

Project BAZALT-1

Igor B. Morozov¹, Elena A. Morozova, and Scott B. Smithson

Department of Geology and Geophysics, University of Wyoming, Laramie WY, 82071-3006, morozov@uwyo.edu

¹Also at: Department of Geological Sciences, University of Saskatchewan, 114 Science Place, Saskatoon, SK S7N5E2 Canada, igor.morozov@usask.ca

Igor N. Kadurin

Centre for Regional Geophysical and Geoecological Research (GEON), Moscow, Russia

Digitization, editing, and delivery of this data sets to IRIS is sponsored by grants from the Defense Threat Reduction Agency (DTRA01-01-C-0081; 75% of funding) and NSF (EAR-0092744; 25%).

Data summary

Project BAZALT-1 included three seismic profiles recording chemical explosions. Locations of and the approximate lengths of the lines are (Figure 1):

Profile 1A: city Krasnovodsk – town Mari, 16 source points, 757 km.

Profile 1B: town Mari – town Muruntau – city Abakan, 48 source points, 2818 km;

Profile 2: town Termez – Aral Sea – town Emba, 23 source points, 1590 km.

Data acquired by Center GEON in 1989.

87 chemical explosions of 3000-5000 kg

Recording systems: Portable 3-component analogue systems TAIGA and
CHEREPAKHA, 1-Hz sensors

Data format

Data format is identical to that of QUARTZ records delivered earlier. The data are provided in standard SEG-Y format using IBM floating point representation of data values. Geographic coordinates of shots and receivers (in degrees), and offsets (in meters) are loaded in data headers. Recording station numbers (generally numbered starting from the West, Figure 1) are loaded in SEG-Y headers as CHANNEL, and FFIDs correspond to shot numbers. Each data file contains a single component of recordings from one shot. File names follow the following convention:

```
baz-1-<line>-<shot_number>-<component_index>.seg-y
```

where `line` is the line name (1A, 1B, or 2), and `shot_number` is the number of the shot.

Shots are numbered by the position of the nearest receiver station. Shot numbers correspond to

the number of the nearest receiver. The component index is 'v' for the vertical (upward), 'r' for radial (directed away from the shot), and 't' for the transverse (directed to the right when looking away from the shot point).

Data records are started at times = offset/8 (s) after the shots and truncated at 200-second record lengths. Time sampling intervals are typically 10 ms (stored in SEG Y headers).

For quality control purposes, data CDs also contain subdirectories with PostScript plots of the corresponding data sections. As the plots are automatically generated, plotting parameters may not be optimal for every record, yet they give an idea of data density and general quality.

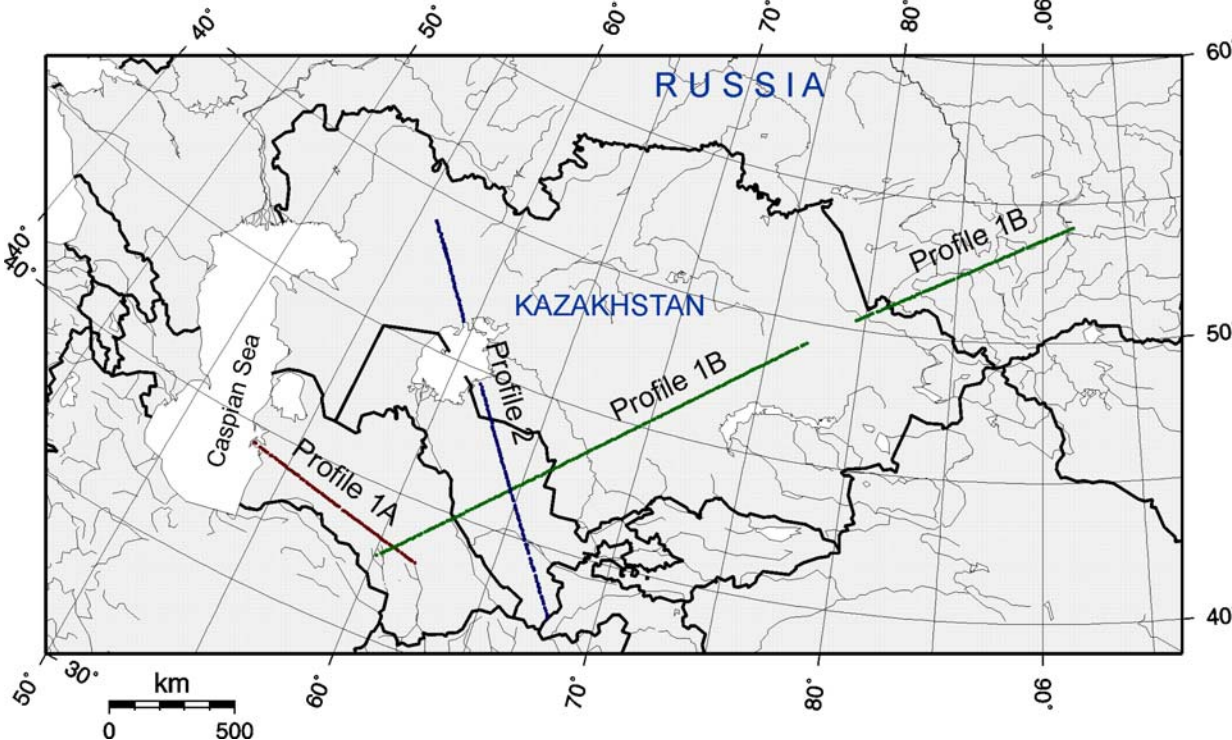


Figure 1. Location map of three chemical-explosion profiles of project BAZALT-1. Small colored triangles show 3-component receiver stations.