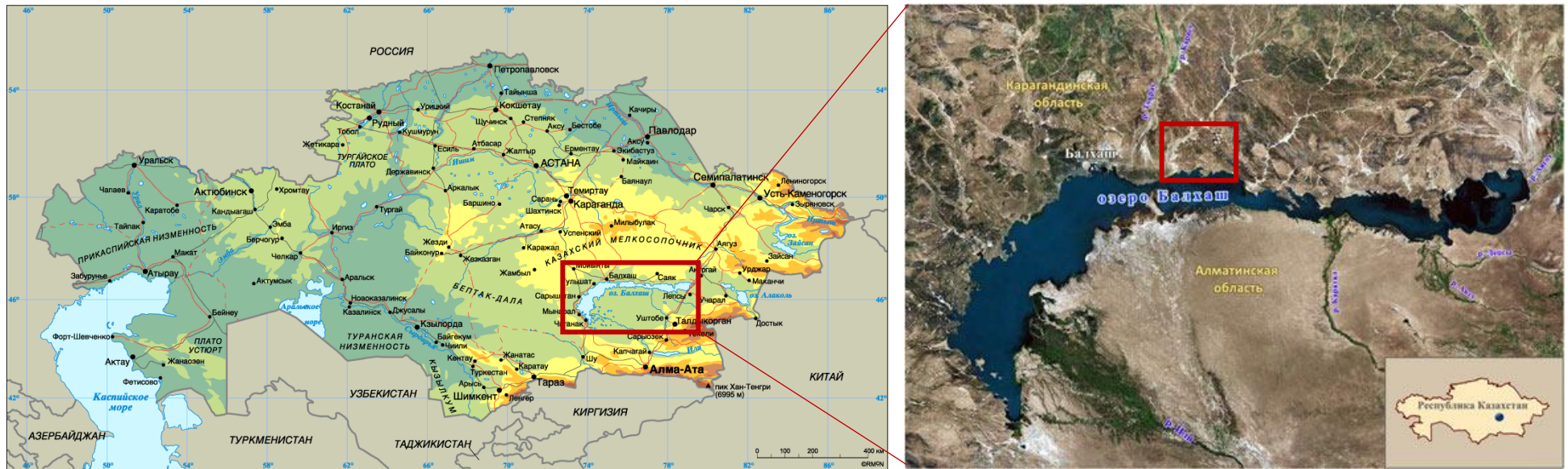
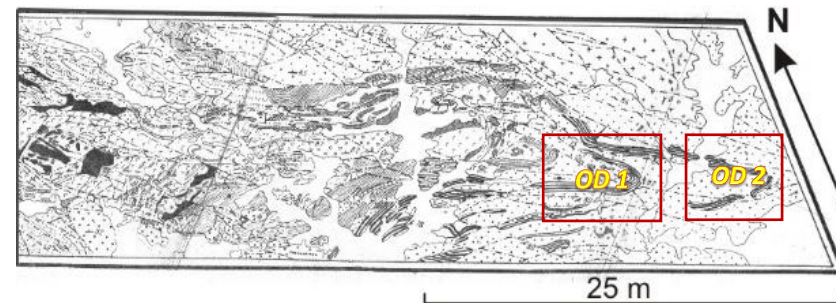
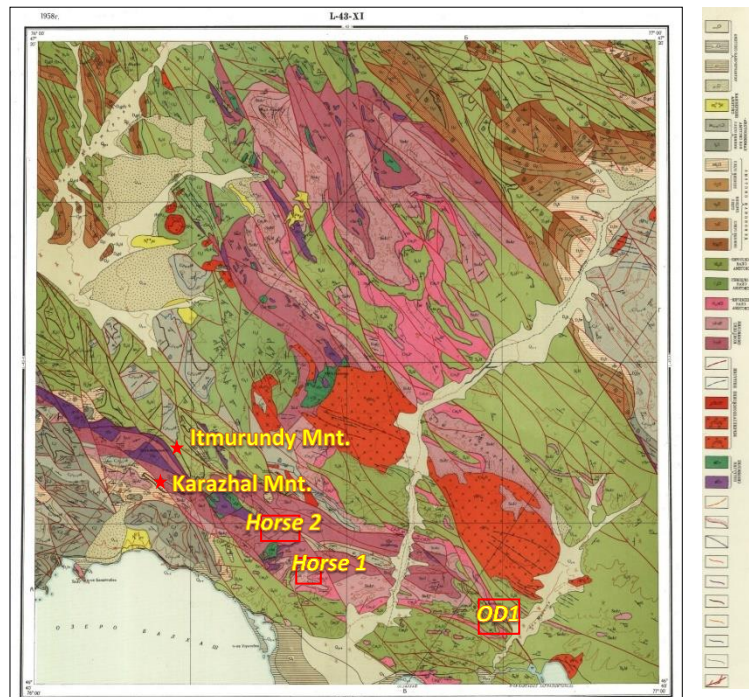


## Field trip to the Itmurundy accretionary complex in northern Balkhash area, central Kazakhstan



**Itmurundy accretionary complex** is cropped out at the north of the Balkhash Lake. Three formations are traditionally defined in the accretionary complex (older to young): Itmurundy, Kazyk and Tyuretai.



The following localities of Lower Paleozoic OPS units were investigated and sampled:

- «Horse 1»
- «Horse 2»
- «Overturned duplex 1(OD1)»
- «Overturned duplex 2 (OD2)»

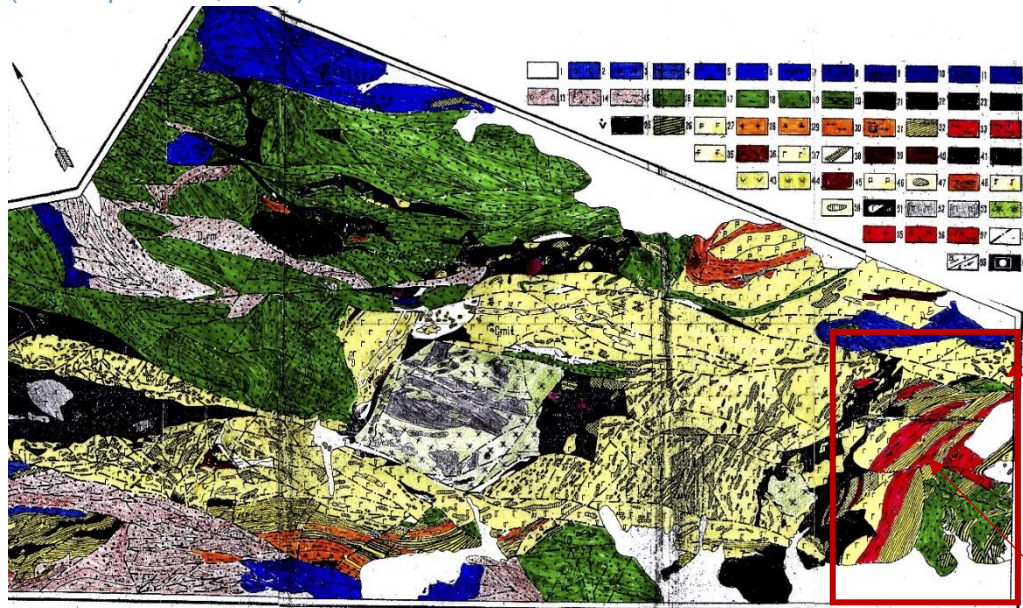
Detailed study of the brittle–ductile deformations: folds, mullion-structures, horse-type, duplex-structures, faults, was carried out to produce structural-tectonic sketch-maps.



## Detailed study of «Horse 1» locality

The Kazyk and Tyuretai formations outcrops were investigated: volcanic rocks (basalts, ultramafic rocks) were sampled for geochemical analysis and sedimentary rocks (cherts, mudstones, sandstones) for micropaleontological studies and U-Pb zircon dating. Detailed study of the ductile deformations was done.

Geological sketch-map for the central part of the Itmurundy complex (after Ophiolites, 1981)



### Tyuretai Formation



### The Kazyk Formation siliceous strata



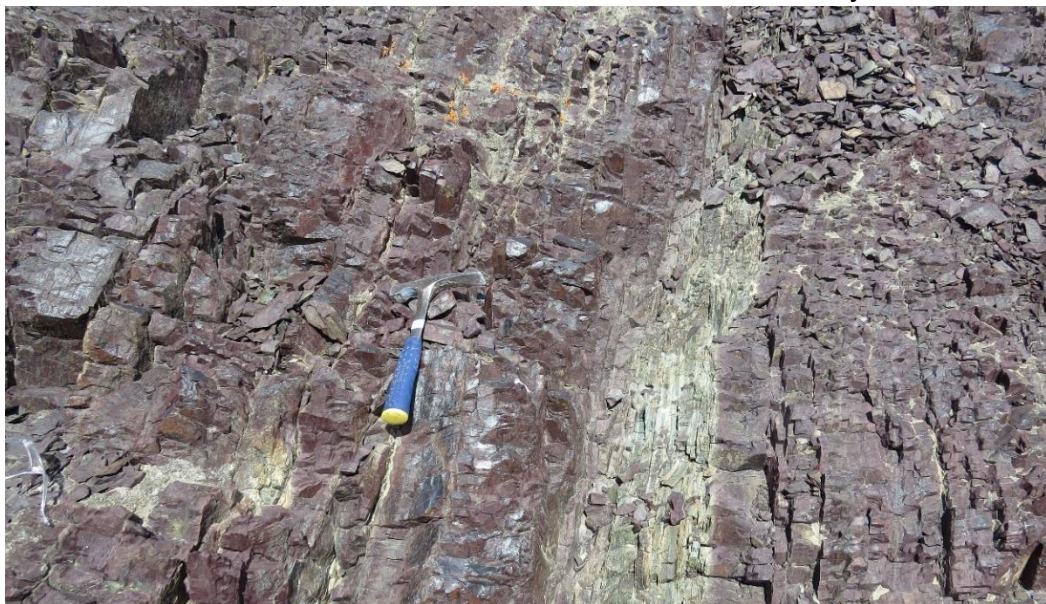
### Kazyk Formation





## Detailed study of «Horse 1» locality

Kazyk Formation ribbon cherts

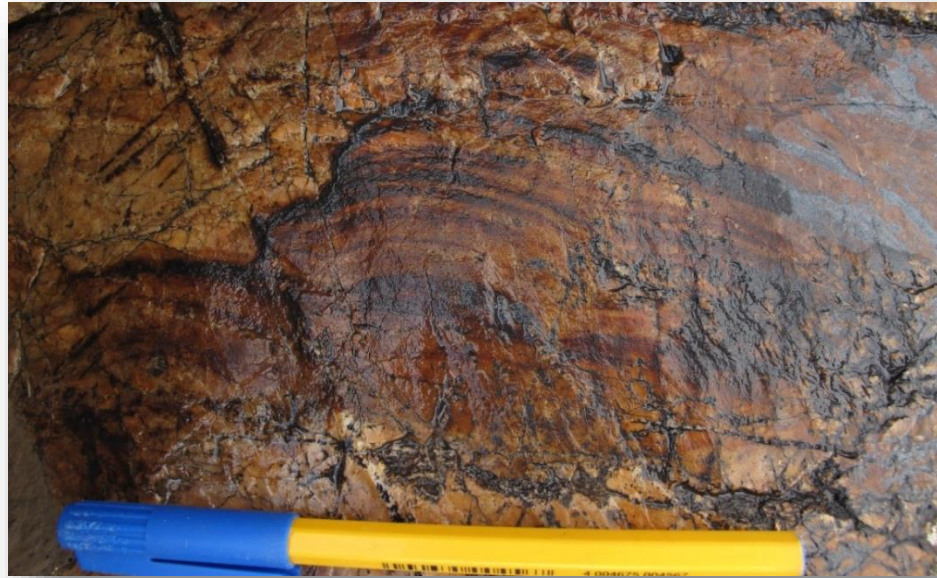


Breccia in basalts in the area between «Horse 1» and «Horse 2» localities





## Detailed study of «Horse 1» locality

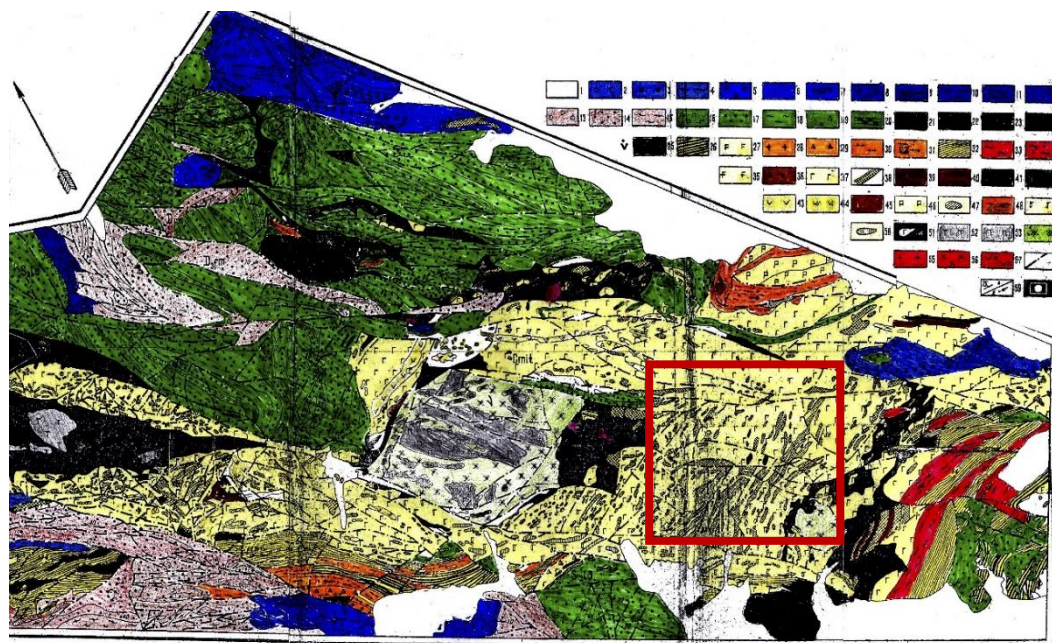


Detailed study of ductile deformations in the ribbon and laminated cherts (folds, nano-duplex structures etc.) from the Tyuretai Formation





## Detailed study of «Horse 2» locality



The Itmurundy Formation pillow-basalts



The Itmurundy Formation siliceous mudstones



The Itmurundy Formation ribbon cherts





## Detailed study of «Horse 2» locality

Range of basaltic hills



Andesite porphyrites



Basalts and altered cherts cropped in the quarry



Pillow-basalt



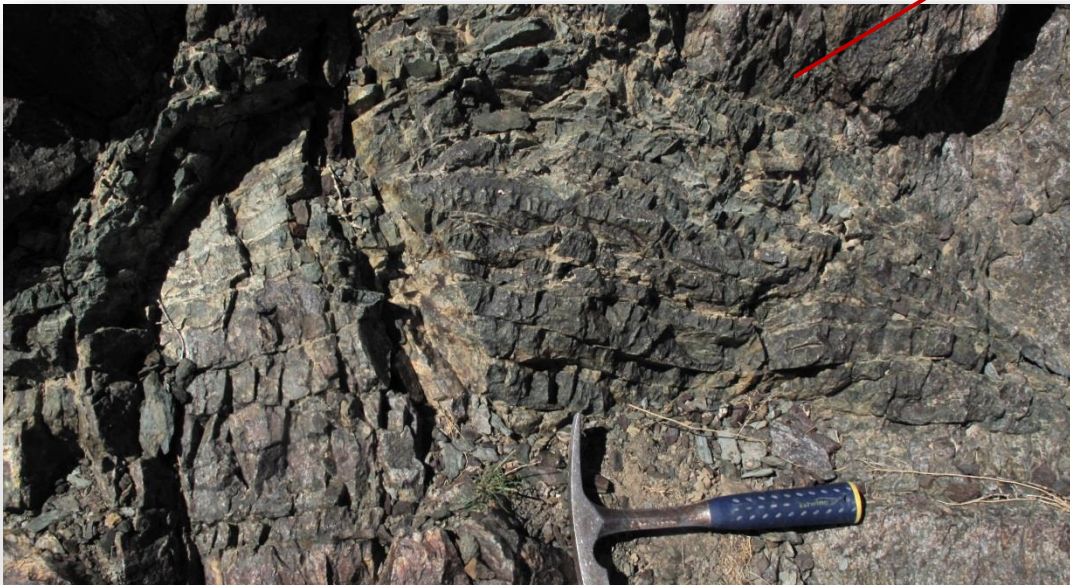
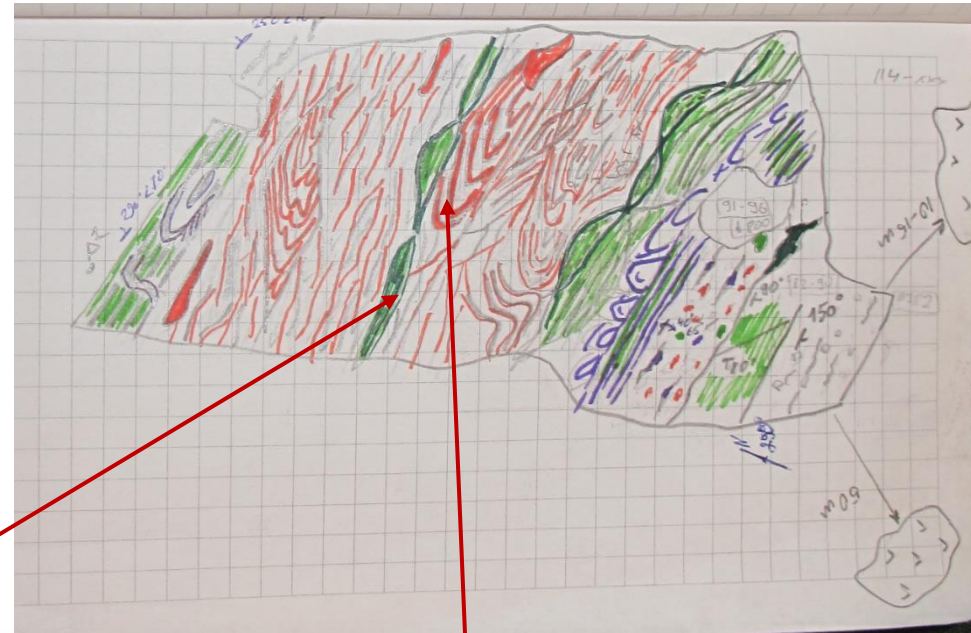
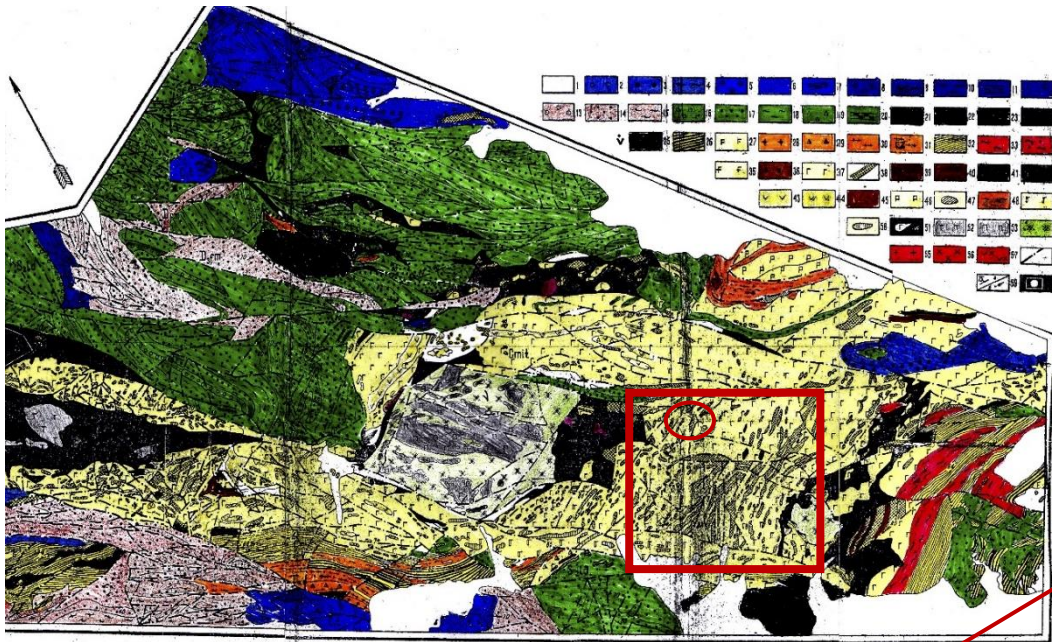
Chert and siliceous mudstone hills with basalts underneath (typical OPS example)





## Detailed study of «Horse 2» locality

A fragment of a detailed sketch-map drawing





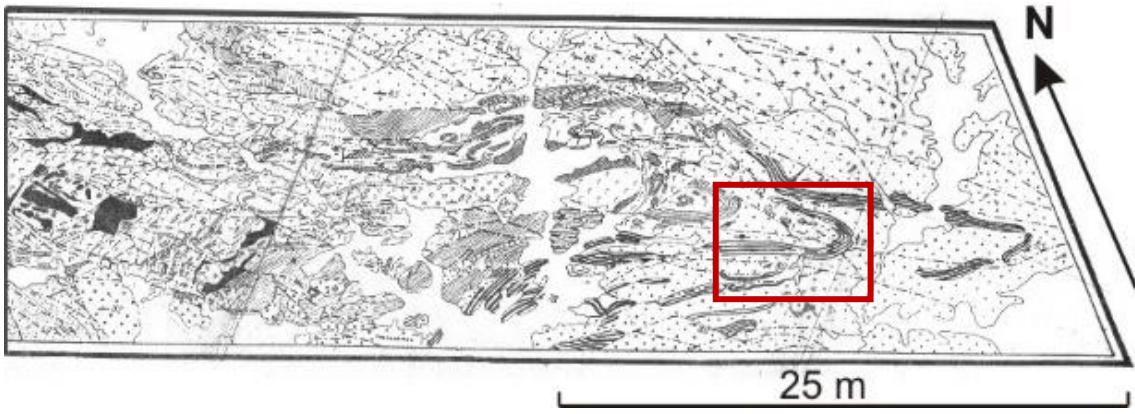
## Detailed study of «Horse 2» locality

A fragment of a detailed sketch-map drawing

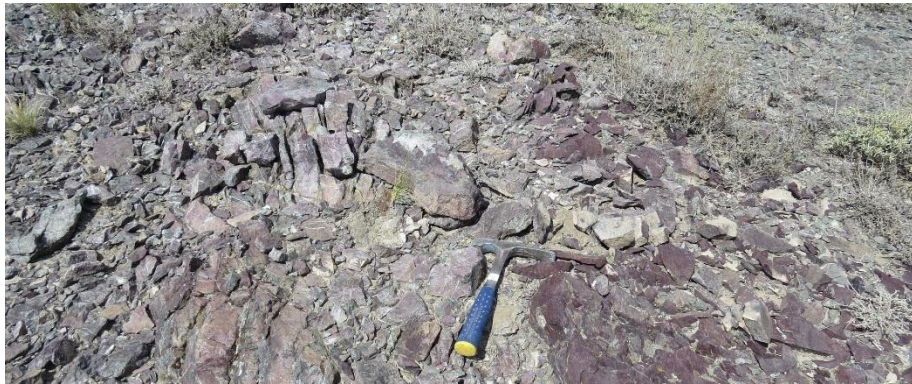




Detailed study of «OD 1» locality



Tyuretai (?)  
Formation  
cherts



Tyuretai (?) Formation cherts

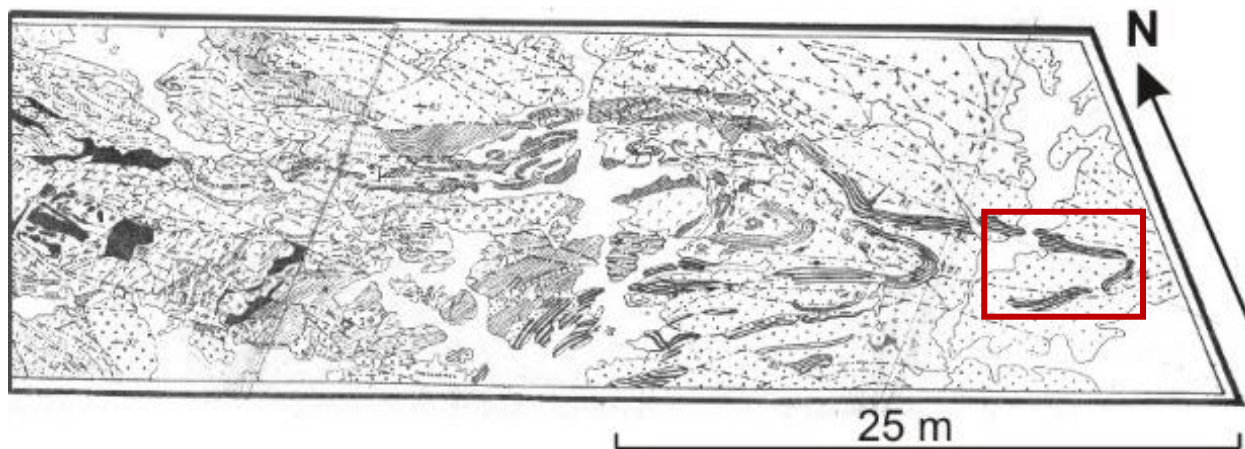


Sampling of sandstones for the U-Pb zircon dating





### Detailed study of «OD 2» locality



Sampling of the Tyuretai (?) Formation sandstones for the U-Pb zircon dating

