CLAIMS

[Claim 1] A purifying device comprising a filter, a measurer, and a controller, wherein

the measurer is configured to:

amplify, by polymerase chain reaction (PCR) method, a genetic nucleic acid of viruses in water filtered by the filter; and

detect varieties of the viruses in the water filtered by the filter, by performing hybridization of an amplified nucleic acid with a fluorescent nucleic acid and detecting light emission, and

the controller is configured to evaluate the integrity of the filter based on a measurement result regarding the viruses in the water filtered by the filter, and output information regarding an evaluation result.

[Claim 2] The purifying device according to claim 1, wherein the controller is configured to output an alarm regarding the filter when the water filtered by the filter includes viruses having a particle size of a defined value or more, the defined value determined based on filtration performance of the filter.

[Claim 3] The purifying device according to claim 1 or 2, wherein the controller is configured to output an alarm regarding the filter when a specific variety of microorganism is detected as a microorganism in the water filtered by the filter.

[Claim 4] The purifying device according to claim 1, comprising the filter in a plurality, each connected in parallel with each other, and further comprising:

a valve configured to allow the measurer to collectively sample water filtered by the plurality of filters from a pipe that merges flow on a secondary side of the plurality of filters.

[Claim 5] A purifying method comprising:

amplifying, by polymerase chain reaction (PCR) method, a genetic nucleic acid of viruses in water filtered by a filter;

detecting varieties of the viruses in the water filtered by the filter, by

performing hybridization of an amplified nucleic acid with a fluorescent nucleic acid and detecting light emission;

evaluating the integrity of a filter based on a measurement result of measuring viruses in water filtered by the filter; and

outputting information regarding an evaluation result.

[Claim 6] The purifying device according to claim 2, wherein the controller is configured to output the alarm regarding the filter when a specific variety of microorganism is detected as a microorganism in the water filtered by the filter.

[Claim 7] The purifying device according to claim 1, wherein the measurer is configured to detect amount or concentration of the viruses in the water filtered by the filter based on a most probable number (MPN) method.

[Claim 8] The purifying device according to claim 1, wherein viruses, which are detected by the measurer, cannot be removed by the filter.

[Claim 9] The purifying device according to claim 8, wherein viruses, which are detected by the measurer, are smaller than Cryptosporidium.