Test Plan

Automated Water Quality Monitoring System

Automated Water Quality Monitoring system is a system that monitor the quality of water in a treatment plant in defined three stages of water treatment process using pH and Turbidity sensors. An embedded device is made and monitoring web site is also made for this project.The main users of this system are plant engineer,chemist,technical officer and other authorized people who have access to the web site.

Following are the test plan that is to be tested.

- **Integration Testing**

Focus – pH sensor, web site

Inputs and expected output

PH	<6.5	6.5 – 7. 5	>7.5
Response	Alert	Normal	Alert

Assumption – temperature 25^0C

Testing Environment – wifi connection,pH sensor along with the embedded device and web interface

Testing Process - In our system we are designing it to give alert when the variation of pH and turbidity values occurred. We can give some sort of boundary values to the system and check whether it gives expected output to the clients.

Normally pH value of treated water should be in the range of 6.5 – 7.5.Then we are going to test our system using this case.

By using soap water ,normal water and leman water it can be tested.

- **Unit Testing**

Test whether sensors are working properly.Test both pH and Turbidity sensors with known solutions to verify whether it gives expected values.

Focus – pH sensor

Inputs and expected outputs –pH value of water is going to be changed by using pH known chemical and expecting their exact pH values using our pH sensor

2.2 – Vinegar

10.5 - Milk of Magnesia

14.0 - Sodium Hydroxide (NaOH)

Assumption – temperature 25^0C

Testing Environment – pH sensor is needed

- **Load Testing**

Focus –whole system

Inputs – increase the number of nodes up to 30 nodes for the system using dummy values

Expected output –system should operate properly as before

Assumption - temperature 25^0C

Testing Environment – pH sensor ,Turbidy sensors,wifi connection and web site