



# Aquaterra

by **CGS Labs**



**EXPORT AND IMPORT TO MIKE FLOOD**





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## **Aquaterra: Export and import to Mike Flood Tutorial**

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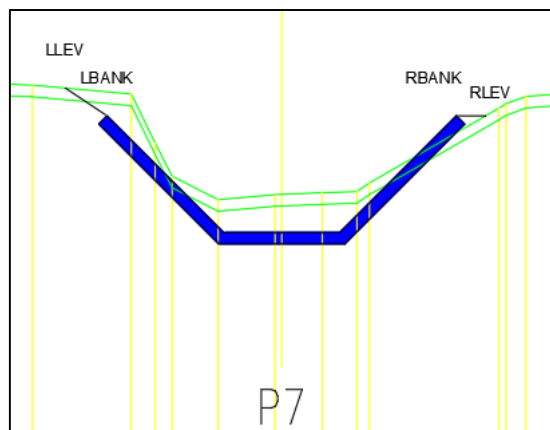
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## Aquaterra: Export and import to Mike Flood Tutorial

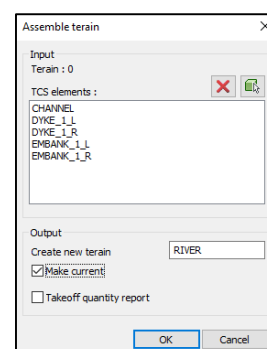
This step-by-step instruction will lead you through the workflow procedure in order to get familiar with the software environment. "Aquaterra Export to MIKE" file should be used. You will learn how to define banks and levee points in Aquaterra and assemble a new terrain from previously defined TCS elements. Next step shows how to export a river axis and cross sections from Aquaterra model and import it to MIKE FLOOD (MIKE11 and MIKE21) where you can use it for the flood analysis. In the last step, you will learn how to import the 1D and 2D flow analysis results back to Aquaterra and insert the water table in the layout, profile and cross sections.

### Define projection points in Aquaterra








1. Open the drawing "Aquaterra MIKE by DHI.dwg"
2. On CGS Labs tab, click on Aquaterra icon  . Aquaterra ribbon opens.
3. On Cross Sections tab, go to Label panel and click Define Projection Points  .
4. In Define Intersection points dialog box, define:
  - Definition method: Right leveeAnd click on the upper side of the right embankment.
5. Run the same command again. Definition method: Right levee. Select the end point of the right dyke.
6. Select the Draw element only in profiles where it does not exist option and confirm with OK.
7. Repeat the procedure for the left levee and the right, left bank.




8. Click on Assemble terrain line  . Use  to select elements from which the new terrain will be assembled. Select left and right banks, dykes and the channel. Press Enter to check the list of the elements.
9. Name the new terrain line.
10. Check Make current option. Confirm with OK.




## Export cross sections

11. On Edit TCS Elements, click Save terrain to file -> CRO  to save cross sections in the file.
12. Specify the file path and file name. Confirm with Save.
13. Select terrain line: River. Confirm with OK.
14. Click on Save Projection points -> IL  to save levee and banks.
15. Specify the file path and file name. Confirm with Save.
16. Select Save at intersection lines and confirm with OK.
17. To export cross axes, go to Layout and click on Sample lines  drop-down menu.
18. Select Sample lines report . Specify the file path and file name. Press Enter.
19. On Utility tab, click on Mike Export  drop-down menu and select Export sections to Mike11 .
20. Click on  to define file path and file name. Press Convert.

## Export river axis


21. Click on Export axis to MIKE 11 .
22. Define file name and confirm with Save. A \*.txt file with containing axis data will be created.

## Mike Flood analysis



23. Open Mike Flood.
24. Open your Mike Project.
25. Go to File -> New -> select Mike11 module and add a new cross section file.
26. Go to File -> Import -> Import Raw data and select the file where cross sections data from Aquaterra were saved earlier.
27. Save the file and reopen it.
28. Under Raw data tab you can edit levee and bank points data using the markers.
29. Go to File -> New -> File, select Mike11 module and then River Network file. Confirm with OK.
30. In dialog box define Map projection and working area.
31. Go to File -> Import -> Point and Branch data from Point-Branch ASCII File. Select the file where axis data from Aquaterra were saved earlier.
32. Go to View -> Tabular view, where you can define
  - Topographic ID: AQUATERRA
  - Flow direction: negative
33. Click on  to save the data.
34. Set the rest of the model and run the analysis.





## Import Mike 11 results to Aquaterra

35. Open Aquaterra program and from Utility tab, click Import from Mike11  .
  36. In dialog box, define
    - the RES11 file where results of 1D flow analysis from Mike11 are saved.
    - The branch
    - Sets: check Envelope
    - The path for the output file
    - Name the set: "Envelope"
- Click Convert.

## Insert the water surface in the longitudinal profile and cross sections

37. On Profile tab, click on Water surface levels  .
38. In Insert water level dialog box, select \*.wsl file and confirm.
39. On Cross sections tab, go to Draw TCS Elements panel and click on Insert water surface  .
40. In Read water surface level dialog box, select \*.wsl file and confirm.

## Draw Mike 21 results

41. From Utility tab, click on Mike Import  drop-down menu and select Draw Mike 21 results  .
42. Select \*.dfs2 file and set the parameters:
  - Parameter: Elevation [m]
  - Style: Contours 1m and 5m

