

Ms Winnie Kakai, a resident of Sofia Village in Busia District, harvested rain as a normal routine on January 13<sup>th</sup> 2024 but to her surprise the rain was black.



“I have read about red water in the Bible, but with this black rain, I am getting worried that the end of the world is near”, she said. Mr. Francis Magambo a resident in the neighboring Marachi Village said he initially thought his containers are dirty, but even after washing them, the water rain black. The Uganda National Meteorological Authority (UNMA) has been contacted to clear the situation. UNMA scientists have tested the black water have found it to contain majorly sulphate ions and also the acidity of the black water. But, they have requested further laboratory tests to confirm the acid concentration in the black water and also a talk with the locals to calm their fear and worry.

**TASK:** Assuming you are chosen for the task, provide a relevant report to complete the task.

You are provided with

**BA1:** a sample of the black rain

**BA2:** a 0.05M sodium hydroxide solution

**Indicator:** Phenolphthalein indicator

**Apparatus needed:** pipette, burette, funnel, 2 conical flasks, 2 empty beakers, filter paper

CHEMISTRY 545/2

Paper 2

Time: 2 hours

**Note:** All working must be shown clearly