Works 2013

Reservoir usage

WHITEPAPER

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Advanced Technical Software

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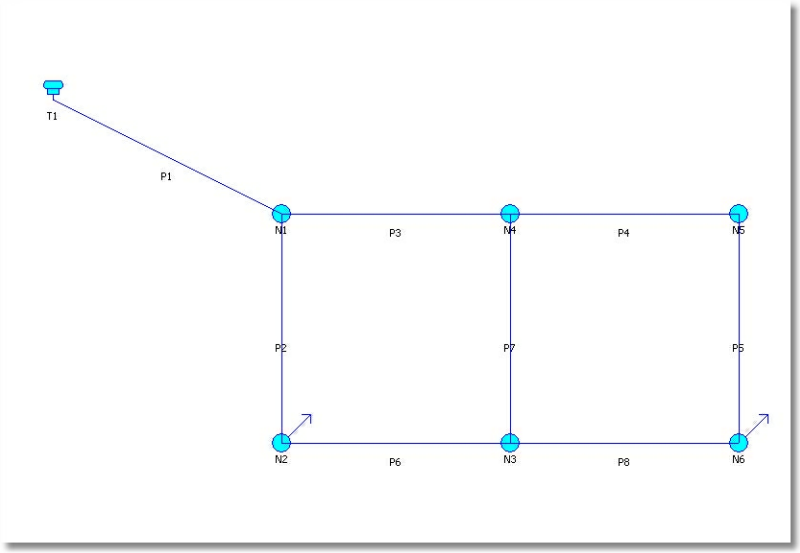
Chapter

1 About the whitepaper

1.1 Purpose

The purpose of this example is to demonstrate the use of the reservoir. This example builds on the water network described in the previous whitepaper (Whitepaper #1). The tank has a varying level; when the water level can be assumed to be constant, a reservoir should be used. The network of the previous example consists of a tank and 8 pipes:



The pipe data are summarized in the following table:

Pipe	Length (m)	Diameter (mm)	Friction Factor
1	90	400	100
2	900	228.6	100
3	600	254	100
4	600	228.6	100
5	900	152.4	100
6	600	152.4	100
7	900	152.4	100
8	600	203.2	100

The Hazen - Williams friction formula will be used. The constant water level is equal to 180 m. The water temperature is equal to 20^0. A constant demand of 10 and 20 L/s appears at nodes N2 and N6, respectively.

1.2 Software

In order to complete the example successfully, the following software is required:

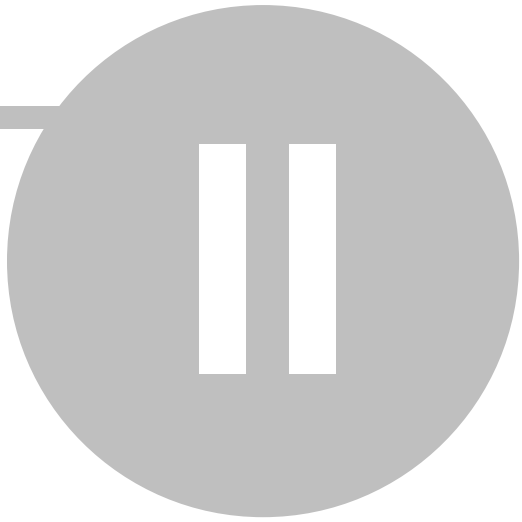
- Water Networks v11.0.

Later versions of the aforementioned software may be incompatible with the structure of the example as it is presented herein. In addition, this example refers to information contained in the following documents:

- Water Networks Whitepaper #1.

Note that you may not be able to complete the example successfully without access to the aforementioned documents.

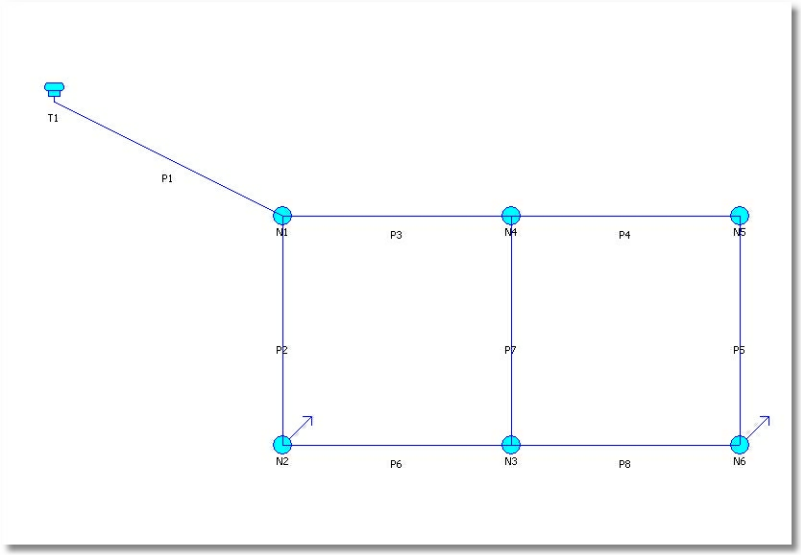
Chapter



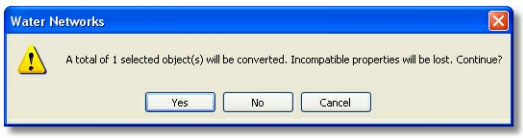
2 Steps

2.1 Step 01: Network Modifications

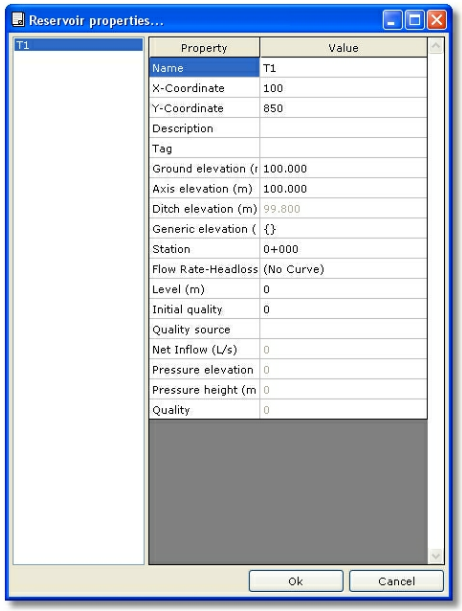
The network that was designed in Whitepaper #1 is as follows:



Select tank T1 by clicking on it or by enclosing it in a selection window. The tank will change color. Select **Objects > Object Conversion > Convert Selected Nodes to > Reservoirs.** The following warning message will appear:



Select **Yes**. Double click on the reservoir to show its properties:



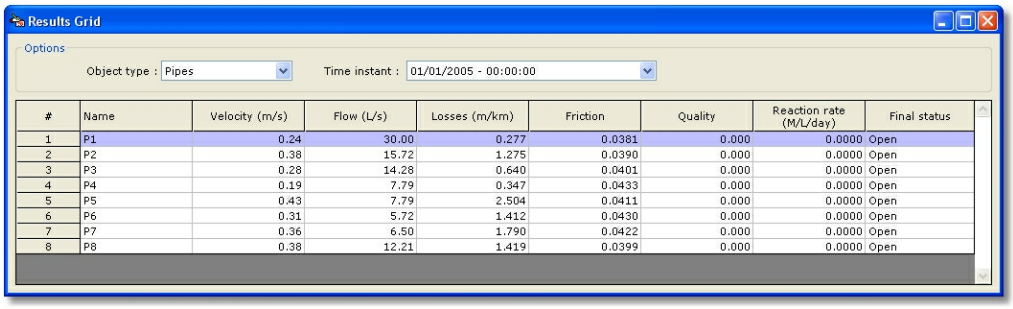
Select reservoir T1 from the list on the left. Make the following changes:

- **Name:** Enter "R1"
- **Level:** Enter "180".

Hit **Ok**.

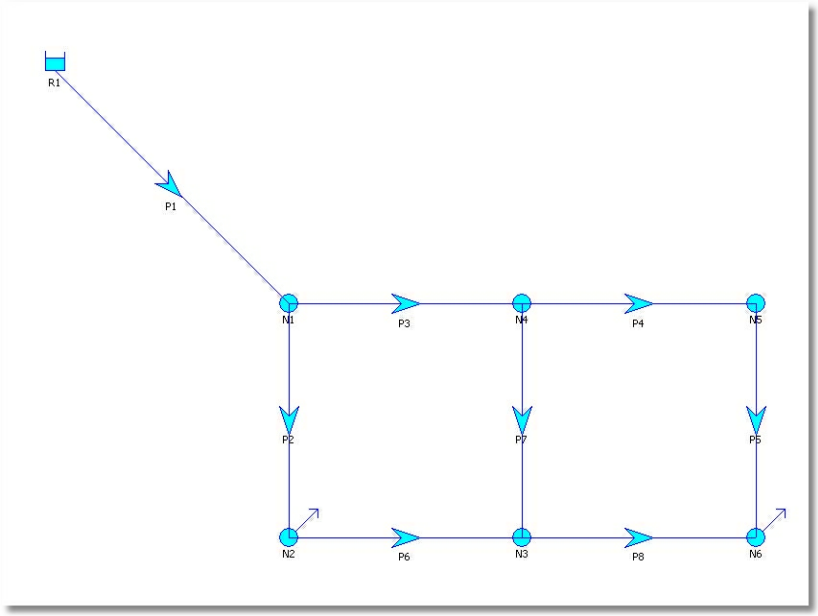
2.2 Step 02: Calculations

In order to perform calculations, hit **F5.** The results are displayed in the following form:



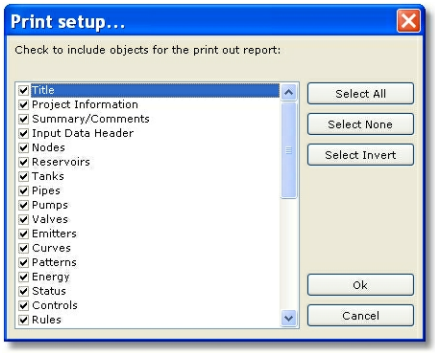
#	Name	Velocity (m/s)	Flow (L/s)	Losses (m/km)	Friction	Quality	Reaction rate (M/L/day)	Final status
1	P1	0.24	30.00	0.277	0.0381	0.000	0.0000	Open
2	P2	0.38	15.72	1.275	0.0390	0.000	0.0000	Open
3	P3	0.28	14.28	0.640	0.0401	0.000	0.0000	Open
4	P4	0.19	7.79	0.347	0.0433	0.000	0.0000	Open
5	P5	0.43	7.79	2.504	0.0411	0.000	0.0000	Open
6	P6	0.31	5.72	1.412	0.0430	0.000	0.0000	Open
7	P7	0.36	6.50	1.790	0.0422	0.000	0.0000	Open
8	P8	0.38	12.21	1.419	0.0399	0.000	0.0000	Open

Select **Ok.** The flow direction is now displayed in the main drawing:



2.3 Step 03: Printing

Optionally, you may want to print the results to a printer, to Microsoft Word or Microsoft Excel. From the **File** menu select **Print setup:**



Make the appropriate selections and select **Ok**.

From the **File** menu select **Print** or **Print To > Word** or **Print To > Excel** to invoke the corresponding print engine.

Chapter

3 Help

3.1 Technical support

Technical Support

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