Title of project / experiment / activity
GM2 - Active Water Cooling System - Peltier Cell Cooling

Location of activity	**Start and end dates**
Dyson Centre	5/6/25 - 9/6/25

Brief description (or attach procedure / protocol)
We aim to create a water cooling circuit by pumping water from a bucket, through a heat exchanger interfaced with a peltier cell, through to another bucket. The peltier cell will exhaust heat aided by a fan, to the environment. The peltier cell, pump, and fan will be powered by a power supply and / or batteries.

Hazard	Effect	Control measures	Residual risk
Water on Power Supply	Breaking the power supply	Contain entire water system in a deep tray, keep power supply over a metre away from any water	Splashing water in any way might cause water to get on the power supply
Water on Batteries	Shorting the batteries, electrocution	Contain entire water system in a deep tray, keep batteries over a metre away from any water	Splashing water in any way might cause water to get on the batteries
Hot peltier cell / surroundings	Burning hands	Don't run the peltier cell without running the fan, also the peltier cell is surrounded by the fan casing and so it is impossible to touch cell itself	Fan casing becomes hot
Live wires touching water	Shorting batteries / electrocution	Manage cables neatly as to stay far from bottom of tray, connect cables securely and wrap tightly in electrical tape	Wires could get pulled down into water
Water leaking on electrical components	Shorting power supply/electrocution	Using standard water cooling components that are tried and tested and will not leak if used properly	Leaking water when assembling/ disassembling the circuit

Personal Protective Equipment required [*eye / face protection, respiratory protection, gloves, lab coat etc*]
Goggles

Emergency Instructions & First Aid

Any special monitoring required [*e.g. hearing test, vibration monitoring, health surveillance*]

Further control measures required? If yes, list with actions.

Biological / Laser / Radiation Approval [*requires relevant Specialist Safety Officer signature and date*]

Out of hours / Lone working measures

The risk assessor and their Supervisor must sign to confirm that this is a suitable and sufficient assessment of risk and that all stated control measures are in place.

This risk assessment should be reviewed and revised if additional risks not covered in this assessment are identified or if there is any reason to indicate that the control measures are insufficient.

Name of assessor : Jamie Maxen **Email : jamie.maxen@gmail.com**	**Signature** 	**Date** 5/6/25
Name of Supervisor : **Email :**	**Signature**	**Date**

Received by the Local Safety Coordinator:

Local Safety Coordinator : Email :	Signature	Date
Comments:		

Received by the Safety Office:

Departmental Safety Office : Email :	Signature	Date
Comments:		