OpenUtilities® sisHYD®

Design, Analyze, and Simulate Gas Networks

OpenUtilities sisHYD is a comprehensive analytical modeling and network design application that delivers the thermal and hydraulic calculations necessary for district energy and/or gas pipeline networks. OpenUtilities sisHYD can quickly perform complex analyses to identify asset usage costs, present operational status, and locate critical points, as well as to generate failure simulation scenarios and calculate all hydraulic parameters of the network.

HYDRAULIC CALCULATIONS

To guarantee uninterrupted service, OpenUtilities sisHYD runs steady-state calculations to determine pressure and flow distribution in the network. In design mode, the calculation engine proposes new pipe types based on the specific pressure loss and pipe velocity.

NETWORK, PROFILE, AND TIME SERIES PLOTS

By generating network plots adhering to a freely configurable labeling and color/weight coding schema, you can visualize your results. OpenUtilities sisHYD can easily identify critical areas in your network and create dynamic profile plots using a user-defined network path. The time series plot displays the change of a physical property over time for a specific calculation scenario.

INTEGRATION WITH MICROSTATION'S USER INTERFACE

You can easily navigate between plots, reports, calculation logs, and the associated data with MicroStation®-like ease, as OpenUtilities sisHYD includes a modeless dialog system with workflow-driven wizards. The application's graphic capabilities are used to build and modify the modeled facility graphically.

### ENGINEERING UNITS AND ENGINEERING LIBRARIES

Units displayed in the user interface, including dialog, plots, and reports, are freely configurable and editable. OpenUtilities sisHYD is delivered with a pipe-type catalog within Microsoft Excel spreadsheets. You can extend that library with your own pipe types and reuse the catalog across projects.

FLEXIBLE DATA SOURCES

OpenUtilities sisHYD works with OpenUtilities sisNET® data, but it can also use data from virtually any GIS or asset management resource. The application can be used as a stand-alone calculator, or it can be integrated into a complete Bentley district energy GIS and facilities management solution.

REPORTING AND PDF OUTPUT

You can create reports on the fly to get statistical information and lists of object rules, then print the information or export to Microsoft Excel for additional post-processing. PDF outputs can be created with just a few clicks to share results. OpenUtilities sisHYD integrates with print preparation applications, and adds functions to automatically populate labels and legends on print templates.
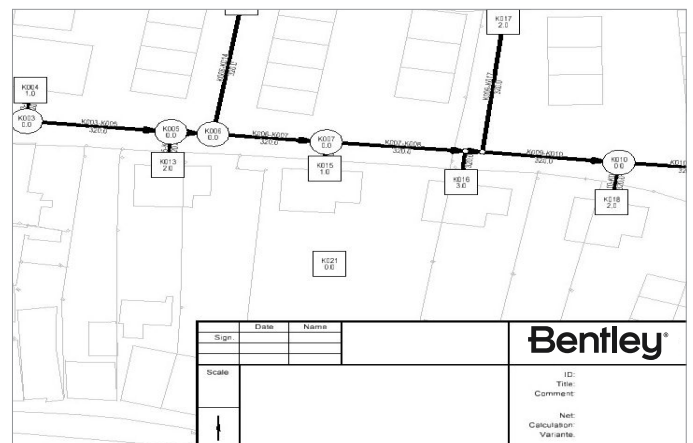
Output your result to PDF for easy distribution

SYSTEM REQUIREMENTS

MINIMUM: Windows 10 64 bit or higher, Intel® or AMD® processor 3.0 GHz or greater, any industry-standard video card that supports DirectX, 4 GB memory, 25 GB storage

RECOMMENDED: 16 GB memory, up to 40 GB disk space

OpenUtilities sisHYD At-A-Glance

DESIGN CALCULATIONS AND ANALYSIS

- Calculate hydraulic network parameters
- Design new networks using design aids for placing appropriate pipe diameters
- Generate reports that calculate equipment and construction costs
- Use compressor and valve specifications provided by manufacturers for modeling
- Validate that calculated elements are operating within their assigned limits
- Design pipe inner diameters by limiting the specific pressure loss and velocity
  - Designs can be done on the entire network, on network segments, by pipe types, or selected pipes

SCALABLE NETWORK MODELING

- Unlimited number of consumers
- Unlimited number of loops
- All network components are modeled as "elements" (pipes, pumps, valves, supplier, consumer)

DATA MANAGEMENT

- Data is stored in an open database
- External applications can access the published database schema
- Reuse data generated in OpenUtilities sisNET to avoid redundant data models

SPECIAL FUNCTIONS

- Preconfigured and customizable units of measure

USABILITY

- User-friendly interface with intuitive capabilities
  - Tooltip displays analytical results
  - Objects intelligently linked between map graphics and profile, reports, and logs
- Integrates with print preparation capabilities
- Seamless integration with CAD software
- Trace and search in the map views
- Validation of input data
- Workflows supported by wizards

REPORTS, MAPS, AND CHARTS

- Generate tabular lists and reports
- Create presentation map plots with labeling to document analysis results
- Configure network map plots to display selected objects and results as labels
- Apply color and weight coding to map plots based on attributes
  - Color-code pressure differences
  - Thematically apply line weights based upon the internal pipe diameter
- Create profile plots of node and pipe results along user-defined network routes
- Export map graphics to PDFs for archiving and distribution
- Publish network plots at user-defined map scales
- Symbology and annotation collision detection support

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