

StationManager™

Description

StationManager™ is a database application that allows the management of various regulator station styles through an easy-to-use spreadsheet, data form, and schematic style interfaces. After being in the works for several years, the product represents a collaboration between B3PE and several operating utilities. It is intended to provide database and analytical tools to support both information management and compliance calculation needs of organizations who must comply with US Department of Transportation requirements.

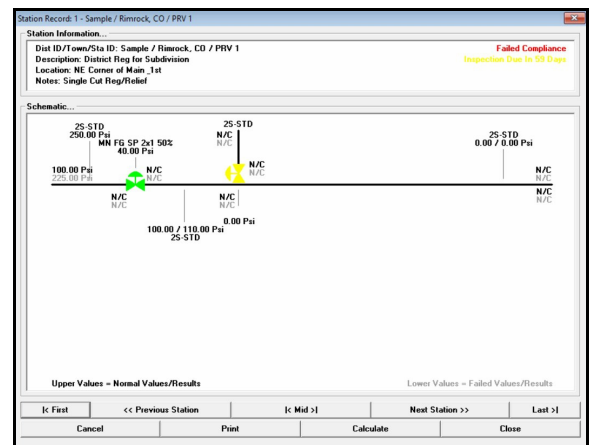


The Database

StationManager provides a predefined database that includes over 150 data fields and over 100 analytical results fields. The data fields include general, hydraulic, compliance, operational settings, inspection, and equipment items. The data fields allow tracking of station location, description, identification, status, dates, hydraulic configuration, MAOPs, installed equipment specifications, inspection results, pressure settings, and digital images of the station. The results fields include detailed pressure, pressure drop, capacity, and velocity values for each component of the station.

The StationManager data scheme looks at a “station” as a set of stages and runs. A station can consist of up to two runs, with up to two stages per run. Each stage can consist of an upstream piping section, an upstream device (regulator), an intermediate/interstage piping section, a downstream device (regulator or relief valve), a downstream piping section, and a stack piping section. The stages can be configured as regulator only, relief valve only, regulator-relief valve, regulator-regulator (upstream monitor, downstream monitor, or upstream working monitor), dual regulator-single relief, and single regulator-dual relief valve. Any combination of supported manufacturers, makes, and models can be included in the stage configurations. Each run can consist of any combination of supported stage configurations. The piping sections can contain a combination of both pipe segments and fittings.

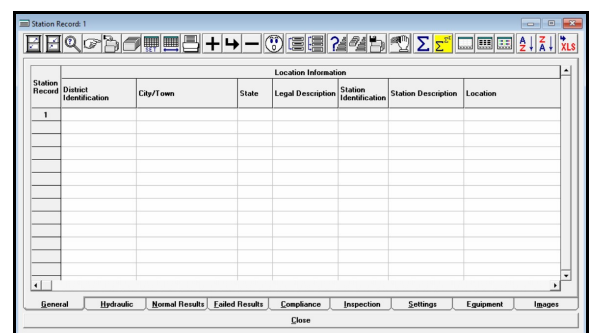
The station data is complimented by a set of Property Tables that contain information on Pipe, Fitting, Regulator, and Relief Valve properties. The standard tables include a substantial list of makes, models, and sizes that can be modified or enhanced by the User.



The Data Interface

The primary access to the StationManager database is through a spreadsheet-style report interface. Station records are added, deleted, moved, and manipulated using the Station Data Report interface. However, data values can be entered or revised using either the row and column format report, a “fill-in-the-blank” Data Entry Form, or a “point-and-click” graphical Schematic Data Interface.

Data entry is enhanced by numerous drop-down and pop-up selection lists and screens. Pop-up tooltips assist the User with the required data entry.



The tab-delimited report and data screens group the data into functional classifications. The Station Data Report screen provides a toolbar of useful record and manipulation functions.

Using the Station Data Report screen, data can be sorted or selected for viewing. Selection sets can be created based on User-defined criteria. For example, only the stations associated with a particular operating district or only stations containing a particular regulator or relief valve type could be selected and displayed.

The dimensional units, the number format, and the fields that are displayed can all be User specified.

An "audit" screen is provided to allow view-only access to select data. This feature is intended to allow a non-User to view station compliance values while denying the ability to change the data.

Data can be printed in a spreadsheet-style report or a document-style data sheet. A printable inspection form assists in field data collection.

The screenshot shows a software window titled "Station Record: 1 - Sample, Rimrock, CO, PRV 1". It has several tabs: "General", "Run 1 Stage 1", "Compliance", "Inspection", and "Images". The "General" tab is active. It is divided into several sections: "Run Configuration..." with dropdowns for "Run Type" (Working - 1st Cut) and "Stage Style" (Regulator - Relief Valve); "Piping Components..." with a list box containing "P: 25-510 - Len: 10.0" and buttons for "Add", "Delete", "Insert", and "Clear"; "Hydraulic Data..." with input fields for "Min Inlet Pressure: 100 Psi", "Max Inlet Pressure: 225 Psi", "MAOP: 250 Psi", "Efficiency: 95 Percent", and "Flow Equation: IGT-Improved"; "Calculated Values..." with a table for "Normal" and "Failed" conditions for "Outlet Pressure", "Pressure Drop", "Flow Rate", and "Velocity". At the bottom, there are navigation buttons like "Up Piping", "Up Device", "Int Piping", "Down Device", "Down Piping", "Stack Piping", "Meter/Recorder", and "Print", "Calculate", "Close".

The Calculation Engine

The StationManager calculation engine was derived from our popular GASCalc software. The StationManager engine has been enhanced to provide a more compliance-oriented set of calculations compared to GASCalc's more design-oriented methods. The station configuration is defined by the hydraulic data entered in the database. The database allows for a very detailed station definition; however, the actual definition can be as detailed or as general as the User desires. Individual pipe sections, fittings, and valves can be included in the configuration - or the entire section can be generalized as a single pipe segment or completely eliminated. Once the configuration is defined, the detailed pressure and flows at both normal and failed conditions can be calculated. The calculation routine will flag conditions that are out of code compliance or outside User-defined limits.

StationManager supports nearly twenty industry-standard pipe flow equations and ten regulator/relief valve equations. This combination of equation and configuration support allows StationManager to support nearly every conceivable station configuration found in the distribution, transmission, or gathering sectors of the industry.

Utilities

StationManager provides a number of utility functions for manipulating data values, sharing data, and importing and exporting data to other software applications. A mass update routine is provided, which allows the User to change data for records meeting certain search criteria. A routine is provided for creating a "sub" database from a selected set of records. Data entry is enhanced by a set of User-defined default data. A full set of file-handling routines is provided for copying, appending, merging, and "zipping" data files.

Import/Export Routines

A very robust set of import and export routines is provided for sharing data with other applications. Routines are provided for reading data from GasValve™, GASCalc™, dBase™, Access™, and Excel™ data files. Routines are also provided for writing data in several of these formats. This allows not only two-way sharing of the data but also allows the User to take advantage of the more general reporting, analytical, and manipulation features of these outside applications.

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