LOCAL ARTISANAL GOLD MINERS ABANDON MERCURY FOR BORAX

After the gold ore has been mined from the pit, they are crushed and milled when still wet. From this stage, the gold sand is then rinsed, in a process called sluicing to form a concentrate. The gold sand is then panned without using mercury, before it is mixed with borax and heated. During heating, the borax will then attract gold into small parcels for collection. Baltuziki said the whole process can take a day compared to when mercury is used. Using mercury for extraction, he said, depends on the weather. It can take over a week in drying the gold sand during the rainy season.

Artisanal miners panning for gold in Mubende district recently. Miners who use mercury to extract gold come into contact with the toxic metal using their bare hands.

Miners Association. She was carrying a white 400g tin with a substance. Baltuziki said the substance was bought about a year and a half ago and that it has worked on several trucks of gold sand. "At Muhende gold miners, we have moved away from mercury use. Borax is the new thing for us," she said. Olivia Chedet, a gold miner from Mwaro under the Karamojja Women's Association, also said they have stopped using mercury in gold extraction. The group, she said, is switching to borax. "In Karamojja mines, when they get you with mercury, you may not like the consequences. The penalties are punitive. You risk being suspended indefinitely over using mercury," Chedet said.

The two made the remarks during the International Day of Women in Mining commemoration last week at Stanridge Recreation Centre in Buwata, Kira municipality in Wakiso district. The celebrations were organised by Global Rights Alert.

Borax extraction process:

Borax extraction process in the pit involves:

1. Washing the ore:
   - Washing is done initially to remove impurities and make the ore suitable for further treatment.
   - The process is aimed at reducing the amount of gold present in the ore to facilitate efficient extraction.

2. Crushing and milling:
   - The ore is crushed to a fine powder to increase its surface area, making it easier to extract the gold content.
   - Milling is then performed to further reduce the size of the particles, enhancing the efficiency of the subsequent extraction processes.

3. Roasting:
   - The roasting step involves heating the crushed ore in the presence of oxygens, typically in the form of air or pure oxygen.
   - This process helps to drive off volatile impurities and facilitate the formation of volatile compounds that can be easily removed.

4. Extraction:
   - Once the impurities are driven off, the gold in the ore is usually extracted using either a chemical method or by physical means.
   - Chemical methods may involve the use of acid or alkali solutions to dissolve the gold-bearing compounds, while physical methods might include gravity separation, flotation, or magnetic separation techniques.

5. Refining:
   - The extracted gold is further purified to achieve the required purity level, often involving multiple rounds of refining steps.
   - This process may involve the use of reagents to remove remaining impurities or to refine the extracted gold to a specific standard.

- **COST: BORAX VS MERCURY**:
  - Borax has a comparative advantage over mercury in many fronts, including the price.

- **(NEMA) spokesperson, said the environmental body continues to discourage miners from using mercury.**
  - "For environmental safety, NEMA recommends borax use. Borax is safe," he said.

- **What stakeholders say**:
  - Winnie Ngirabire, the executive director of Global Rights Alert, said the country had been advocating mercury-free gold mining for a long time. However, not many options were available for use. Now that miners have learnt about and used borax, she said, this is the best time to ask them to move away from mercury.

- **Dangers of mercury use**:
  - A recent study on the health and ecological implications of mercury use in the artisanal gold extraction process, which was done by Ugandan researchers, revealed that mercury is extremely dangerous.
  - The study was conducted by Herbert Nabasra from Mbarara University, Willy Ngakaka and U electrify Plumbing from Makerere and Mumbi universities respectively. The study indicated that the amount of vapour released by mining activities has been proven to damage the kidneys, liver, brain, heart, lungs, colon and immune system.

In addition, using borax in gold extraction produces more pure gold, whereas mercury leaves impurities. Baltuziki said a ton of gold ore has a purity of between 950,000 and 960,000. That, she added, can be used by a miner for at least two years.

A gram of borax can extract between 15 and 18 Elf trucks of gold sand. On average, an Elf truck has a maximum load of 2,000 kg. This implies that a gram of borax can mix between 30,000-36,000 kg of gold sand.

Compared to mercury, Baltuziki said borax is more affordable. The price of a bottle of mercury reaches between shs50,000 and shs200,000. This amount can mix about three to seven Elf trucks of gold sand.

This implies that a bottle of mercury can mix between 6,000-14,000 kg of gold sand and yet is expensive. "Borax is cheaper and equally effective. Since we are artisanal and small-scale miners, we have switched to borax. The output is much more," she said.

"People were using mercury because it is easy and faster. But after using borax for at least a year and a half, I can confirm, borax is a better alternative."