If you’ve ever worked on a water or wastewater treatment plant design, you’ve probably had to endure the painstaking task of analyzing a hydraulic profile. Even if it’s just a simple plant upgrade or analysis of one particular unit, the task can be time consuming and extremely aggravating. Look familiar??

Calculating hydraulic profiles or analyzing individual hydraulic features can be a complex process. Multiple tables and graphs, complex equations, trial and error solutions, multiple flow conditions … put them all together and you have a time consuming analysis that can be frustrating and inefficient. And what happens if the design changes? The process starts all over again.

Save time, money, and headaches by using a tool that was developed to make this process as simple as possible. Visual Hydraulics provides engineers and designers with a Windows friendly platform that’s extremely flexible and intuitive. In addition, specialized design tools are provided that make even the most complex hydraulic problem as straightforward as possible.
Visual Hydraulics follows the classic method of analyzing hydraulic profiles. A downstream control point is selected, and the hydraulic profile is computed by working upstream of that control point. The hydraulic profile is displayed in both tabular and graphic format that is easy to follow.

Let the Visual Hydraulics editing features handle this with a few clicks of the mouse. Not only will Visual Hydraulics recalculate the hydraulics for that section, but also reanalyze the entire hydraulic profile to account for the affect that change may have on other sections upstream. In addition to simple editing, Visual Hydraulics allows you to insert a hydraulic feature in between any two existing features, and will recalculate the entire hydraulic profile. Therefore if something is overlooked during design, the entire profile doesn’t have to be reanalyzed. Visual Hydraulics will do that for you.
What about results? The program came up with an answer, but where did it come from? And how do I know if it’s right? Visual Hydraulics was programmed with built-in summary features that allow you to view the process and equations used by the program to arrive at a particular result.

Visual Hydraulics comes equipped with a variety of summary options, including summary diagrams, summary tables, and even provides the equations used to analyze any particular section. Feel better knowing what Visual Hydraulics used in coming up with the answer, and how.
Visual Hydraulics offers a whole range of reporting options. Generate reports for entire profiles or individual sections. In addition, the reports can be exported to familiar Windows® formats, such as Word or Acrobat. This allows you to easily save and email any reports that you generate.
What you've seen so far only scratches the surface on what Visual Hydraulics can do. What makes Visual Hydraulics so unique is its special features and options. Take units off-line and see how it affects the hydraulic profile. Model unique flow split situations. Customize your pipe fitting database. Do you have a unique piece of equipment? You can even generate your own head loss equation. Different return flow scenarios? No problem. You'll be amazed at what you can accomplish.

Specify any number of flow conditions for analysis, including return flows.

Do you have hydraulic data for a special piece of equipment? Use it to generate your own head loss equation.

Use the units on-line database to take units off-line or put units on-line and see how it affects the hydraulic profile.

Use Visual Hydraulic’s flow splitting tool to analyze unequal flow split scenarios in pipes and over weirs.
• Simple to use, intuitive Windows® based graphical user interface.
• Draw, drag, copy, and move elements around the screen with the click of a mouse.
• Full hydraulic analysis capabilities of pipes, open channels, gates, orifices and ports, six different types of weirs, filters, bar racks and screens, tanks, launders, four different types of flumes, Venturi meters, and user defined losses.
• Advanced pipe analysis tools, including analyzing flows with solids and pipe age.
• Specialty tools, including user defined loss equations, a flow split analysis tool, and a manifold/diffuser analysis tool.
• Parallel treatment trains that are analyzed separate from one another. Take entire treatment trains off-line or just one unit and see how it affects the hydraulic profile.
• A fitting K value database for pipes, which allows you to change pipe K values, add your own fittings and K values, or remove fittings and K values.
• Multiple flow options, including return flow scenarios and specifying up to 20 different flow conditions for any flow scenario.
• A units on-line database which allows you to take units off-line or place units on-line and see how it affects the hydraulic profile.
• Advanced editing features that allow you to easily change any section of the profile and even insert a new section between two existing sections of the hydraulic profile.
• An operating conditions feature which will flag unusual or undesirable conditions, such as high losses, high velocities, and weir submergence.
• A flexible operating system that easily allows the designer to switch between the metric and English systems and work with different flow units, including million gallons per day, cubic feet per second, gallons per minute, cubic meters per second, or liters per second. Temperature variations can also be considered.
• An advanced graphing feature that allows you to analyze the behavior of any section of the profile over any range of flows.
• A full range of printing and reporting options, including full profile reports, reports of any individual section, and graphical analysis reports and tables.
• An exporting option for the summary reports which allows the report to be saved in a Windows® friendly format, such as Word or Adobe Acrobat.
• Two modes of operation – full profile mode and individual section mode, which allows you to work with a full hydraulic profile or just an individual section of the plant.
• Detailed help files that provide examples on all features of the program.

Take the complexity out of analyzing hydraulic profiles or treatment plant units. Let Visual Hydraulics do the work for you. Save time, money, and be confident with your analysis.

To analyze Visual Hydraulics free of charge for a 30 day trial period, contact Innovative Hydraulics at 412-334-1637.
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