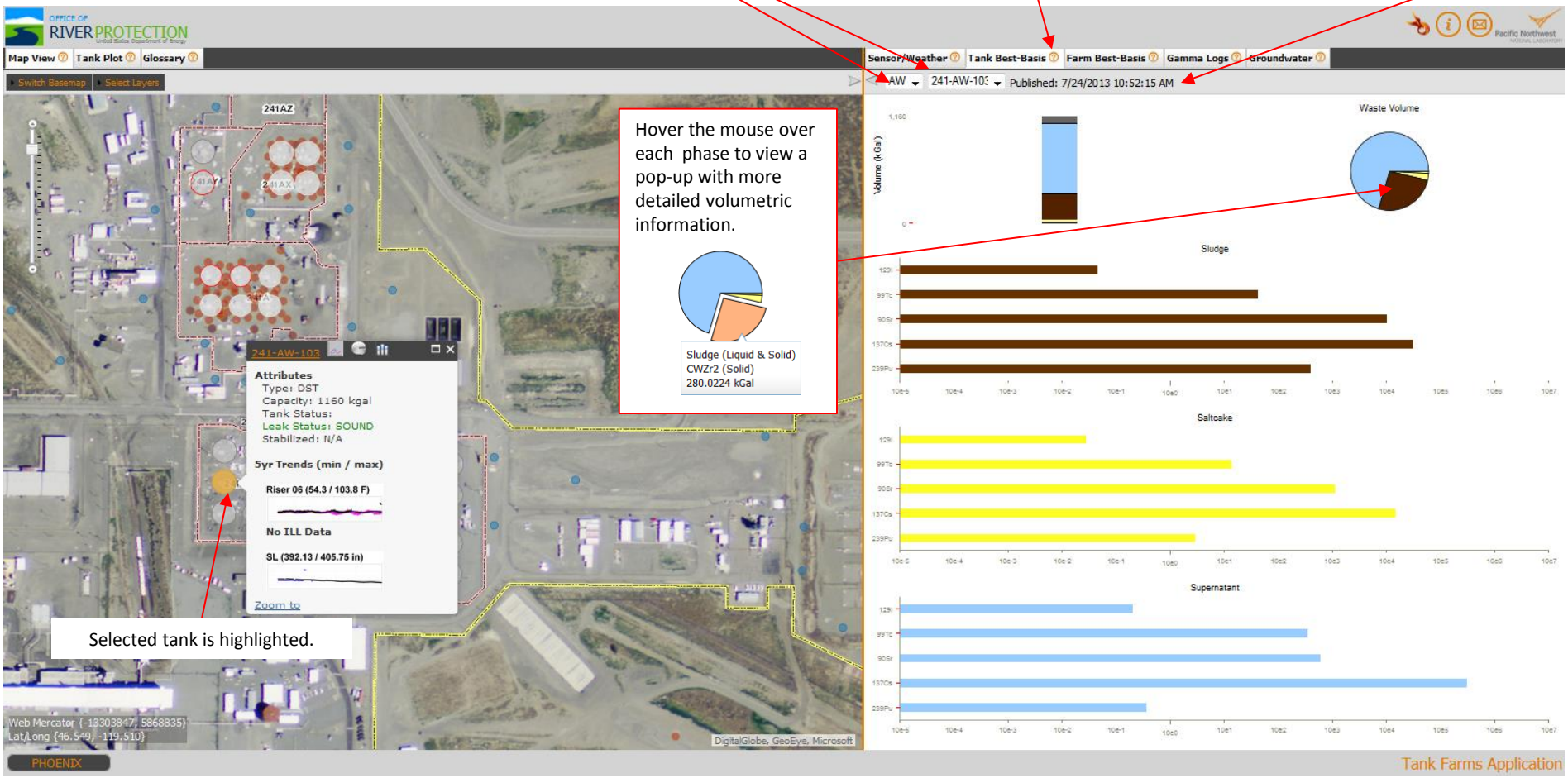


Figure 13. Tank Best-Basis Inventory chart panel

Figure 14A. Drywell pop-up. Click on a well to see well ID and type.

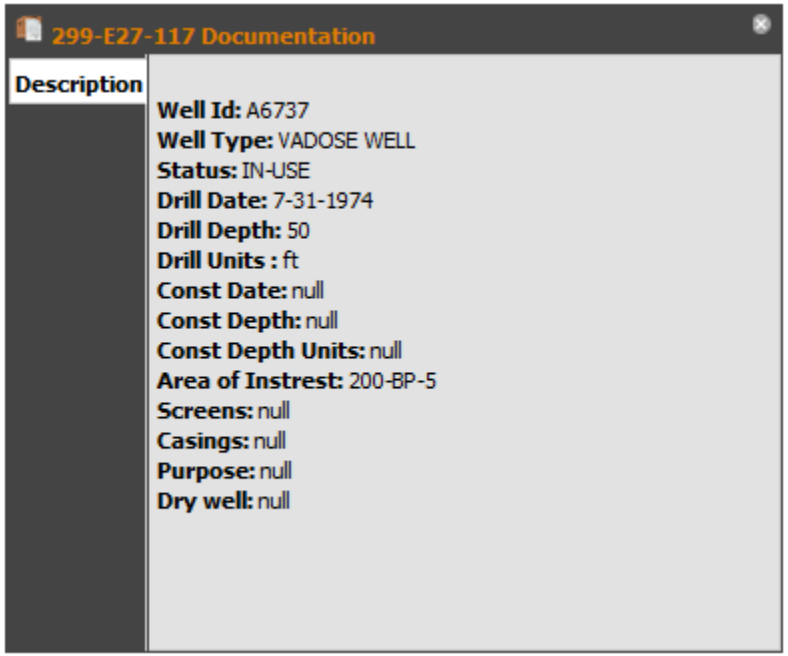
Click the well name to view the detailed well information pop-up (Figure 14B).

Click the Gamma Logs icon to view the gamma logs chart in the panel to the right of the screen (Figure 15).

Click to zoom in closer to the well on the map.

Click the Groundwater icon to view the groundwater monitoring results in the panel to the right of the screen (Figure 17).

Figure 14B. Detailed drywell well information pop-up. "Description" tab provides detailed information about the well.



Select well to view log charts for that specific well.

Select which analyte to view well log data for in the drop-down menu. Each sampling event is shown as a separate data series in the legend on the bottom of the chart.

Click the "Well Info" button to see corresponding chart data in tabular view (Figure 12A).

Click the Question Mark icon to view the information widget to read more detailed information about the Gamma Logs data.

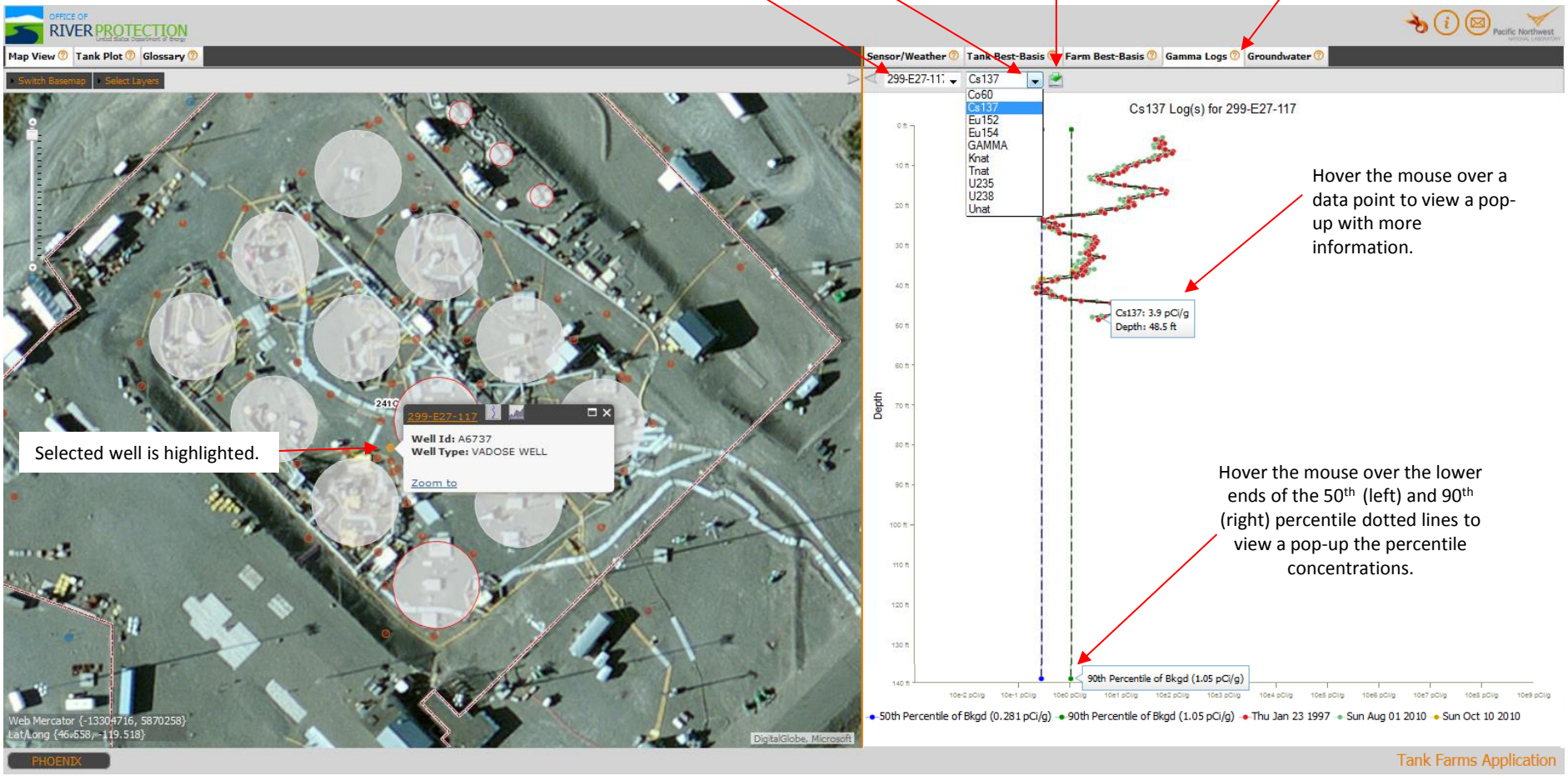


Figure 15. Drywell gamma logs chart panel

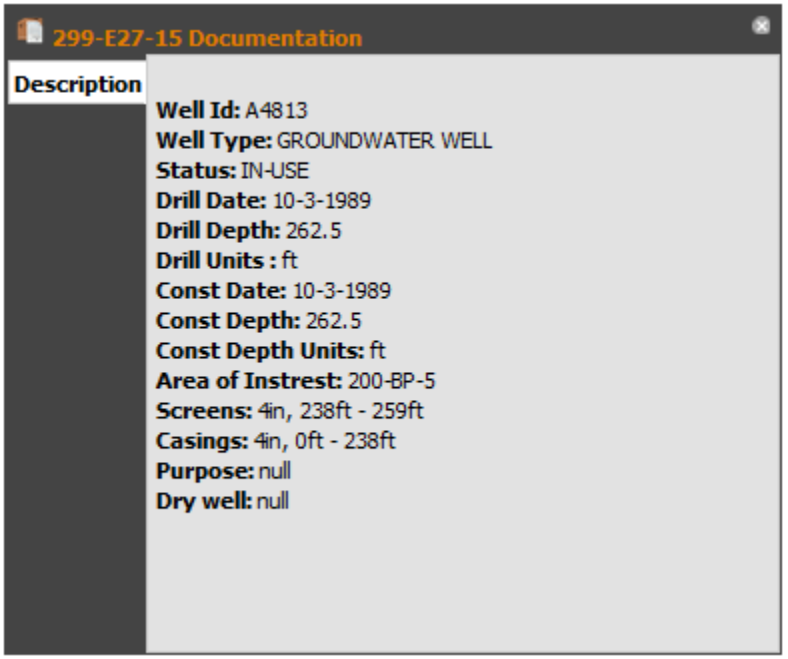
Figure 16A. Groundwater well pop-up. Click on a well to see well ID and type.

Click the well name to view the detailed well information pop-up (Figure 16B).

Click to zoom in closer to the well on the map.

Click the Groundwater icon to view the groundwater monitoring results in the panel to the right of the screen (Figure 17).

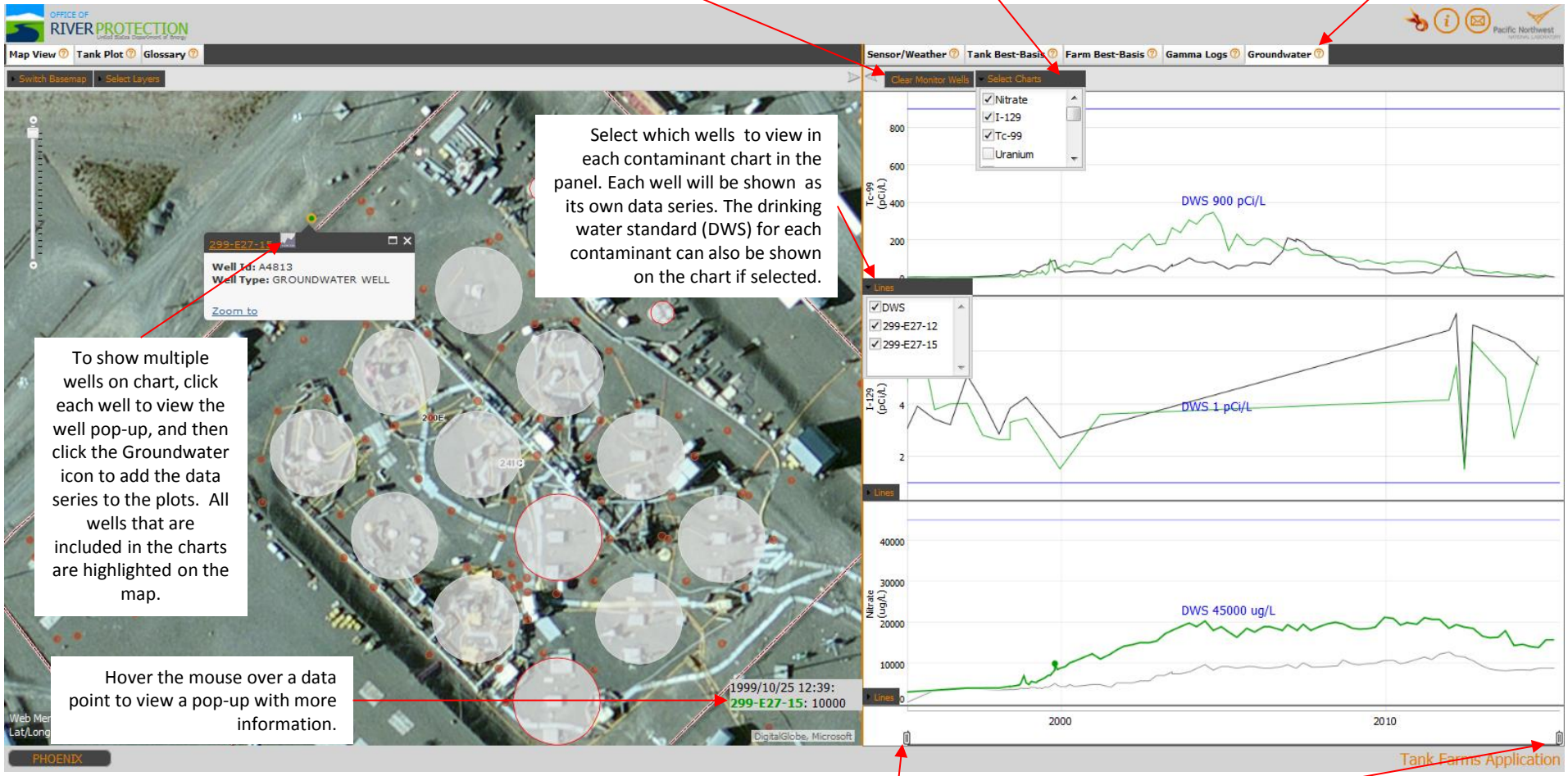
Figure 16B. Detailed groundwater well information pop-up. "Description" tab provides detailed information about the well.



Click "Clear Monitor Wells" to clear all monitoring data on the charts.

Select which contaminants to view monitoring data for in the drop-down menu. Each contaminant will have its own chart added to the panel below.

Click the Question Mark icon to view the information widget to read more detailed information about the groundwater monitoring data.



Select which wells to view in each contaminant chart in the panel. Each well will be shown as its own data series. The drinking water standard (DWS) for each contaminant can also be shown on the chart if selected.

To show multiple wells on chart, click each well to view the well pop-up, and then click the Groundwater icon to add the data series to the plots. All wells that are included in the charts are highlighted on the map.

Hover the mouse over a data point to view a pop-up with more information.

Figure 17. Groundwater monitoring chart panel

Slide the bars to increase or decrease the temporal extent of the x-axis. Double-click to zoom back to initial temporal extent. Other options for changing chart extents are shown in Figure 12B.

Hover the mouse over each letter/number to move to the respective section within the Glossary.

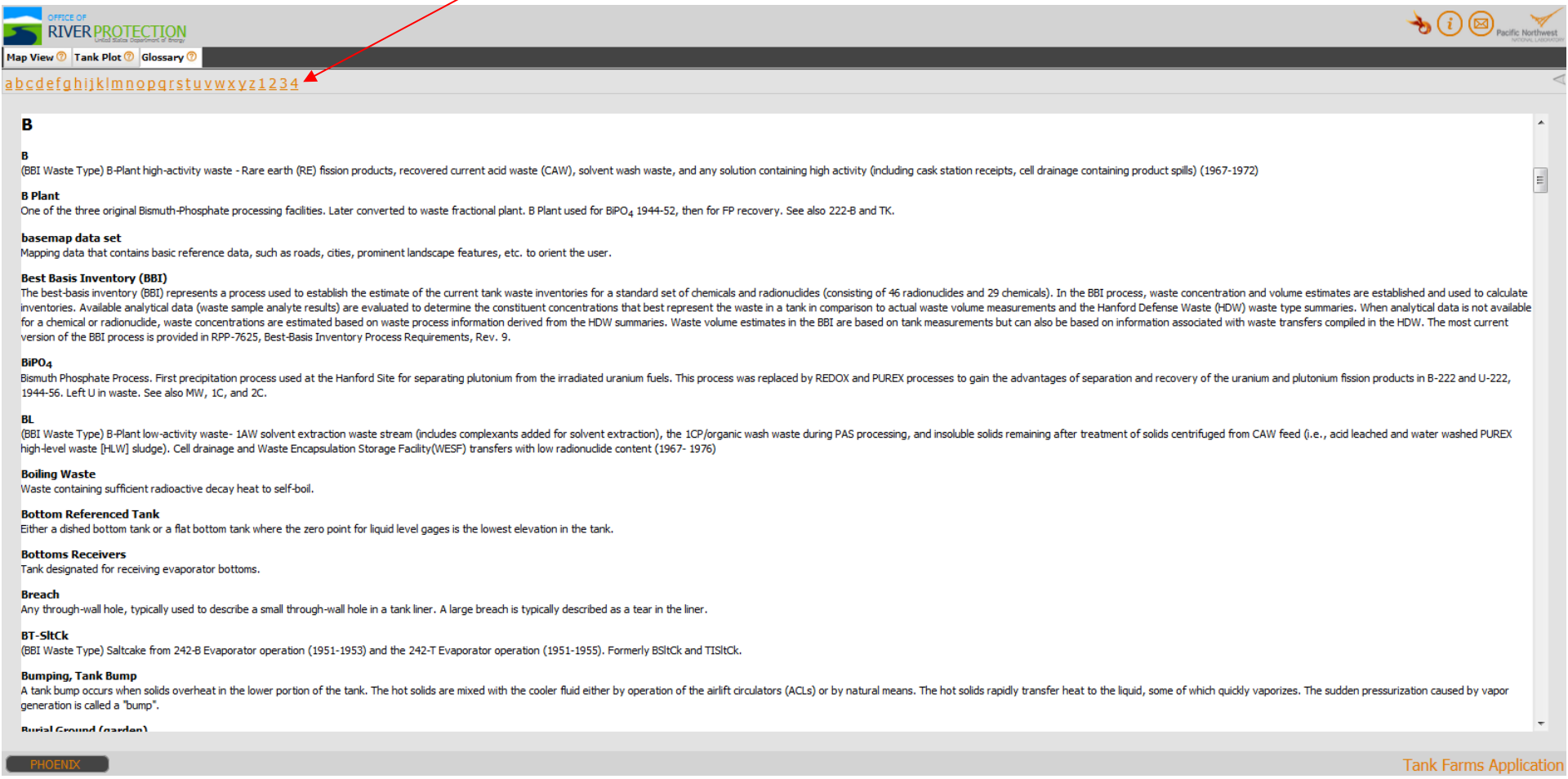


Figure 18. Glossary

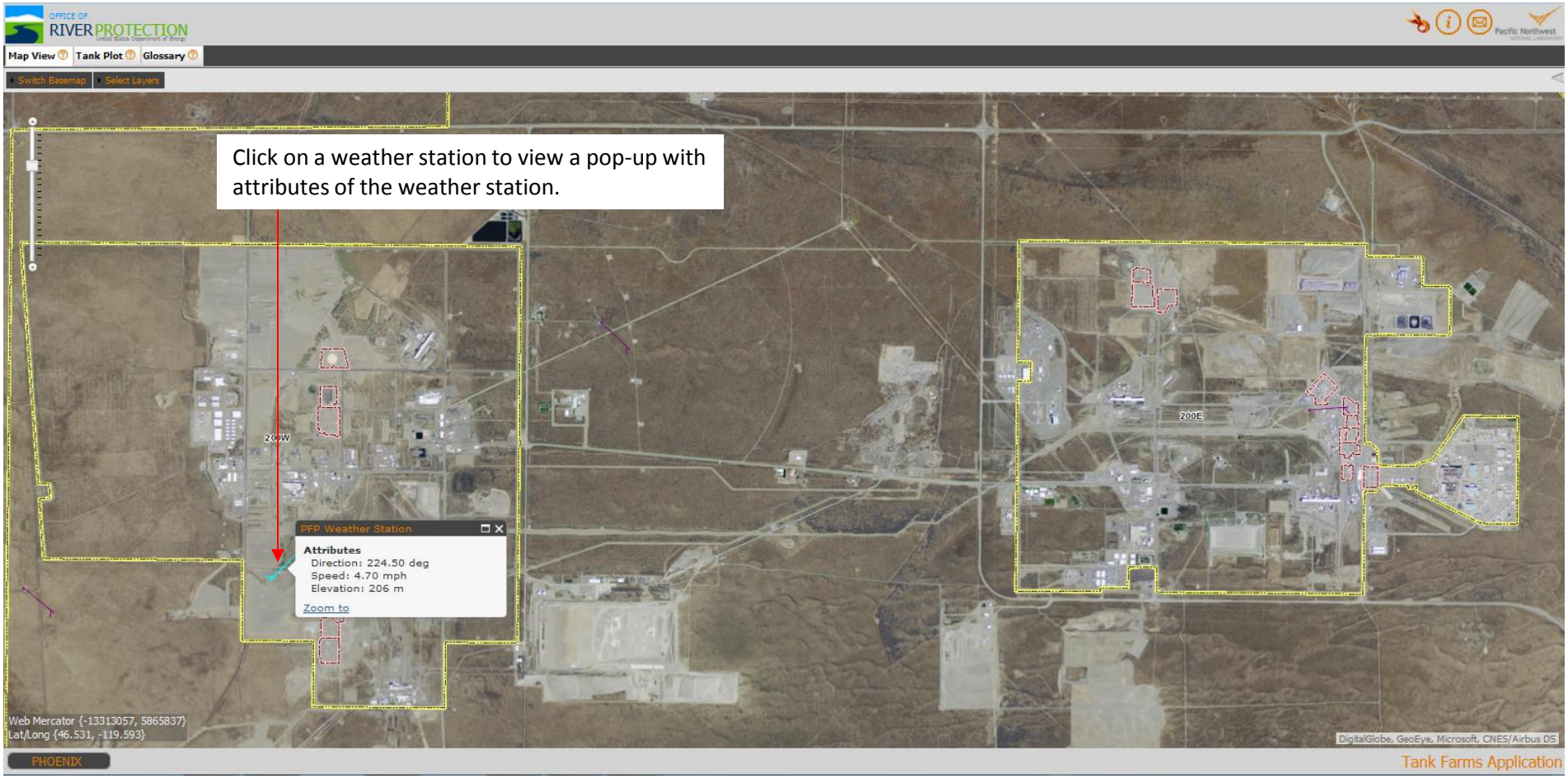


Figure 19. Weather stations