KINGDOM ANALYTICS – Kingdom Log Coverage Template

This template was created with logic to determine both the percent of the total wellbore that contains log data (coverage by wellbore), and the coverage in percent per well and per zone. For example: How many wells have triple combo logs for a petrophysical analysis in the Formation A, B, and C? If there are logs in those intervals, what is the total log coverage per formation, 100%, 75%, 30%, etc.?

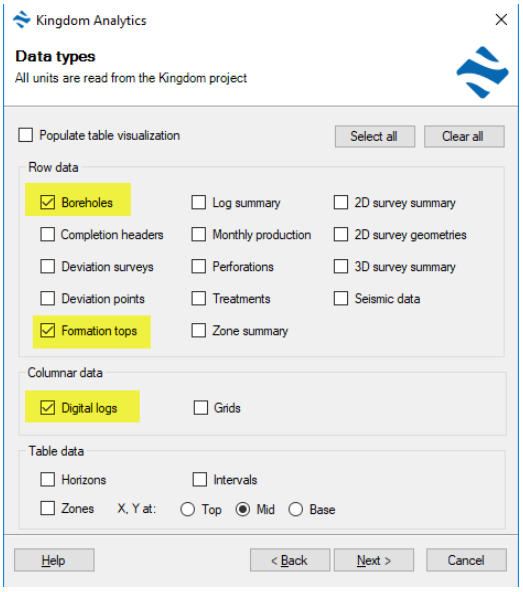
Recommended Steps in Kingdom before using the template

The following steps are recommendations on how to more efficiently take advantage of this template. The following steps are not mandatory, just recommendations; you have the flexibility to change the data selection in the Kingdom Analytics wizard.

1. Alias the log curves: **Logs > Digital Log Curve Management > Alias tab**
2. Create a stratigraphic column: **Tops > Formation Top Management > Strat Column tab**
3. The logs that this template includes by default are: GR, RT, NPHI, DT, RHOB, and CALIPER (and the logs aliased to them). Those curves are selected in the template. Again, if you have a different alias priority, simply change the default selections and select the ones that best fit your project. Also, having the aliasing is not a necessary step. You can also send logs without previous aliasing. The template will accept any log combination you select in the dialog box.

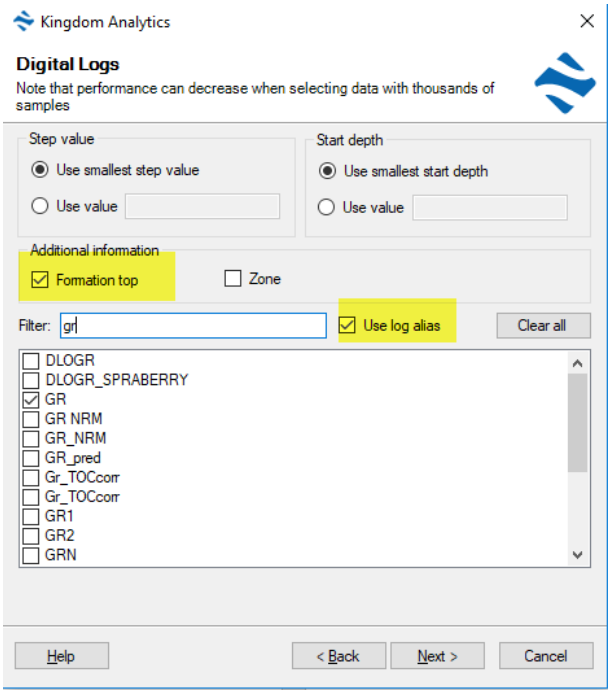
The images below of the Kingdom Analytics wizard display the default template selections (Remember, you are free to modify these defaults at any time).

Default selected tables



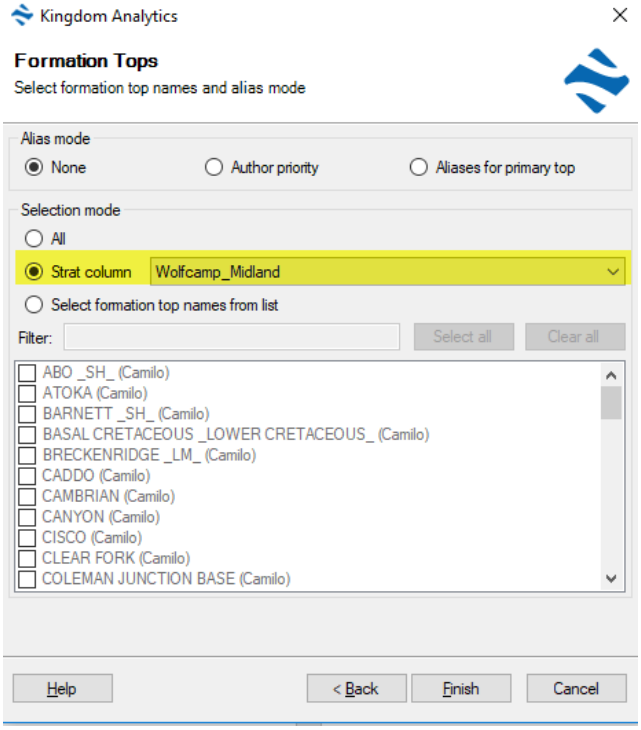
Default Log selection

Use log alias with the following logs: **GR, RT, NPHI, DT, RHOB**, and **CALIPER**. The template has these already selected.



Formation tops

A stratigraphic column is selected to have more control over which zones to analyze.



Using the Template

Analyzing one log at the time

The use of this template is very straight forward. The only thing you need to do is select the log(s) that you want to analyze select in the left panel. The plots will update accordingly showing the information.

The visualizations in this template center around the following log combinations. In addition, the **GR** curve is added to each:

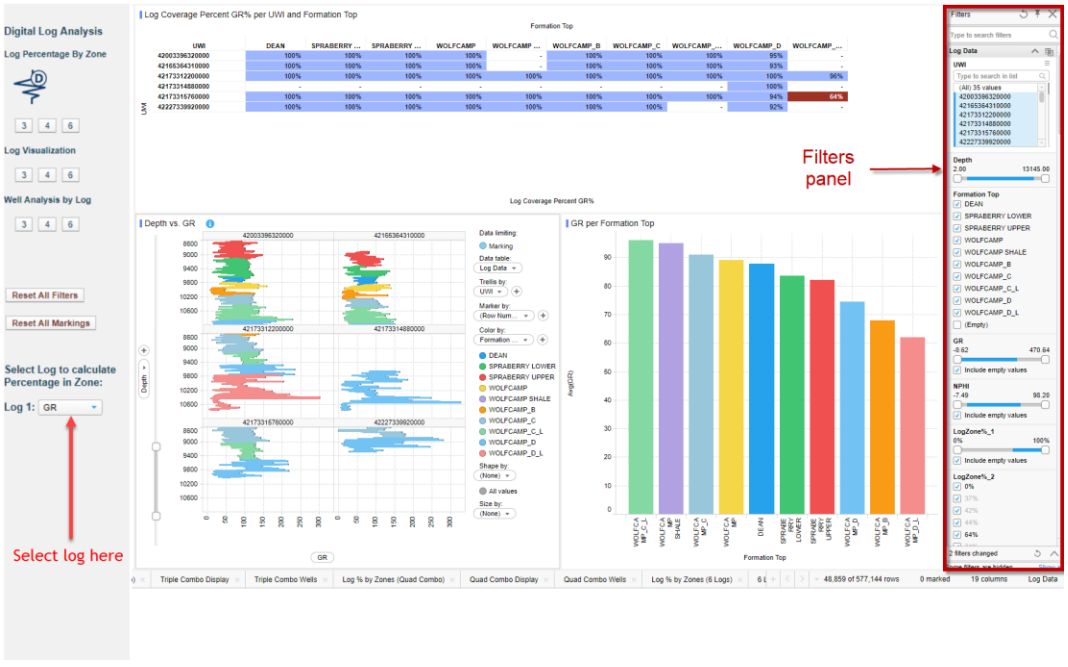
Triple Combo	Resistivity | Porosity | Density
Quad Combo	Resistivity | Porosity | Density | Sonic
Six Combo	Resistivity | Porosity | Density | Sonic | Caliper | Gamma Ray

Remember that these log types are the logs that the template includes by default (and the logs aliased to them. Again, you can change the default selections and select the ones that best fit your project. Also, having the aliasing is not a necessary step. You can also send logs without previous aliasing. The template will accept any log combination you select in the dialog box.

Log % by Zones

The first tab **Log % by Zones** displays the log percentage coverage of only the selected log. In the picture below, GR is selected. Notice that the adjacent table is showing the log coverage of that log per zone. The scatter plot in the lower left section displays the GR logs for the selected wells. The histogram in the lower right shows the coverage percentage per zone. Use the right "**Filters panel**" to filter by wells or formations.

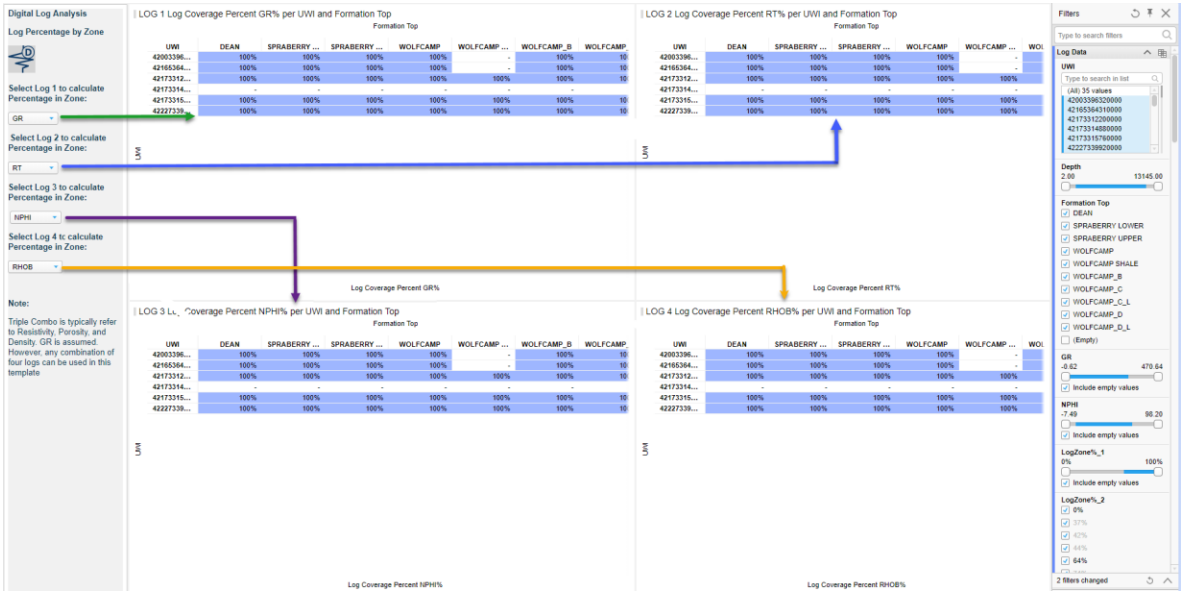
Note:	This first tab is completely independent of the subsequent tabs. This means that the log selected in this tab is not going to affect the selections in the other tabs.



Analyzing multiple logs (Triple Combo, Quad Combo and Six logs)

The following tabs analyze the log coverage percentage of multiple logs (i.e. triple combo logs).

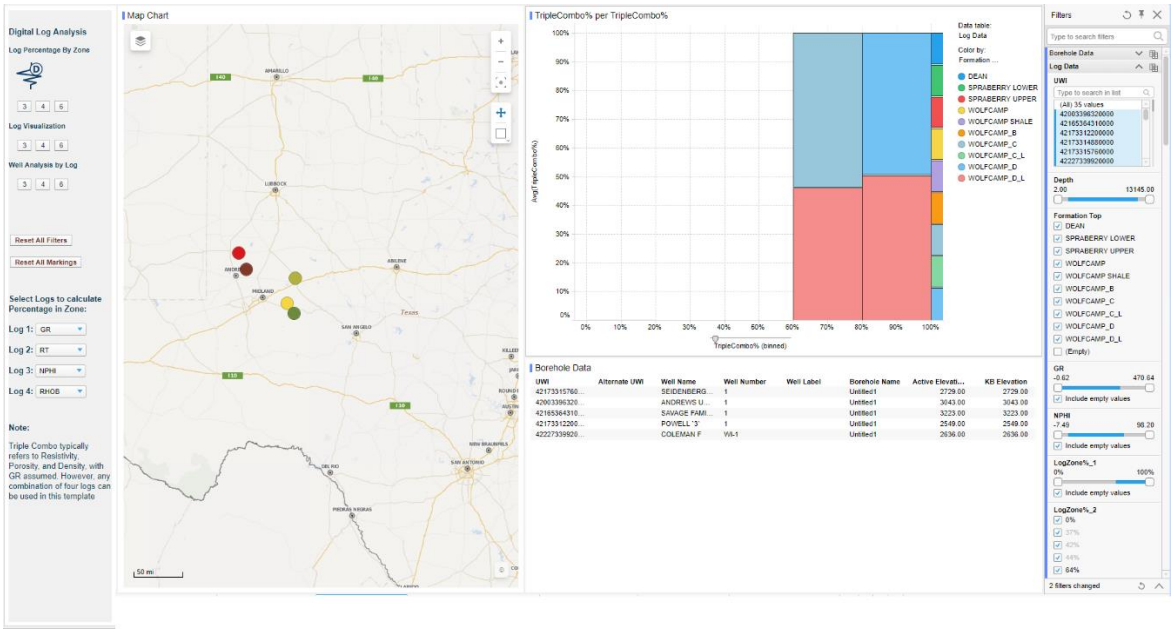
The second tab analyzes triple combo: **Log % by zone (Triple Combo)**. Triple combo refers to Resistivity, Porosity and Density logs, Gamma Ray is always assumed. This tab shows the log coverage percentage of those logs individually per zone, just like the first tab, but with four tables. Notice that the triple combo logs plus the gamma ray are selected by default here, but you can select any other log as required.



The third tab, **Triple Combo Display**, shows the logs of the selected wells. The histogram in the upper right section shows the log coverage percentage by zones of triple combo and it can also be used to filter by zones.

For example, if one well in one zone has 100% GR coverage, 100% RT coverage, 85% NPHI coverage and 70% RHOB coverage, then the total triple combo coverage will be 70% which is the lowest percentage of all the selected logs.

The fourth tab, **Triple Combo Wells**, shows the location of the wells with triple combo logs. In the histogram in the right you can select, for example, the wells with 100% triple combo coverage by zones and those wells will show up in the map as well as in the table underneath. Remember you can easily save a subset of the selected wells in Kingdom. right click and select **Kingdom Analytics > Save marked UWIs as a Kingdom subset**.



The subsequent tabs are the same of the second, third and fourth tab just that have one more field for a new log (Quad Combo) and then it is repeated for six logs.

Note:	From the second tab to the last tab, all the selections in the left panel are connected. The idea is to keep adding logs to the analysis. For example, any change in log number 1 in any of the Six Logs tabs, will also change log number 1 in the triple and quad combo tabs.