AFT Fathom™
Add-on Modules

AFT
Applied Flow Technology

Goal Seek & Control
Vary input parameters that yield desired output values and simulates control functions

Automated Network Sizing
Automatically size piping to minimize weight and cost

Settling Slurry
Model the effects of pumping fluids containing settling solids using the Wilson/GIW method

Extended Time Simulation
Models dynamic system behavior and how critical system parameters vary over time

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Automated Network Sizing
ANS Module

Benefits
- Size your piping network as an integrated system to ensure you find better design combinations
- Manage your iterations, enabling efficient comparison of more design concepts.
- Use design cases to size a system while anticipating different operating requirements or future expansions.
- Perform economic analysis without opening another program.

Capabilities
- Apply design objectives to minimize system costs including pipe weight, duct volume, and monetary cost
- Specify design requirements such as pressures, flowrates, velocities and NPSH throughout a system
- Size a system for multiple operating conditions, meeting design requirements using dependent design cases

Goal Seek & Control
GSC Module

Benefits
- Evaluate the effects of changing system parameters
- Save time by avoiding manual iterative analyses
- Simulate control system behavior

Capabilities
- Define multiple variables and goals at multiple locations
- Define goals as single point, differential or sum
- Calibrate models by automatically adjusting pipe friction and scaling to match measured data
- Modeling parameters for variables or goals include
  - Control valves - setpoint, open percent
  - Pumps – speed, flow, head rise
  - Valves - open percent, Cv/K, delta P, flow
  - Reservoirs - pressure, temperature
  - Orifice - diameter, area
  - Heat exchangers - heat rate, temperatures, area, U value
 - Spray discharge - area, K value, discharge coefficient, exit pressure

Dynamic solutions for a fluid world ™

Extended Time Simulation
XTS Module

Benefits
- Understand how critical system parameters vary over time
- Automatically change variables for a dynamic simulation of your system

Capabilities
- Define a wide range of actions to occur during the time simulation including:
  - Tank volume and liquid level tracking
  - Pump start/stop and speed variation
  - Valve position changes
  - Control valve setpoint variation
- Text and graphical output
- Unique animation feature dynamically displays time varying parameters along selected flow paths
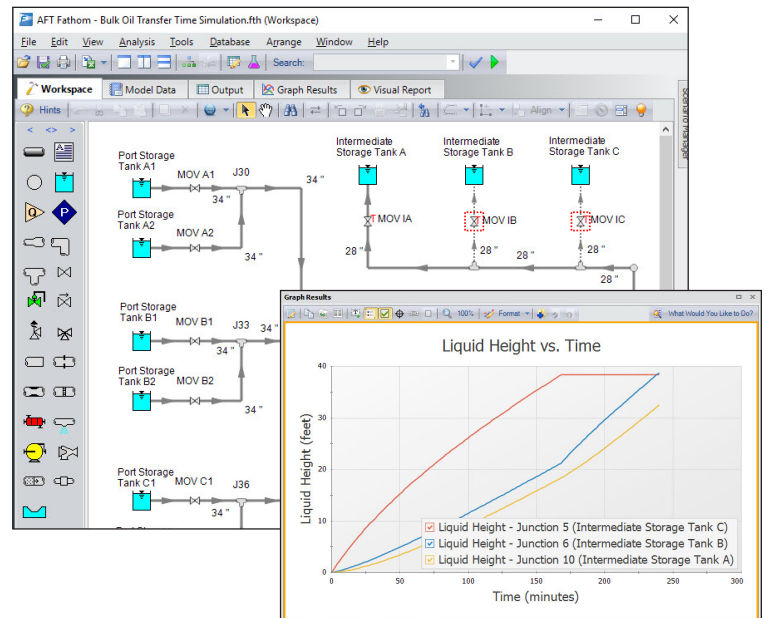
Settling Slurries
SSL Module

Benefits
- Consider additional losses associated with slurry flow
- De-rate pumps for accurate modeling
- Determine whether solids will settle out of solution and acceptable margin

Capabilities
- Solutions from the leading Wilson/GIW method
- Shareable database of solid particle properties
- Slurry pump de-rating using Warman or ANSI/HI methods
- Produces output reports with settling velocity, slurry volume/mass flows and other slurry parameters
- Generates slurry systems curves critical to understanding system velocity limits

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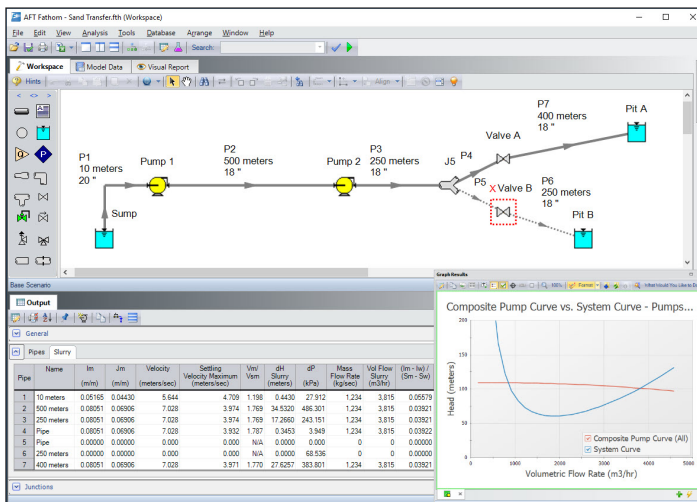
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