

occur where there are valves connecting the two breached zones: abnormally high consumption of certain magnitudes is less likely (or impossible) in many residential service connections than in a commercial or industrial connection; and an anomaly identified as a likely case of water theft could be characteristic of theft from a fire hydrant or similarly exposed connection.

[00021] The results of these tests are the identification of likely locations for the anomaly. The results are then combined to generate scores for the determined likely locations for the anomaly. The most likely location or locations are then presented to a user, possibly with the associated scores. Other data regarding the anomaly may also be reported with the likely location(s), to aid the user in refining the location, including characteristics of the anomaly and data associated with related anomalies detected previously.

[00021a] In accordance with another aspect of the invention, there is provided a computerized system for determining one or more likely locations of an anomaly; the one or more likely locations of the anomaly disposed throughout a water utility network, the water utility network comprising at least a network of pipes for delivering water to consumers and a plurality of meters positioned within the water utility network, the system comprising: a network information database for receiving anomaly data, the anomaly data representing an indication of an anomaly having occurred within the water utility network, the indication of the anomaly being associated with meter data produced by one or more of the meters; an analysis engine for performing a plurality of separate tests to statistically determine a likely location of the anomaly by statistically combining results of the plurality of tests to generate scores for each of the likely locations for the anomaly; and a user interface module for presenting the likely locations and associated scores to a user.

BRIEF DESCRIPTION OF THE DRAWINGS

[00022] The invention is illustrated in the figures of the accompanying drawings which are meant to be exemplary and not limiting, in which like references are intended to refer to like or corresponding parts, and in which:

[00023] Figs. 1 and 2 present block diagrams depicting systems for locating anomalies within a water utility network according to embodiments of the present invention;

[00024] Figs. 3 through 11 present flow diagrams illustrating methods for locating anomalies within a water utility network according to embodiments of the present invention; and

[00025] Figs. 12 through 14 present screenshots showing a web user interface presenting event information generated by the geolocation engine according to certain embodiments of the present invention.