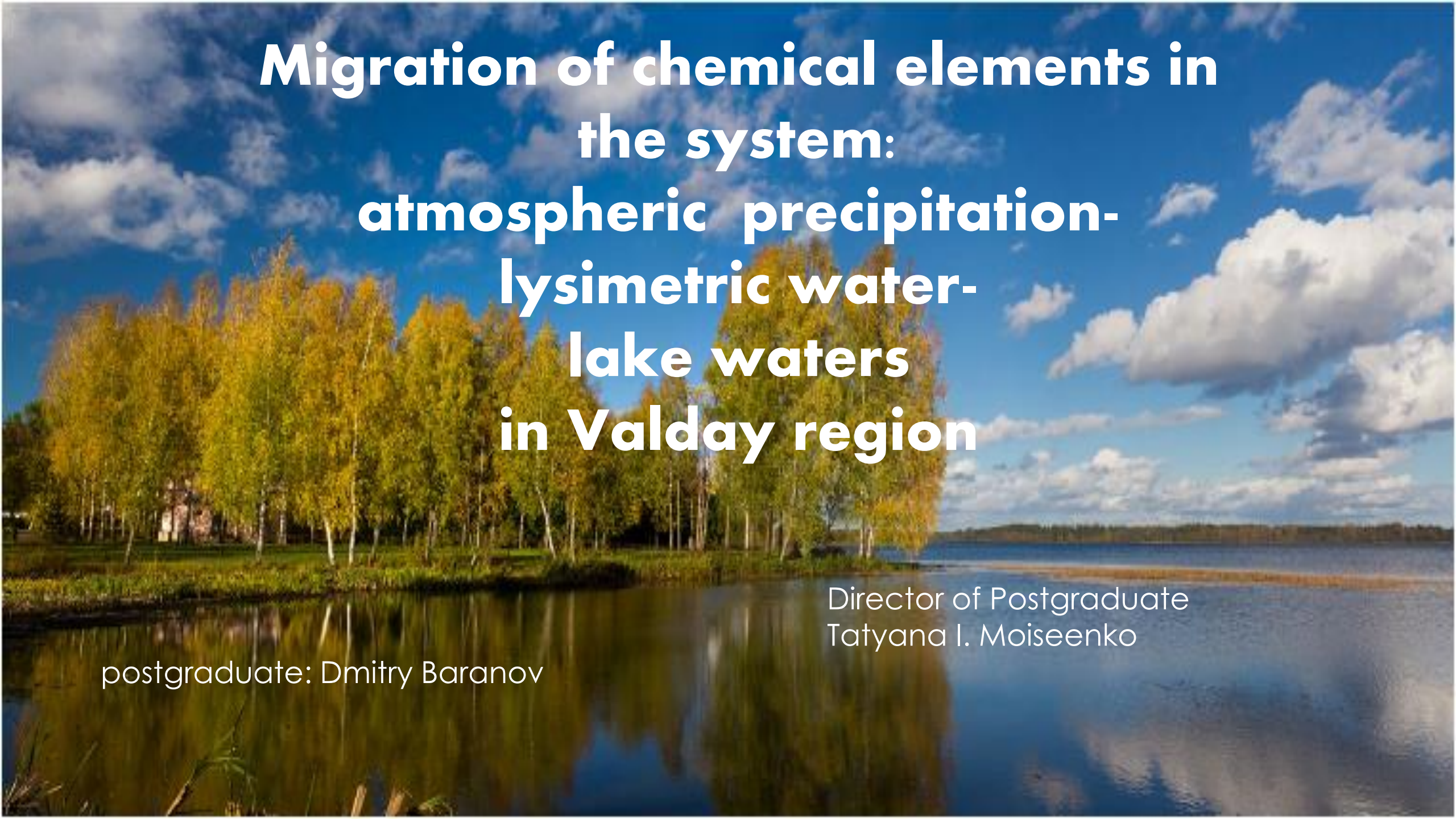


Migration of chemical elements in the system: atmospheric precipitation-lysimetric water-lake waters in Valday region

Director of Postgraduate
Tatyana I. Moiseenko

postgraduate: Dmitry Baranov

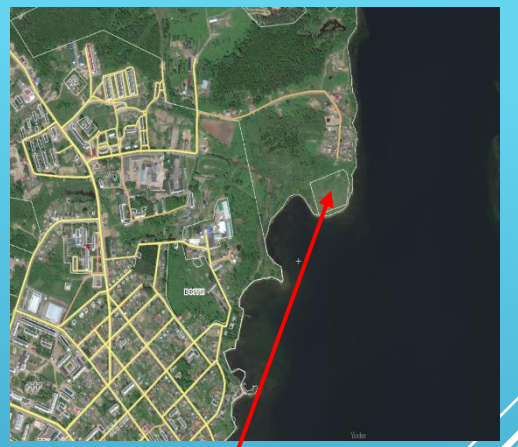
Presentation structure

1. Landscape Features.

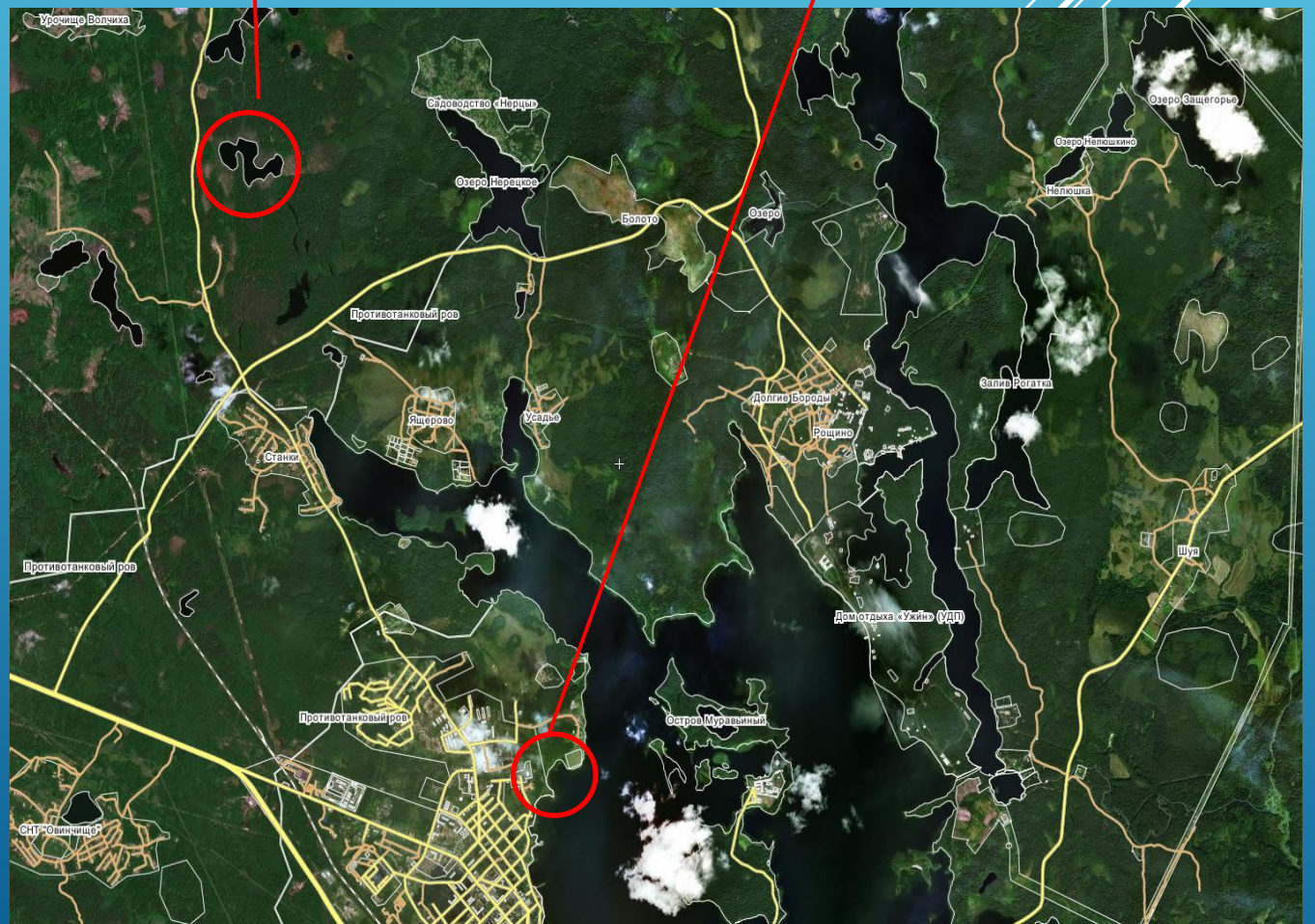
2. Location of lysimeters and bottle for precipitation collecting.

3. The discussion of the results.

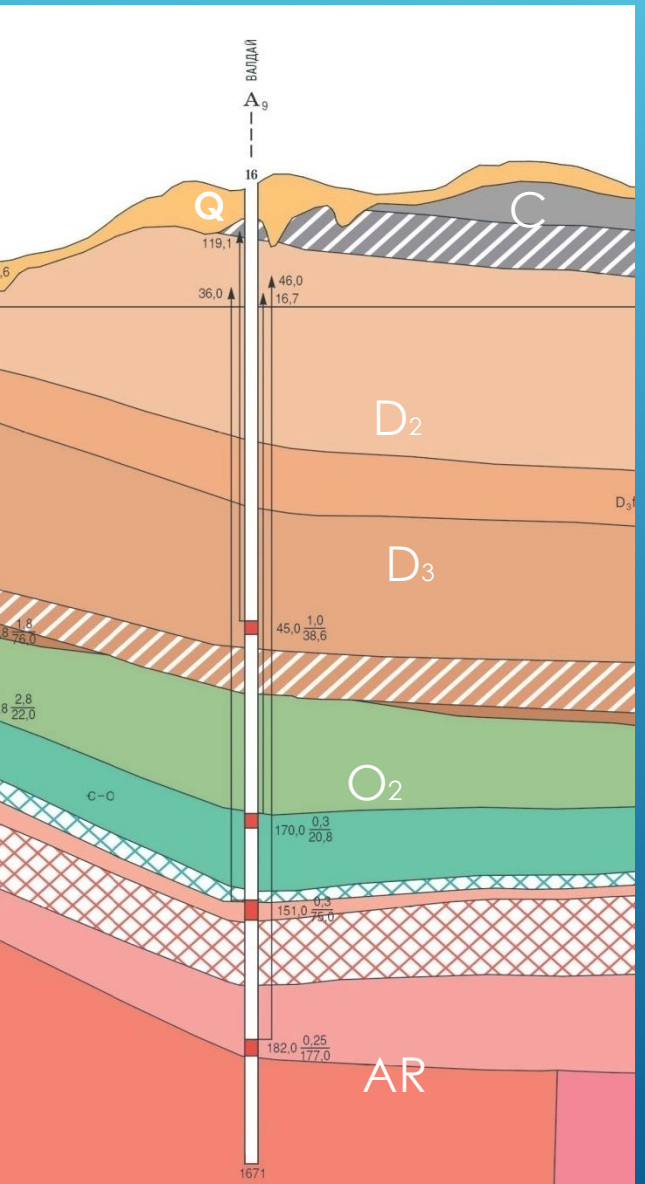
Valday area



Location of sampling points



Geological features of Valday area



Q – alluvium period

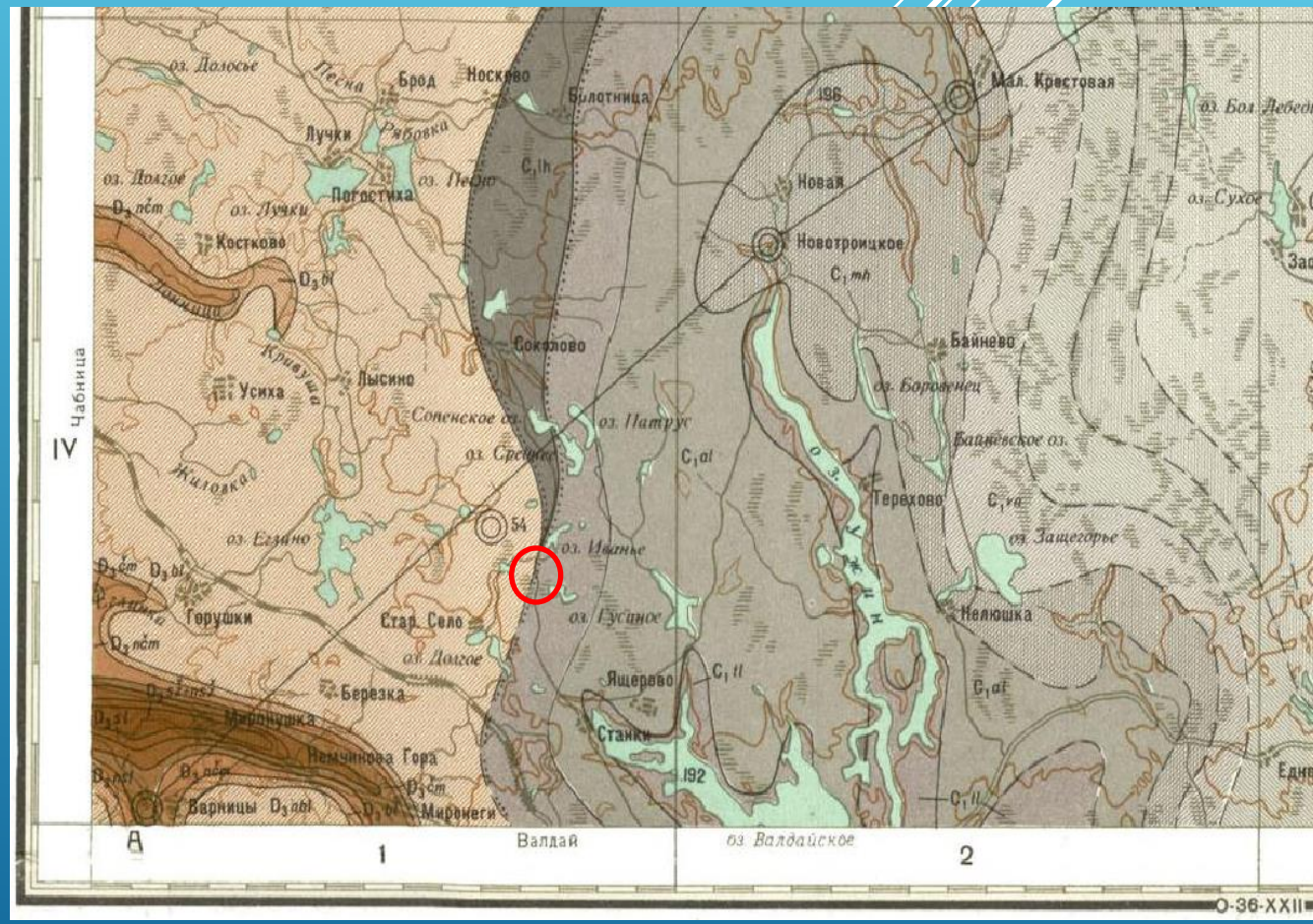
C – carbon period

D2-3 – middle and low Devonian system

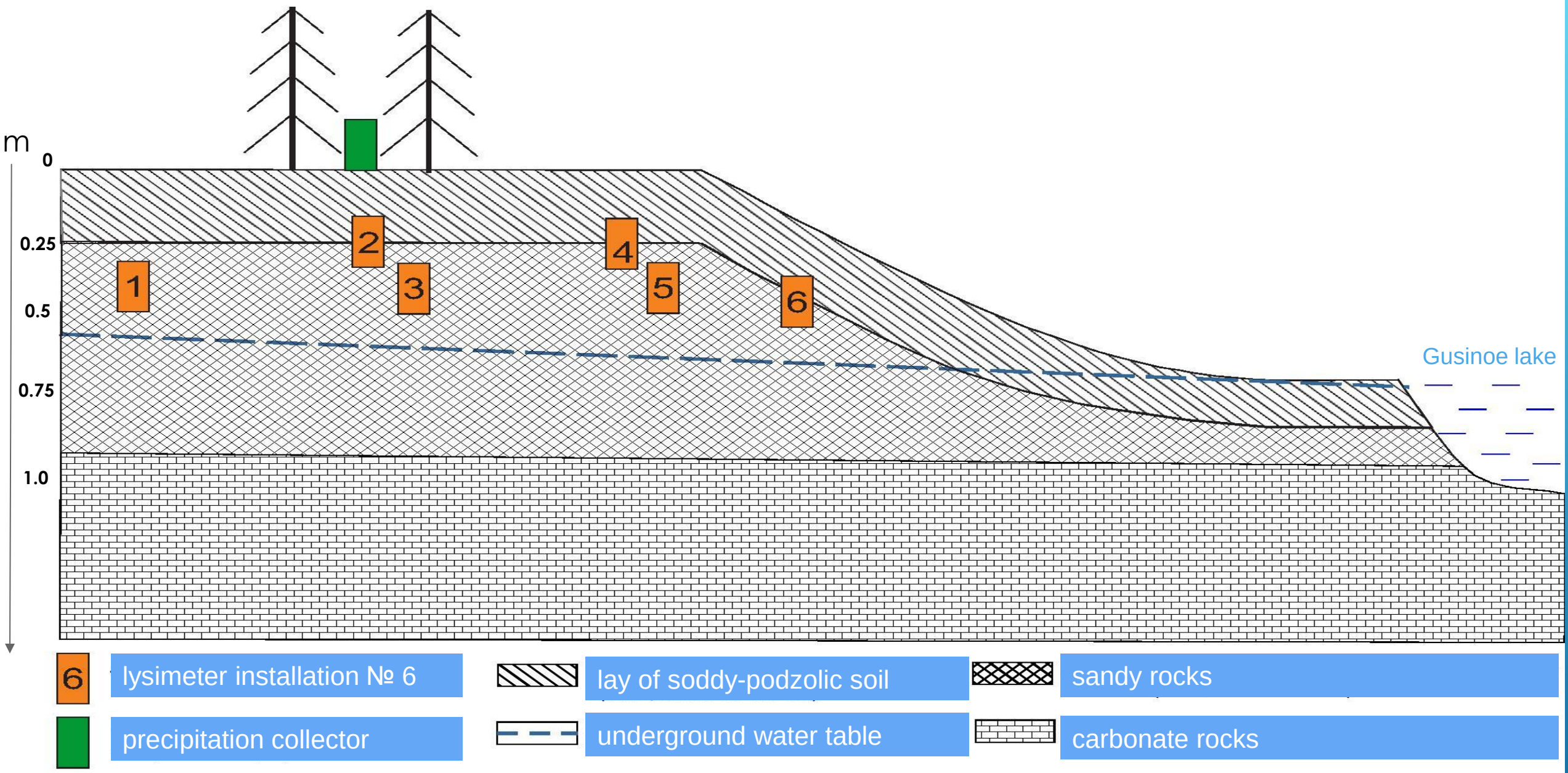
O2 - middle Ordovician system

AR - mesoarchean system

Part of the geological map

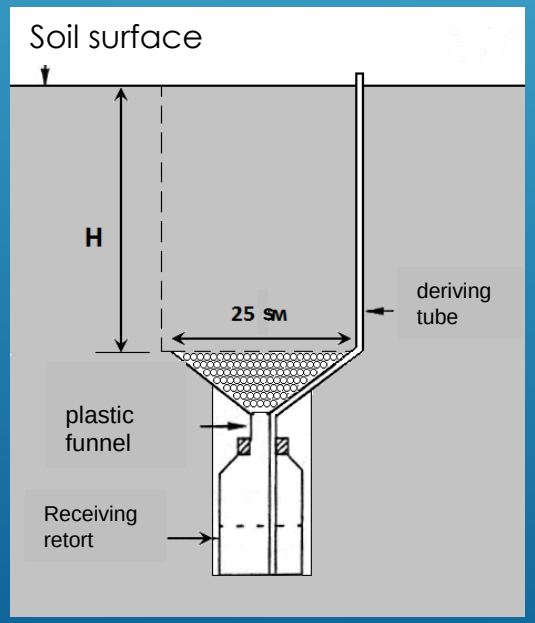


Soil horizons and sampling location



Equipment scheme

1. Lysimeters are located under humic, eluvial and enrichment soil horizons
2. Precipitation collectors are located on the open area and on the areas with the trees influence
3. Samples are collected in summer and autumn periods every 1-2 months



scheme of lysimeter

lysimeter

scrow for the installation of lysimeters

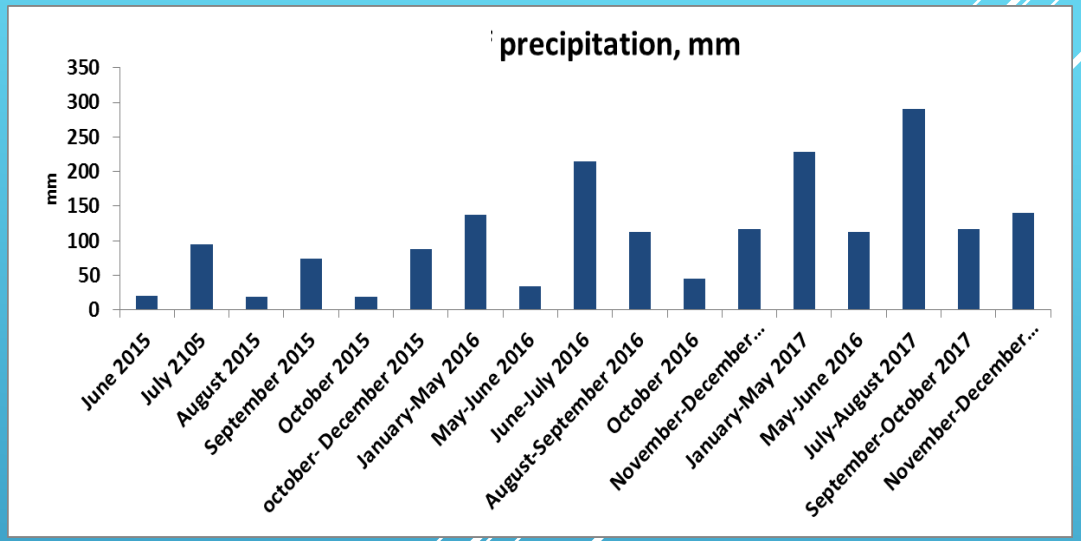
precipitation collector in the forest

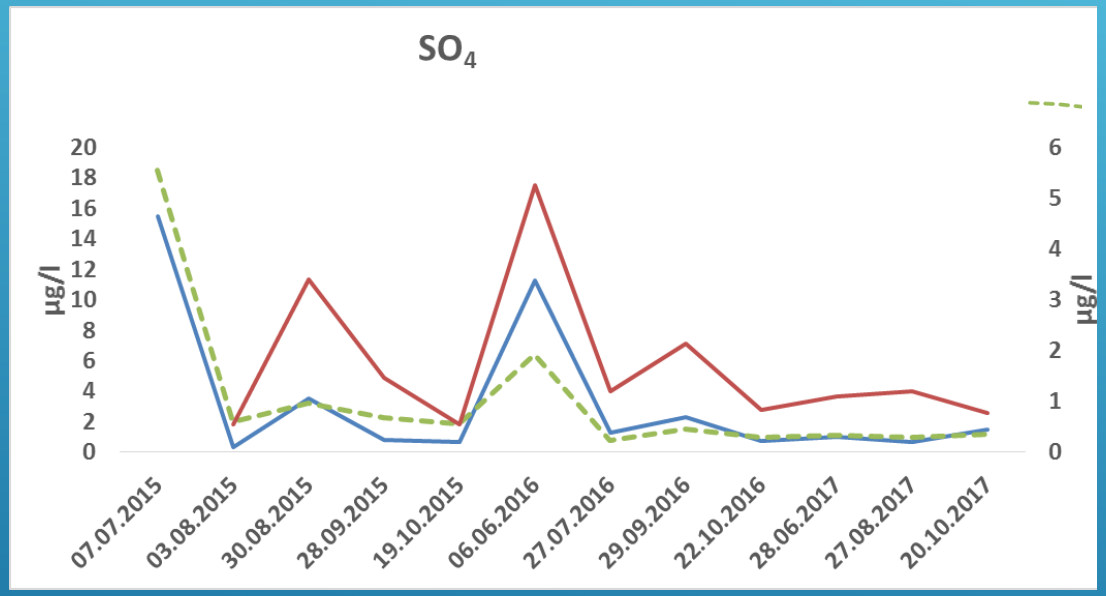
precipitation collector in the open area

Precipitation chemical analysis results

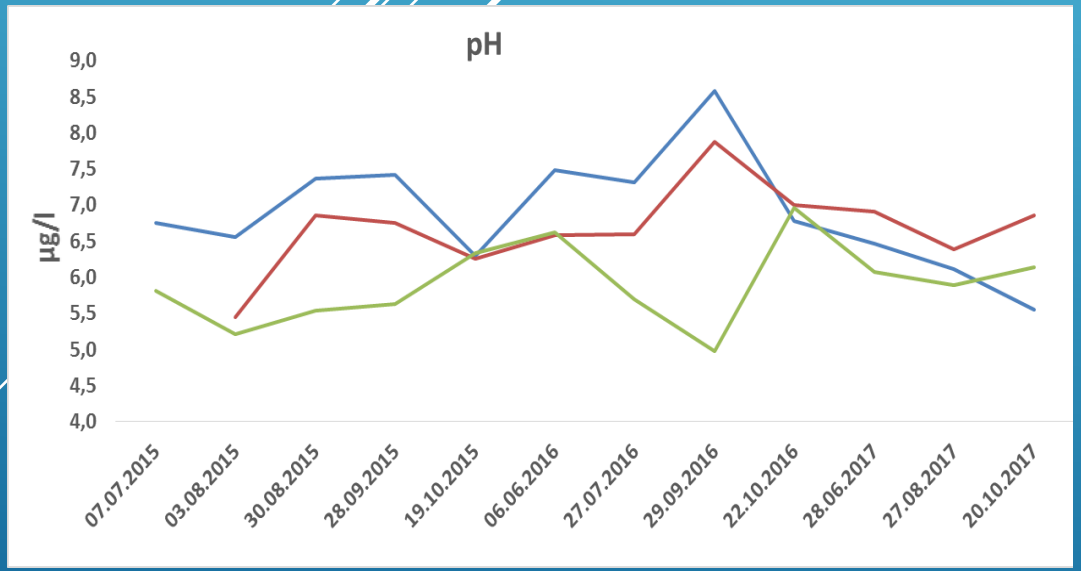
Precipitation change over the exploration period

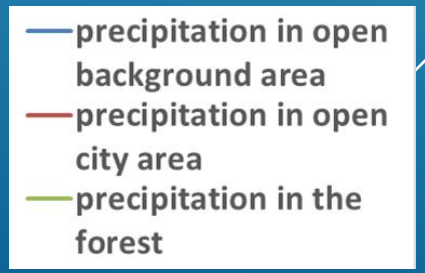
June and July are months with the highest precipitation.
The least rainfall is typical for late autumn and early spring.
From 2015 to 2017, the amount of precipitation has increased.



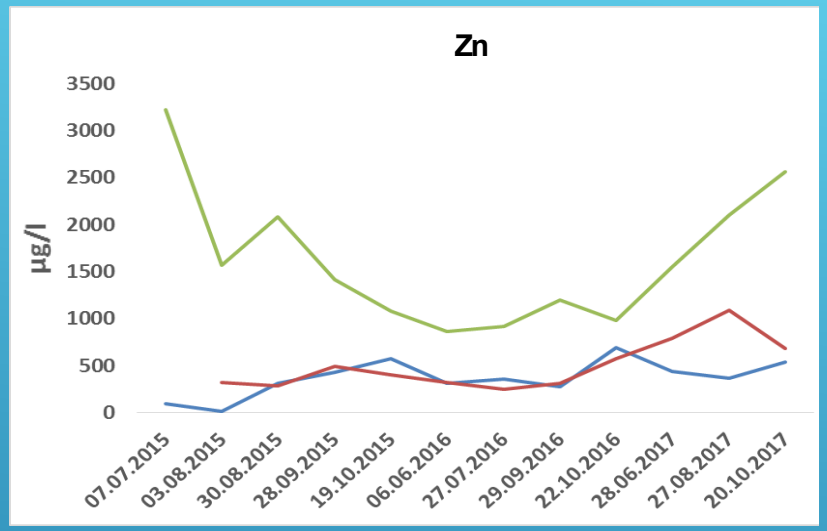


The lowest pH values were fixed in the forest.
High content of sulfates was found in the area of the city



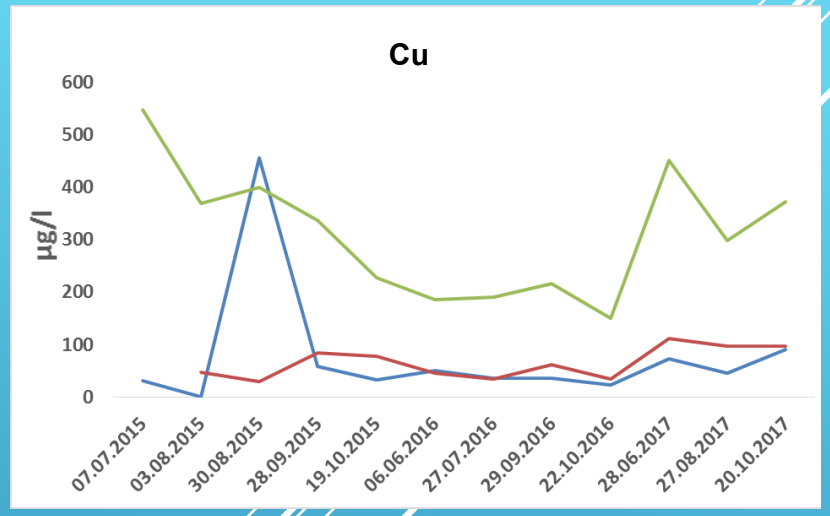


Concentration of elements

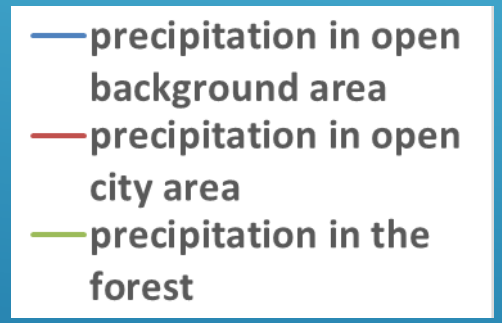


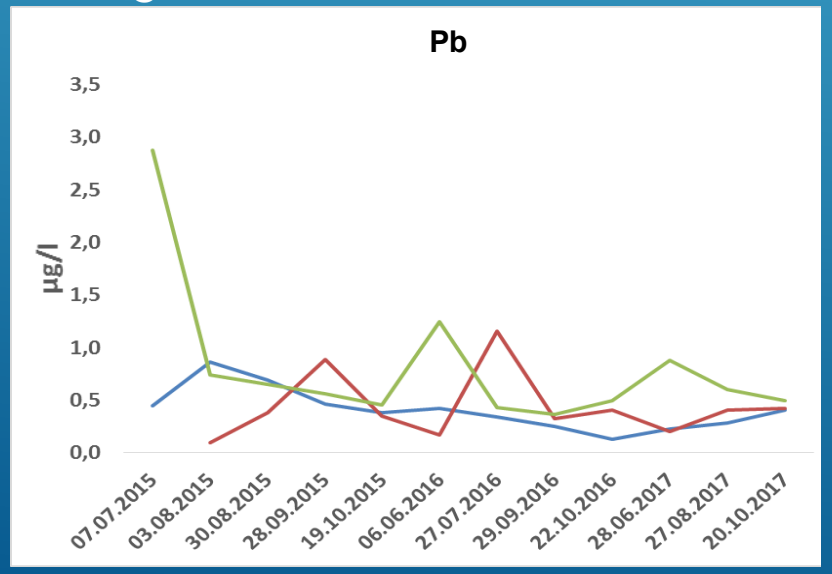
The highest Zn concentrations are fixed in sub crown precipitation. The Zn content in the city is higher than in the background area

The highest Ni concentrations are found in urban and forest samples.

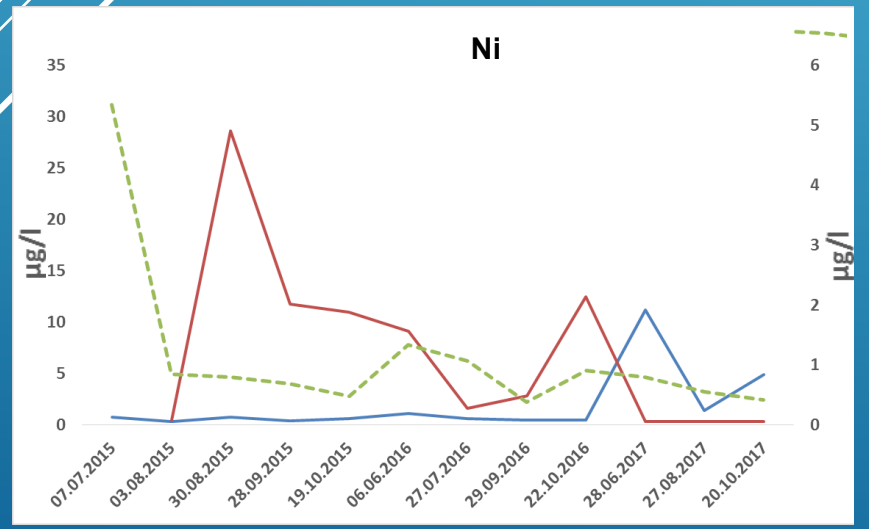


The highest Cu concentrations were measured in sub crown precipitation. The Cu content in the city is insignificantly higher than in the background area





Concentration of Pb didn't dramatically change in background area

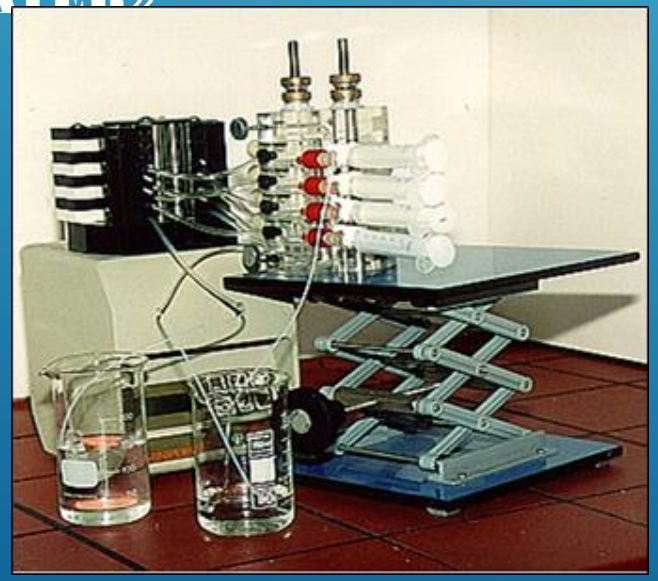


PLANS

1. 2018-2020 RESEARCH ON THE SPECIFICATION OF ELEMENTS IN SEASONAL VARIATION, ASSESSMENT OF THE SPECIFICATION OF AN ELEMENT IN THE BIOGEOCHEMICAL CYCLE

2. CONDUCT A MODEL EXPERIMENT OF THE EFFECT OF ACID DEPOSITION ON THE MIGRATION OF ELEMENTS IN THE SOIL COLUMN

3. INVESTIGATION OF THE EFFECT OF ACIDIFIED AND EUTROPHIC LAKES NATURE ON THE CYCLE OF ELEMENTS IN THE SYSTEM: «ATMOSPHERIC PRECIPITATION - LYSIMETRIC WATERS - LAKES WATER»



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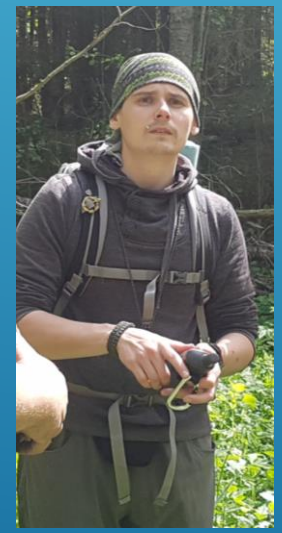

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Thanks for attention!