Mount Laurel Township MUA Hydrant Maintenance Program

Using ArcPad to Track Hydrant Flow Testing and Flushing procedures

MLTMUA
CLEAN WATER
WATER POLLUTION CONTROL

Delaware Valley Regional Planning Commission

What is the Mount Laurel MUA?

- The Mount Laurel Township, Municipal Utilities Authority (MUA) is located within the Southern edge of Burlington County. Currently the (MUA) supplies water service to approximately 18,000+ customers. The authority also currently maintains over 183 liner miles of water mains, 1548+ fire hydrants and 4695 water valves thought the township.

What is Hydrant Flushing?

- Hydrant flushing is a common water utility practice utilized for improving water quality, and for the reduction of tuberculation. A water utility provider should have an established flushing program in place throughout the hydrant distribution systems which is performed on a established intervals and time periods.

The MUA Hydrant Flushing Program

- In October 2006, the MLTMUA Water Department began implementing their yearly fire hydrant flushing tests using the ArcPad software in the field and linking the results to hydrant features in our water GeoDatabase.
- As required by federal and state agencies to maintain all of its fire hydrants, which included the performing of a yearly hydrant flush program.

Our Previous System

- Before GIS was implemented, the Water Department visited each hydrant via a hydrant master list and filled out a paper form which was then scanned and entered into a excel database. While this method produced positive results. It was decided that a geospatial based system would help to improve the accuracy of imputed data as well as cut down on the redundancy factors caused during data entry.

What is ArcPad?

ArcPad is software for mobile GIS and field mapping applications using handheld and mobile devices. ArcPad provides field-based personnel with the ability to capture, analyze, and display geographic information.

- **With ArcPad you can:**

- Perform reliable, accurate, and validated field data collection.
- Integrate GPS, rangefinders, and digital cameras into GIS data collection.
- Share enterprise data with field-workers for updating and decision making.
- Improve the productivity of GIS data collection.
- Improve the accuracy of the GIS database and make it more up to date.

Benefits of Field Collection

Redundancy Cut Down

- Data entry redundancy problems were reduced dramatically, saving the Authority thousands of dollars in data entry expenses. With field workers entering data directly into a our geo-database, the need for information to be copied from paper field notes was eliminated. Also the use of an close ended questionnaire, eliminated data entry problems associated with the filed note method.

Use of Existing Manpower

- With field workers being able to correct and add hydrants located incorrectly on the map, the authorities GIS Department was able to save both time and money.

Additional Information

- Field workers were able to collect data that the GIS Department was not able to or was unfeasible to collect at the time. Since the cost of gathering the data coordinated with regularly scheduled field work.

Locating Hydrants Faster in the Field

- The use of both GPS and GIS software helped to cut down on the number of hours field workers spent locating and documenting hydrants in the field, as a result field crews were able to spend more time in identifying previously undocumented aspects of each hydrant such as it location, grade, valves, reflectors, security rings and general conditions.

Fewer 3rd Party Software Purchases

- By combining multiple software applications into a single GIS application. Fewer software purchases are necessary, and the continuous updates, upgrades, and maintenance agreements associated with each of the previous software applications are eliminated.

- The main purpose of designing a GIS any application is should be modeled after the best attributes of other existing software applications—such as document management, data entry, and retrieval with an interactive mapping system—into one user friendly application.

Future Plans

Share Results With Departments Easier

- Using ArcReader the GIS Department will be able to share the results all MLTMUA Departments, who will now be able to look up hydrant via, ID numbers, street address or graphic selection.

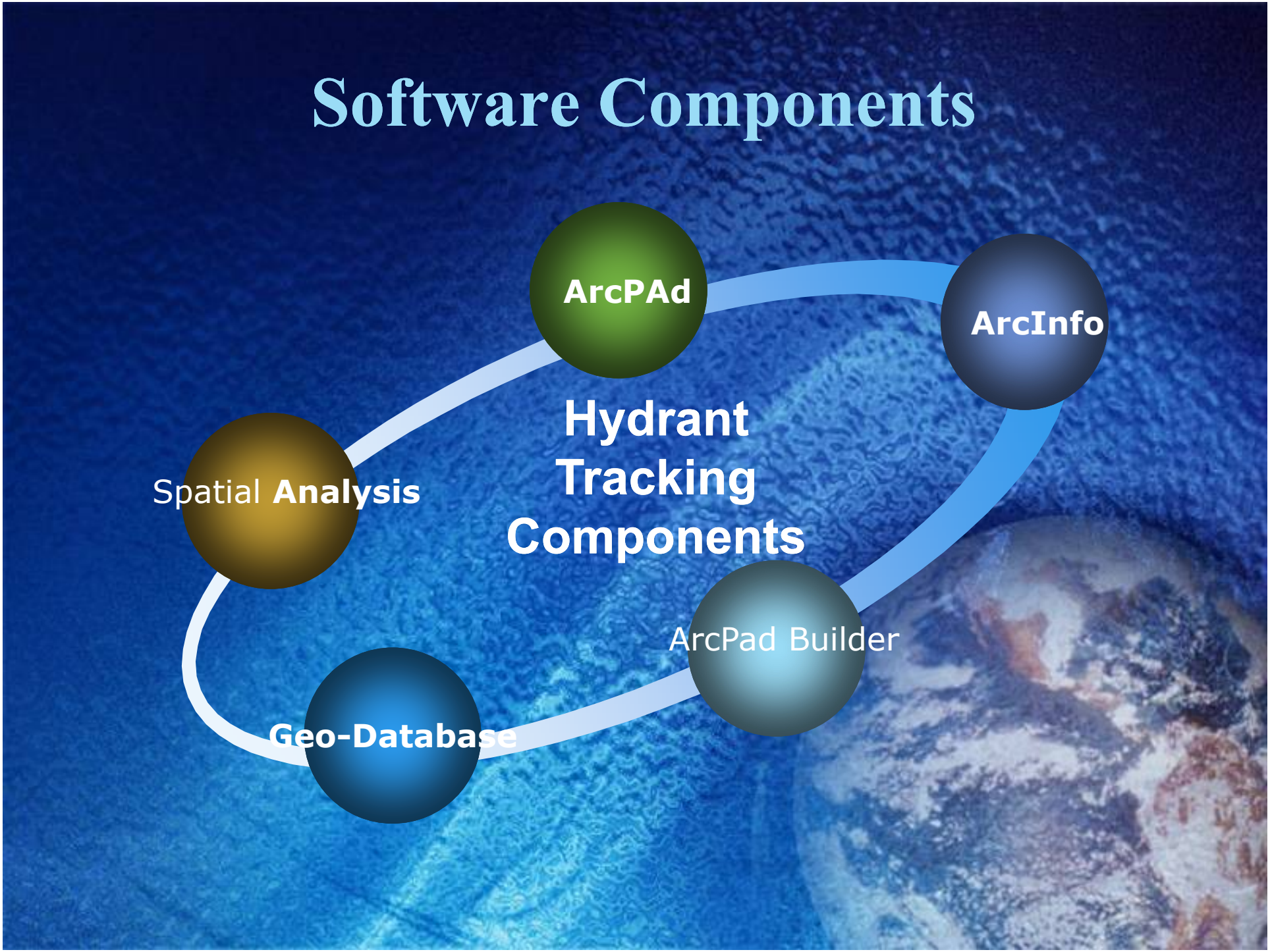
Shared Information with Agencies

- The information obtained can be shared with other township agencies such as the fire and police departments. In addition agencies such as the fire department which also performs maintenance on both township and private hydrants will able to incorporate their additional data into the GIS system.

Future GIS Field Applications

- Although the full value of the project has yet to be realized, the payoff is already apparent and the future can only bring further benefits. This program has been a huge success and we are now planning to expand it to a number of other functions preformed by both the water and sewer departments.

Software Components



ArcPad In The Field

Hydrant Forms

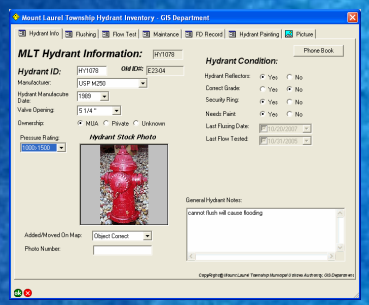
Hydrant APM

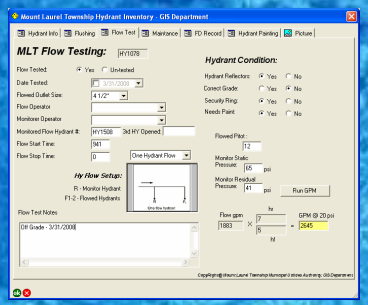
Hydrant Info

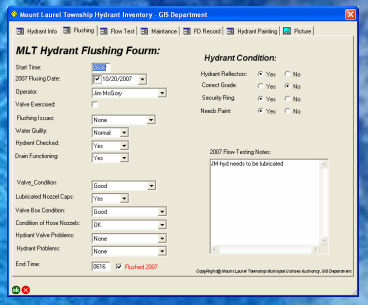
Flow Testing

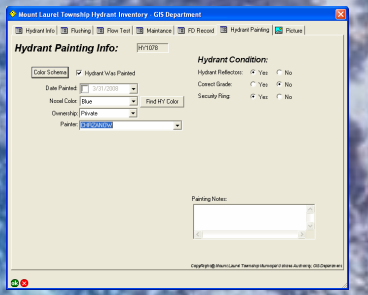
Flushing

Painting







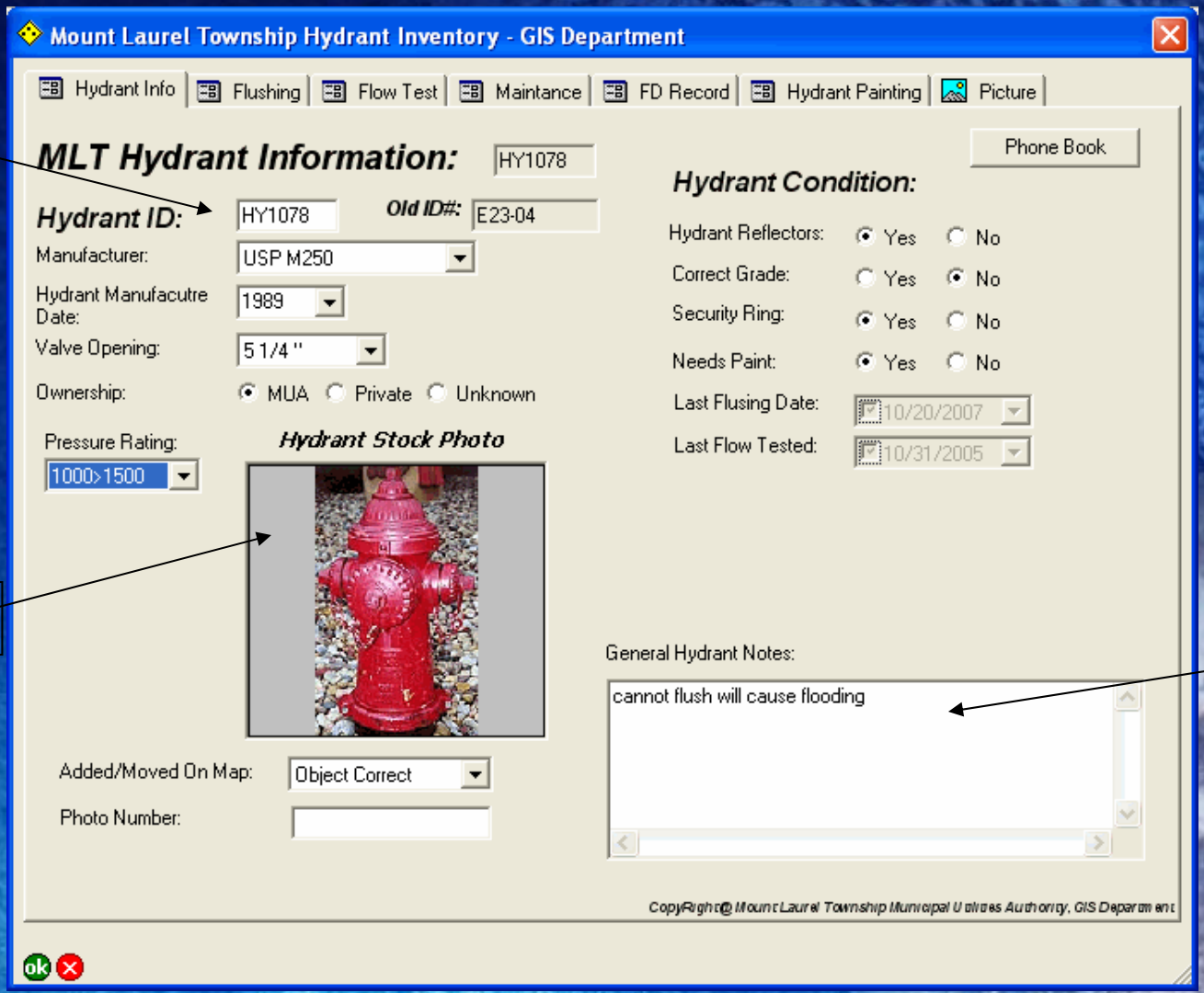


Hydrant Main Page

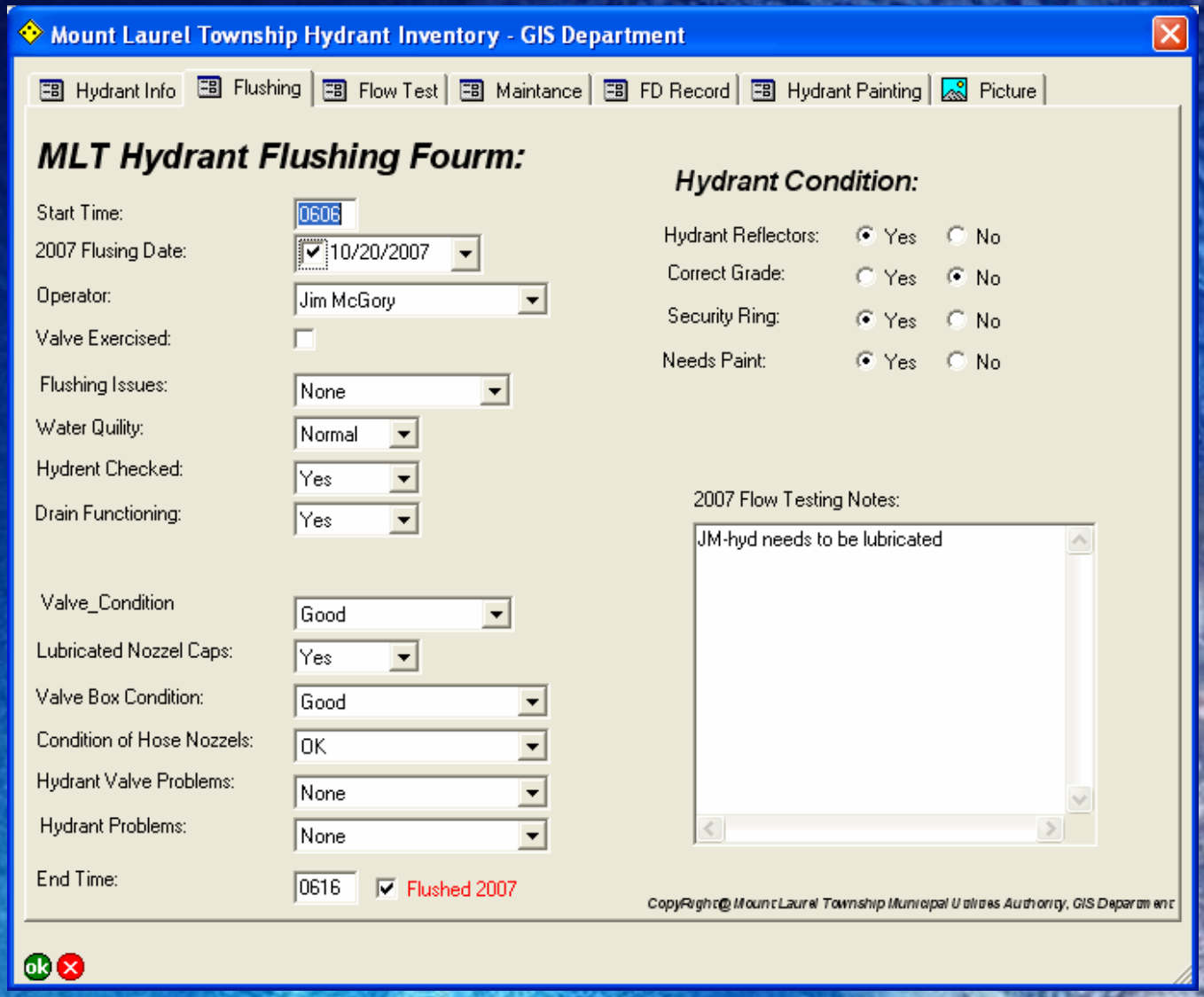
Hydrant ID

Stock Photo

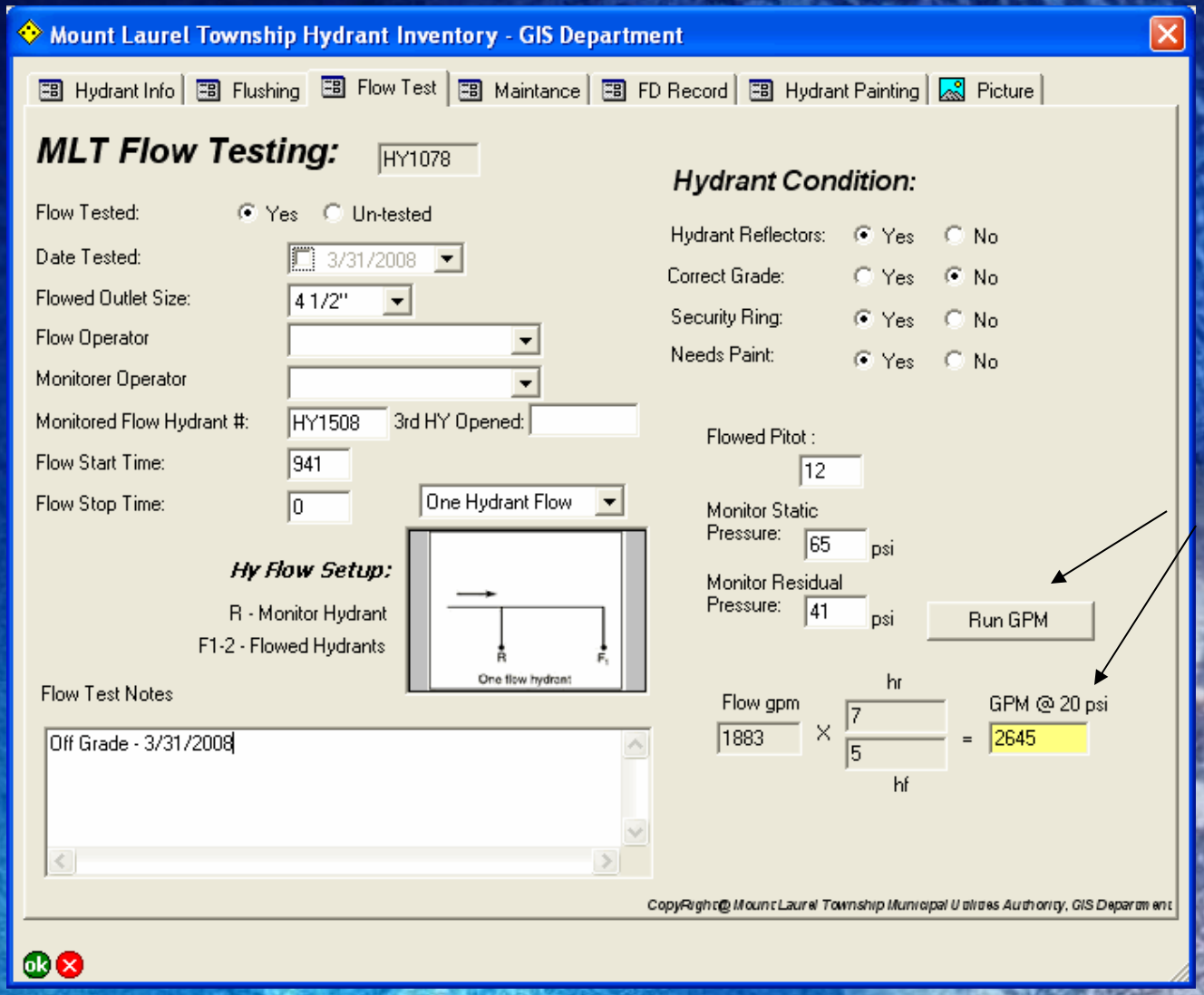
Field Notes

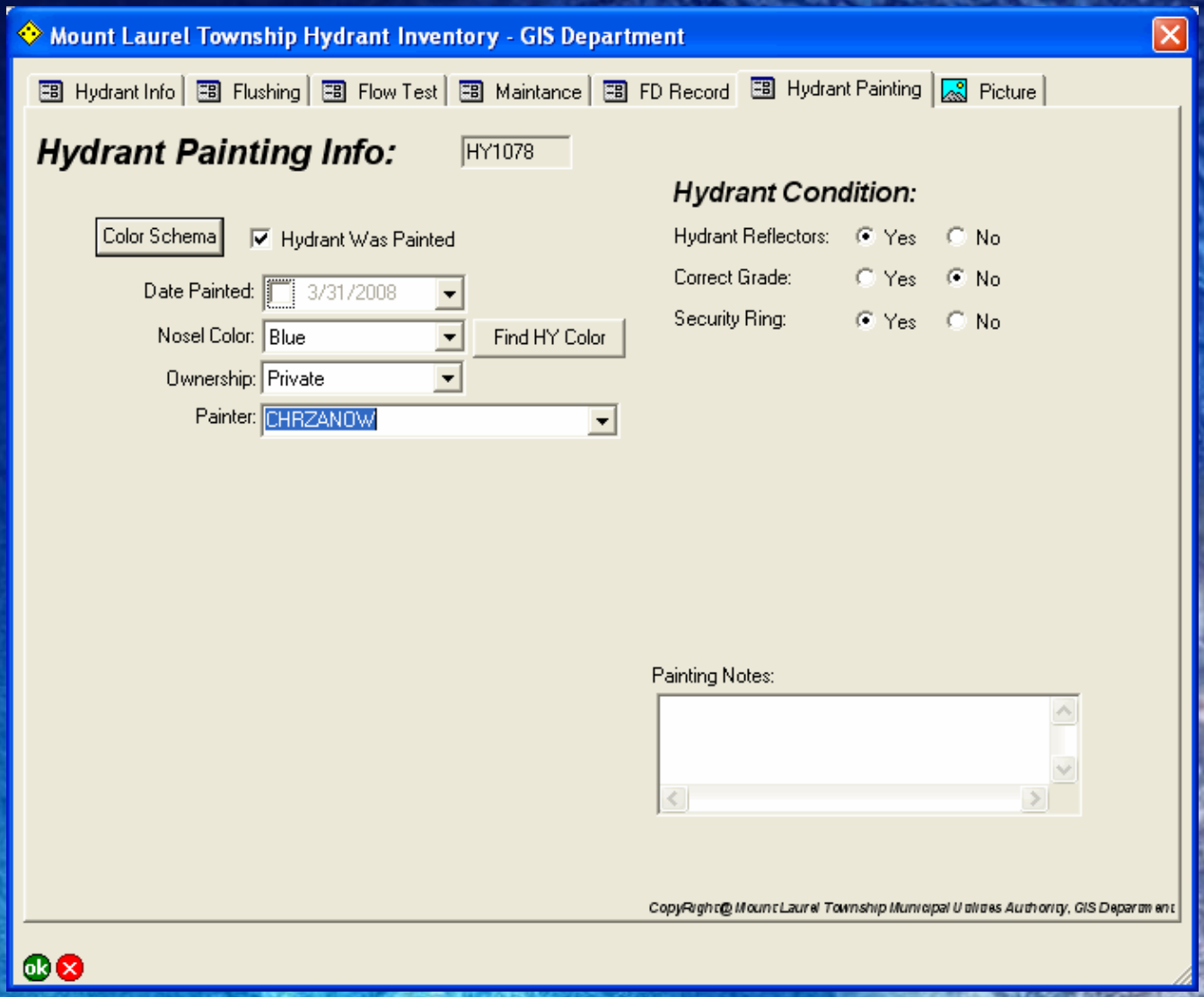


Hydrant Flushing Page



Hydrant Flow Testing Page



VBA Script To run GPM Equation

Hydrant Painting Page