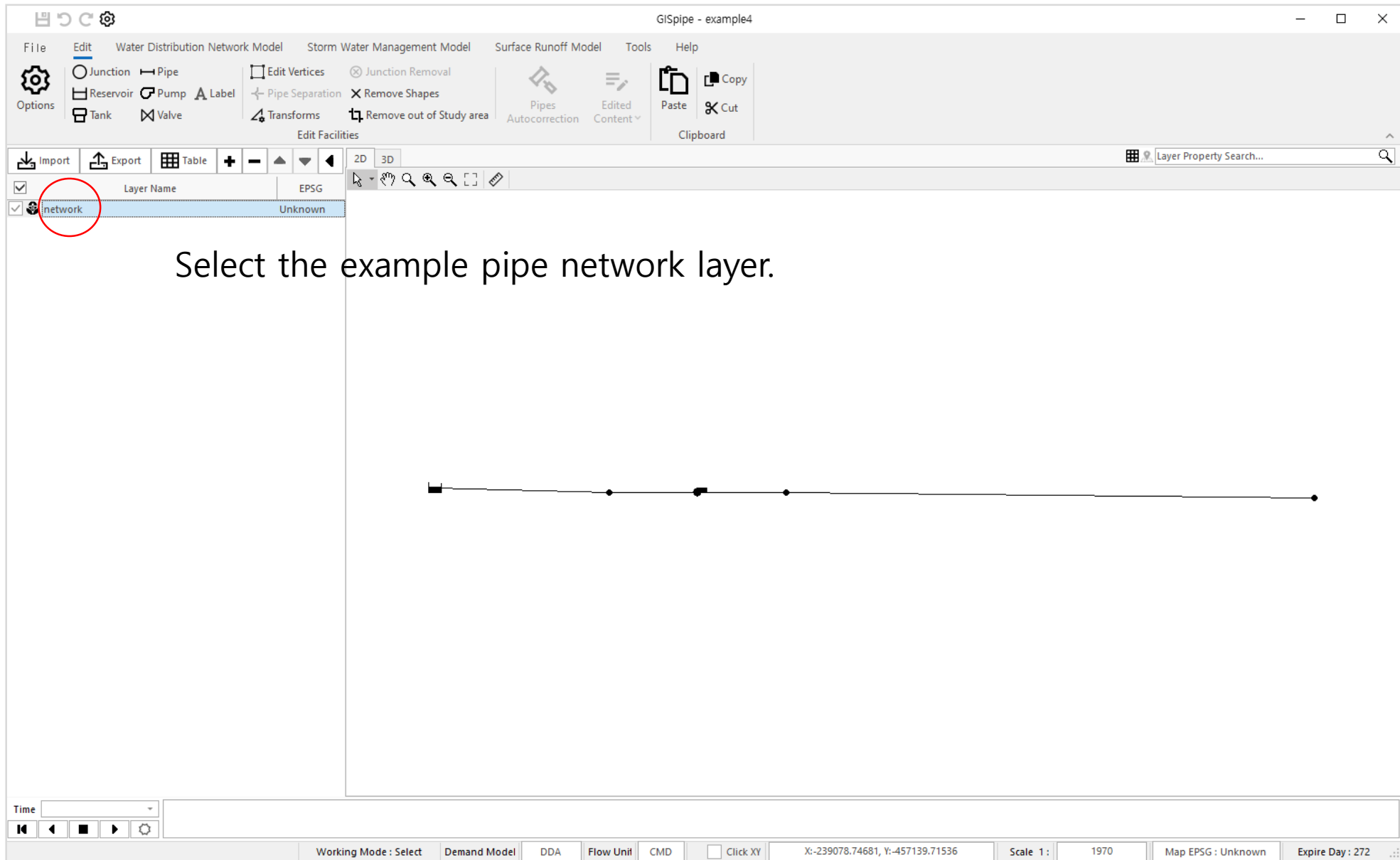
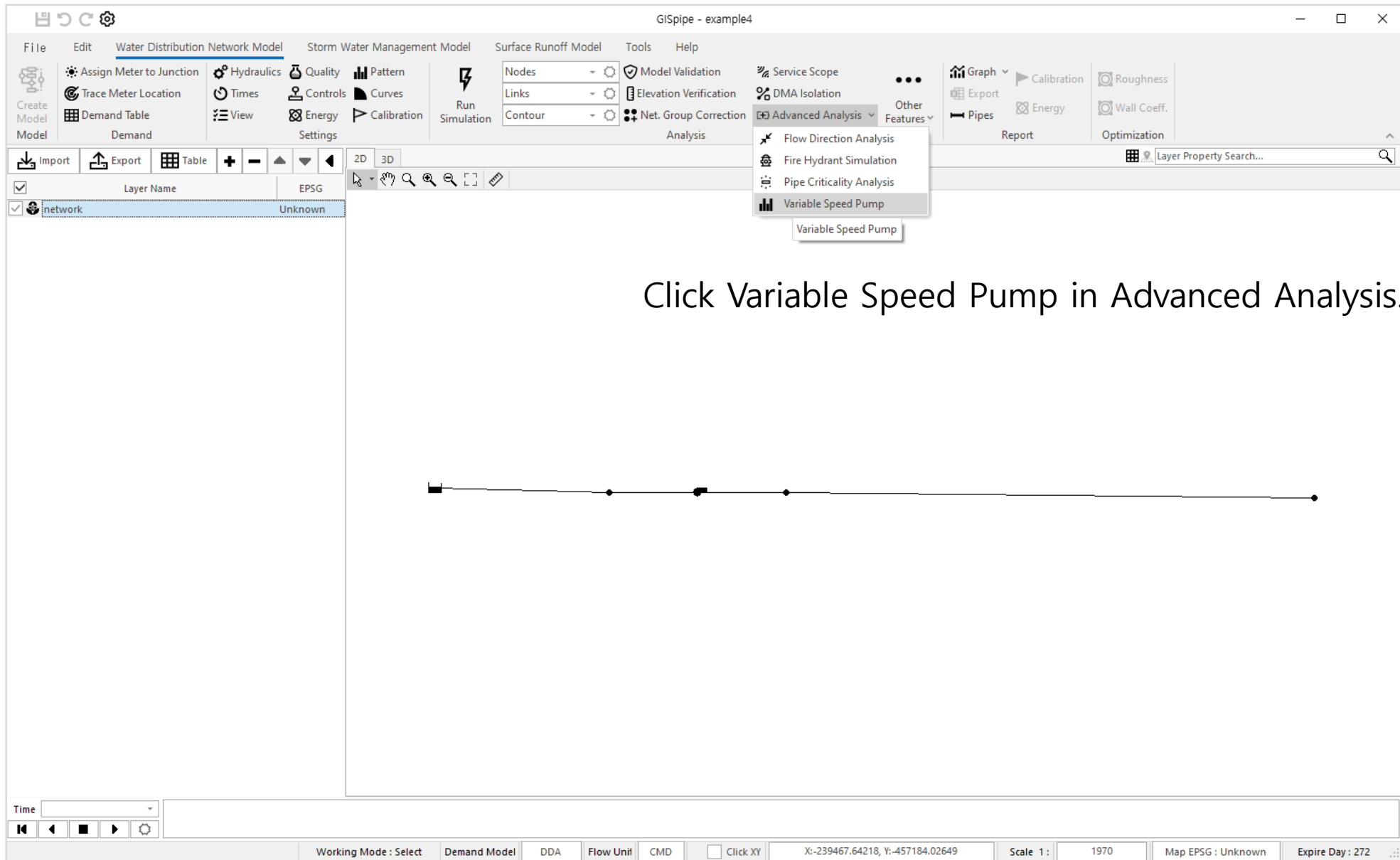


# Create variable speed pump pattern

- A function to obtain the speed pattern of the variable pump.



Select the example pipe network layer.





The screenshot shows the GISpice software interface with the 'Variable Speed Pump' dialog box open. The dialog contains a table with the following data:

| Pump ID | Max. Speed | Target Junction | Target Pressure |
|---------|------------|-----------------|-----------------|
| 1       | 2          | 2               | 30              |

Below this table, a larger table displays the speed pattern over time for Pump ID 1:

| Pump ID | 1                |                  |
|---------|------------------|------------------|
| Time    | Speed Pattern    | Pressure         |
| 0:00    | 1.5008291389327  | 29.9999431319954 |
| 1:00    | 1.50332811328188 | 29.9999157108114 |
| 2:00    | 1.50748083288256 | 29.999764134713  |
| 3:00    | 1.51327467074632 | 29.9995327802683 |
| 4:00    | 1.52069070179758 | 29.9992178630018 |
| 5:00    | 1.52970516327521 | 29.9988146768044 |
| 6:00    | 1.54028981623328 | 29.9983177753849 |
| 7:00    | 1.55241236240409 | 29.9977210908823 |
| 8:00    | 1.56603690239733 | 29.9970180623158 |
| 9:00    | 1.58112442023796 | 29.9962017680982 |
| 10:00   | 1.59763328006938 | 29.9952650558899 |

The 'Run' button is highlighted in the dialog box.

GISpipe - example4

File Edit Water Distribution Network Model Storm Water Management Model Surface Runoff Model Tools Help

Create Model Model Assign Meter to Junction Trace Meter Location Demand Table Demand Hydraulics Times View Quality Controls Energy Settings Pattern Curves Calibration Run Simulation Model Validation Elevation Verification Net. Group Correction Analysis Service Scope DMA Isolation Advanced Analysis Other Features Graph Export Pipes Calibration Energy Report Roughness Wall Coeff. Optimization

Import Export Table + - 2D 3D Layer Name Search... Layer Property Search...

Variable Speed Pump

Enter text to search...

| Pattern Name | Average |
|--------------|---------|
| 1            | 1.00    |

Time \ Patterns

| Time \ Patterns | 1    | 2                |
|-----------------|------|------------------|
| 0:00            | 0.08 | 1.5008291389327  |
| 1:00            | 0.16 | 1.50332811328188 |
| 2:00            | 0.24 | 1.50748083288256 |
| 3:00            | 0.32 | 1.51327467074632 |
| 4:00            | 0.4  | 1.52069070179758 |
| 5:00            | 0.48 | 1.52970516327521 |
| 6:00            | 0.56 | 1.54028981623328 |
| 7:00            | 0.64 | 1.55241236240409 |
| 8:00            | 0.72 | 1.56603690239733 |
| 9:00            | 0.8  | 1.58112442023796 |
| 10:00           | 0.88 | 1.59763328006938 |
| 11:00           | 0.96 | 1.61565333216616 |
| 12:00           | 1.04 | 1.63489768831886 |
| 13:00           | 1.12 | 1.65489316161616 |
| 14:00           | 1.2  | 1.67720276166291 |
| 15:00           | 1.28 | 1.70016868223684 |
| 16:00           | 1.36 | 1.72427990479998 |
| 17:00           | 1.44 | 1.74948905436981 |
| 18:00           | 1.52 | 1.77574934988119 |
| 19:00           | 1.6  | 1.80301484152044 |
| 20:00           | 1.68 | 1.83124060921428 |
| 21:00           | 1.76 | 1.8603829245851  |
| 22:00           | 1.84 | 1.8903993792045  |
| 23:00           | 1.92 | 1.92124898227352 |

Copy the speed pattern, paste it into the pattern editor, and save it.

Set Time Add Delete Select Shape Chart Multiplier Save Close

Run Close

Time Working Mode : Select Demand Model DDA Flow Unit CMD Click XY X:-239349.30539, Y:-457454.06376 Scale 1 : 1970 Map EPSG : Unknown Expire Day : 272

GISpipe - example4

File Edit Water Distribution Network Model Storm Water Management Model Surface Runoff Model Tools Help

Create Model Model Demand

Assign Meter to Junction Trace Meter Location Demand Table

Hydraulics Quality Pattern Times Controls Curves View Energy Calibration

Run Simulation

Nodes Links Contour

Model Validation Elevation Verification Net. Group Correction

Service Scope DMA Isolation Advanced Analysis

Other Features

Graph Export Pipes

Calibration Energy

Roughness Wall Coeff.

Report Optimization

Layer Property Search...

Import Export

Layer Name

network

Property

Pump ID Start Node End Node Description Tag Pump Curve Power (kW) Speed

Pattern

Initial Status Effic. Curve Energy Price (kWh) Price Pattern Flow (m<sup>3</sup>/day) Unit Headloss (m/km) Quality Status Flow Variation

Additional Information

Enable

Time

Working Mode : Select Demand Model DDA Flow Unit CMD Click XY X:-239467.12088, Y:-457331.55651 Scale 1 : 1970 Map EPSG : Unknown Expire Day : 272

Pattern Name Pattern

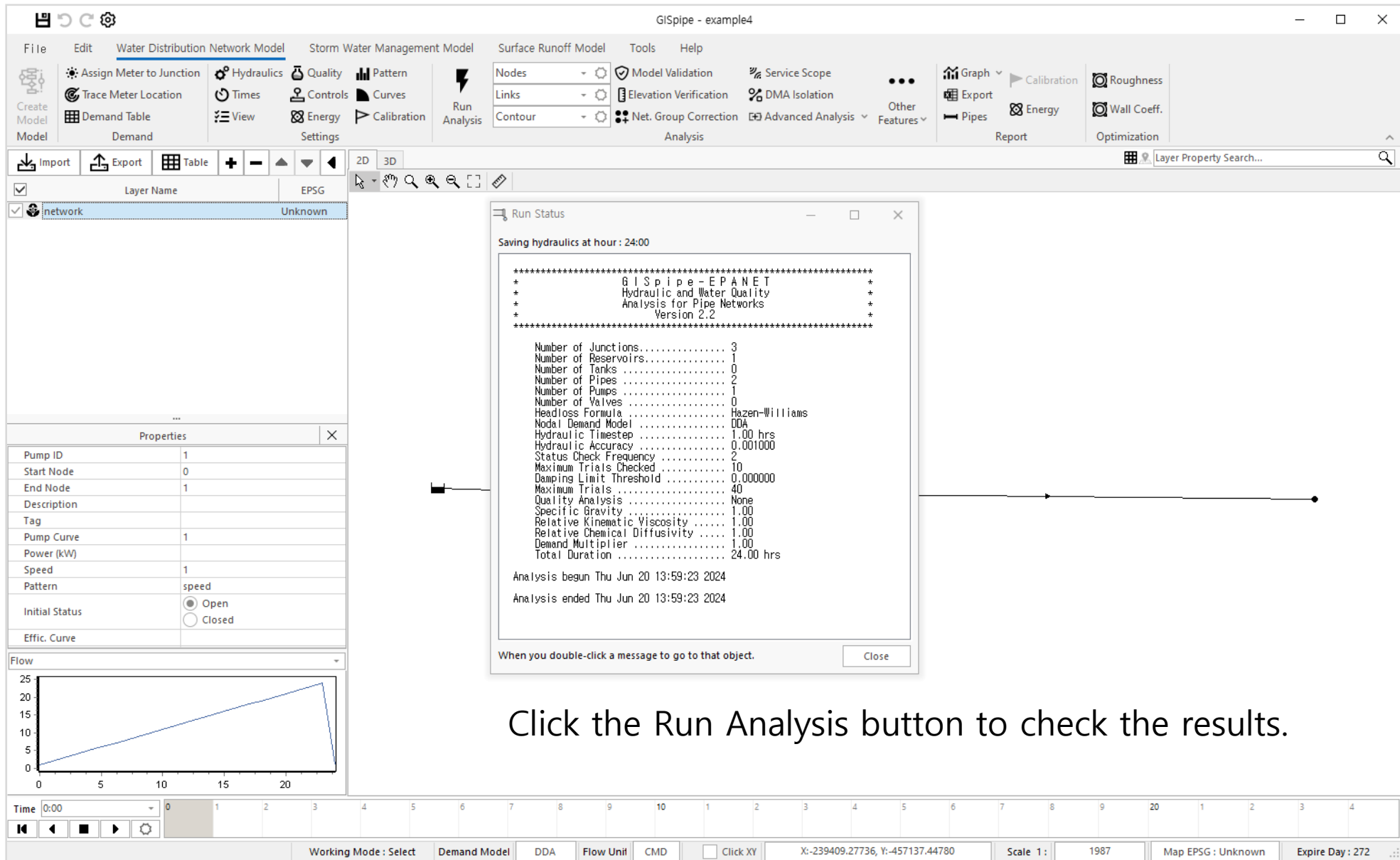
1

speed

speed

Open Closed

Select the relevant pump and enter the pattern value.



Click the Run Analysis button to check the results.