Application for the publication of dumping and/or countervailing duty notices

Cooling tower water treatment controller units exported from the United States of America
APPLICATION UNDER SECTION 269TB OF THE CUSTOMS ACT 1901 FOR THE PUBLICATION OF DUMPING AND/OR COUNTERVAILING DUTY NOTICES

DECLARATION

I request, in accordance with Section 269TB of the Customs Act 1901, that the Minister publish in respect of goods the subject of this application:

☑ a dumping duty notice, or
☐ a countervailing duty notice, or
☐ a dumping and a countervailing duty notice

This application is made on behalf of the Australian industry producing like goods to the imported goods the subject of this application. The application is supported by Australian producers whose collective output comprises:

• 25% or more of the total Australian production of the like goods; and
• more than 50% of the total production of like goods by those Australian producers that have expressed either support for, or opposition to, this application.

I believe that the information contained in this application:
• provides reasonable grounds for the publication of the notice(s) requested; and
• is complete and correct.

Signature: [Signature]

Name: Ian Palmer

Position: Managing Director

Company: Aquarius Technologies Pty Ltd

ABN: 28 010 588 637

Date:
PART A

INJURY

TO AN AUSTRALIAN INDUSTRY

IMPORTANT

All questions in Part A should be answered even if the answer is ‘Not applicable’ or ‘None’. If an Australian industry comprises more than one company/entity, each should separately complete Part A.

For advice about completing this part please contact the Commission’s client support section on:

Phone: 1300 884 159
Fax: 1300 882 506
Email: clientsupport@adcommission.gov.au
### Identity and communication.

Please nominate a person in your company for contact about the application:

<table>
<thead>
<tr>
<th>Contact Name:</th>
<th>XXXXXXXXXXXXXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company and position:</td>
<td>Sales Manager, Aquarius Technologies Pty Ltd</td>
</tr>
<tr>
<td>Address:</td>
<td>1/23 Richland Av. Coopers Plains QLD 4108</td>
</tr>
<tr>
<td>Telephone:</td>
<td>07 3274 4750</td>
</tr>
<tr>
<td>Facsimile:</td>
<td>07 3274 4736</td>
</tr>
<tr>
<td>E-mail address:</td>
<td>XXXXXXXXXXXXXXX</td>
</tr>
<tr>
<td>ABN:</td>
<td>28 010 588 637</td>
</tr>
</tbody>
</table>

**Alternative contact**

<table>
<thead>
<tr>
<th>Name:</th>
<th>XXXXXXXXXXXXXXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position in company:</td>
<td>General Manager</td>
</tr>
<tr>
<td>Address:</td>
<td>1/23 Richland Av. Coopers Plains QLD 4108</td>
</tr>
<tr>
<td>Telephone:</td>
<td>07 3274 4750</td>
</tr>
<tr>
<td>Facsimile:</td>
<td>07 3274 4736</td>
</tr>
<tr>
<td>E-mail address:</td>
<td>XXXXXXXXXXXXXXX</td>
</tr>
</tbody>
</table>

If you have appointed a representative to assist with your application, provide the following details and complete Appendix A8 (Representation).

<table>
<thead>
<tr>
<th>Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business name:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Telephone:</td>
<td></td>
</tr>
<tr>
<td>Facsimile:</td>
<td></td>
</tr>
<tr>
<td>E-mail address:</td>
<td></td>
</tr>
<tr>
<td>ABN:</td>
<td></td>
</tr>
</tbody>
</table>
A-2  **Company information.**

1. State the legal name of your business and its type (eg. company, partnership, sole trader, joint venture). Please provide details of any other business names you use to manufacture/produce/sell the goods that are the subject of your application.

   Aquarius Technologies Pty Ltd (Aquarius Technologies) is a private company. Aquarius Technologies is also referred to as ‘the applicant’.

   Aquarius Technologies does not use any other business names to manufacture or sell the goods subject to this application.

2. Provide your company’s internal organisation chart. Describe the functions performed by each group within the organisation.

   Refer confidential attachment A-2.2

3. List the major shareholders of your company. Provide the shareholding percentages for joint owners and/or major shareholders.

   Refer confidential attachments A-2, A-2-1 and A-2-2

4. If your company is a subsidiary of another company list the major shareholders of that company.

   Refer confidential attachment A-2

5. If your parent company is a subsidiary of another company, list the major shareholders of that company.

   N/A - Refer confidential attachment A-2

6. Provide an outline diagram showing major associated or affiliated companies and your company’s place within that structure (include the ABNs of each company).

   N/A - Refer confidential attachment A-2

7. Are any management fees/corporate allocations charged to your company by your parent or related company?

   No.

8. Identify and provide details of any relationship you have with an exporter to Australia or Australian importer of the goods.

   Aquarius Technologies has no relationships with any exporter or importer of the goods the subject of this application.
9. Provide a copy of all annual reports applicable to the data supplied in appendix A3 (Sales Turnover). Any relevant brochures or pamphlets on your business activities should also be supplied.

Aquarius Technologies is a private company and does not prepare annual reports.


Copies of the products brochures are at non-confidential attachments A-2.9.1 to A-2.9.4.

10. Provide details of any relevant industry association.

Not applicable.

A-3 The imported and locally produced goods.

1. Fully describe the imported product(s) the subject of your application:
   - Include physical, technical or other properties.
   - Where the application covers a range of products, list this information for each make and model in the range.
   - Supply technical documentation where appropriate.

The goods that are the subject of this application (the goods) are industrial water treatment controllers, programmed to monitor and/or treat water in a cooling tower, with or without accessories including sensors, pumps, solenoids and modem (cooling tower water treatment controllers).

Further information

A cooling tower is a heat rejection device that rejects waste heat to the atmosphere through the cooling of a water stream. Common applications of cooling towers include air conditioning for buildings and the cooling of circulating water in industrial processes.

Cooling tower water treatment controllers are units programmed to monitor water conditions (such as conductivity, Oxidation Reduction Potential (ORP) and power of hydrogen (pH) levels) in the cooling tower water and/or initiate actions required to bring the water to within the user’s desired parameters (for example, through the addition of disinfecting chemicals). A controller typically comprises a printed circuit board or boards (PCBs), connection terminals, a display screen and control panel with keypad.

The control functions of cooling tower water treatment controllers are based on inputs from probes measuring the properties of the water.
Depending on the reading from the probes, the unit signals ancillary devices such as a bleed solenoid, a feeder and/or pump/s (which are connected to the water treatment system separately as an additional system component) to drain a controlled amount of water or dose the water with the required amount of chemical(s) (for example oxidising biocide, acid).

In addition, the goods are often equipped with internal timers which are programmed by users to send signals to ancillary devices to dose water with other chemicals when required (for example inhibitor secondary biocide (non-oxidising), dispersant).

Depending on the customer’s final requirements, cooling tower water treatment controllers may have the following features as well:

• Data logging feature to log the measurements on the controller to be downloaded on USB or a laptop when required; and/or
• Remote access through web by adding Modems, Wi-Fi Adapter or Ethernet Adapter; and/or
• Building management system (BMS) boards: printed circuit boards (PCBs) for communication with Building Monitoring and Control System (BMCSs).

BMS boards transfer the controller data to the BMCSs using two main protocols: Analogue: 4-20mA outputs, and Digital: Modbus.

2. What is the tariff classification and statistical code of the imported goods.

Aquarius understands the goods subject to the application are classified to the subheading 9032.89.80 (statistical code 90) of Schedule 3 to the Customs Tariff Act 1995, however this will need to be confirmed by the Commission with the relevant authorities.

An extract of Chapter 9032 of the tariff is copied below. Classification 9032.89.80 refers to automatic regulating or controlling instruments that are not thermostats or manostats, are not hydraulic or pneumatic and are not motor vehicle voltage regulators or passenger motor vehicle components (i.e. they are ‘other, other’).

Aquarius thinks that other items that may fall under this tariff classification are swimming pool water treatment control units, waste water treatment control units and electric 7 day timers.
3. Fully describe your product(s) that are ‘like’ to the imported product:
   - Include physical, technical or other properties.
   - Where the application covers a range of products, list this information for each make and model in the range.
   - Supply technical documentation where appropriate.
   - Indicate which of your product types or models are comparable to each of the imported product types or models. If appropriate, the comparison can be done in a table.

Aquarius Technologies manufactures like goods equivalent to the imported goods at its Coopers Plains facility near Brisbane, Queensland.

Aquarius Technologies is the only producer in Australia of ‘like goods’.

As with the imported goods, the goods produced by Aquarius Technologies consist of a weatherproof enclosure (predominantly made of plastic) that includes:

- A circuit board with proprietary software;
- Connection terminals for ancillary devices such as power, feeders and pumps;
- Probes (sometimes referred to as sensors or electrodes);
- Display screen (typically to display set points, readings, alarms, date); and
- Control panel with key pad.

A comparison of the physical, technical and other properties of a selection of models of the imported goods the subject of this application from a major supplier (see below) and the ‘like goods’ produced by the applicant are contained in the table below.

The table compares the applicant’s like goods to the goods that it understands are exported from the US by a major exporter, Advantage Controls. Advantage
Controls’ controllers are commercially known as ‘MegaTron’ products. There are numerous other models and exporters of the goods from the US, the listed models are included for illustrative purposes only.

As far as the applicant knows, the three models manufactured and exported by Advantage Controls are:

1. MegaTron: This model can control 1-4 systems simultaneously. Limited numbers of this model are sold in Australian due to its high price.
2. MegaTron ‘SS’ series: These units are a smaller single system version of the MegaTron.
3. MegaTron ‘XS’ series: These models have the same functions as the MegaTron SS plus additional features such as USB, more memory, more inputs and outputs and more menu abilities.

Note: For the purpose of this application generally, the applicant has focused on establishing reasonable grounds of dumping in relation to the MegaTron SS and MegaTron XS models, which it considers is a reasonable approach as these are considered the largest volumes of all US controllers.

The goods the subject of the application are not limited to specific models.

<table>
<thead>
<tr>
<th>Make</th>
<th>Advantage Controls (imported goods)</th>
<th>Aquarius Technologies (applicant’s like goods)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model number</td>
<td>SSCF3-A7Y</td>
<td>SSCF3E-A7Y</td>
</tr>
<tr>
<td>Sensors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Conductivity</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ORP</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Flow Sensor</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Timer</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Communication port</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Extras</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modem</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table A-3.3 Comparison of properties between the imported goods and the applicant’s ‘like goods’

The technical specifications of the applicant’s ‘like goods’ produced in Australia are at:

- non-confidential attachment A-3.3.1 for CO1 series models; and
- non-confidential attachment A-3.3.2 for CT1 series models; and
- non-confidential attachment A-3.3.3 for Ultima series models.

4. Describe the ways in which the essential characteristics of the imported goods are alike to the goods produced by the Australian industry.

Although the applicant’s like goods are not considered identical in all respects to the imported goods, the applicant’s goods have the following characteristics closely resembling those of the imported goods, as outlined below.
Although the applicant’s like goods are not considered identical in all respects to the imported goods (size of display, position of buttons, colour etc. which don’t affect the product functionality), the applicant’s goods have the following characteristics closely resembling those of the imported goods, as outlined below.

(a) Physical likeness

As shown in Table A-3.3, above, the imported goods and the applicant’s goods are physically very similar in respect to the general design and components.

While there may be physical differences in appearance, branding and design, both the goods and the like goods produced by the Australian industry have the following elements:

- A circuit board loaded with proprietary software;
- Connection terminals/Outlet sockets for ancillary devices such as power, feeders and pumps;
- Probes (sometimes referred to as sensors or electrodes);
- Display screen (typically to display set points, readings, alarms, date); and
- Control panel with key pad.

As outlined in Table A-3.3 above, depending on the model of the Australian goods and the imported goods, each can have all of the same sensors, timers, communication ports and modem (optional).

As indicated in the table the following MegaTron models are physically matched to Aquarius Technologies’ models:

- SSCF3-A7Y, XSCF3-A7Y, SSCF3E-A7Y and XSCF3E-A7Y match the Aquarius product CT1.

SSCF3-A7Y and XSCF3-A7Y are converted to SSCF3E-A7Y and XSCF3E-A7Y by adding a Flow sensor. The functions are exactly the same for these models. Whereas, a Flow Sensor is standard with CT1.

- SSCPRF3E-A7Y, XSCPRF3E-A7Y, SSCPRF3E-A7H1Y and SSCPRF3E-A7H1Y are equivalent to the Aquarius products CO1 and ULTIMA. ‘H1’ in the model code indicates the communication port which can be added to SS and XS series. However, communication ports are standard with Aquarius Technologies products CO1 and ULTIMA.

The following images of imported goods and the Australian produced like goods indicate the general design features of a liquid crystal display screen and soft-press buttons for user input and programming. The images show that each controllers has its own physical design.
(b) Commercial likeness

Both the imported goods and the applicant’s goods are directly competitive in the Australian cooling tower services and maintenance market and are sold to the same customers.

The parameters which affect the customer’s purchasing decision include price, recommendations made in tender documents, recommendations made by water treatment service companies, and references from previous applications.

The imported and Australian produced goods compete in the same market sectors, specifically:

- to replace existing outdated controllers (about 75% of the market); and
- installation in new projects (about 25% of the market).

mostly via the wholesaler channel to market (typically consisting of water treatment service companies).
For convenience of use, the majority of the imported goods and the applicant’s “like goods” are mounted on PVC backboards here in Australia to include required further accessories for the water treatment system as a whole, typically including manifolds, bleed solenoids and injection pumps. These packages are distinguished by their unique “Product Codes” in the companies’ price lists to make it easy for the final users to select and order their required product (such as XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXX [Confidential – market information]. However, in some occasions, the water treatment service companies buy the stand alone controllers only and put them in their own packages (such as XXXXXXXXXXX). [Confidential – market information]

There is complete commercial interchangeability between the imported goods and the Australian produced goods, influenced entirely by close price competition.

(c) Functional likeness

Both the imported and Australian produced goods are put to the same end-use, that is, for use in water treatment dosing applications in cooling towers.

The exact functionality that each unit has will depend on its componentry, such as which sensors it has and whether it has a communication port or modem. However, both the like goods and the goods (when they have the same componentry) have the exact same functionality as outlined below:

1. The **SSCF3/XSCF3** models have the same functions as of the Australian made products: CT1 series.

2. The **SSCPF3/XSCPFRF3** models have the same functions as of the Australian made products: CO series and ULTIMA

Part of the market for both imported and Australian products is to replace outdated or decayed units.

The following graphics indicate the installation of the imported goods (Diagram A-3.4.1) and the Australian produced goods:
Diagram A-3.4.1 A typical controller installation diagram issued by an exporter of the US goods (Source: Non-confidential Attachment A-3.4.1)

Diagram A-3.4.2 Typical cooling tower controller installation diagram of the like goods (Source: Non-confidential Attachment A-3.4.2)

As indicated on the above diagrams, both imported and local controllers are used with cooling towers. In principal, the cold water is circulated from the cooling tower through the heat exchangers or condensers to remove the extra heat. The water is then returned to the cooling tower to reject the heat.
To install any of these controllers, a sample line is taken from discharge section of the circulation pump to circulate the water through the controller manifold where the probes are installed. The probes measure the water parameters and regulate the dosing pumps or solenoids accordingly.

The outlet of the manifold is returned to the cooling tower either directly or through the main circulation line.

(d) Production likeness

The applicant understands that the imported goods undergo a similar production process to that of the Australian like goods, including manually installing circuit boards/motherboard circuitry inside an enclosure, add proper power outputs and other required electrical parts and preform the required wirings. Both imported and like goods are supplied in UV stabilised plastic type enclosures.

5. What is the Australian and New Zealand Standard Industrial Classification Code (ANZSIC) applicable to your product.

The ANZSIC code applicable to water treatment equipment, commercial, manufacturing is Class 2499, Division C Manufacturing, Subdivision 24 Machinery and Equipment Manufacturing.

6. Provide a summary and a diagram of your production process.

The key components of the like goods are controller box, circuit board, probes, power outputs, controller panel including display and keys.

In summary, the applicant produces the ‘like’ goods to the goods the subject of this application, as follows:

![Diagram of production process]

Diagram A-3.6 - Manufacturing Line for like goods
1. Preparing the required parts and items:

1.1. Probes:

There are two main probes used with Aquarius controllers:

1. **PR_FCT: Flow/Conductivity/Temperature Probe**
   Aquarius Technologies manufactures PR_FCT combination probes in their workshop for use in the products. PR_FCT measures conductivity and temperature simultaneously and works as a flow switch as well.

2. **PR_PHRG: Combination Probe**
   The PR_PHRG combination probe includes pH, ORP and Gnd. ref probes. The PR_PHRG has been designed by the applicant and it is manufactured through a local outsourced company.

1.2. Circuit boards:

The circuit boards are designed by the Aquarius Technologies [Confidential: production arrangements]. For each individual model, the relevant firmware is uploaded onto the controller circuit board in the applicant’s workshop during the production process.

1.3. Controller box:

[Confidential production information]

The circuit boards and all required accessories are installed into the controller boxes in Aquarius Technologies workshop to make some middle modules ready which are kept in the stock to be used for manufacturing the final products.

1.4. Software:

The controller software is designed by Aquarius Technologies programmers.

1.5. Modem:

[Confidential production information]. They are used for remote communication with the controllers through the internet. The software to support internet communication via the modems is developed by Aquarius Technologies.
2. **Manufacturing line:**

Aquarius Technologies does not stock the finished products (controllers) in their workshop. Controllers are manufactured upon receiving customer orders and they are programmed to meet the customer’s required specifications.

As soon as an order is received, Aquarius Technologies’ administration manager inputs the order onto the system and prints a sales order which is sent to workshop for production. Upon receiving the sales order in the workshop, the required number of controller boxes (which already include the required electrical parts, please see 1.3. above) are picked from stock and sent to the main manufacturing desk. On the main manufacturing line of workshop, the required software for each application is uploaded on to the circuit boards and then sensors and other required items are added to the controller box to make the final product based on the ordered specifications.

Then functionalities of the controller buttons are tested and keypad overlays are fitted. If the order includes modems, they are installed and tested at this stage. If the order is for a package of controller and pumps (most of the orders are for packages), the controller is mounted on a backboard with the required number of pumps and manifold. The software functionality is checked, and the controller undergoes final quality control tests. The approved products are packed, ready for despatch.

7. **If your product is manufactured from both Australian and imported inputs:**
   - describe the use of the imported inputs; and
   - identify that at least one substantial process of manufacture occurs in Australia (for example by reference to the value added, complexity of process, or investment in capital).

The following raw materials are imported, either directly or indirectly:

- XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[Confidential raw material information]

Every process identified in the diagram A-3.6, above, is performed in Australia.

Aquarius Technologies designs the controllers, circuit boards, probes and all relevant features of the controllers,
The following manufacturing processes occur in Australia:

- **Circuit boards**: Circuit boards for Aquarius Technologies' controllers are designed by the applicant’s engineers. [Confidential – production arrangements] The circuit boards are then used in Aquarius Technologies’ products.

- **Flow/Conductivity/Temperature probes (PR_FCT)**: The circuit boards are designed by Aquarius Technologies. [Confidential manufacturing process] Aquarius Technologies then uses these circuit boards in the manufacturing of the probes.

- **pH/ORP/Gnd. ref combination probes**: These probes were designed by Aquarius Technologies. [Confidential manufacturing process information]

- **Controllers**: When all raw materials are prepared, the water treatment controllers are assembled and programmed in the applicant’s workshop.

- Design, assembly and testing of controllers: as outlined in A-3.6, Aquarius Technologies locally designs, assembles and tests controllers in Australia. All of these processes are substantial processes of manufacture in Australia.

The processes undertaken in Australia are substantial and give the essential characteristics to the finished product.

Refer to the Confidential attachment A-7.1 for detailed cost break down.

8. If your product is a processed agricultural good, you may need to complete Part C-3 (close processed agricultural goods).

   Not applicable.

9. Supply a list of the names and contact details of all other Australian producers of the product.

   Aquarius Technologies is not aware of any other producers of controllers in Australia.

**A-4 The Australian market.**

1. Describe the end uses of both your product and the imported goods.

   The end uses of both Australian and imported goods are for use in the measurement and controlled release of chemicals into water used in cooling
tower systems, including:

- commercial cooling towers (examples include, medium and large commercial buildings, public facilities, shopping centres); and
- industrial cooling towers (examples include manufacturers, refineries, steel companies and pasteurisers).

The controllers subject of this application can be theoretically programmed to be used with the other applications such as swimming pools or drinking water (it is the proprietary software that makes them suitable for water cooling towers). Aquarius Technologies does not have evidence about imported controllers being reprogrammed for these other applications, or being imported without the required software then re-programme in Australia. However this is considered a circumvention risk that would require monitoring by the Commission should anti-dumping measures be applied.

2. Generally describe the Australian market for the Australian and imported product and the conditions of competition within the overall market. Your description could include information about:

- sources of product demand;

Demand for controllers comes from two sources:

1. replacing non-compliant or outdated existing products which are already installed on industrial or commercial cooling towers; and
2. installation of control systems on new industrial or commercial cooling towers.

Replacement units are the primary source of demand in the Australian market.

- marketing and distribution arrangements;

**Major Suppliers**

Major suppliers of controllers in the Australian market are:

a. Aquarius Technologies (applicant): Manufacturer of CO, CT and Ultima series controller for cooling towers. Aquarius Technologies manufactures controllers for other applications including swimming pools, waste water and drinking water applications.

b. Nalco an Ecolab Company (Nalco) (importer): an American company with an Australian office, who provides water treatment services. Nalco manufacture their own controllers in US for their customers with the general name of 3D Trasar. Nalco doesn’t sell 3D Trasar products, they rent controllers to their customers as part of a water treatment package for the period of a contract. Nalco neither sells nor rents 3D Trasar to the other water treatment service companies.

c. Convergent Water Controls (CWC) (importer): Aquarius Technologies is unaware of the exact manufacturing source of the controllers supplied by
this company. CWC supplies controllers under the commercial name ‘DigiChem’.

d. Solenis (ex. Ashland) (importer): Solenis is a water treatment company that supplies WalChem controllers (a US controller manufacturer). Solenis is the only water treatment service company in Australia who buys WalChem controllers products due to the global contract between them. The commercial names of WalChem controllers are WCT, WDT, WEDT and WECT.

e. Waterdos (importer): This company imports MegaTron controllers from the American manufacturer, Advantage Controls.

**Major Customers**

Major customers for the goods are “Water Treatment Service Companies” who provide services to cooling towers. These companies work as resellers of water treatment controllers (subject of this application). They sell controllers and their other services as a package to the final users. Final users are buildings that have cooling towers including shopping centres, hospitals, airports and any other commercial buildings.

There are approximately XXXXXX “Water Treatment Service Companies” active in the Australian market, which, when combined account for approximately XXX% of the total market for the goods. There are some occasional orders directly from XXXXXXXXXXXXXXXXXXXXXXXXXXXXX etc. The total direct orders from these companies are not more than XX% of the total market. [Confidential – customer arrangements].

**Distribution arrangements:**

The like goods manufactured by Aquarius Technologies are dispatched from the company workshop in Coopers Plains to the destinations specified by the clients. At the moment, Aquarius Technologies doesn’t stock their products in the other states. Couriers are used for delivery to Customers:

1. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Aquarius understands that other major suppliers of controllers in Australia have similar distribution arrangements.

**Rented products:**

Nalco an Ecolab Company rents their controller (Commercial name of 3D Trasar) as part of their water treatment services to the final users. There is no clear information on the 3D Trasar price as it is always rented as part of service packages. Nalco an Ecolab Company used to count for about 10% of the cooling tower market.

However, they have recently focused on large waste water treatment projects and
have left small cooling tower projects. In general, although 3D Trasar is equivalent to Aquarius Technologies’ CO and Ultima controllers, Nalco an Ecolab Company may not be considered as a direct competitor to Aquarius Technologies like goods, as they don’t sell 3D Trasar to the other service companies (Aquarius Technologies’ customers) – XXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Diagram A-4.2, below, displays the three channels to market for the goods.

As indicated in Diagram A-4.2 the main direct competitors of Aquarius Technologies are the companies who sell to the Australian water treatment companies. It shows that “Nalco and Ecolab Company” and Solenis don’t directly compete with Aquarius Technologies. XXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

• typical customers/users/consumers of the product;

Building owners are the end users of controller units. The units are used to control the water treatment systems on cooling towers of those buildings.

Water treatment service companies are the main channel to the end use market. Aquarius Technologies and importers of controller units sell controllers to water treatment service companies for installation in cooling tower systems.

The major water treatment service companies in Australia are: XXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

[Confidential – customer information].

Diagram A-4.2 Channel to market diagram for the ‘like’ and imported goods
When installing new cooling tower systems (and hence new controllers), the most common channel to market is through a tender process that is answered by water treatment service companies. When a new system is being installed, a call for tender is released with required specifications of the cooling tower system, and water treatment service companies tender for supply of the system.

The main reasons for water treatment service companies to select a specific controller for installation in a cooling tower system that they have won a tender for are:

1. Price; and
2. Use of the brand recommended in tender documents (e.g. the tender, which is drawn up by a Consultant Engineer, may call for a specific brand and model of controller ‘or similar’)

Water Treatment Service companies normally recommend “similar” controllers XXXXXXXXXXXXXXXXXXXXXXXXXXXX.

In general, water treatment service tenders are for complete packages of chemicals, services and equipment. That’s why controller manufacturers (or distributors) such as Aquarius Technologies don’t take part in water treatment tenders, they do not offer the full package but manufacture the components. They try to sell their products by influencing reasons 1 and 2 above.

In replacement controllers, factors include:

1. Price;
2. Replacement of an outdated controller with the new one of the same brand (replace old for new in same brand); and
3. Use of the brand usually recommended by Water Treatment Service Company.

Tender documents: Contacts are made between manufacturers and Consultant Engineering companies (who set the tender requirements) to recommend the manufacturers’ product in the tender documents. Controller manufacturers prepare a portfolio of the company history, activities and products and send to the Consultant Engineering companies. They also include a list of their products for different applications and explain their functionalities. Each manufacturer outlines the available functions, outputs, available accessories (such as modem, BMS communications etc.) in their portfolio to convince the Consultant Engineers to include their product as the recommended controller for that project. However, as the imported goods and the like goods have similar functions and are interchangeable as replacements of each other, water treatment companies may still be able to influence the final user’s decision by introducing similar products from different manufacturers.

Water Treatment Companies are the most important sources of selling products into the market. Although quality and low maintenance cost and services are
important, water treatment service companies are normally attracted by the lowest prices because the low prices help them to win the relevant tenders and maximise their profit.

Water Treatment companies are normally loyal to the supplier who offers the lowest price. They agree on some special low prices or some discount rates and stay with that supplier. They may order based on the agreed prices or ask for quotes if requirements of a project are different. Aquarius Technologies is aware that certain Importers not only offer low prices to the water treatment companies, but also provide rebates based on the volume of sales.

- the presence of market segmentation, such as geographic or product segmentation;

There is no market segmentation. While the product is physically mostly used during warm seasons when cooling is required, the market for the controllers is quite stable during the year as installation of new units or replacements happens continually.

The applicant’s “like goods” and imported goods can be sold all over Australia, however XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX [Confidential – market information]. The majority of the traditional final users, who had used Aquarius Technologies controllers in early days, still replace them with the Aquarius Technologies new products. This has potentially made XXXXXXX a larger market for applicant. [Confidential – market details].

XXXXXX is the second largest market for the applicant’s like goods as the applicable health legislation in that state support automatic control of disinfection and Aquarius Technologies’ controllers have traditionally been recognised as providing automatic disinfection control to the cooling towers as well as simple controllers which dose chemicals using timers. The XXXXX applicable health legislation has encouraged the use of Aquarius Technologies’ controllers because of their reputation of being reliable automatic controllers. This has made XXXXXXX the second largest market for Aquarius Technologies controllers. Although the other suppliers now provide automatic controllers, XXXXXXXX has historically remained a good market for Aquarius Technologies’ products.

- causes of demand variability, such as seasonal fluctuations, factors contributing to overall market growth or decline, government regulation, and developments in technology affecting either demand or production;

Demand variability is impacted by a range of factors.

Business and investment confidence are the major drivers for demand in the building and construction sector. When confidence is high, an expansionary effect is experienced in the building and construction sector where businesses
and investors invest in new and/or refurbished commercial, industrial and large scale developments. The government can also drive demand for the goods through infrastructure projects such as hospitals and large public spaces.

Changes to health and safety legislation have great impact on the demand to upgrade uncompliant products to new systems.

- the way in which the imported and Australian product compete; and

As explained in section A-4.2 and indicated in Diagram A-4.2 main imported products which compete with Aquarius Technologies are supplied through the following companies:

- Waterdos: MegaTron controllers from Advantage Controls (US)
- Convergent Water Controls (CWC): DigiChem controllers (manufacturer unknown)
- Nalco an Ecolab Company: 3D Trasar, rented controller (from the US arm of Nalco an Ecolab Company)
- Solenis: WalChem WCT, WDT, WEDT and WECT from US

The Australian produced ‘like’ goods and imported goods compete entirely on price, with no discernible product differentiation between the two.

As shown in Diagram A-4.2, water treatment service companies are the main sales channel to the market and controller suppliers try to convince water treatment service companies to sell their products. In general, price is the main factor affecting the deal.

Except Nalco an Ecolab Company who takes part in tenders for the entire water treatment project (including controllers), other controller suppliers do not normally take part in tenders. The controller suppliers provide quotations to the water treatment service companies upon receiving enquiries. Alternatively, water treatment service companies and controller suppliers agree on some discount rates allowing them to estimate the cost of controller for each project. Sometimes, water treatment service companies and controller suppliers agree on some special prices for the products.

Aquarius Technologies considers that there had been fair competition between it and CWC for many years prior to Waterdos entering the Australian market, without CWC undercutting the applicant’s prices. Each company tried to sell the products based on their performance, reliability etc.

WalChem products had also been in the market for many years prior to MegaTron goods entering, without being considered as a serious competitor as they didn’t sell to the other water treatment service companies.

XXXXXXXXXXXXX still sometimes buys Aquarius controllers XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXX [Confidential – customer information].

The competition situation in the Australian market changed drastically in 2009
when Waterdos started introducing Advantage Control products (MegaTron) with dumped prices. The low prices of Megatron in Australia not only absorbed some Aquarius customers but also cause reductions in Aquarius Technologies’ profit margins as most customers started asking for lower prices.

- any other factors influencing the market.

Natural disasters such as floods, droughts, earthquakes, and bushfires can influence the market demand for replacing damaged products. New technology such as remote access to the products through web provides demand through innovation.

3. Identify if there are any commercially significant market substitutes for the Australian and imported product.

We are not aware of any market substitutes for these products in Australia. Water treatment controller units subject of this application are specifically programmed to be used with cooling towers. However, controllers in general can be used in different industries including swimming pools, or some limited markets such as laundries and potable water if they are programmed accordingly.

Theoretically, all controllers can be reprogrammed for different applications (it is the proprietary software that makes them suitable in water cooling towers or another use).

Aquarius has not encountered evidence that controllers that were sold with software for other applications (swimming pool, potable water or waste water) have been reprogrammed for the cooling tower market. Controllers for cooling towers are complicated systems which prevents other controller suppliers developing the proper software required for cooling tower water treatment.

4. Complete appendix A1 (Australian production). This data is used to support your declaration at the beginning of this application.

Confidential appendix A1 has been completed and is attached.

5. Complete appendix A2 (Australian market).

Confidential appendix A2 has been completed and is attached.

Assumptions: As the tariff classification applicable to the imported goods the subject of this application is significantly wider than the scope of the goods and Aquarius Technologies doesn’t have visibility over the exact imports included in the data available from the Australian Bureau of Statistics, import data has not been used to estimate the size of the Australian market.

Instead, the applicant has considered its own sales, the impact of the Global Financial Crisis, manufacturers merged with water treatment companies and
some other assumptions to estimate the Australian market.

Confidential attachment A-4.5 explains the methodology used to estimate the Australian market.

6. Use the data from appendix A2 (Australian market) to complete this table:

**Indexed table of sales quantities**

<table>
<thead>
<tr>
<th>Period</th>
<th>(a)</th>
<th>(b)</th>
<th>(c )</th>
<th>(d)</th>
<th>( e)</th>
<th>(f)</th>
<th>(g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>Your sales</td>
<td>Other Aust Sales</td>
<td>Total Aust Sales</td>
<td>Dumped Imports</td>
<td>Other Imports</td>
<td>Total Imports</td>
<td>Total Market</td>
</tr>
<tr>
<td>2019/10</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2010/11</td>
<td>59</td>
<td>59</td>
<td>420</td>
<td>100</td>
<td>131</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>59</td>
<td>59</td>
<td>420</td>
<td>90</td>
<td>122</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>48</td>
<td>48</td>
<td>520</td>
<td>81</td>
<td>123</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>2013/14</td>
<td>51</td>
<td>51</td>
<td>560</td>
<td>55</td>
<td>104</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>2014/15</td>
<td>57</td>
<td>57</td>
<td>510</td>
<td>56</td>
<td>100</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>2015/16</td>
<td>67</td>
<td>67</td>
<td>540</td>
<td>55</td>
<td>102</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

**A-5 Applicant’s sales.**

1. Complete appendix A3 (sales turnover).

Confidential appendix A3 has been completed for the period commencing 1 July 2010.

2. Use the data from appendix A3 (sales turnover) to complete these tables.

**Indexed table of Applicant’s sales quantities***

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Like goods

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Confidential appendix A3 has been completed for the period commencing 1 July 2010.*
Indexed table of Applicant’s sales values

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian market</td>
<td>100</td>
<td>59</td>
<td>82</td>
<td>98</td>
<td>80</td>
<td>89</td>
<td>94</td>
</tr>
<tr>
<td>Export market</td>
<td>100</td>
<td>94</td>
<td>45</td>
<td>102</td>
<td>19</td>
<td>49</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>60</td>
<td>81</td>
<td>98</td>
<td>79</td>
<td>88</td>
<td>93</td>
</tr>
</tbody>
</table>

| Like goods                  |         |         |         |         |         |         |         |
| Australian market           | 100     | 59      | 57      | 46      | 45      | 52      | 69      |
| Export market               | 100     | 94      | 44      | 121     | 34      | 21      | 90      |
| Total                       | 100     | 61      | 57      | 49      | 45      | 51      | 70      |

3. Complete appendix A5 (sales of other production) if you have made any:
   • internal transfers; or

Not applicable. The applicant has made no domestic sales of like goods to a related party.

   • domestic sales of like goods that you have not produced, for example if you have imported the product or on-sold purchases from another Australian manufacturer.

Not applicable. The applicant has neither imported, nor purchased from another Australian manufacturer, the goods the subject of this application.


Confidential appendix A4 is attached in an individual spreadsheet. It comprises a listing of domestic sales for the period Jul 2015 to Jun 2016 as per the Aquarius Technologies Sales system.

5. If any of the customers listed at appendix A4 (domestic sales) are associated with your business, provide details of the association. Describe the price effect of the association.

None of the customers listed at confidential appendix A4 are associated with the applicant in any manner other than on commercial terms and within arms-length transactions.

6. Attach a copy of distributor or agency agreements/contracts.

Aquarius Technologies does not have distributor or agency agreements in place for the sale of the ‘like’ goods.

The company does have service agents that are provided discounts. To date...
this discount has not been applied for sales of the goods under consideration.

7. Provide copies of any price lists.

Confidential attachment A-5.7.1 – 2010 Price List
Confidential attachment A-5.7.2 – 2011 Price List
Confidential attachment A-5.7.3 – 2012 Price List
Confidential attachment A-5.7.4 – 2013 Price List
Confidential attachment A-5.7.5 – 2014 Price List
Confidential attachment A-5.7.6 – 2014 Price List
Confidential attachment A-5.7.7 – 2016 Price List

8. If any price reductions (for example commissions, discounts, rebates, allowances and credit notes) have been made on your Australian sales of like goods provide a description and explain the terms and conditions that must be met by the customer to qualify.

Discounts are included in the quotations and invoices. Aquarius Technologies does not offer any off-invoice reductions.

Confidential attachment A-5.8 provides a sample list of the discount rates to the companies and their credit limits.
Confidential attachment A-5.8-1 includes samples of price agreements

Similarly, Aquarius Technologies does not provide commissions, rebates, allowances or credit notes on the invoices. Adjustment notes are issued for the returned products or warranty purposes only.

Off-invoice reductions: N/A
Aquarius Technologies XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Rebates – ‘base rebate’: N/A
Aquarius Technologies XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

Discounts – ‘Reseller’s discount’

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. [Confidential re-seller discount information]

Price agreements

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
One off price agreements

Where the reduction is not identified on the sales invoice, explain how you calculated the amounts shown in appendix A4 (domestic sales).

If you have issued credit notes (directly or indirectly) provide details if the credited amount has not been reported appendix A4 (domestic sales) as a discount or rebate. (Not Occurred)

Aquarius Technologies does not offer or issue credit notes. Sales figures include all information.

9. Select two domestic sales in each quarter of the data supplied in appendix A4 (domestic sales). Provide a complete set of commercial documentation for these sales. Include, for example, purchase order, order acceptance, commercial invoice, discounts or rebates applicable, credit/debit notes, long or short term contract of sale, inland freight contract, and bank documentation showing proof of payment.

Refer confidential attachment A-5.9.

A-6 General accounting/administration information.

1. Specify your accounting period.

   1 July to 30 June

2. Provide details of the address(es) where your financial records are held.

   Factory 1, 23 Richland Avenue, Coopers Plains, QLD, 4108

3. To the extent relevant to the application, please provide the following financial documents for the two most recently completed financial years plus any subsequent statements:

   • chart of accounts;

   Refer confidential attachment A-6.3.1.

   • audited consolidated and unconsolidated financial statements (including
all footnotes and the auditor’s opinion);

The applicant does not prepare audited financial statements.

- internal financial statements, income statements (profit and loss reports), or management accounts, that are prepared and maintained in the normal course of business for the goods.

These documents should relate to:

1. the division or section/s of your business responsible for the production and sale of the goods covered by the application, and

2. the company overall.

Confidential attachment A-6.3.3.1 Income Statement 2010
Confidential attachment A-6.3.3.2 Income Statement 2011
Confidential attachment A-6.3.3.3 Income Statement 2012
Confidential attachment A-6.3.3.4 Income Statement 2013
Confidential attachment A-6.3.3.5 Income Statement 2014
Confidential attachment A-6.3.3.6 Income Statement 2015
Confidential attachment A-6.3.3.7 Income Statement 2016

4. If your accounts are not audited, provide the unaudited financial statements for the two most recently completed financial years, together with your taxation returns. Any subsequent monthly, quarterly or half yearly statements should also be provided.

Financial statements are attached.

Confidential attachment A-6.4.1 Financial Statements 2011
Confidential attachment A-6.4.2 Financial Statements 2012
Confidential attachment A-6.4.3 Financial Statements 2013
Confidential attachment A-6.4.4 Management Accounts 2014
Confidential attachment A-6.4.5 Management Accounts 2015
Confidential attachment A-6.4.6 Financial Report 2014
Confidential attachment A-6.4.7 Financial Report 2015
Confidential attachment A-6.4.8 Balance Sheet 2016

5. If your accounting practices, or aspects of your practices, differ from Australian generally accepted accounting principles, provide details.

Aquarius Technologies’ accounting practices are in accordance with Australian generally accepted accounting principles.

6. Describe your accounting methodology, where applicable, for:

- The recognition/timing of income, and the impact of discounts, rebates, sales returns warranty claims and intercompany transfers;
Warranty claims are checked and recorded immediately. The overall warranty expenses for last three financial years are less than 1% of the company’s

[Confidential accounting information]

- provisions for bad or doubtful debts;

[Confidential accounting information]

- the accounting treatment of general expenses and/or interest and the extent to which these are allocated to the cost of goods;

General expenses and interest are not allocated to the cost of sales (COS).

[Confidential accounting information]

- costing methods (eg by tonnes, units, revenue, activity, direct costs etc) and allocation of costs shared with other goods or processes;

Aquarius Technologies uses a job-order costing method.

All major products are built on orders; however there are some components that
are pre-manufactured in quantities sufficient for timely supply of products.

Bills of Materials for each product and component are regularly reviewed.

- the method of valuation for inventories of raw material, work-in-process, and finished goods (eg FIFO, weighted average cost);

Weighted average cost method for raw materials and components are used. As the products are built on orders, there is no substantial work-in-progress and finished goods stock.

- valuation methods for scrap, by-products, or joint products;

Aquarius Technologies does not produce scrap, by-products or joint products.

- valuation methods for damaged or sub-standard goods generated at the various stages of production;

All damaged or sub-standard goods are written off and disposed at the time of discovery of a fault.

Aquarius Technologies reviews annually the list of stock and writes off all obsolete stock items.

- valuation and revaluation of fixed assets;

Fixed assets are stated at cost less accumulated depreciation and any accumulated impairment losses.

- average useful life for each class of production equipment, the depreciation method and depreciation rate used for each;

Aquarius Technologies applies the useful life estimates from the Australian Tax Office for each class of equipment. It uses diminishing value method for depreciation. [Confidential depreciation information]

- treatment of foreign exchange gains and losses arising from transactions and from the translation of balance sheet items;

The balance sheet does not include items in foreign currencies. The exchange gains and losses from purchases are recognised in the cost of components. [Confidential accounting information]

- restructuring costs, costs of plant closure, expenses for idle equipment and/or plant shut-downs.
There have been no restructuring costs, costs of plan closure, expenses for idle equipment and/or plant shut down during the period covered by this application.

7. If the accounting methods used by your company have changed over the period covered by your application please provide an explanation of the changes, the date of change, and the reasons.

The accounting methods used have not changed over the period covered by this application.

A-7 Cost information

1. Complete appendices A6.1 and A6.2 (cost to make and sell) for domestic and export sales.

Completed confidential appendices A6.1 and A6.2 are attached.

A-8 Injury

The principal indicators of injury are prices, volumes and profit effects – although not all of these must be evident. For this application, profit refers to amounts earned. Profitability is the ratio of profit to sales revenue. Where injury is threatened, but has not yet occurred, refer to question C.2.

1. Estimate the date when the material injury from dumped imports commenced.

The injury from dumping is estimated to have commenced in FY 2010/11.

Dumped imports were believed to have been in the market before this date (starting around 2009/10, with Waterdos establishing itself as a supplier in 2008-9), but only had a small percentage of market share.

In FY 2010/11, Waterdos (the local supplier of Advantage controllers exported) started rapidly growing and developing their market share in Australia. Waterdos was able to drastically increase its market share during this time by significantly undercutting Aquarius Technologies’ prices.
2. Using the data from appendix A6 (cost to make and sell), complete the following tables for each model and grade of your production. $P^n$ is the most recent period.

### CT1

**Index of production variations (CT1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>61</td>
<td>58</td>
<td>54</td>
<td>70</td>
<td>56</td>
<td>46</td>
</tr>
</tbody>
</table>

**Index of cost variations (CT1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>99</td>
<td>82</td>
<td>81</td>
<td>73</td>
<td>78</td>
<td>77</td>
</tr>
</tbody>
</table>

**Index of price variations (CT1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>97</td>
<td>84</td>
<td>78</td>
<td>73</td>
<td>74</td>
<td>75</td>
</tr>
</tbody>
</table>

**Index of profit variations (CT1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>82</td>
<td>106</td>
<td>55</td>
<td>68</td>
<td>44</td>
<td>50</td>
</tr>
</tbody>
</table>

**Index of profitability variations (CT1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>85</td>
<td>126</td>
<td>70</td>
<td>93</td>
<td>59</td>
<td>68</td>
</tr>
</tbody>
</table>

### CO1

**Index of production variations (CO1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>56</td>
<td>51</td>
<td>41</td>
<td>35</td>
<td>45</td>
<td>34</td>
</tr>
</tbody>
</table>

**Index of cost variations (CO1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>100</td>
<td>90</td>
<td>93</td>
<td>86</td>
<td>88</td>
<td>89</td>
</tr>
</tbody>
</table>

**Index of price variations (CO1)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>99</td>
<td>97</td>
<td>100</td>
<td>97</td>
<td>94</td>
<td>96</td>
</tr>
</tbody>
</table>
### Index of profit variations (CO1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>98</td>
<td>191</td>
<td>191</td>
<td>234</td>
<td>159</td>
<td>175</td>
</tr>
</tbody>
</table>

### Index of profitability variations (CO1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>99</td>
<td>196</td>
<td>191</td>
<td>242</td>
<td>170</td>
<td>183</td>
</tr>
</tbody>
</table>

### CO1_W

### Index of production variations (CO1_W)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>*</td>
<td>100</td>
<td>388</td>
<td>250</td>
<td>363</td>
<td>375</td>
<td>213</td>
</tr>
</tbody>
</table>

### Index of cost variations (CO1_W)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>*</td>
<td>100</td>
<td>77</td>
<td>79</td>
<td>68</td>
<td>72</td>
<td>81</td>
</tr>
</tbody>
</table>

### Index of price variations (CO1_W)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>*</td>
<td>100</td>
<td>83</td>
<td>83</td>
<td>74</td>
<td>72</td>
<td>83</td>
</tr>
</tbody>
</table>

### Index of profit variations (CO1_W)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>*</td>
<td>100</td>
<td>110</td>
<td>103</td>
<td>100</td>
<td>75</td>
<td>91</td>
</tr>
</tbody>
</table>

### Index of profitability variations (CO1_W)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>*</td>
<td>100</td>
<td>133</td>
<td>123</td>
<td>135</td>
<td>104</td>
<td>110</td>
</tr>
</tbody>
</table>

* This product was released since 2010/2011

### ULTIMA

### Index of cost variations (ULTIMA)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>100</td>
<td>500</td>
</tr>
</tbody>
</table>

### Index of cost variations (ULTIMA)

|----------|---------|---------|---------|---------|---------|---------|---------|
3. Complete appendix A7 (other injury factors).

Where applicable to injury claims, prepare an indexed table for other injury factor(s) in the format above.

** This product was released in late 2014/2015 (Apr 2015)

### Assets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>46</td>
<td>28</td>
<td>25</td>
<td>29</td>
<td>35</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Capital Investment</td>
<td>Revenue</td>
<td>Capacity</td>
<td>Capacity Utilisation</td>
<td>Employment</td>
<td>Cash Flow Measurement</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
<td>---------</td>
<td>----------</td>
<td>----------------------</td>
<td>------------</td>
<td>----------------------</td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td>100 81 70 34 32 59 43</td>
<td>100 57 53 40 42 47 65</td>
<td>100 100 100 88 88 88 88</td>
<td>100 67 65 53 56 61 72</td>
<td>100 100 89 78 78 78 78</td>
<td>100 100 75 48 59 57 57</td>
<td></td>
</tr>
</tbody>
</table>
A-9 Link between injury and dumped imports.

To establish grounds to initiate an investigation there must be evidence of a relationship between the injury and the alleged dumping. This section provides for an applicant to analyse the data provided in the application to establish this link. It is not necessary that injury be shown for each economic indicator.

1. Identify from the data at appendix A2 (Australian market) the influence of the volume of dumped imports on your quarterly sales volume and market share.

Aquarius Technologies has experienced substantial losses of both sales volumes and market share, starting in FY2010/11, when dumped US controllers began entering the market in large volumes.

Up until FY 2009/2010, the Australian market for controllers was relatively stable. Dumped products had just started to enter the market and had a very small market share (with Waterdos establishing itself as a supplier in 2008-9).

However, the applicant suffered a dramatic decline in sales volume and market share since FY 2010/2011, when significant sales of dumped product from the US commenced at heavily dumped prices1.

Aquarius Technologies believes that the impact of dumping became significant in FY 2010/11, when Waterdos began aggressively importing MegaTron controllers from the US at dumped prices. As is demonstrated in Part B of this application, the margin at which dumping has occurred has been substantial.

Aquarius Technologies considers the dumping of MegaTron controllers (from Advantage Controls) has since had a similar impact on the pricing of other imported products from the US (previously considered to be undumped) such that those products now are also dumped.

This dumping has affected the Australian market significantly, leading to changes in overall pricing (detailed below). These changes can be directly attributed to the dumping, with Aquarius Technologies known to have lost significant volumes of sales to US controllers based on the price of those goods. This is explored in detail in A-9.2 below.

---

1 Imports of dumped Advantage Controls controllers were present in the market before 2009/2010, but as a new product it did not have significant effects on the Aquarius Technologies market share prior to FY 2010/2011.
Impact on market share

Market share by source is depicted in Chart A-9.1.1 below.

As can be seen in Chart A-9.1.1, between FY 2009/10 and FY2015/16 the market share of dumped imports has increased from 5% to 31%. During the same period, Aquarius Technologies’ market share decreased from XX% to XX%.

Chart A-9.1.1 shows that dumped imports from the US have managed to gain and hold significant market share over the charted period, at the expense of both Aquarius Technologies and imported controllers from other (unknown) country(ies).

As outlined above, the rapid decrease in market share in FY 2010/11 (which has continued to present date) coincides with the aggressive dumping of Advantage Technologies controllers in increased volumes from the US from FY 2010/11 (see below).
Impact on sales volumes

Sales volume by source (all models combined) is depicted in Chart A-9.1.2 below.

![Chart A-9.1.2 – Total Australian market sales volumes – all sources](image)

Chart A-9.1.2 demonstrates that, in FY 2010/11 there was a significant increase in the volume of dumped controllers from the US entering the Australian market. This increase has continued to grow throughout the charted period, with volumes of imported dumped imports from the US growing 440% from FY 2009/10 to FY 2015/16.

At the same time as the initial drastic increase of dumped goods in FY 2010/11, Aquarius Technologies experienced a significant decline in its sales volumes, which continued year-on-year until FY 2013/14, before modestly increasing in FY 2014/15 and 2015/16. Over the charted period, Aquarius Technologies' sales volume of controllers fell by 33%.

As discussed below, the recovery in sales volumes seen in the latter years of the charted period are largely attributed to increases in sales volumes of the Ultima and Ultima 3G models.

Aquarius Technologies' sales volumes by model are depicted in Chart A-9.1.3 below.
As seen in Chart A-9.1.3, by model, in FY 2010/2011 there was a rapid drop in Aquarius Technologies’ sales volumes of the CT1 and CO1 series controllers. This decline continued into FY 2011/12 and FY 2012/13 for both models.

In relation to CT1 controllers:
- sales volumes continued to decline in FY 2013/14, increased slightly in FY 2014/15, before again declining in FY 2015; and
- from FY 2009/10 to FY 2015/16, sales volumes decreased by 54%.

For CO1 controllers:
- sales volumes increased modestly in FY 2013/14, before declining again in FY 2014/15 and 2015/16; and
- from FY 2009/10 to FY 2015/16, sales volumes decreased by 66%.

These two models represent a significant majority of Aquarius Technologies’ sales (XX% in FY 2009/10 to XX% in FY 2015/16).

In relation to the CO1_W model (which only commenced sales in FY 2010/11), there has been a modest overall increase in sales during the period (though for FY 2015/16, this model represented only XX% of all controller sales).

In order to overcome the lost sales problems, XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. [Confidential – business tactics]

For Ultima and Ultima3G models (which only commenced sales in FY 2014/15), an increase of sales volume was seen into FY 2015/16. These models combined represented a total of XX% of all sales in FY 2015/16.
However, Aquarius notes that these sales of the new Ultima models have taken sales volume from their equivalent CT1 and CO1 models, meaning that total sales volumes in FY2014/15 and FY 2015/16 though slightly higher than previous years, did not increase substantially.

These increases were able to be achieved as a result of a price reduction policy by Aquarius Technologies, aimed at regaining some volume and market share (which achieved some limited success – see further discussion in A-9.2 below).

The rapid drop in sales volume in the major models of CT1 and CO1 in the early years of the charted period coincides with a significant increase in imports of MegTron controllers in FY 2010/11, with Waterdos establishing its business in Australia in 2008 – 2009 supplying dumped controllers exported from the US and increasing its sales of dumped controllers substantially in FY 2010/11.

It is Aquarius Technologies’ understanding that Waterdos’ imports started mainly with CT1-equivalent units when export supply began in 2008-9, and then entered into CO1 and CO1_W equivalents in 2010.

Many of Aquarius Technologies’ customers have been attracted by the low prices of the dumped US ‘Advantage Control’ products supplied by Waterdos during this period.

It is important to note that the injury caused to Aquarius Technologies through this loss of sales volume and market share is not limited to the initial supply of controller units. Future lost sales of replacement parts for those units is also a major issue, as less Aquarius Technologies’ products have been installed and hence there is less demand for replacement parts when required.

In recent years, Aquarius Technologies was able to regain part of their market by some price reductions. However, it cannot effectively compete with the Waterdos dumped prices.
Confidential attachment A-9-5 shows examples of lost sales volumes and value by customer. The attachment shows that a lot of companies stopped buying from Aquarius Technologies or reduced their purchases since 2010 and started buying the imported controllers with dumped prices. The attachment A-9-5 shows that some of them returned to Aquarius after their discount rates increased and some didn't. As there are only three main suppliers of the controllers it is quite easy to find who is the main supplier of the controllers to each client. The companies mentioned in attachment A-9-5 buy their controllers mainly from Waterdos, unless the final user pushes them to buy from a different supplier.

Confidential attachment A-9-4 is another example of the customer referring to the low prices of Advantage controllers and asks for more competitive price.

The sudden and dramatic drop in Aquarius Technologies sales volume between FY 2009/10 to present has had a significant impact on the company’s profit margin, employment numbers and other performance factors – as detailed in the below sections.

2. Use the data at appendix A2 (Australian market) to show the influence of the price of dumped imports on your quarterly prices, profits and profitability provided at appendix A6.1 (costs to make and sell). If appropriate, refer to any price undercutting and price depression evident in the market.

Dumped imports from the US have had a significant impact on the price, profit and profitability of Aquarius Technologies’ like goods sold on the domestic market.

As discussed previously, Aquarius Technologies believes that the dumping of US controllers started when Waterdos began importing controllers from the US in around 2008-9, but became problematic in FY2010/11 when increased import volumes of these controllers were observed at very low prices.

When Waterdos started marketing in the Australian market they were known as the cheapest products on the market. This was especially the case early on when they used to supply Non-ORP (probe type) controllers only (including: SSCF3-A7Y and SSCF3E-A7Y). XS models (XSCF3-A7Y and XSCF3E-A7Y), which are considered more advanced than SS models and were imported to the market later.

Initially, Waterdos was not considered as a serious threat to Aquarius Technologies market early on when they commenced importing to Australia, because MegaTron controllers were considered to be of low quality. However, despite quality issues, the extremely low prices of MegaTron controllers attracted a lot of customers (particularly from FY 2010/11 onwards). Step by step, MegaTron controllers started penetrating into the more sophisticated market (ORP controllers) by introducing XSCPRF3 and SSCPRF3 models.
In response, Aquarius Technologies was forced to reduce prices and increase discount rates in 2011 and 2012. This is demonstrated by the graphed prices below, and Aquarius Technologies price lists (refer confidential attachments A-5.7.1 to A-5.7.7 and to the table of prices at Confidential Attachment A-9-1).

Looking at Aquarius Technologies’ price lists (refer confidential attachments A5.7.1 to A.5.7.5) shows that Aquarius not only didn’t increase its prices for 6 years, but also reduced the prices of some more popular models. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX [Confidential discount information] A comparison between the invoices for the same products between 2009/10 and 2012/13 and later shows the trends of price reductions and discount rate increases for some clients.

A specific example of Aquarius Technologies offering competitive and significantly reduced prices for controllers is included in confidential attachment A-9-2. This attachment is a price offer that contains very competitive prices to a local water treatment service company who is known to be a main supporter of Waterdos in Australia. Confidential attachment A-9-3 shows that company’s reply to Aquarius Technologies, declining the low price offer, having committed to another controller supplier (known to be Waterdos). Our further investigations and negotiations with the same company (including in-person meetings) uncovered that Waterdos’s low prices and rebates provided (proportional to the sales volumes) were the only reasons of the commitment.

The same policy (low prices and rebates) were used by Waterdos to attract many other customers in the market.

While MegaTron controllers are quite expensive in US, the only way for Waterdos to provide rebates on the low prices in Australia is to import them with very high dumping margins.

As indicated in attachment A-9-1 and in 2010 – 2016 price lists (A-5.7.1 to A-5.7.7), XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX [Confidential – business tactics]

As discussed in A-9.1 above, by applying a price reduction policy and offering special prices, sales volumes increased slightly in 2013-14 to 2015/16. However total sales values remained significantly less than volumes in 2009-10.

Similar discussions were made with the other companies mentioned in confidential attachment A-9-1.

All Aquarius Technologies’ customers who were contacted to find out their reason for buying from Waterdos mentioned to the low prices of Waterdos products compared with Aquarius Technologies.
Pricing trends

As demonstrated in the following chart ((Chart A-9.2), in FY 2010/11(at the time dumped exports from the US commenced sales in the Australian market in large volumes) Aquarius Technologies started reducing its prices by either giving further discounts to customers or reducing its list prices to be able to compete with the prices of the controllers exported from the US and revive the market.

This strategy allowed Aquarius Technologies to maintain some, but not all volume, and mitigated its loss of market share (though, as discussed above, losses of market share still occurred). However, though the number of sold controllers increased, as the prices were lower the total income did not increase significantly.

Aquarius Technologies policies to sustain the customers are explained in confidential attachment A-9-5. The policies include reducing the prices, increasing discount rate and provide special prices.

The following chart (Chart A-9.2) shows Average unit domestic selling prices per unit by model.

Chart A-9.2 demonstrates:

- For CT1 controllers:
  - Aquarius Technologies experienced per unit price reductions year-on-year from FY 2010/11 to FY 2013/14, seeing a modest increase in FY 2014/15, before again declining in FY 2015/16; and
• over the charted period, the per unit sales value of the model decreased at total of 25% (from FY 2009/10 to FY 2015/16). For CO1 controllers:
  ▪ There was a steady increase in unit price over the charted period, except for a modest increase in FY 2012/13; and
  ▪ over the charted period, the per unit sales value of the model decreased at total of 4% (from FY 2009/10 to FY 2015/16);
• For CO1_W series controllers (which commenced sale in FY 2010/11):
  ▪ Sales price per unit decreased in FY 2011/12 before a slight recovery in FY 2012/13, then decreases in both FY 2013/14 and 2014/15, before recovering against slightly in FY 2015/16; and
  ▪ over the charted period, the per unit sales value of the model decreased at total of 17% (from FY 2010/1 to FY 2015/16).
• For both Ultima models of controllers, there was a price increase experienced from FY 2014/15 to FY 2015/16. Being a new product, a few samples of Ultima were provided to the clients for trial. The trial units were sold with substantial discounts to cover the possible extra time they may need to spend for troubleshooting in case of problems. This is a normal procedure for the newly released products. Sales of these models only commenced in FY 2014/15 so long terms trends do not exist.

As demonstrated by Chart A-9.1.3, CO1, CT1 and CO1_W controllers historically represent the largest volume models of controllers of Aquarius Technologies.

In relation to CO1 controllers, though price has declined over time, this has not been as drastic as the declines seen in the CT1 model as the exports of equivalent MegaTron controllers from the US were not very active in this part of the market initially (before 2010), which left some room for Aquarius Technologies to keep prices stable for a while.

However, when MegaTron controllers started being more active in this market, Aquarius Technologies provided further discounts to some companies to keep this market. In general, by reducing the cost of making products (XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX), this model became more profitable over the period 2009/10 – 2014/15. But still the total sales volume of this model remained far below 2009-2010 sales.

The CO1_W series model was a new product introduced to the market by Aquarius Technologies in 2011 to attract further customers. This product can be monitored remotely XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

When selling CO1_W models, Aquarius Technologies supplies web communication with a very competitive prices in order to regain its market share. The low price of exported goods from the US made Aquarius Technologies supply web access with prices lower than projections in order to make this sector of its product range more competitive.

Although web access with exported goods from US was not very low in price,
Aquarius Technologies had to keep the web prices low in order to use web access for attracting customers of non-web controllers as well. This has caused profits in this part of the market to be less than planned margins. As an example, Aquarius Technologies supplied GPRS and 3G modems with the most competitive prices to Australian market.

**Profit and profitability**

Domestic unit profit and profitability for all models, and separately for the largest selling Aquarius Technologies controller model is charted below in Charts A-9.2.4 to 9.2.7.
Chart A-9.2.5 - Australian industry unit profit and profitability – CT1 model

Chart A-9.2.6 - Australian industry unit profit and profitability – CO1 model
The above charts demonstrate that, during the charted period:

- Aquarius Technologies was able to achieve an increase in both unit profit and profitability for controllers as a whole (all models combined);
- For the CT1 model, both profit and profitability fell (with profit falling by 23%);
- For the CO1 model, unit profit and profitability increased; and
- For the CO1_W model, unit profit fell while unit profitability increased slightly.

Aquarius Technologies notes that improvements in its unit profit and profitability for controllers have been driven not by an increase in unit revenue, but rather reductions in CTMS driven by the company in an effort to counter the pressures from dumped US controllers. This is demonstrated further in A-9-3 below.

3. Compare the data at appendix A2 (Australian market) to identify the influence of dumped imports on your quarterly costs to make and sell at appendix A6.1 (for example refer to changes in unit fixed costs or the ability to raise prices in response to material cost increases).
As indicated at Appendix A2 and in Chart A-9.1.1 above, Aquarius Technologies encountered a big reduction in market share in FY 2010/2011, when US controllers entered the market in large volumes at dumped prices.

In response to the increased volume of low-priced dumped goods in the Australian market, Aquarius Technologies had to implement policies to mitigate its losses. As discussed in A-9.2 above, this included implementing reductions in prices in order to regain market share and volume. At the same time, Aquarius Technologies implemented production cost savings to achieve reductions in production cost XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

As discussed in A-9.2, although Aquarius Technologies looks much more profitable per unit during FY 2012/13 to FY2015/16 than it was in FY 2009/10 and 2011/12, this is due primarily to the cost reductions achieved and not an increase in selling price.

Further, the total net profit of the company itself in recent years is far below that achieved in FY 2009/2010 as the company has not been able to generate enough sales volume or regain substantial market share to generate profits.

Domestic unit CTMS and sales value for all models, and separately for the largest selling Aquarius Technologies controller model is depicted below in Charts A-9.3.1 to 9.3.4.

---

**Chart A-9.3.1 Comparison of Australian Industry Selling Price/Unit and CTMS/unit - all models**
CT1 domestic unit CTMS and revenue

Chart A-9.3.2 Comparison of Australian Industry Selling Price/Unit and CTMS/unit – CT1

CO1 domestic unit CTMS and revenue

Chart A-9.3.3 Comparison of Australian Industry Selling Price/Unit and CTMS/unit – CO1
Chart A-9.3.4 Comparison of Australian Industry Selling Price/Unit and CTMS/unit – CO1_W

Chart A-9.3.5 Comparison of Australian Industry Selling Price/Unit and CTMS/unit – ULTIMA
Charts A-9.3.1 to 9.3.6 support that, from FY2009/10 to FY2015/16, Aquarius Technologies’ CTMS for all models combined and each of the major models of controllers fell substantially.

As shown in the above charts, this reduction in CTMS has been accompanied by falling unit prices. In the case of models CO1_W and CO1, these reductions in CTMS have enabled Aquarius Technologies to maintain a similar or improved level of unit profit throughout the period (though price suppression is evident for both models in FY2014/15 where increases in CTMS were unable to be recovered with a proportionate increase in selling price). For model CO1, unit profitability has decreased over time despite CTMS reductions, showing price suppression in relation to that model over the period.

4. The quantity and prices of dumped imported goods may affect various economic factors relevant to an Australian industry. These include, amongst other things, the return on investment in an industry, cash flow, the number of persons employed and their wages, the ability to raise capital, and the level of investment in the industry. Describe, as appropriate, the effect of dumped imports on these factors and where applicable use references to the data you have provided at appendix A7 (other economic factors). If factors other than those listed at appendix A7 (other economic factors) are relevant, include discussion of those in response to this question.

Aquarius Technologies’ revenue for the like goods is contained in chart A-9.4.1 below. This chart clearly shows that there was over XX% reduction in the applicant’s revenue for like goods between FY 2009/10- to 2012/13. This reduction started at the same time when Waterdos became more active in the Australian market and imported controllers at dumped prices.

A combination of price reduction policies applied by Aquarius Technologies held the applicant to regain part of the market in more recent years, but this regain
saw revenue still far below the FY2009/10 revenue achieved by the applicant.

Charts A-9.4.2 to A-9.4.4 show the applicant’s:

- manufacturing assets;
- capital investment; and
- cash flow (accounts receivable) for like goods from FY2009/10 to 2015/16.
Chart A-9.4.3 Reduction in Aquarius Capital Investment for manufacturing of like goods

The above charts demonstrate that, during the period FY 2009/10 to 2014/15, Aquarius Technologies experienced significant declines in the assets, capital investment and cash flow related to like goods.

In addition, in order to address reduced revenue from lost sales of water treatment controller units, Aquarius Technologies had to reduce the staff involved in cooling tower production and sales from XXX people in 2009 to XXX people in 2011-2012.

By introducing new products (web based controllers) into the market and reducing our costs, Aquarius Technologies was able to increase the staff to XX people in FY 2015/16. The dumped exports from the US resulted in XX people losing their jobs. This is a XXXXX reduction in staff, which is material.

Details of the other injury to Aquarius Technologies between FY 2009/2010 to end of Q3 FY 2015/16 are presented in Confidential Appendix 7.

5. Describe how the injury factors caused by dumping and suffered by the Australian industry are considered to be ‘material’.

Aquarius Technologies submits that injury to its business operations been caused by dumped US exports of the goods is material.

The dumped imported controllers in the Australian market have undercut Aquarius Technologies’ average selling prices significantly and have caused large reductions to Aquarius Technologies’ selling prices, market share and sales volumes. This has resulted in Aquarius Technologies experiencing substantial loss of profits since FY 2009/10, even though the company was able to reduce CTMS to ensure reasonable levels of unit profit and profitability were maintained.
The data prepared for this application clearly shows that the import volume of controllers from the US has increased significantly from FY2010/11 onwards and a strong causal link has been drawn between those imports and Aquarius Technologies’ injury.

These losses represent a 37% decline in volume and 31% decline in revenue for domestic controllers. Noting the domestic sales of controllers represent a substantial part of Aquarius Technologies’ business (approx. XX% of all company revenue in FY 2015/16), these losses are clearly material to the business. Furthermore, the declines in volume, market share, revenue, unit price and company profits are significant in nature, and can only be considered greater than that would occur in the normal ebb and flow of business.

As identified in the above sections,

6. Discuss factors other than dumped imports that may have caused injury to the industry. This may be relevant to the application in that an industry weakened by other events may be more susceptible to injury from dumping.

The GFC has resulted in less new buildings which has reduced the growth in demand for controllers. Although it is not easy to estimate the effect of the GFC on the controllers market precisely, Aquarius Technologies included this parameter in the Australian market estimations. The assumptions are included in Appendix A2.

However, it is the dumped imported products from the US that have caused Aquarius Technologies to lose sales volume and experience price depression, price suppression and reduced profits.

7. This question is not mandatory, but may support your application. Where trends are evident in your estimate of the volume and prices of dumped imports, forecast their impact on your industry’s economic condition. Use the data at appendix A2 (Australian market), appendix A6 (cost to make and sell), and appendix A7 (other economic factors) to support your analysis.
PART B

DUMPING

IMPORTANT

All questions in Part B should be answered even if the answer is ‘Not applicable’ or ‘None’ (unless the application is for countervailing duty only: refer Part C). If an Australian industry comprises more than one company/entity, Part B need only be completed once.

For advice about completing this part please contact the Commission’s client support section on:

- **Phone:** 1300 884 159
- **Fax:** 1300 882 506
- **Email:** clientsupport@adcommission.gov.au
B-1 Source of exports.

1. Identify the country(ies) of export of the dumped goods.

United States of America (US).

2. Identify whether each country is also the country of origin of the imported goods. If not, provide details.

The US is the country of origin.

3. If the source of the exports is a non-market economy, or an ‘economy in transition’ refer to Part C.4 and Part C.5 of the application.

Not applicable.

4. Where possible, provide the names, addresses and contact details of:

- Producer/exporter of the goods exported to Australia;

1. US company: Advantage Controls
   4700 Harold Abitz Drive, Muskogee, OKLAHOMA 74403
   Tel: 1-800-743-7431
   1.1. Importer.
   Waterdos Instruments (Waterdos)
   23/31 Keysborough Close, KEYSBOROUGH VIC 3173; Tel: (03) 9701 5088

2. US Company: WalChem
   5 Boynton Road, Hopping Brook Park, Holliston, MA 01746
   Tel: 508-429-1110; Fax: 508-429-7433; info@walchem.com (email)
   2.1. Importer:
   Solenis Australia Pty Ltd (Solenis)
   Sir Thomas Mitchell Road 7, 2162 Sydney - Chester Hill, NSW
   Tel: (02) 9727 1660

3. NALCO Water, An Ecolab Company,
   2901 Southwest 149th Avenue #300, Miramar, FL 33027, United States
   Phone:+1 954-436-2675
   3.1. Importer:
   Nalco an Ecolab Company
   2 DRAKE Ave MACQUARIE PARK 2113 NSW, Tel: (02) 8870 8220

5. If the import volume from each nominated country at Appendix A.2 (Australian Market) does not exceed 3% of all imports of the product into Australia refer to Part C.6 of the application.

Import volumes from the nominated country exceed 3% of all imports of the goods into Australia
6. In the case of an application for countervailing measures against exports from a developing country, if the import volume from each nominated country at Appendix A.2 (Australian Market) does not exceed 4% of all imports of the product into Australia refer to Part C.6 of the application.

Not applicable (as this application does not relate to countervailing).

**B-2 Export price**

Possible sources of information on export price include export price lists; estimates from the Australian Bureau of Statistics; a deductive export price calculation from the Australian selling price of the imported goods; export sales quotations or invoices; foreign government export trade clearances.

As discussed previously in this application, Aquarius Technologies considers it likely that MegaTron controllers were the first brand of controller to enter the Australian market at dumped prices. This dumping has continued to this day.

It is considered that the dumping of MegaTron controllers has driven the prices of other US controllers down in the Australian market, in the same way that Aquarius Technologies has had to reduce its prices in competition with MegaTron controllers. This reduction of other US controller prices has driven those prices down to a dumped level.

Further, Advantage Controls’ MegaTron controllers are also understood to be by far the largest source of controllers from the US in the Australian market.

For the purposes of the application, Aquarius Technologies has focused on establishing reasonable grounds that MegaTron controllers, which represent a significant proportion of the goods imported from the US, have been dumped. This is considered reasonable as MegaTron controllers are the highest volume of controllers imported from the US (to Aquarius Technologies’ knowledge) and the most reasonable pricing information is available for these products.

For the purpose of proving reasonable grounds of dumping in this application, the applicant has focused on the MegaTron XS models as this model represents a significant percentage of the import volume of controllers from the US and export pricing data was able to be located for this model.

1. Indicate the FOB export price(s) of the imported goods. Where there are different grades, levels of trade, models or types involved, an export price should be supplied for each.

As discussed previously, ABS data relevant to controllers is not useful in determining import volumes or export prices, as the relevant tariff classification and statistical code contain numerous items other than controllers. ABS data has therefore not been used.
for the purposes of this application to determine export price.

The applicant has been unable to source invoices or other documents showing selling prices between the US exporter and Australian importer. However, it has been able to obtain a quote for the price of a controller from a known importer to an unrelated Australian water treatment company.

Using this quote, the applicant has derived a free on board (FOB) export price using the deductive method, for two models of controllers:

- XSCPRF3E; and
- XSCPRF3EH1.

To determine this price, the applicant uses the quote from the importer to an unrelated Australian water treatment company for a controller, manifold and PVC backboard combined (model code XSCPRF3E-A7Y-0P0S - see Confidential Attachment B-2.4) and deducts:

- the cost of a manifold and PVC backboard to arrive at a price for the controller unit itself;
- a reasonable and conservative amount for importer profit based on Aquarius Technologies’ own rate of profit;
- a reasonable and conservative estimate of the importers’ selling, general and administrative expenses; and
- reasonable post-FOB charges based on Aquarius Technologies’ own costs for importing certain products to Australia.

For model XSCPRF3EH1, the price of a modem (item ADD-H1) has been added to the quoted price before the deductions. The addition of a modem is the only difference between XSCPRF3E and XSCPRF3EH1 models.

The export prices calculated by Aquarius Technologies following the above are as follows:

<table>
<thead>
<tr>
<th></th>
<th>XSCPRF3E</th>
<th>XSCPRF3E - A7H1Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deductive export price (FOB) in USD</td>
<td>$852.04</td>
<td>$1,064.25</td>
</tr>
</tbody>
</table>

Refer to confidential appendix B1 for deductive export price calculations.

2. Specify the terms and conditions of the sale, where known.

From information available on the selling price of a controller imported from the USA, Aquarius Technologies understands the quoted amount used in the export price is ex-works with 30 days credit terms.

Delivery is quoted as a separate invoice line.
3. If you consider published export prices are inadequate, or do not appropriately reflect actual prices, please calculate a deductive export price for the goods. Appendix B1 (Deductive Export Price) can be used to assist your estimation.

See above discussion at B-2.1 - a deductive export price has been calculated.

Refer confidential appendix B1 for deductive export price calculations.

4. It is important that the application be supported by evidence to show how export price(s) have been calculated or estimated. The evidence should identify the source(s) of data.

Supporting information is included at confidential Appendix B1 below the table, and confidential attachments B-2 and B-2.4

B-3 Selling price (normal value) in the exporter's domestic market.

Possible sources of information about domestic selling prices in the country of export include: price lists for domestic sales (with information on discounts); actual quotations or invoices relating to domestic sales; published material providing information on the domestic selling prices; or market research undertaken on behalf of the applicant.

1. State the selling price for each grade, model or type of like goods sold by the exporter, or other sellers, on the domestic market of the country of export.

Please refer to the appendix B-1.1.

Three different sources were used to estimate the ex-warehouse prices for models XSCPRF3E and XSCPRF3E-H1:


b. Water Parts Plus domestic advertised prices
   http://www.waterpartsplus.com/Controllers/ (Sep 2015 and Nov 2016)

c. EnviroAqua domestic advertised prices -
   http://www.enviroaqua.com/controllers/advantage-controls.html
   (August 2015 and Nov 2016)


Advantage Controls’ 2014-15 price list (Confidential Attachment B-3.1) has been used to calculate ex-warehouse normal values for each of the two models. These prices have been ‘built’ using the relevant base model price and additional functionality extras, as per the guidelines set out in the Advantage Controls price list. See attachment B-2.1 for further discussion.

The established list price has then been reduced by 40% to account for the likely discount between Advantage Controls and domestic resellers, to ensure the sale
is at the same level of trade as the deductive FOB export prices established at B-2 (that is, a sale between Advantage Controls and a water treatment company reseller, as opposed to direct to the end user, which the price list reflects.

Aquarius Technologies is not aware of the exact local resellers’ discount rates. Discount rates can vary from 20% to 50% of the list prices depending on the marketing and sales policies of each individual company that is purchasing the controllers. As a solution, a high discount rate of 40% has been applied to estimate the local sales prices to water treatment companies. Aquarius Technologies operates at a maximum discount amount of 40%, and it is considered reasonable that this (very high) rate be used for the purposes of the application. However, the dumping margins are so high even further discounts demonstrate significant levels of dumping.

The average of RBS USD/AUD exchange rates of 0.76 was considered to estimate the prices in Australian Dollar. Dumping margins will be much higher if the last updated exchange rates are used.

The normal values calculated by Aquarius Technologies following the above are as follows:

<table>
<thead>
<tr>
<th></th>
<th>XSCPRF3E-A7</th>
<th>XSCPRF3E - A7H1Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal value, ex</td>
<td>$ 2,094.00</td>
<td>$ 2,406.00</td>
</tr>
<tr>
<td>warehouse (USD)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Method two: Water Parts Plus domestic advertised prices**


<table>
<thead>
<tr>
<th></th>
<th>XSCPRF3E-A7</th>
<th>XSCPRF3E - A7H1Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal value, ex</td>
<td>$ 2,178.00</td>
<td>$ 2,502.60</td>
</tr>
<tr>
<td>warehouse (USD)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Method three: Enviro Aqua domestic advertised prices**

Aquarius Technologies noticed that this website has removed Megatron-XS models from their website. They are now advertising Megatron which is more expensive than Megatron-XS and can’t be used to compare prices. This website also advertises MicroTron models. Aquarius Technologies couldn’t find evidences of selling this controller to the Australian market.

For all methods, options for conductivity, pH, ORP, flow switch and timers must be selected from the list. The options with lowest prices were selected for this proposal.
The details of estimations are presented in appendix B-1.1. Attachment B-2.1 provides further guidelines on how to use the above websites or Advantage Controls price list.

2. Specify the terms and conditions of the sale, where known.

Terms and conditions are not known.

3. Provide supporting documentary evidence.

Supporting information for Advantage Controls’ and Waterdos price lists are at confidential attachments B-3.1 and B-3.3.

4. List the names and contact details of other known sellers of like goods in the domestic market of the exporting country.


B-4 Estimate of normal value using another method.

This section is not mandatory. It need only be completed where there is no reliable information available about selling prices in the exporter’s domestic market. Other methods of calculating a normal value include:

- the cost to make the exported goods plus the selling and administration costs (as if they were sold in the exporter’s domestic market) plus an amount for profit (if applicable);

OR

- the selling price of like goods from the country of export to a third country.

1. Indicate the normal value of the like goods in the country of export using another method (if applicable, use appendix B2 Constructed Normal Value).

The normal value of goods in US is estimated at attachment B-4.2

2. Provide supporting documentary evidence.

Not applicable.
B-5 Adjustments.

A fair comparison must be made between the export price and the normal value. Adjustments should be made for differences in the terms and circumstances of the sales such as the level of trade, physical characteristics, taxes or other factors that affect price comparability.

1. Provide details of any known differences between the export price and the normal value. Include supporting information, including the basis of estimates.

   Not known. Information is not available to the applicant to estimate differences in delivery expenses (to calculate a normal value in FOB terms). However for the purposes of this application the applicant considers that this is reasonable.

2. State the amount of adjustment required for each and apply the adjustments to the domestic prices to calculate normal values. Include supporting information, including the basis of estimates.

   It is Aquarius Technologies’ understanding that Waterdos pays funds back to its domestic and export customers as rebates proportional for purchased controllers. To date Aquarius Technologies does not have any specific details on the rebate.

B-6 Dumping margin.

1. Subtract the export price from the normal value for each grade, model or type of the goods (after adjusting for any differences affecting price comparability).

   Dumping margin calculations are at Appendix B-1.1

2. Show dumping margins as a percentage of the export price.

   Our estimations show that dumping margins range from 116.83% to 195.80%.
<table>
<thead>
<tr>
<th>APPENDICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A1</td>
</tr>
<tr>
<td>Appendix A2</td>
</tr>
<tr>
<td>Appendix A3</td>
</tr>
<tr>
<td>Appendix A4</td>
</tr>
<tr>
<td>Appendix A5</td>
</tr>
<tr>
<td>Appendix A6.1</td>
</tr>
<tr>
<td>Appendix A6.2</td>
</tr>
<tr>
<td>Appendix A7</td>
</tr>
<tr>
<td>Appendix B1</td>
</tr>
<tr>
<td>Appendix B2</td>
</tr>
</tbody>
</table>
### ATTACHMENTS

<table>
<thead>
<tr>
<th>Confidential Level</th>
<th>Attachment Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidential</td>
<td>A-2</td>
<td>Company ownership</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-2-1</td>
<td>Aquarius Technologies company extract</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-2-2</td>
<td>Poolrite Company Extract</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-2.2</td>
<td>Organisation Chart</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-2.9.1</td>
<td>Cooling Water Product brochure</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-2.9.2</td>
<td>Ultima Cooling Water Product Brochure</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-2.9.3</td>
<td>Ultima Swimming Pool Product Brochure</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-2.9.4</td>
<td>Ultima Potable Water Product Brochure</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-3.3.1</td>
<td>Specification Sheet CO1 Series Models</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-3.3.2</td>
<td>Specification Sheet CT1 Series Models</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-3.3.3</td>
<td>Specification Sheet ULTIMA Cooling Tower Series</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-3.4.1</td>
<td>MegaTron XS (Advantage Controls) User Manual</td>
</tr>
<tr>
<td>Non-confidential</td>
<td>A-3.4.2</td>
<td>Aquarius Product User Manual</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-4.5</td>
<td>Explanation of Appendix A2 Methodology</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-5.7.1 – A-5.7.7</td>
<td>Aquarius Price Lists</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-5.8</td>
<td>Discount Rates – Credit accounts and price agreements</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-8.8-1</td>
<td>Price agreements</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-5.9</td>
<td>Selected Commercial Documents</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-6.3.1</td>
<td>Chart of Accounts</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-6.3.3.1 - A-6.3.3.7</td>
<td>Income Statements, Tax returns and Management accounts 2010 to 2015</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-6.4.1</td>
<td>Financial statement 2011</td>
</tr>
<tr>
<td>Confidential</td>
<td>A-6.4.2</td>
<td>Financial statement 2012</td>
</tr>
</tbody>
</table>
Confidential A-6.4.3 Accounts 2013
Confidential A-6.4.4 Management Accounts 2014
Confidential A-6.4.5 Management Accounts 2015
Confidential A-6.4.6 Audited Financial report 2014
Confidential A-6.4.7 Audited Financial report 2015
Confidential A-6.4.8 Balance Sheet 2016
Confidential A-7.1 Cost Break Down
Confidential A-9-1 Aquarius price reductions
Confidential A-9-2 Aquarius Competitive Offers
Confidential A-9-3 Local customer commitment to Waterdos
Confidential A-9-4 Local customer e-mail asking for low price by referring to Waterdos prices
Confidential A-9-5 Lost customers and policies to return them
Confidential B-2 Deductive Export Price guidelines
Non-confidential B-2.1 Guidelines to use Advantage Controls price list
Confidential B-2.2 Sea Freight Cost
Confidential B-2.4 Waterdos pricing
Confidential B-3.1 2015 controller pricing Advantage controls
Non-confidential B-4.2 Normal Value of goods in the country of origin