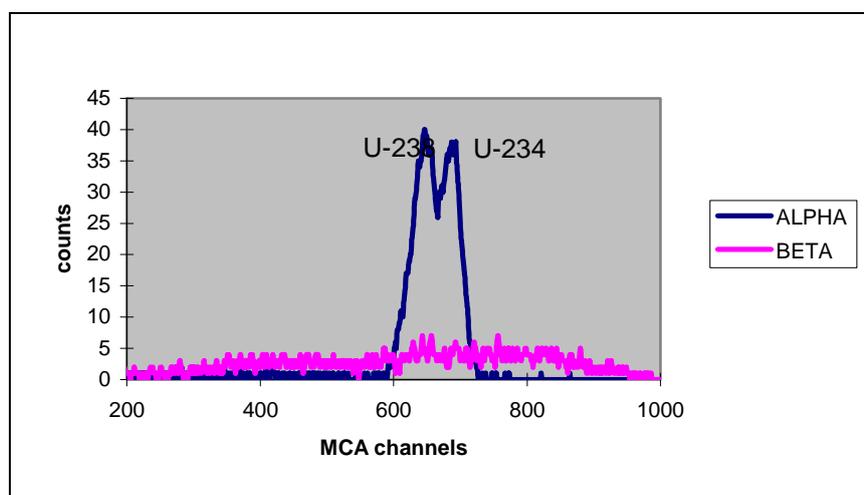
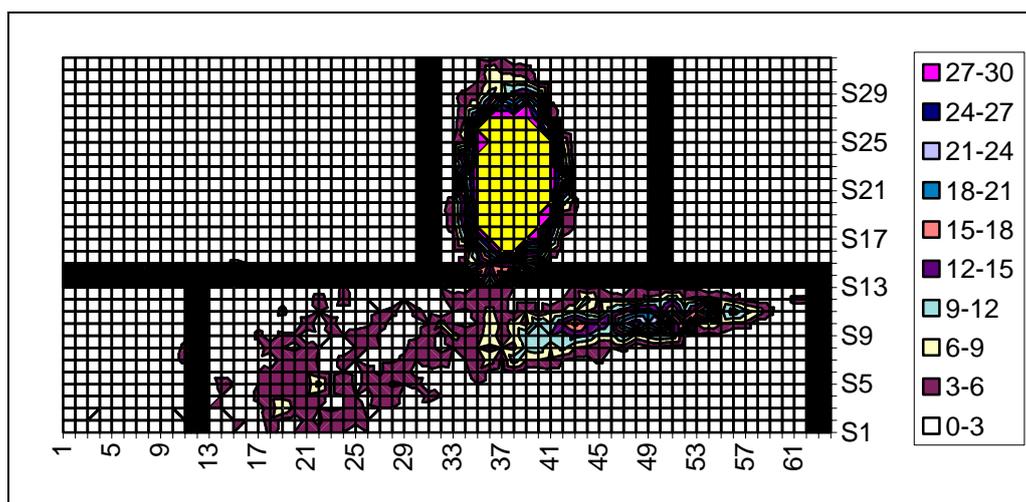


## Uranium - Extraction from 250 ml water

U-238 can be extracted from water with modified MaxiLight added with a few per cent (6 %) of a complexing agent, such as e.g. bis(2-ethylhexyl)-phosphate (HDEHP), trioctylphosphine oxide (TOPO) or tributyl phosphate (TBP). Before extraction, water is thoroughly bubbled to remove Rn-222 and made acidic with nitric acid. According to literature, these agents are rather effective so that a few milliliters of the modified cocktail can extract over 90 % of U from one liter of water. LLoD in 1 hour: 1 µg/l or 0,01 Bq (U -238) / l



Activity of the sample: 3,36 mg/l or 42 Bq/l

### Procedure

- Organophosphorus compounds can extract U from acidified water.
  - Bis-ethylhexyl phosphate (HDEHP).
  - Tri-octylphosphine oxide (TOPO).
  - Tributyl phosphate (TBP).
- Prepare an extractive cocktail containing 5-10 % concentration of extractant in a hydrophobic cocktail.
- Bubble the water thoroughly with clean air to remove Rn-222.
- Take 50-1000 mL of water and add 5-30 mL extractive cocktail on it.
- Shake, let phases separate and collect an aliquot of cocktail. Count