

slidable sealing piston slidable between the ends of the elongate container in response to differential pressure across the piston, said elongate container being coupled to a respective port of the multiport valve at the cleaning liquid opening end and to a respective manifold outlet of the output manifold at the pumping water opening end;

and wherein the starting position of the piston in said cleaning fluid container is adjacent to the pumping water opening end with the elongate container filled with cleaning liquid;

an output manifold having a plurality of manifold outlets coupled to the respective sample receivers and to said at least one container of cleaning liquid at the respective pumping water opening ends, and a water output line coupled to the plurality of manifold outlets;

a reversible pump coupled to the water output line for pumping and drawing sample water through the sample water intake line into selected sample receivers and for pumping and pushing cleaning liquid from at least one cleaning liquid container out the sample water intake line;

and a programmable controller coupled to the valve means and pump, said controller being programmable to cause pumping and drawing of sample water into the intake line and into respective sample receivers in series in a timed sequence of sample collecting events, said controller also being programmable for reversing the pump and pumping and pushing cleaning liquid from said at least one cleaning liquid container out the sample water intake line to wash away fouling material between the sample collecting events.

12. The water sampling system of claim 11 wherein the sample receivers are syringes.

13. The water sampling system of claim 11 wherein the sample receivers are sample collecting elongate cylindrical tubes.

14. The water sampling system of claim 11 wherein the sample receivers comprise a flexible bag inside the elongate container, said flexible bag having an opening coupled to the respective port.

15. The water sampling system of claim 11 wherein the valve means comprises a valve head having multiple ports and port inlets arranged in substantially circular configuration and a distributor rotor bearing against the valve head for rotation to different rotational positions, said rotor forming a seal between the rotor and valve head, said distributor rotor being formed with a coupling channel for coupling the sample water intake line to different port inlets according to the rotational position of the rotor; said valve head and distributor rotor being formed with flat bearing faces for sealing and closing all port inlets and ports when the rotor is in rotational positions with the coupling channel between ports.

16. The water sampling system of claim 11 comprising:

a cleaning liquid container comprising an elongate container of cleaning liquid coupled to a cleaning port of the multiport valve for washing away fouling material from the sample water intake line;

an elongate container of flushing liquid coupled to a flushing port of the multiport valve for flushing away cleaning liquid;

and wherein the controller is also programmable for operating the pump in reverse for first pumping

and pushing cleaning liquid out the sample water intake line and then pumping and pushing flushing liquid out the sample water intake line for flushing away cleaning liquid.

17. A method for automatically sampling water at a remote site using a multiport valve having a plurality of ports and respective port inlets, a sample water intake line coupled to the respective port inlets, and valve means for individually opening and closing the port inlets comprising:

selectively opening a first port inlet and first port; pumping and drawing sample water through the sample water intake line and first port inlet into a first sample receiver coupled to the respective first port for collecting a first sample;

closing the first port inlet and first port;

selectively opening a cleaning port inlet and respective cleaning port of the multiport valve;

reversing the pumping direction, pumping and pushing cleaning liquid from a cleaning liquid container coupled to the respective cleaning port out the sample water intake line, and washing away fouling material the cleaning port inlet and respective cleaning port;

waiting a predetermined period of time;

selectively opening a second port inlet and respective second port;

pumping and drawing sample water through the sample water intake line and second port inlet into a second sample receiver coupled to the respective second port for collecting a second sample;

closing the second port inlet and second port;

selectively opening the cleaning port inlet and respective cleaning port;

again reversing the pumping direction, pumping and pushing cleaning liquid from a cleaning liquid container coupled to the respective cleaning port out the sample water intake line, and washing away fouling material;

closing the cleaning port inlet and respective cleaning port;

waiting a predetermined period of time;

and alternating the steps of collecting samples and washing away fouling material in series in a timed sequence until a prescribed number of samples has been collected.

18. The method of claim 17 comprising the steps following the step of closing the cleaning port inlet and respective cleaning port as follows:

selectively opening a flushing port inlet and respective flushing port of the multiport valve;

continuing the reverse pumping direction, pumping and pushing flushing liquid from a flushing liquid container coupled to the respective flushing port out the sample water intake line, and flushing away cleaning liquid from the sample water intake line.

19. The method of claim 17 comprising the steps of providing sample receivers and at least one cleaning liquid container in the configuration of elongate containers having a sample water opening at one end, a pumping water opening at the other end, and containing a slidable sealing piston slidable between the ends of the elongate container in response to differential pressure across the piston;

locating the pistons of sample receivers at the sample water opening end and backfilling the sample receivers with pumping water before the sample collecting steps;