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THOMSON REGION GEOCHEMICAL SURVEY, NORTHWESTERN NEW SOUTH WALES

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ABSTRACT

The Thomson Orogen Project is a collaborative research project between CRC LEME, the NSW Department of Primary Industries and Geoscience Australia that aims to provide stakeholders with pre-competitive data pertaining to the mineral prospectivity of the NSW portion of the Thomson Orogen. The Project includes geological, geophysical and geochemical components, of which the geochemical survey presented in this report is part.

The Thomson geochemical survey establishes the concentration ranges and distributions of over 60 geochemical properties measured in surface and near-surface regolith material over the ~155,000 km^2 project area. The main sampling media were 'catchment outlet sediments', which in fluvial-dominated settings equate to overbank sediments, but are generalised to also apply to other, e.g., aeolian-dominated, environments. All together, 99 catchment outlet sites have been sampled over the area, giving an average sample density of 1 site per 1561 km^2. At each site a sample was taken at the surface (0-10 cm depth), which is called the top outlet sediment (TOS), and another one at depth (a 10 cm interval generally between 60 and 90 cm depth), which is called the bottom outlet sediment (BOS). Both sample types are composited to enhance their representativeness. In addition, shallow outlet samples (SOS) were taken from an intermediate depth (10-25 cm depth) for mobile metal ion analysis.

In the field, the sites were described and photographed, and field pH and dry and moist colours of the soil were recorded. In-field trials of portable X-ray fluorescence and digital data entry were also carried out over the course of the project. In the laboratory, small splits of the bulk samples were dried and subjected to laser particle size analysis, X-Ray diffraction and pH and electrical conductivity of 1:5 (soil:water) extracts were determined. The bulk samples were dried and split into 2 halves. One half was archived for future analysis, whilst the other was sieved to <180 μm and <75 μm fractions. Both size fractions were analysed for over 60 analytes by:

- X-ray fluorescence for multiple elements (at Geoscience Australia, Canberra)
- inductively coupled plasma-mass spectrometry after 4-acid 'near-total' digestion for multi-element analysis (at Acme Laboratories, Vancouver, Canada)
- inductively coupled plasma-mass spectrometry after HF and multi-acid digestion for Se analysis (at CSIRO Laboratories, Adelaide)
- inductively coupled plasma-mass spectrometry after proprietary MMI-M® leach for multi-element analysis (at ALS Chemex Laboratories, Perth)
- ion selective electrode after alkaline fusion for F analysis (at ALS Chemex Laboratories, Brisbane)
- Graphite furnace-atomic adsorption spectrometry for Au analysis (at ALS Chemex Laboratories, Brisbane)

Geochemical maps and diagrams were constructed for all elements/sample types/size fractions and are presented in this Report. Preliminary interpretations suggest that proximity to known mineralisation is detected in many cases by elevated concentrations of, e.g., Cu, Pb or Sb. Recent drilling by industry has intersected sulfide accumulation in a catchment with elevated concentrations of these 3 elements in the outlet sediments. Several anomalous concentrations were also revealed in areas with no known mineralisation and/or where cover is thicker, particularly in the east of the study area. These may warrant further investigation. Au distribution appears to be subject to nugget effects.

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1 INTRODUCTION

1.1 Background

Geochemical surveys provide a crucial understanding of the natural concentration of chemical elements and compounds in the environment, which can be used in a variety of applications. These natural concentrations vary greatly due to local influences such as geology, biological processes and other factors (Reimann and Caritat 1998, 2005). Low-density geochemical surveys have been conducted in many places including Europe, China, Canada and the USA. They have been applied to mineral exploration and resource evaluation, land use management and environmental policy development, and in studies of the health and well-being of humans, animals and plants.

Interest in conducting a regional geochemical survey in the Thomson region of northwestern NSW was sparked by the release of a Report on a similar geochemical survey in the Riverina region of NSW and Victoria (Caritat *et al.* 2004) and ensuing preliminary interpretations (Caritat *et al.* 2005). The methodology has demonstrated that geochemical patterns exist in the surface regolith that pertain to geological and mineralisation features below the cover. The Riverina survey identified the northerly extension of the Au rich Bendigo Zone under the Murray Basin sediments, and identified elevated regolith Au concentrations in catchments containing known Au deposits or occurrences. It also showed anomalous Ag, Pb and Zn concentrations along the eastern margin of the study area, which borders the base metal-rich Lachlan fold belt. Another similar geochemical pilot project was carried out in the Gawler region, which demonstrated the applicability of the method in arid, aeolian-influenced landscapes (Caritat *et al.* 2006).

The Thomson region geochemical survey is one of several activities of the Thomson Orogen Project. The Thomson Orogen Project is a collaborative venture between CRC LEME, the NSW Department of Primary Industries (DPI) and Geoscience Australia (GA). The other activities in the Project include a biogeochemical survey, regolith mapping and geophysical surveys.

1.2 Aims

The Thomson Orogen Project aims to provide stakeholders with pre-competitive data pertaining to the mineral prospectivity of the NSW portion of the Thomson Orogen.

The geochemical survey of the Thomson region aims to:

1. Provide an internally consistent, background geochemical dataset for the Thomson region of northwestern NSW,
2. Help refine the sampling protocol developed in the Riverina and Gawler regions to ensure its suitability for a range of environments across Australia, and
3. Enhance global attractiveness to mineral exploration, and improve our resource management and environmental protection in the Thomson region.

This report provides a detailed record of the project outputs including documentation of field methods and full results. The resulting geochemical dataset is one of the largest pre-competitive datasets available to the mineral and resource exploration industry in this greenfields area of Australia.

1.3 Milestones

A summary of milestones achieved to date in the geochemical survey project are listed in Table 1.

Table 1. Milestones achieved by the Thomson region geochemical survey.

Contacting of landholders	Landholder contacts were obtained and over 150 letters were sent out to gain access to properties for sampling
Field trips and sample collection	Three field trips have been carried out to collect samples for the Thomson geochemical survey: - Reconnaissance field trip: October 2005 - Main field trip: March 2006 - Final field trip: October 2006
Base maps	Maps showing various background information have been prepared
Particle size analysis	Analyses of samples from all field trips have been completed
pH 1:5 and EC 1:5 (soil:water) extracts	Analyses of samples from all field trips have been completed
X-ray diffraction (XRD) analysis	Analyses of samples from all field trips have been completed
Geochemical analysis	Analyses of samples from all field trips have been completed
Geochemical maps	Geochemical maps of outlet sediment samples from all field trips have been completed (this Report)
Database population	Database have been populated with results to date: - Sites descriptions for all field trips entered into GA's DEVIANT and FIELD SITES databases - Chemistry results sent from GA's laboratory to the Database Group (to be entered into OZCHEM)

1.4 Setting

1.4.1 Location

The Thomson Orogen Project area covers an area of 154,521 km^2 and is located in northwestern NSW (Figure 1). The limits of the area were established by the NSW DPI to encompass the NSW portion of the Thomson Orogen and parts of the adjacent Lachlan and Delamerian Orogens. The Queensland Department of Natural Resources and Mines (NR&M) has placed a preliminary boundary around the Thomson Orogen (Figure 2) and current work in northwestern NSW aims to clarify the nature and location of its southern boundary.

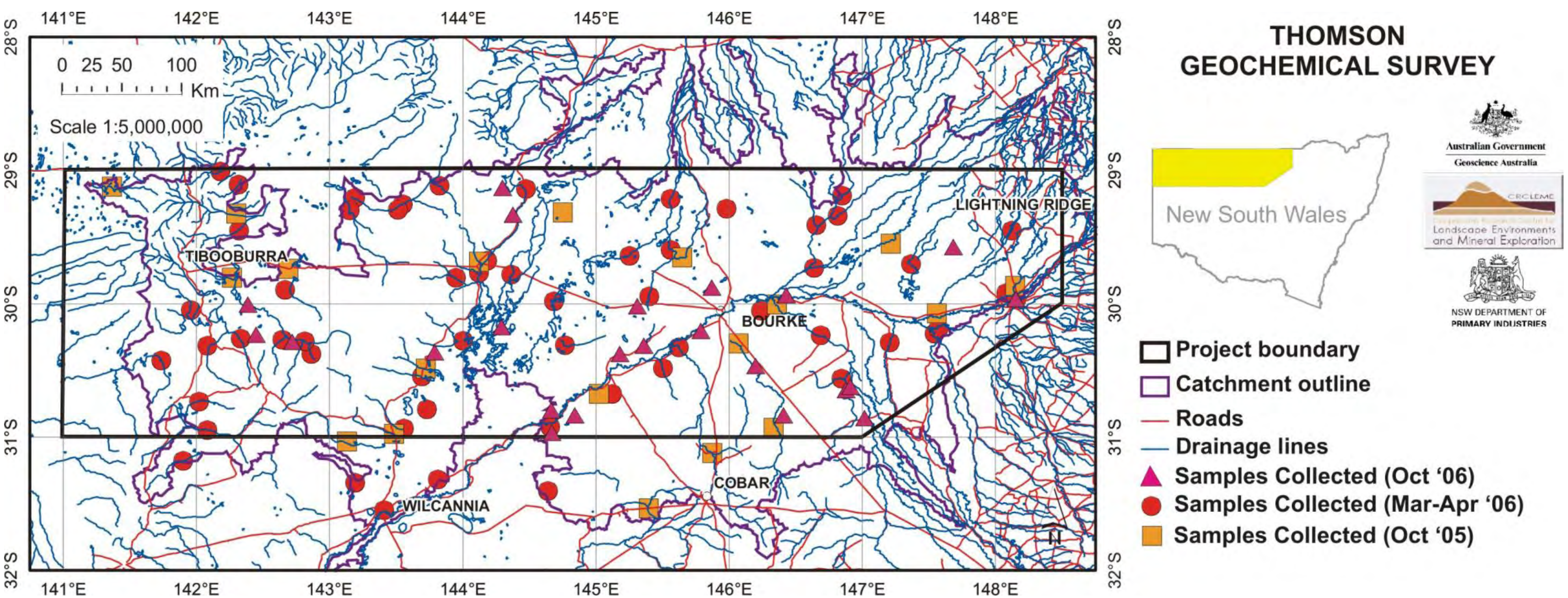


Figure 1. Location of the Thomson Orogen study area (black outline), outline of catchments sampled for the geochemical survey (purple line) and location of sampling sites for the 3 field trips.

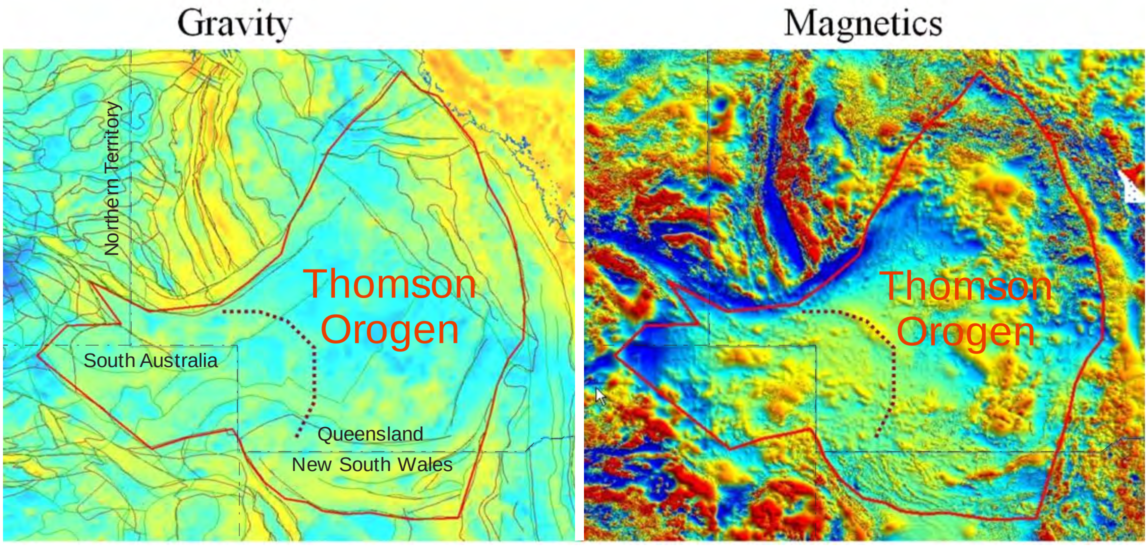


Figure 2. Preliminary boundary of the Thomson Orogen as defined by Queensland NR&M with gravity and magnetics as a background images (modified from Qld NR&M).

The outline of the catchments sampled for the Thomson geochemical survey differs from the NSW DPI boundary. This is because it encompasses the catchments sampled, whether they be wholly or partially within the boundary as defined by NSW DPI. The catchment outline delimits an area of 152,504 km^2 (Figure 1), which encompasses parts of the following 1:250,000 map sheets: Milparinka, Cobham Lake, Broken Hill, Urisino, White Cliffs, Wilcannia, Yantabulla, Louth, Barnato, Enngonia, Bourke, Cobar, Angledool, Walgett, Nyngan and Moree.

1.4.2 Climate

The Thomson region is characterised by hot dry summers and cold winters. The western portion of the region is classified as desert, with low rainfall averaging <250 mm/yr. The eastern portion of the region is classified as grassland, with uniform rainfall averaging 250-500 mm/yr (Bureau of Meteorology 2005) (Table 2, Figure 3).

Table 2. Climate statistics for key towns in the Thomson region.

Climate averages for Station: 052088 WALGETT AIRPORT AWS
Commenced: 1993; Last record: 2004; Latitude (deg S): -30.0372; Longitude (deg E): 148.1223; State: NSW

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean daily max temp (ºC)	35.2	33.9	31.6	27.2	22.3	19	18.3	20.8	24.8	28	31.4	34.3	27.2
Highest daily max temp (ºC)	45	45.2	42	35	29.8	27	26	31.5	38	40	45	44.1	45.2
Mean daily min temp (ºC)	20.1	19.9	16.4	11.5	7.6	4.9	3.5	4.7	8.3	11.7	15.8	18.3	11.8
Lowest daily min temp (ºC)	9	11	7	2	-3	-4	-6	-5	-1	1	3.5	6.9	-6
Mean monthly rainfall - mm	114	33.9	21.8	10.7	76.9	26.5	34.6	16.5	39.6	42	17.6	57.7	491.3
Mean no. of rain days	8.5	6.5	2.8	2.2	4.7	5	4.3	3.5	6.5	5.3	5	6.5	60.6
Mean no. of clear days	8	6.8	14.8	17.3	11.5	7.3	13.3	18.8	17	14	11	13.5	153
Mean no. of cloudy days	9.3	9.8	3.3	3.3	7	6	6.8	4.8	4.5	7.5	9.5	7.3	78.8

Climate averages for Station: 046037 TIBOOBURRA POST OFFICE
Commenced: 1886; Last record: 2004; Latitude (deg S): -29.4345; Longitude (deg E): 142.0098; State: NSW

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean daily max temp (ºC)	36.1	35.2	32.1	27	21.9	18.3	17.8	20.3	24.5	28.3	32	34.9	27.4
Highest daily max temp (ºC)	47.6	46.5	45	38.3	34.4	28.9	31.7	34.1	42.2	42.4	44.8	46.7	47.6
Mean daily min temp (ºC)	21.6	21.4	18.4	13.7	9.5	6.5	5.4	6.9	10.2	13.9	17.4	20.1	13.8
Lowest daily min temp (ºC)	5.6	5	2.8	1.7	-1.1	-2.5	-2.8	-0.6	0	-1	3.9	5.6	-2.8
Mean monthly rainfall - mm	27.3	29.7	23.7	15	18.1	16.4	16.6	12	12.2	18.7	15.9	22.2	227.9
Mean no. of rain days	2.7	2.7	2.3	1.9	2.6	2.8	2.9	2.5	2.4	3	2.8	2.8	31.4
Mean no. of clear days	19.1	16.8	20.3	19.6	17.4	17.5	19.4	21.4	21.5	19.7	17.8	19.1	229.6
Mean no. of cloudy days	3.9	3.7	3.2	3.5	5.6	5.4	4.4	3.8	3.4	4.2	4.3	4.7	50.1

Climate averages for Station: 048013 BOURKE POST OFFICE
Commenced: 1871; Last record: 1996; Latitude (deg S): -30.0917; Longitude (deg E): 145.9358; State: NSW

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean daily max temp (ºC)	36.3	35.3	32.3	27.4	22.2	18.5	17.9	20.5	24.5	28.8	32.6	35.3	27.6
Highest daily max temp (ºC)	49.7	48.3	46.7	41.1	35	30	28.9	34.4	37.8	43.3	45.6	48.9	49.7
Mean daily min temp (ºC)	21	20.4	17.5	12.9	8.7	5.9	4.6	6.2	9.2	13.2	16.7	19.4	12.9
Lowest daily min temp (ºC)	8.9	10.6	1.7	1.7	-2.8	-3.9	-3.3	-3.3	-1.7	1.7	3.3	5	-3.9
Mean monthly rainfall - mm	41.9	42.2	34.8	27.5	30.4	27.3	23.4	20	19.9	26.3	29.1	32.2	355.1
Mean no. of rain days	4	4.1	3.8	2.8	4	4.3	4.4	3.7	3.6	4.4	3.9	4.2	47.2
Mean no. of clear days	17.5	15.5	18.8	18.2	17.1	15.4	17.5	18.5	19.1	18.4	16.8	18	210.6
Mean no. of cloudy days	4.7	4.8	4.4	4.2	5.8	6.7	5.3	4.6	3.6	4.8	4.2	4.8	57.7

Climate averages for Station: 046042 WHITE CLIFFS POST OFFICE
Commenced: 1901; Last record: 2004; Latitude (deg S): -30.8506; Longitude (deg E): 143.0897; State: NSW

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean daily max temp (ºC)	35.7	34.9	31.6	26.3	21.3	17.6	17.2	19.7	23.9	27.9	31.5	34.5	26.9
Highest daily max temp (ºC)	48.6	46.9	44.1	37.9	31.9	28	28.8	33	39.5	41.7	44.8	45.8	48.6
Mean daily min temp (ºC)	20.6	20.4	17.1	12.3	8.2	5.2	4	5.6	8.9	12.8	16.3	19.2	12.6
Lowest daily min temp (ºC)	12.8	8.8	8.8	3	-0.5	-2.3	-3.3	-1.7	0.2	2	3.4	6.8	-3.3
Mean monthly rainfall - mm	27.1	26	22.9	15.7	20.9	17.9	17.5	15.8	15	23.4	18.4	25.6	246.2
Mean no. of rain days	2.9	2.7	2.4	2.2	3.4	3.5	3.7	3.5	2.9	3.6	2.9	3	36.6
Mean no. of clear days	16.2	15.1	17.7	16.3	12.7	12.8	14.7	16.4	16.7	15.6	14.7	16.1	185.1
Mean no. of cloudy days	5.2	4.5	4.1	5	8.3	7.5	7	5.4	5.5	6.2	6.5	5.9	71.2

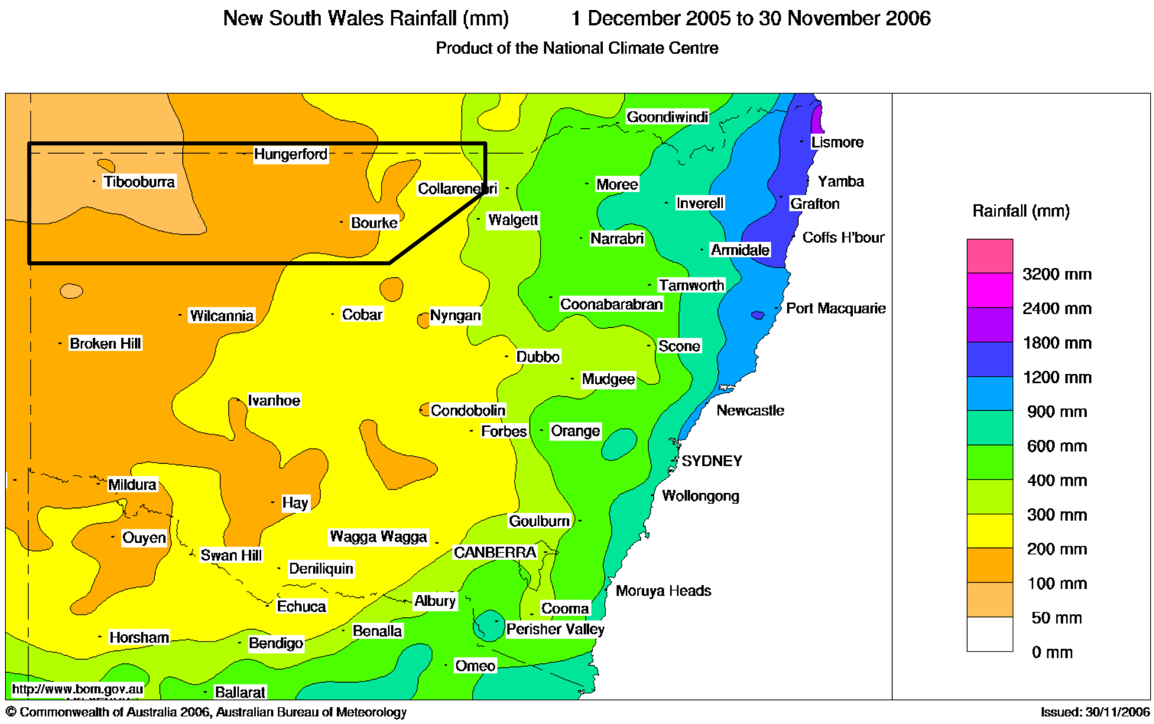


Figure 3. Rainfall for NSW between 1 December 2005 and 30 November 2006 (Bureau of Meteorology 2006).

1.4.3 Geology and regolith

The following was taken directly from Greenfield *et al*. (2006):

> *"The Thomson Orogen is one of the most poorly understood orogenic belts in Australia. It covers a vast area, mostly throughout south-central Queensland, but extends into north-western NSW. […/…] The NSW portion of the Orogen incorporates the entire southern margin with boundaries against the Delamerian and Lachlan orogens. […/…] Named by Kirkegaard (1974) after the Thomson River in central Queensland, it is part of the greater Tasmanides of eastern Australia. New geochronology data suggest the Thomson Orogen has undergone a history distinct to the Lachlan Orogen (Draper 2005). Neoproterozoic to Middle Cambrian sedimentation and ~500 Ma deformation recognised in the Thomson Orogen is more akin to the Kanmantoo and Adelaide fold belts. A felsic magmatic/volcanic event at ~470 Ma that is not recognised in the Lachlan Orogen, as well as an abrupt change in structural grain at the contact between the orogens suggests some differences in their early Palaeozoic histories (Draper 2005). The orogens share a similar post-Middle Devonian history, with deformed orogenic rocks unconformably overlain by epicratonic Late Devonian infrabasins. The Thomson Orogen is in turn overlain by the Permian Cooper Basin, and Mesozoic Great Australian Basin (which incorporates the Eromanga Basin)"* (Figure 4, Figure 5).

Regolith cover also includes sediments from the Cainozoic Lake Eyre, Bulloo-Bancannia and Murray-Darling basins.

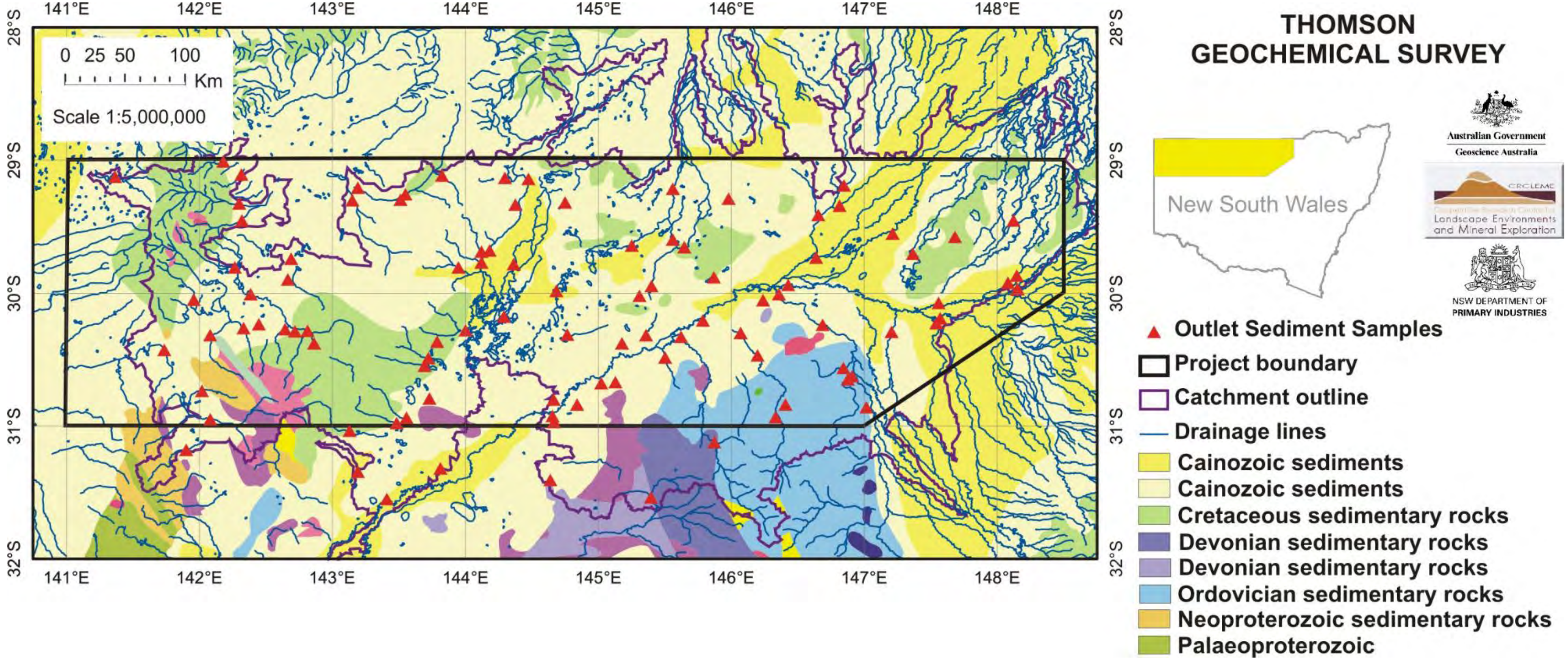


Figure 4. Bedrock geology of the Thomson region (from 1:2.5 M data set; Geoscience Australia 2007a).

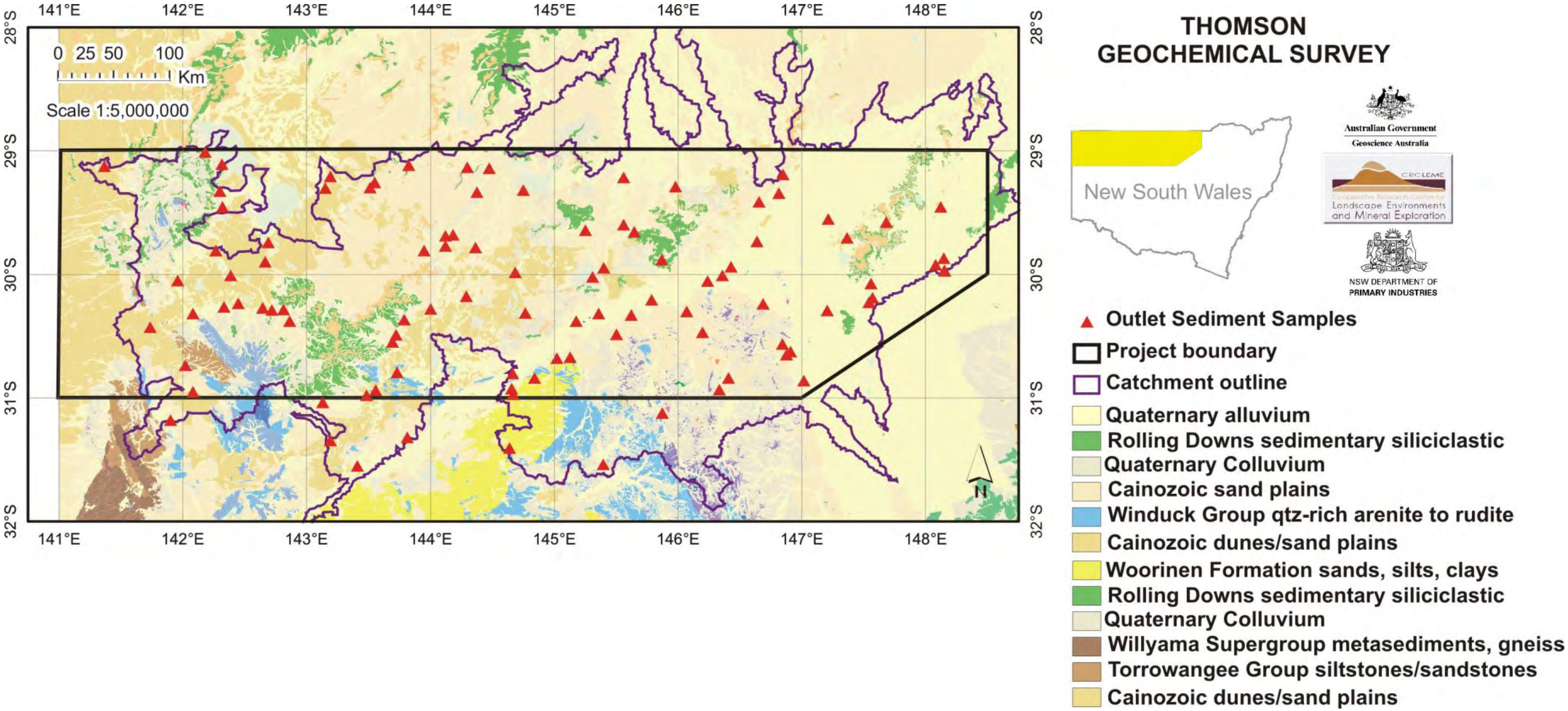


Figure 5. Surficial geology of the Thomson region (from 1:1 M data set; Geoscience Australia 2007b).

The crustal elements (Shaw *et al.* 1996) underlying the Thomson geochemical study area are shown in Figure 6. The oldest element is the Proterozoic Curnamona Craton in the Broken Hill region to the southwest. The Lachlan Fold Belt is divided into an East Lachlan element along the eastern margin of the study area and a West Lachlan element under the Cobar Basin in the southeast and further along the southern margin of the map. A northwest-trending sliver of Thomson Orogen, the Wonnaminta Block, is located between the Curnamona and West Lachlan elements. This merges to the north with the main Thomson Orogen mass, which occupies the entire north-central part of the map and has an arcuate boundary with the flanking crustal elements to the southwest, south, southeast and east.

Various mineral commodities are found in the Thomson region (Figure 7). Of particular interest are Pb, Zn and Sn near Broken Hill, Au near Tibooburra and Au, Cu and Pb near Cobar.

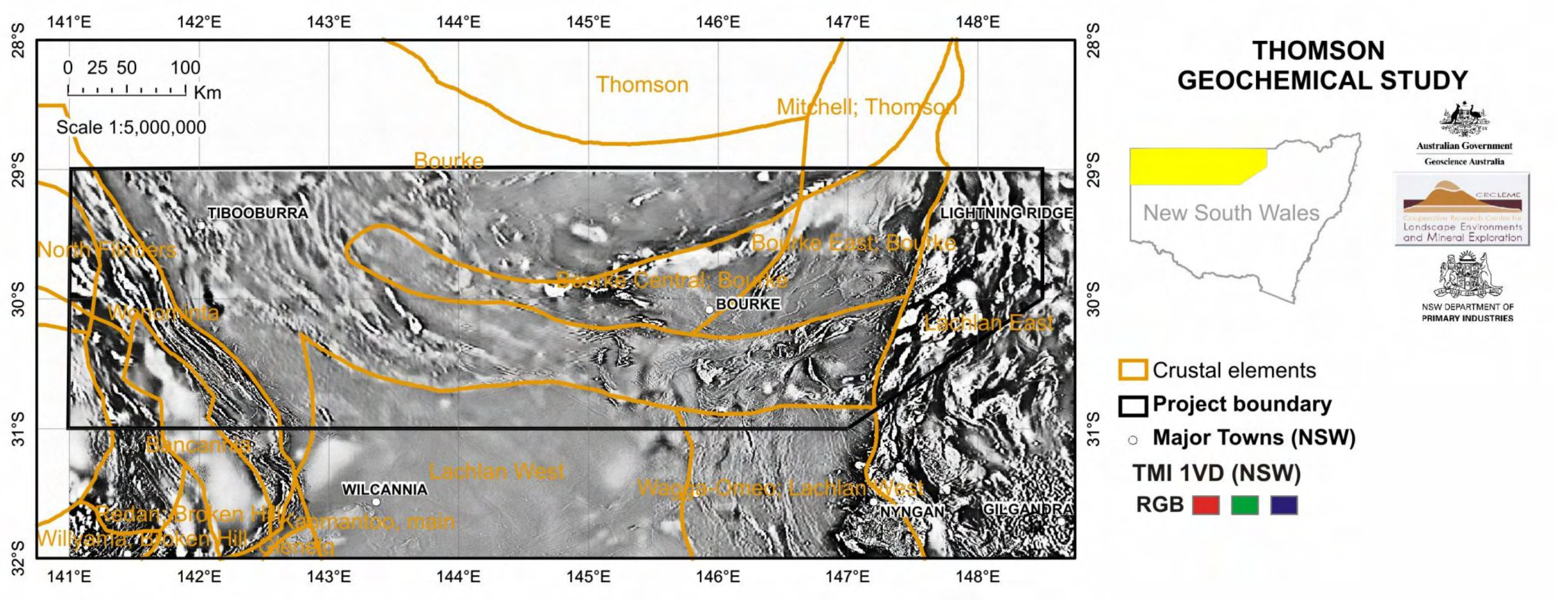


Figure 6. Crustal elements of the Thomson project area (Shaw *et al.* 1996).

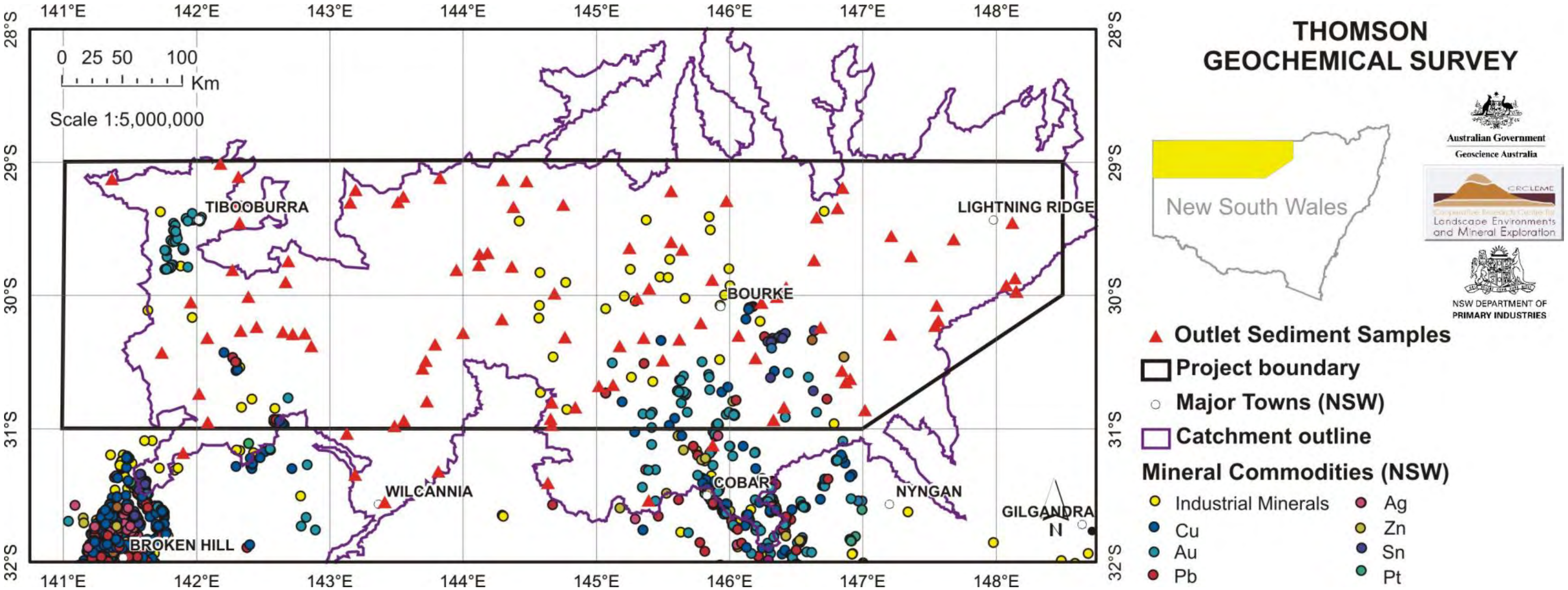


Figure 7. Major mineral commodities in the Thomson region.

Various regolith and land system studies have been conducted in the Thomson region including works by Walker (1991), Gibson (1999a,b) and Hill (2005a,b). The study area is dominated by transported regolith with very little outcrop visible (Figure 8, Figure 9). Outcropping bedrock forms hills and ranges including the Tibooburra inlier, Barrier Ranges and Koonenberry Mountain in the west, and Church Hills, Mount Gunderbooka and Mount Oxley, in the central to eastern part of the region. In the east, black cracking clays, clay pans and gilgai are associated with the expansive Quaternary alluvial plains of the Darling, Barwon, Bogan and Warrego River systems (Walker 1991). Away from the alluvial plains a veneer of aeolian sand plains and dunes cover much of the region. The Bulloo River overflow in the northwest feeds salt lakes systems including Cobham Lake and Bancannia Lake. The lakes contain lacustrine sediments and associated evaporites, with fringing aeolian clay and sand lunettes (Hill 2005b). The alluvium of ephemeral streams in the west and southeast are principally composed of reworked aeolian material. Erosional rises and plains north of White Cliffs relate to silicified palaeodrainages. They form tablelands with stony surficial lag on the remnant surfaces (Walker 1991). Regolith carbonates and Fe- and/or Mn-nodules were commonly observed in the regolith profiles sampled during this study.

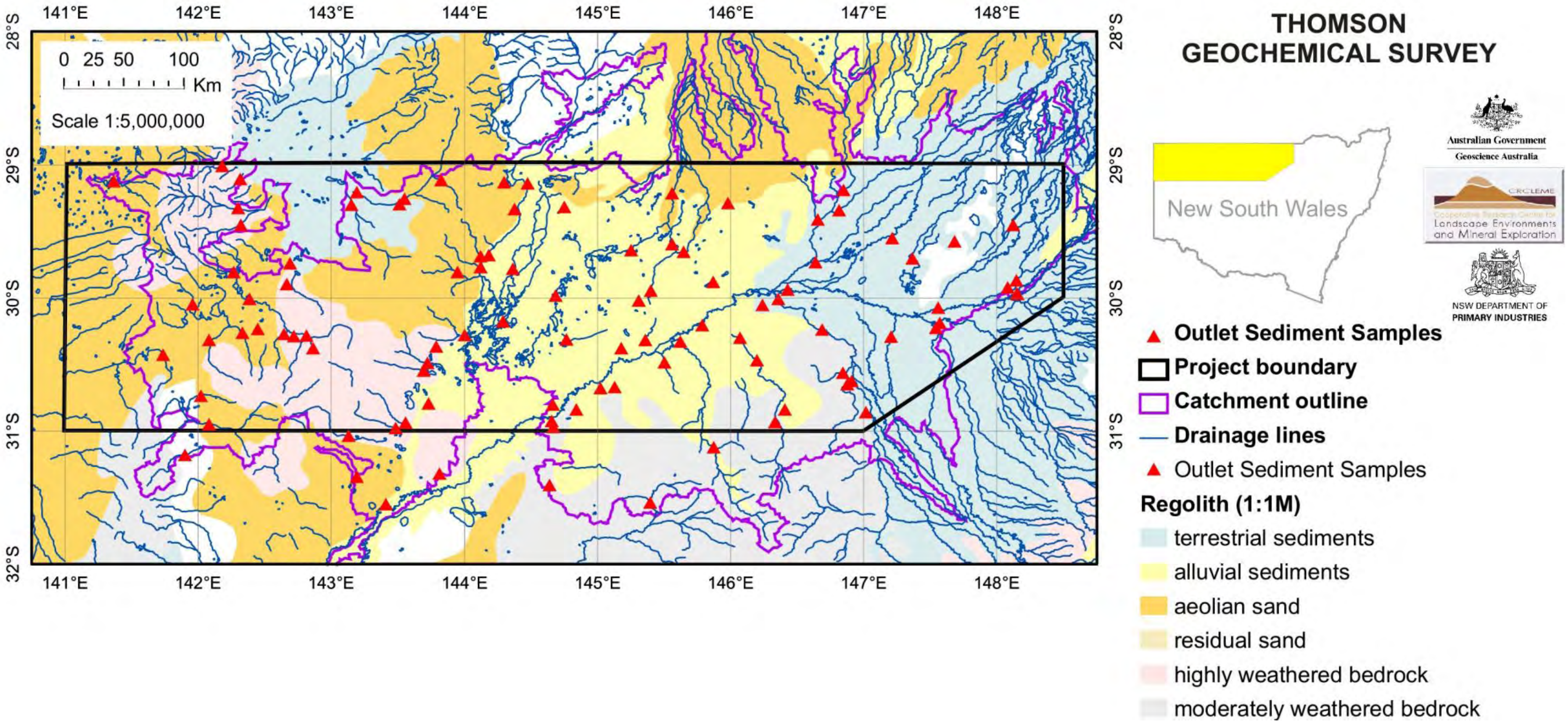


Figure 8. Regolith of the Thomson region (from 1:5 M data set; Geoscience Australia 2007c).

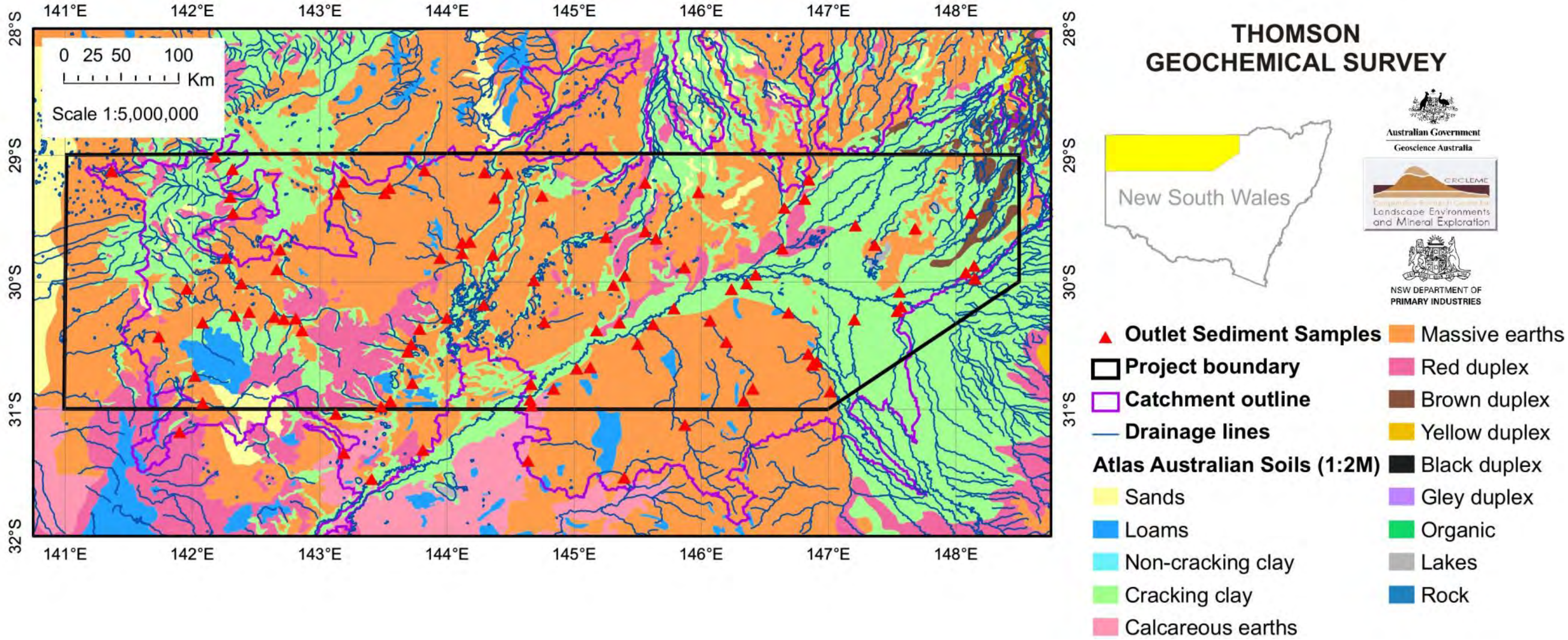


Figure 9. Soils of the Thomson region (from 1:2 M Atlas of Australian Soils data set: Bureau of Rural Sciences 2007).

1.4.4 Hydrology

The eastern part of the study area consists of the Barwon-Darling River system including their tributaries named the Culgoa, Bokhara, Narran, Bogan, Macquarie and Warrego Rivers. These anastomosing rivers and creeks drain the northeast and southeast portions of the study area and form part of the Murray-Darling Basin catchment. These highly sinuous rivers have gradients less than 0.001 (Riley 1988). They do not flow throughout the year, but generally retain stagnant waterholes in the deep river channels between rain events. There has been significant change in flows down these rivers as a result of agriculture. Weirs, dams and irrigation channel diversions for irrigation have significantly reduced the flows to the Darling River. During flood events, the rivers break their banks to cover extensive floodplains extending laterally for many kilometres beyond their banks (Figure 10). Fine silts and clays are deposited on these floodplains during these events, as rapid drainage is inhibited by their low gradients.

The rivers and creeks further west remain relatively untouched by agriculture. Highly variable rainfall results in ephemeral streams. These creeks and rivers only flow during flood events. The Paroo River system and Bulloo River overflow run south into a series of overflows, swamps and lake systems that receive flood waters during high rainfall events. Figure 11 shows the river basins in the Thomson study area.

a)

b)

Figure 10. The broad floodplains of the Barwon River near Brewarrina were completely inundated when the Barwon River broke its banks in 1988. (Figure 10a: image number 3058; Figure 10b: image number 3064; Source: State Emergency Service of NSW 2006a,b).

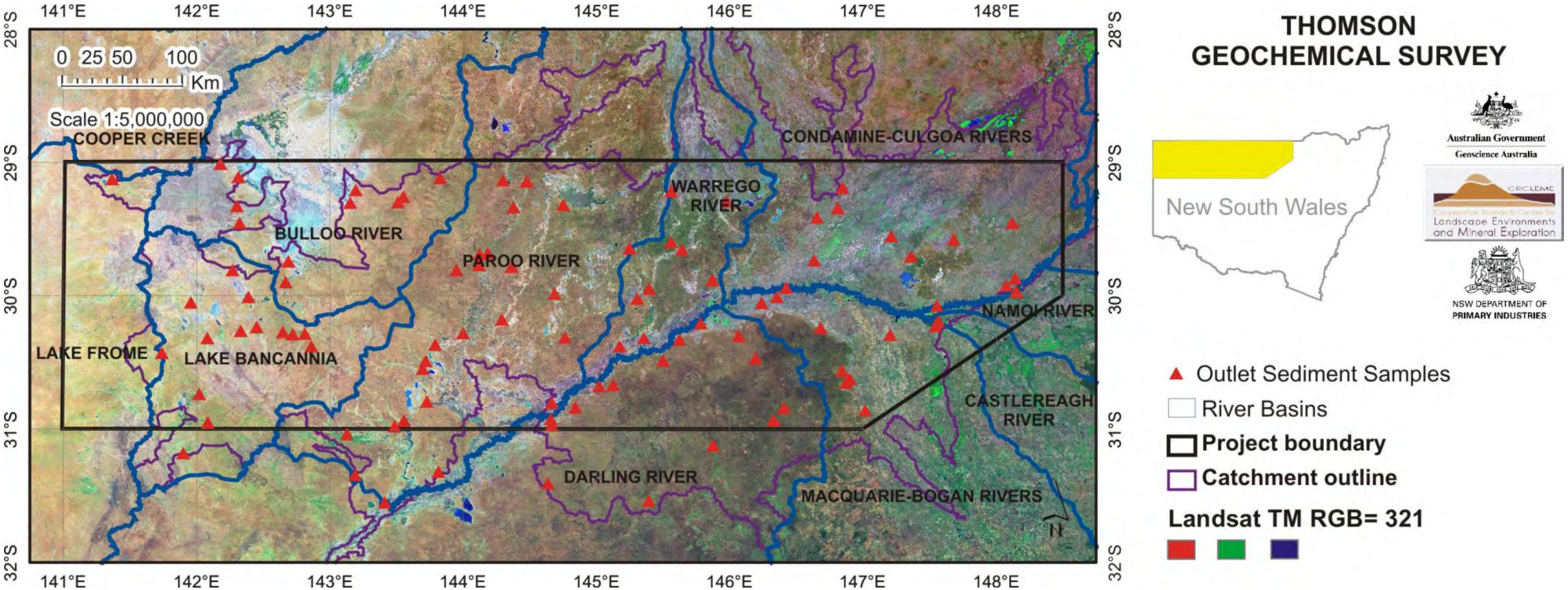


Figure 11. Landsat TM (RGB=321) image showing the major river basins in the Thomson region.

1.4.5 Vegetation and land use

The dominant vegetation communities at the localities targeted for the geochemical survey were Black Box, Coolibah, Bimble Box and River Red Gum. The major vegetation types with their associated land systems are described by Walker (1991):

- Mulga – sand plains and dune fields, hard red ridges and flats, and ranges and hills
- Bimble Box and Pine – plains and ridges with Bimble Box and White Cypress Pine, ranges and hills with gum and ironbark, ranges and hills with Mallee and White Cypress Pine
- Saltbush and Bluebush – stony rises and associated plains, riverine plain
- Mallee – sand plains and dune fields
- Belah and Bluebush – sand plains and dune fields with Belah and Rosewood
- Gidgee and Brigalow – sand plains and alluvial plains
- Coolibah – floodplains
- Mitchell Grass – floodplains
- Black Box and/or River Red Gum – floodplains

The region is predominantly land leased for pastoral and agricultural use. The most intensive cultivation is cotton and dryland agriculture such as wheat. This mostly occurs in the east, associated with the riverine plains. Sheep and cattle grazing dominates the low rainfall areas in the west. Numerous national parks and reserves are found in the region including Sturt National Park in the west, Paroo-Darling National Park and Nocoleche Nature Reserve in the central portion and Gundabooka and Culgoa National Parks in the east (Figure 12). The red/orange patterns shown in the east of the Landsat TM image (Figure 13) along the Darling/Barwon River systems are cultivated paddocks.

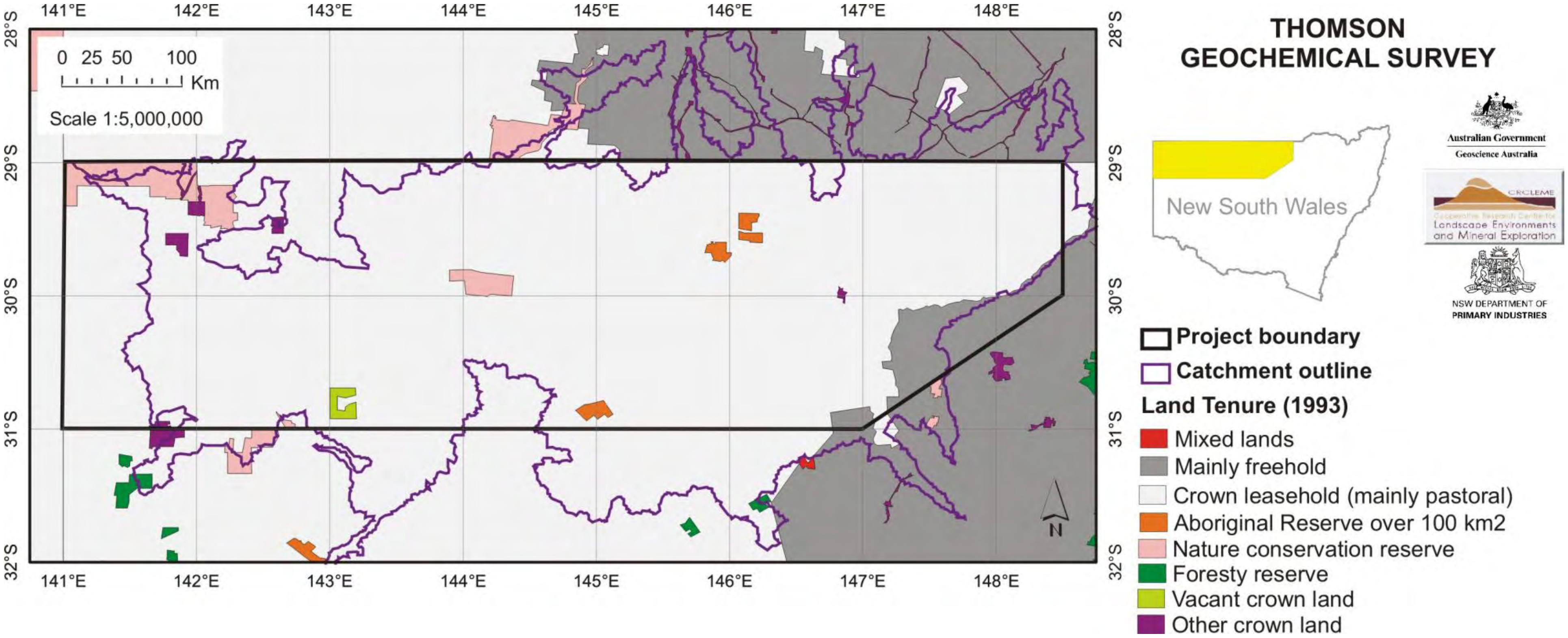


Figure 12. Land tenure in the Thomson region in 1993 (Geoscience Australia 2007d).

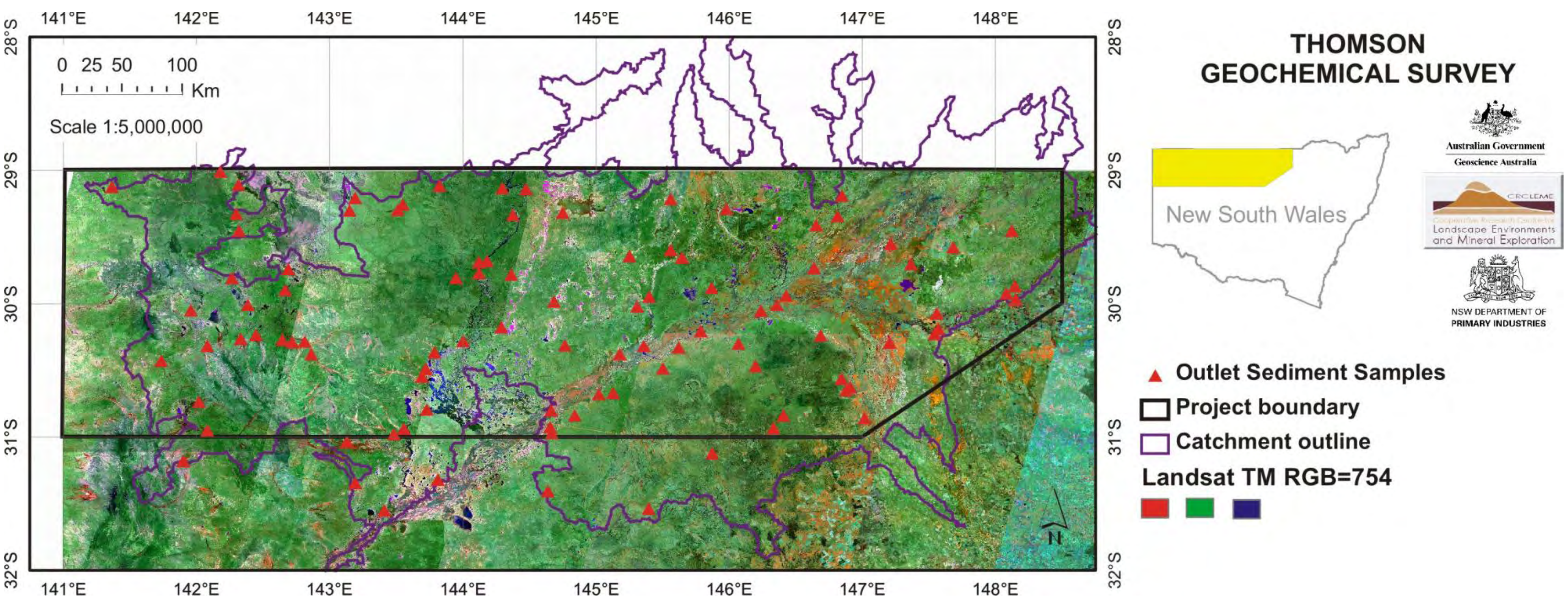


Figure 13. Landsat TM (RGB=754) mosaic image of Thomson region.

2 METHODS

2.1 Regolith field methods

The main sampling medium targeted for the geochemical survey was overbank (or floodplain) sediments. These are deposited as fine-grained sediments settling from receding floodwaters. They provide a sampling medium that is ubiquitous and comparable throughout Australia and beyond. This sampling medium was selected because it is more likely than other media to represent an average composition of entire catchments, enabling low-cost sampling of large areas (Ottesen *et al*. 1989, Bølviken *et al.* 2004). It also exhibits a high geochemical signal-to-noise ratio due to the fine-grained nature of the material. Overbank sediments are commonly used in geochemical surveys, e.g., McConnell *et al.* (1993), Eden and Bjørklund (1996), Volden *et al*. (1997), Swennen *et al*. (1998) and Pavlovic *et al*. (2004).

The sampling protocol used in the Thomson geochemical survey was adapted from Äyräs and Reimann (1995), itself the basis for the Forum of European Geological Surveys (FOREGS) geochemical mapping field manual (Salminen *et al*. 1998). Modifications were made to the method in light of lessons learned during the Riverina and Gawler pilot projects. The <180 and <75 µm fractions were chosen for analysis here because they require no milling, which adds costs and may introduce contamination. The <180 µm fraction should still be representative of the bulk sediments (except in some aeolian landscapes) and should be sufficiently fine-grained to exhibit detectable concentrations for most elements. The <75 µm fraction is representative of the finer (mostly silt- and clay-sized) sediment and regolith particles and exhibits an even stronger signal-to-noise ratio.

2.2 Site selection

2.2.1 Theoretical determination of sampling sites

Before going out in the field, theoretical (target) sampling sites near the outlet of catchments were established according to the following procedure:

- Datasets used:
    - GEODATA 9 Second Digital Elevation Model (DEM-9S) Version 2 (ANZLIC unique identifier: ANZCW0703005624)
    - Australian Nested Catchments and Sub-Catchments at 500 km^2 scale (ANZLIC unique identifier: ANZCW1202000005) produced in 2000 by the Centre for Resource and Environmental Studies (CRES), Australian National University, Canberra (Hutchinson *et al*. 2004)
- The national DEM and nested catchment coverages were chosen to ensure that future geochemical surveys are fully comparable with the current survey
- The lowest point (outlet) of each catchment was determined by hydrological analysis using the ArcHydro® v 1.1 Beta 2 extension of ESRI's ArcGIS® software (Whiteaker and Maidment 2004)
- Using ArcHydro®, the DEM was filled and flow direction and flow accumulation analyses were conducted. Finally drainage point processing was conducted to determine outlet points
- The target sampling sites were then culled to an achievable number of samples by:
    - Removing "dangle" catchments with perimeters of <300 m
    - Merging those catchments <500 km^2 in area with adjacent larger catchments and removing obsolete outlet points
    - The sample sites were then carefully adjusted using drainage and road coverages, and field considerations such as land accessibility, landscape position and possible anthropogenic interferences at the site

The sites established using this technique are not on a uniform grid and their position and distribution are controlled by the regional drainage systems.

2.2.2 Determination of priority of sampling

Reconnaissance trip sample priorities were set by selecting the top 20 largest catchments that had sample points within a 10 km buffer of major roads.

Sample collection priorities for the next field trips were set as follows (Figure 14):

- The sample points fall within the NSW DPI Thomson project boundary,
- Weighted scores were assigned for drainage definition (visual estimate), using satellite imagery and drainage shapefiles, and
- Weighted scores were assigned for depth to basement using the contoured map of Eromanga basin base of Mesozoic depth.

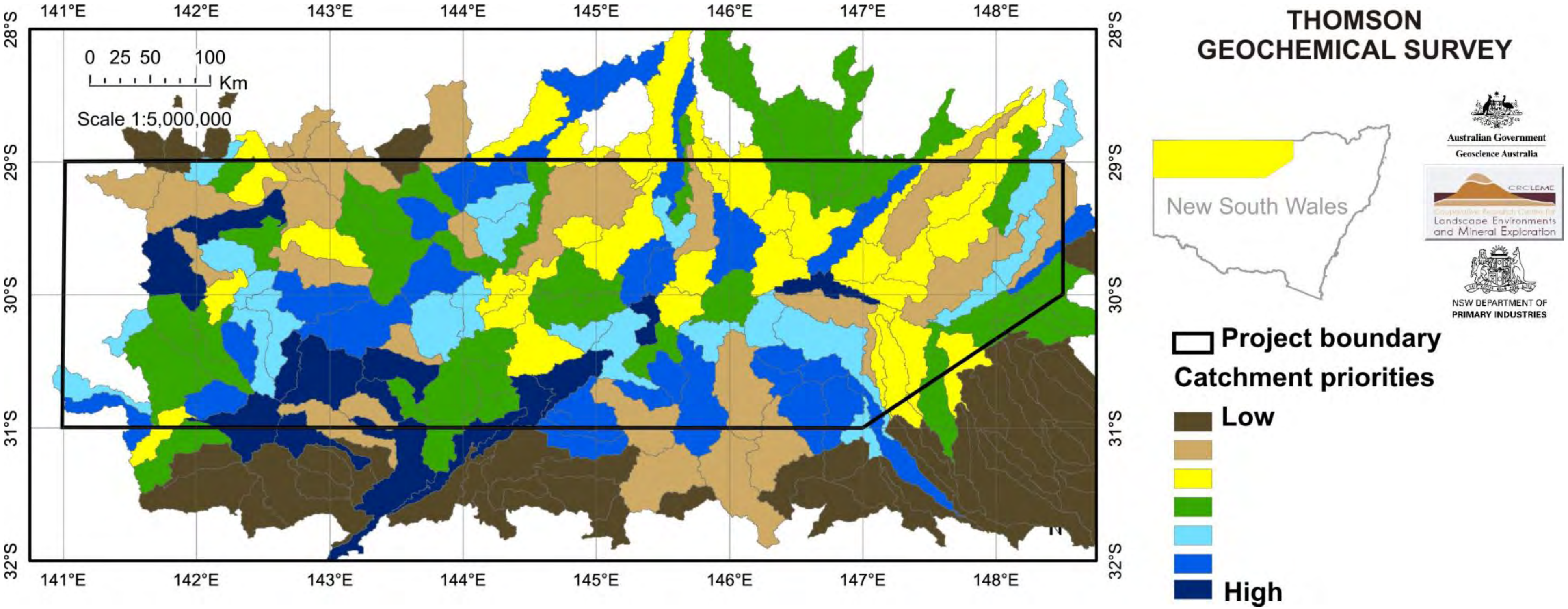


Figure 14. Map of catchment priority values for ranking of sampling sites.

2.2.3 General criteria for in field site selection

Once a field party arrived near the target sampling site, a number of decisions were taken to finalise where the holes were augered. The following criteria were developed for this purpose:

- Sample at a representative location (avoid those sites that are atypical of the location)
- Sample upstream of roads, bridges, fences, buildings and dams
- To avoid contamination, sample at least:
    - 200 m upstream/upslope of roads (particularly major roads)
    - 100 m upstream/upslope of buildings
    - 50 m upstream/upslope of fields
    - 5 m upstream/upslope of fences
- Avoid sites that are obviously disturbed by human activities such as camping (e.g., presence of fire places, cans and/or bottles), grading, mining, landfills, rehabilitated sites, etc.
- Sampling near or within an open cluster of established (mature) trees ensures that the land surface is at 'natural' level (no massive recent erosion, no major land rehabilitation).
- Obtain access permission to private land, national parks and reserves prior to sampling. Otherwise, move samples slightly upstream, bearing in mind the size of the catchment being sampled.
- Where defined creeks are present, sample the floodplain/overbank sediment (not within the channel).
- In sand dune dominated terrain where no creeks are present, still sample at the lowest point in the catchment in the swale of a dune, where the finer grained sediments and clays accumulate. It is becoming clear that most dune systems in Australia are fairly stationary and well vegetated (Fitzsimmons 2006, Sheard *et al.* 2006). A study by Sheard *et al.* (2006) found that the sand dunes in the Great Victoria Desert have been stable for about 70 ka and secondary migration of Au into the dune occurred within 10-20 ka. This indicates that dune swales are an appropriate sampling location where overbank sediments are absent.

General comments for sample collection:

- Be mindful of contamination by sunscreen, watches, jewellery such as rings and cross-contamination by dirty augers, shovels, etc. Such contamination is easily avoided by wearing gloves (e.g., non-coloured leather) while handling the sampling material or using a plastic scoop, and 'conditioning' the digging tools with the soil at the site to remove traces of soil from previous site.
- Take measures to preserve the selected site until the sample is taken (i.e., don't drive or walk over the area to be sampled).
- When the surface sample is collected, use the white plastic scoop.
- Refill all holes and restore surface to pre-existing conditions as much as possible

2.3 Sampling protocols

The fieldwork for the regolith component of the Thomson region geochemical survey took place in three phases:

- Reconnaissance field trip: 09 October – 17 October 2005 (Patrice de Caritat, Megan Lech, Bill Reid),
- Main field trip: 27 March – 13 April 2006 (Megan Lech, Adrian Fisher, Karen Hulme), and
- Final field trip: 16 October – 25 October 2006 (Patrice de Caritat, Megan Lech, Karen Hulme, Andrew McPherson).

2.3.1 Sample collection

At each site, two ~10-cm depth intervals were sampled: one from 0 to 10 cm below the root layer, if present (top outlet sediment, TOS), and another at depths generally ranging from ~60 to 90 cm (bottom outlet sediment, BOS). To minimise inherent soil heterogeneity issues, the TOS sample is collected from an area ~30 x 60 cm, whilst the BOS sample is a composite of 2 to 6 holes augered to the same depth. For each interval, two bags of ~3 kg of material were collected.

All together, 99 catchment outlet sites have been sampled over the area, giving an average sample density of 1 per 1540 km^2, and all geochemical results are presented in this report.

Additionally, at 57 sites sampled during the main and final field trips, at least 150 g of material was collected from a 15 cm interval form 10 to 25 cm depth (shallow outlet sediment, SOS) for multi-element mobile metal ion (MMI-M®) determination. These results are also presented herein.

More detail on sampling procedures for the above sample types is given below.

Sampling of the TOS

- Remove vegetation and organic litter, and scrape off the root layer (if any) over an area of ~50 x 80 cm
- Loosen the soil down to 10 cm depth with a crowbar over an area of ~30 x 60 cm. It is possible that some samples may experience minor contamination from (blue) paint flakes coming off that tool. This is not considered to be a significant concern (the paint was analysed and shown to mostly consist of Ti)
- Stick adhesive sample labels on the outside of 2 plastic sample bags and place the corresponding paper labels into the bags. Additionally, the bags are labelled with a black permanent marker. One draw-string calico bag is also labelled with a black permanent marker
- With a white plastic scoop, collect the 0-10 cm sample interval into 2 plastic sample bags, evenly distributing the sample interval between both bags. Collect ~3 kg of sample in each bag
- Fold down several times the top of the bags and staple twice at the top
- Place the 2 like (e.g., TOS) samples in the labelled calico bag and close with tie string

Sampling of the BOS

- With a power or hand auger drill at least 3 holes to ensure a sample representative of the location is taken
- Once the hole is at the required starting depth, clean out the inside of the hole with a gloved hand to ensure no wall or surficial material is collected
- Stick adhesive sample labels on the outside of 2 sample bags and place the corresponding paper labels into the bags. Additionally, the bags are labelled with a black permanent marker. One calico bag is also labelled with a black permanent marker
- With a clean hand auger, collect the regolith material and place into the sample bags. As with the TOS, collect 2-3 kg of sample in each bag
    - To ensure the sample is a composite, collect alternatively from each of the holes, ensuring that each bag has a mix of materials from all holes over the sampled depths
    - On rare occasions, the material could not be retrieved with the hand auger (e.g., to loose or too hard). In those cases, the material was carefully loosened if needed (but not brought to the surface) with the power auger and collected by reaching down the hole with a gloved hand

- Where the soil was too hard for power or hand auger combinations, a small trench had to be dug (~50 cm wide and between 70 and 150 cm long) to the desired depth using a shovel and crowbar
  - Collect the disaggregated material from several locations across the trench floor with a white plastic scoop
- At some locations, hardpans (e.g., carbonate) may occur at or before reaching the targeted sample depth. In such cases, the samples were collected from auger holes bottoming out above the hardpans to avoid secondary modifications of the sampling medium sought
- Fold down several times the top of the bags and staple twice at the top
- Place the 2 like (e.g., BOS) samples in the labelled calico bag and close with tie string

Sampling for MMI

- Clean out the ~30 x 60 cm by 10 cm deep hole previously dug for TOS, and loosen up the soil down to a depth of 25 cm using the crowbar
- Stick adhesive sample label on the outside of MMI sample bag and place the corresponding paper label into the bag.
- Collect an aggregate sample consistently between 10-25 cm of at least 150 grams was using a plastic scoop and place in plastic bag
- Fold down several times the top of the bags and staple twice at the top

2.3.2 Sampling equipment

The equipment used for collection of samples is as follows:

- Shovel
- Crowbar
- Tanaka JEA-50 petrol driven power auger with 6 inch bit
- 2 hand augers
- Paper field sampling forms
- Large screwdriver (for scraping caked soil off auger, if needed)
- Measuring stick
- White plastic Scoop
- Leather gloves
- 25 x 35 cm (150 μm thick) plastic sample bags for TOS and BOS
- 15 x 20 cm plastic sample bags for MMI
- 30 x 45 cm calico (cotton) bags
- Stapler and staples
- Black markers, pens, pencils
- Adhesive labels for plastic bags
- Paper labels for inserting into plastic bags
- Field sample forms
- Inoculo™ pH testing kit
- Munsell™ Colour Chart
- RTMAP Redbook
- 10% HCl (test for soil carbonates) in a 45 mL plastic dropper
- 10% H_2O_2 (Fe/Mn reaction test) in a 45 mL plastic dropper
- Ear plugs, dust masks

2.3.3 Field measurements

Munsell soil colour

Soil colour is important as it gives information as to whether it is an oxidising or reducing environment. Red soils are more oxidised and contain more Fe-oxides whereas the more yellow soils contain more goethite. Fe-oxides may absorb or adsorb metals of interest including As and Au. For instance, Pell *et al.* (1999) found that Great Victoria Desert soils (which encompasses this study area) range in colour from yellow in the south grading through to red in the north.

Munsell soil colour was determined in the field using a Munsell™ coil colour chart (Munsell Color Company 1975) according to standard protocols outlined by Northcote (1979). Moist and dry hue, value and chroma (e.g., 7YR5/4) were recorded on the sampling forms.

Soil colour was determined on a freshly broken soil aggregate held as close as possible to the colour chip. Where soil colour did not match the colour chip, the closest chip colour was used. Care was taken to ensure the broken surface was not smeared as this may produce an incorrect colour of the soil matrix. The aggregate was then moistened and soil colour was recorded once the visible moisture film disappeared from the soil aggregate's surface.

Field pH

pH provides information that can be related to element mobility and stability within the regolith materials. It can be correlated with various chemical and environmental factors that influence soils and plants. It must be recognised, however, that soil pH can vary markedly within a short distance.

The Inoculo™ Soil pH Testing Kit (Figure 15) designed by the CSIRO Division of Soils was used to determine in-field soil pH measurements as follows:

- A 2 mm sieve was used to sieve out any coarse material
- A teaspoon of soil was placed on a white plastic tray provided in the test kit
- A few drops of the green dye indicator liquid was placed on the soil
- A stick was used to mix the indicator liquid and the soil
- The white $BaSO_4$ powder was lightly dusted over the moist soil
- Although the indicator changes immediately, it was left a few minutes before the colour was matched to the accompanying indicator card to determine the pH value
- The colour chosen should match the dominant colour of the $BaSO_4$ powder

Figure 15. Inoculo soil pH test kit used for the survey.

2.3.4 Sample numbering

All samples were numbered according to the Geoscience Australia code:

- Reconnaissance field trip: **2005 861 001 X** to **2005 861 019 X**, where '2005' is the year, '86' the project number, '1' the geoscientist's code, '001' to '019' the site number (increasing incrementally for each site), and 'X' the sample type with 'X' = '001' for TOS samples, '002' for BOS samples, '003' for vegetation samples, '004' for lag samples. 19 sites were sampled during this trip.
- Main field trip: **2006 861 101 X** to **2006 861 157 X**, as per above, with the addition of 'X' = '005' for SOS samples. The site numbers start at 101 to differentiate them from earlier sites. 57 sites were sampled during this trip.
- Final field trip: **2006 861 201 X** to **2006 861 223 X**, as per above. The site numbers start at 201 to differentiate them from earlier sites. 23 sites were sampled during this trip.

2.3.5 Field form

At each site, field data was entered on the sampling forms and a palmtop computer for the main and final field trips. Most of that data was subsequently entered into Geoscience Australia's RTMAP, FIELD SITES and DEVIANT databases.

A form has been developed (Appendix 1) to record all relevant field information while at the sampling site. The form was modified from Salminen *et al.* (1998) to suit Australian conditions. At each site, the sampling form was filled to record, among others, date, GPS location, width and flow of the stream or river (if applicable), regolith landscape position, geomorphic processes, field parameters such as texture and Munsell soil colour. The forms are completed in a legible manner, as they are likely to be used to cross check potential errors in the digital entry or resolve questions arising during data interpretation.

General comments for in-field site documentation:

- Take a close-up photo of the sample bag immediately before the site photos. (This will aid in labelling the photos later).
- Take a photo showing the holes with a shovel down the hole to indicate depth. Take several photos that are representative of the landscape. One of these should be taken showing the river/creek.
- Coordinates should be recorded in Geographic Coordinate System, Geodetic Datum of Australia 1994 (GCS GDA94).
- Latitude and longitude to be recorded in decimal degrees.
- Use the RTMAP 'red book' (Pain *et al.* 2003) to determine the landform and geomorphology, using the definitions in the back.

2.3.6 Digital data capture

During the main and final field trips of this project, field data was also entered on a palmtop computer using ArcPad® and SurMapp®. SurMapp® is an integrated regolith mapping module developed by Mike Craig, CRC LEME, based on Geoscience Australia's RTMAP database. This enabled the site information (as per the sampling form) to be automatically collected and recorded as a shapefile for later transfer into a GIS. It was hoped that digital entry would accelerate the entry of samples into GA's databases, a mandatory procedure before geochemical analysis is performed. Teething problems meant that digital entry was error prone and slow. As a result the entry forms are still under development.

2.4 Sample preparation and analysis

The various sample preparation methods used are described in detail below and summarised in Table 3.

Table 3. Summary of TOS and BOS sample preparation methods used for the Thomson region geochemical survey.

Method of Analysis	Lab/Code	Sample Preparation
XRD	GA	D40, ground if needed
XRF (multi-element)	GA	D40, S180, 75. Li-borate fused bead
XRF (MLOI calculated)	GA	D40, S180, 75. As per XRF
ICP-MS (multi-element)	ACME/1T-MS	D40, S180, 75. Four acid digestion
ISE (F only)	ALS Chemex /FELE81a	D40, S180, 75. Alkaline fusion, water leach
GF-AAS (Au only)	ALS Chemex /ST43	D40, S180, 75. Aqua regia digestion
ICP-MS (Se only)	CSIRO LW/5806	D40, S180, 75. HF + multi-acid digestion
MMI	ALS Chemex/ MMI-M	Weak buffered leach (proprietary method)
Field pH	field	Raw
Munsell Soil Colour (Dry)	field	Raw
Munsell Soil Colour (Moist)	field	Raw, moist
pH 1:5 by pH meter (Potentiometric)	GA	D45, U, 1:5 (soil:water) mixture
EC 1:5 by conductivity	GA	D45, U, 1:5 (soil:water) mixture
Laser Particle size analysis	GA	D45, U

Key:

Dx	Dried to x °C (see text for duration)
Sx	Sieved to <x µm
U	Unsieved
Raw	As found under field conditions

2.4.1 General sample preparation

A flow chart showing the drying, splitting and sieving of samples is shown in Figure 16.

The procedure is detailed below:

- Both bags representing the TOS sample are mixed together and spread evenly in a pre-labelled 250 x 380 x 50 mm Al baking dish, which is then dried in an oven at 40 ^{o}C for 48 h. After drying the sample was homogenised by using a Jones-type riffle splitter to split and re-mix it several times. When considered to be homogeneous, half of the sample is riffle split and set aside for archiving, whilst the other half is processed further for geochemical and mineralogical analysis
- If needed, the sample was disaggregated by placing it in a plastic bag, rolling the top closed and pounding it with blunt heavy object (e.g., steel ring from a ring mill). This process was repeated until sufficient sample was obtained, replacing the sample bag as required. Care was taken not to break up rock fragments or grains, while disaggregating clay clumps
- The sample was then sieved using 180 µm (ASTM #80 mesh) and 75 µm (ASTM #200 mesh) nylon meshes. Sieves were cleaned between samples using compressed air

- Approximately 80 g of <180 μm and 80 g of <75 μm sample was kept for geochemical analyses and an equivalent amount was set aside for future analytical needs. Samples with high sand content generally had poorer return, particularly for the <75 μm fraction. All efforts were made to recover as much sample as possible but if sample size was a limiting factor, then the <180 μm fraction was preferred.
- The mass of the <75 μm and <180 μm sieved fractions was reduced for geochemical analyses by using a Jones-type Sepor™ precision riffle splitter (Figure 17) to avoid mechanical fractionation and placed into various vials for analysis
- Same procedure was applied to the 2 bags representing the BOS sample

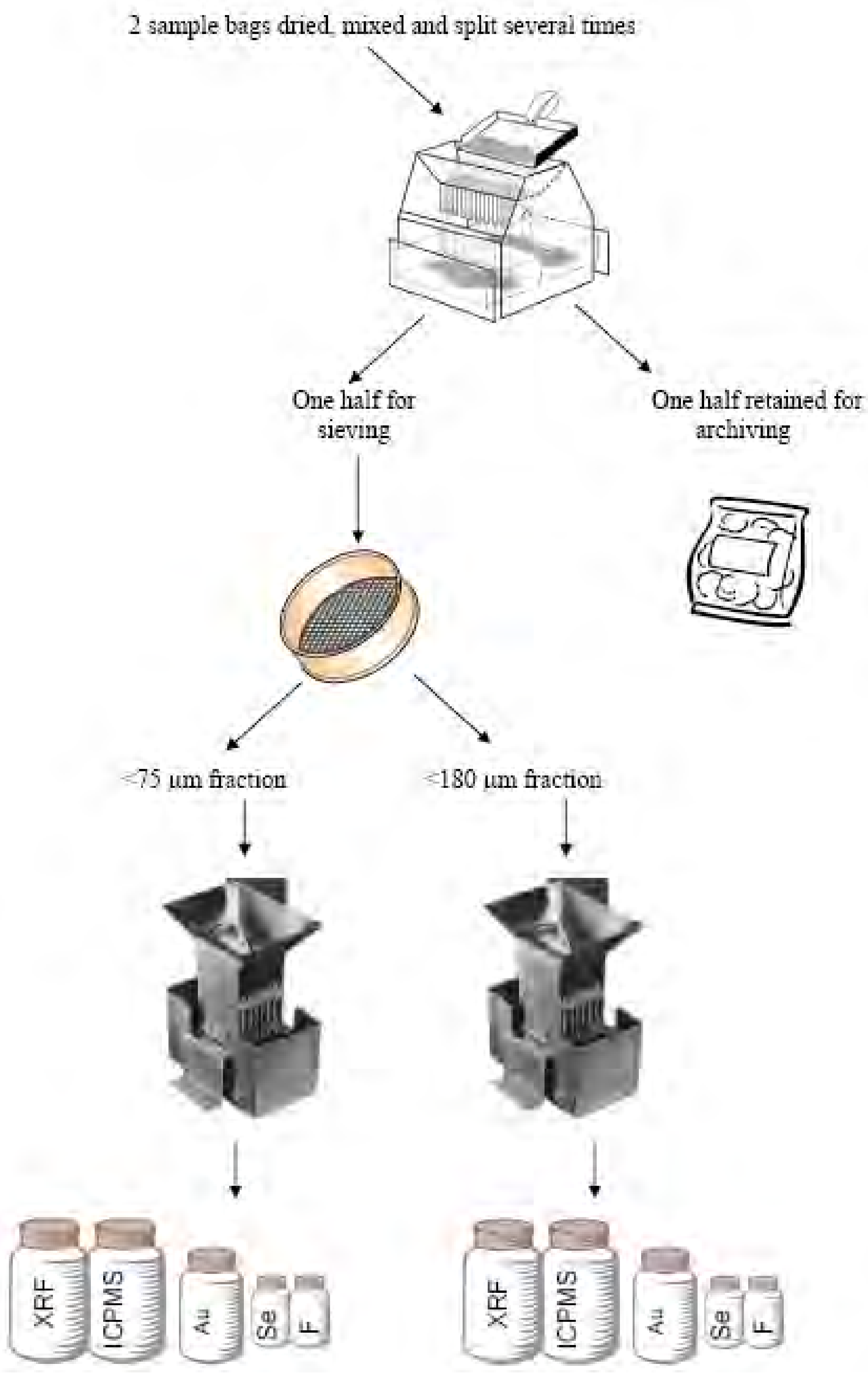


Figure 16. Flow chart of sieving and splitting samples for geochemical analysis.

Figure 17. Jones-type Sepor™ precision riffle splitter used to mass reduce the samples for various geochemical analyses.

2.4.2 X-ray fluorescence analysis of multiple elements

Fusion of glass beads for XRF analysis

The Geoscience Australia Minerals laboratory uses a Philips PW2404 4kW sequential X-ray fluorescence (XRF) wavelength dispersive spectrometer equipped with a Rh tube. It is used to determine the concentration of major elements and a range of the more abundant trace elements.

The instrument is calibrated using a range of USGS and SARM (South African Ref. Material) and other international standards. Synthetically prepared standards and some Australian Soil and Plant Analysis Council (ASPAC) standards were also used. The 'Classic Model' as outlined in the 'Philips SuperQ/Quantitative Users Guide' was used to calculate alpha coefficients and line overlap factors.

Reference monitor standard Si3 is used for the XRF program applicable here.

The sample preparation protocol is as follows:

- Weigh accurately approximately 4.8 grams of flux and transfer into a Scintillation vial. Record weight in "Fusion Log Book" to 4 decimal places
- Weigh accurately approximately .8 Grams of sample and transfer to the scintillation vial with the flux. Record weight and sample number in "Fusion Log Book" to 4 decimal places
- Mix flux and sample together by rotating the vial. Be careful not to allow mixture to get up into the cap and vial thread area

- Transfer mixture to a 30 ml 95%Pt/5%Au crucible. Add 0.5 ml of 20% LiNO3 solution and allow crucible and mixture to stand for at least 10 minutes
- Using Ti thongs place the crucible and mixture into the roasting oven at 400 degrees c for 10 minutes
- Using the Ti thongs remove the crucible and the mixture from the oven and place the crucible and mixture into the rocker cradle of the BFF-1 furnace that has been preheated and stabilised at 1100 degrees C or 1000 degrees C depending on the type of flux being used eg: 1100 degrees for 12.22 and 57.43 1000 degrees C for 100 LM. (NB. When using X- Ray flux 100 Lithium Metaborate) the temperature is reduced to 1000 degrees C to retain F in the melt. The "Agitation Control" is set on 5
- Place a Pt mould into a holder and slide into the furnace
- Heat for 10 minutes at the required temperature. After approximately 6 minutes add one tablet of Ammonium Iodide to each crucible
- Withdraw the mould using the slide. Open the furnace and immediately lift the crucible from the rocker cradle using ti thongs and pour the melt from the crucible into the mould
- A cooling fan is activated when the mould slide is fully withdrawn. The "Mould Cooler" control is normally set on 5. After approximately 5 minutes a GREEN LIGHT indicates that the bead is ready for removal from the mould. Using the "Mould Tilt Control Bar" lift one side so that the mould can be grasped by the tongs and the bead tipped onto paper towel on the cooling tray
- After another few minutes the bead with the analysis side facing down will be cool enough to remove for introduction to the XRF
- If necessary clean the PT ware using hot 10% Citric Acid. After cleaning rinse the PT ware with DE-IONISED Water and blow dry with compressed air

The routinely determined major element oxides are SiO_2, TiO_2, Al_2O_3, Fe_2O_3, MnO, MgO, CaO, Na_2O, K_2O, P_2O_5 and SO_3. BaO, Cr_2O_3, NiO, CuO, ZnO, Rb_2O, SrO and ZrO_2 can be run as a supplementary to these.

Depending on material type, several modes can be used. The one used for the Thomson geochemical survey is called 'Major elements (geological)' using the '57:43 MAJORS' program. This program was devised to handle samples that are difficult to fuse with the 12:22 flux. Trace elements Sc, V, Cr, Ni, Cu, Zn, Ba and Cl are determined on these fusions for sediment and other samples that may contain significant NaCl.

Loss on ignition

Measured loss on ignition (%MLOI) is calculated by subtracting from 100 the XRF major element oxide determinations for SiO_2, TiO_2, Al_2O_3, Fe_2O_3, MnO, MgO, CaO, Na_2O, K_2O, P_2O_5, SO_3 plus the determinations for trace element oxides BaO, Cr_2O_3, NiO, CuO, ZnO, Rb_2O, SrO and ZrO_2 obtained on the same fused disc.

Loss on ignition (%LOI) is an indication of the level of volatile components, normally comprising C, CO_2 and H_2O, present in a sample. It is normally calculated by correcting %MLOI for the uptake of oxygen by ferrous iron and reduced sulphur during the sample/flux fusion. However, seeing that the present samples are mostly oxidised and unlikely to contain significant proportions of ferrous Fe and reduced S, the correction is unnecessary and %LOI is assumed to be equivalent to %MLOI. The hypothesis about the oxidised state of the outlet sediment samples was tested by measuring FeO concentrations (by titrimetry) in 8 outlet sediment samples from the Gawler and Thomson geochemical surveys. In these samples, FeO accounted for between <1 and 9 % of total Fe (average 4 %), generally supporting the posed hypothesis.

2.4.3 Inductively coupled plasma-mass spectrometry analysis of multiple elements

The samples destined for 'near-total' inductively coupled plasma-mass spectrometry (ICP-MS) analysis (Method 1T-MS) were sent to ACME Laboratories, Vancouver, Canada. There, the samples were digested in a 4-acid solution as follows:

- A 0.25 g split is heated in HNO_3-$HClO_4$-HF to fuming and taken to dryness
- The residue is dissolved in HCl
- Solutions are analysed by ICP-MS

The digestion is only partial for some Cr and Ba minerals and some oxides of Al, Hf, Mn, Sn, Ta, Zr. Volatilization during fuming may result in some loss of As, Sb and Au.

2.4.4 Inductively coupled plasma-mass spectrometry analysis of Se

Soil sub-samples (~0.2g) were digested using a strong multi-acid HF/HCl/HNO_3 digestion procedure and analysed for Se at m/z 78 using an Agilent 7500ce ICP-MS at the CSIRO Land & Water Laboratories in Adelaide. Total Se concentrations were determined in collision cell mode using the reactive gas hydrogen at a flow rate of 4 ml min^{-1}.

2.4.5 Inductively coupled plasma-mass spectrometry analysis of MMI

Mobile metal ion (MMI) leach and analysis were performed at ALS Chemex Laboratories in Perth, WA. A weak buffered leach technique that selectively solubilizes various mobile metal ions was used on the samples. Method ME-MS17 (MMI-M) was used to extract Cu, Pb, Zn, Cd, U, Au, Ag, Ni, Co, Pd and other elements. This is a proprietary technique and the exact methodology is not disclosed.

2.4.6 Ion selective electrode analysis of F

F concentration was determined at ALS Chemex Laboratories in Brisbane using Method F-ELE81a. The sample is fused in an alkaline flux, leached in water and made to a known volume. An aliquot of solution is treated with Total Ionic Strength Adjustment Buffer and F concentration is determined electrochemically with an ion selective electrode (ISE) using the method of standard addition.

2.4.7 Graphite furnace-atomic adsorption spectrometry analysis of Au

Au concentration was determined at ALS Chemex Laboratories in Brisbane using Method Au-ST43. A 25 g sample was digested in aqua regia, and the acid volume was partially reduced by evaporation. The solution was diluted to volume and mixed thoroughly. An aliquot was taken, a complexing agent added and the Au complex was extracted into an organic solvent. Au concentration was measured by Zeeman™ graphite furnace atomic adsorption spectrometry (GF-AAS).

Table 4. Analytes determined, methods used and favoured, and detection limits (known or inferred) for the Thomson geochemical survey.

Elements & Detection Limits (mg/kg) for Thomson Geochemical Survey Project

	Instrument	XRF	ICP-MS	ISE	GF-AAS	ICP-MS	ICP-MS
	Elements	Multi	Multi	F	Au	Se	MMI
	Code	U	T	I	A	C	S
Count	Element						
1	Ag		0.02				<0.0007
2	Al	5	200				
3	As	2	0.2				0.001
4	Au		0.1		0.0001		0.0001
5	Ba	8	1				<0.46
6	Be		1				
7	Bi	1	0.04				0.003
8	Ca	14	200				0.05
9	Cd		0.02				0.001
10	Ce	12	0.02				<0.0018
11	Cl	5					
12	Co	1	0.2				0.0002
13	Cr	2	1				0.001
14	Cs	3	0.1				
15	Cu	1	0.02				0.01
16	Dy		0.1				
17	Er		0.1				<0.0016
18	Eu		0.1				
19	F	50		20			
20	FeT	14	200				<1.5
21	Ga		0.02				
22	Gd		0.1				<0.0075
23	Hf		0.02				
24	Ho		0.1				
25	K	17	200				
26	La	5	0.1				<0.0002
27	Li		0.1				0.0002
28	Lu		0.1				
29	Mg	24	200				0.5
30	Mn	8	2				<1.8
31	Mo	1	0.05				0.005
32	Na	30	20				
33	Nb	1	0.04				0.0001
34	Nd	10	0.1				<0.0004
35	Ni	2	0.1				0.003
36	P	4	10				
37	Pb	1	0.02				0.01
38	Pd						<0.0002
39	Pr		0.1				<0.0001
40	Rb	1	0.1				<0.024
41	S	4	400				
42	Sb		0.02				0.001
43	Sc	1	0.1				0.003
44	Se					0.04	
45	Si	28					
46	Sm		0.1				<0.0003
47	Sn		0.1				<0.0002
48	Sr	1	1				0.01
49	Ta		0.1				
50	Tb		0.1				<0.0003
51	Te						0.001
52	Th	1	0.1				0.001
53	Ti	12	10				0.003
54	Tl						0.01
55	Tm		0.1				
56	U	1	0.1				0.001
57	V	2	1				
58	W	2	0.1				0.0002
59	Y	1	0.1				<0.0102
60	Yb		0.1				<0.0015
61	Zn	1	0.2				0.02
62	Zr	1	0.2				0.001
63	Fe(II)	78					
64	LOI	10					

Favoured method
Only method

2.4.8 X-ray diffraction analysis of mineralogy

Mineralogical analysis on the samples was conducted at Geoscience Australia using the method described below:

- Ensure samples are dry. Either dry at room temp for a week or in an oven at 40 °C for 12 to 24 hours
- If necessary, samples are ground in an agate mortar and pestle. Better diffraction patterns are obtained when the sample grain size is finer than 10 μm
- Approx 0.5 g of sample is packed into Siemens™ sample holders. Care is taken to avoid preferred orientation and to provide a level surface for analysis. If there is limited sample, an ethanol slurry of the sample is placed onto a glass slide, which is then placed in the Siemens sample holder
- X-ray diffraction is carried out on a Siemens D500 spectrometer using a Cu anode X-ray tube operating at 40kV and 30mA. Samples are scanned in 0.02 °2θ steps, from 2 to 70 °2θ. The scan takes approx 2 hours
- The raw scan is interpreted using Bruker Diffrac^{Plus} Eva software. The software searches the International Centre for Diffraction Data's Powder Diffraction library for best-fit of peaks
- The evaluated scan is then quantified using Siroquant®

2.4.9 Ion selective electrode analysis of pH 1:5 (soil:water) solutions

The following method was obtained from the Bureau of Rural Sciences (A. Plazinska, pers. comm. 2003):

- 30-40 g of unsieved (raw) sample was transferred into a labelled Al tray. Sample was placed into an oven at 45 °C for a minimum of eight hours, then placed in desiccator until temperature returned to room conditions
- 10 g (± 0.02 g) of sample was accurately weighed into a plastic vial
- 50 mL of distilled water was added to the vial using a Hamilton Microlab™ dispenser. The vial was closed and shaken by hand to ensure thorough mixing of sample
- The sample vials were placed in plastic bowls and the bowls placed in New Brunswick™ shaker for 1 hour at 160 rpm and 25 °C
- Samples were shaken again by hand just before being measured to ensure the sample has not settled
- The pH was measured using a calibrated bench top pHM83 AutoCal™ pH meter. Meter was calibrated using pH 4 and 7 buffer solutions
- Probes were rinsed with distilled water and dried with lab tissues between samples

2.4.10 Conductivity analysis of EC 1:5 (soil:water) solutions

Same method as above, except the electrical conductivity (EC) is measured with calibrated TPS™ 900-C conductivity/salinity metre and temperature probe. Meter was calibrated using appropriate standards (1409 μS/cm, 147μS/cm or 12.09 mS/cm depending on solution salinity).

2.4.11 Laser particle size analysis of granulometry

All samples were delivered to the Sedimentology Laboratory at Geoscience Australia to be analysed with the laser particle size analyser. The equipment used is a Malvern™ Mastersizer 2000 coupled to a Hydro 2000 MU pump unit, which allows dispersion of large volume samples using standard laboratory beakers as the sample container. The basic principles of particle size analysis are summarised by Rawle (undated).

Particle size was broken up into classes for sand, silt and clay according to Northcote (1979), i.e., sand = 0.02-2 mm, silt = 0.02-0.002 mm, clay <0.002 mm. This standard schema is recommended in the Australian soil and land survey field handbook by McDonald *et al.* (1990).

2.5 Quality assurance/quality control

Various quality assurance/quality control (QA/QC) measures were implemented to allow the assessment of the accuracy of the data (precision and bias). As part of the field work, one pair of sample duplicates (2006861103 and 2006861223) was collected to assess the representativeness of the sampling at the lower end of catchments (in this case, as part of 2 separate field trips). The 2 sampling sites are located on the Barwon River, approximately 400 m apart (as the crow flies). Unfortunately, they appear to have quite different grain-size distributions, affecting the chemical composition and hence their comparability.

In the laboratory, 1 in every 10 sample was duplicated and submitted blindly to the labs to assess precision. For the purposes of statistical and graphical data analysis, including the production of the geochemical maps, the first sample of each blind duplicate pair is used. Standard Reference Materials (SRMs) and internal standards were also submitted blindly to the labs to assess accuracy. These provide information regarding precision and bias. These standards included GA9, GA25 (Geoscience Australia internal powdered granite and basalt standards) and the GSD series (drainage sediments from China; Xie *et al*. 1985). Please note that the mineralogical make up of some of these materials are significantly different from the samples being analysed here; differences in mineralogy and grain size can lead to differences in performance of digestion procedures and hence ensuing chemical compositions.

In addition to these “User-controlled” QA/QC measures, some of the laboratories also included their own QA/QC measures, such as replicates (“repeat” analyses), which in the case of Acme and ALS Chemex were separate splits of the pulps submitted to the normal digestion process and analysed after the ‘normal’ sample. Data for blanks and SRMs were also reported by some labs.

The QA/QC data are reported in Appendix 4 and should be taken into consideration before making any decision based on this project’s data. Where data is reported to be below the Lower Level of Detection (LLD), it has been halved for the purposes of compiling the QA/QC data, and these data are highlighted in red. Similarly, a few samples were reported above the Upper Level of Detection (ULD), and these have been doubled in the QA/QC data, and similarly highlighted.

Several elements were analysed by more than 1 method. In most cases, comparing the results can not be used in a QA/QC assessment because the sample preparation and analysis methods are sufficiently different (e.g., XRF total analysis versus ICP-MS after chemical digestion).

2.6 Data analysis

Data generated by this project was delivered to Geoscience Australia's database group to be stored on Geoscience Australia's corporate databases DEVIANT and OZCHEM. Data analysis is performed using ESRI's ArcMap® (Minami 2000) geographical information system (GIS) for basic spatial representation, and DAS® (Dutter *et al.* 1995) for more advanced statistical treatment (boxplots, cumulative frequency distributions, histograms) and geochemical mapping.

Boxplots were constructed in DAS® using statistical methods from Exploratory Data Analysis (EDA) following Tukey (1977) and Velleman and Hoaglin (1981). The line in the middle of the box indicates the median value (50th percentile). The ends of the box or hinges represent the 1st and 3rd quartiles (25th and 75th percentiles, respectively), so that 50% of the data is located within the box. Where the 25th and 75th percentiles coincide, the box collapses to a single line identified by a cross in the middle. The notches (square brackets) indicate how far two medians have to be from one another to be significantly different at the 5% confidence level. The whiskers on either side of the central box extend 1.5 times the hinge spread (HS) away from the box. Any data point that lies outside these whiskers is considered an outlier (square symbol), and any outlier that is more than 3 x HS away from a hinge is called a far or extreme outlier (plus symbol). This method of constructing boxplots uses the inherent structure of the data to determine if outliers exist at all, and if they are extreme outliers or not. Thus, human bias of deciding that samples above the 90th, 95th or 99th percentile are 'anomalous' or not is avoided.

For statistical analysis, results below the lower limit of detection (LLD) were replaced by ½ LLD values, to still enable mathematical treatment (such as ratios or log-transformation).

3 Results and discussion

3.1 TOS and BOS geochemistry

The geochemical results of the Thomson survey are summarised in.Table 5 Selected element distributions and interpretations are given below. All geochemical maps can be found in Appendix 2. Raw data can be found in Appendix 5.

Table 5. Summary statistics for the geochemical data from the Thomson geochemical survey. LLD = Lower Level of Detection.

Parameter*	Min	Med	Max	LLD	N	N >= LLD	% >= LLD	Min / LLD	Max / Min	Max - Min
Cy_L_c_Bk	2	13	40		198				26	38
St_L_c_Bk	7	39	73		198				11	67
Sd_L_c_Bk	8	46	90		198				11	82
pH_F_p_Bk	4.5	7.5	9.0		194				2	4.5
pH15_P_p_Bk	5.0	7.9	9.5		198				2	4.5
EC15_E_u_Bk	6.2	99.8	9090.0		198				1471	9083.8
LOIc_Z_m_75	19670	96200	253990	10	195	195	100%	1967	13	234320
LOIc_Z_m_180	12740	71295	190910	10	198	198	100%	1274	15	178170
Ag_T_m_75	<0.02	0.04	0.18	0.02	198	170	86%	Min < LLD	Min < LLD	Min < LLD
Ag_T_m_180	<0.02	0.04	0.23	0.02	198	160	81%	Min < LLD	Min < LLD	Min < LLD
Au_A_m_75	<0.0001	0.0003	0.0048	0.0001	198	190	96%	Min < LLD	Min < LLD	Min < LLD
Au_A_m_180	<0.0001	0.0002	0.0013	0.0001	198	177	89%	Min < LLD	Min < LLD	Min < LLD
Al_U_m_75	30620	64395	100705	5	195	195	100%	6124	3	70085
Al_U_m_180	24528	51525	96126	5	198	198	100%	4906	4	71598
As_T_m_75	1.7	5.2	16.6	0.2	198	198	100%	9	10	14.9
As_T_m_180	1.1	4.3	12.5	0.2	198	198	100%	6	11	11.4
Ba_U_m_75	189	332	732	8	195	195	100%	24	4	543
Ba_U_m_180	141	301	551	8	198	198	100%	18	4	410
Be_T_m_75	<1	1	3	1	198	197	99%	Min < LLD	Min < LLD	Min < LLD
Be_T_m_180	<1	1	2	1	198	193	97%	Min < LLD	Min < LLD	Min < LLD
Bi_T_m_75	0.11	0.24	0.43	0.04	198	198	100%	3	4	0.32
Bi_T_m_180	0.11	0.19	0.38	0.04	198	198	100%	3	3	0.27
Ca_U_m_75	722	3931	113523	14	195	195	100%	52	157	112801
Ca_U_m_180	543	3066	68454	14	198	198	100%	39	126	67911
Cd_T_m_75	0.03	0.10	0.19	0.02	198	198	100%	2	6	0.16
Cd_T_m_180	0.02	0.08	0.25	0.02	198	198	100%	1	13	0.23
Ce_T_m_75	29.76	56.65	103.98	0.02	198	198	100%	1488	3	74.22
Ce_T_m_180	23.67	44.57	91.01	0.02	198	198	100%	1184	4	67.34
Cl_U_m_75	<5	63	9836	5	195	165	85%	Min < LLD	Min < LLD	Min < LLD
Cl_U_m_180	<5	45	8874	5	198	158	80%	Min < LLD	Min < LLD	Min < LLD
Co_T_m_75	4.5	12.1	25.6	0.2	198	198	100%	23	6	21.1
Co_T_m_180	3.8	9.4	21.1	0.2	198	198	100%	19	6	17.3
Cr_U_m_75	31	55	88	2	195	195	100%	16	3	57
Cr_U_m_180	20	44	87	2	198	198	100%	10	4	67
Cs_T_m_75	1.7	3.8	7.3	0.1	198	198	100%	17	4	5.6
Cs_T_m_180	1.4	3.0	6.3	0.1	198	198	100%	14	5	4.9
Cu_U_m_75	6	18	32	1	195	195	100%	6	5	26
Cu_U_m_180	3	14	27	1	198	198	100%	3	9	24
Dy_T_m_75	1.9	3.6	6.0	0.1	198	198	100%	19	3	4.1
Dy_T_m_180	1.4	2.9	4.5	0.1	198	198	100%	14	3	3.1
Er_T_m_75	1.0	1.9	2.8	0.1	198	198	100%	10	3	1.8
Er_T_m_180	0.7	1.5	2.6	0.1	198	198	100%	7	4	1.9
Eu_T_m_75	0.6	1.1	1.7	0.1	198	198	100%	6	3	1.1
Eu_T_m_180	0.4	0.9	1.4	0.1	198	198	100%	4	4	1.0
F_I_m_75	70	240	660	20	176	176	100%	4	9	590
F_I_m_180	80	190	1150	20	178	178	100%	4	14	1070
Fet_U_m_75	14869	32228	49245	14	195	195	100%	1062	3	34376
Fet_U_m_180	10680	25745	47084	14	198	198	100%	763	4	36404
Ga_T_m_75	6.91	16.05	24.84	0.02	198	198	100%	346	4	17.93
Ga_T_m_180	5.28	12.77	23.94	0.02	198	198	100%	264	5	18.66
Gd_T_m_75	2.3	4.1	6.8	0.1	198	198	100%	23	3	4.5
Gd_T_m_180	1.4	3.3	5.2	0.1	198	198	100%	14	4	3.8
Hf_T_m_75	2.12	3.33	4.65	0.02	198	198	100%	106	2	2.53
Hf_T_m_180	1.41	2.58	4.14	0.02	198	198	100%	71	3	2.73
Ho_T_m_75	0.4	0.7	1.0	0.1	198	198	100%	4	3	0.6
Ho_T_m_180	0.3	0.6	0.9	0.1	198	198	100%	3	3	0.6
K_U_m_75	7712	11646	21466	17	195	195	100%	454	3	13755
K_U_m_180	5130	9347	18777	17	198	198	100%	302	4	13647
La_T_m_75	14.8	26.4	44.2	0.1	198	198	100%	148	3	29.4
La_T_m_180	11.8	21.3	34.1	0.1	198	198	100%	118	3	22.3
Li_T_m_75	13.6	25.4	64.2	0.1	198	198	100%	136	5	50.6
Li_T_m_180	11.2	20.5	53.9	0.1	198	198	100%	112	5	42.7
Lu_T_m_75	0.2	0.3	0.4	0.1	198	198	100%	2	2	0.2
Lu_T_m_180	0.1	0.2	0.4	0.1	198	198	100%	1	4	0.3
Mg_U_m_75	1441	5264	10872	24	195	195	100%	60	8	9431
Mg_U_m_180	1122	4305	10426	24	198	198	100%	47	9	9304
Mn_U_m_75	108	441	1611	8	195	195	100%	14	15	1503
Mn_U_m_180	62	321	1139	8	198	198	100%	8	18	1077
Mo_T_m_75	0.27	0.53	1.62	0.05	198	198	100%	5	6	1.35
Mo_T_m_180	0.17	0.40	1.26	0.05	198	198	100%	3	7	1.09

Table 5. Continued.

Parameter*	Min	Med	Max	LLD	N	N >= LLD	% >= LLD	Min / LLD	Max / Min	Max - Min
Na_U_m_75	1120	3680	12219	30	195	195	100%	37	11	11099
Na_U_m_180	631	2719	11529	30	198	198	100%	21	18	10899
Nb_T_m_75	4.68	9.01	16.23	0.04	198	198	100%	117	3	11.55
Nb_T_m_180	3.67	7.02	16.42	0.04	198	198	100%	92	4	12.75
Nd_T_m_75	14.2	25.7	40.5	0.1	198	198	100%	142	3	26.3
Nd_T_m_180	10.6	20.2	30.6	0.1	198	198	100%	106	3	20.0
Ni_U_m_75	7	21	38	2	195	195	100%	4	5	31
Ni_U_m_180	3	17	35	2	198	198	100%	2	12	32
P_U_m_75	179	358	877	4	195	195	100%	45	5	698
P_U_m_180	157	292	707	4	198	198	100%	39	5	550
Pb_T_m_75	9.77	15.95	25.85	0.02	198	198	100%	489	3	16.08
Pb_T_m_180	7.83	13.36	22.23	0.02	198	198	100%	392	3	14.40
Pr_T_m_75	3.3	6.1	10.1	0.1	198	198	100%	33	3	6.8
Pr_T_m_180	2.6	4.9	7.6	0.1	198	198	100%	26	3	5.0
Rb_U_m_75	33.3	60.5	119.2	1	195	195	100%	33	4	85.9
Rb_U_m_180	22.2	49.6	99.8	1	198	198	100%	22	4	77.6
Sb_T_m_75	0.29	0.46	1.00	0.02	198	198	100%	15	3	0.71
Sb_T_m_180	0.25	0.39	0.86	0.02	198	198	100%	13	3	0.61
Sc_T_m_75	5.2	11.1	17.6	0.1	198	198	100%	52	3	12.4
Sc_T_m_180	3.8	8.6	14.8	0.1	198	198	100%	38	4	11.0
Se_C_m_75	0.06	0.18	0.63	0.04	180	180	100%	1	11	0.57
Se_C_m_180	0.06	0.16	0.54	0.04	180	180	100%	1	10	0.48
Si_U_m_75	194322	320174	404077	28	195	195	100%	6940	2	209755
Si_U_m_180	226932	352029	420819	28	198	198	100%	8105	2	193887
Sm_T_m_75	2.8	5.1	8.1	0.1	198	198	100%	28	3	5.3
Sm_T_m_180	2.2	4.0	6.8	0.1	198	198	100%	22	3	4.6
Sn_T_m_75	1.0	2.0	3.6	0.1	198	198	100%	10	4	2.6
Sn_T_m_180	0.8	1.6	3.1	0.1	198	198	100%	8	4	2.3
S_U_m_75	72	200	6234	4	195	195	100%	18	86	6162
S_U_m_180	60	164	7017	4	198	198	100%	15	117	6957
Sr_U_m_75	46.0	101.4	444.5	1	195	195	100%	46	10	398.5
Sr_U_m_180	36.6	84.0	291.6	1	198	198	100%	37	8	255.0
Ta_T_m_75	0.5	0.9	2.5	0.1	198	198	100%	5	5	2.0
Ta_T_m_180	0.3	0.7	1.8	0.1	198	198	100%	3	6	1.5
Tb_T_m_75	0.3	0.6	0.9	0.1	198	198	100%	3	3	0.6
Tb_T_m_180	0.2	0.5	0.8	0.1	198	198	100%	2	4	0.6
Th_T_m_75	5.5	10.0	18.8	0.1	198	198	100%	55	3	13.3
Th_T_m_180	4.1	7.6	12.6	0.1	198	198	100%	41	3	8.5
Ti_U_m_75	3122	5394	7359	12	195	195	100%	260	2	4237
Ti_U_m_180	1990	4099	6107	12	198	198	100%	166	3	4117
Tm_T_m_75	0.2	0.3	0.5	0.1	198	198	100%	2	3	0.3
Tm_T_m_180	0.1	0.2	0.4	0.1	198	198	100%	1	4	0.3
U_T_m_75	0.9	1.4	2.9	0.1	198	198	100%	9	3	2.0
U_T_m_180	0.6	1.1	4.6	0.1	198	198	100%	6	8	4.0
V_U_m_75	48	86	208	2	195	195	100%	24	4	160
V_U_m_180	35	70	204	2	198	198	100%	18	6	169
W_T_m_75	0.6	1.1	1.7	0.1	198	198	100%	6	3	1.1
W_T_m_180	0.4	0.9	1.7	0.1	198	198	100%	4	4	1.3
Y_T_m_75	10.0	18.6	30.1	0.1	198	198	100%	100	3	20.1
Y_T_m_180	7.5	14.7	23.1	0.1	198	198	100%	75	3	15.6
Yb_T_m_75	1.0	2.0	3.1	0.1	198	198	100%	10	3	2.1
Yb_T_m_180	0.7	1.5	2.6	0.1	198	198	100%	7	4	1.9
Zn_T_m_75	27.0	63.8	105.9	0.2	198	198	100%	135	4	78.9
Zn_T_m_180	21.0	51.4	95.3	0.2	198	198	100%	105	5	74.3
Zr_U_m_75	175	566	1404	1	195	195	100%	175	8	1229
Zr_U_m_180	153	375	754	1	198	198	100%	153	5	601
Zr_T_m_75	63.1	104.5	146.0	0.2	198	198	100%	316	2	82.9
Zr_T_m_180	45.3	81.3	132.9	0.2	198	198	100%	227	3	87.6

*Parameter name: Analyte code_Method code_Unit code_Fraction code, as follows:
Analyte code: Cy = clay; St = silt; Sd = sand; pH15 = pH 1:5; EC15 = electrical conductivity 1:5; LOI = loss on ignition; Ag = silver; etc.
Method code: L = laser particle size analyser; F = field (soil) pH; P = potentiometry; E = conductimetry; T = ICP-MS at Acme; A = GF-AAS at ALS Chemex; U = XRF at GA; I = ISE at ALS Chemex; Z = calculated based on XRF data; C = ICP-MS at CSIRO
Unit code: c = %, m = ppm; p = pH unit; u = uS/cm
Fraction code: Bk = bulk; 75 = <75 um; 180 = <180 um

3.1.1 General considerations

Areas with high metal concentrations mostly occur close to outcrops of crystalline basement. In the southwest, the Curnamona Craton outcrops in the Broken Hill region and a few samples here reflect proximity to the mineralised Province. Further to the northeast, at the junction of the Wonnaminta, Thomson and Lachlan crustal elements, several points have elevated concentrations of metal and other trace elements. Finally, the eastern and southeastern margins of the Thomson Orogen, i.e., where it abuts the East Lachlan crustal element and the West Lachlan crustal element under the Cobar Basin, are also characterised by elevated concentrations in several trace elements. The low concentrations present through the central portion of the study area correspond to the presence of a thicker cover of Great Australian Basin sediments. Here, it is necessary to apply lower thresholds to assess prospectivity because of the thickness of cover. There are no known mineral occurrences in this area either.

For instance, catchments containing known mineral occurrences with Pb, Cu or Sb listed as one of the commodities generally have anomalous concentrations in these elements in the catchment outlet sample. These anomalous values do not tend to extend further downstream. This indicates that the scale of mechanical dispersion of these elements is of the same order as the catchment size.

There is a positive correlation between high Sb, Cu and Pb in the outlet sediments with known mineral occurrences. As there are higher base metal concentrations northeast of Cobar and no known mineral occurrences we suggest that further attention should be paid to this region in particular.

3.1.2 Copper

Cu is predominantly higher in the BOS sample for both fractions. Spatially there is more Cu in the east in the BOS and TOS, particularly for the <180 μm fraction (Figure 18). A Cu anomaly is present in the BOS <75 μm and <180 μm fractions near the Barrier Ranges (32 mg/kg; 24 mg/kg) and 50 km southeast of Brewarrina (29 mg/kg; 27 mg/kg). 70 km southeast of Tibooburra there is a sample with notably high Cu concentration in the <180 μm (25 mg/kg). Higher Cu on the Yancannia map sheet is only a few km away from a recent Compass Resources drillhole that intersected bedded pyrite mineralization.

3.1.3 Lead

Signatures from the Barrier Ranges in the southeast (Caloola Creek; 21.7 mg/kg) and an overwhelming signature from the Lachlan Fold Belt northeast of Cobar are evident (Figure 19). Both these regions have known Pb mineral occurrences. Elevated Pb values also occur at Turkey (19.48 mg/kg) and Youltoo Creek (19.22 mg/kg) on the Yancannia map sheet.

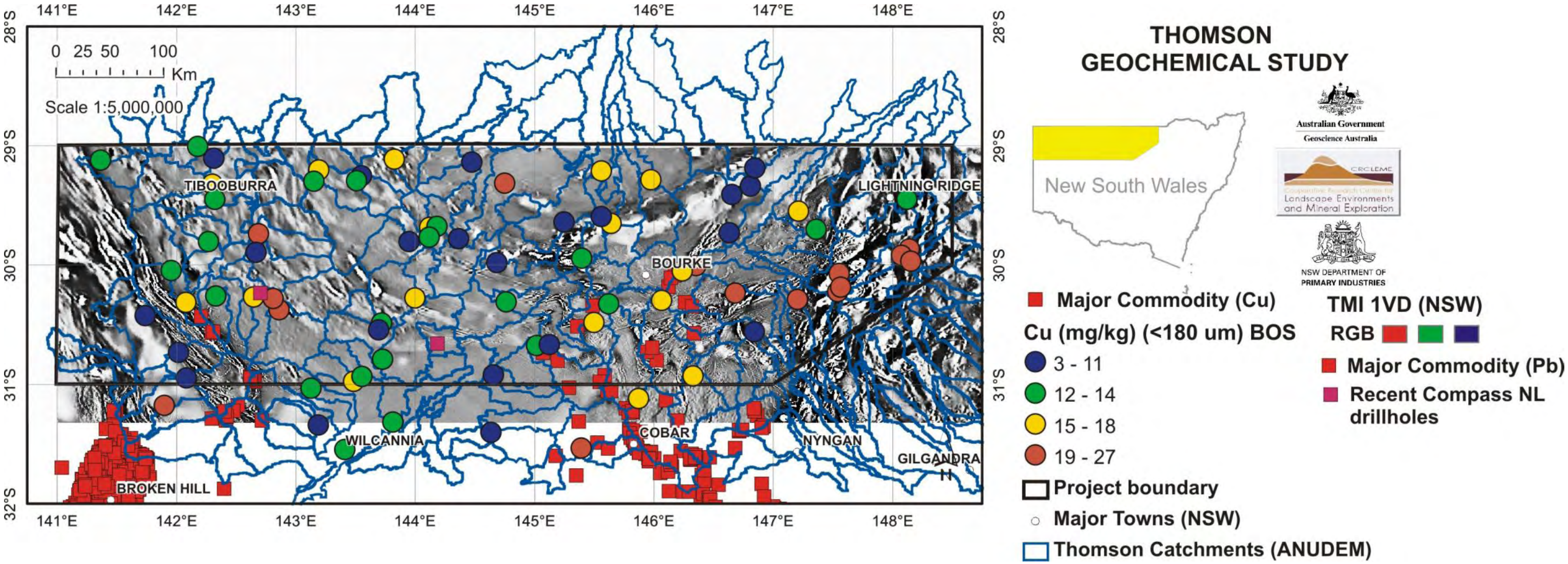


Figure 18. Geochemical map of Cu concentration in <180 μm fraction of the bottom outlet sediments (BOS), with known Cu occurrences. Geochemical data is for the reconnaissance and main field trips only.

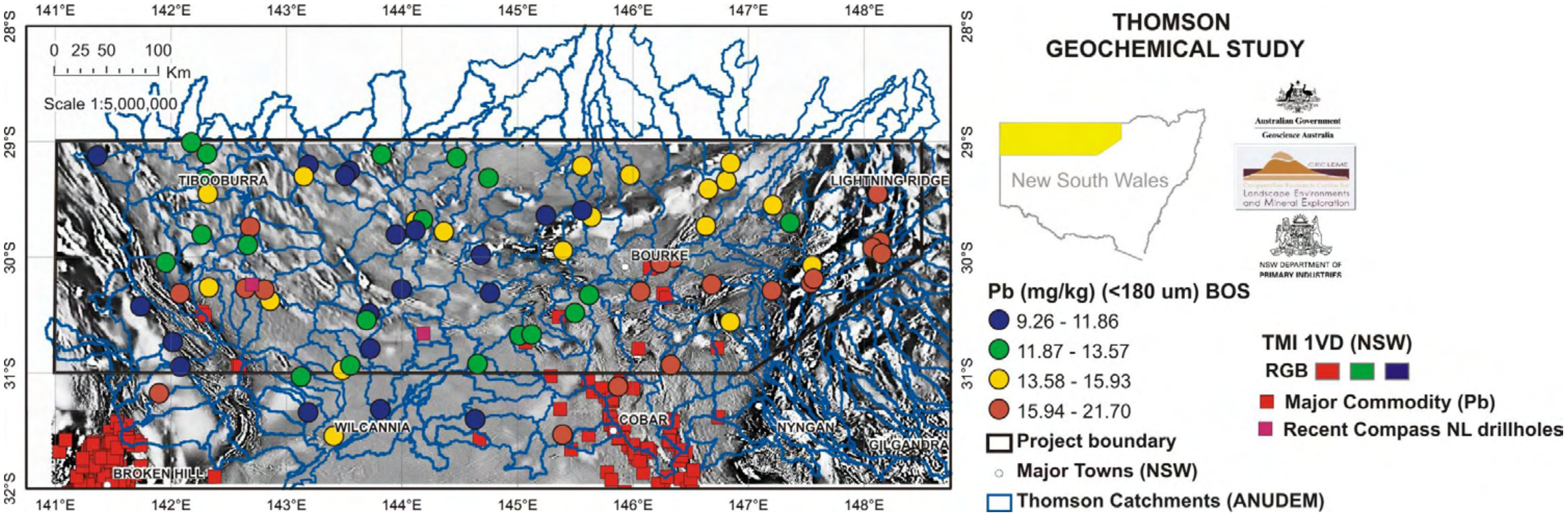


Figure 19. Geochemical map of Pb concentration in <180 μm fraction of the bottom outlet sediments (BOS), with known Pb occurrences. Geochemical data is for the reconnaissance and main field trips only.

3.1.4 Antimony

Sb is notably higher northeast of Cobar and on the Yancannia map sheet in the central-west (Figure 20). Of particular interest are elevated Sb concentrations on Gray's Creek in the central-west (0.70 mg/kg), on Yanda Creek located 40 km north of Cobar (0.86 and 0.79 mg/kg).

3.1.5 Gold

Contrary to the other elements discussed above, Au concentrations in the <75 μm and <180 μm fractions do not exhibit the same geochemical patterns. There appears to be no consistent geochemical pattern across the Thomson area for either fraction. The <75 μm fraction does not appear to reflect a spatial relationship between known Au occurrences and high Au concentration in the outlet sediments. Many catchments with Au in the 25 to 50 percentile class also contain known Au occurrences (Figure 21).

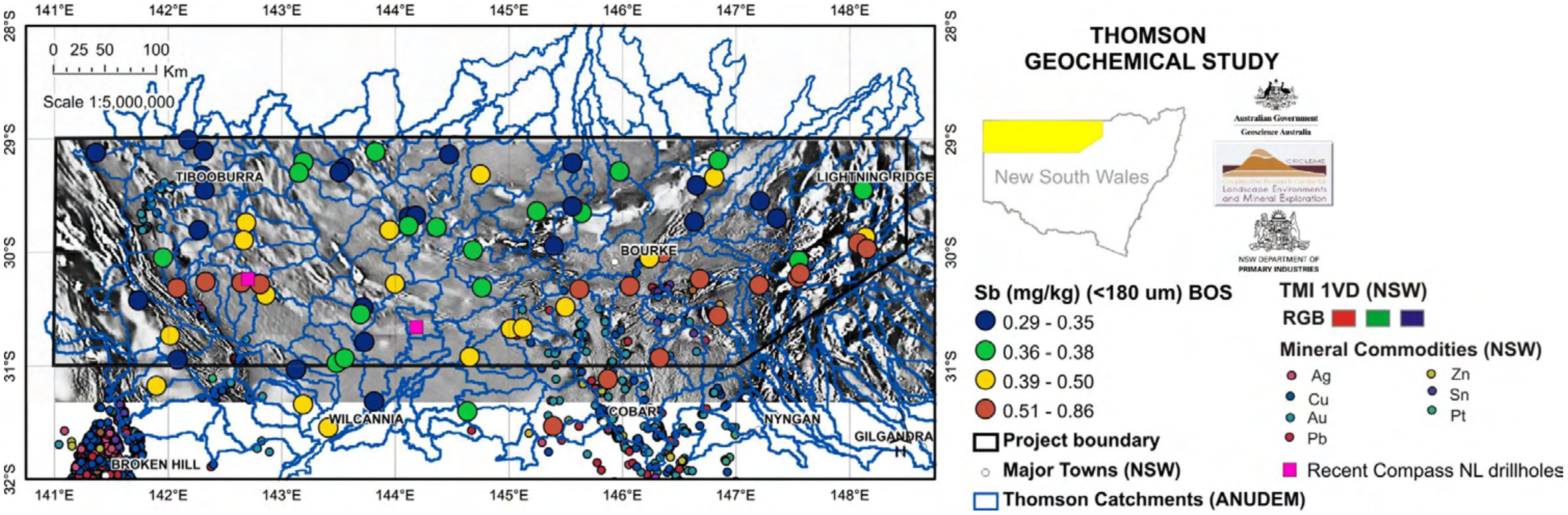


Figure 20. Geochemical map of Sb concentration in <180 μm fraction of the bottom outlet sediments (BOS), with known mineral occurrences. Geochemical data is for the reconnaissance and main field trips only.

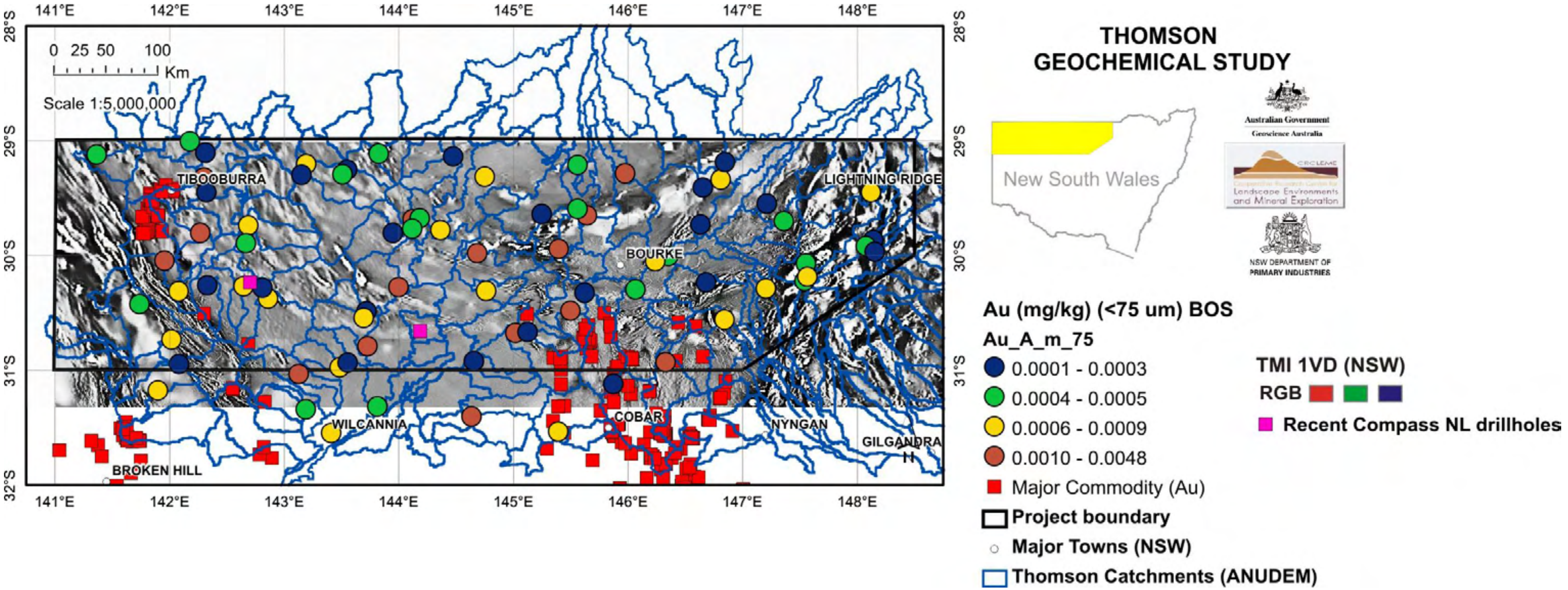


Figure 21. Geochemical map of Au concentration in <75 μm fraction of the bottom outlet sediments (BOS), with known Au occurrences. Geochemical data is for the reconnaissance and main field trips only.

3.2 MMI geochemistry

Mobile metal ion concentrations have been suggested by Mann *et al.* (2005) to be a useful tool for mineral exploration. Loosely bound ions can be preferentially located via capillary rise and evaporation to 10-25 cm below the soil surface. The idea is that these ions have migrated up from buried mineralisation and attached themselves on the surfaces of minerals and possibly other matter at or near the surface. Different migration mechanisms have been proposed in the literature with a consensus yet to be reached.

The MMI results of the Thomson survey are summarised in Table 6. Note that in this table, the detection limit was the lowest of either the value quoted in ALS Chemex (2004) or the value returned as <LLD in our data (e.g., as -0.001 ppm). For those elements where no LLD is quoted in ALS Chemex (2004) and the minimum value in our data is not <LLD (i.e., minimum not reported as a negative value), all we can say is that the LLD must be smaller than (or equivalent to) the minimum in our dataset. All MMI geochemical maps can be found in Appendix 3.

Table 6. Summary statistics for the MMI data from the Thomson geochemical survey. LLD = Lower Level of Detection; ULD = Upper Level of Detection.

Parameter*	Min	Med	Max	LLD	ULD	N	N >= LLD & <= ULD	% >= LLD & <= ULD	Min / LLD	Max / Min	Max - Min
Ag_S_m_Bk	0.0004	0.0046	0.0696	0.0001		79	79	100%	4	174	0.0692
As_S_m_Bk	<0.001	0.006	0.068	0.001		79	76	96%	Min < LLD	Min < LLD	Min < LLD
Au_S_m_Bk	0.0001	0.0004	0.0013	0.0001		79	79	100%	1	13	0.0012
Ba_S_m_Bk	0.08	2.38	10.15	0.01		79	79	100%	8	127	10.07
Bi_S_m_Bk	<0.003	<0.003	0.0160	0.003		79	11	14%	Min < LLD	Min < LLD	Min < LLD
Ca_S_m_Bk	176	679	>1000	0.2	1000	79	70	89%	880	Max > ULD	Max > ULD
Cd_S_m_Bk	<0.001	0.004	0.017	0.001		79	78	99%	Min < LLD	Min < LLD	Min < LLD
Ce_S_m_Bk	0.0018	0.0380	1.2250	0.0001		79	79	100%	18	681	1.2232
Co_S_m_Bk	0.0292	0.2040	1.0850	0.0003		79	79	100%	97	37	1.0558
Cr_S_m_Bk	<0.001	0.012	0.064	0.001		79	72	91%	Min < LLD	Min < LLD	Min < LLD
Cu_S_m_Bk	0.29	0.99	2.96	0.01		79	79	100%	29	10	2.67
Er_S_m_Bk	0.0015	0.0196	0.1310	0.0001		79	79	100%	15	87	0.1295
Fe_S_m_Bk	<0.1	2.4	39.7	0.1		79	73	92%	Min < LLD	Min < LLD	Min < LLD
Gd_S_m_Bk	0.0074	0.0455	0.3640	0.0001		79	79	100%	74	49	0.3566
La_S_m_Bk	<0.0001	0.0033	0.2730	0.0001		79	71	90%	Min < LLD	Min < LLD	Min < LLD
Li_S_m_Bk	0.0022	0.0083	0.1175	0.0002		79	79	100%	11	53	0.1153
Mg_S_m_Bk	44.5	218.0	>1000	0.01	1000	79	71	90%	4450	Max > ULD	Max > ULD
Mn_S_m_Bk	1.18	5.17	23.00	0.01		79	79	100%	118	19	21.82
Mo_S_m_Bk	<0.005	0.009	0.028	0.005		79	61	77%	Min < LLD	Min < LLD	Min < LLD
Nb_S_m_Bk	<0.0001	0.0001	0.0033	0.0001		79	49	62%	Min < LLD	Min < LLD	Min < LLD
Nd_S_m_Bk	<0.0001	0.0257	0.9610	0.0001		79	78	99%	Min < LLD	Min < LLD	Min < LLD
Ni_S_m_Bk	0.081	0.406	2.700	0.003		79	79	100%	27	33	2.619
Pb_S_m_Bk	0.01	0.06	0.28	0.01		79	79	100%	1	28	0.27
Pd_S_m_Bk	<0.0001	0.0009	0.0080	0.0001		79	73	92%	Min < LLD	Min < LLD	Min < LLD
Pr_S_m_Bk	<0.0001	0.0029	0.1575	0.0001		79	71	90%	Min < LLD	Min < LLD	Min < LLD
Rb_S_m_Bk	0.021	0.055	0.204	0.005		79	79	100%	4	10	0.183
Sb_S_m_Bk	<0.001	<0.001	0.001	0.001		79	0	0%	Min < LLD	Min < LLD	Min < LLD
Sc_S_m_Bk	<0.003	0.007	0.136	0.003		79	75	95%	Min < LLD	Min < LLD	Min < LLD
Sm_S_m_Bk	0.0001	0.0152	0.2880	0.0001		79	79	100%	1	2880	0.2879
Sn_S_m_Bk	<0.0002	<0.0002	0.0018	0.0002		79	3	4%	Min < LLD	Min < LLD	Min < LLD
Sr_S_m_Bk	0.95	6.22	15.30	0.01		79	79	100%	95	16	14.35
Tb_S_m_Bk	0.0002	0.0057	0.0514	0.0001		79	79	100%	2	257	0.0512
Te_S_m_Bk	<0.001	<0.001	0.002	0.001		79	10	13%	Min < LLD	Min < LLD	Min < LLD
Th_S_m_Bk	<0.001	0.003	0.166	0.001		79	74	94%	Min < LLD	Min < LLD	Min < LLD
Ti_S_m_Bk	0.01	0.03	2.16	0.01		79	79	100%	1	216	2.15
Tl_S_m_Bk	<0.01	<0.01	<0.01	0.01		79	0	0%	Min < LLD	Min < LLD	Min < LLD
U_S_m_Bk	0.001	0.025	0.113	0.001		79	79	100%	1	113	0.112
W_S_m_Bk	<0.0002	0.0005	0.0015	0.0002		79	75	95%	Min < LLD	Min < LLD	Min < LLD
Y_S_m_Bk	0.0079	0.1395	1.0000	0.0001		79	79	100%	79	127	0.9921
Yb_S_m_Bk	0.0015	0.0118	0.0806	0.0001		79	79	100%	15	54	0.0791
Zn_S_m_Bk	<0.02	0.05	0.48	0.02		79	78	99%	Min < LLD	Min < LLD	Min < LLD
Zr_S_m_Bk	<0.001	0.005	0.072	0.001		79	78	99%	Min < LLD	Min < LLD	Min < LLD

*Parameter name: Analyte code_Method code_Unit code_Fraction code, as follows:

Analyte code: Ag = silver; etc.

Method code: S = mobile metal ion by ICP-MS at ALS Chemex

Unit code: m = ppm

Fraction code: Bk = bulk

3.3 Mineralogy

The distribution of mineral assemblages based on the Thomson region reconnaissance samples appears to relate to sample composition (Figure 22 and Figure 23). Fine-grained outlet sediments from lakes and the big river systems like the Darling River are characterised by lower % quartz. The sediments with higher aeolian input have higher quartz and apart from halloysite, kaolin and minor albite, little else. Muscovite, kaolin and orthoclase are highest mostly in southeast. Sample 2005861010 in the Bulloo River Overflow is the only one in the western part of the study area to have a fluvial-like mineral assemblage similar to the Darling region. There is slightly less quartz in the BOS sample than in the TOS. There appears to be no relationship between the reconnaissance XRD results and depth to the Eromanga basement (Figure 24) suggesting that the mineralogy cannot be used to determine depth to bedrock.

NB: The XRD mineral assemblages were automatically classified using Siroquant®. We suspect that the mineral interpreted as halloysite is, in fact, kaolin. Closer inspection of the diffractograms and XRD analysis of the clay fractions would be needed to confirm this.

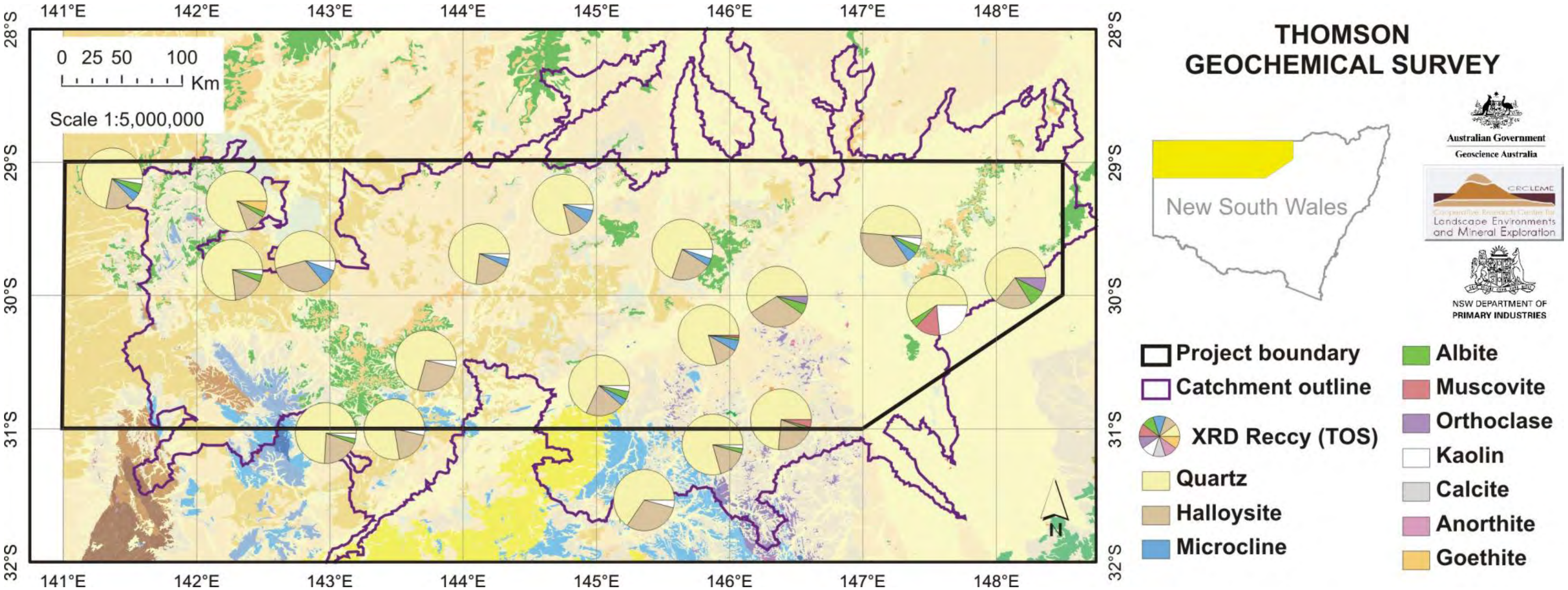


Figure 22. Mineralogical assemblage for top outlet sediments (TOS). Data (XRD and Siroquant) is for the reconnaissance field trip only.

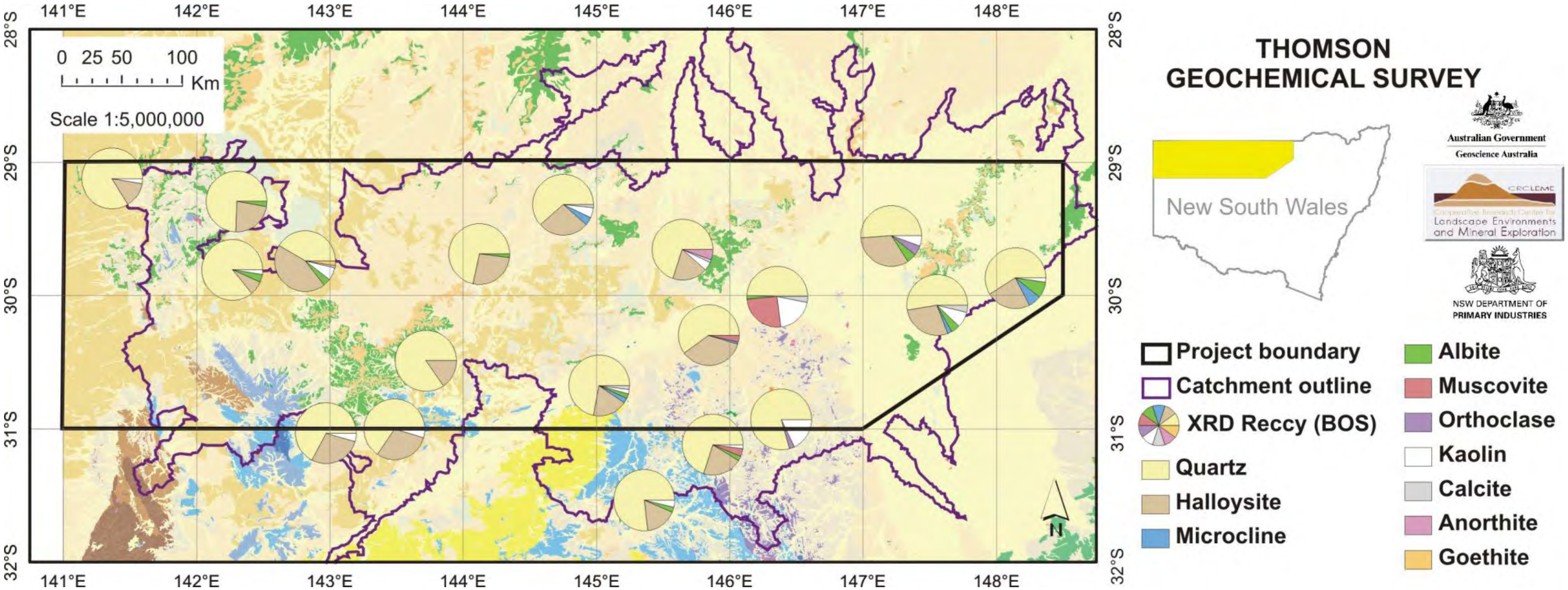


Figure 23. Mineralogical assemblage pie charts for bottom outlet sediments (BOS). Data (XRD and Siroquant) is for the reconnaissance field trip only.

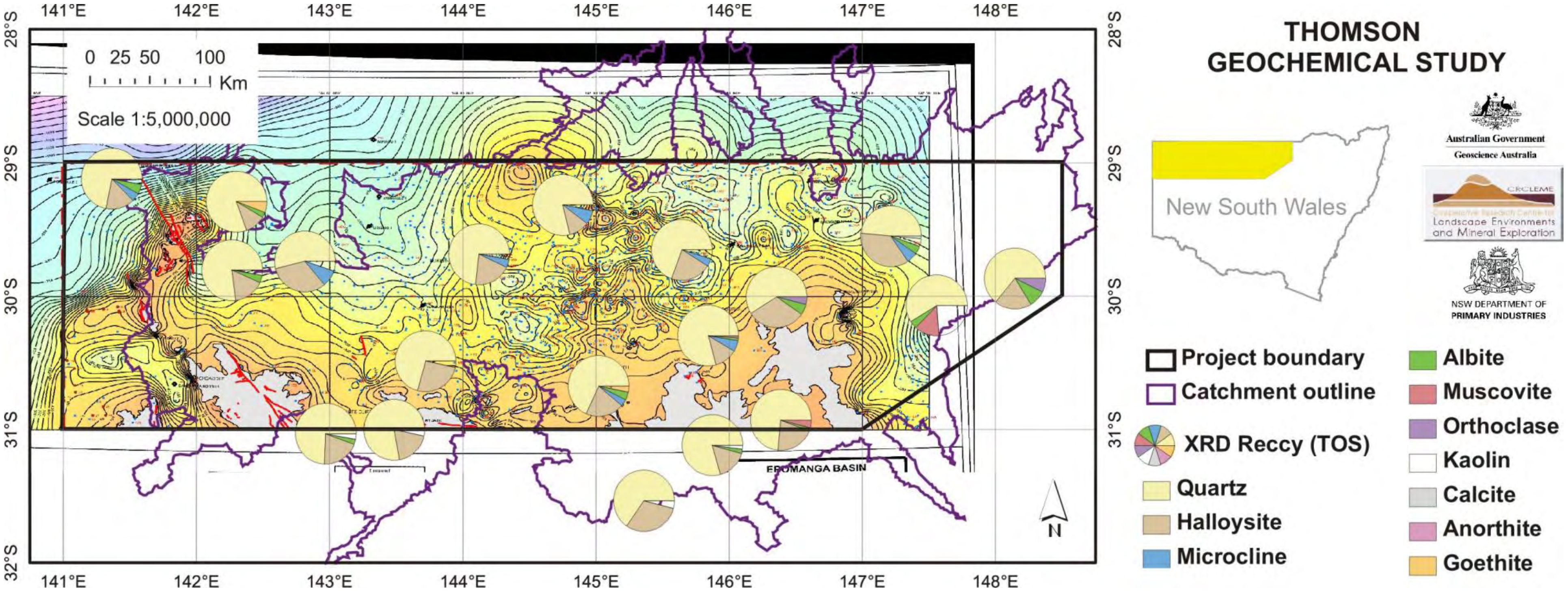


Figure 24. The relationship between mineral assemblages for the TOS and depth to the Eromanga basement.

3.4 Colour

The Munsell soil colours provide an indication of how much aeolian input there is in the outlet sediments. The soils from the west and southeast are redder suggesting that these sediments have strong aeolian input. This is evident in both the moist and dry TOS and BOS samples (Figure 25, Figure 26, Figure 27, Figure 28). Samples in the east and the central-north have more yellow and grey hues. These samples are part of the Darling-Barwon and Paroo river systems, hence have more alluvial input. Colour intensifies when samples are moist and in most instances also with depth.

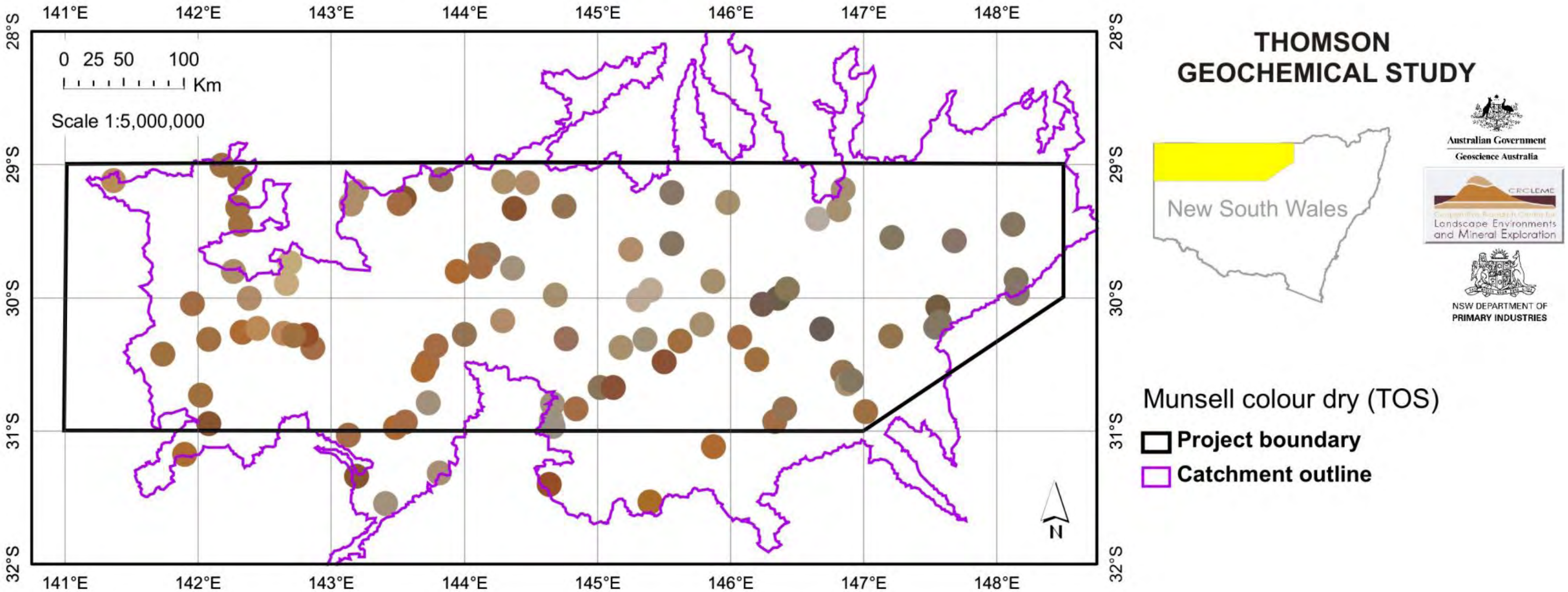


Figure 25. Dry Munsell Soil colour for top outlet sediments (TOS).

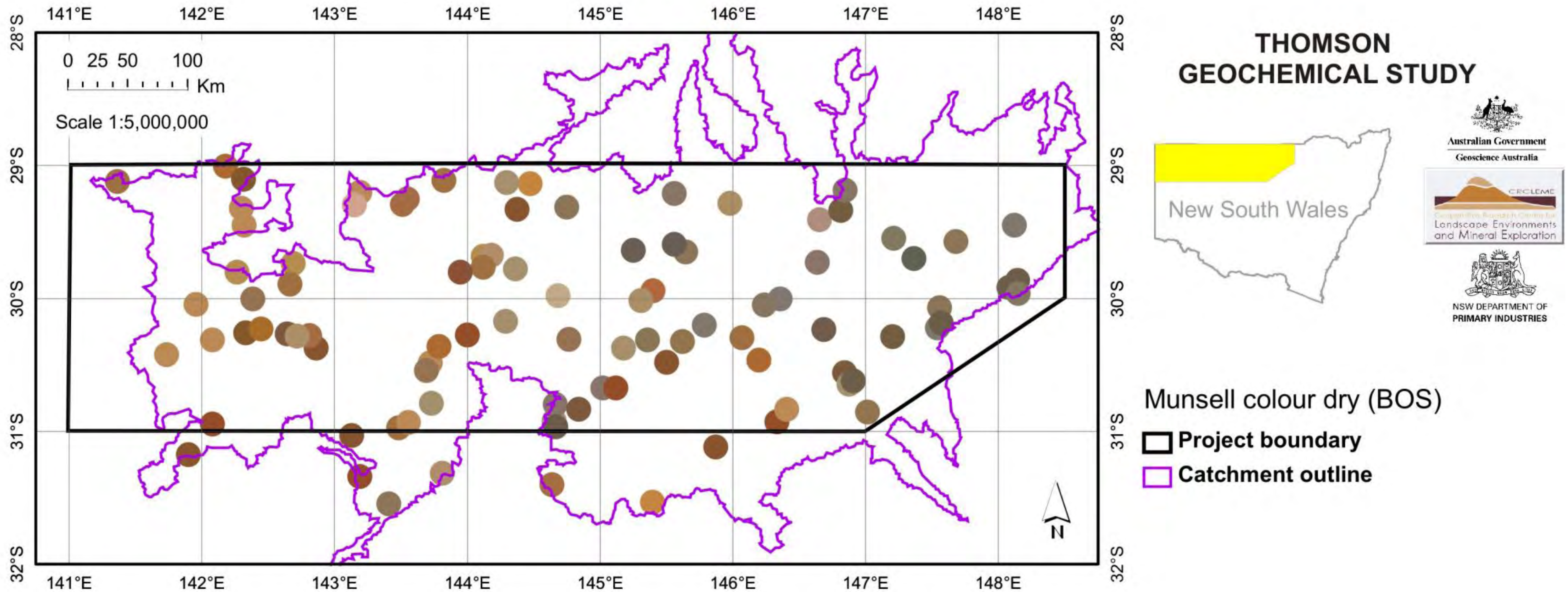


Figure 26. Dry Munsell Soil colour for bottom outlet sediments (BOS).

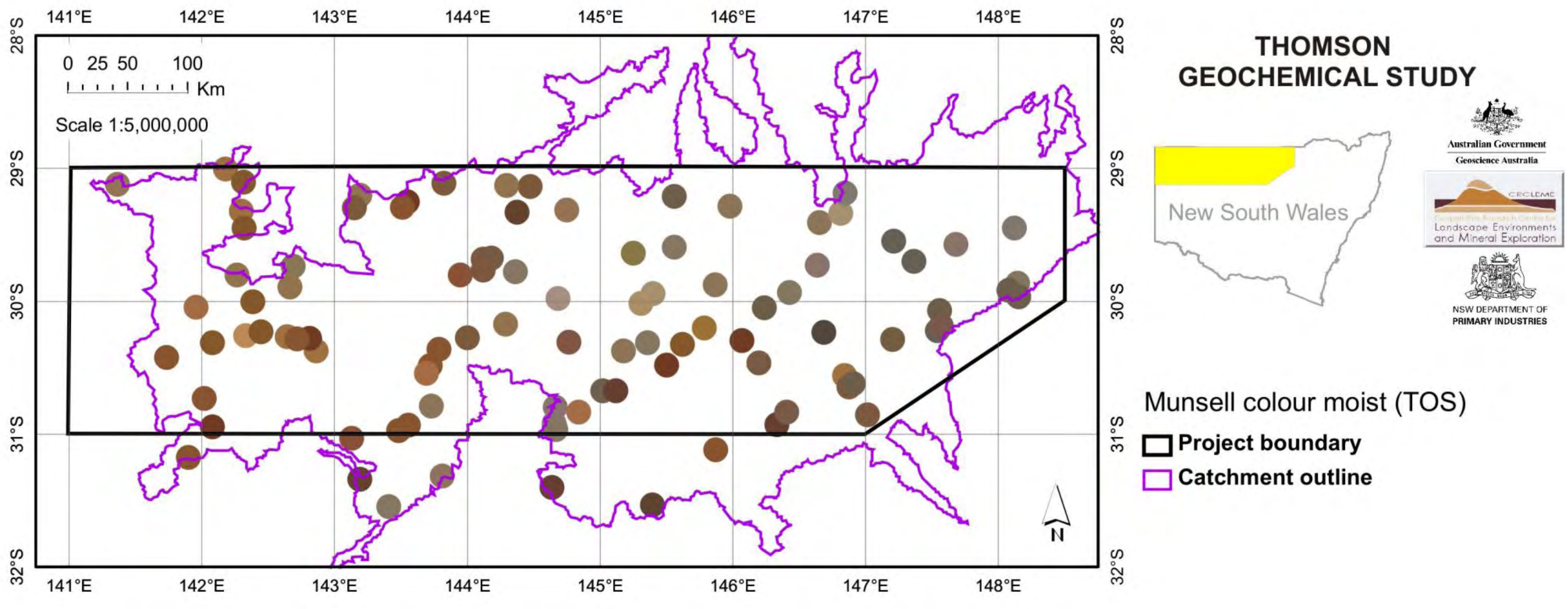


Figure 27. Moist Munsell Soil colour for top outlet sediments (TOS).

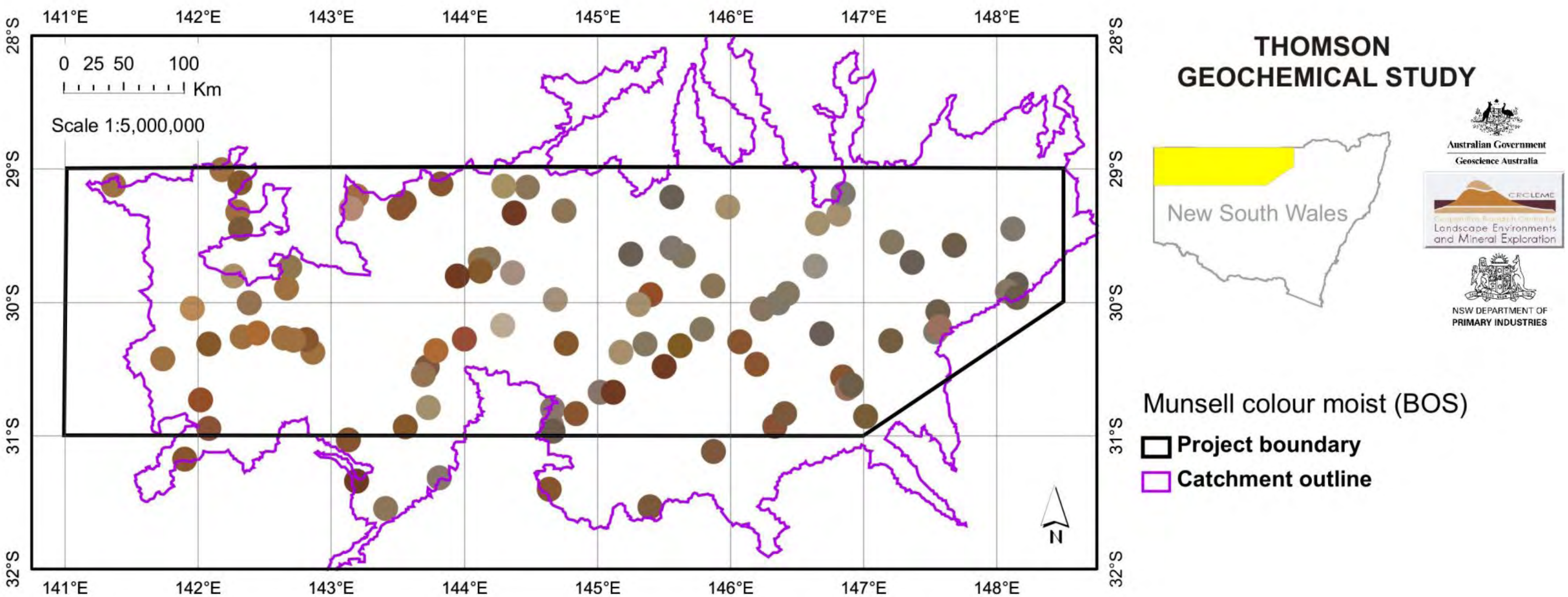


Figure 28. Moist Munsell Soil colour for bottom outlet sediments (BOS).

3.5 pH

Higher pH 1:5 (soil:water) values (TOS) are present in the west from Tibooburra to Wilcannia (Figure 29), and along the Barwon and Darling Rivers. pH (TOS) ranging from 5.13-7 are found on aeolian landscapes between Bourke and Cobar, and Bourke and Tibooburra. Low pH values are particularly noticeable along the Paroo River. pH values for the BOS samples (Figure 30) are more alkaline than the TOS, as expected, and are particularly elevated in the west near Tibooburra and associated with the Paroo River.

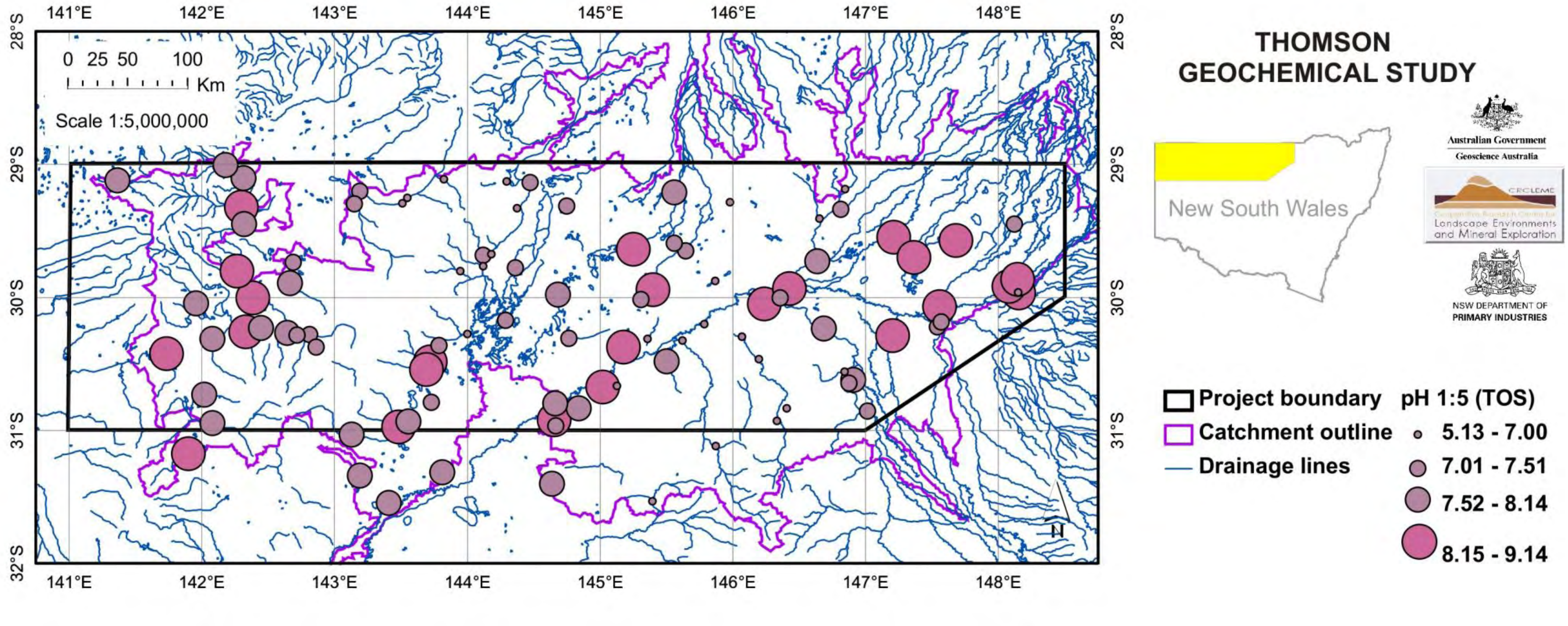


Figure 29. pH 1:5 (soil:water) for top outlet sediment (TOS).

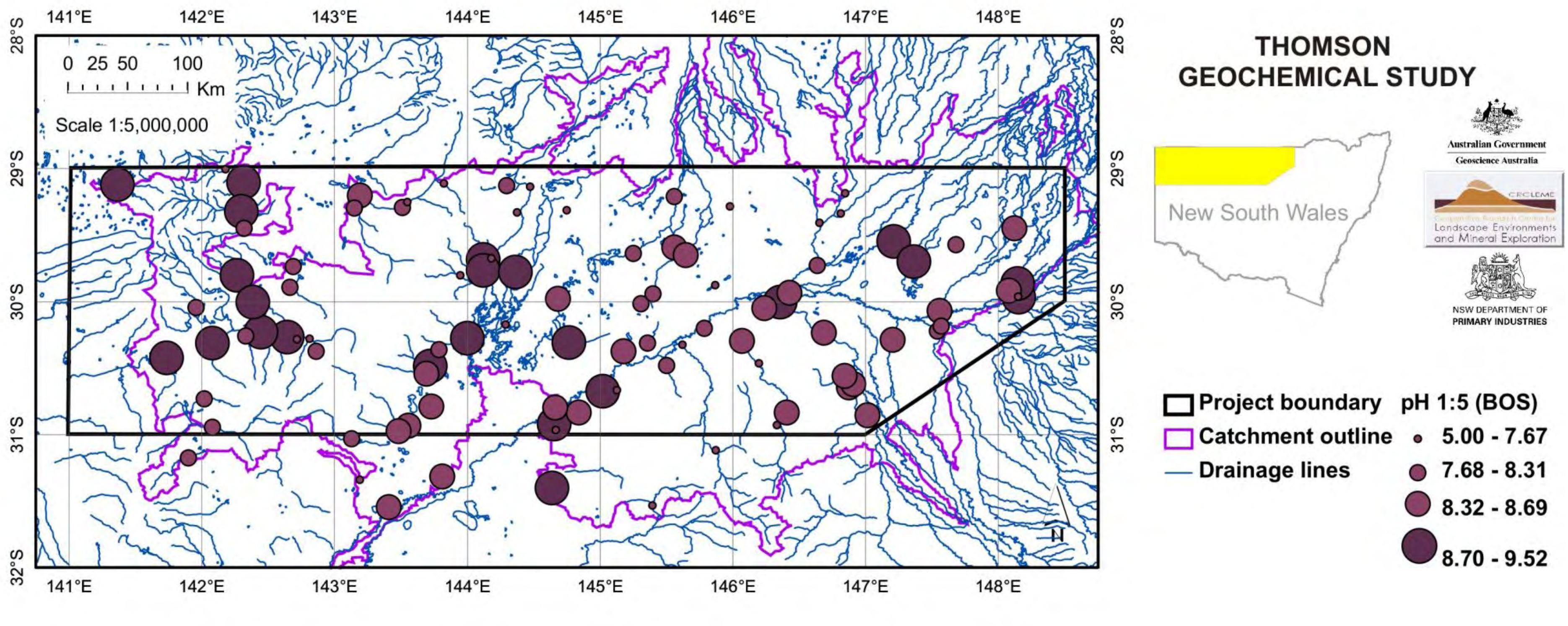


Figure 30. pH 1:5 (soil:water) for bottom outlet sediment (BOS).

3.6 Electrical conductivity

EC 1:5 (soil:water) is predominantly higher in the BOS than the TOS (Figure 31, Figure 32). There is no consistent spatial pattern for EC in the landscape but higher EC often coincides with the lake systems south of the Bulloo and Paroo Rivers. These lakes have high evaporation which results in the accumulation of salts in the soil profile. High EC values in the east may relate to increased clay in the soils (although this is not evident in Figure 33) or are perhaps enhanced by land use.

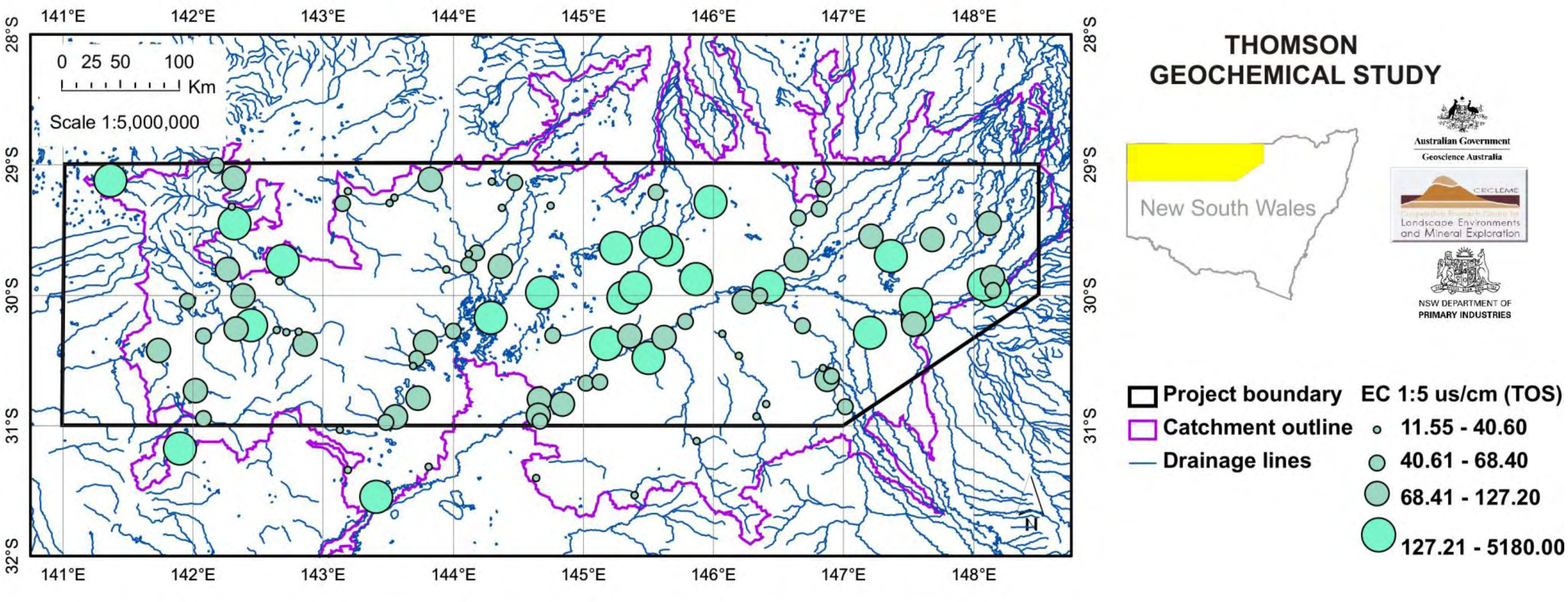


Figure 31. EC 1:5 (soil:water) (µS/cm) for top outlet sediment (TOS).

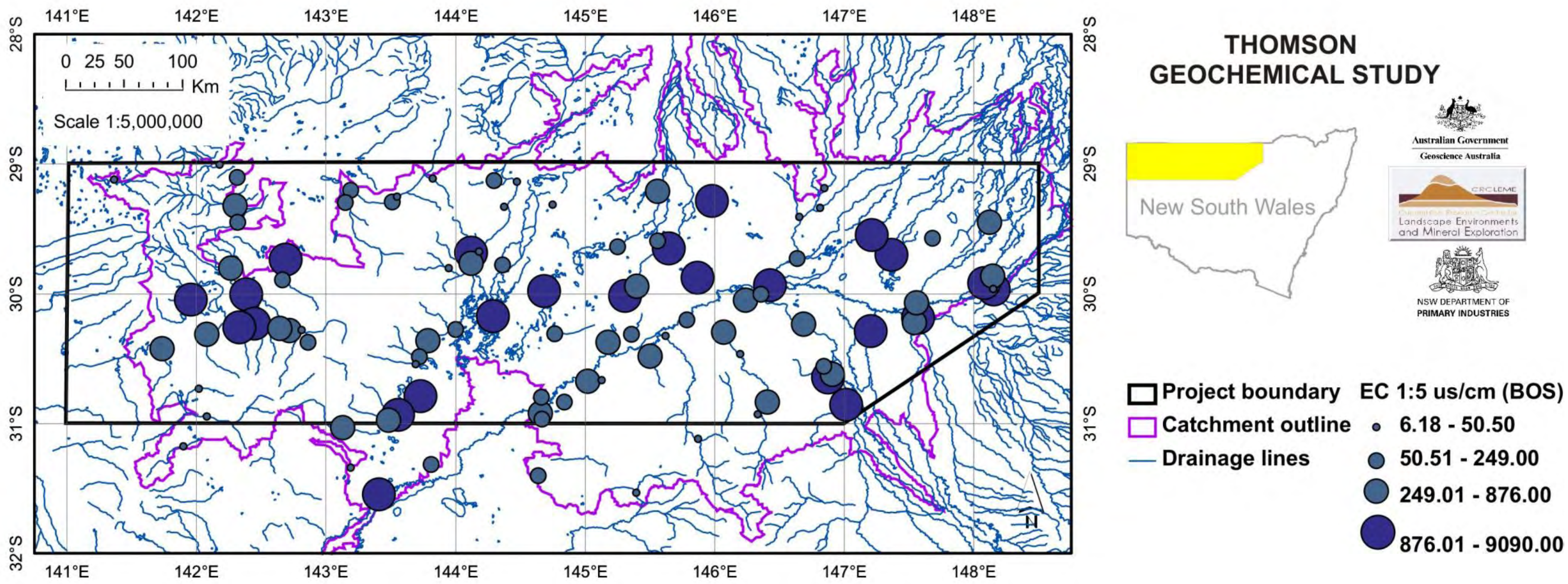


Figure 32. EC 1:5 (soil:water) (µS/cm) for bottom outlet sediment (BOS).

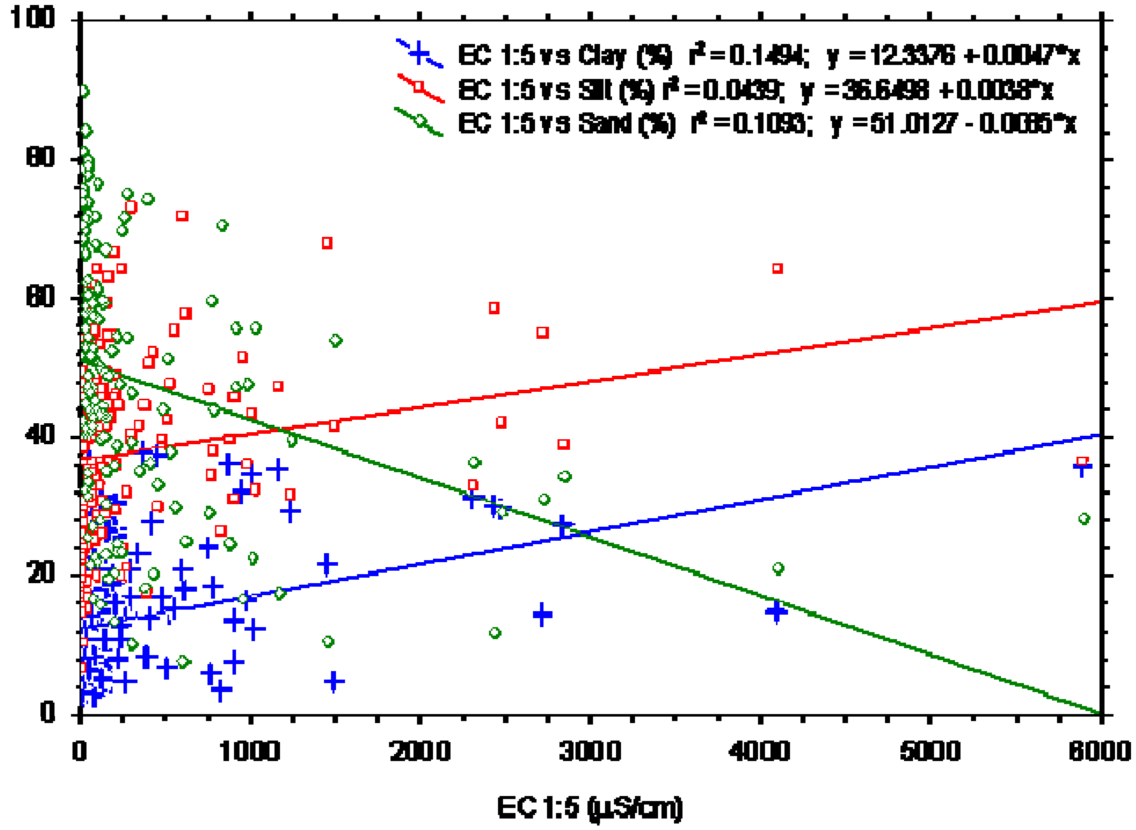


Figure 33. EC 1:5 (soil:water) (µS/cm) versus sand, silt and clay concentrations (%).

3.7 Granulometry

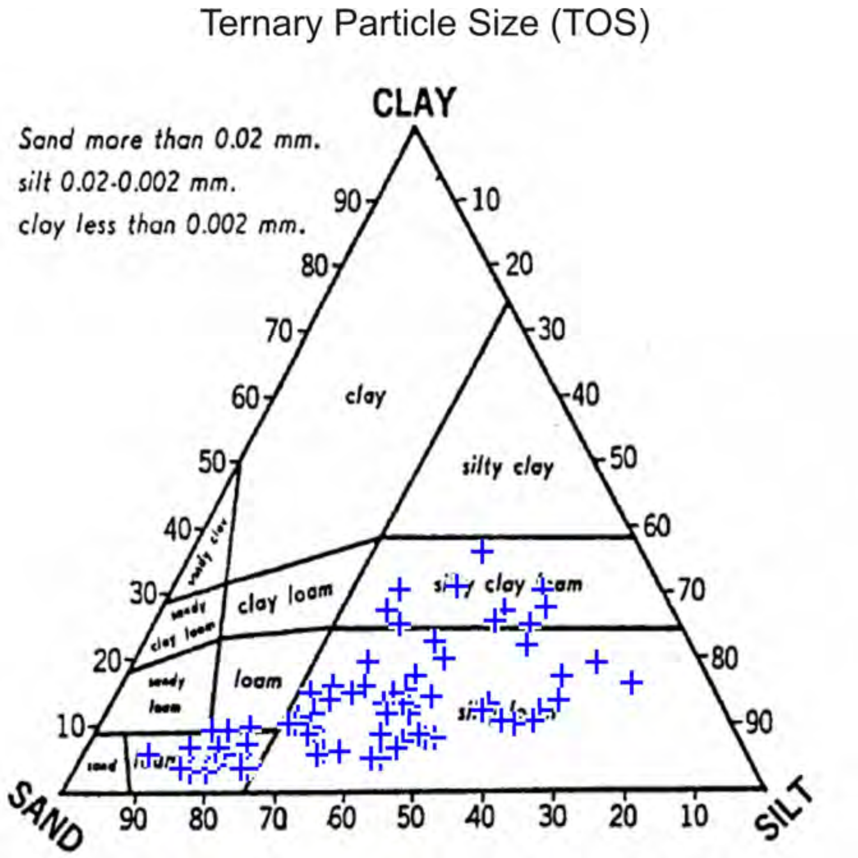
Based on the ternary texture diagram of Marshall (1947), the majority of samples from the Thomson survey can be classified as silty loams, silty clay loams and loamy sands (Figure 34).

Samples in the east associated with the Baron-Darling River system contain more clay than those to the west (Figure 35, Figure 36). This is not surprising as those in the west have a distinct aeolian influence. Clay and silt components are higher in the BOS than in the TOS (Appendix 2).

The majority of samples in both TOS and BOS are dominantly a mixture of fine sand and fine silt (Figure 37 and Figure 38). Medium silt and medium sand are subordinate populations, as is medium clay.

With future work it may be possible to test if the fine sand fraction represents an aeolian influence observed in the region. The clay fraction mostly relates to the flood plan sediments of the major river systems.

a)



b)

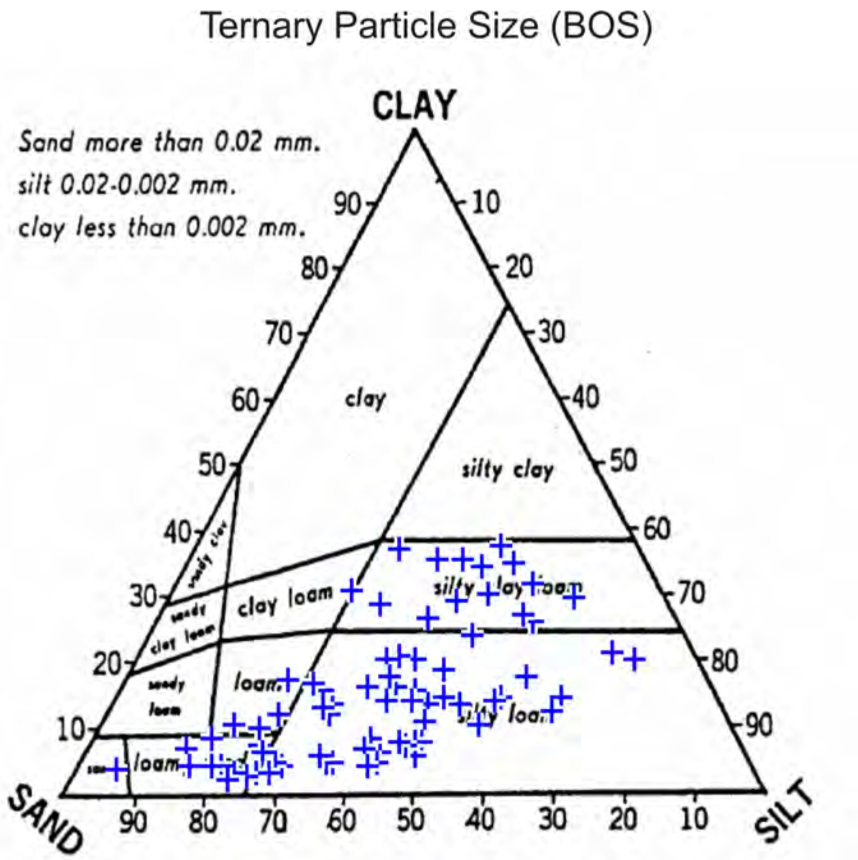


Figure 34. Ternary diagrams of sand, silt and clay concentrations (%) for TOS (a) and BOS (b).

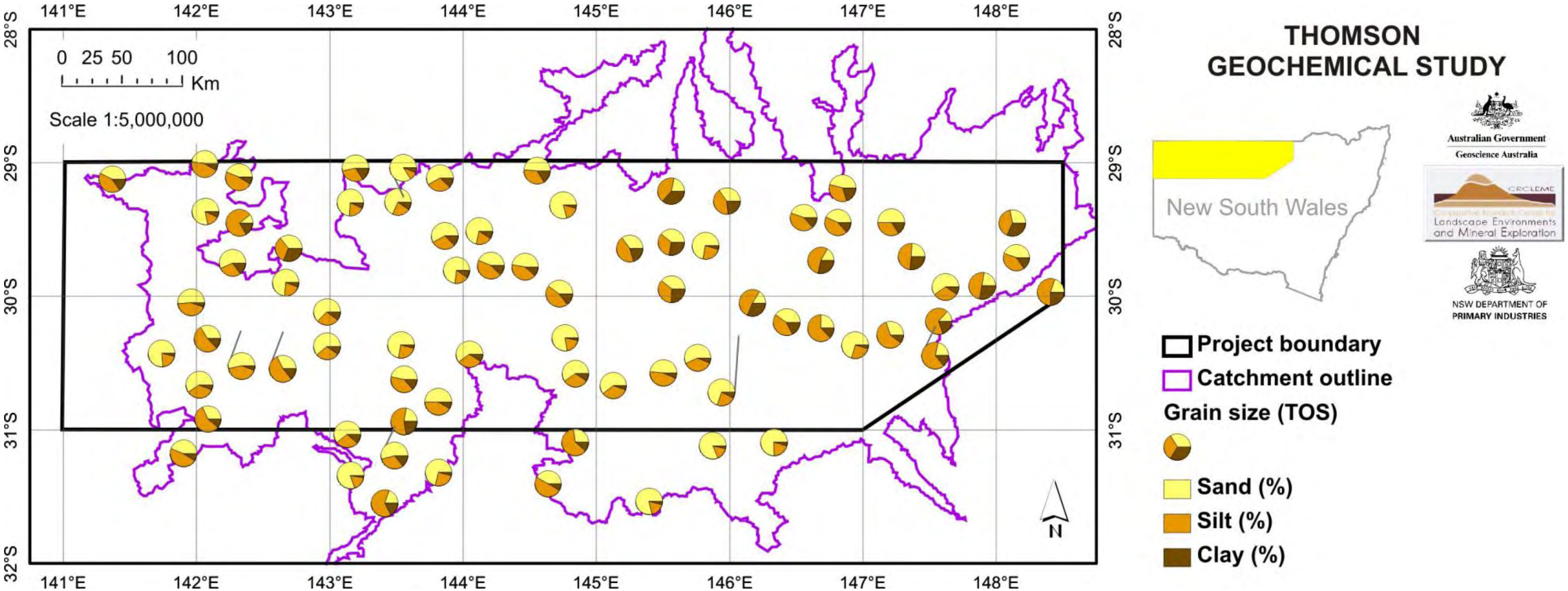


Figure 35. Sand, silt and clay concentrations (%) for reconnaissance and main field trip top outlet sediments (TOS).

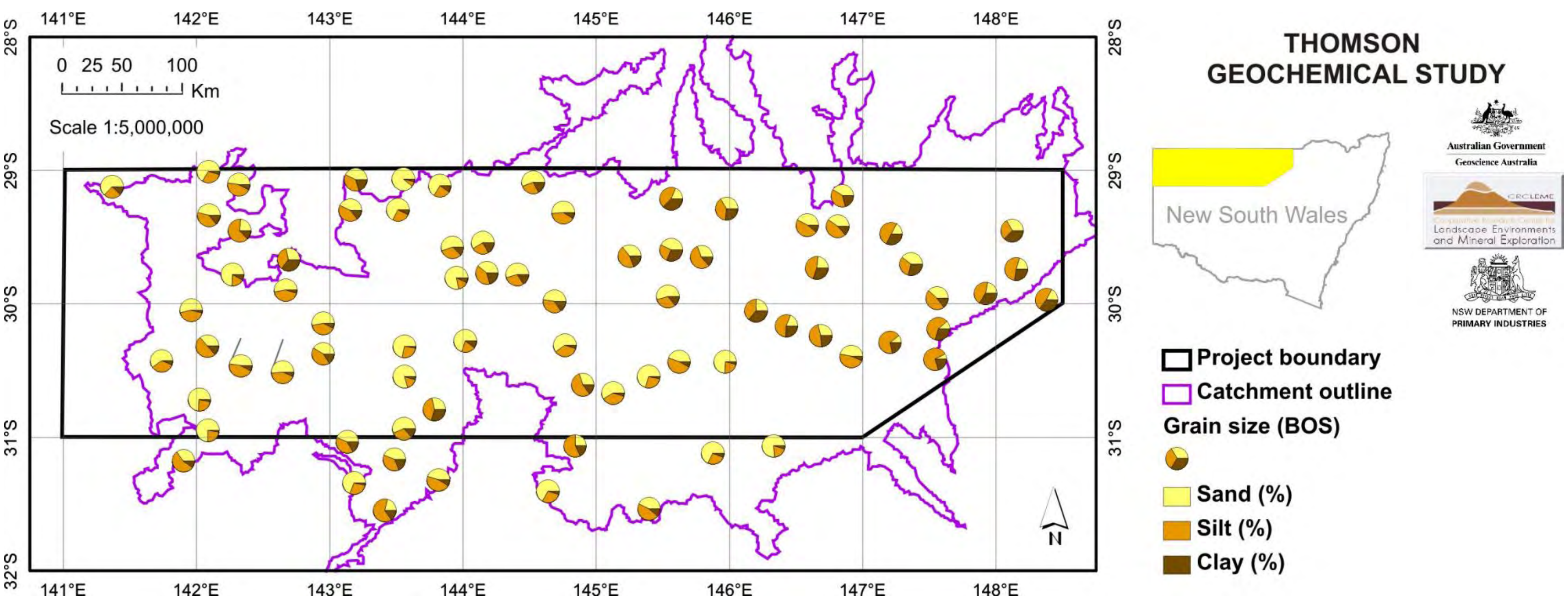


Figure 36. Sand, silt and clay concentrations (%) for reconnaissance and main field trip bottom outlet sediments (BOS).

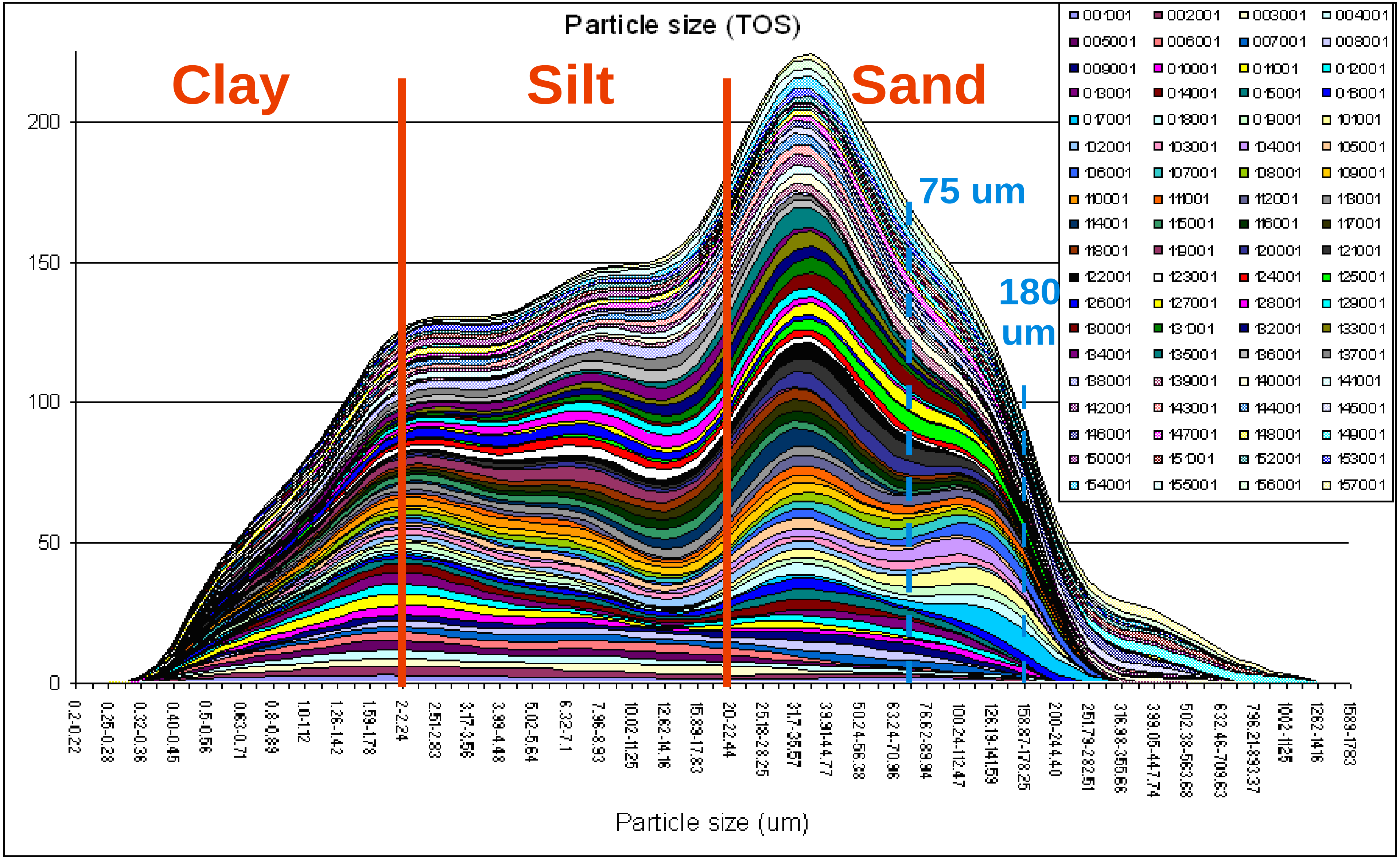


Figure 37. Clay, silt and sand distribution in the Thomson TOS samples.

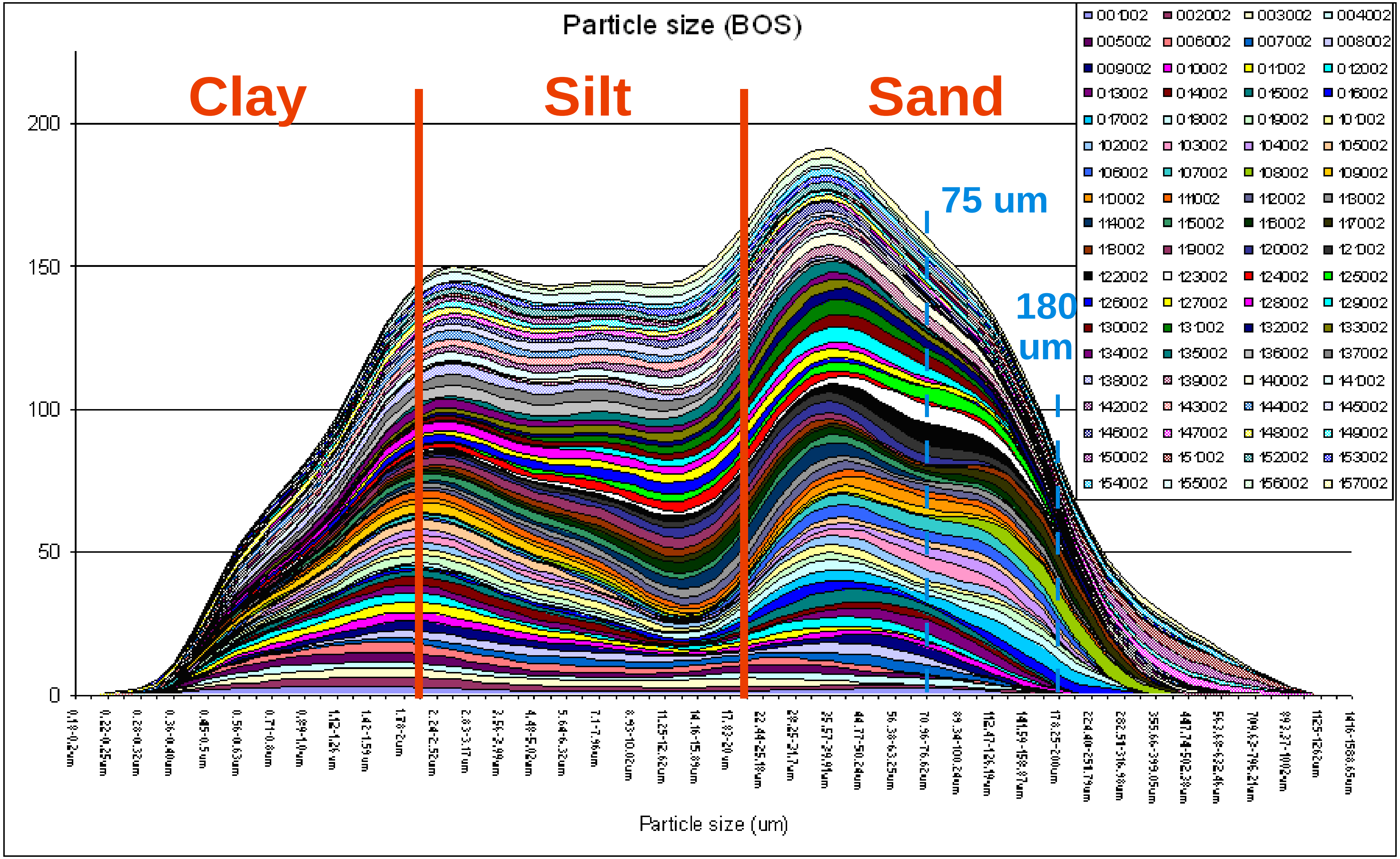


Figure 38. Clay, silt and sand distribution in the Thomson BOS samples.

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REFERENCES

ALS Chemex 2004. Australian Schedule of services and fees [Web page] http://www.alschemex.com/services/ALS%20Schedule%202004%20-%20AUD.pdf (Last accessed 22 December 2006)

Äyräs, M. and Reimann, C. (Eds.) 1995. Ecogeochemistry Kola - Field Manual. Geological Survey of Norway NGU Report, 95.111, 30 pp. + Appendices.

Bølviken, B., Bogen, J., Jartun, M., Langedal, M., Ottesen, R. T. and Volden, T. 2004. Overbank sediments: a natural bed blending sampling medium for large-scale geochemical mapping. *Chemometrics and Intelligent Laboratory Systems*, **74**, 183-199.

Bureau of Meteorology 2005. Australian climate classifications [Web page] http://www.bom.gov.au/climate/map/climate_classifications/IDCJCM0000_climate_classification.shtml (Last accessed 5 December 2006)

Bureau of Meteorology 2006. NSW Rainfall [Web page] http://www.bom.gov.au/cgi-bin/silo/rain_maps.cgi (Last accessed 22 December 2006)

Bureau of Rural Sciences 2007. Digital Atlas of Australian Soils - Soil Landscapes [Web Page] http://adl.brs.gov.au/anrdl/php/full.php?fileidentifier=http://adl.brs.gov.au/findit/metadata_files/a_daaslr9abd_00111a01.xml (Last accessed 10 December 2007).

Caritat, P. de, Jaireth, S., Lech, M. and Pyke, J. 2004. *Regional geochemical surveys: Riverina Pilot project – Methodology and preliminary results*. Cooperative Research Centre for Landscape Environments and Mineral Exploration Open File Report, 160, 156 pp. + CD-ROM. Available at: http://www.crcleme.org.au/Pubs/OFR160/CRCLEME_OFR160.pdf

Caritat, P. de, Lech, M., Jaireth, S., Pyke, J. and Lambert, I. 2005. Riverina geochemical survey – A National First. *AusGeo News*, **78**, 6 pp. (June 2005). Available at: http://www.ga.gov.au/image_cache/GA6632.pdf

Caritat, P. de, Lech, M.E., Kernich, A. and Jaireth, S. 2006. Geochemical mapping of Australia: Initial results from the Gawler region pilot project. *Australian Earth Sciences Convention 2006* (Melbourne, VIC, 2-6 July 2006), Convention Handbook: 124.

Draper, J. 2005. Age dating of the Thomson Fold Belt – a new paradigm required. In: *Digging Deeper 3, Geological Survey of Queensland Symposium*, 25th October 2005.

Dutter, R., Leitner, T., Reimann, C.and Wurzer, F. 1995. *DAS® Data Analysis System Handbook*. Technical University Vienna, 236 p.

Eden, P. and Björklund, A. 1996. Applicability of overbank sediment for environmental assessment according to wide-spaced sampling in Fennoscandia. *Applied Geochemistry*, **11**, (1-2), 271-276.

Fitzsimmons, K.E. 2006. Regional landform patterns in the Strzelecki Desert dunefield: dune migration and mobility at large scales. In: Fitzpatrick, R.W. and Shand, P. (Editors). *Regolith 2006: Consolidation and Dispersion of Ideas*, CRC LEME, Perth, Western Australia: 95-99. Available at: http://www.crcleme.org.au/Pubs/Monographs/Regolith2006.html

Geoscience Australia 2007a. Geology (1:2,500,000) (National Geoscience Dataset). ANZLIC unique identifier: (ANZCW0703002305) [Web Page] http://www.ga.gov.au/meta/ANZCW0703002305.html (Last accessed 10 December 2007).

Geoscience Australia 2007b. Surface geology of Australia 1:1,000,000 scale, eastern States. ANZLIC unique identifier: (ANZCW0703008689) [Web Page] http://www.ga.gov.au/meta/ANZCW0703008689.html (Last accessed 10 December 2007).

Geoscience Australia 2007c. Regolith Terrains of Australia (National Geoscience Dataset). ANZLIC unique identifier: (ANZCW0703002403) [Web Page] http://www.ga.gov.au/meta/ANZCW0703002403.html (Last accessed 10 December 2007).

Geoscience Australia 2007d. Australia Land Tenure 1993. ANZLIC unique identifier: (ANZCW0703005424) [Web Page] http://www.ga.gov.au/meta/ANZCW0703005424.html (Last accessed 10 December 2007).

Gibson, D.L. 1999a. *Explanatory notes for the 1:500 000 Broken Hill and Curnamona Province regolith landform maps*, CRC LEME OFR 77, CRC LEME, Perth, 59pp.

Gibson, D.L. 1999b. *Explanatory notes for the 1:500 000 Cobar regolith landform map*, CRC LEME OFR 76, Cooperative Centre for Landscape Evolution and Mineral Exploration (CRC LEME), Perth, 52pp.

Greenfield, J., Reid, W., Gilmore, P., Caritat P. de., Lech, M., Hill, S., Hulme, K., Watkins, J. and Worrall, L. 2006. The Thomson Orogen Project - a work in progress. In: Roach, IC (Editor) *Regolith 2006*, p118-121.

Hill, S.M. 2005a. Tibooburra, New South Wales. In: Anand, R.R. and Broekert, P. de (Editors). *Regolith landscape evolution across Australia: A compilation of regolith landscape case studies with regolith landscape evolution models*. CRC LEME, Perth, p118-122.

Hill, S.M. 2005b. Regolith and landscape evolution of far western New South Wales. In: Anand, R.R. and Broekert, P. de (Editors). *Regolith landscape evolution across Australia: A compilation of regolith landscape case studies with regolith landscape evolution models.* CRC LEME, Perth, p130-145.

Hutchinson, M., Stein J. and Stein, J. 2004. Derivation of Nested Catchments and Sub-Catchments for the Australian Continent [Web page] http://cres.anu.edu.au/outputs/audit/index.php (Last accessed 16 September 2006).

Kirkegaard, A.G. 1974. *Structural elements of the northern part of the Tasman Geosyncline.* In: Denmead, A.K., Tweedale, G.W. and Wilson, A.F. (Editors). The Tasman Geosyncline: A Symposium. Geological Society of Australia, Queensland Division, Brisbane, 47-62.

Mann, A.W., Birrell, R.D., Fedikow, M.A.F., and Souza, H.A.F. 2005. Vertical ionic migration: mechanisms, soil anomalies, and sampling depth for mineral exploration. *Geochemistry: Exploration, Environment, Analysis*, **5**, 201-210.

Marshall, T.J. 1947. Mechanical composition of soil in relation to field descriptions. CSIR Aust. Bull. No. 224, In: McDonald, R.C., Isbell, R.F., Speight, J.G., Walker, J. and Hopkins, M.S. (Editors). 1990. *Australian soil and land survey field handbook*, Inkata Press, p116-117.

McConnell, J.W., Finch, C., Hall, G.E.M. and Davenport, P. H. 1993. Geochemical mapping employing active and overbank stream-sediment, lake sediment and lake water in two areas of Newfoundland. *Journal of Geochemical Exploration*, **49**, 123-143.

McDonald, R.C., Isbell, R.F., Speight, J.G., Walker, J. and Hopkins, M.S. 1990. *Australian soil and land survey field handbook*, Inkata Press, p116-117.

Minami, M. 2000. *Using ArcMap GIS by ESRI*. Environmental Systems Research Institute, Inc., 380 New York Street, Redlands, CA 92373-8100, USA, 528 p.

Munsell Color Company 1975. *Munsell Soil Color Charts*. Munsell Color Co. Inc. Baltimore, Maryland 21218, U.S.A.

Northcote, K. 1979. *A factual key for the recognition of Australian soils*, 4th Edition. Rellim Technical Publications, Pty, Ltd, Coffs Harbour, p26-29.

Ottesen, R.T., Bogen, J., Bølviken, B. and Volden, T. 1989. Overbank sediment: a representative sample medium for regional geochemical sampling. *Journal of Geochemical Exploration*, **32**, 257-277.

Pain, C., Chan, R., Criag, M., Gibson, D., Kilgour, P. and Wilford J. 2003. Draft RTMAP regolith database field book and users guide. 2nd Edition. *CRCLEME Report 138*.

Pavlovic, G., Prohic, E. and Tibljas, D. 2004. Statistical assessment of geochemical pattern in overbank sediments of the river Sava, Croatia. *Journal Environmental Geology*, **46**, 132-143.

Pell, S.D., Chivas, A.R., and Williams, I.S. 1999. Great Victoria Desert; development and sand provenance. In: *Australian Journal of Earth Sciences*, **46,** (2), 289-999.

Rawle undated. Basic principles of particle size measurement. Malvern Instruments limited, UK, p 1-7. http://www.malvern.co.uk/malvern/kbase.nsf/allbyno/KB000021/$file/Basic_principles_of_particle_size_analysis_MRK034-low_res.pdf (Last accessed 11 August 2006).

Reimann, C. and Caritat, P. de 1998. *Chemical Elements in the Environment: Factsheets for the Geochemist and Environmental Scientist.* Springer-Verlag, Berlin, Germany, 398 pp.
Reimann, C. and Caritat, P. de 2005. Distinguishing between natural and anthropogenic sources for elements in the environment: regional geochemical surveys versus enrichment factors. *Science of the Total Environment*, **337**, 91-107.
Riley, S.J. 1998. Secular change in the annual flows of streams in the NSW section of the Murray-Darling Basin. In: Warner, R.F. *Fluvial geomorphology of Australia,* Academic Press, Sydney, p245-266.
Salminen R., Tarvainen T., Demetriades A. and 25 others. 1998. *FOREGS Geochemical Mapping field manual.* Geological Survey of Finland, Guide 47, 36p. Available at: http://www.gsf.fi/foregs/geochem/fieldman.pdf
Shaw, R.D., Wellman, P., Gun, P., Whitaker, A.J., Tarlowski, C.Z. and Morse, M. 1996. Guide to using the Australian crustal elements map. Australian Geological Survey Organisation Record, **1996/30**, 49p.
Sheard, M.J., Prescott, J.R. and Huntley, D.J. 2006. Great Victoria Desert: new dates for South Australia's ?oldest desert dune system. *MESA Journal* (Quarterly Earth Resources Journal of Primary Industries and Resources South Australia), **42**, 15-26.
State Emergency Service of NSW 2006a. SES Image Gallery photo # 3058 [Web Page] http://www.ses.nsw.gov.au/imagegallery/3064/HighResImage/brewarrina_1998_flood4_large.jpg (Last accessed 18 December 2006)
State Emergency Service of NSW 2006b. SES Image Gallery photo # 3058 [Web Page] http://www.ses.nsw.gov.au/imagegallery/3058/HighResImage/brewarrina_1998_flood_aerial1_large.jpg (Last accessed 18 December 2006)
Swennen, R., Sluys, J. van der, Hindel, R. and Brusselmans, A. 1998. Geochemistry of overbank and high-order stream sediments in Belgium and Luxembourg: a way to assess environmental pollution. *Journal of Geochemical Exploration*, **62**, 67-79.
Tukey, J.W. 1977. *Exploratory Data Analysis*. Addison-Wesley, Reading, 506 pp.
Velleman, P.F. and Hoaglin, D.C. 1981. Applications, Basics and Computing of Exploratory Data Analysis. Duxbury Press, Boston, 354 pp.
Volden, T., Reimann, C., Pavlov, V.A., Caritat, P. de and Äyräs, M. 1997. Overbank sediments from the surroundings of the Russian nickel mining and smelting industry on the Kola Peninsula. *Journal Environmental Geology*, **32**, 175-185.
Walker, P.J. 1991. *Land systems of western New South Wales*. Technical Report No. 25, Soil Conservation Service of New South Wales, 615 pp.
Whiteaker, T. and Maidment, D. 2004. ArcHydro Toolset for ArcGIS 8.x [Web Page] http://www.crwr.utexas.edu/archydrotools/tools.html (Last accessed 16 September 2006).
Xie, X., Yan, M., Li, L. and Shen, H., 1985. Geochemical reference samples, drainage sediment GSD 1-8 from China. *Geostandards Newsletter*, **9**, 83-159.

APPENDICES

APPENDIX 1: SAMPLING FIELD SHEET

Method of digging hole:
◷:

REGIONAL GEOCHEMICAL SURVEY
OVERBANK SEDIMENT SAMPLING

SAMPLE ID **2005 86 11 __ __ ☐ ***

Date ____/____/__2006 (dd/mm/yyyy)
Sampler/Team:

LOCATION REGION: Thomson Orogen
STREAM NAME ________________
SHIRE ________________
MAPSHEET ________________
NEAREST TOWN ________________
PROPERTY ________________

Zone ______________	Latitude ______________	Longitude ______________
Datum ______________	Way Pt. ______________	Altitude ____________ m

DESCRIPTION OF CATCHMENT BASIN

Approx size of catchment ______________ (hectares / km^2) Catchment ID __________ (ANU catch500)
Predominant bedrock lithology within catchment basin _____________________

SITE DESCRIPTION

Landscape/topography ________________________________ RTMAP: Landform _______
Geomorph1 _______
Geomorph1 _______

Land use
- ☐ Agriculture, specify crop _____________
- ☐ Agriculture, grazing. Specify animal _______________
- ☐ Pasture, grassland, fallow field
- ☐ Forest ☐ Native ___________ ☐ Plantation ________ ☐ Other __________
- ☐ Wetland
- ☐ Not-cultivated
- ☐ Urban
- ☐ Other, specify ______________
- ☐ National Park/Reserve

River width ______________m depth______________m
Channel Characteristics ☐ Natural ☐ reinforced
☐ Man-made (ditch, irrigation channel)
Time since last rainfall ____ days ____ hours
Stream flow ☐ Dry ☐ Stagnant ☐ Flowing ☐ Flooding
Bedrock lithology _____________________________
Outcrops ☐ Yes, specify ______________
☐ No
Depth of observed groundwater table (cm) ______

* Sampling interval from surface
☐ top _______cm (00**1**) ☐ Geochem ☐ Heavy Min Sieve fraction:_____
☐ base _______ cm (00**2**) ☐ Geochem ☐ Heavy Min Sieve fraction:_____

☐ vegetation (00**3**), species: _________
☐ lag (00**4**)
☐ other, specify: ( )
☐ MMI sample _______ cm (00**5**)

Possible sources of contamination, specify ____

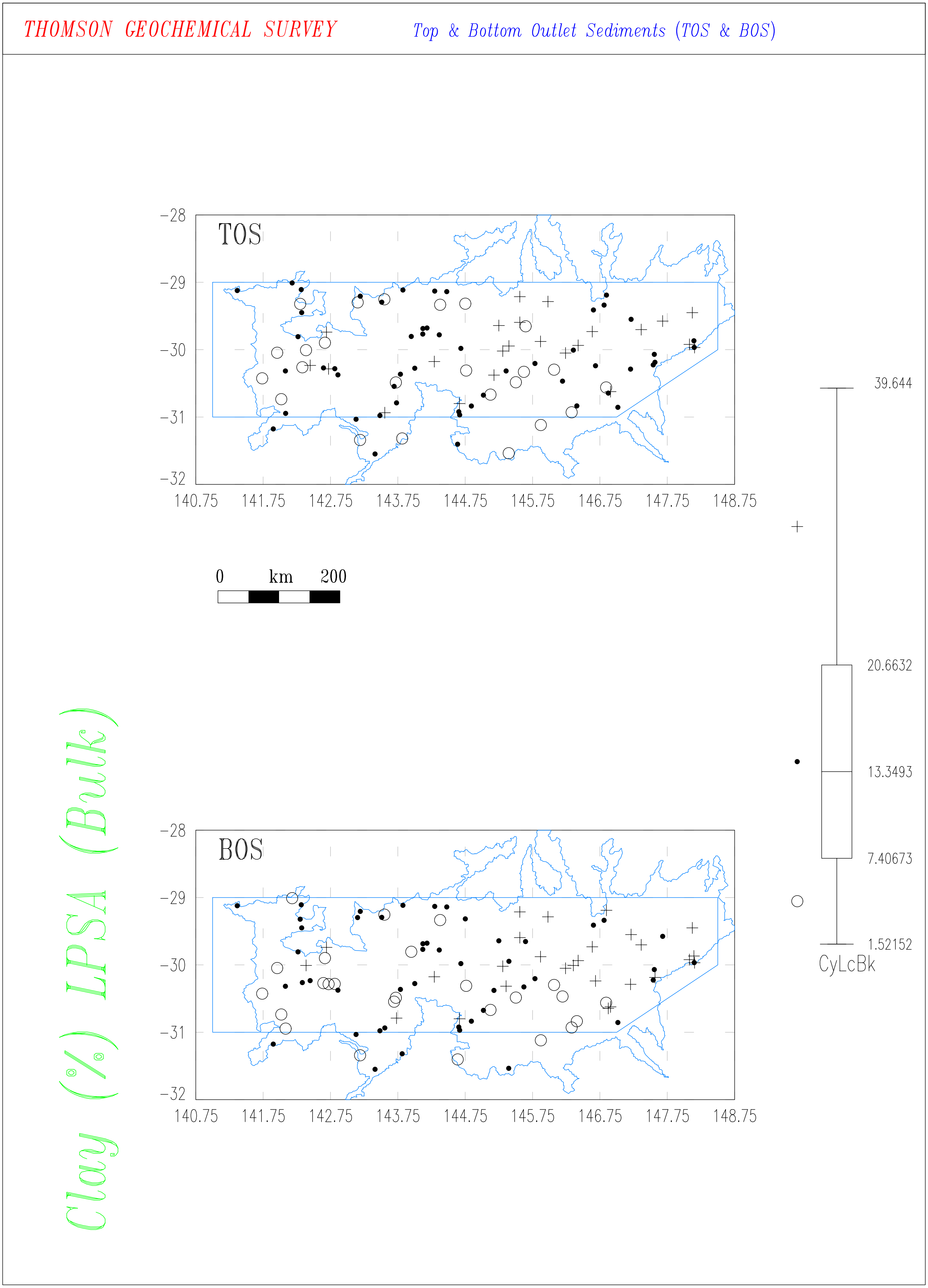
OTHER

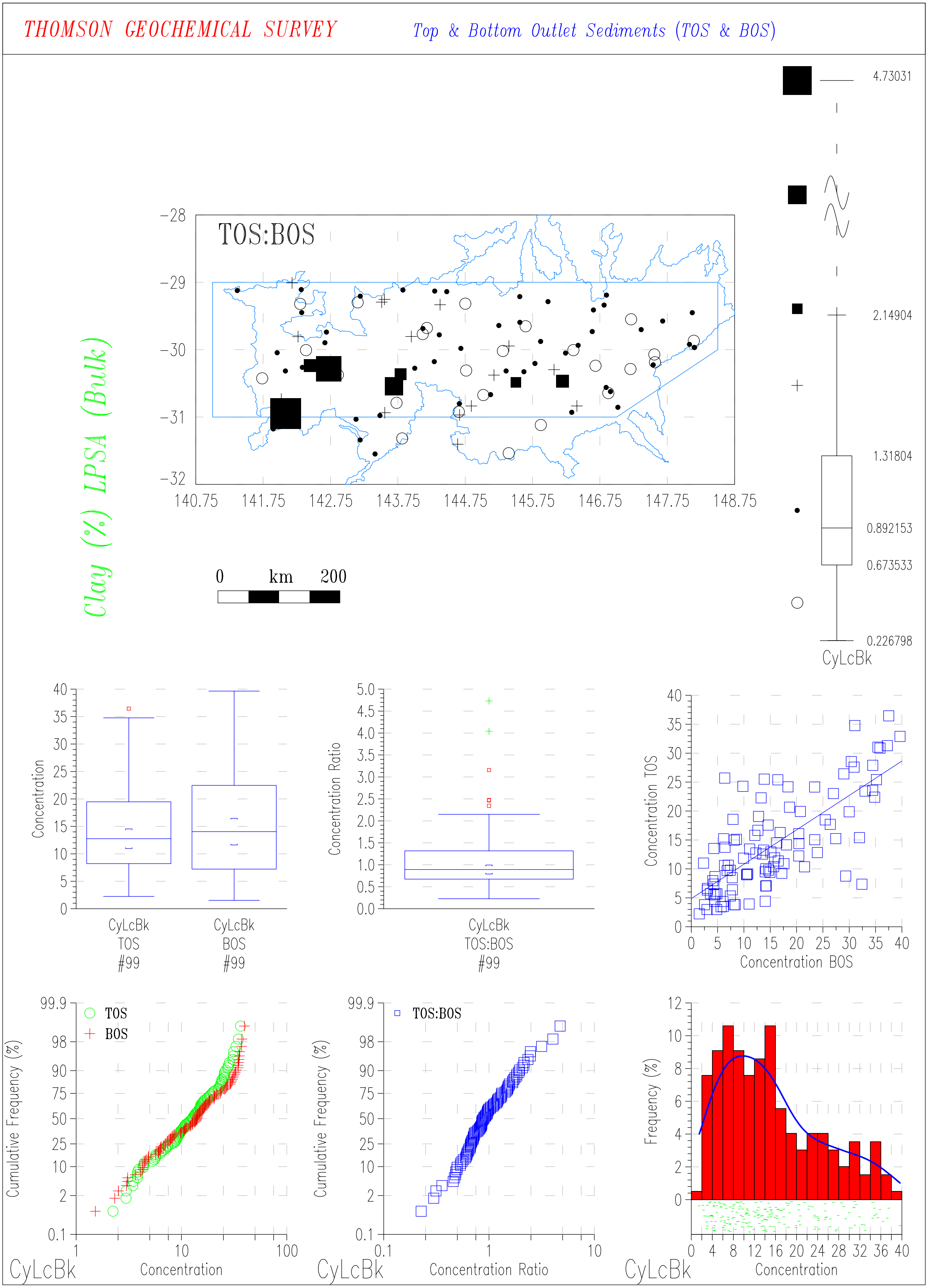
Field pH	Top	____	Munsell Colour - Dry	Top	___________
	Bottom	____		Bottom	___________
Texture	Top	_________	- Moist	Top	___________
	Bottom	_________		Bottom	___________

NUMBER OF SAMPLE BAGS **PHOTOS**
COMMENTS

Modified from Salminen, R. et al,. 1998. FOREGS geochemical mapping field manual. Geologian tutkimuskeskus, Opas 47, Geological Survey of Finland, Guide 47. Espoo. Appendix.

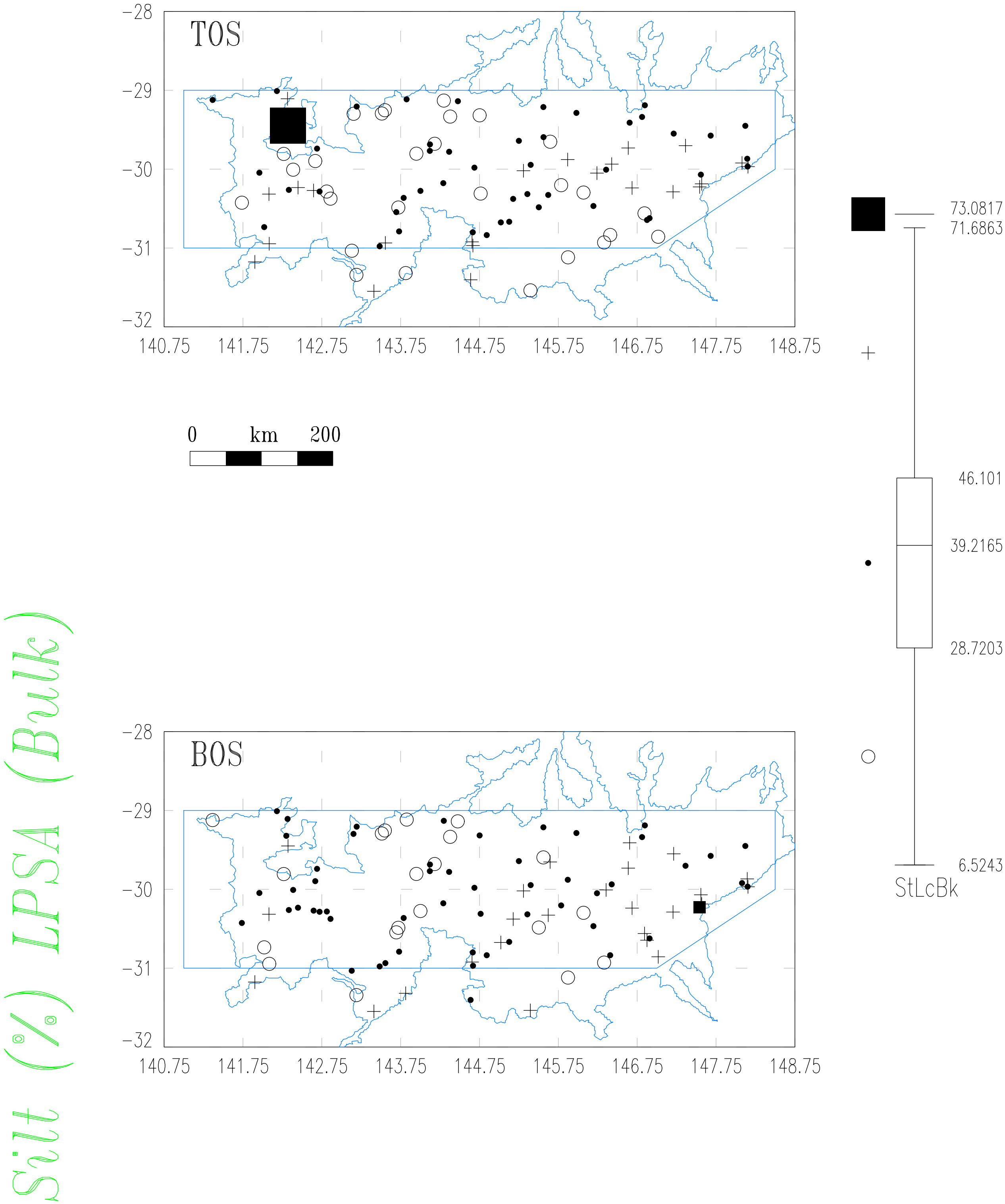
APPENDIX 2: TOS AND BOS GEOCHEMICAL MAPS

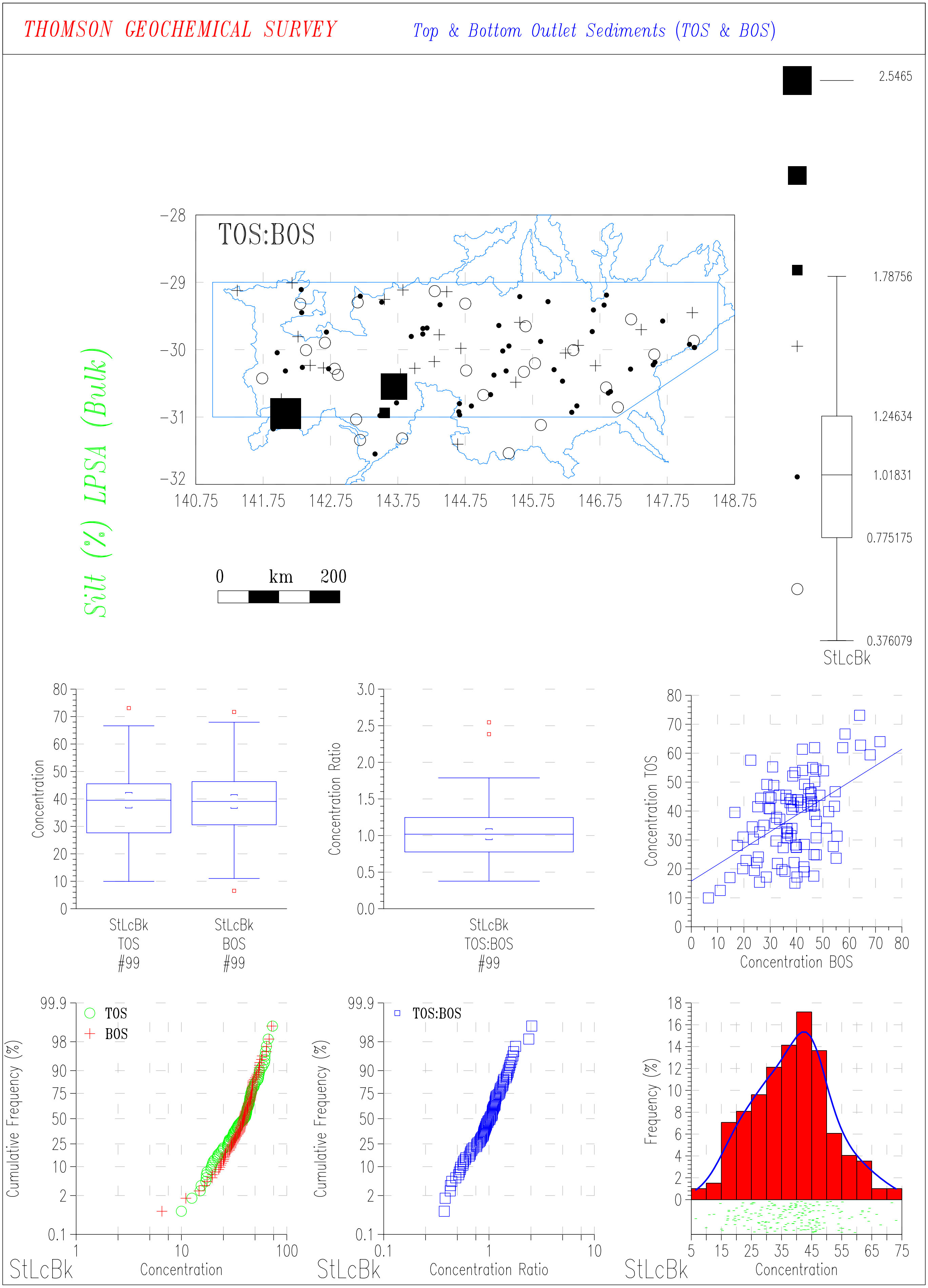

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
39.644
20.6632
13.3493
7.40673
1.52152
CyLcBk
Clay (%) LPSA (Bulk)



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Clay (%) LPSA (Bulk)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
4.73031
2.14904
1.31804
0.892153
0.673533
0.226798
CyLcBk
Concentration
CyLcBk
TOS
#99
CyLcBk
BOS
#99
Concentration Ratio
CyLcBk
TOS:BOS
#99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
CyLcBk
Concentration
TOS:BOS
CyLcBk
Concentration Ratio
Frequency (%)
CyLcBk
Concentration

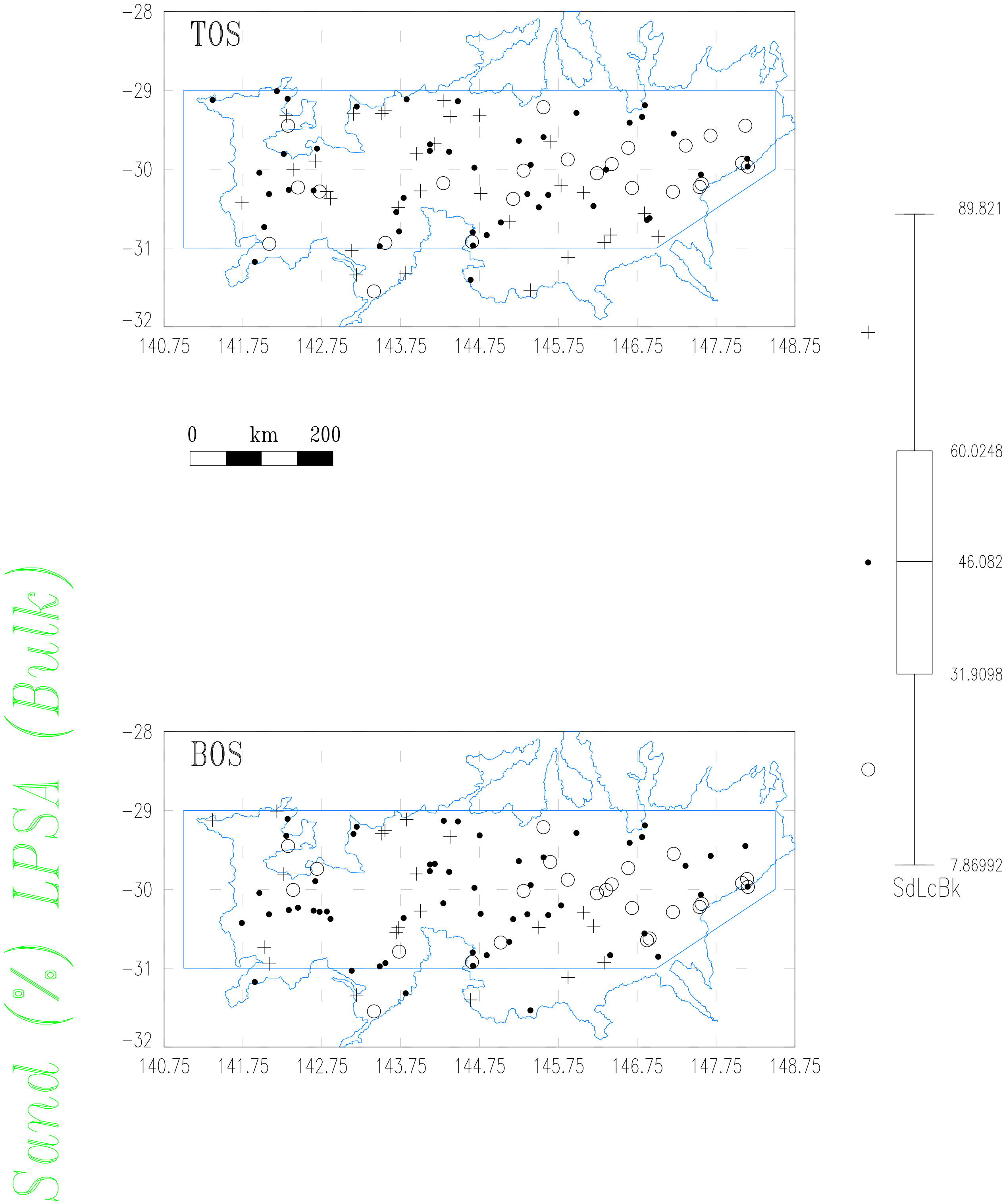
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

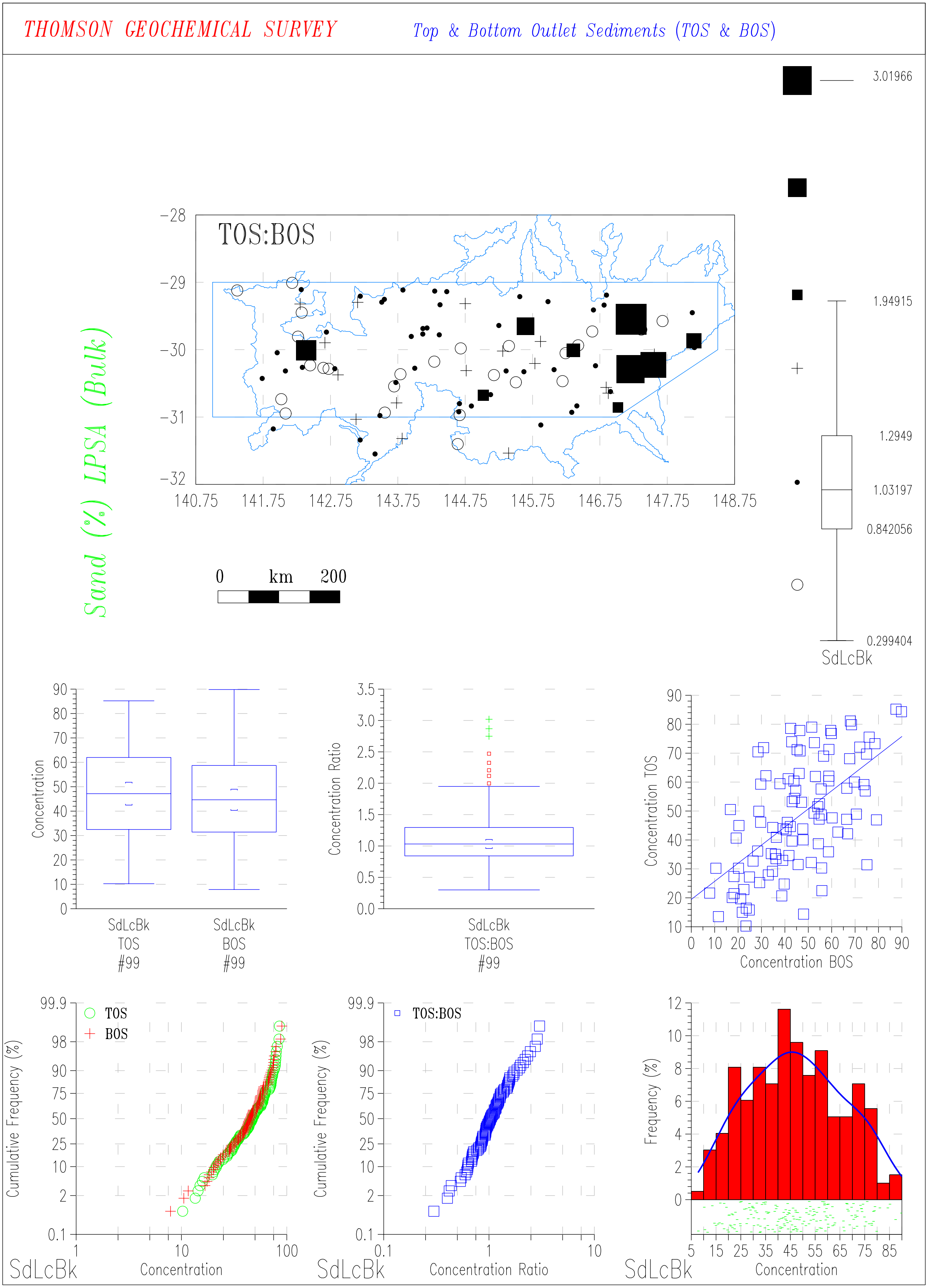



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Silt (%) LPSA (Bulk)
TOS:BOS
0 km 200
140.75 141.75 142.75 143.75 144.75 145.75 146.75 147.75 148.75
−28 −29 −30 −31 −32
2.5465
1.78756
1.24634
1.01831
0.775175
0.376079
StLcBk
Concentration
StLcBk TOS #99
StLcBk BOS #99
Concentration Ratio
StLcBk TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
Concentration Ratio
StLcBk

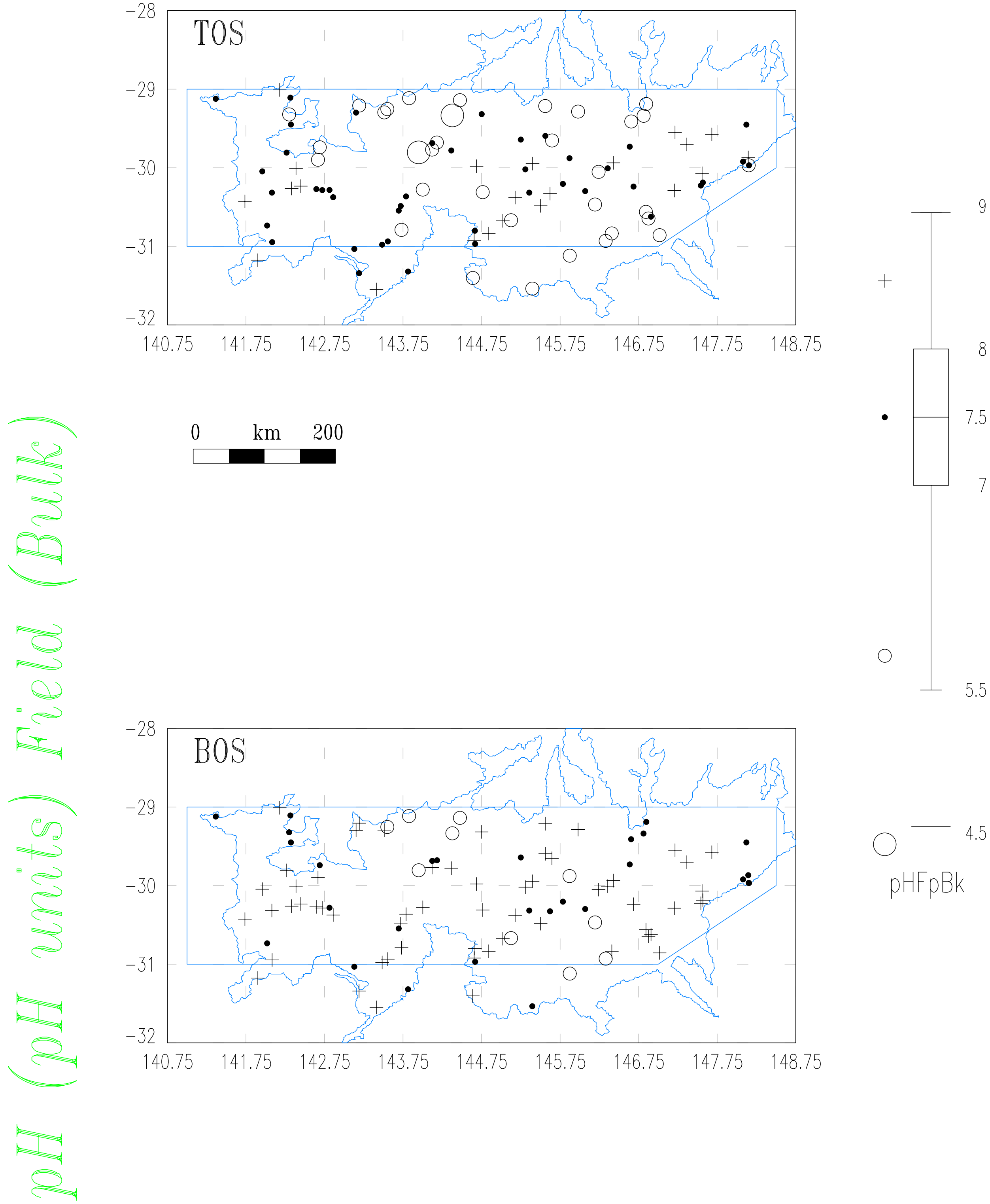
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

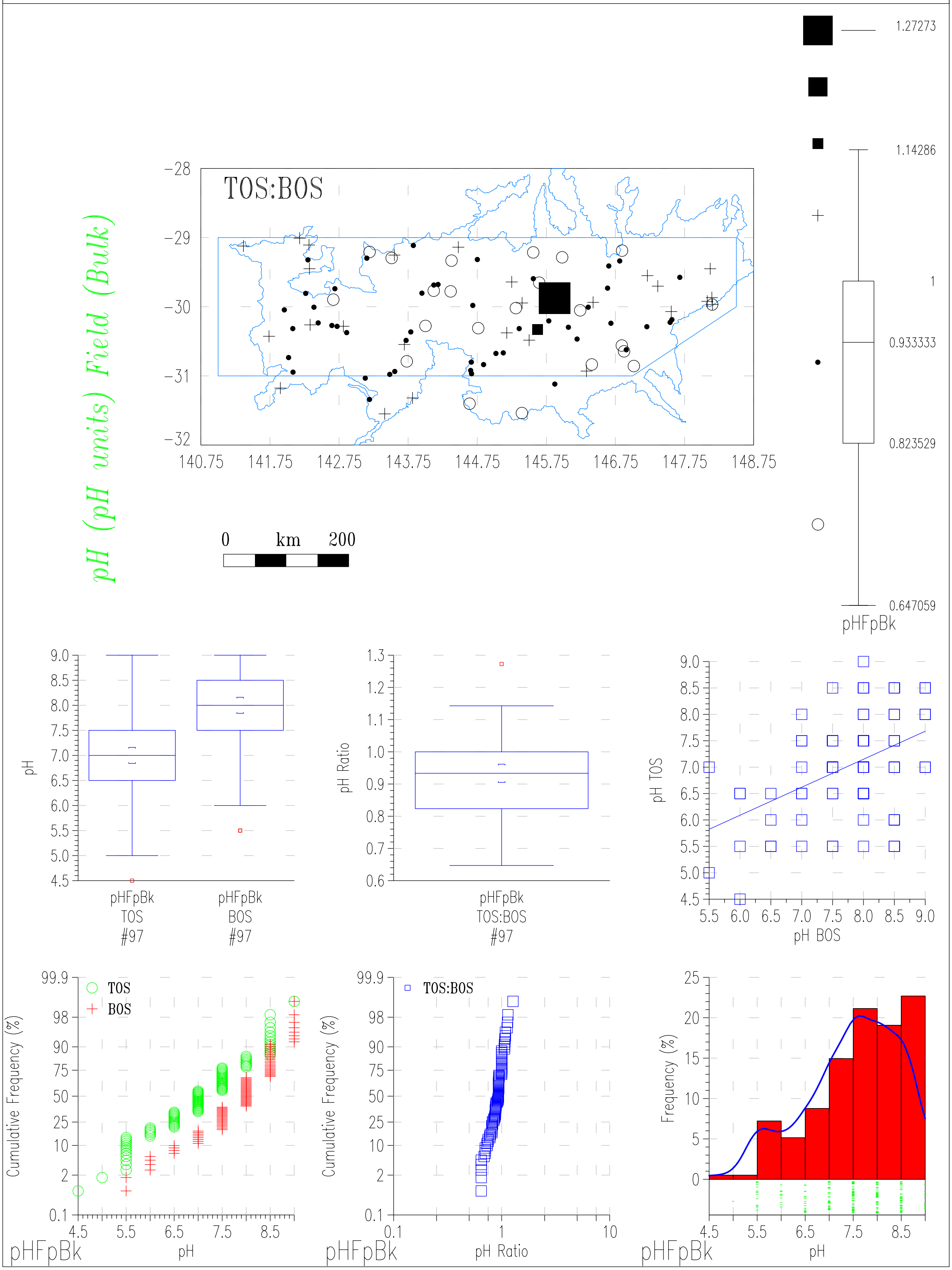



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sand (%) LPSA (Bulk)
TOS:BOS
0 km 200
3.01966
1.94915
1.2949
1.03197
0.842056
0.299404
SdLcBk
Concentration
SdLcBk TOS #99
SdLcBk BOS #99
Concentration Ratio
SdLcBk TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
SdLcBk
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

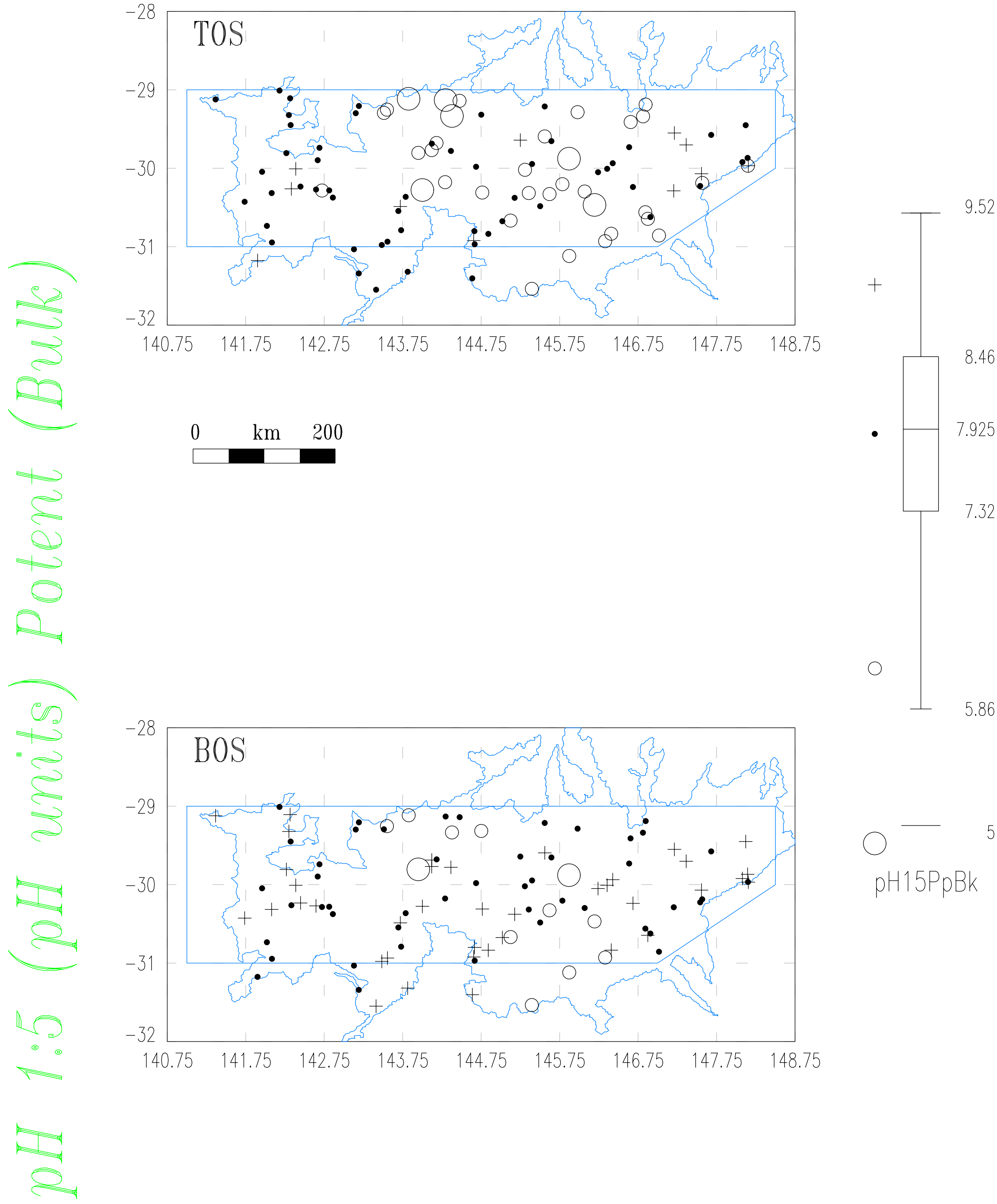
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

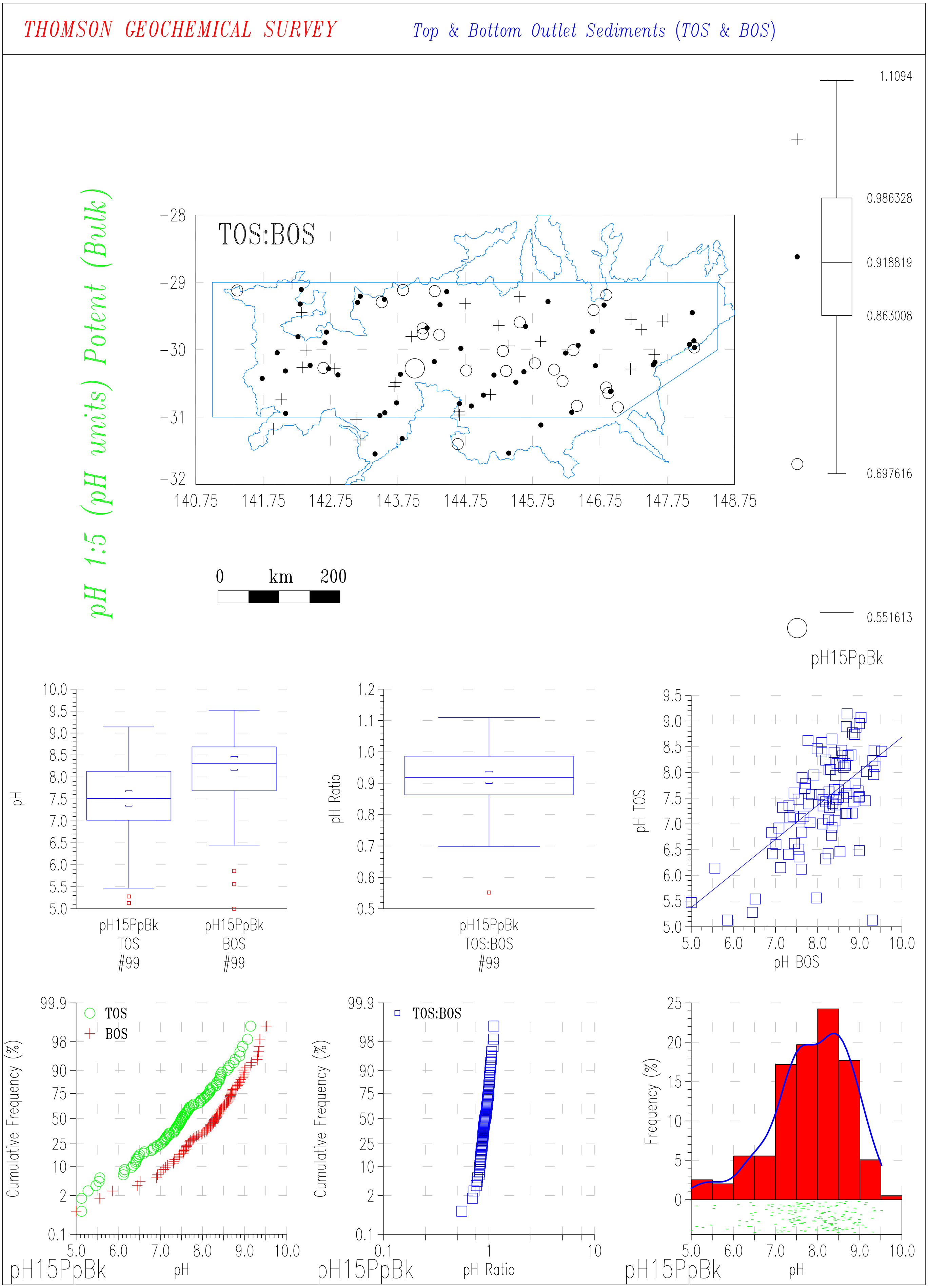


THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

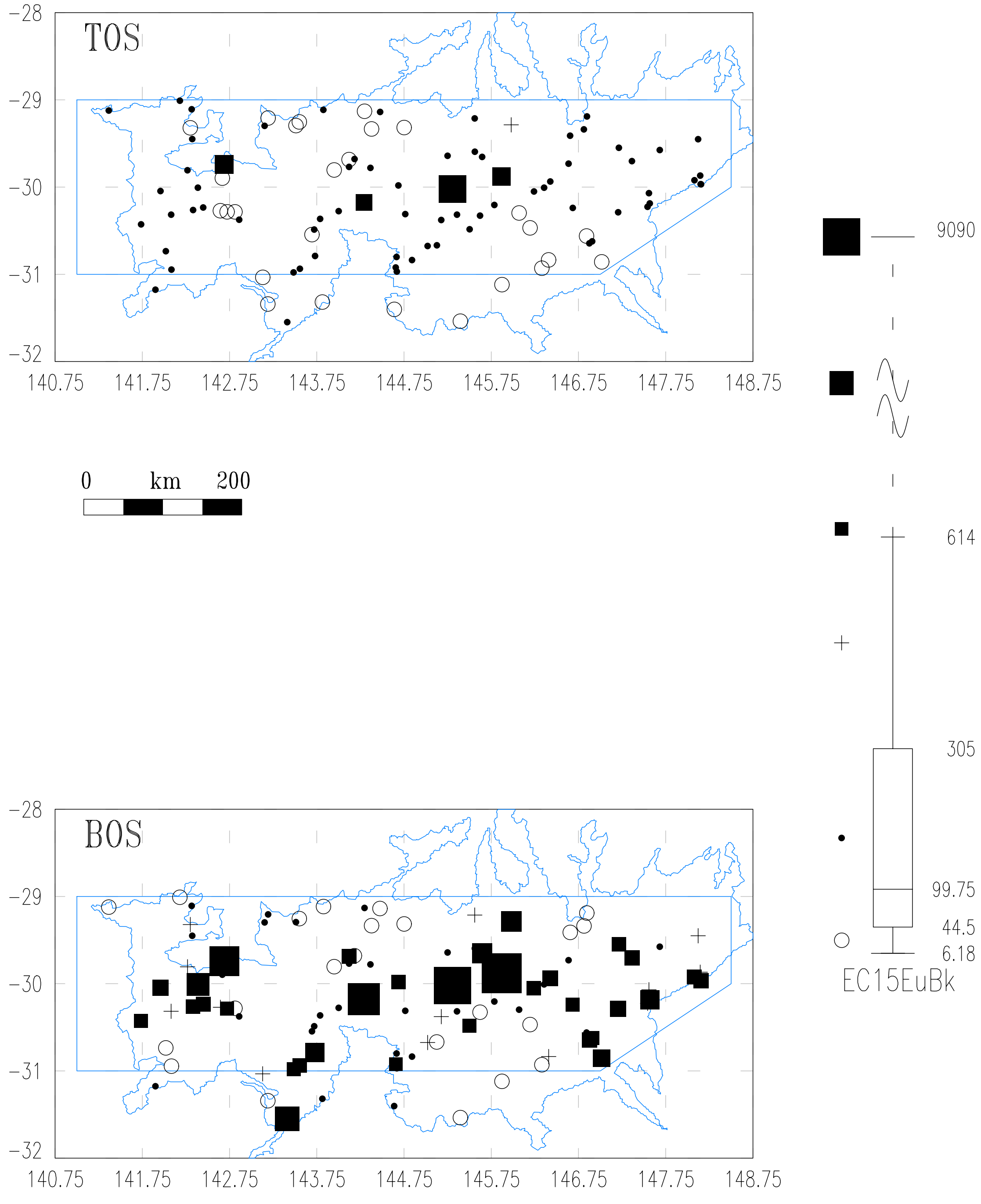


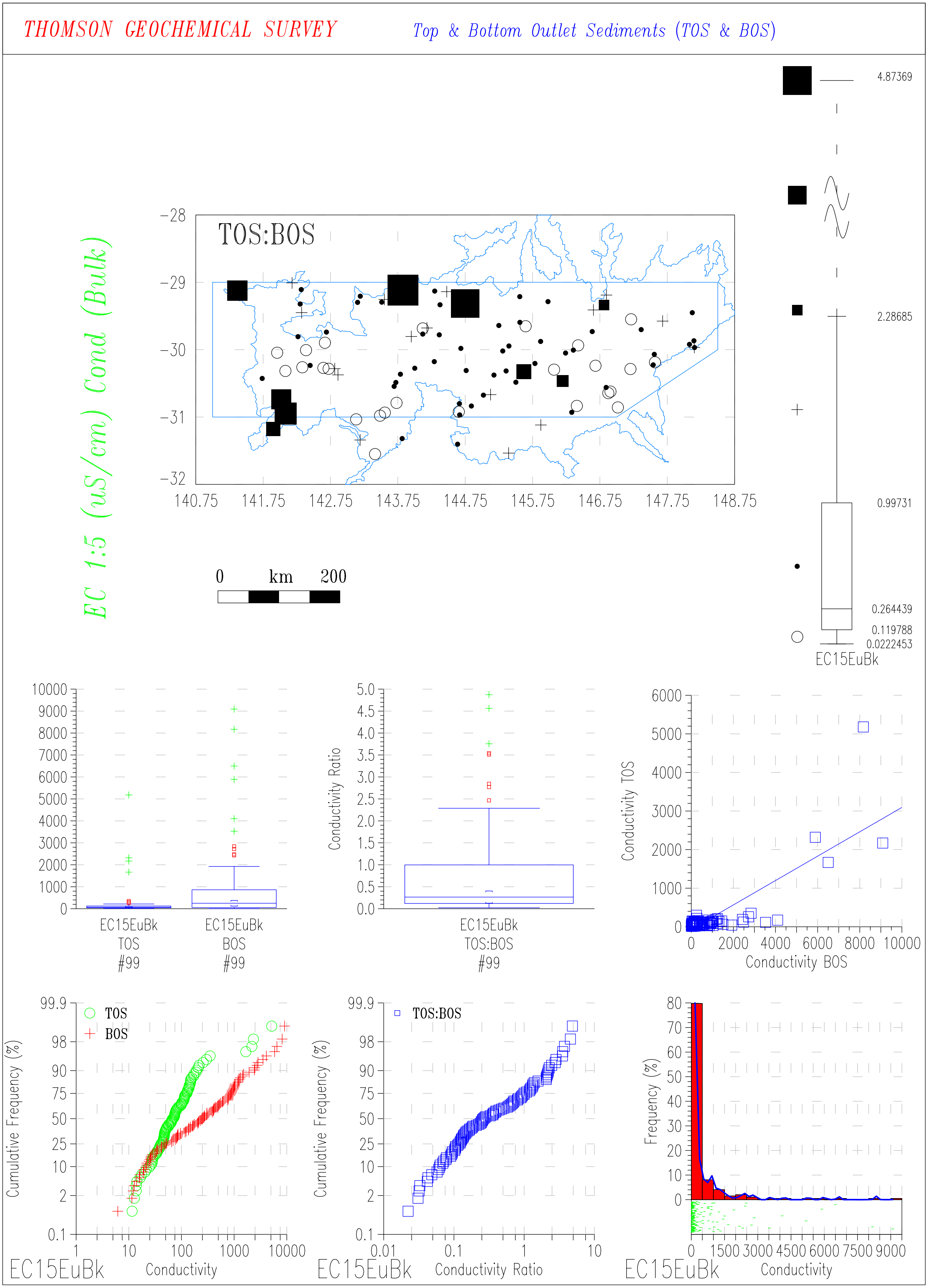

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
pH 1:5 (pH units) Potent (Bulk)
TOS:BOS
0 km 200
1.1094
0.986328
0.918819
0.863008
0.697616
0.551613
pH15PpBk
pH
pH15PpBk TOS #99
pH15PpBk BOS #99
pH Ratio
pH15PpBk TOS:BOS #99
pH TOS
pH BOS
TOS
BOS
Cumulative Frequency (%)
pH15PpBk
pH Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

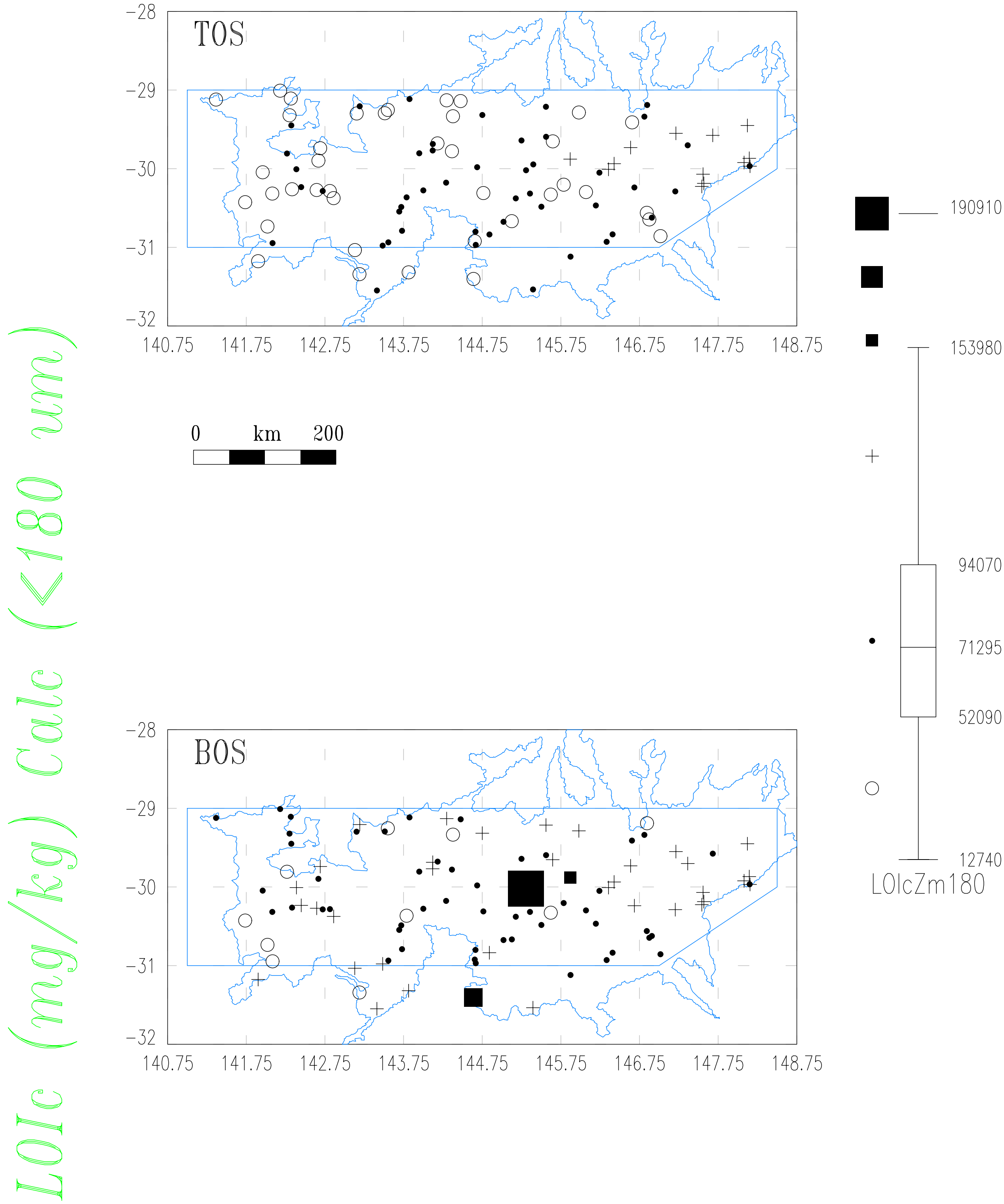
EC 1:5 (uS/cm) Cond (Bulk)



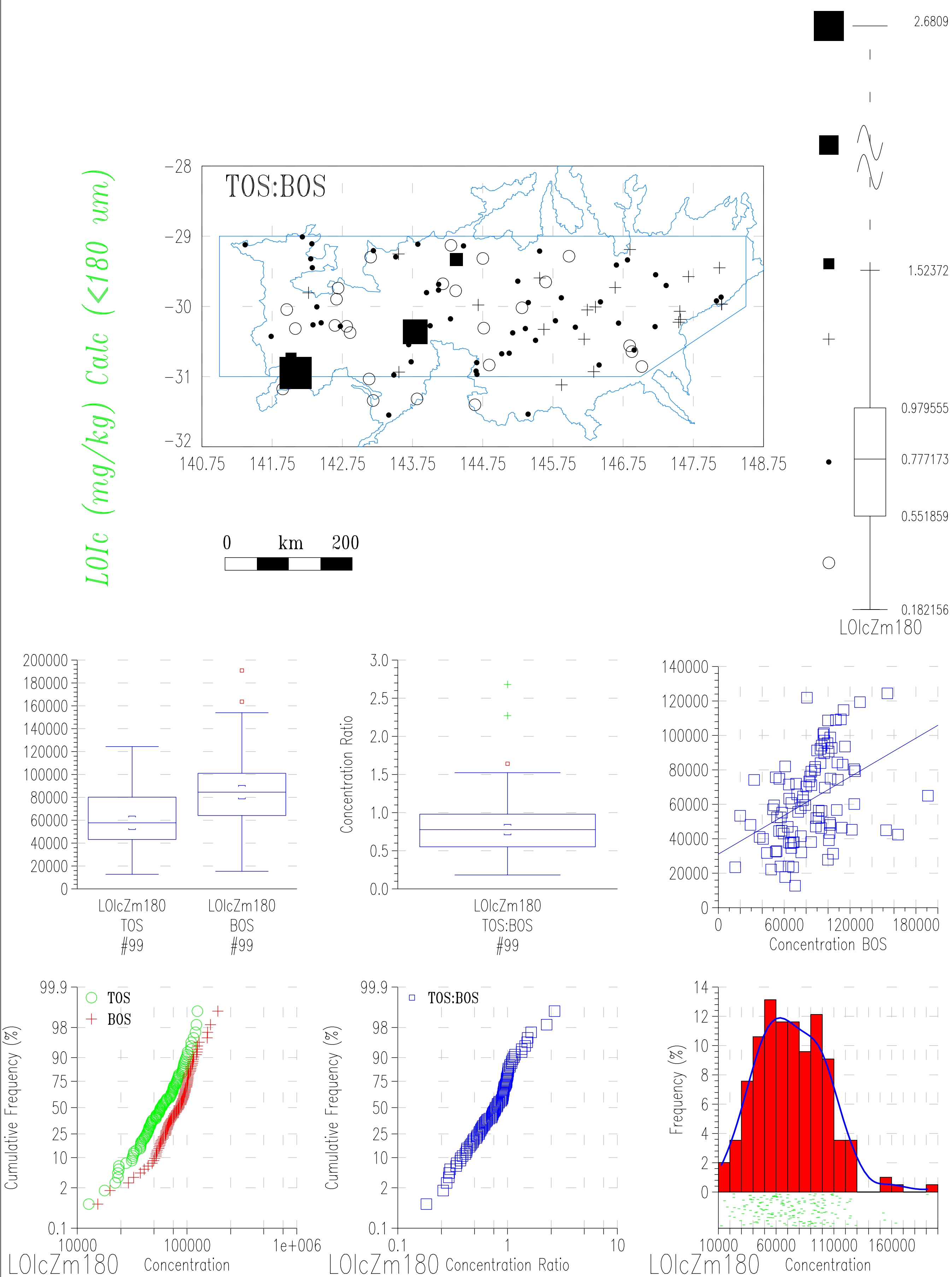

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
EC 1:5 (uS/cm) Cond (Bulk)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
4.87369
2.28685
0.99731
0.264439
0.119788
0.0222453
EC15EuBk
EC15EuBk TOS #99
EC15EuBk BOS #99
Conductivity Ratio
EC15EuBk TOS:BOS #99
Conductivity TOS
Conductivity BOS
TOS
BOS
Cumulative Frequency (%)
EC15EuBk
Conductivity
Conductivity Ratio
Frequency (%)

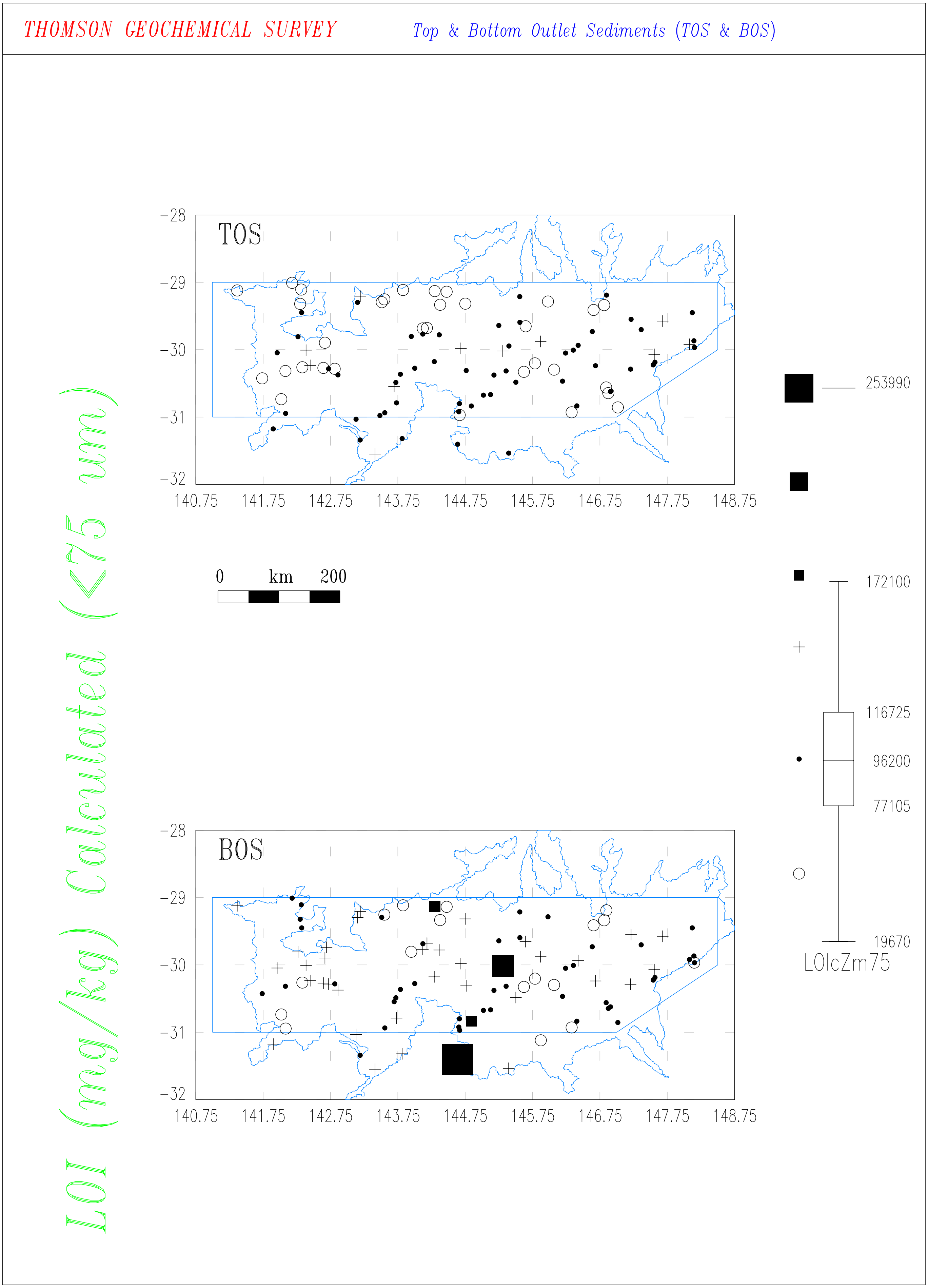
THOMSON GEOCHEMICAL SURVEY

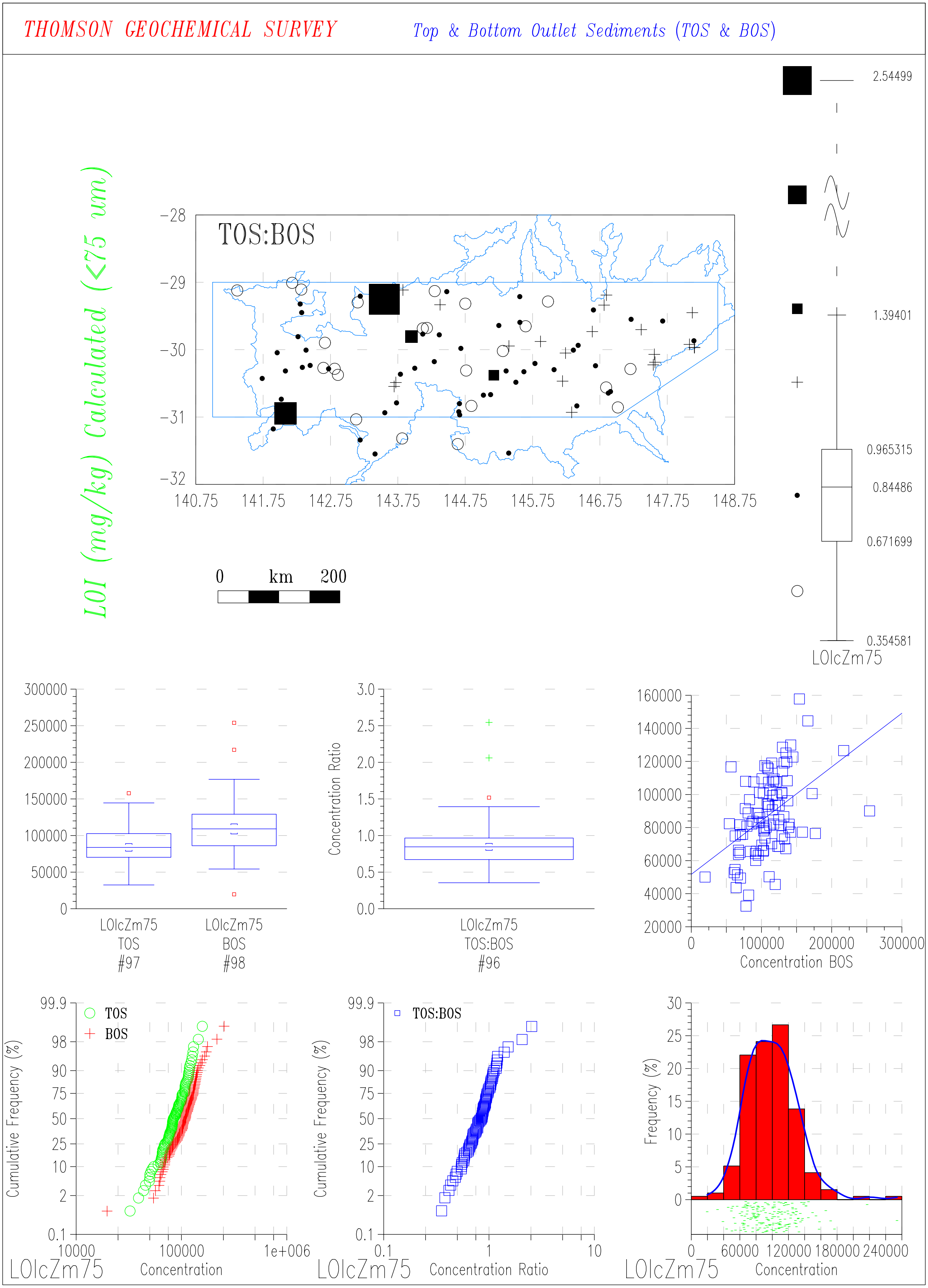
Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

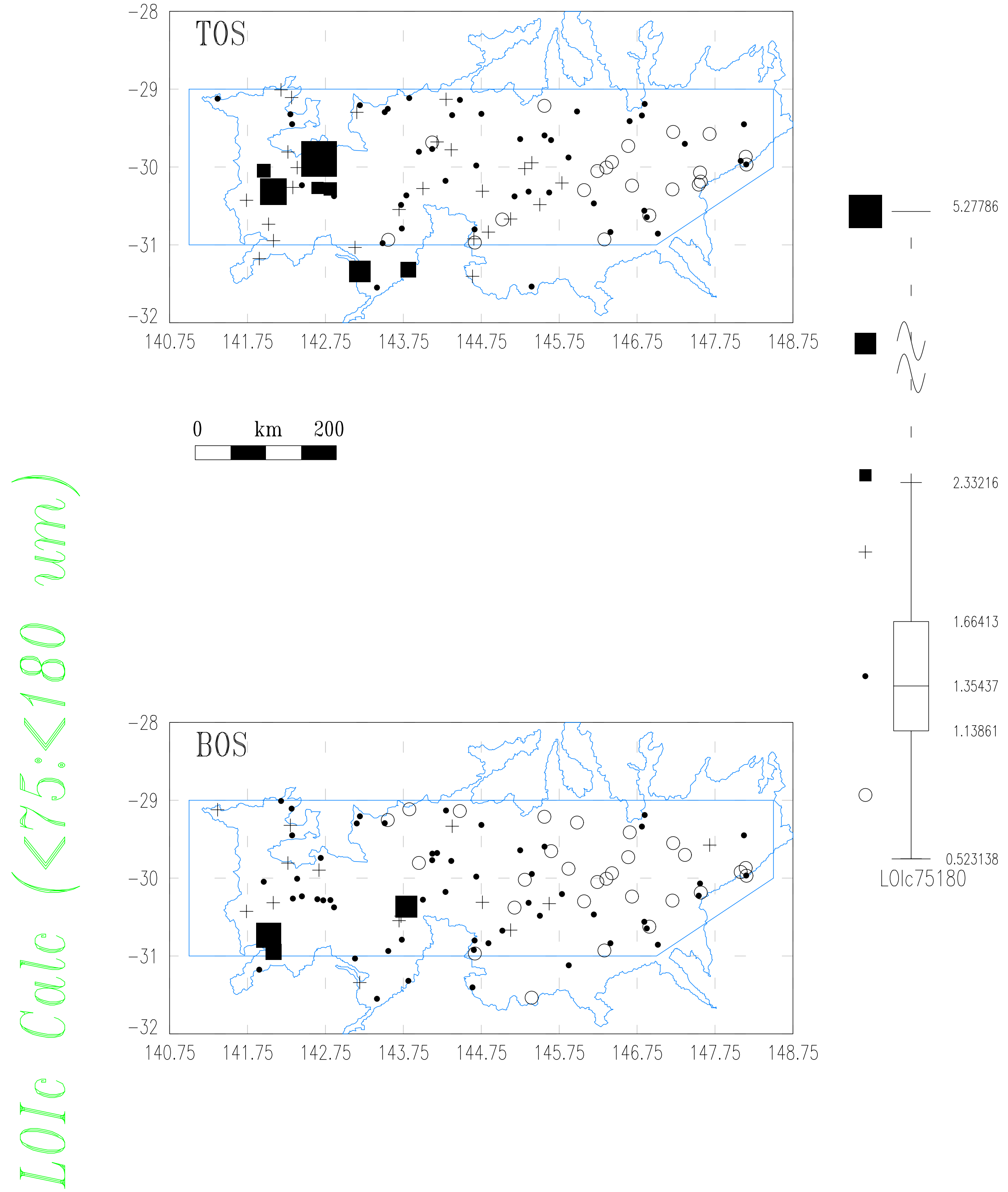



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
LOI (mg/kg) Calculated (<75 um)
TOS
BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
253990
172100
116725
96200
77105
19670
LOIcZm75

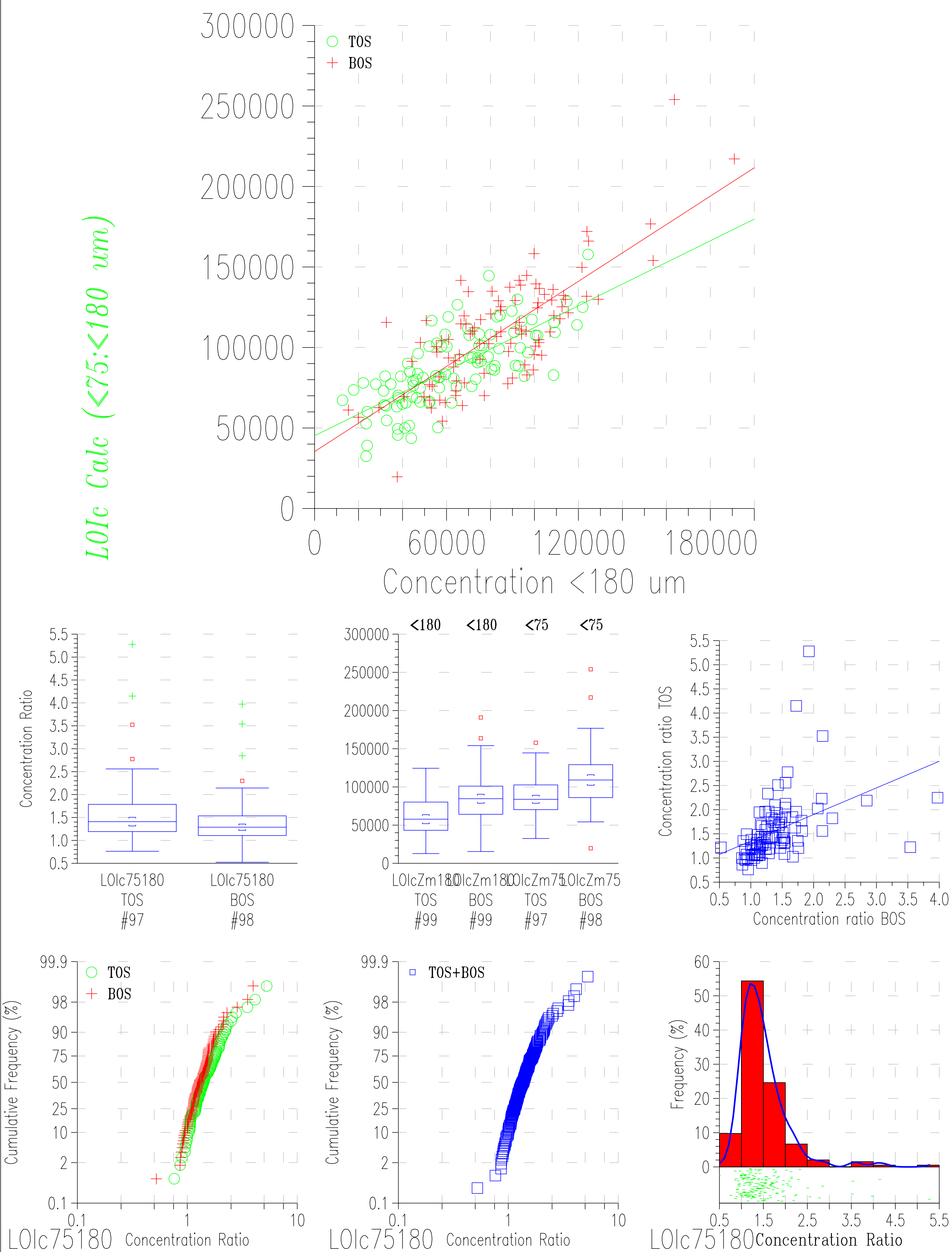

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
LOI (mg/kg) Calculated (<75 um)
TOS:BOS
0 km 200
2.54499
1.39401
0.965315
0.84486
0.671699
0.354581
LOIcZm75
LOIcZm75 TOS #97
LOIcZm75 BOS #98
Concentration Ratio
LOIcZm75 TOS:BOS #96
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

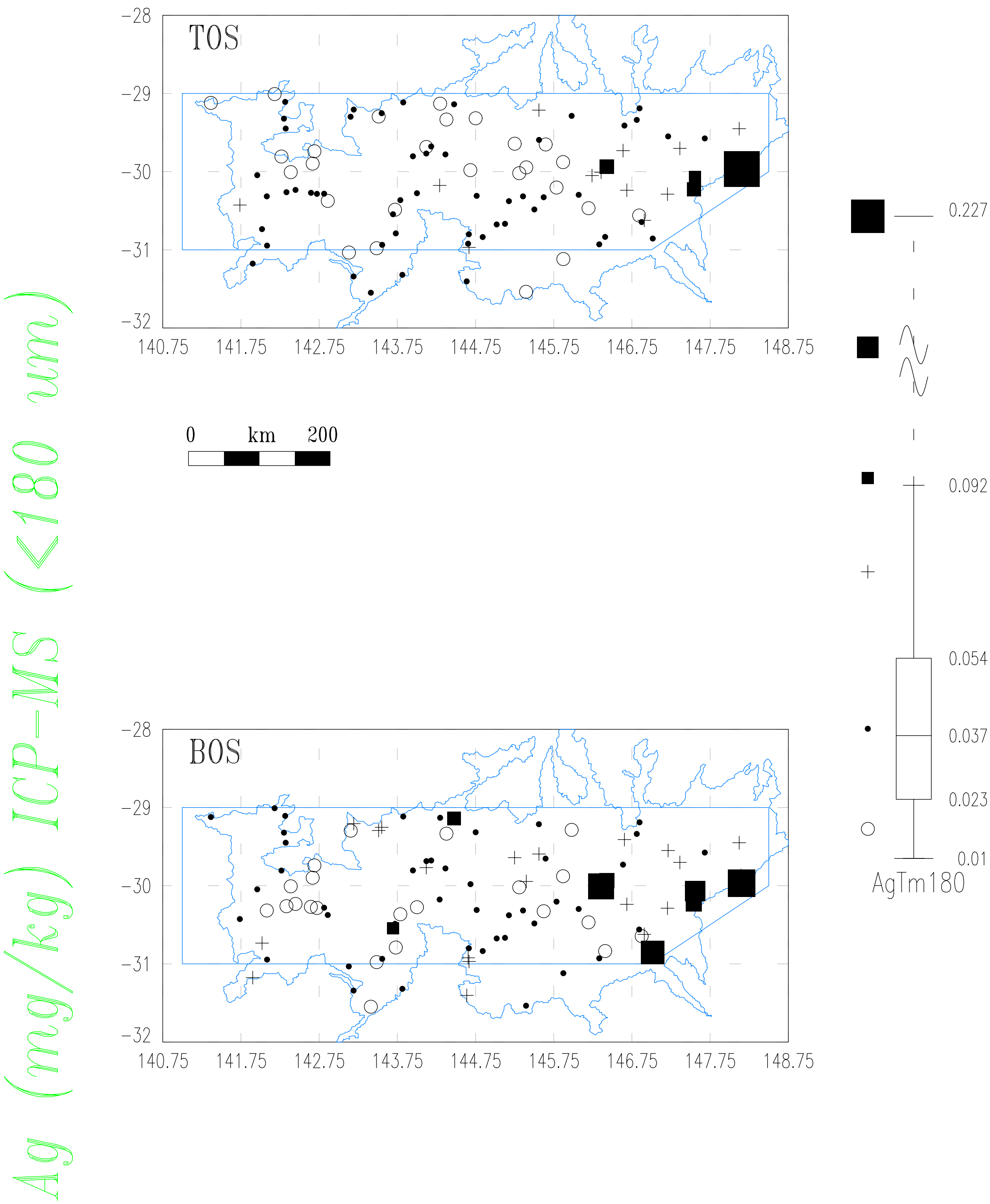
Top & Bottom Outlet Sediments (TOS & BOS)

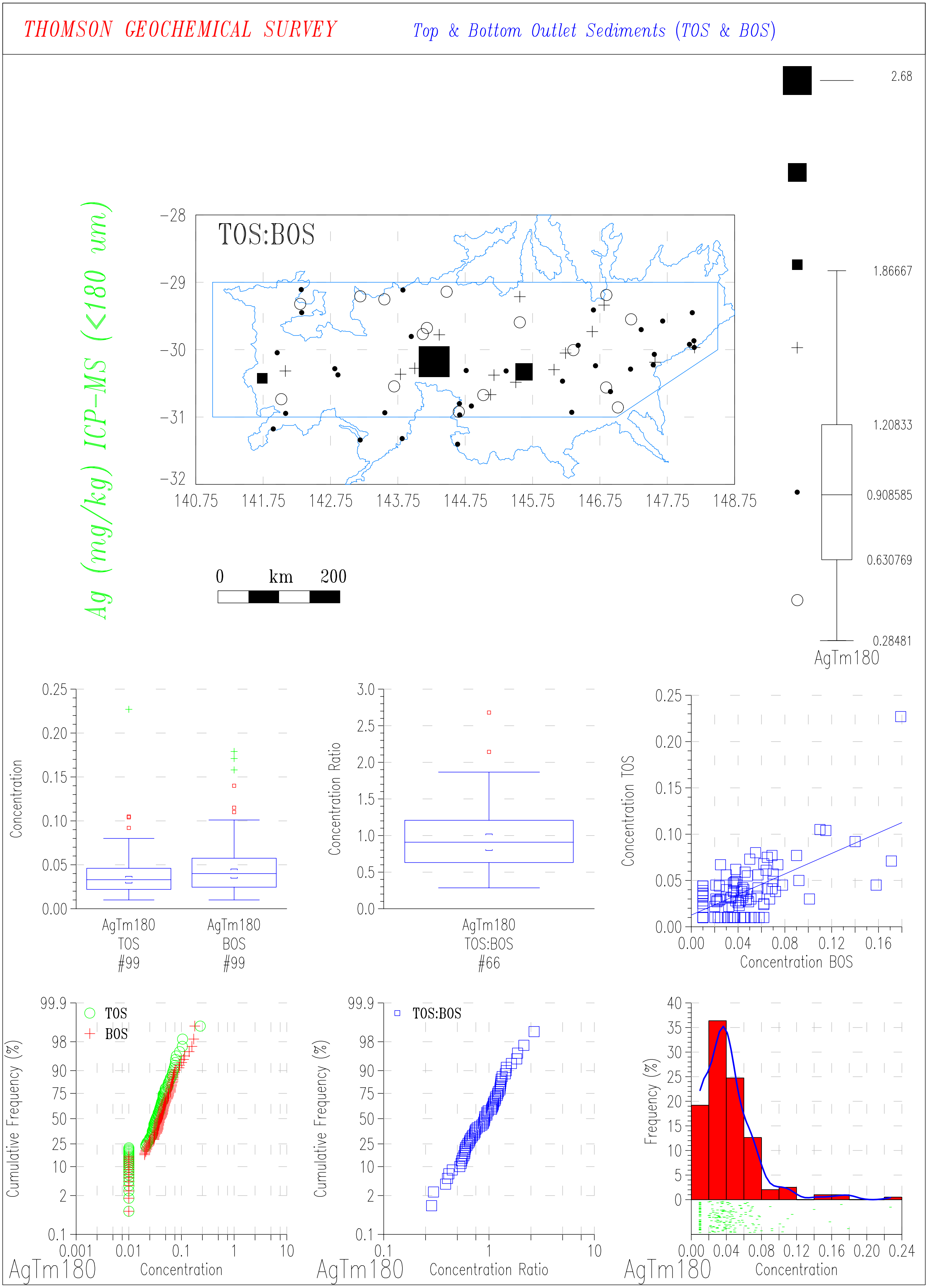


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



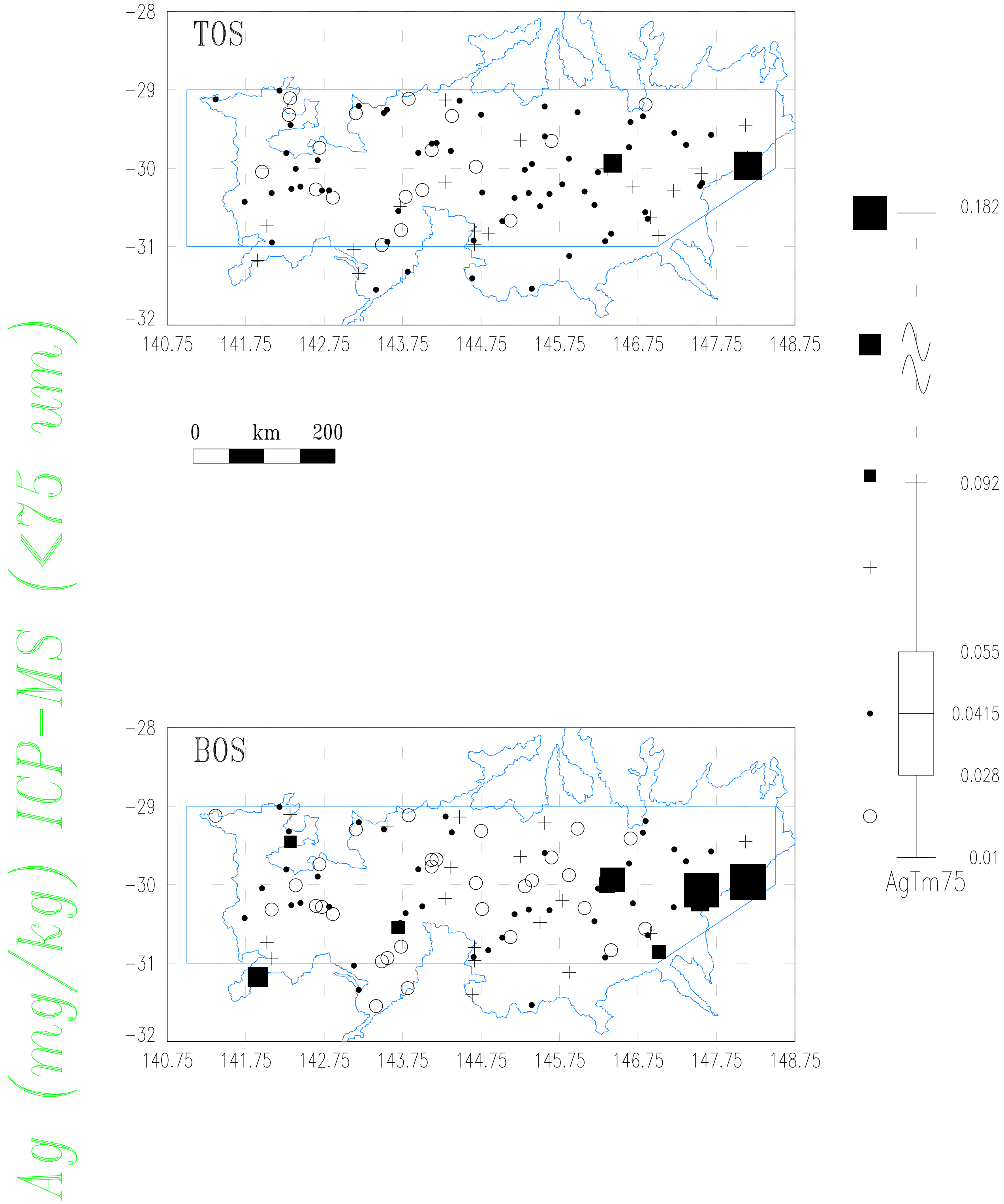
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

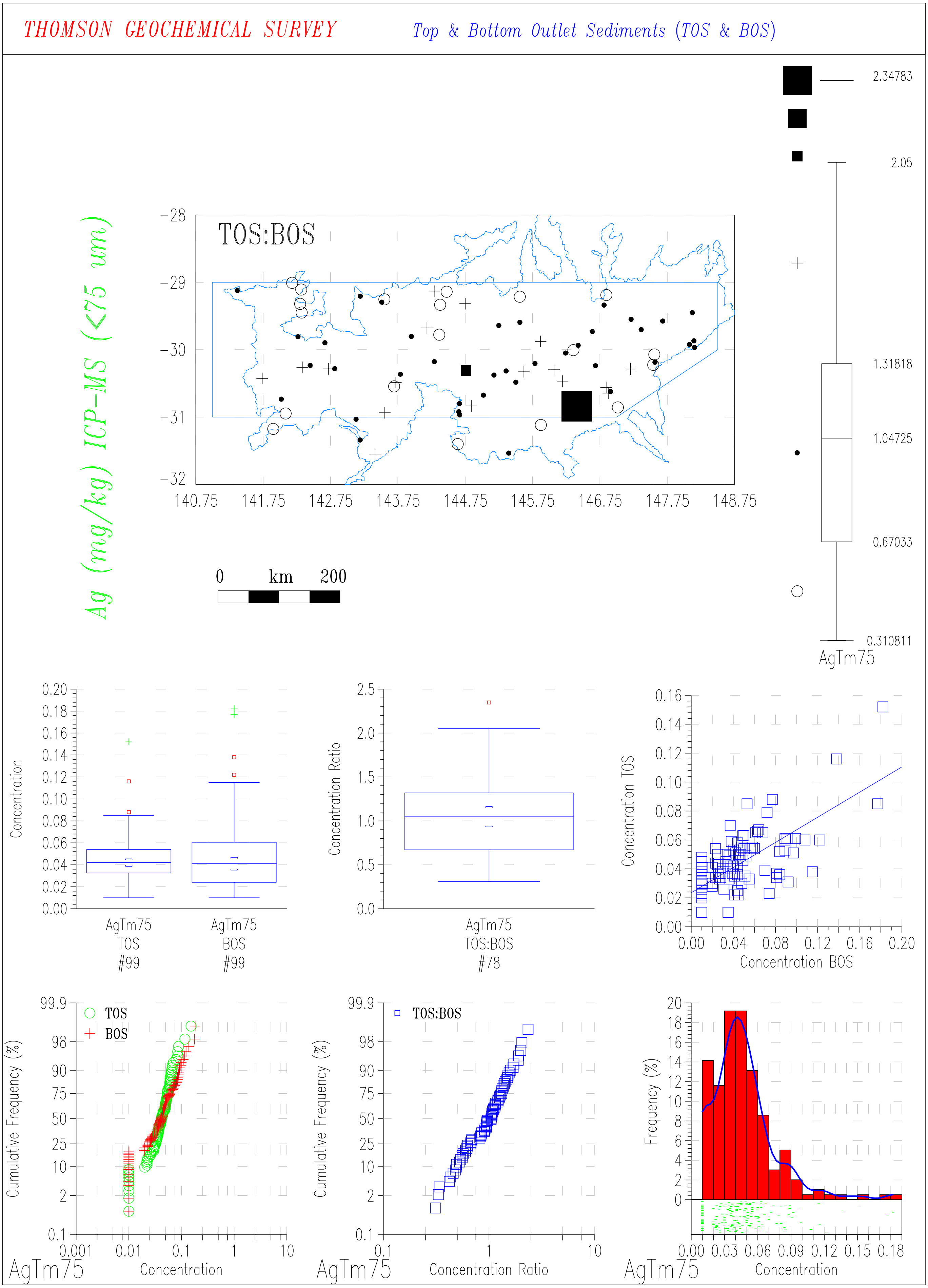




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ag (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
2.68
1.86667
1.20833
0.908585
0.630769
0.28481
AgTm180
Concentration
AgTm180 TOS #99
AgTm180 BOS #99
Concentration Ratio
AgTm180 TOS:BOS #66
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
AgTm180 Concentration
TOS:BOS
AgTm180 Concentration Ratio
Frequency (%)
AgTm180 Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

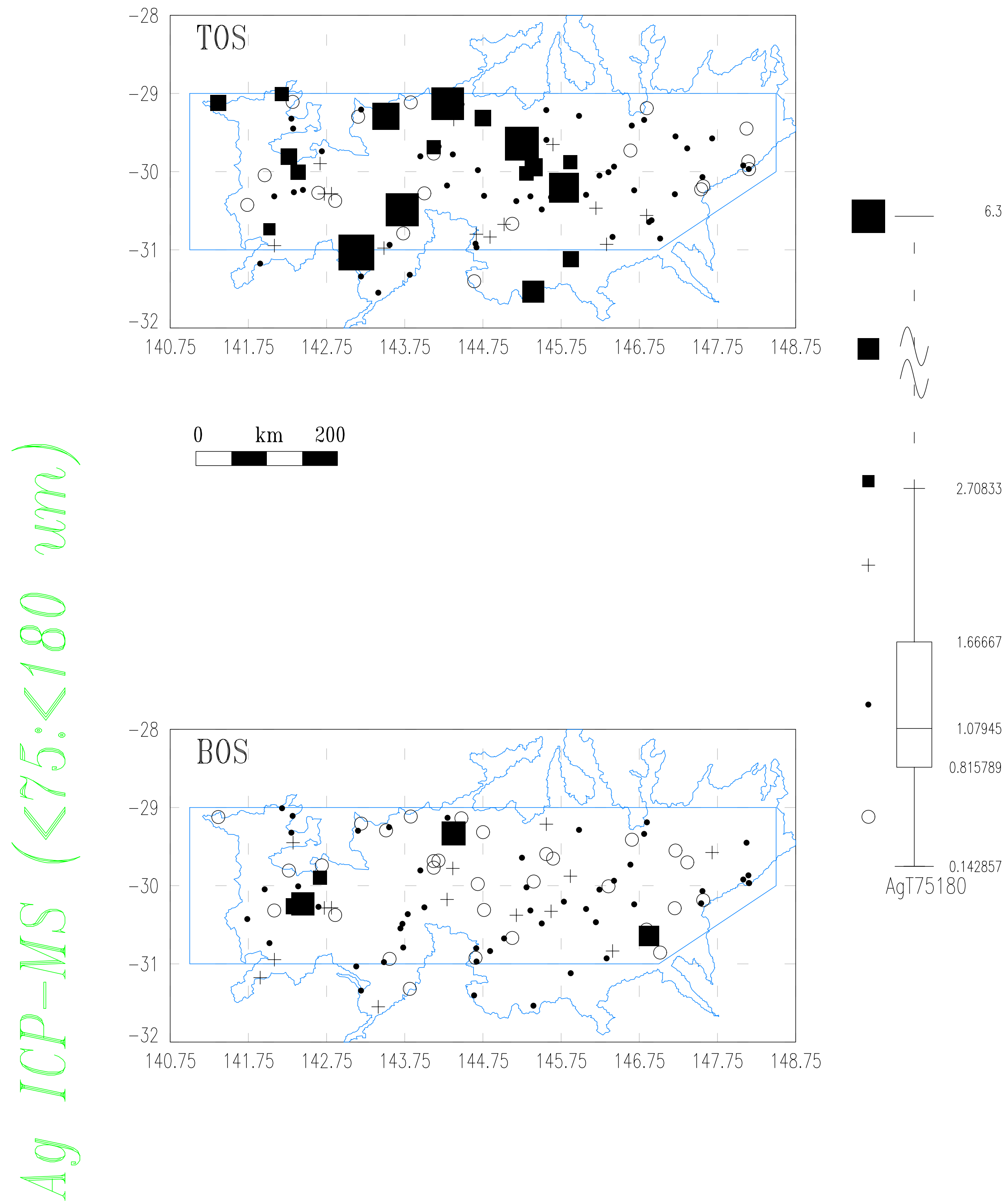


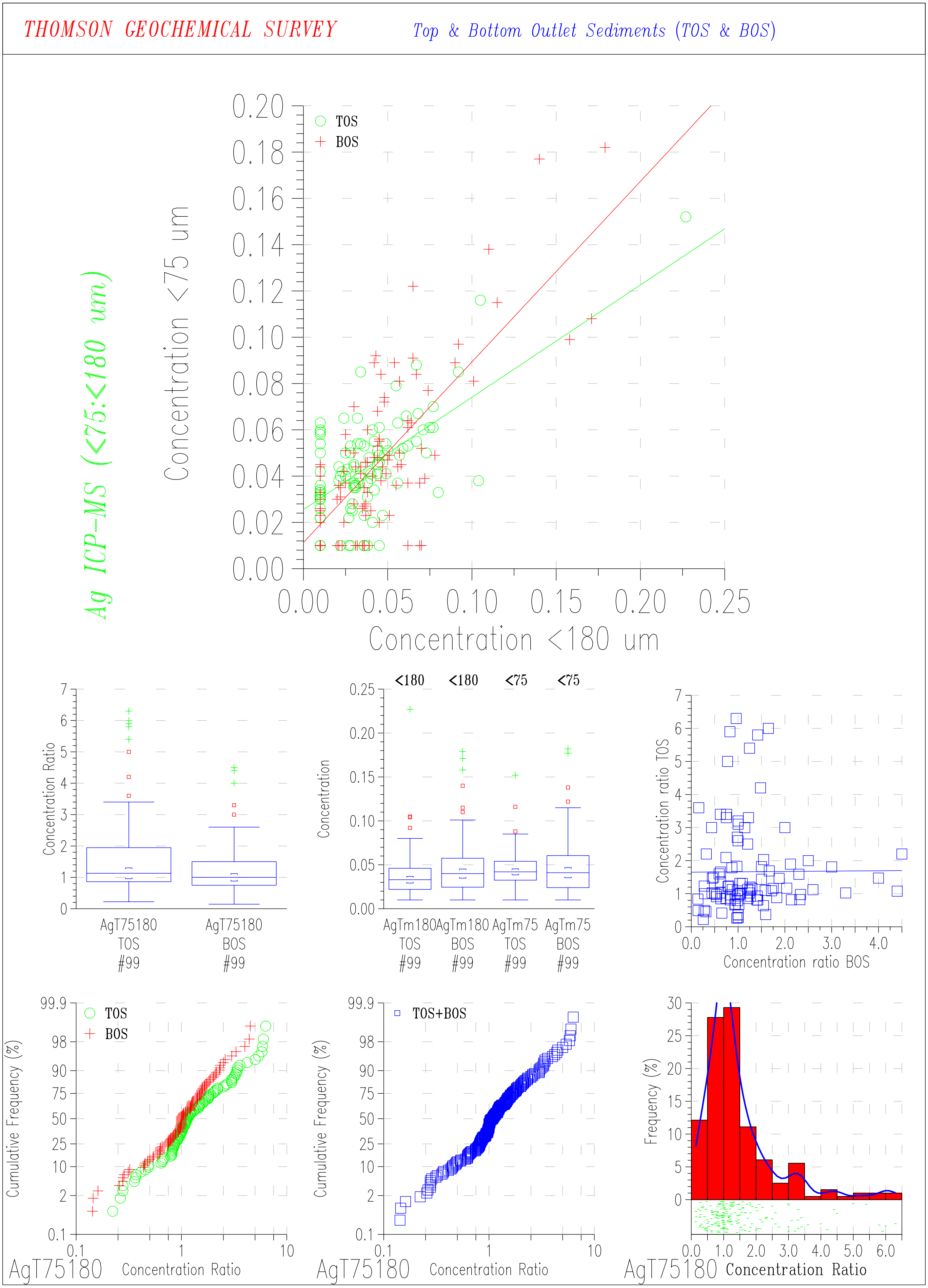


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ag (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
2.34783
2.05
1.31818
1.04725
0.67033
0.310811
AgTm75
Concentration
AgTm75 TOS #99
AgTm75 BOS #99
Concentration Ratio
AgTm75 TOS:BOS #78
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
AgTm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

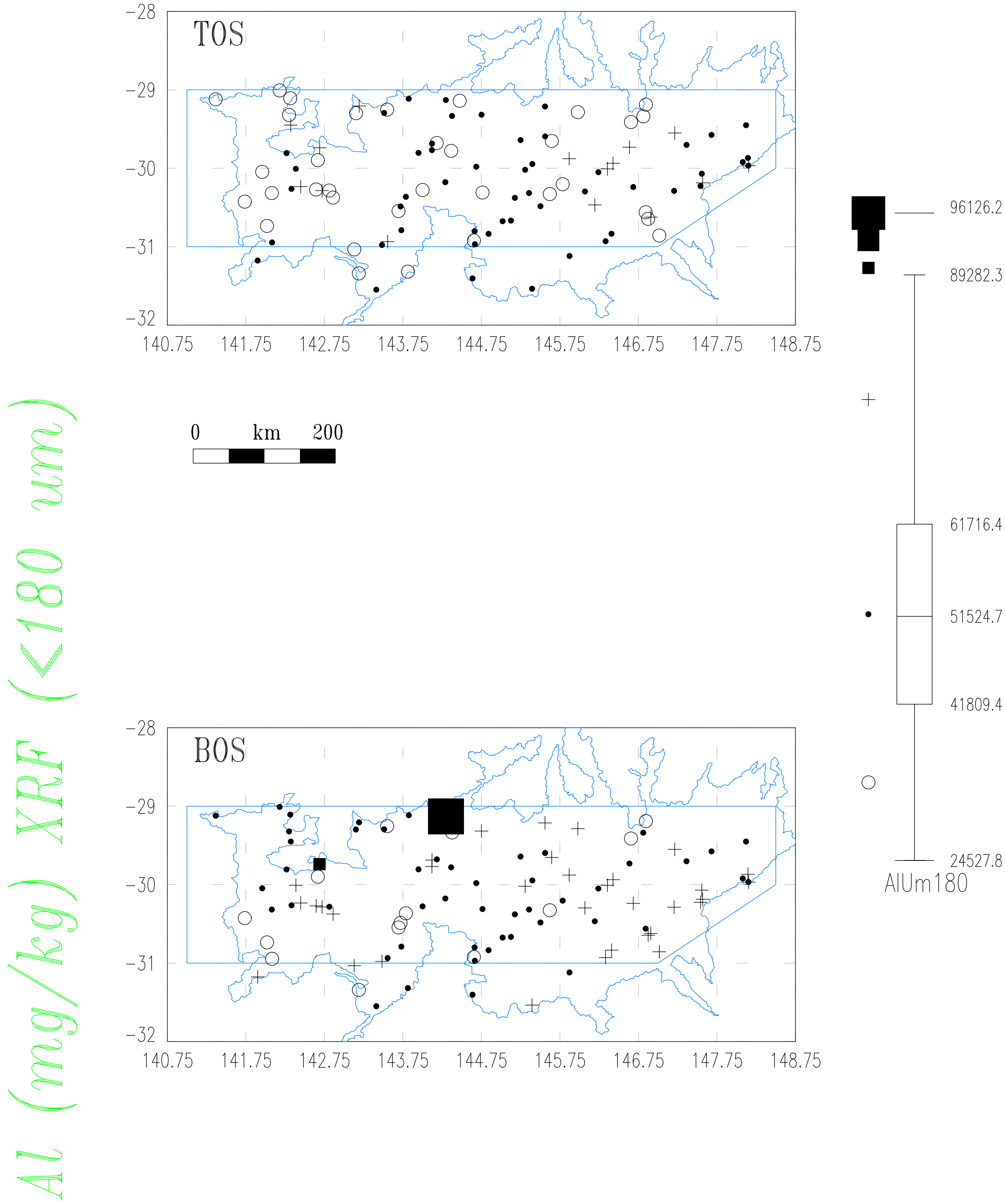
THOMSON GEOCHEMICAL SURVEY

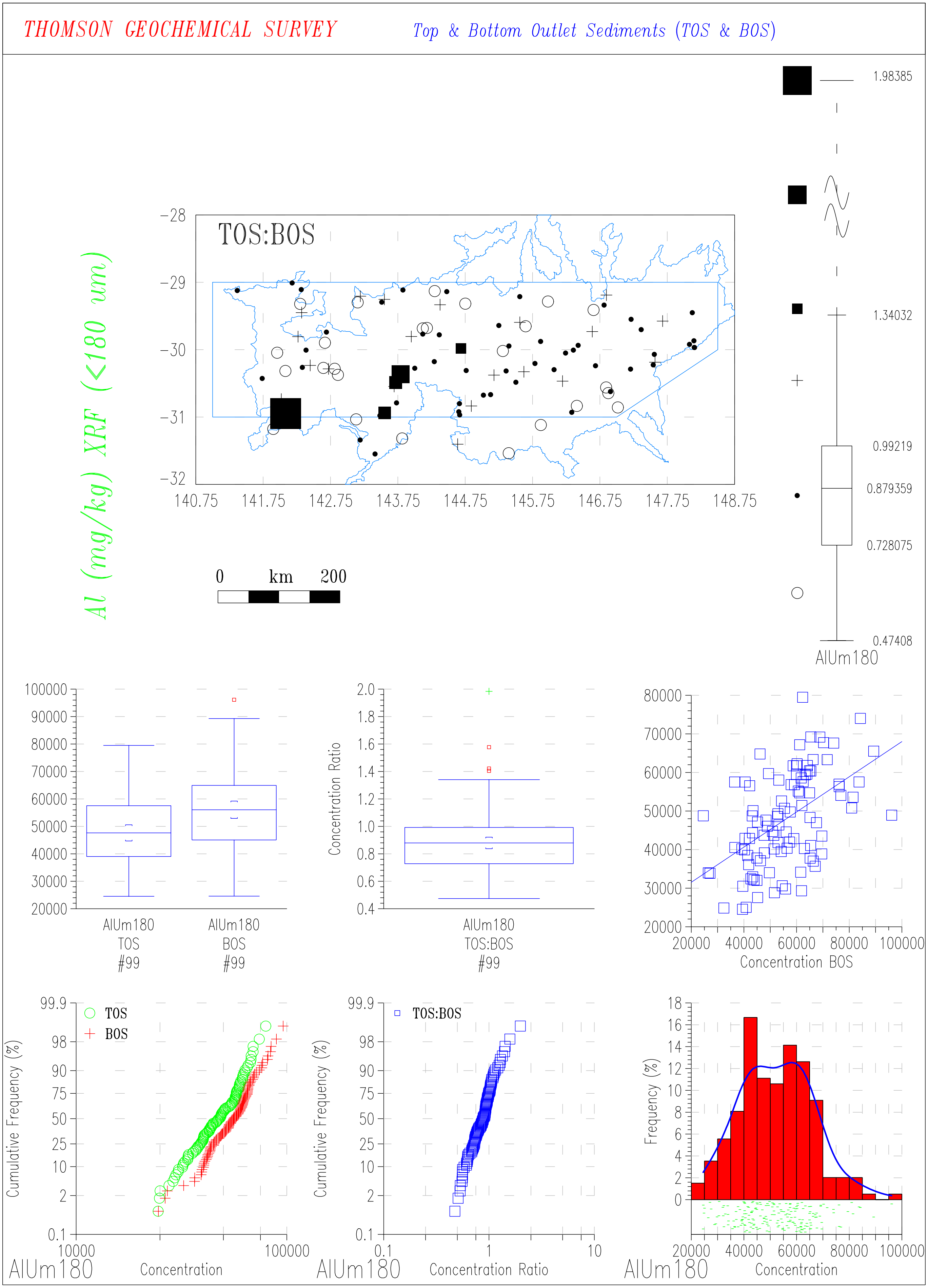
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ag ICP-MS (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
AgT75180 TOS #99
AgT75180 BOS #99
<180 <180 <75 <75
Concentration
AgTm180 TOS #99
AgTm180 BOS #99
AgTm75 TOS #99
AgTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
AgT75180 Concentration Ratio

THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*

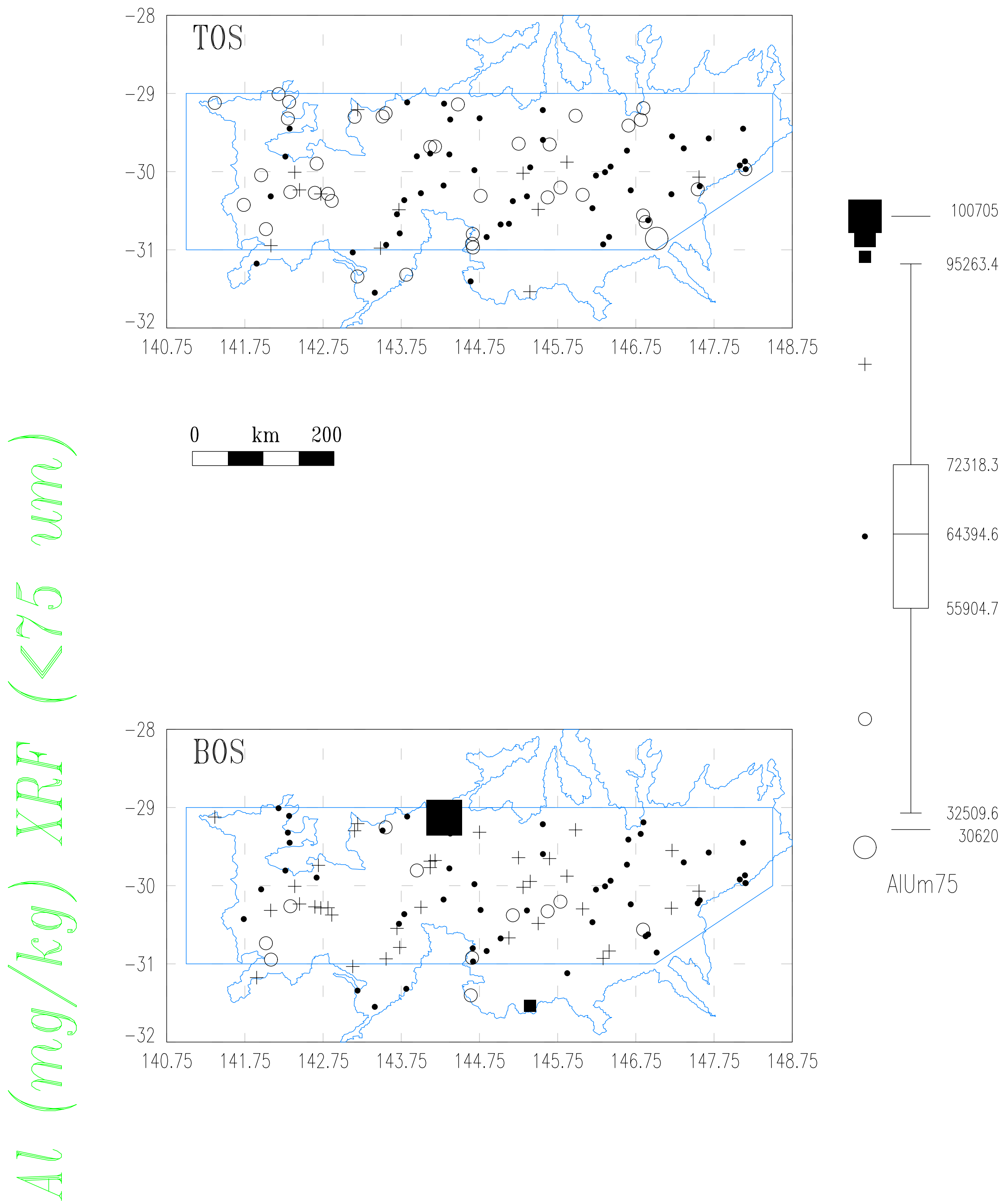


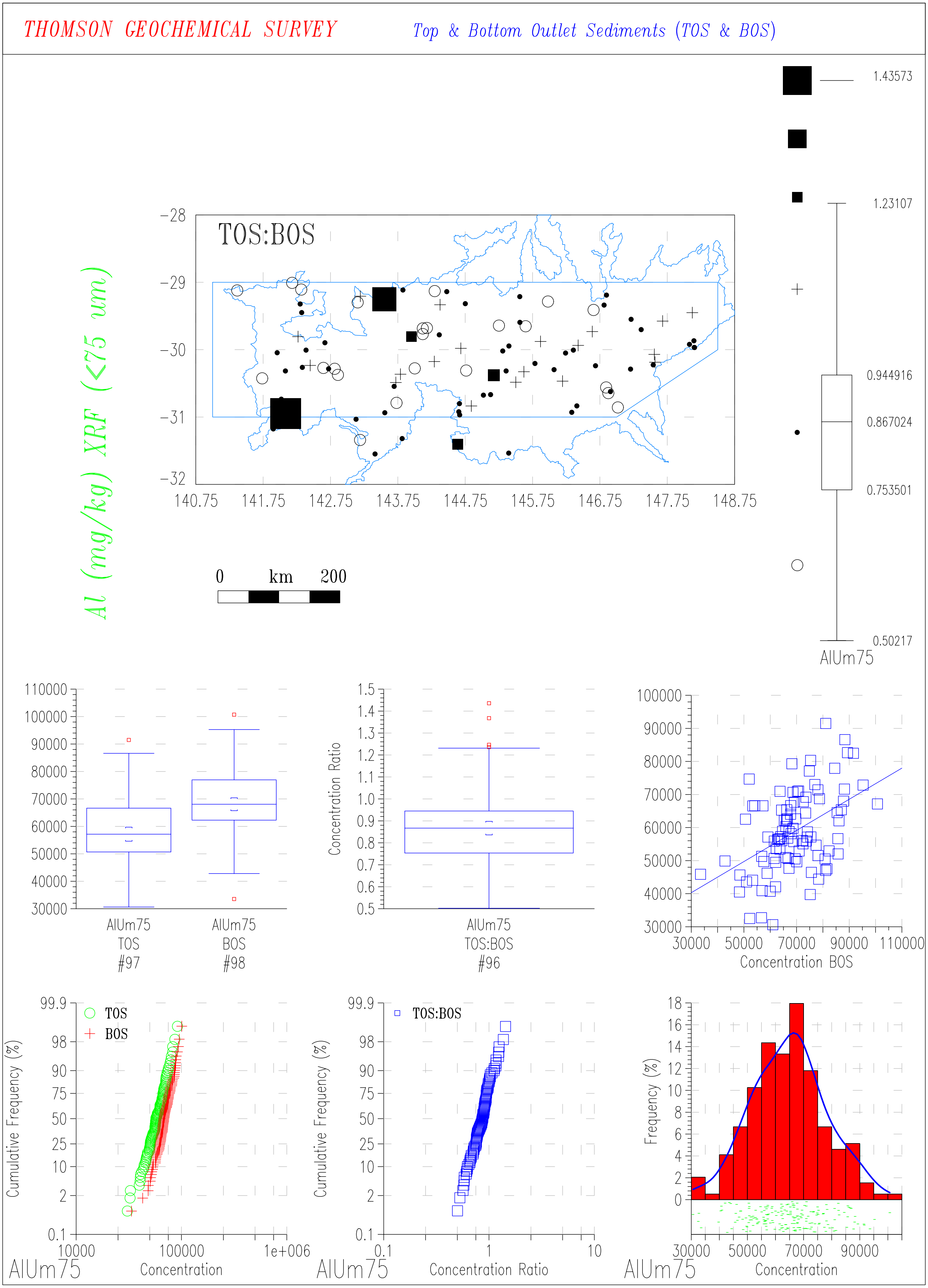


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Al (mg/kg) XRF (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.98385
1.34032
0.99219
0.879359
0.728075
0.47408
AlUm180
100000
90000
80000
70000
60000
50000
40000
30000
20000
AlUm180 TOS #99
AlUm180 BOS #99
Concentration Ratio
AlUm180 TOS:BOS #99
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY

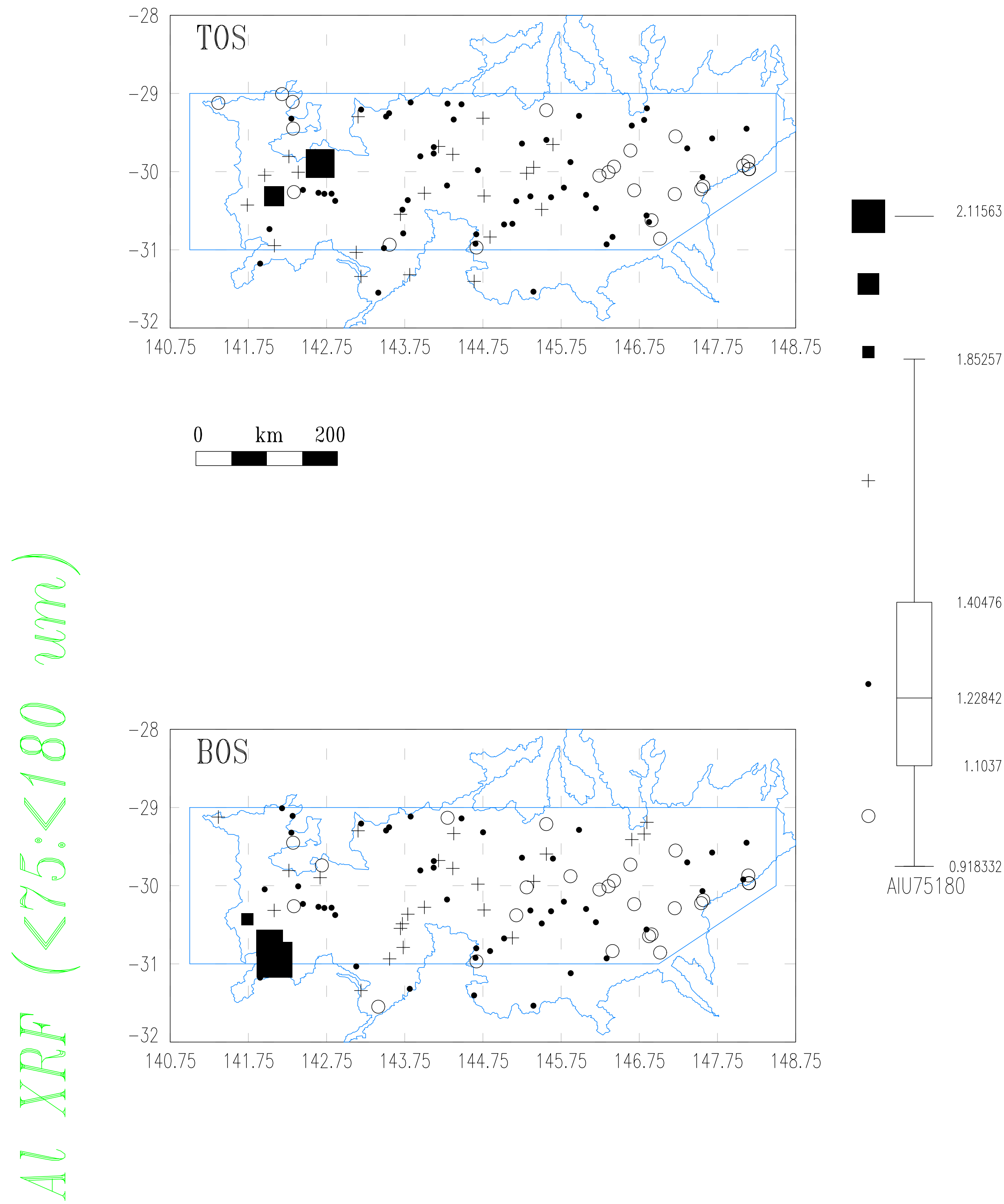
Top & Bottom Outlet Sediments (TOS & BOS)



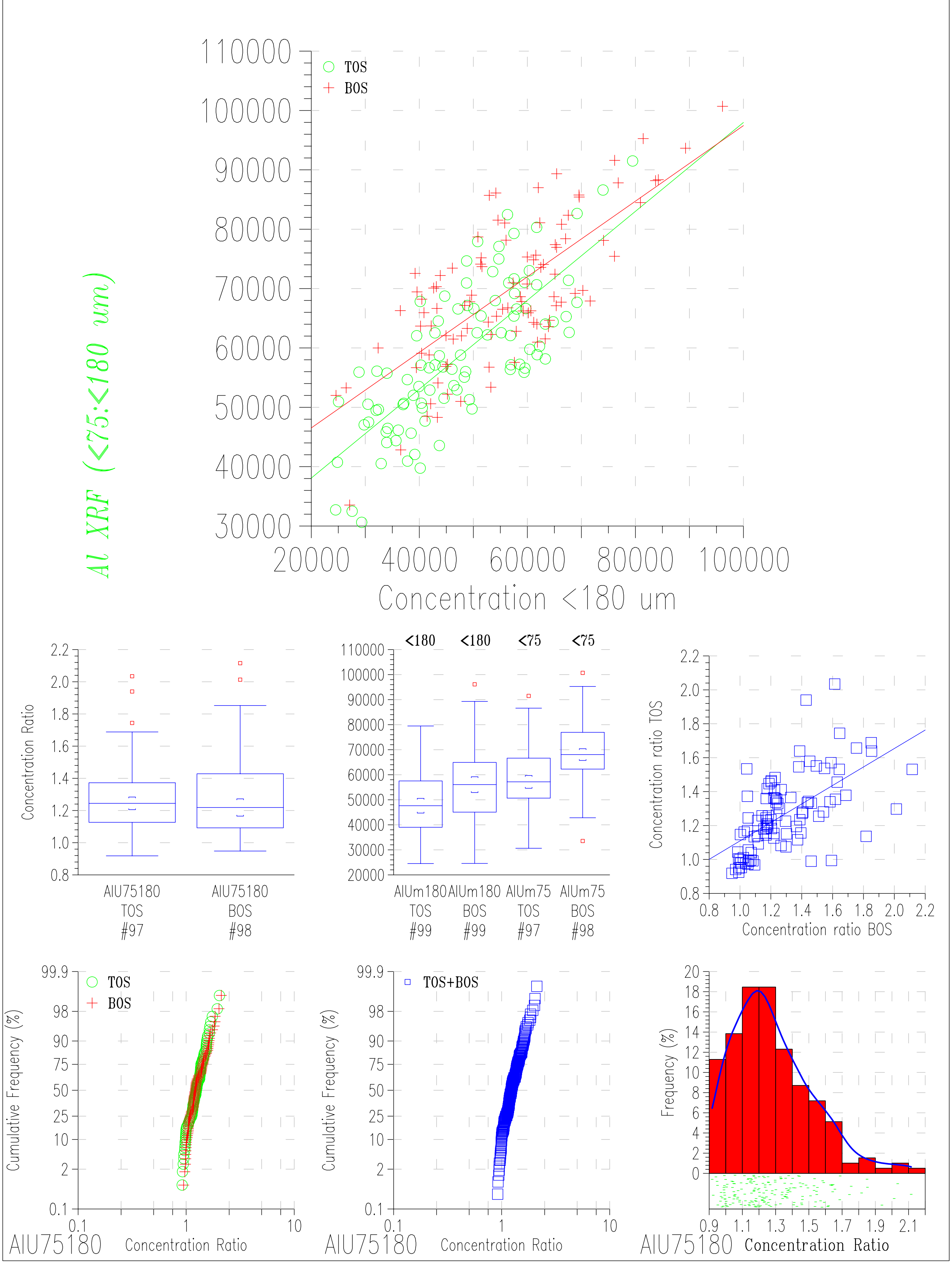

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Al (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.43573
1.23107
0.944916
0.867024
0.753501
0.50217
AlUm75
AlUm75
TOS
#97
AlUm75
BOS
#98
Concentration Ratio
AlUm75
TOS:BOS
#96
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
AlUm75
Concentration
TOS:BOS
Cumulative Frequency (%)
AlUm75
Concentration Ratio
Frequency (%)
AlUm75
Concentration

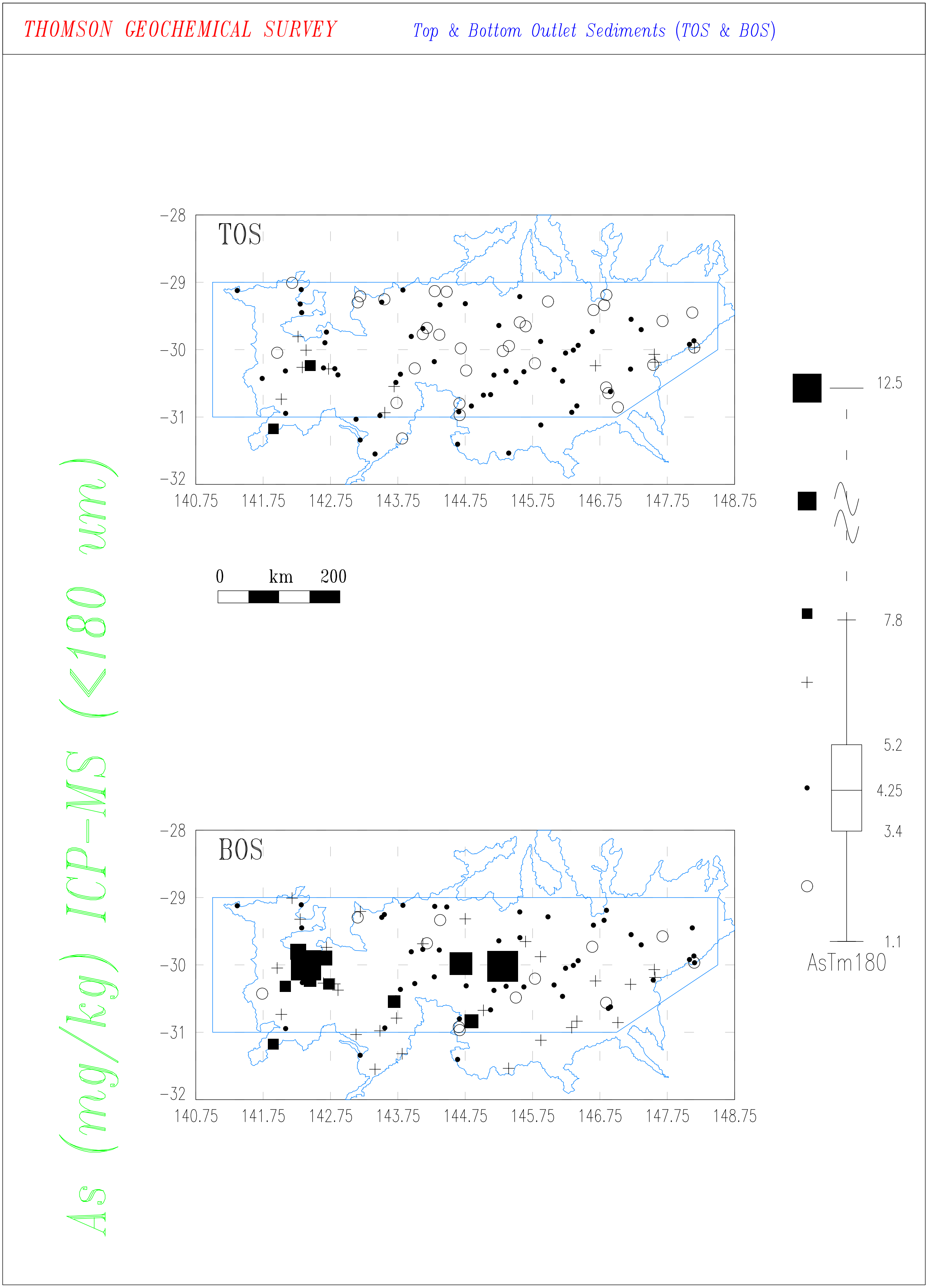
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

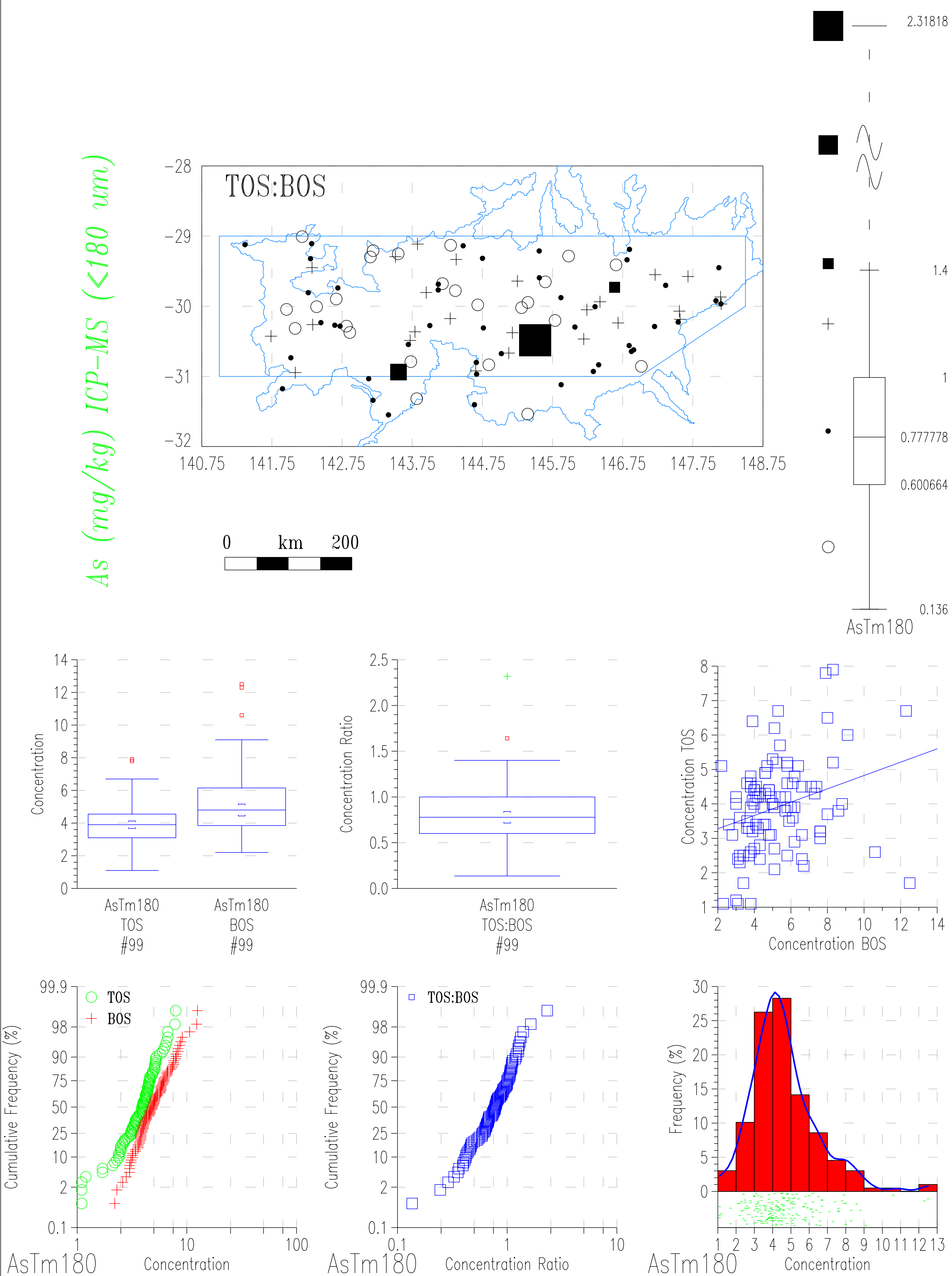


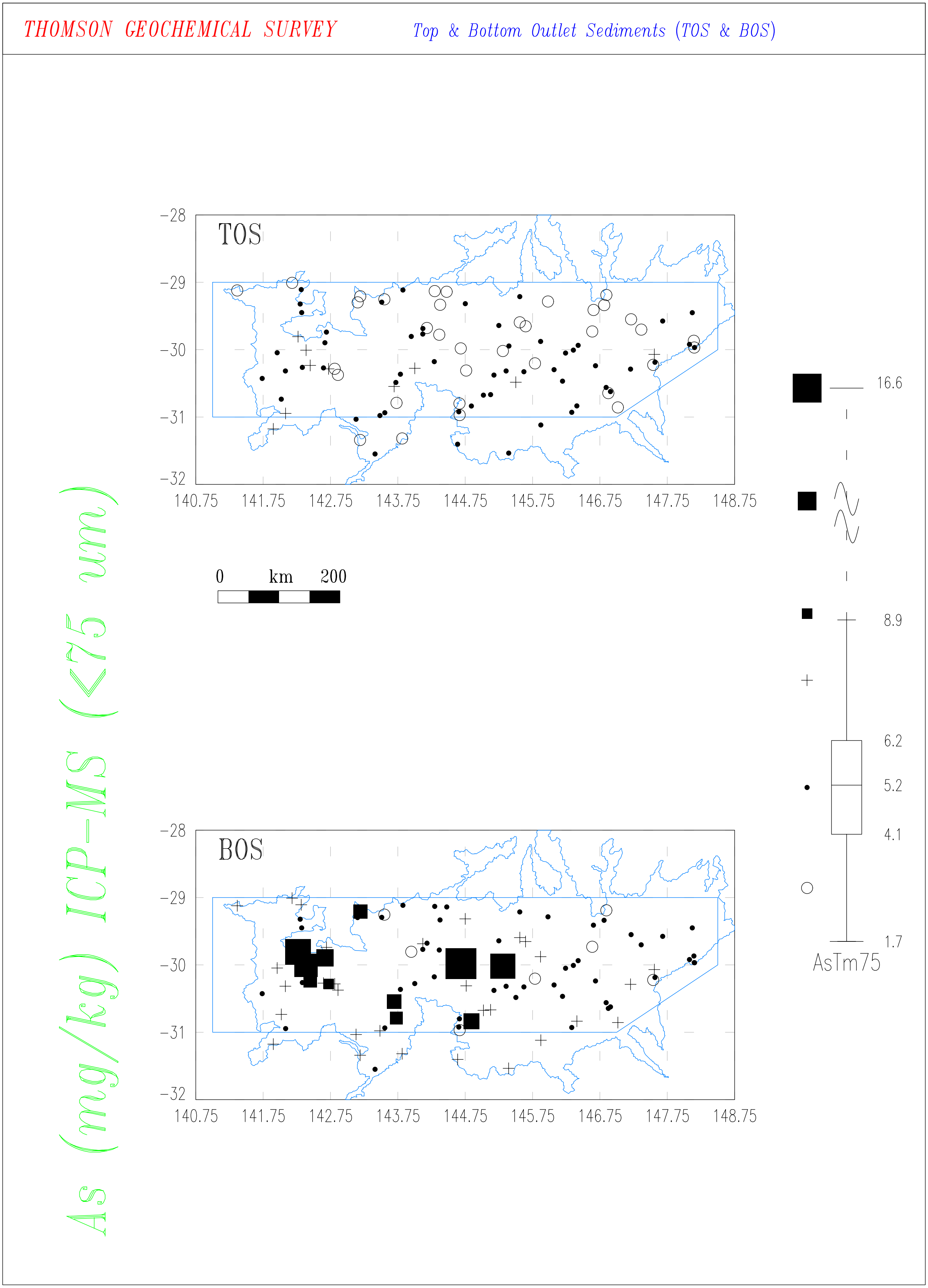
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

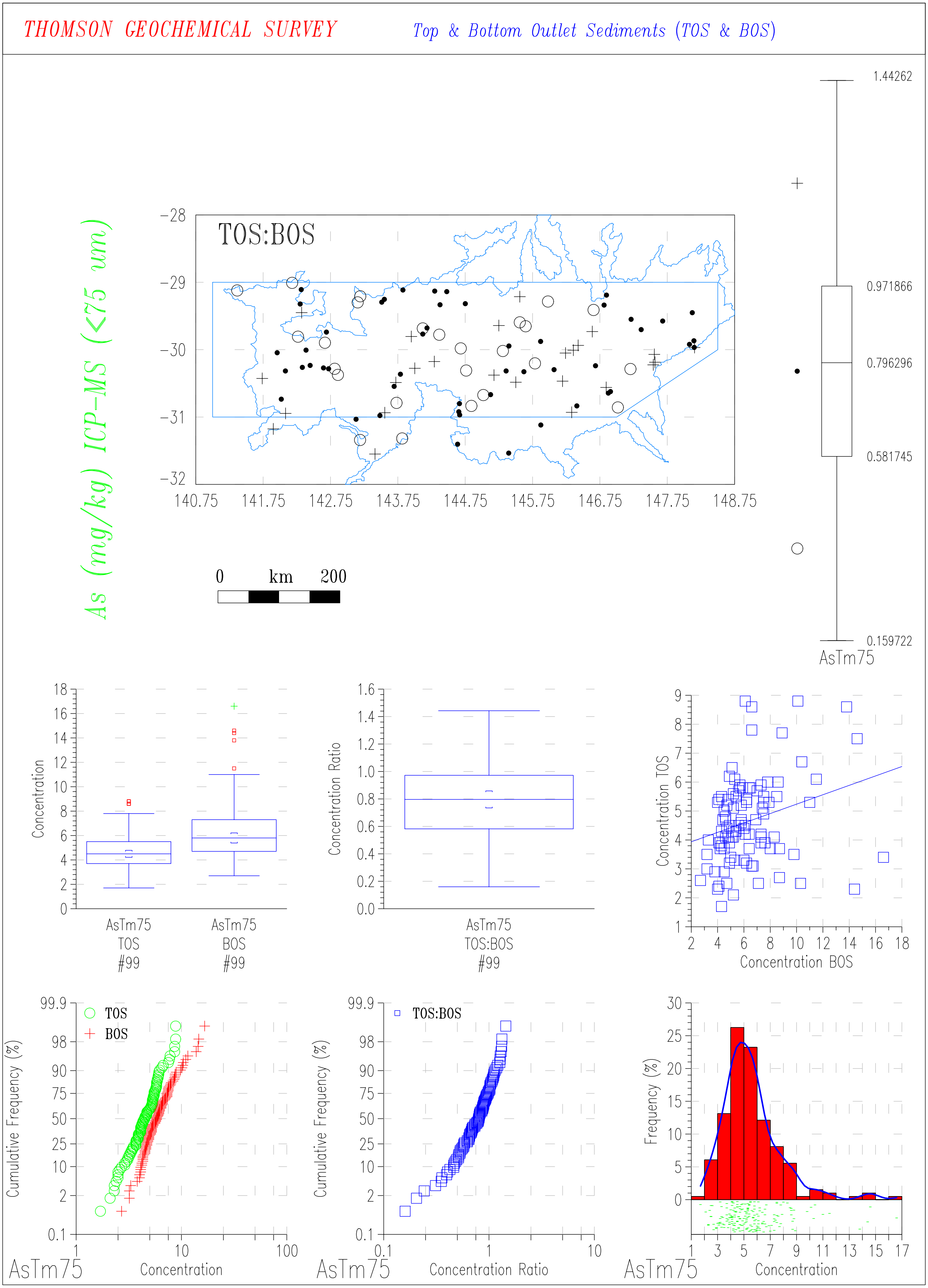


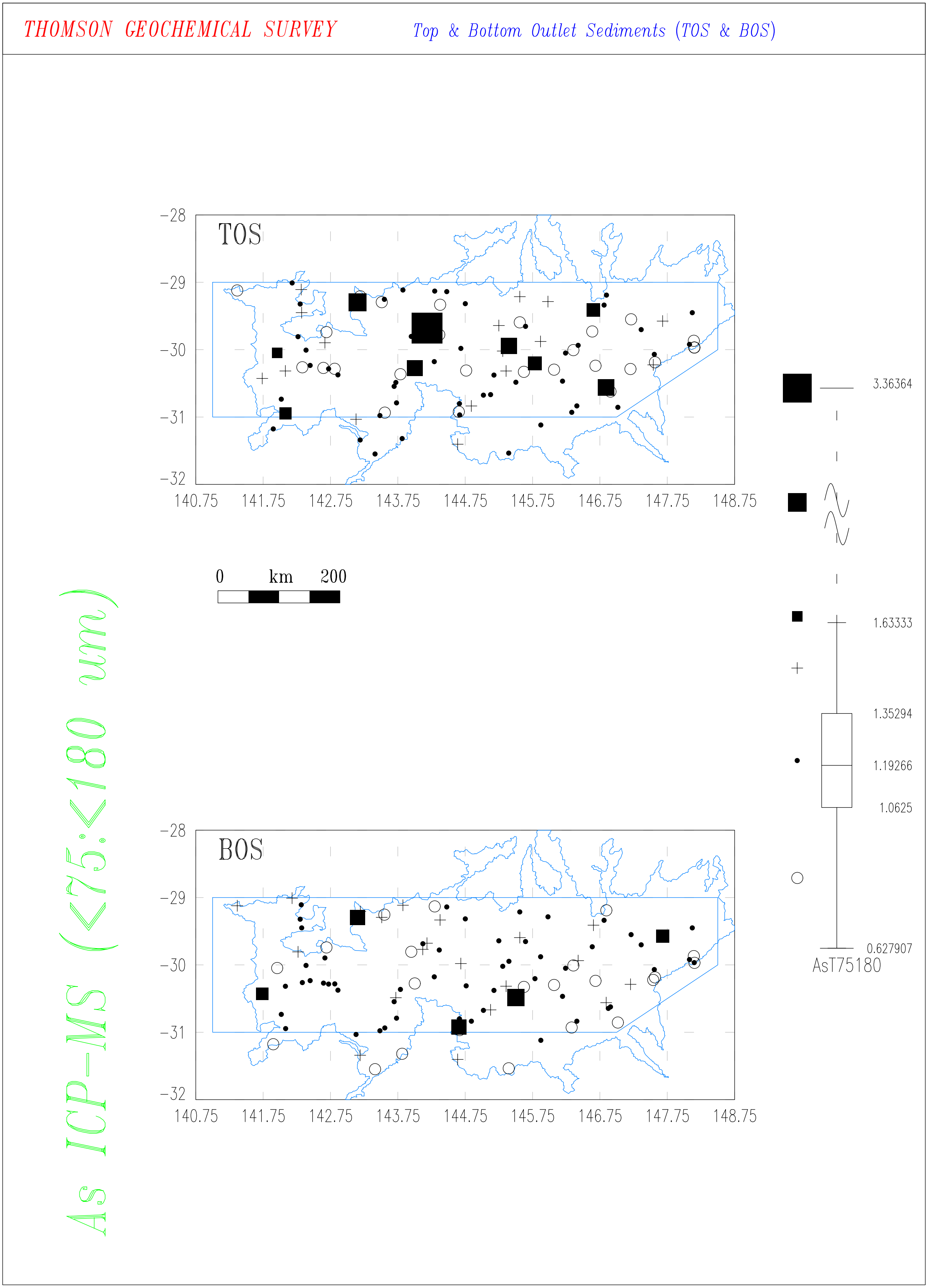

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
As (mg/kg) ICP-MS (<180 um)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
12.5
7.8
5.2
4.25
3.4
1.1
AsTm180

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

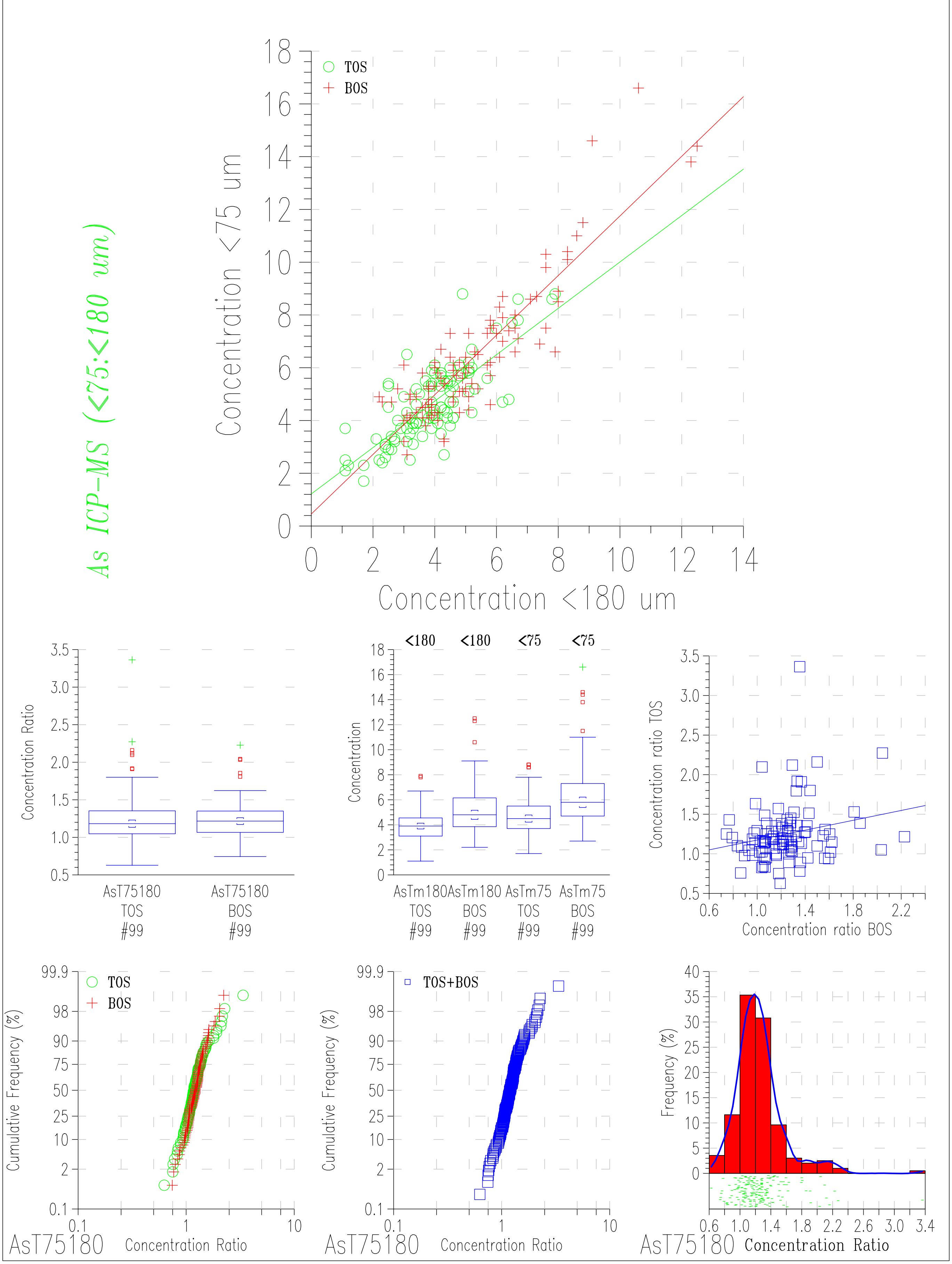


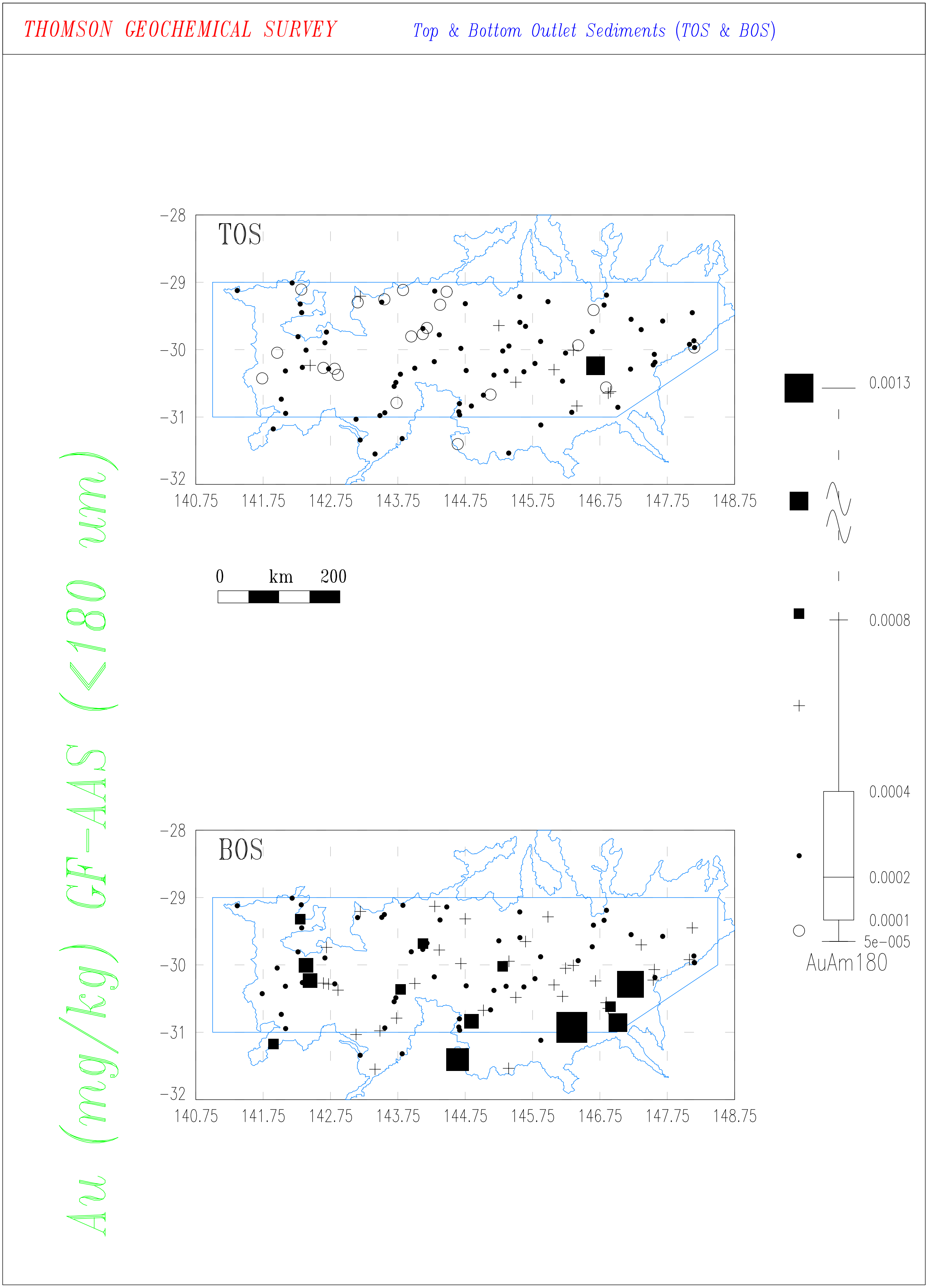

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
16.6
8.9
6.2
5.2
4.1
1.7
AsTm75
As (mg/kg) ICP-MS (<75 um)

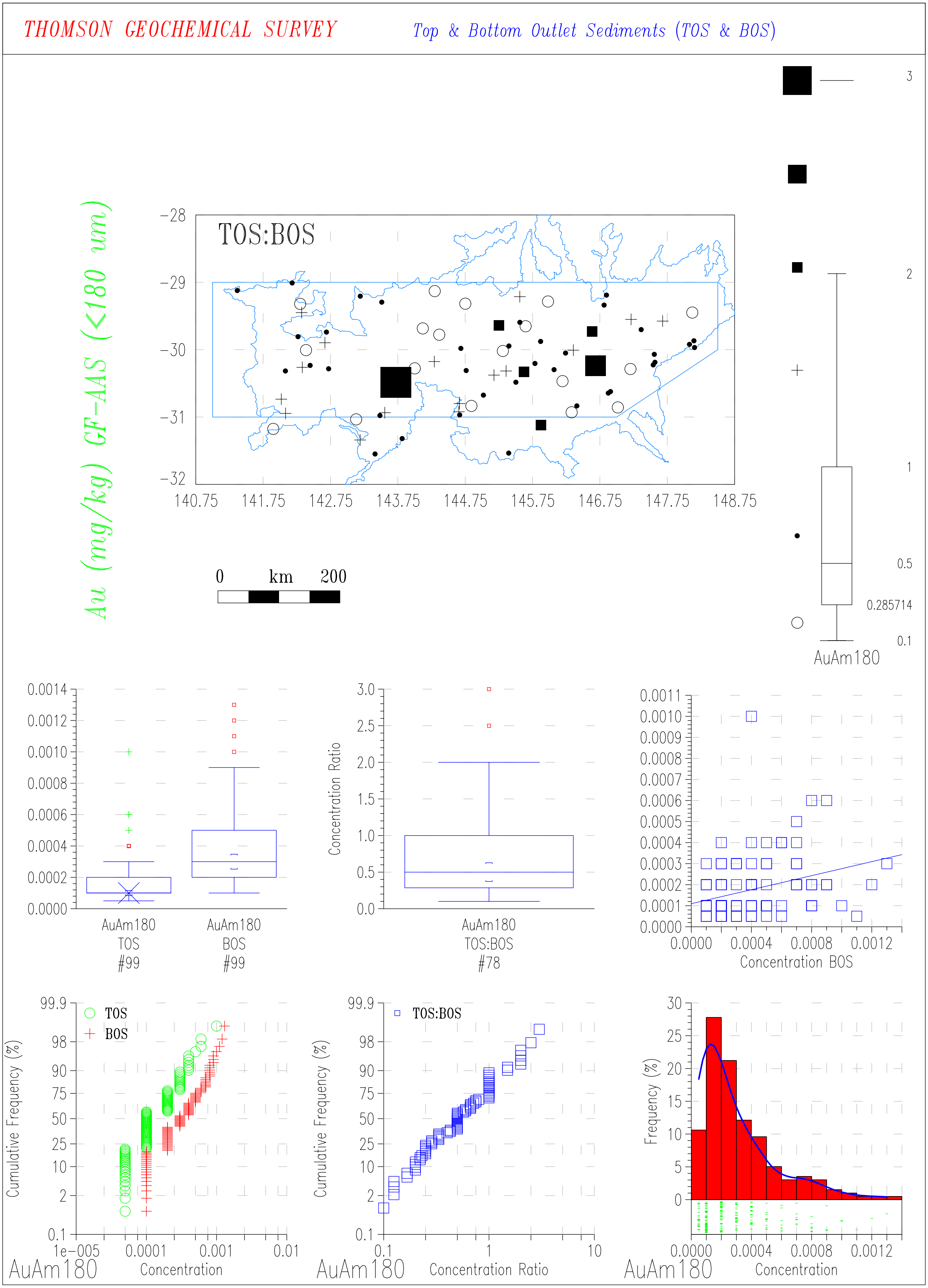

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
As (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.44262
0.971866
0.796296
0.581745
0.159722
AsTm75
Concentration
AsTm75 TOS #99
AsTm75 BOS #99
Concentration Ratio
AsTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Frequency (%)


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
As ICP-MS (<75:<180 um)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
3.36364
1.63333
1.35294
1.19266
1.0625
0.627907
AsT75180

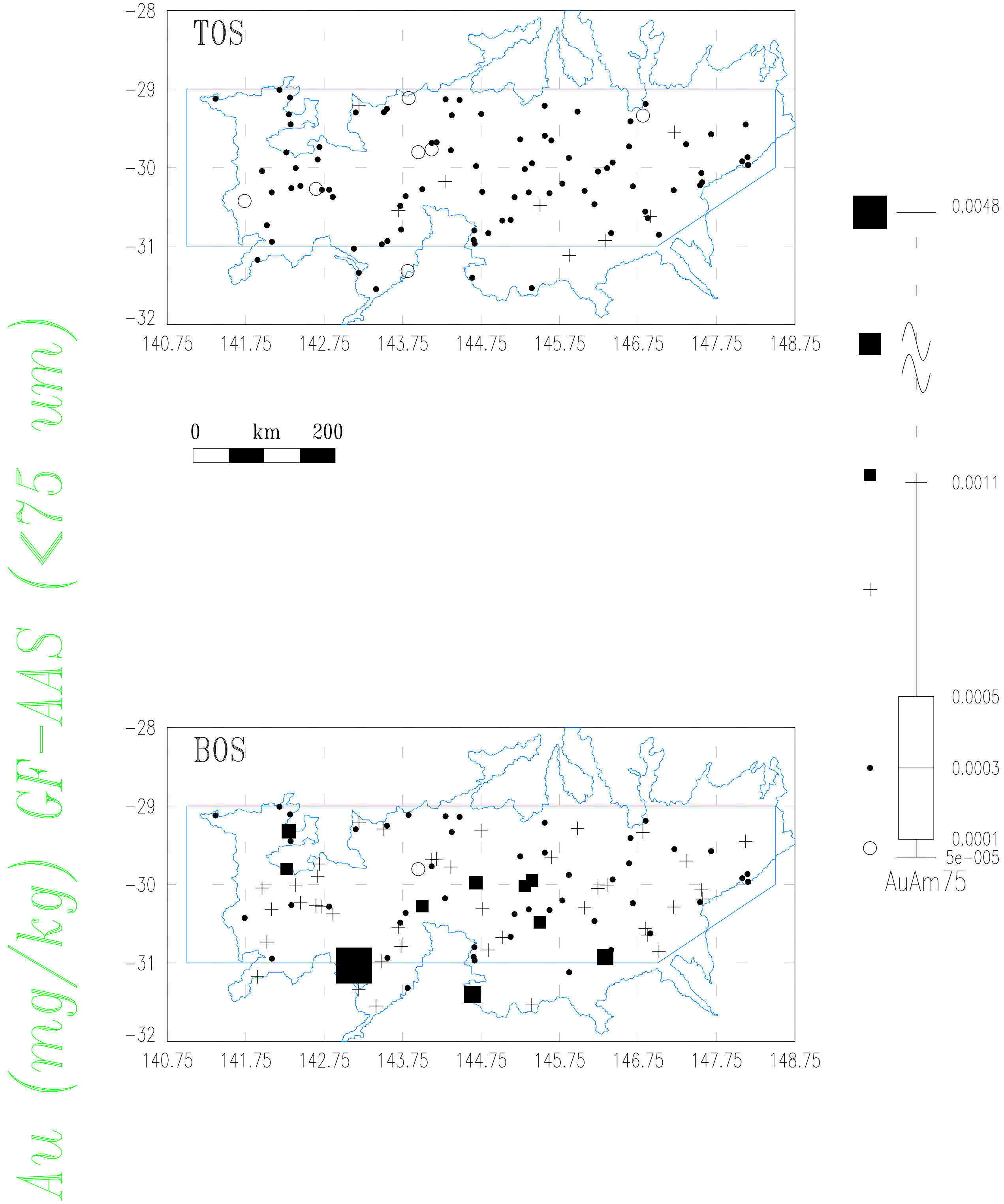
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

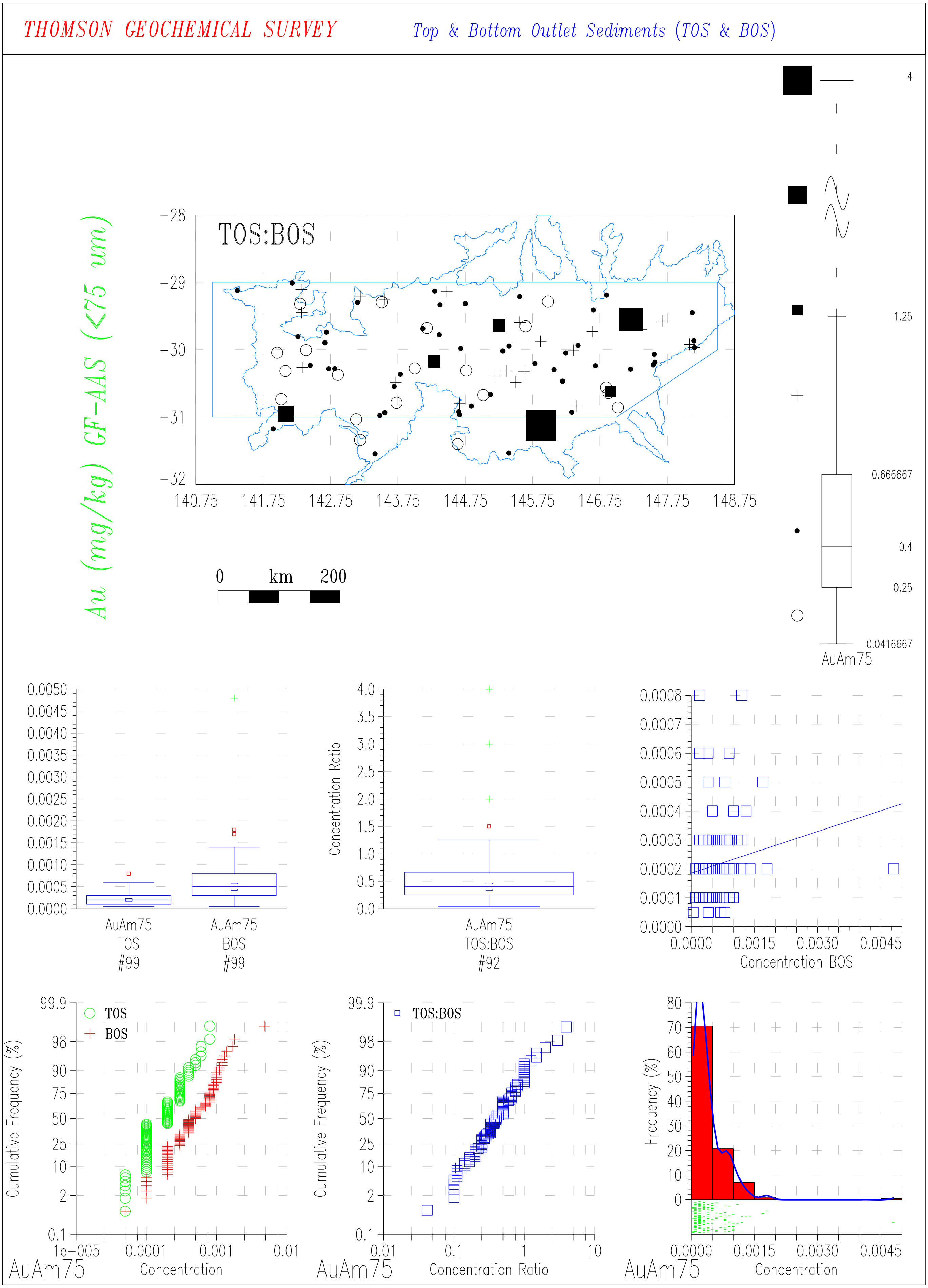



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Au (mg/kg) GF-AAS (<180 um)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
0.0013
0.0008
0.0004
0.0002
0.0001
5e-005
AuAm180

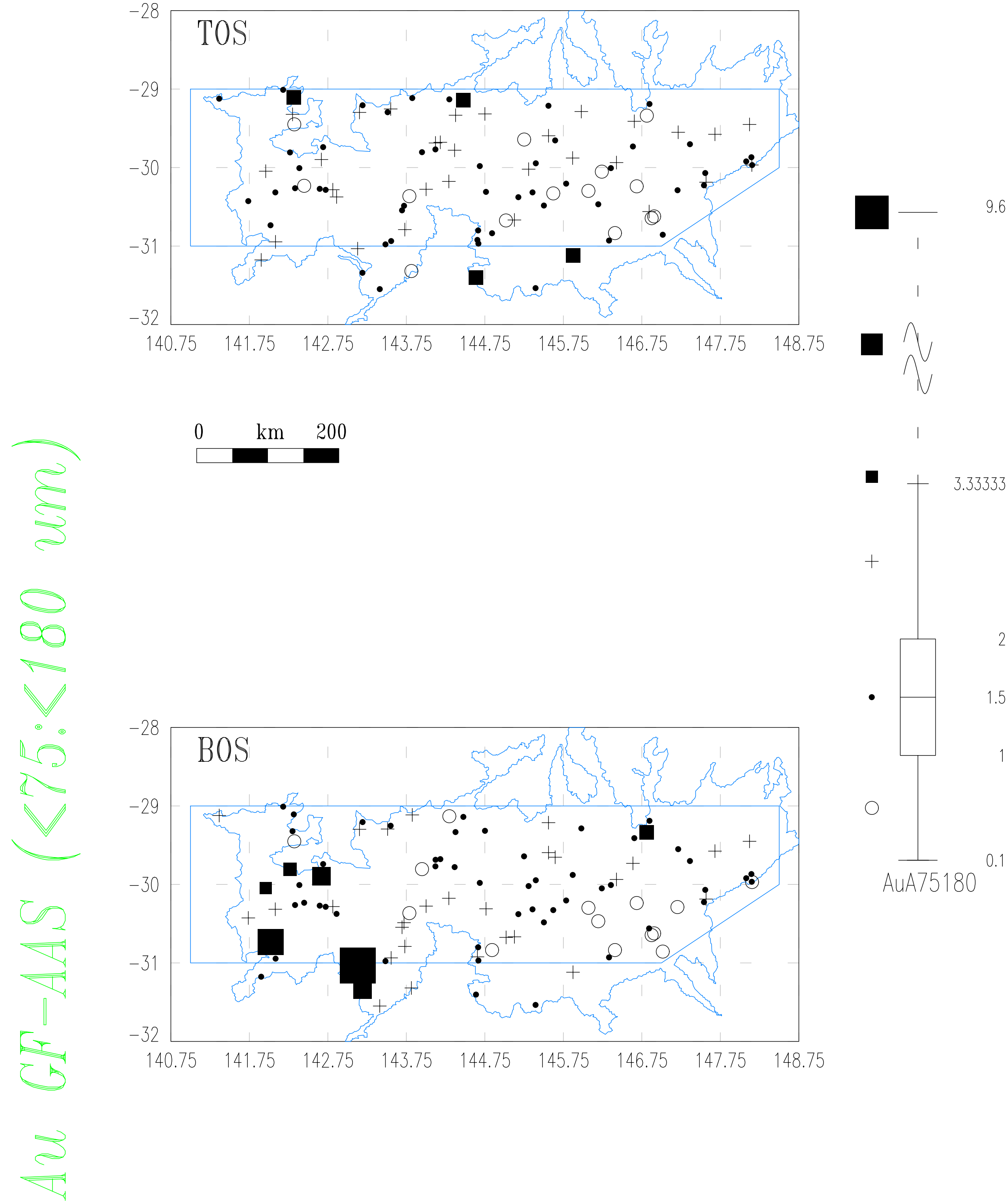

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Au (mg/kg) GF-AAS (<180 um)
TOS:BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
3
2
1
0.5
0.285714
0.1
AuAm180
AuAm180
TOS
#99
AuAm180
BOS
#99
Concentration Ratio
AuAm180
TOS:BOS
#78
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
AuAm180
Concentration
TOS:BOS
AuAm180
Concentration Ratio
Frequency (%)
AuAm180
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

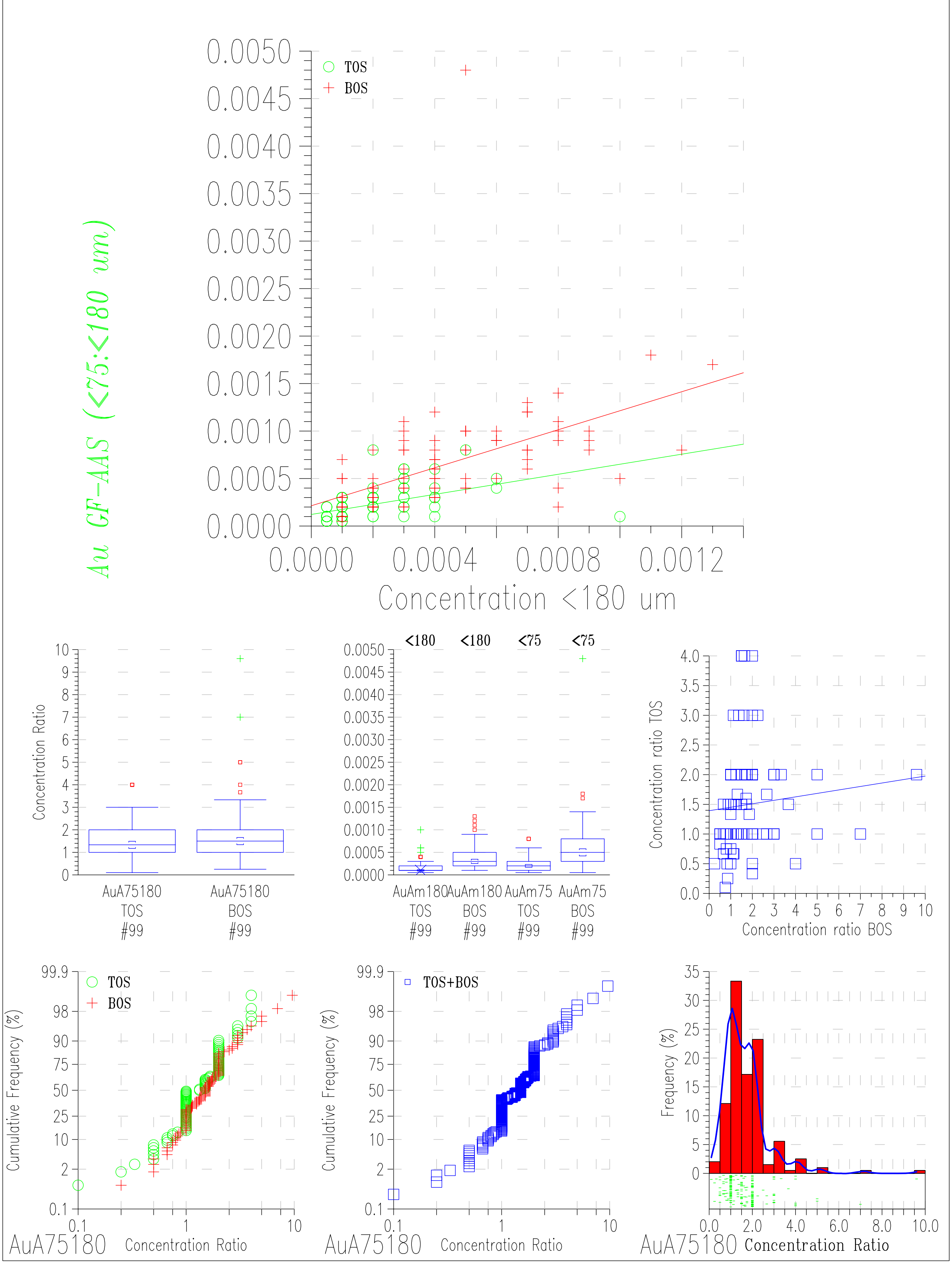



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Au (mg/kg) GF-AAS (<75 um)
TOS:BOS
0 km 200
4
1.25
0.666667
0.4
0.25
0.0416667
AuAm75
AuAm75 TOS #99
AuAm75 BOS #99
Concentration Ratio
AuAm75 TOS:BOS #92
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Concentration
TOS:BOS
Frequency (%)

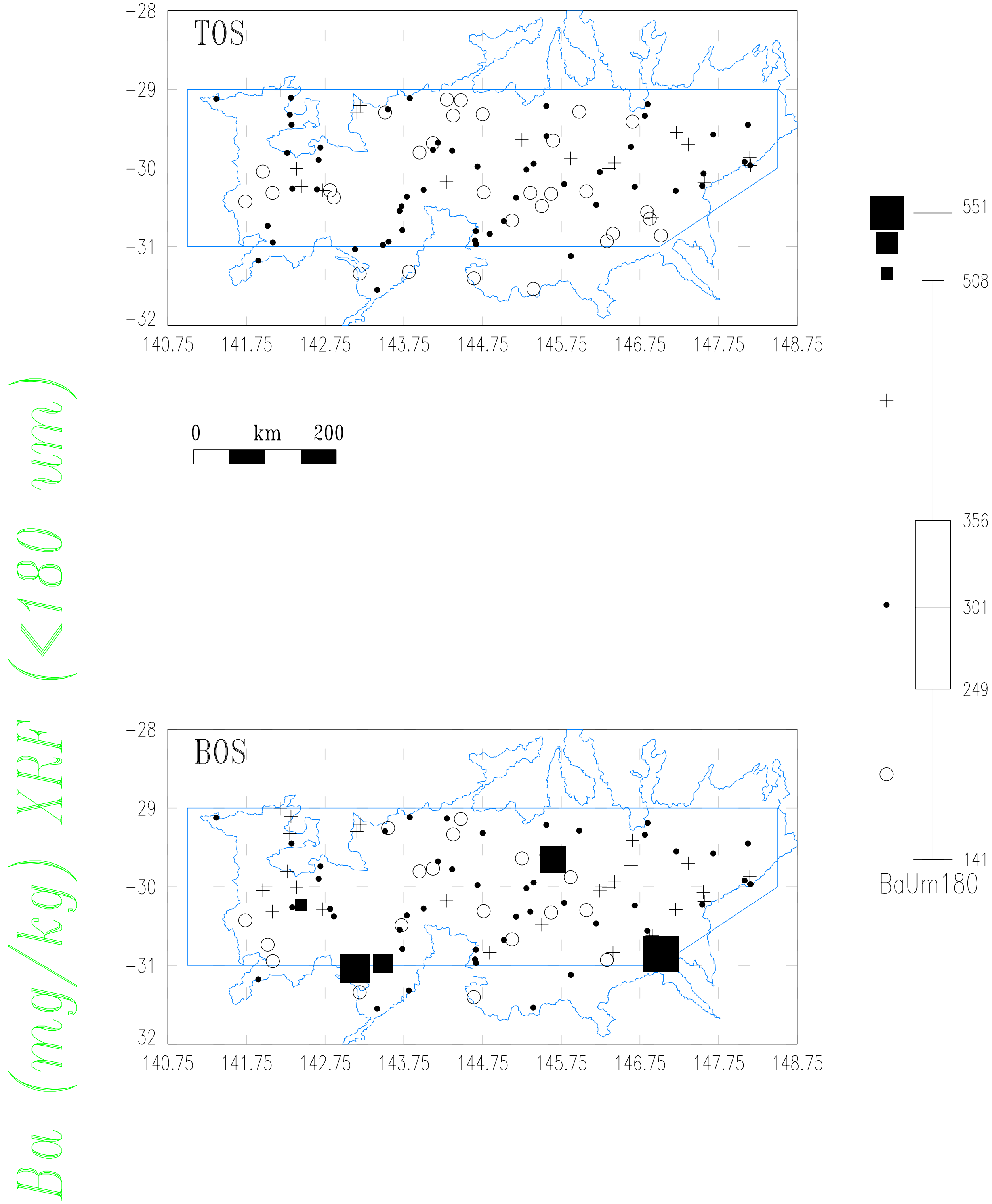
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

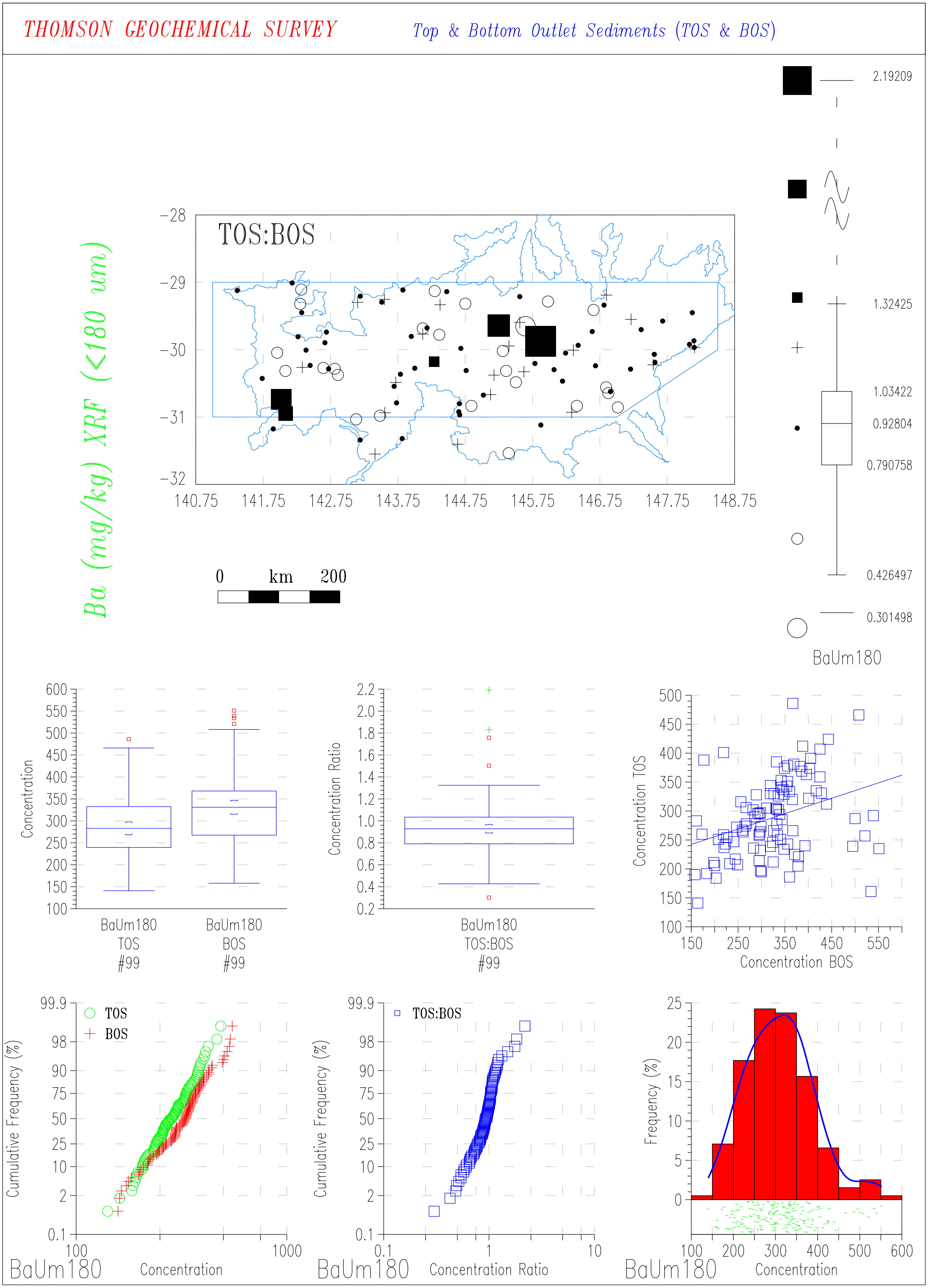


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

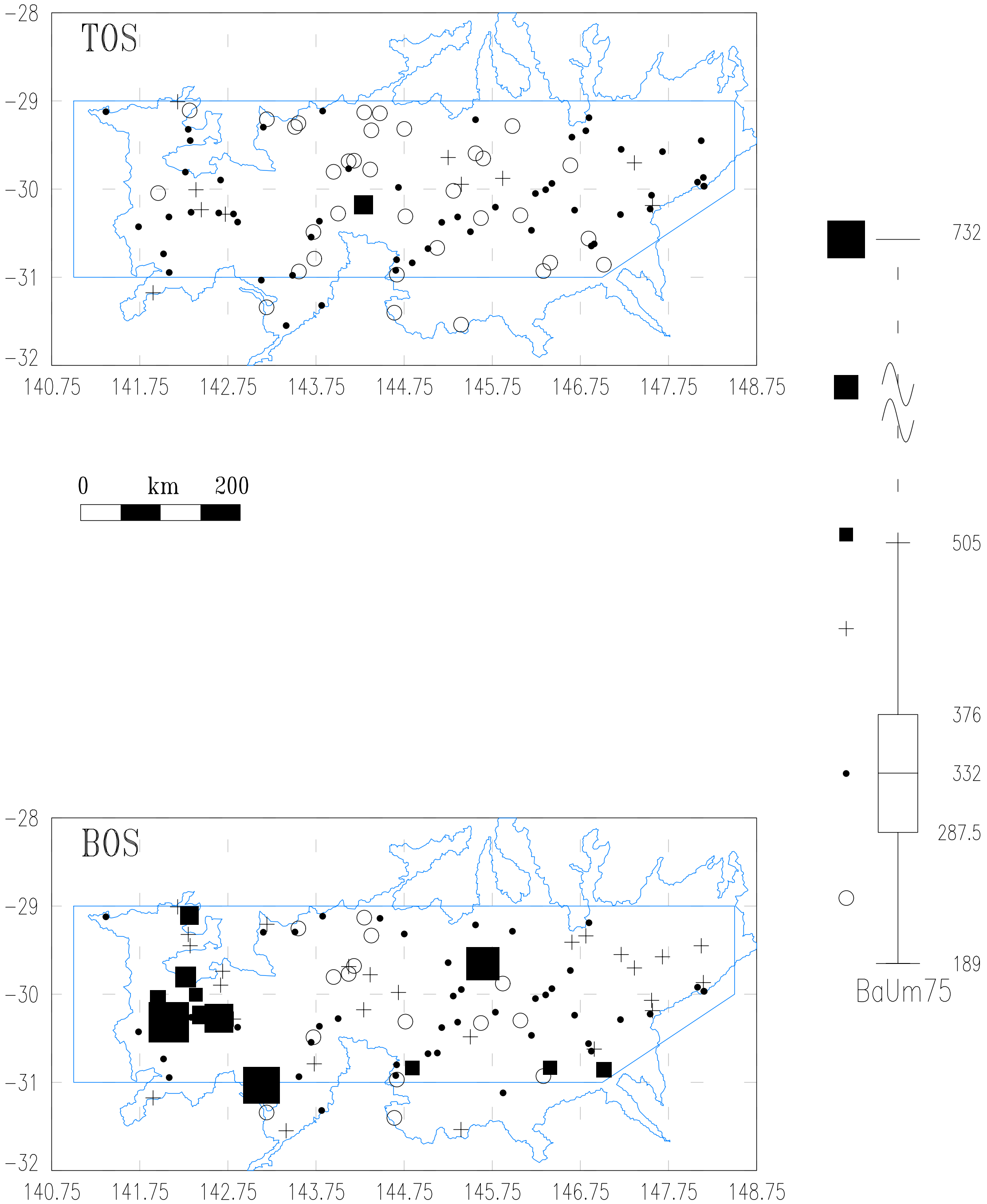



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ba (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
2.19209
1.32425
1.03422
0.92804
0.790758
0.426497
0.301498
BaUm180
Concentration
BaUm180 TOS #99
BaUm180 BOS #99
Concentration Ratio
BaUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
BaUm180
Concentration
TOS:BOS
BaUm180
Concentration Ratio
Frequency (%)
BaUm180
Concentration

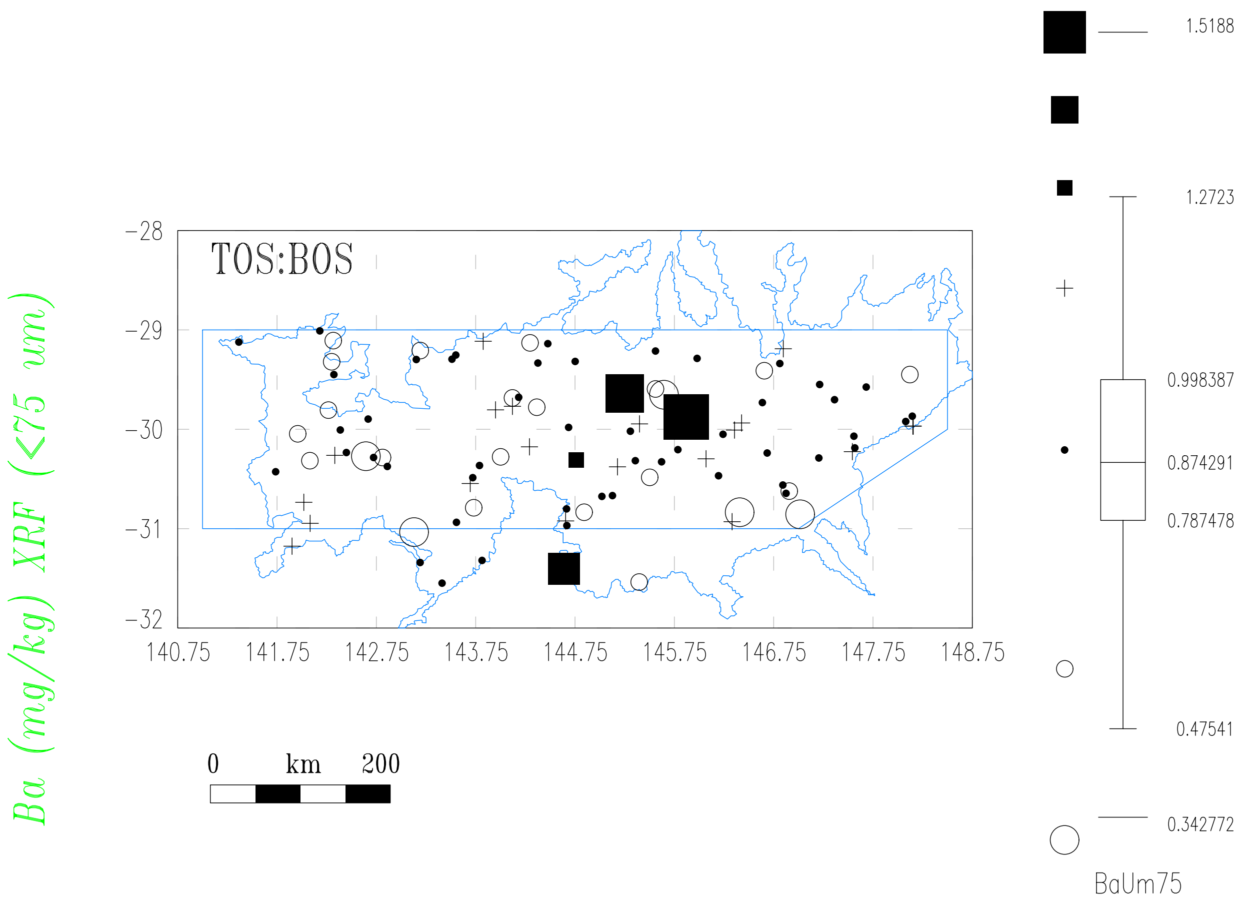
THOMSON GEOCHEMICAL SURVEY

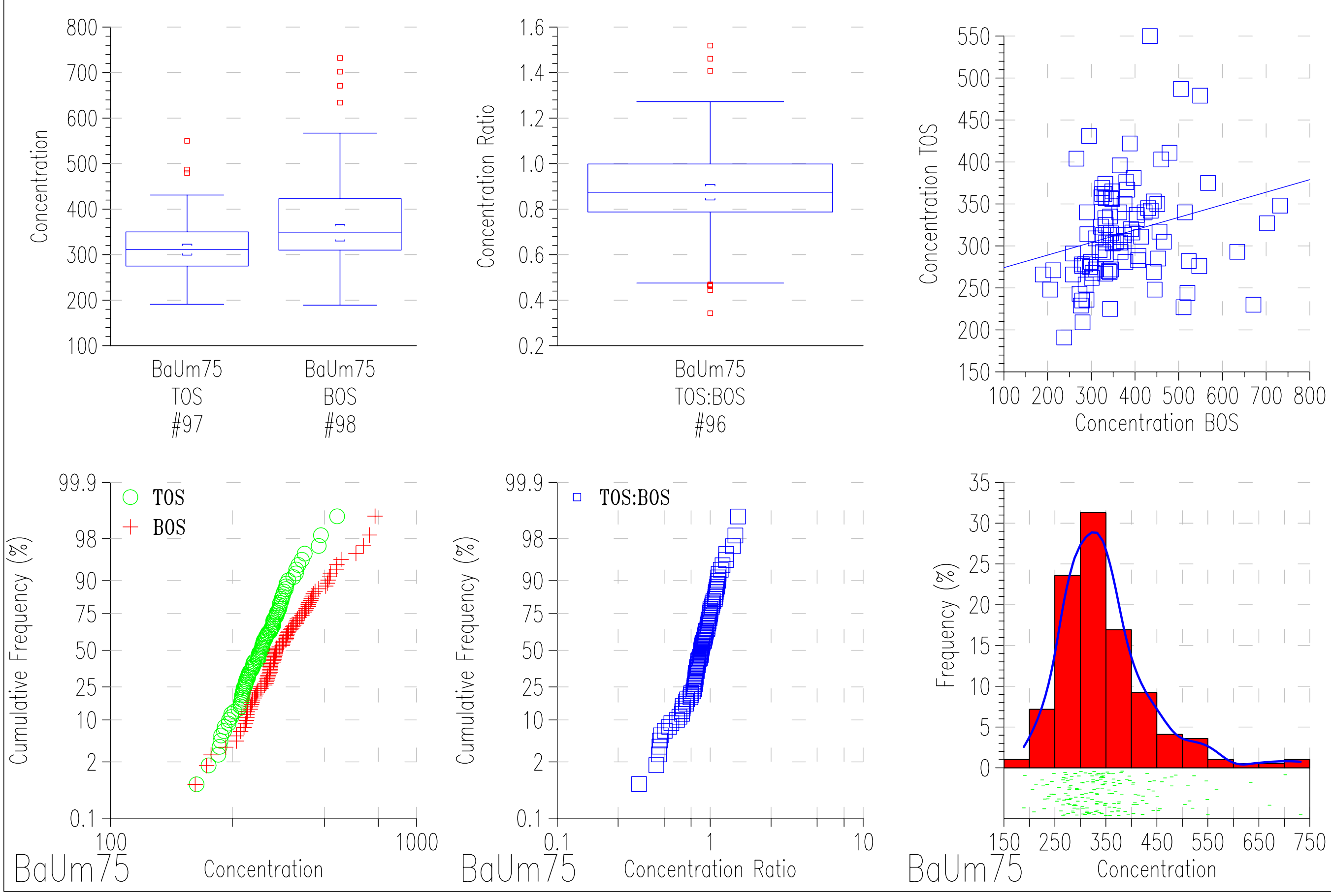
Top & Bottom Outlet Sediments (TOS & BOS)

Ba (mg/kg) XRF (<75 um)



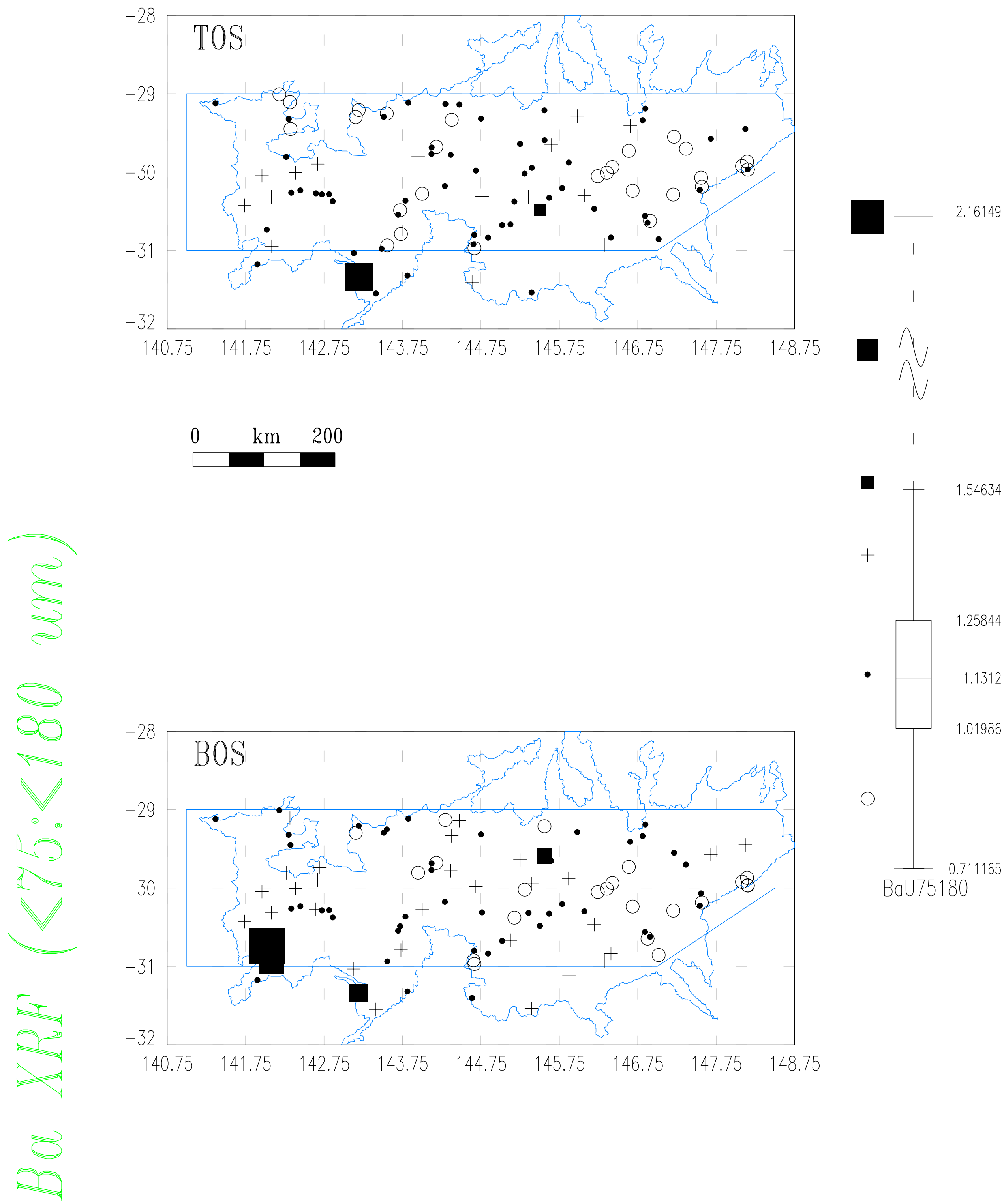
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



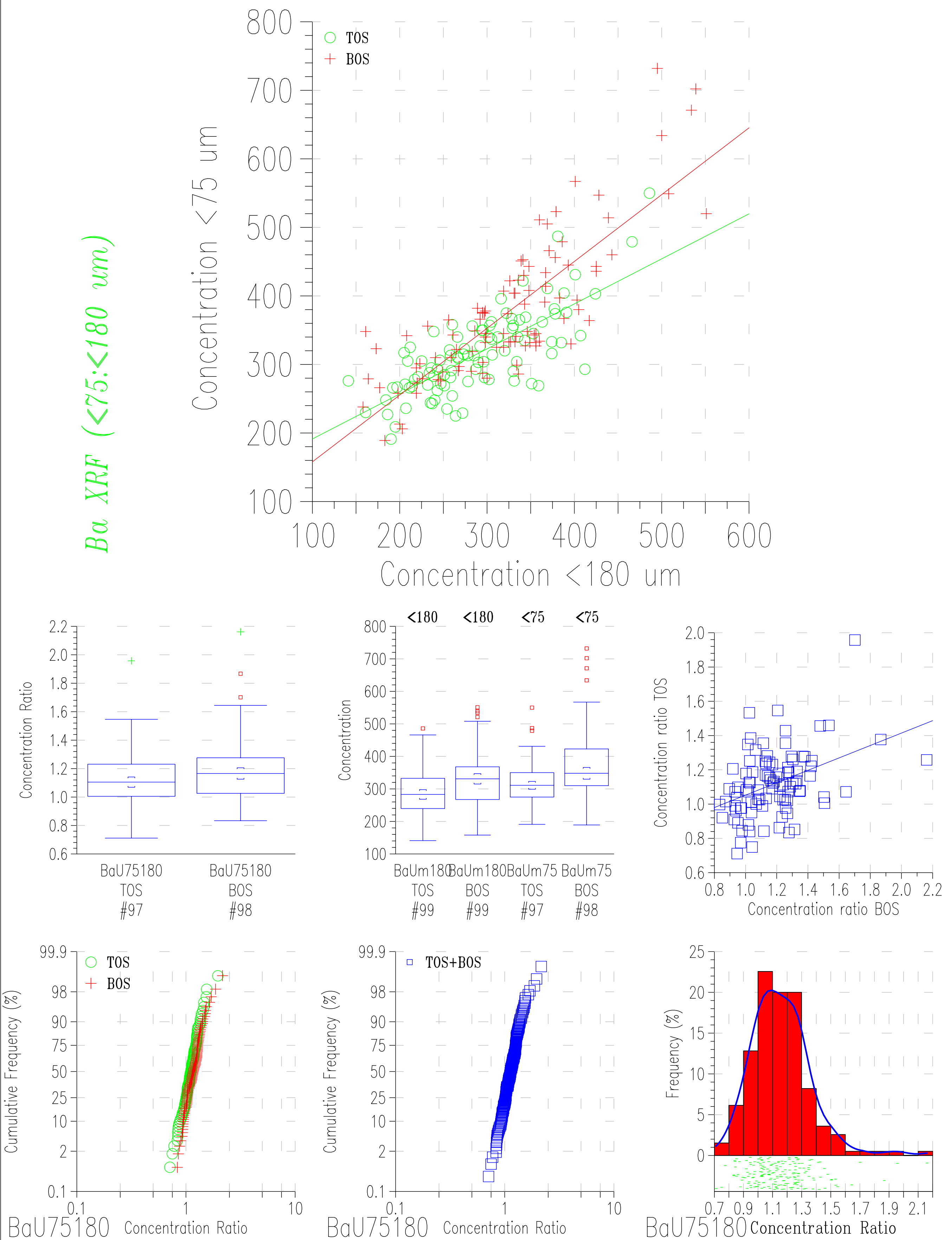


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

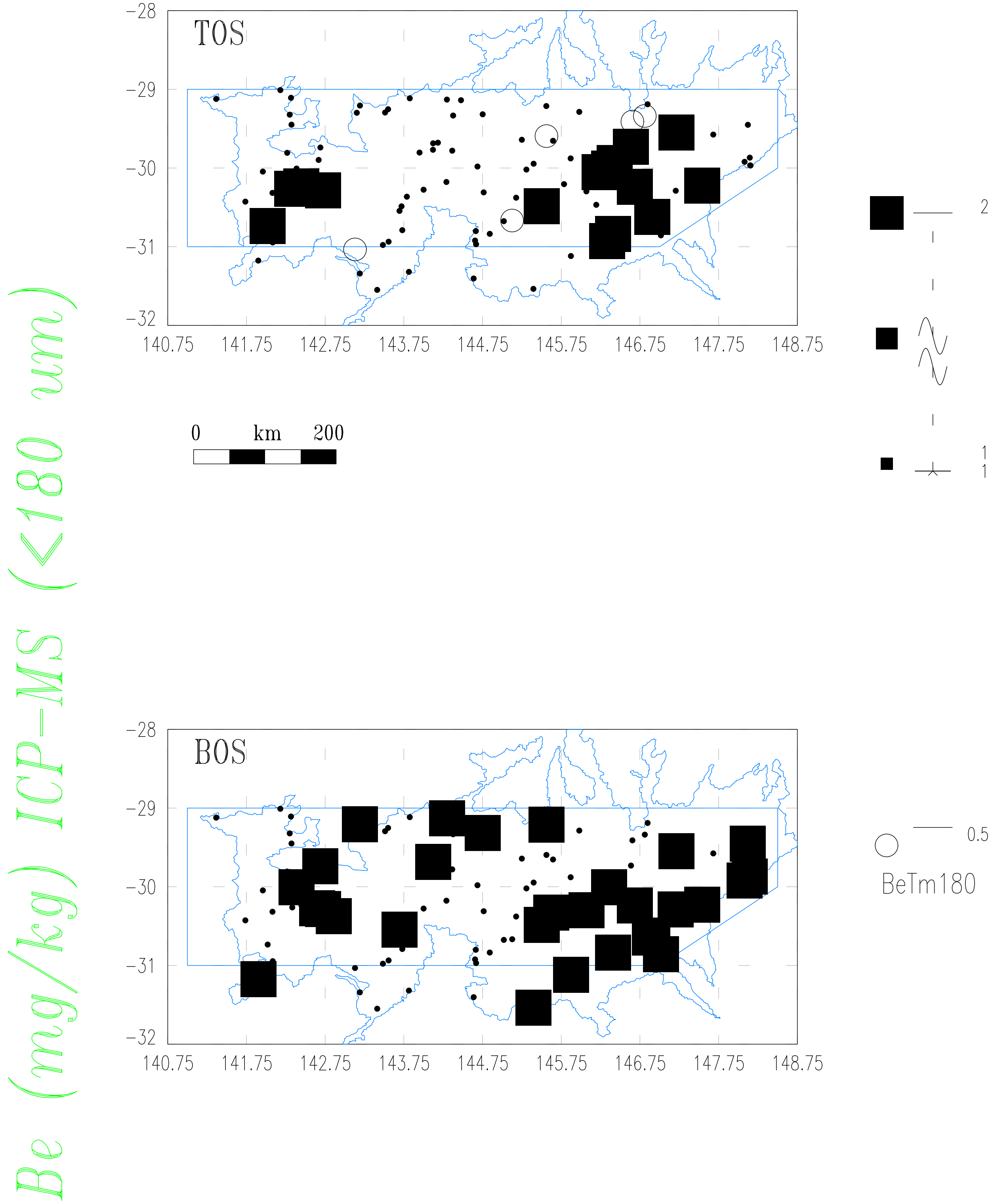


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

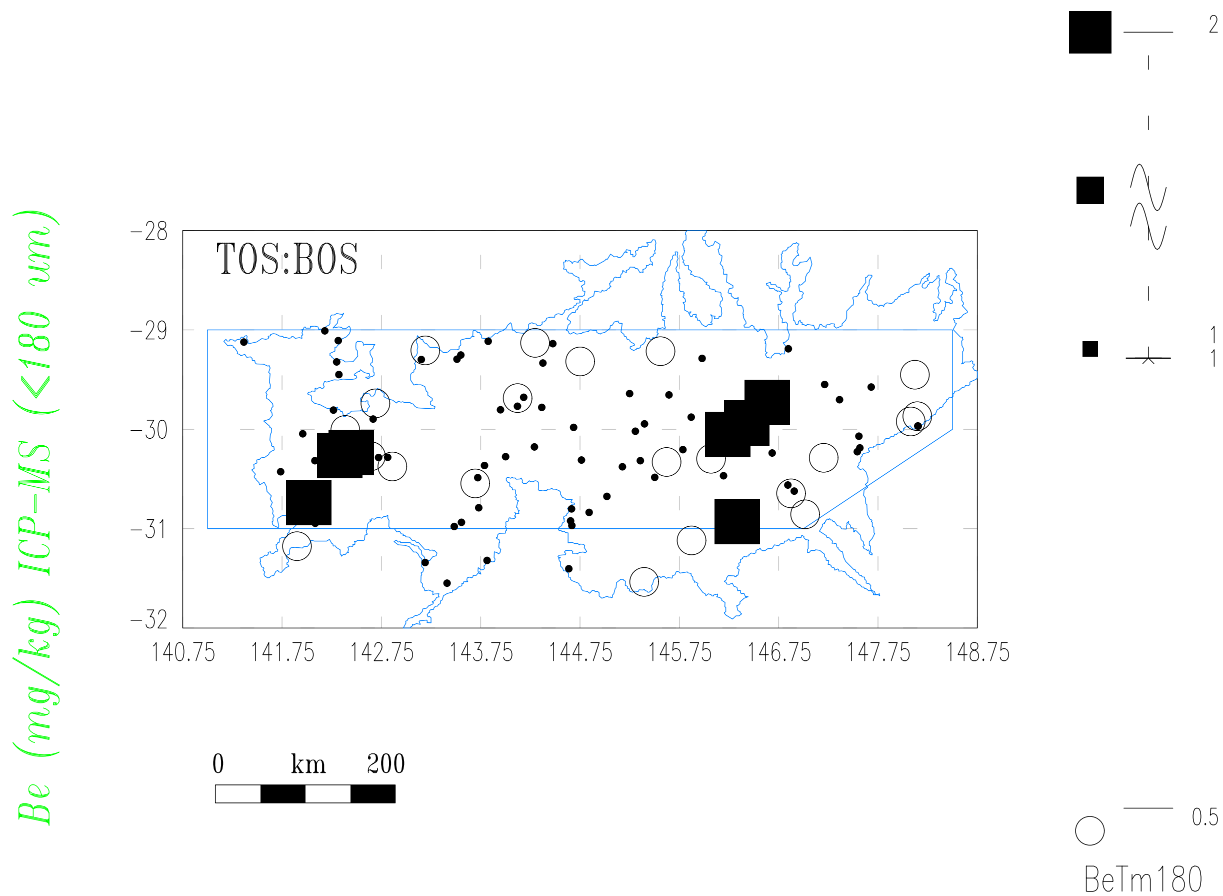


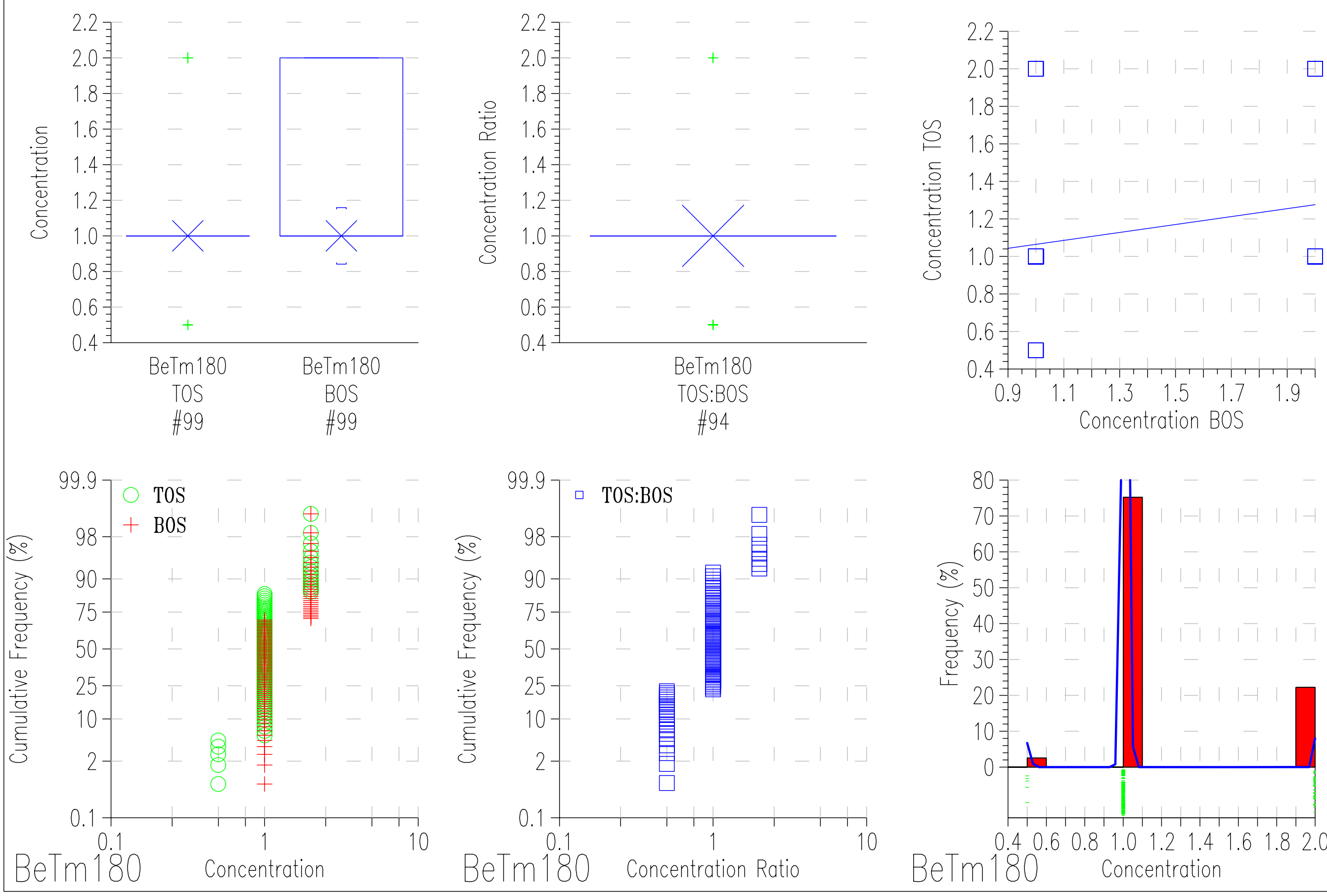
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

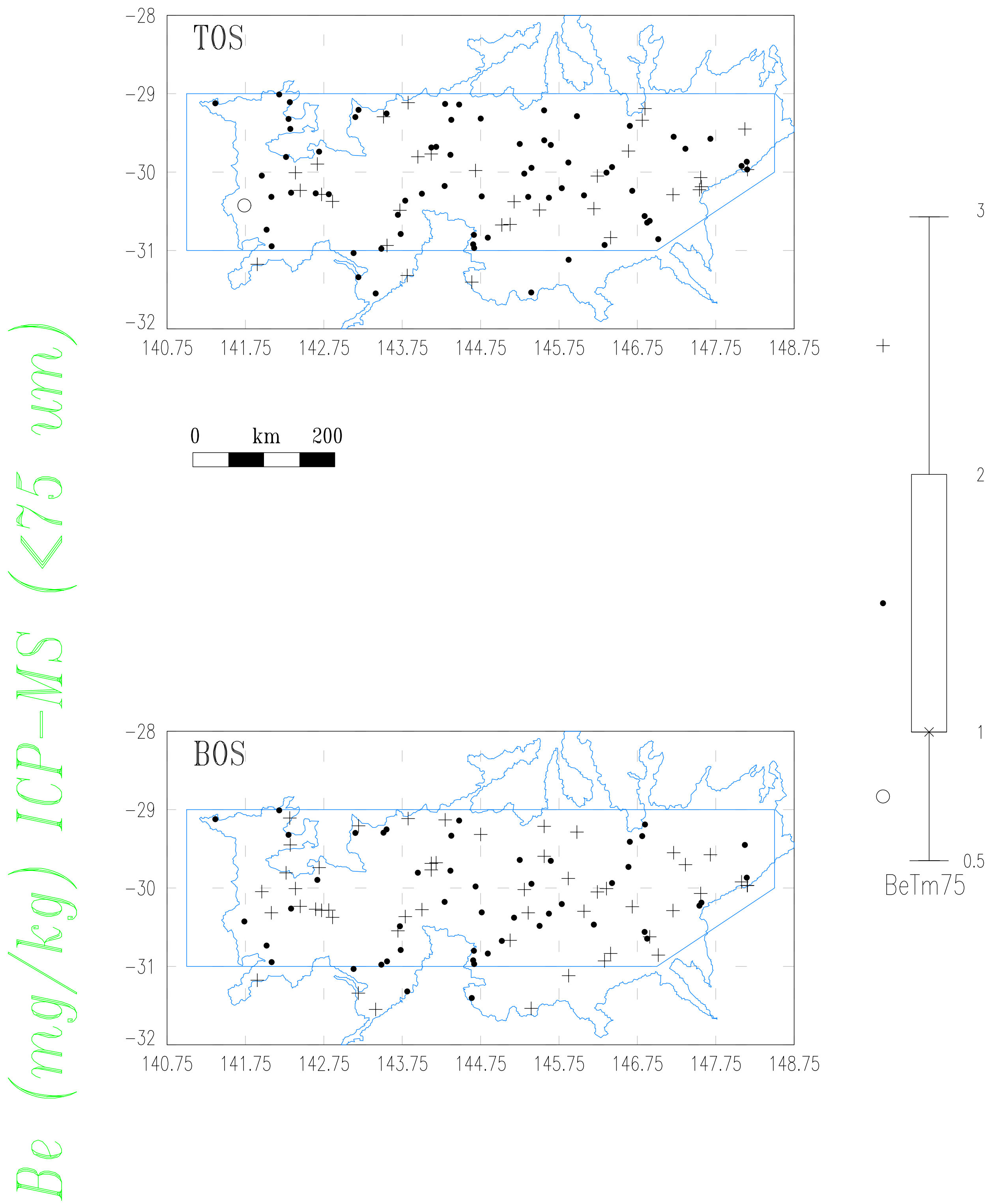


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



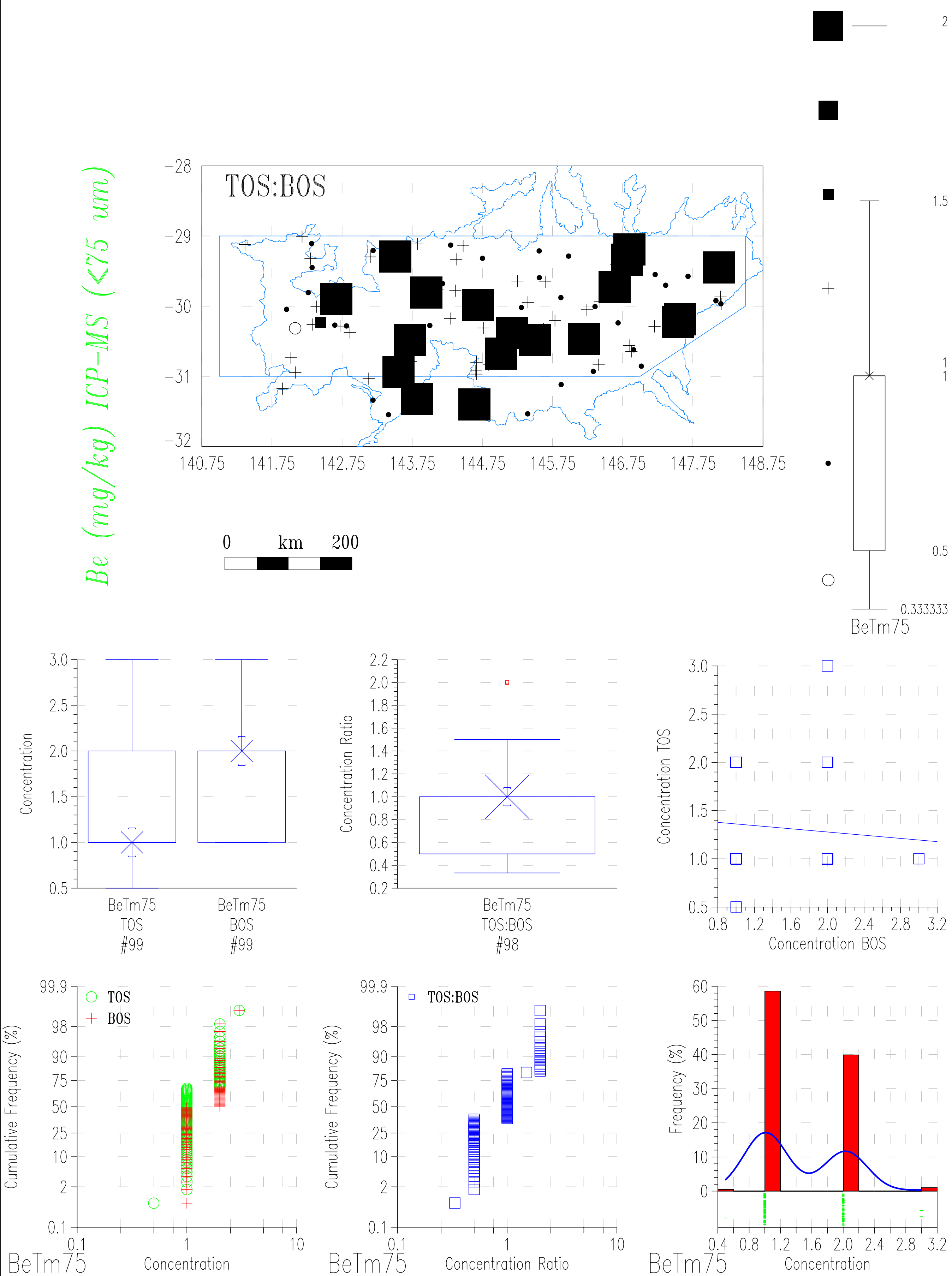


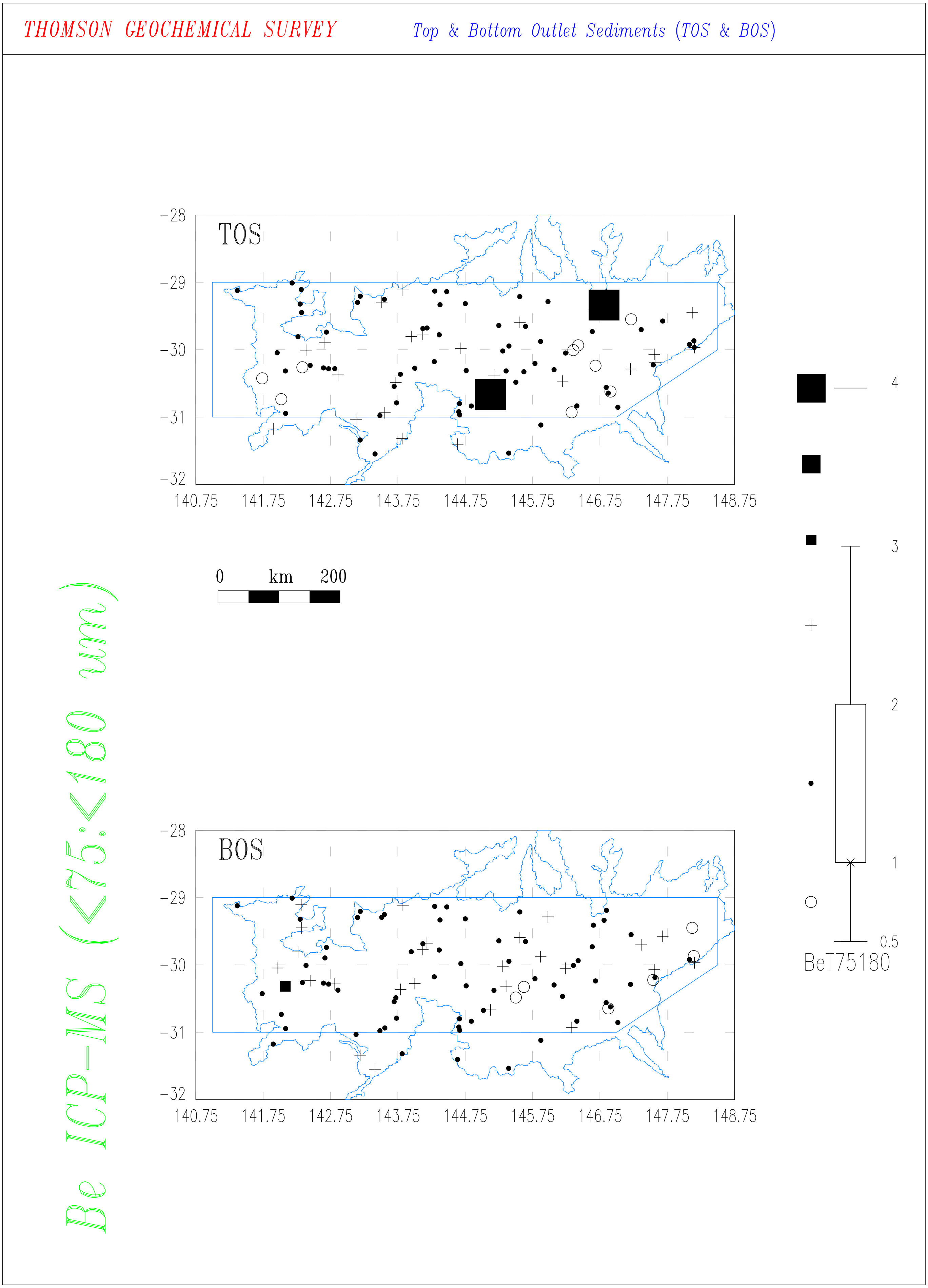
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

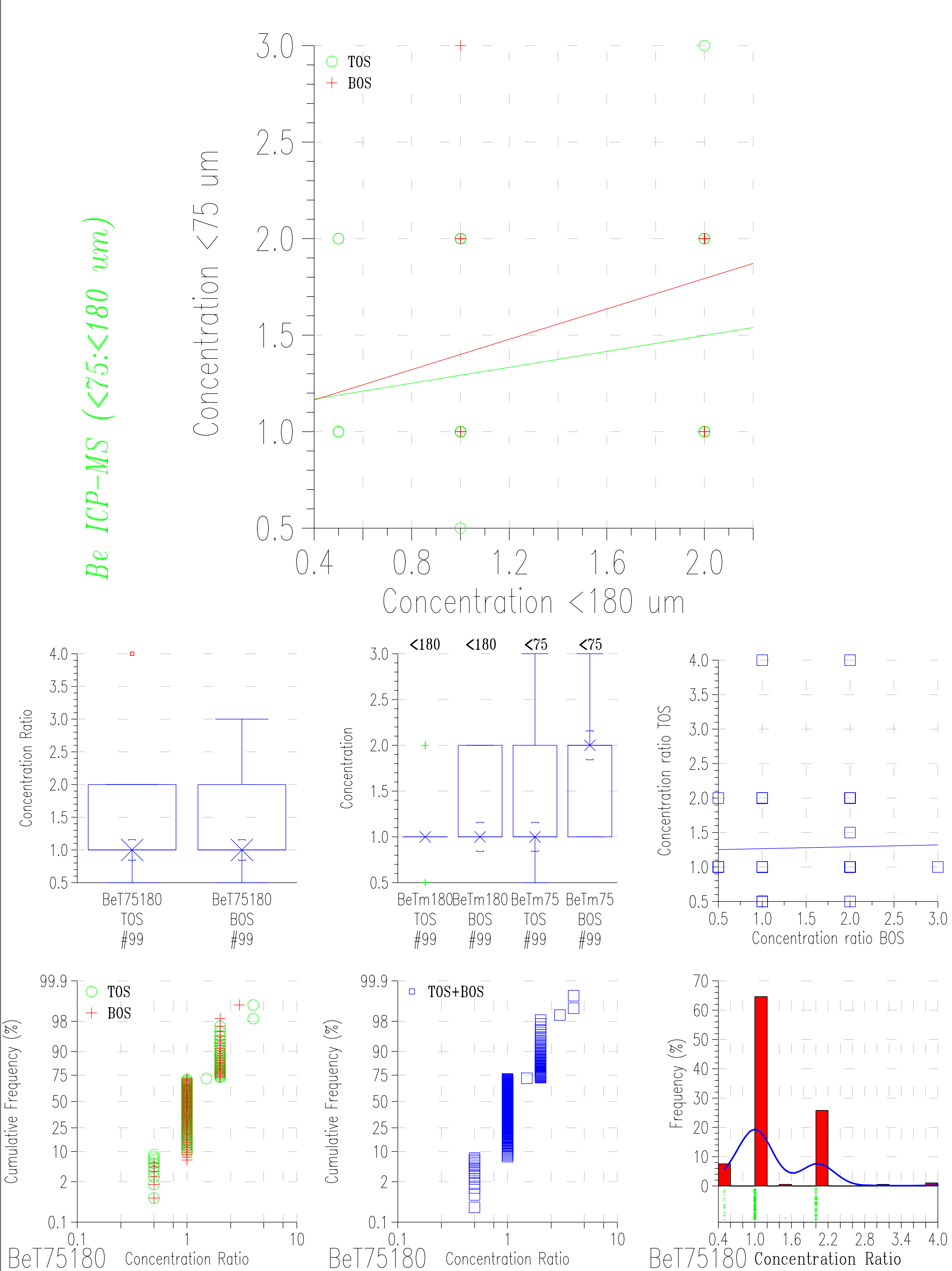
Top & Bottom Outlet Sediments (TOS & BOS)



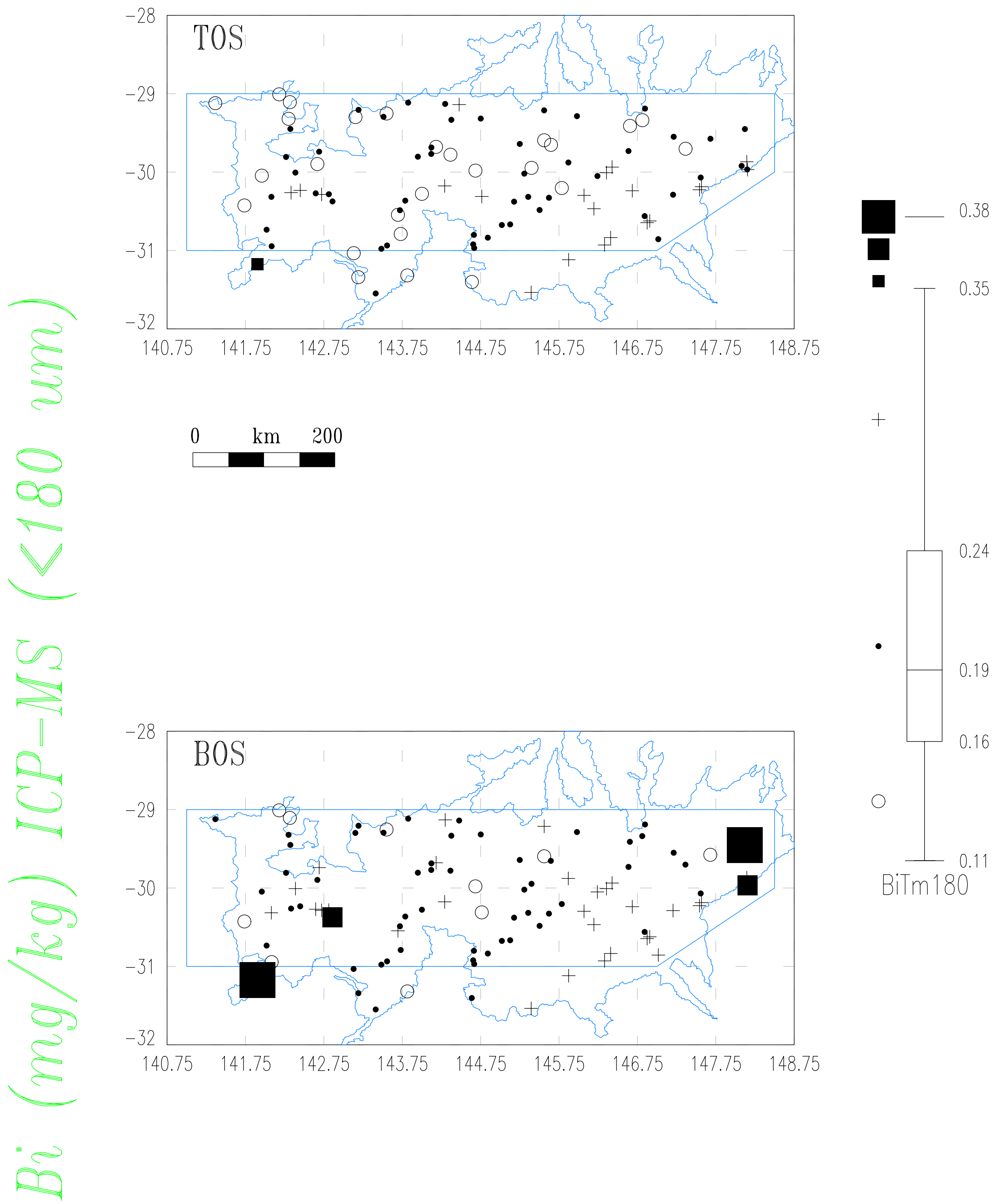

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
4
3
2
1
0.5
BeT75180
Be ICP-MS (<75:<180 um)

THOMSON GEOCHEMICAL SURVEY

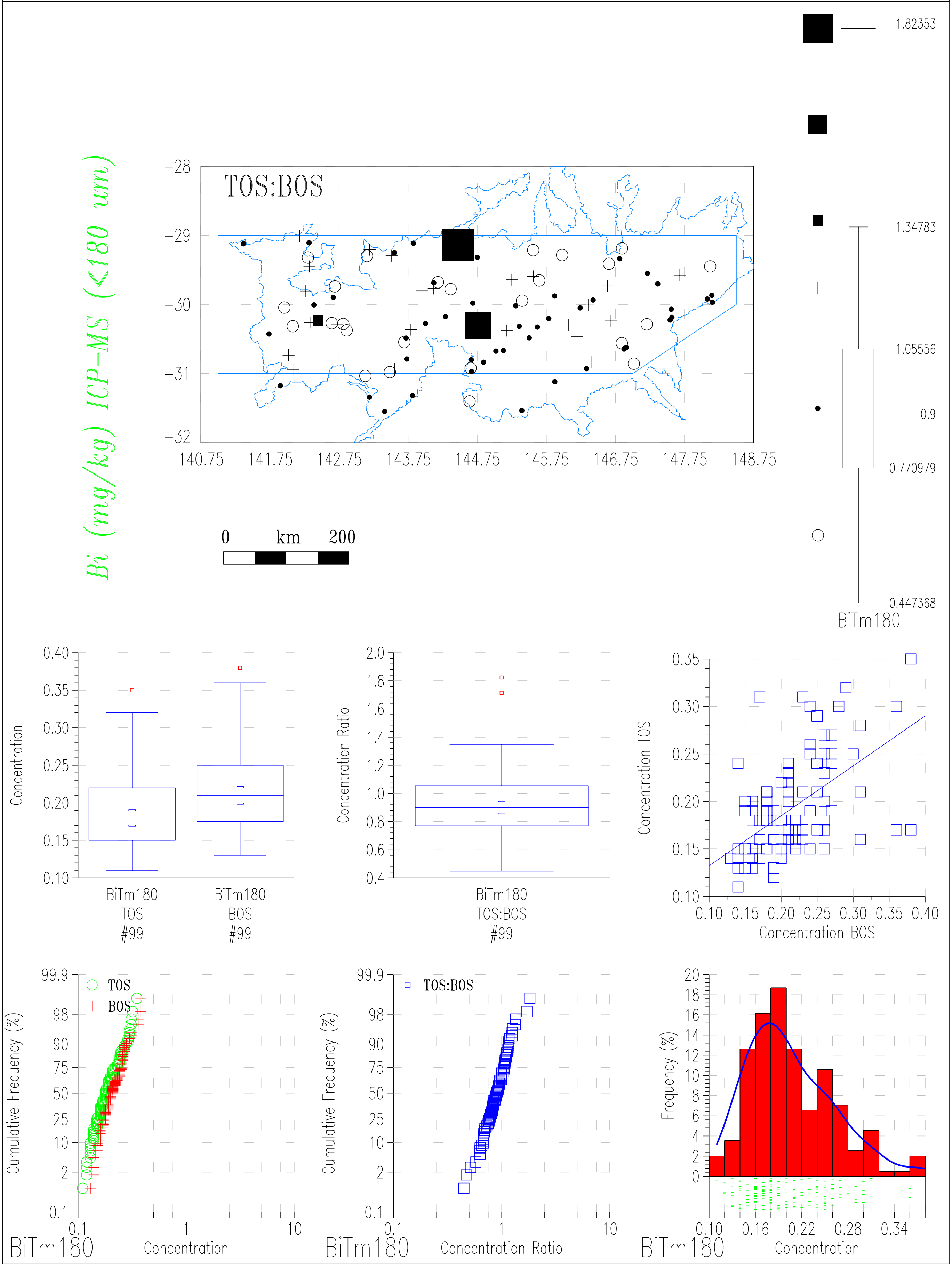
Top & Bottom Outlet Sediments (TOS & BOS)



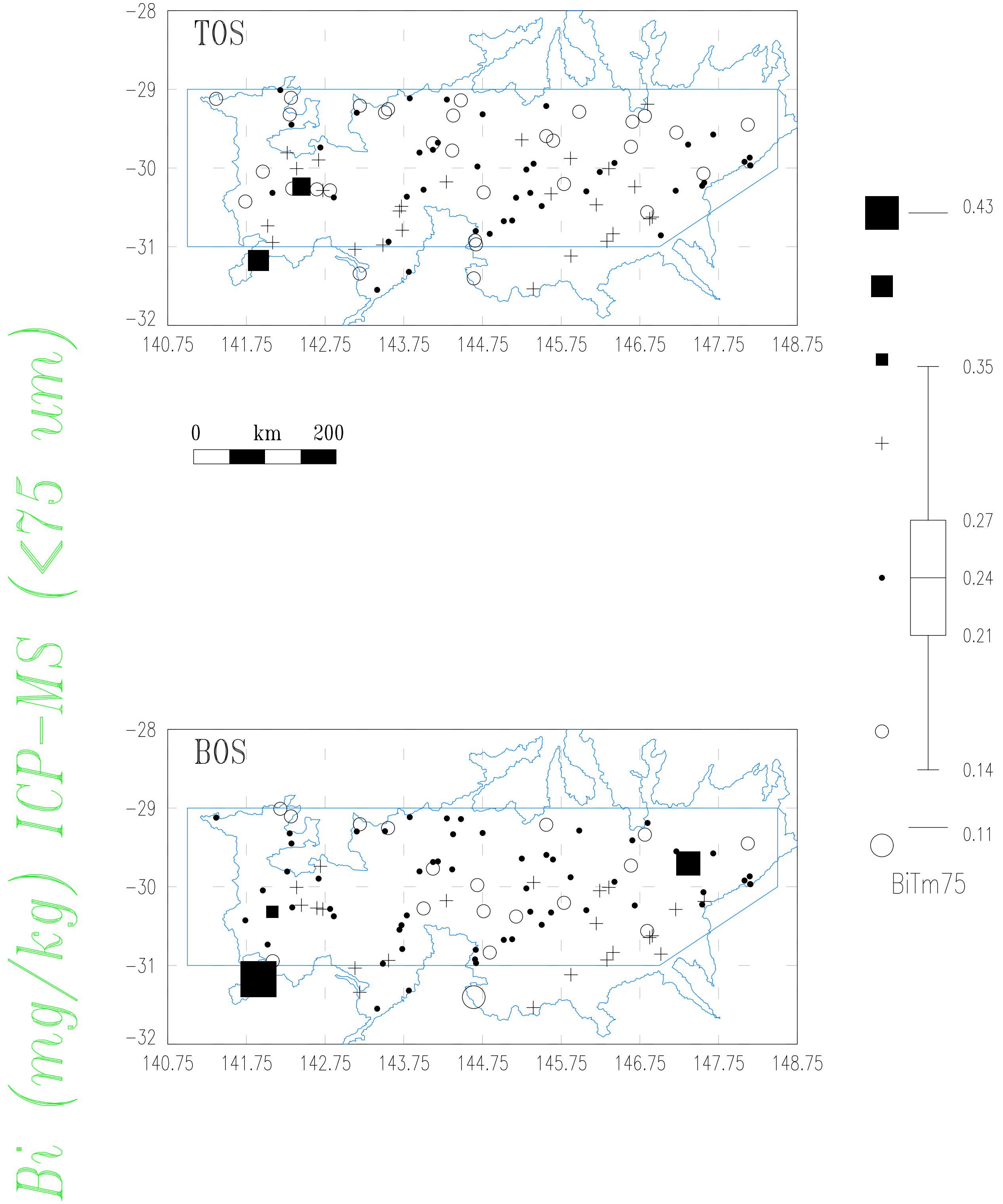
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



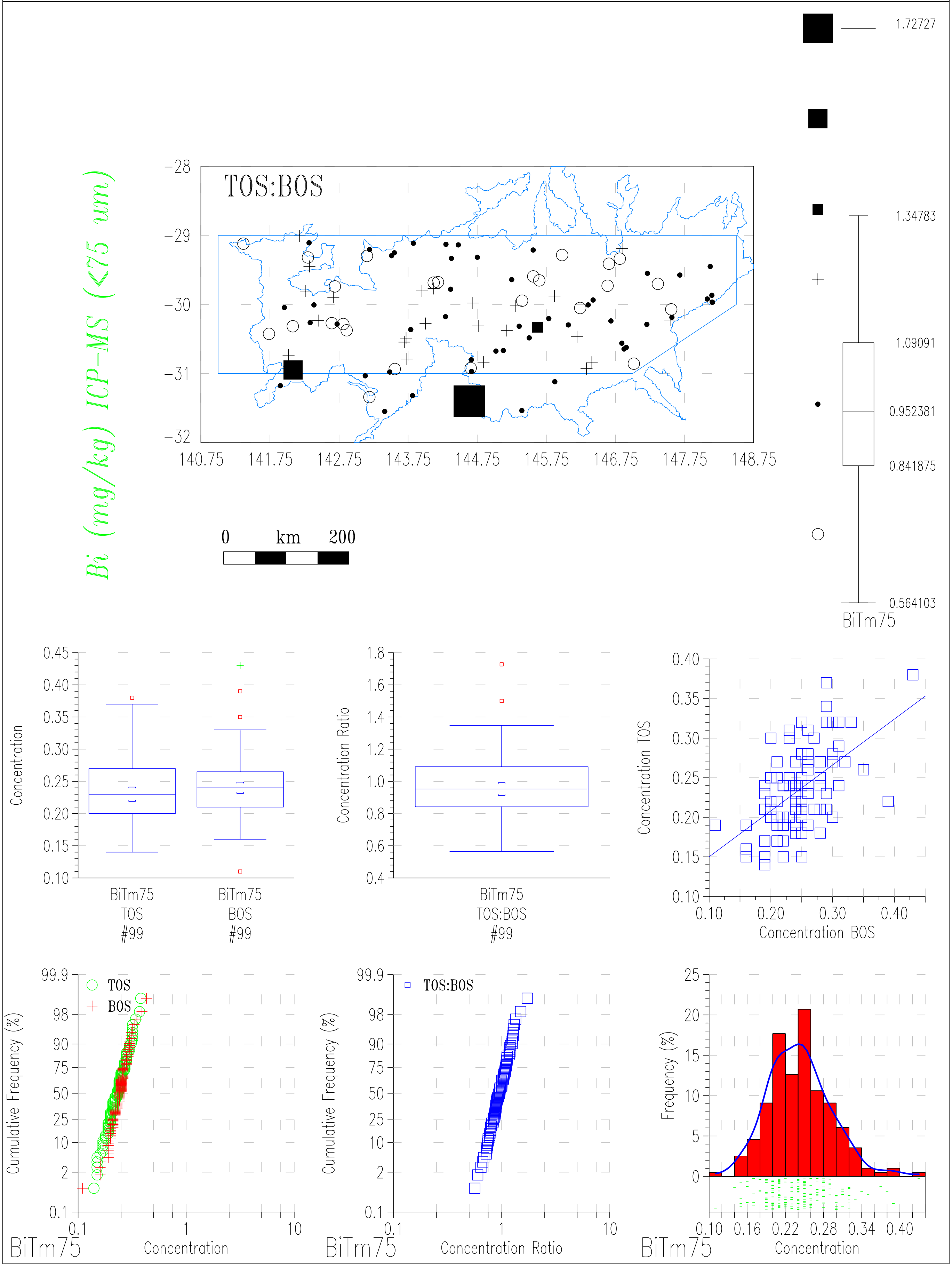
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

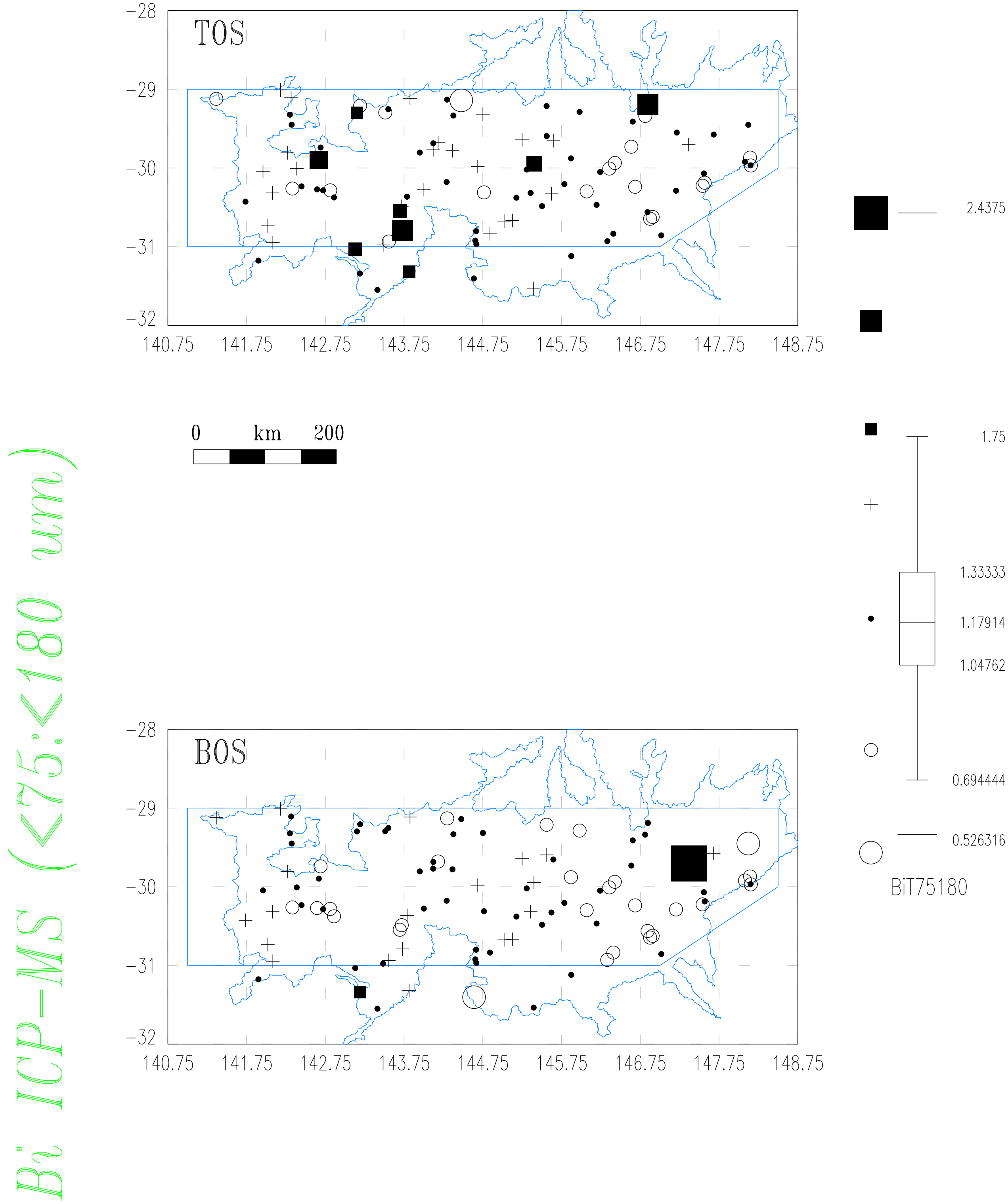


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

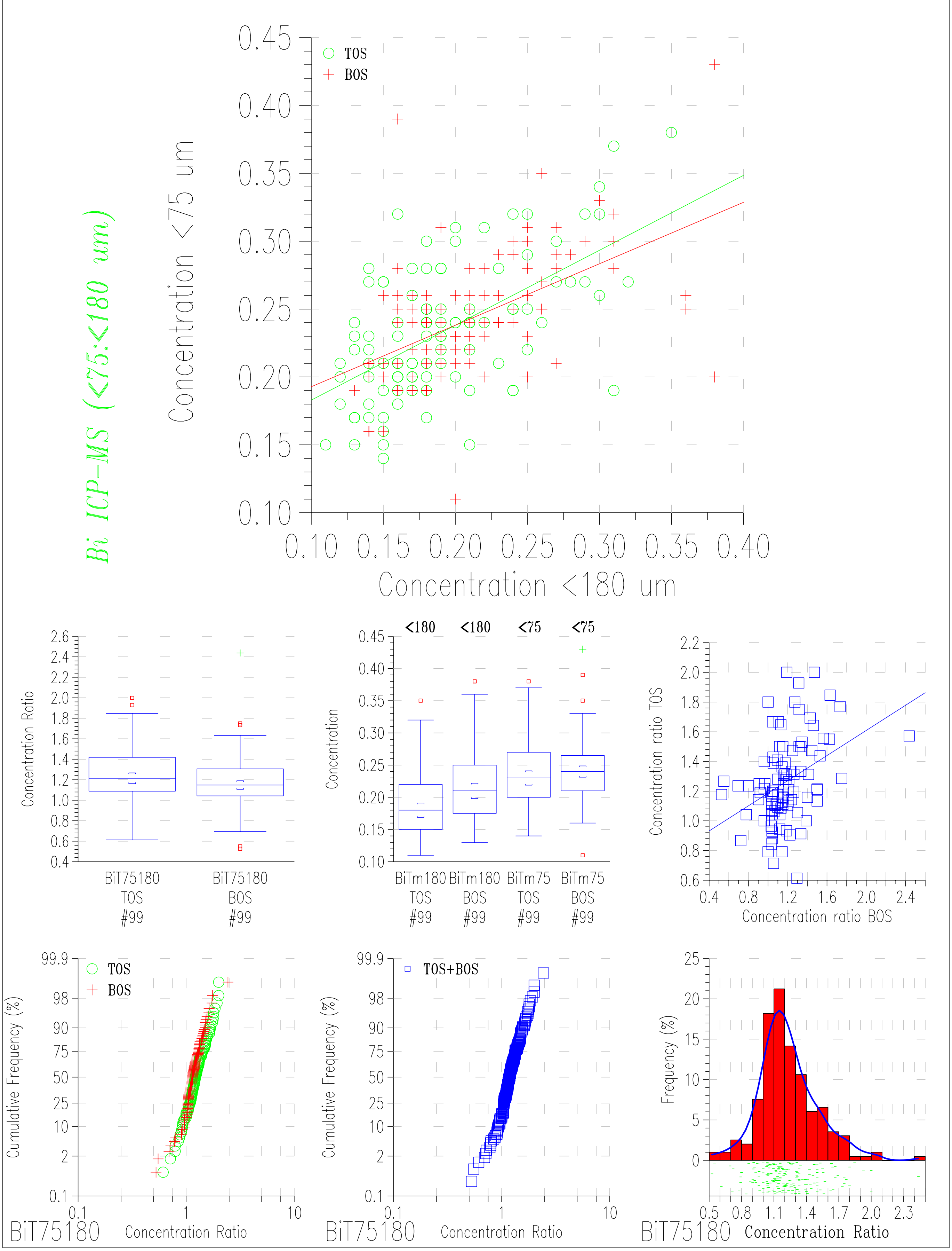


THOMSON GEOCHEMICAL SURVEY

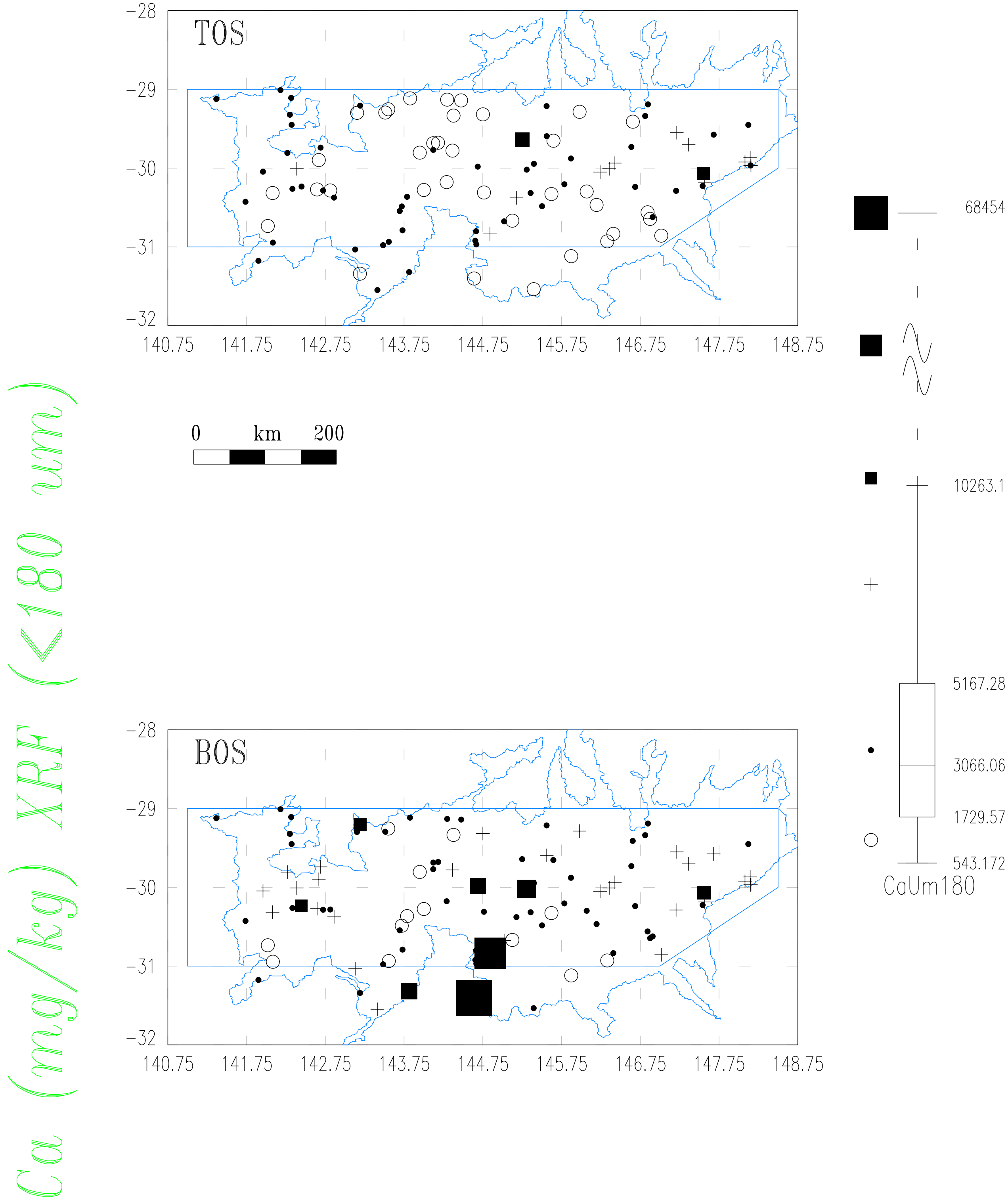
Top & Bottom Outlet Sediments (TOS & BOS)

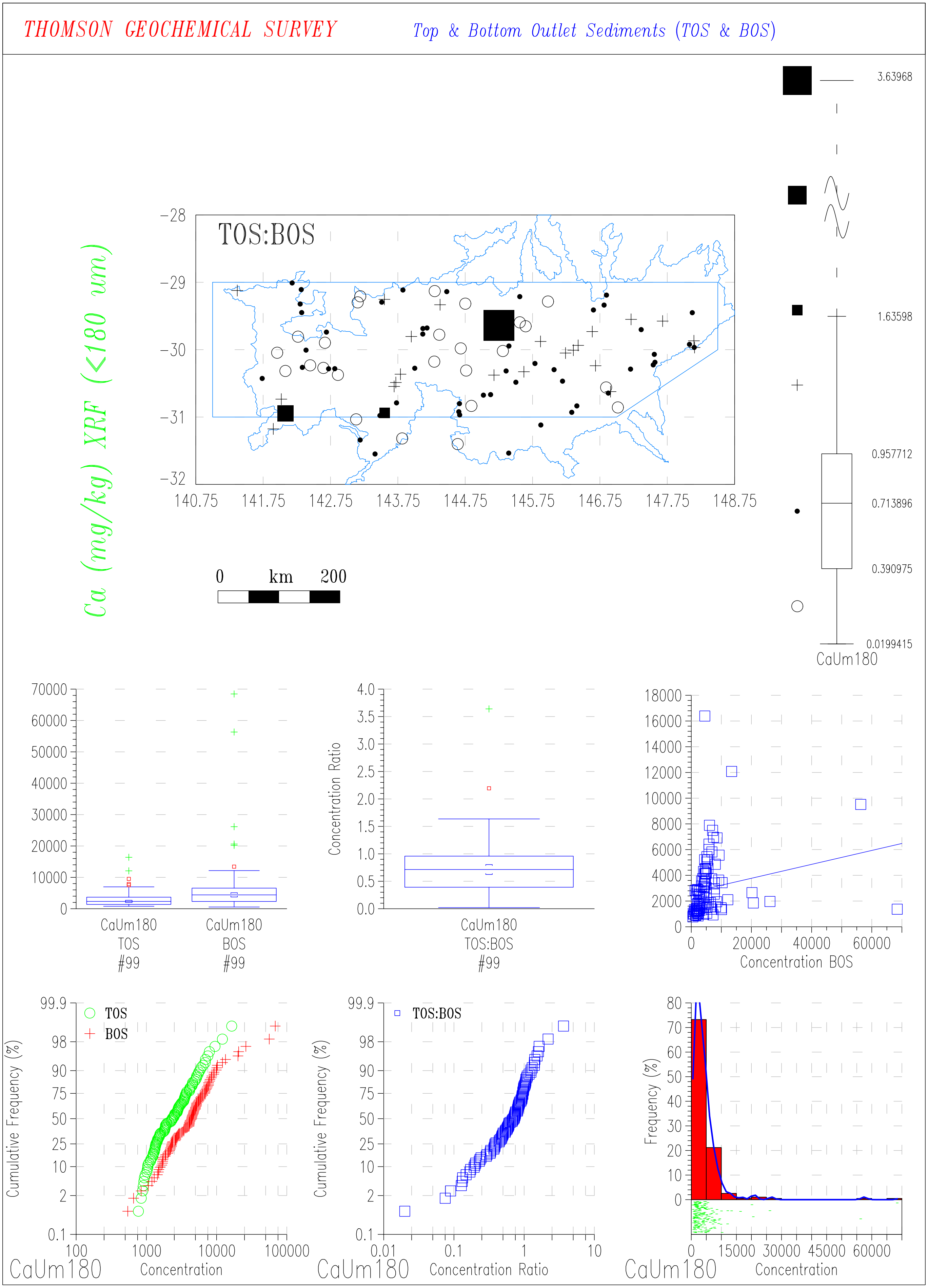


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



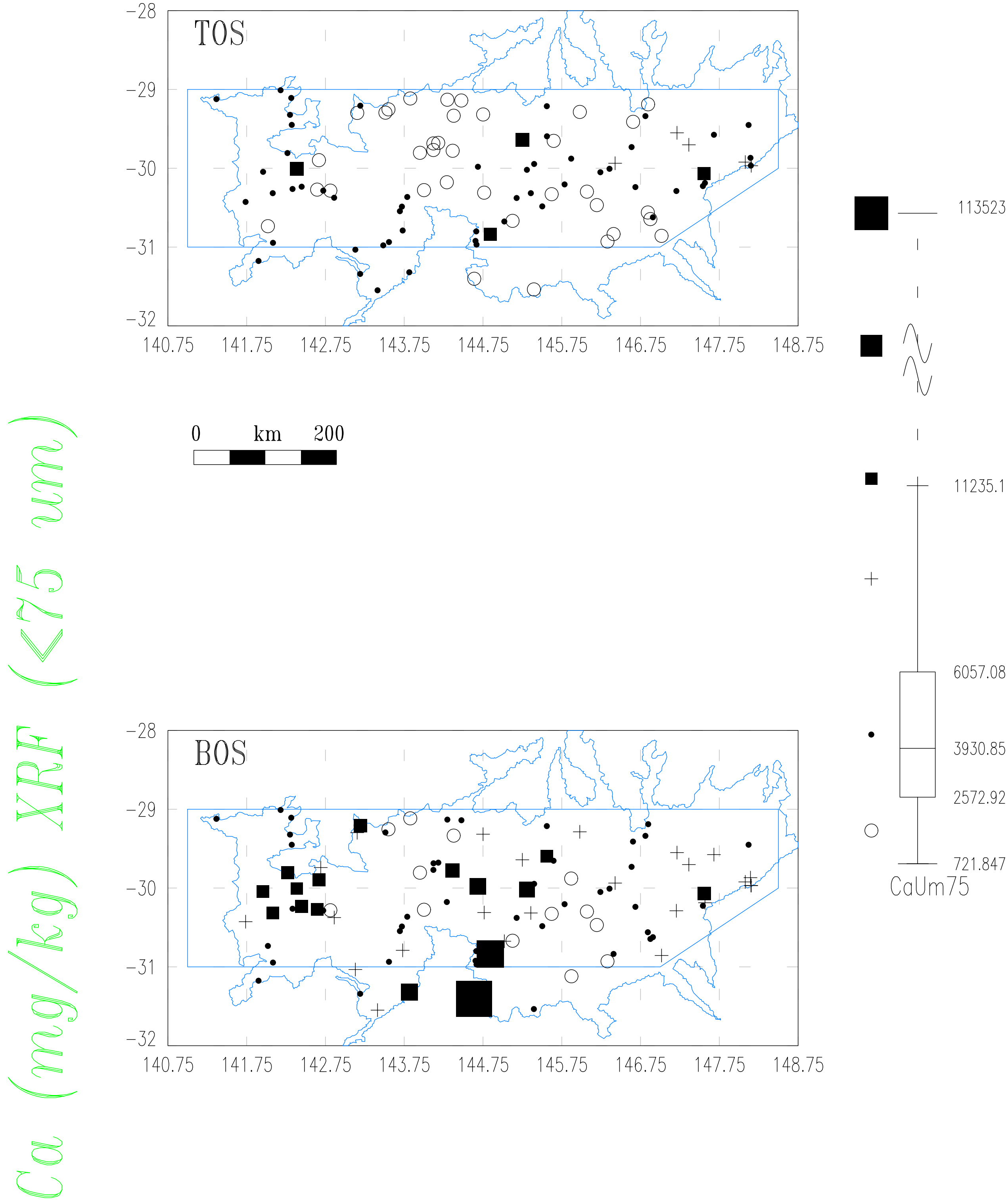
THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



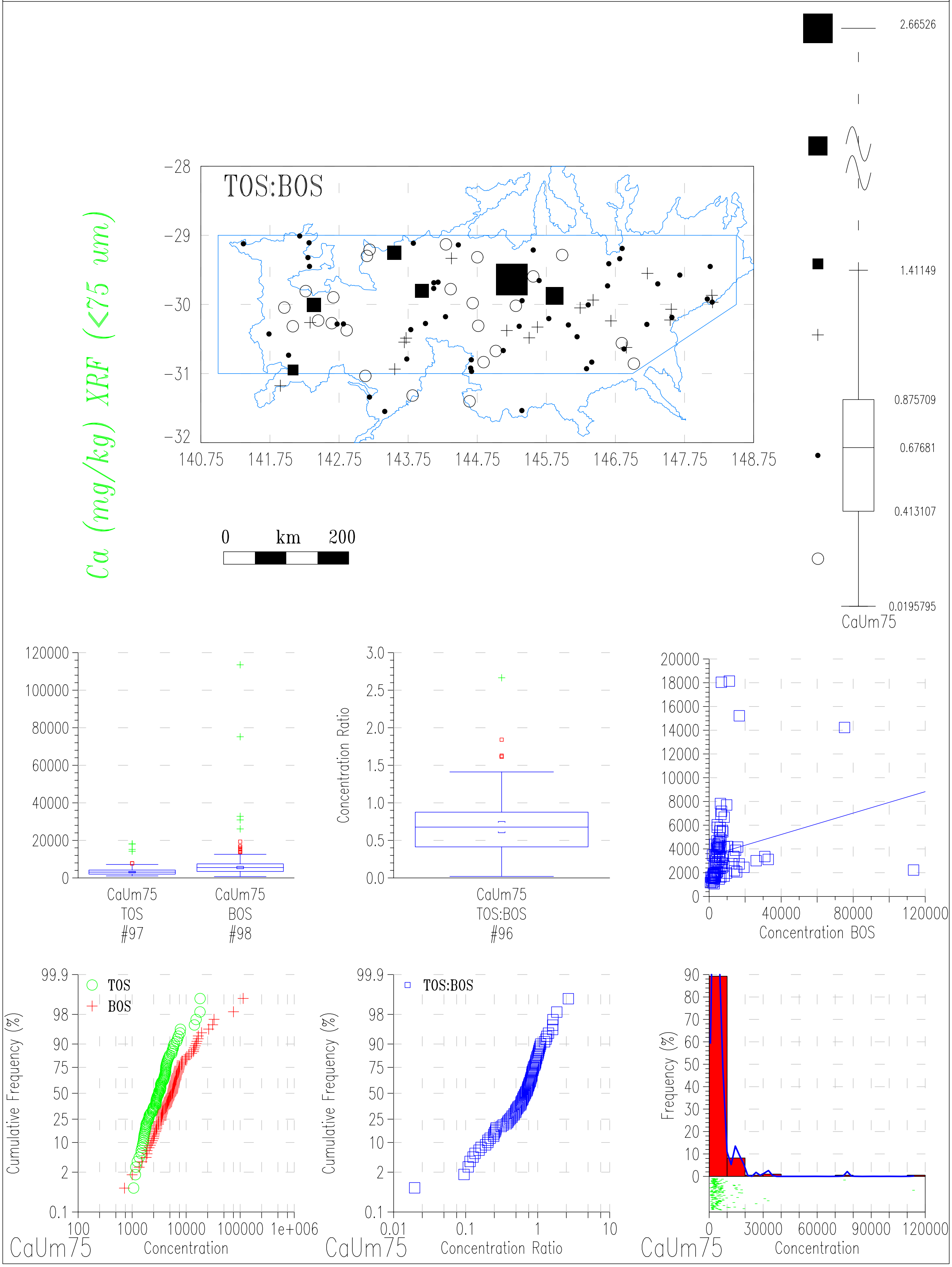


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ca (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
3.63968
1.63598
0.957712
0.713896
0.390975
0.0199415
CaUm180
CaUm180 TOS #99
CaUm180 BOS #99
Concentration Ratio
CaUm180 TOS:BOS #99
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

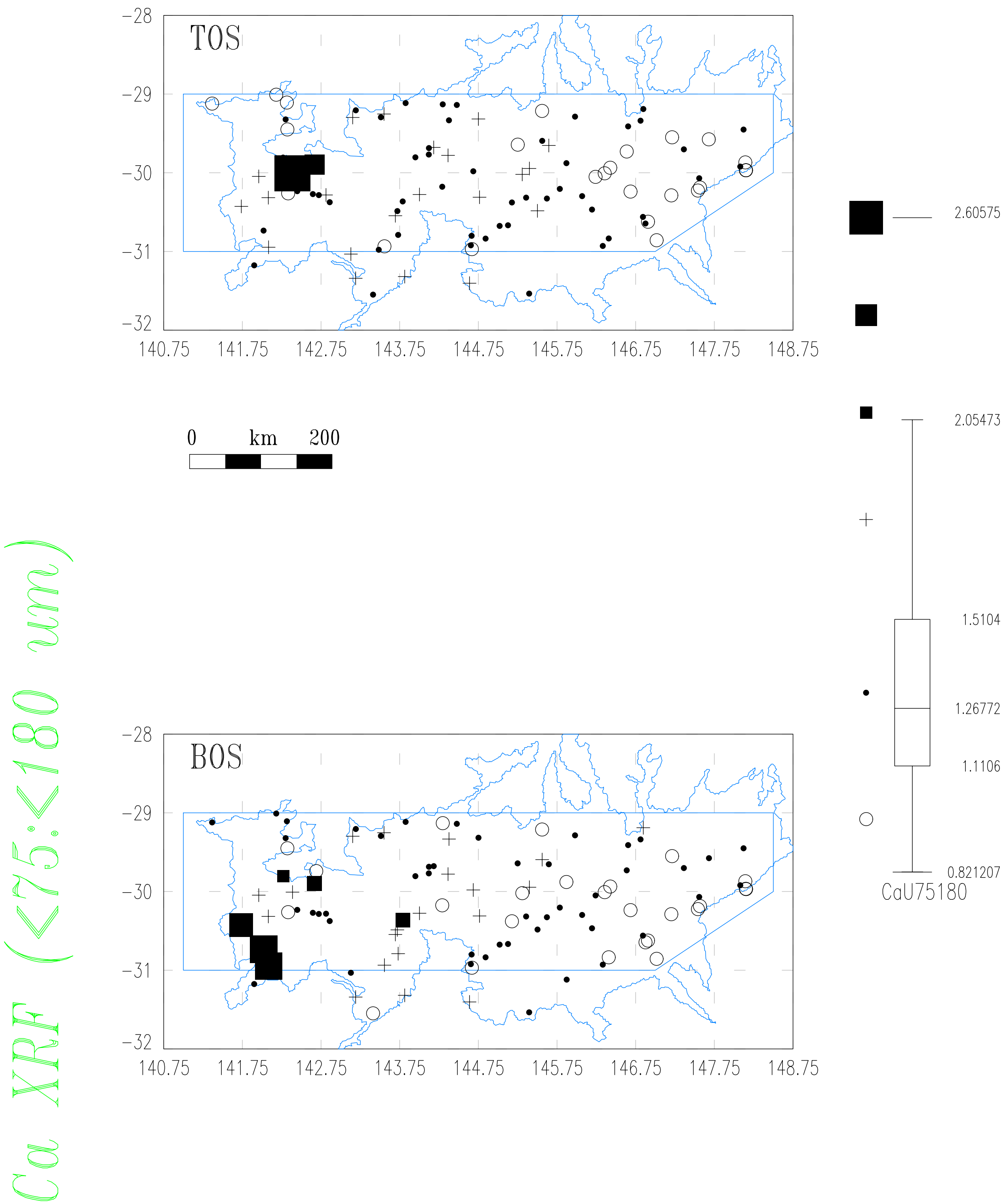


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

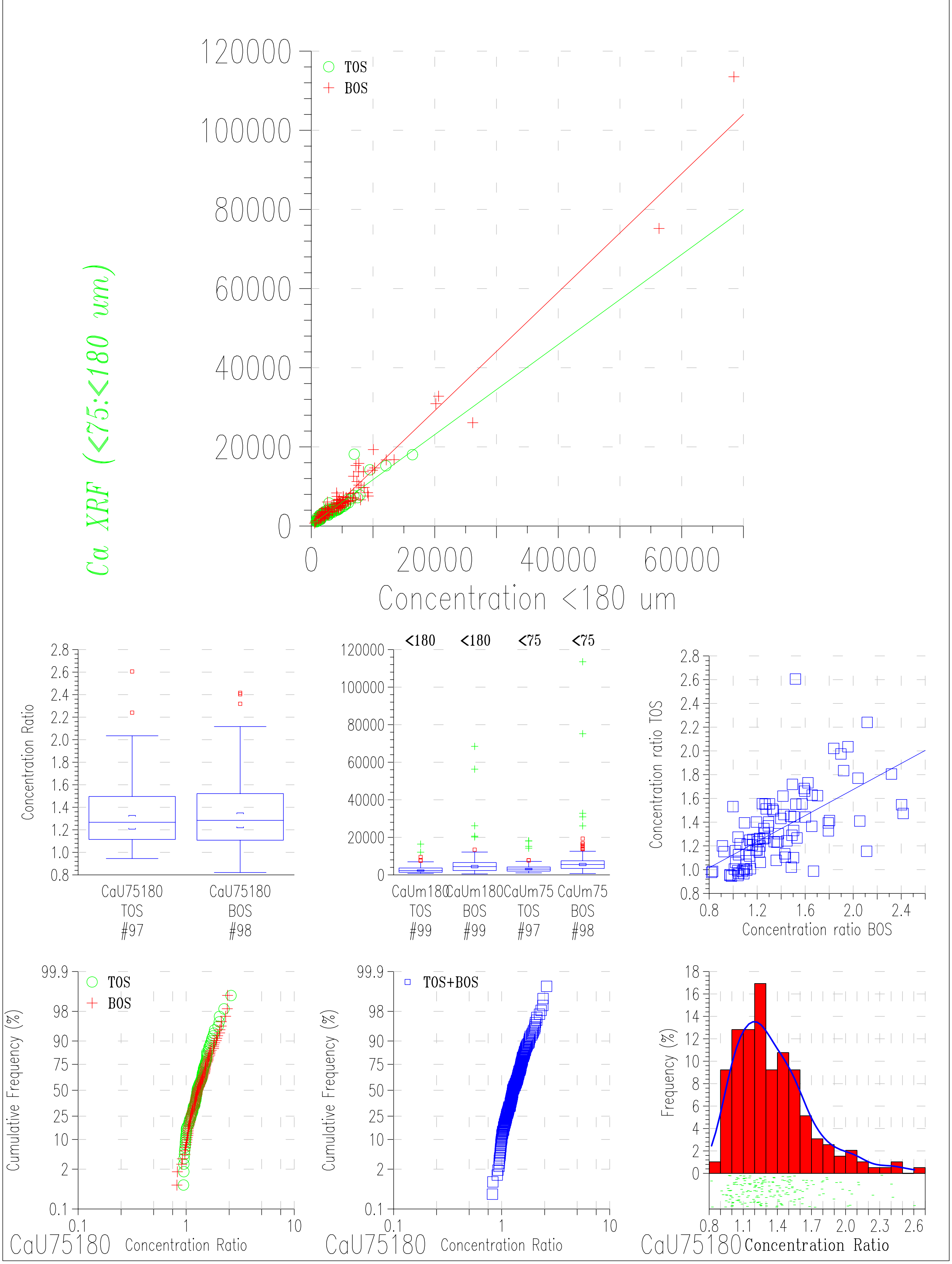


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

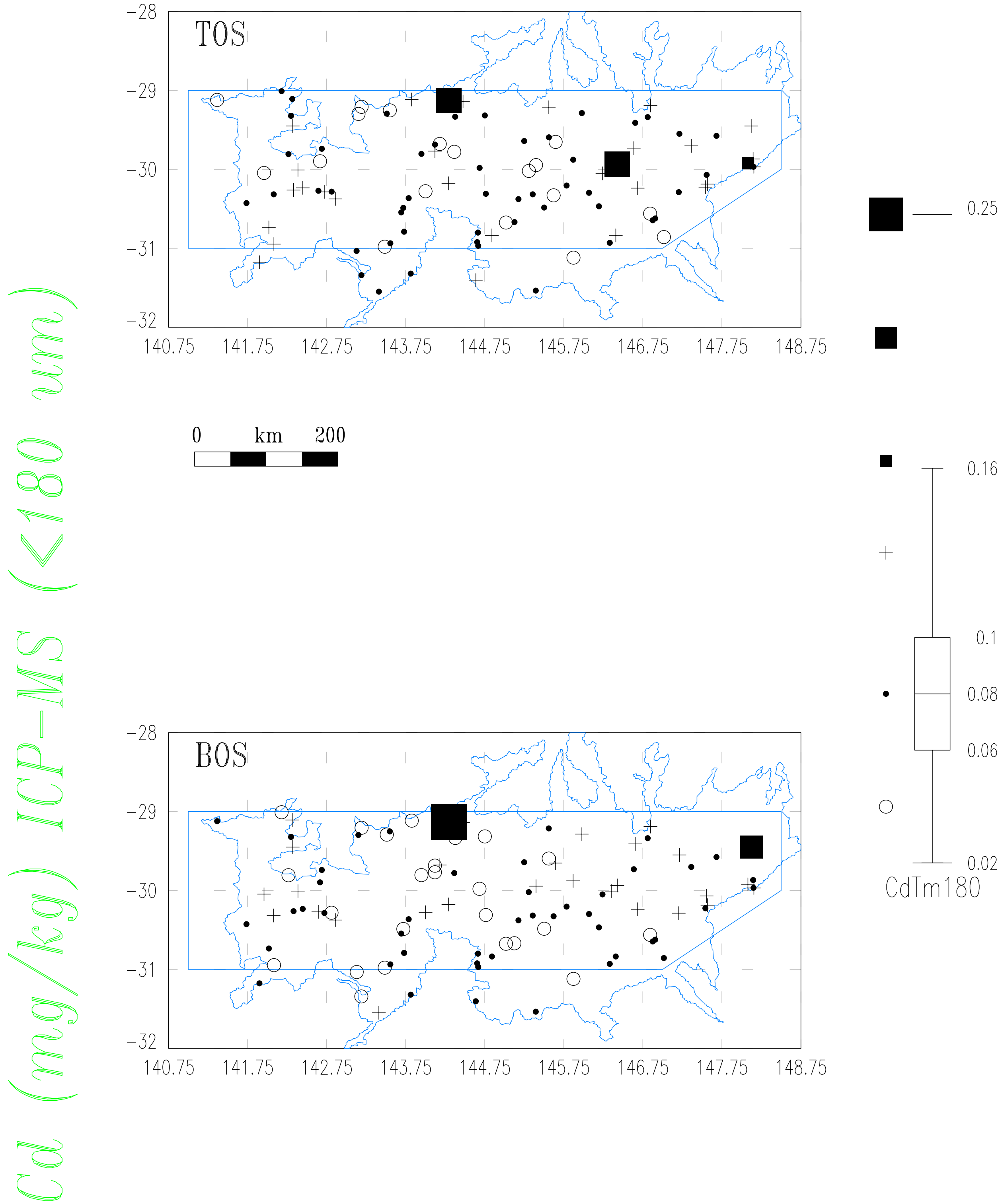


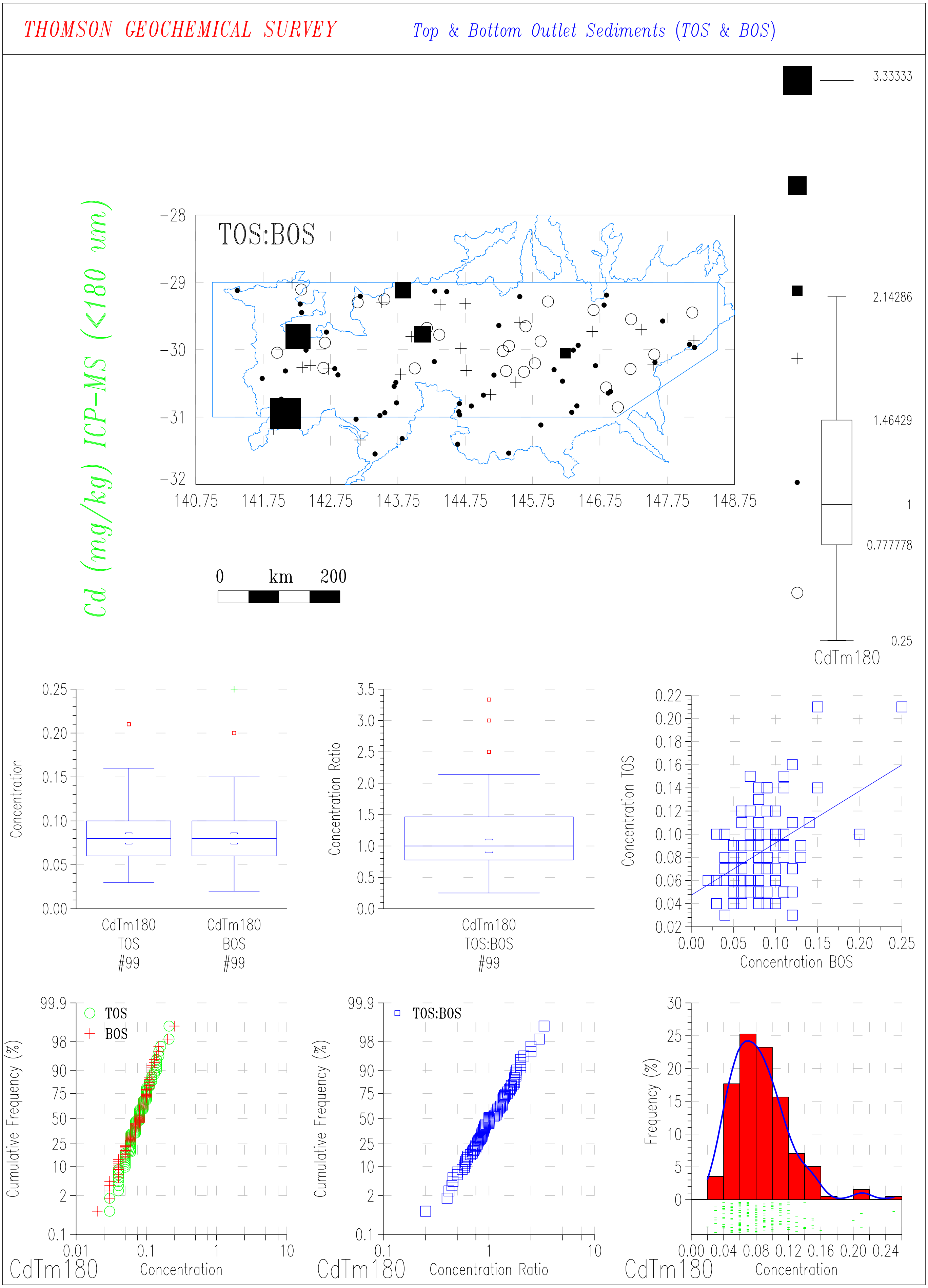
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



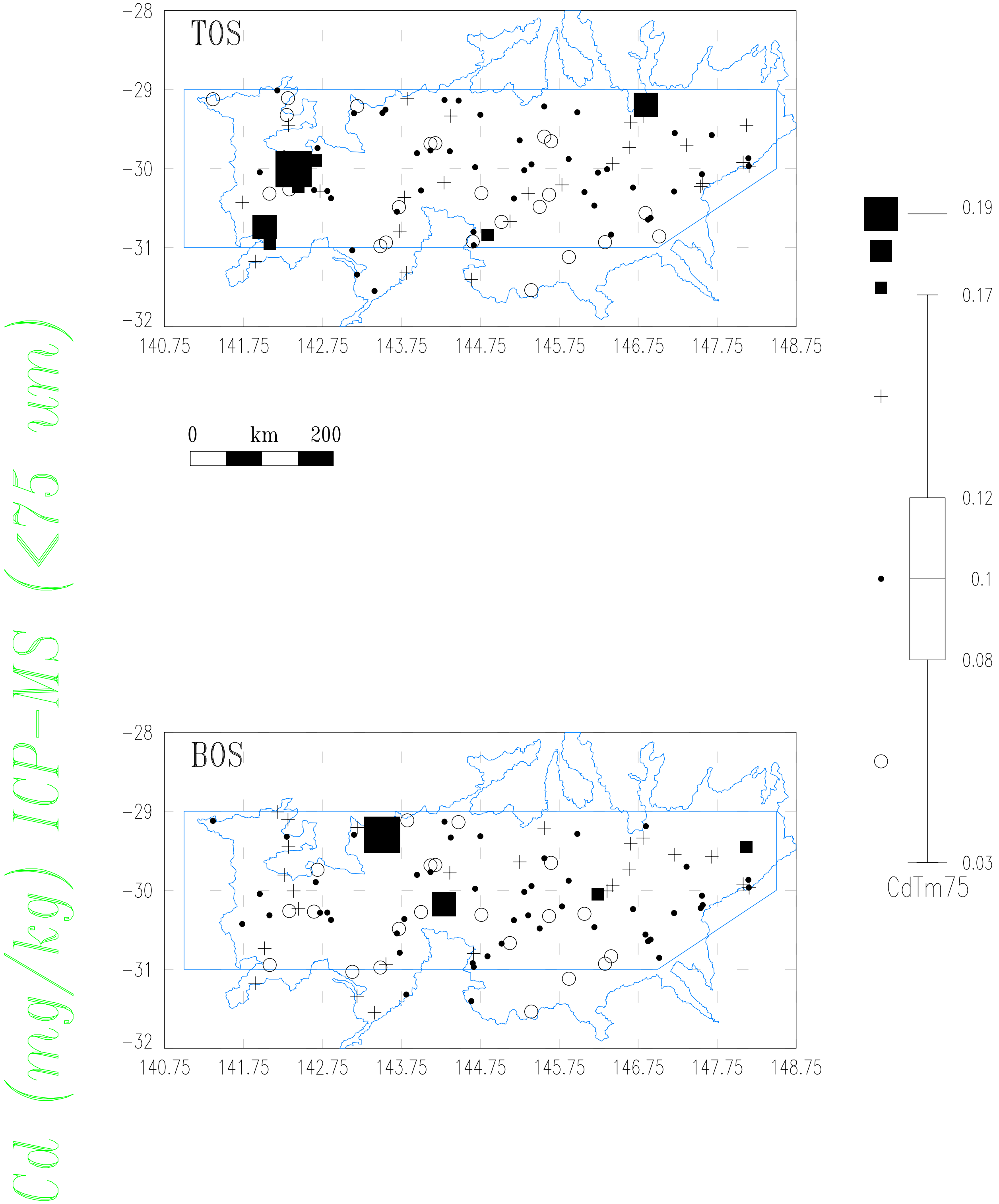
THOMSON GEOCHEMICAL SURVEY

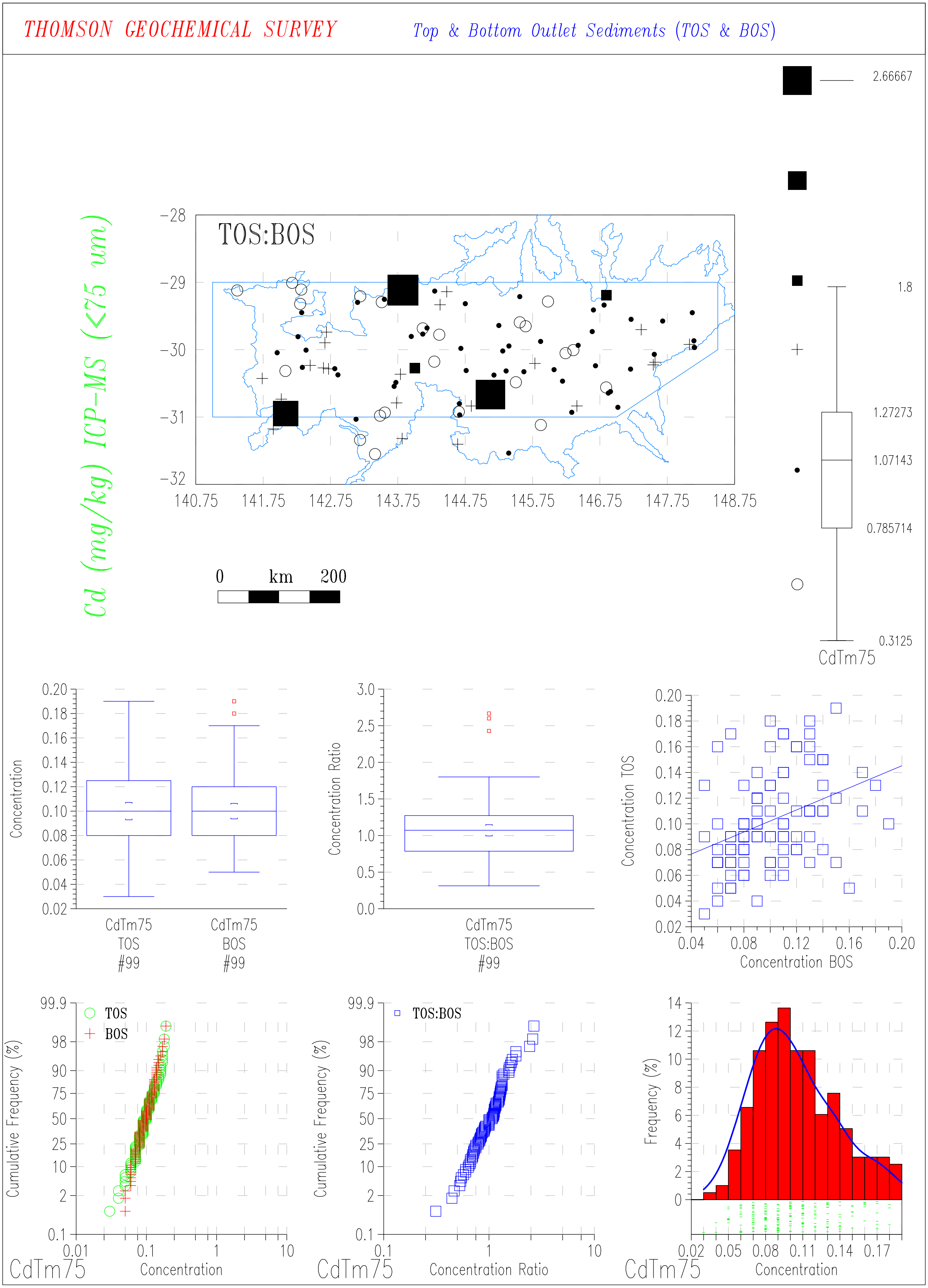
Top & Bottom Outlet Sediments (TOS & BOS)



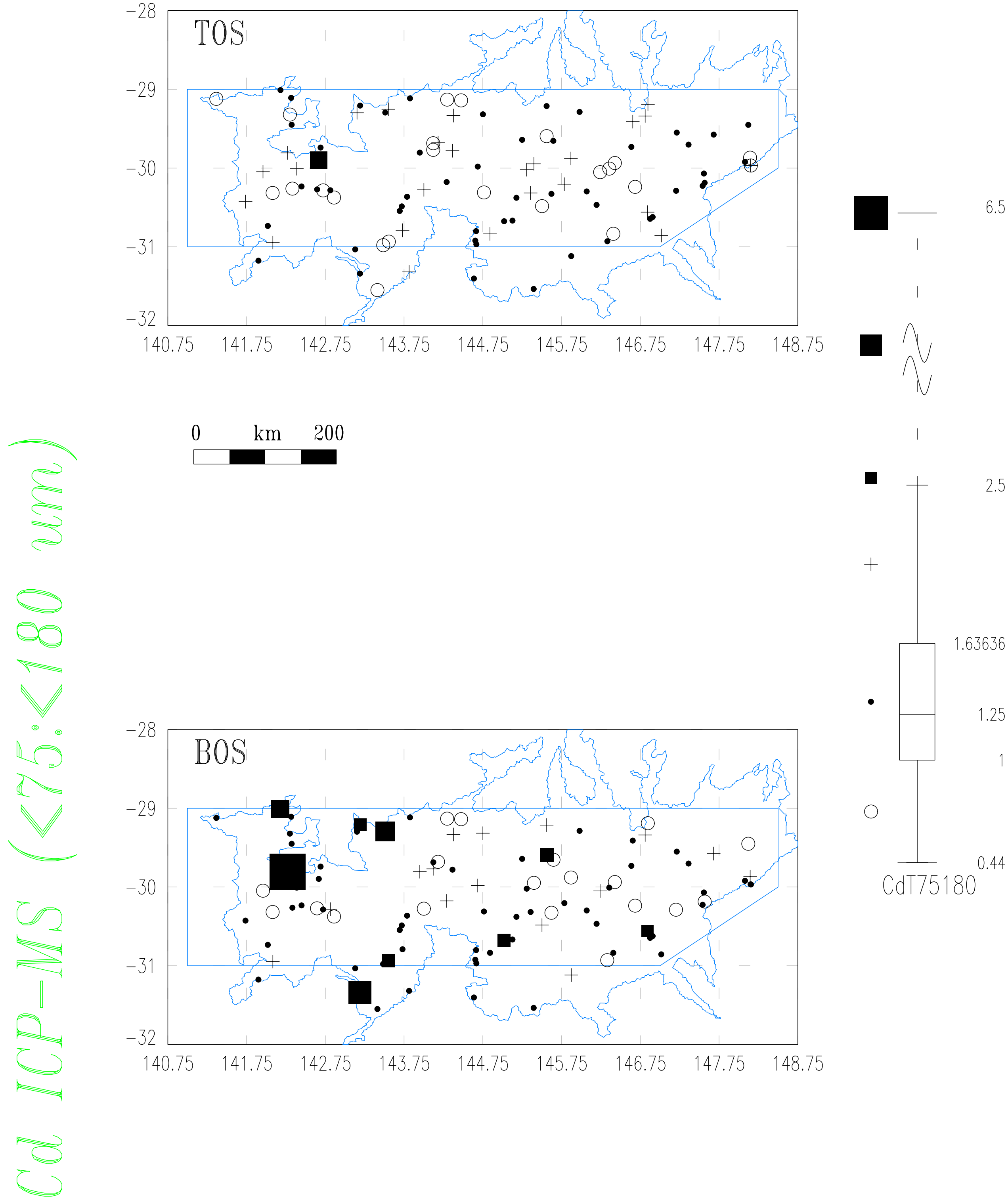

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cd (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
3.33333
2.14286
1.46429
1
0.777778
0.25
CdTm180
Concentration
CdTm180 TOS #99
CdTm180 BOS #99
Concentration Ratio
CdTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



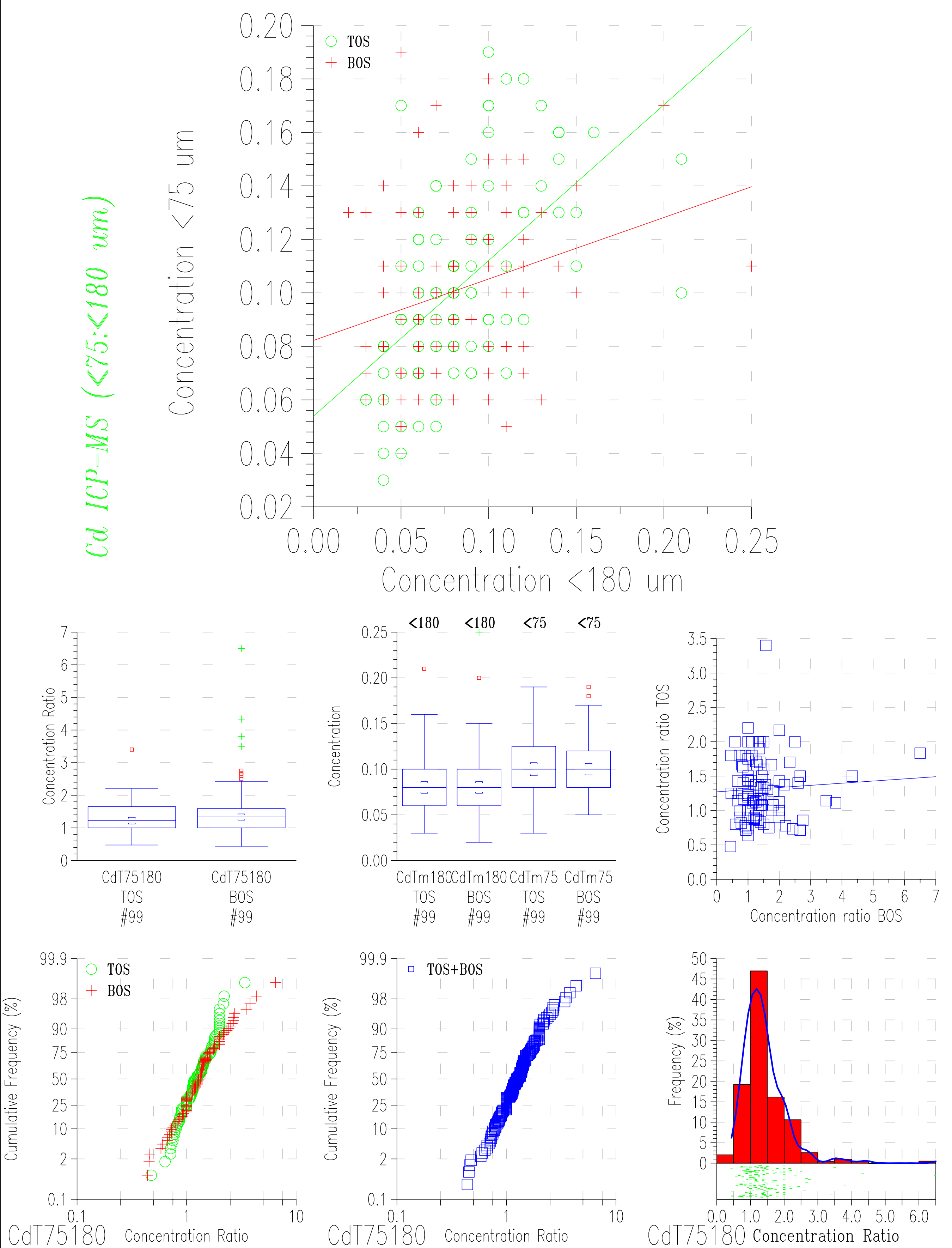

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cd (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
2.66667
1.8
1.27273
1.07143
0.785714
0.3125
CdTm75
Concentration
CdTm75 TOS #99
CdTm75 BOS #99
Concentration Ratio
CdTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
CdTm75
TOS:BOS
Concentration Ratio
CdTm75
Frequency (%)
Concentration
CdTm75

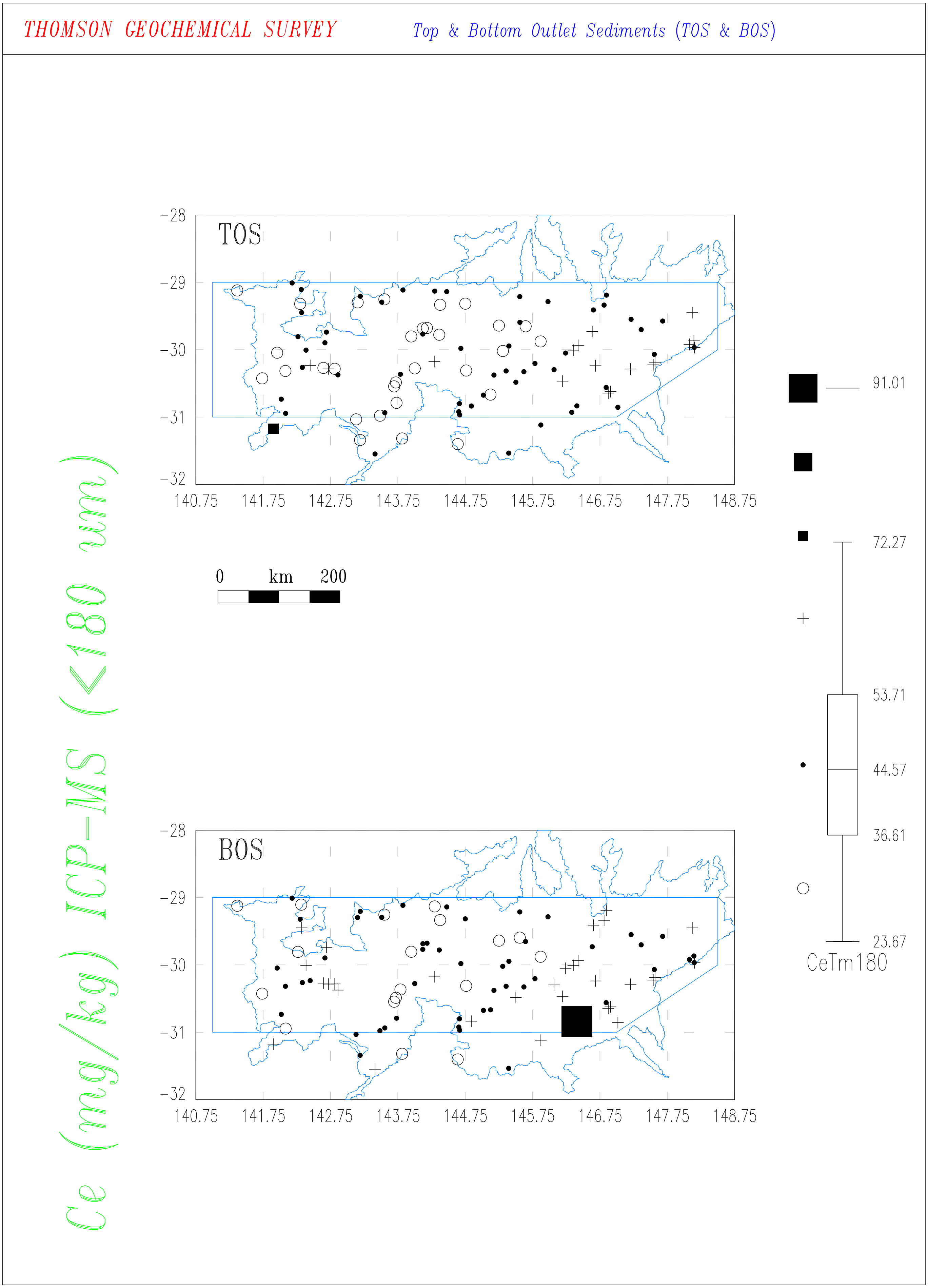
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

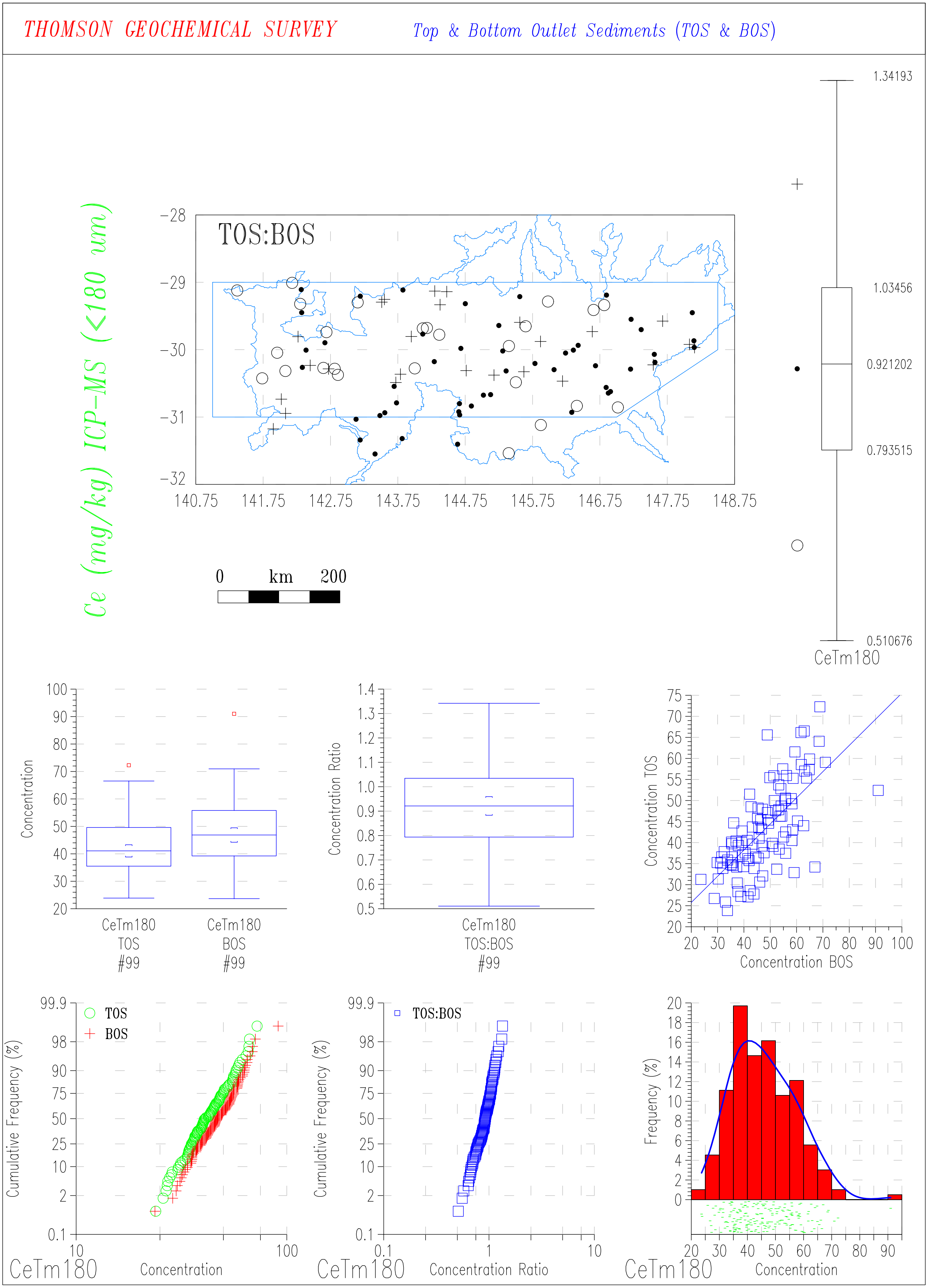


THOMSON GEOCHEMICAL SURVEY

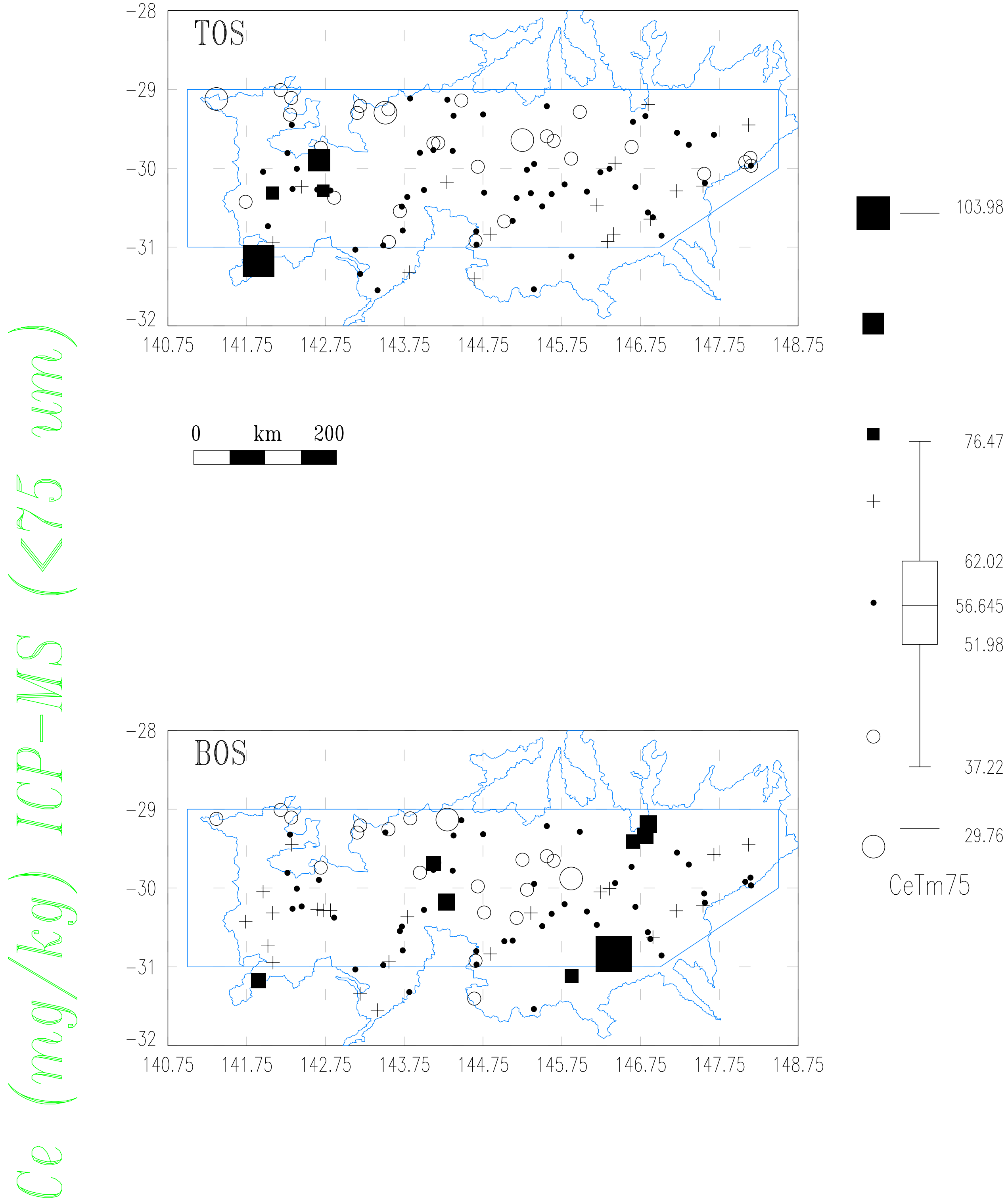
Top & Bottom Outlet Sediments (TOS & BOS)

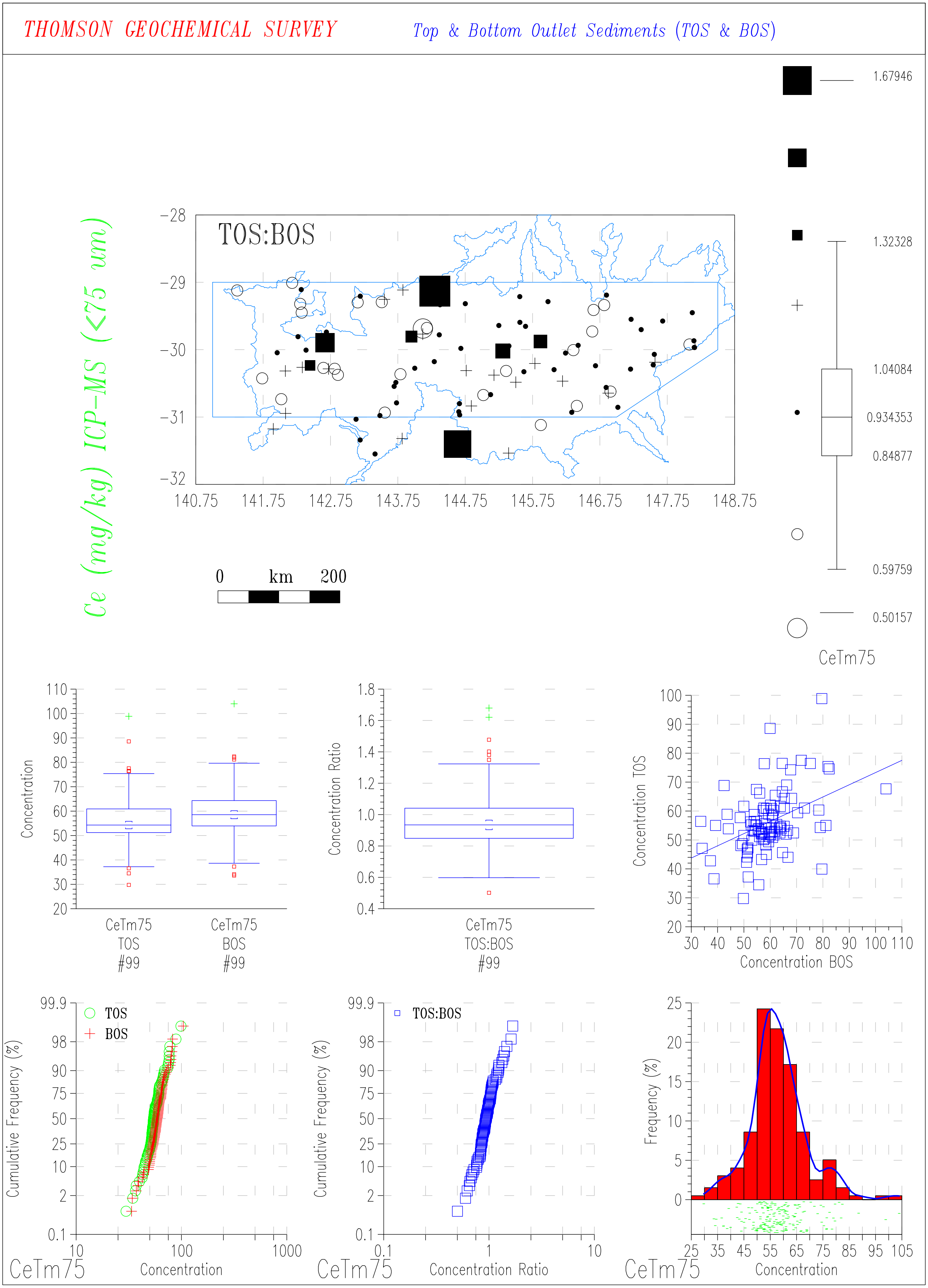



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
91.01
72.27
53.71
44.57
36.61
23.67
CeTm180
Ce (mg/kg) ICP-MS (<180 um)

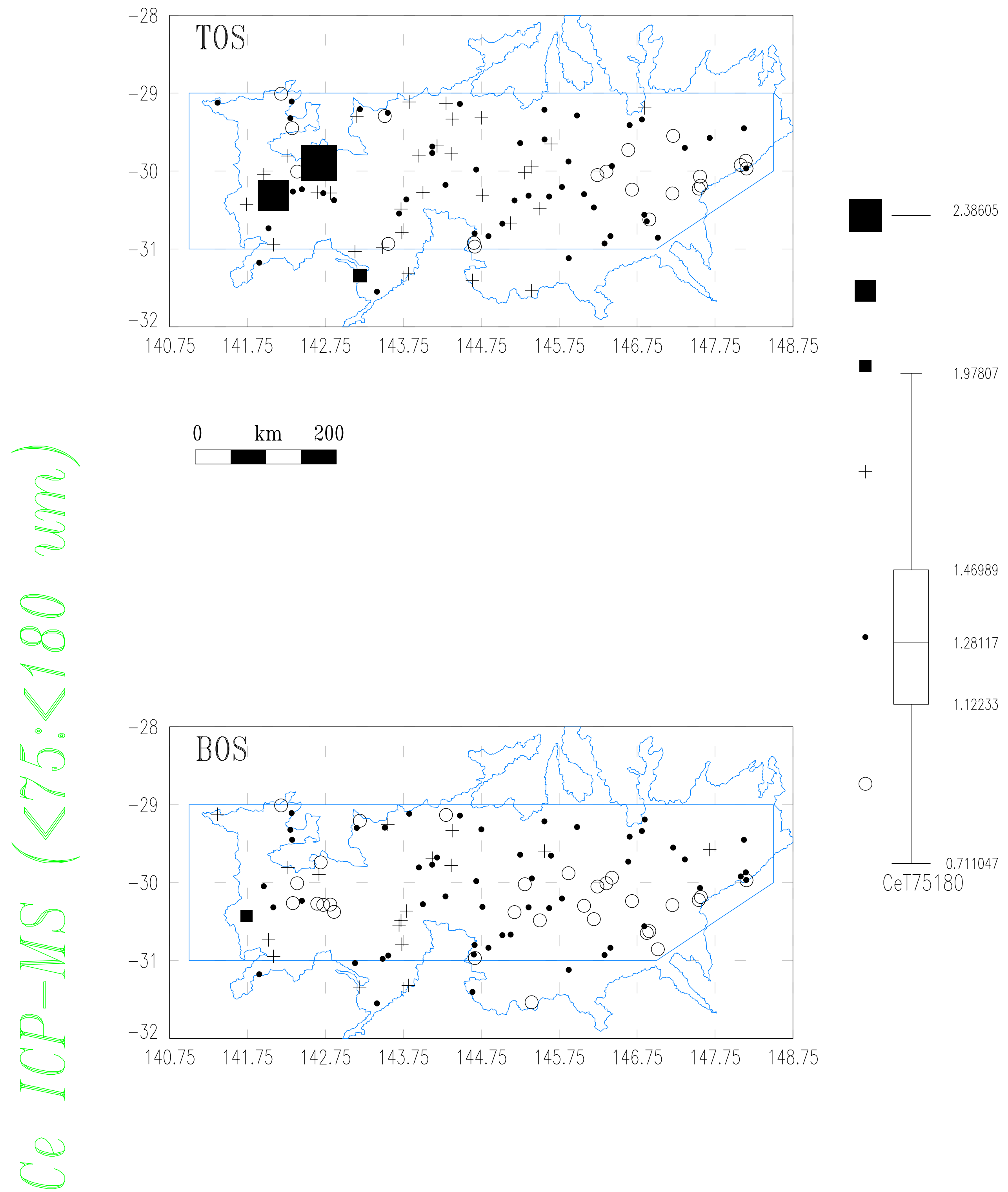

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ce (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.34193
1.03456
0.921202
0.793515
0.510676
CeTm180
Concentration
CeTm180 TOS #99
CeTm180 BOS #99
Concentration Ratio
CeTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
CeTm180
Concentration
TOS:BOS
CeTm180
Concentration Ratio
Frequency (%)
CeTm180
Concentration

THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

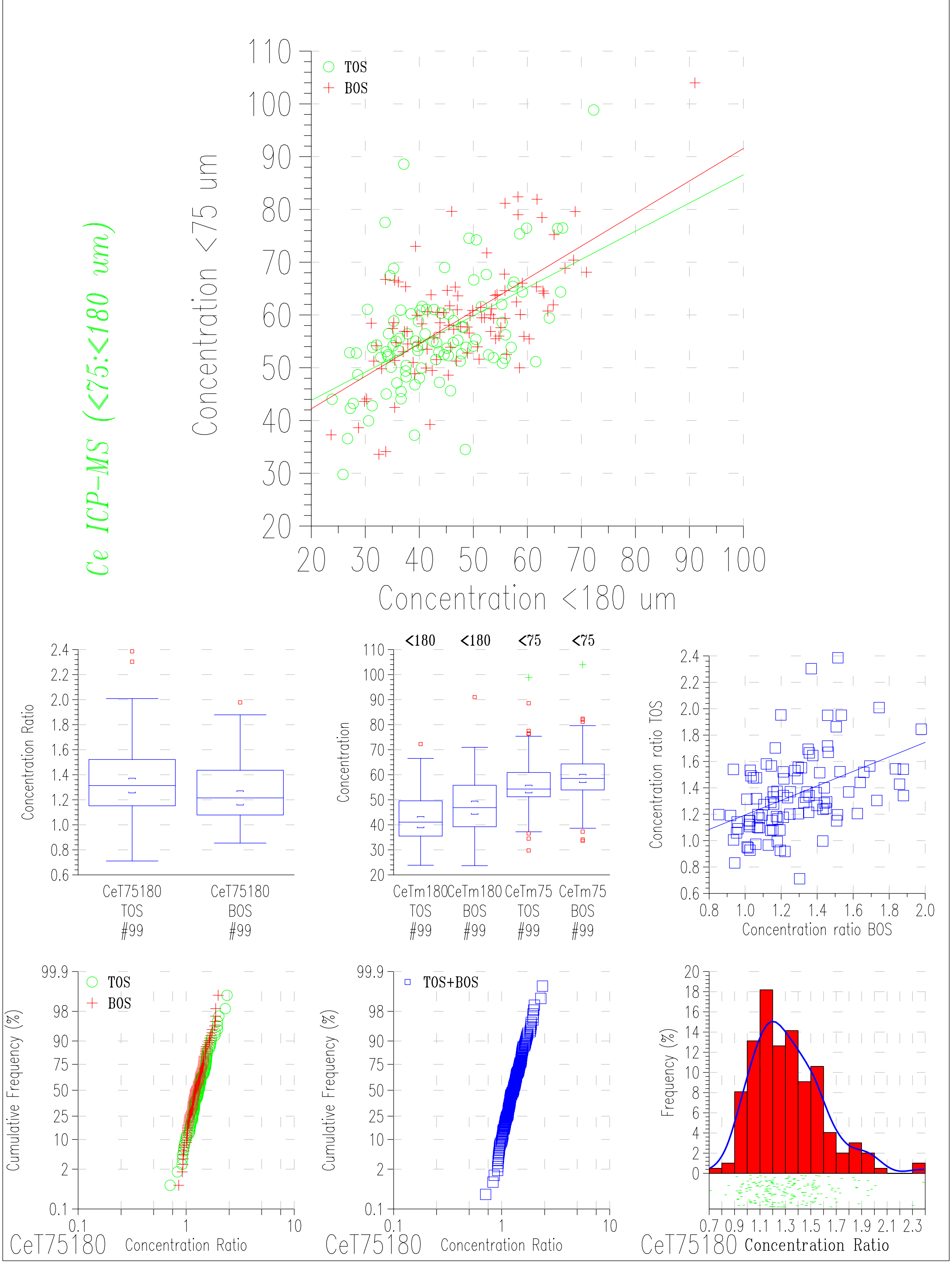



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ce (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.67946
1.32328
1.04084
0.934353
0.84877
0.59759
0.50157
CeTm75
Concentration
CeTm75
TOS
#99
CeTm75
BOS
#99
Concentration Ratio
CeTm75
TOS:BOS
#99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
CeTm75
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

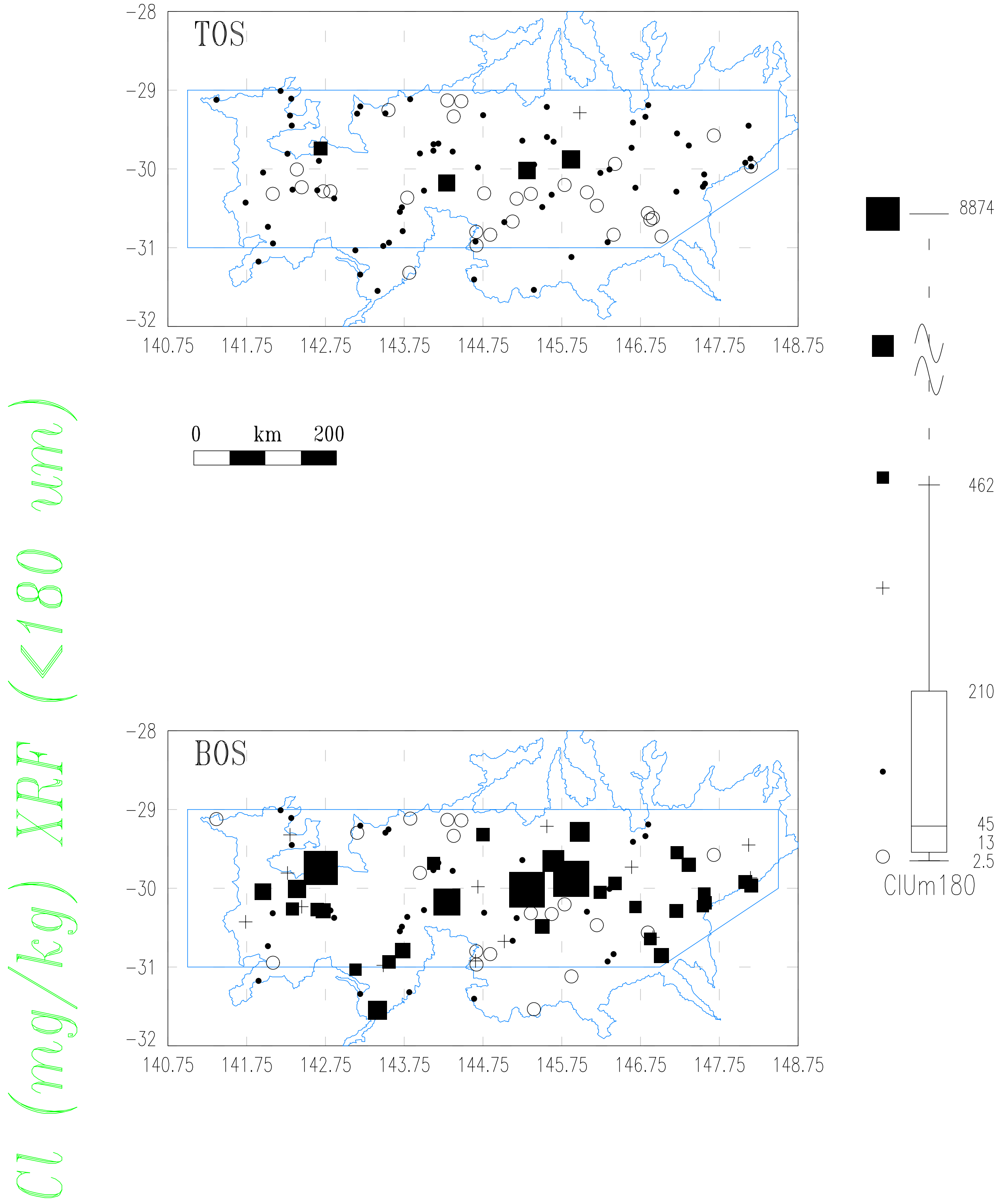
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

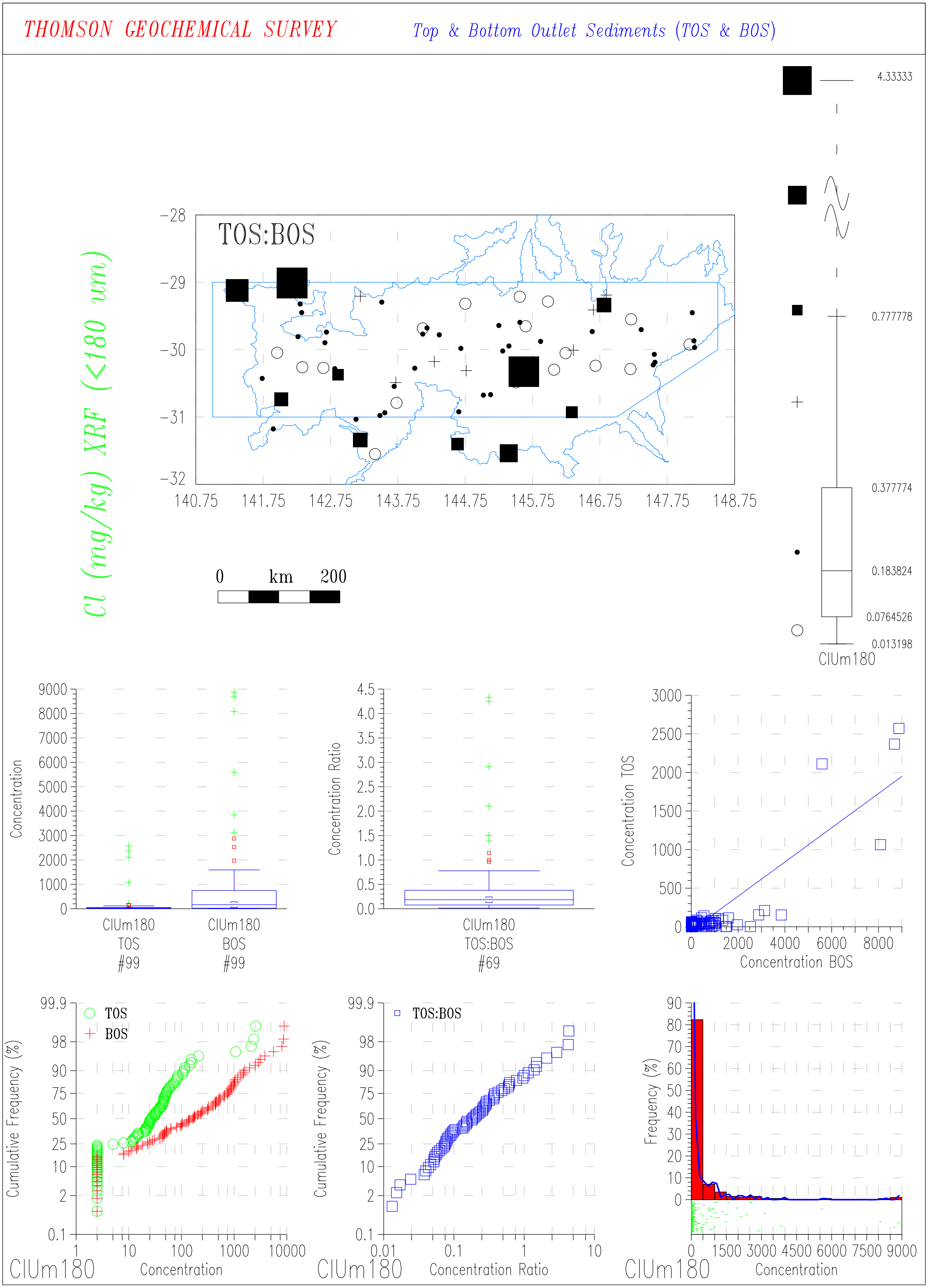


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



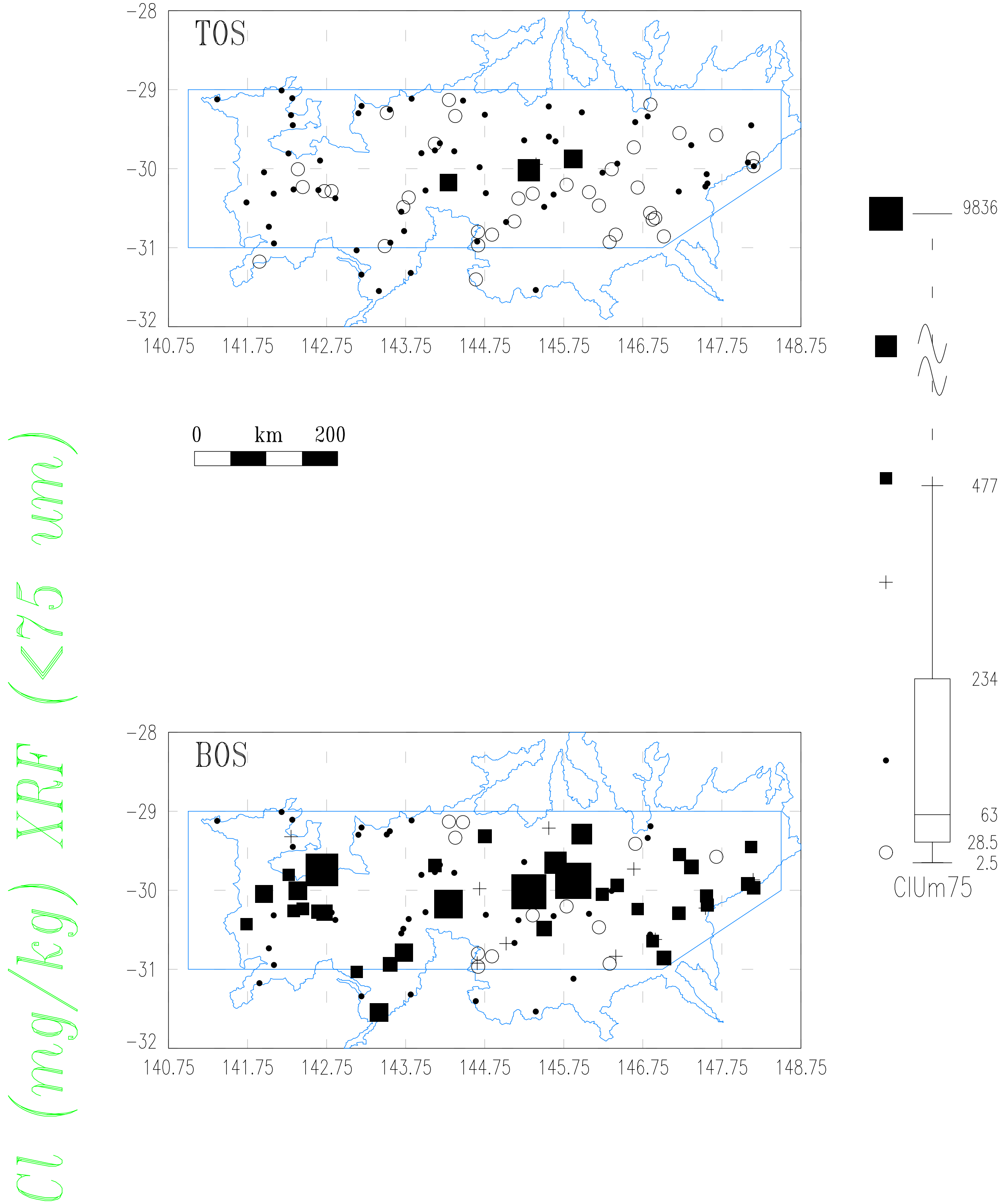
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

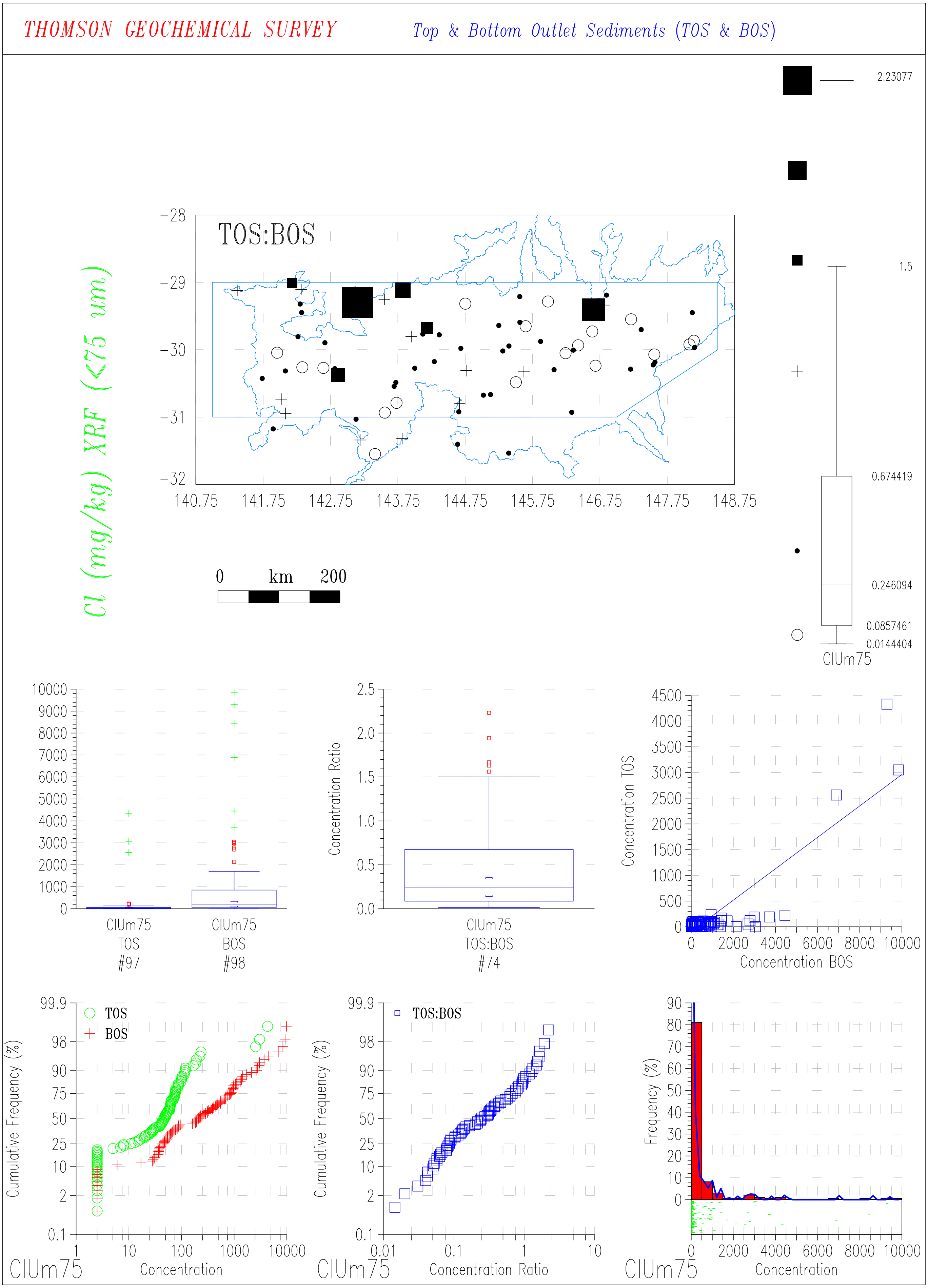



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cl (mg/kg) XRF (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75 141.75 142.75 143.75 144.75 145.75 146.75 147.75 148.75
0 km 200
4.33333
0.777778
0.377774
0.183824
0.0764526
0.013198
ClUm180
Concentration
ClUm180 TOS #99
ClUm180 BOS #99
Concentration Ratio
ClUm180 TOS:BOS #69
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
ClUm180

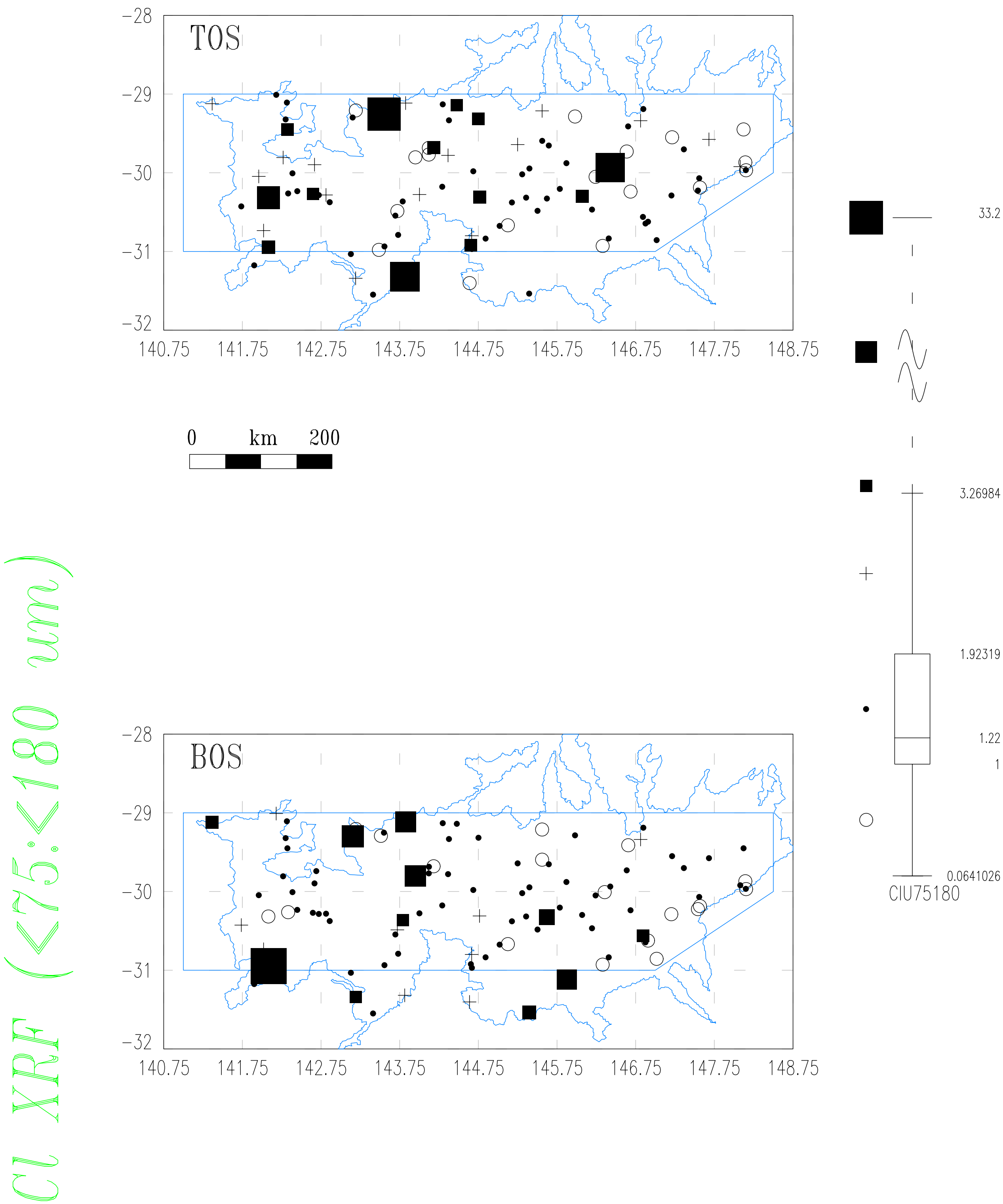
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

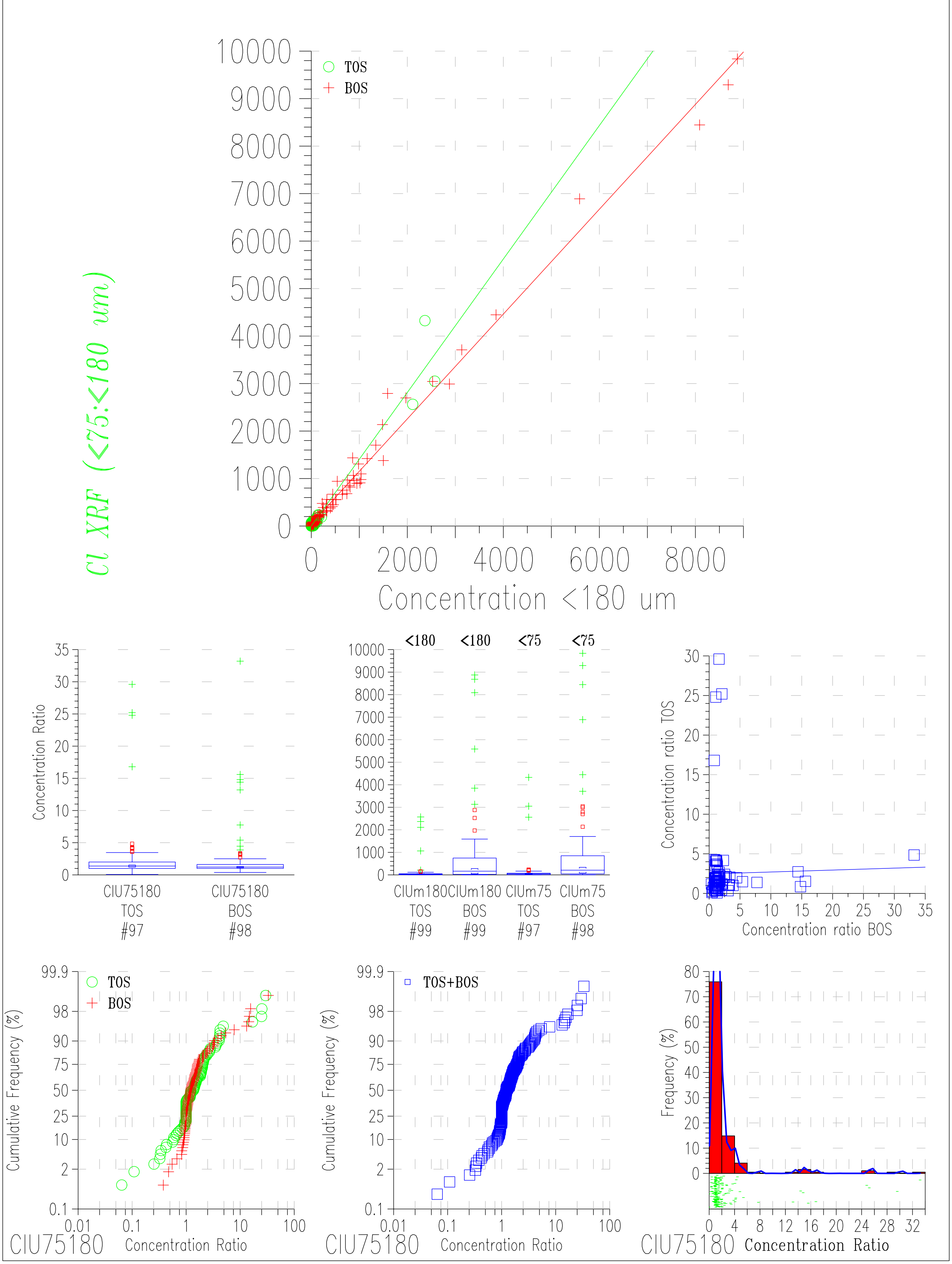



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cl (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
2.23077
1.5
0.674419
0.246094
0.0857461
0.0144404
ClUm75
ClUm75 TOS #97
ClUm75 BOS #98
Concentration Ratio
ClUm75 TOS:BOS #74
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
Concentration Ratio
Frequency (%)

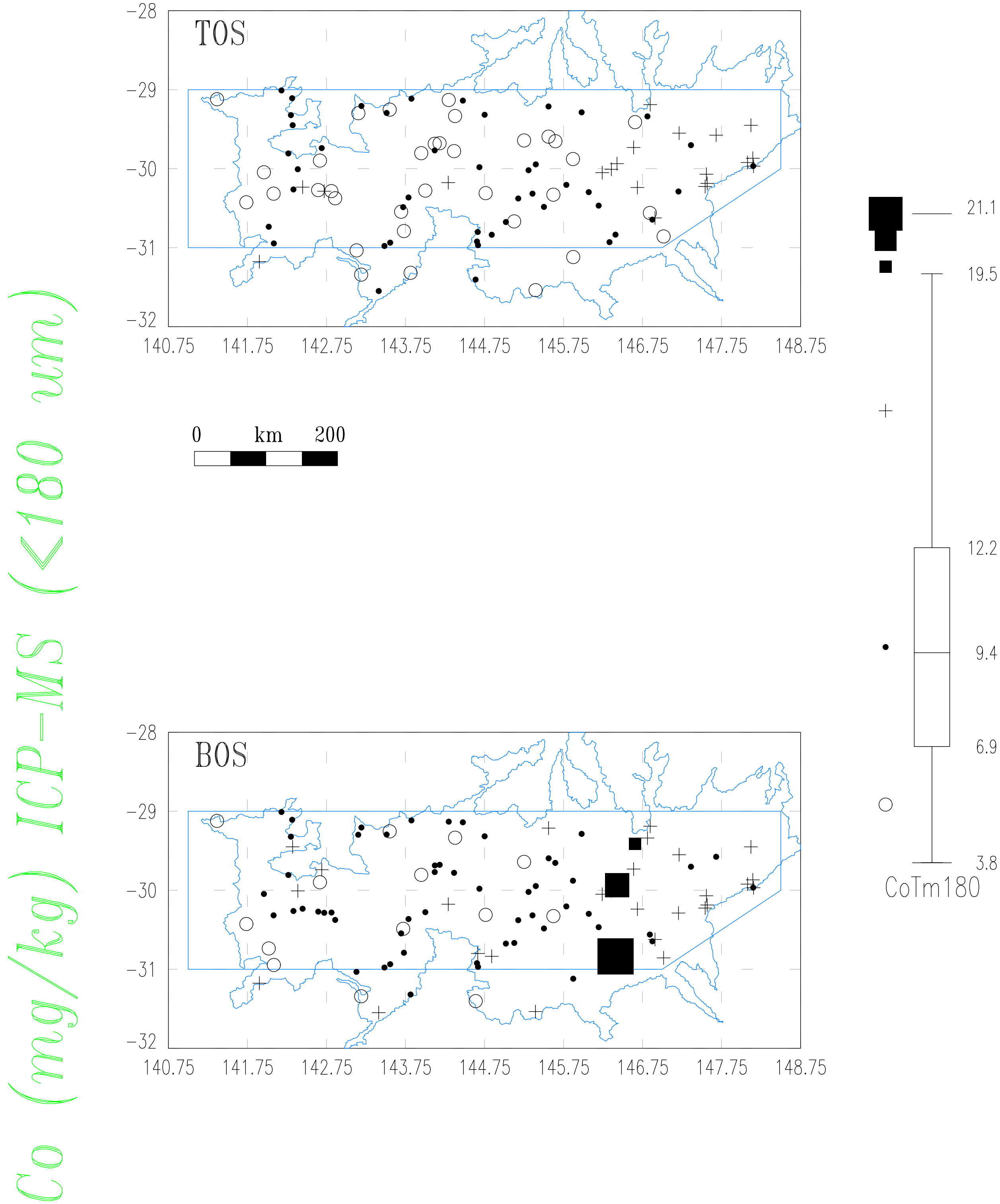
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

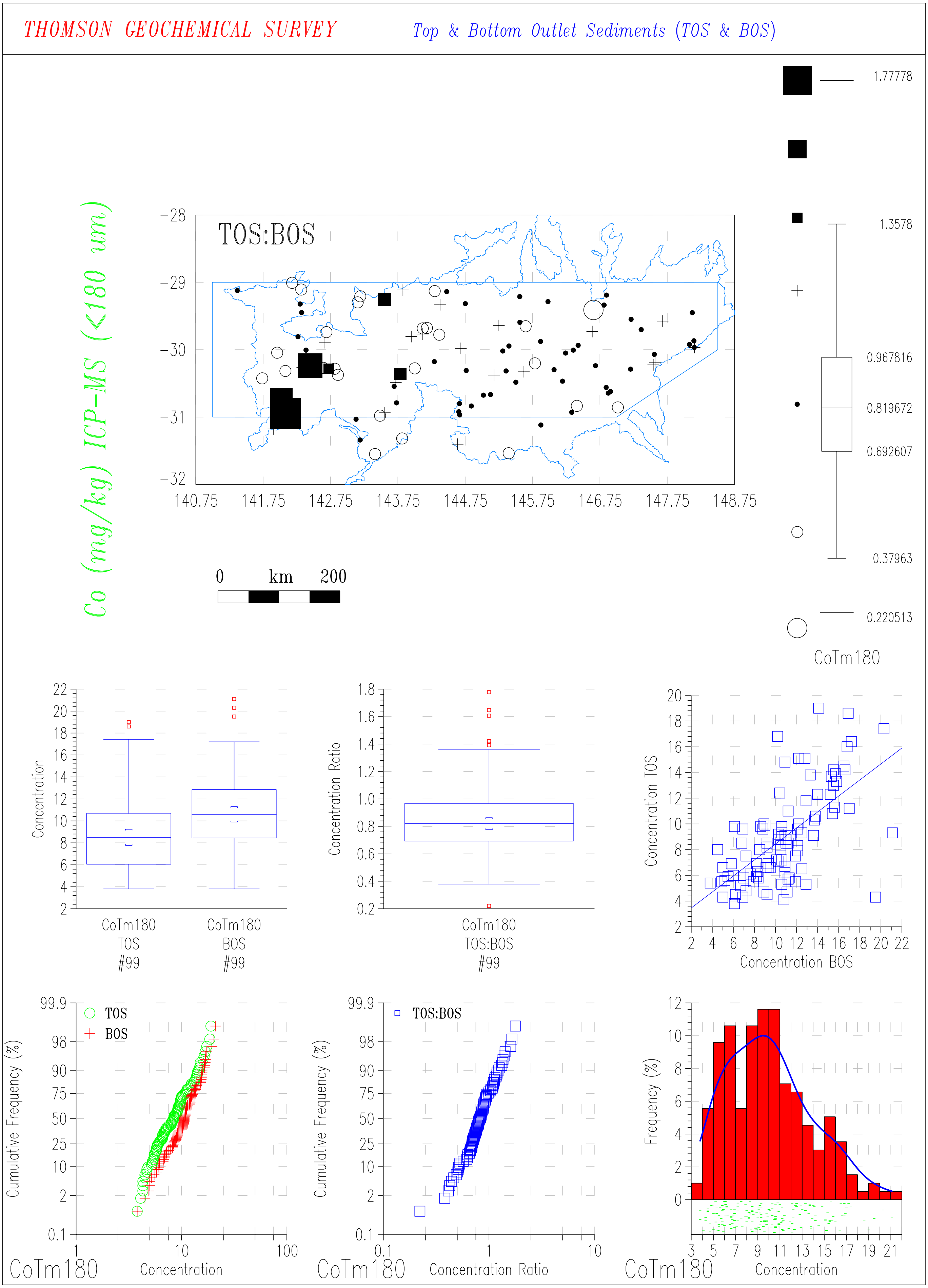


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



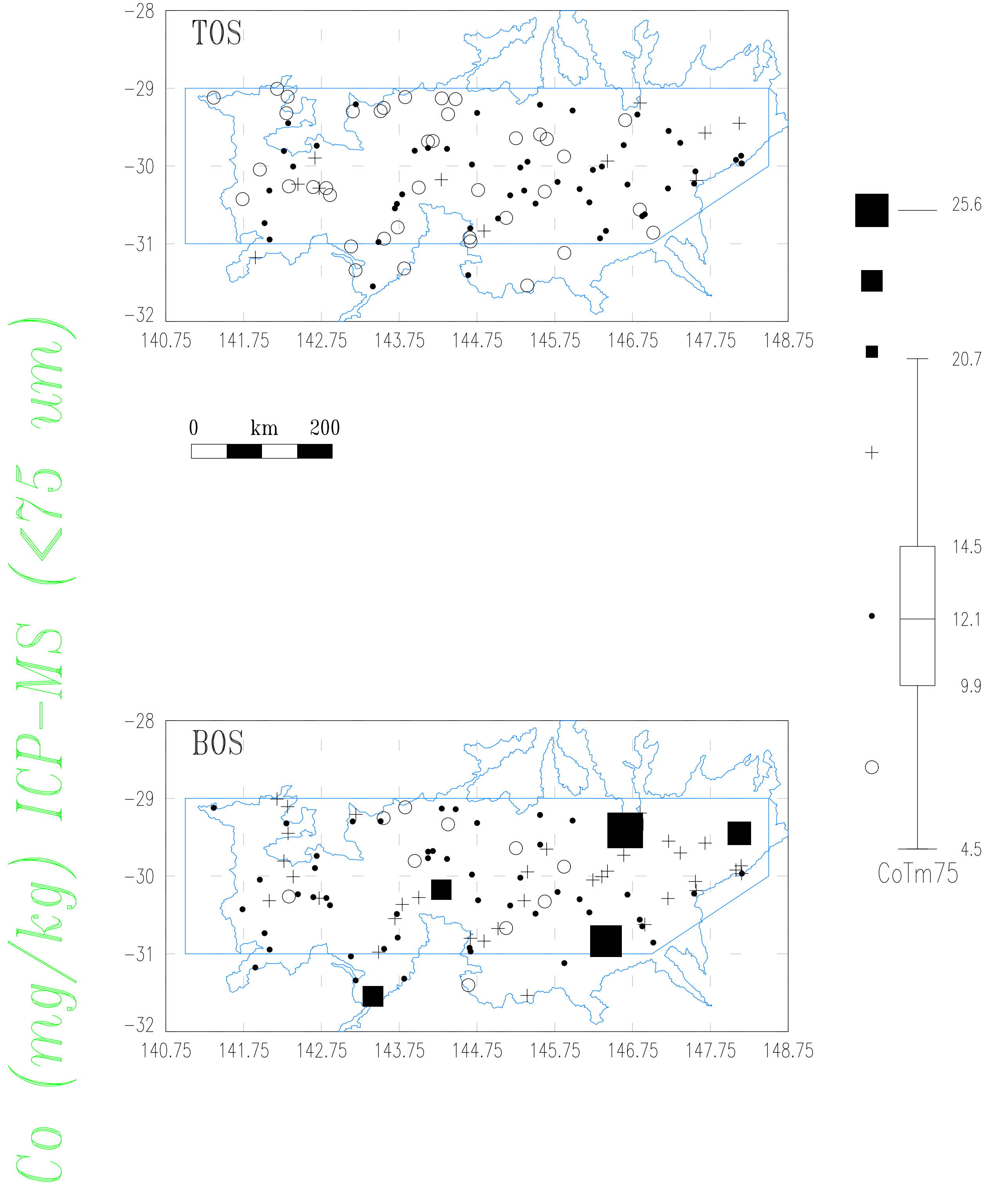
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

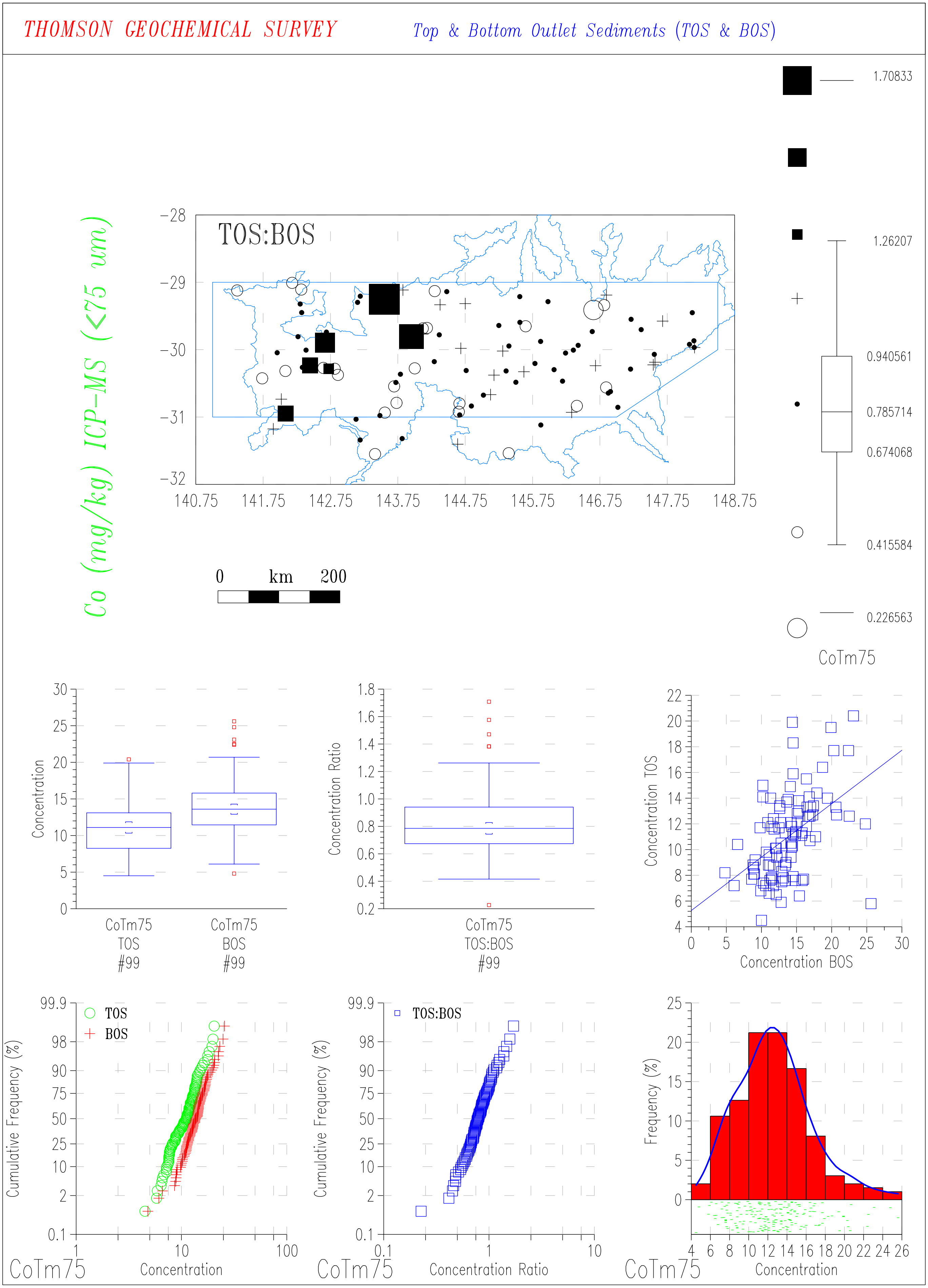



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Co (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.77778
1.3578
0.967816
0.819672
0.692607
0.37963
0.220513
CoTm180
Concentration
CoTm180 TOS #99
CoTm180 BOS #99
Concentration Ratio
CoTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration
CoTm180
CoTm180
CoTm180

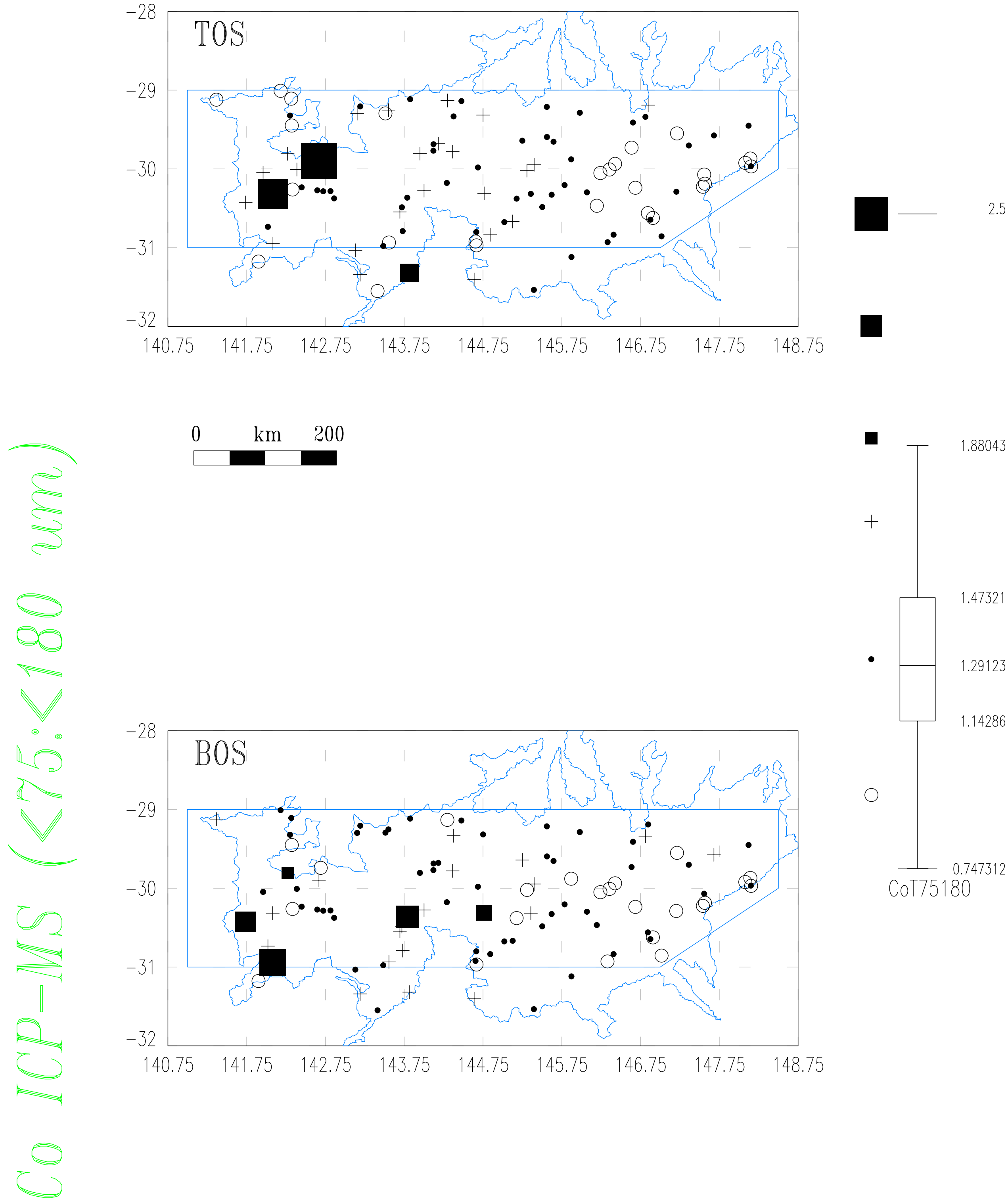
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

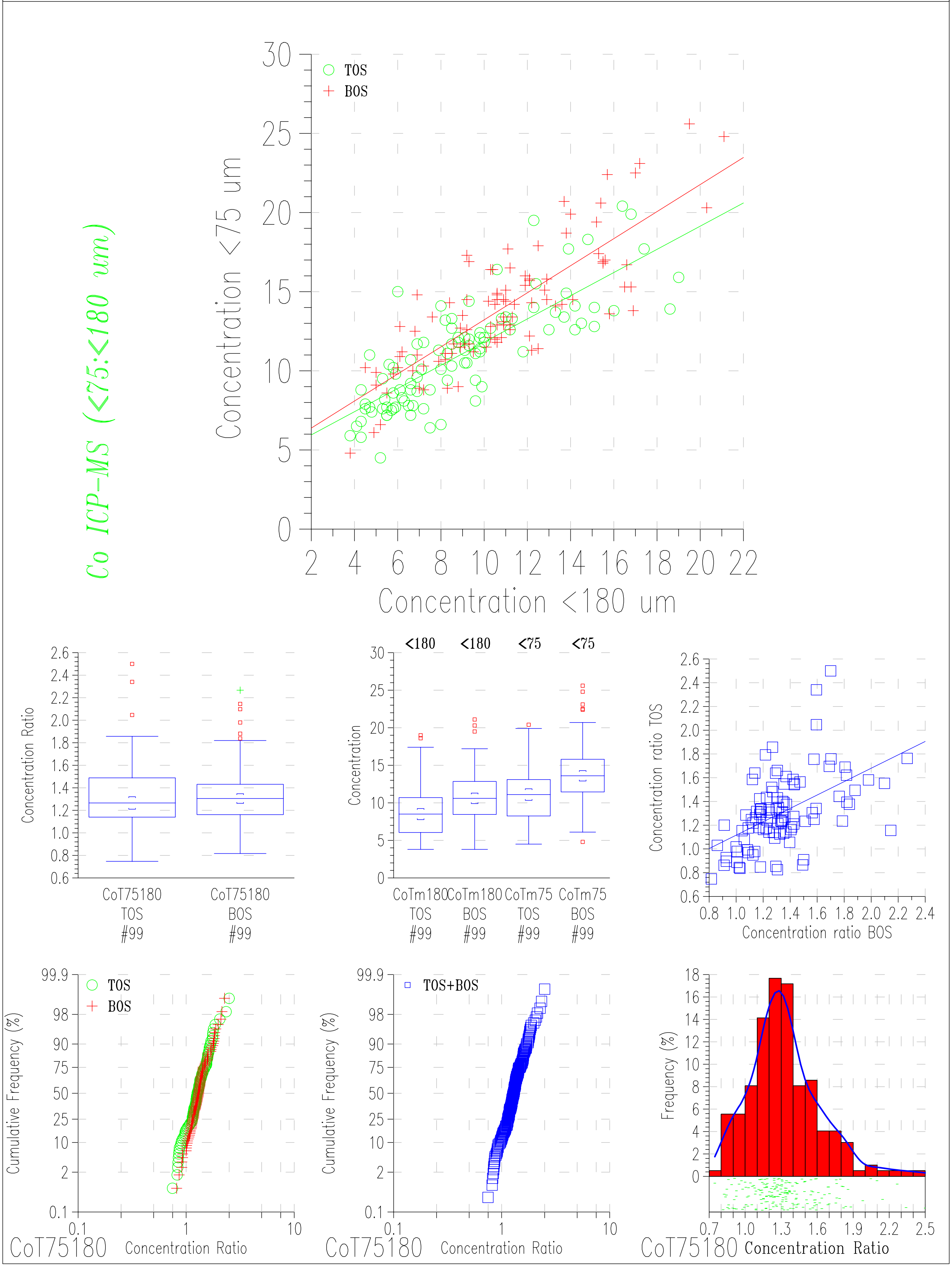



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Co (mg/kg) ICP-MS (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.70833
1.26207
0.940561
0.785714
0.674068
0.415584
0.226563
CoTm75
Concentration
CoTm75 TOS #99
CoTm75 BOS #99
Concentration Ratio
CoTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

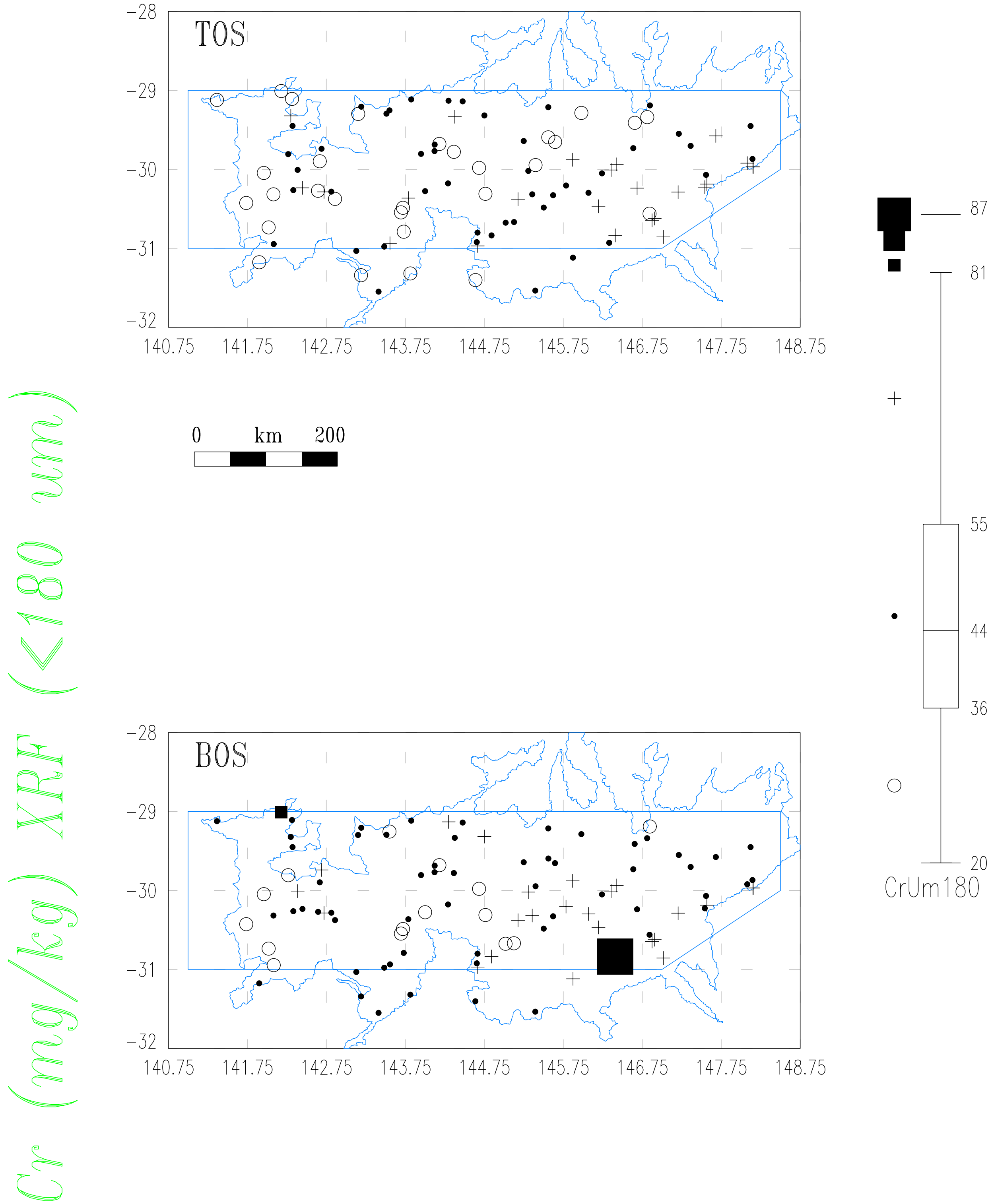


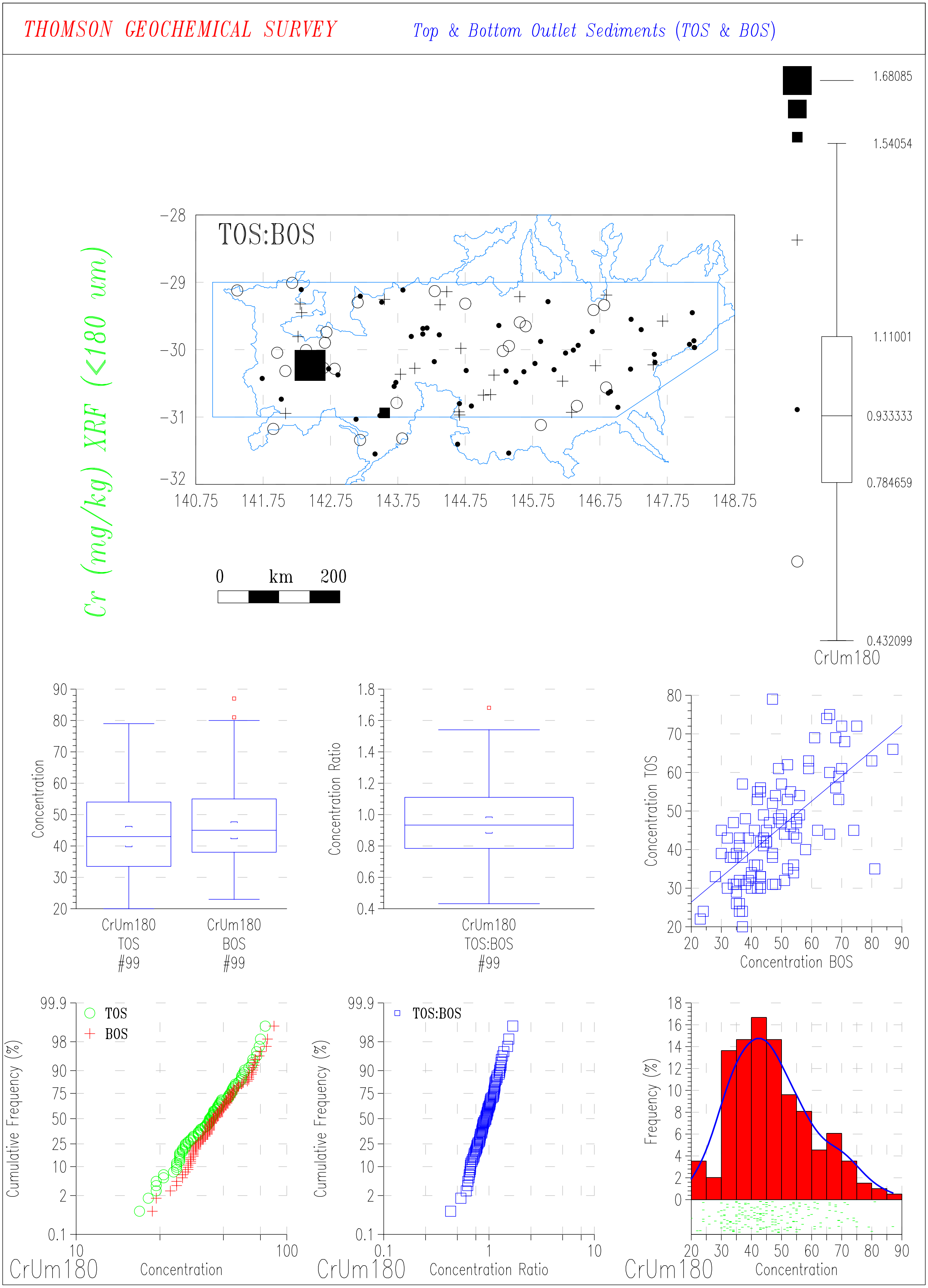
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)



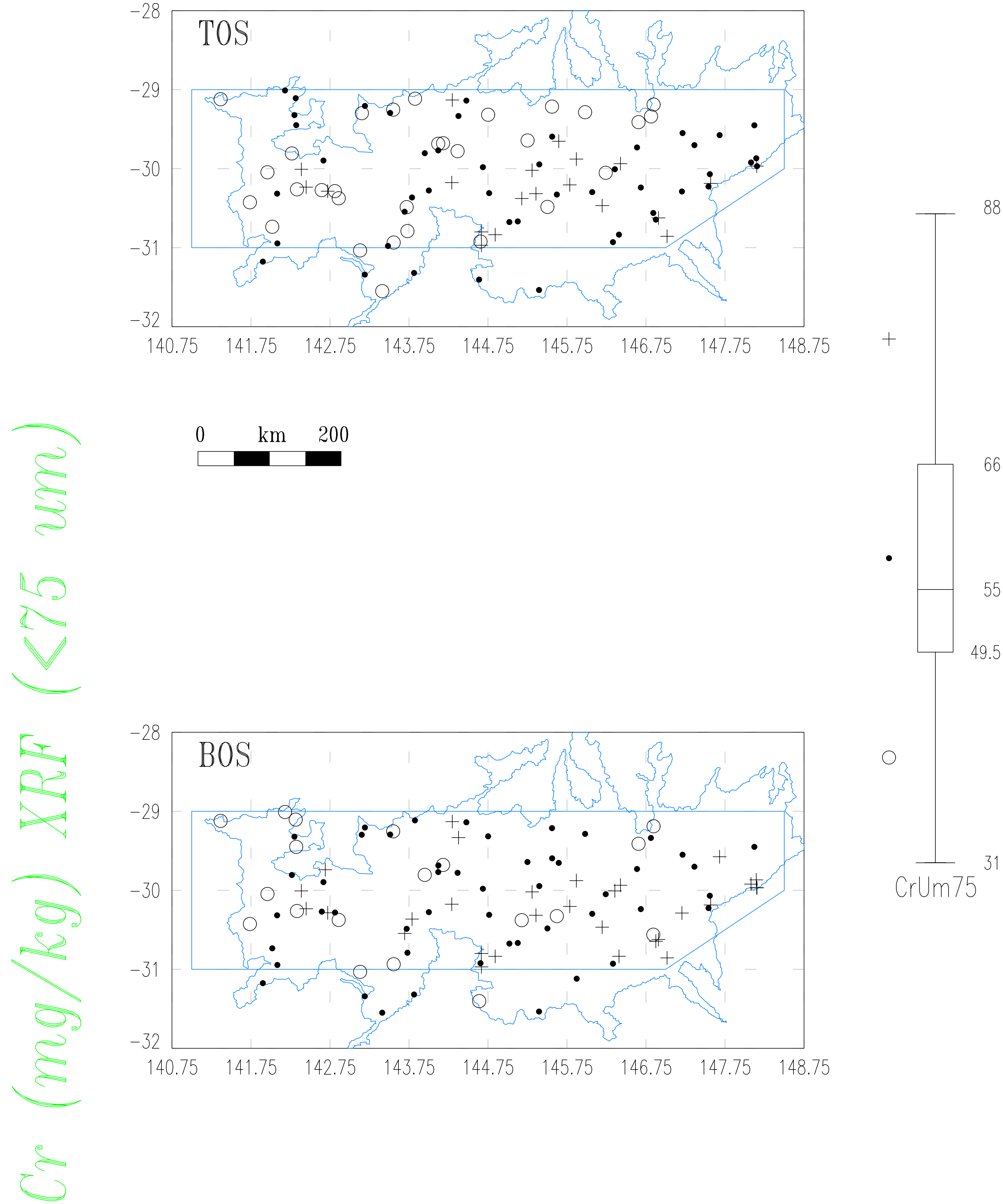
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

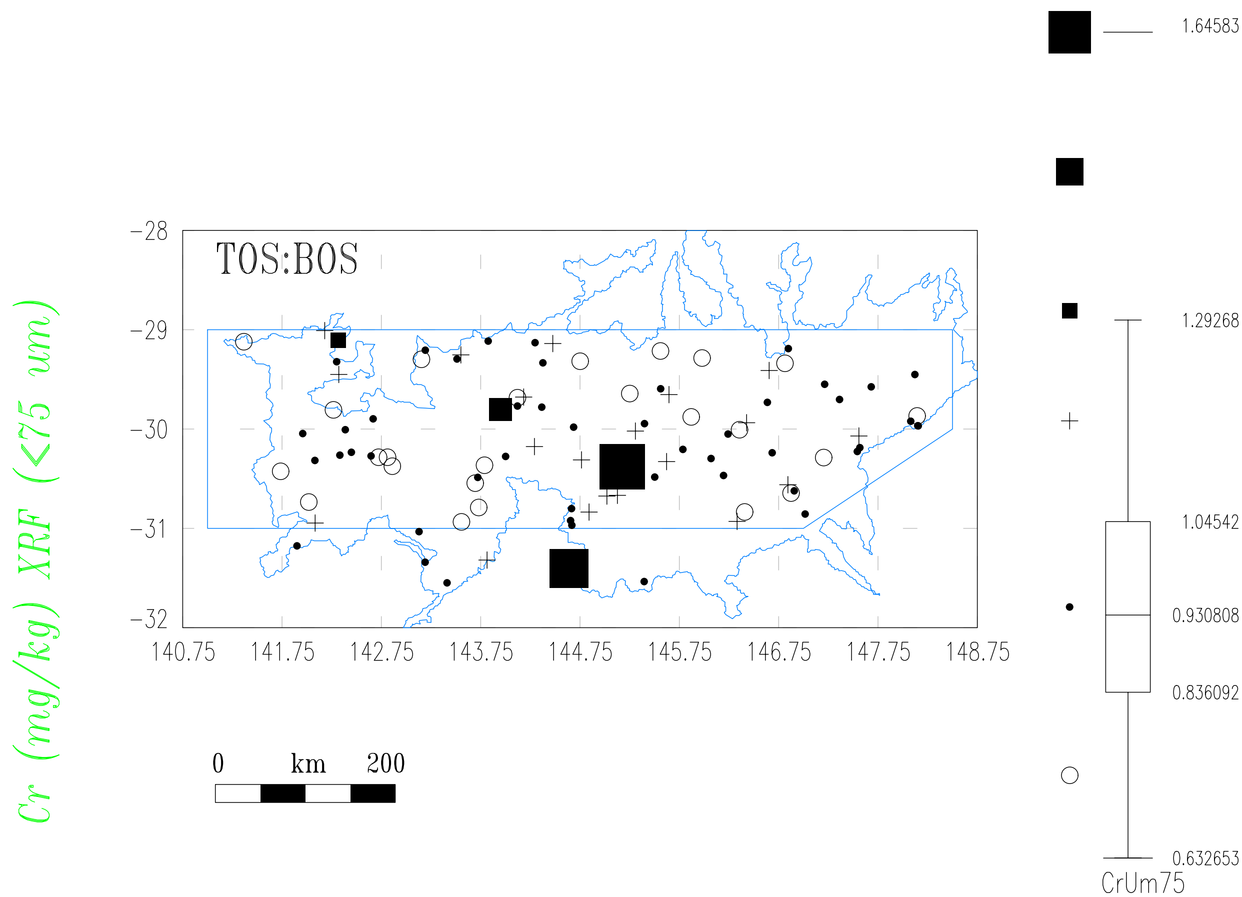


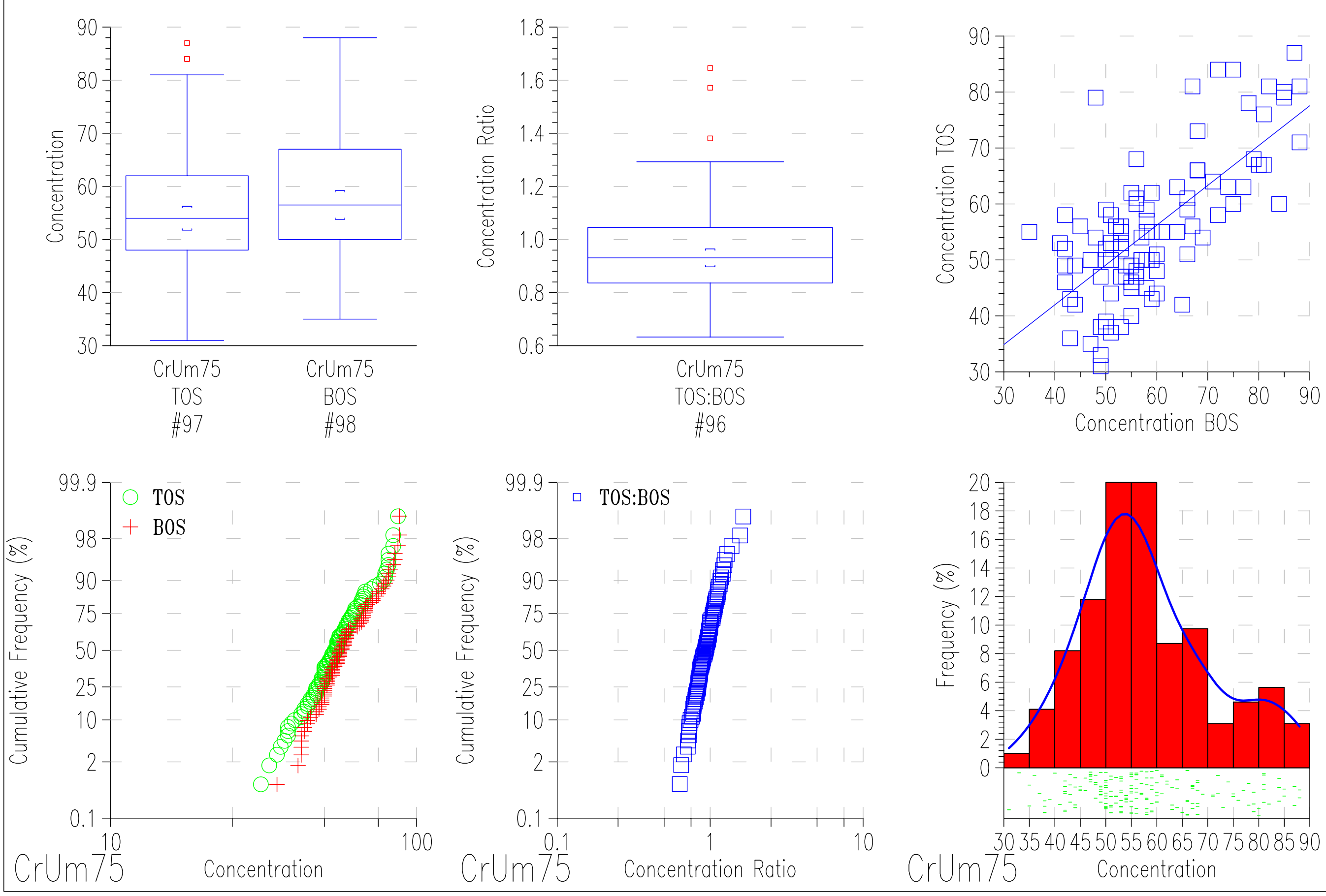

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cr (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
1.68085
1.54054
1.11001
0.933333
0.784659
0.432099
CrUm180
Concentration
CrUm180 TOS #99
CrUm180 BOS #99
Concentration Ratio
CrUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
CrUm180 Concentration
CrUm180 Concentration Ratio
Frequency (%)
CrUm180 Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



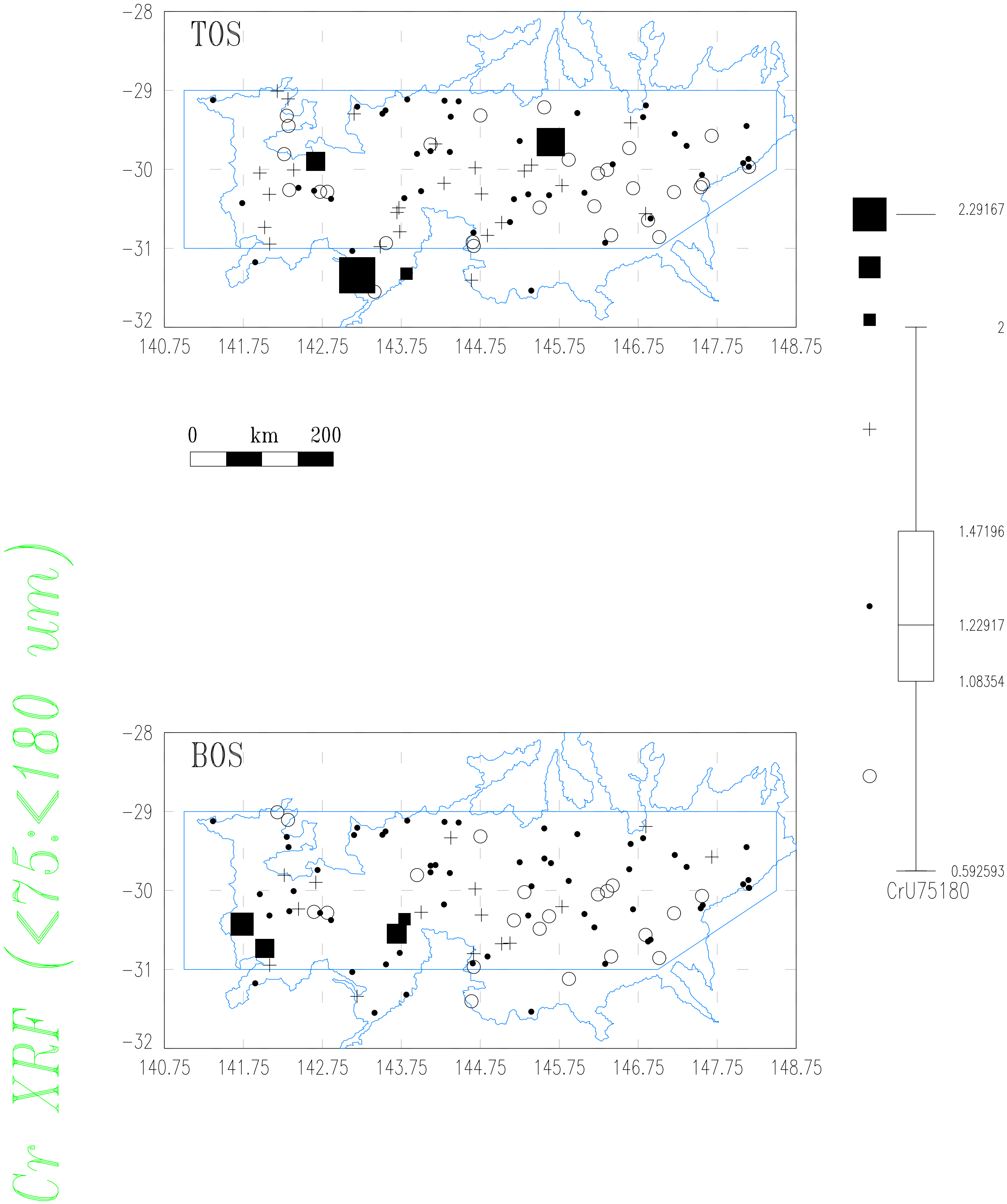
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



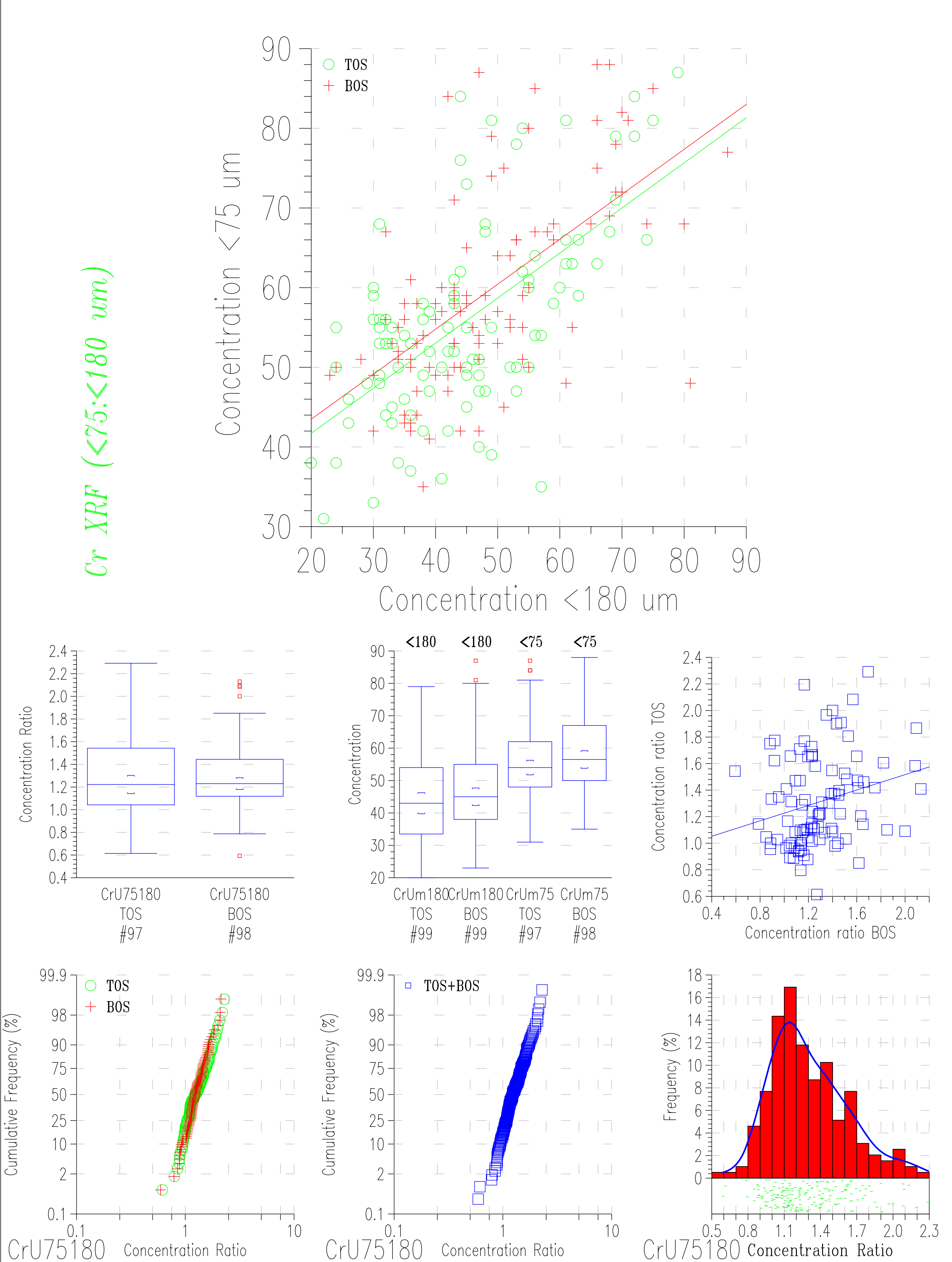


THOMSON GEOCHEMICAL SURVEY

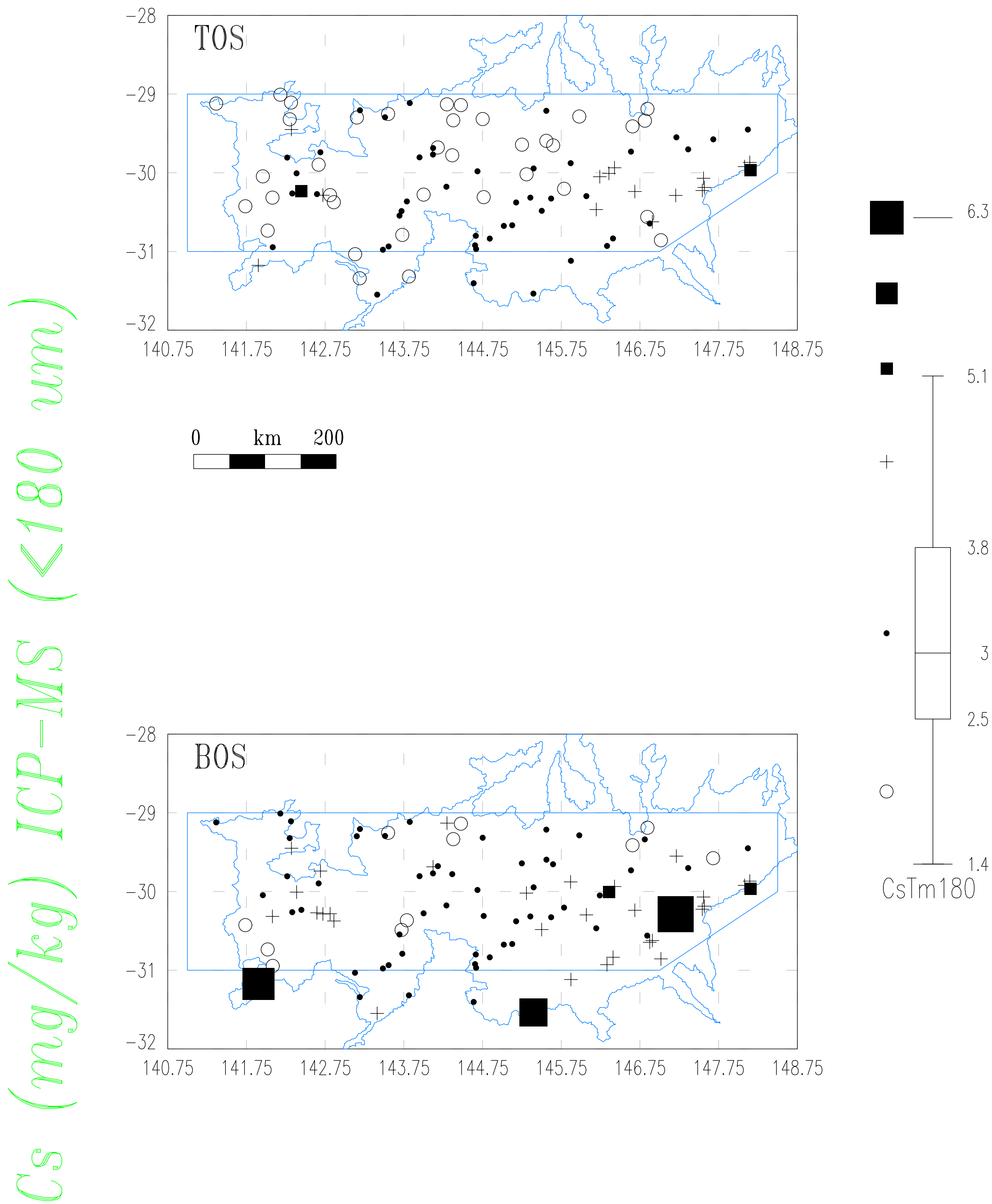
Top & Bottom Outlet Sediments (TOS & BOS)

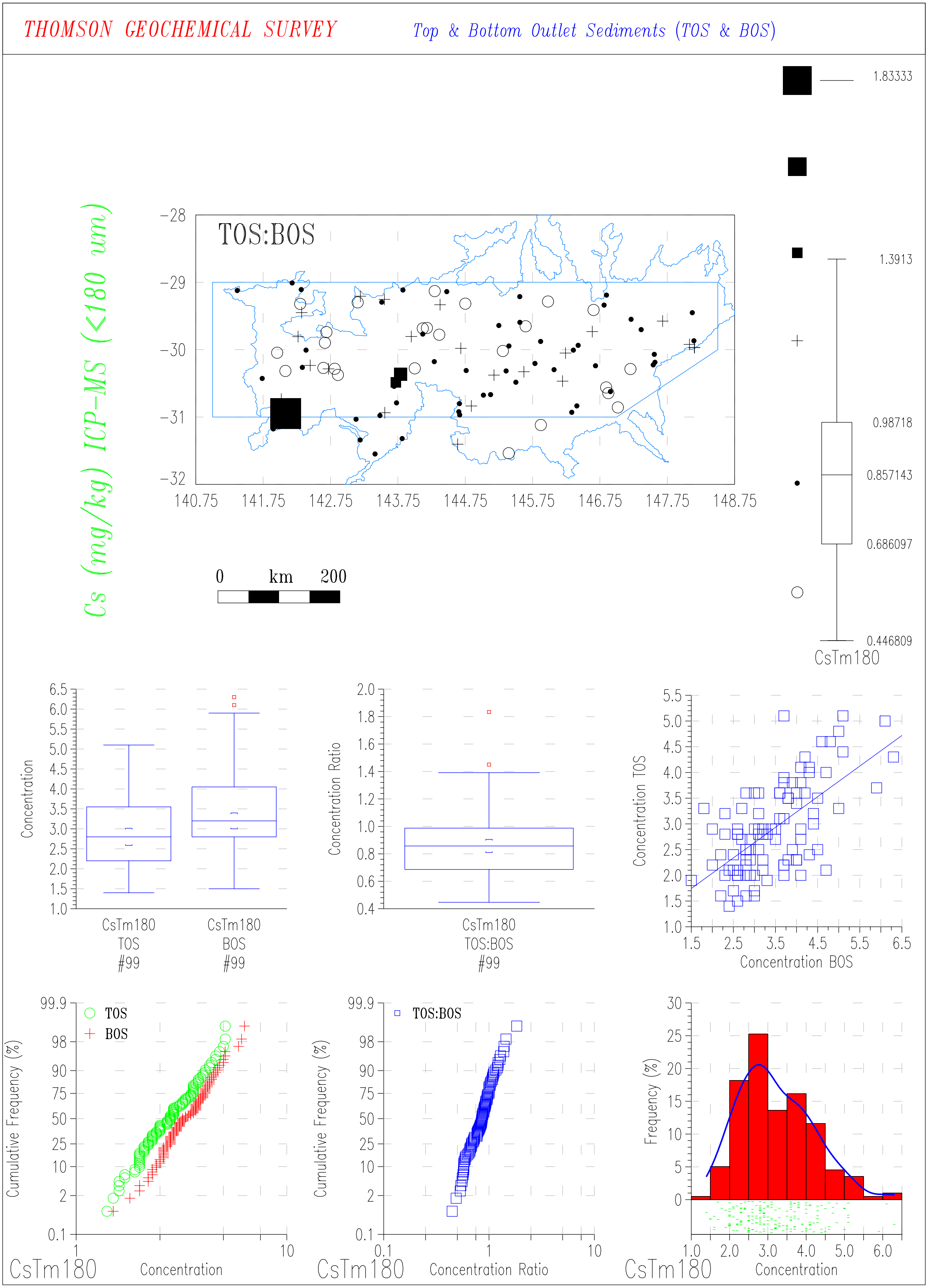


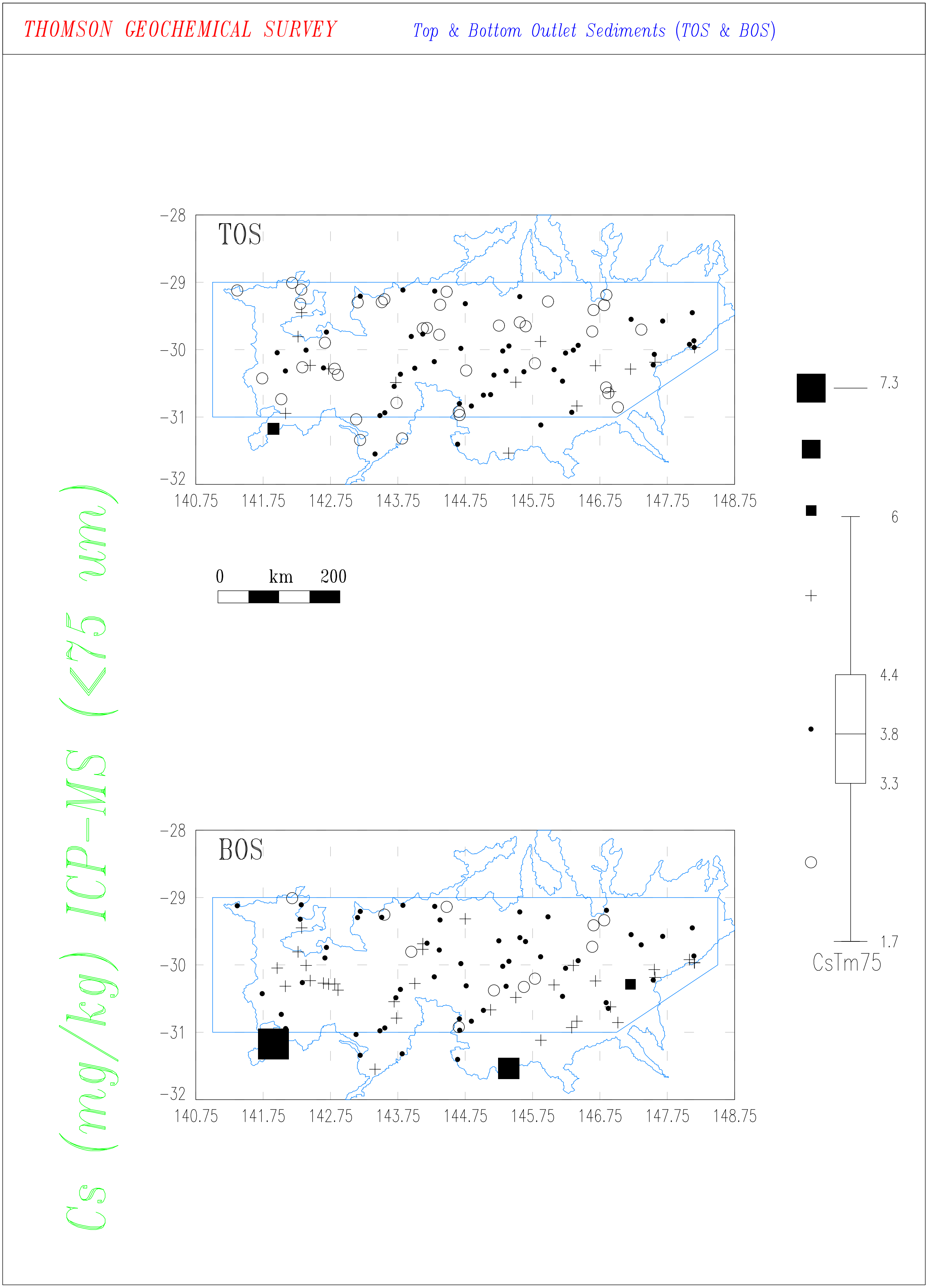
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



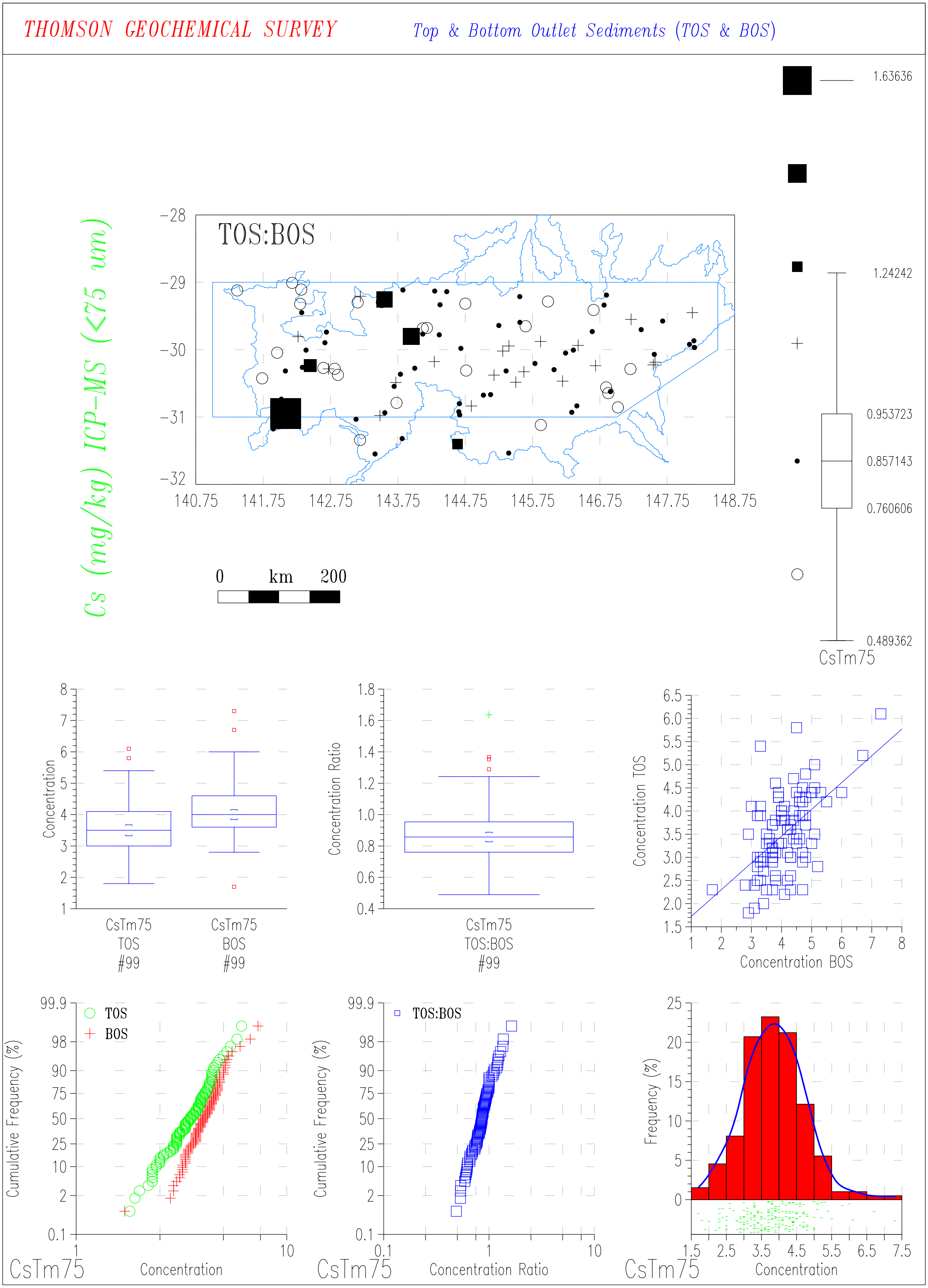
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cs (mg/kg) ICP–MS (<180 um)
TOS:BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
1.83333
1.3913
0.98718
0.857143
0.686097
0.446809
CsTm180
Concentration
CsTm180 TOS #99
CsTm180 BOS #99
Concentration Ratio
CsTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
CsTm180
Concentration
TOS:BOS
CsTm180
Concentration Ratio
Frequency (%)
CsTm180
Concentration

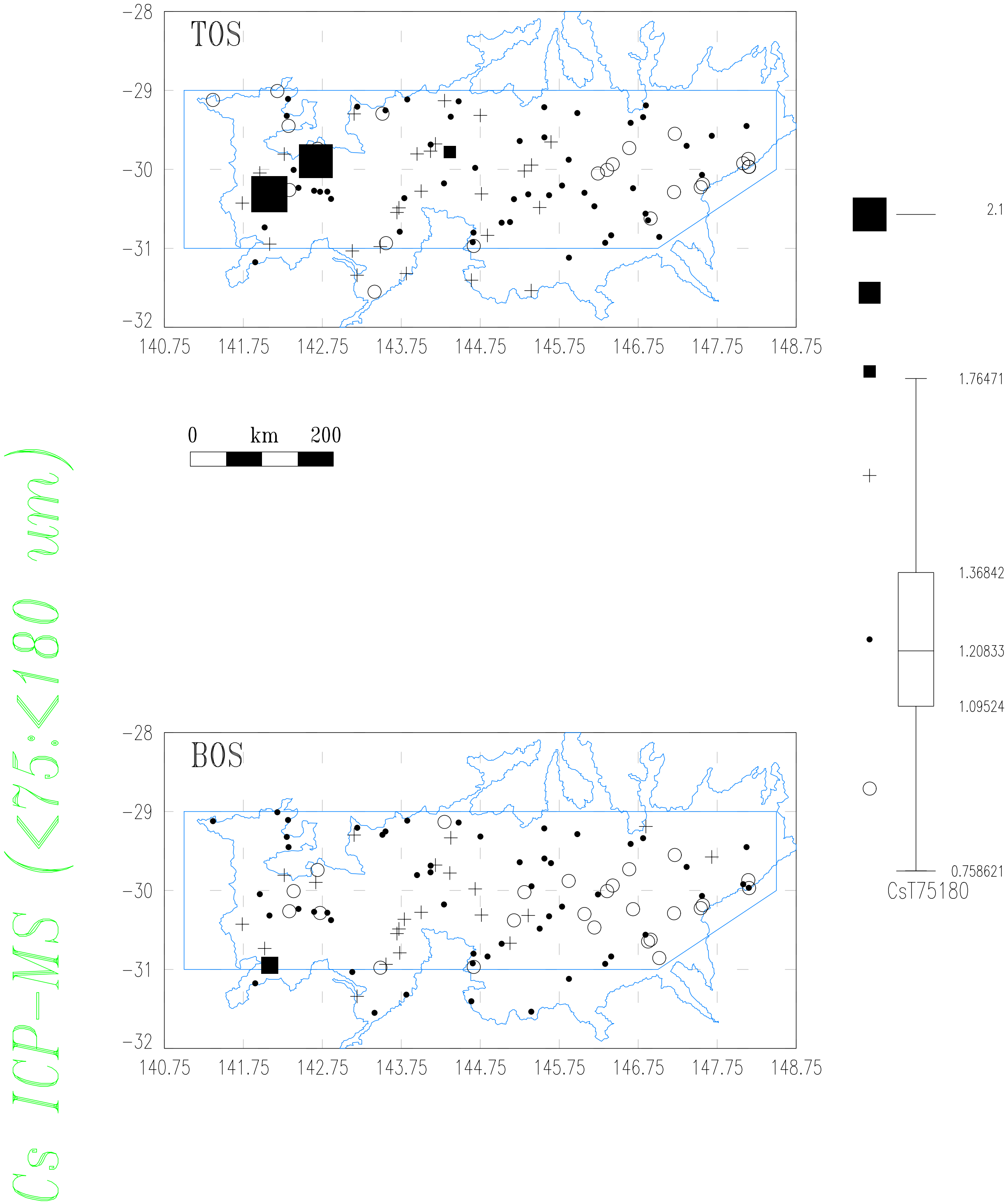


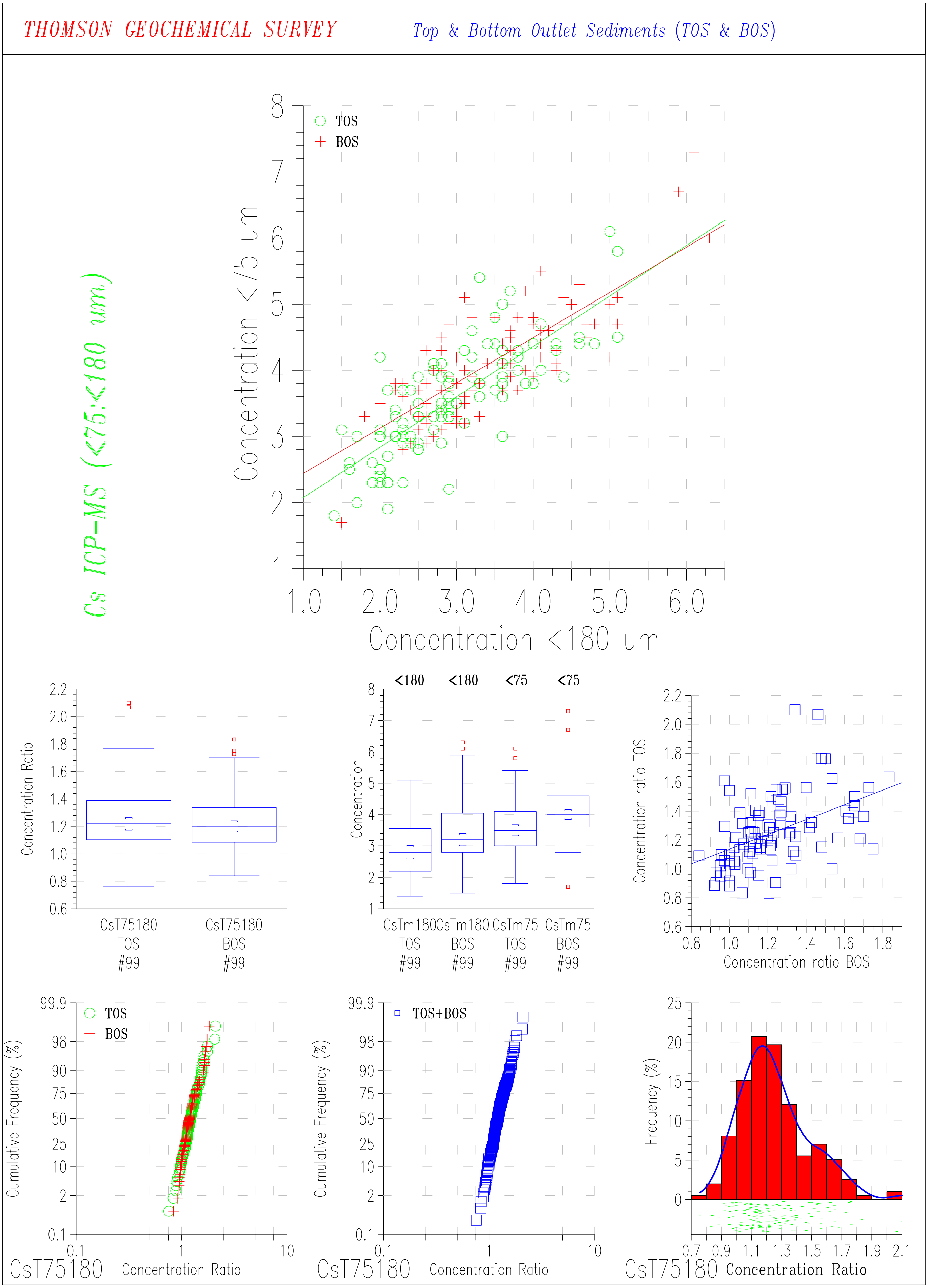
THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
7.3
6
4.4
3.8
3.3
1.7
CsTm75
Cs (mg/kg) ICP-MS (<75 um)



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cs (mg/kg) ICP-MS (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.63636
1.24242
0.953723
0.857143
0.760606
0.489362
CsTm75
Concentration
CsTm75 TOS #99
CsTm75 BOS #99
Concentration Ratio
CsTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
CsTm75
TOS:BOS
Frequency (%)

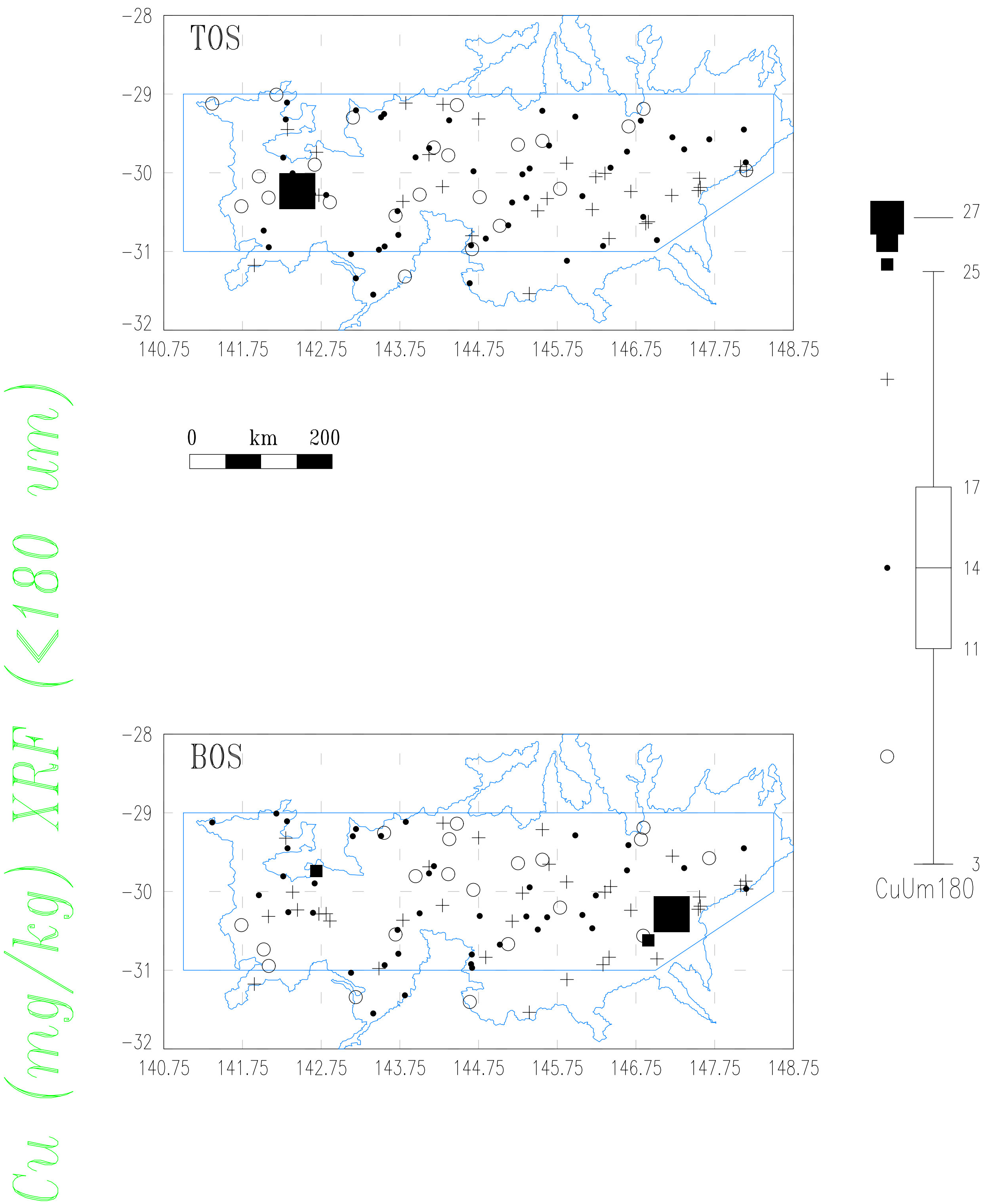
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Cs ICP-MS (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
CsT75180 TOS #99
CsT75180 BOS #99
Concentration
<180
<180
<75
<75
CsTm180 TOS #99
CsTm180 BOS #99
CsTm75 TOS #99
CsTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
CsT75180
Concentration Ratio

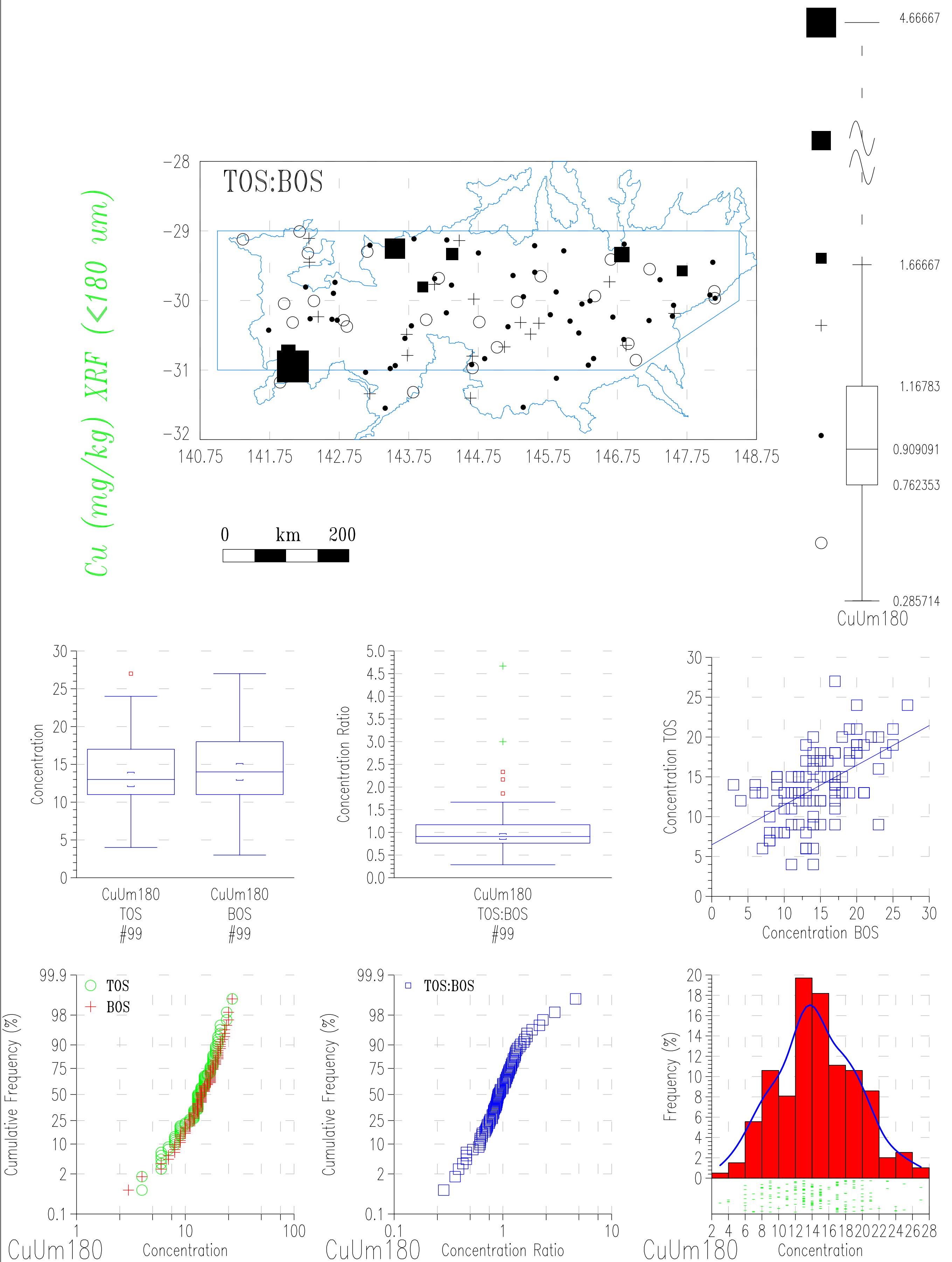
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)



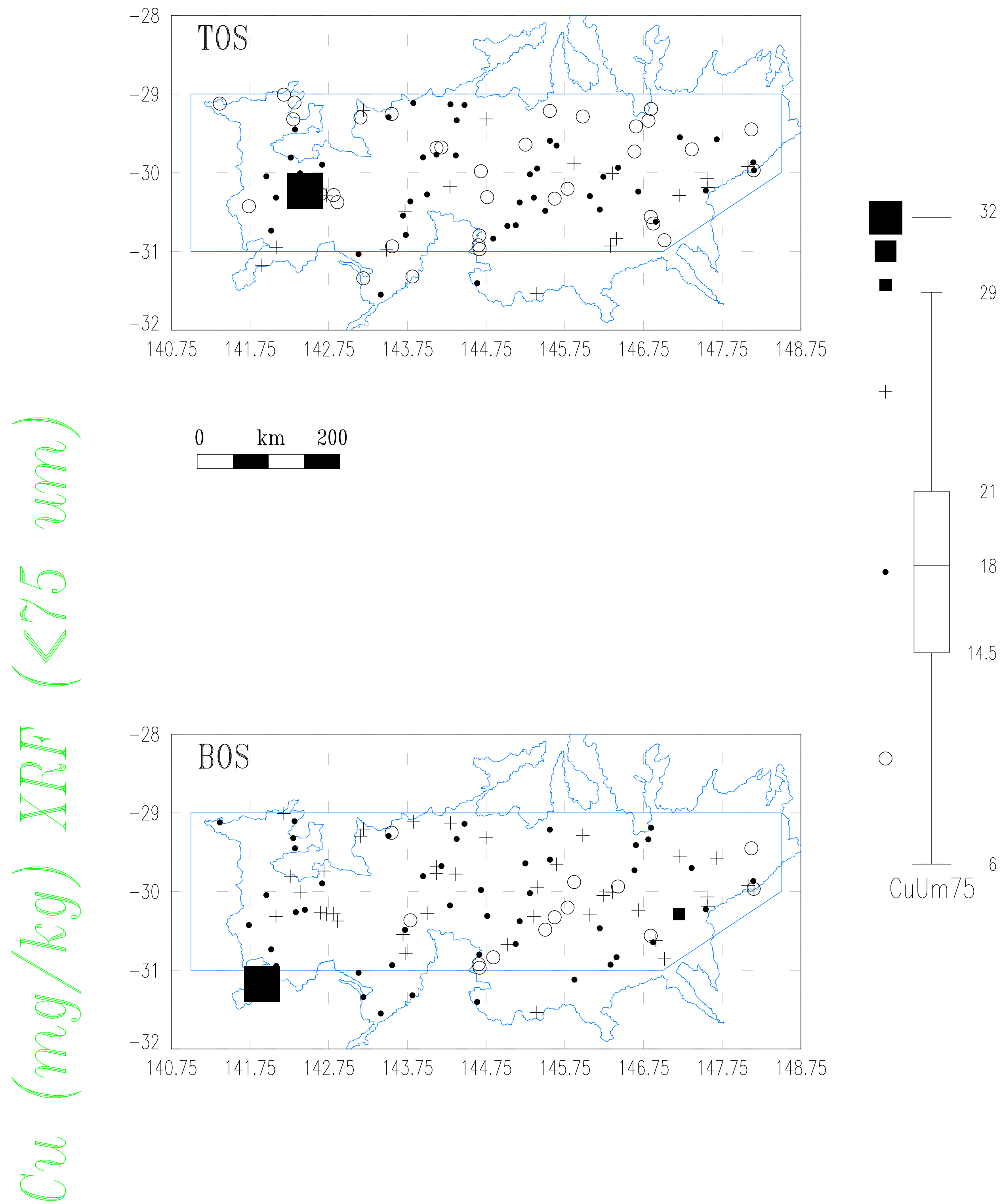
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

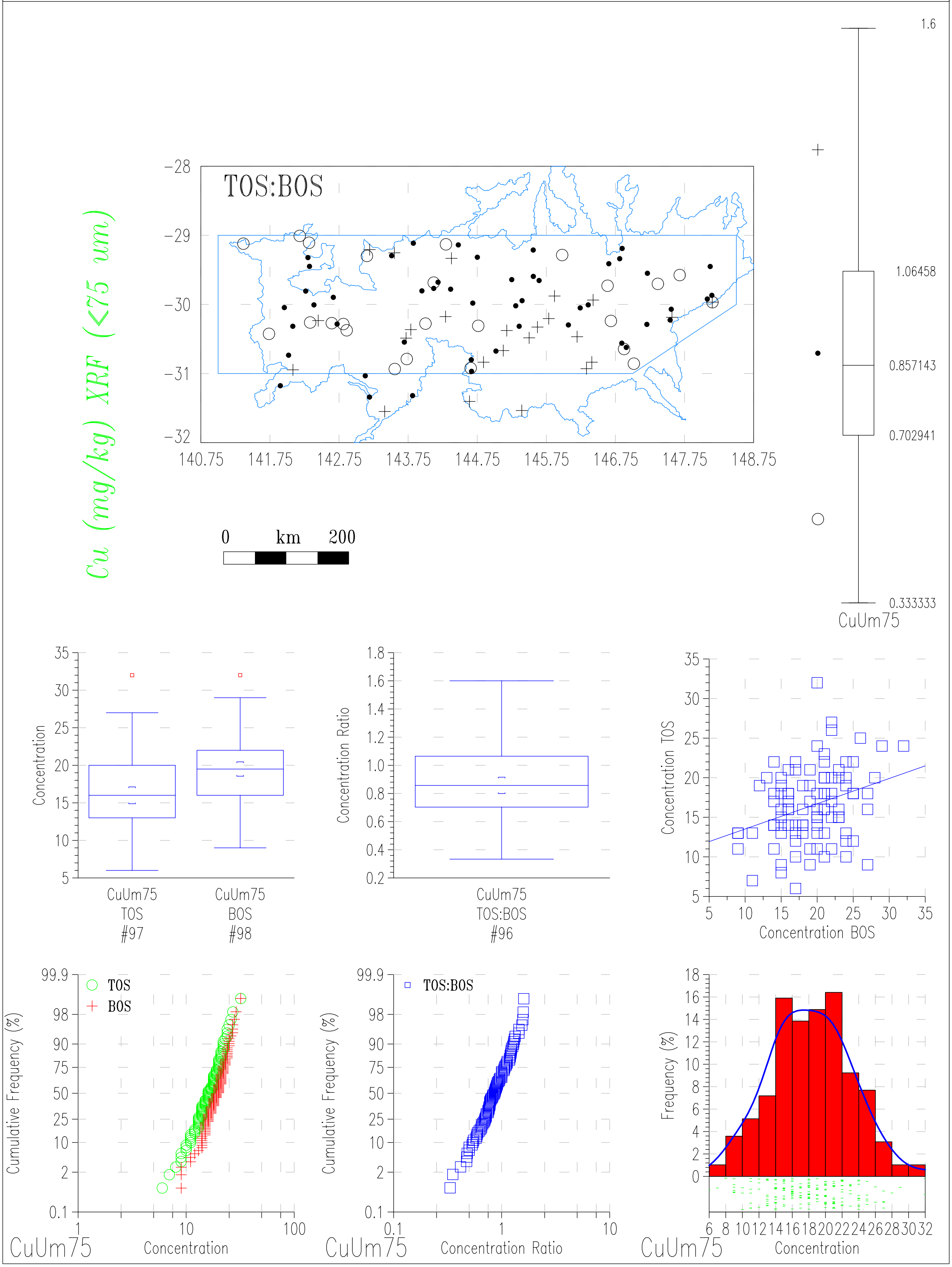


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

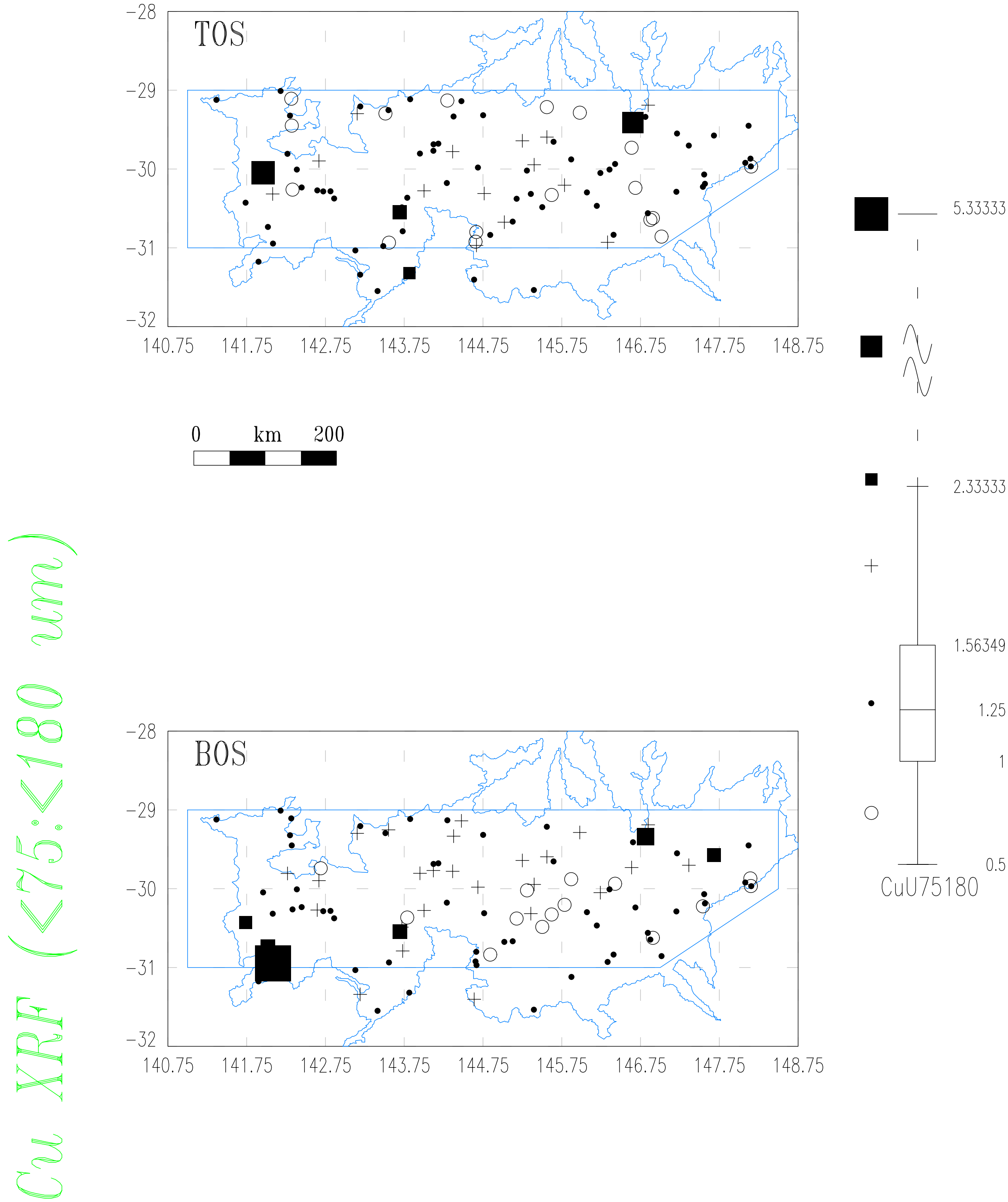


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



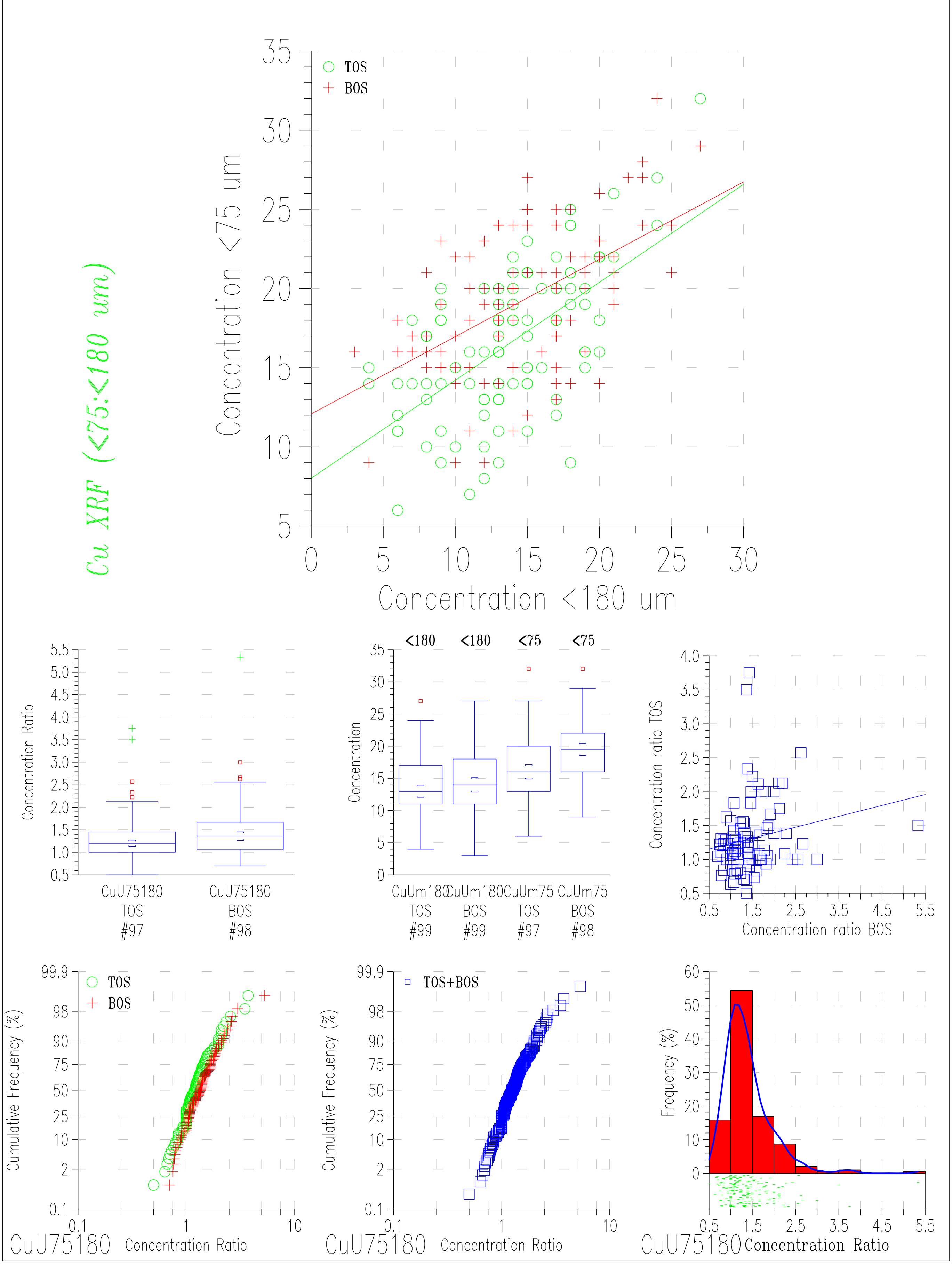
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

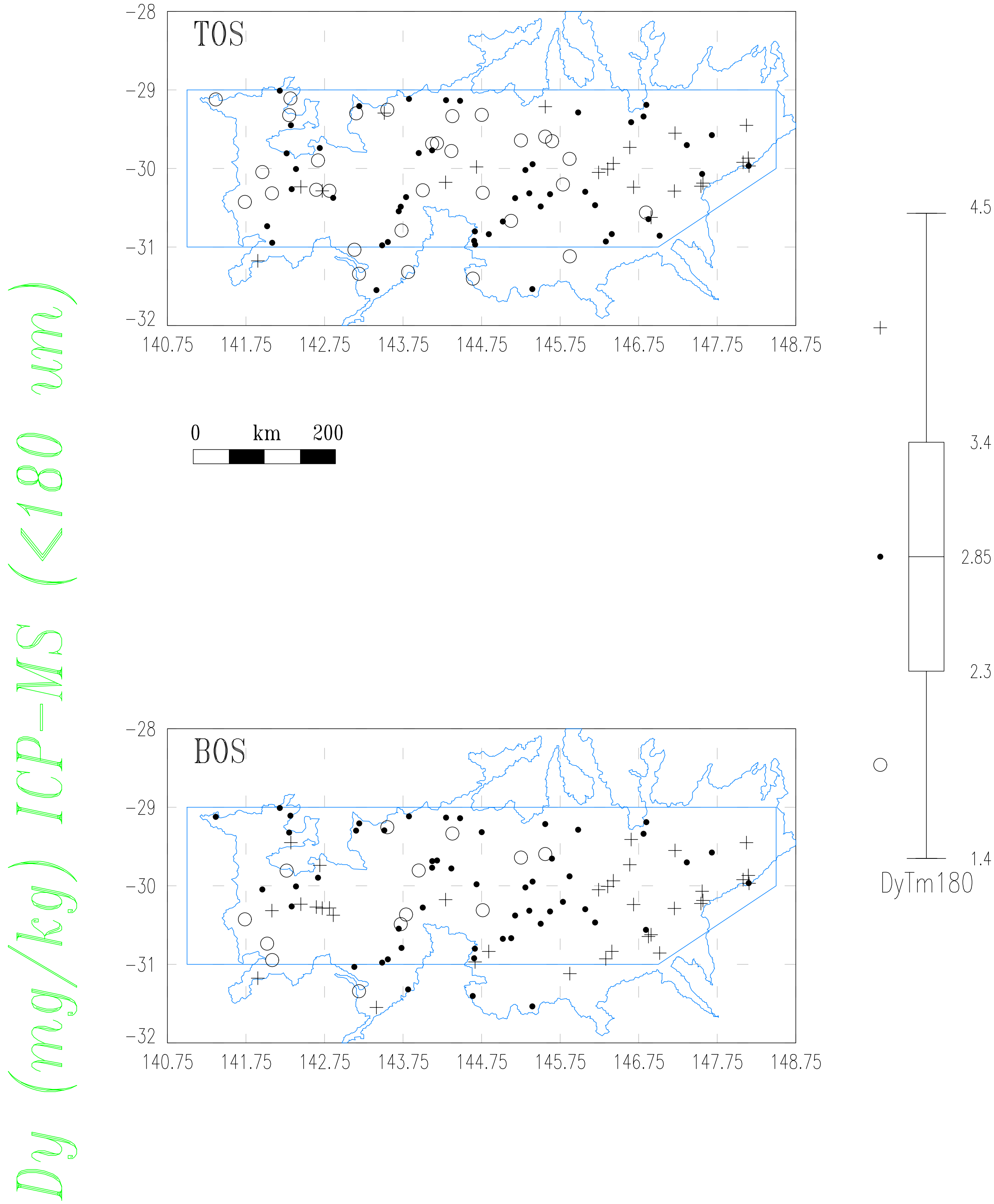


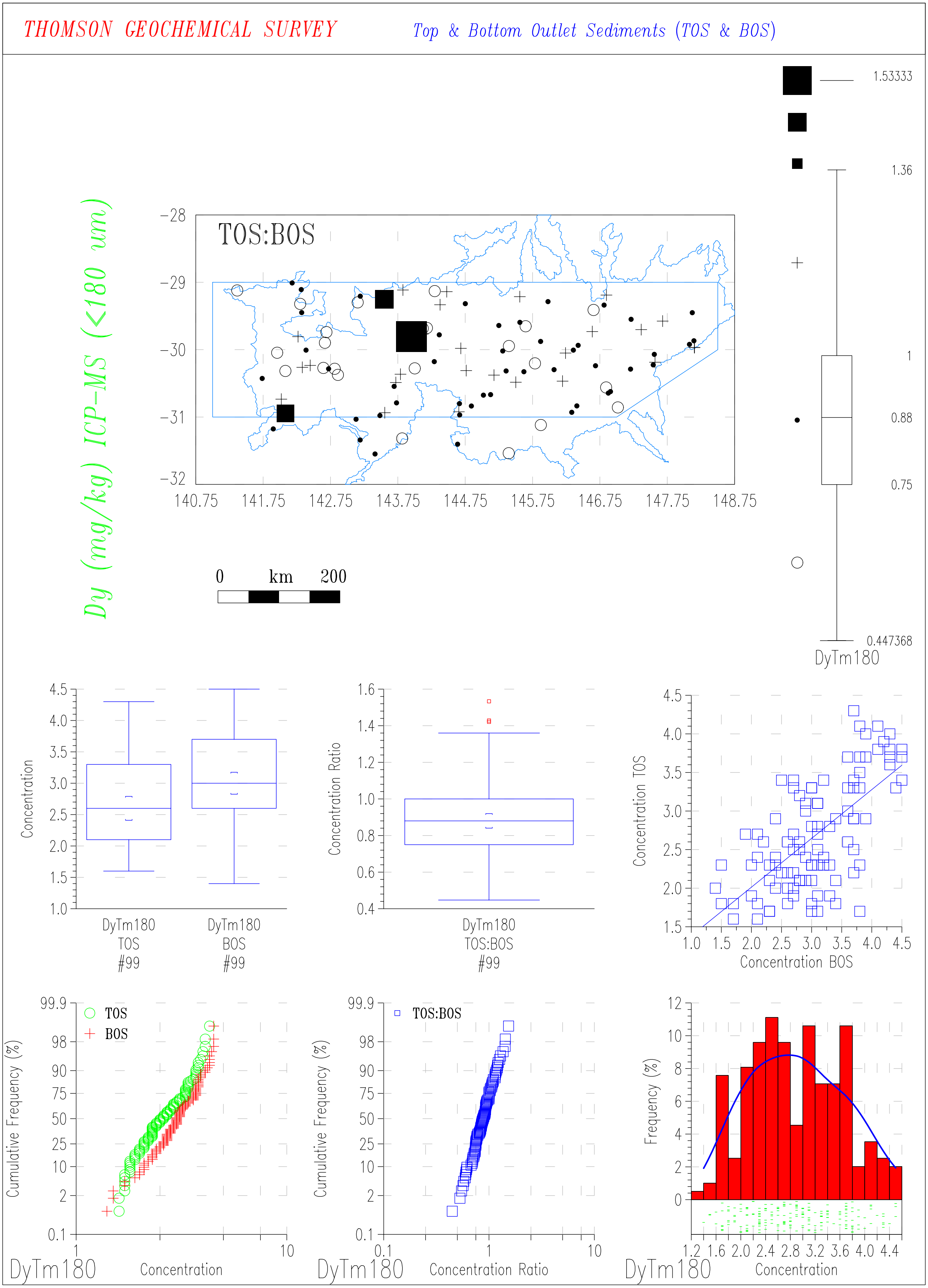
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

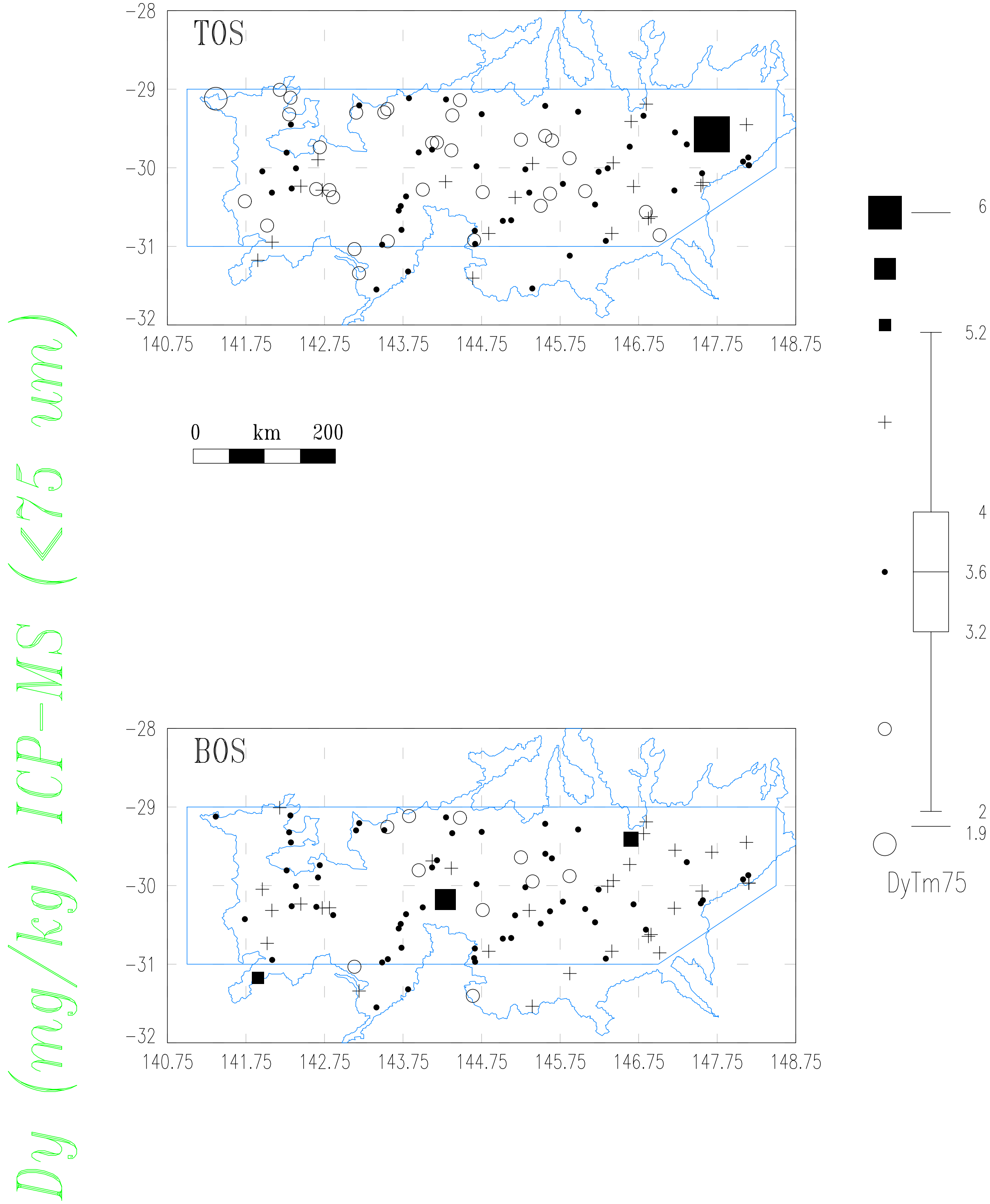


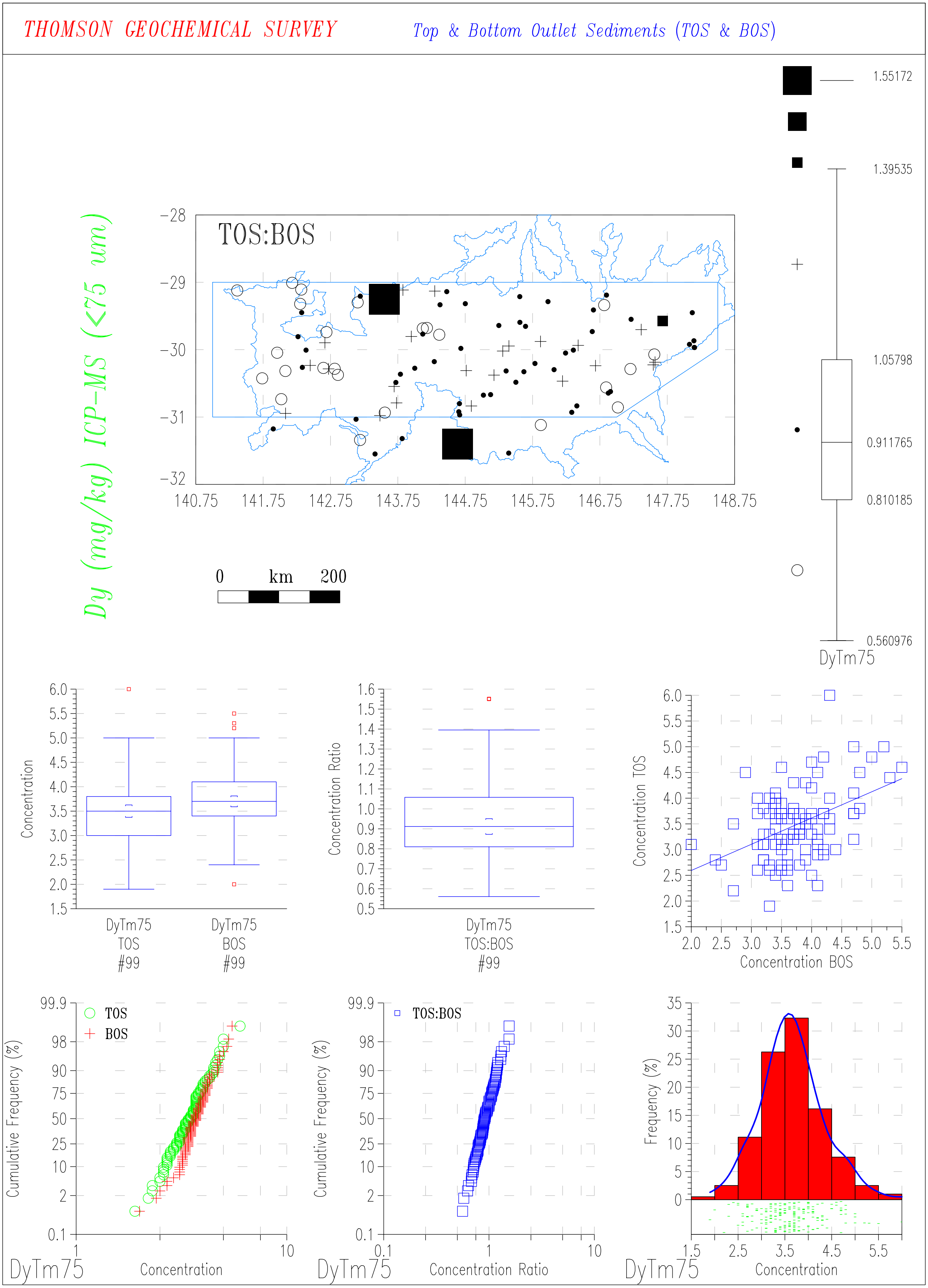
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



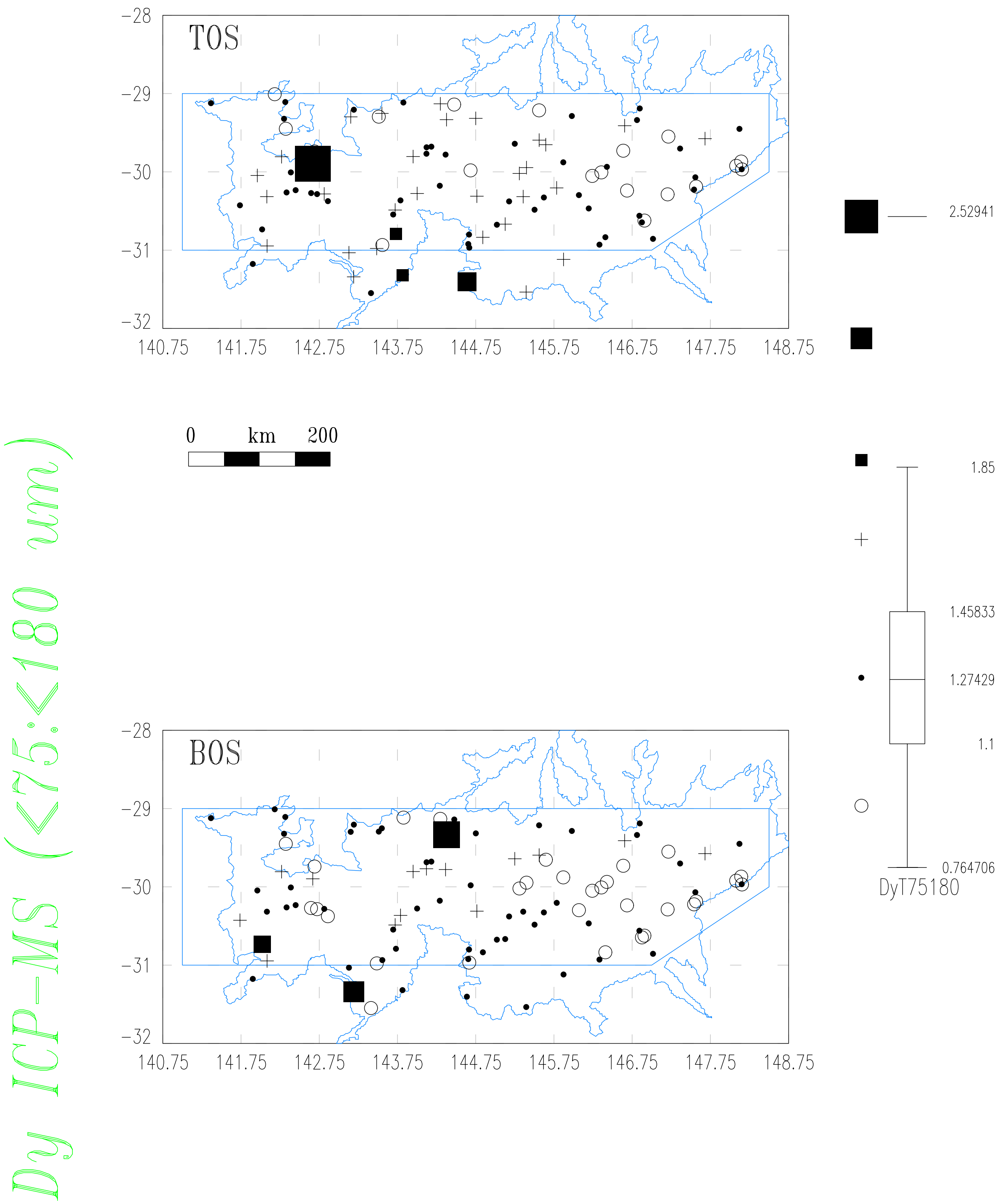

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Dy (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.53333
1.36
1
0.88
0.75
0.447368
DyTm180
Concentration
DyTm180 TOS #99
DyTm180 BOS #99
Concentration Ratio
DyTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
DyTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

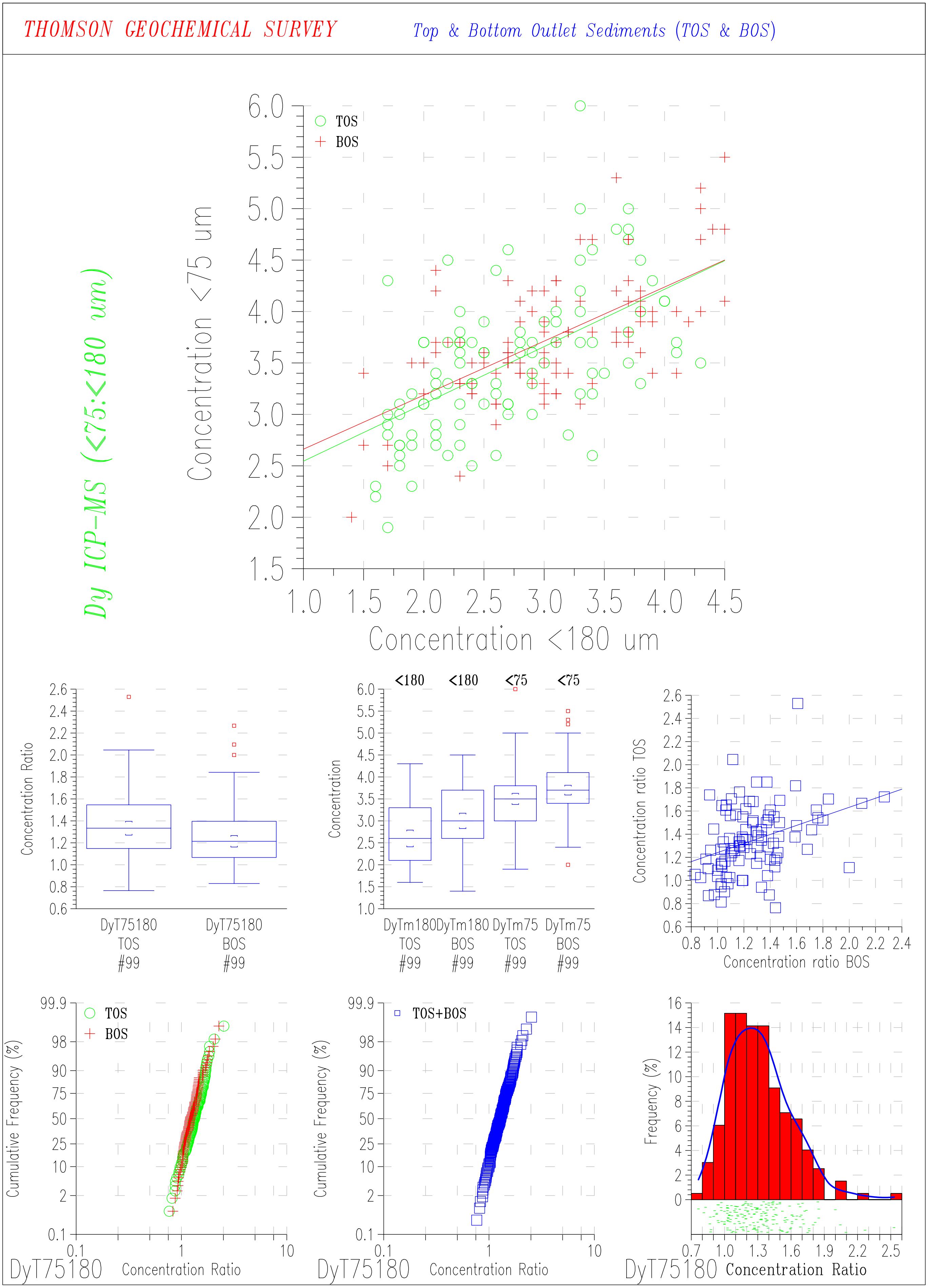
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Dy (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.55172
1.39535
1.05798
0.911765
0.810185
0.560976
DyTm75
Concentration
DyTm75 TOS #99
DyTm75 BOS #99
Concentration Ratio
DyTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

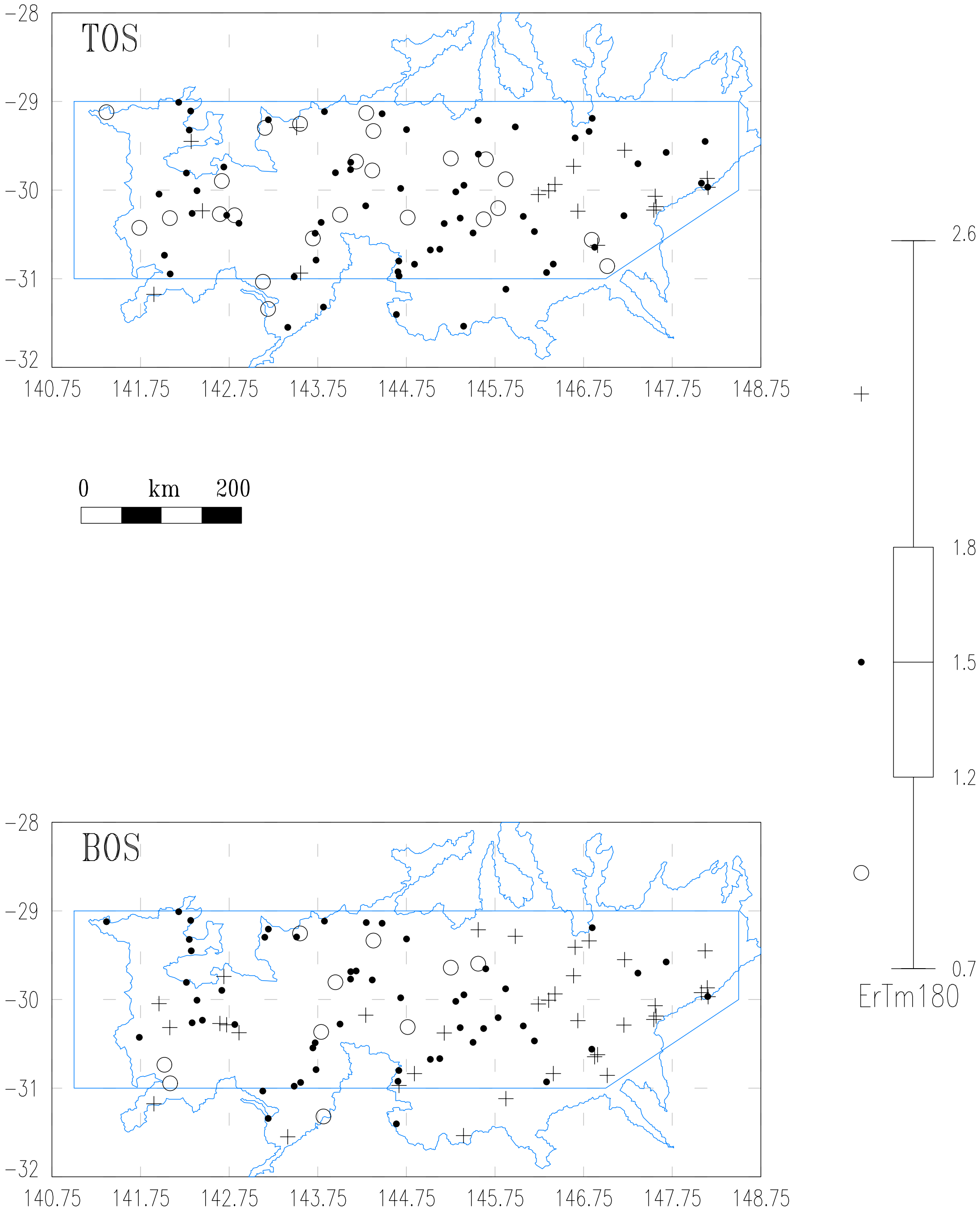


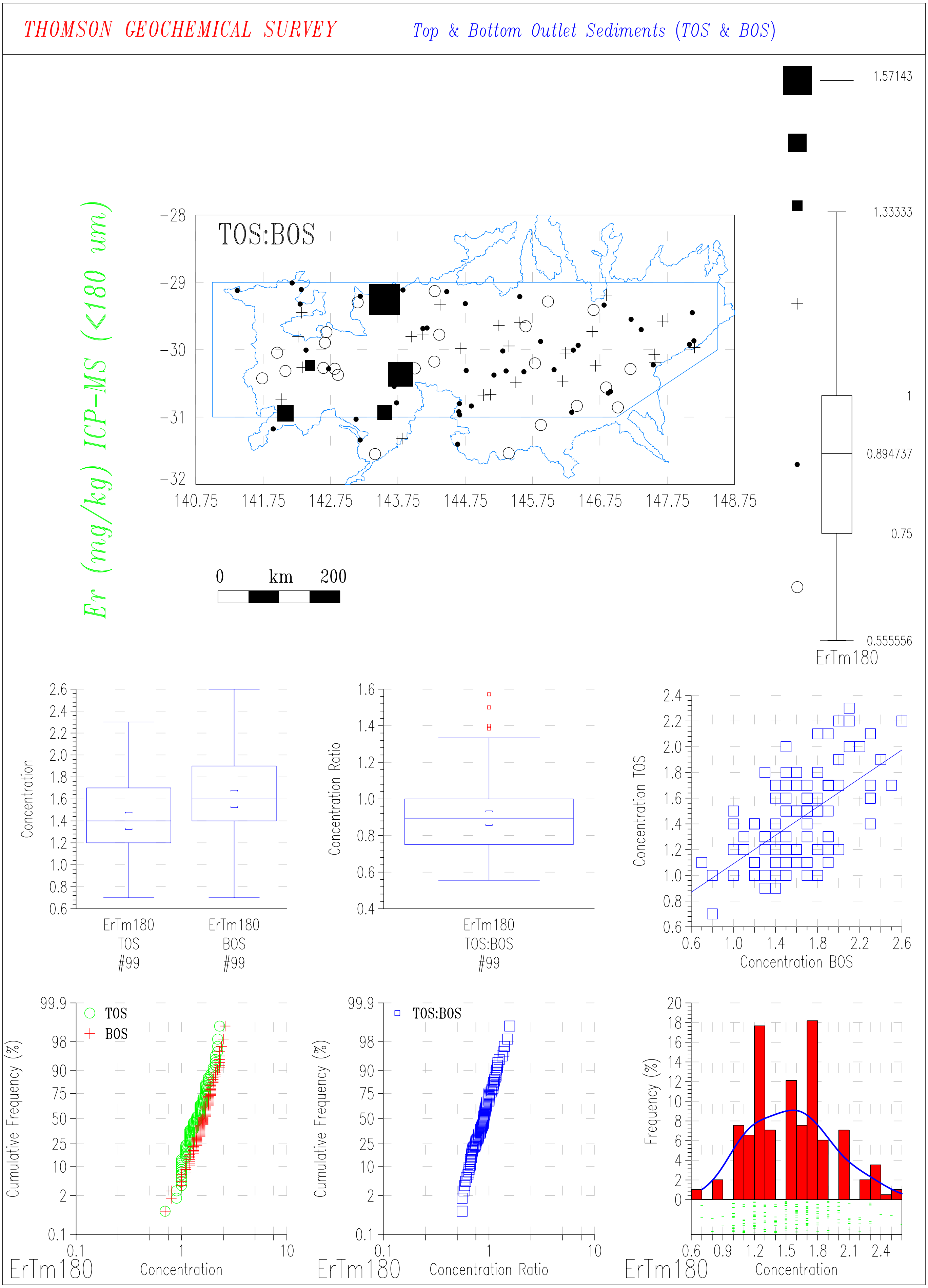

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Dy ICP-MS (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
DyT75180 TOS #99
DyT75180 BOS #99
<180 <180 <75 <75
Concentration
DyTm180 TOS #99
DyTm180 BOS #99
DyTm75 TOS #99
DyTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
DyT75180 Concentration Ratio
TOS+BOS
Cumulative Frequency (%)
DyT75180 Concentration Ratio
Frequency (%)
DyT75180 Concentration Ratio

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

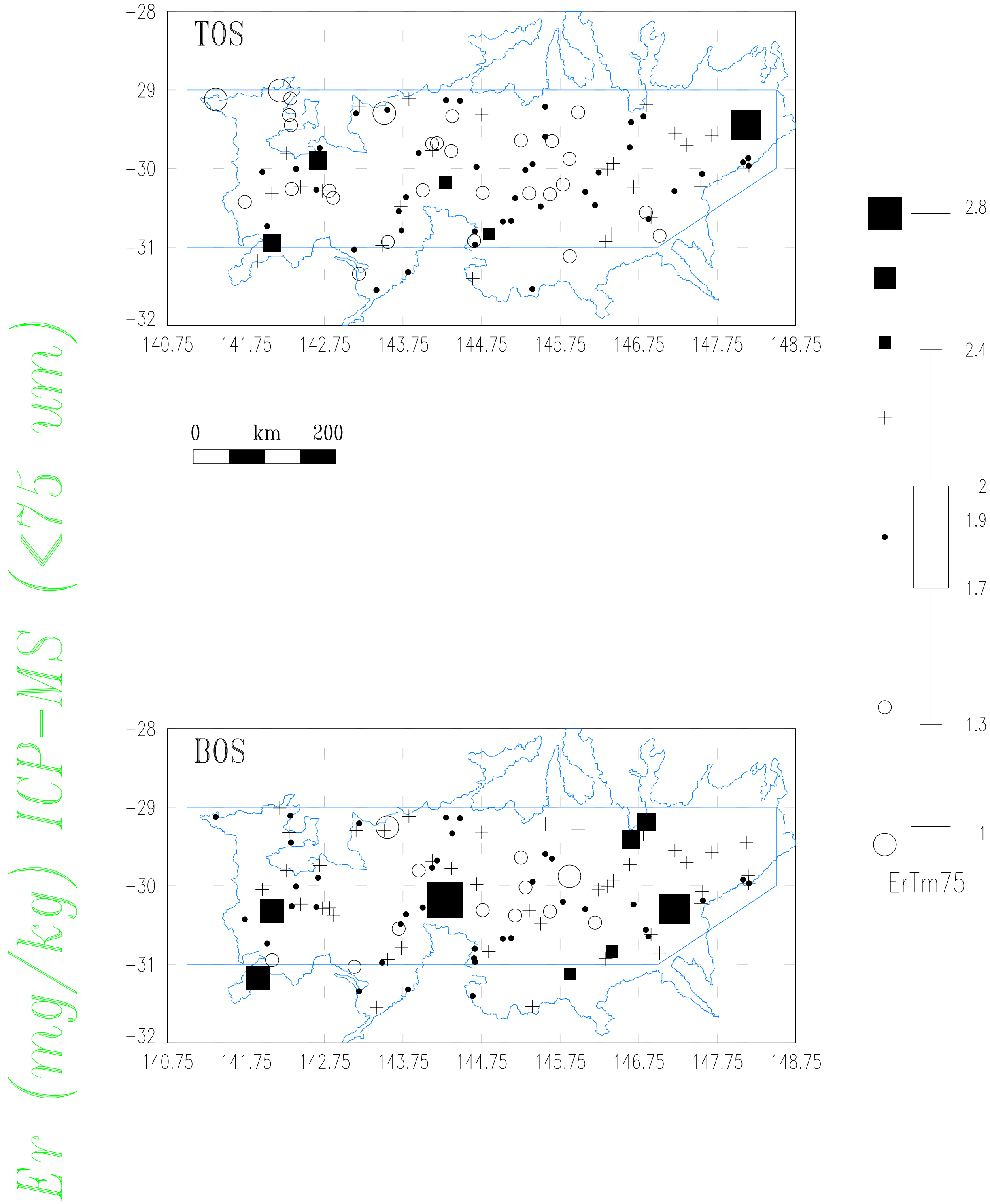
Er (mg/kg) ICP-MS (<180 um)



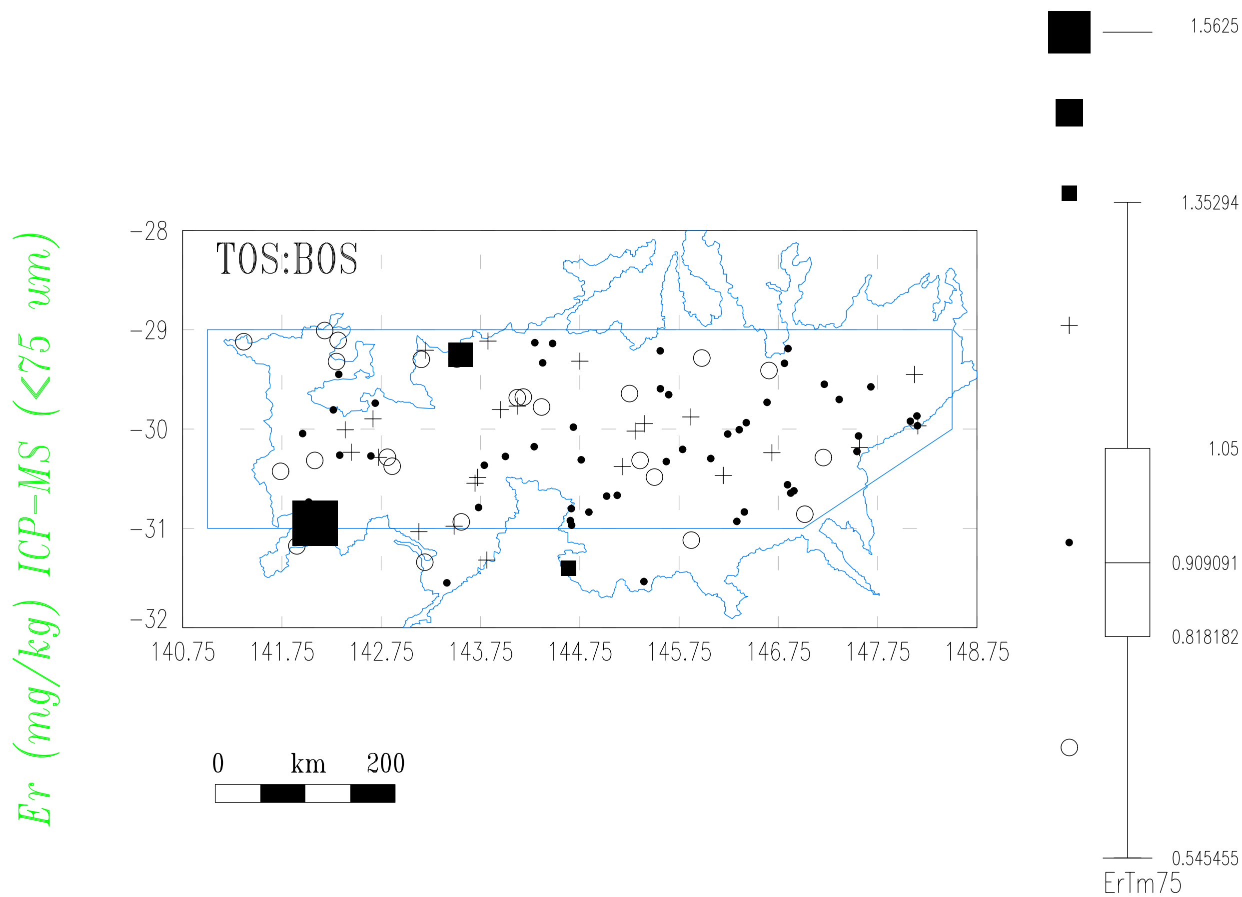

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Er (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.57143
1.33333
1
0.894737
0.75
0.555556
ErTm180
Concentration
ErTm180 TOS #99
ErTm180 BOS #99
Concentration Ratio
ErTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
ErTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

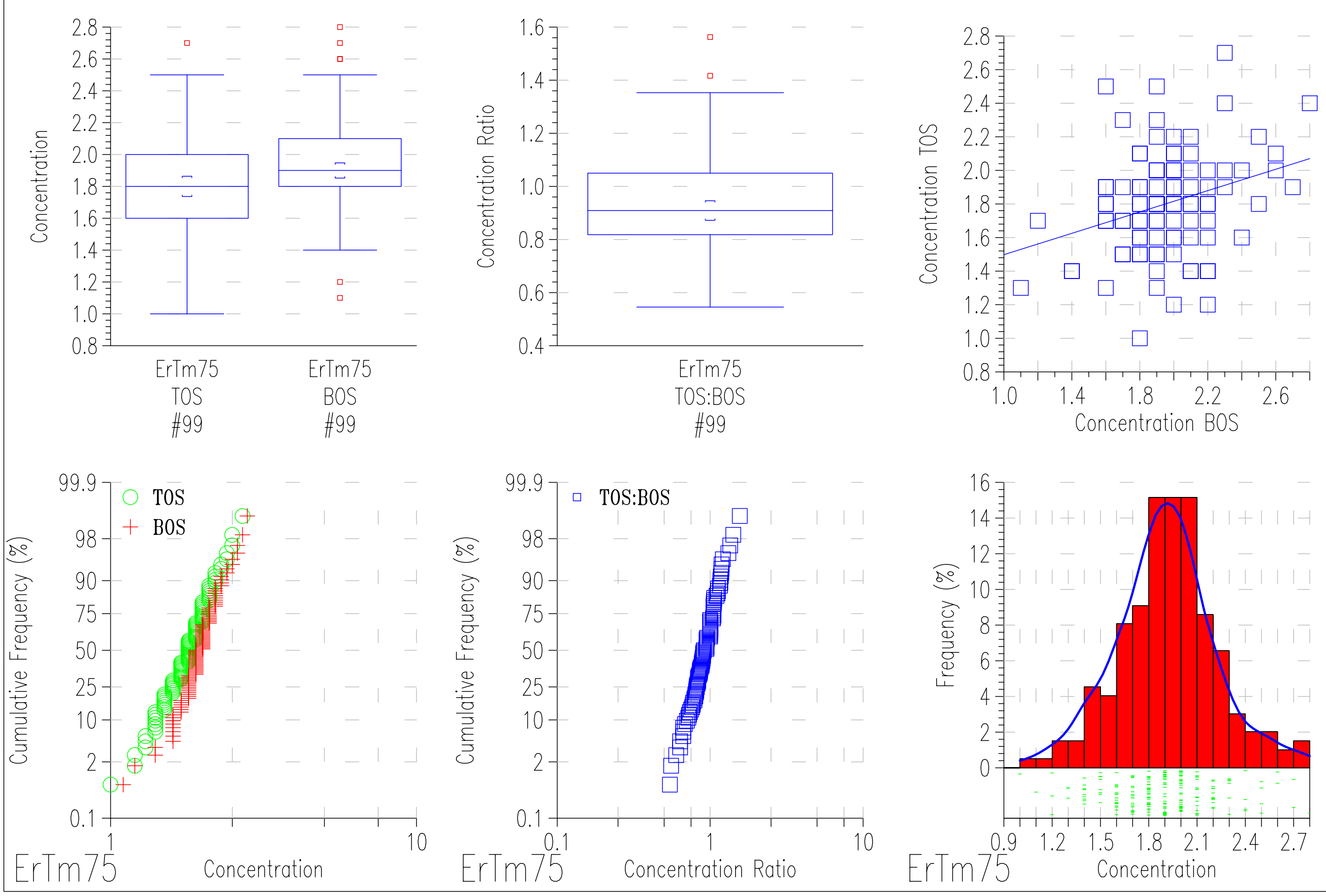
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

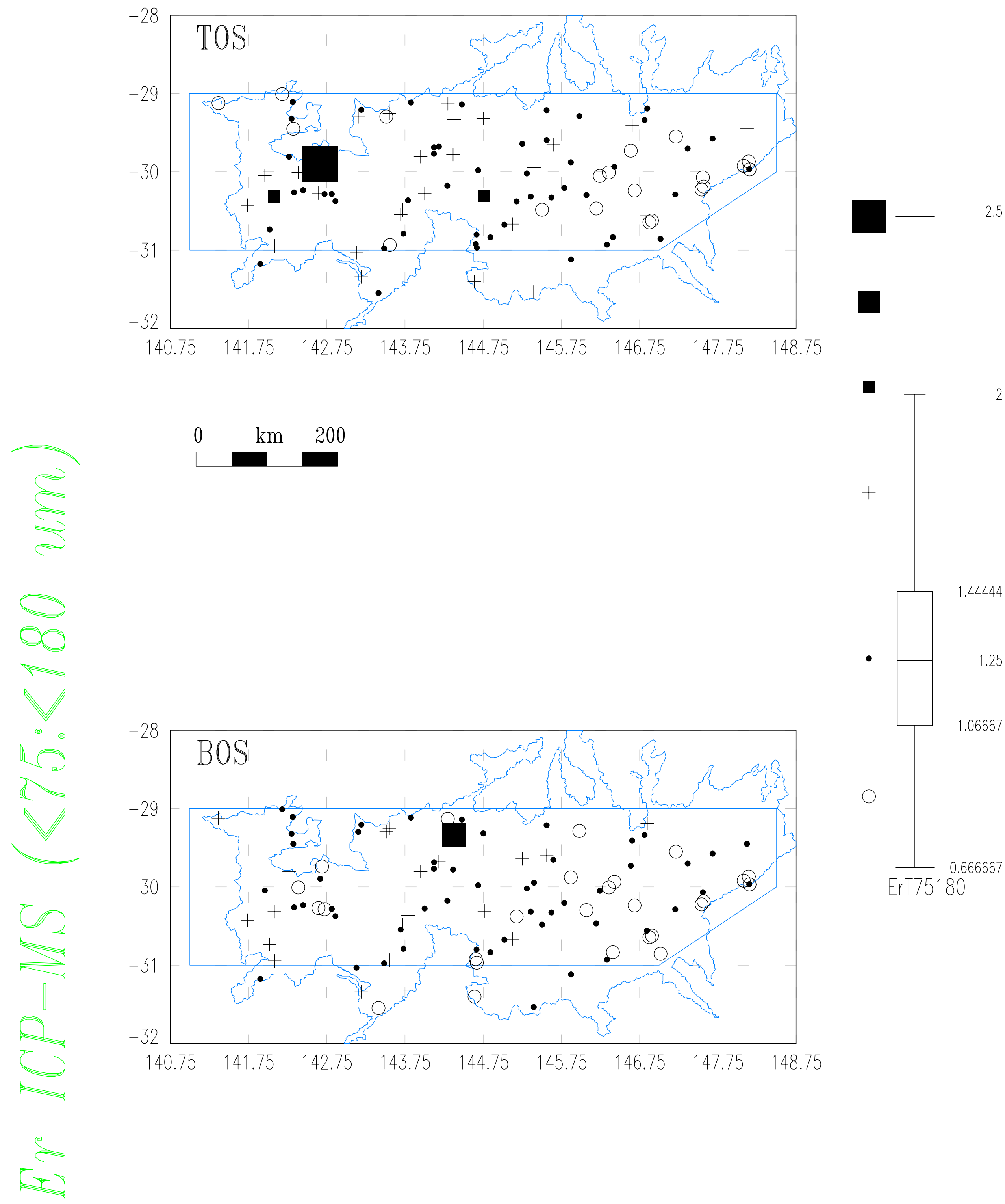


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



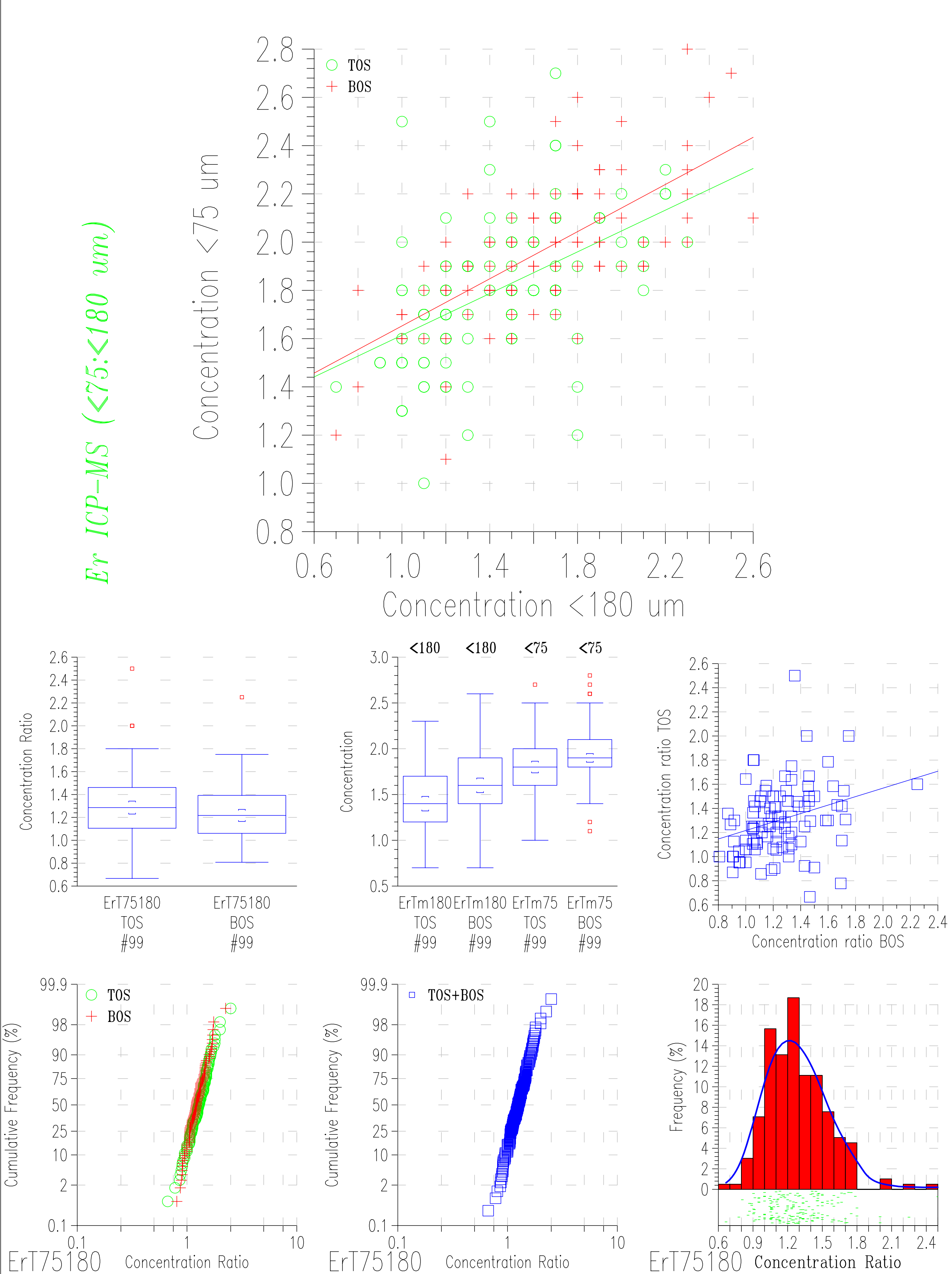


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



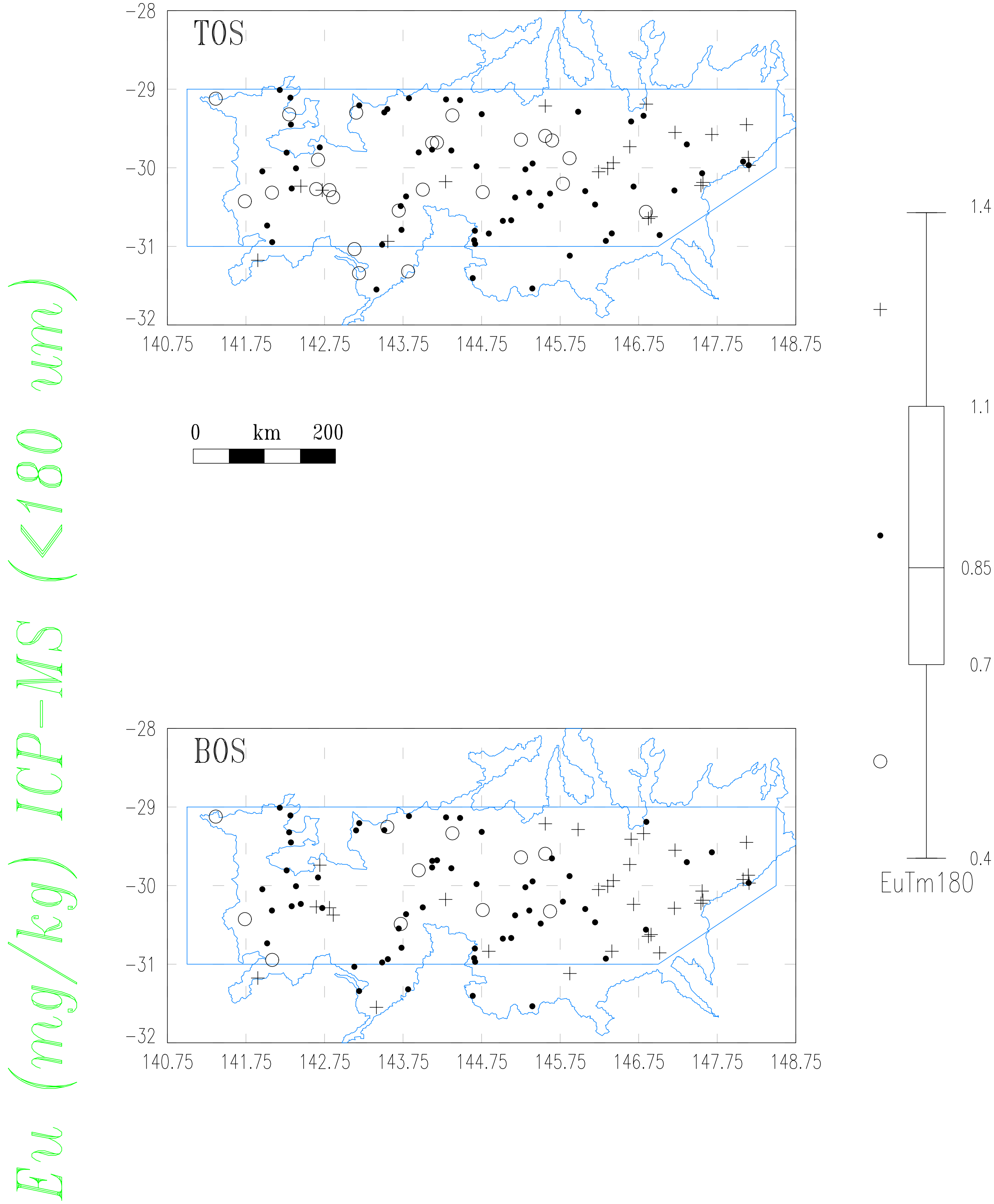
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

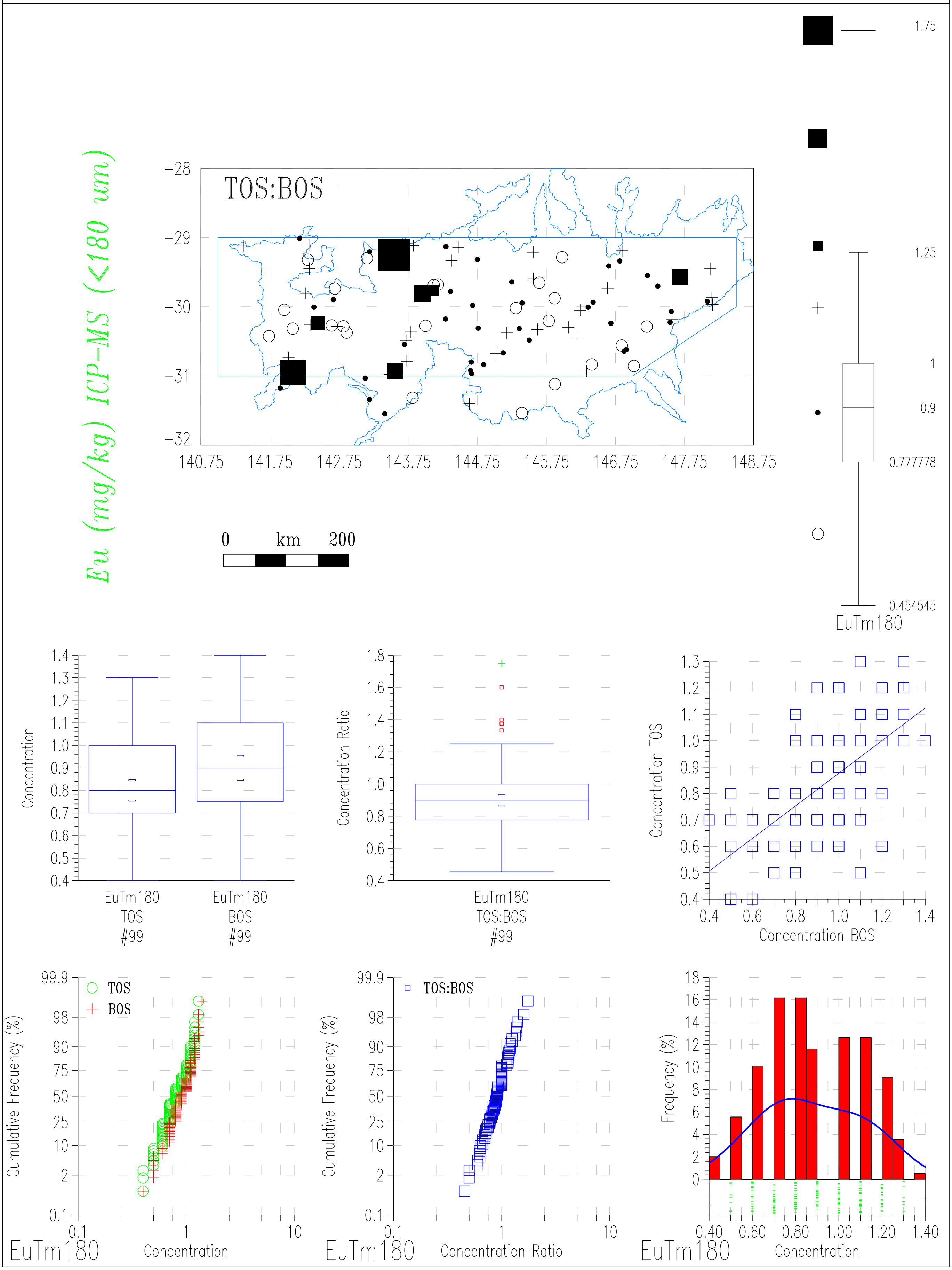


THOMSON GEOCHEMICAL SURVEY

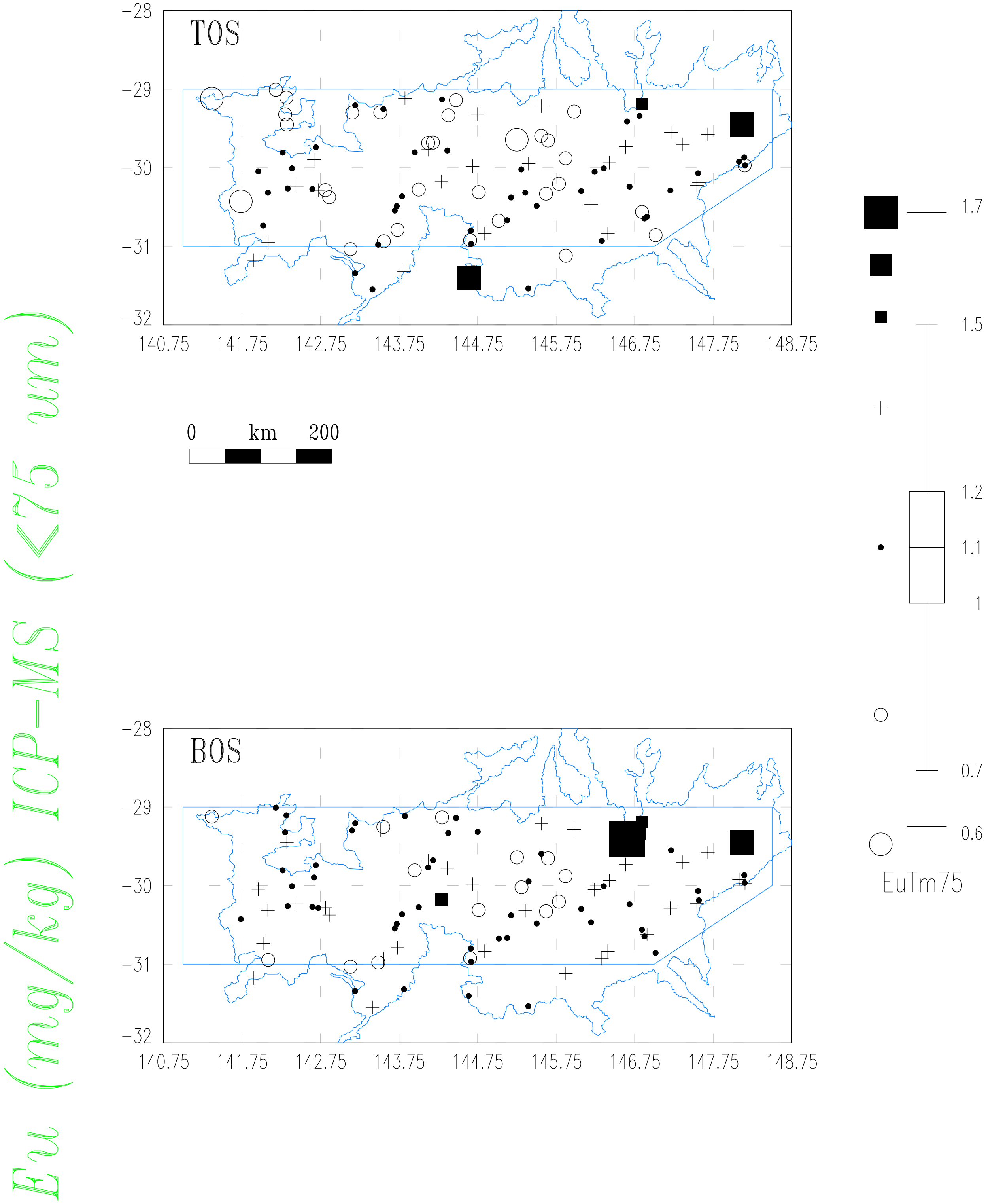
Top & Bottom Outlet Sediments (TOS & BOS)

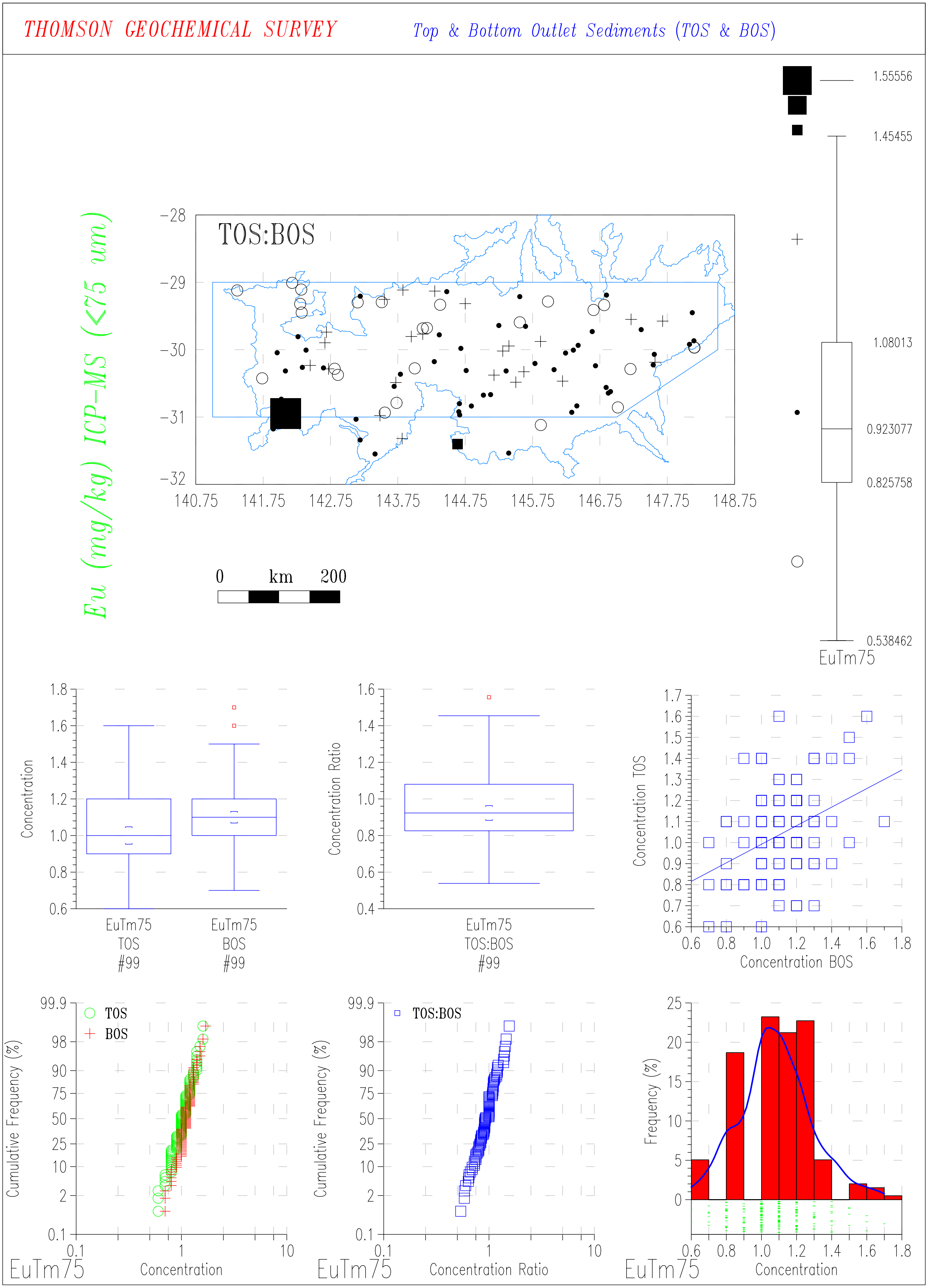


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



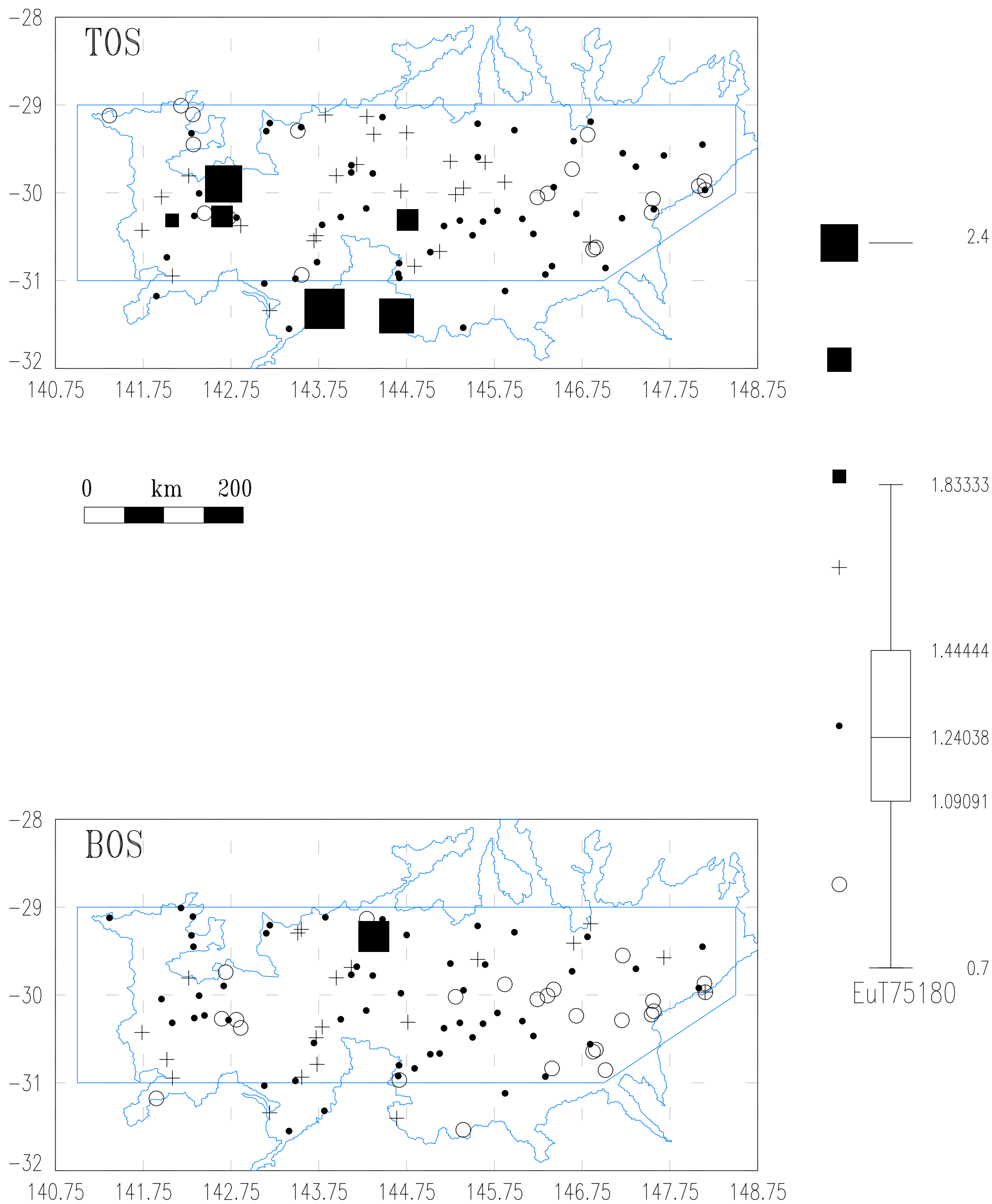
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Eu (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.55556
1.45455
1.08013
0.923077
0.825758
0.538462
EuTm75
Concentration
EuTm75 TOS #99
EuTm75 BOS #99
Concentration Ratio
EuTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Frequency (%)

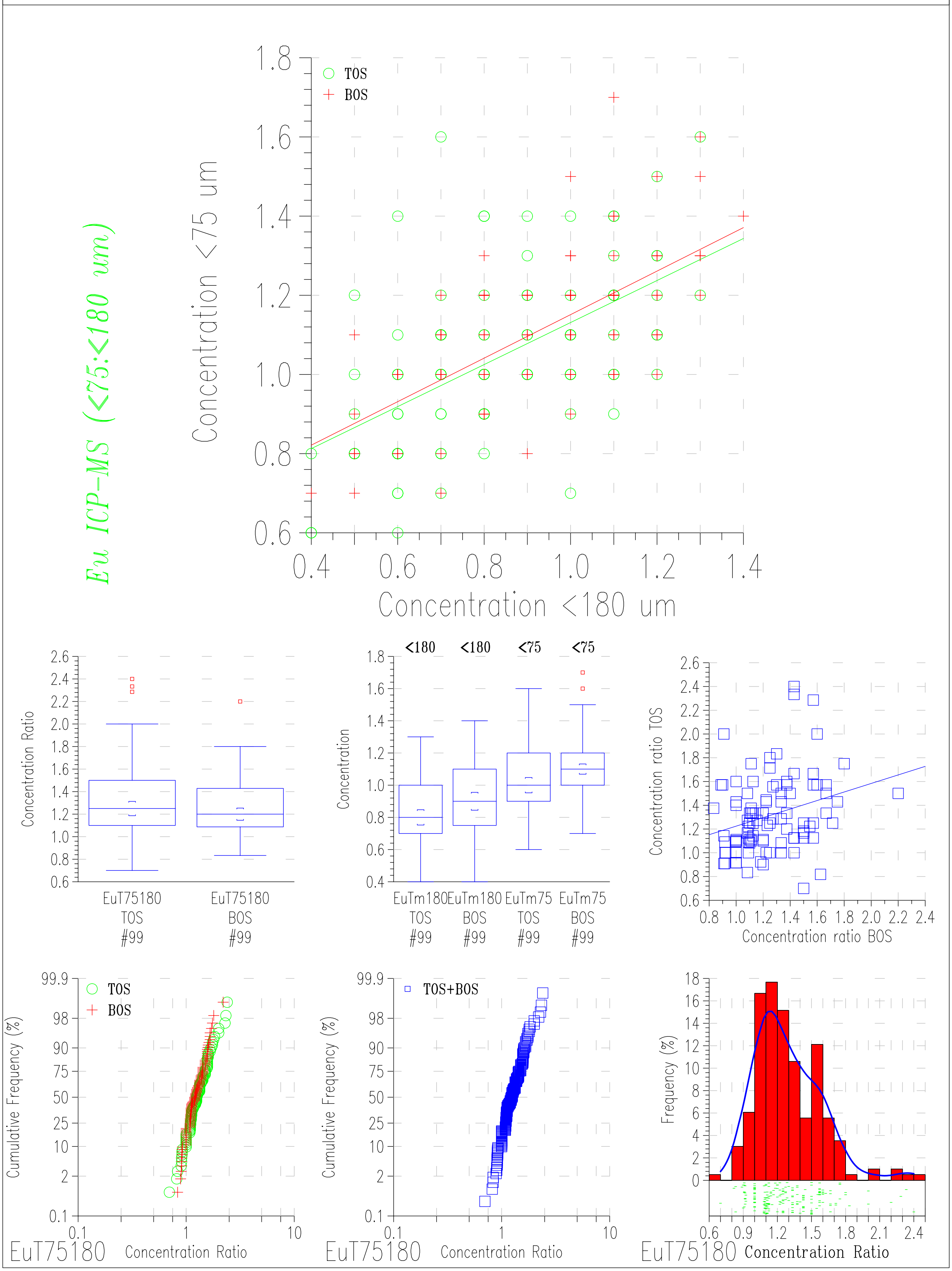
THOMSON GEOCHEMICAL SURVEY

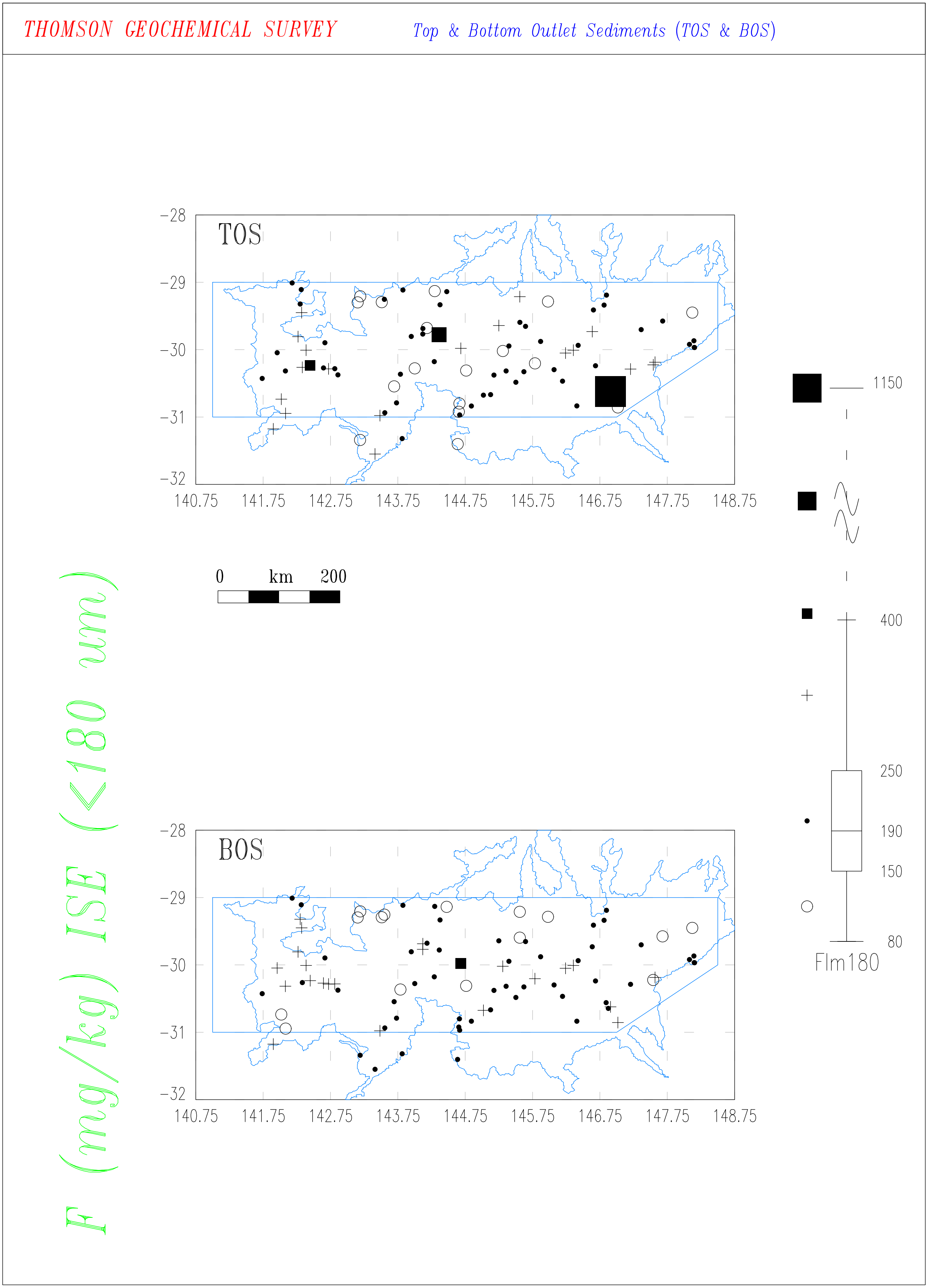
Top & Bottom Outlet Sediments (TOS & BOS)

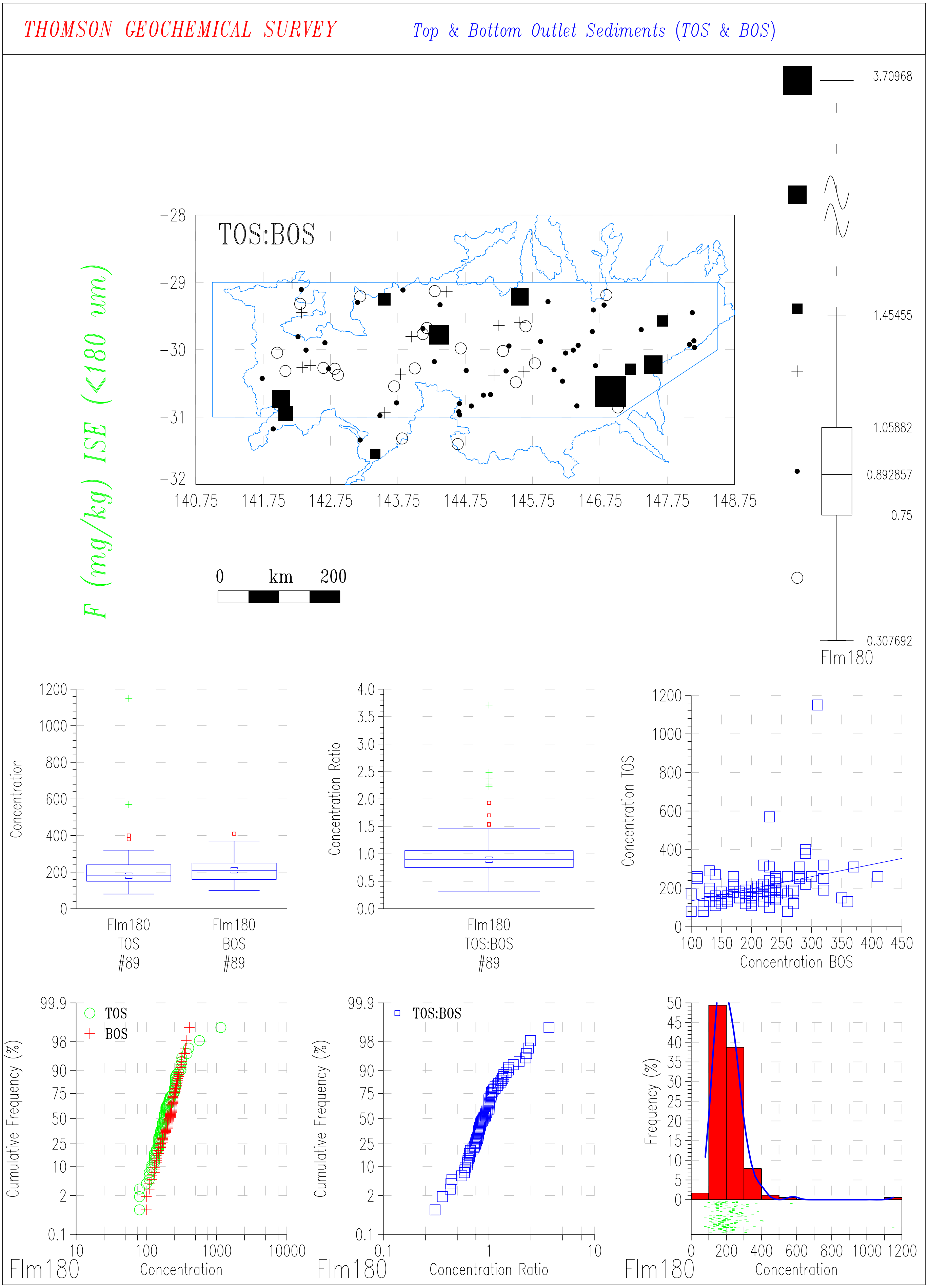


Eu ICP-MS (<75:<180 um)

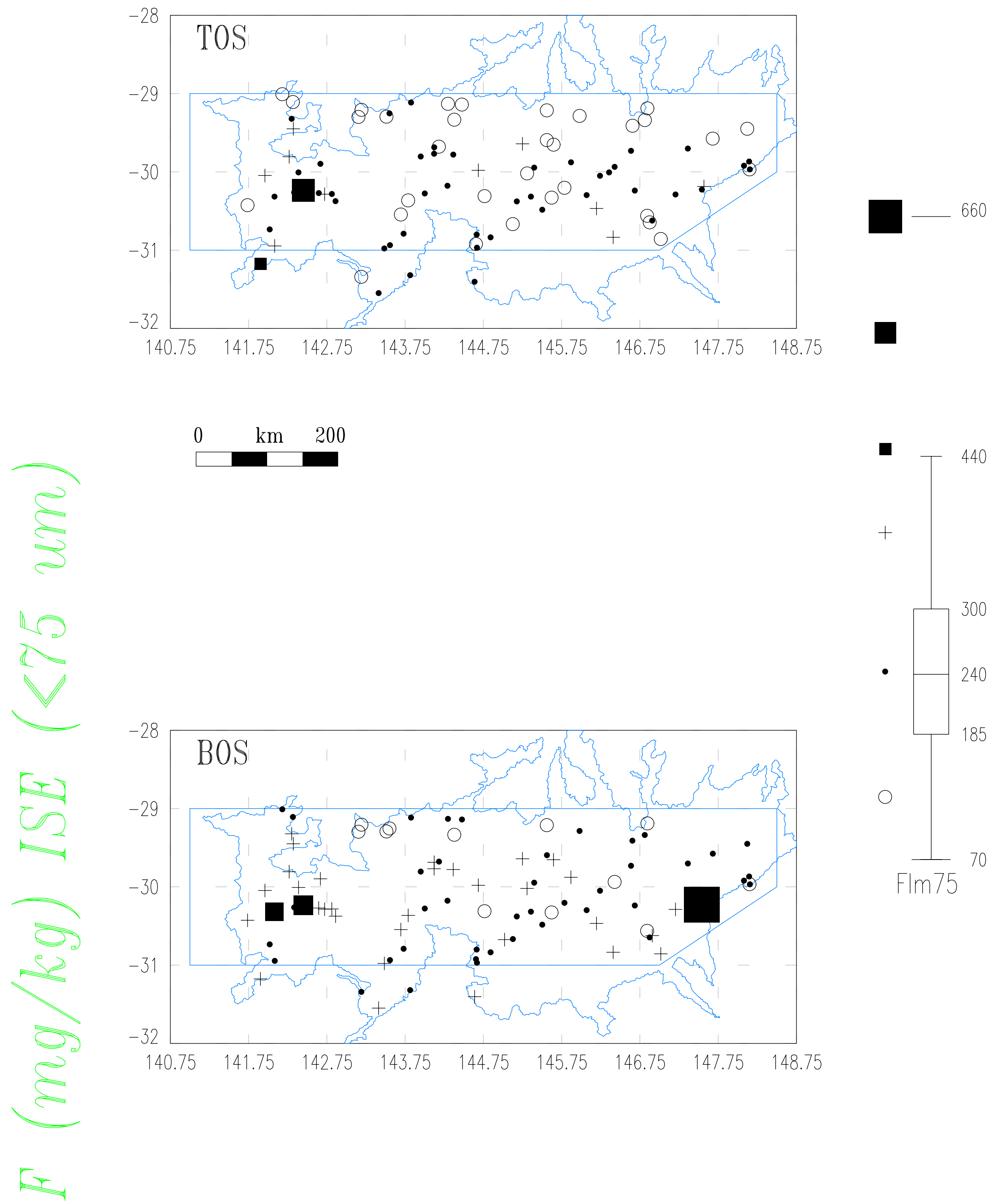
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

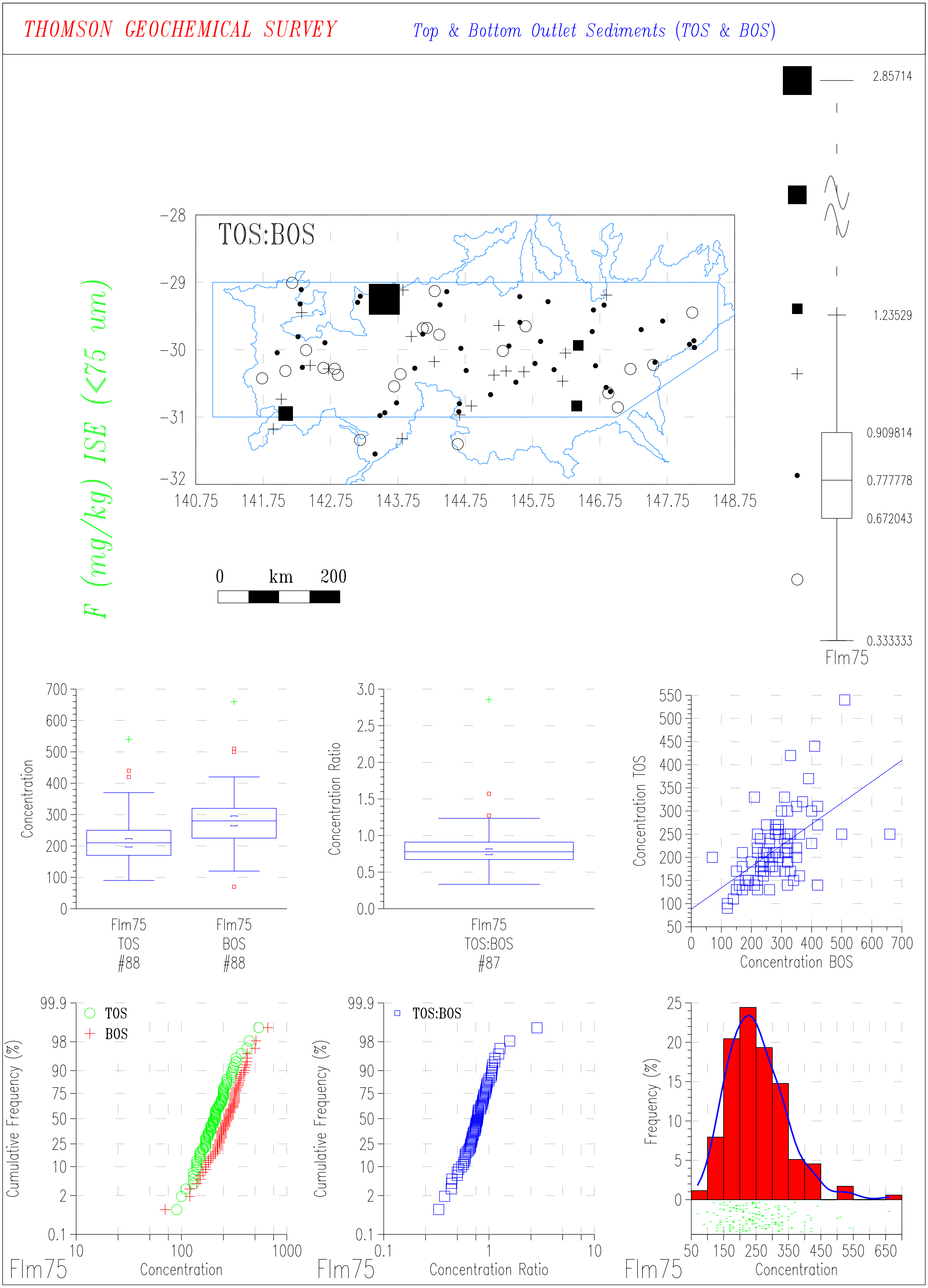



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1150
400
250
190
150
80
FIm180
F (mg/kg) ISE (<180 um)


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS:BOS
F (mg/kg) ISE (<180 um)
0 km 200
3.70968
1.45455
1.05882
0.892857
0.75
0.307692
Flm180
Concentration
Flm180 TOS #89
Flm180 BOS #89
Concentration Ratio
Flm180 TOS:BOS #89
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

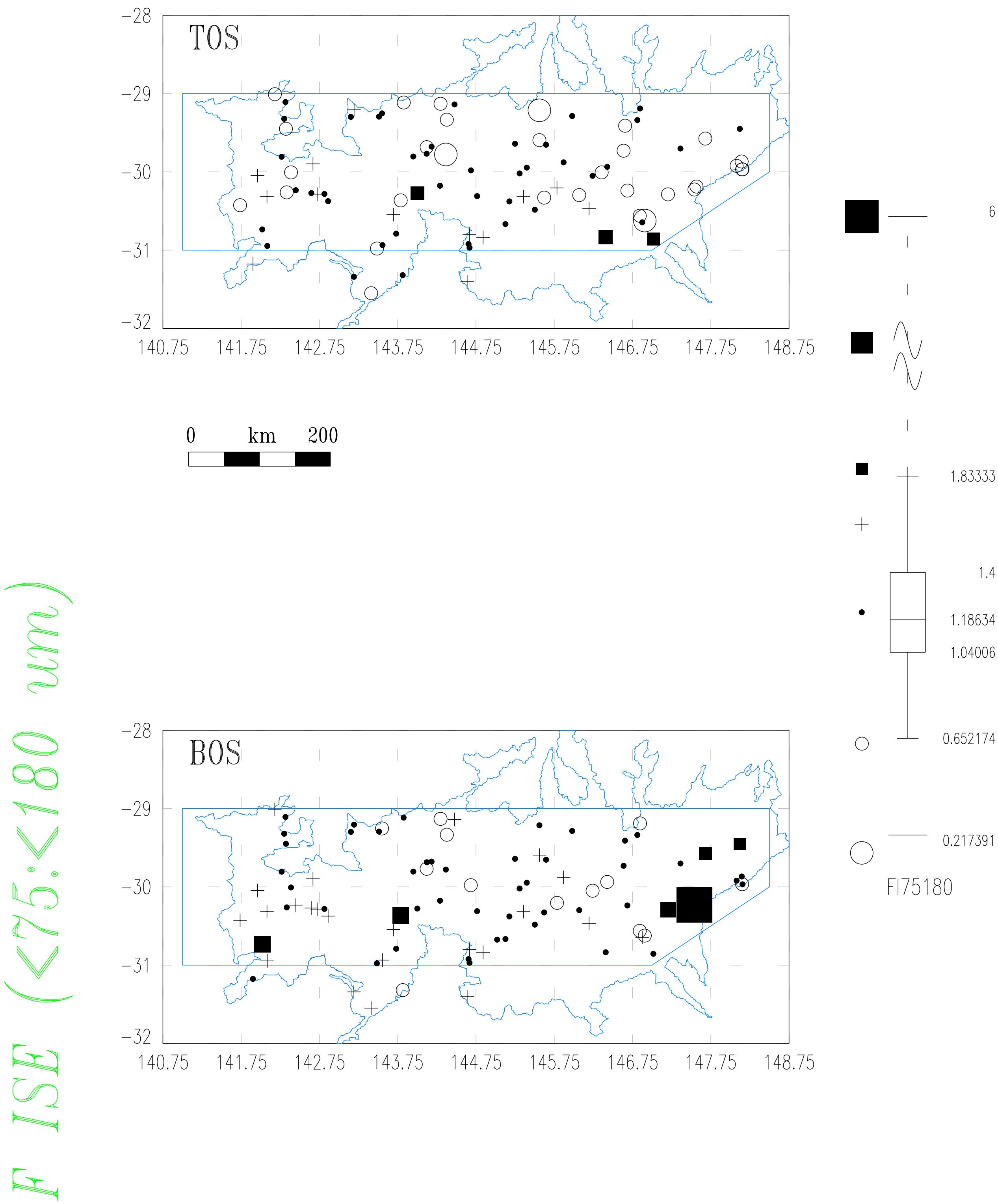


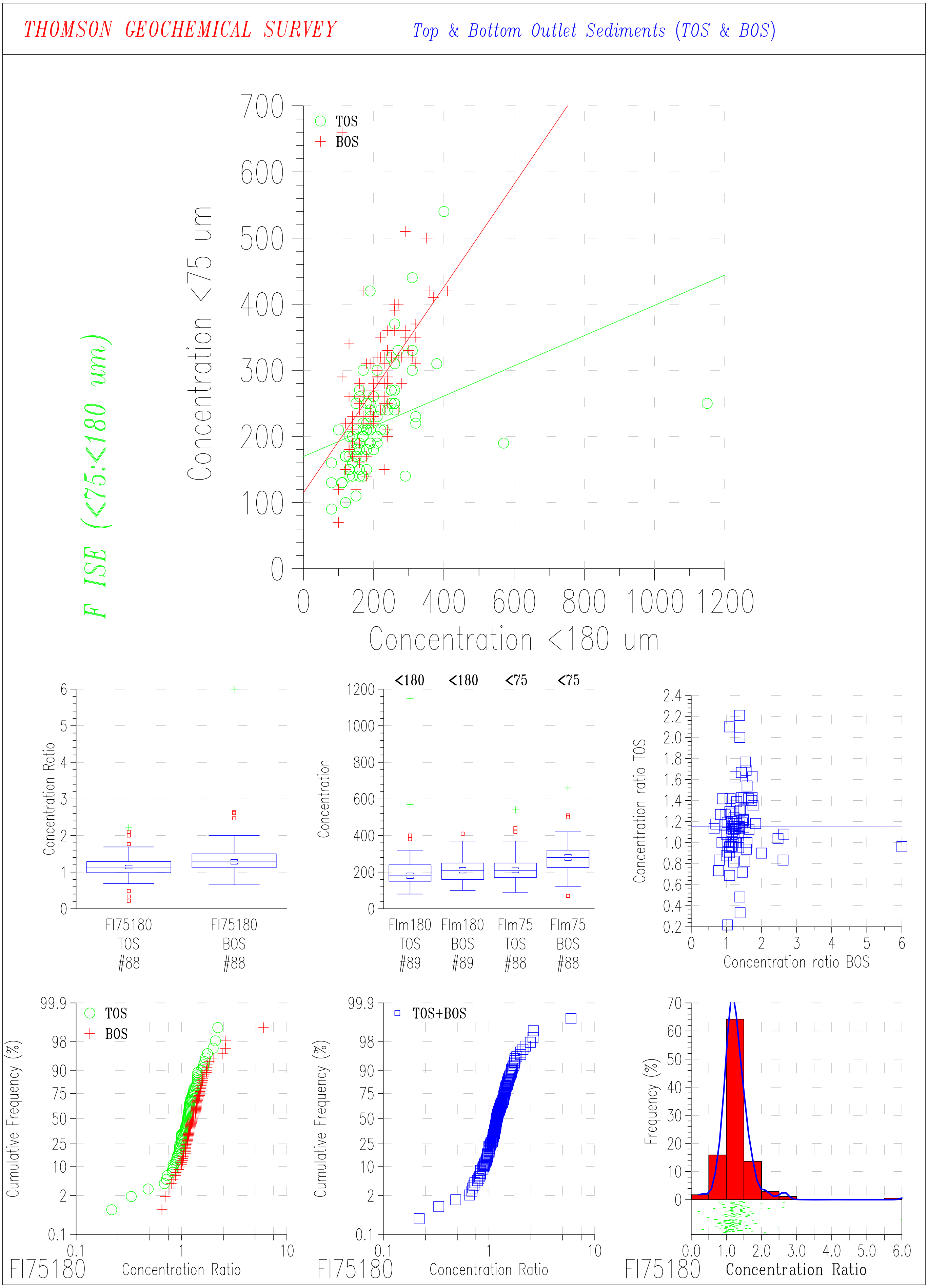


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
F (mg/kg) ISE (<75 um)
TOS:BOS
0 km 200
2.85714
1.23529
0.909814
0.777778
0.672043
0.333333
Flm75
Concentration
Flm75 TOS #88
Flm75 BOS #88
Concentration Ratio
Flm75 TOS:BOS #87
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Frequency (%)

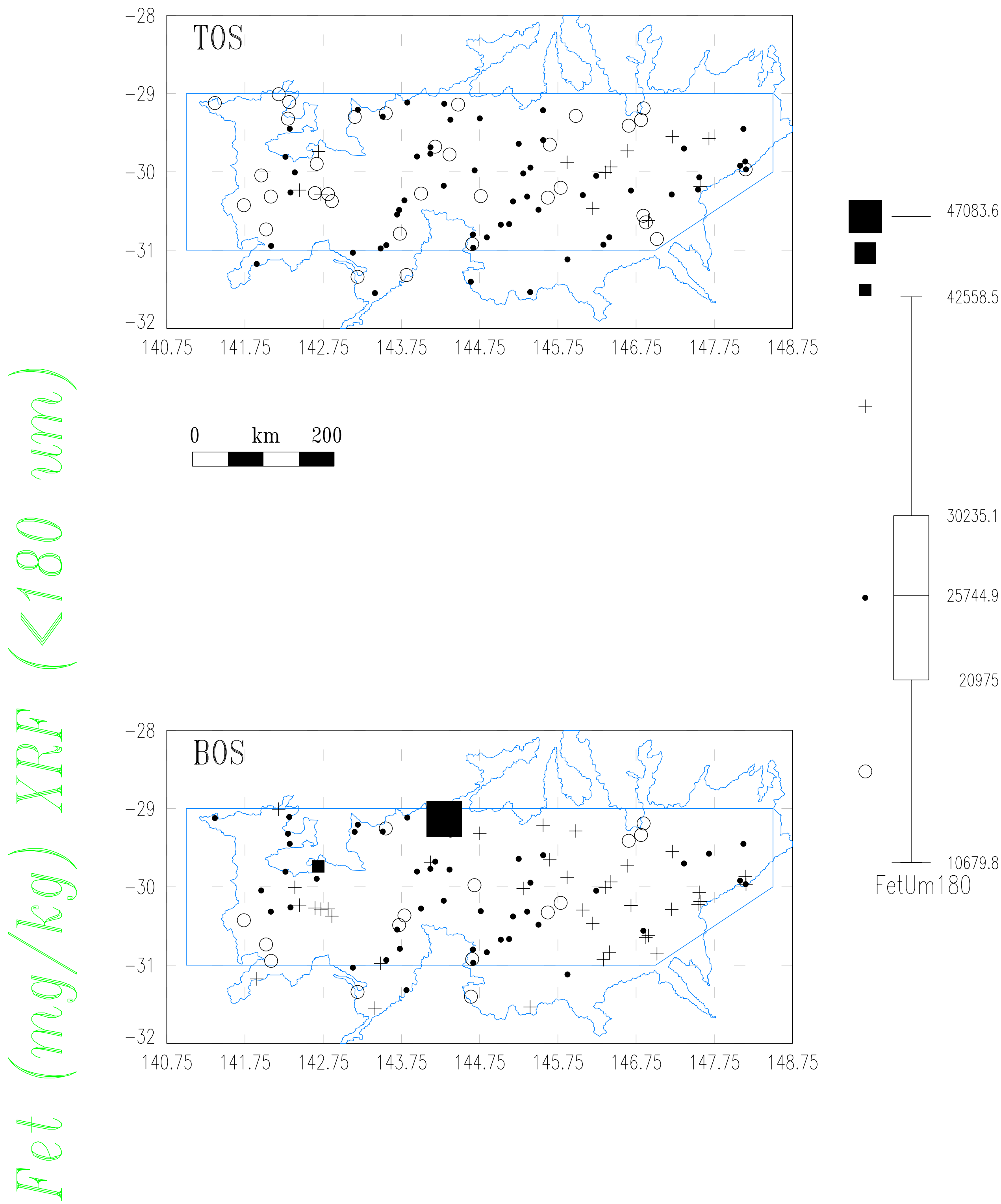
THOMSON GEOCHEMICAL SURVEY

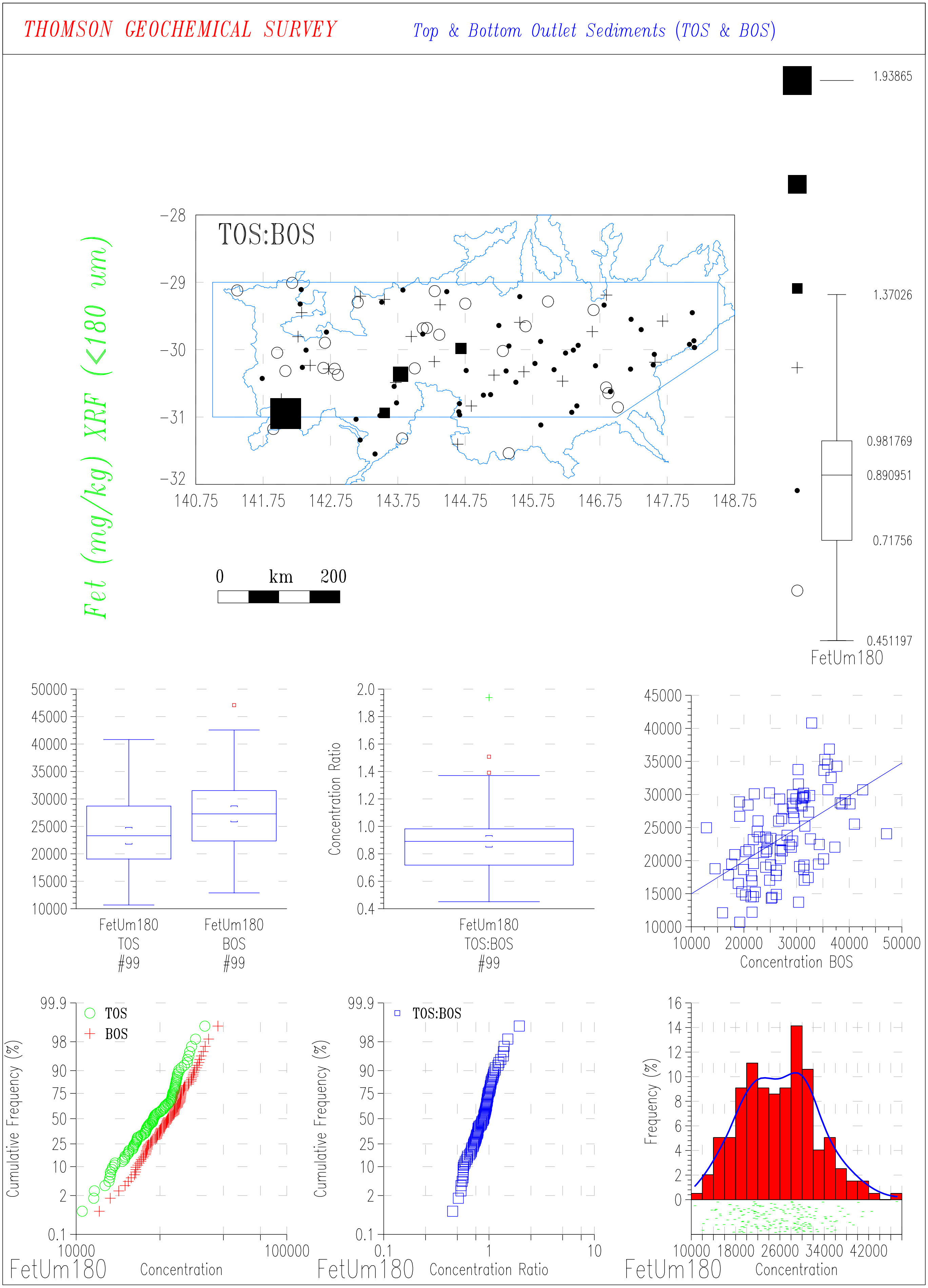
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
F ISE (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
FI75180 TOS #88
FI75180 BOS #88
<180
<180
<75
<75
Concentration
FIm180 TOS #89
FIm180 BOS #89
FIm75 TOS #88
FIm75 BOS #88
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
FI75180
Concentration Ratio

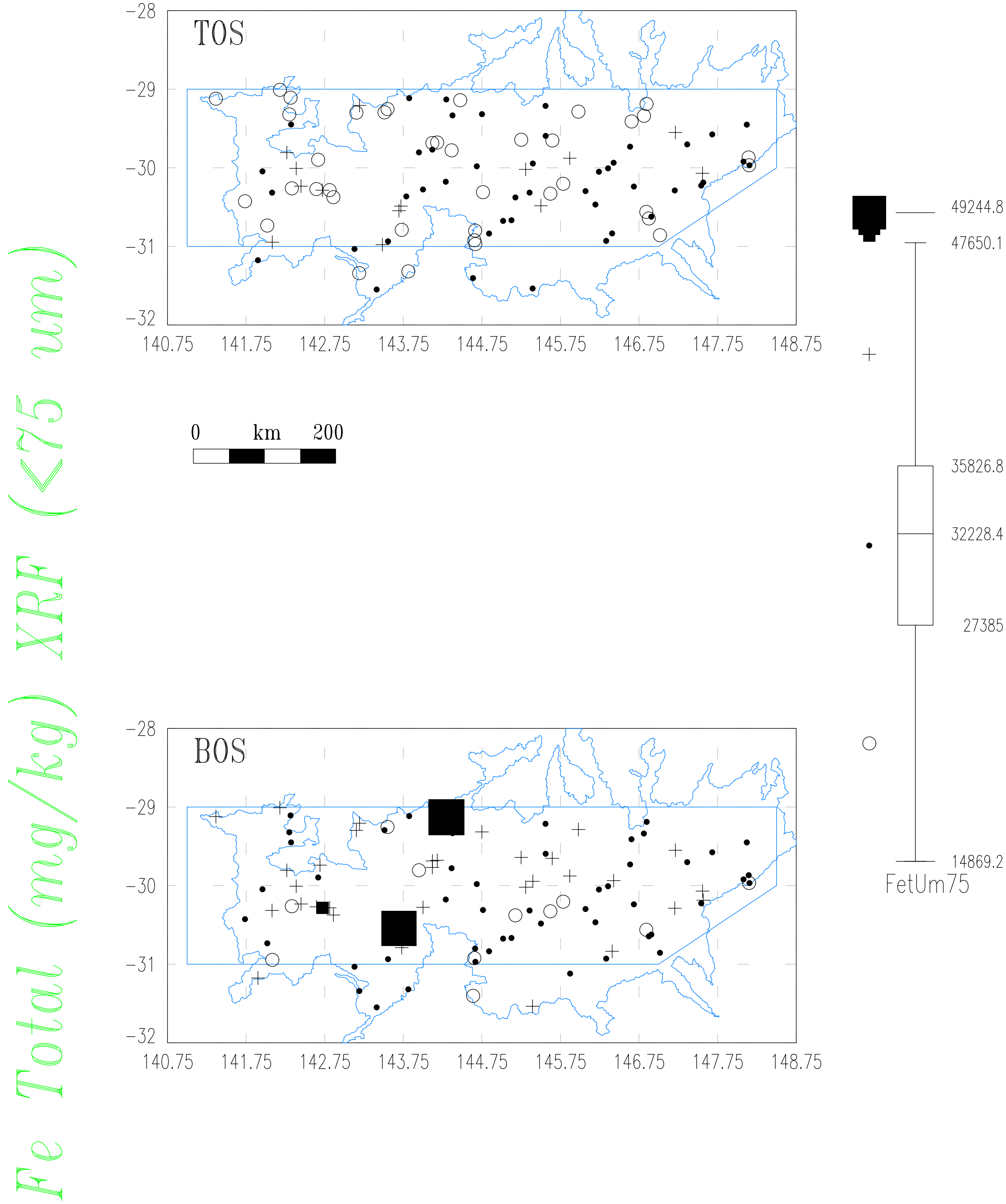
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

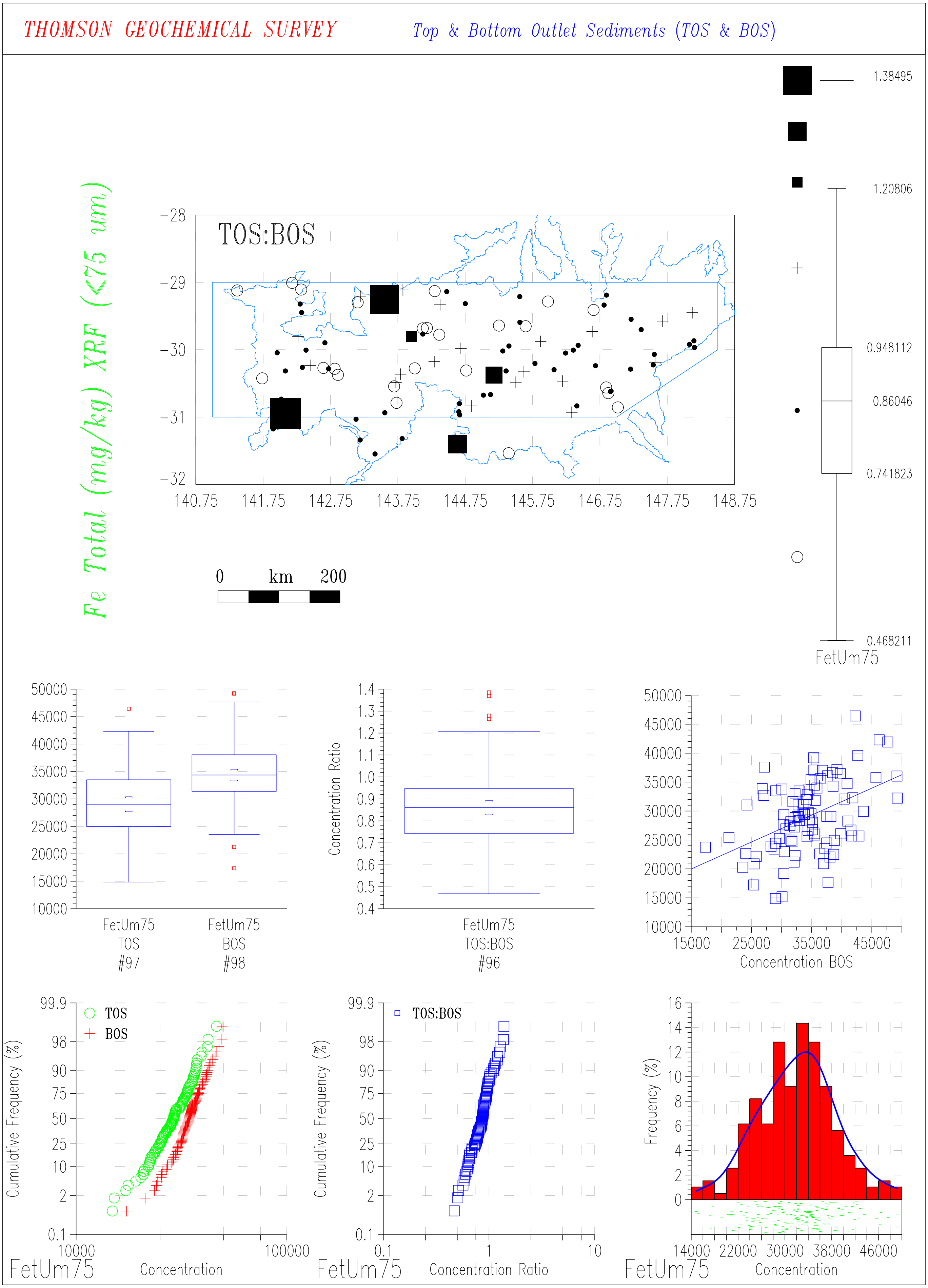



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Fet (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
1.93865
1.37026
0.981769
0.890951
0.71756
0.451197
FetUm180
FetUm180 TOS #99
FetUm180 BOS #99
Concentration Ratio
FetUm180 TOS:BOS #99
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
FetUm180 Concentration
TOS:BOS
FetUm180 Concentration Ratio
Frequency (%)
FetUm180 Concentration

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

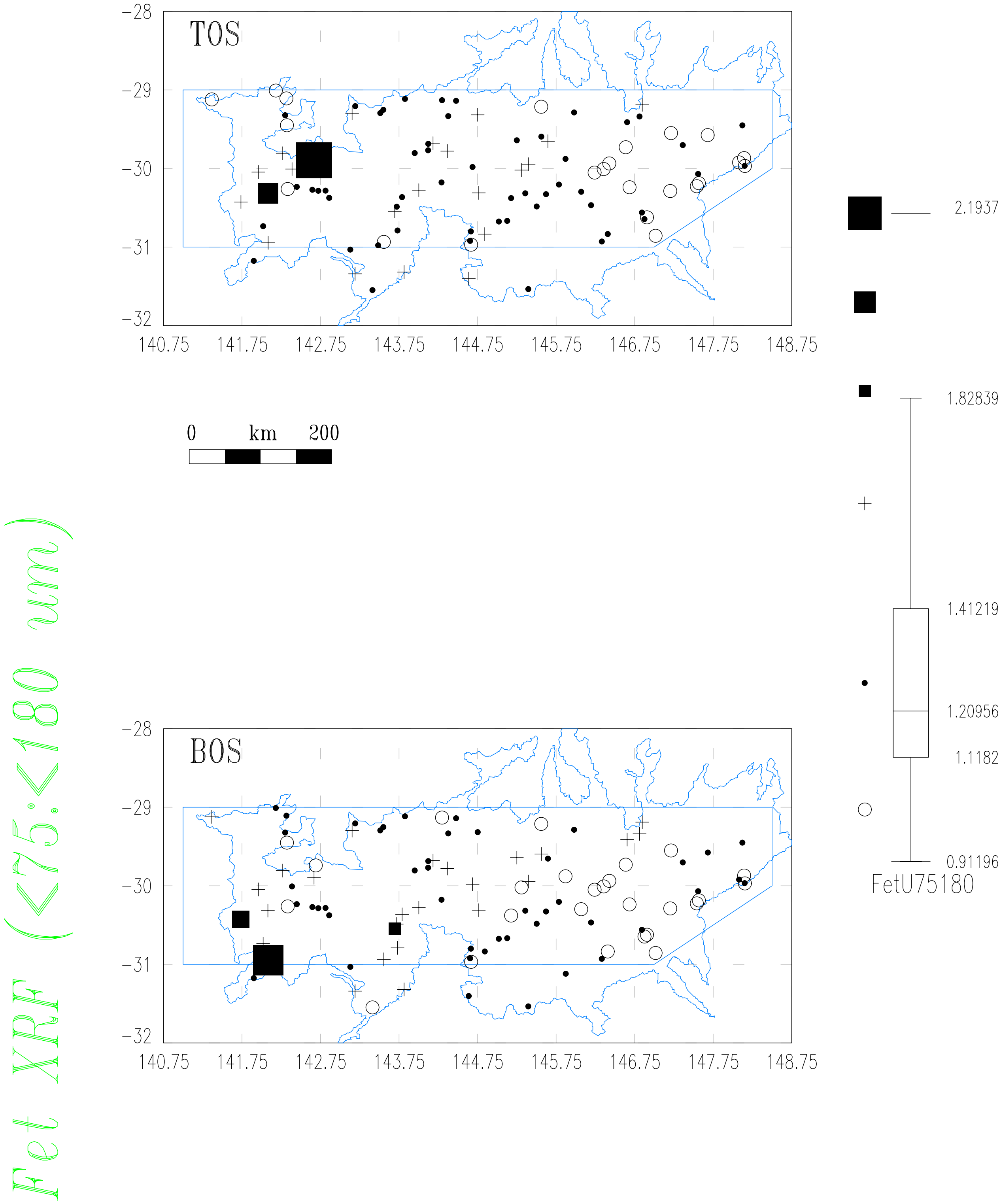




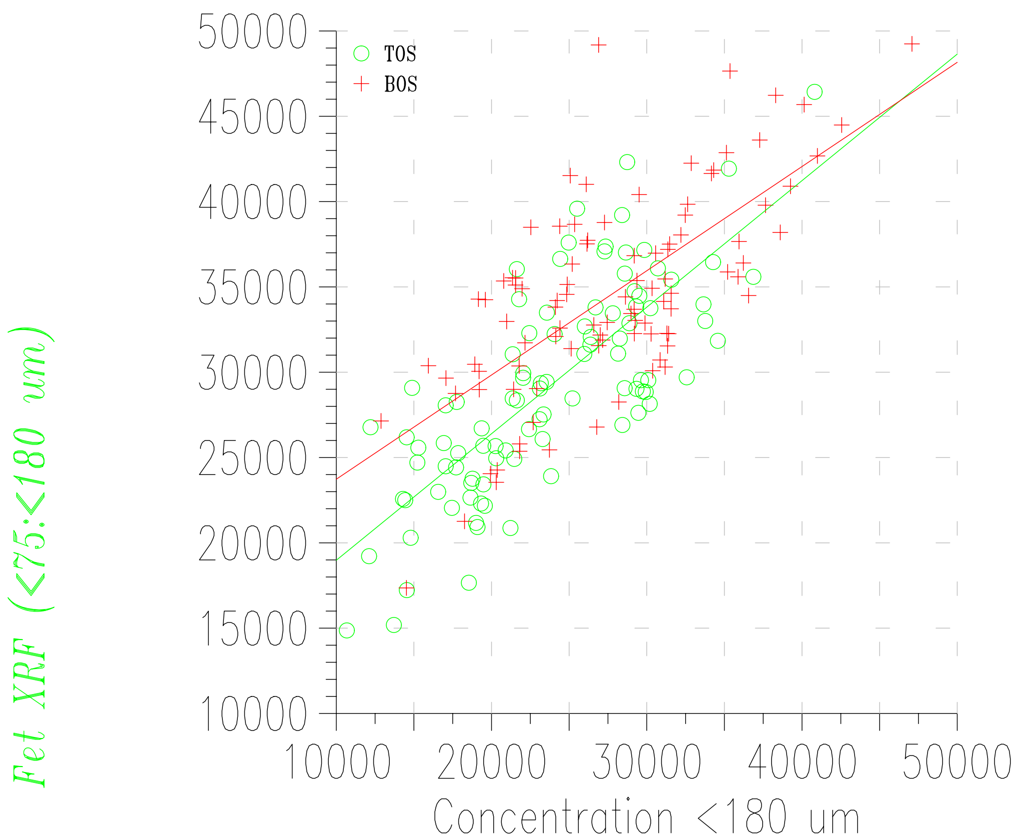
THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Fe Total (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.38495
1.20806
0.948112
0.86046
0.741823
0.468211
FetUm75
FetUm75 TOS #97
FetUm75 BOS #98
Concentration Ratio
FetUm75 TOS:BOS #96
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Concentration
Concentration Ratio
Frequency (%)

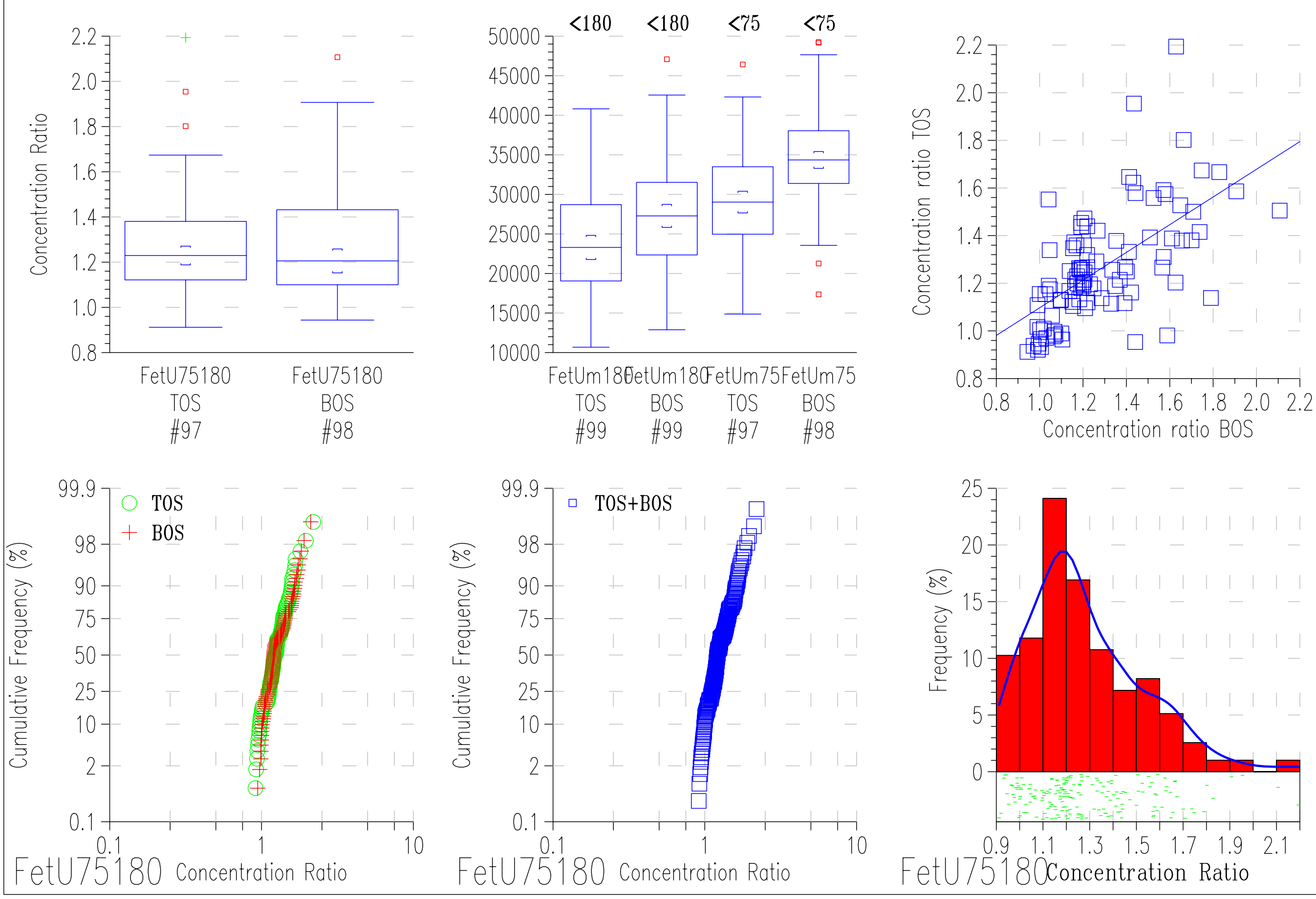
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

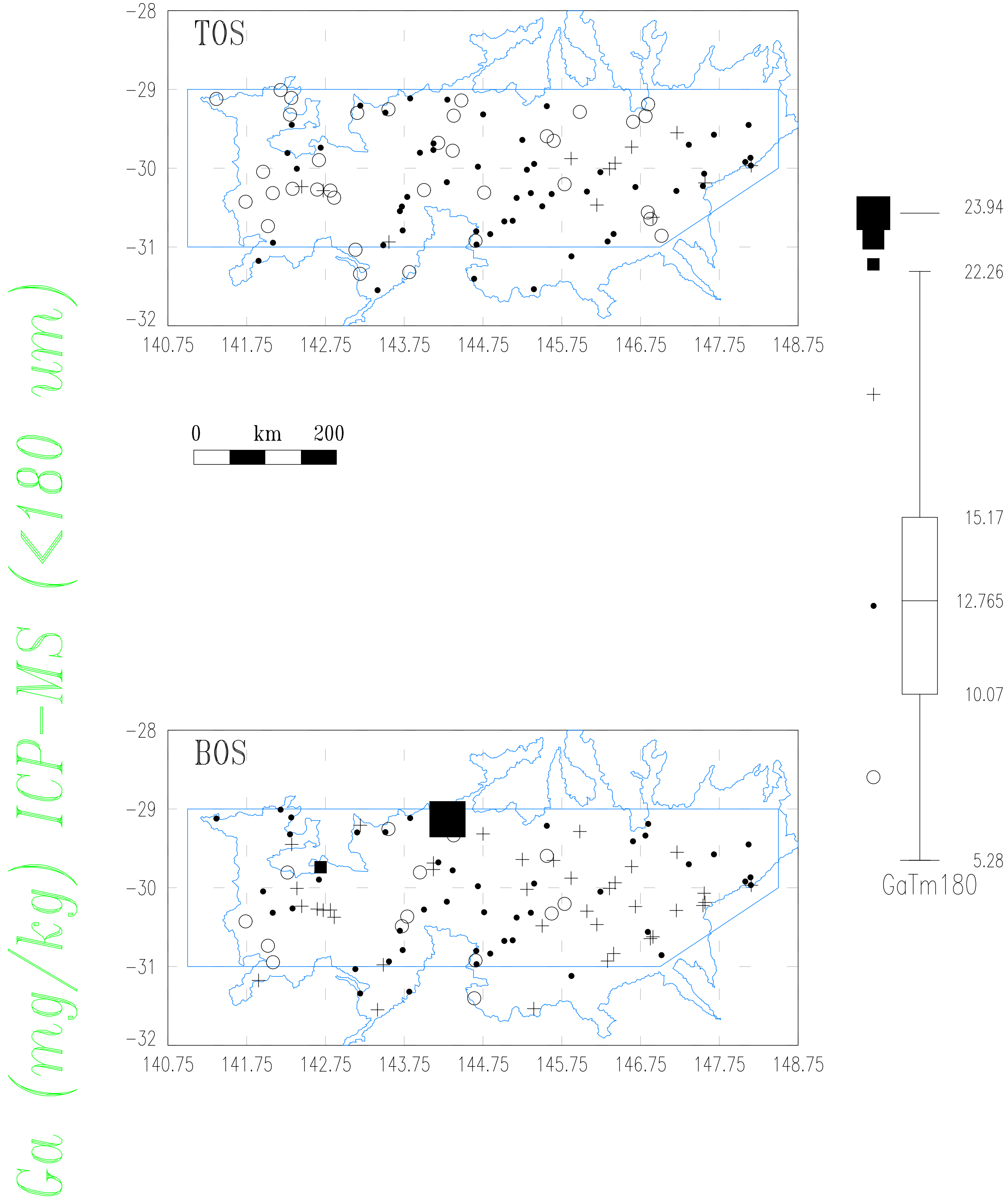


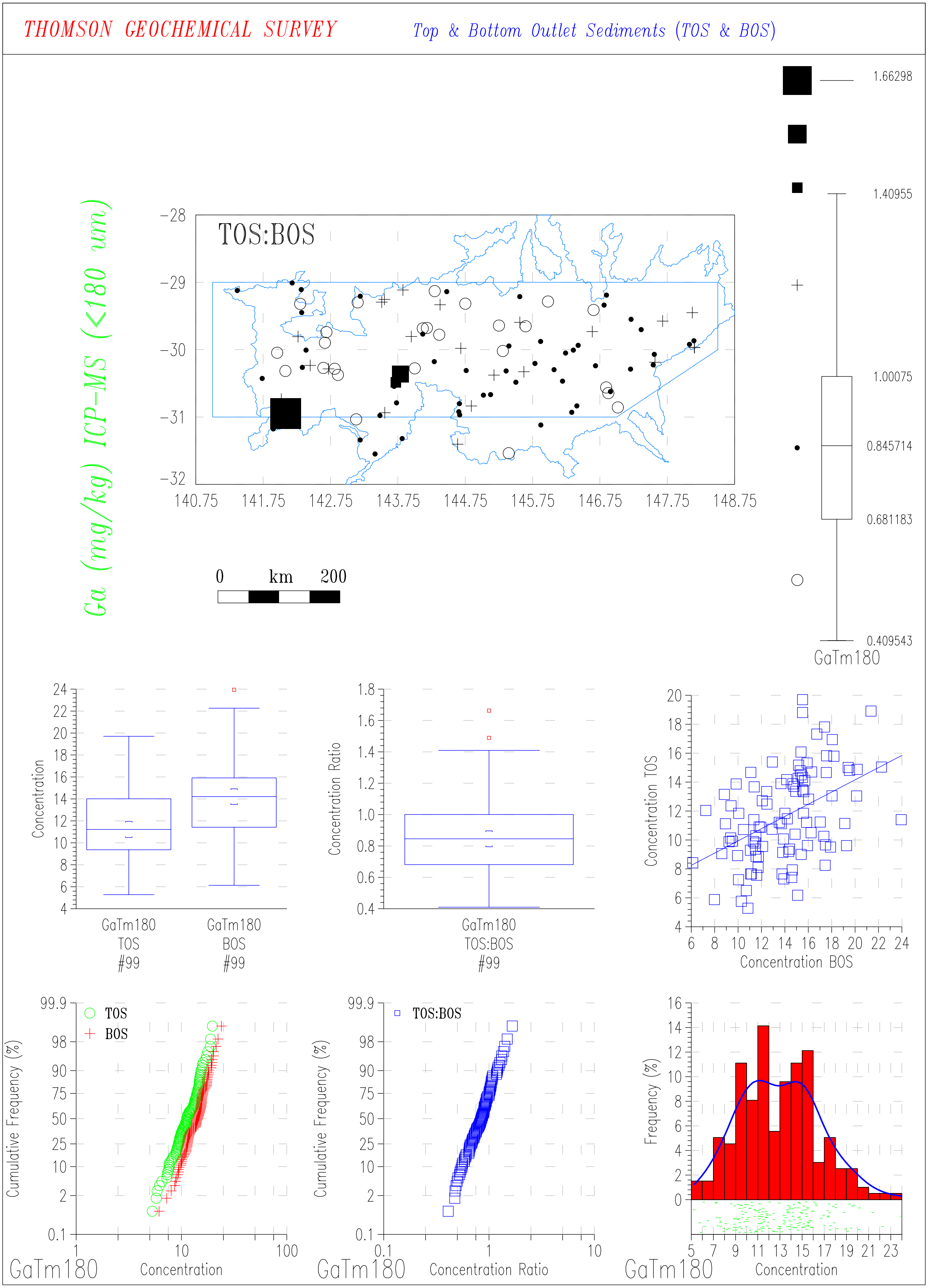
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)





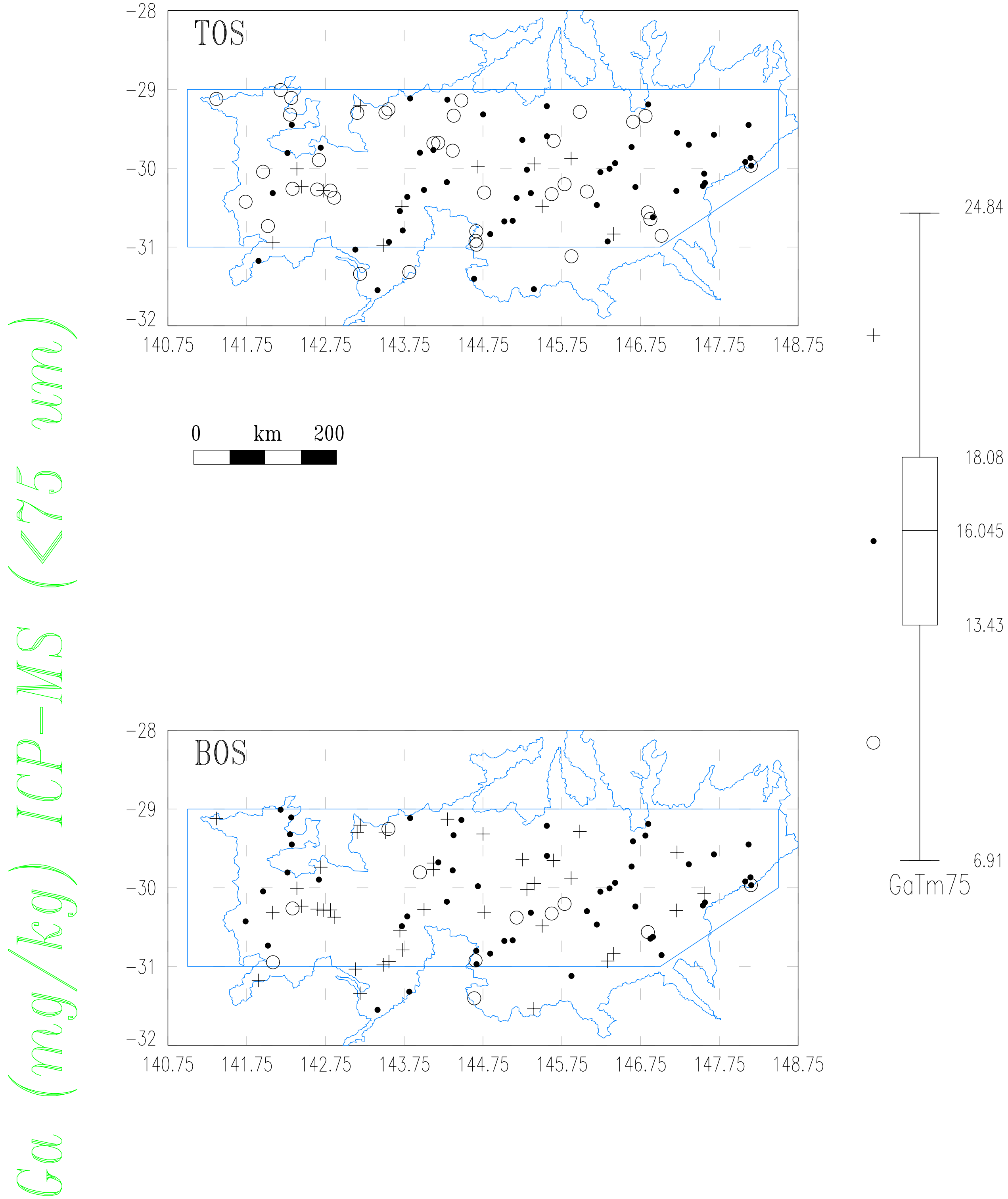
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

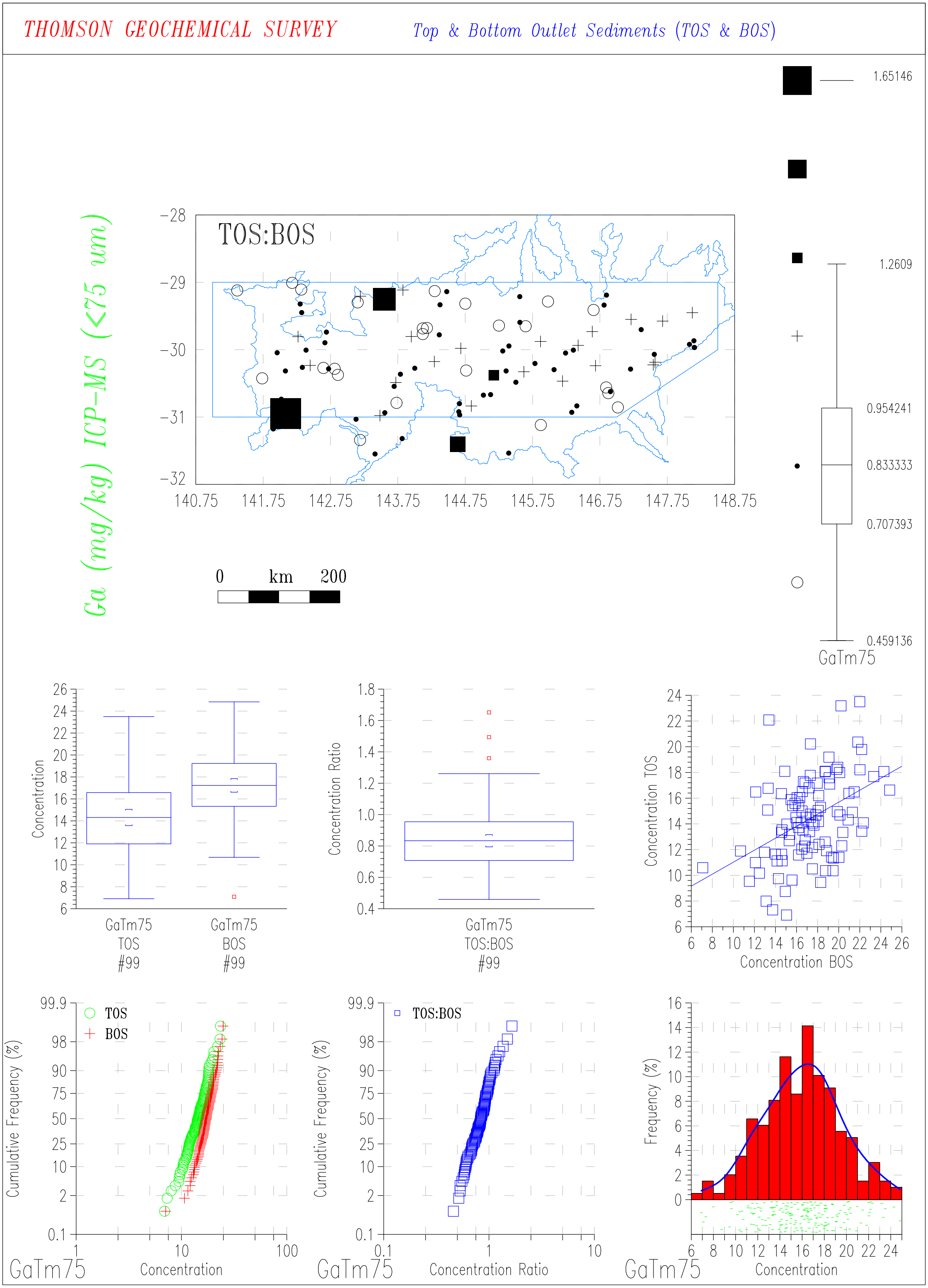




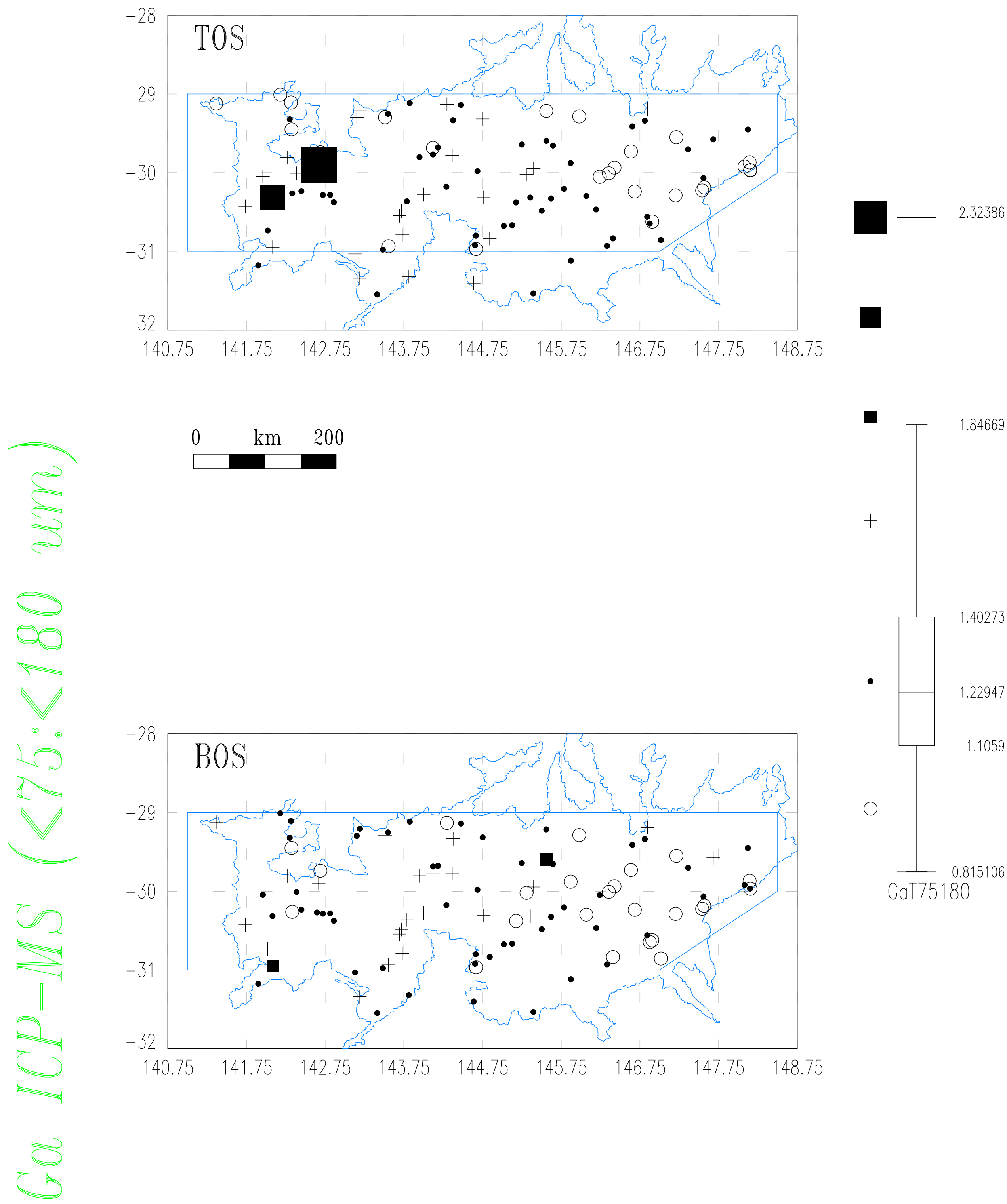
THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ga (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.66298
1.40955
1.00075
0.845714
0.681183
0.409543
GaTm180
Concentration
GaTm180 TOS #99
GaTm180 BOS #99
Concentration Ratio
GaTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
GaTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



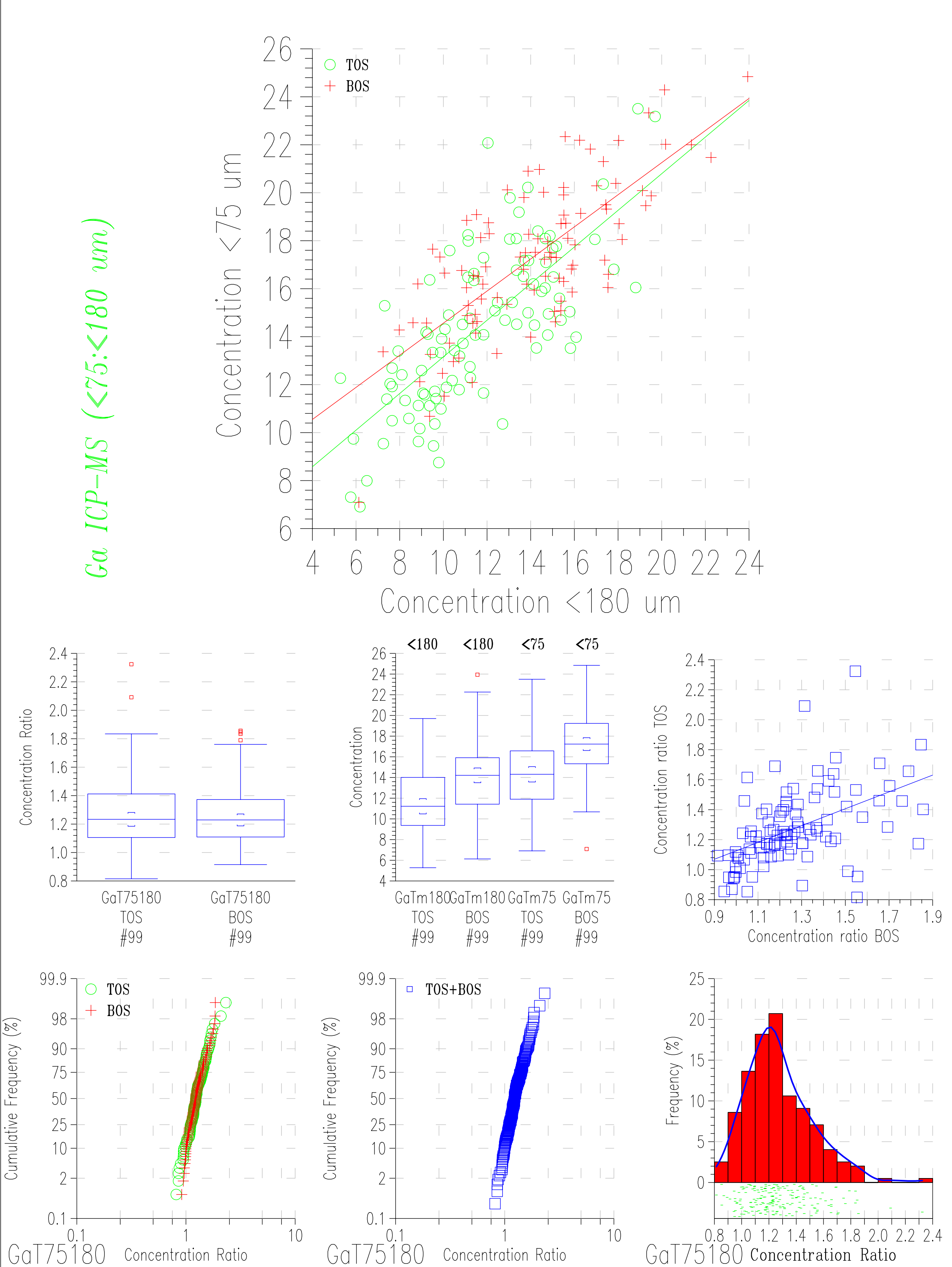

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ga (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.65146
1.2609
0.954241
0.833333
0.707393
0.459136
GaTm75
Concentration
GaTm75 TOS #99
GaTm75 BOS #99
Concentration Ratio
GaTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
GaTm75
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



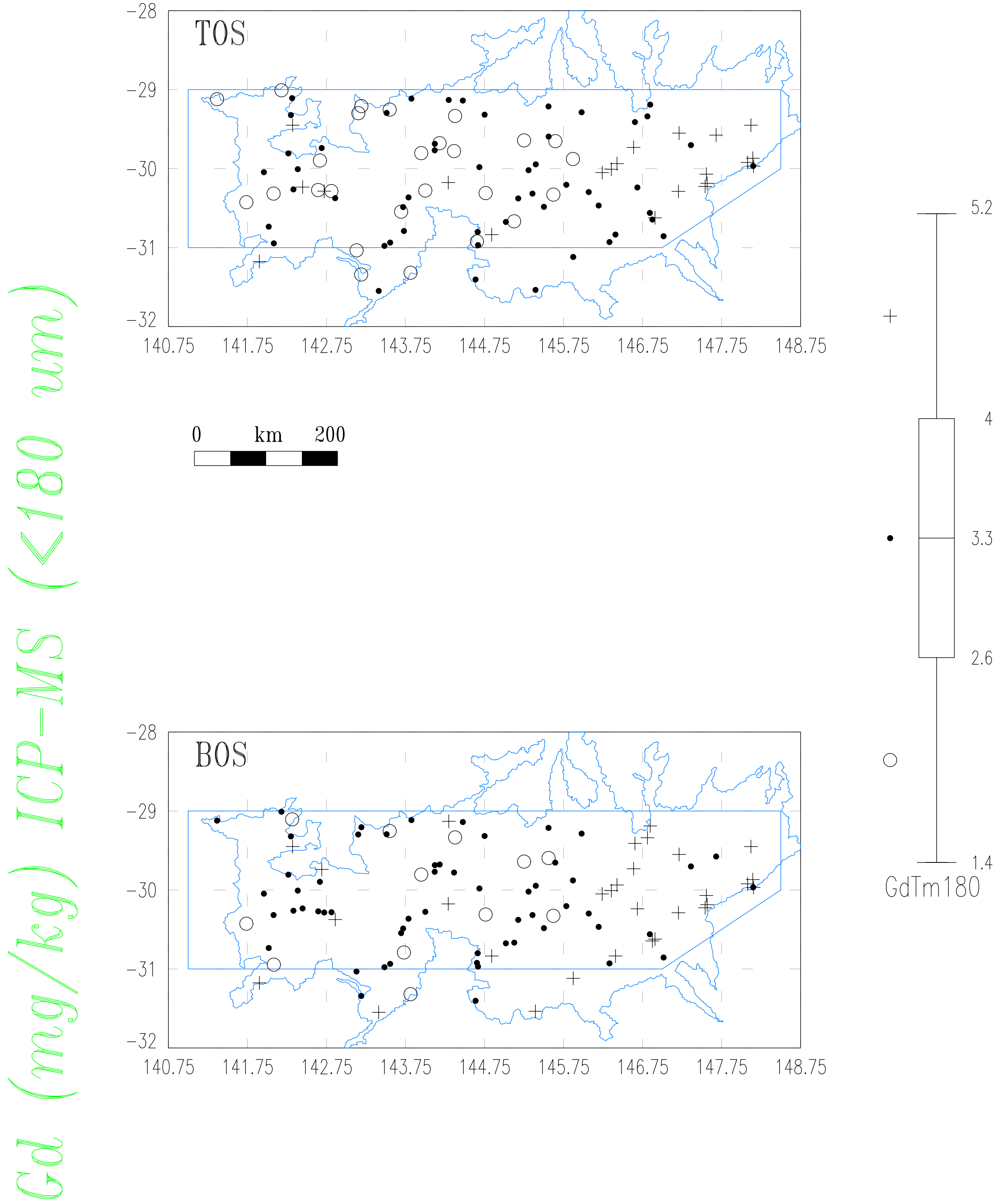
THOMSON GEOCHEMICAL SURVEY

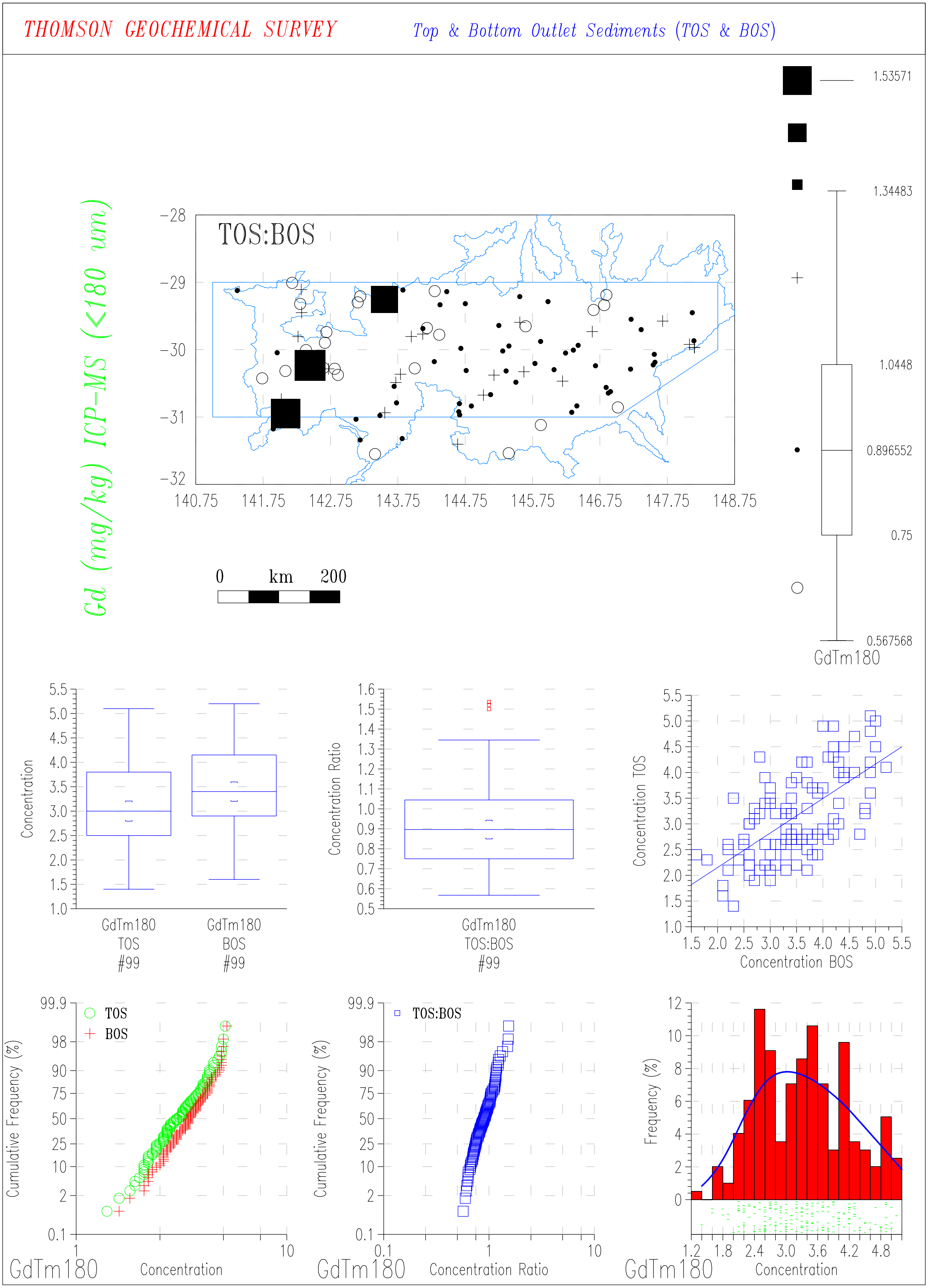
Top & Bottom Outlet Sediments (TOS & BOS)



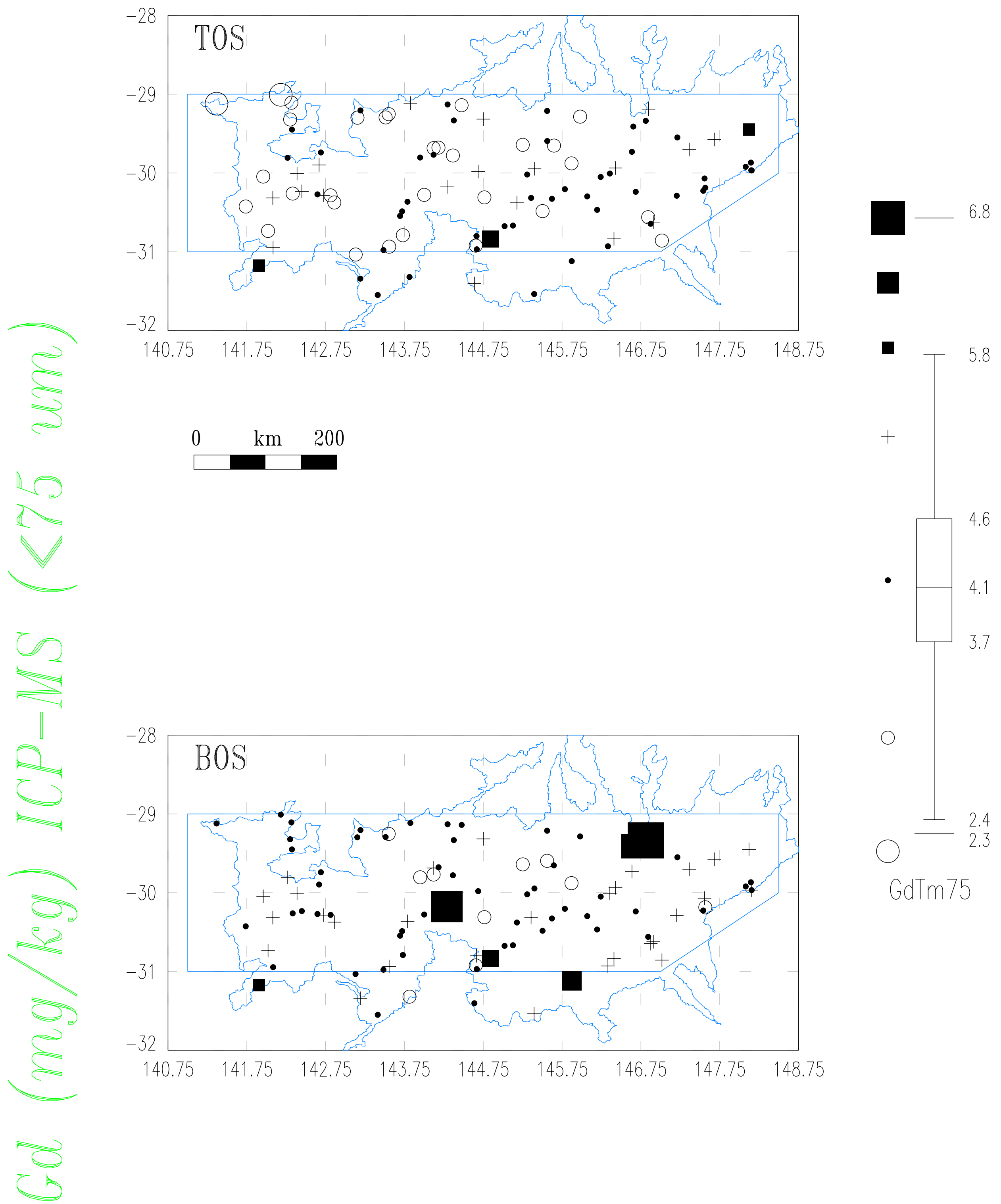
THOMSON GEOCHEMICAL SURVEY

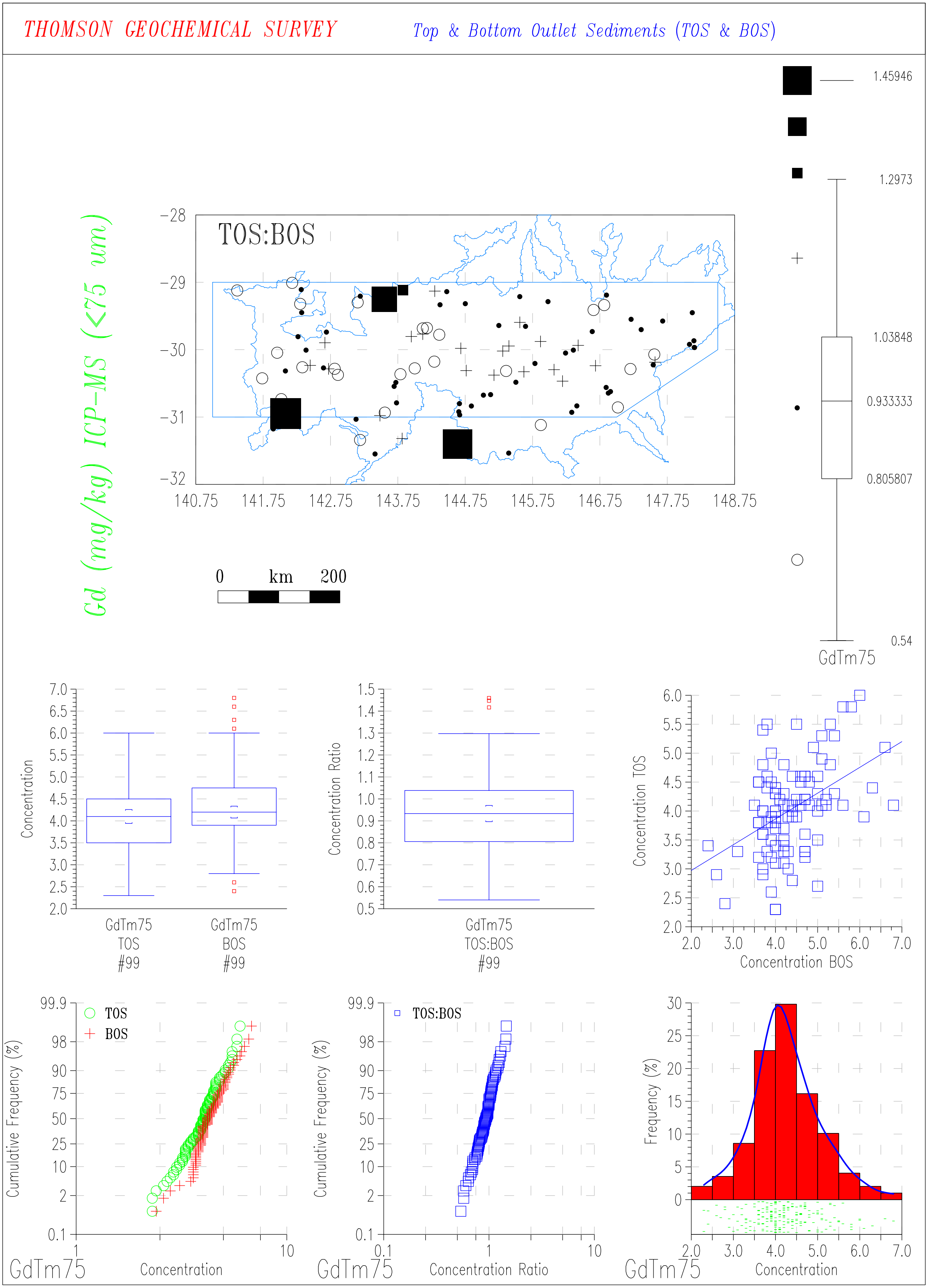
Top & Bottom Outlet Sediments (TOS & BOS)



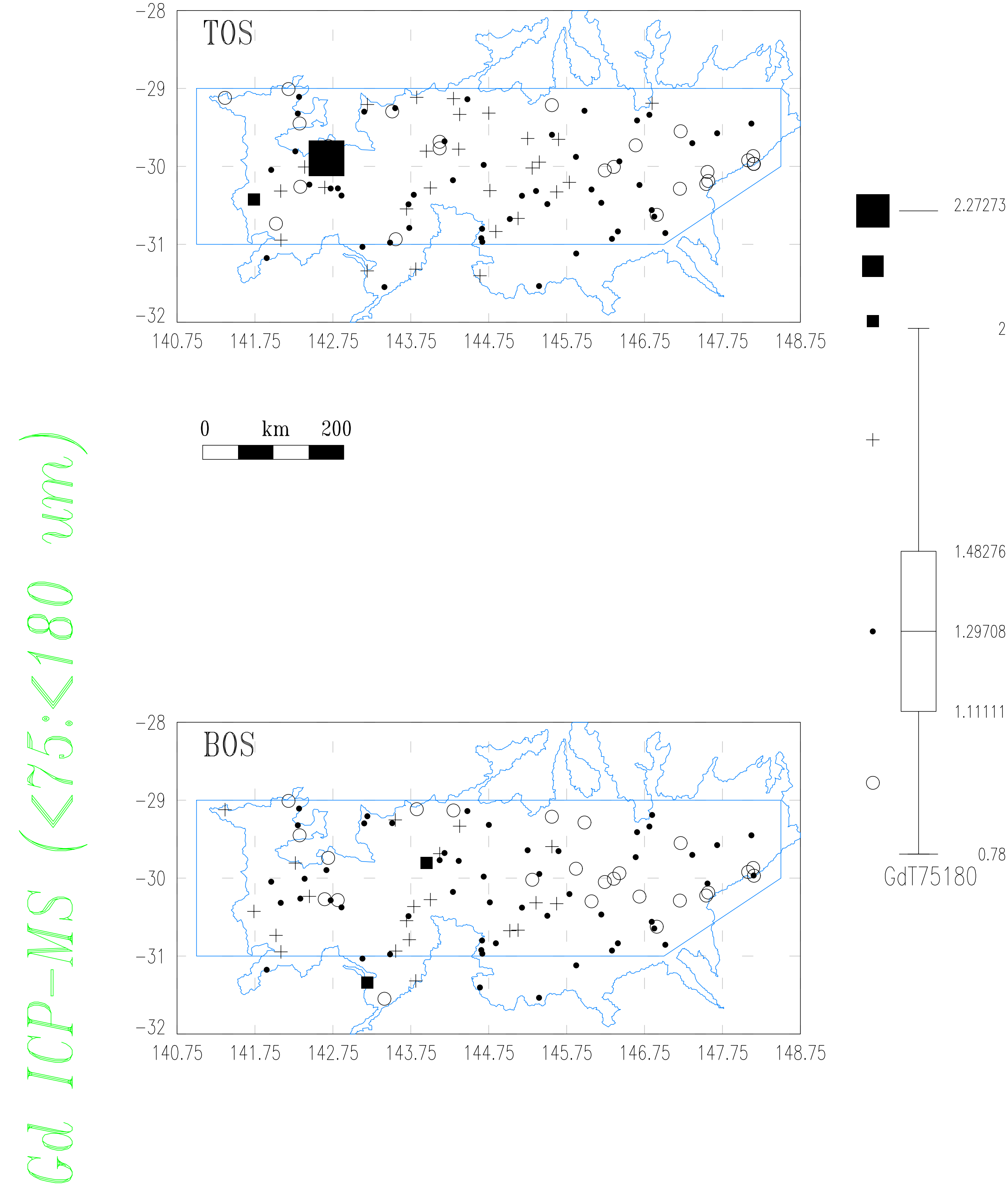

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Gd (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.53571
1.34483
1.0448
0.896552
0.75
0.567568
GdTm180
Concentration
GdTm180 TOS #99
GdTm180 BOS #99
Concentration Ratio
GdTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration Ratio
Frequency (%)

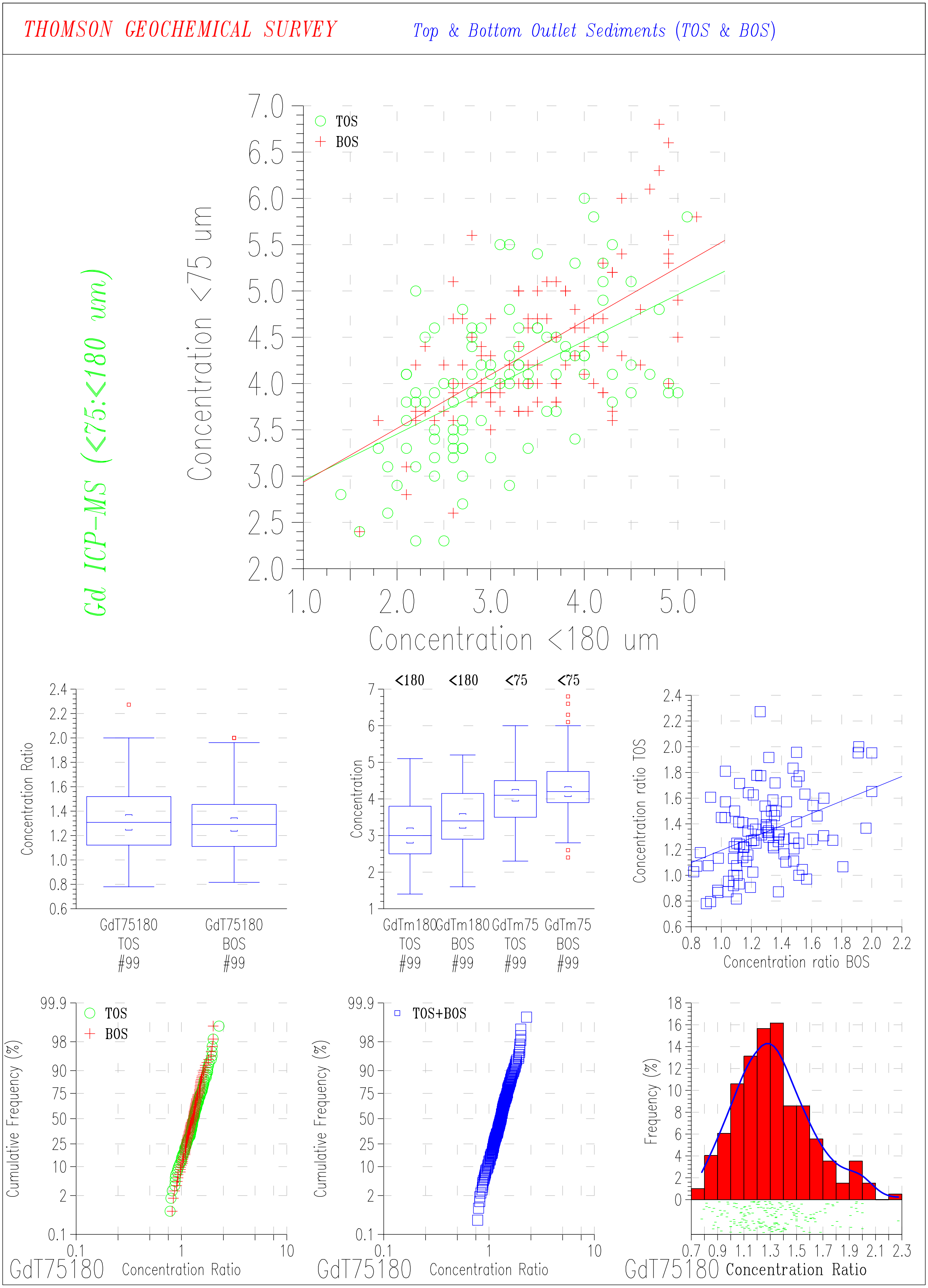
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Gd (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.45946
1.2973
1.03848
0.933333
0.805807
0.54
GdTm75
Concentration
GdTm75 TOS #99
GdTm75 BOS #99
Concentration Ratio
GdTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
GdTm75
TOS:BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   *Top & Bottom Outlet Sediments (TOS & BOS)*

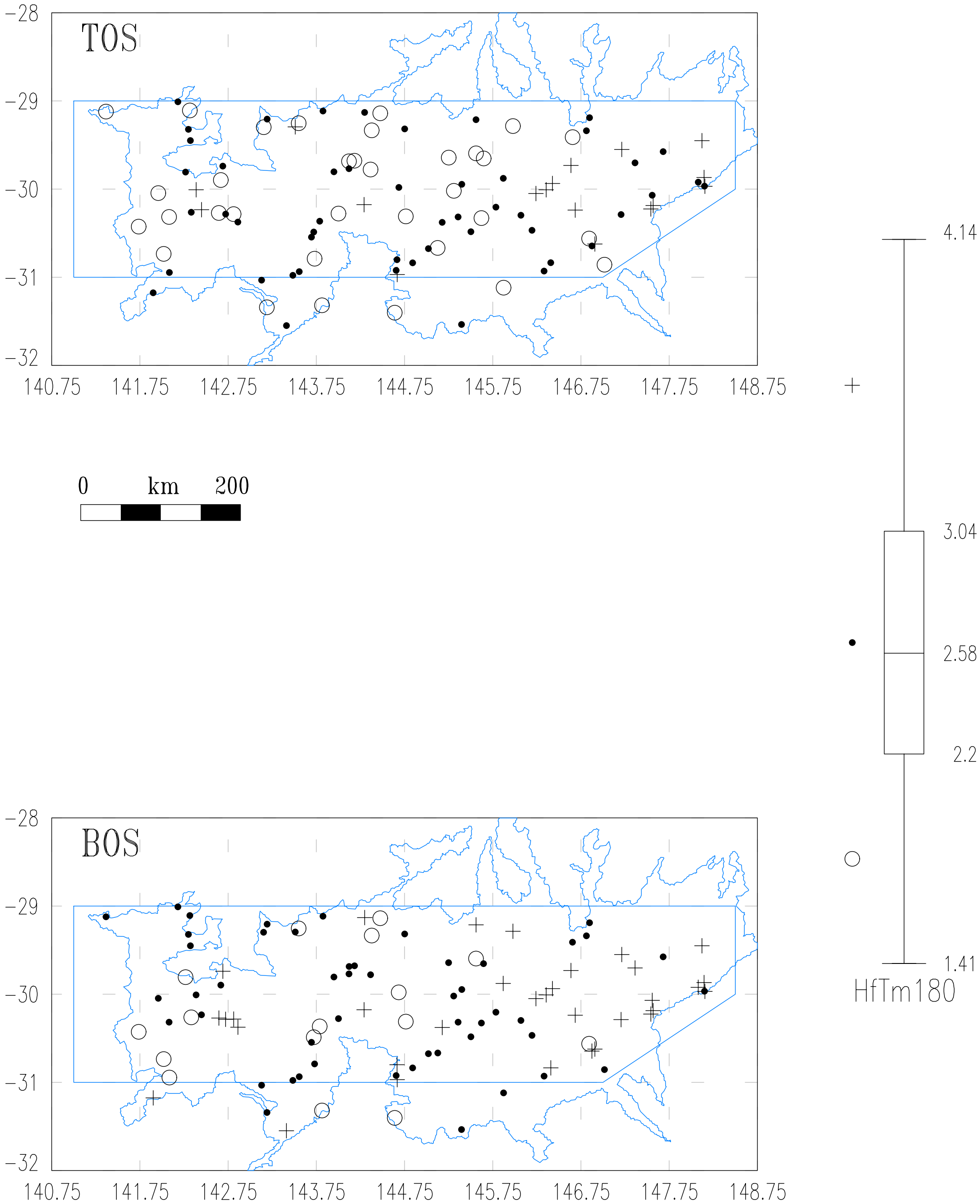


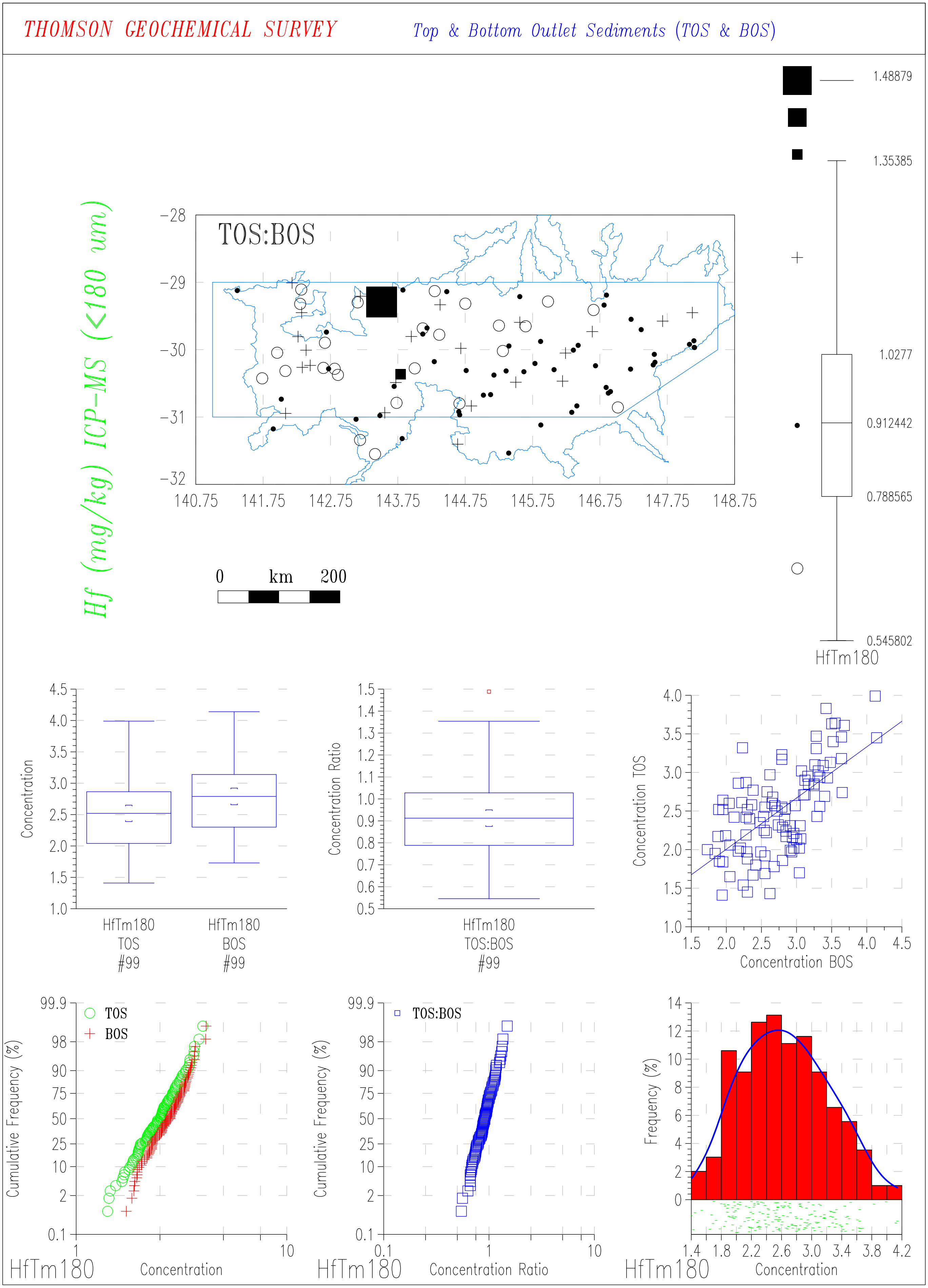

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Gd ICP-MS (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
GdT75180 TOS #99
GdT75180 BOS #99
<180
<180
<75
<75
Concentration
GdTm180 TOS #99
GdTm180 BOS #99
GdTm75 TOS #99
GdTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
GdT75180
TOS+BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

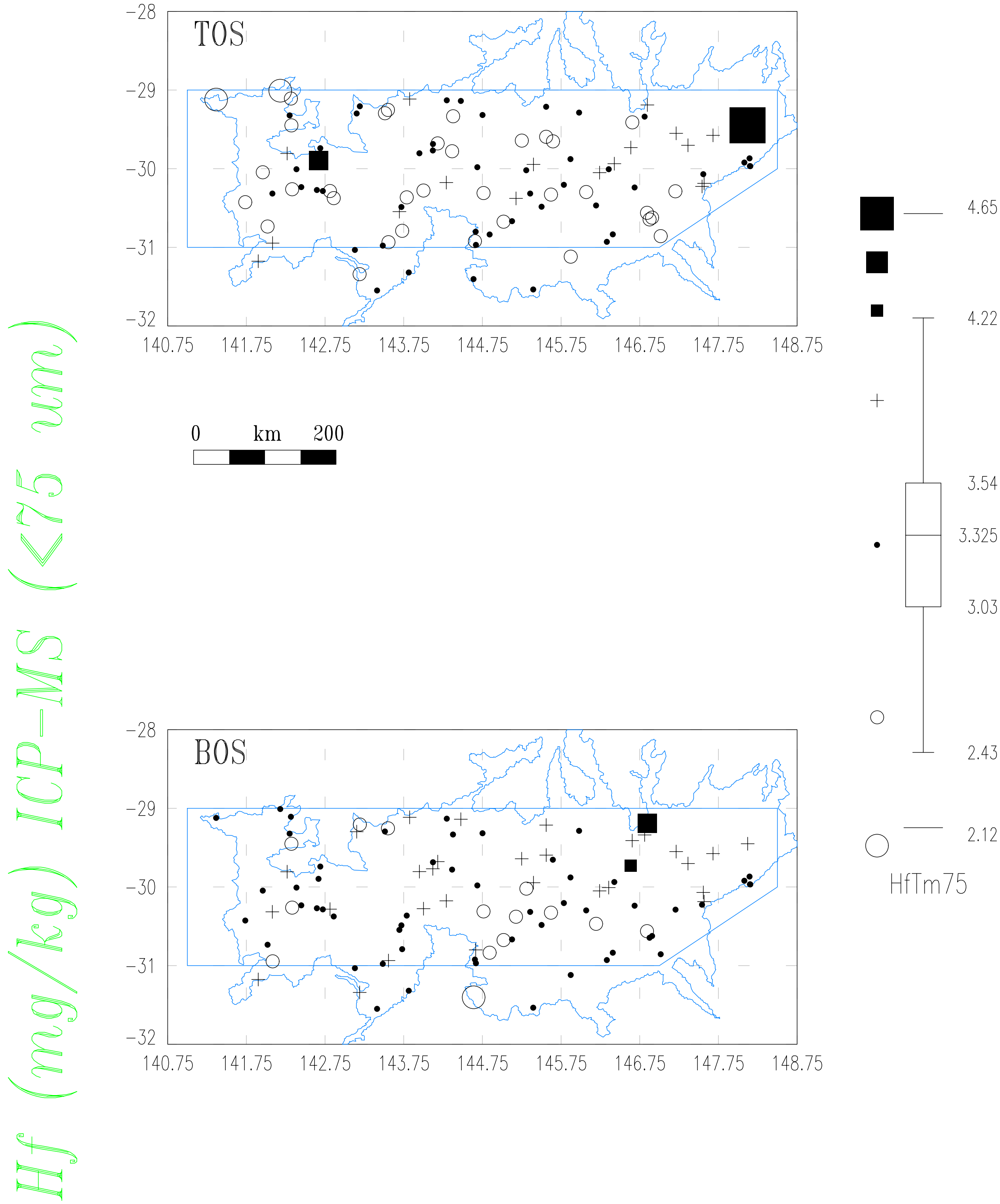
Top & Bottom Outlet Sediments (TOS & BOS)

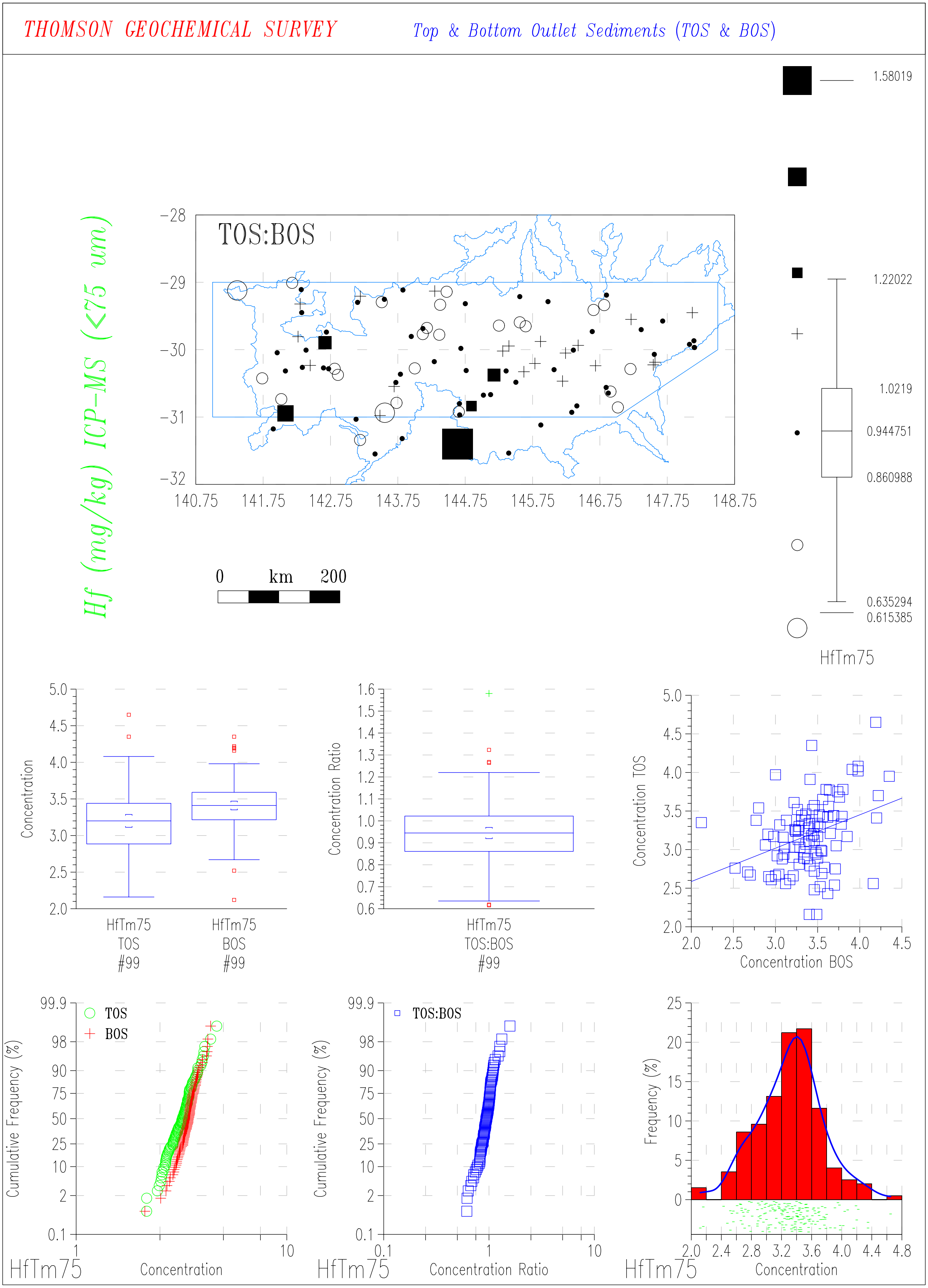
Hf (mg/kg) ICP-MS (<180 um)



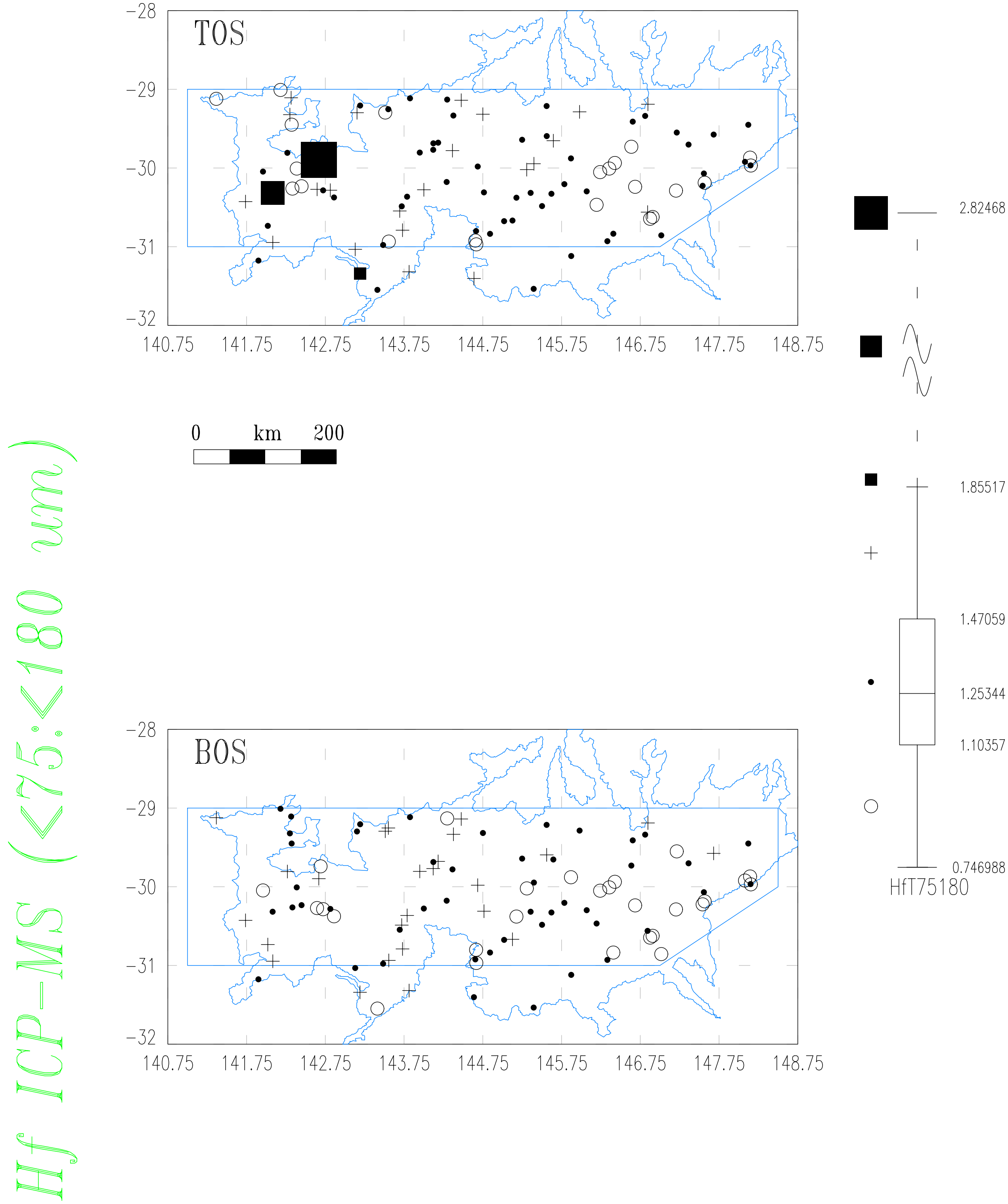

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Hf (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.48879
1.35385
1.0277
0.912442
0.788565
0.545802
HfTm180
Concentration
HfTm180 TOS #99
HfTm180 BOS #99
Concentration Ratio
HfTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
HfTm180 Concentration
HfTm180 Concentration Ratio
HfTm180 Concentration

THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

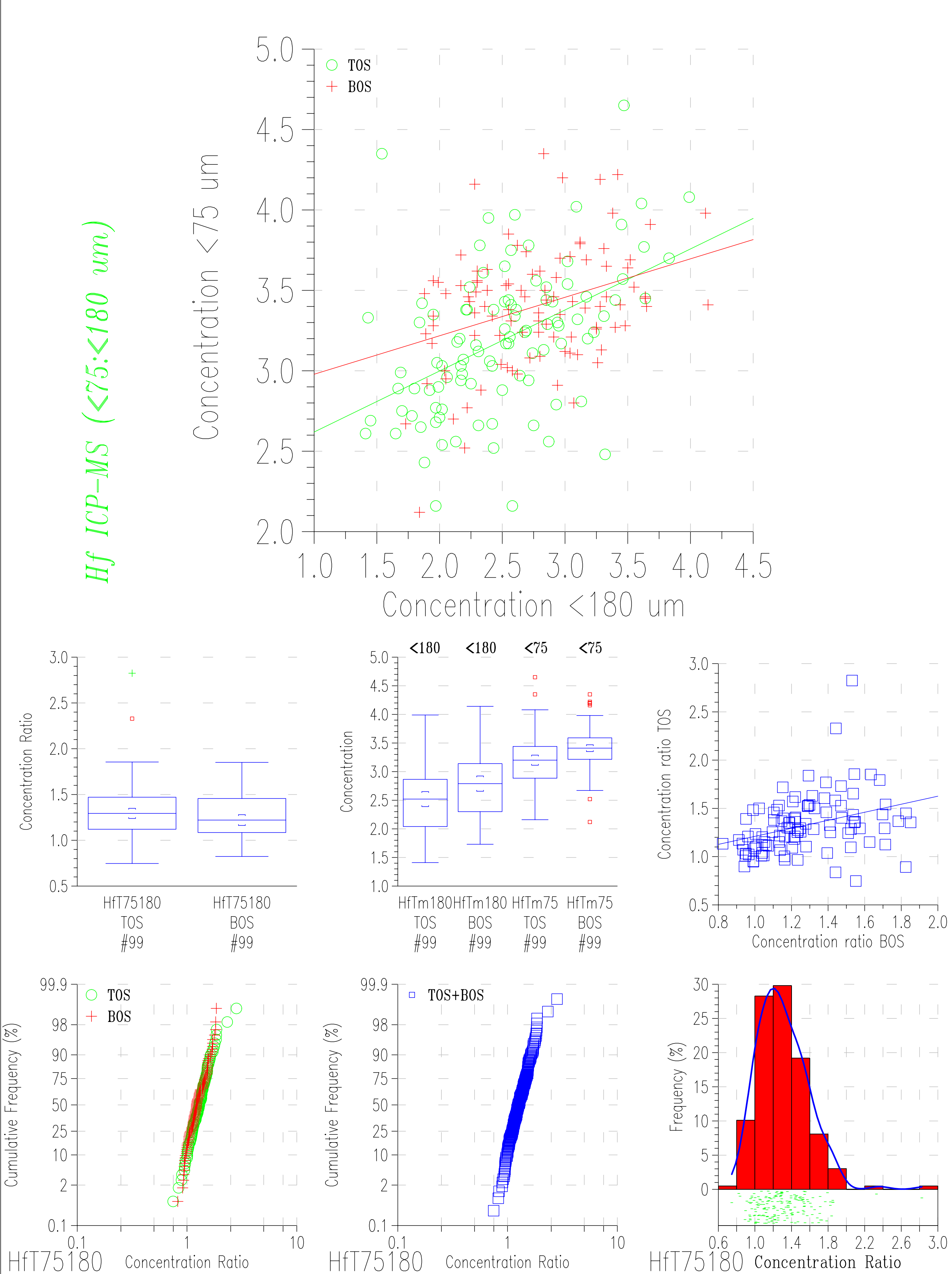


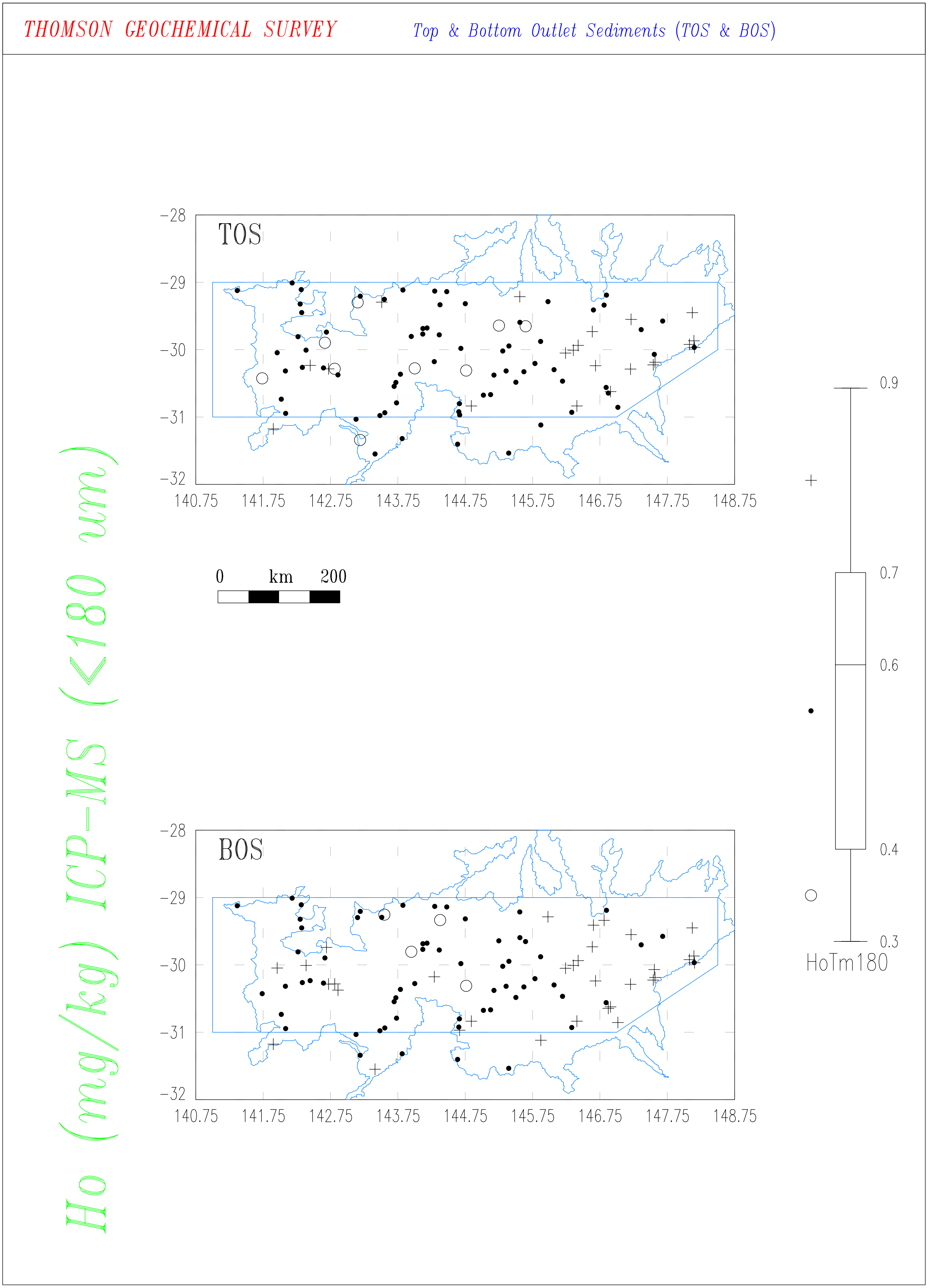

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Hf (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.58019
1.22022
1.0219
0.944751
0.860988
0.635294
0.615385
HfTm75
Concentration
HfTm75 TOS #99
HfTm75 BOS #99
Concentration Ratio
HfTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
Concentration Ratio

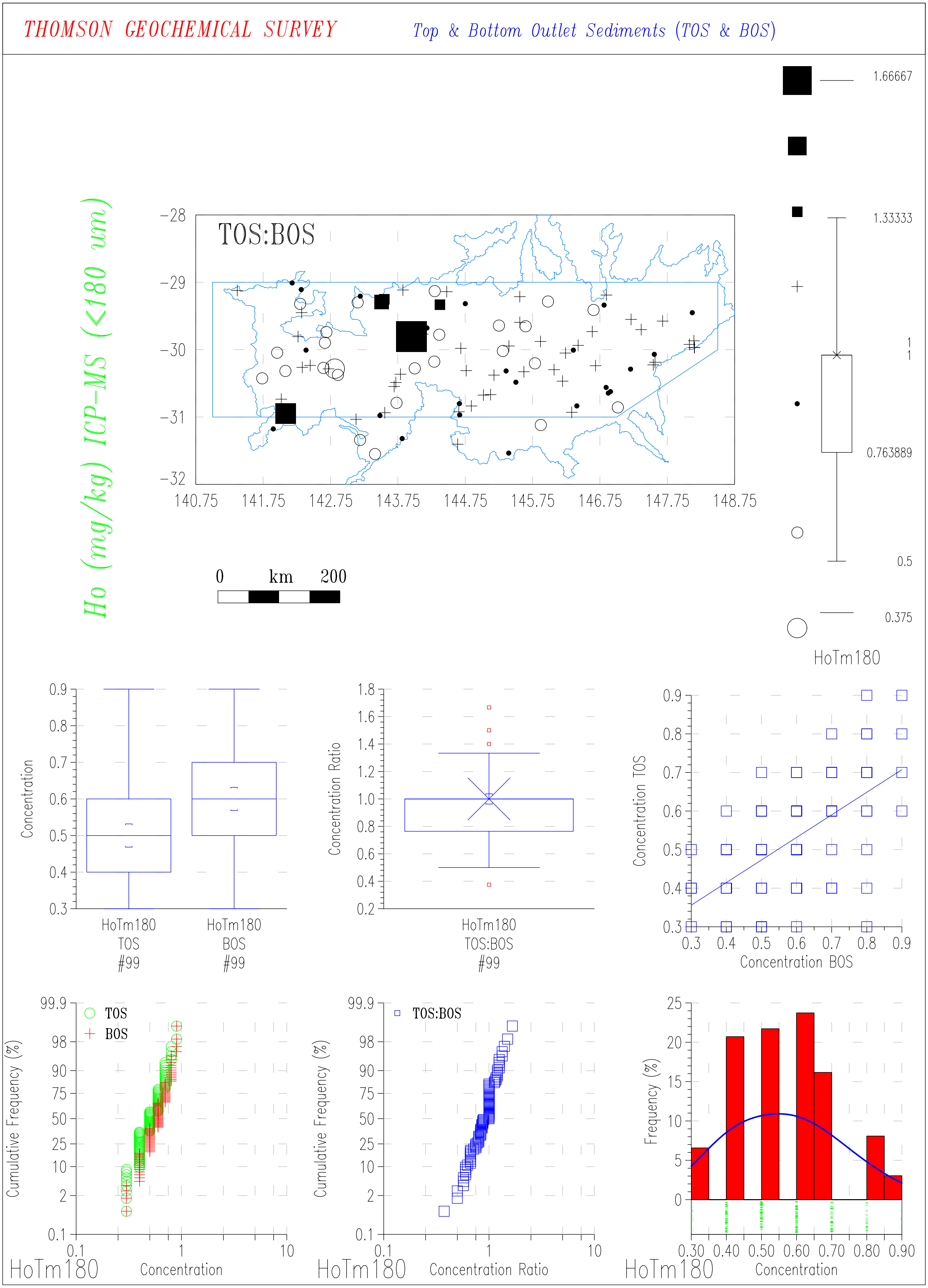
THOMSON GEOCHEMICAL SURVEY   *Top & Bottom Outlet Sediments (TOS & BOS)*



THOMSON GEOCHEMICAL SURVEY   *Top & Bottom Outlet Sediments (TOS & BOS)*

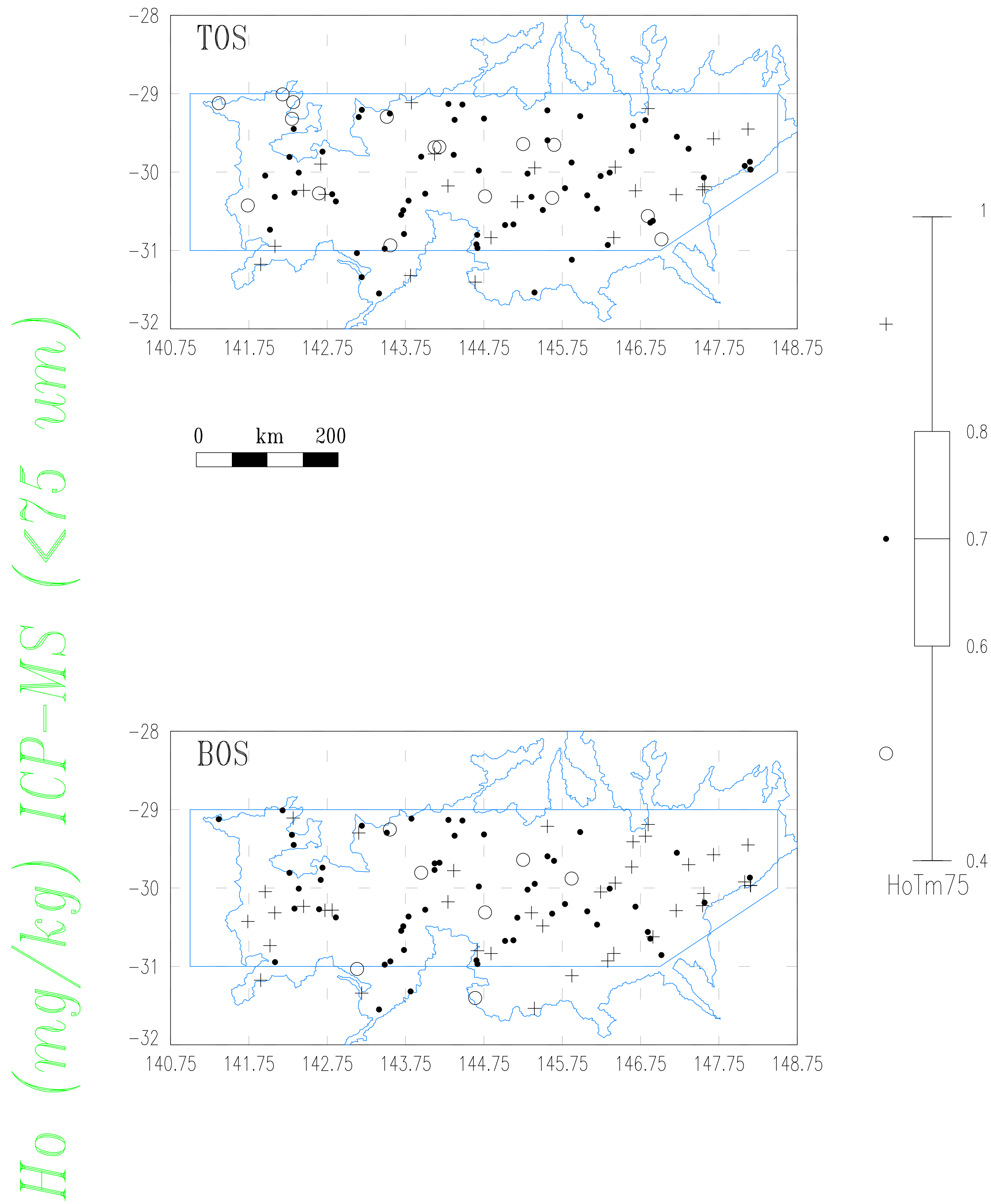


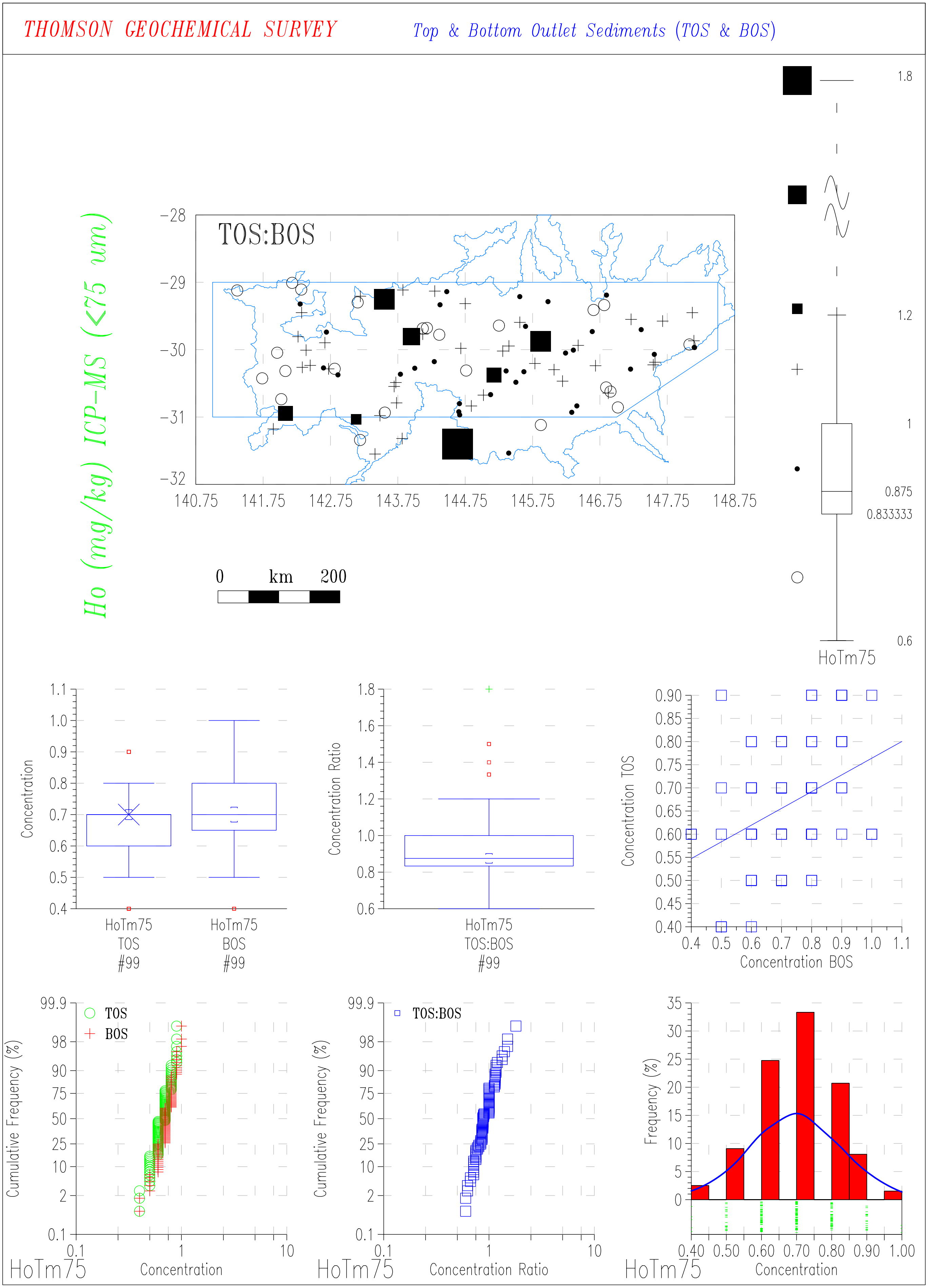

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ho (mg/kg) ICP-MS (<180 um)
TOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0.9
0.7
0.6
0.4
0.3
HoTm180


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ho (mg/kg) ICP-MS (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.66667
1.33333
1
1
0.763889
0.5
0.375
HoTm180
Concentration
HoTm180 TOS #99
HoTm180 BOS #99
Concentration Ratio
HoTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
HoTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

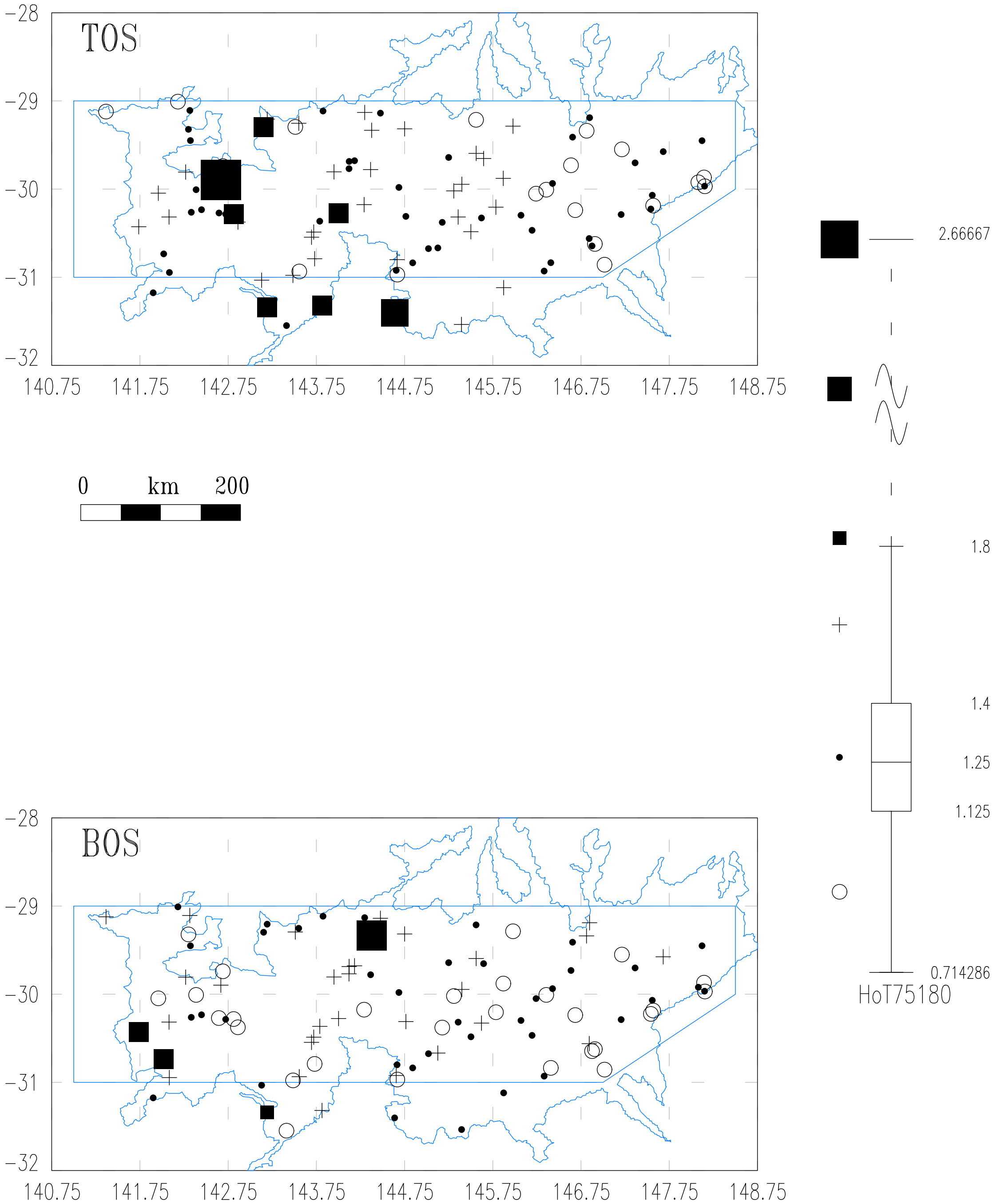
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ho (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.8
1.2
1
0.875
0.833333
0.6
HoTm75
Concentration
HoTm75 TOS #99
HoTm75 BOS #99
Concentration Ratio
HoTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
HoTm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

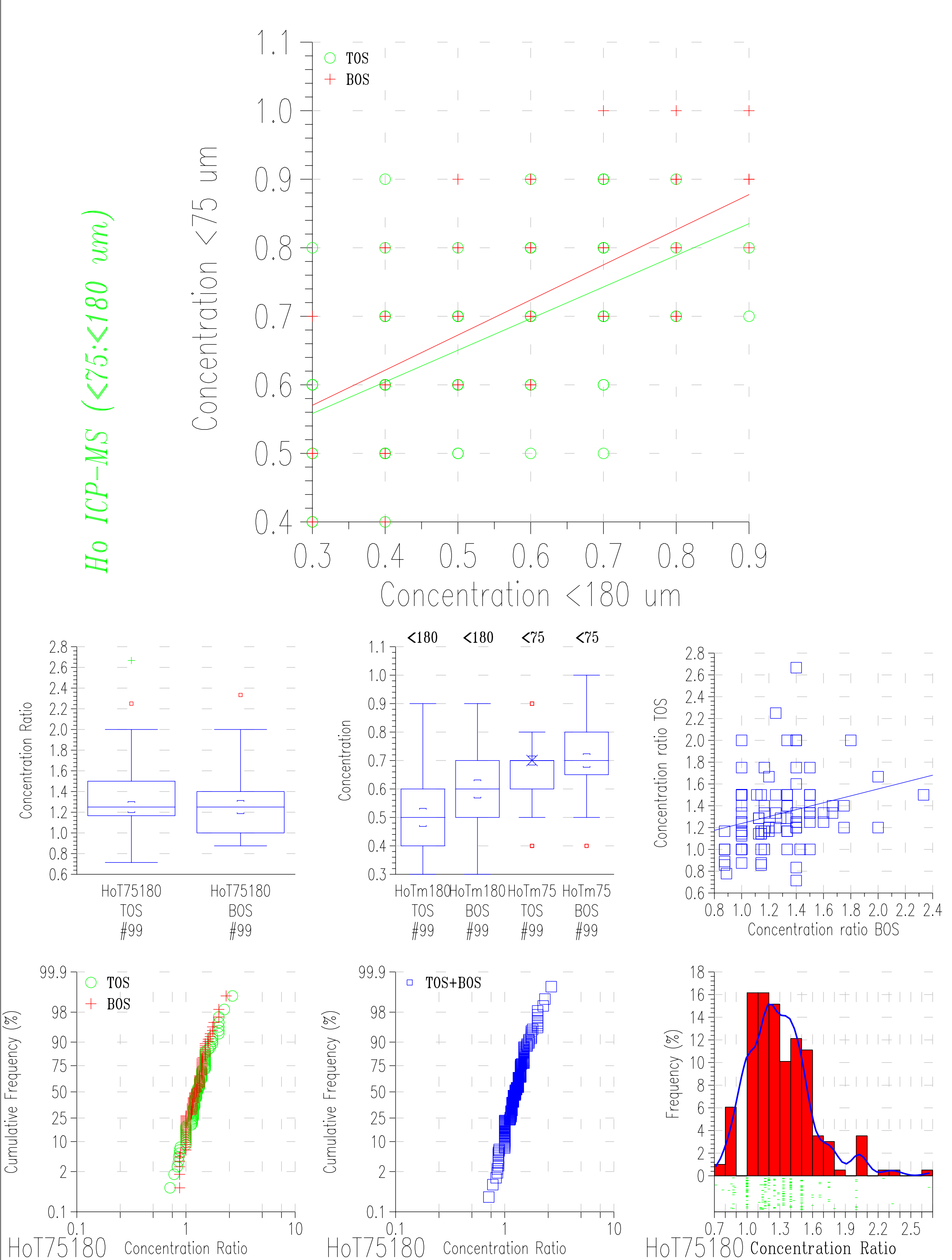
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

Ho ICP-MS (<75:<180 um)

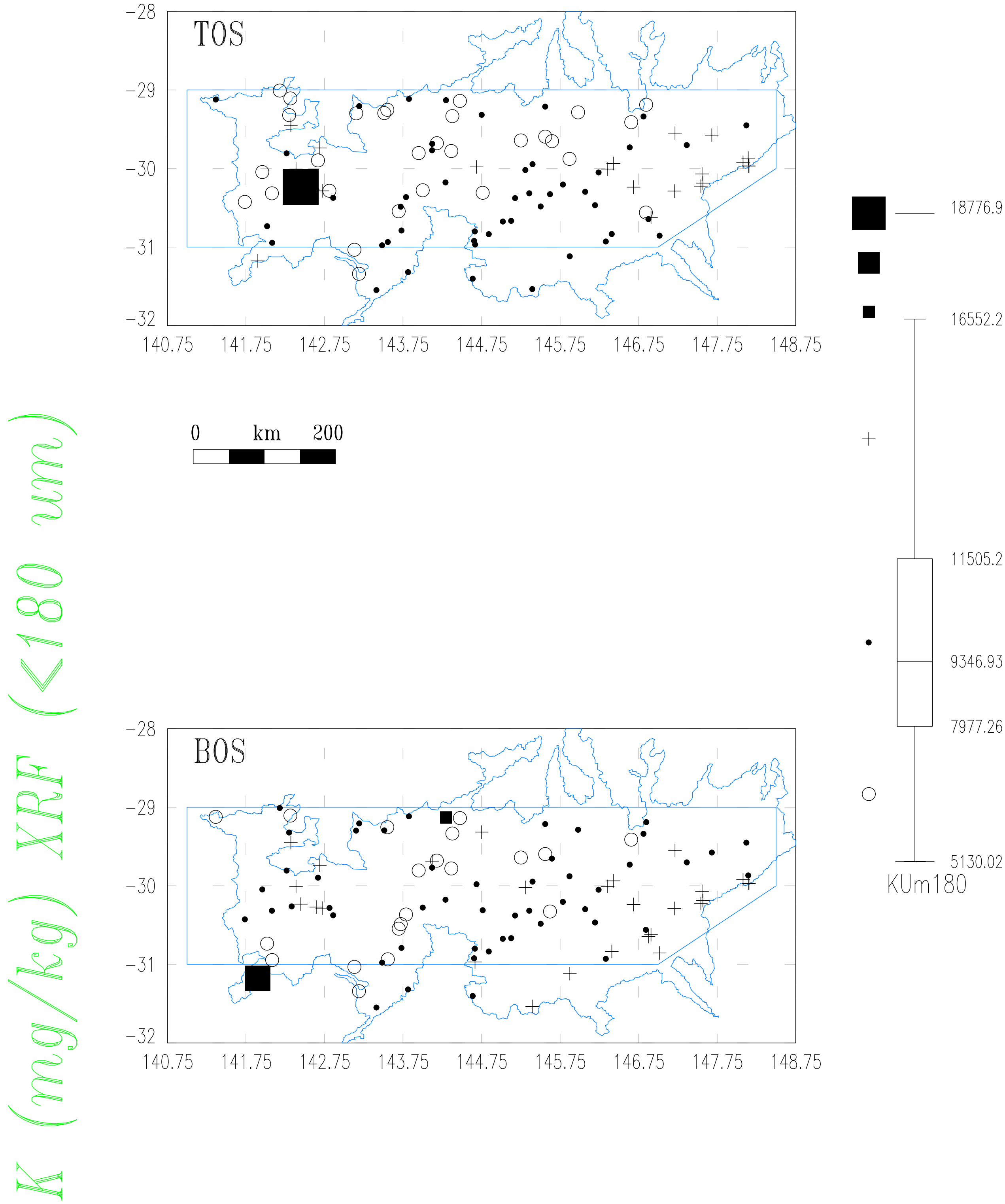


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

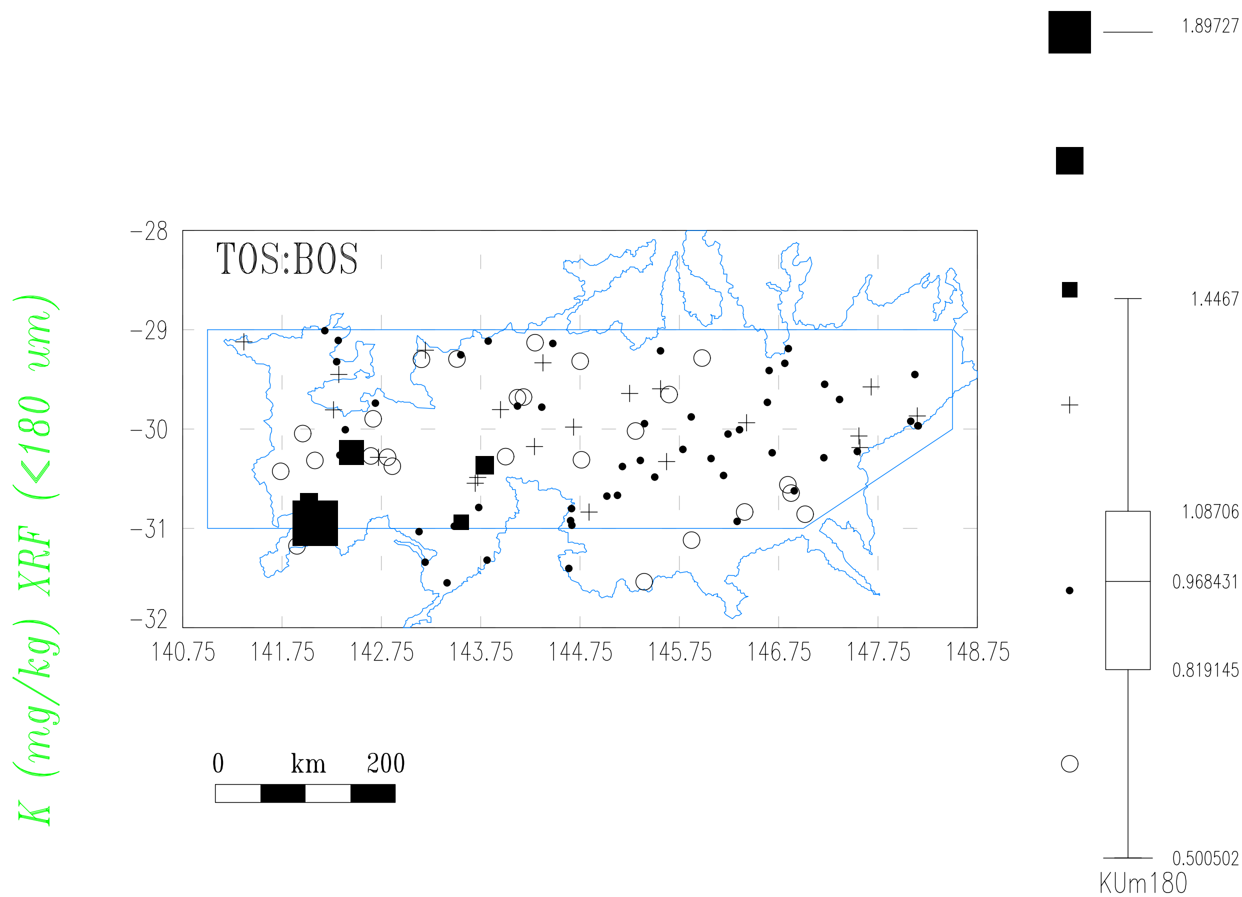


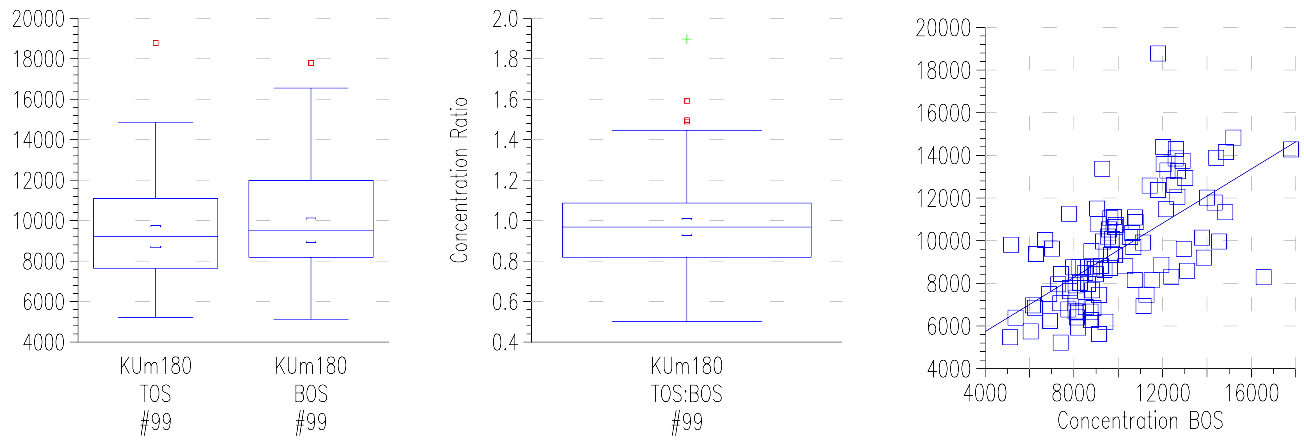
THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*

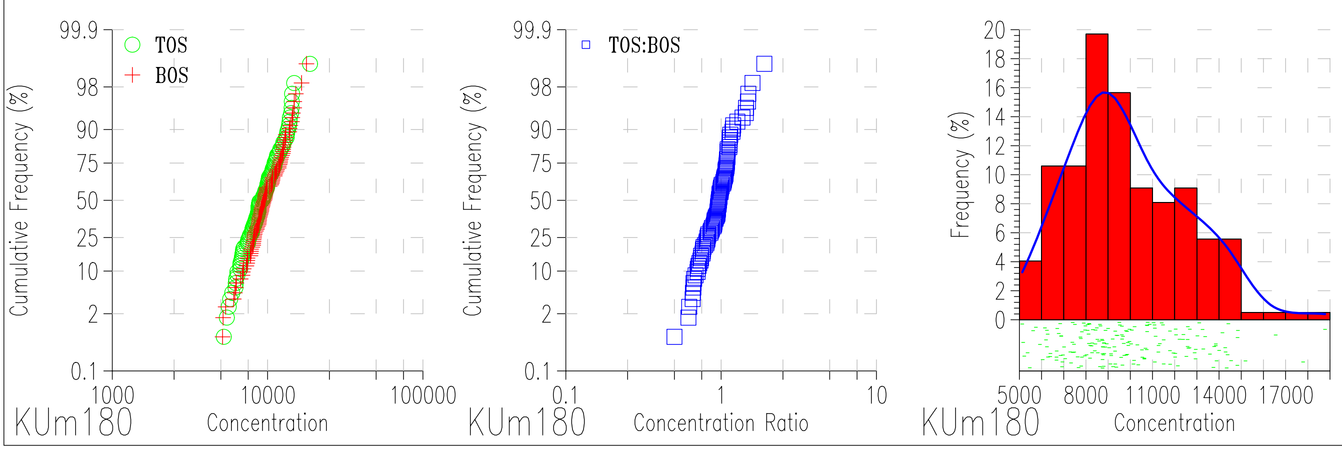


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

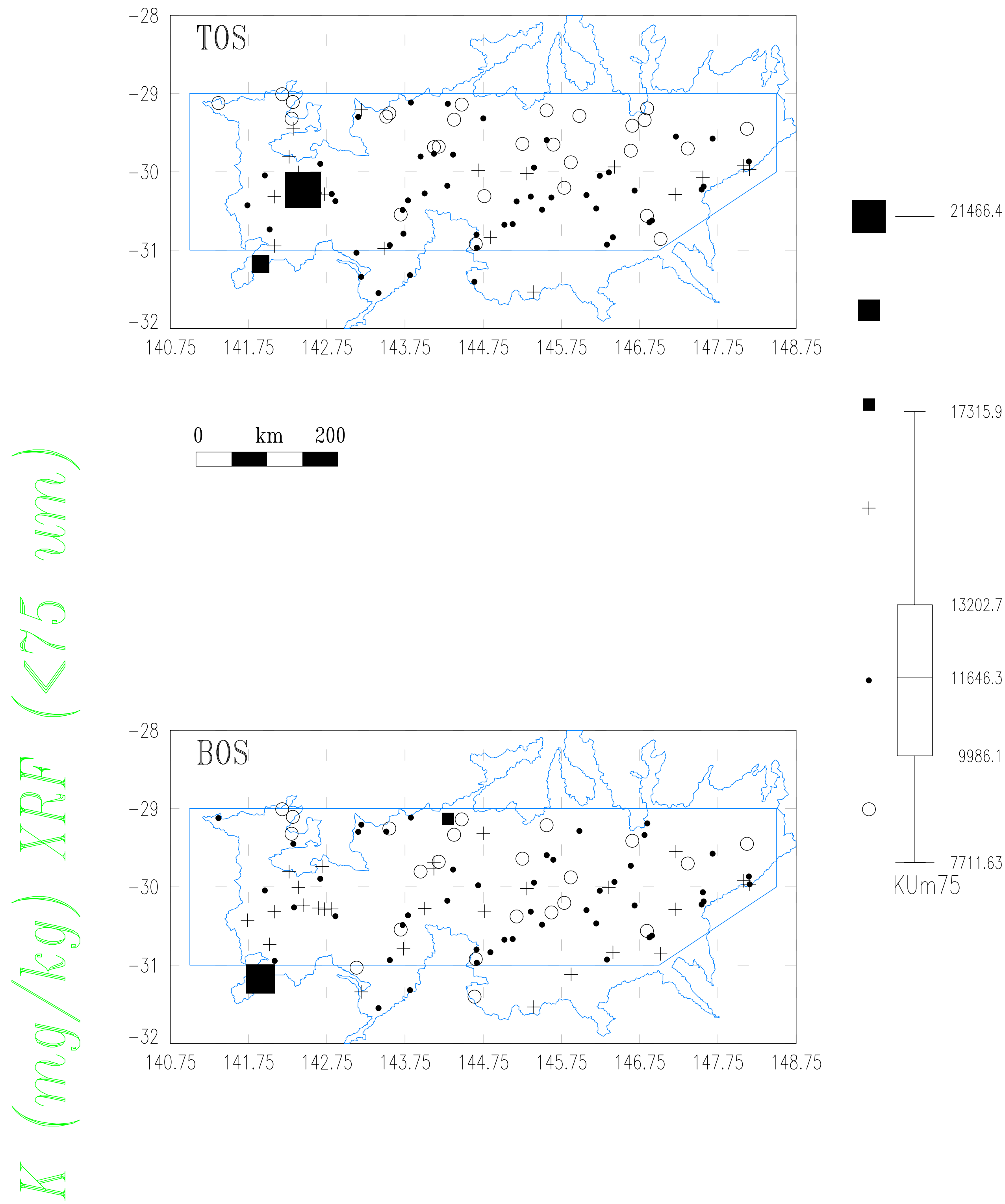


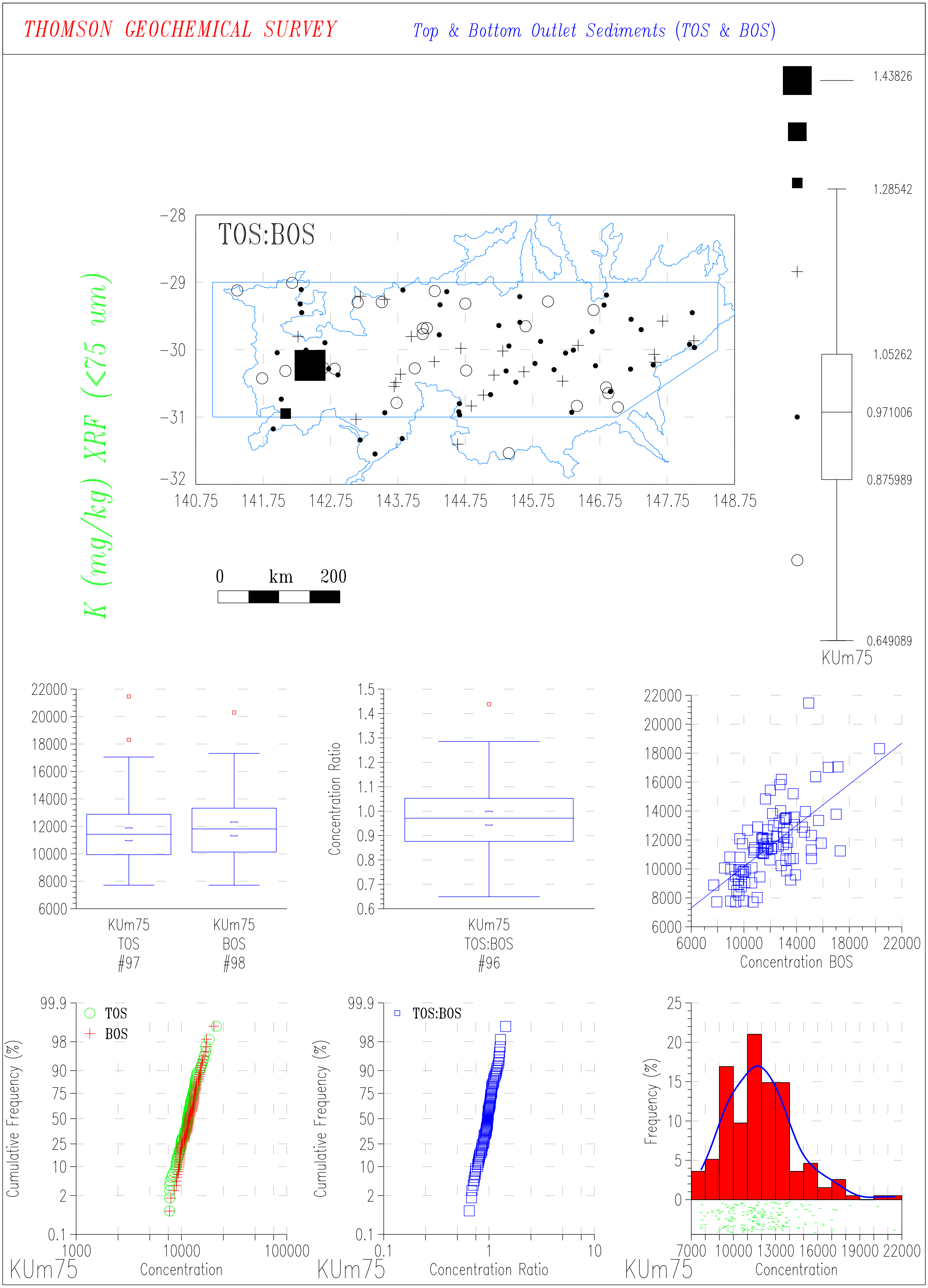




THOMSON GEOCHEMICAL SURVEY

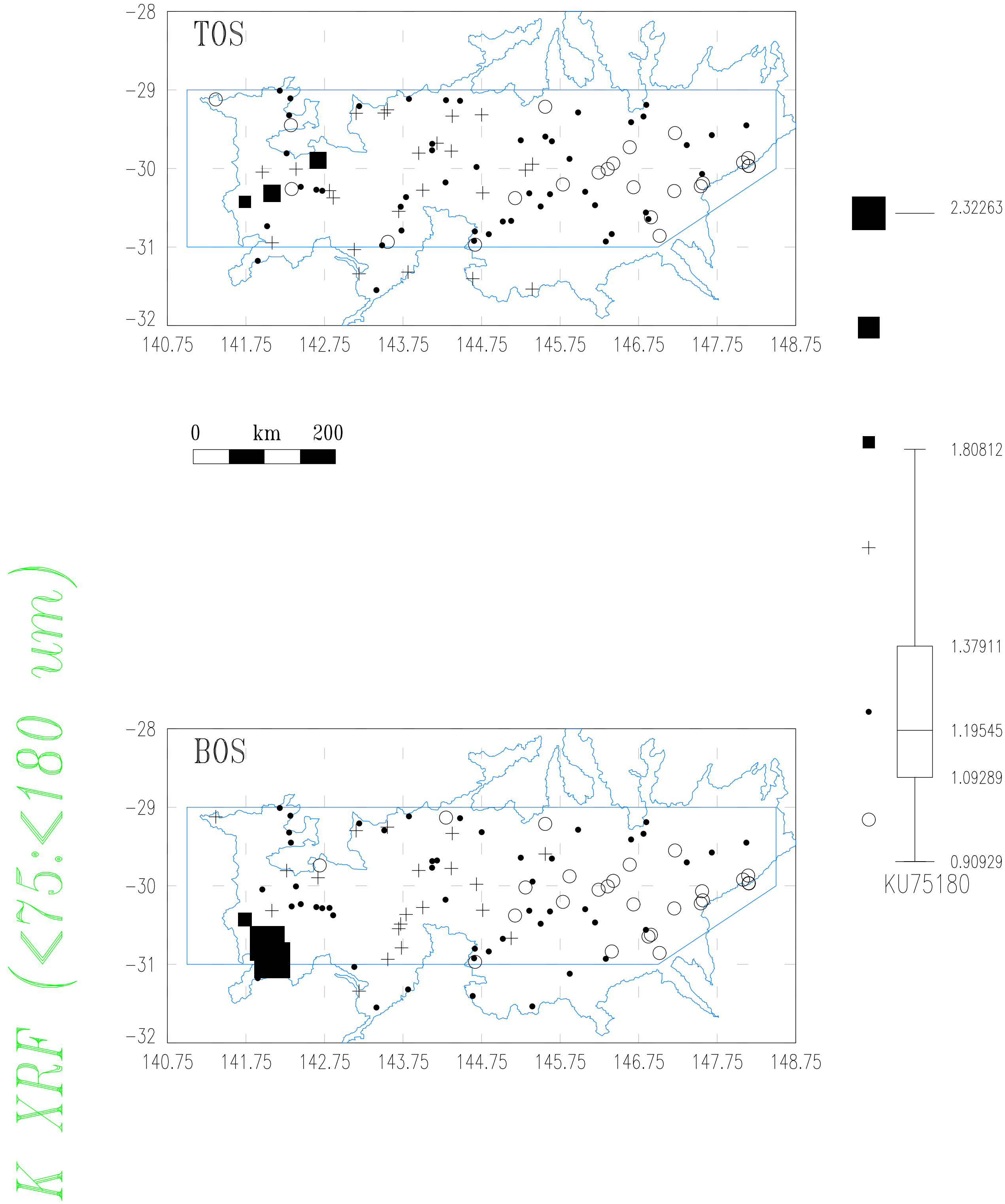
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
K (mg/kg) XRF (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
1.43826
1.28542
1.05262
0.971006
0.875989
0.649089
KUm75
Concentration Ratio
KUm75 TOS #97
KUm75 BOS #98
KUm75 TOS:BOS #96
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Concentration
Frequency (%)
KUm75

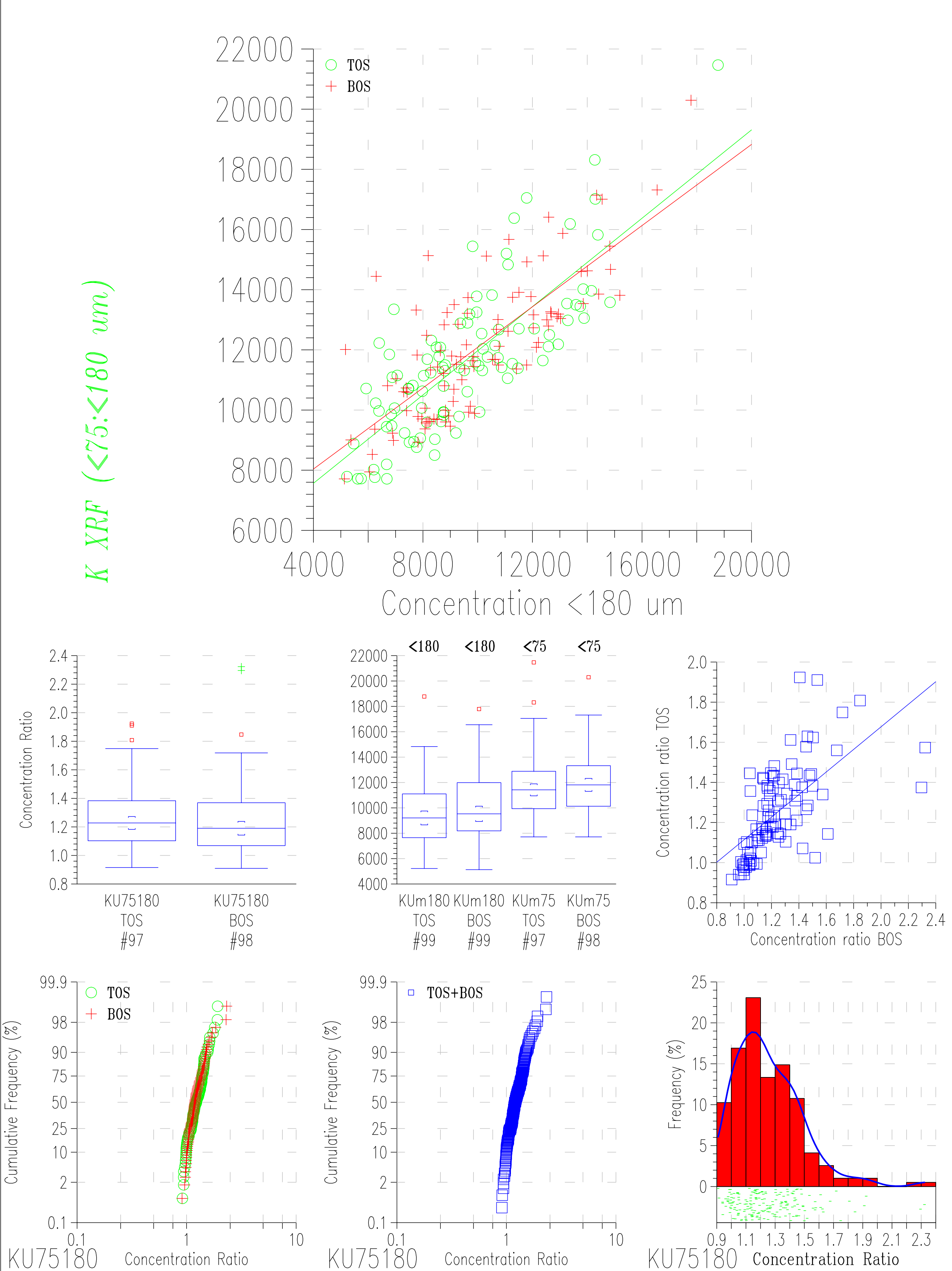
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

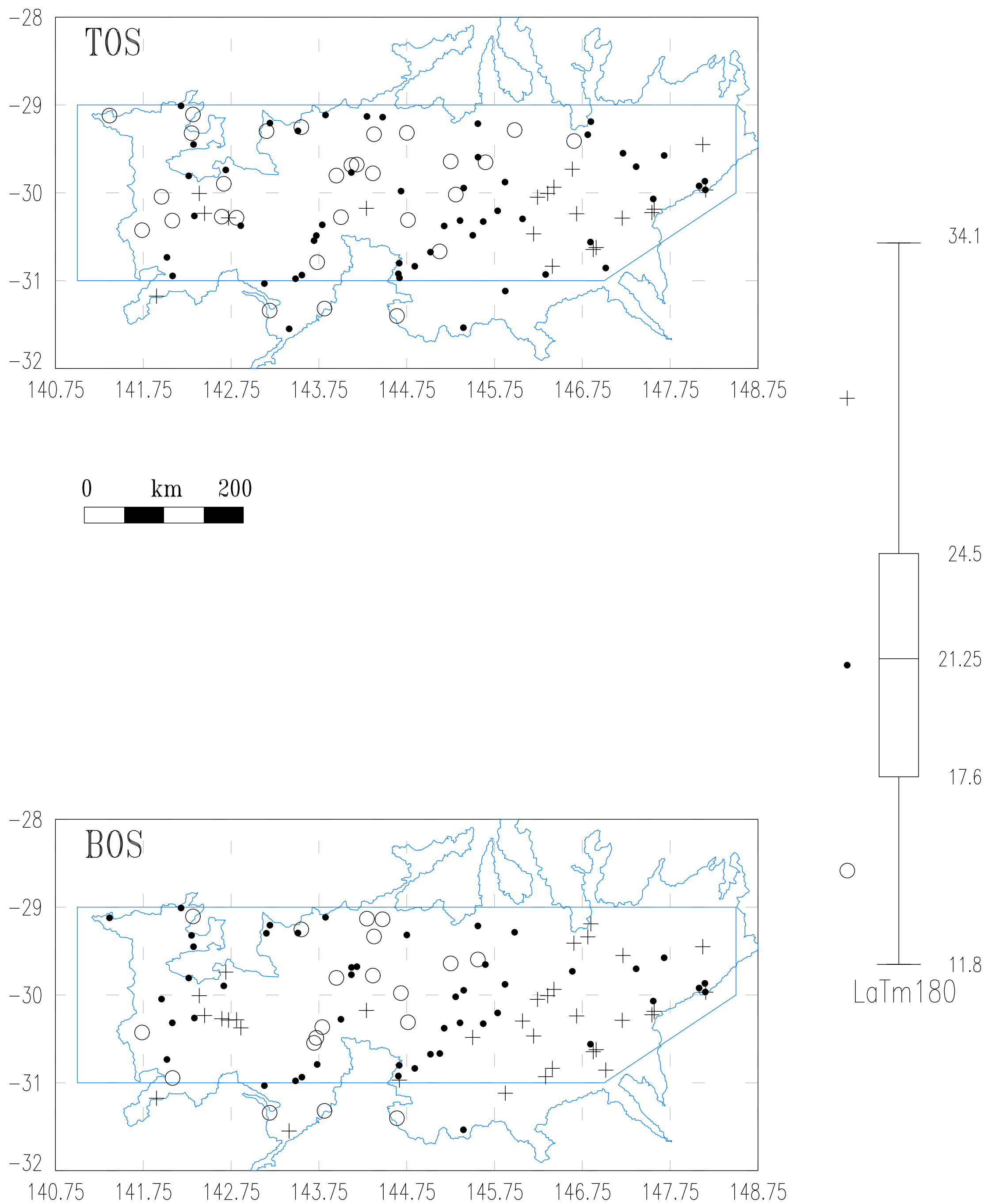
Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

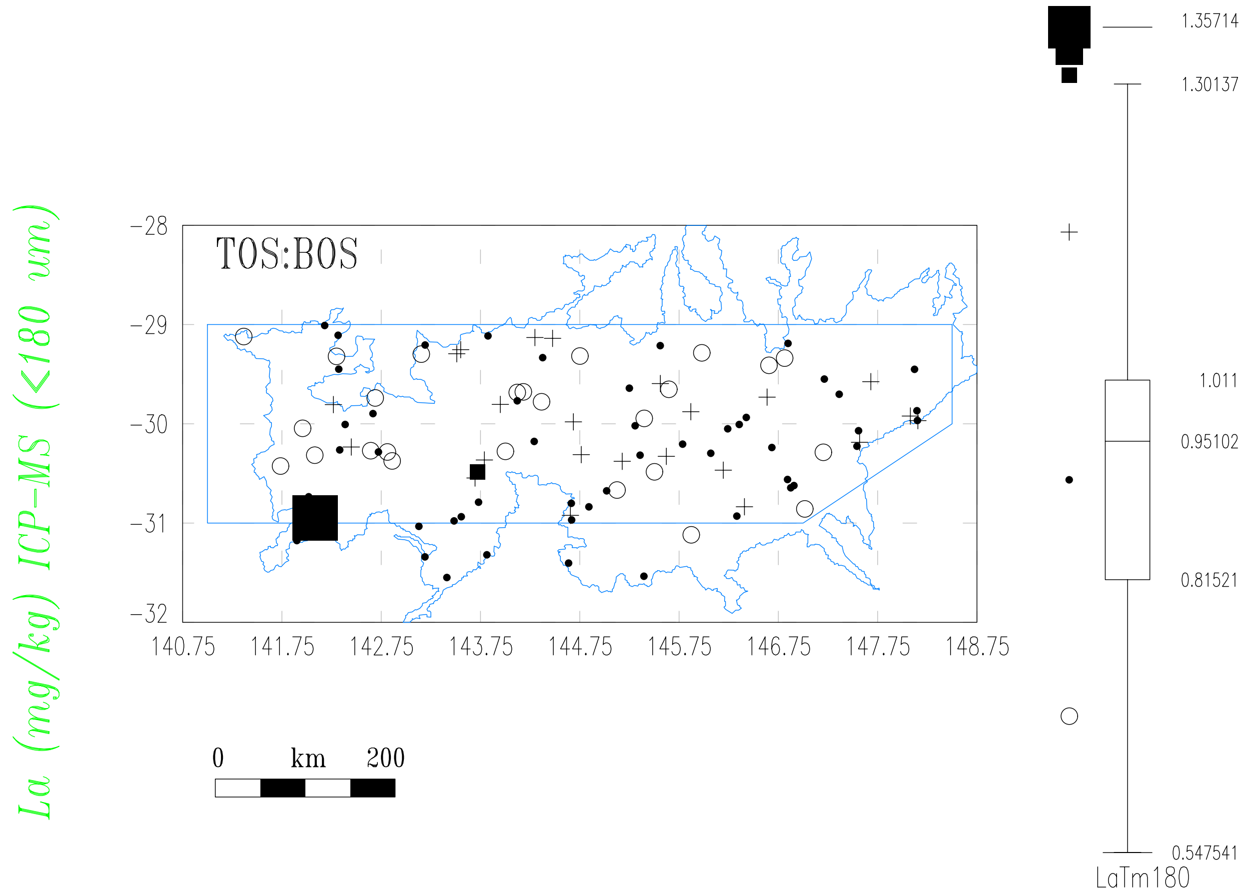
Top & Bottom Outlet Sediments (TOS & BOS)

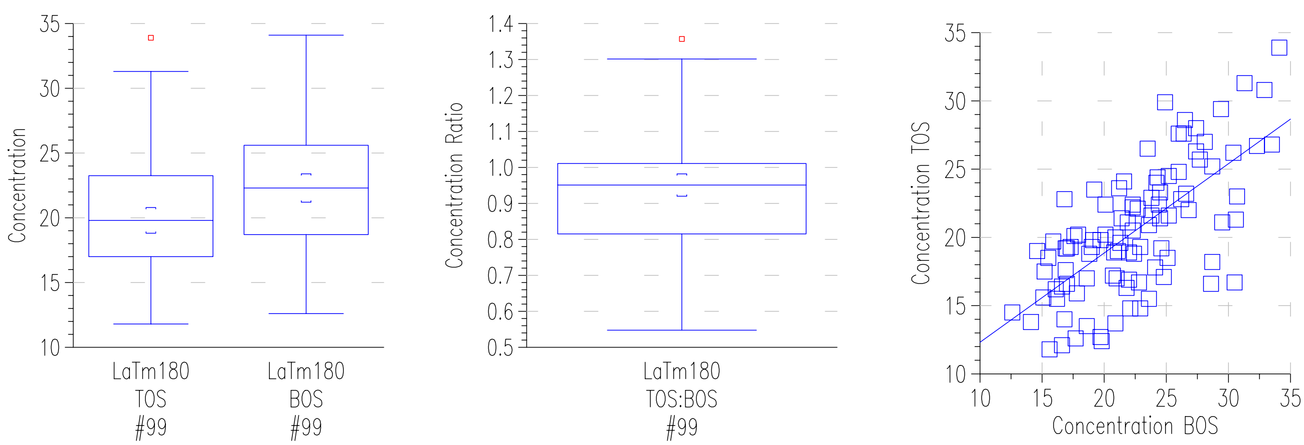
La (mg/kg) ICP-MS (<180 um)

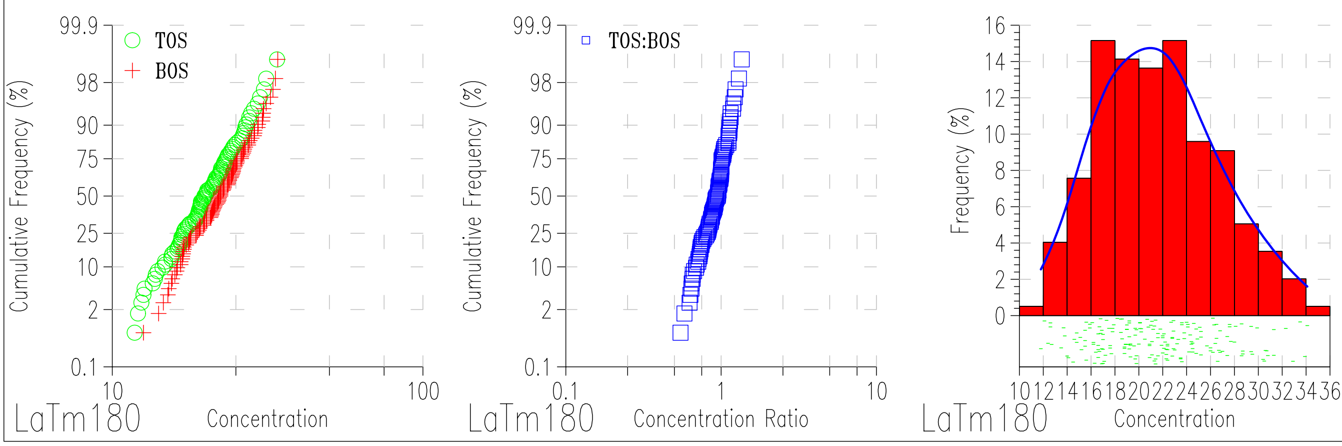


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

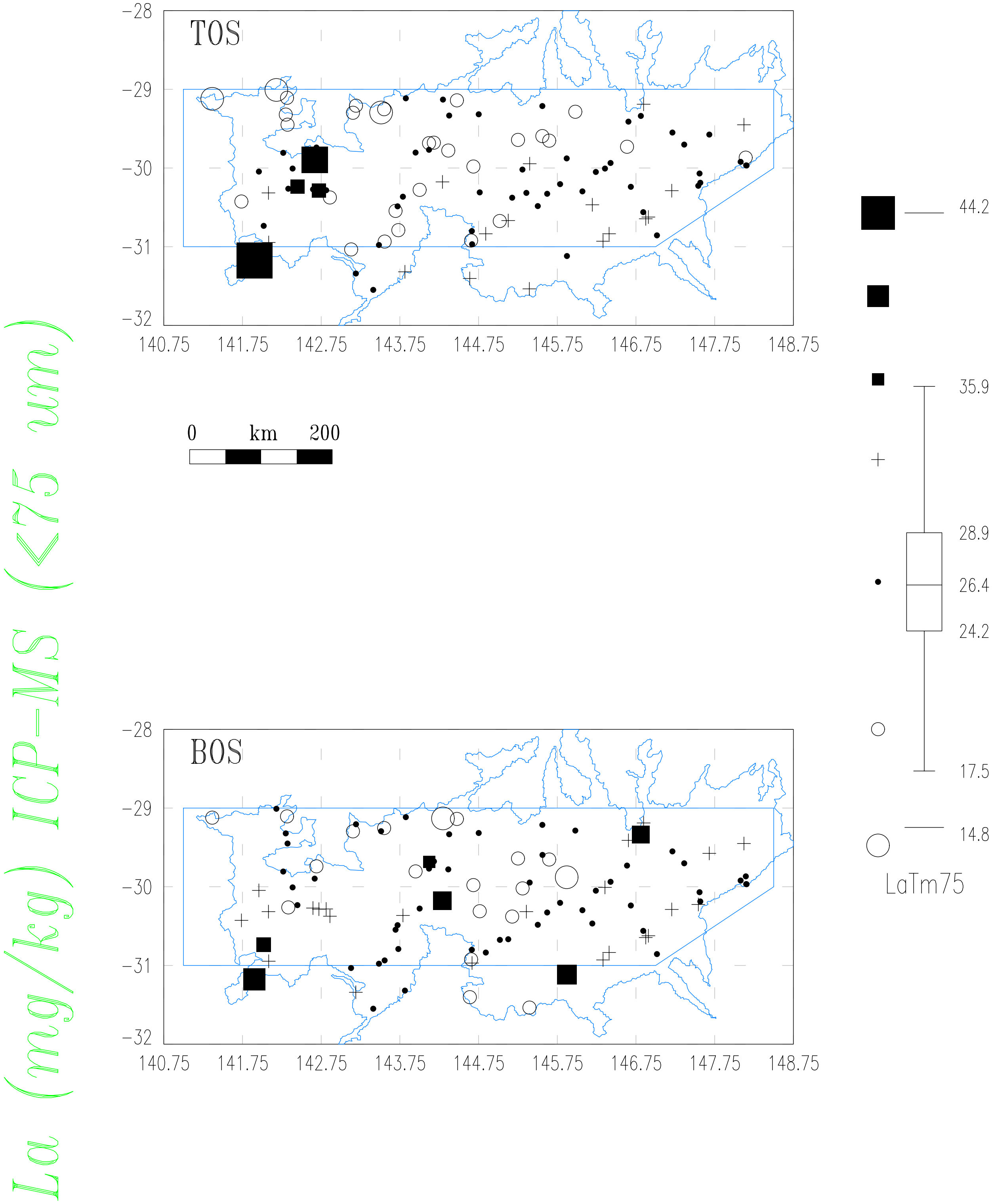




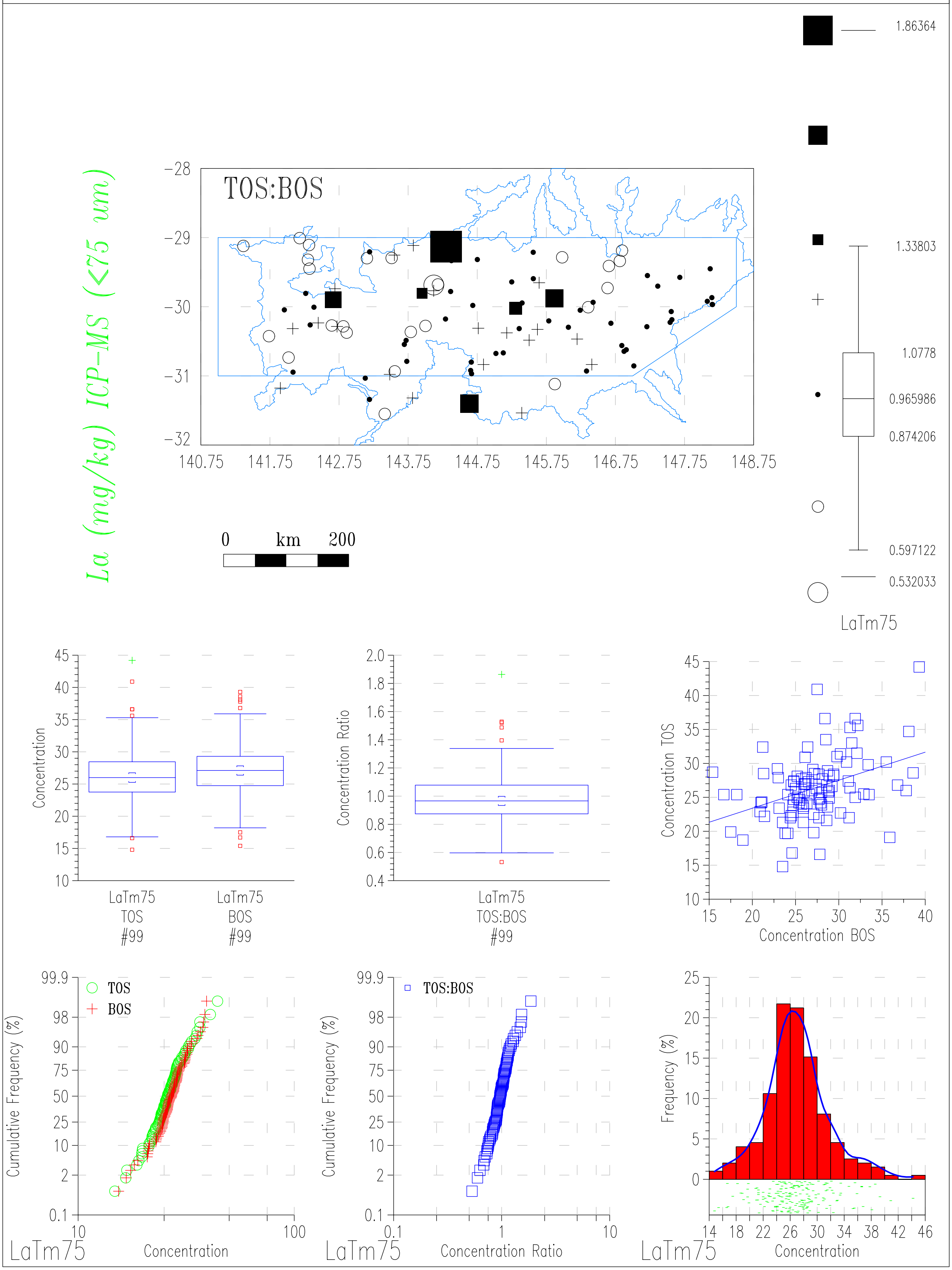


THOMSON GEOCHEMICAL SURVEY

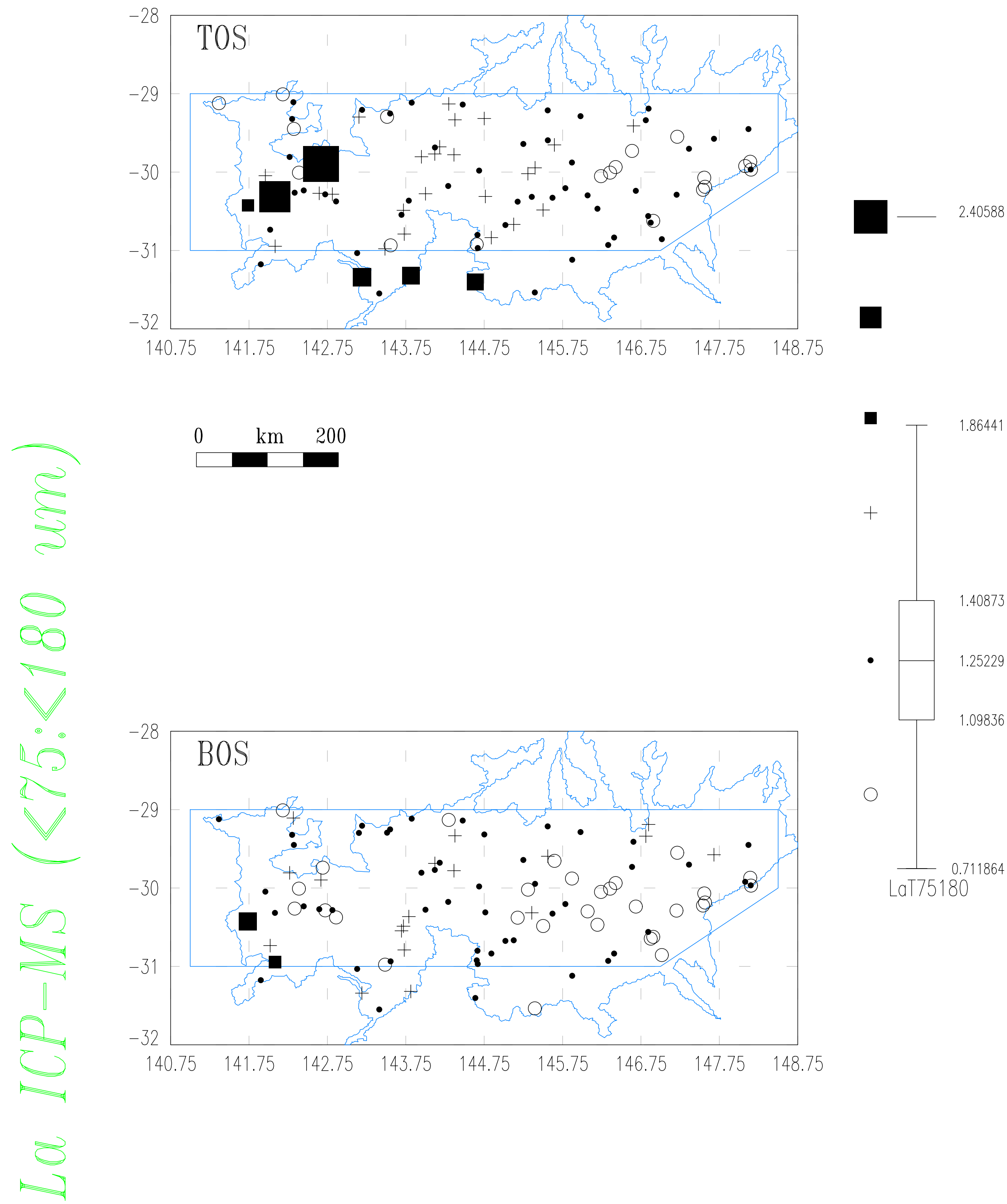
Top & Bottom Outlet Sediments (TOS & BOS)



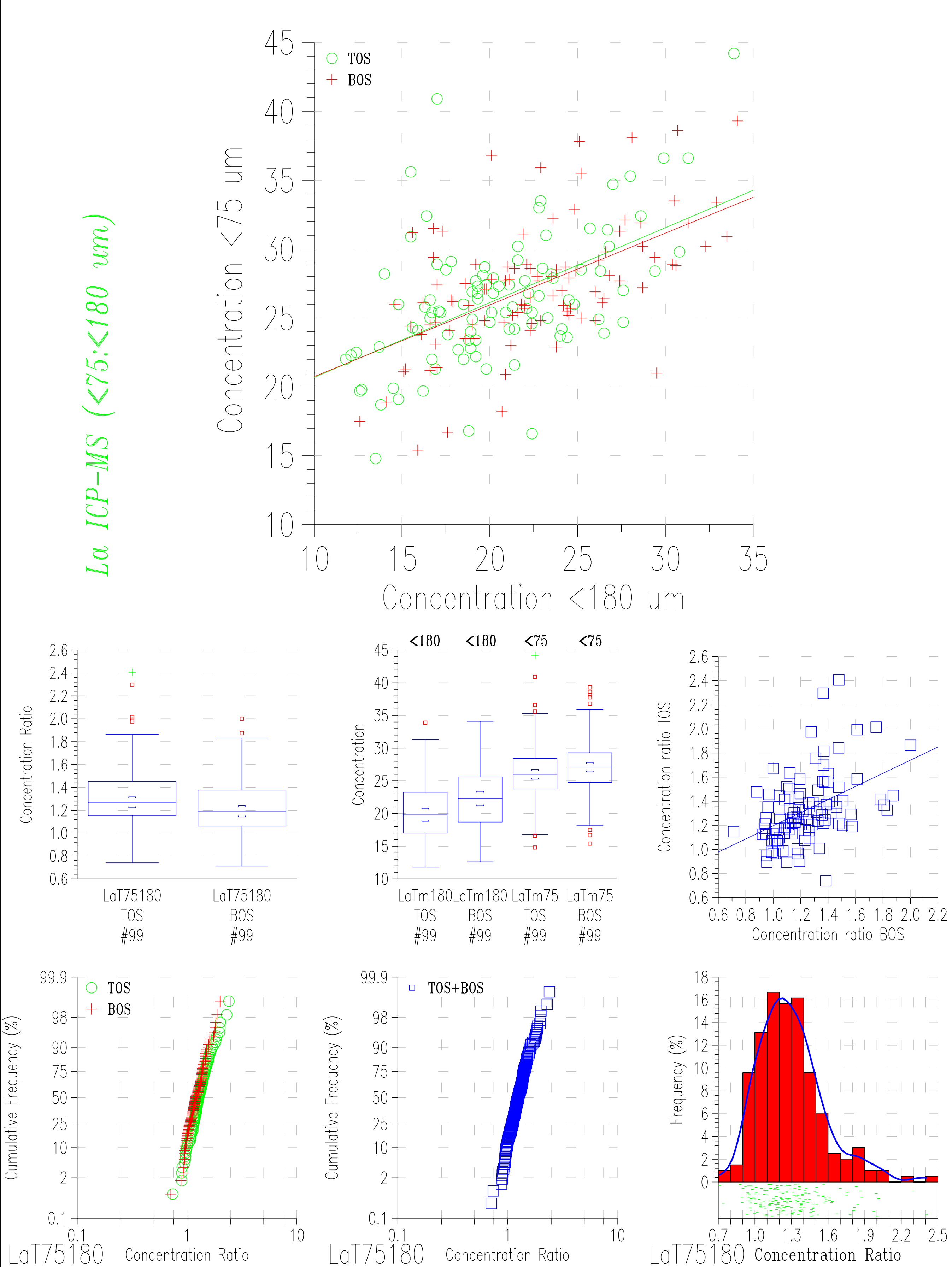
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

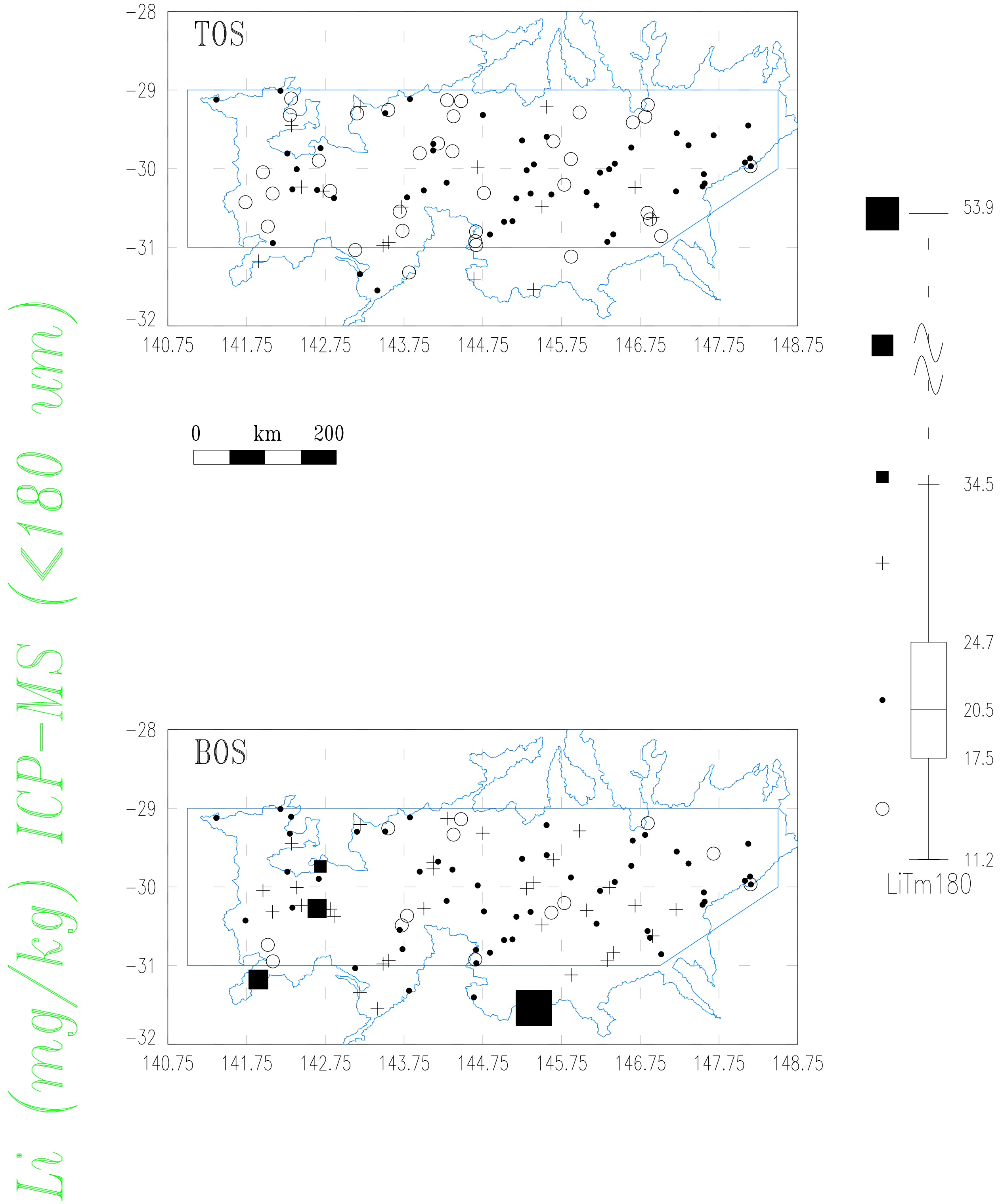


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

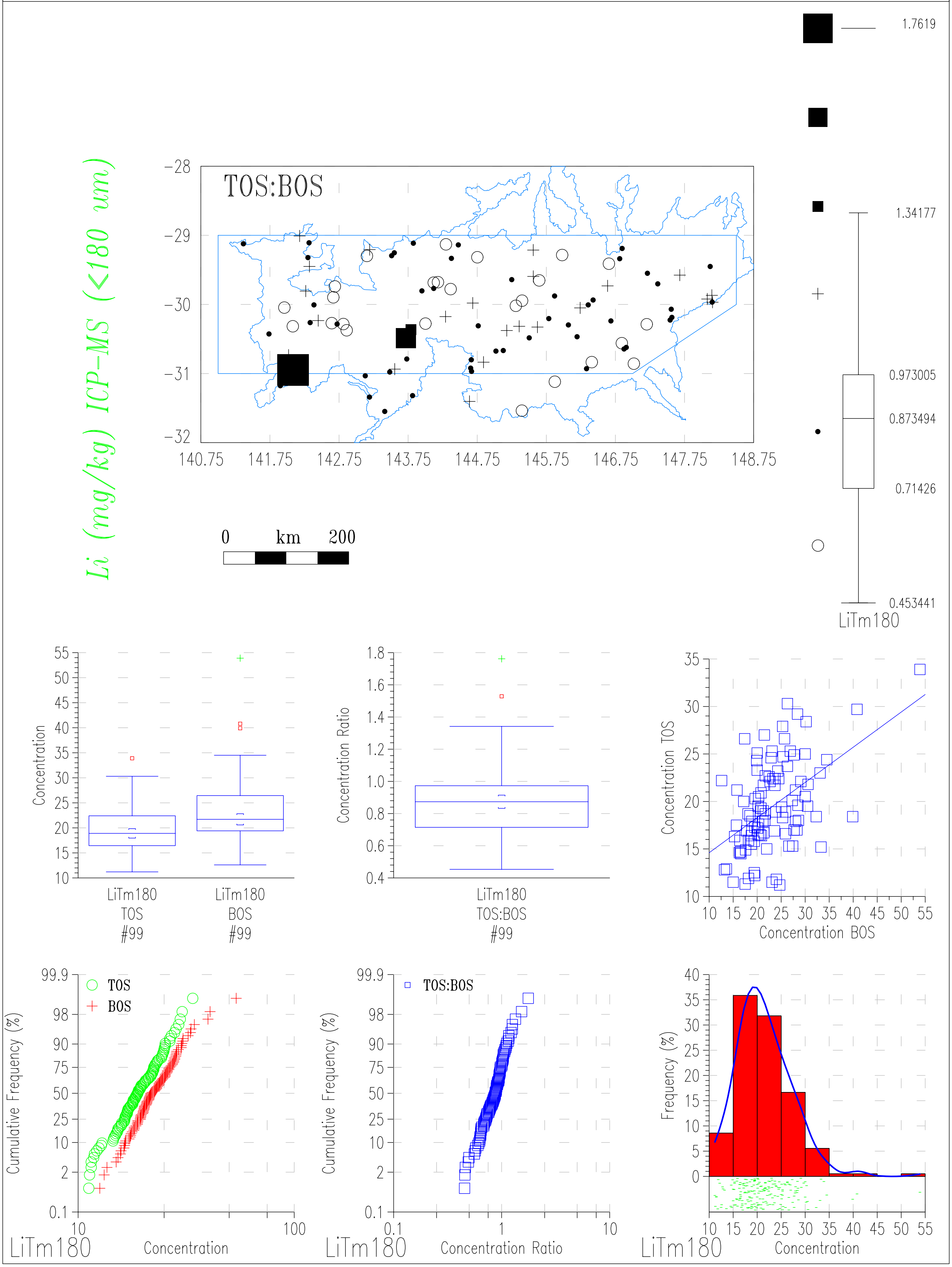


THOMSON GEOCHEMICAL SURVEY

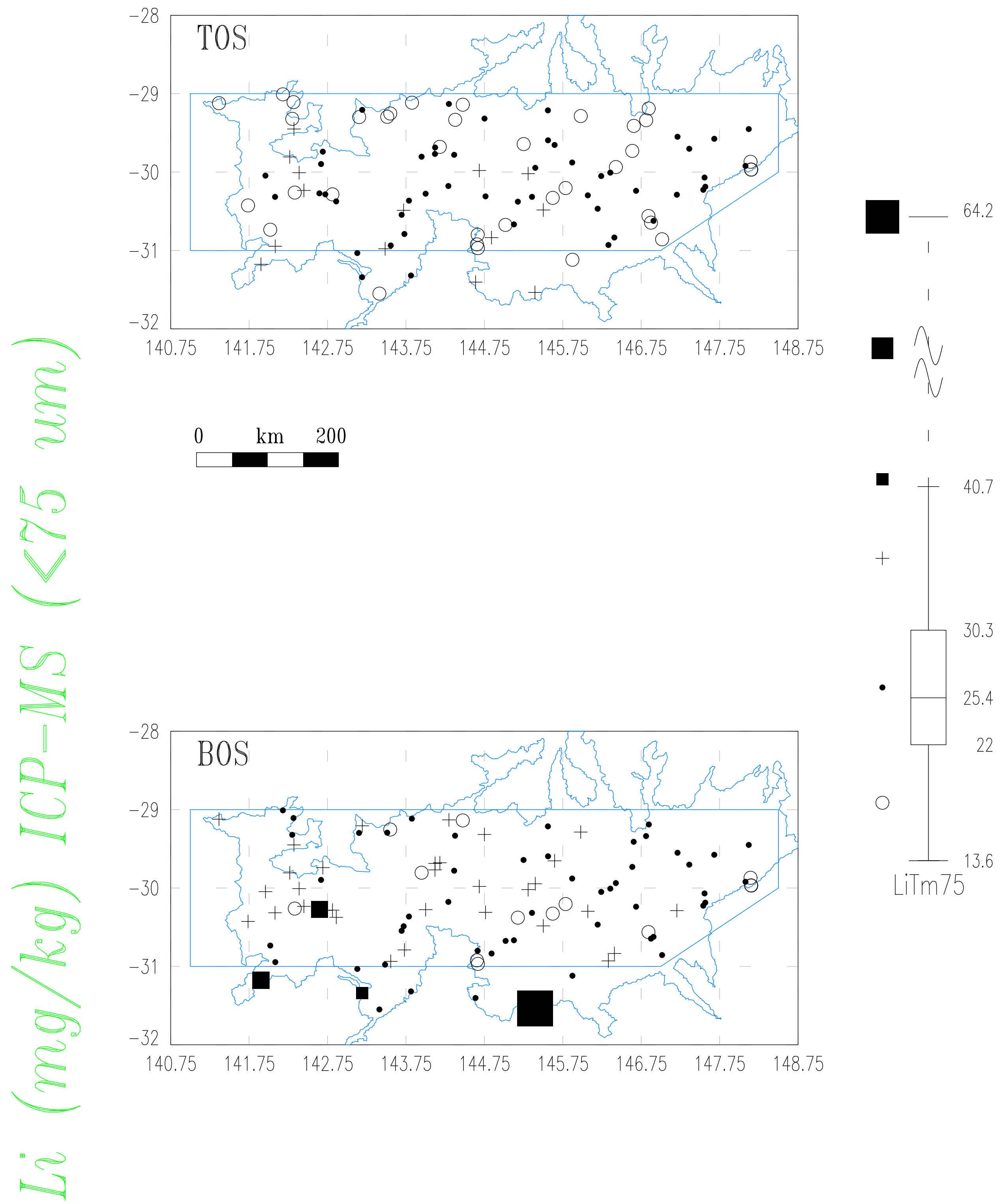
Top & Bottom Outlet Sediments (TOS & BOS)

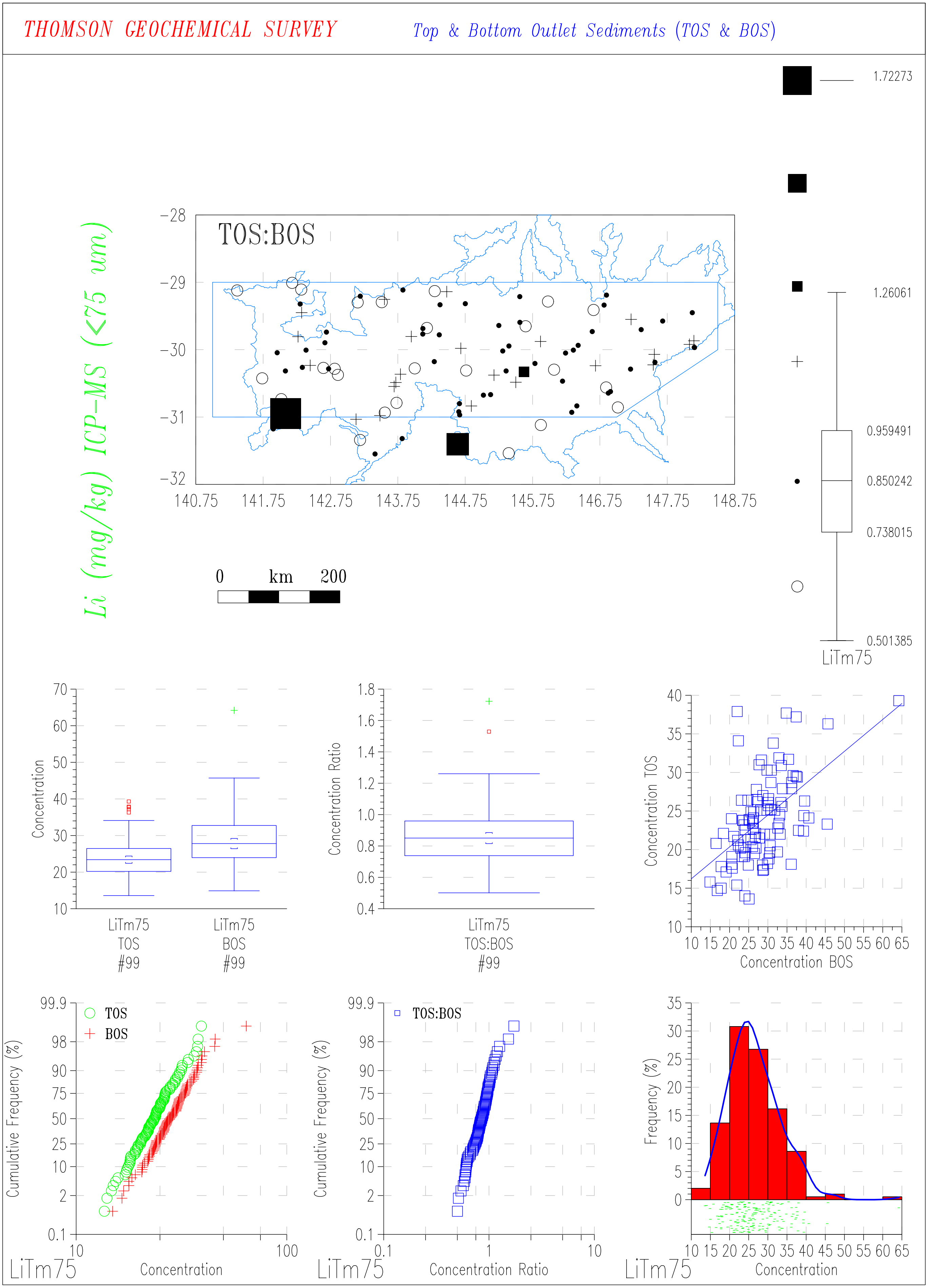


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

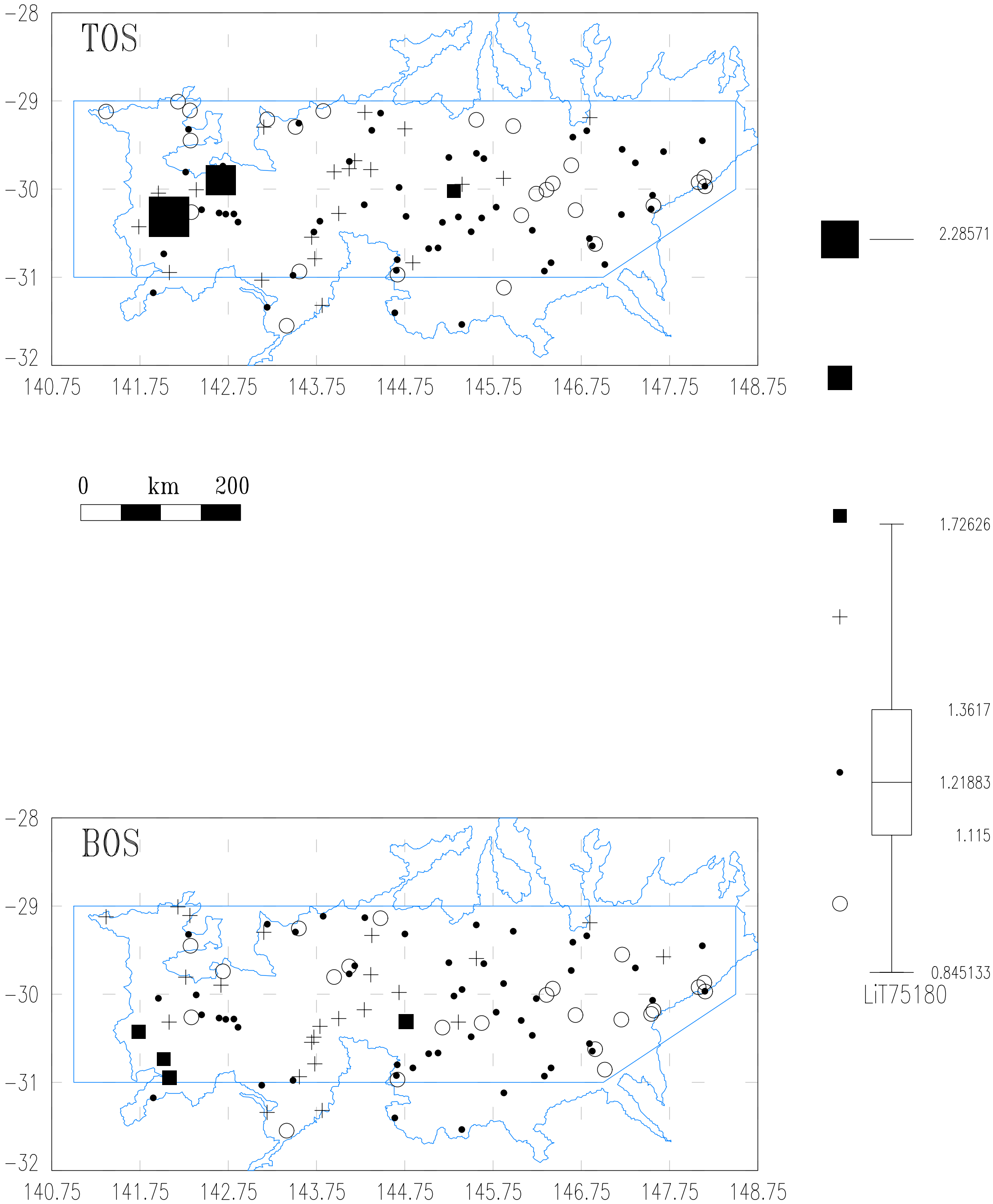



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Li (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.72273
1.26061
0.959491
0.850242
0.738015
0.501385
LiTm75
Concentration
LiTm75 TOS #99
LiTm75 BOS #99
Concentration Ratio
LiTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
Concentration Ratio

THOMSON GEOCHEMICAL SURVEY

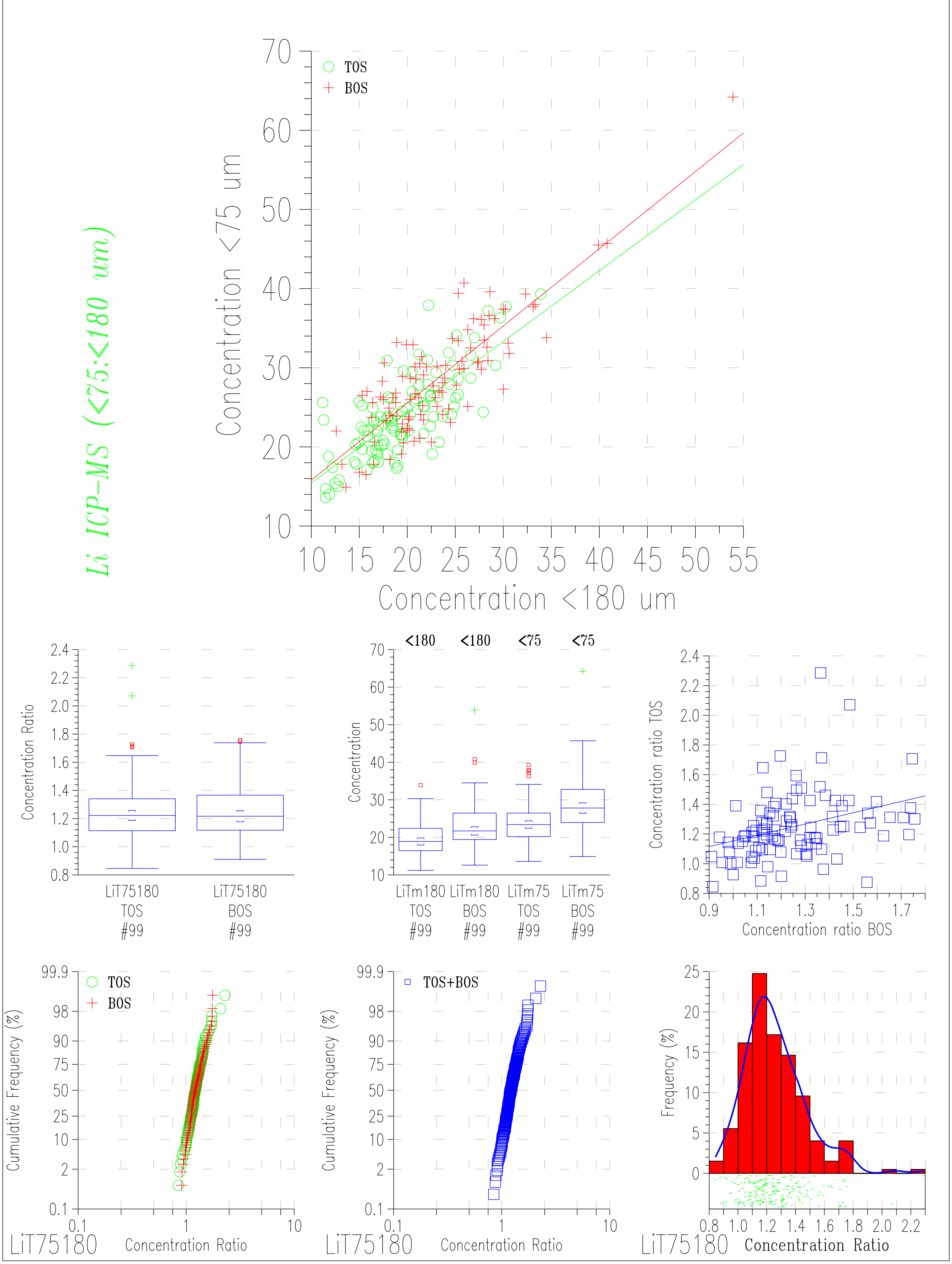
Top & Bottom Outlet Sediments (TOS & BOS)

Li ICP-MS (<75:<180 um)



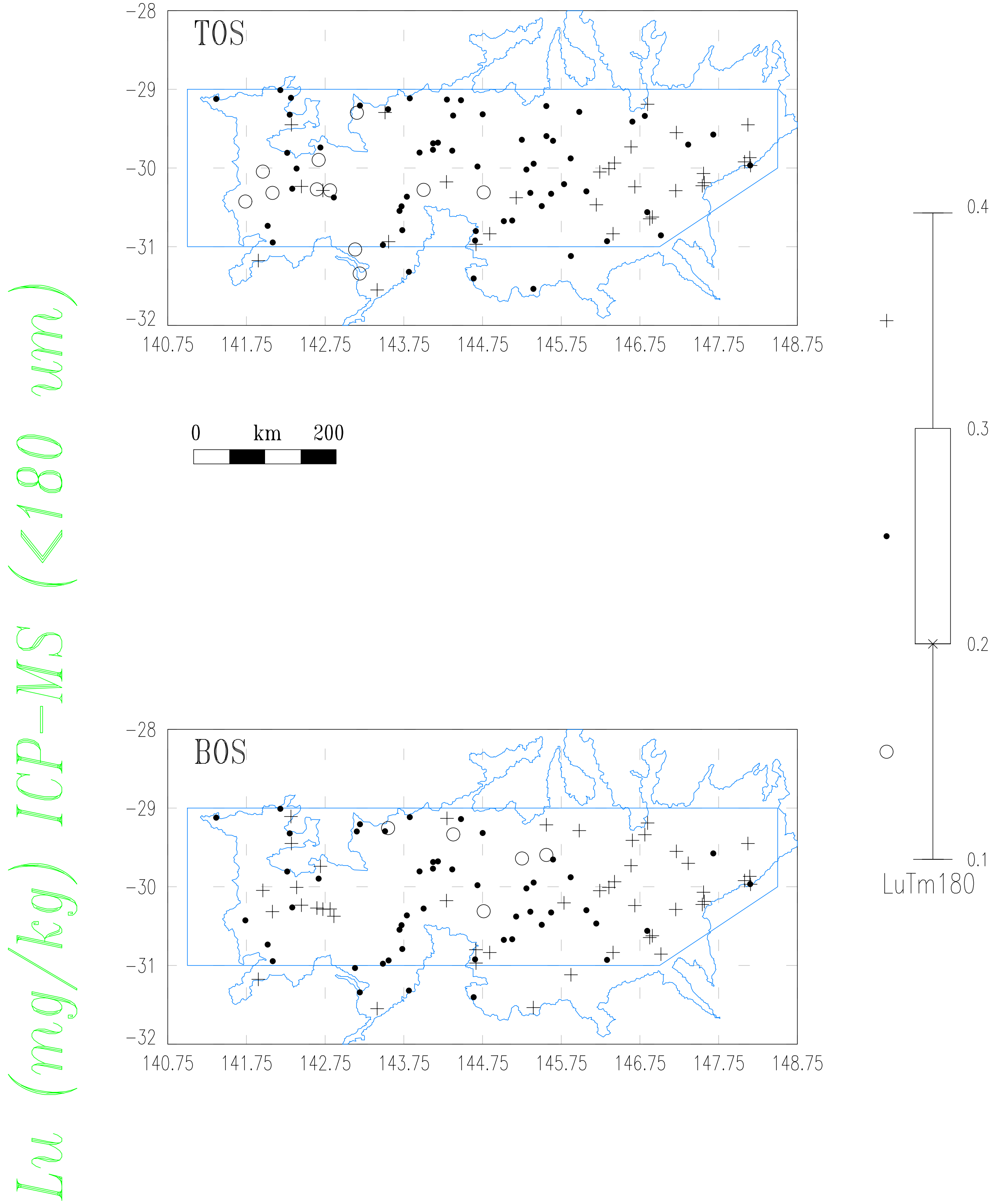
THOMSON GEOCHEMICAL SURVEY

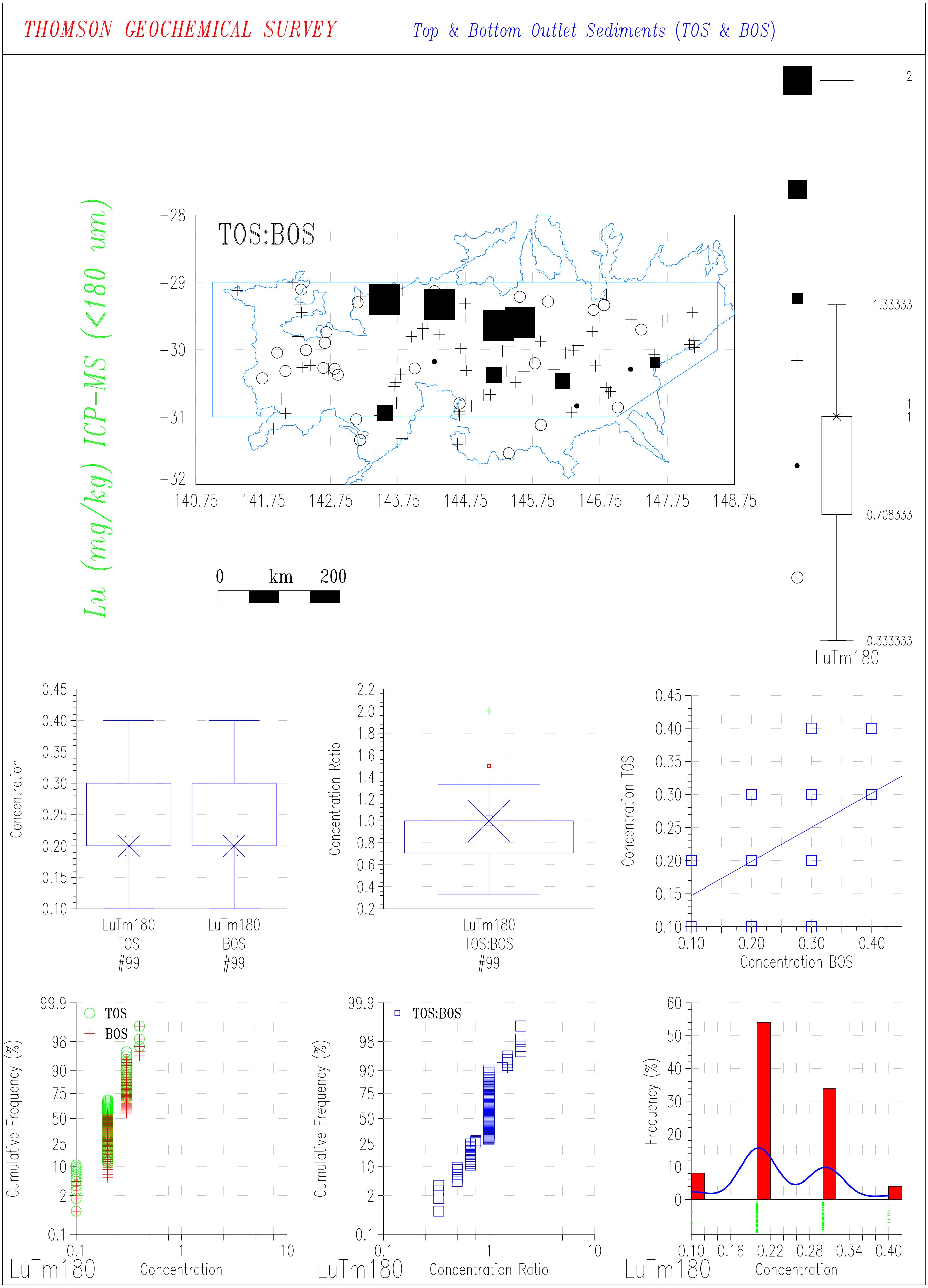
Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

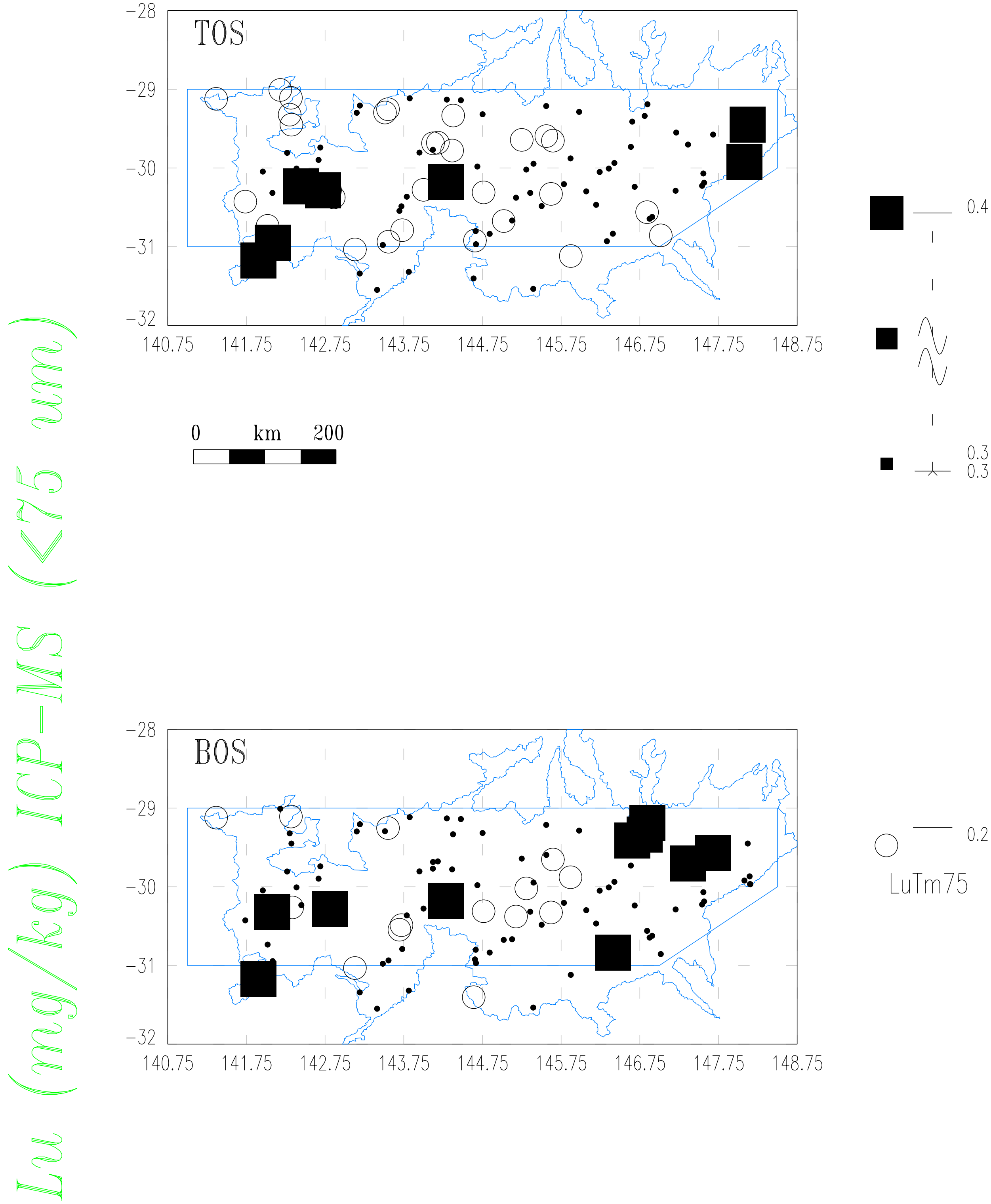
Top & Bottom Outlet Sediments (TOS & BOS)



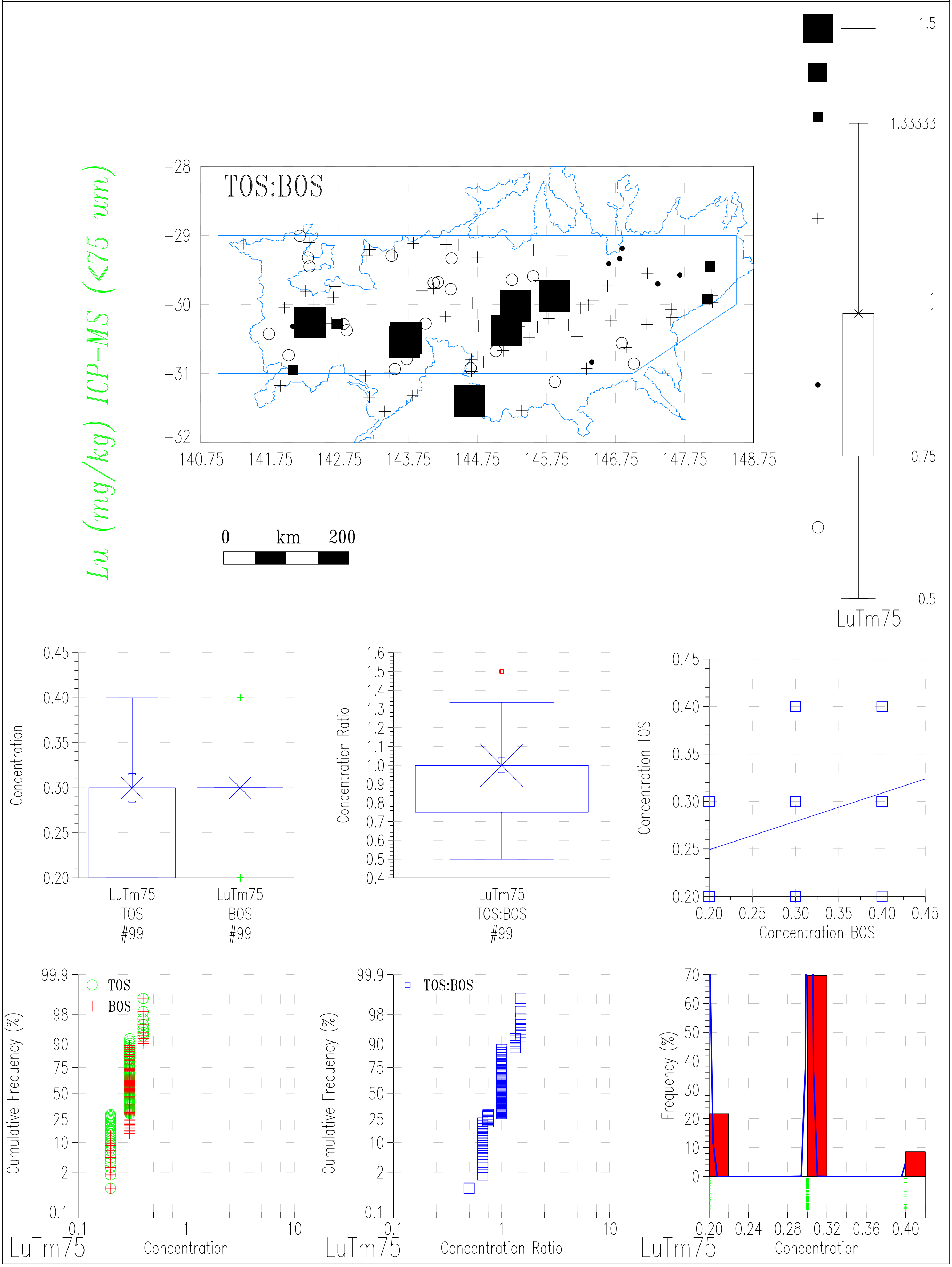

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Lu (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
LuTm180
TOS
BOS
#99
TOS:BOS
Concentration
Concentration Ratio
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)



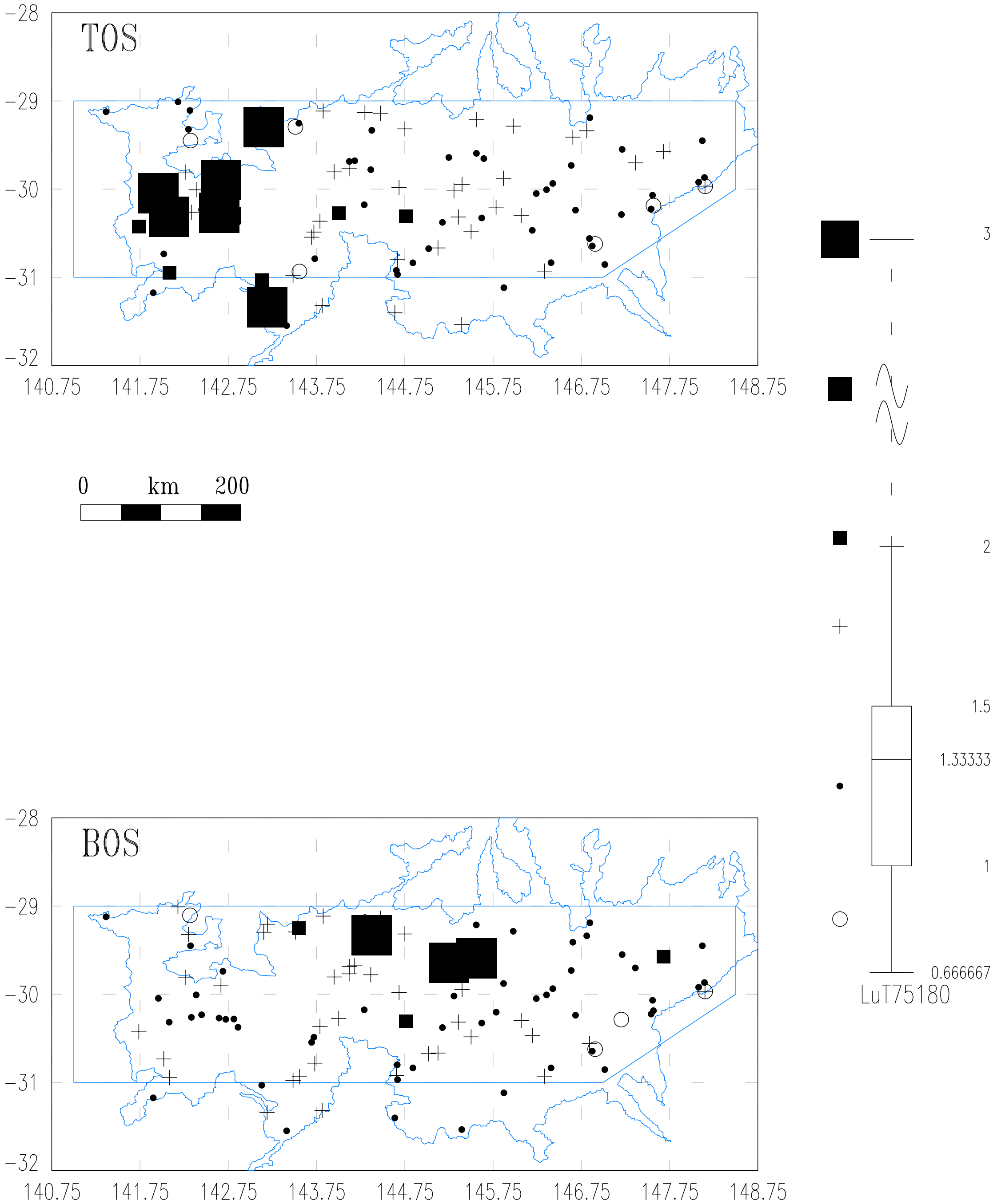
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



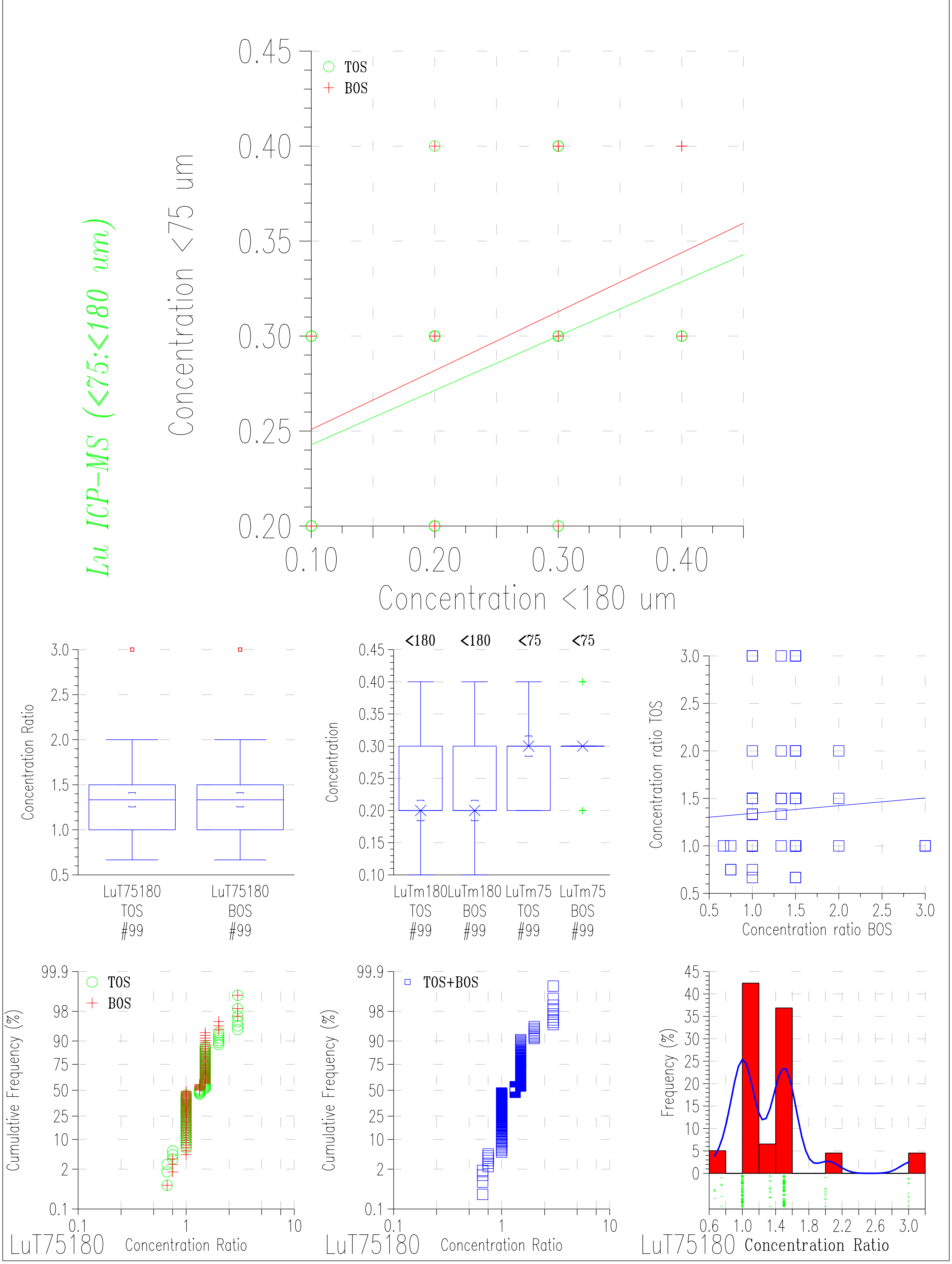
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

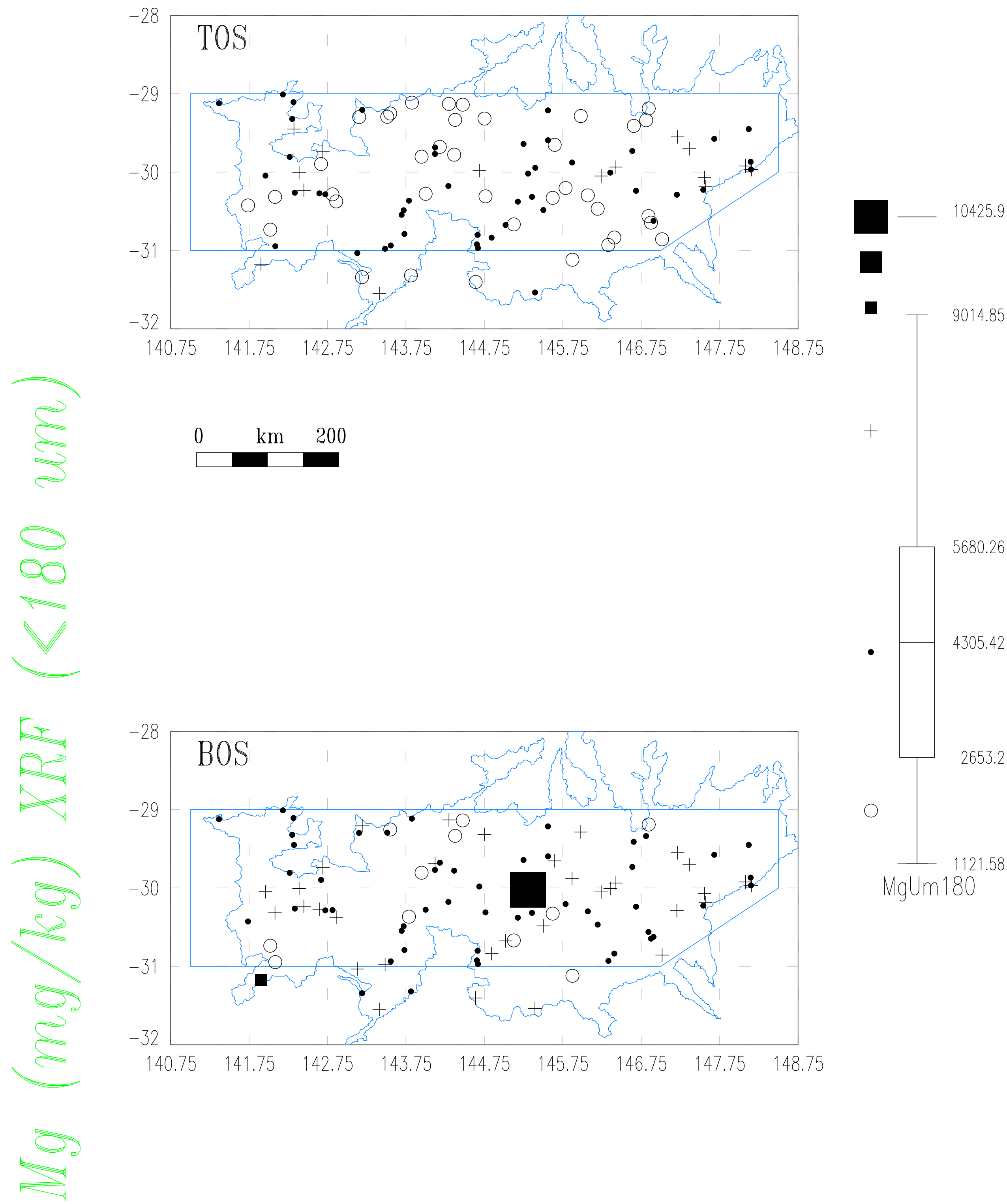
Lu ICP-MS (<75:<180 um)



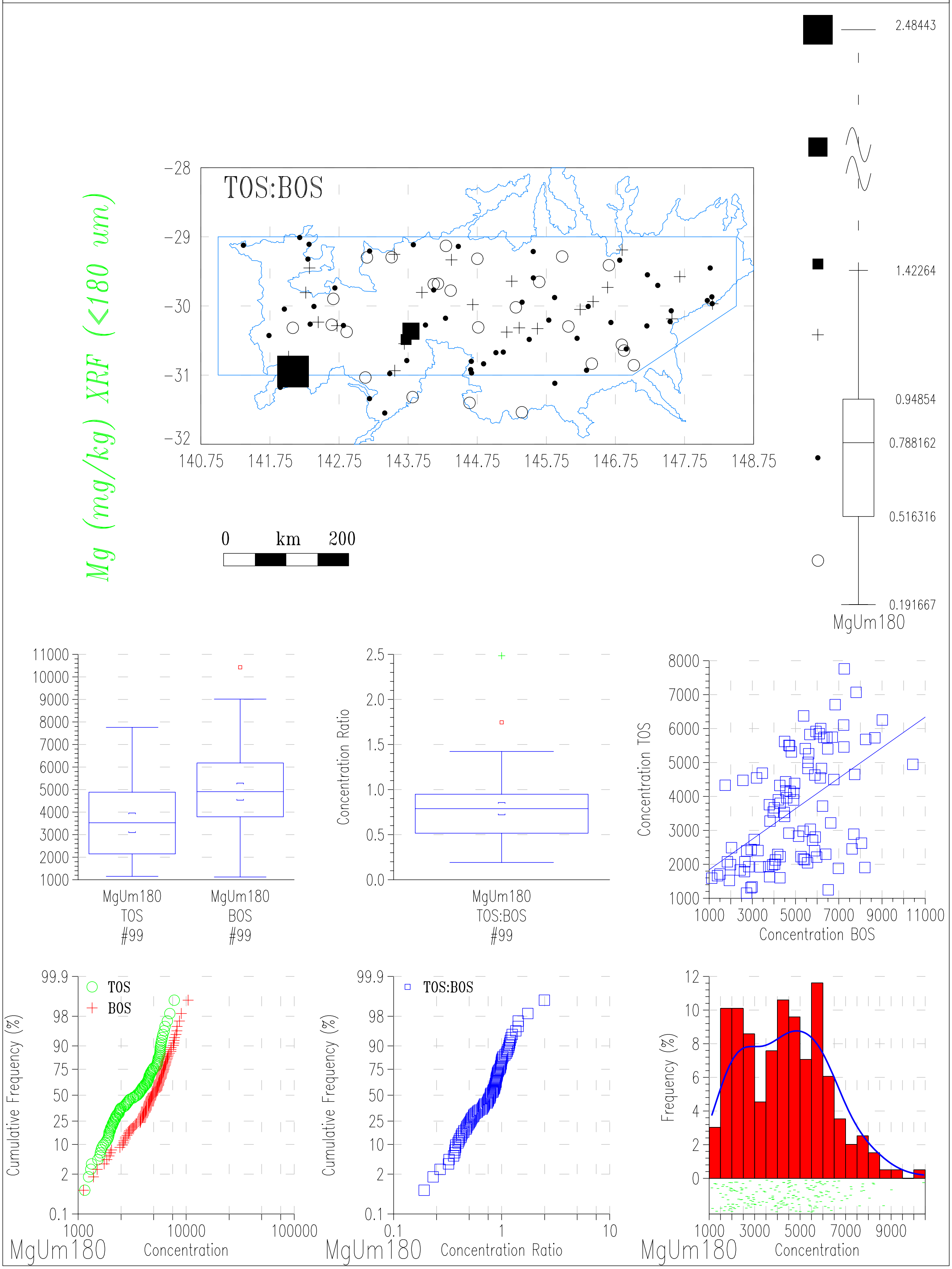
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

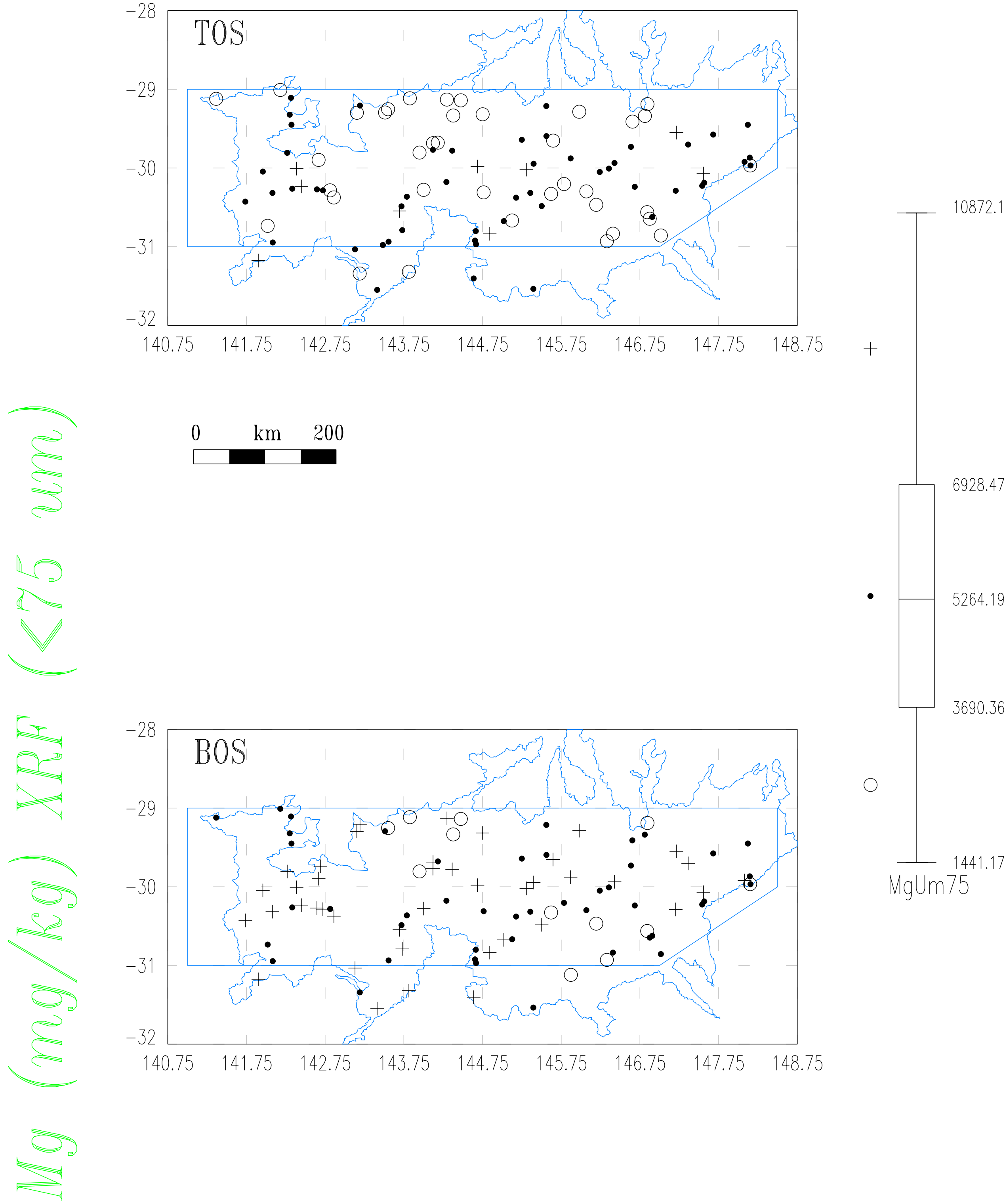


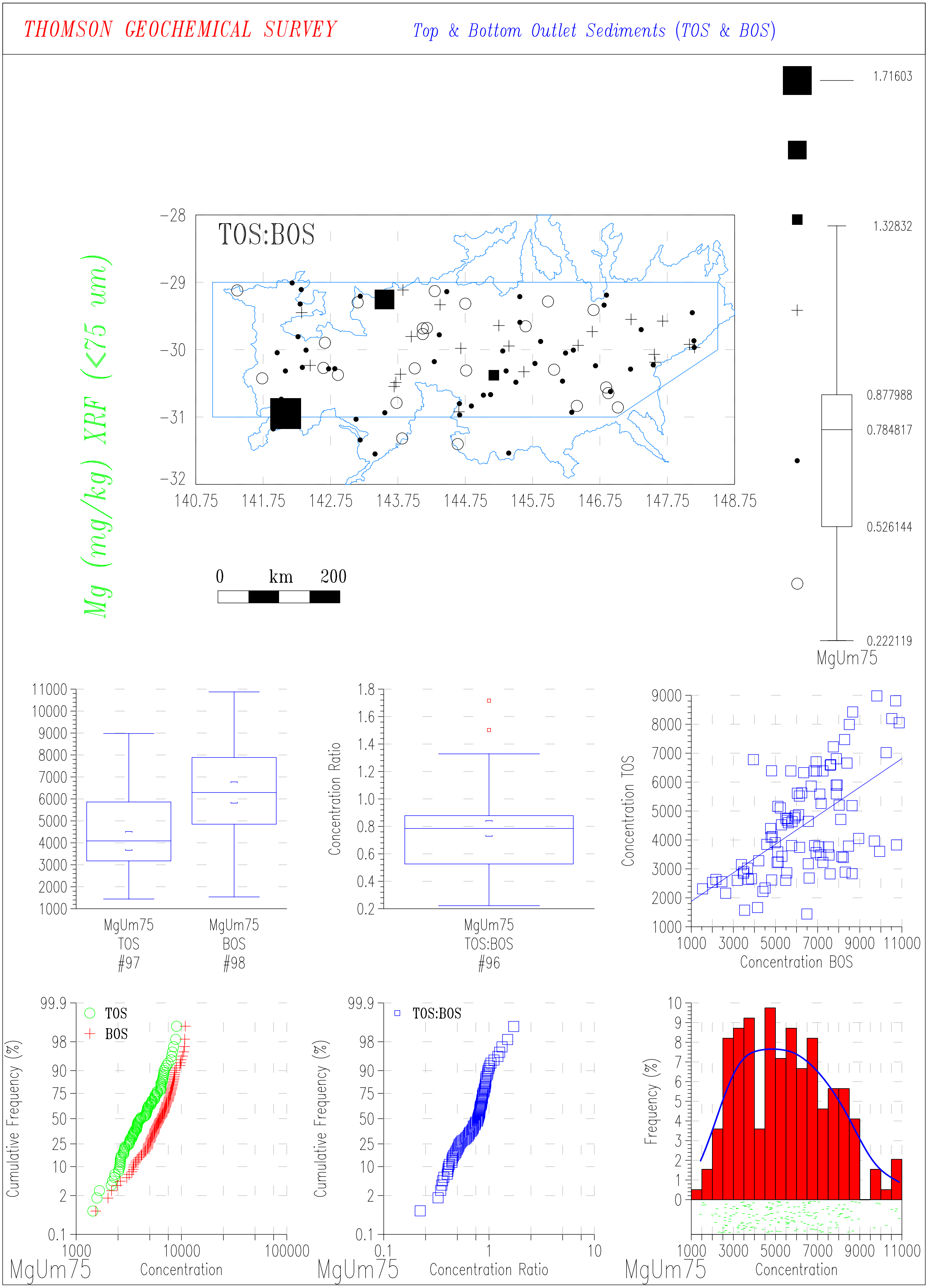
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

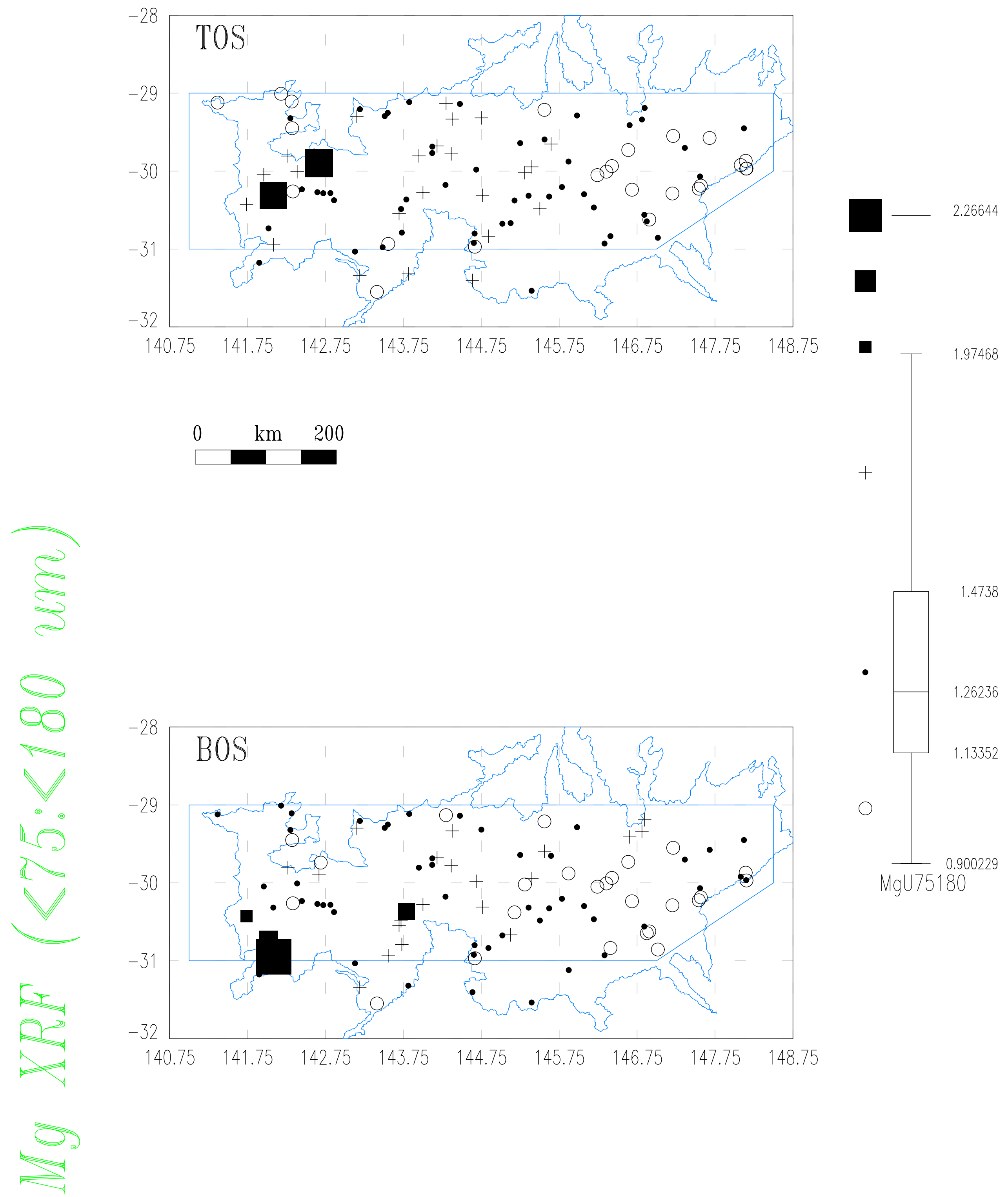
Top & Bottom Outlet Sediments (TOS & BOS)



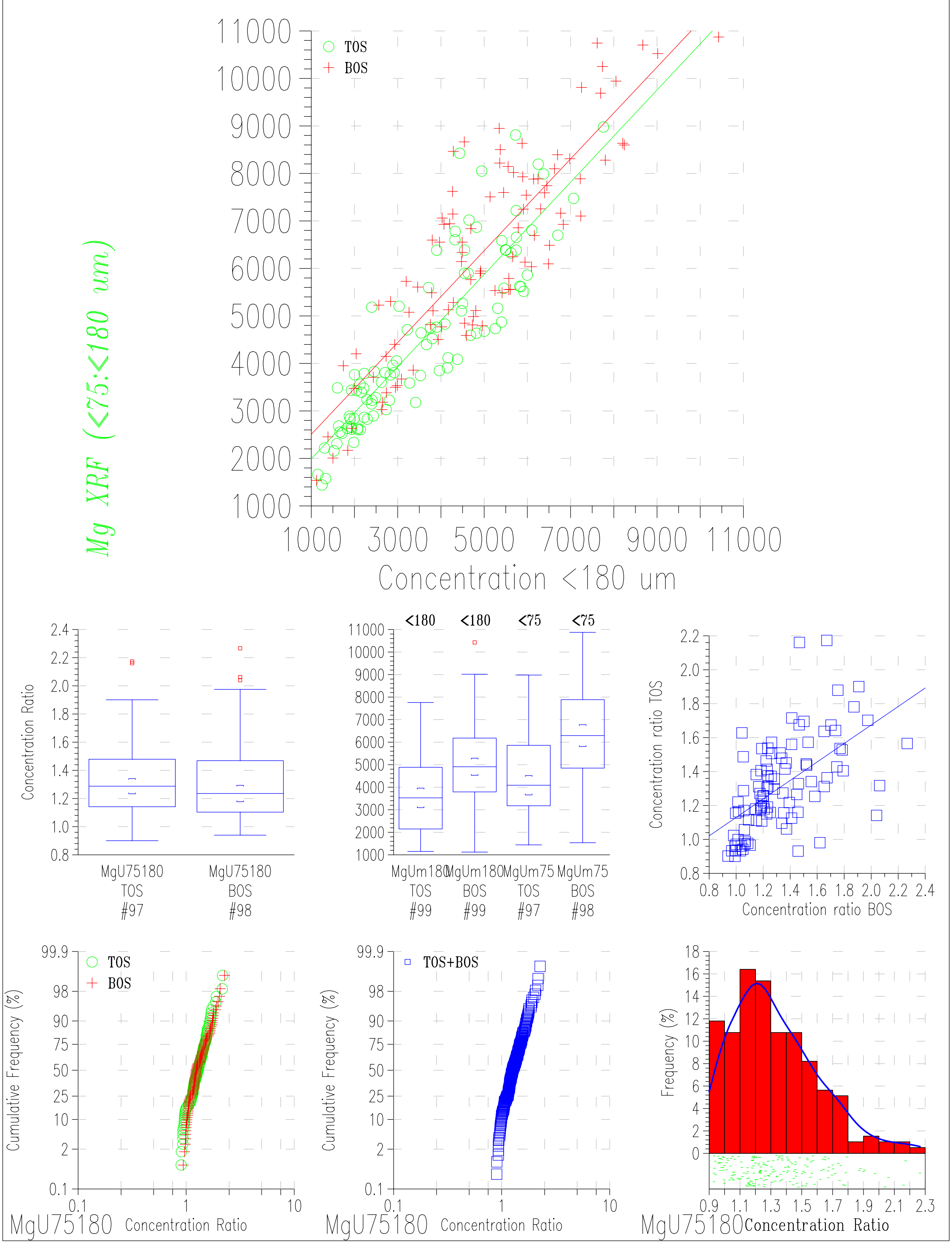

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Mg (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.71603
1.32832
0.877988
0.784817
0.526144
0.222119
MgUm75
MgUm75 TOS #97
MgUm75 BOS #98
Concentration Ratio
MgUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

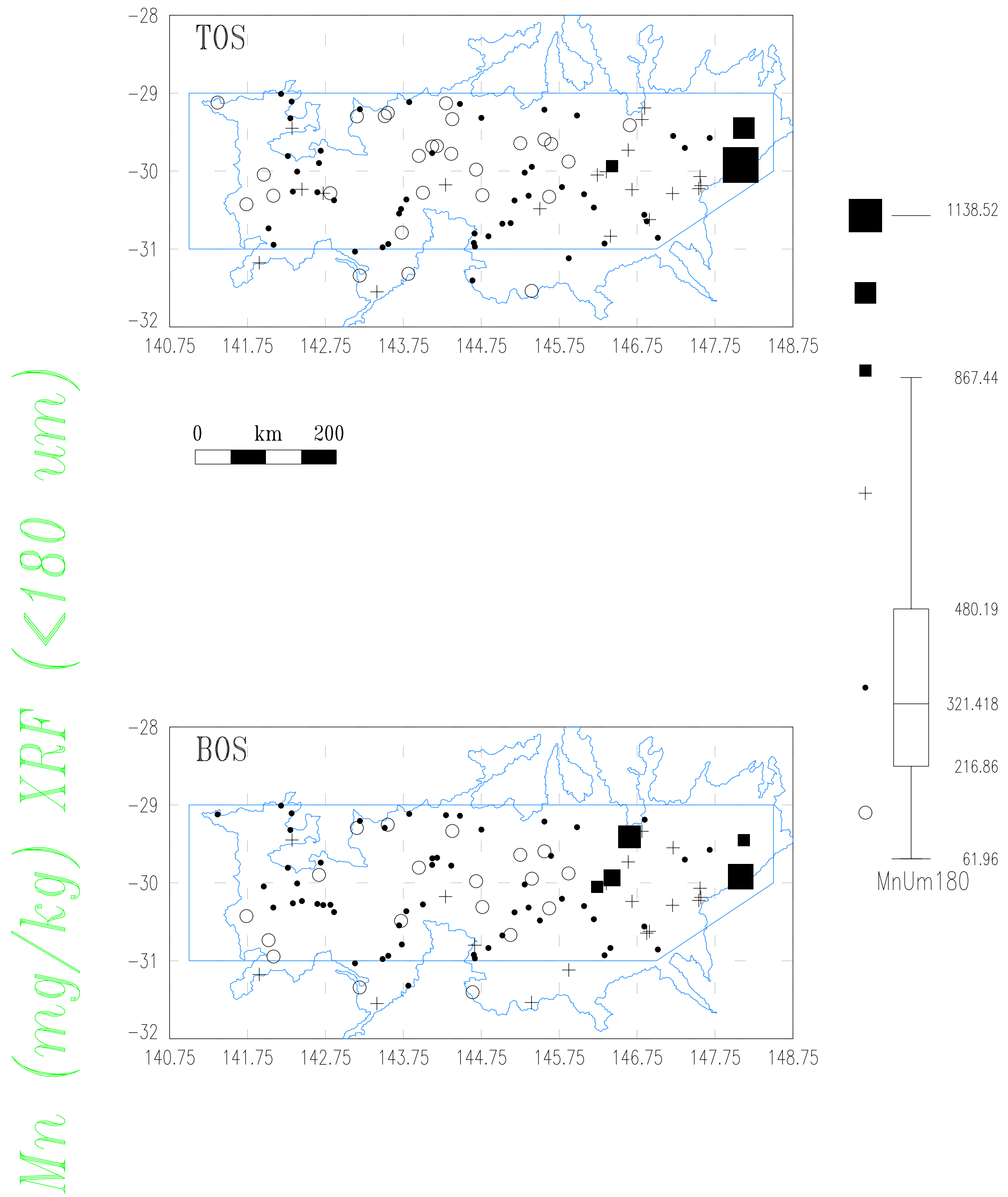
Top & Bottom Outlet Sediments (TOS & BOS)



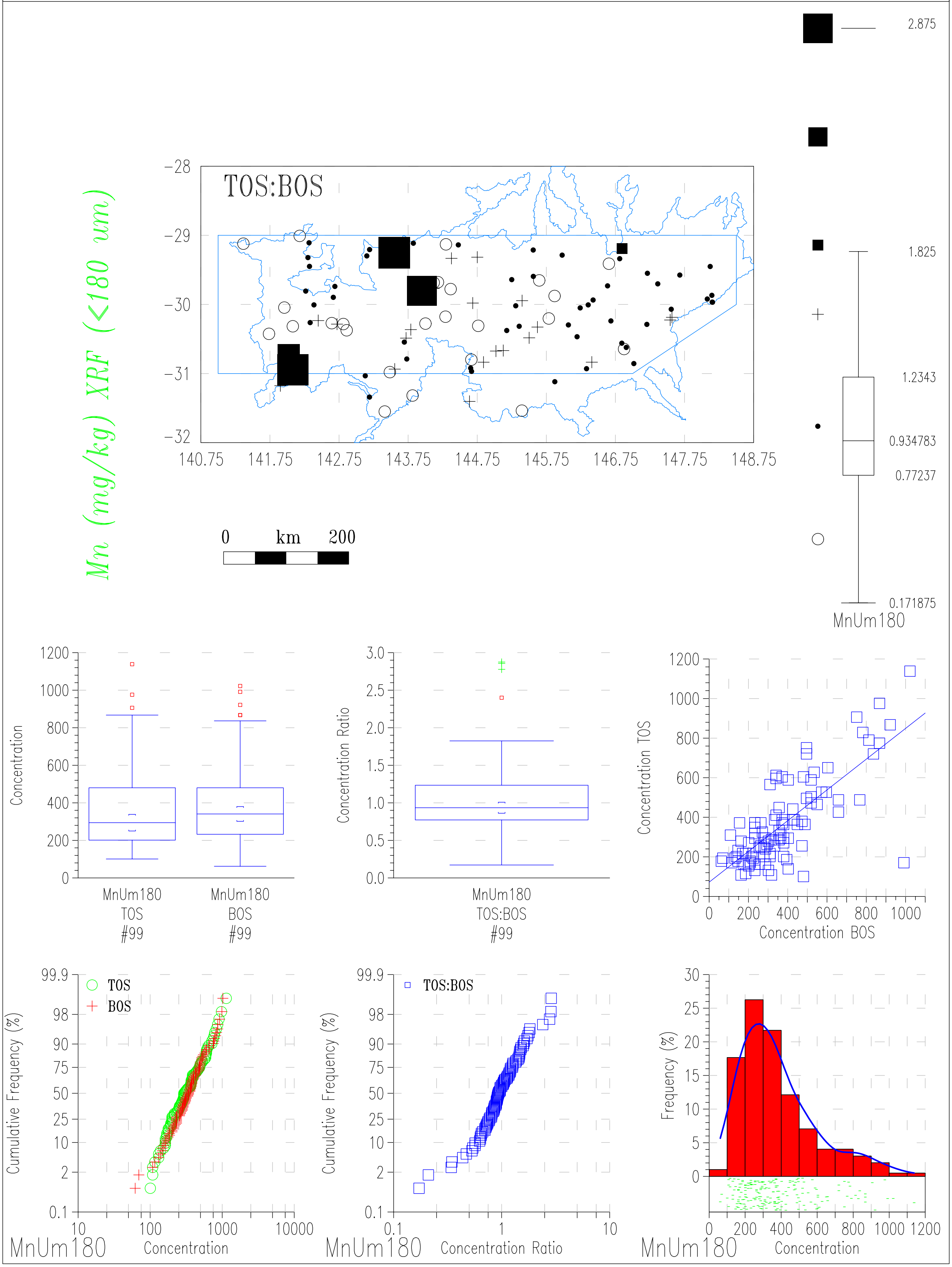
THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



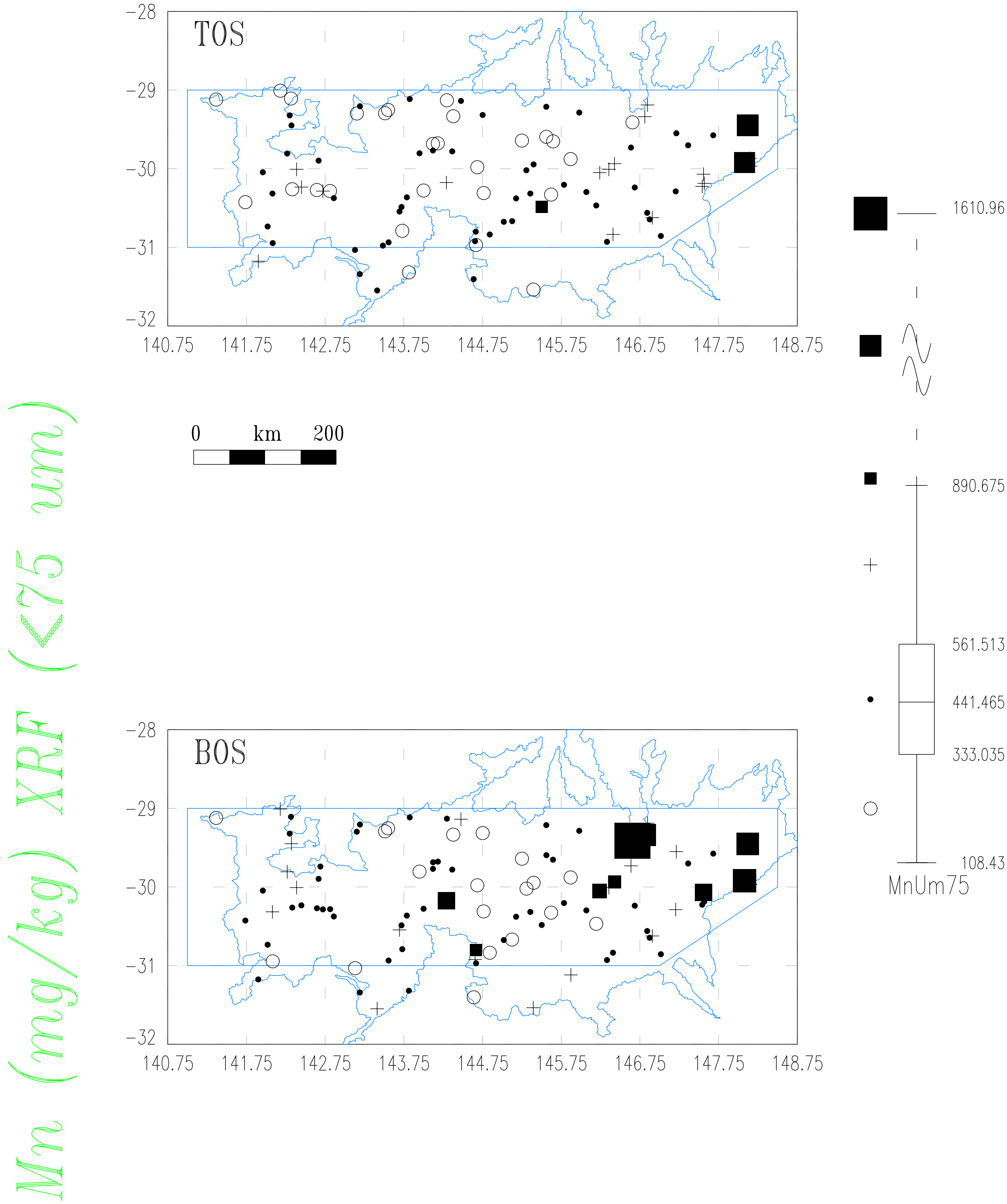
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

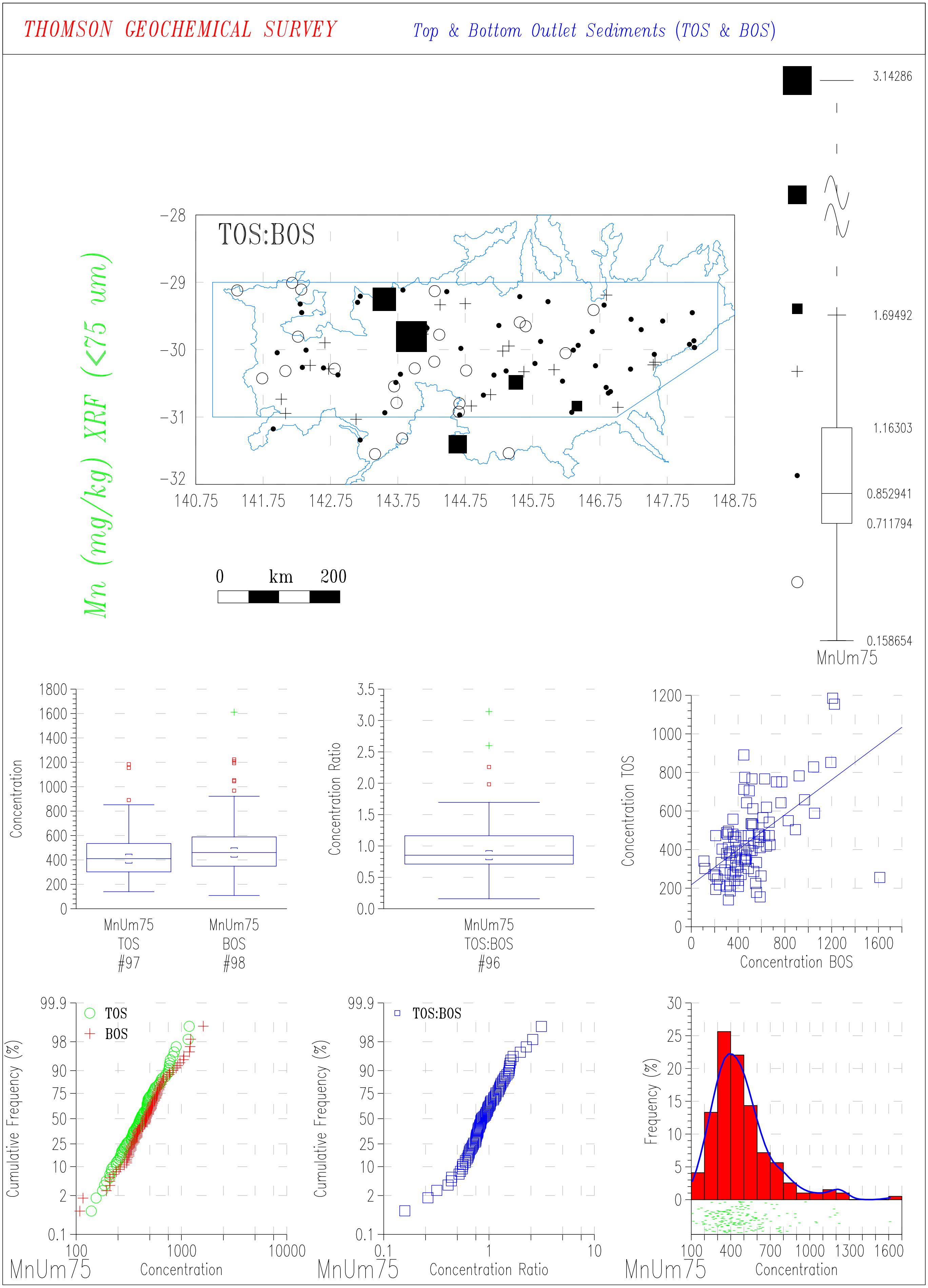


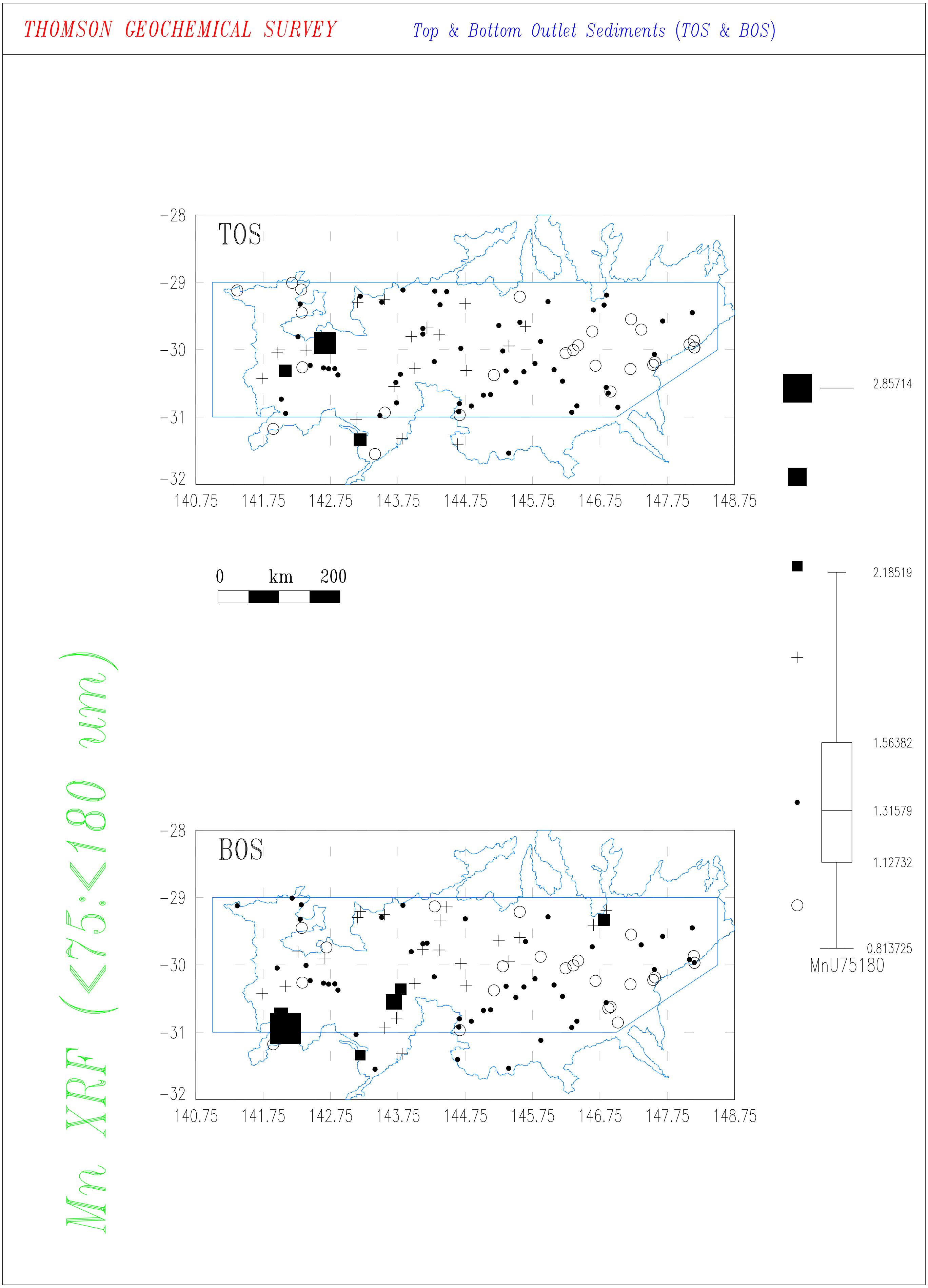
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

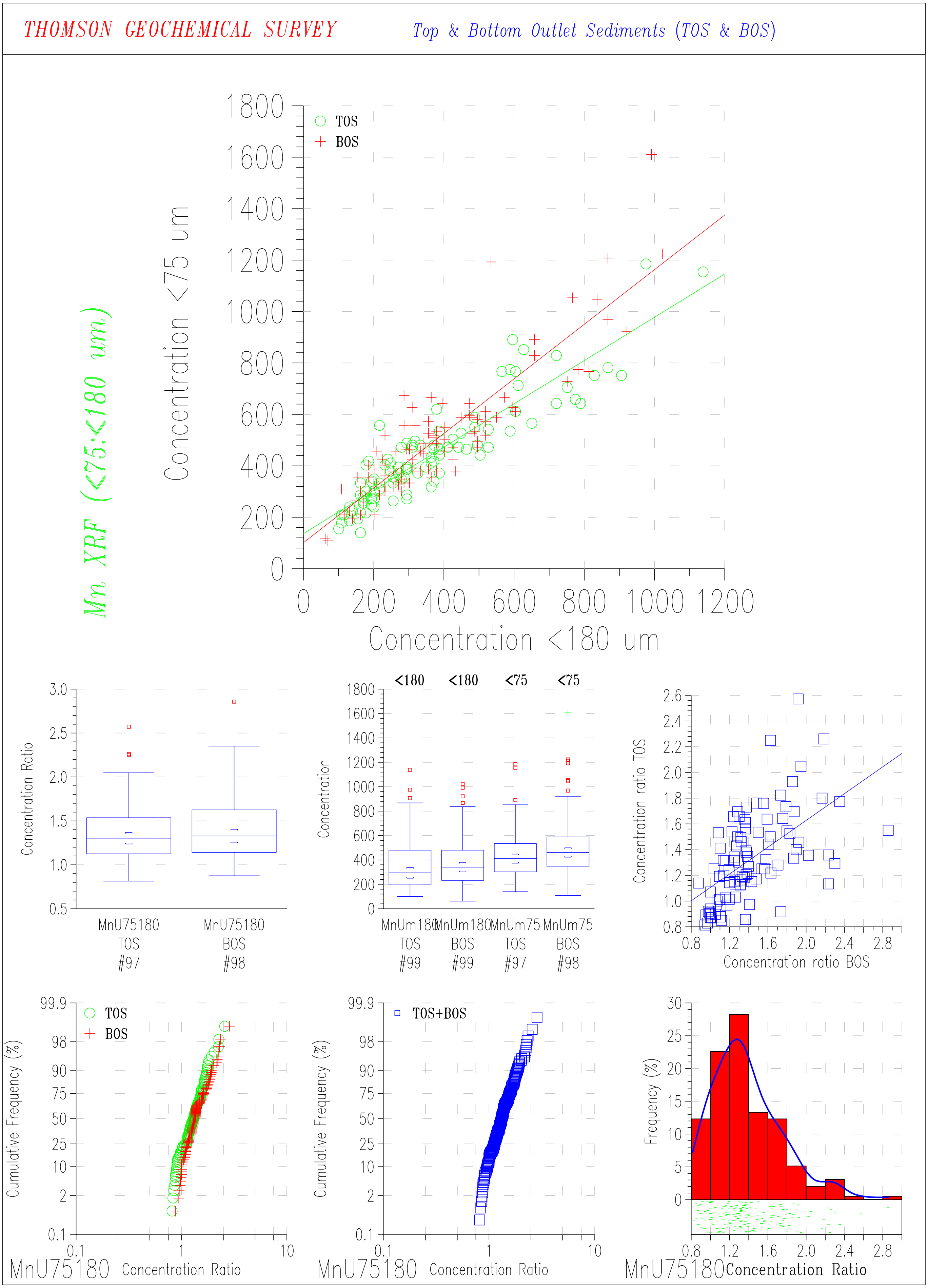


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

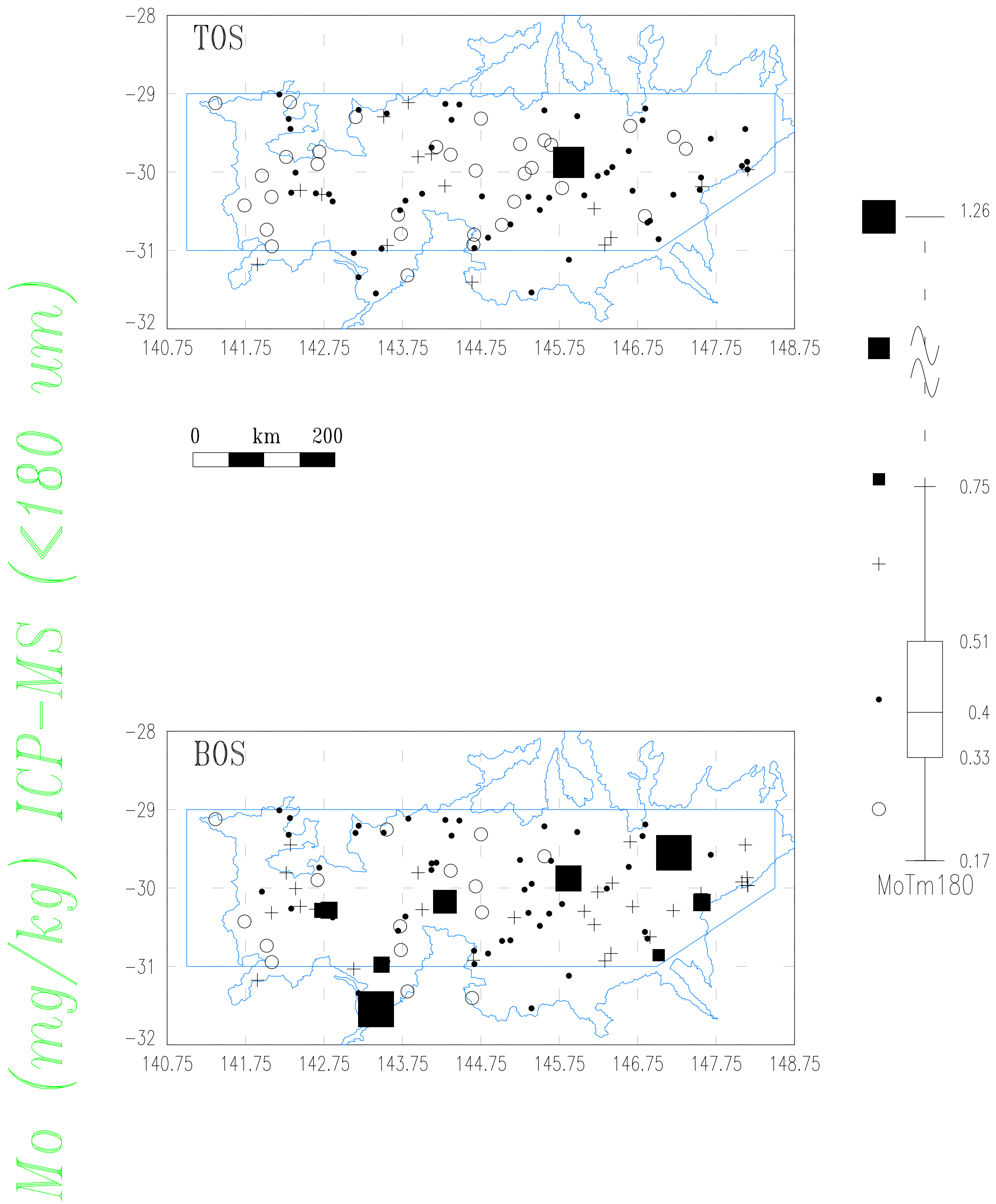



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Mn (mg/kg) XRF (<75 um)
TOS:BOS
3.14286
1.69492
1.16303
0.852941
0.711794
0.158654
MnUm75
0 km 200
Concentration
MnUm75 TOS #97
MnUm75 BOS #98
Concentration Ratio
MnUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
MnUm75
Concentration
Concentration Ratio
Frequency (%)

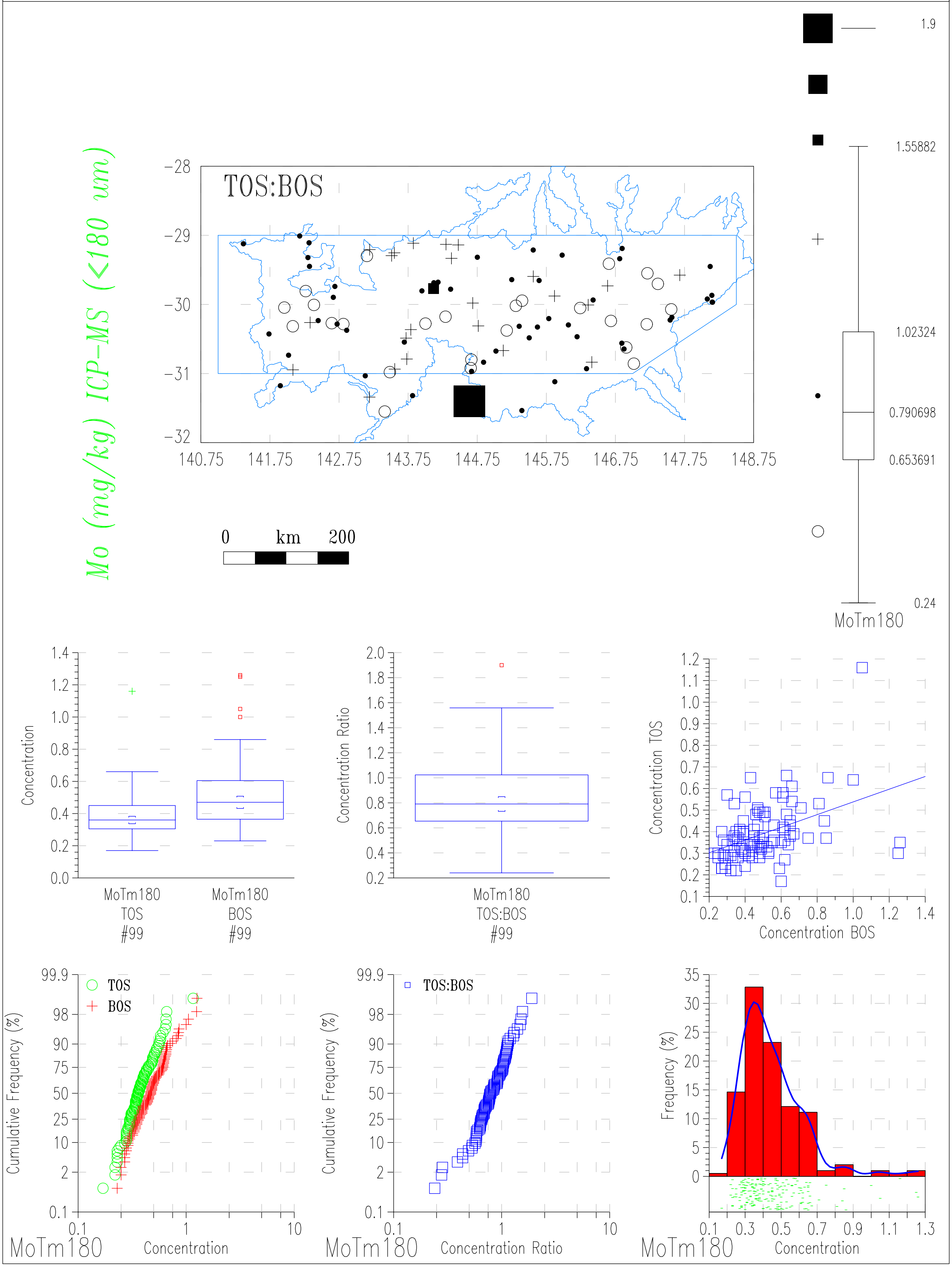

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
2.85714
2.18519
1.56382
1.31579
1.12732
0.813725
MnU75180
Mn XRF (<75:<180 um)


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Mn XRF (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
MnU75180
TOS
#97
MnU75180
BOS
#98
<180
<180
<75
<75
Concentration
MnUm180
TOS
#99
MnUm180
BOS
#99
MnUm75
TOS
#97
MnUm75
BOS
#98
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
MnU75180 Concentration Ratio
TOS+BOS
Cumulative Frequency (%)
MnU75180 Concentration Ratio
Frequency (%)
MnU75180 Concentration Ratio

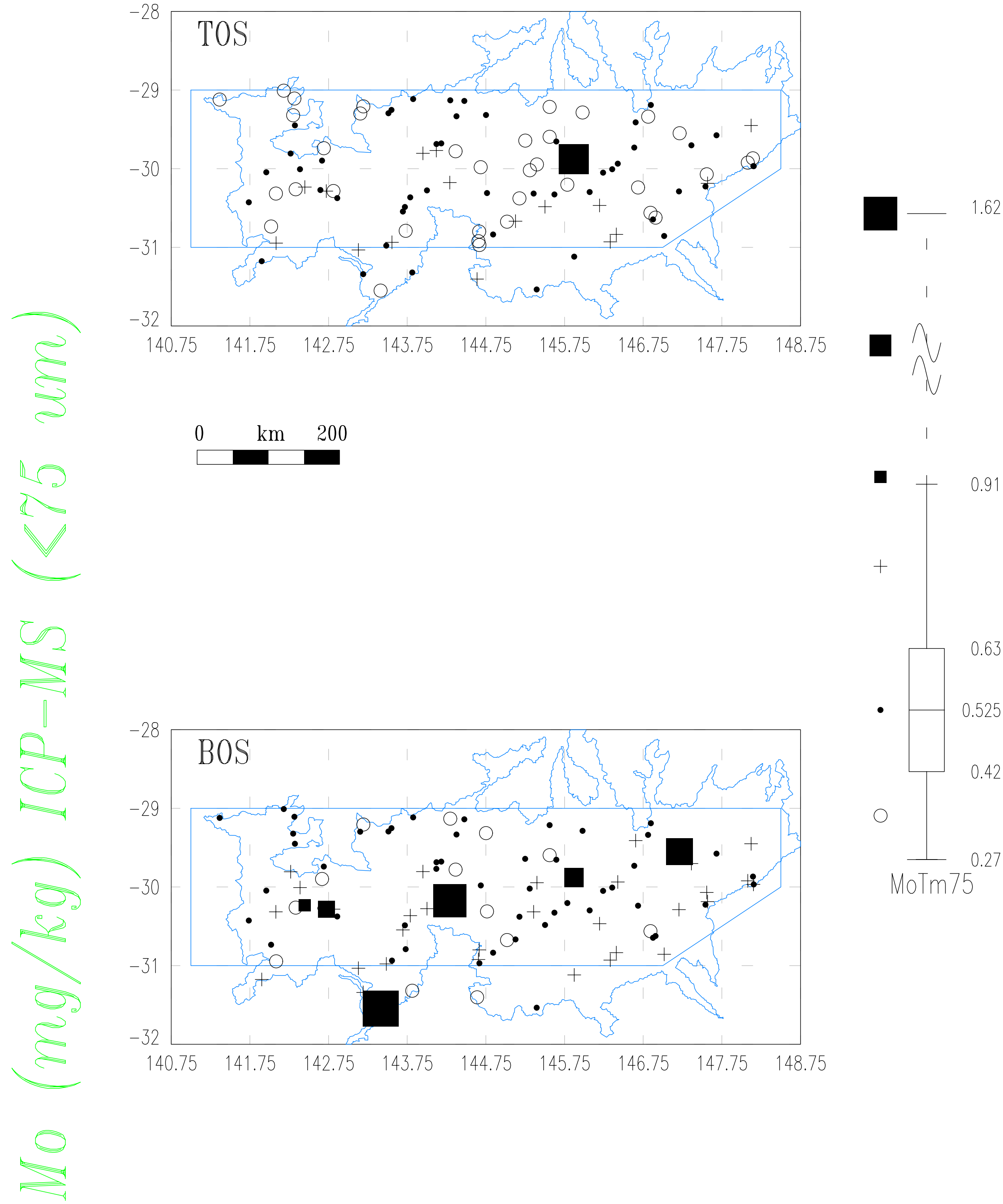
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



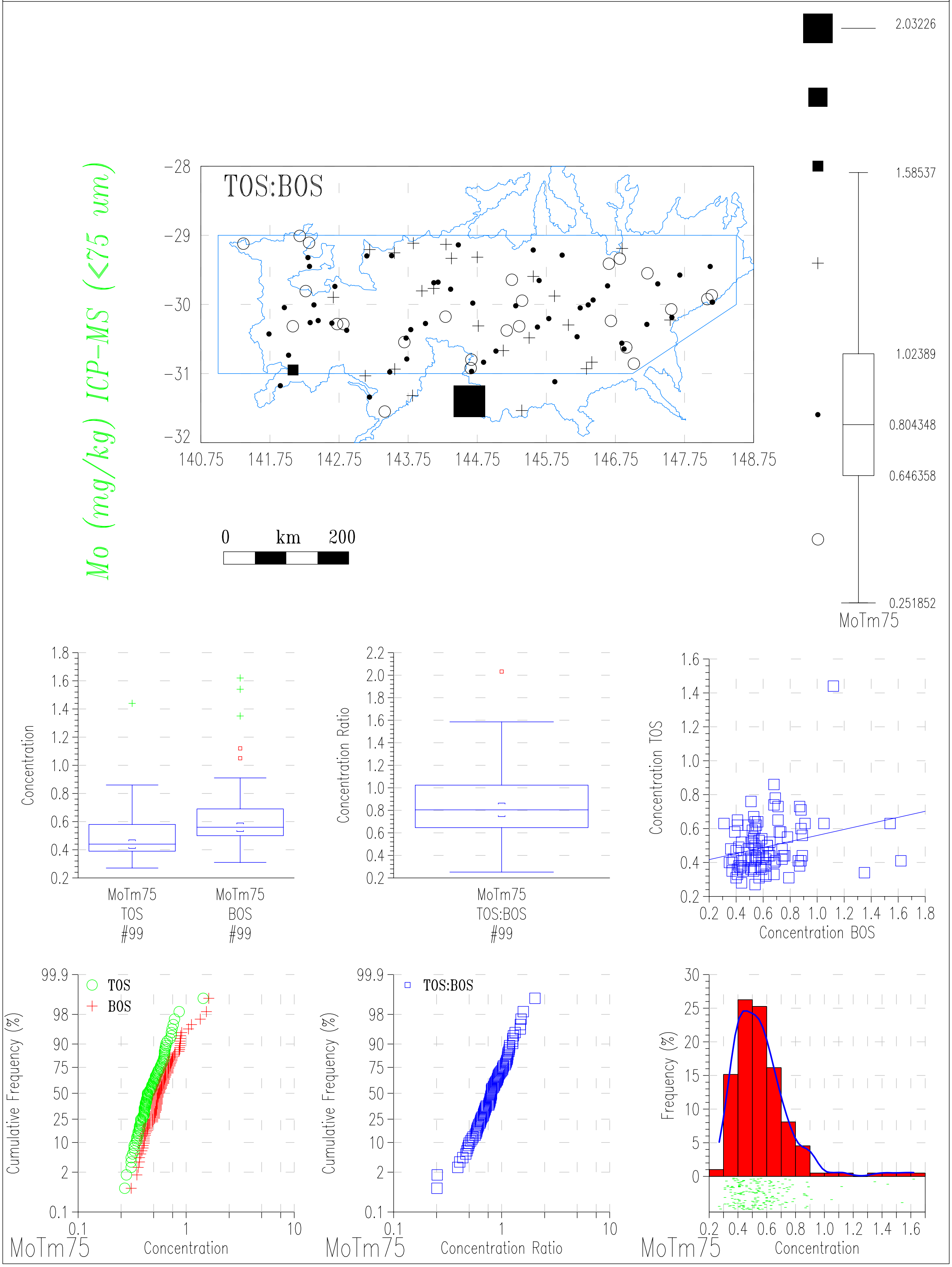
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



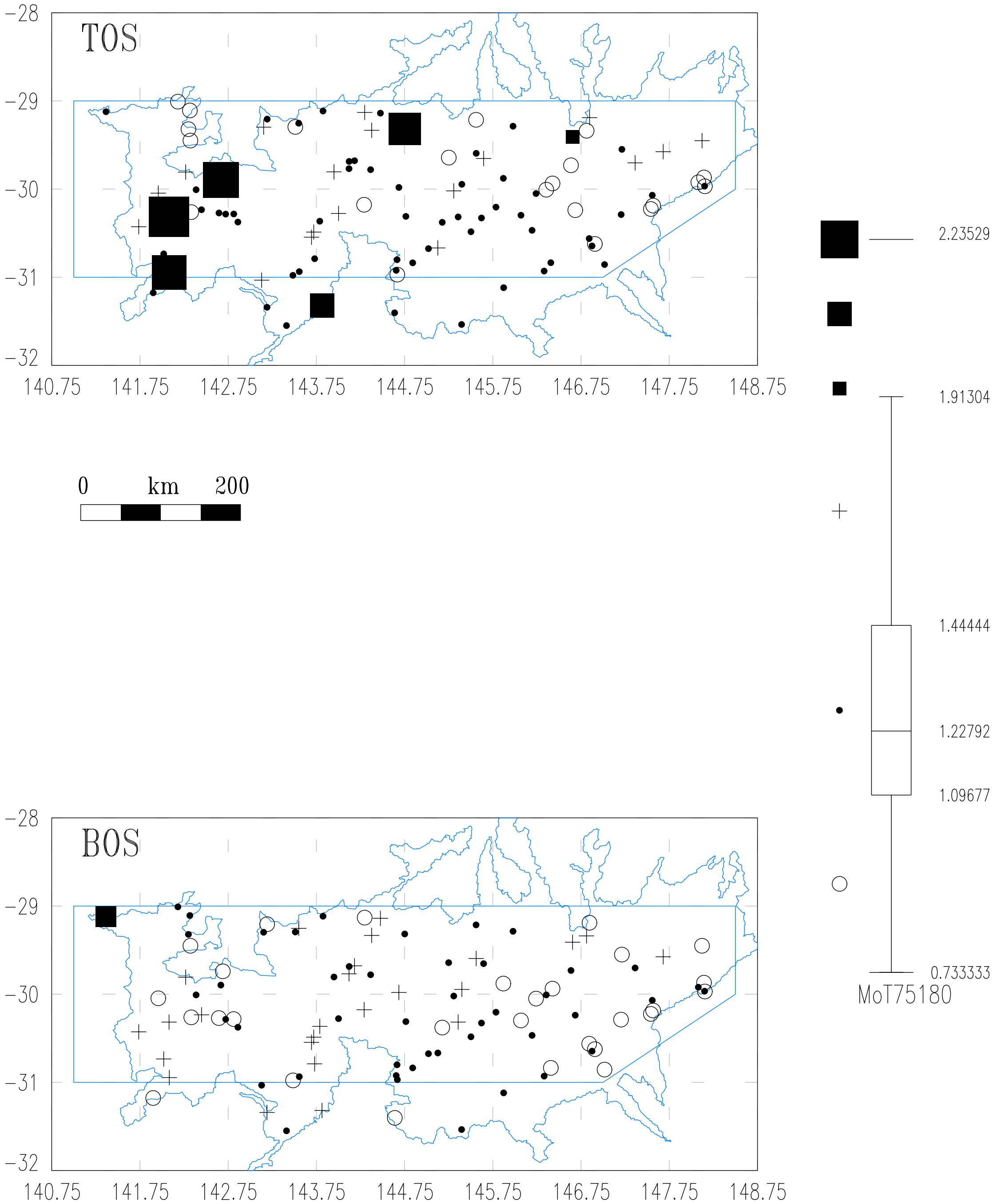
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



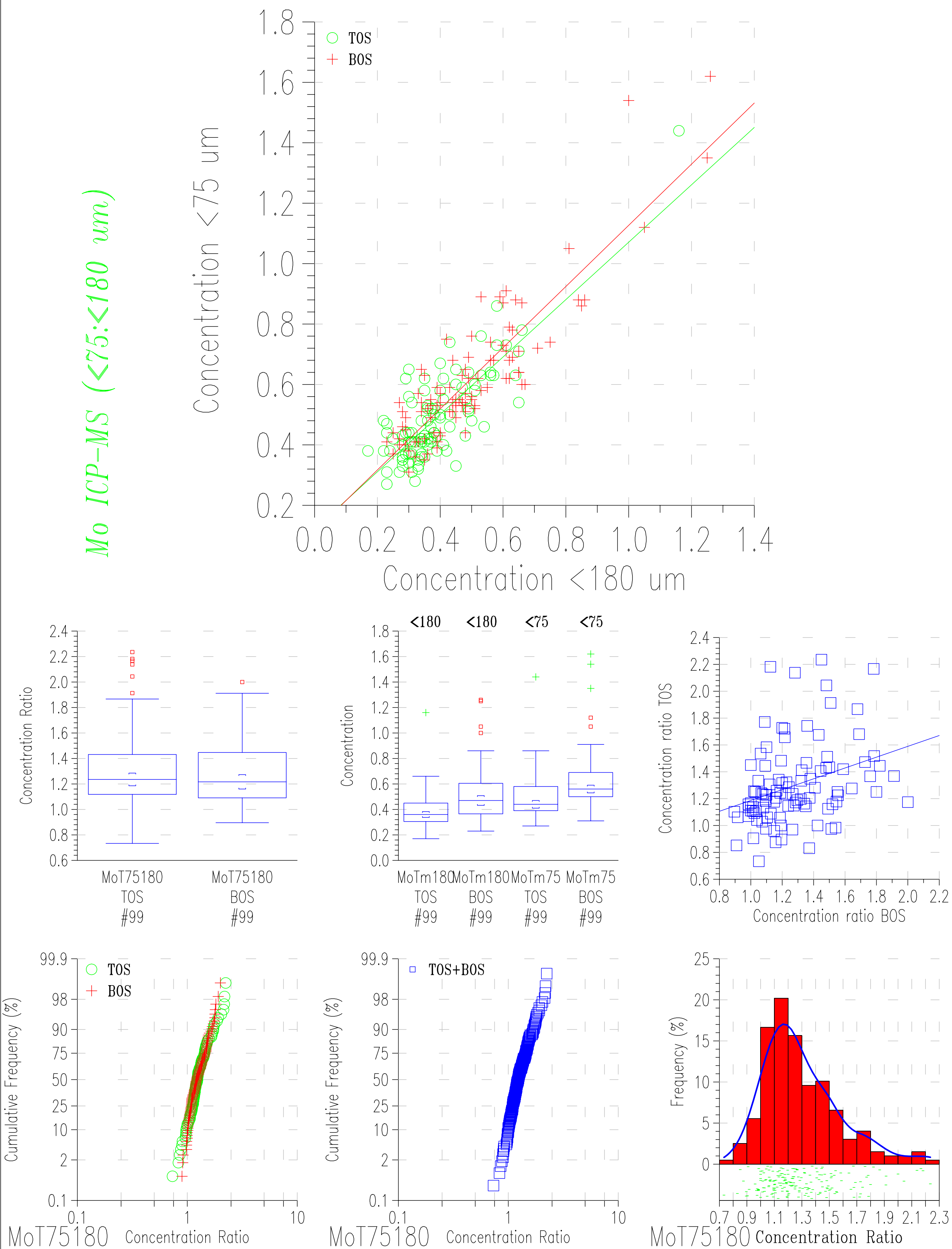
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



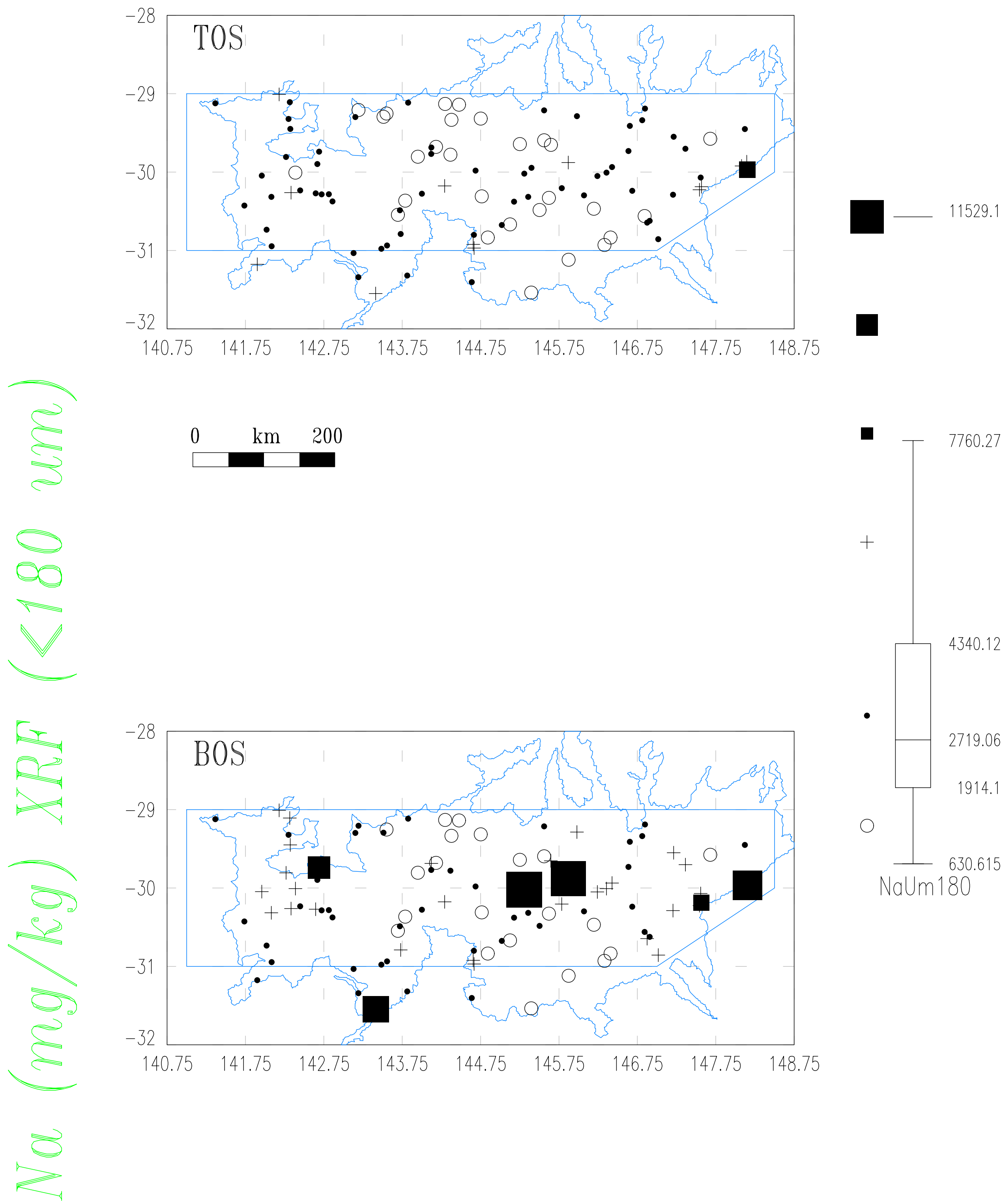
Mo ICP-MS (<75:<180 um)

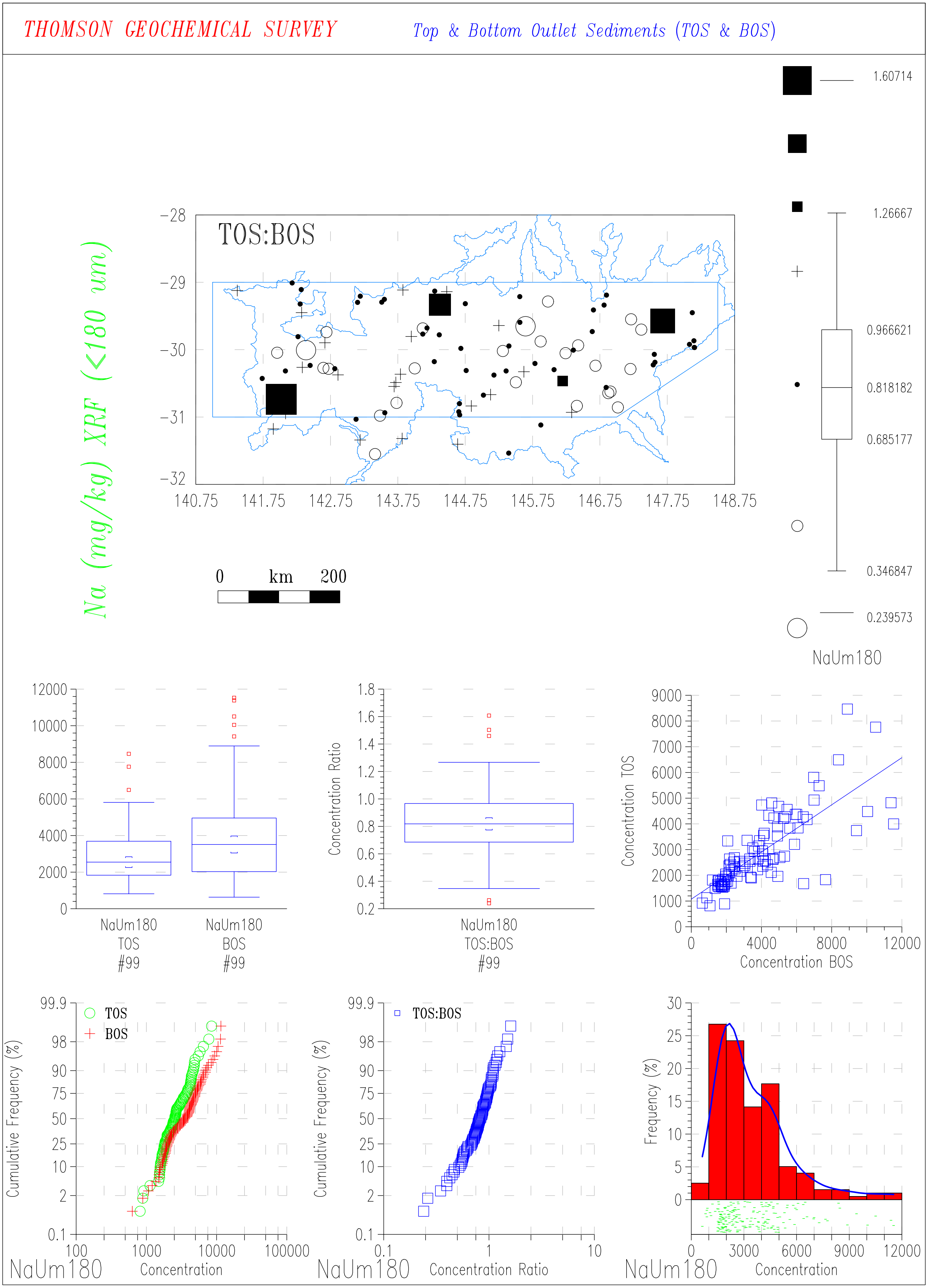
THOMSON GEOCHEMICAL SURVEY

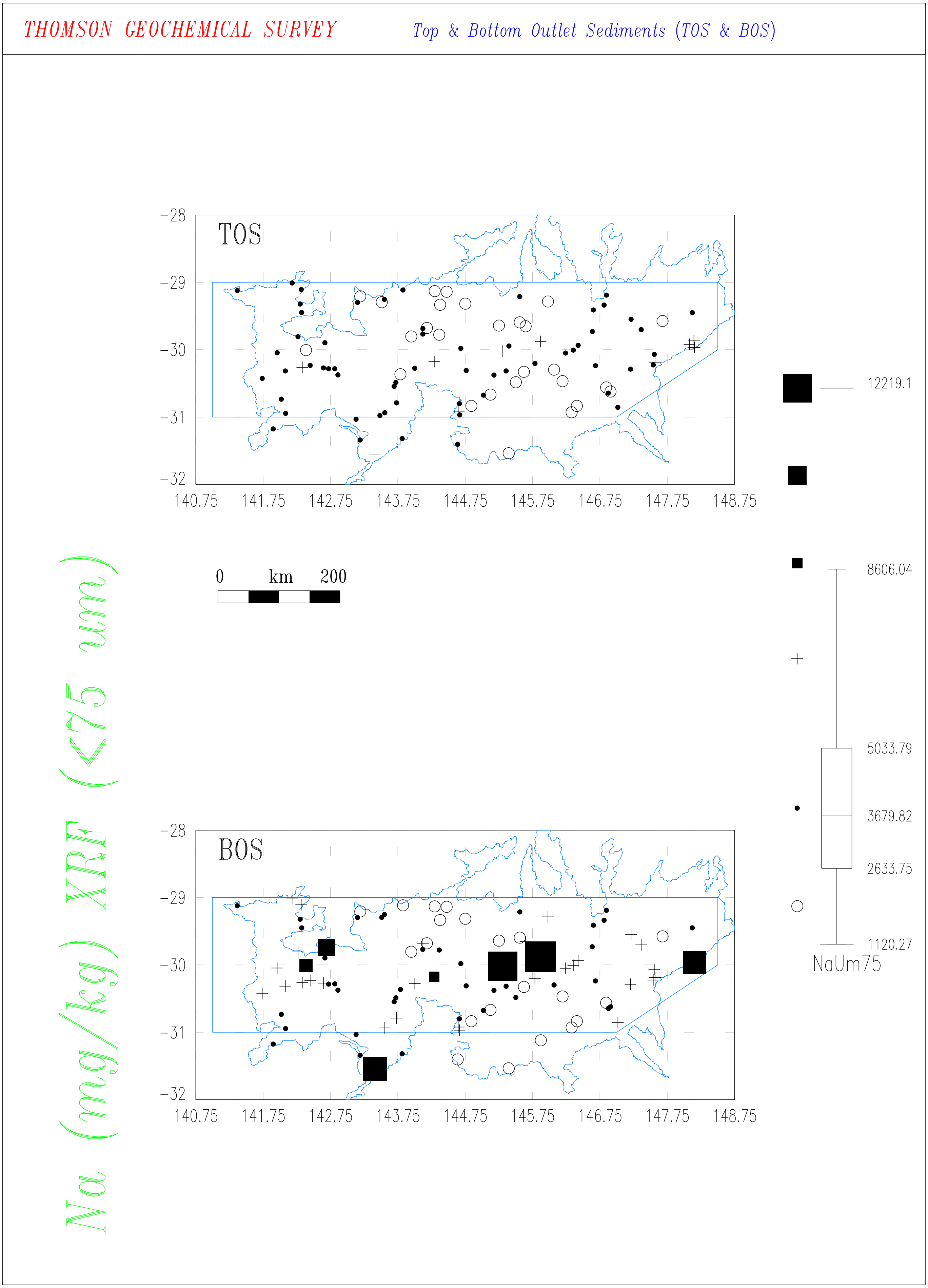
Top & Bottom Outlet Sediments (TOS & BOS)

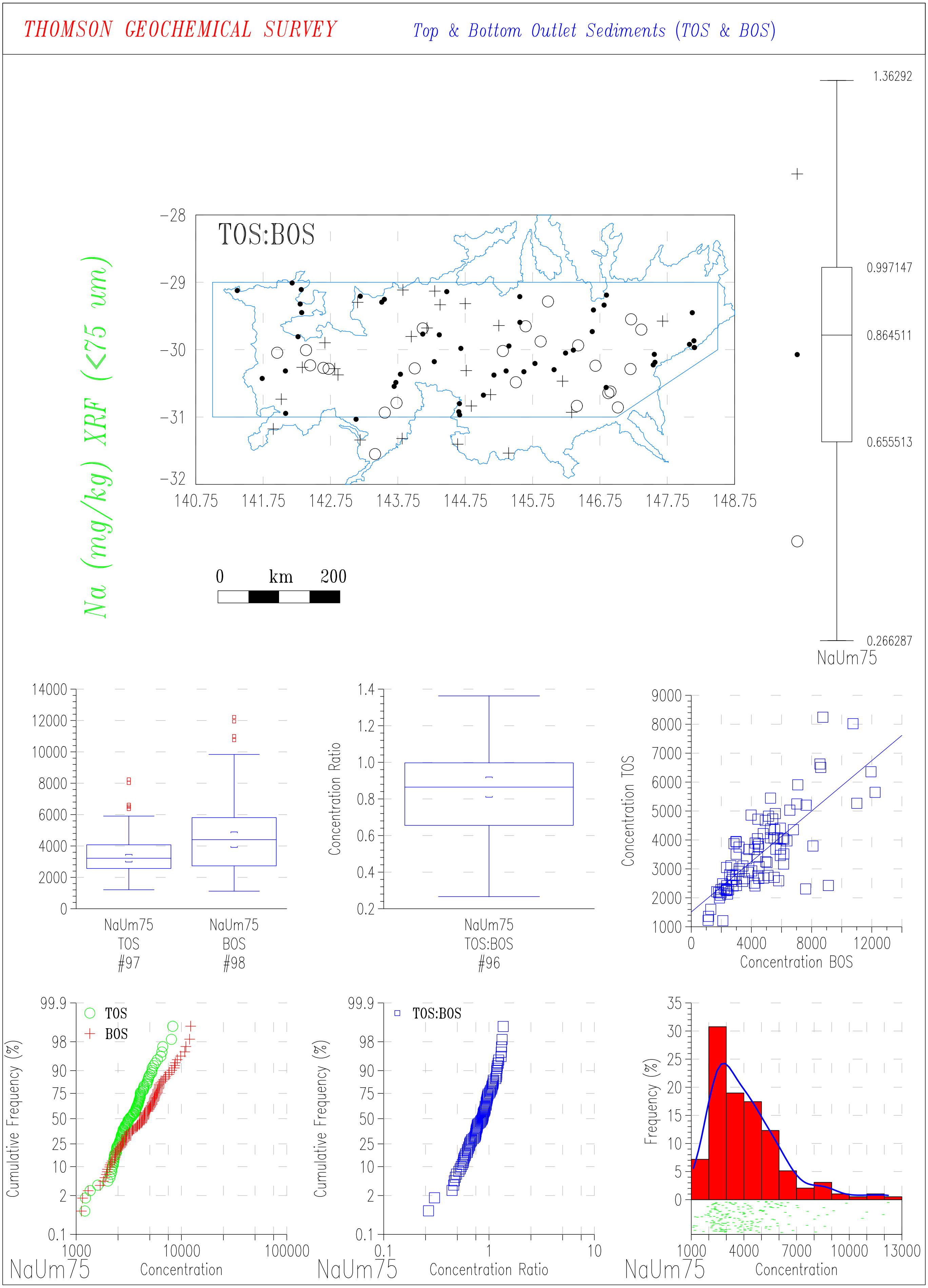


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

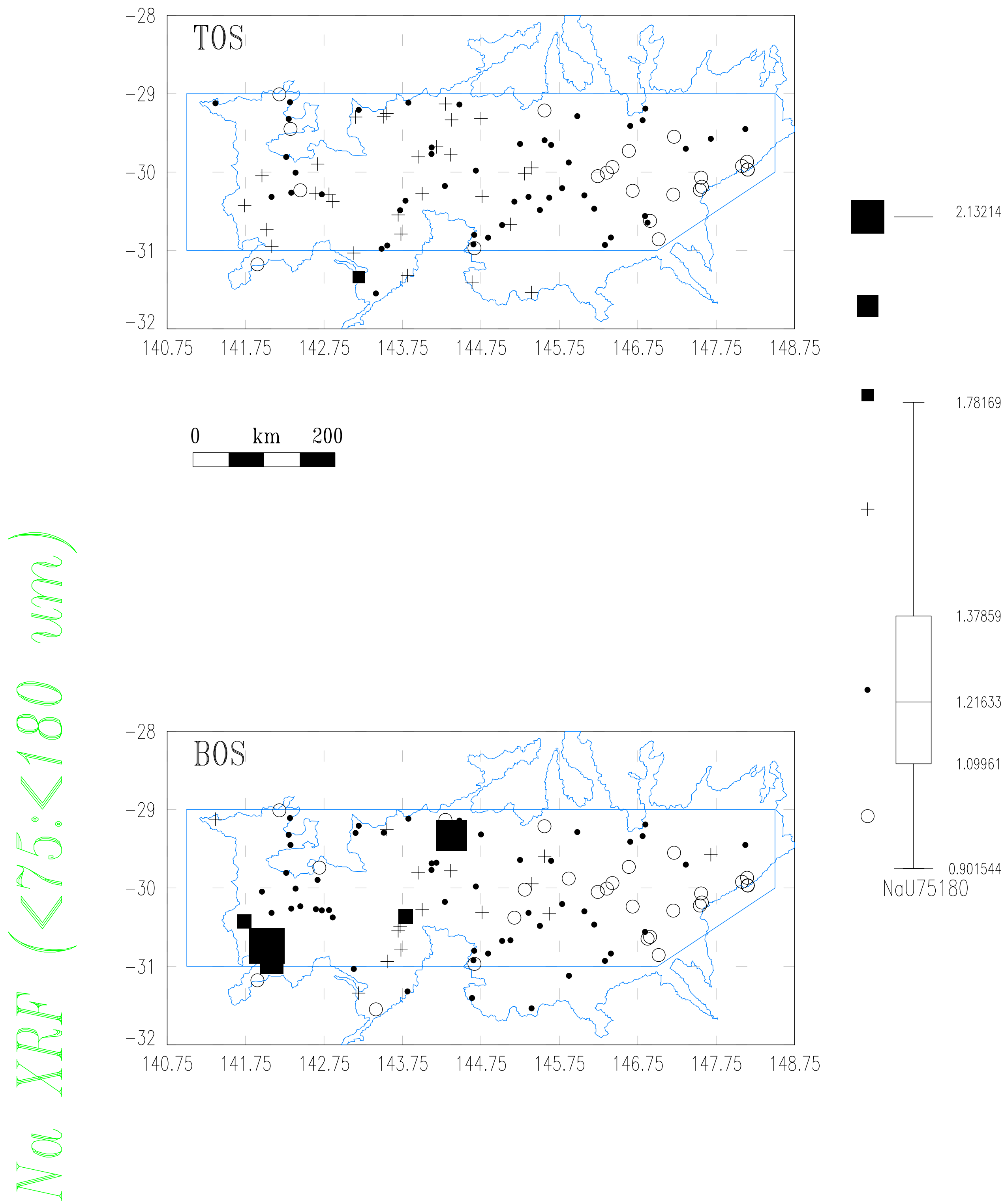



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Na (mg/kg) XRF (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.60714
1.26667
0.966621
0.818182
0.685177
0.346847
0.239573
NaUm180
Concentration Ratio
Concentration TOS
Concentration BOS
NaUm180 TOS #99
NaUm180 BOS #99
NaUm180 TOS:BOS #99
Cumulative Frequency (%)
TOS
BOS
Concentration
Frequency (%)

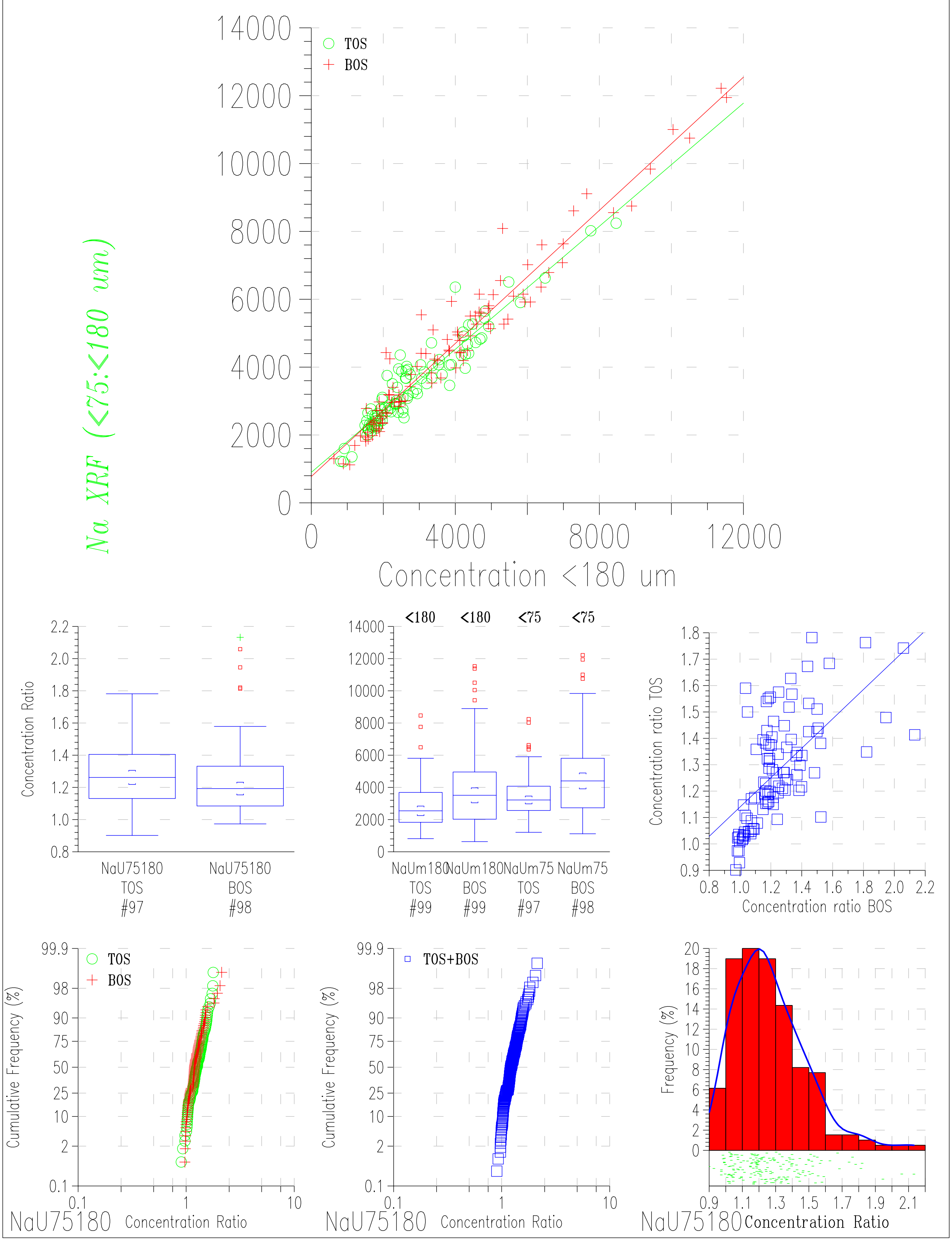

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
12219.1
8606.04
5033.79
3679.82
2633.75
1120.27
NaUm75
Na (mg/kg) XRF (<75 um)


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Na (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.36292
0.997147
0.864511
0.655513
0.266287
NaUm75
Concentration Ratio
Concentration TOS
Concentration BOS
NaUm75 TOS #97
NaUm75 BOS #98
NaUm75 TOS:BOS #96
TOS
BOS
Cumulative Frequency (%)
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

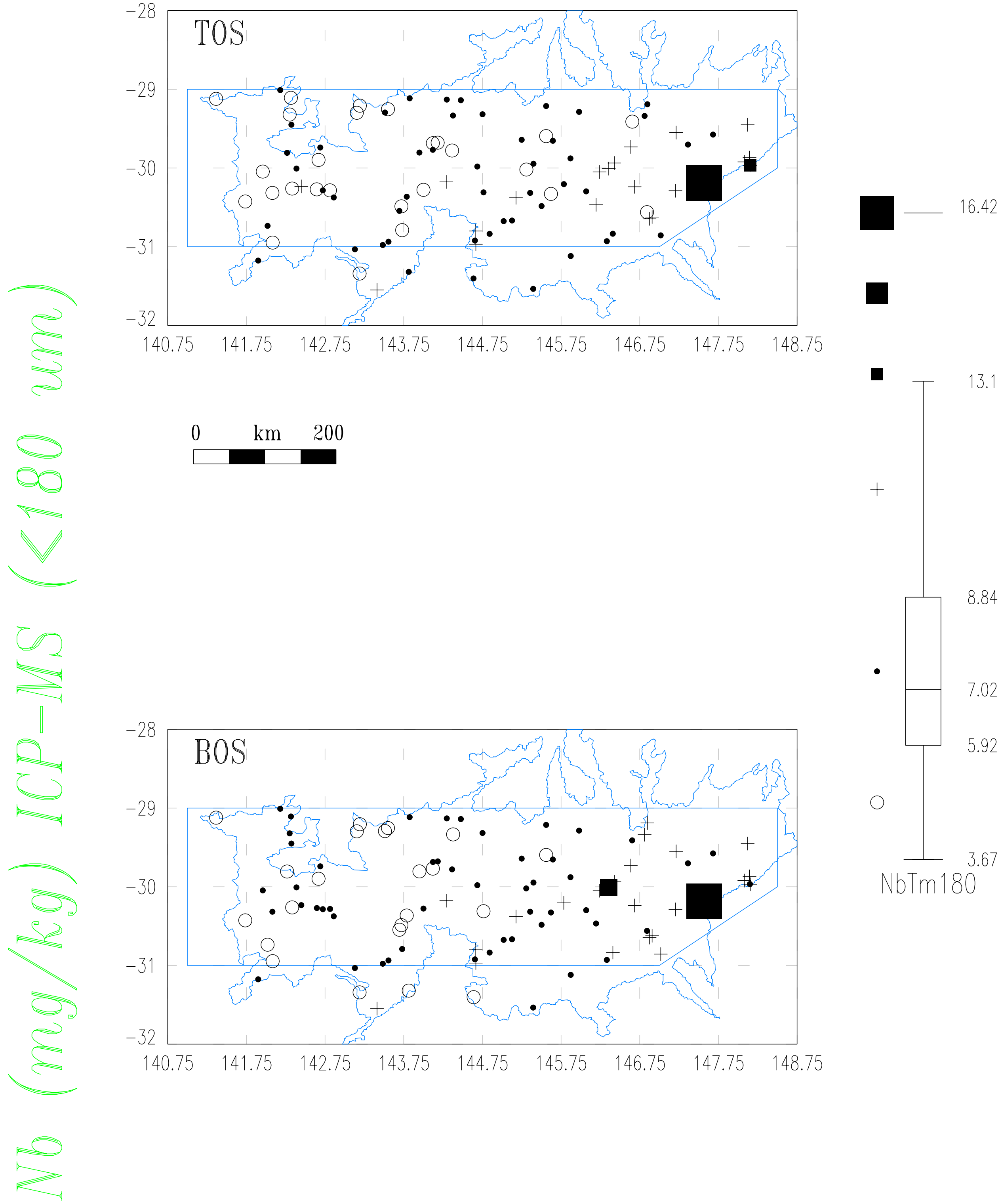


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

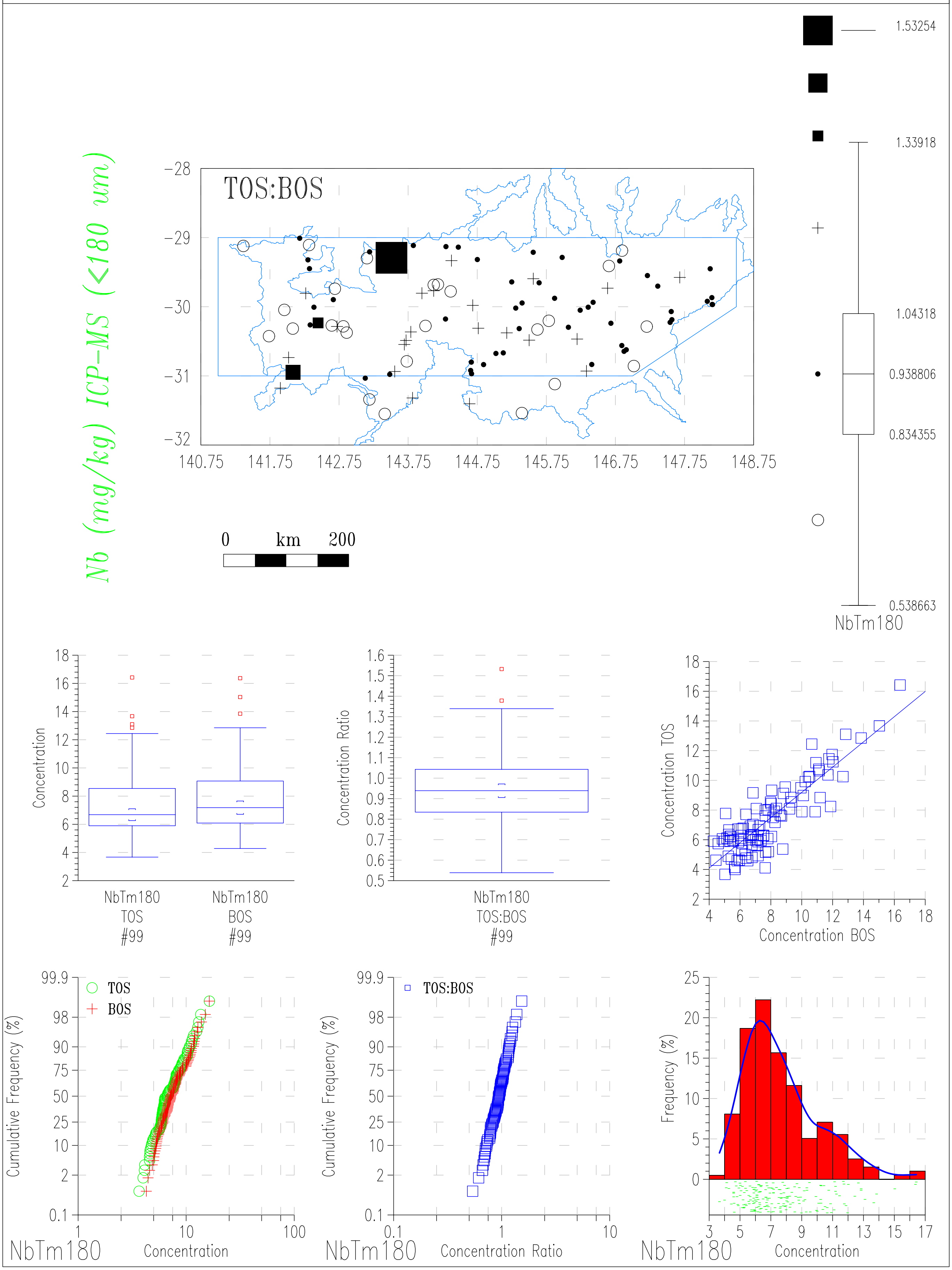


THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

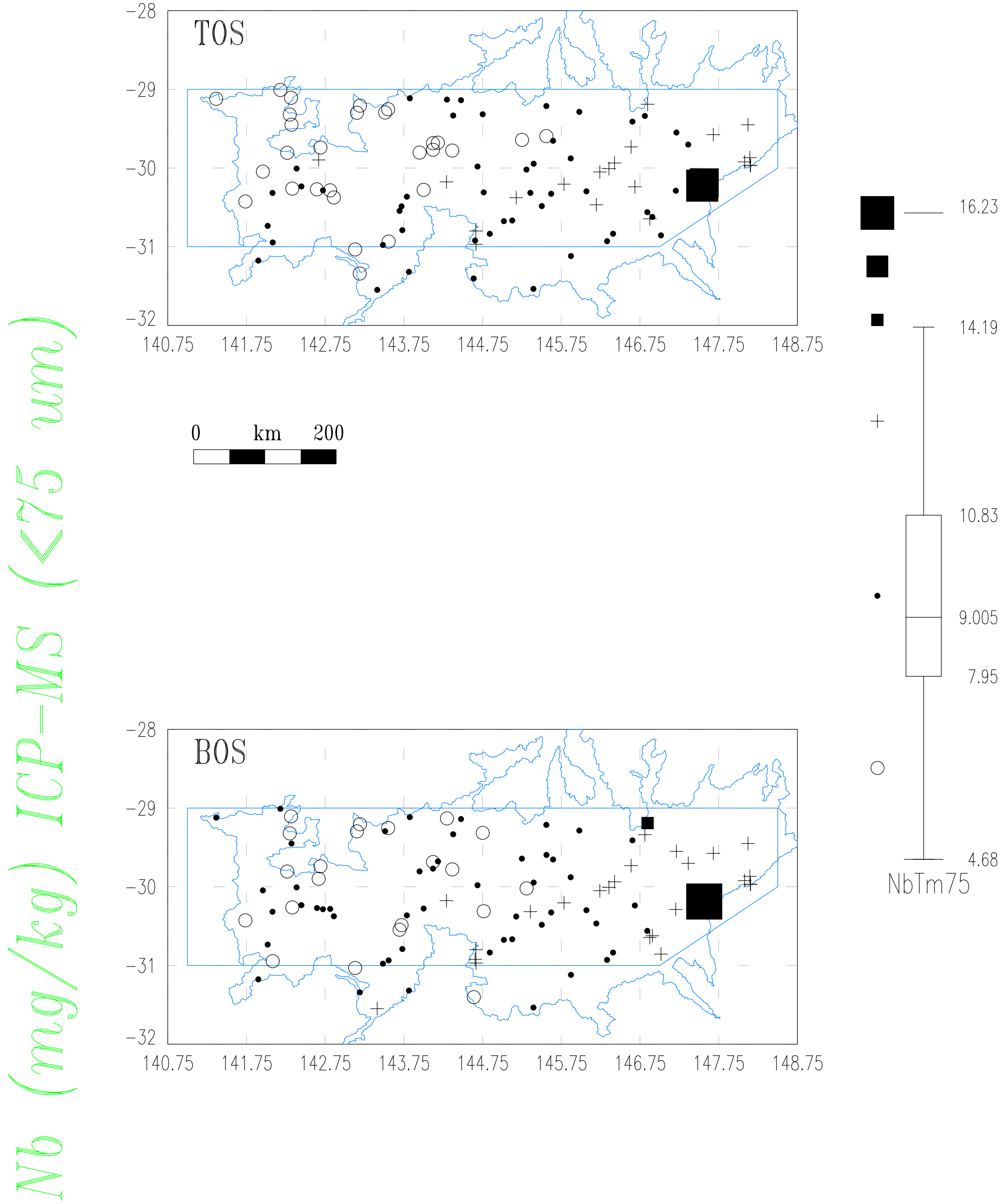


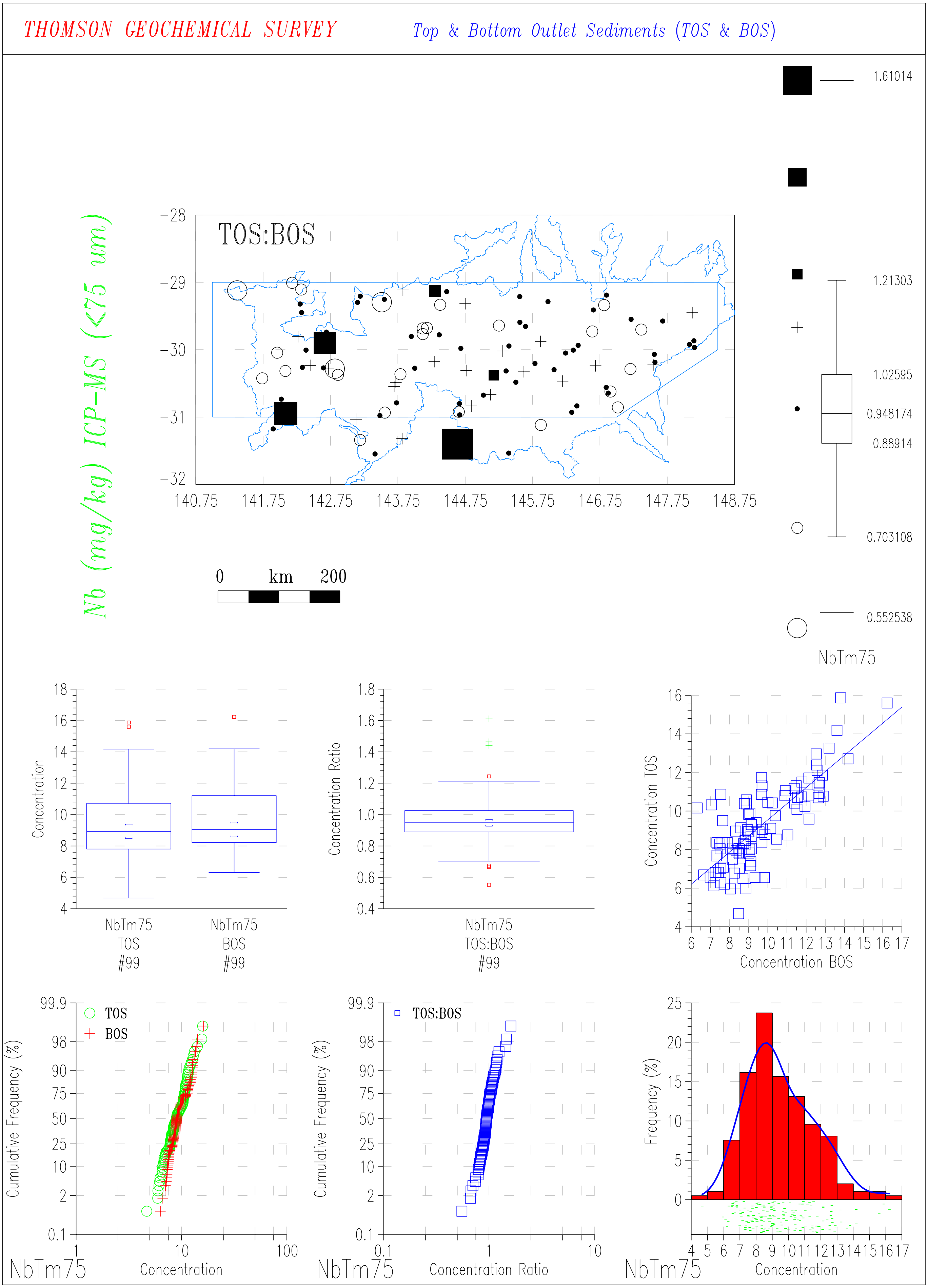
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

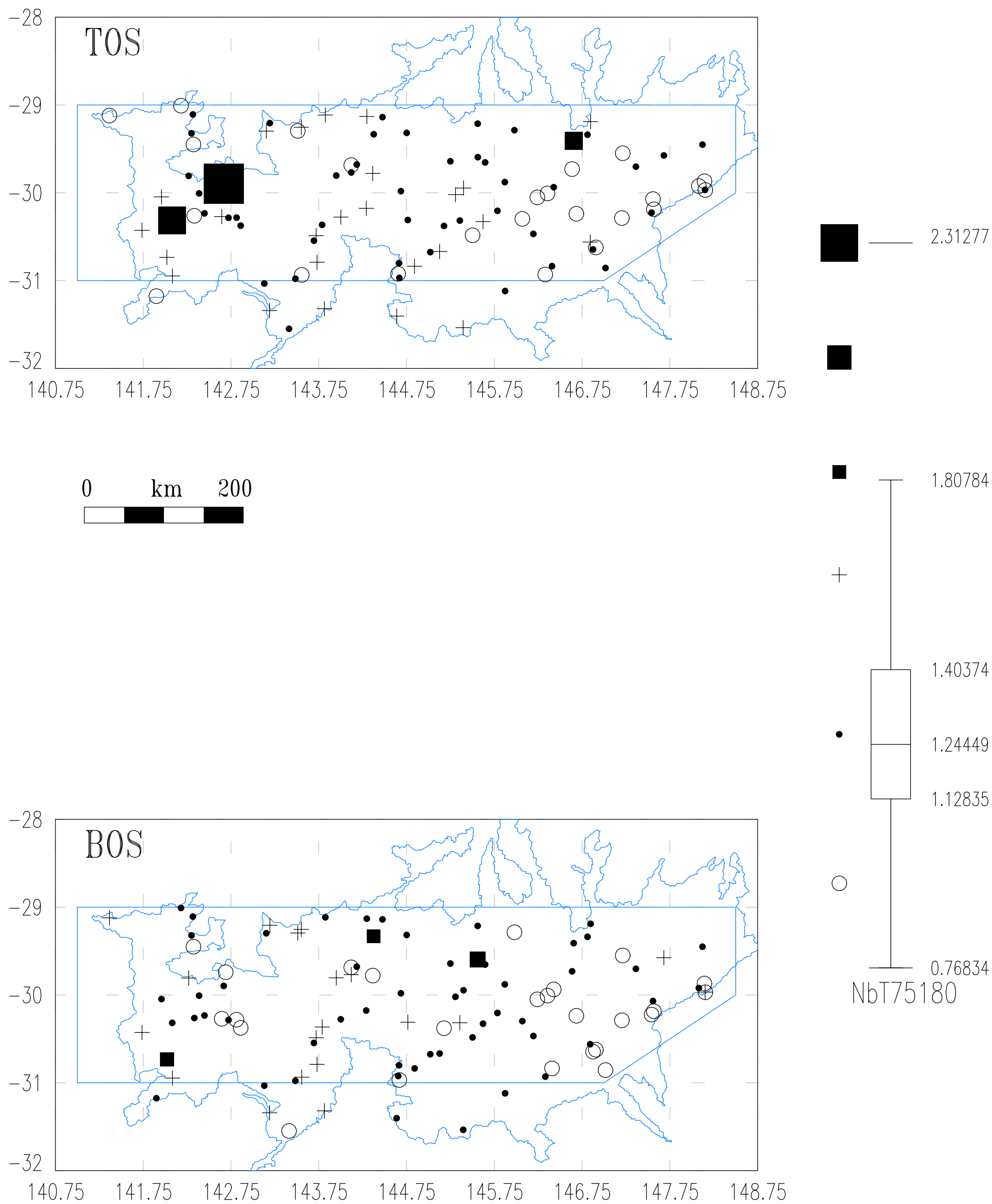
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Nb (mg/kg) ICP-MS (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.61014
1.21303
1.02595
0.948174
0.88914
0.703108
0.552538
NbTm75
Concentration
NbTm75 TOS #99
NbTm75 BOS #99
Concentration Ratio
NbTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

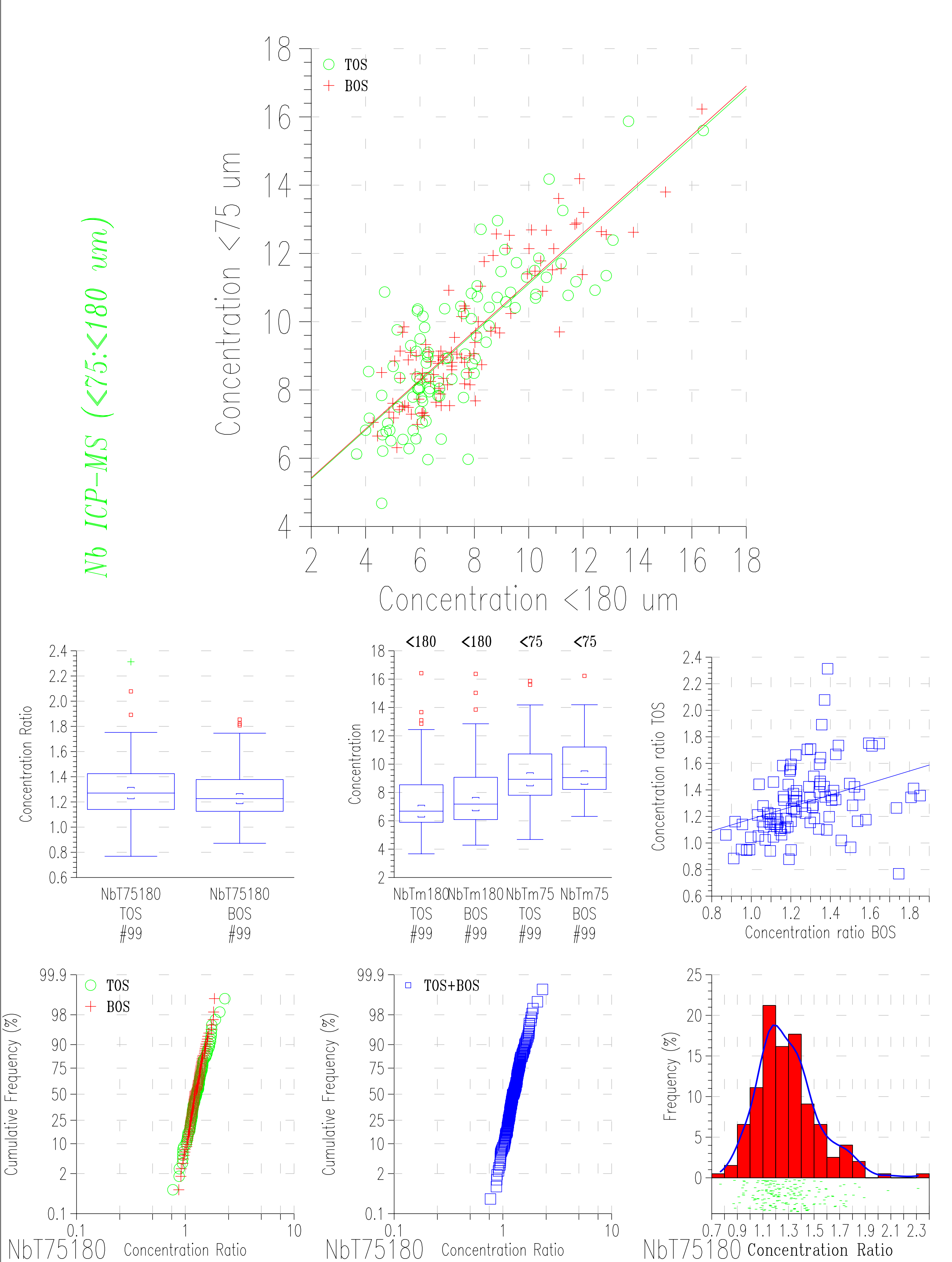
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

Nb ICP-MS (<75:<180 um)

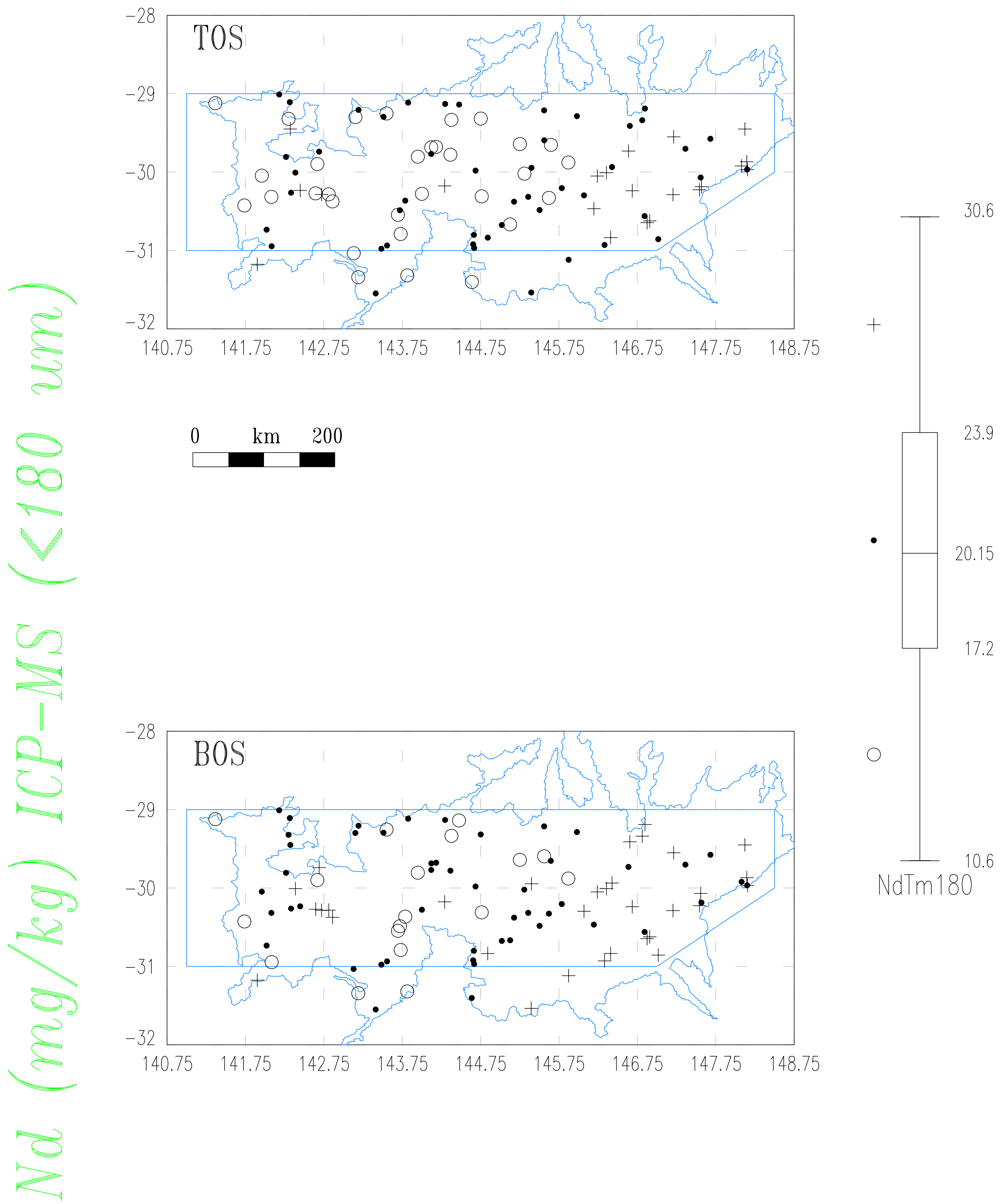


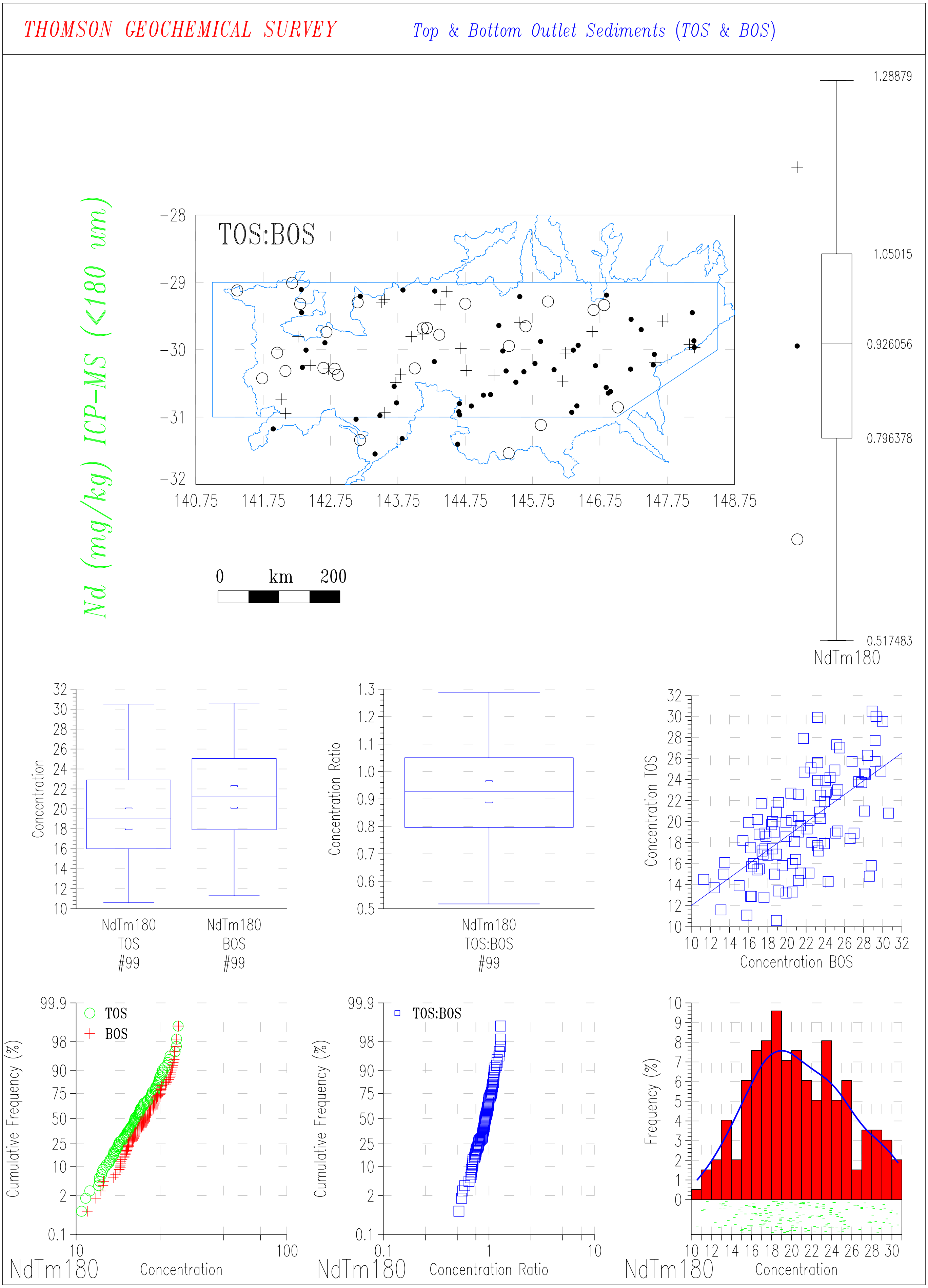
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

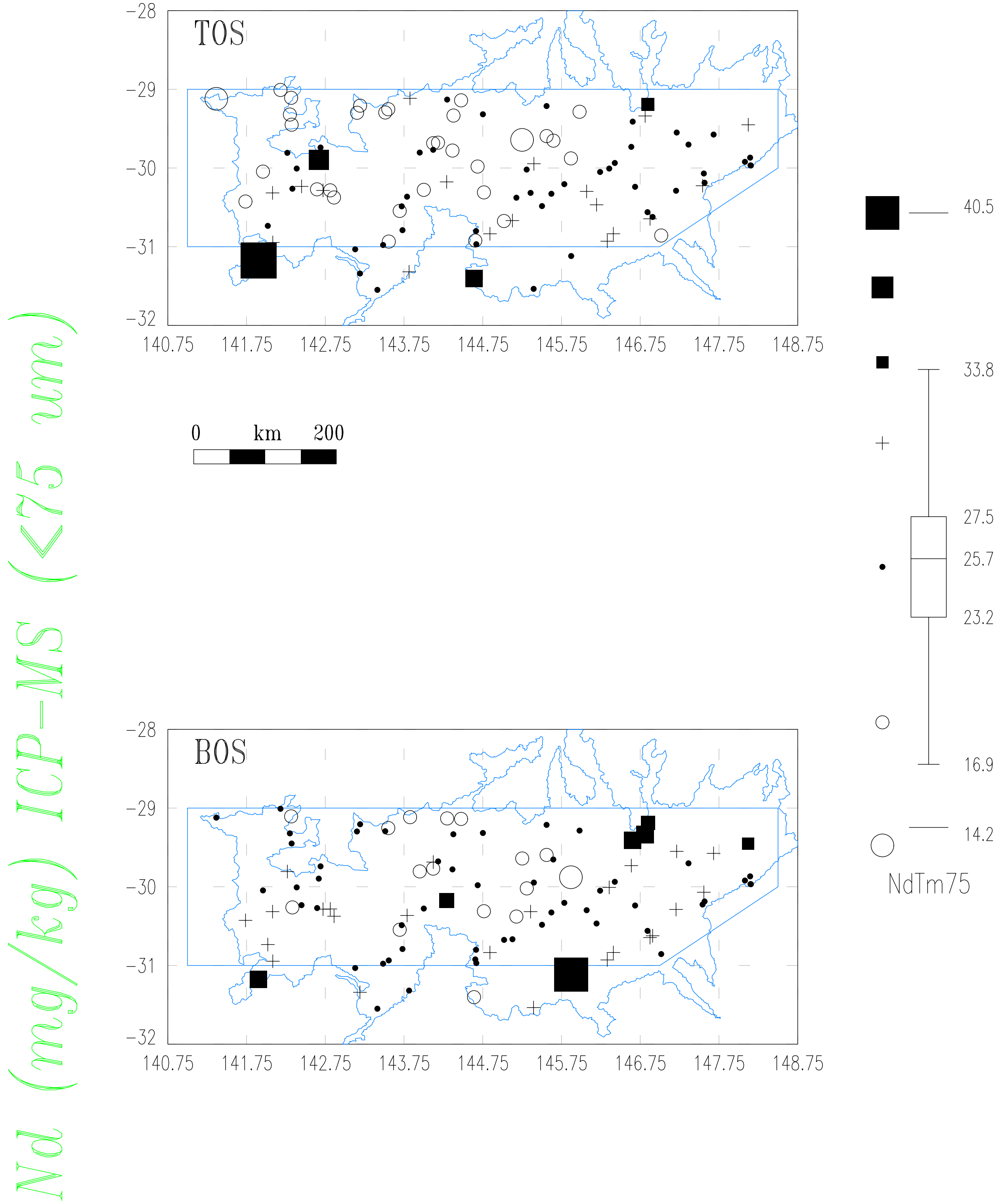


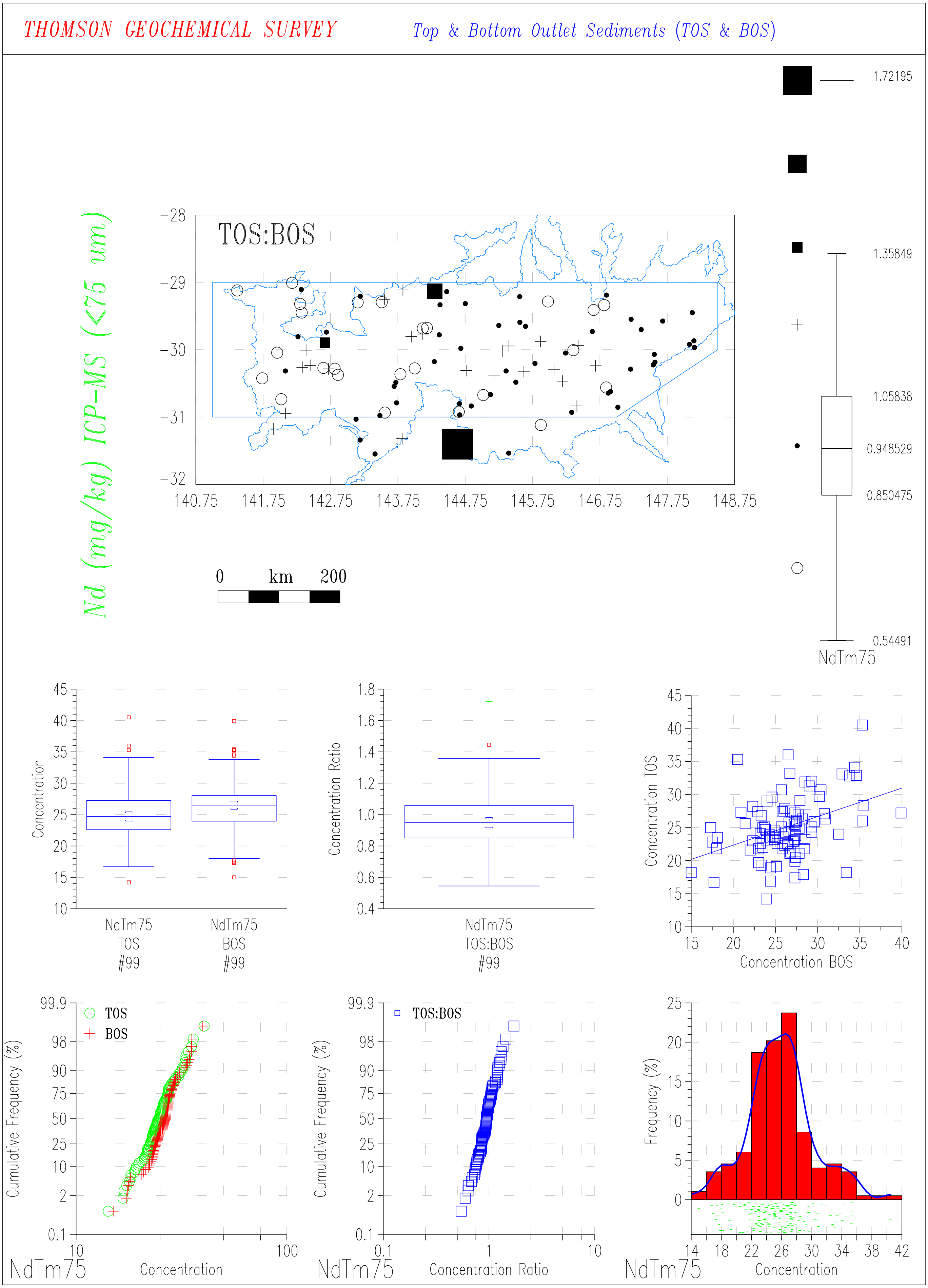
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

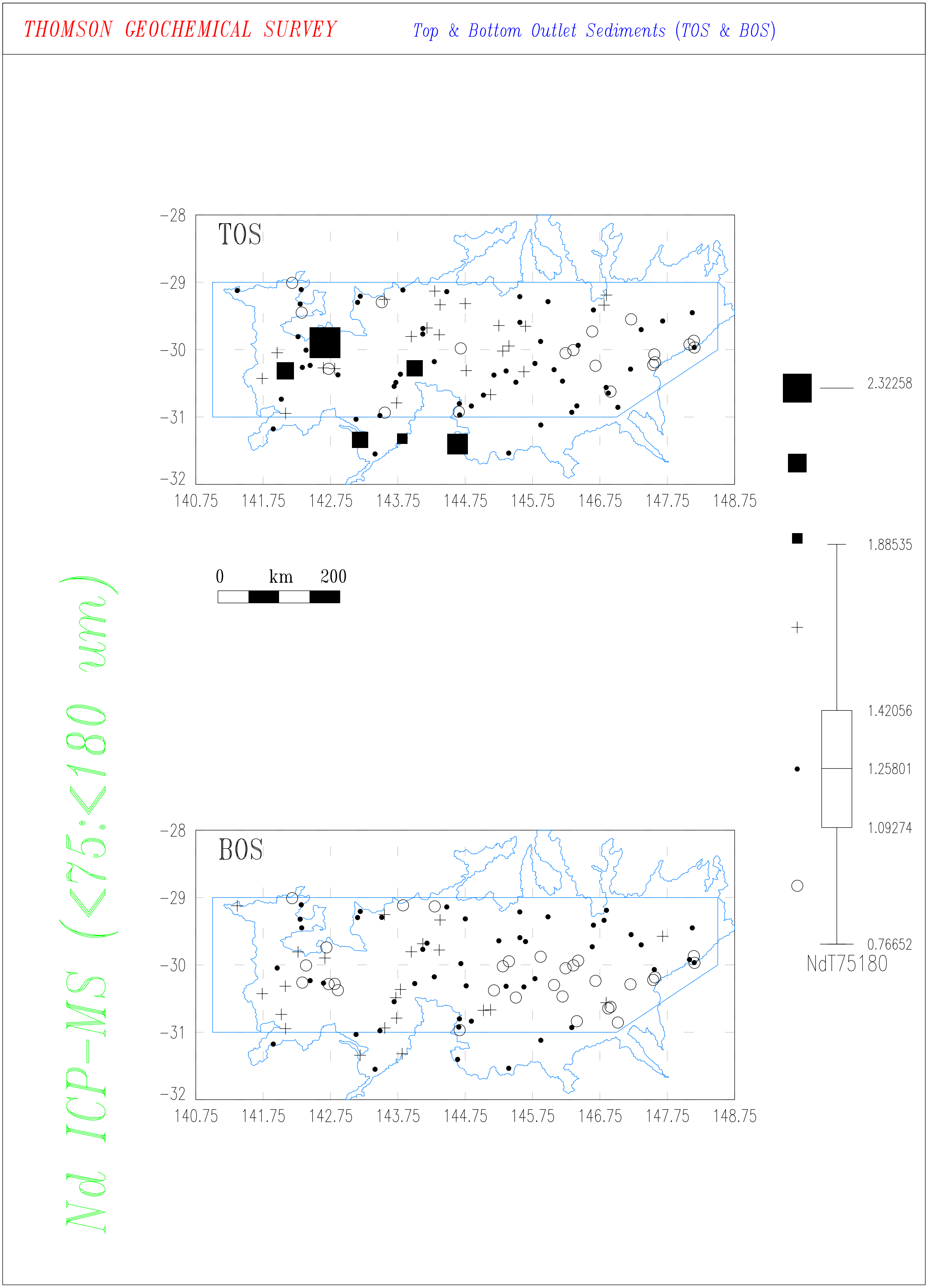



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Nd (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.28879
1.05015
0.926056
0.796378
0.517483
NdTm180
Concentration
NdTm180 TOS #99
NdTm180 BOS #99
Concentration Ratio
NdTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
NdTm180 Concentration
NdTm180 Concentration Ratio
Frequency (%)
NdTm180 Concentration

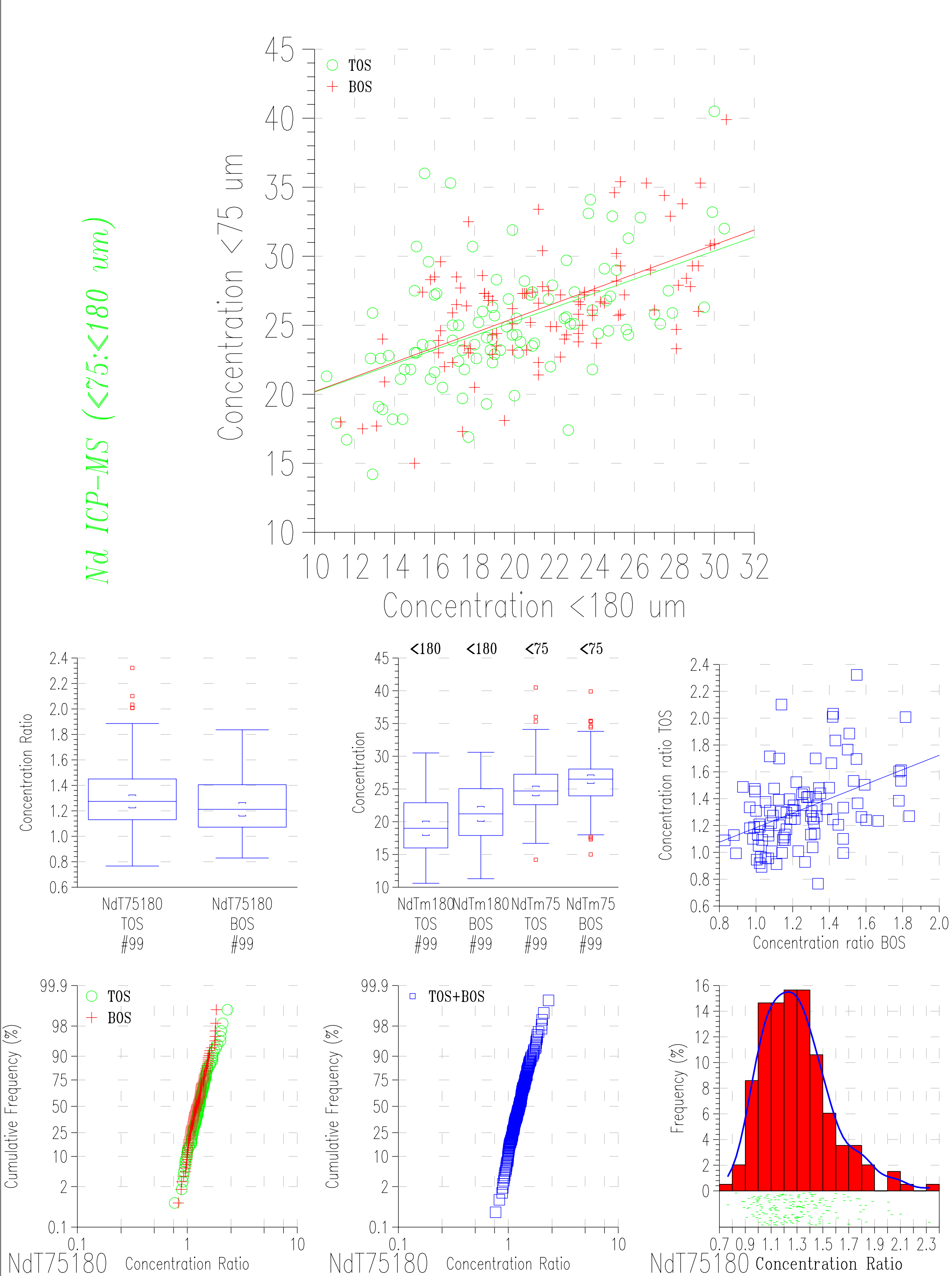
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



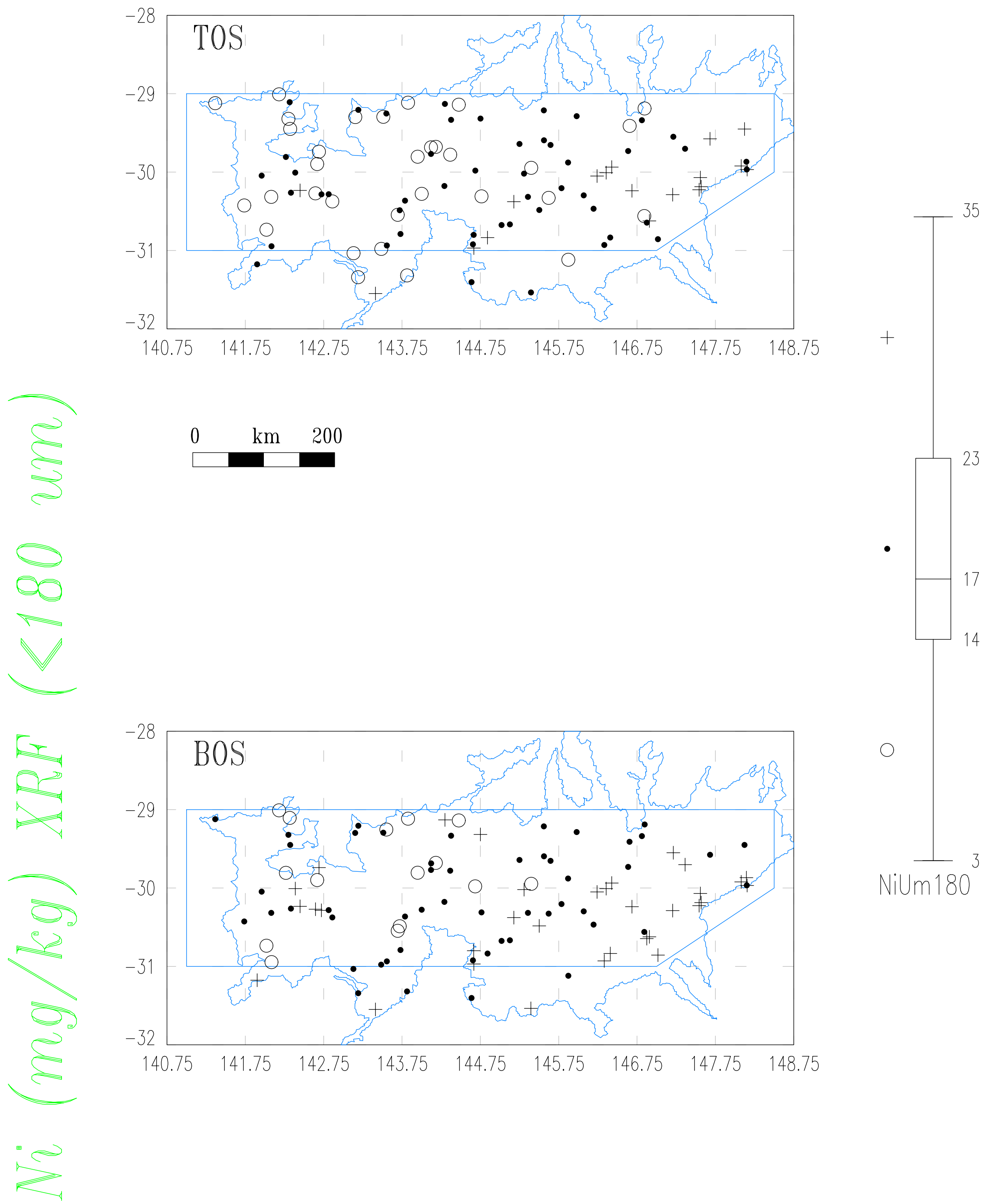

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Nd (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.72195
1.35849
1.05838
0.948529
0.850475
0.54491
NdTm75
Concentration
NdTm75 TOS #99
NdTm75 BOS #99
Concentration Ratio
NdTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
NdTm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

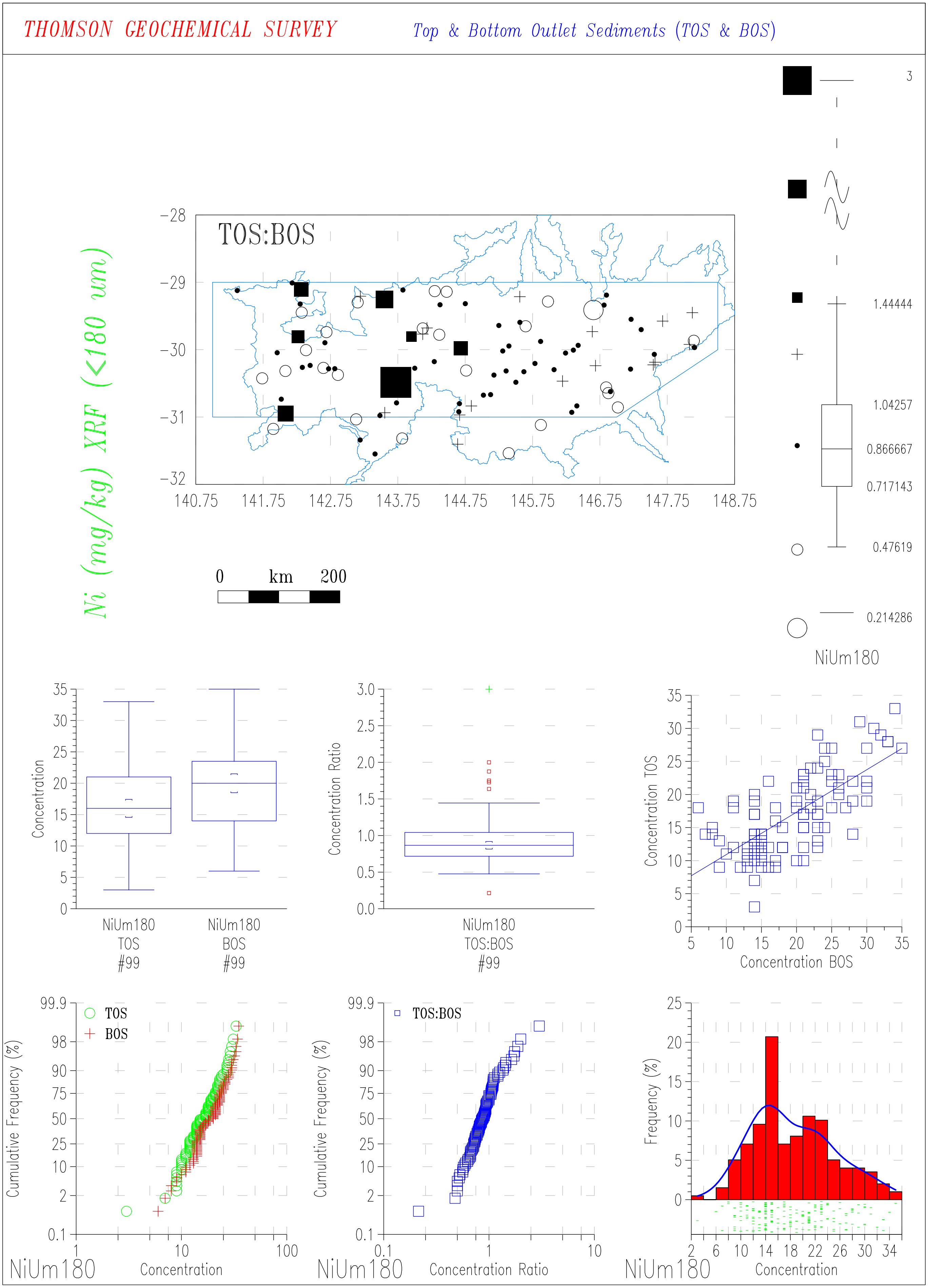

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
0 km 200
2.32258
1.88535
1.42056
1.25801
1.09274
0.76652
NdT75180
Nd ICP-MS (<75:<180 um)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

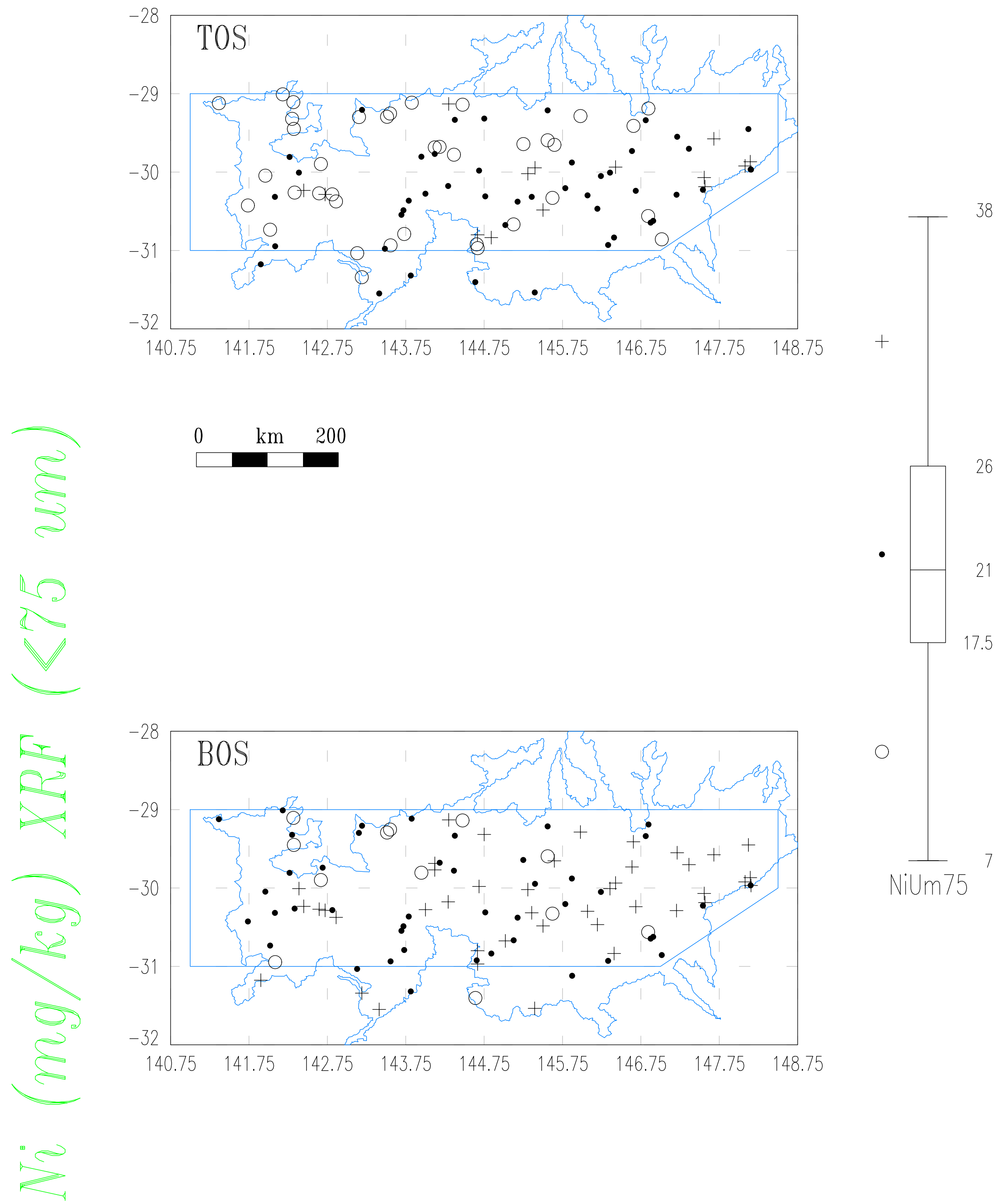


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

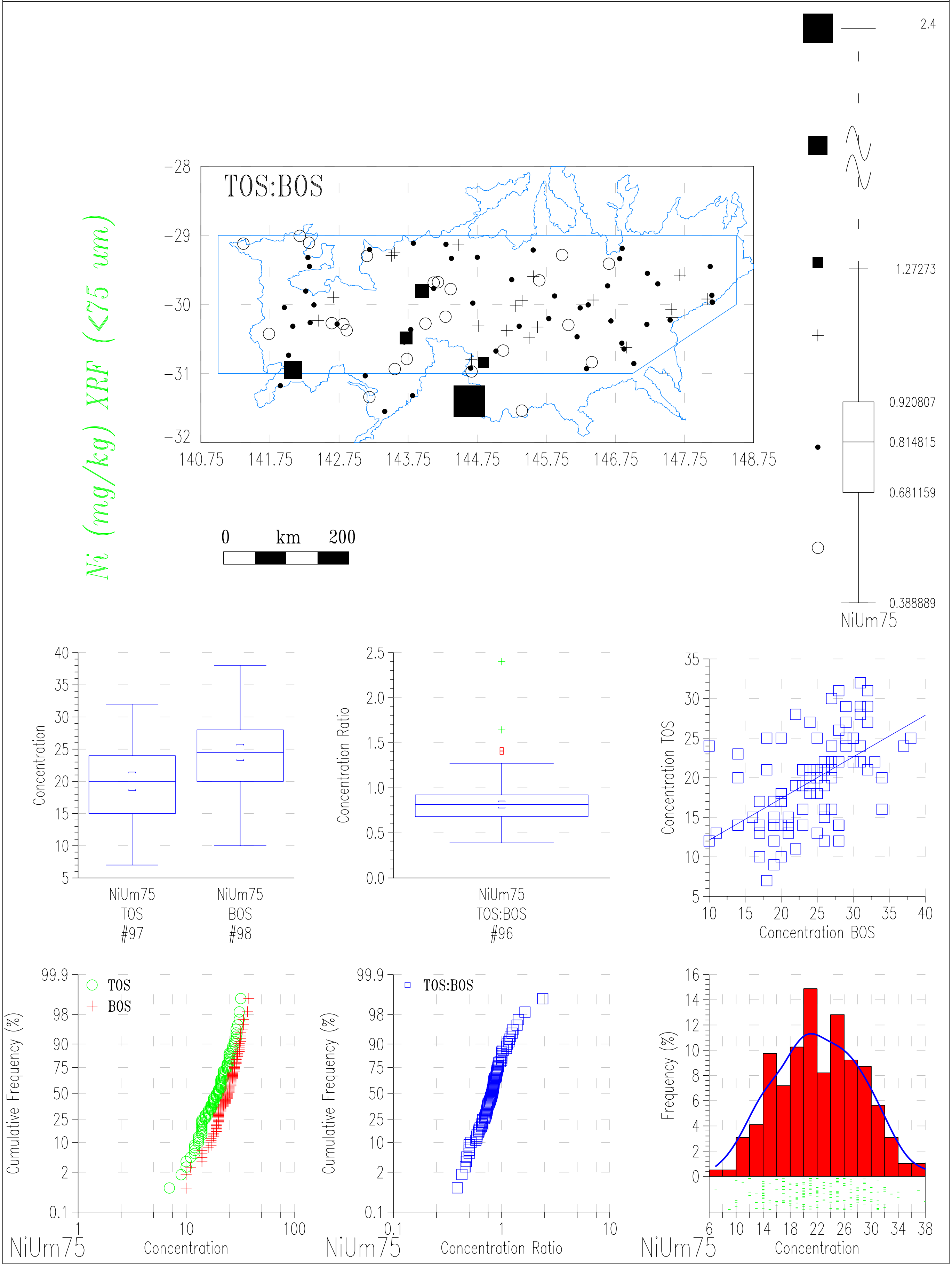



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ni (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
3
1.44444
1.04257
0.866667
0.717143
0.47619
0.214286
NiUm180
Concentration
NiUm180 TOS #99
NiUm180 BOS #99
Concentration Ratio
NiUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
NiUm180
Concentration
TOS:BOS
NiUm180
Concentration Ratio
Frequency (%)
NiUm180
Concentration

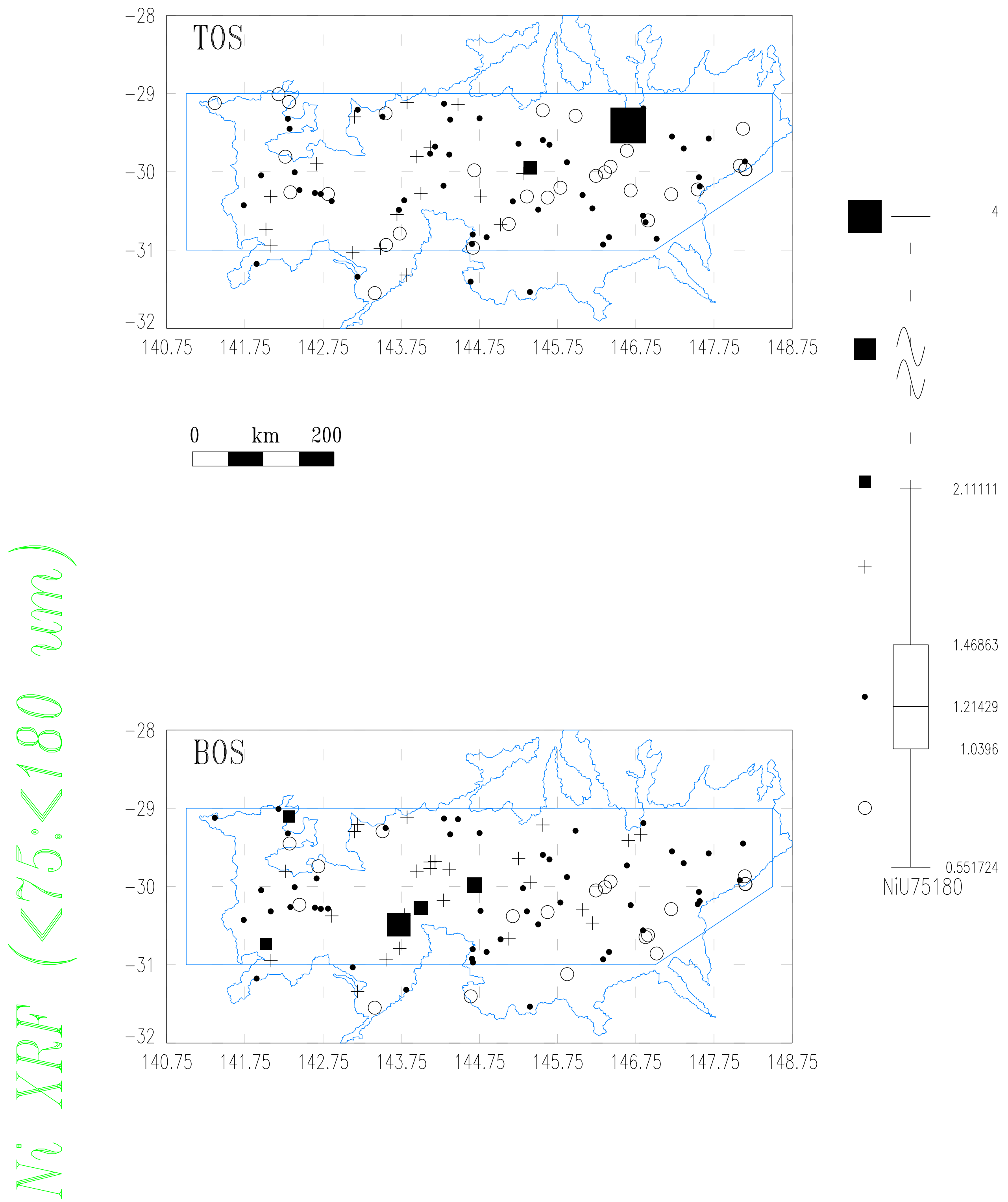
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

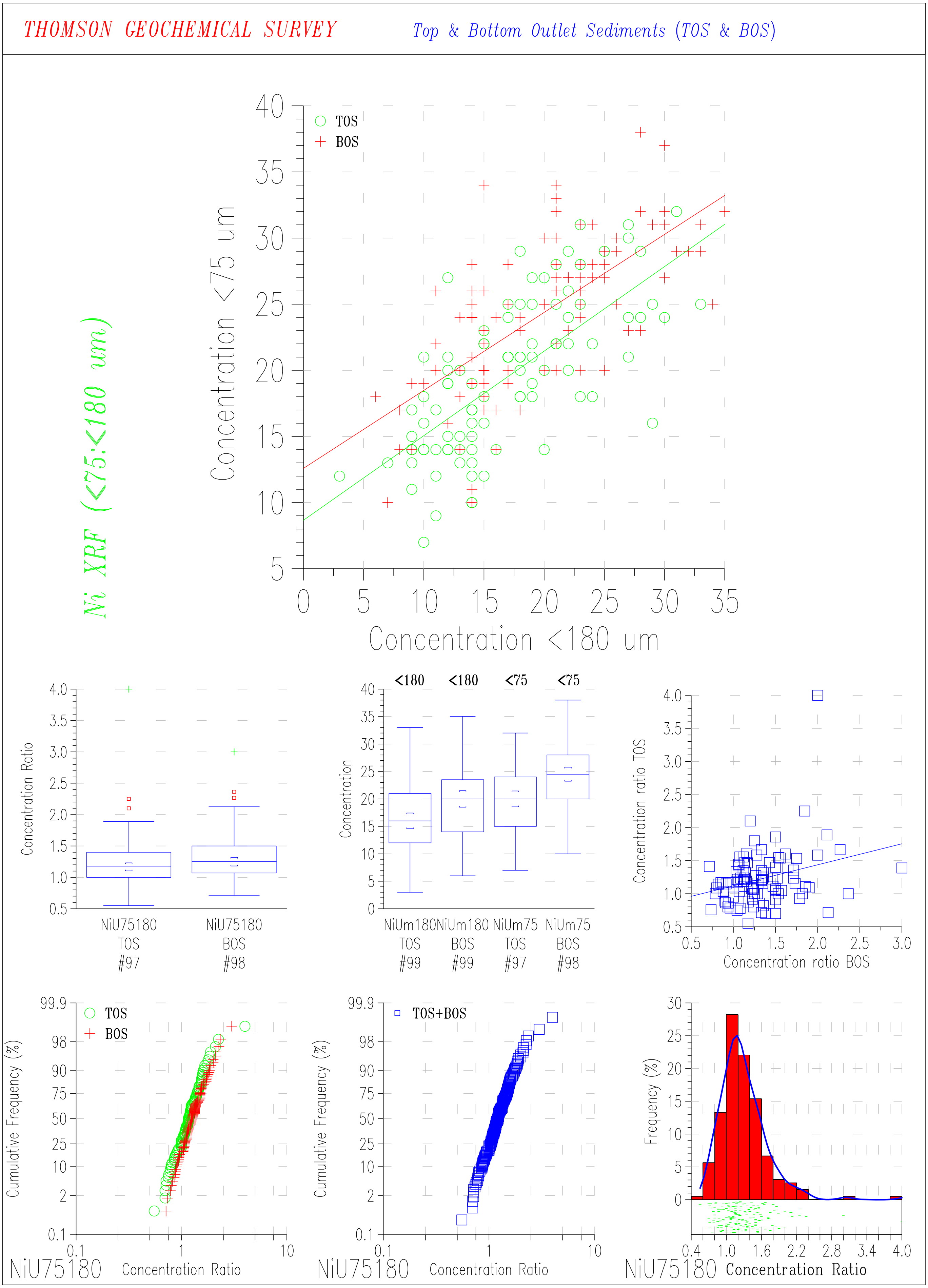


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

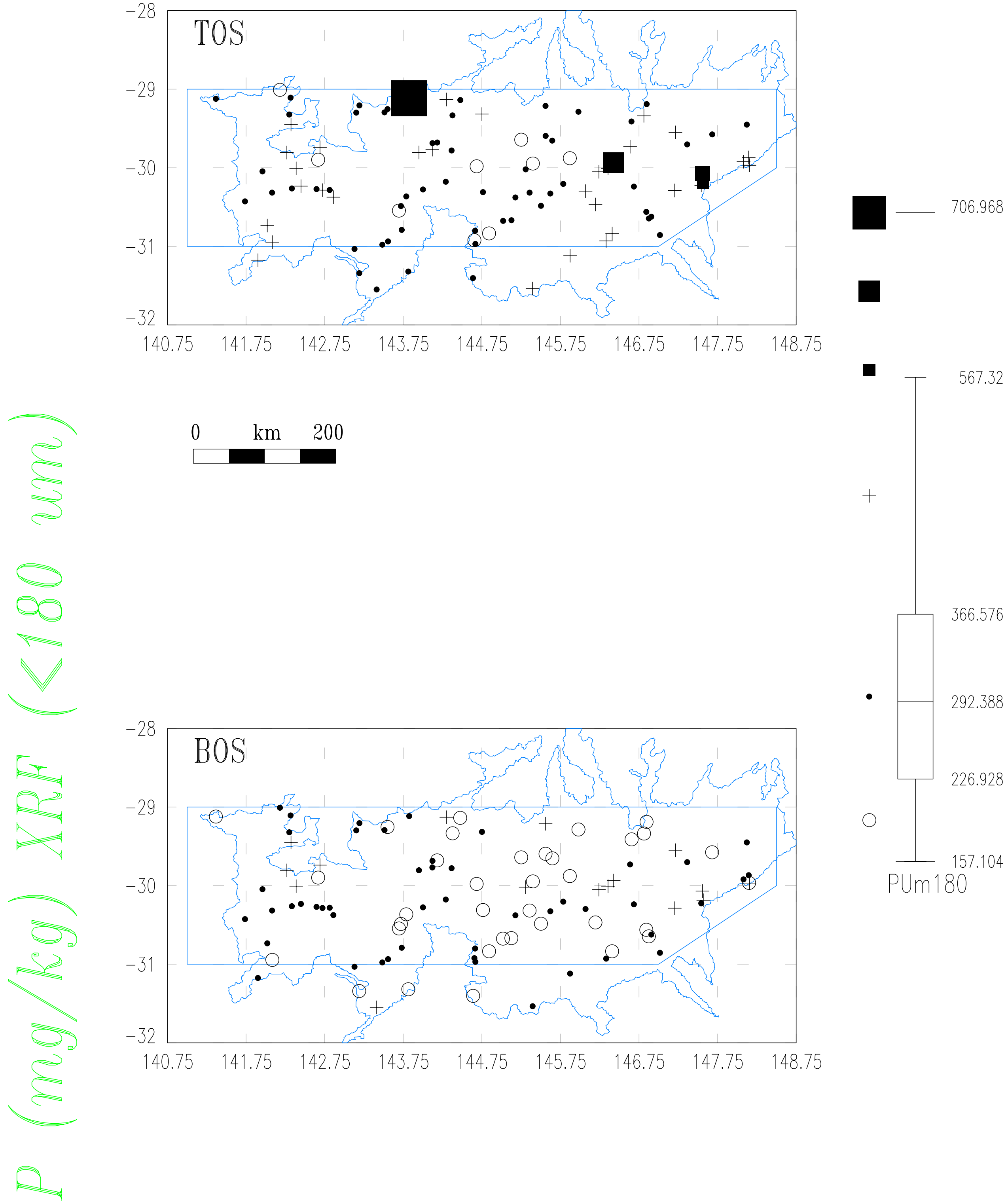


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

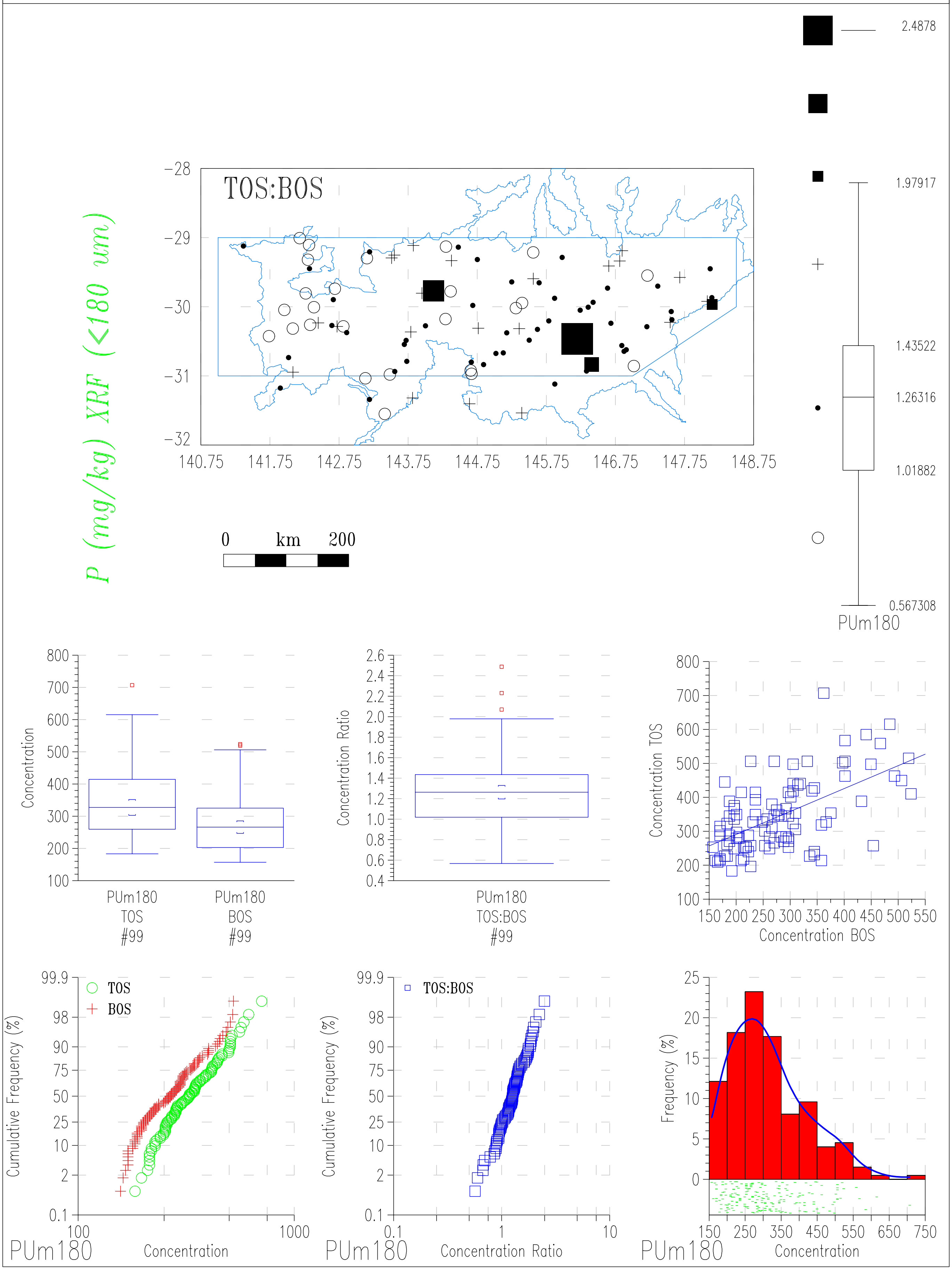



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ni XRF (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
NiU75180 TOS #97
NiU75180 BOS #98
<180
<180
<75
<75
Concentration
NiUm180 TOS #99
NiUm180 BOS #99
NiUm75 TOS #97
NiUm75 BOS #98
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
NiU75180
Concentration Ratio
TOS+BOS
Frequency (%)

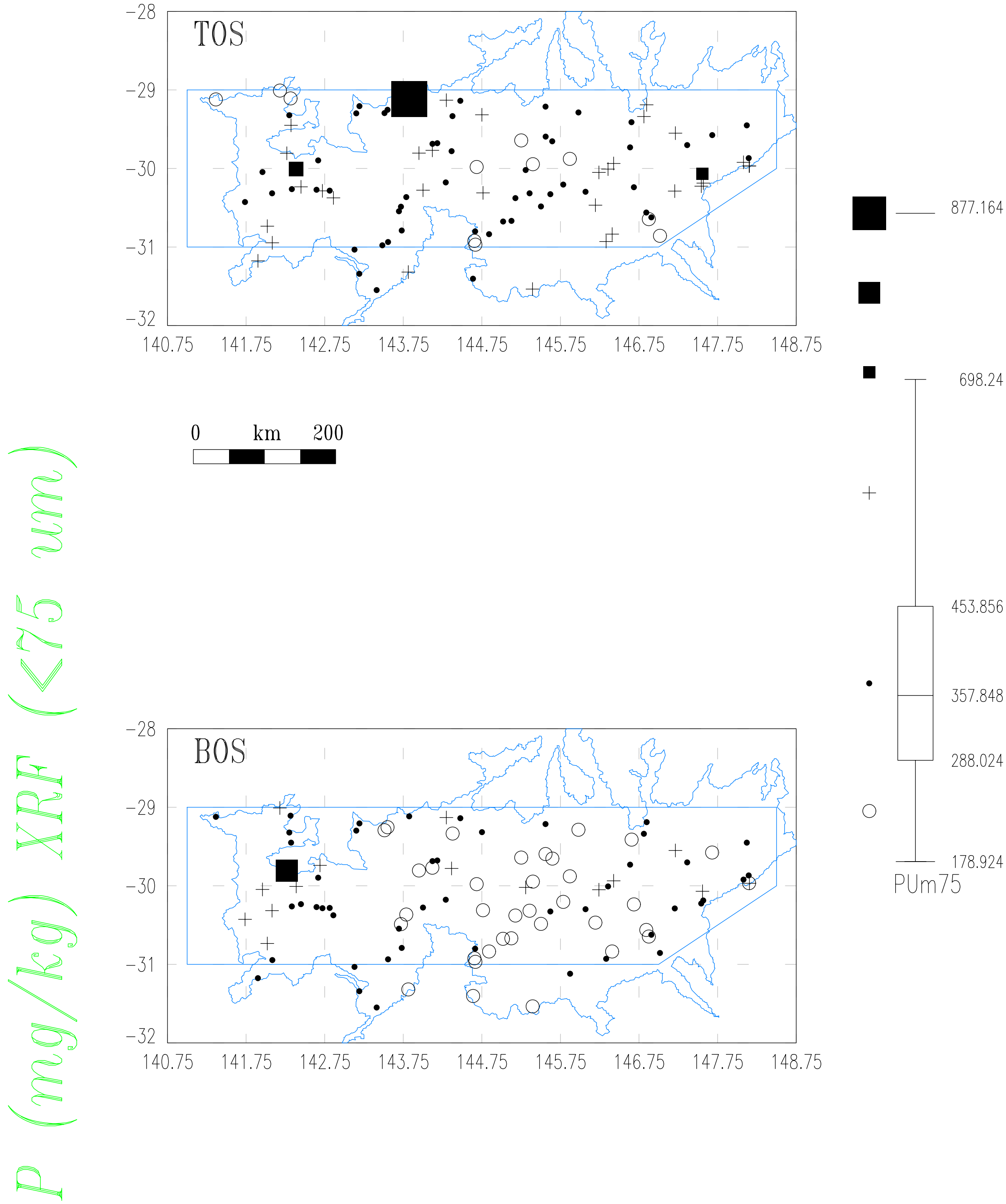
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

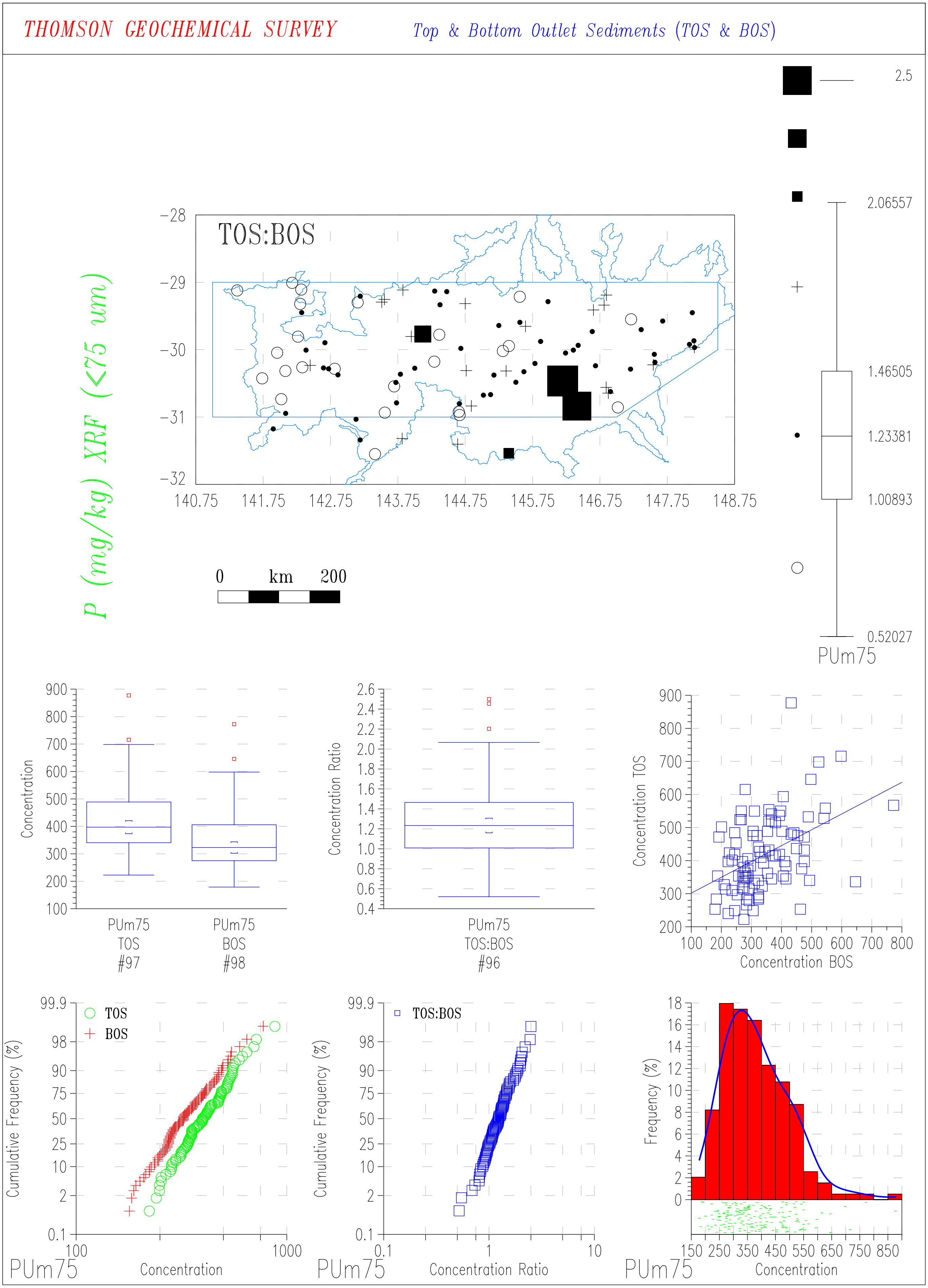


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



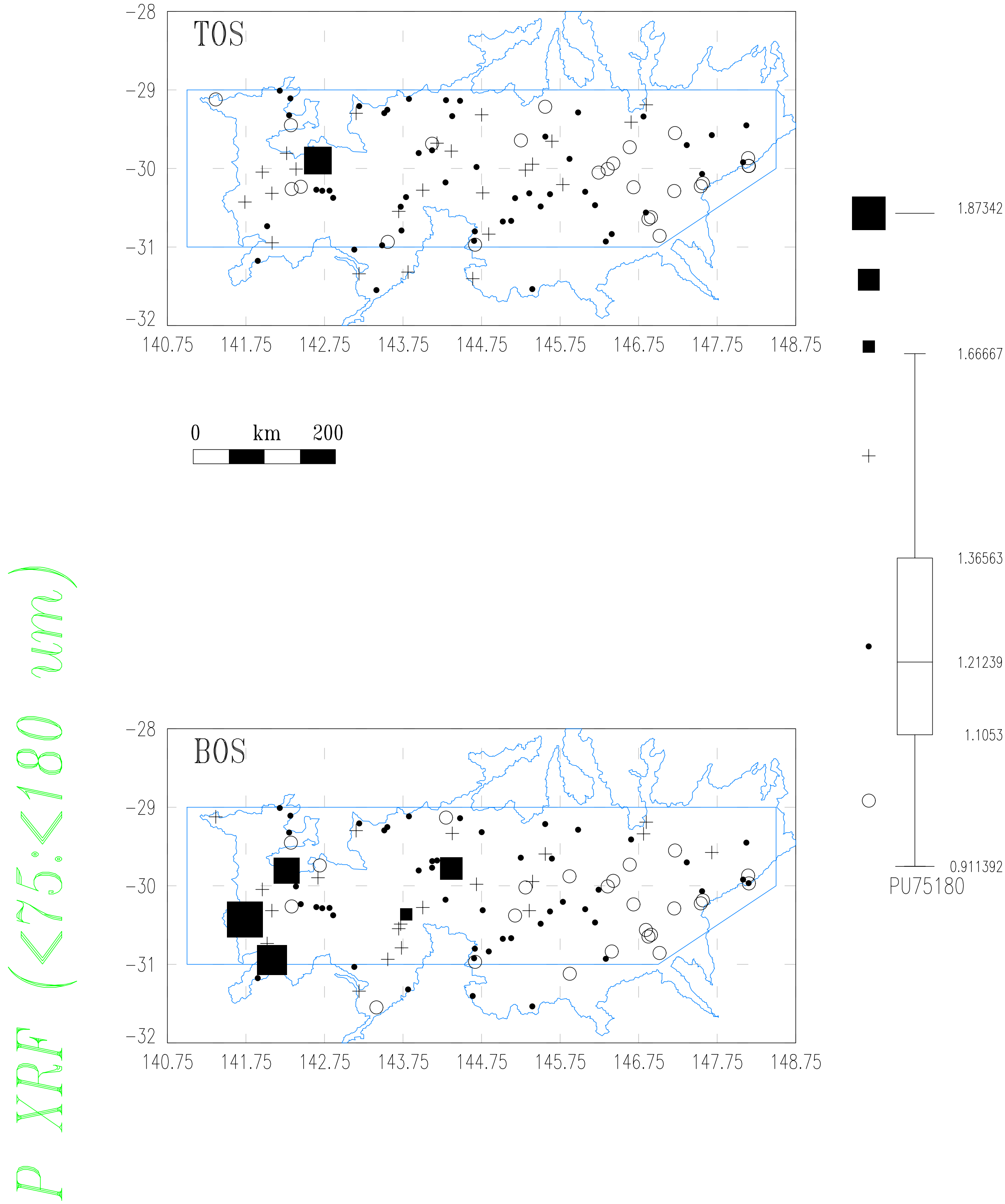
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

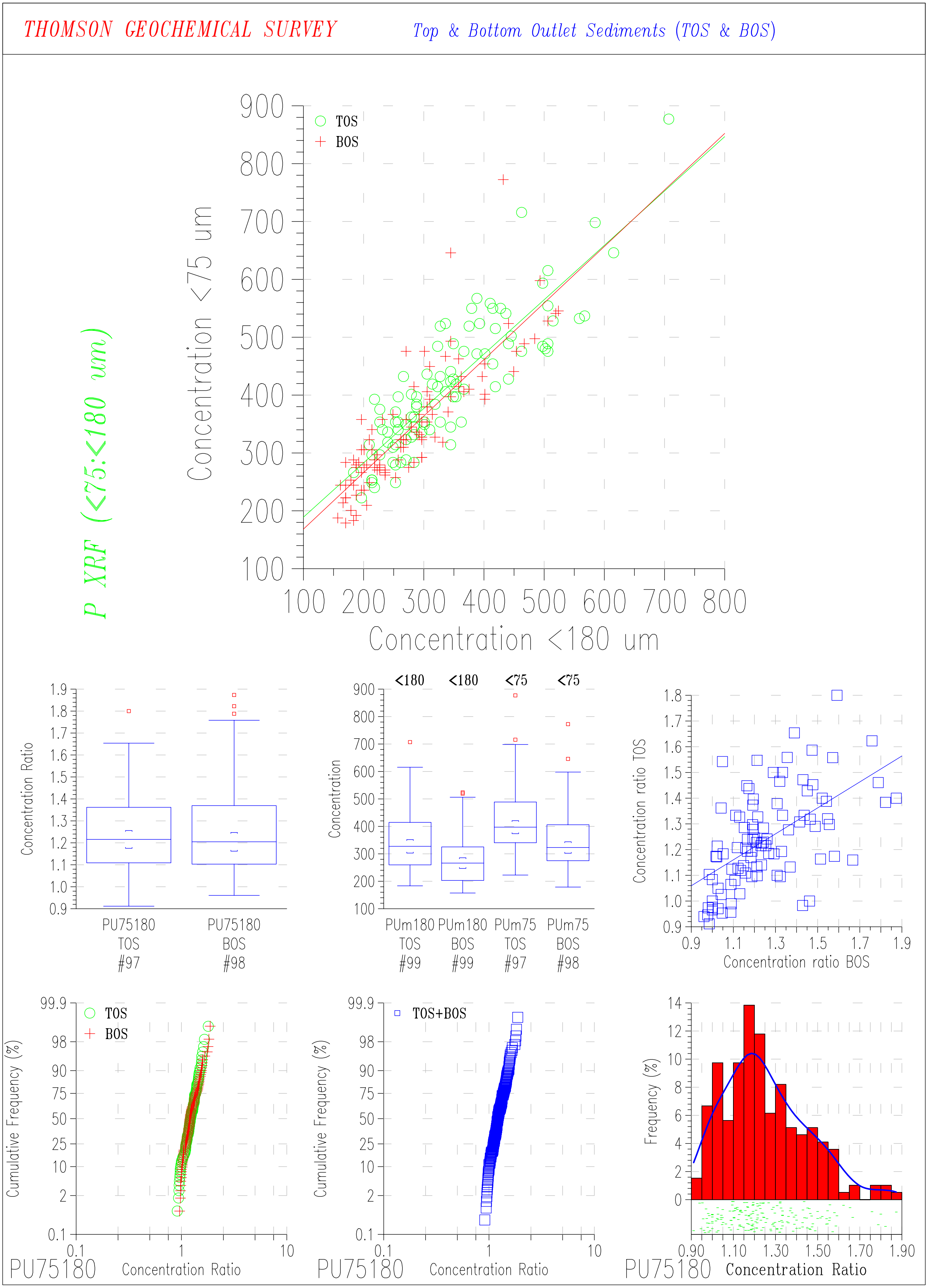



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
P (mg/kg) XRF (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75 141.75 142.75 143.75 144.75 145.75 146.75 147.75 148.75
0 km 200
2.5
2.06557
1.46505
1.23381
1.00893
0.52027
PUm75
Concentration
PUm75 TOS #97
PUm75 BOS #98
Concentration Ratio
PUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
PUm75
Concentration
TOS:BOS
PUm75
Concentration Ratio
Frequency (%)
PUm75
Concentration

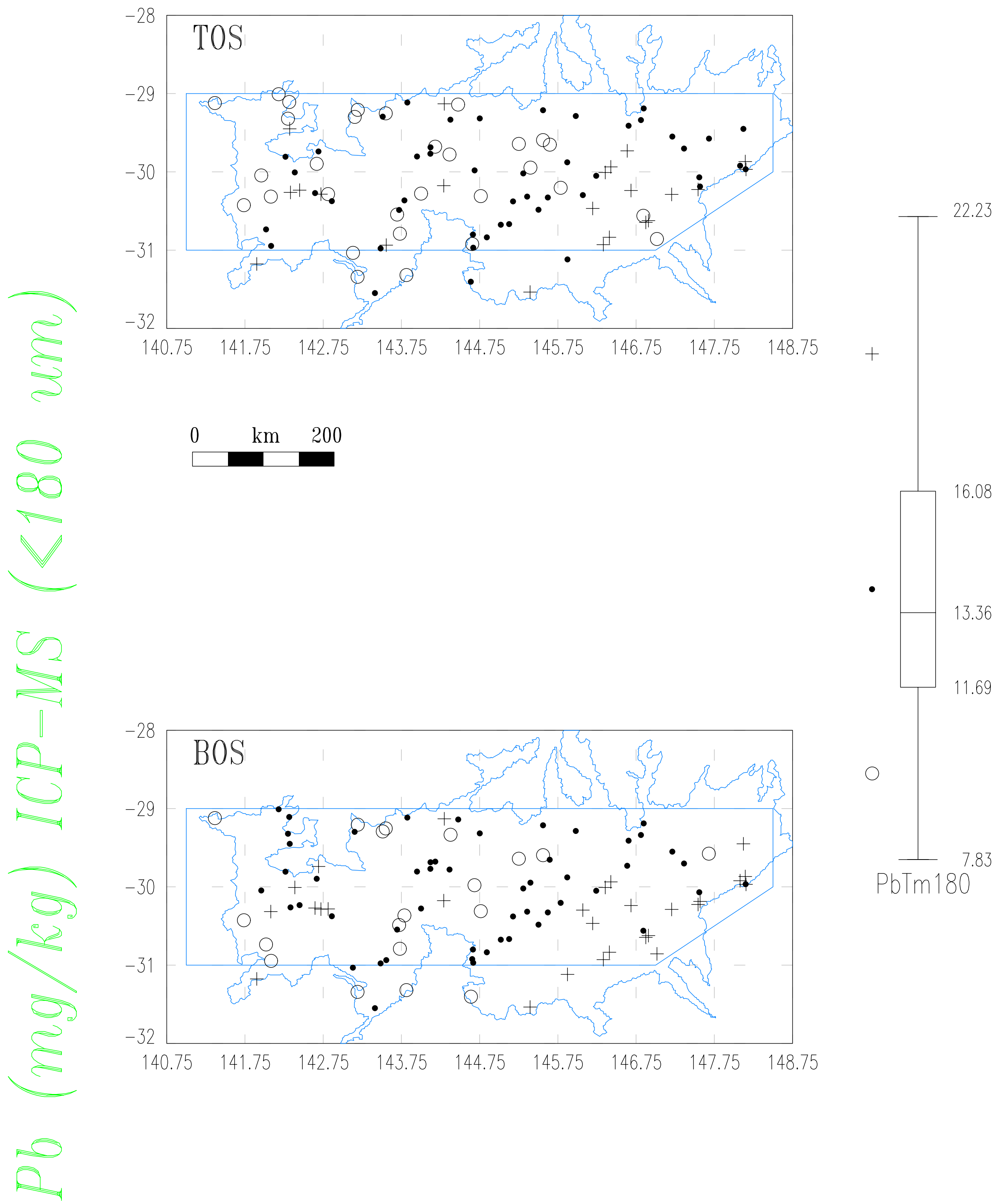
THOMSON GEOCHEMICAL SURVEY

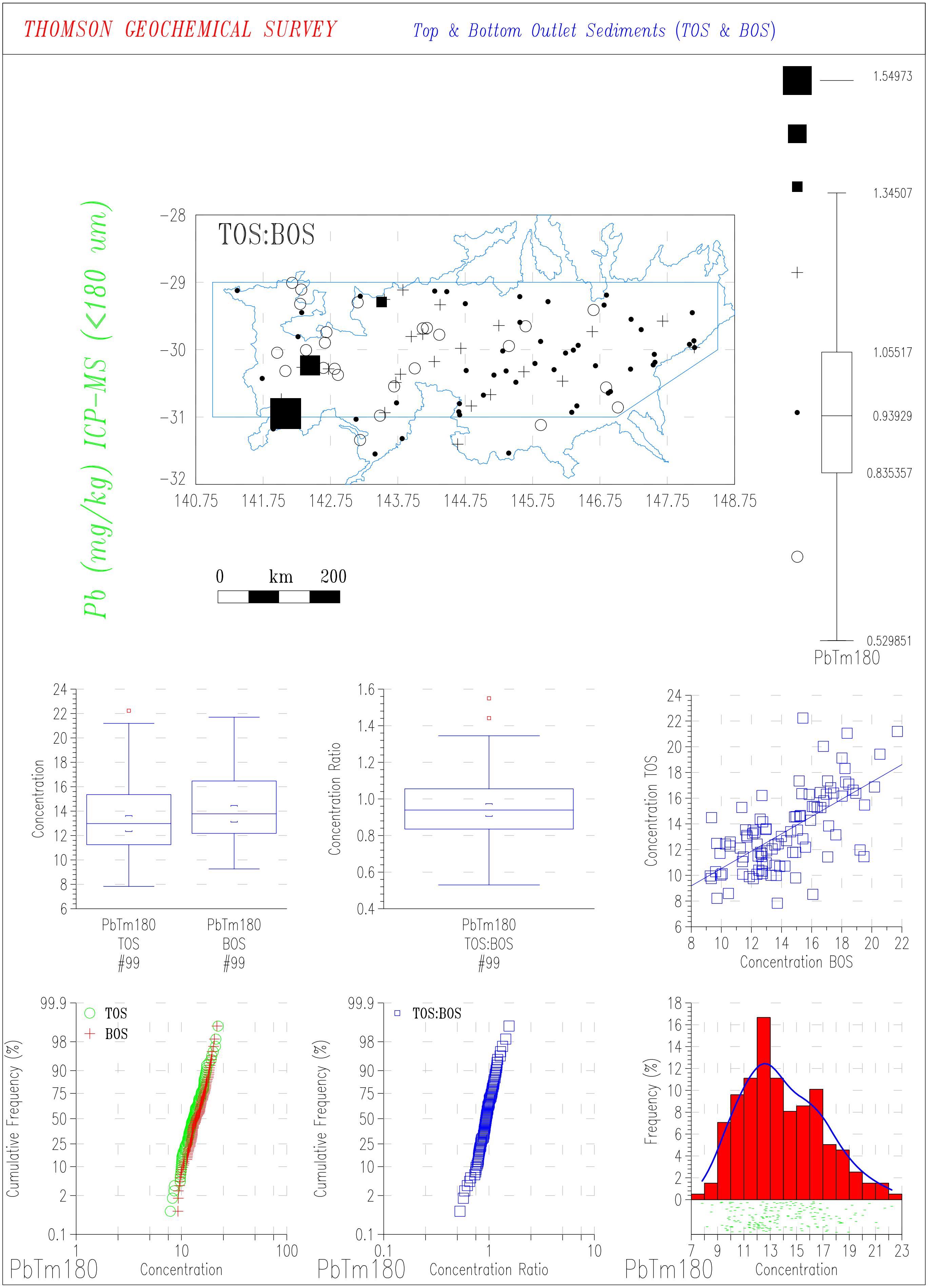
Top & Bottom Outlet Sediments (TOS & BOS)

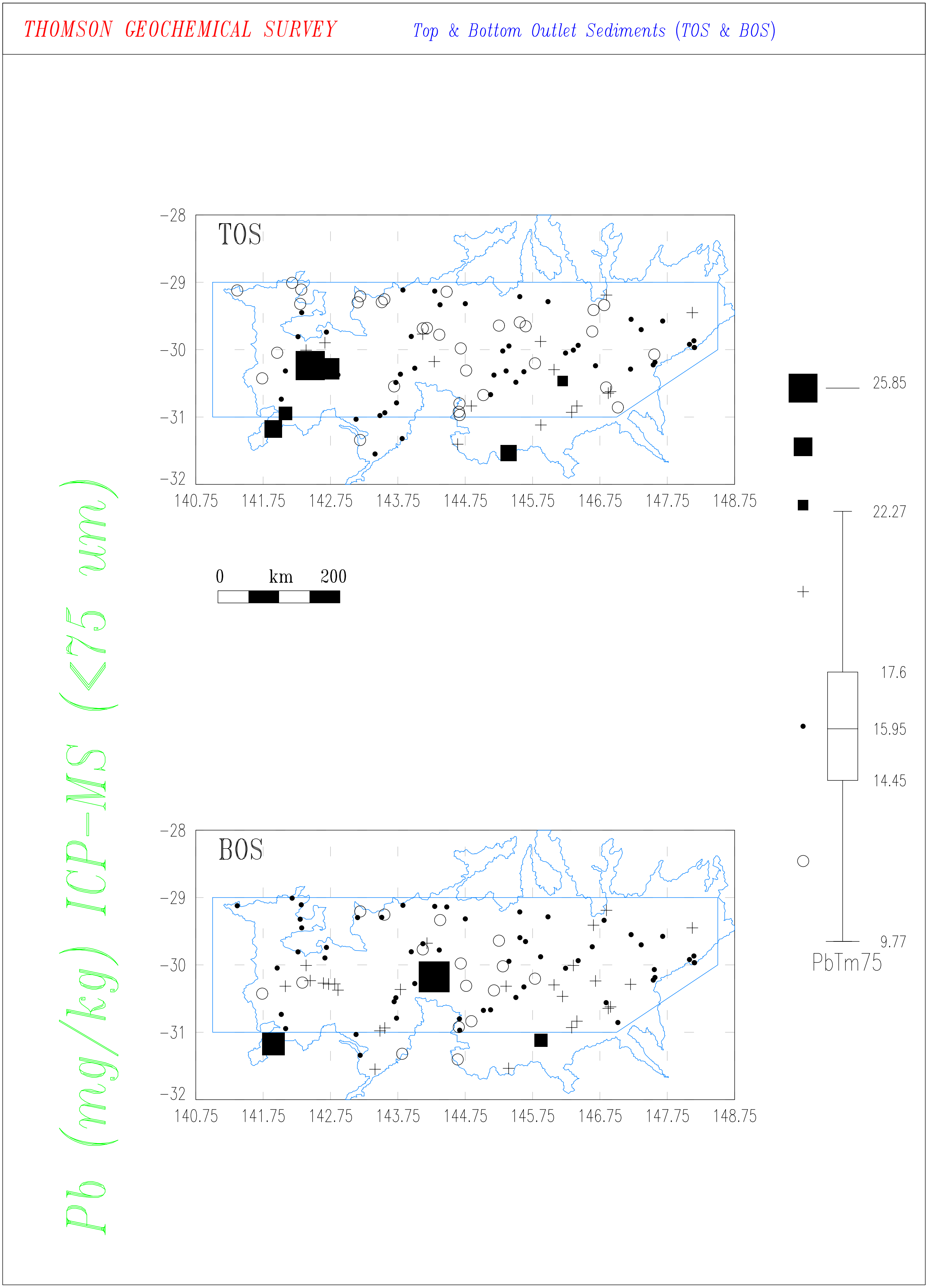



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
P XRF (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
PU75180 TOS #97
PU75180 BOS #98
<180 <180 <75 <75
Concentration
PUm180 TOS #99
PUm180 BOS #99
PUm75 TOS #97
PUm75 BOS #98
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
PU75180

THOMSON GEOCHEMICAL SURVEY   *Top & Bottom Outlet Sediments (TOS & BOS)*

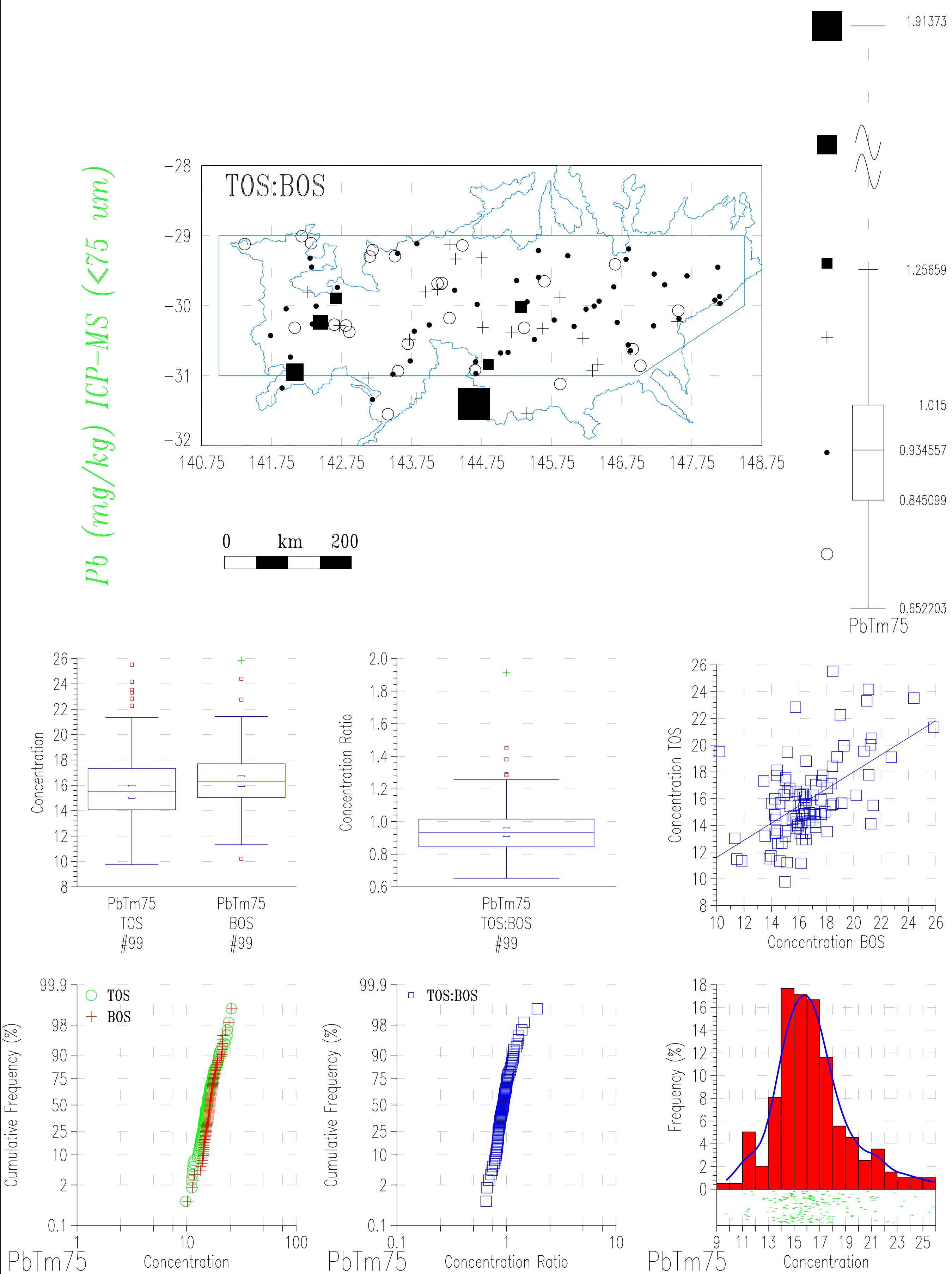



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Pb (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.54973
1.34507
1.05517
0.93929
0.835357
0.529851
PbTm180
Concentration
PbTm180 TOS #99
PbTm180 BOS #99
Concentration Ratio
PbTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Frequency (%)


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
25.85
22.27
17.6
15.95
14.45
9.77
PbTm75
Pb (mg/kg) ICP-MS (<75 um)

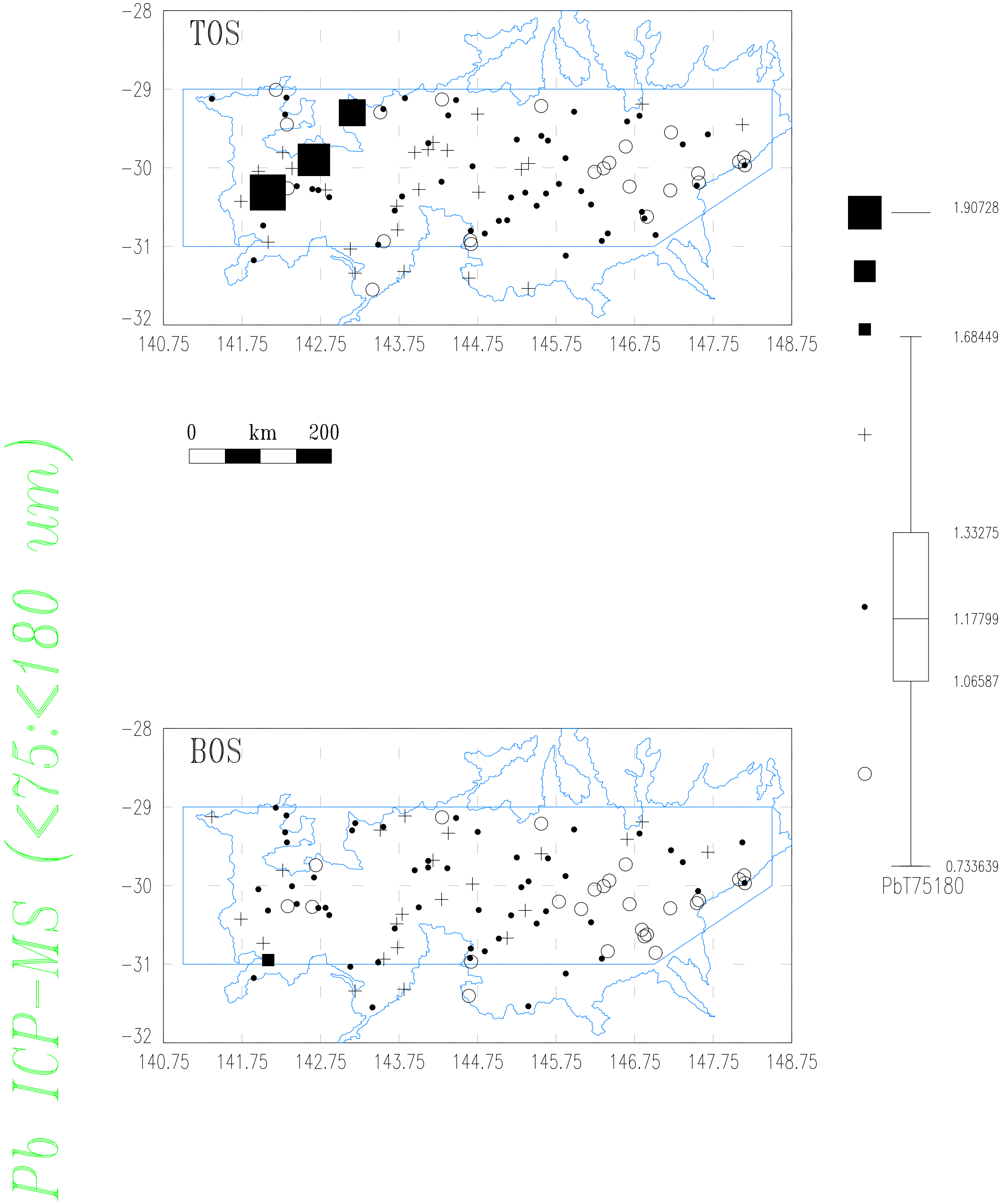
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

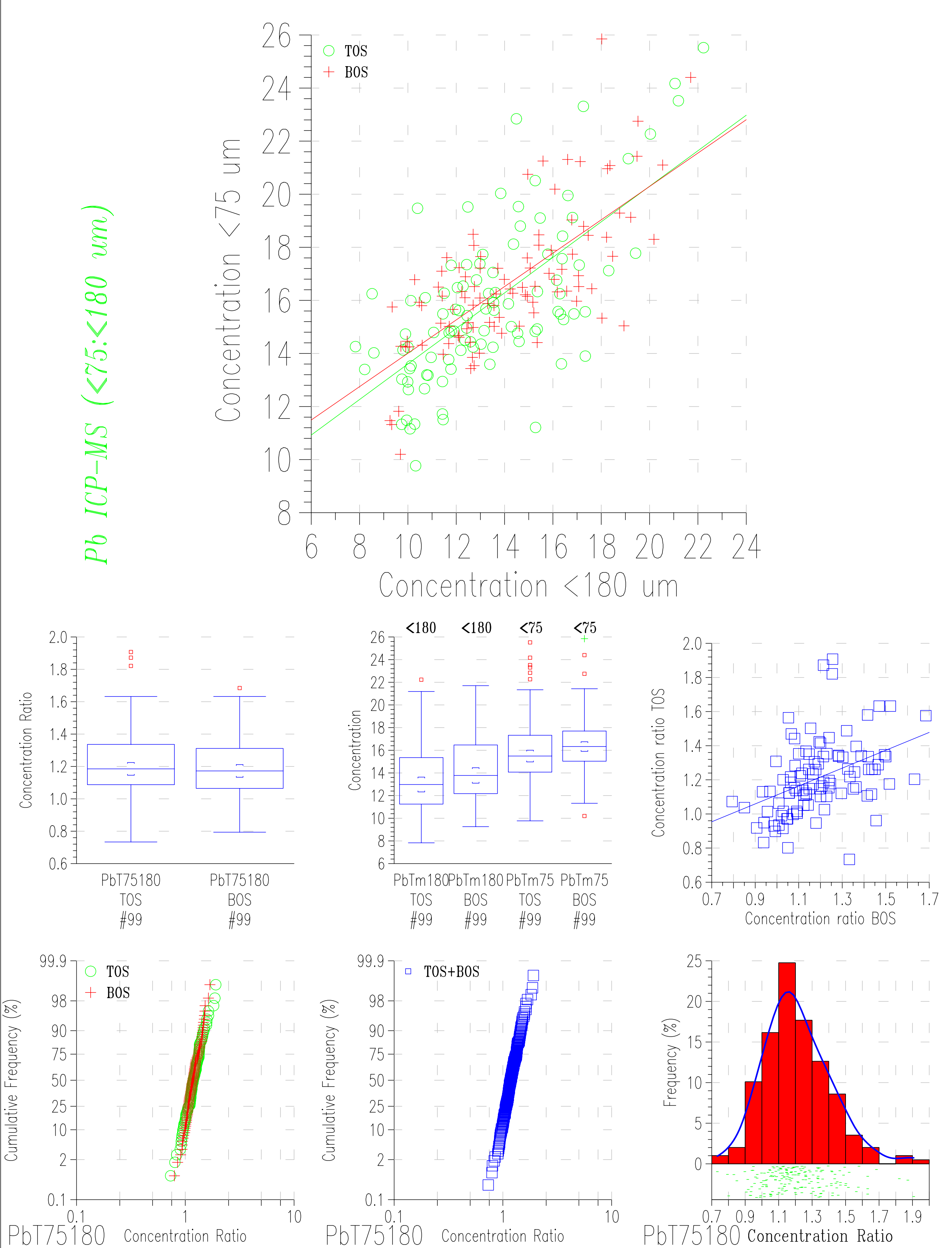


THOMSON GEOCHEMICAL SURVEY

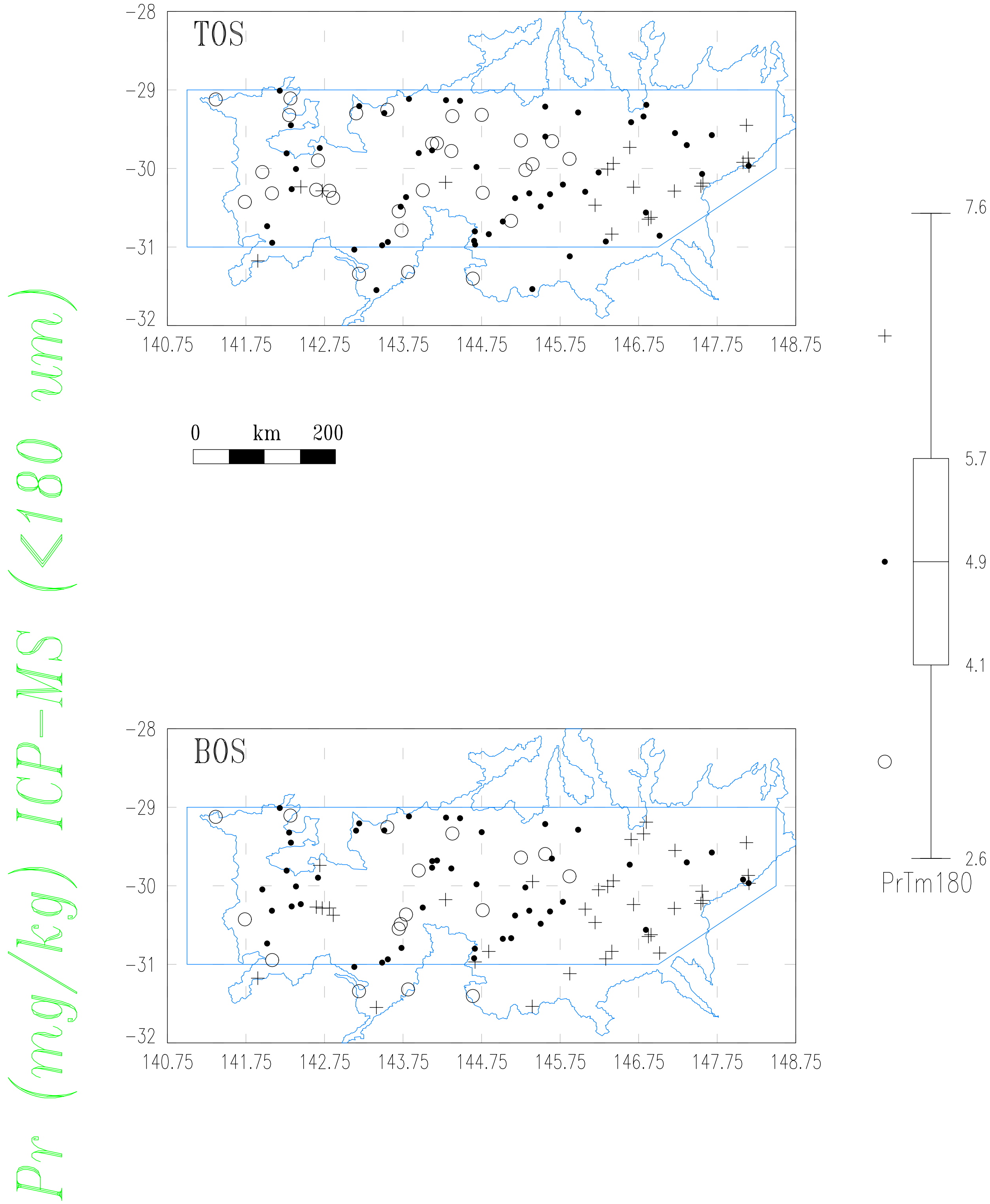
Top & Bottom Outlet Sediments (TOS & BOS)



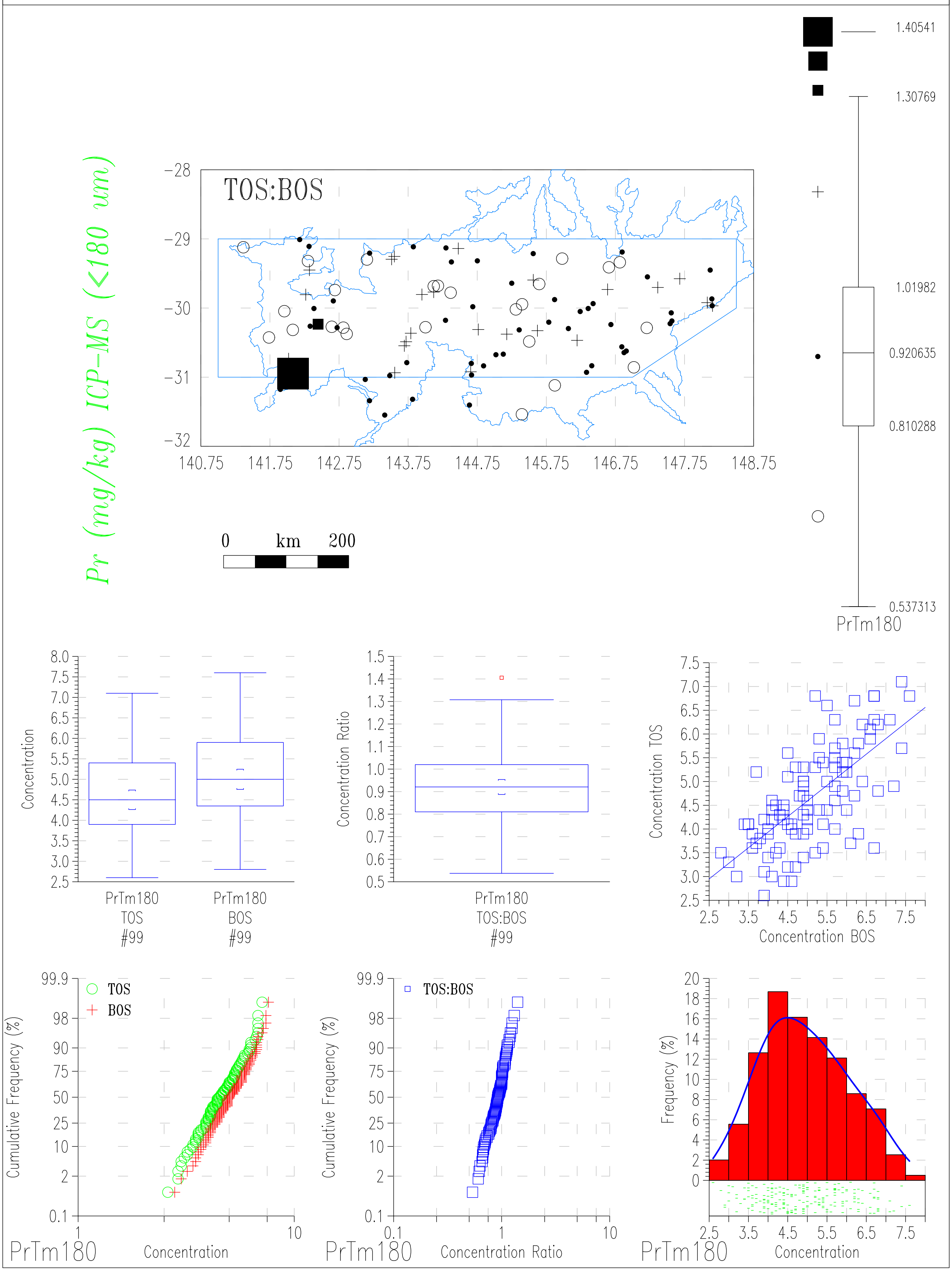
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



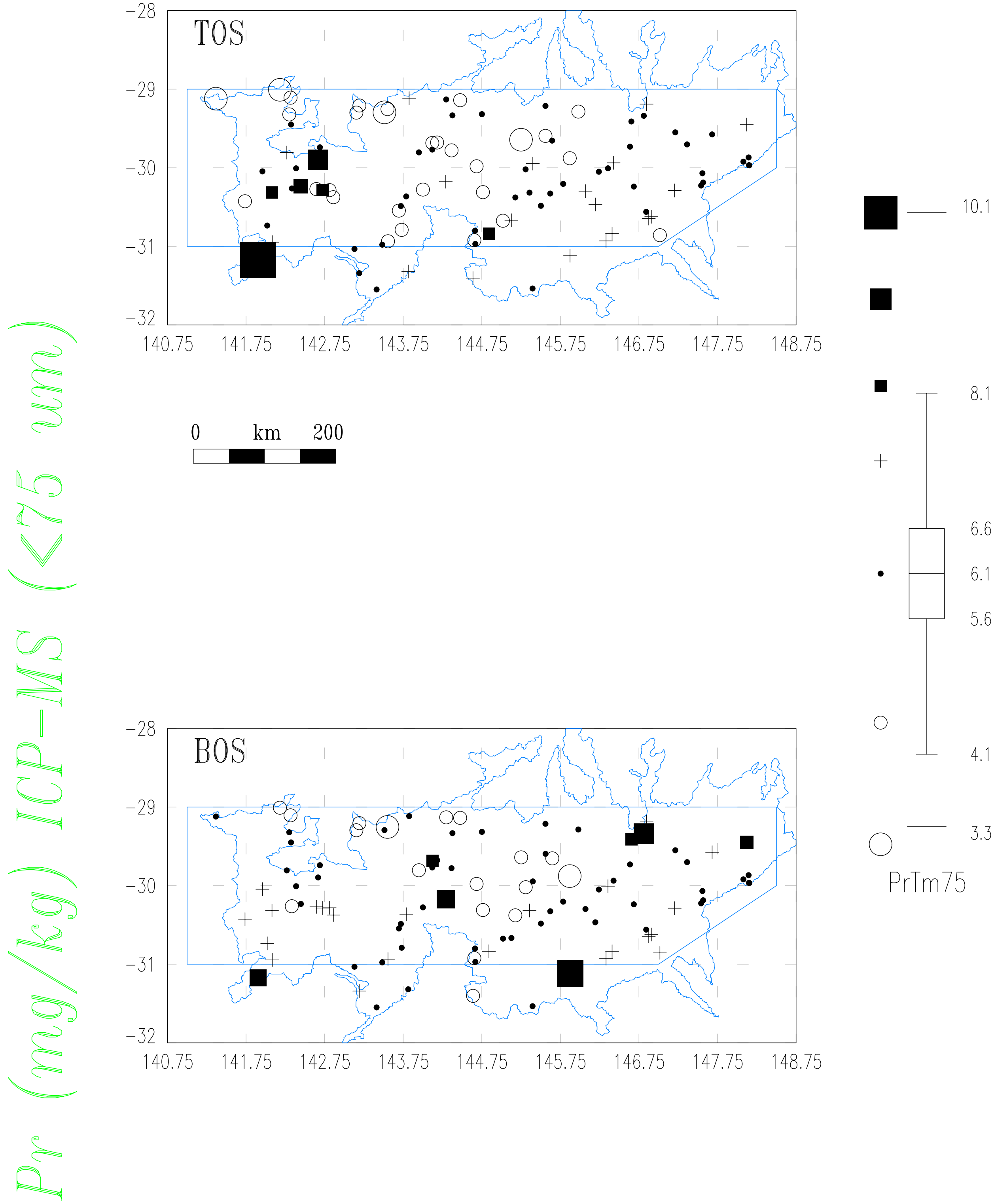
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

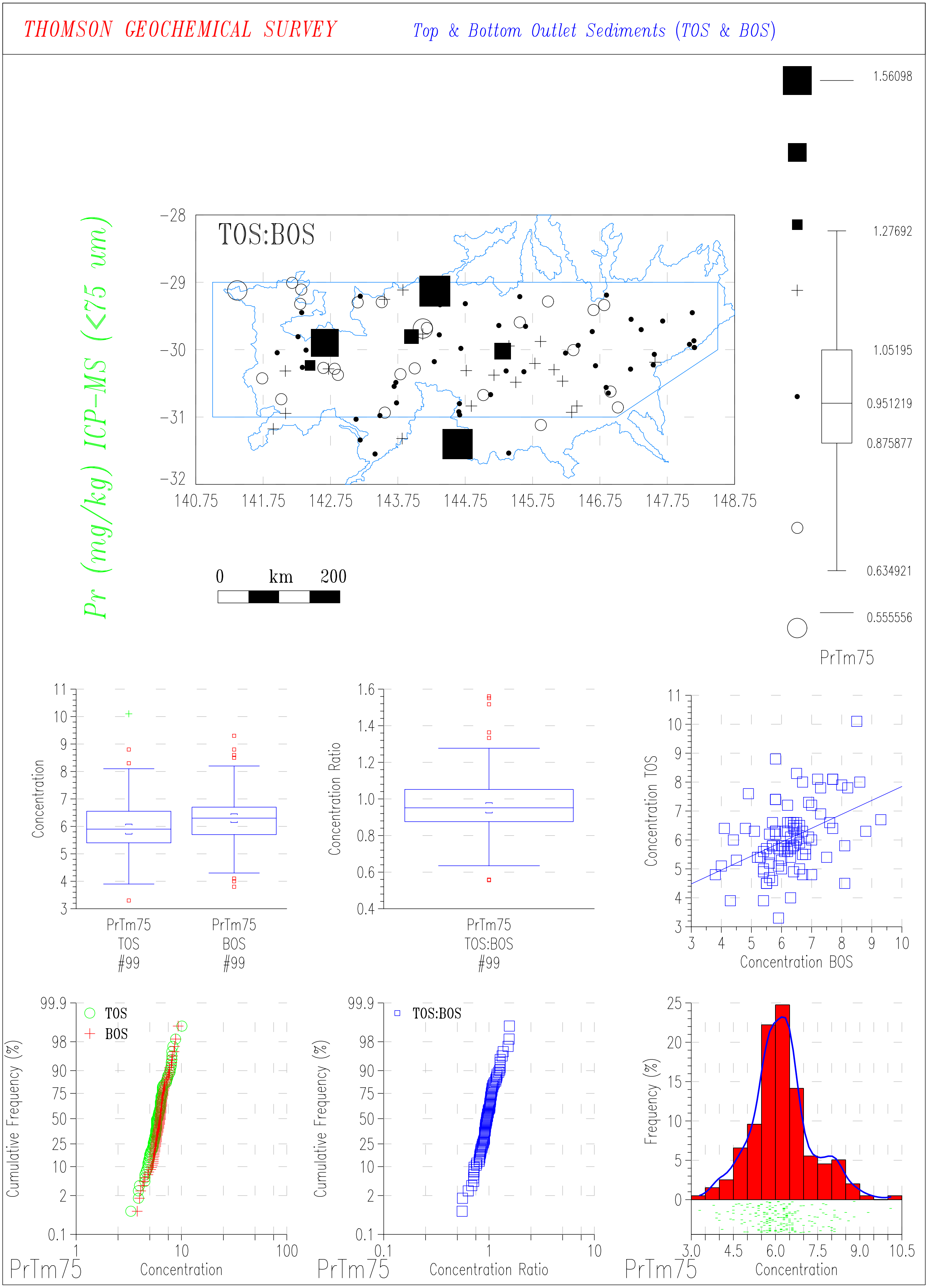


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

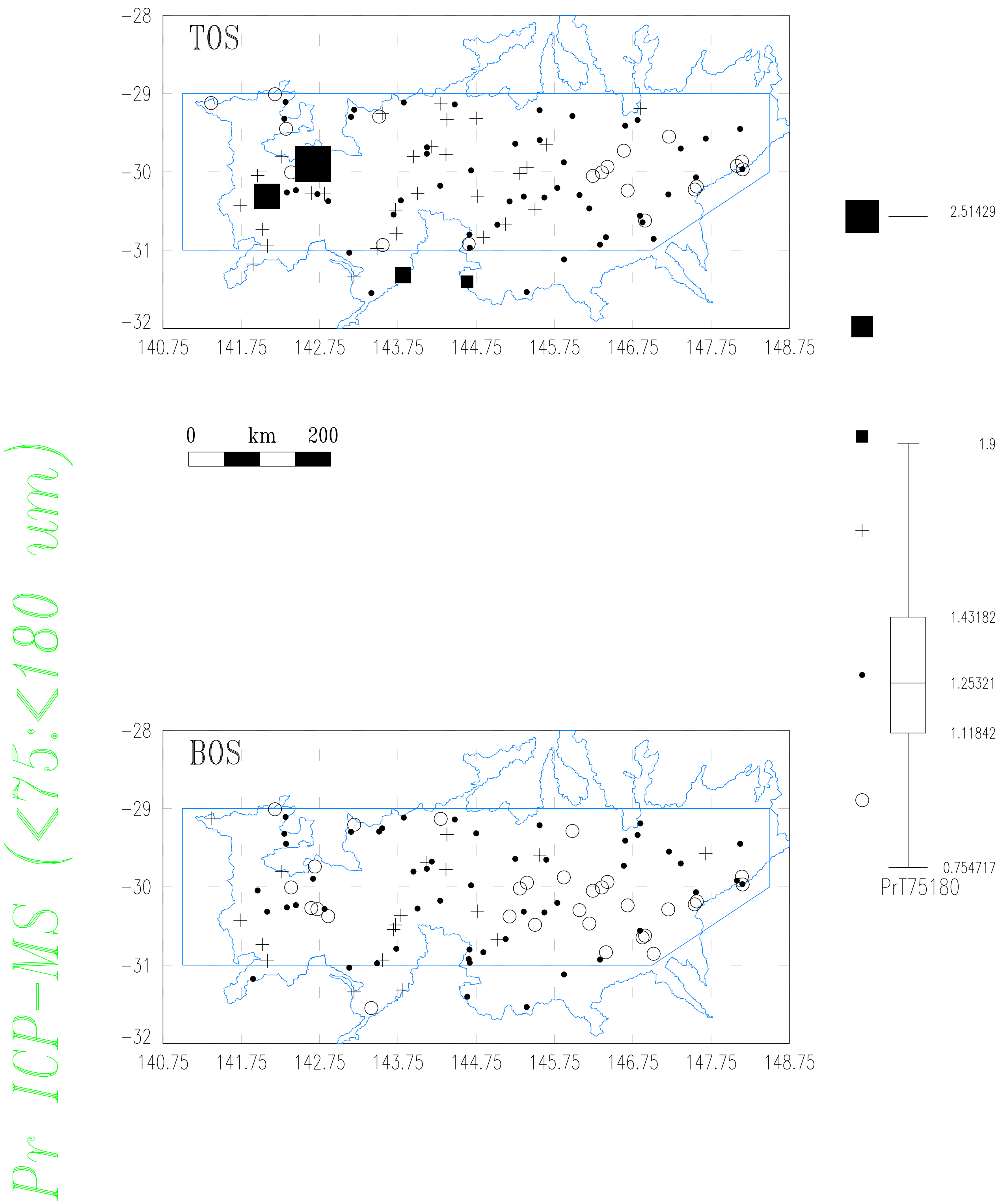


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

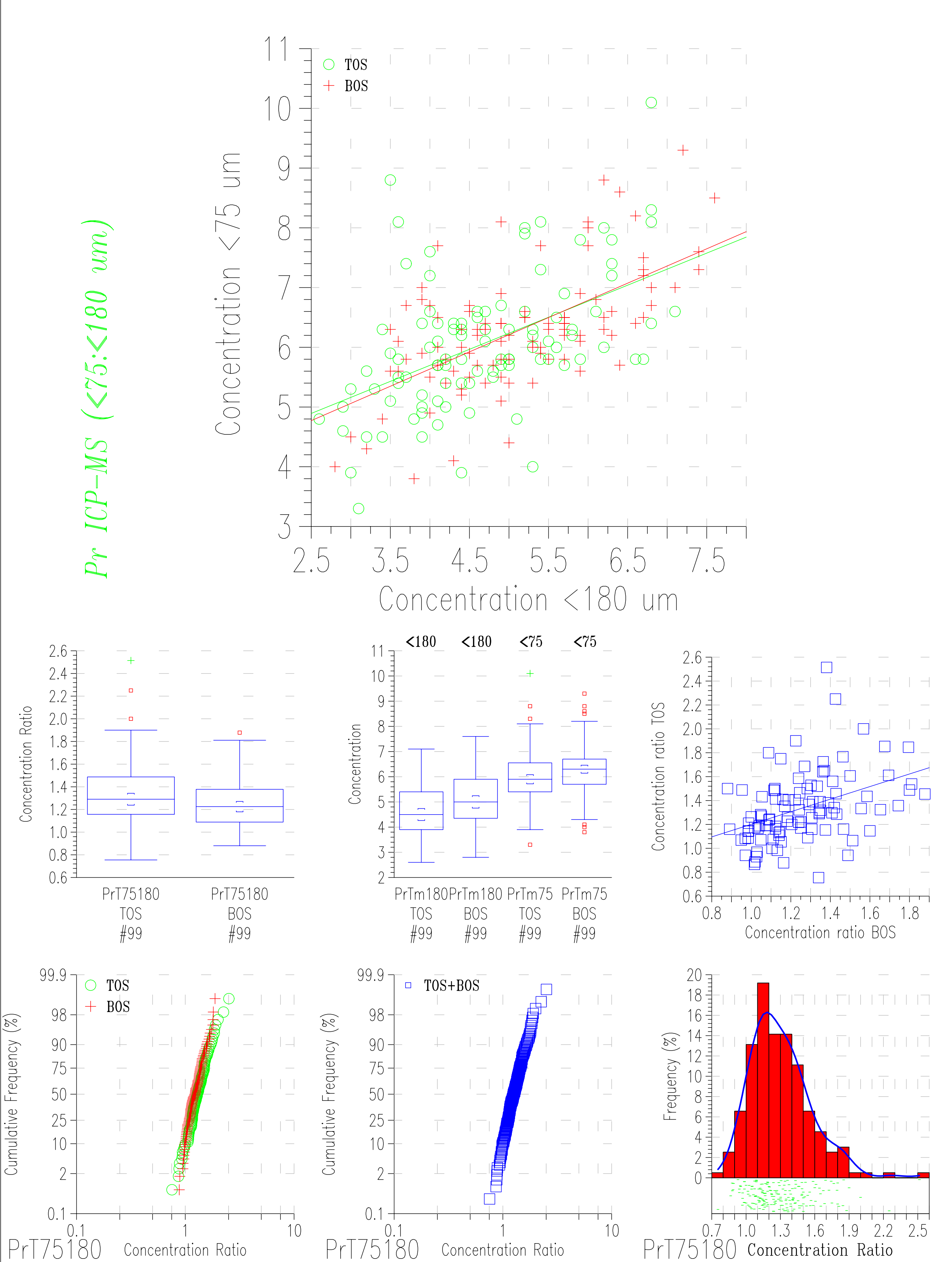



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Pr (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.56098
1.27692
1.05195
0.951219
0.875877
0.634921
0.555556
PrTm75
Concentration
PrTm75 TOS #99
PrTm75 BOS #99
Concentration Ratio
PrTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
PrTm75

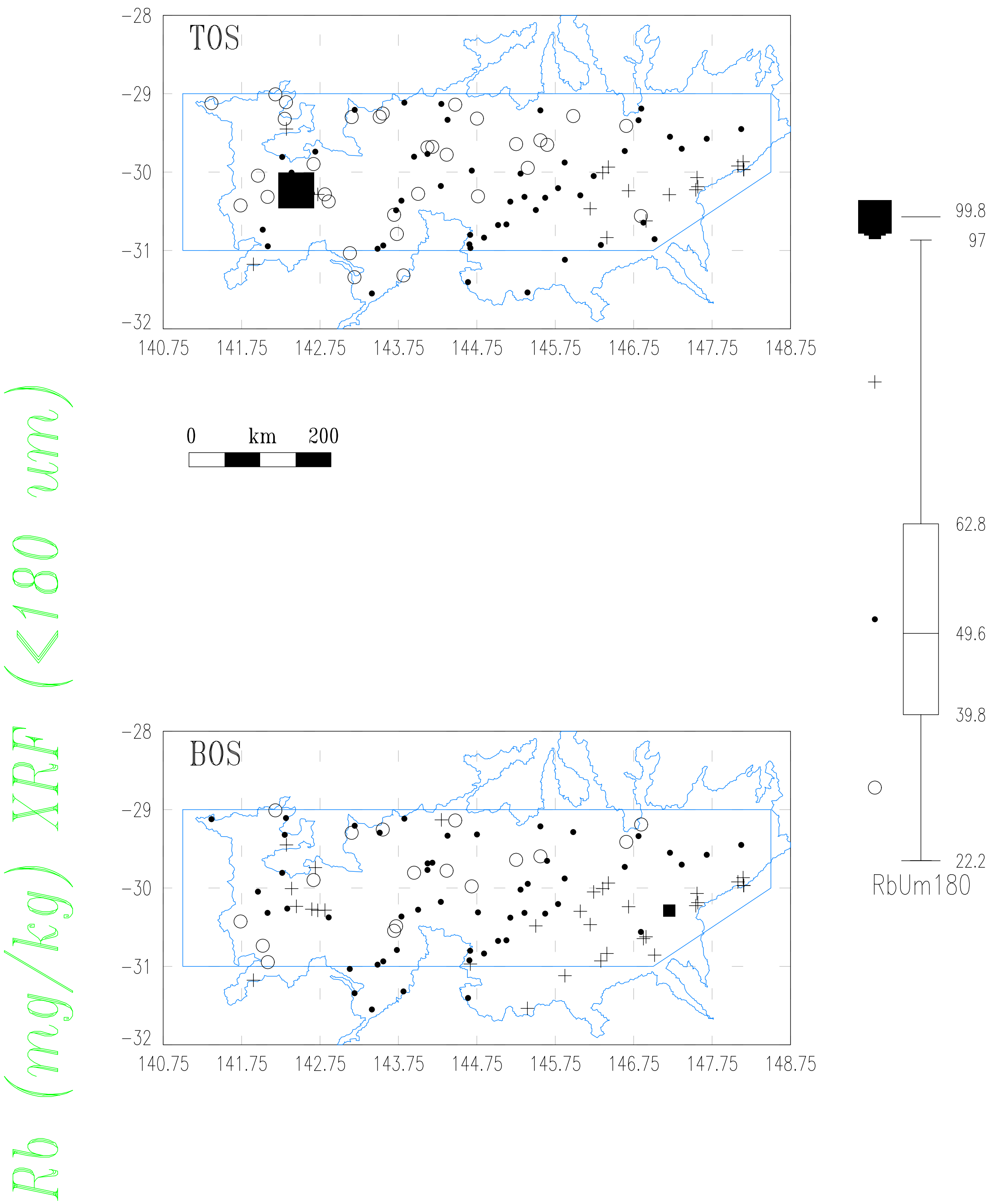
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

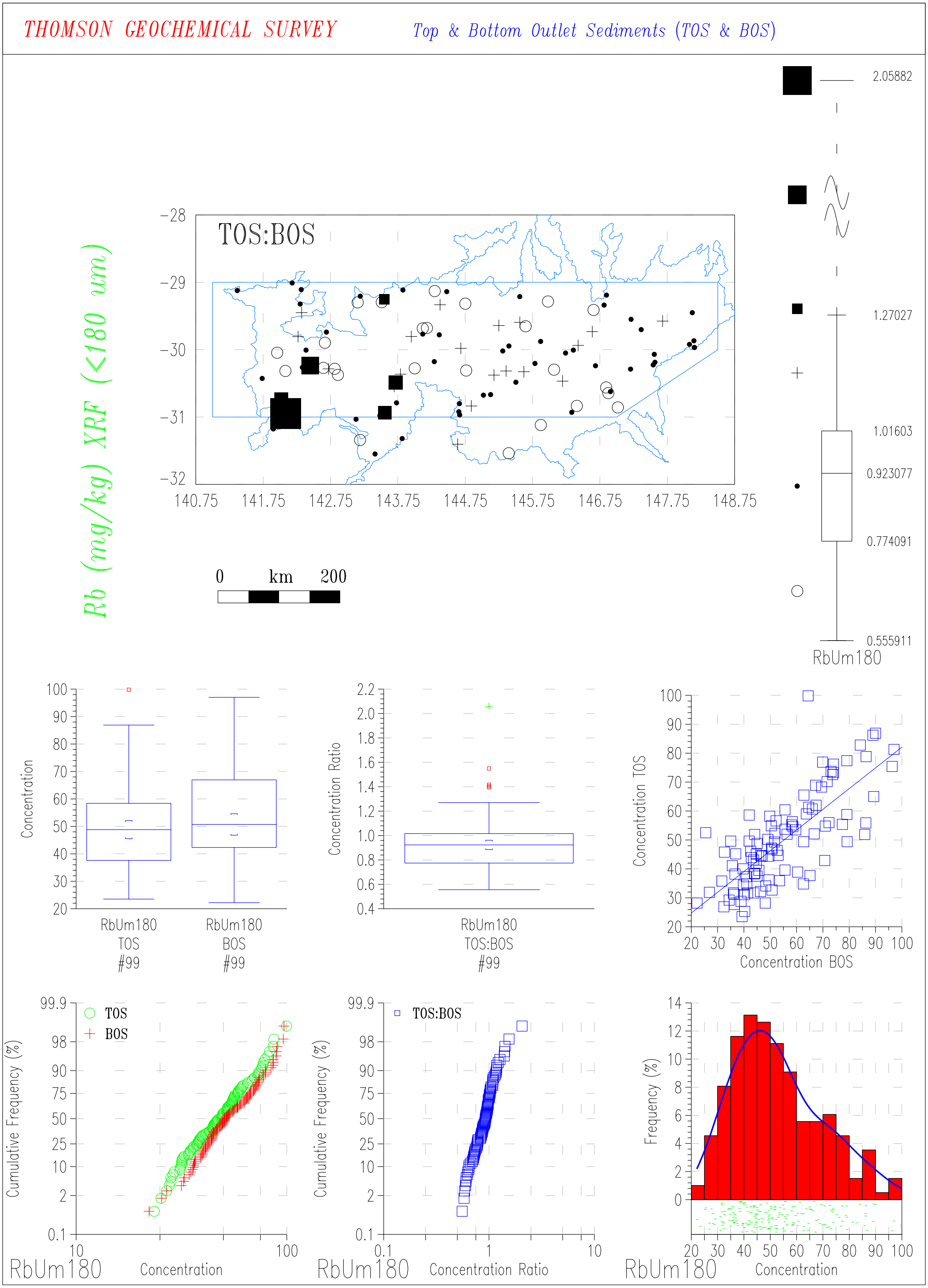


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

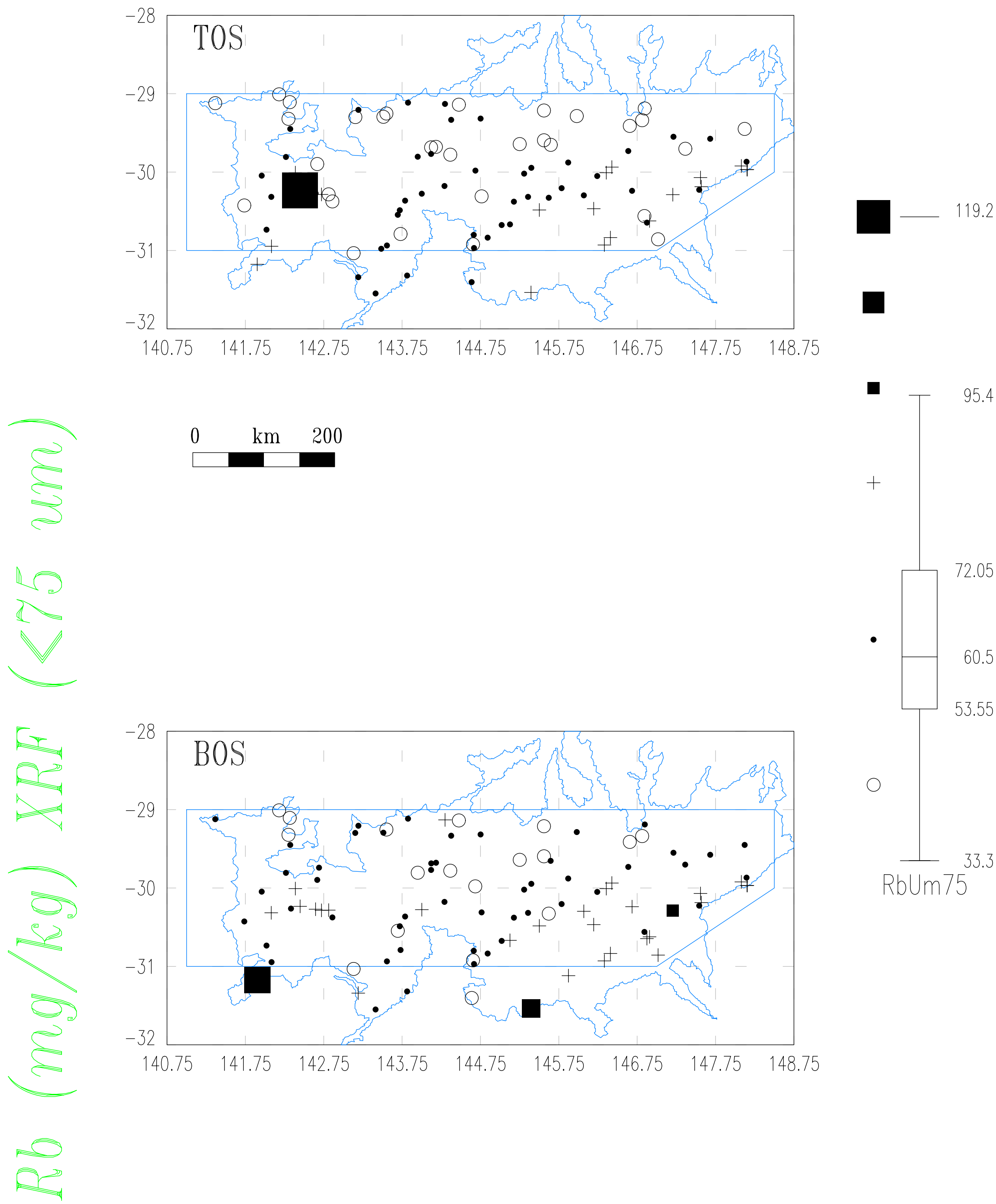


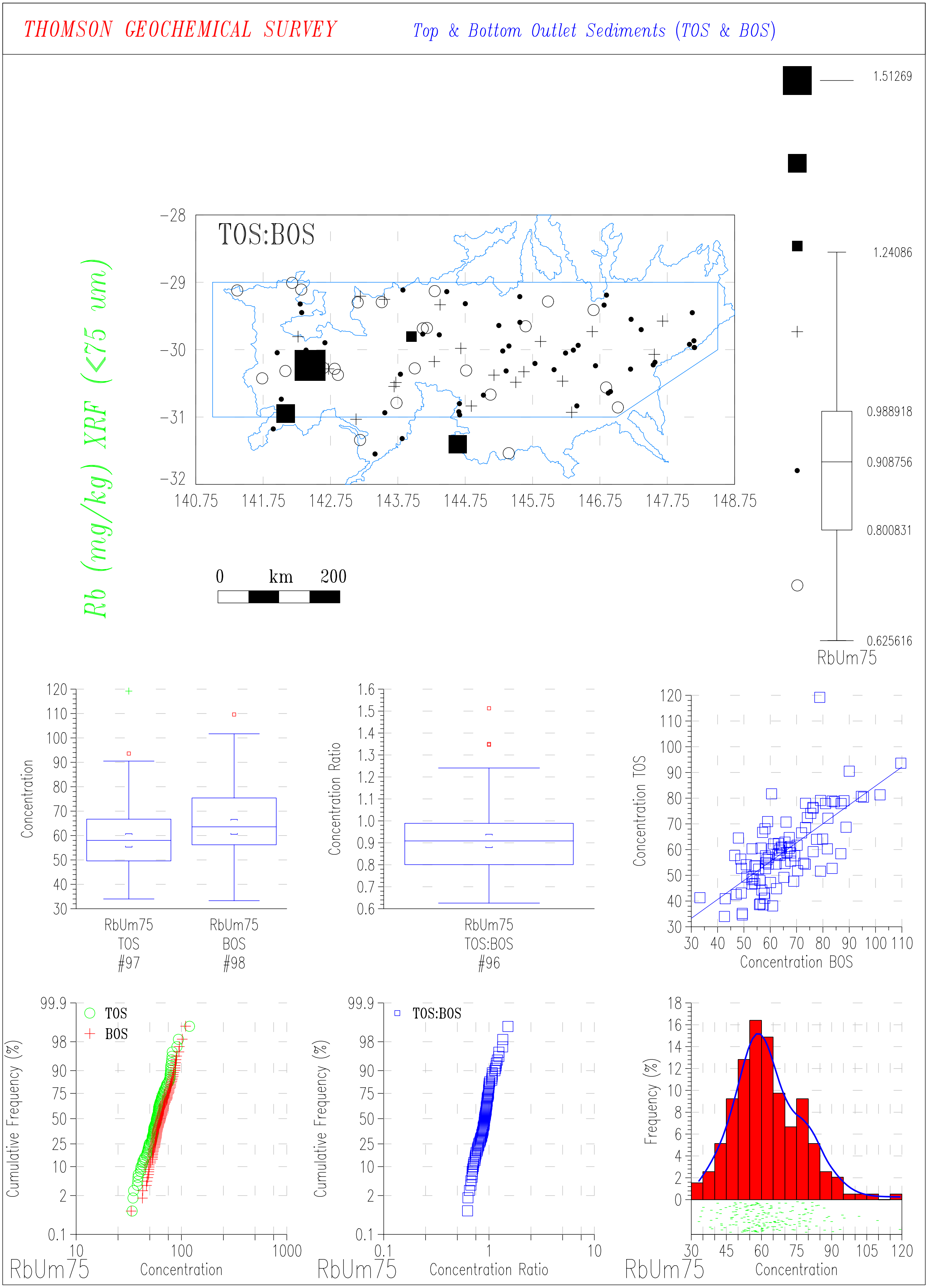
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

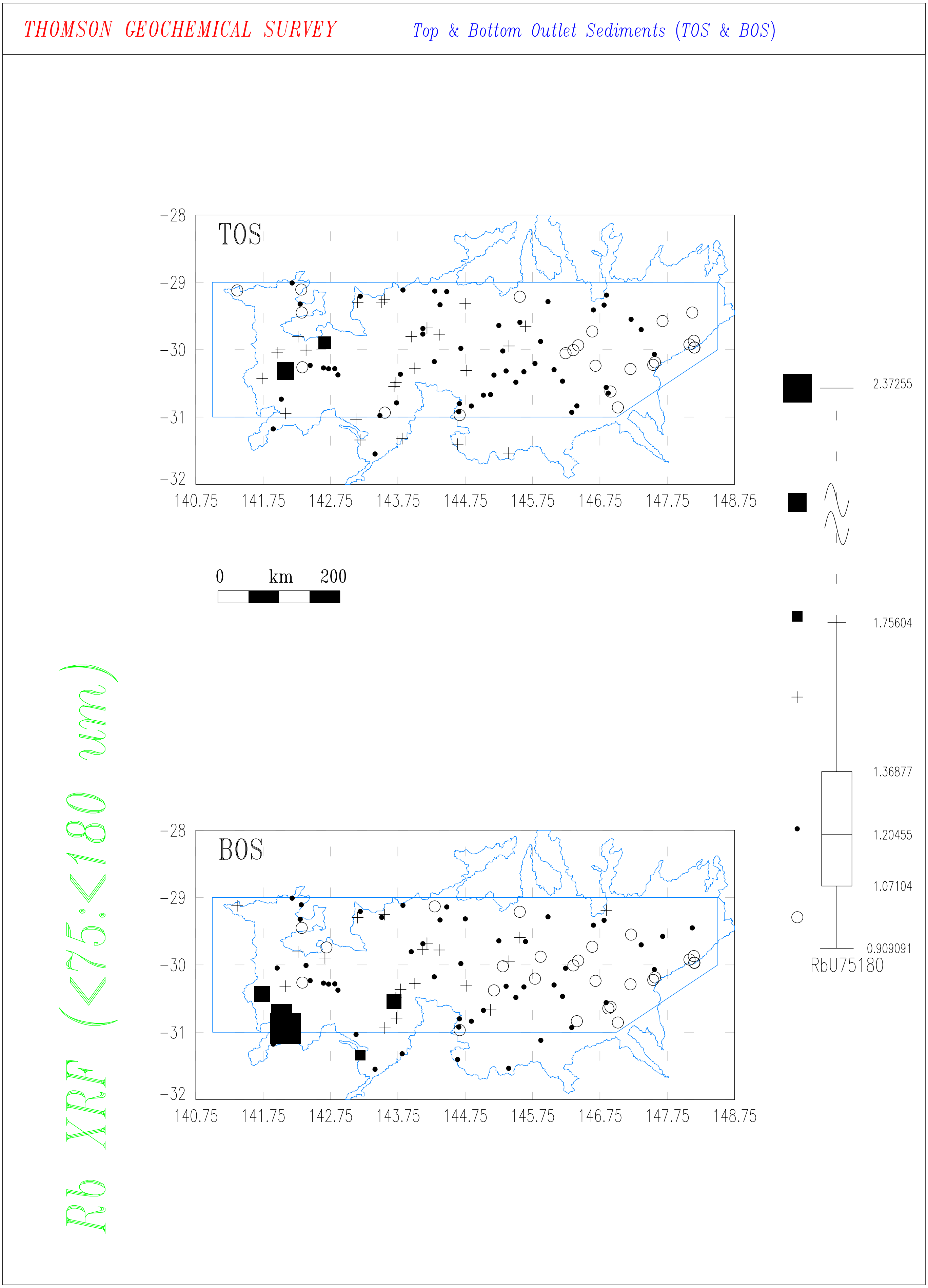



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Rb (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
2.05882
1.27027
1.01603
0.923077
0.774091
0.555911
RbUm180
Concentration
RbUm180 TOS #99
RbUm180 BOS #99
Concentration Ratio
RbUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
RbUm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

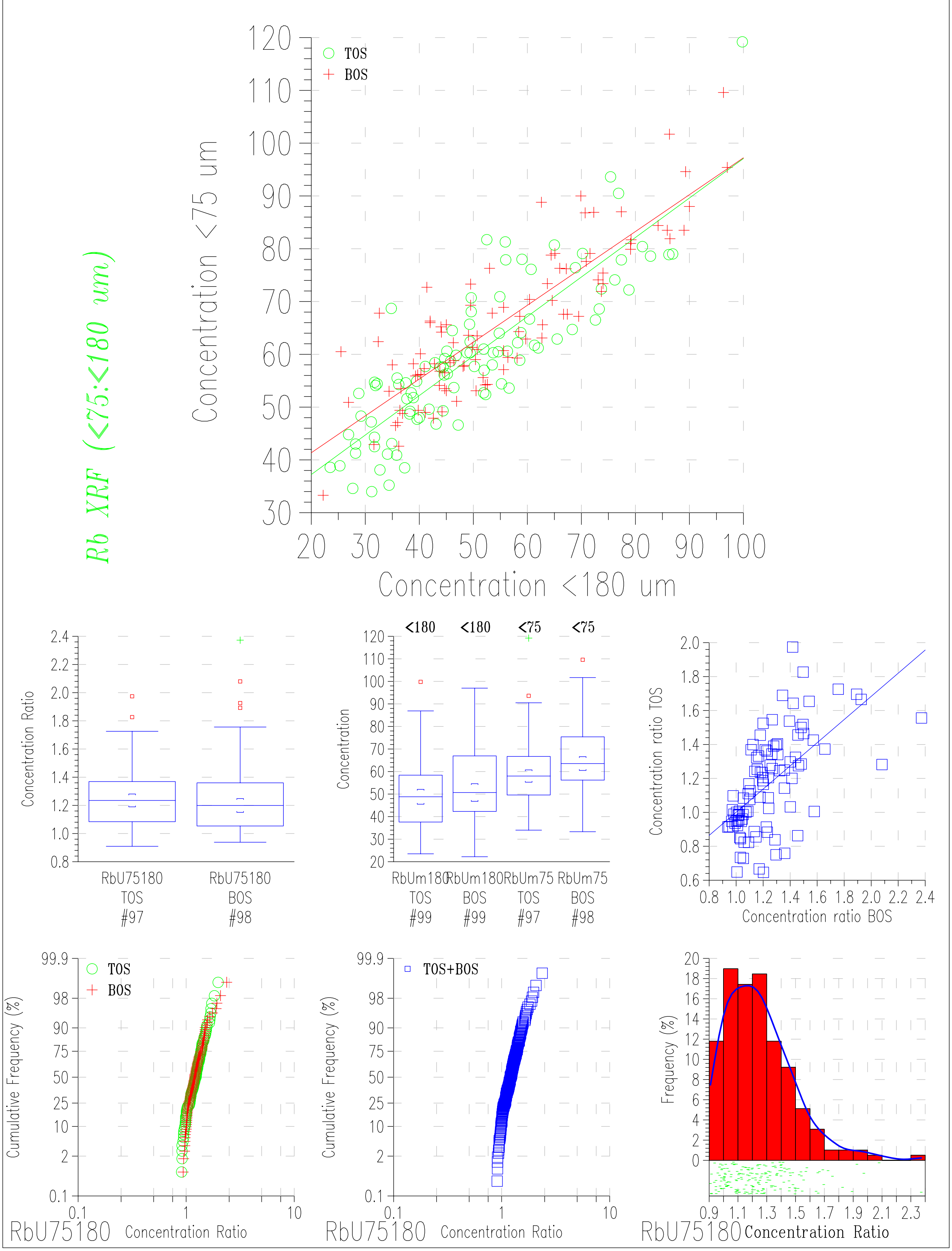
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



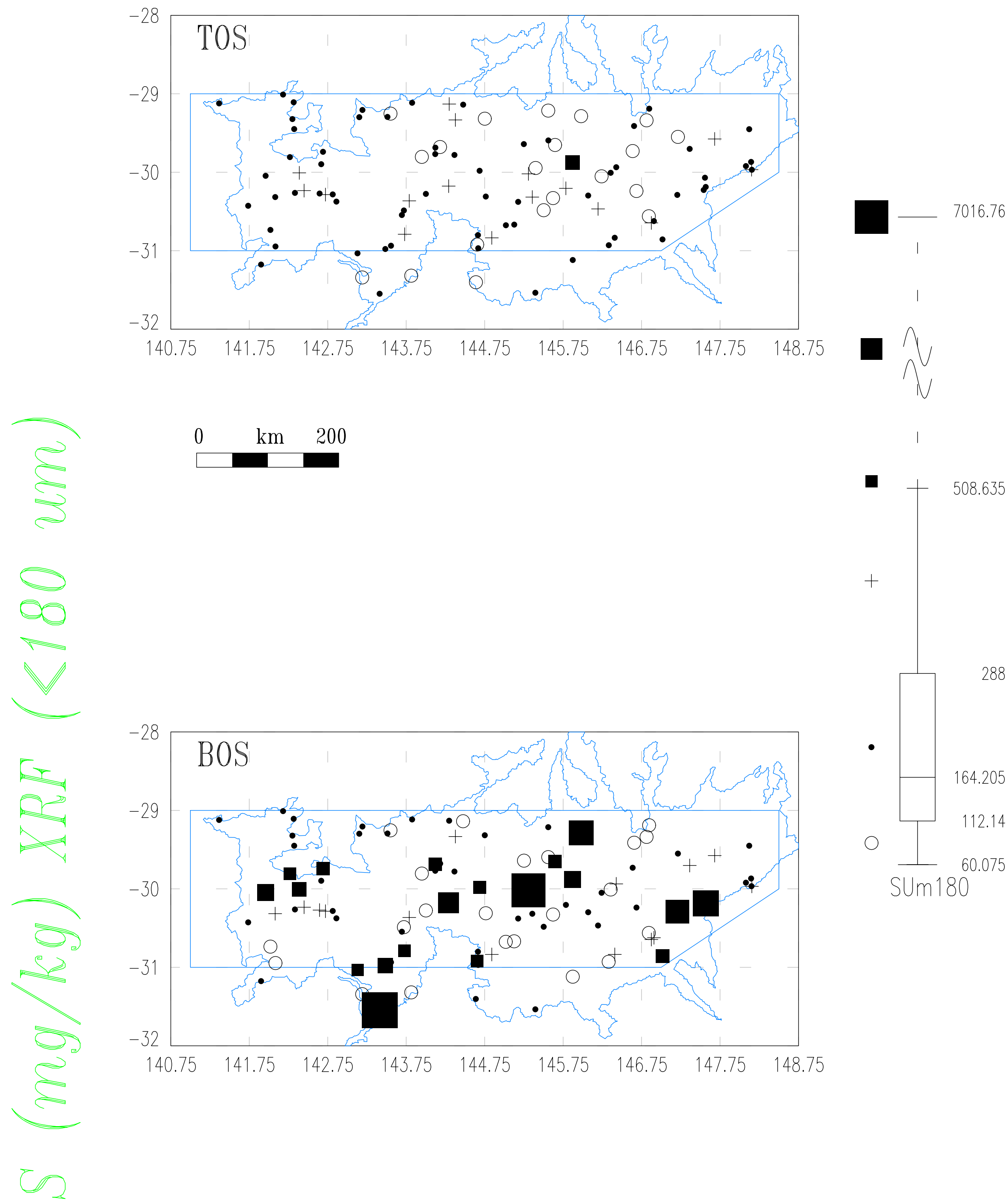

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Rb (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.51269
1.24086
0.988918
0.908756
0.800831
0.625616
RbUm75
Concentration
RbUm75 TOS #97
RbUm75 BOS #98
Concentration Ratio
RbUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Frequency (%)

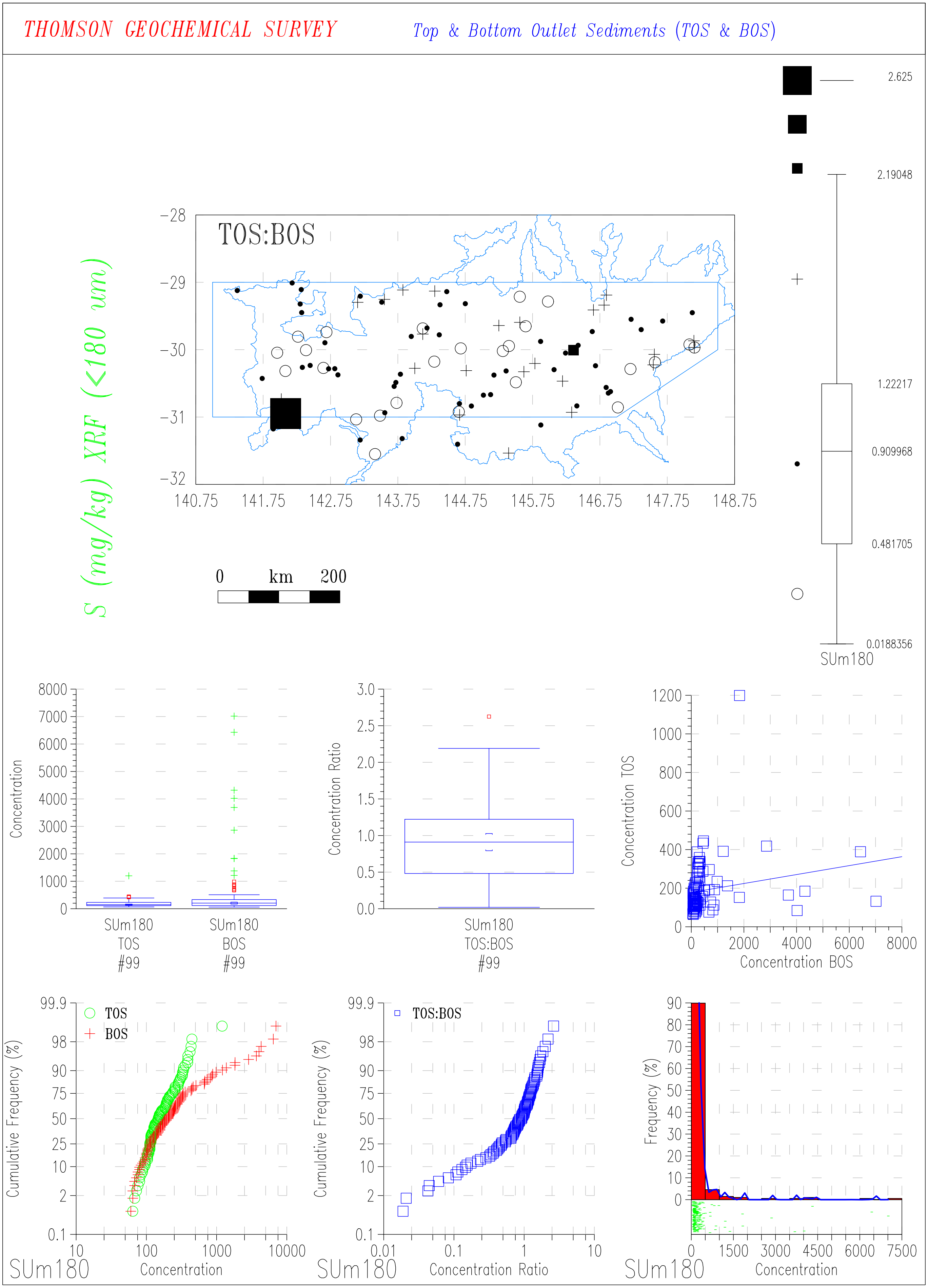

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
2.37255
1.75604
1.36877
1.20455
1.07104
0.909091
RbU75180
Rb XRF (<75:<180 um)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

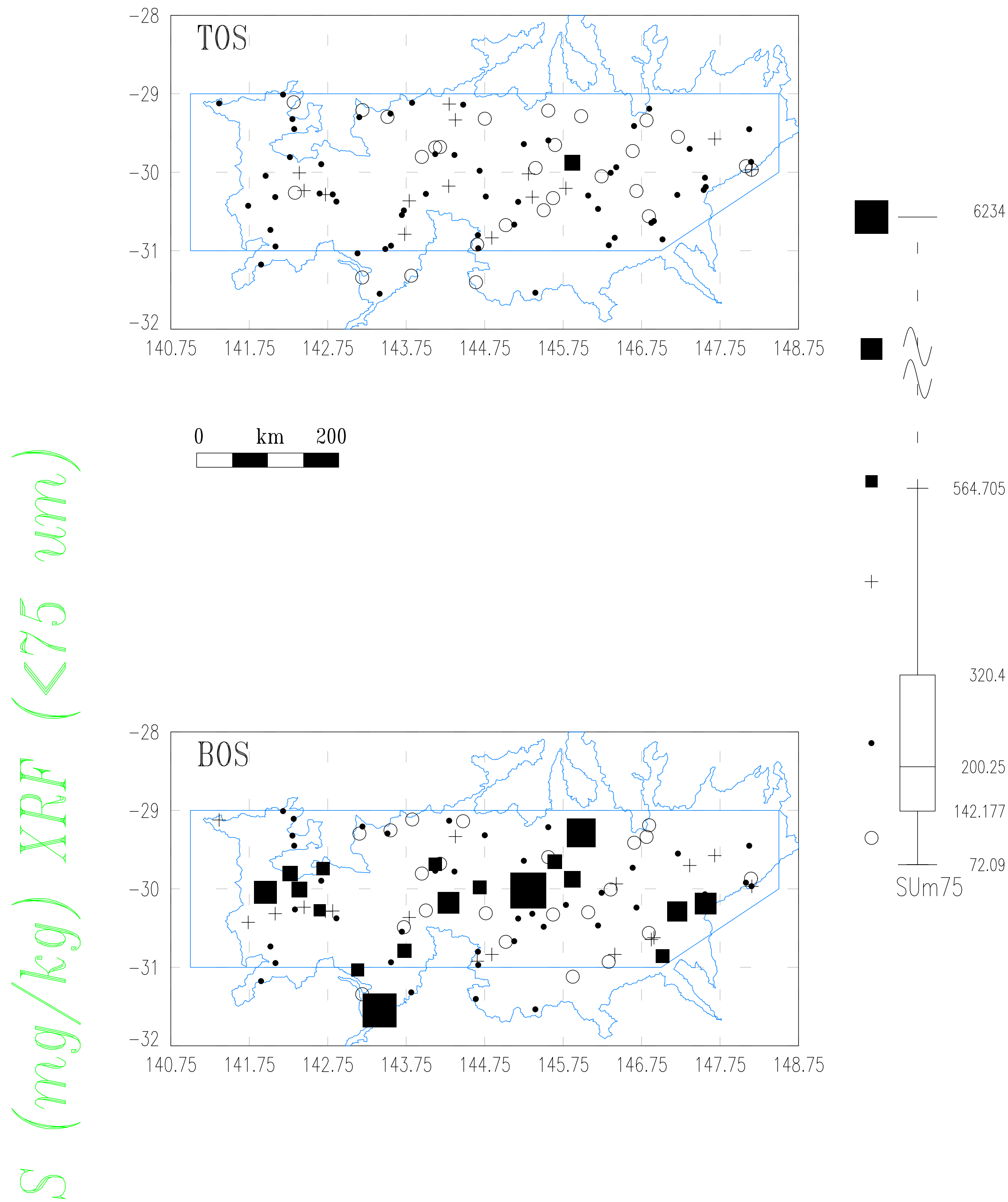


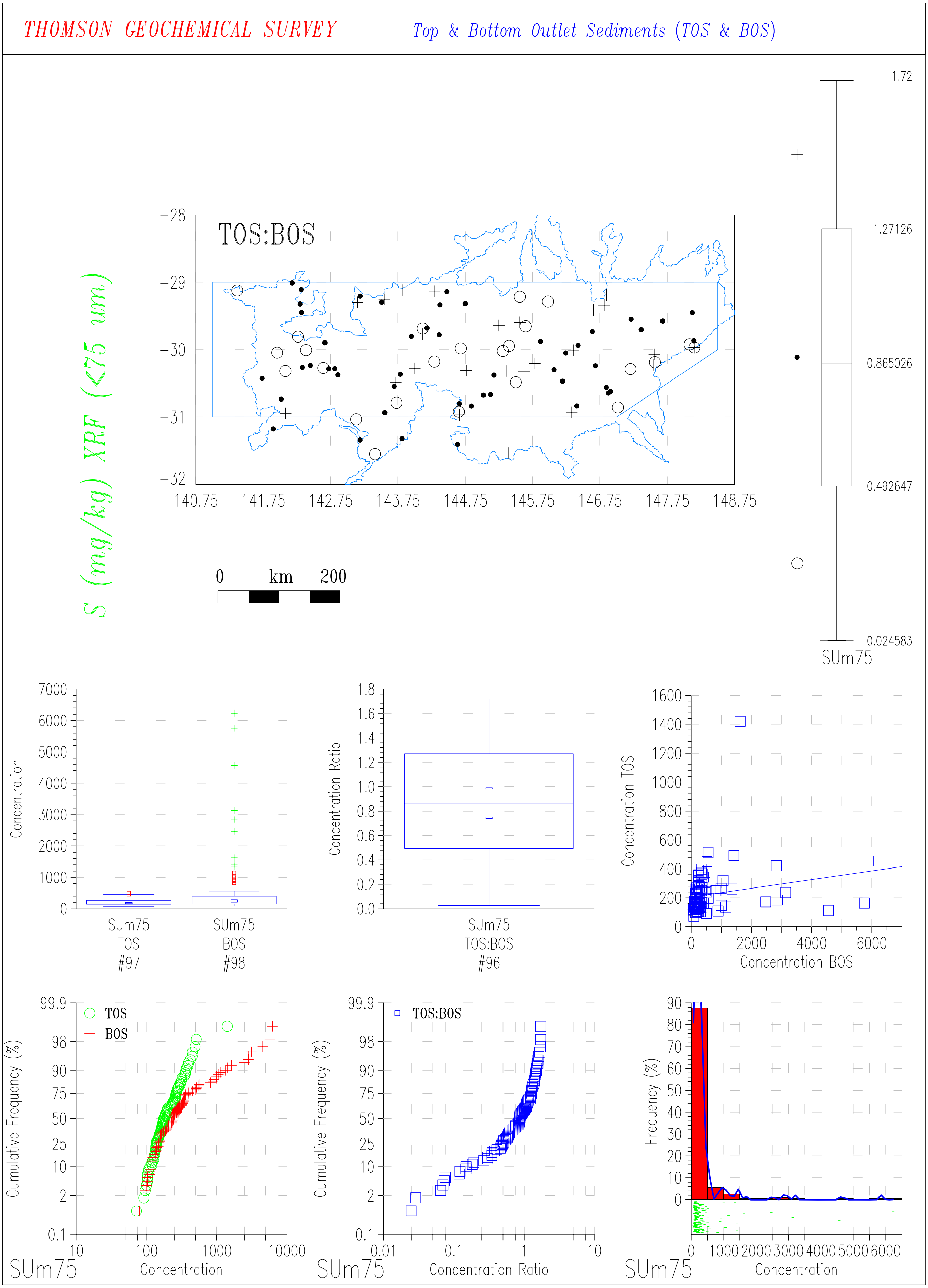
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
S (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
2.625
2.19048
1.22217
0.909968
0.481705
0.0188356
SUm180
Concentration
SUm180 TOS #99
SUm180 BOS #99
Concentration Ratio
SUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

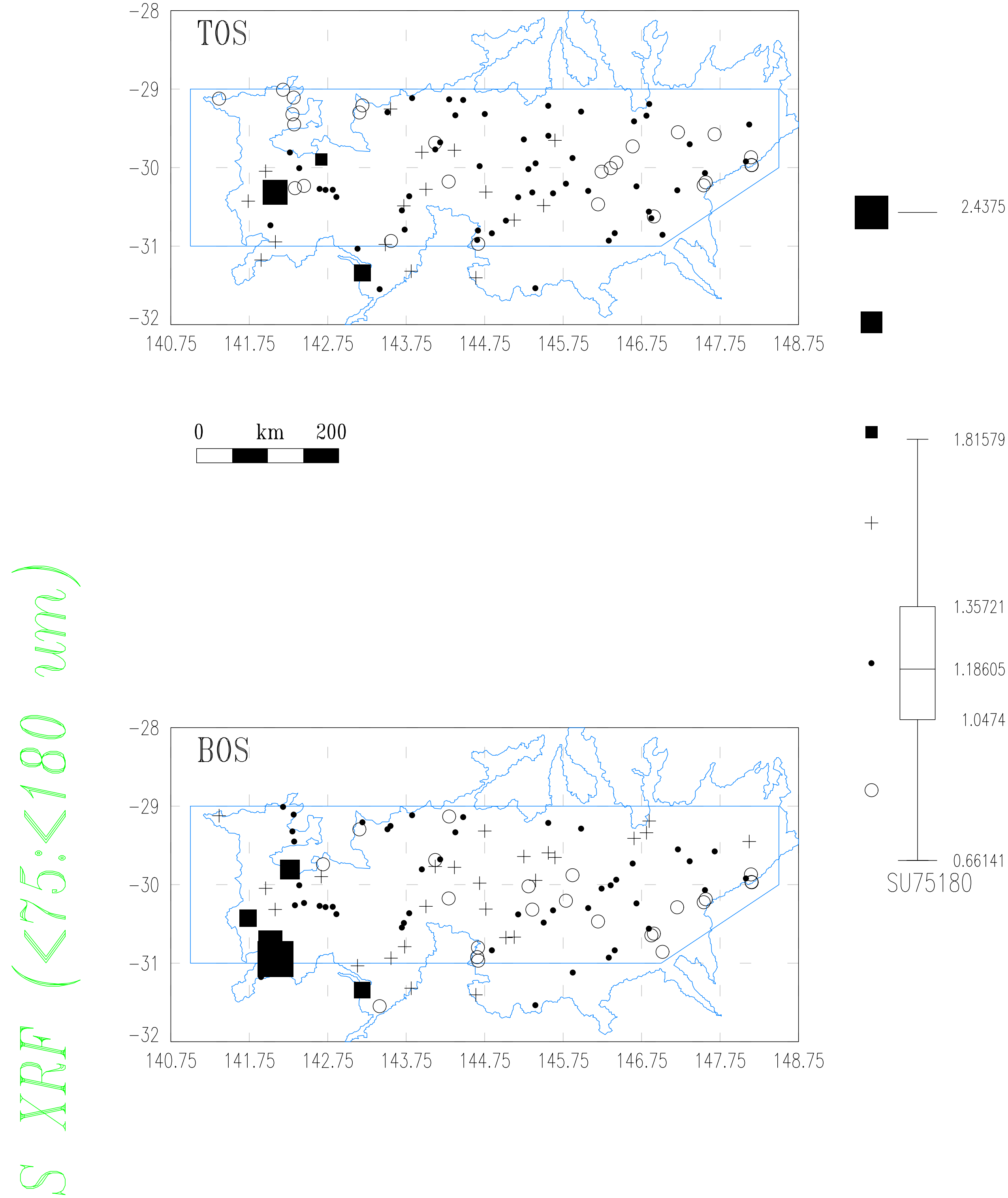
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



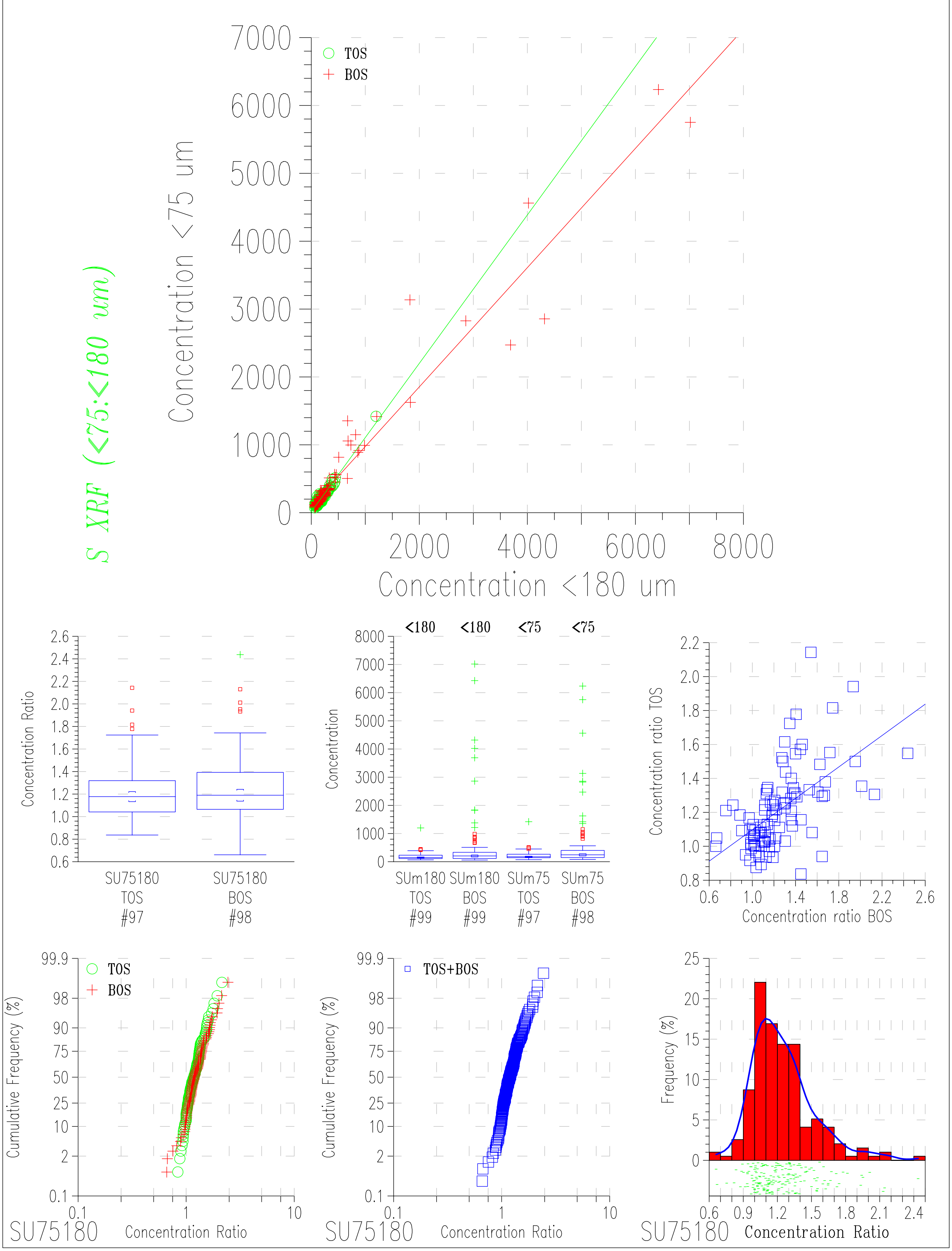

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
S (mg/kg) XRF (<75 um)
TOS:BOS
0 km 200
1.72
1.27126
0.865026
0.492647
0.024583
SUm75
Concentration
SUm75 TOS #97
SUm75 BOS #98
Concentration Ratio
SUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
SUm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

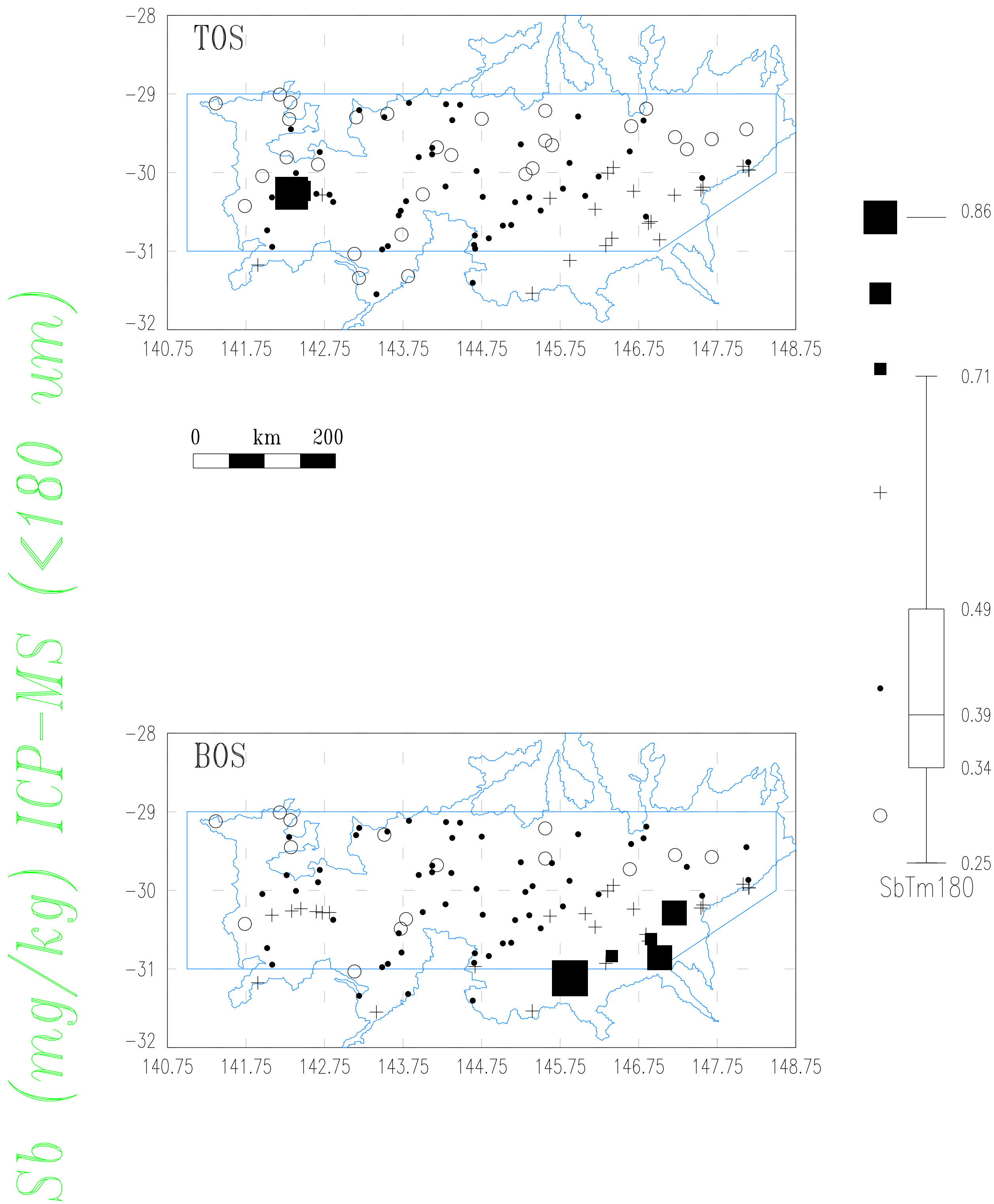


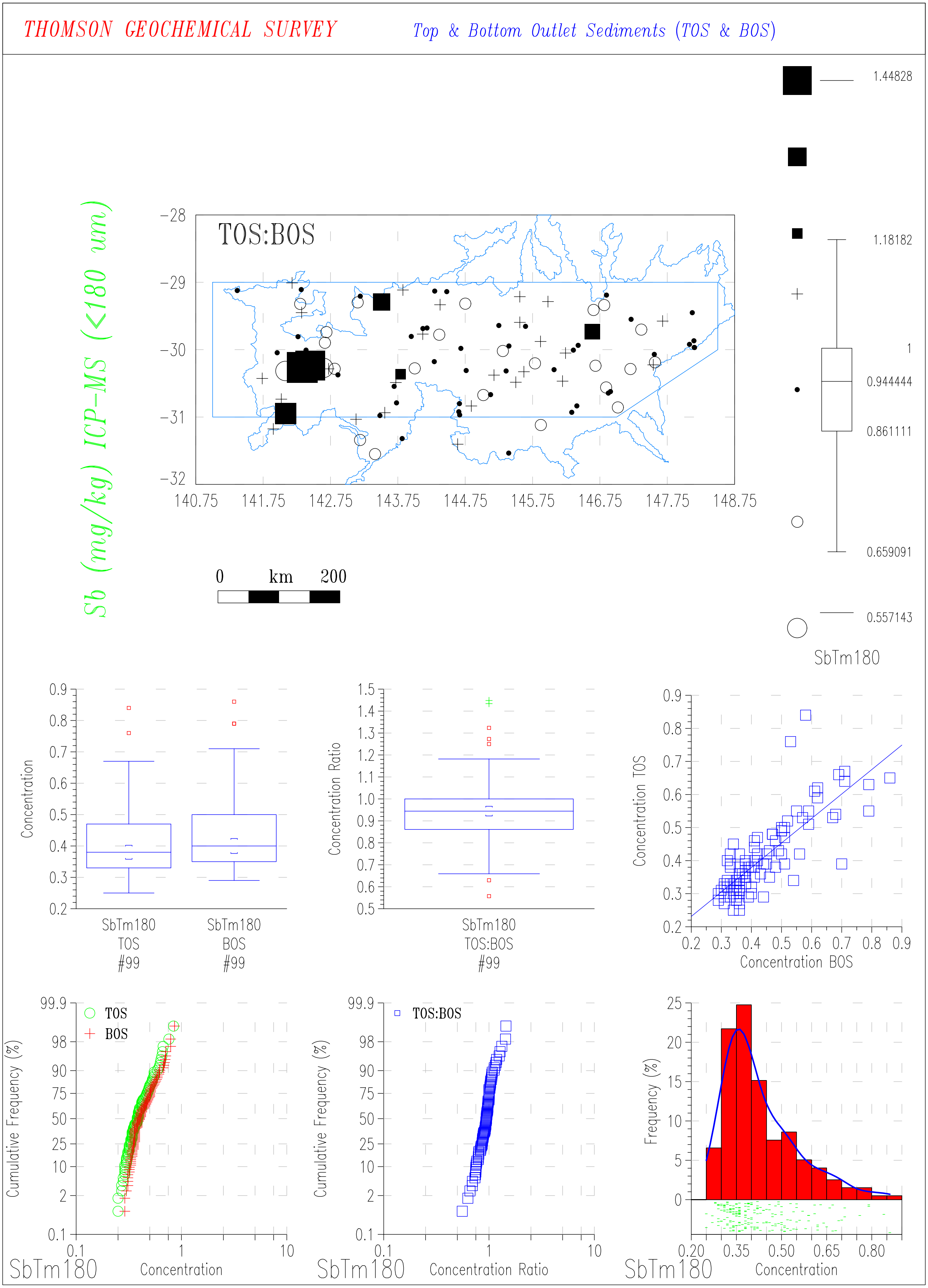
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

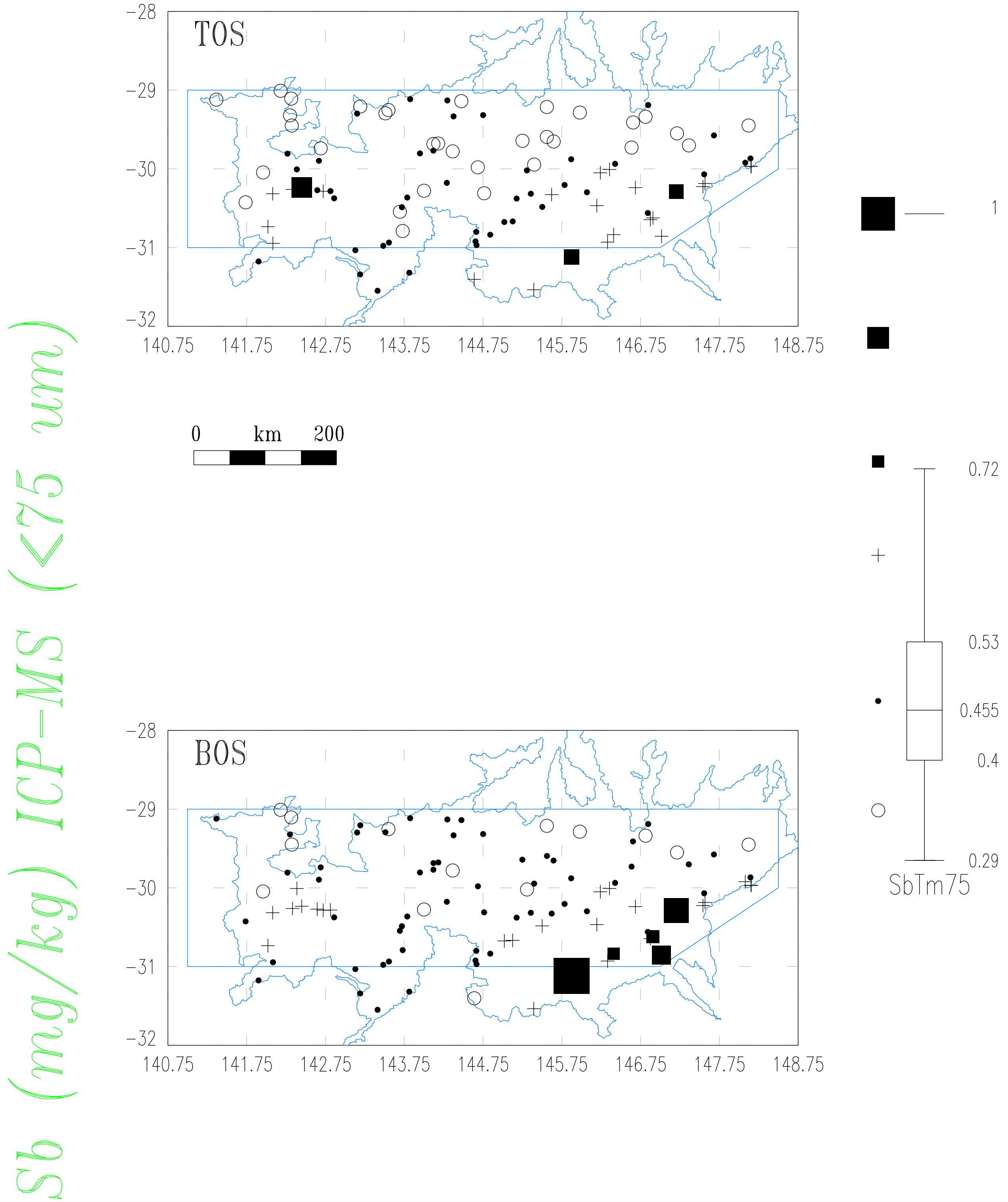
Top & Bottom Outlet Sediments (TOS & BOS)



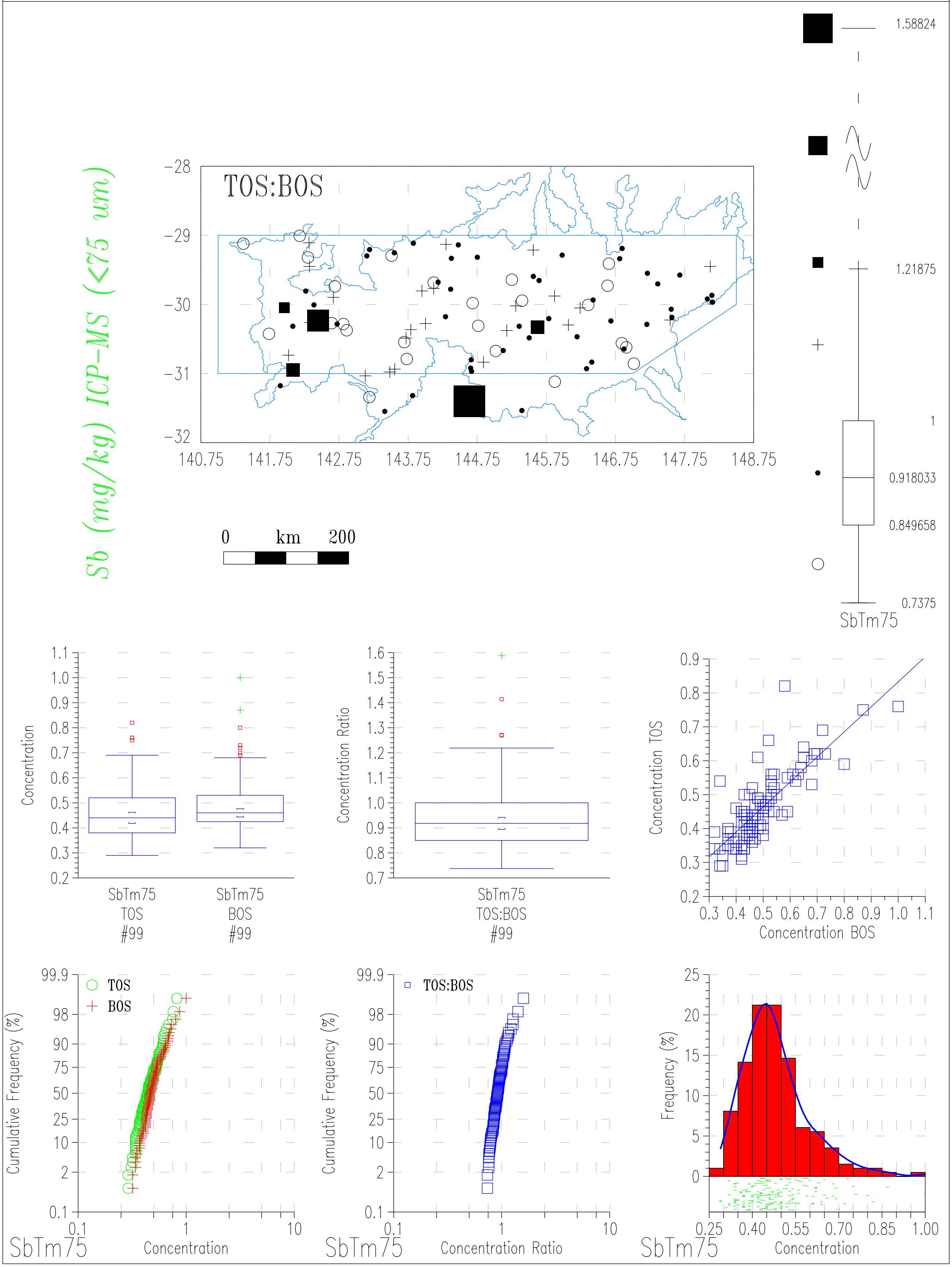

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sb (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.44828
1.18182
1
0.944444
0.861111
0.659091
0.557143
SbTm180
Concentration
SbTm180 TOS #99
SbTm180 BOS #99
Concentration Ratio
SbTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

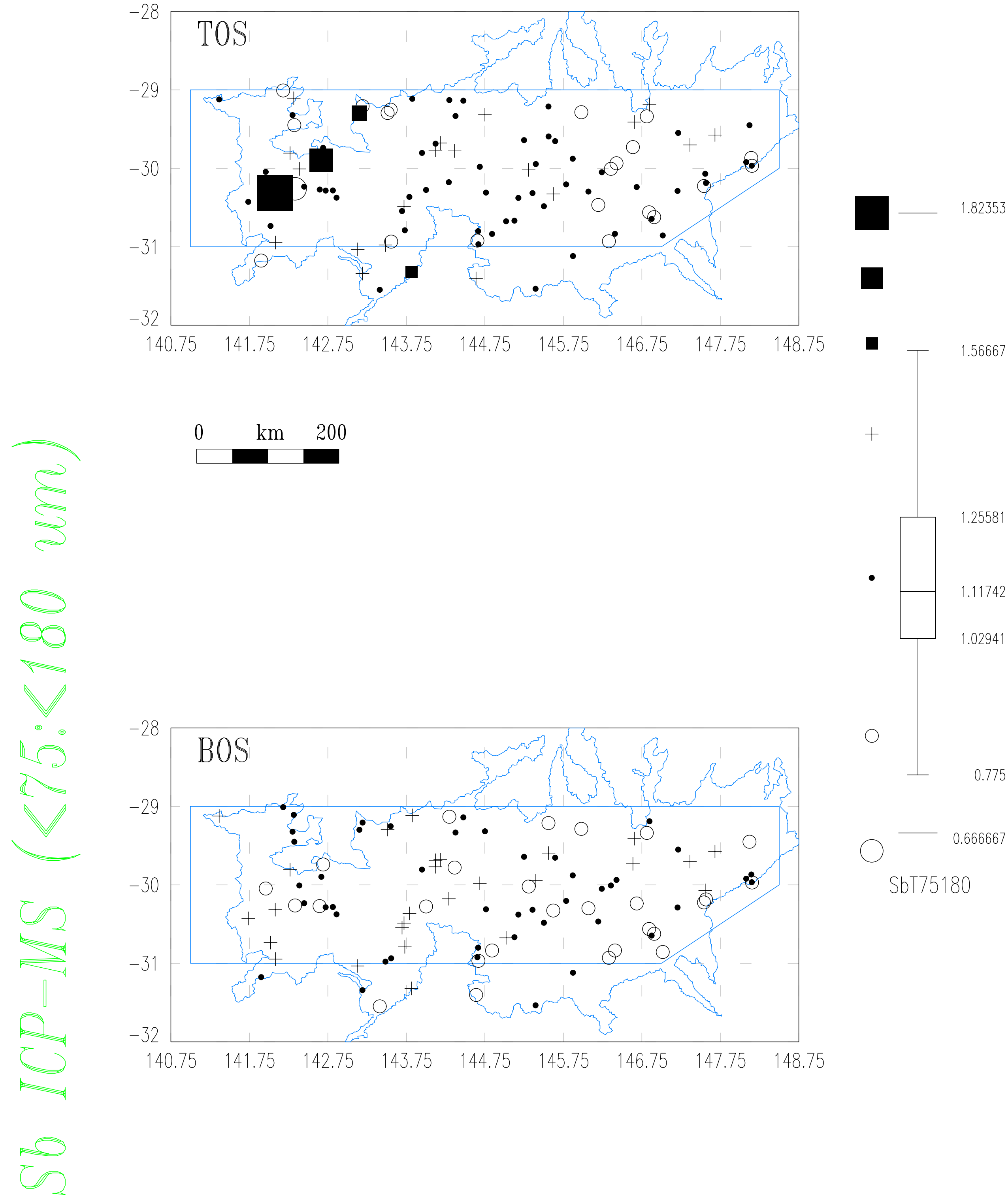
Top & Bottom Outlet Sediments (TOS & BOS)



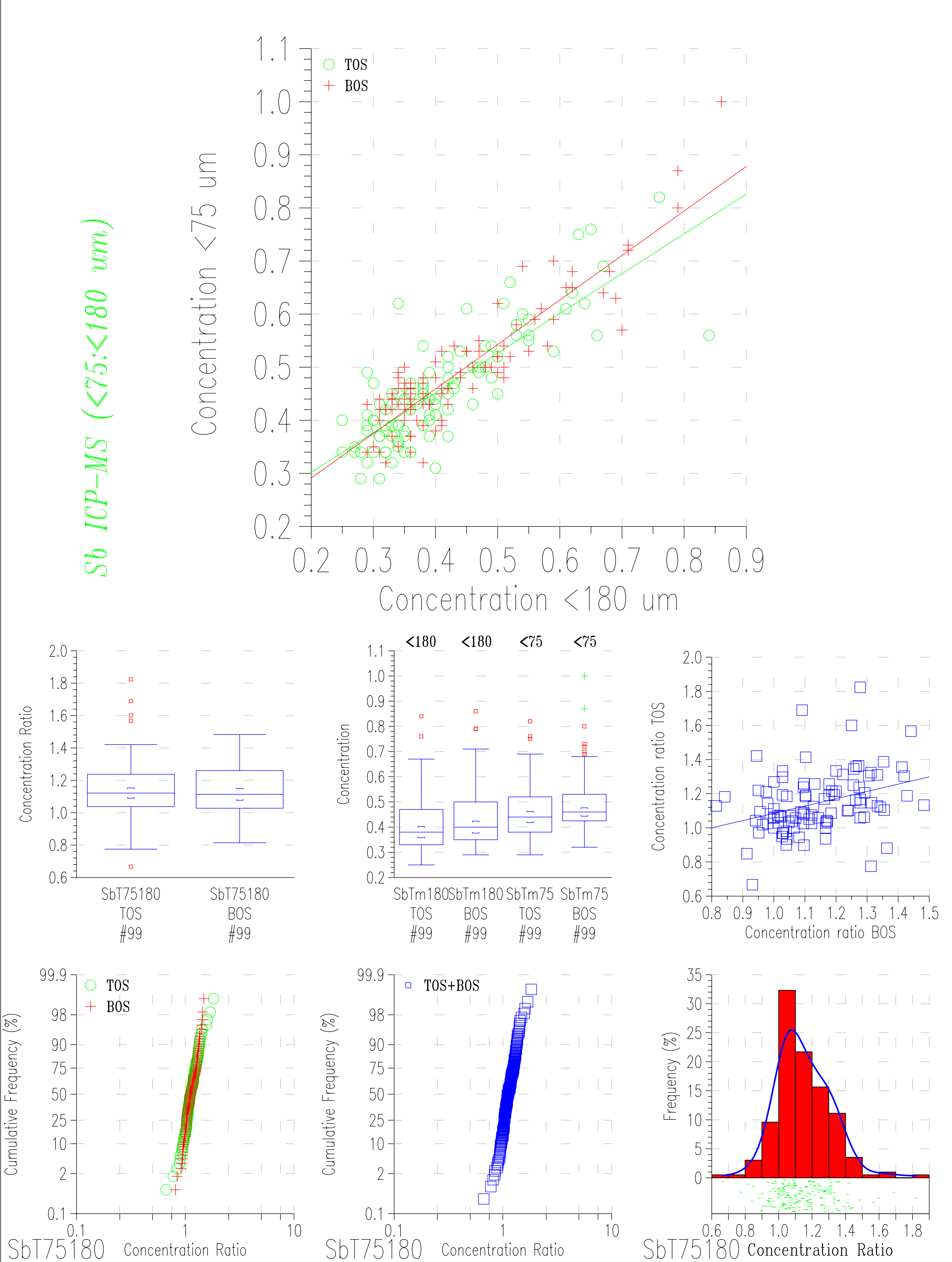
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

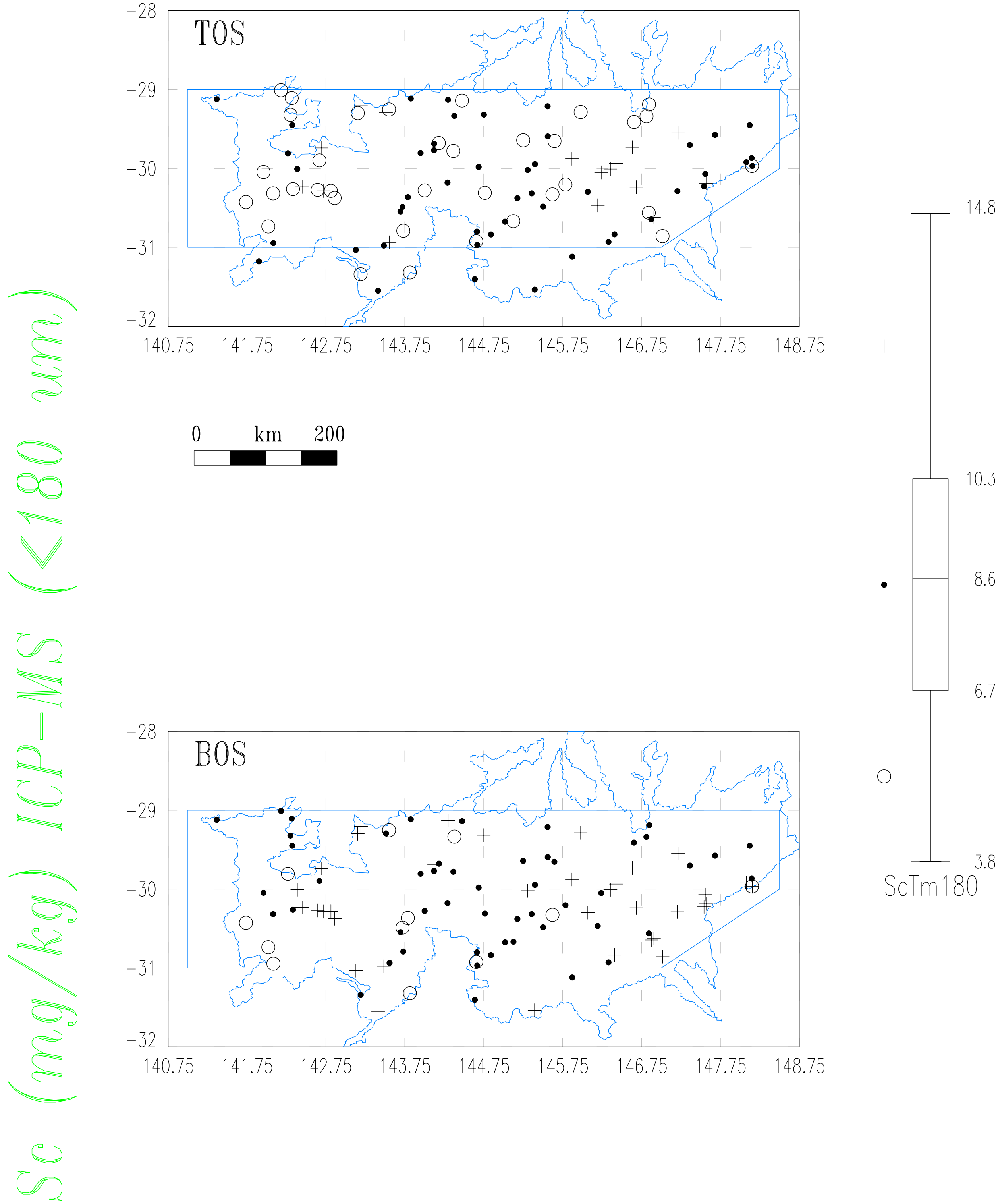


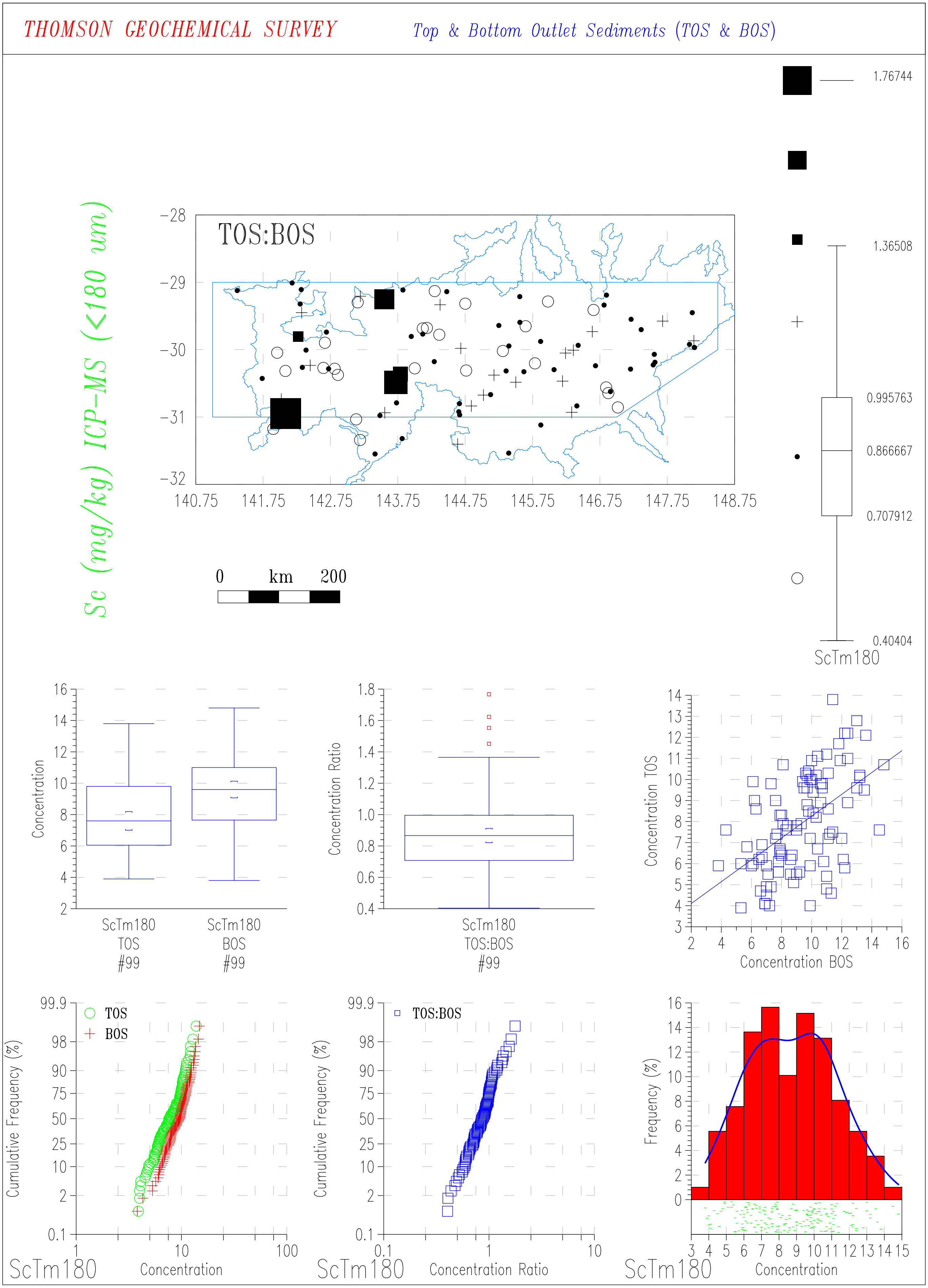
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



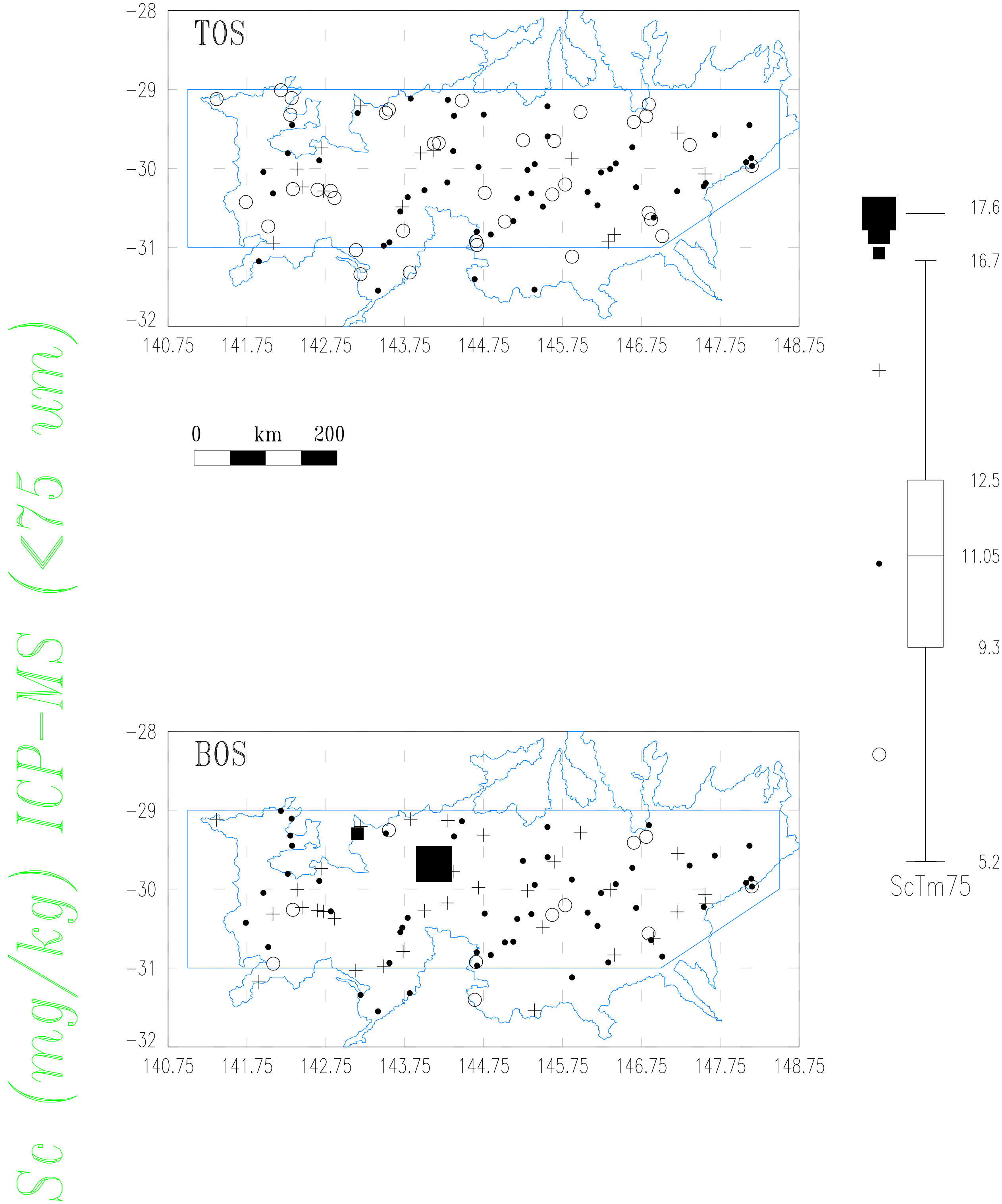
THOMSON GEOCHEMICAL SURVEY

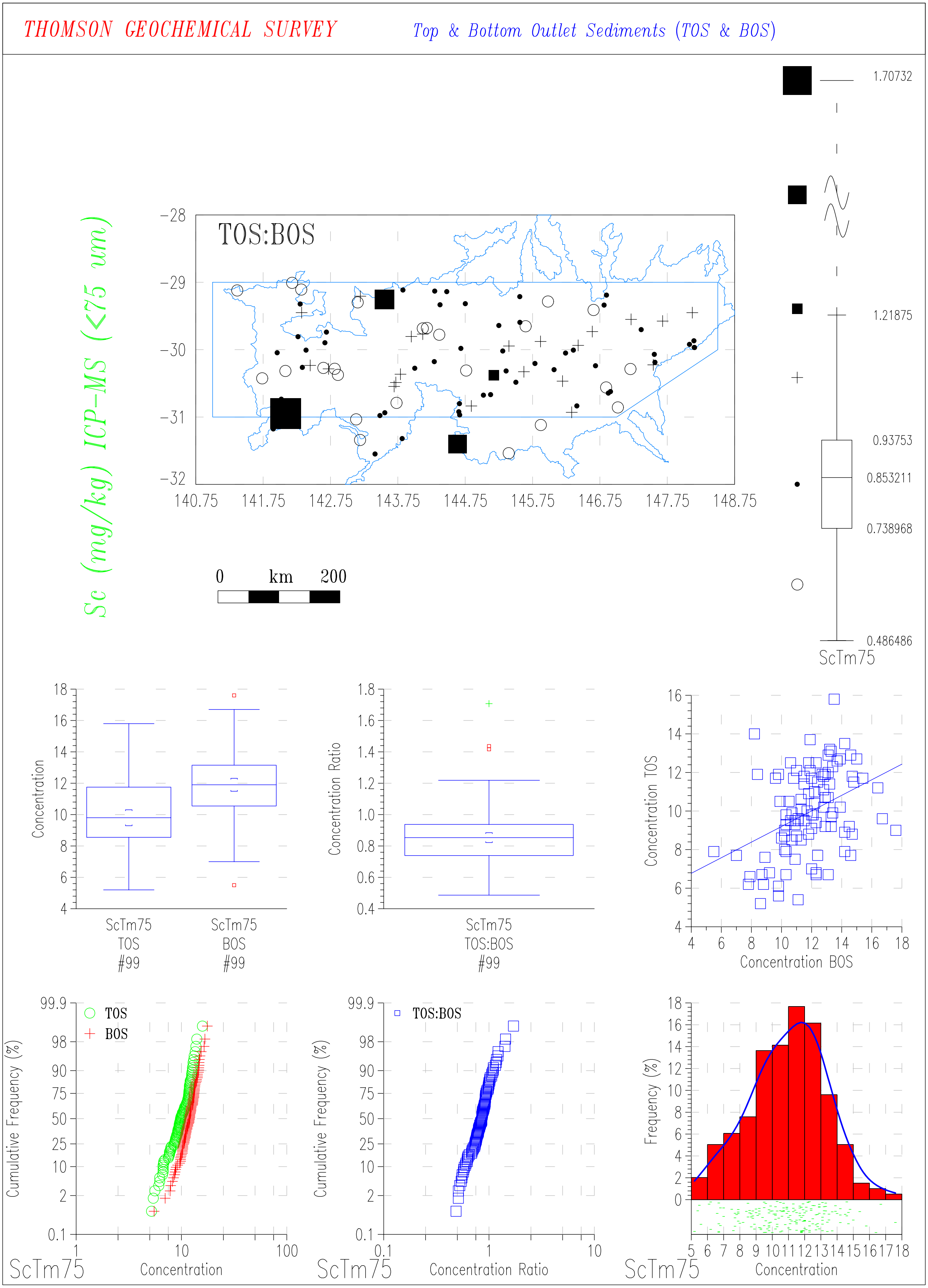
Top & Bottom Outlet Sediments (TOS & BOS)



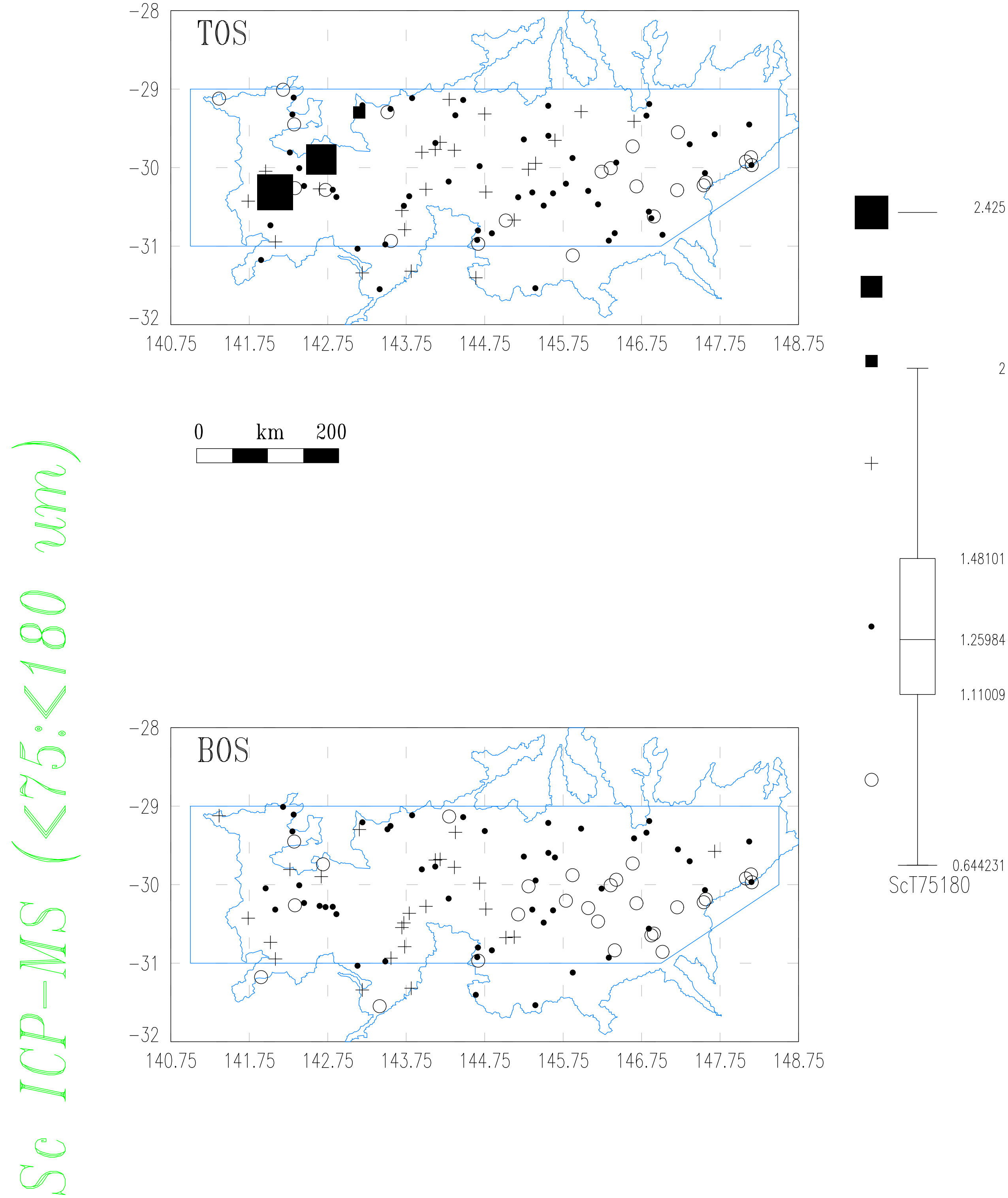

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sc (mg/kg) ICP-MS (<180 um)
TOS:BOS
−28
−29
−30
−31
−32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.76744
1.36508
0.995763
0.866667
0.707912
0.40404
ScTm180
Concentration
ScTm180 TOS #99
ScTm180 BOS #99
Concentration Ratio
ScTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
ScTm180
Concentration
TOS:BOS
Cumulative Frequency (%)
ScTm180
Concentration Ratio
Frequency (%)
ScTm180
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

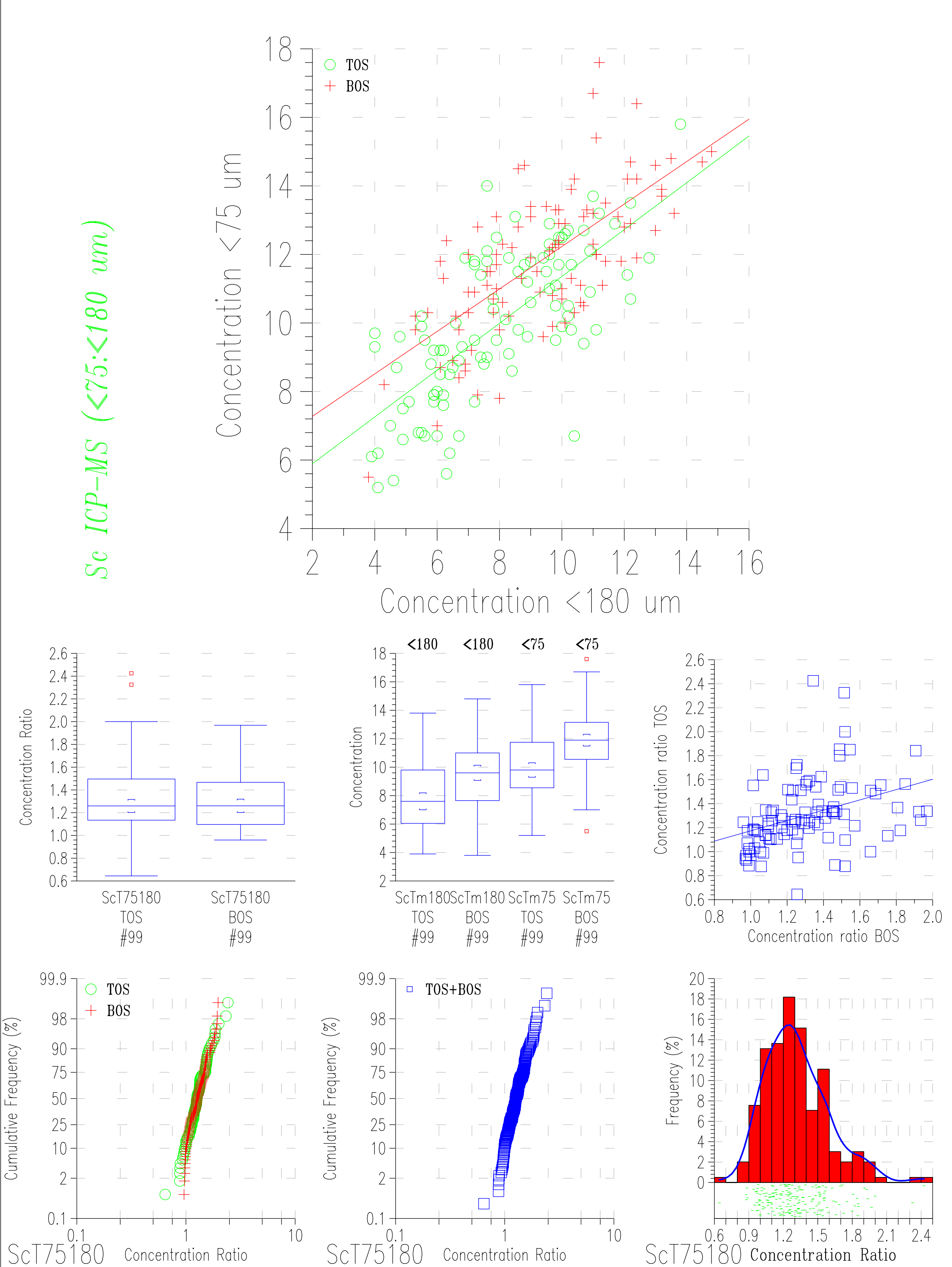



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sc (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.70732
1.21875
0.93753
0.853211
0.738968
0.486486
ScTm75
Concentration
ScTm75 TOS #99
ScTm75 BOS #99
Concentration Ratio
ScTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

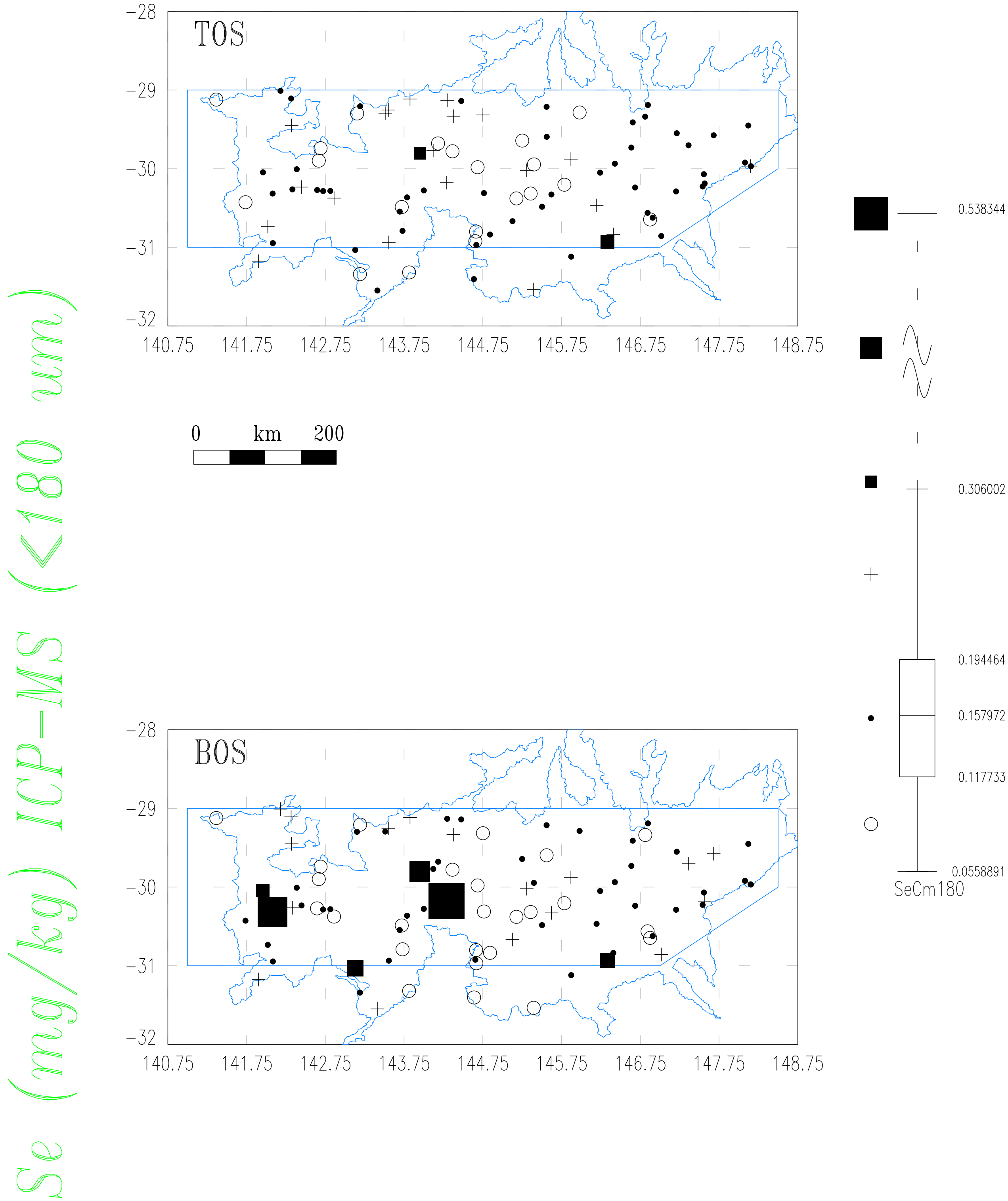


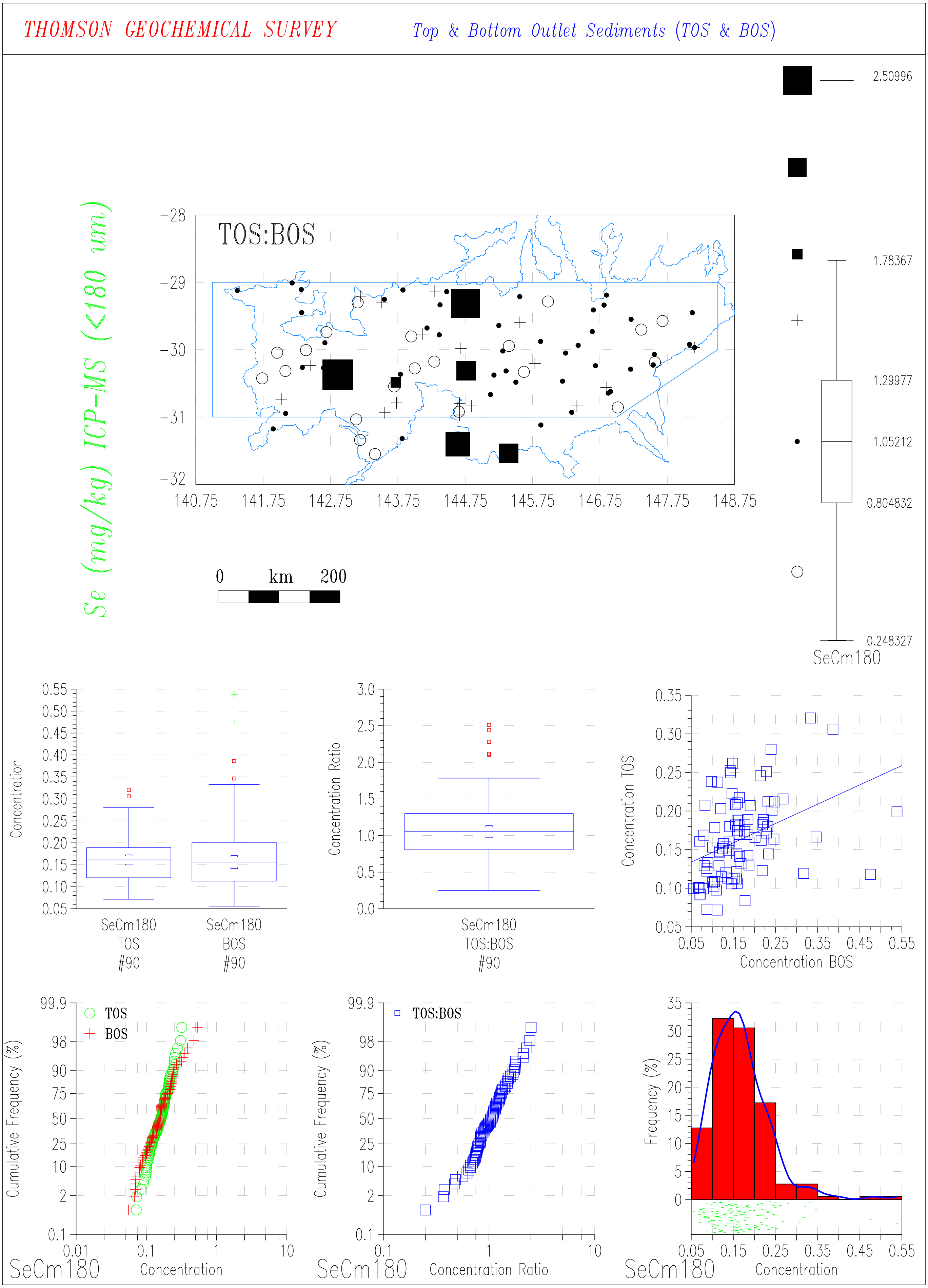
THOMSON GEOCHEMICAL SURVEY　　Top & Bottom Outlet Sediments (TOS & BOS)

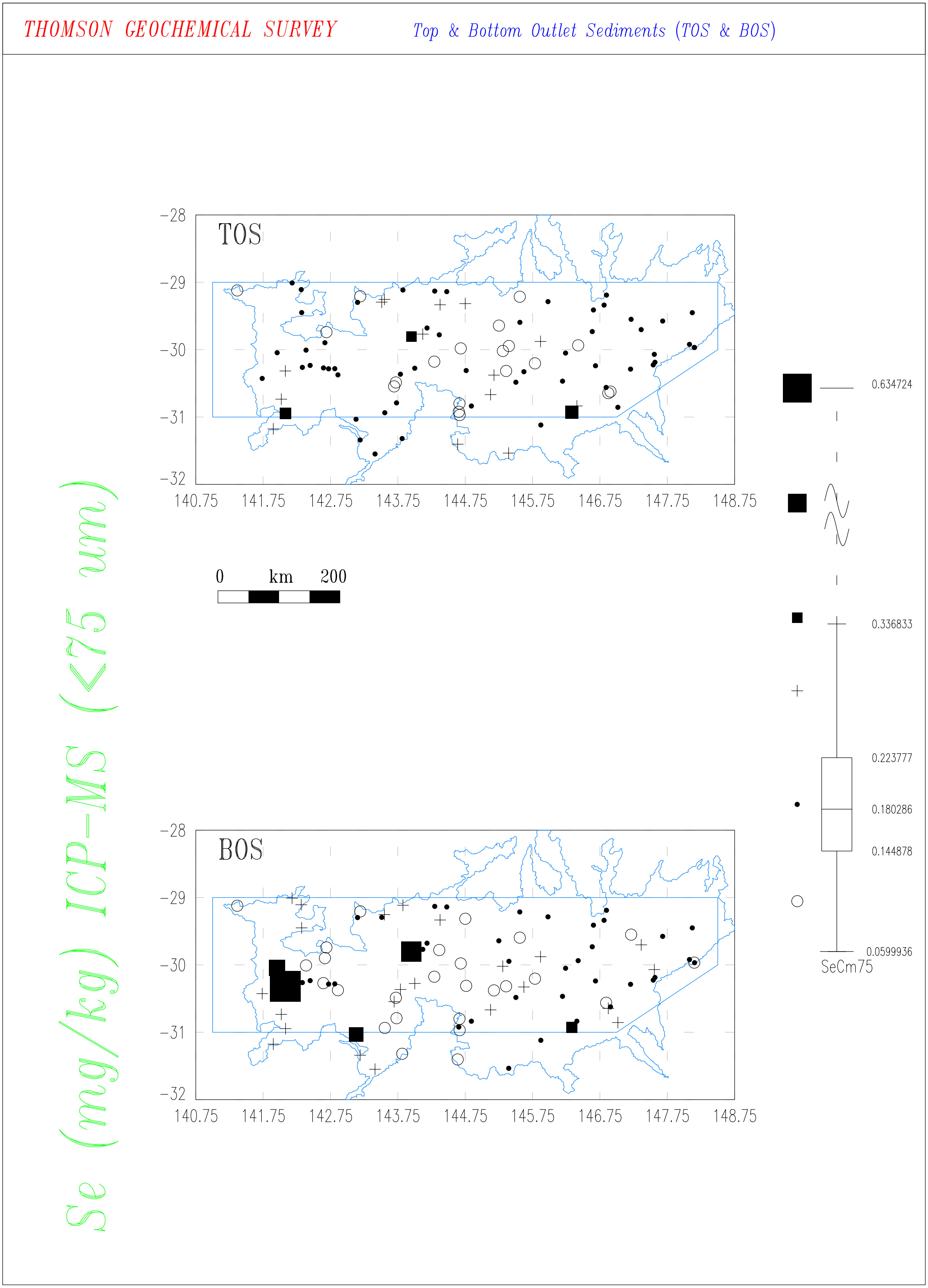


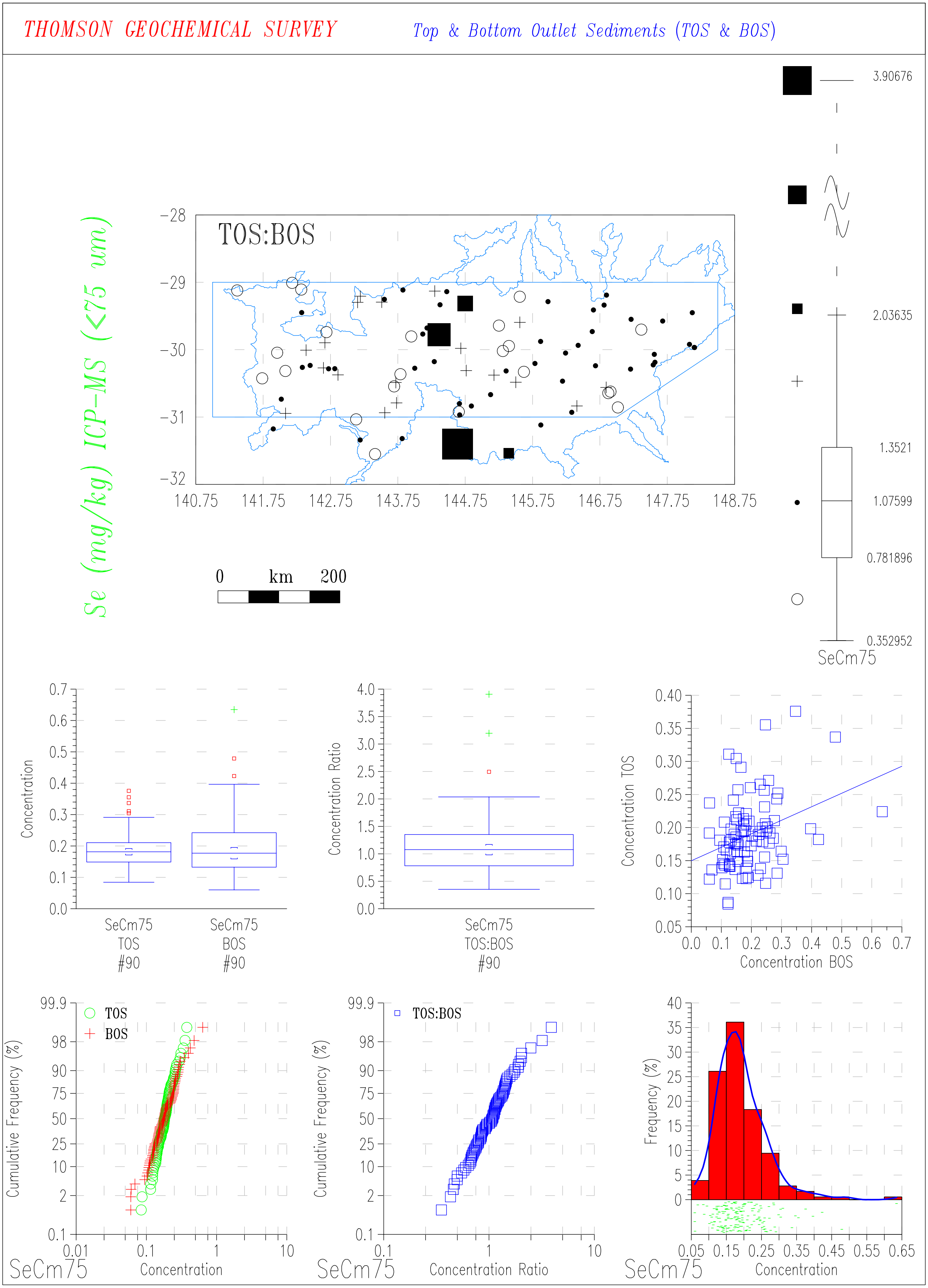
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

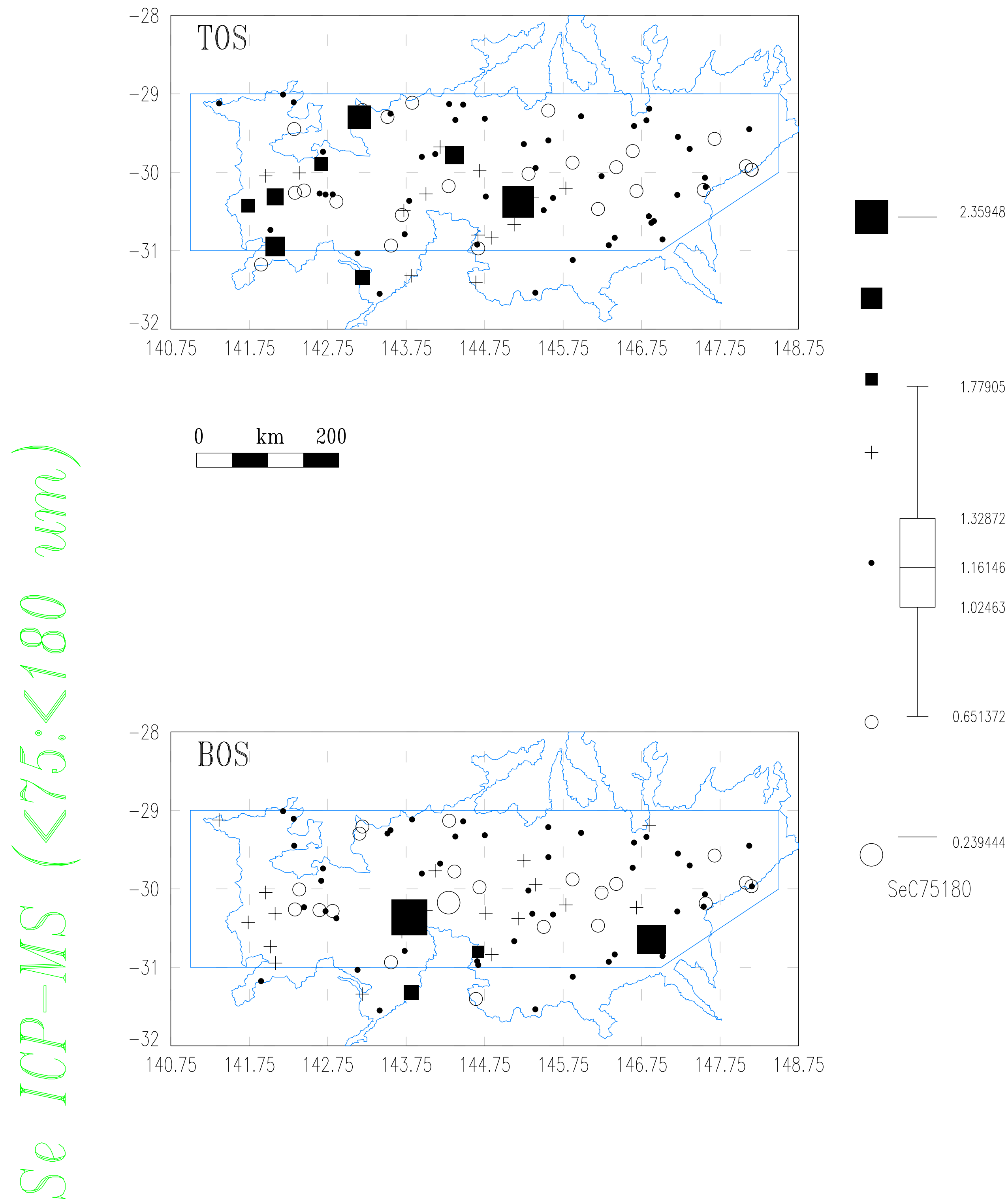



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Se (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
2.50996
1.78367
1.29977
1.05212
0.804832
0.248327
SeCm180
SeCm180 TOS #90
SeCm180 BOS #90
Concentration
SeCm180 TOS:BOS #90
Concentration Ratio
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
SeCm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

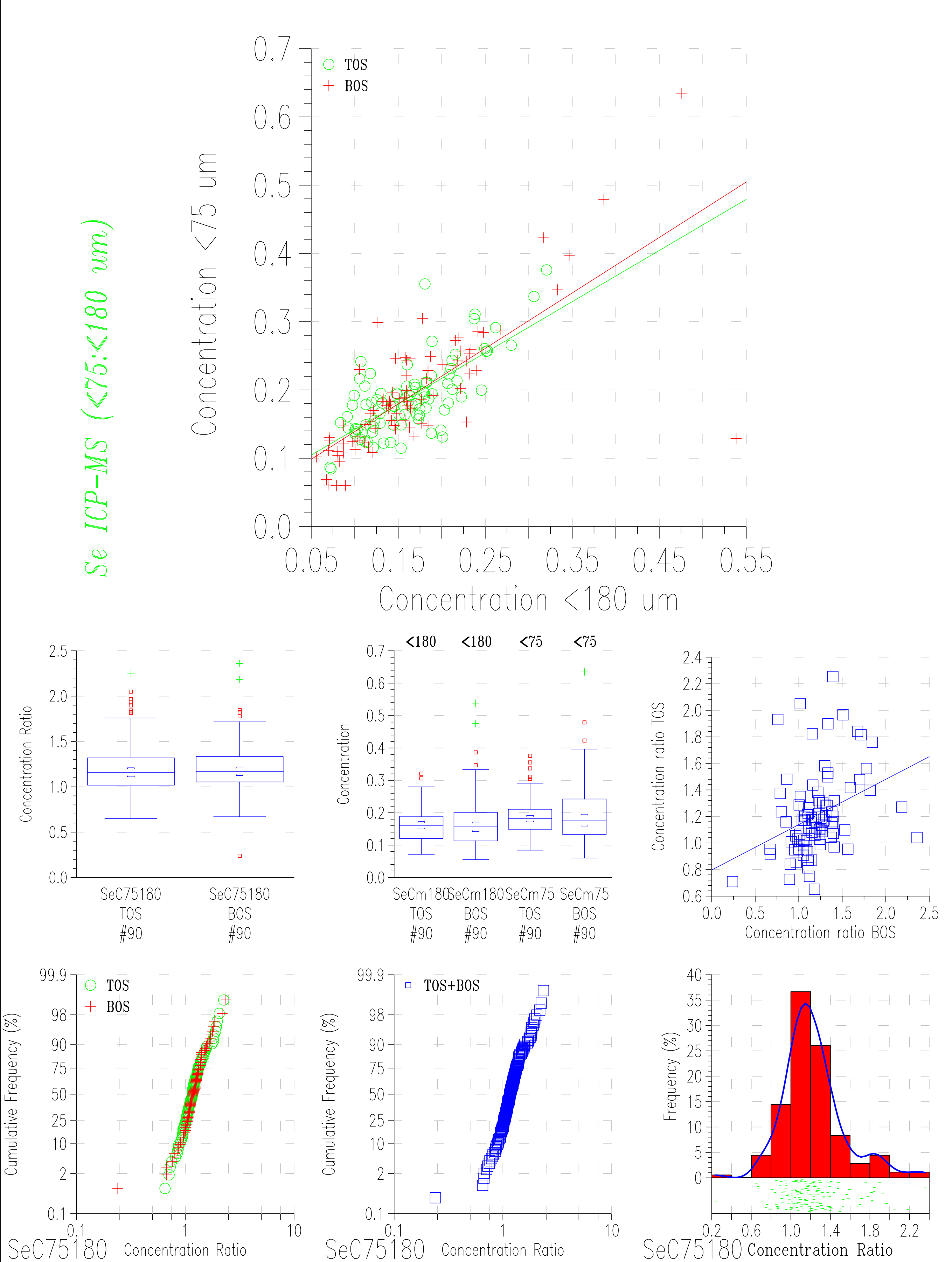

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Se (mg/kg) ICP-MS (<75 um)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
0.634724
0.336833
0.223777
0.180286
0.144878
0.0599936
SeCm75


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Se (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
3.90676
2.03635
1.3521
1.07599
0.781896
0.352952
SeCm75
Concentration
SeCm75 TOS #90
SeCm75 BOS #90
Concentration Ratio
SeCm75 TOS:BOS #90
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
SeCm75
Concentration
Cumulative Frequency (%)
TOS:BOS
SeCm75
Concentration Ratio
Frequency (%)
SeCm75
Concentration

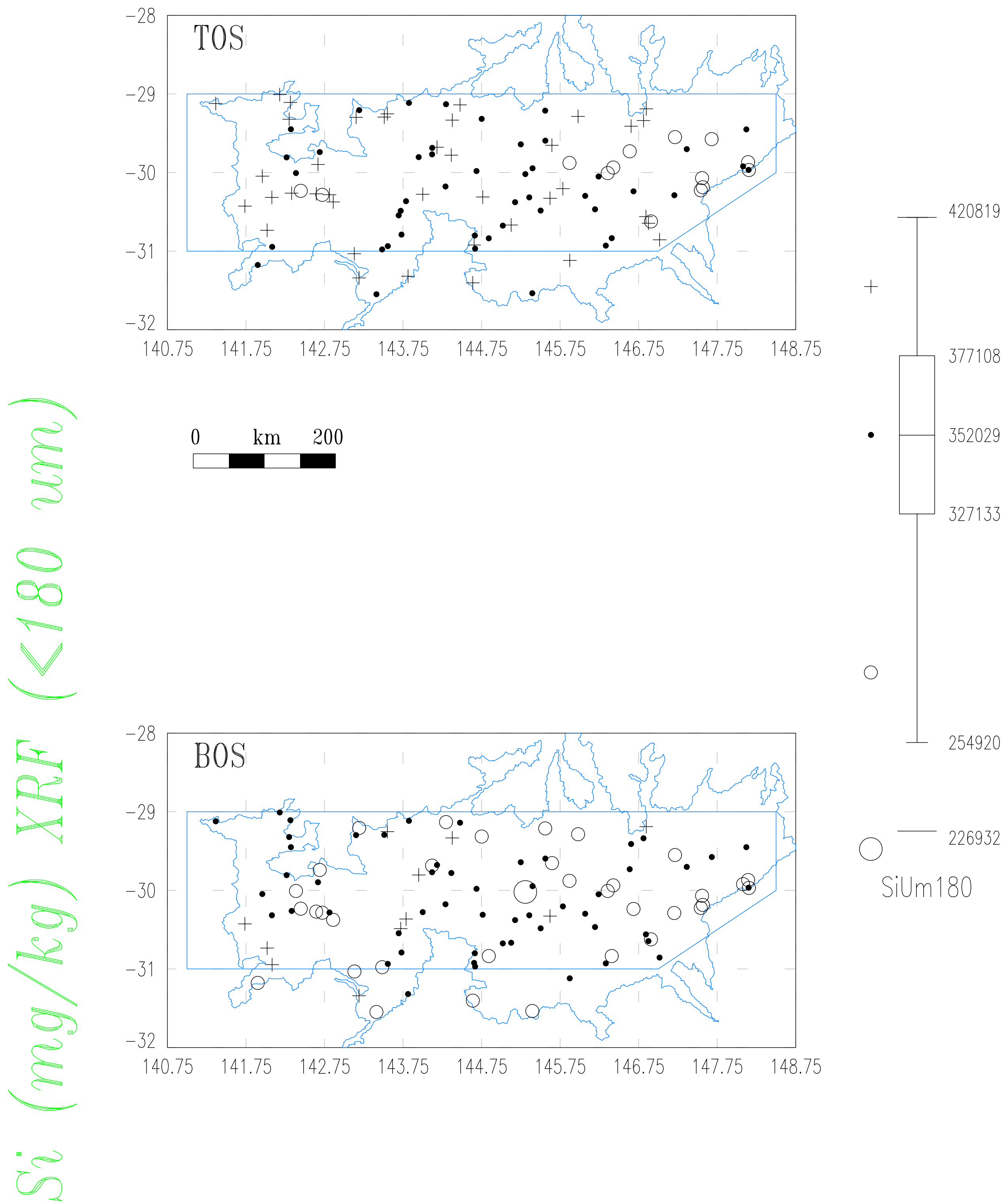
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

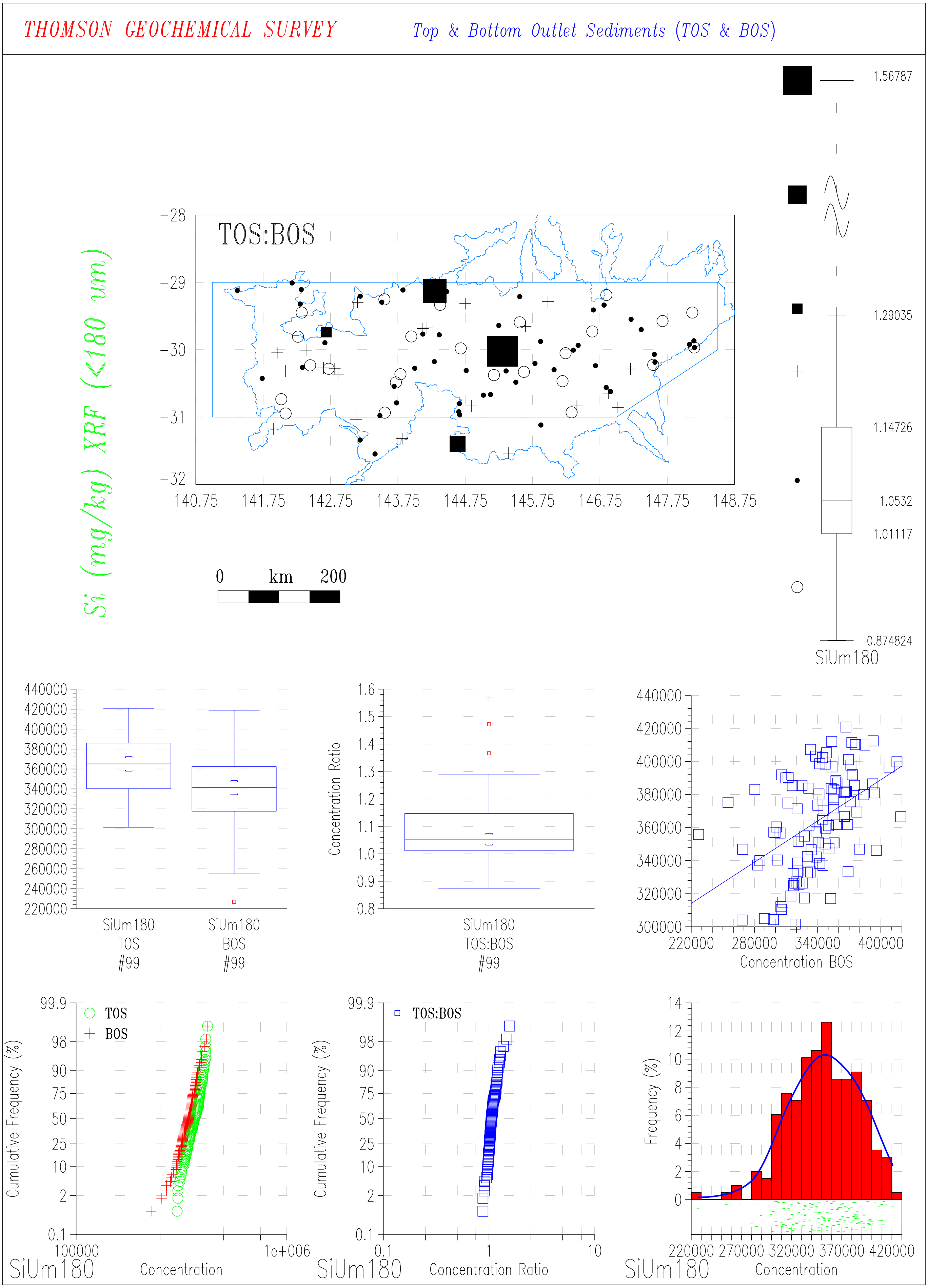


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

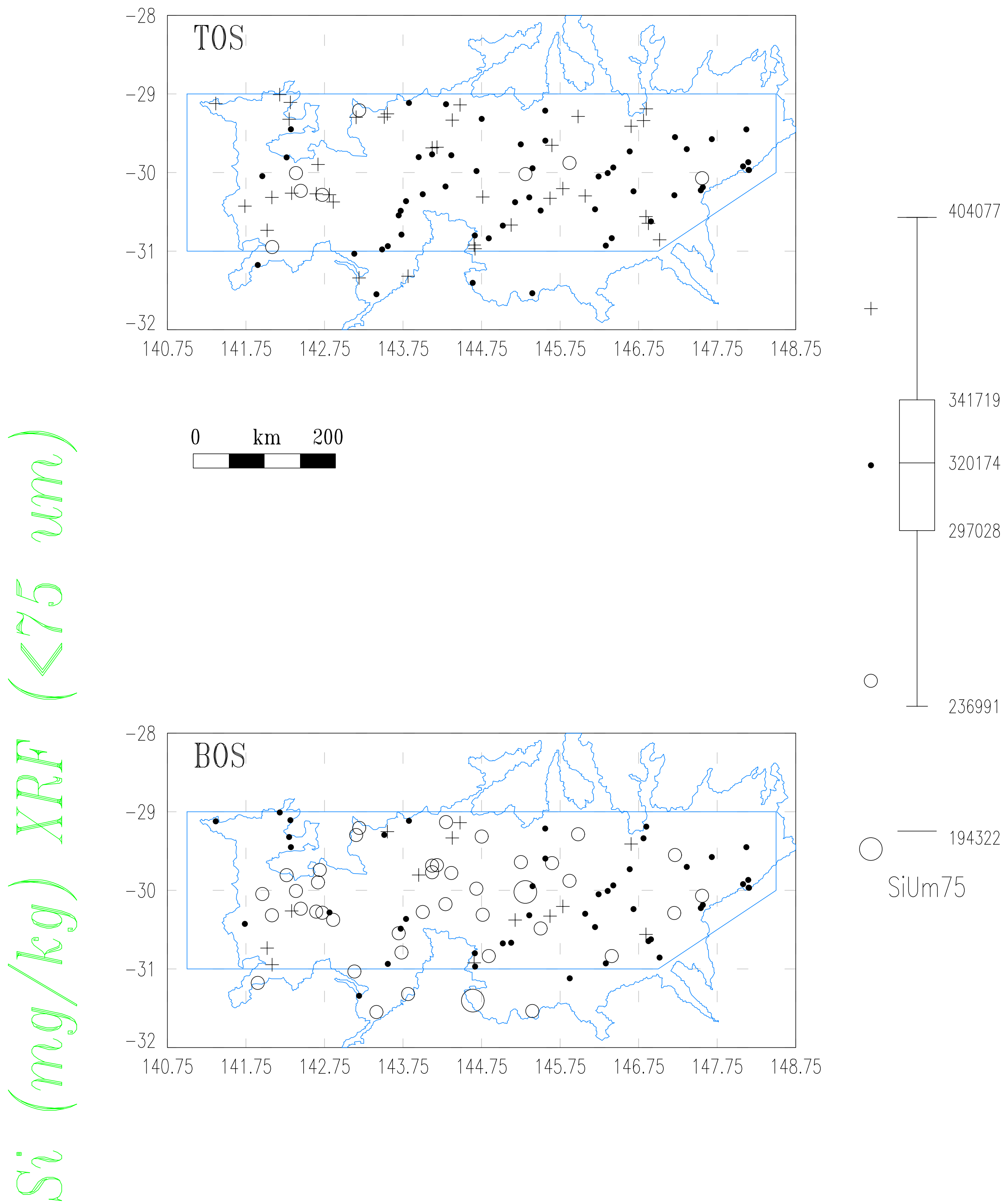


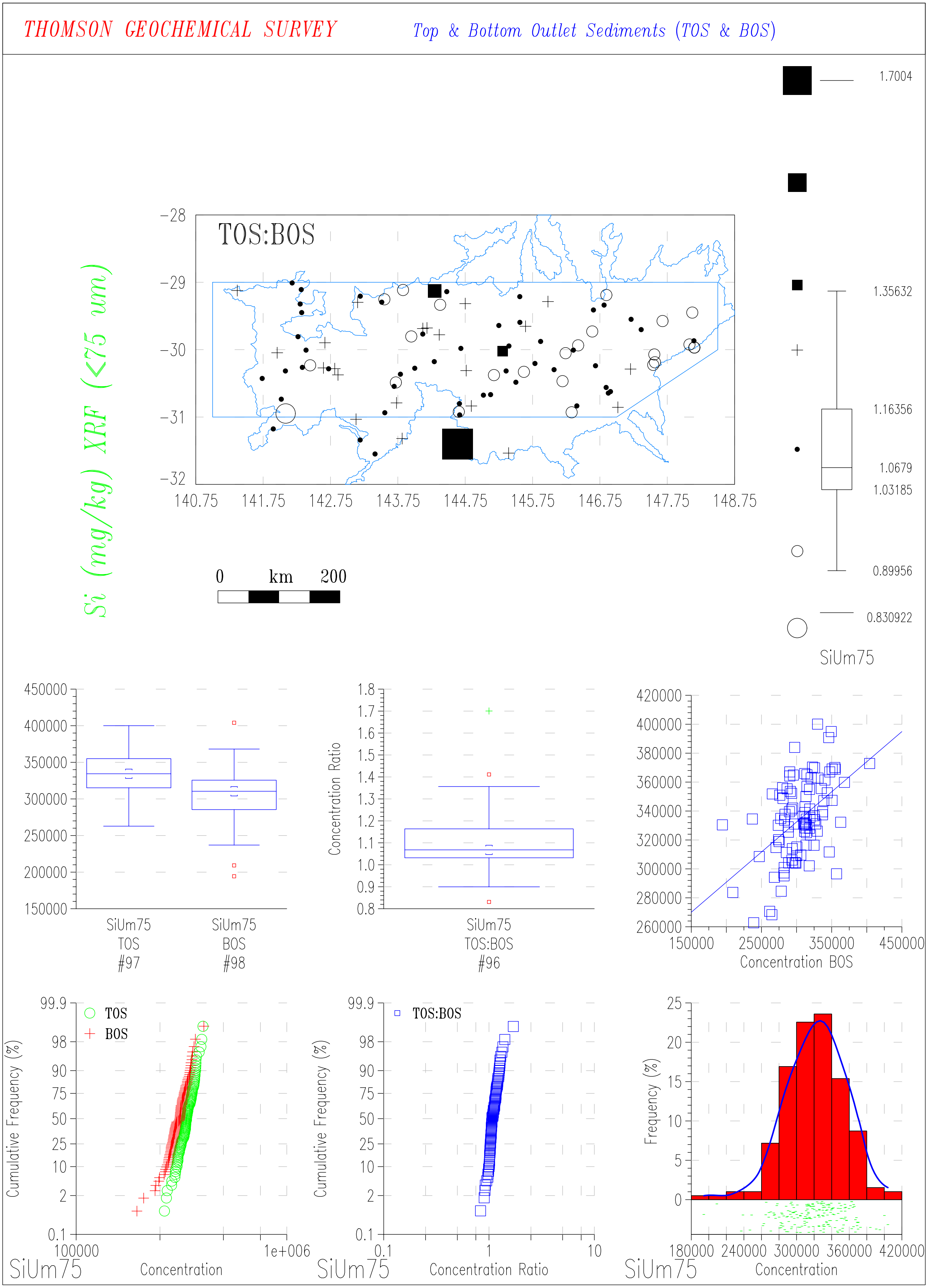
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Si (mg/kg) XRF (<180 um)
TOS:BOS
0 km 200
1.56787
1.29035
1.14726
1.0532
1.01117
0.874824
SiUm180
SiUm180 TOS #99
SiUm180 BOS #99
Concentration Ratio
SiUm180 TOS:BOS #99
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Concentration
Concentration Ratio
Frequency (%)

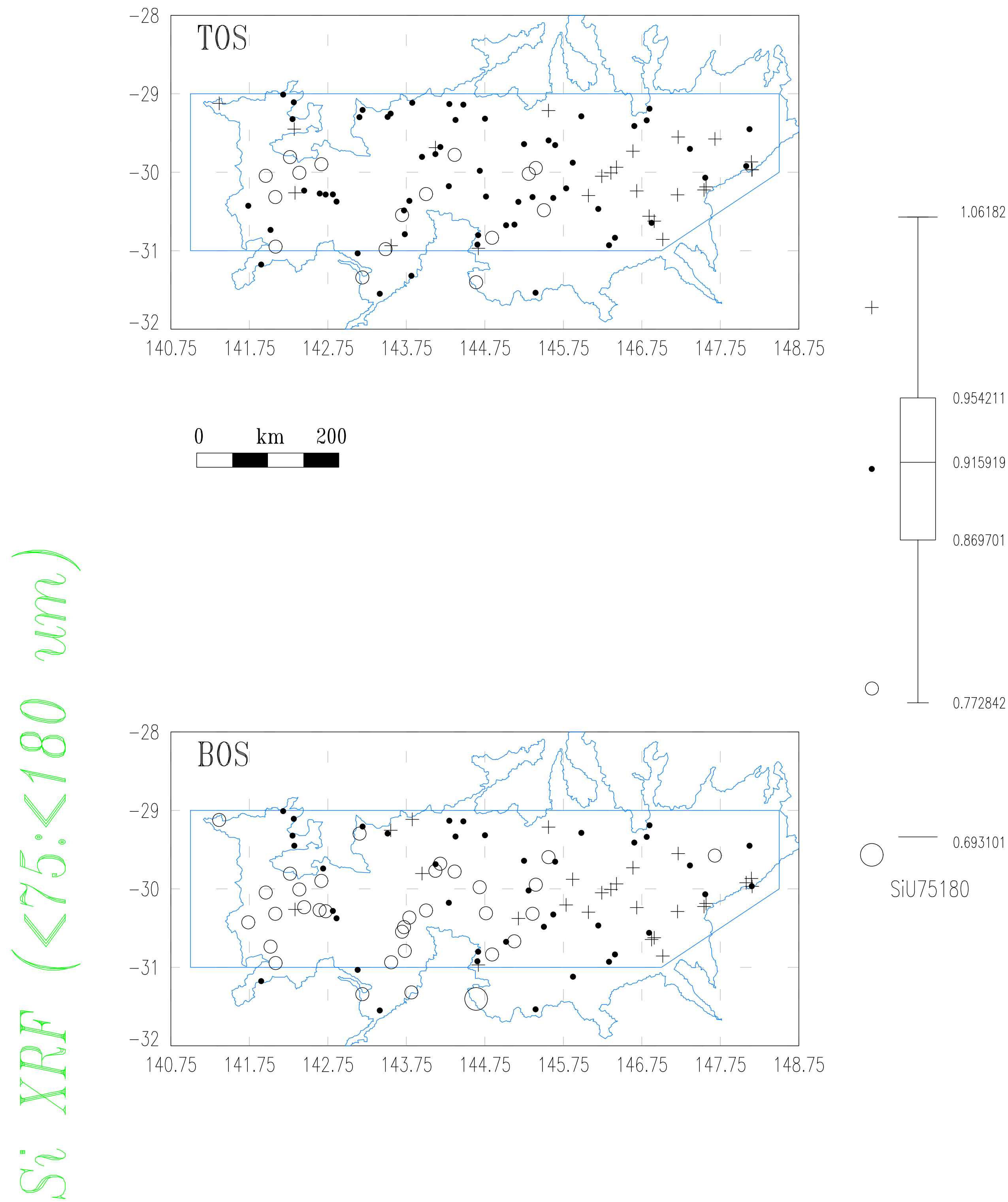
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



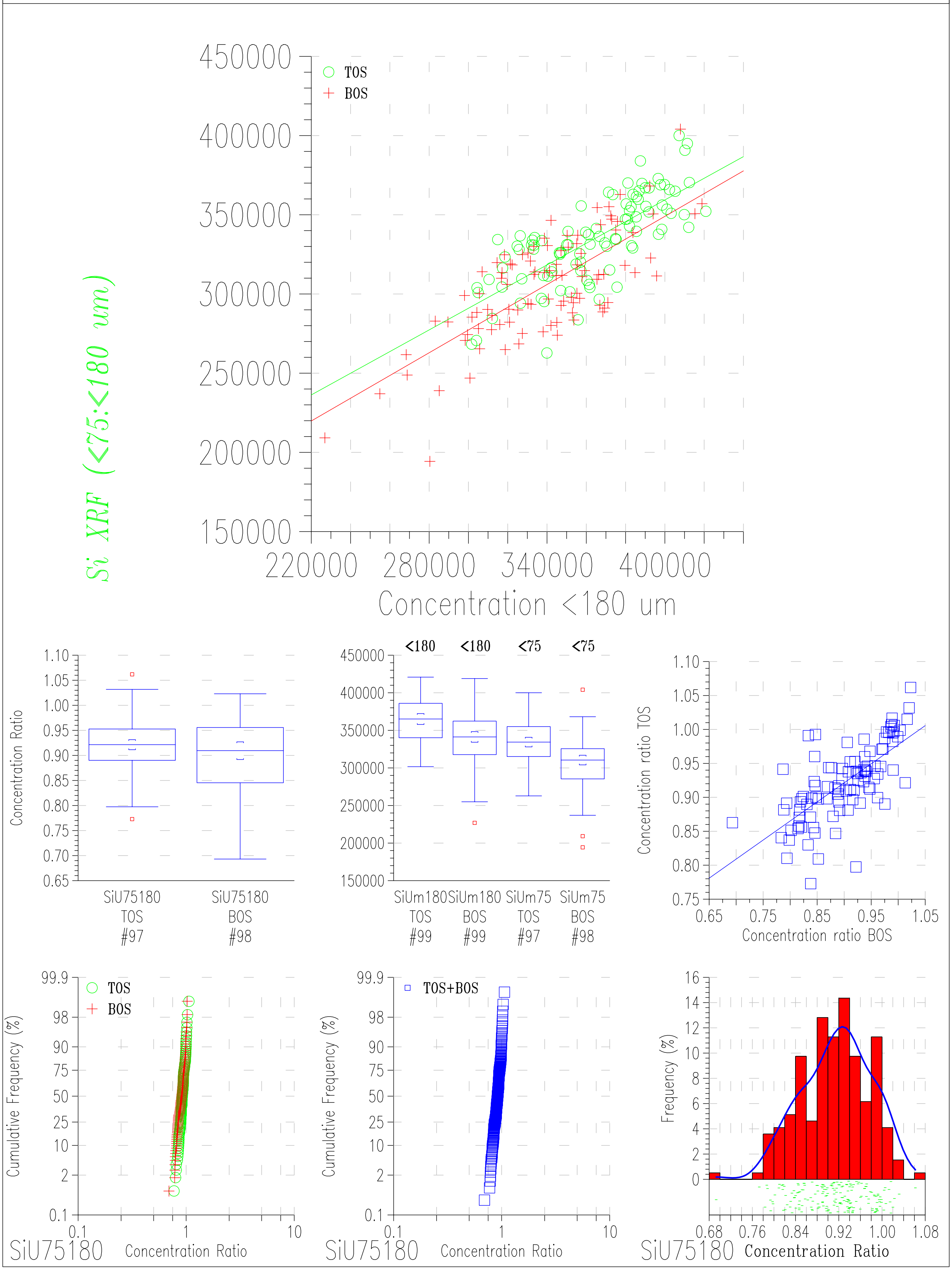

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS:BOS
Si (mg/kg) XRF (<75 um)
0 km 200
1.7004
1.35632
1.16356
1.0679
1.03185
0.89956
0.830922
SiUm75
SiUm75 TOS #97
SiUm75 BOS #98
Concentration Ratio
SiUm75 TOS:BOS #96
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Concentration
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

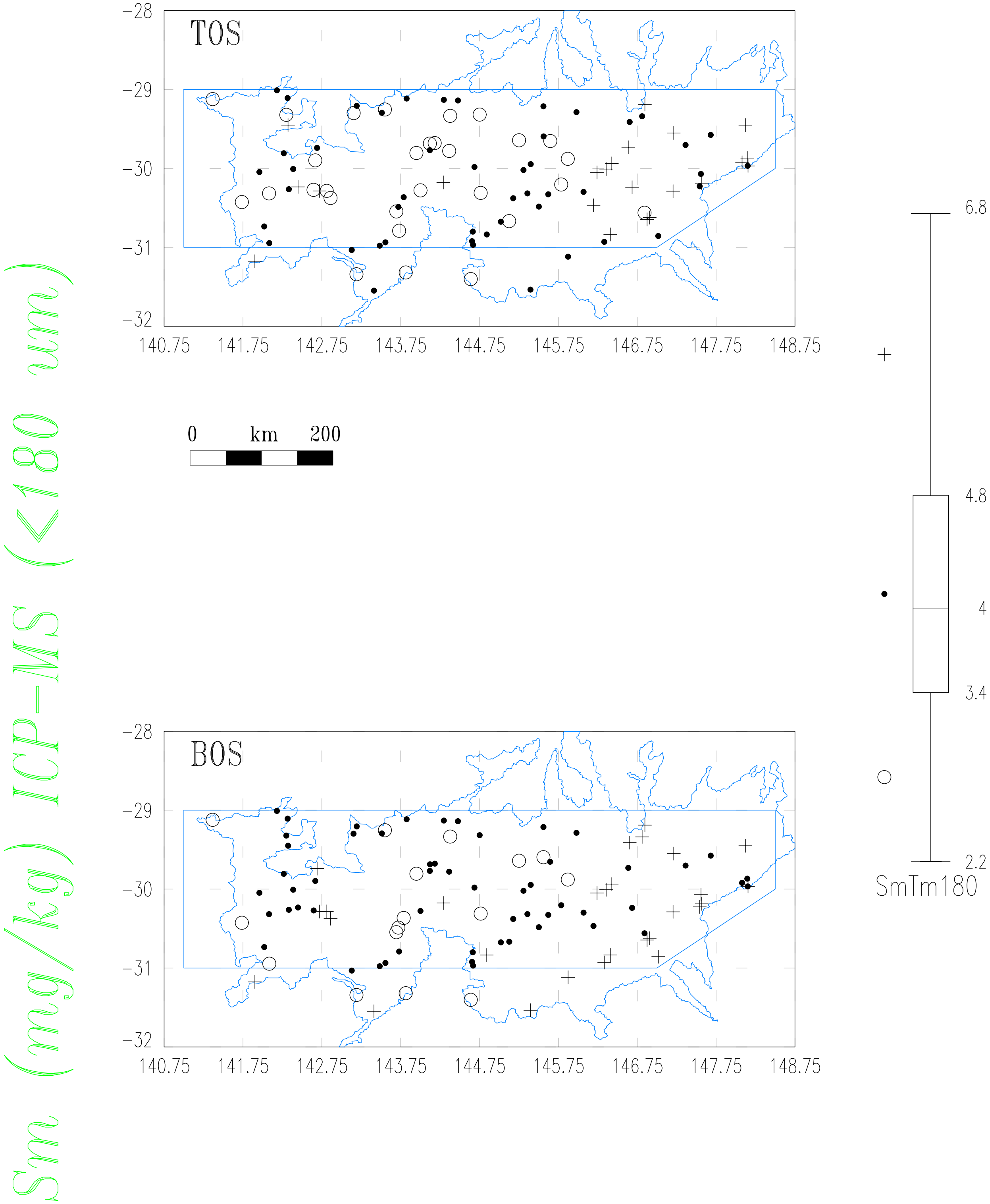


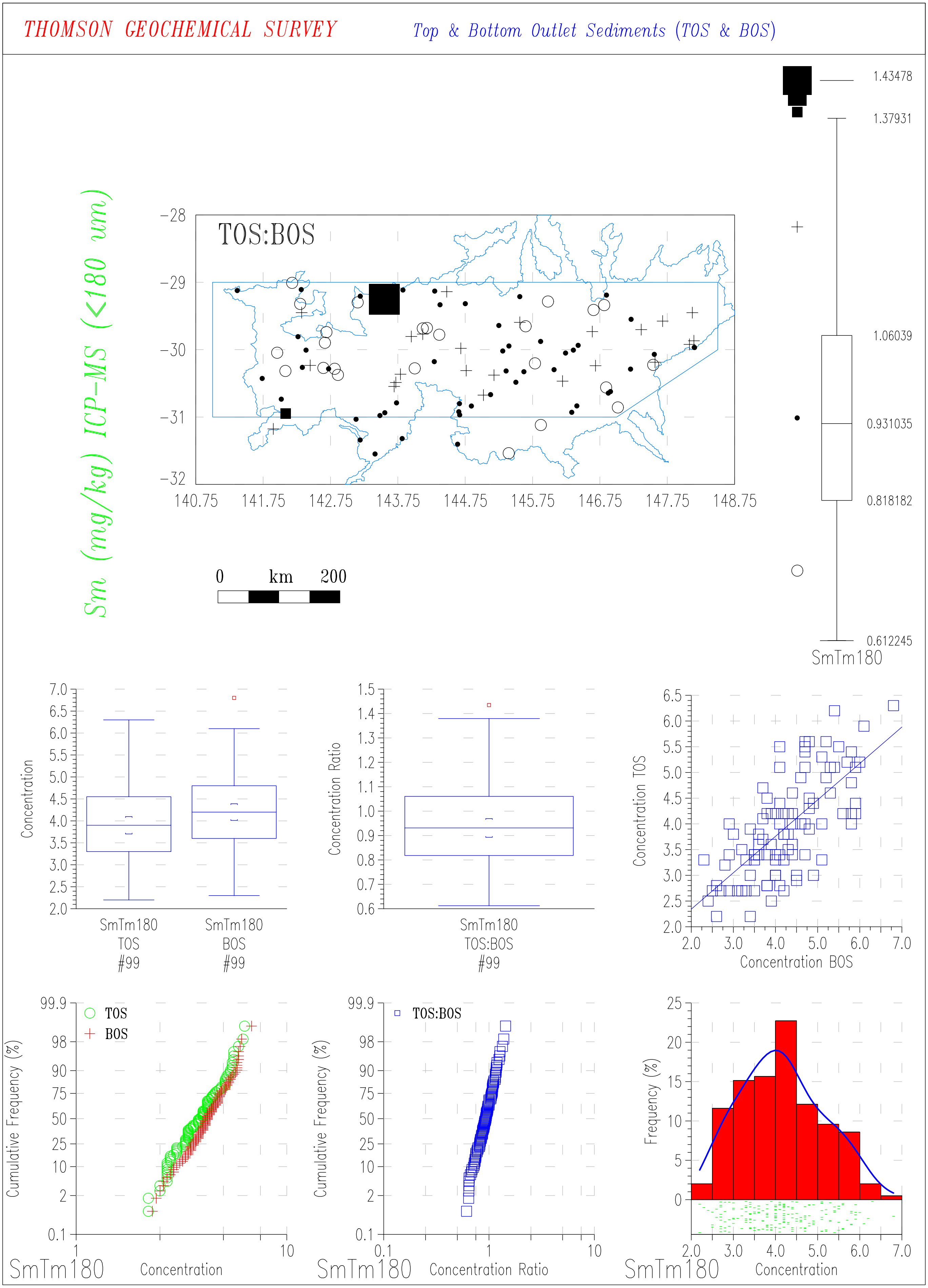
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

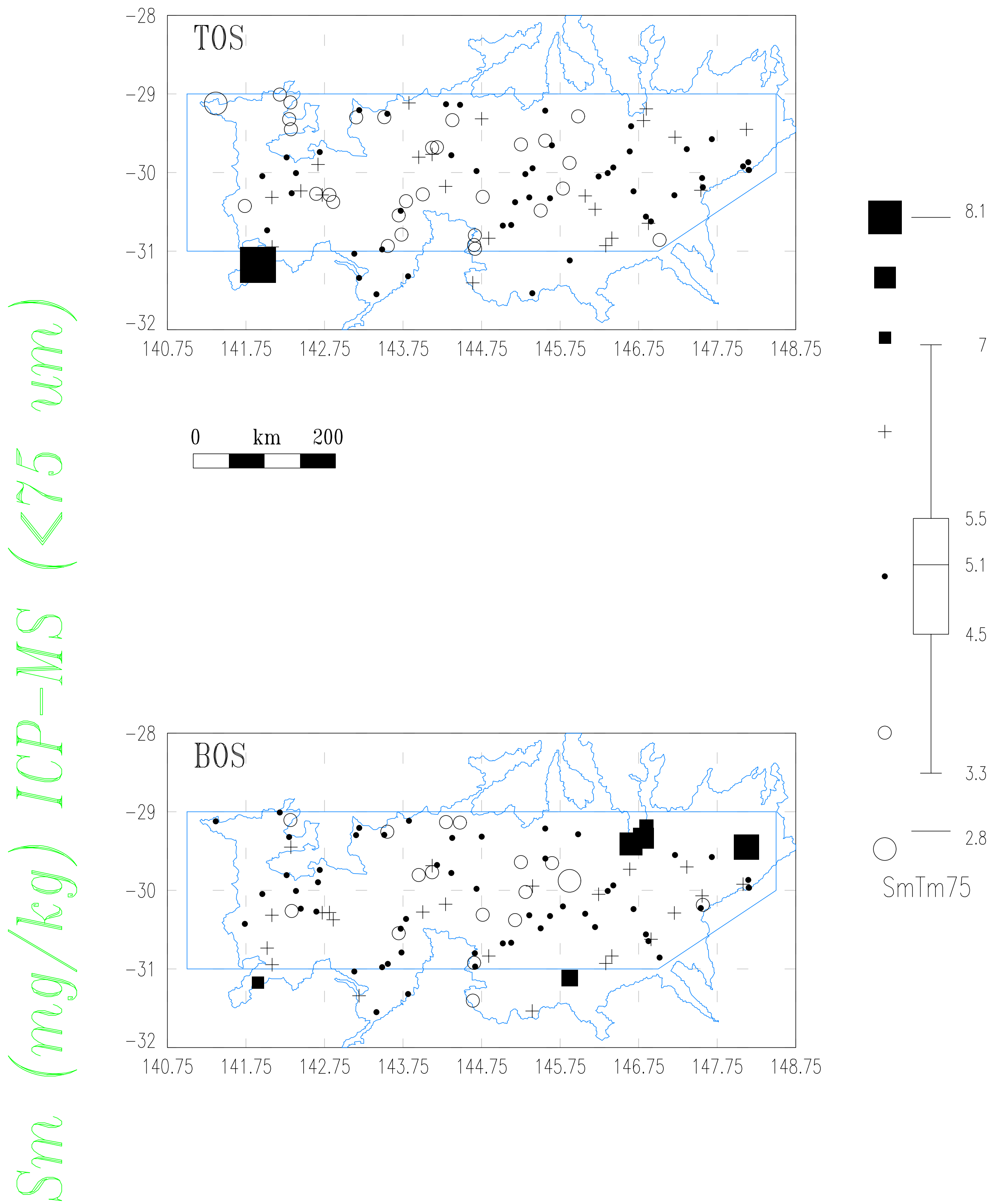
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sm (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.43478
1.37931
1.06039
0.931035
0.818182
0.612245
SmTm180
Concentration
SmTm180 TOS #99
SmTm180 BOS #99
Concentration Ratio
SmTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
SmTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

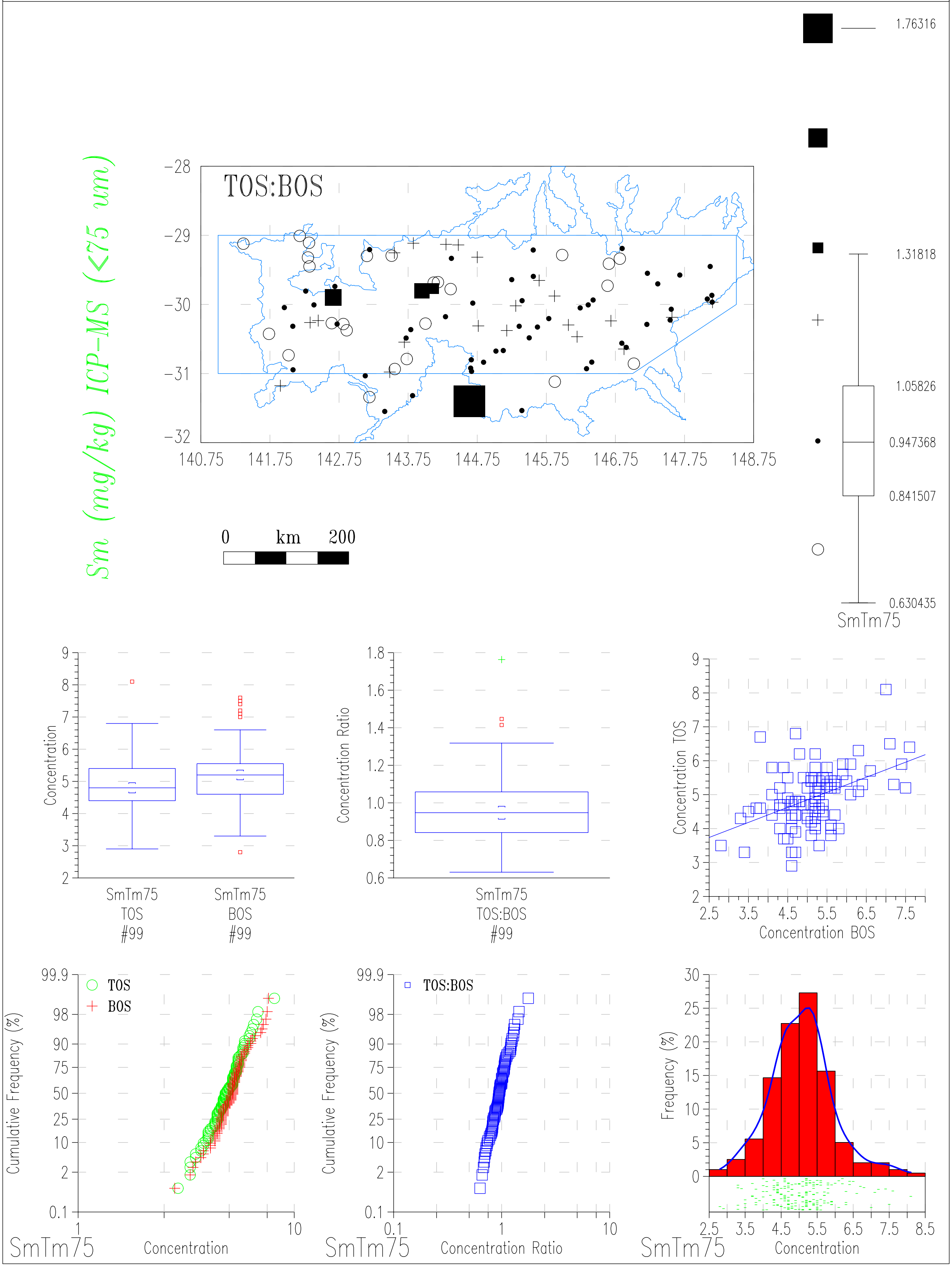
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

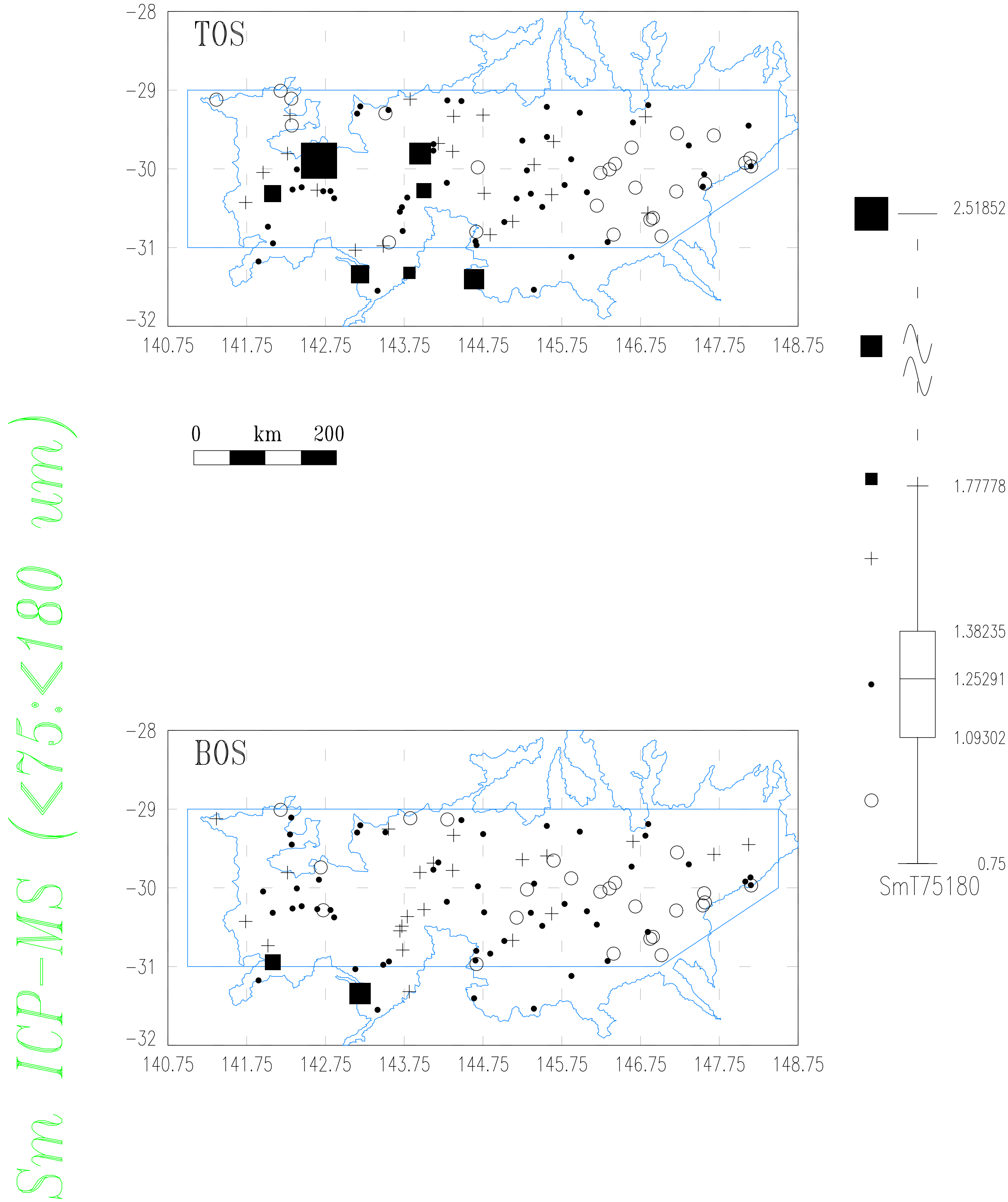


THOMSON GEOCHEMICAL SURVEY

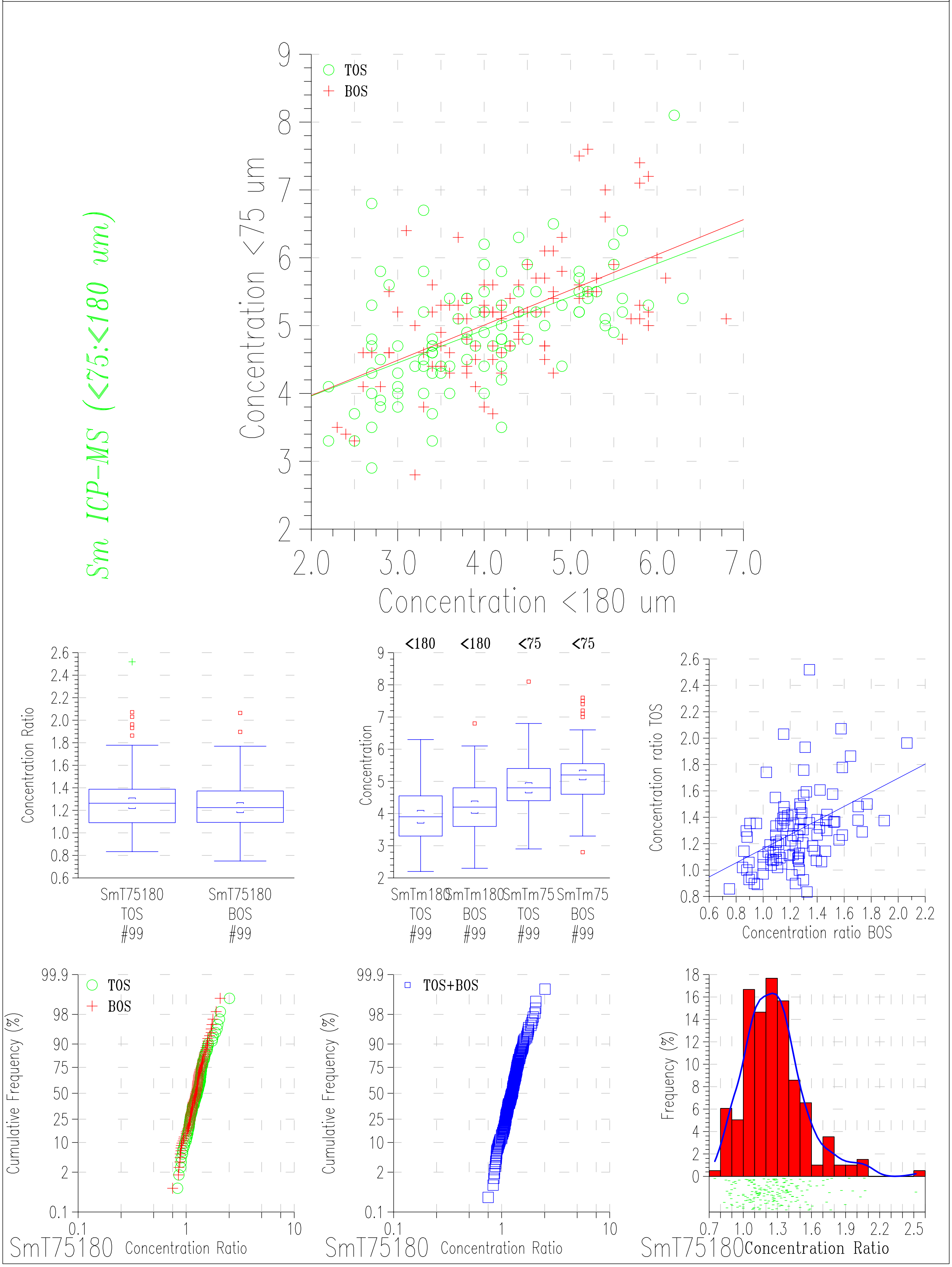
Top & Bottom Outlet Sediments (TOS & BOS)



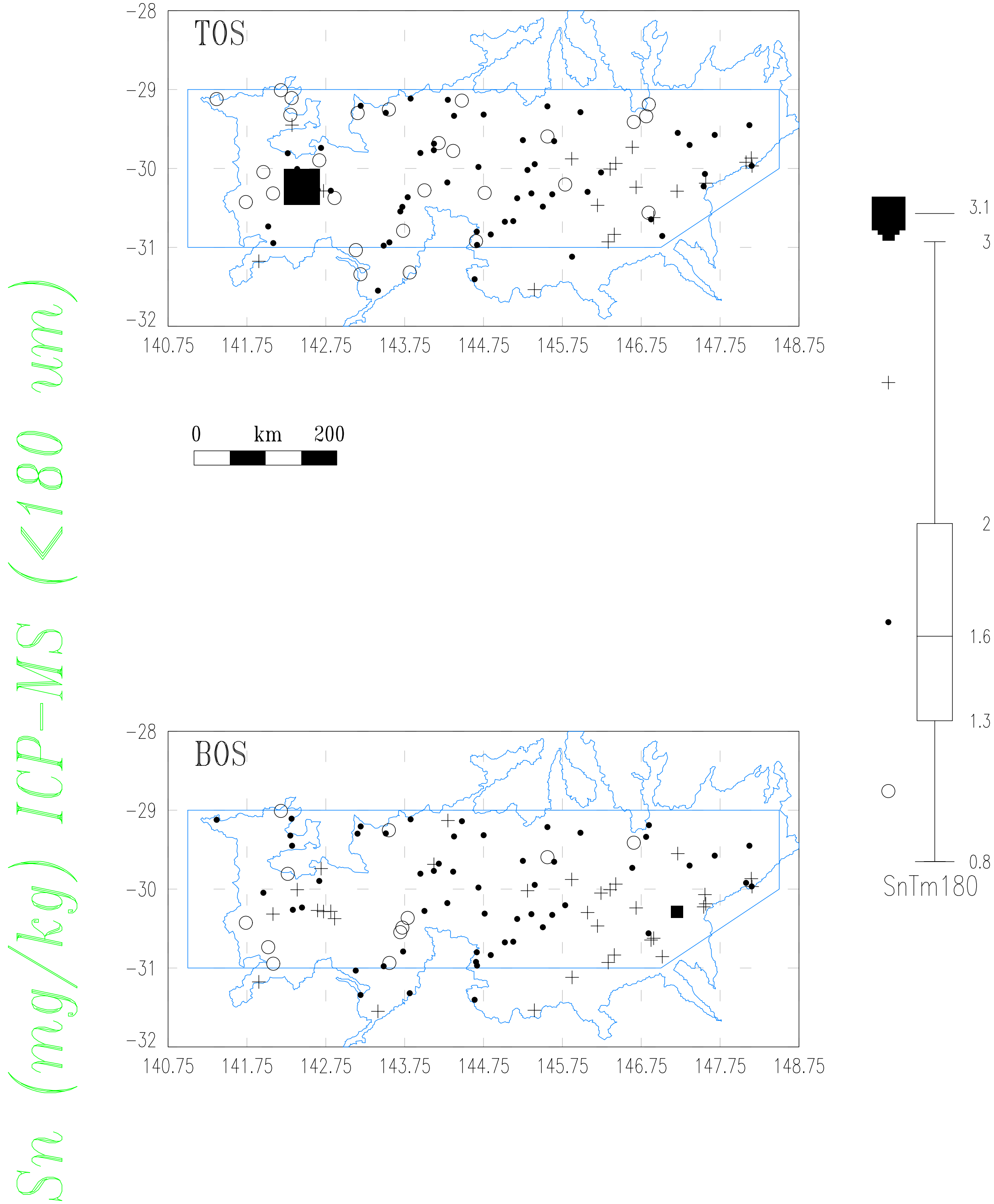
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



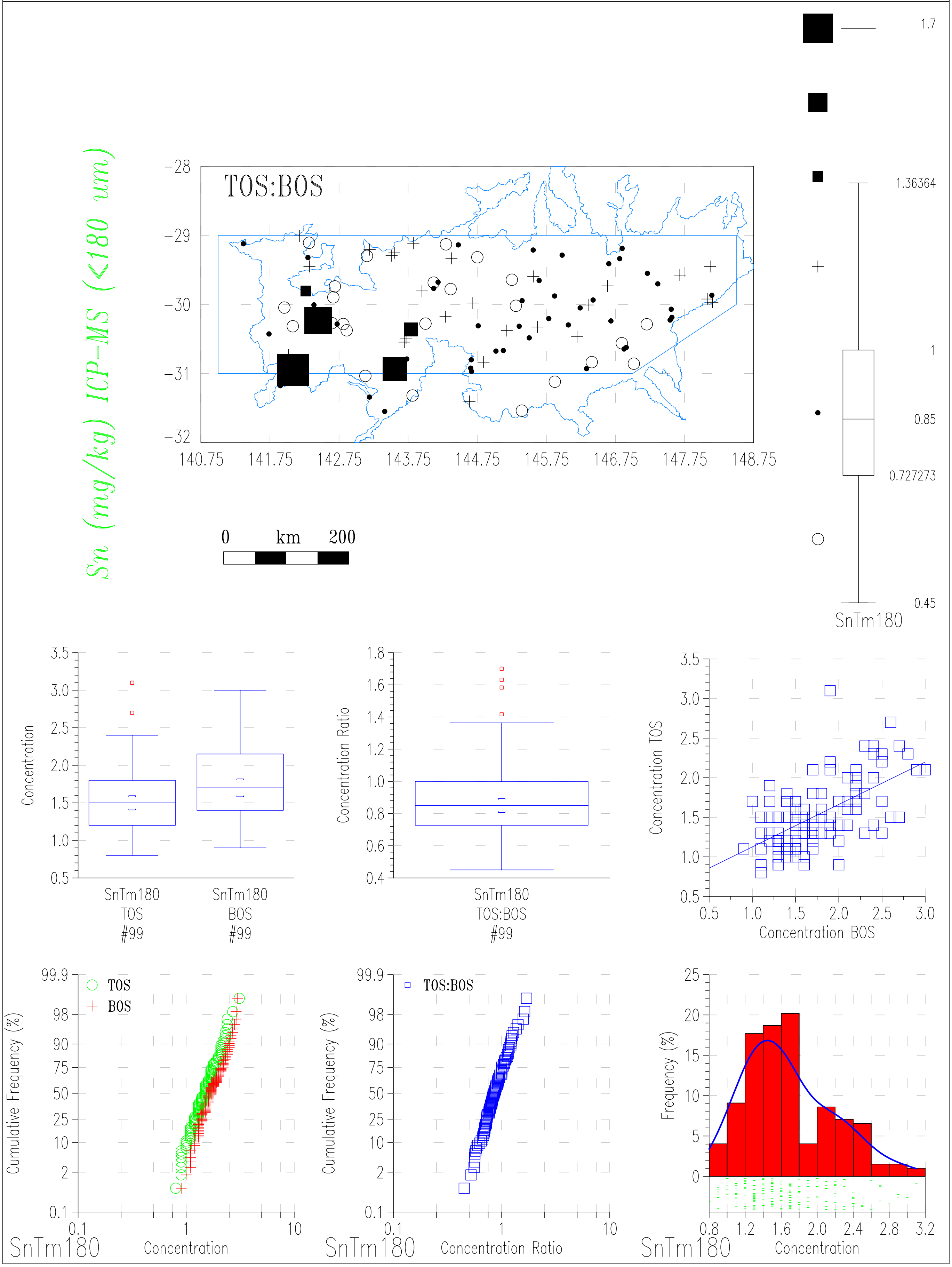
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



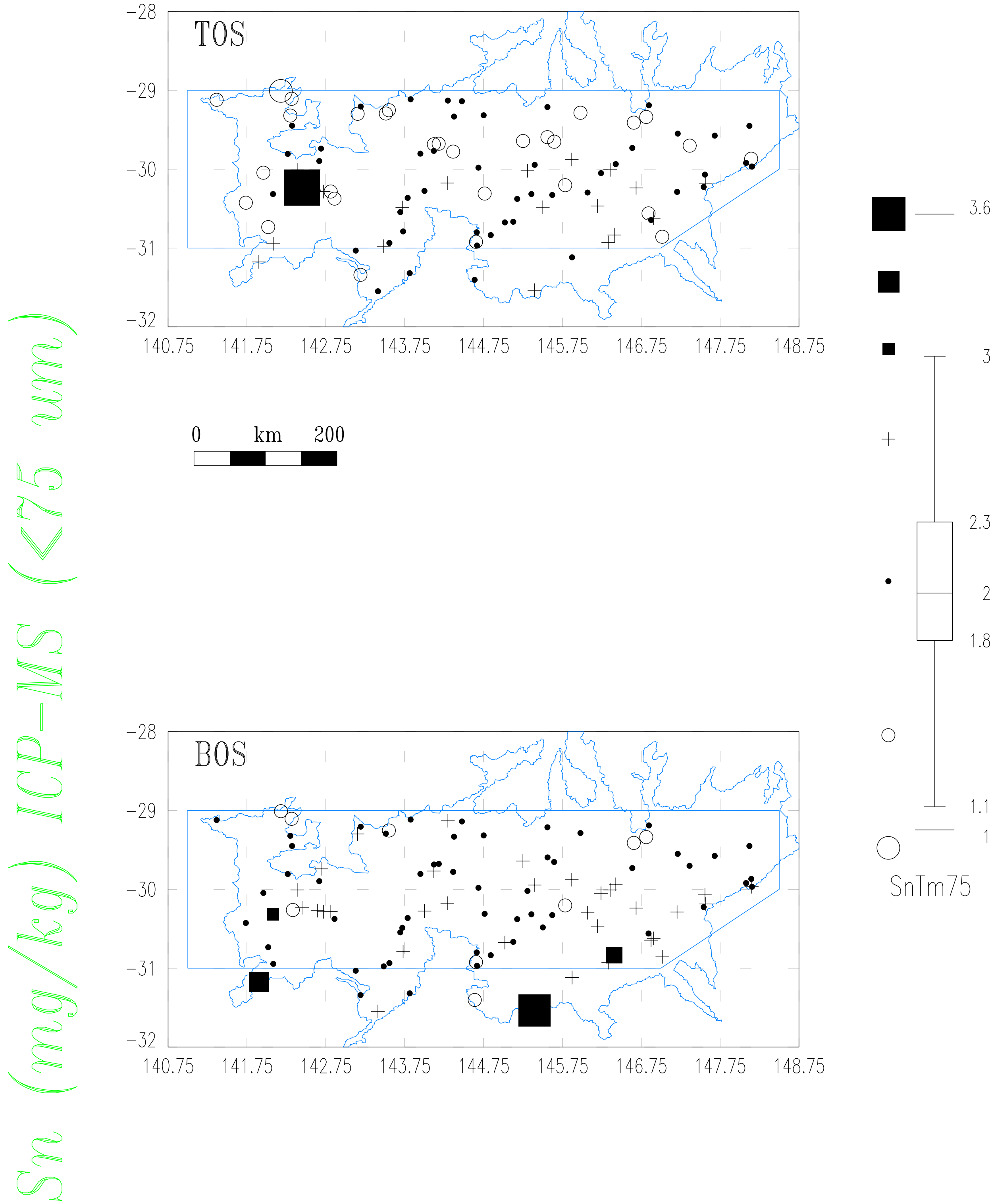
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

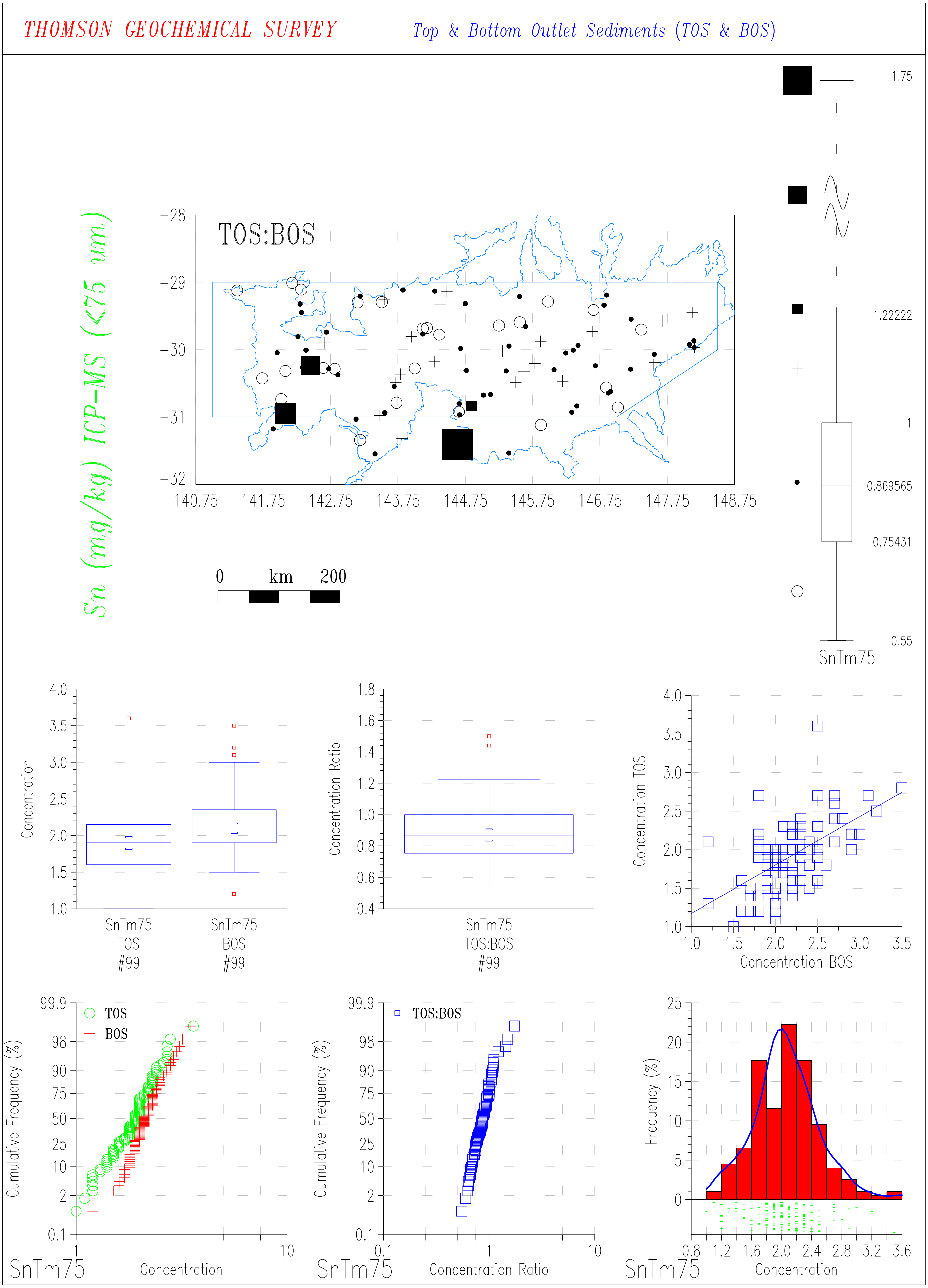


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*

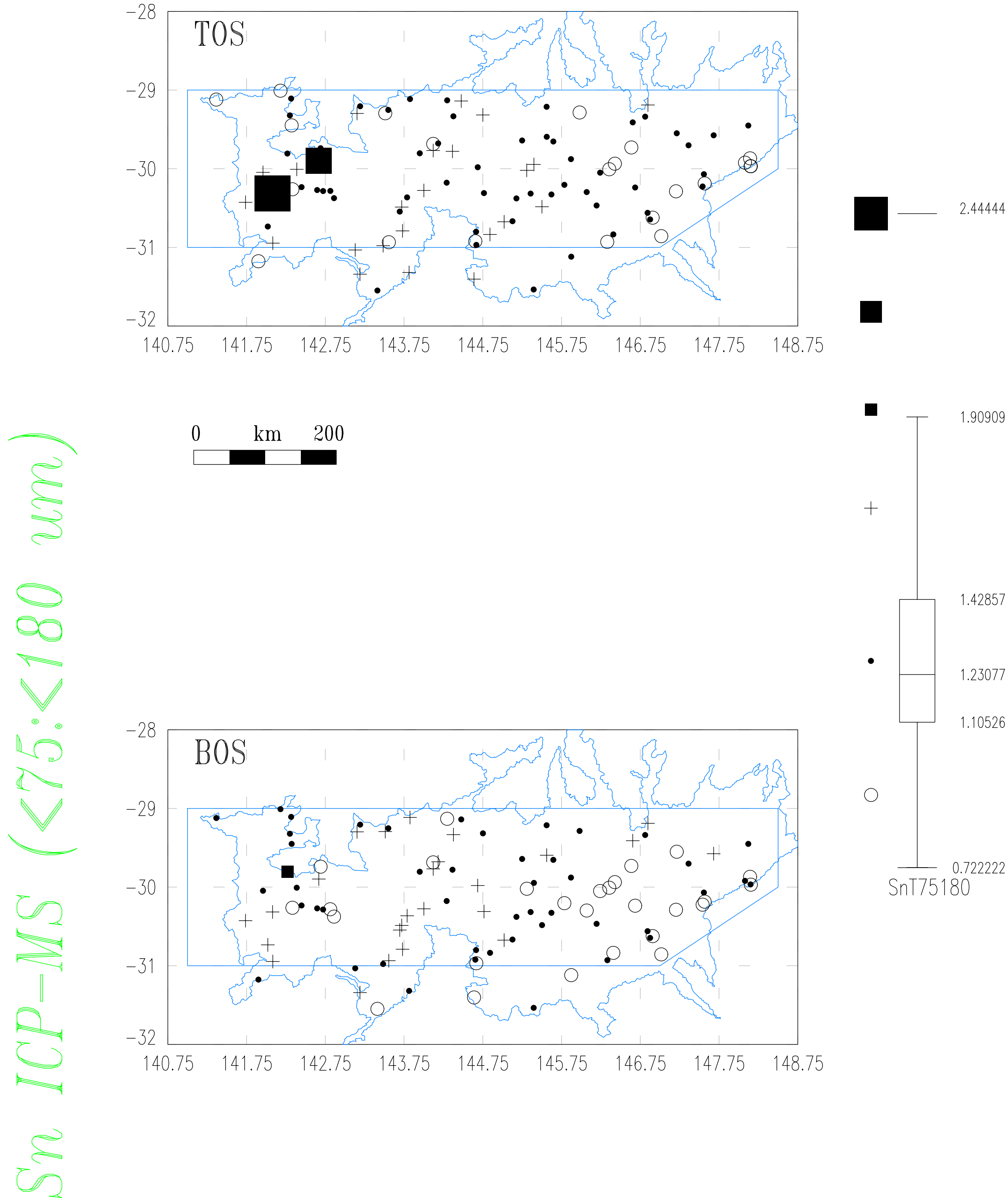


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

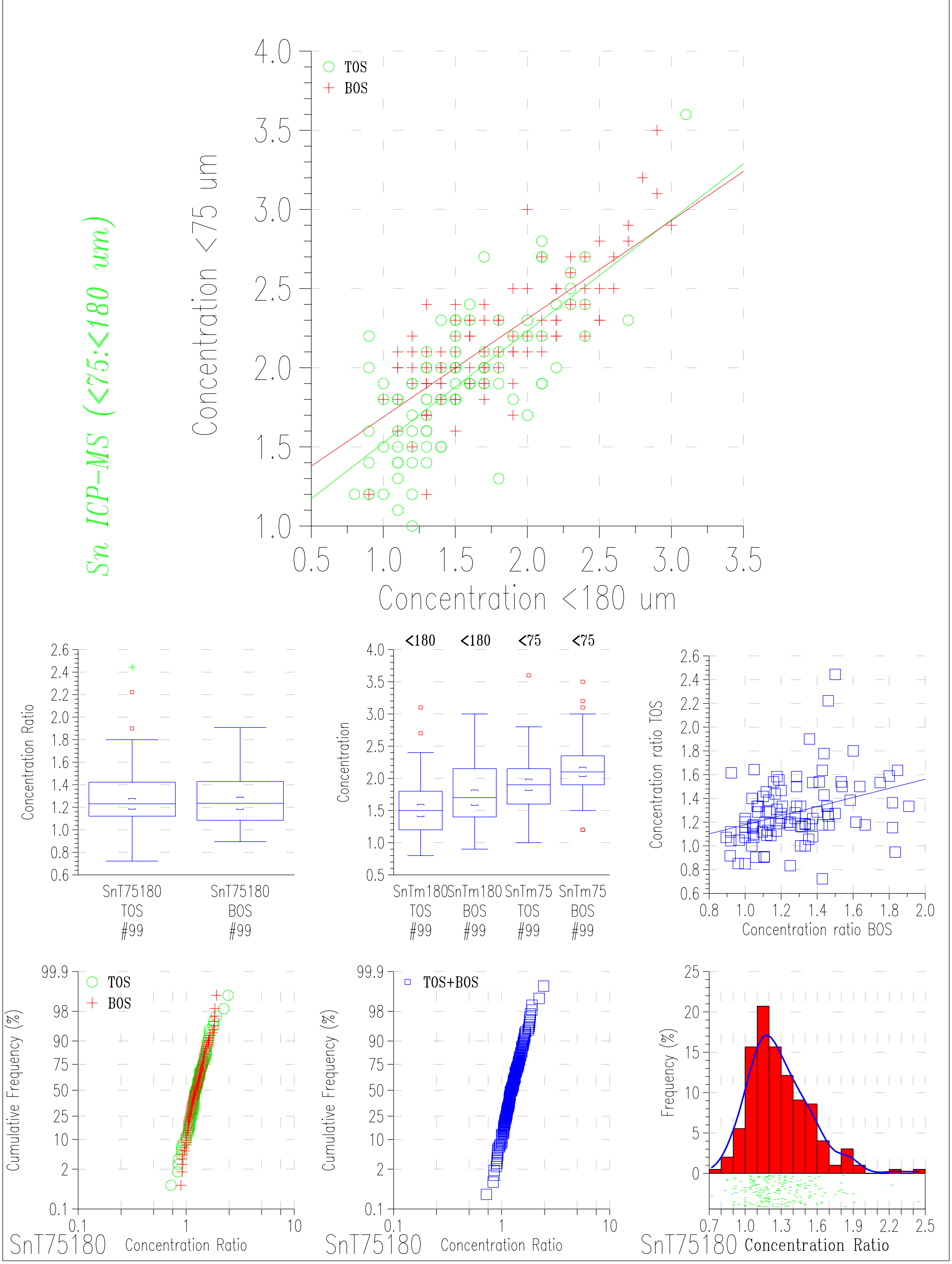



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Sn (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.75
1.22222
1
0.869565
0.75431
0.55
SnTm75
Concentration
SnTm75 TOS #99
SnTm75 BOS #99
Concentration Ratio
SnTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
SnTm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

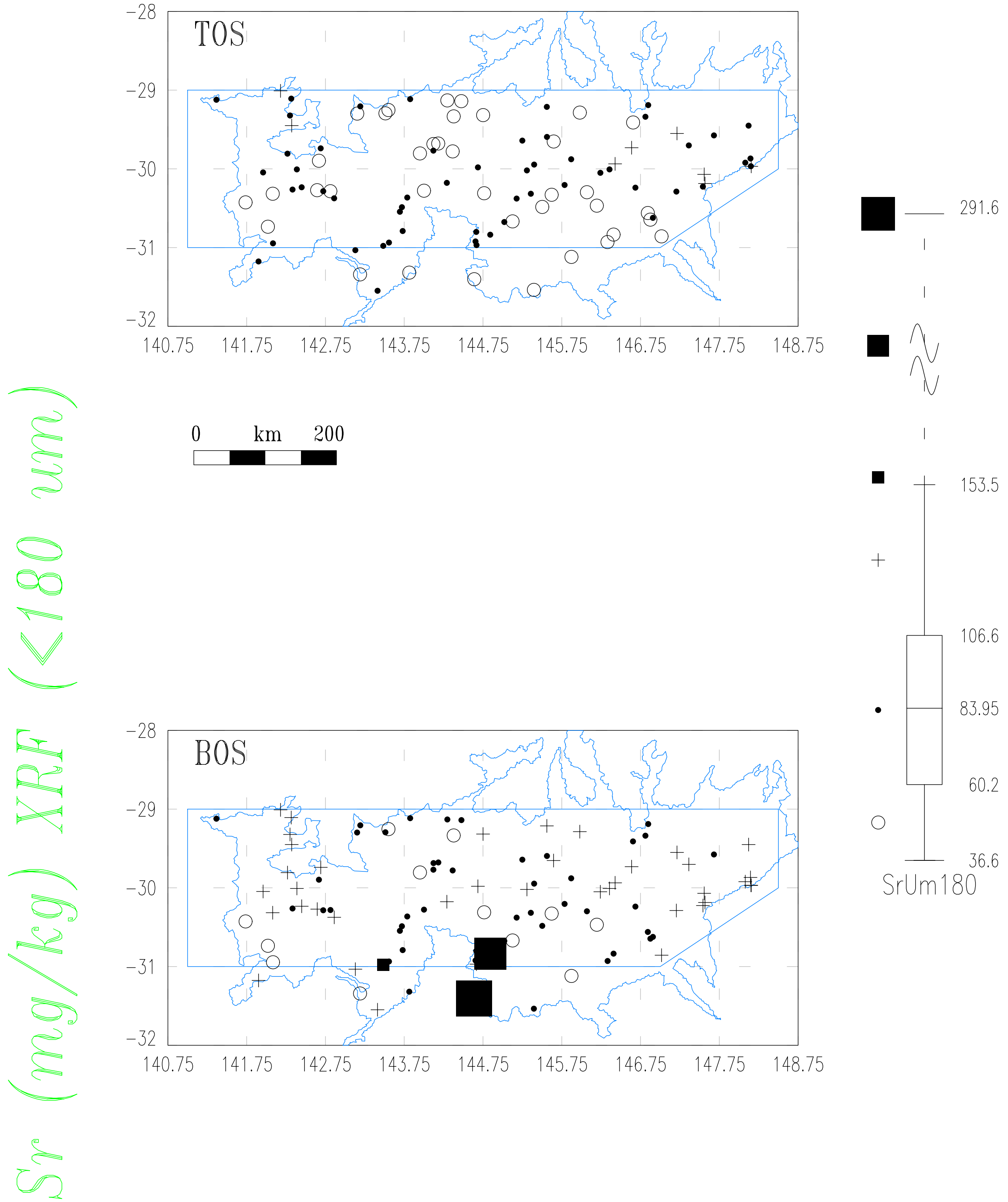


THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

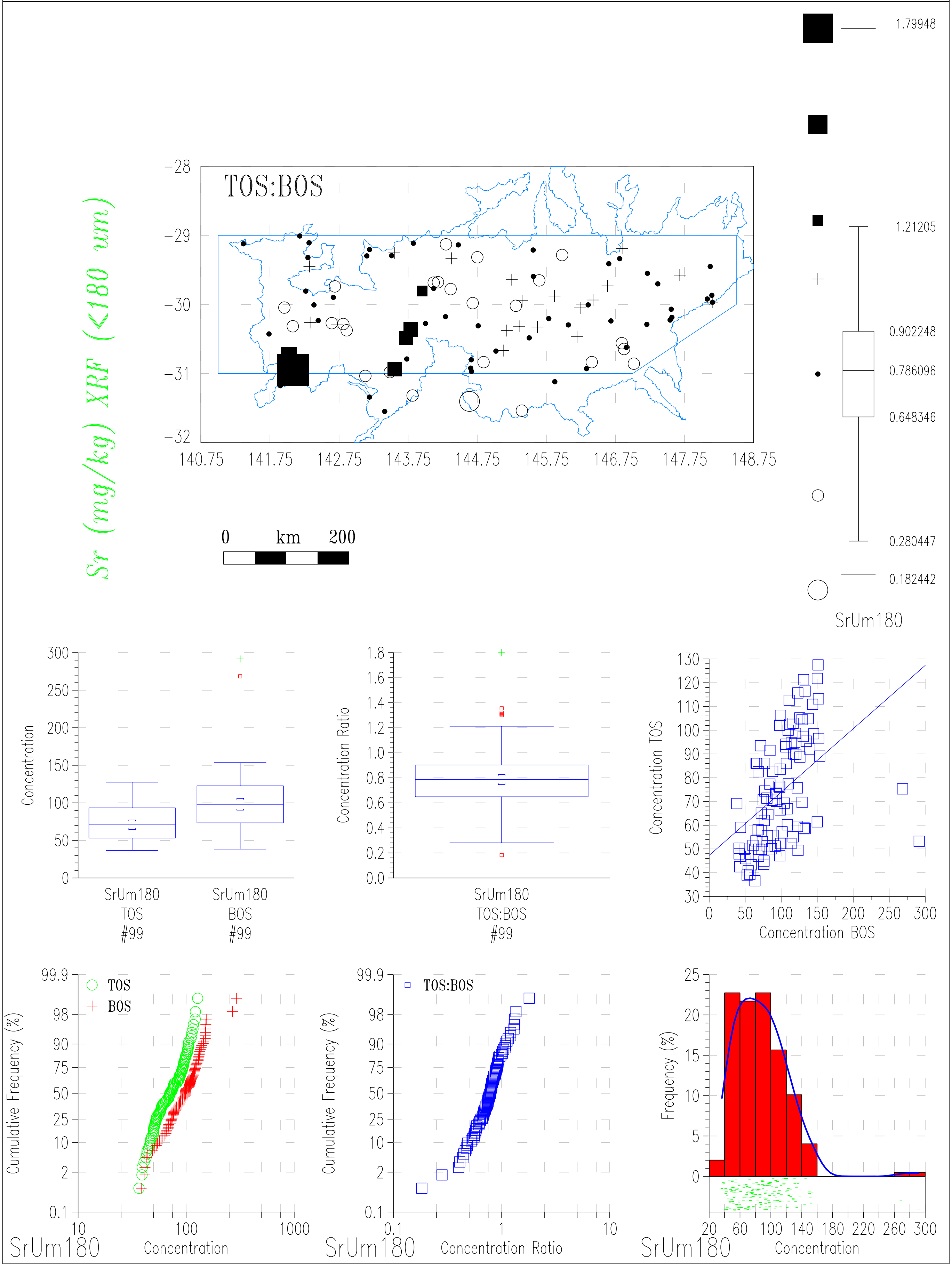


THOMSON GEOCHEMICAL SURVEY

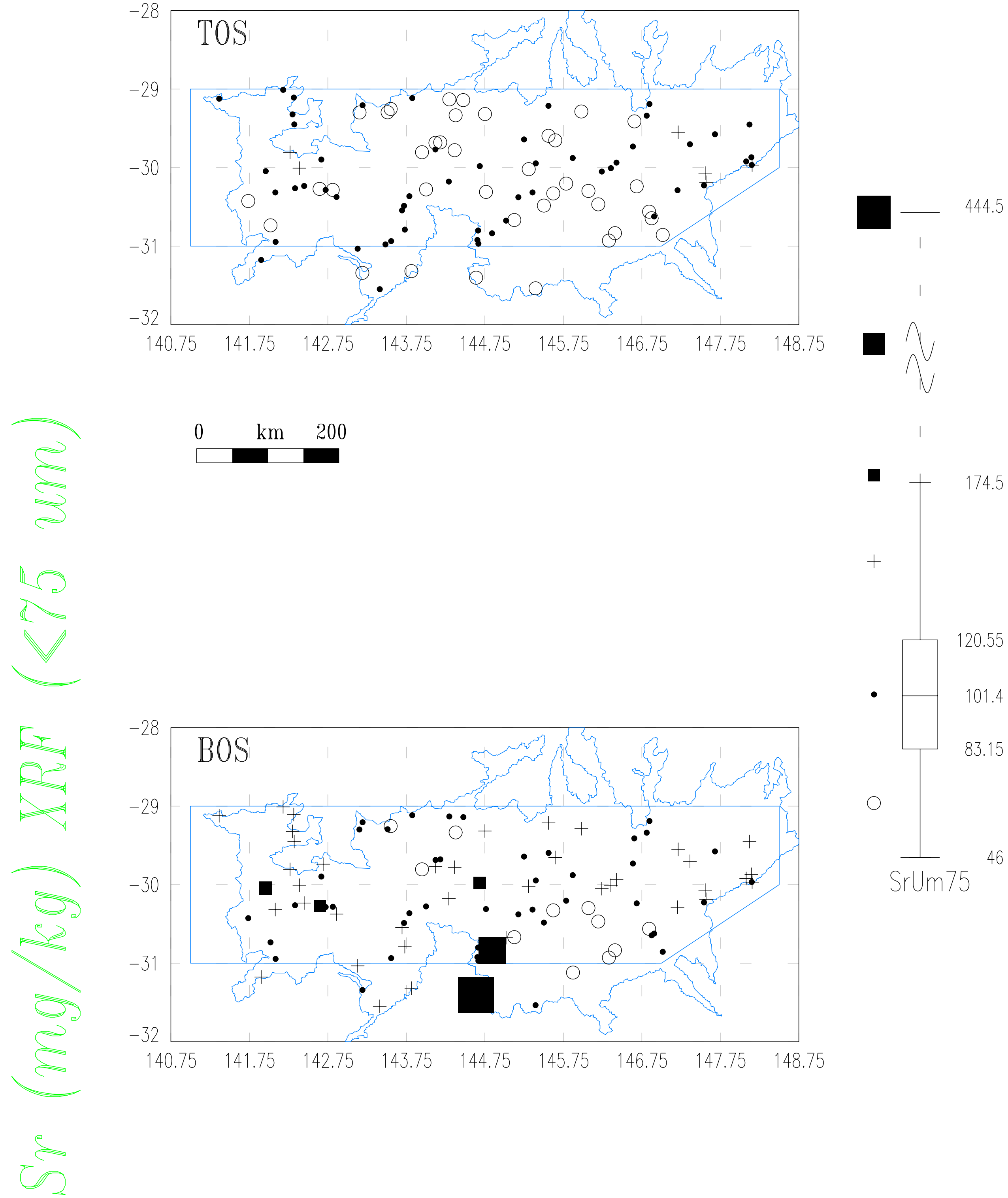
Top & Bottom Outlet Sediments (TOS & BOS)



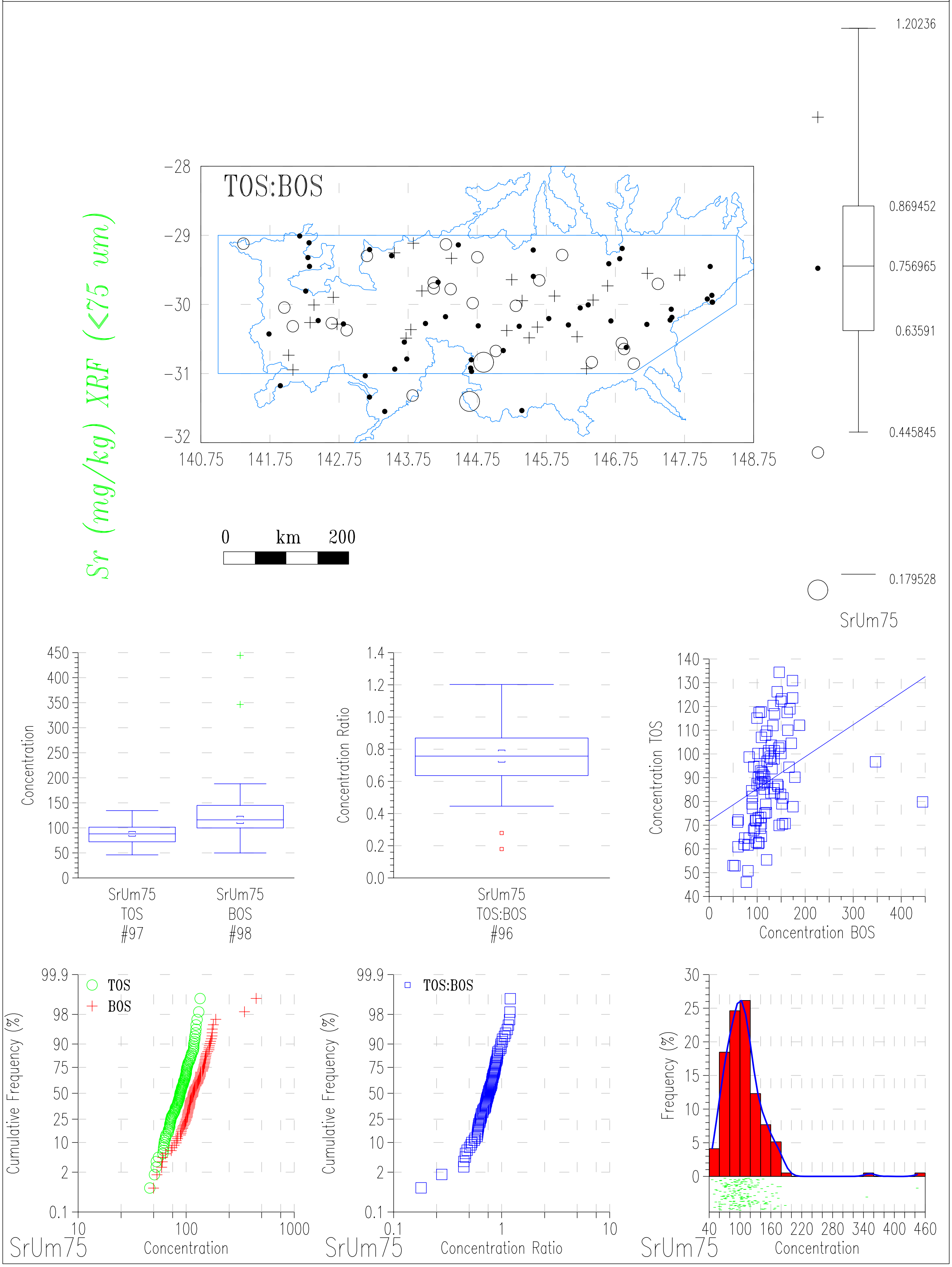
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



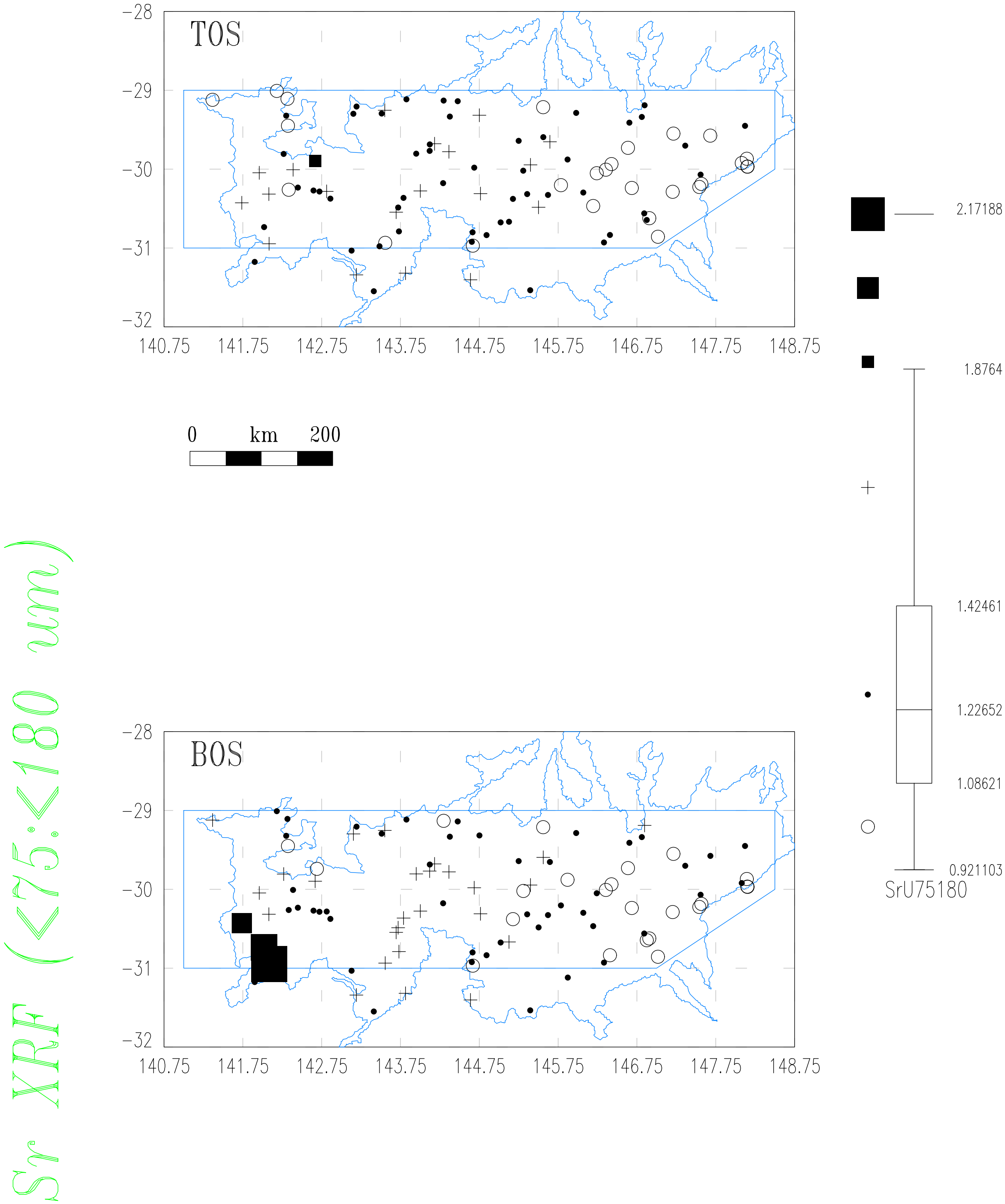
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



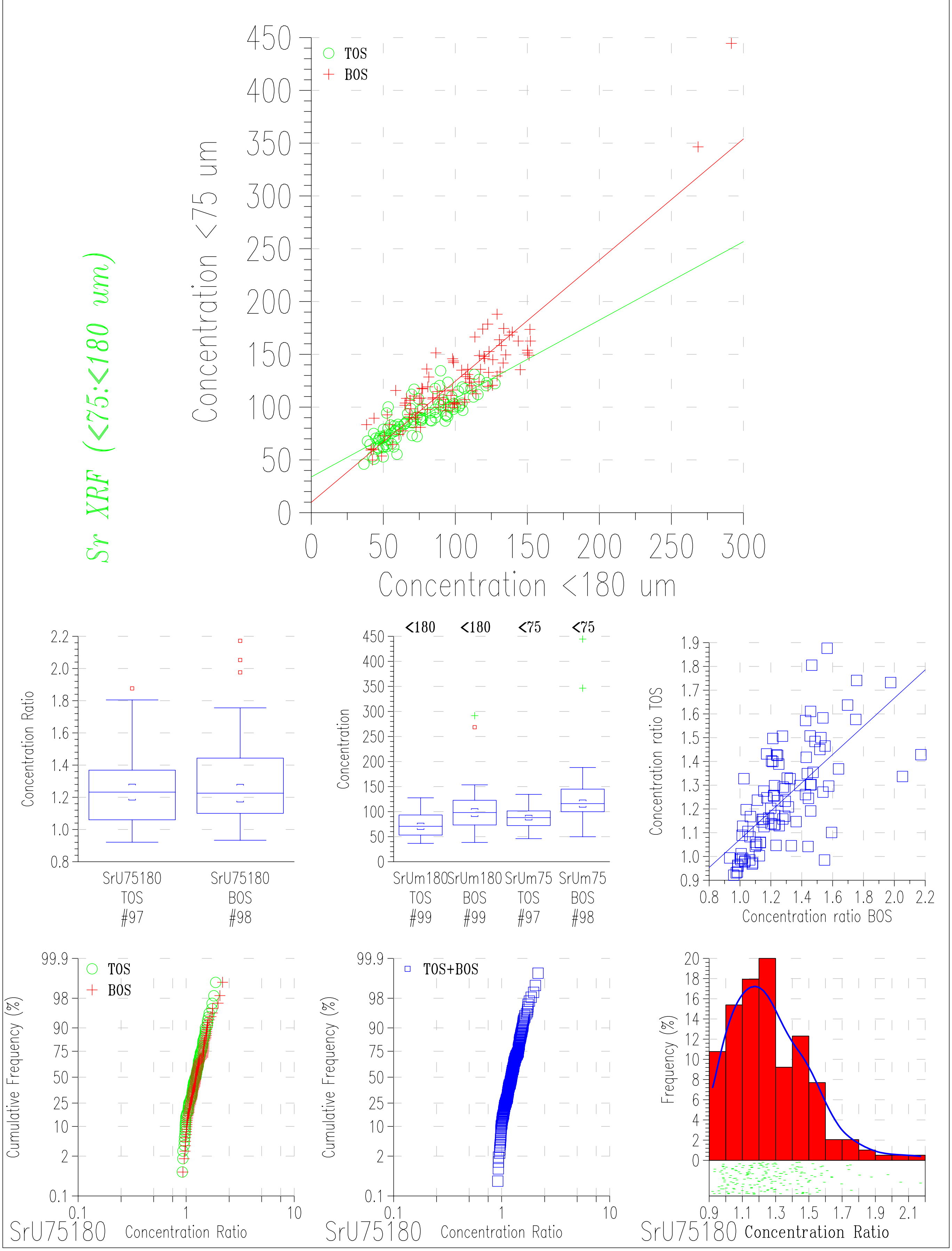
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

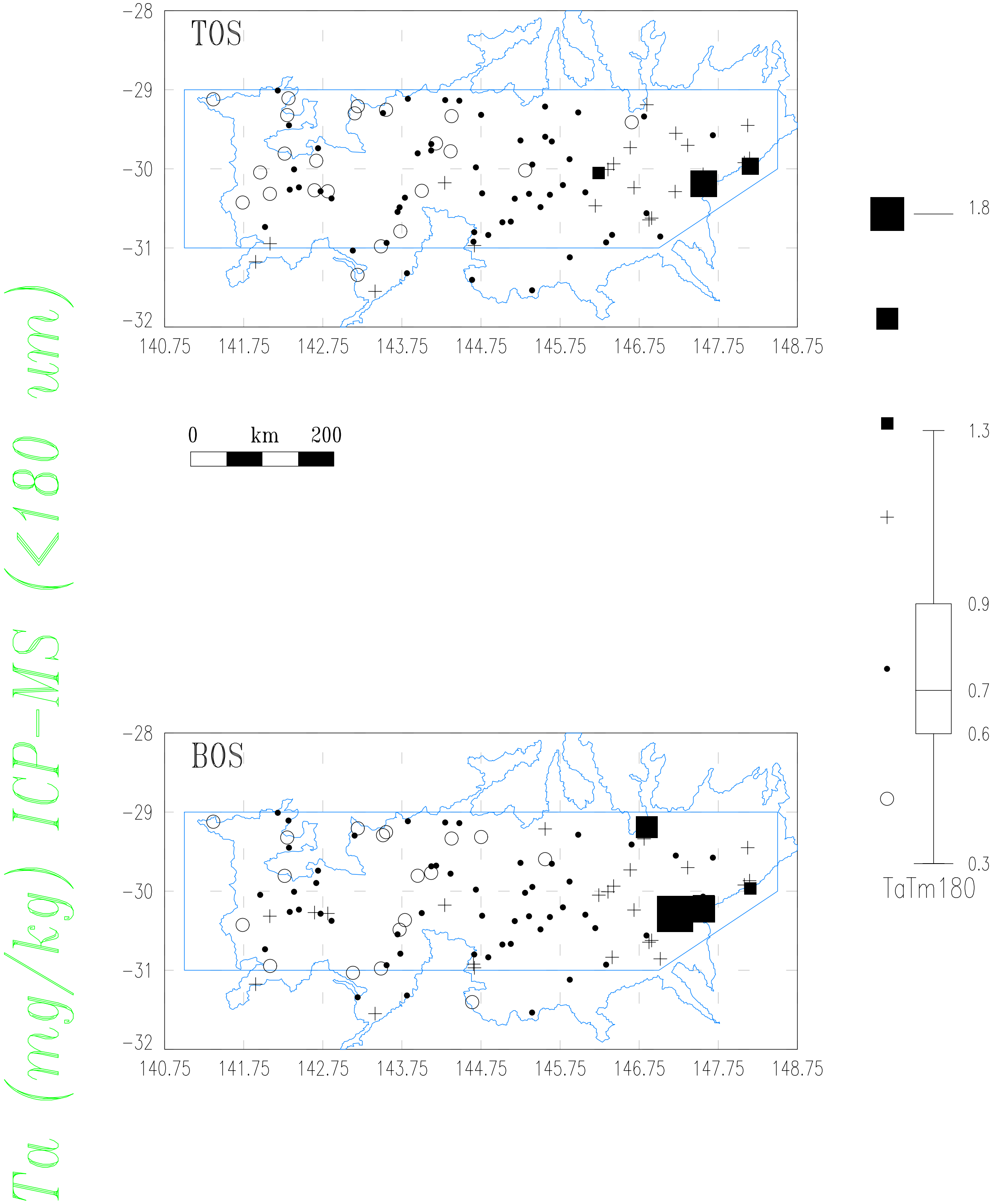


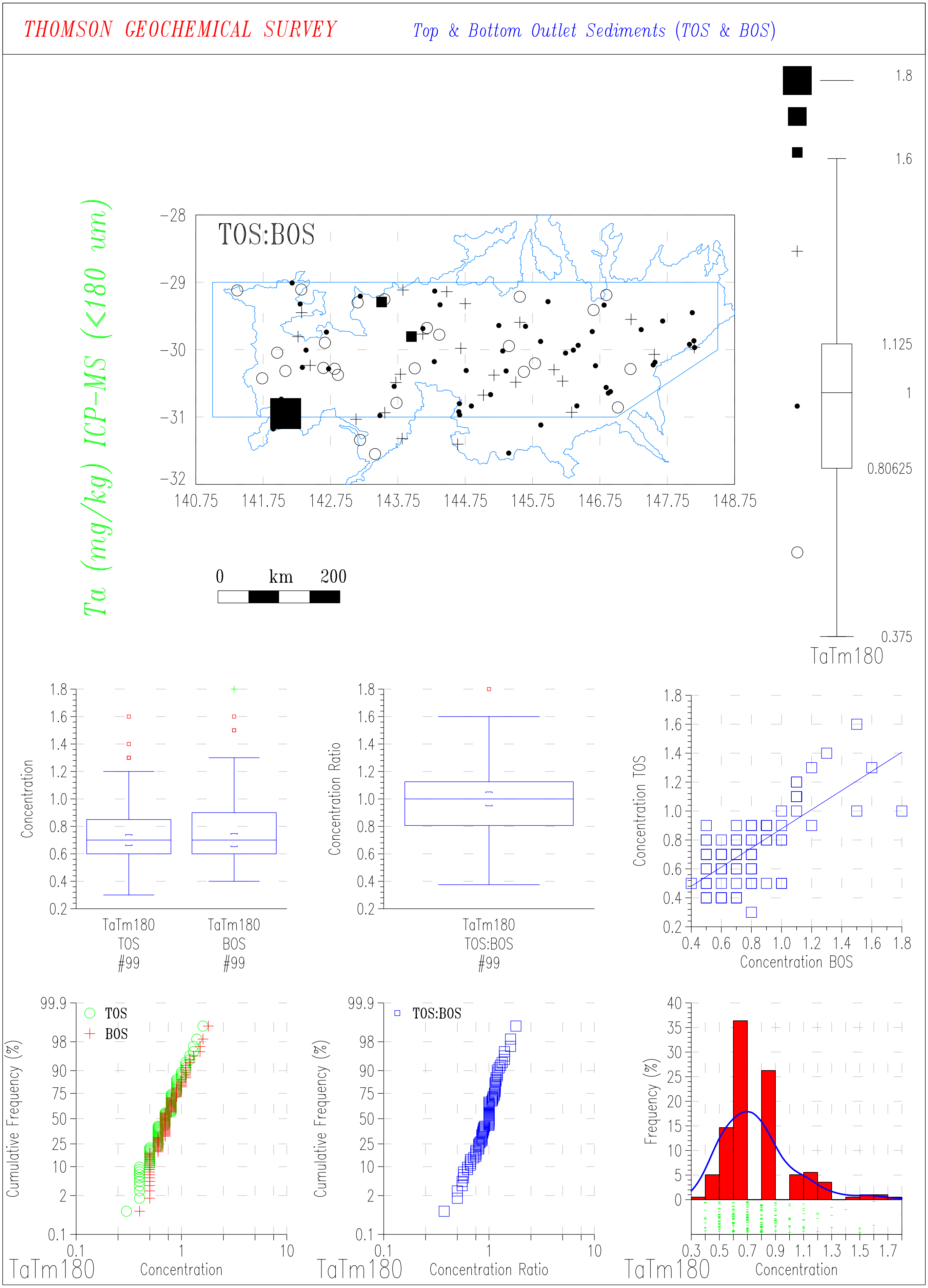
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



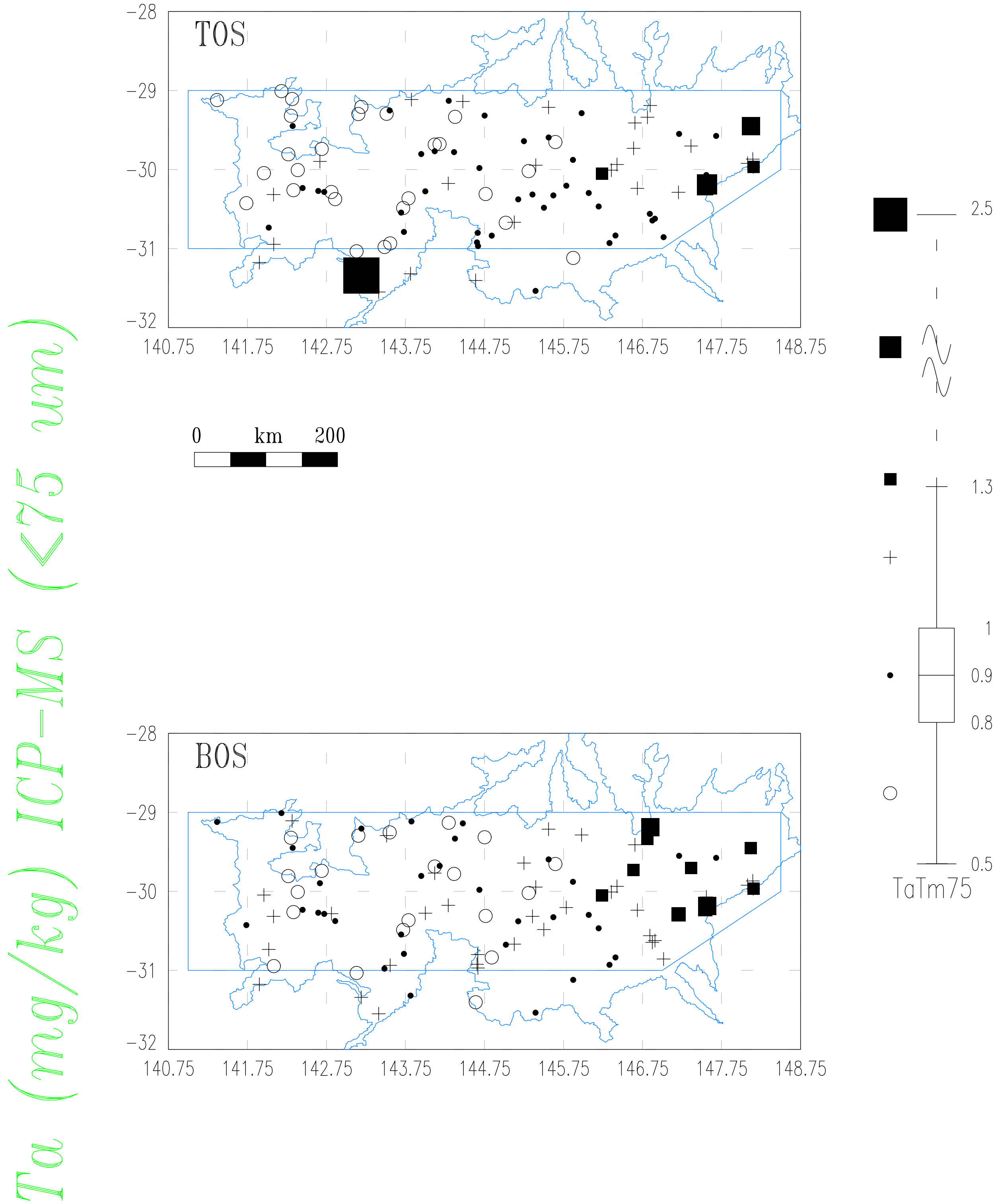
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

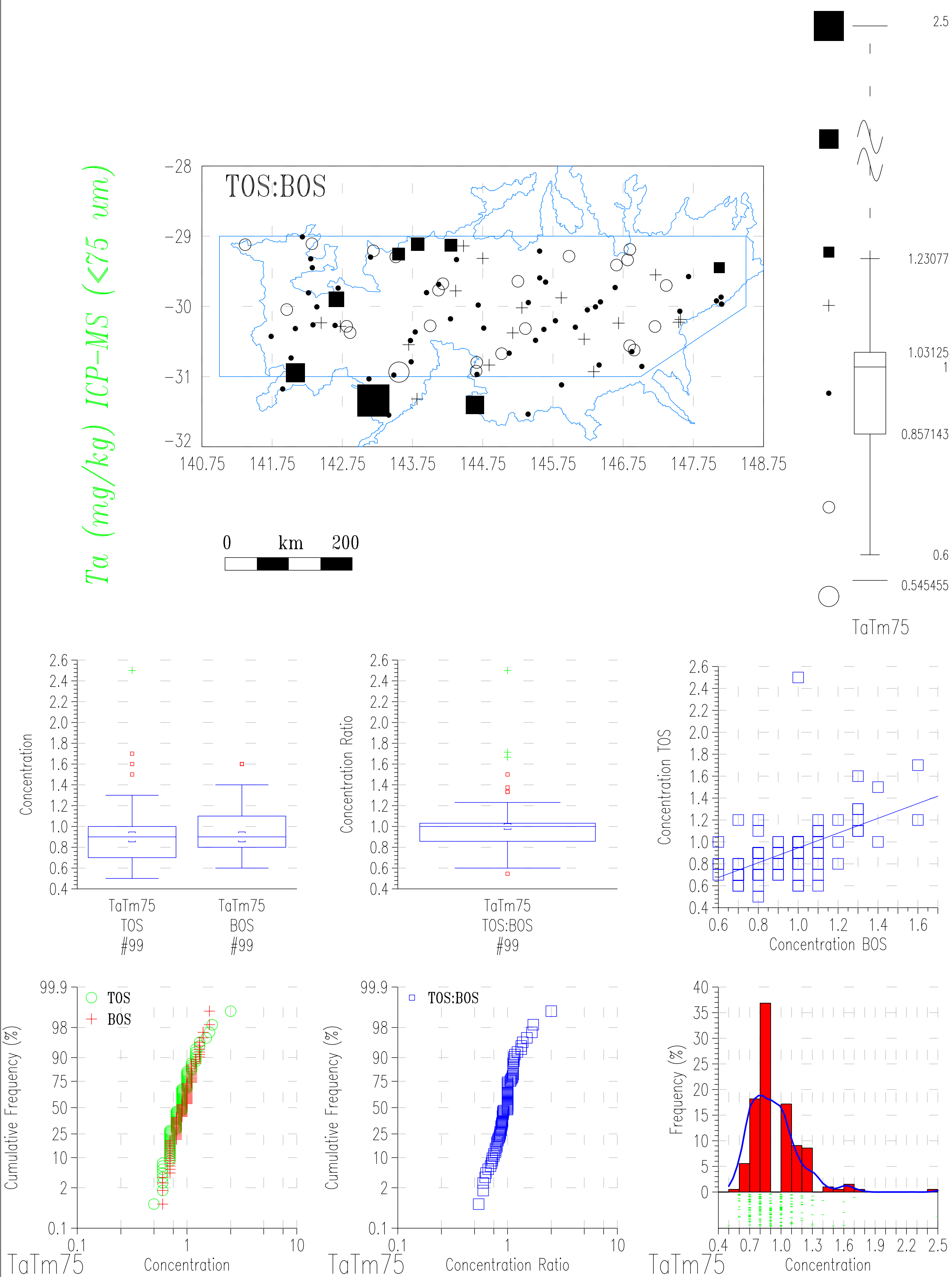


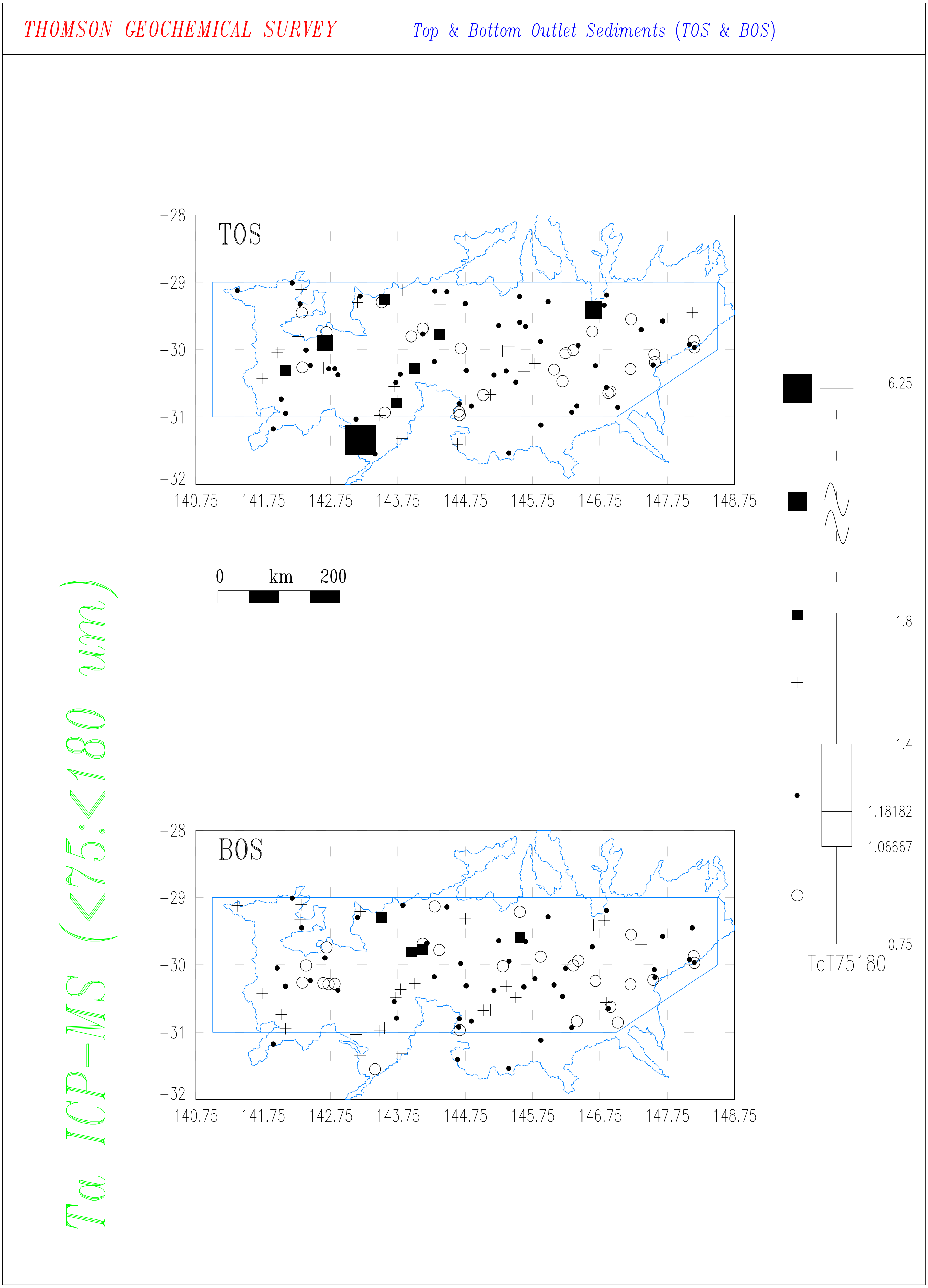

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Ta (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
TaTm180
Concentration
TaTm180 TOS #99
TaTm180 BOS #99
Concentration Ratio
TaTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

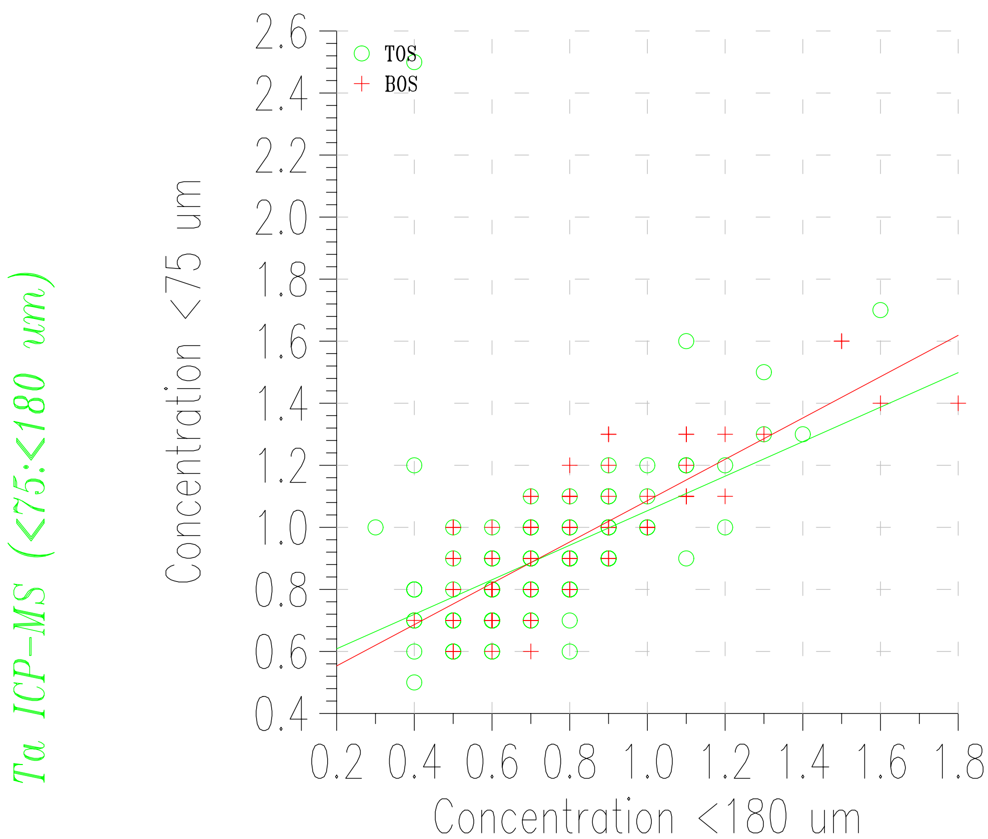


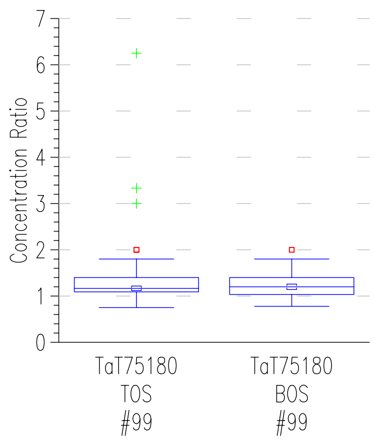
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

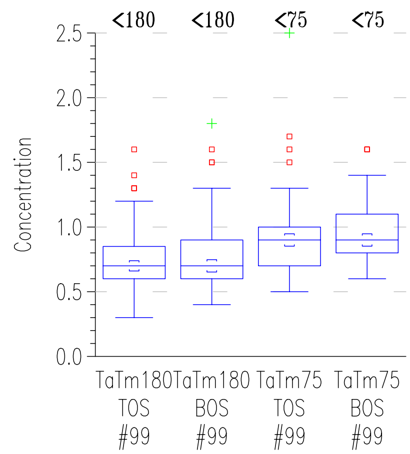


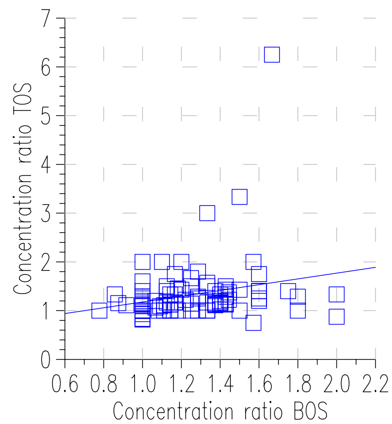

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
6.25
1.8
1.4
1.18182
1.06667
0.75
TaT75180
Ta ICP-MS (<75:<180 um)

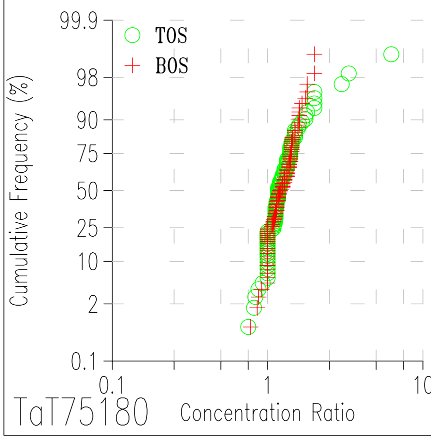
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

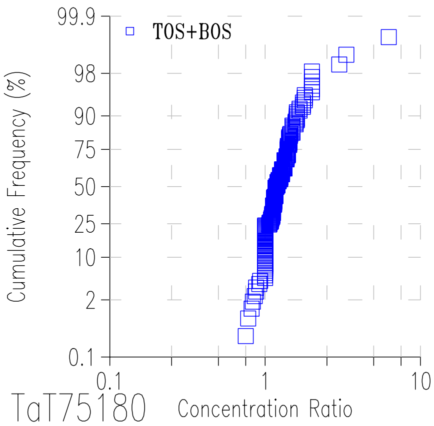


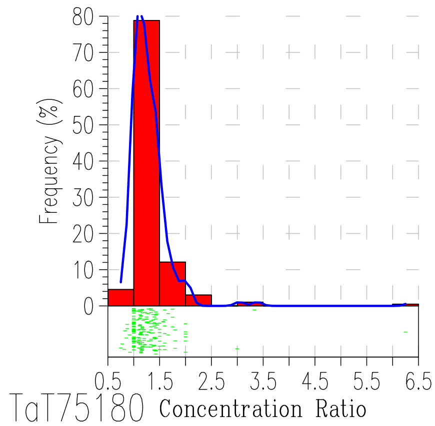




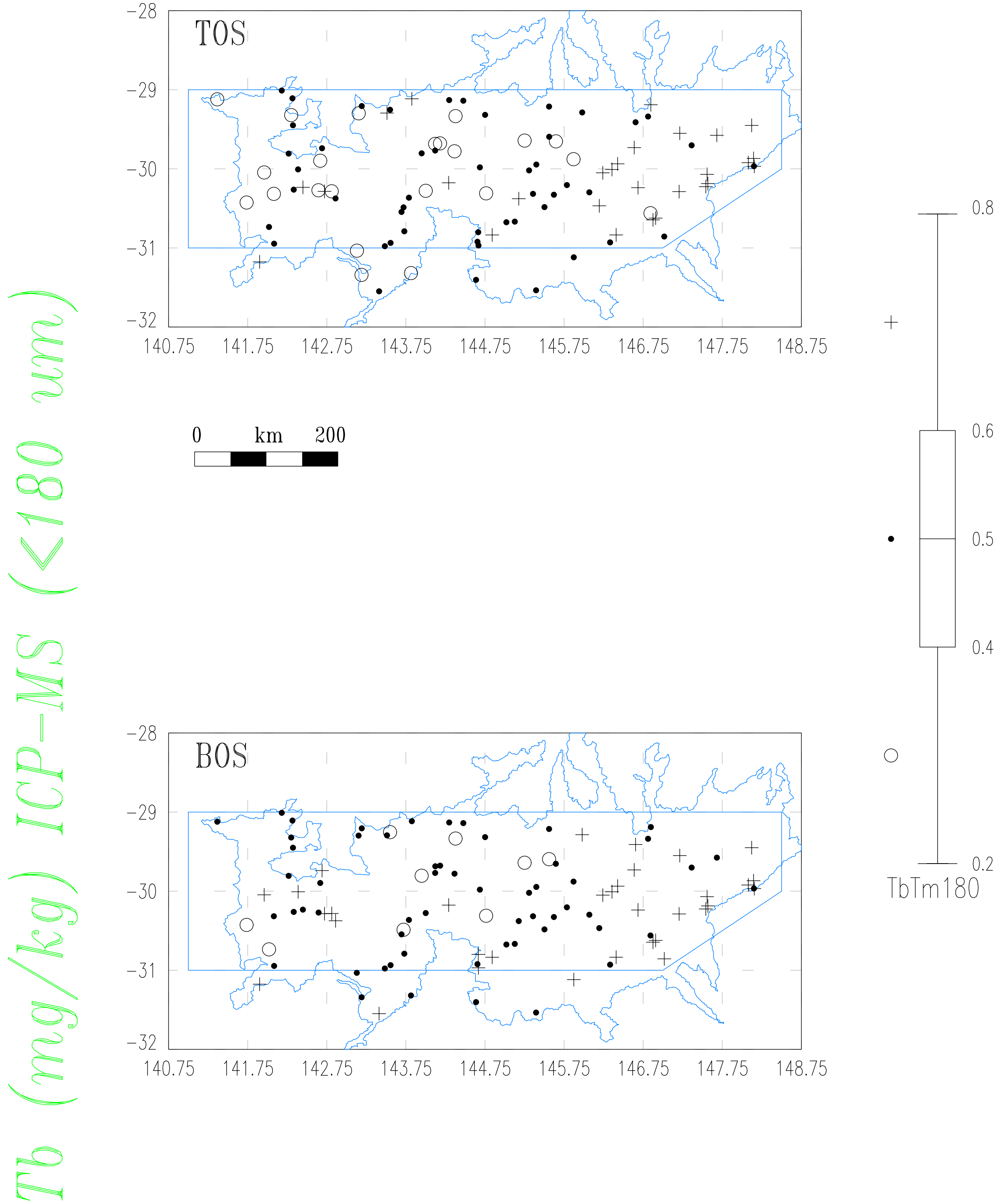


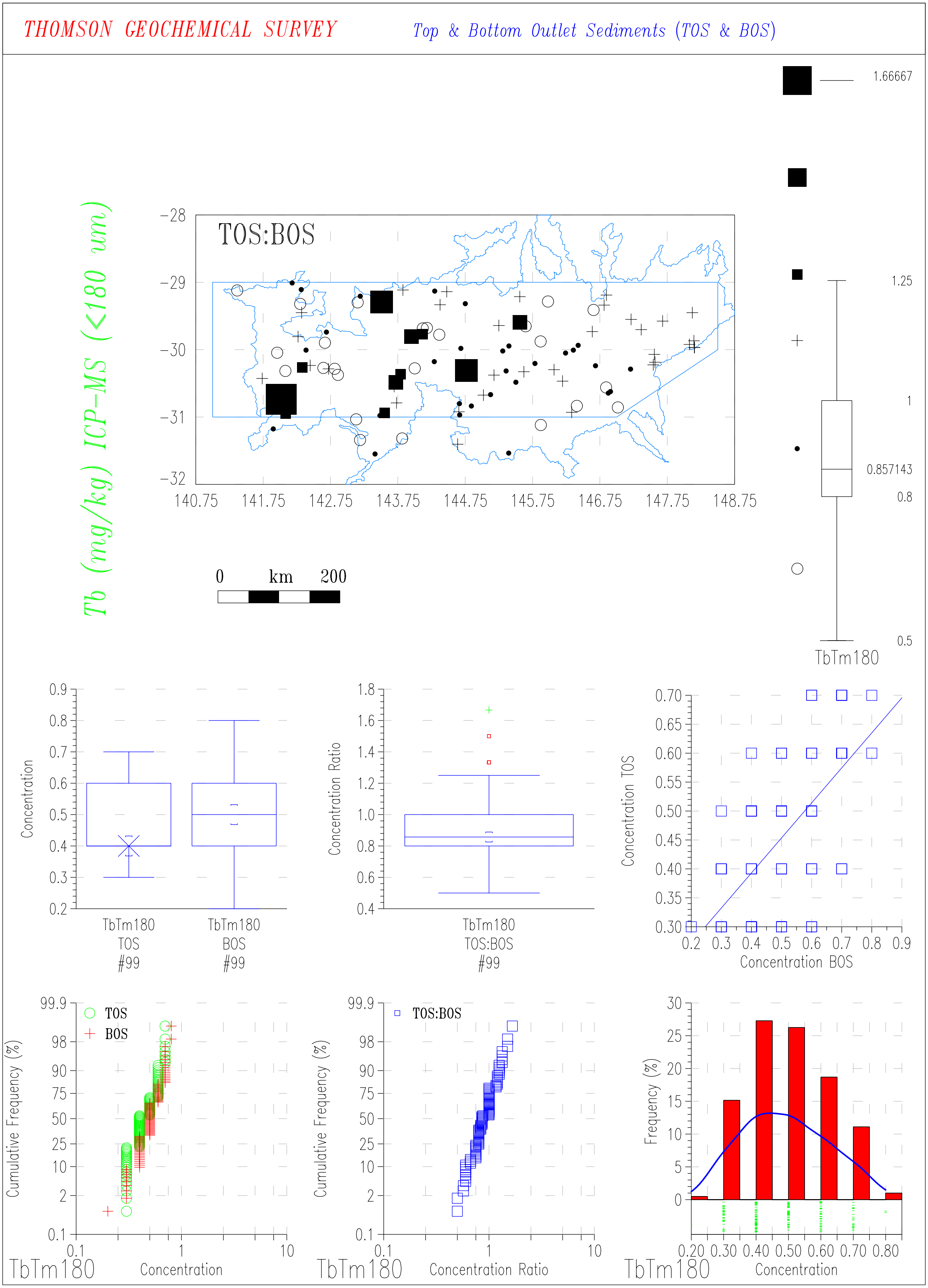






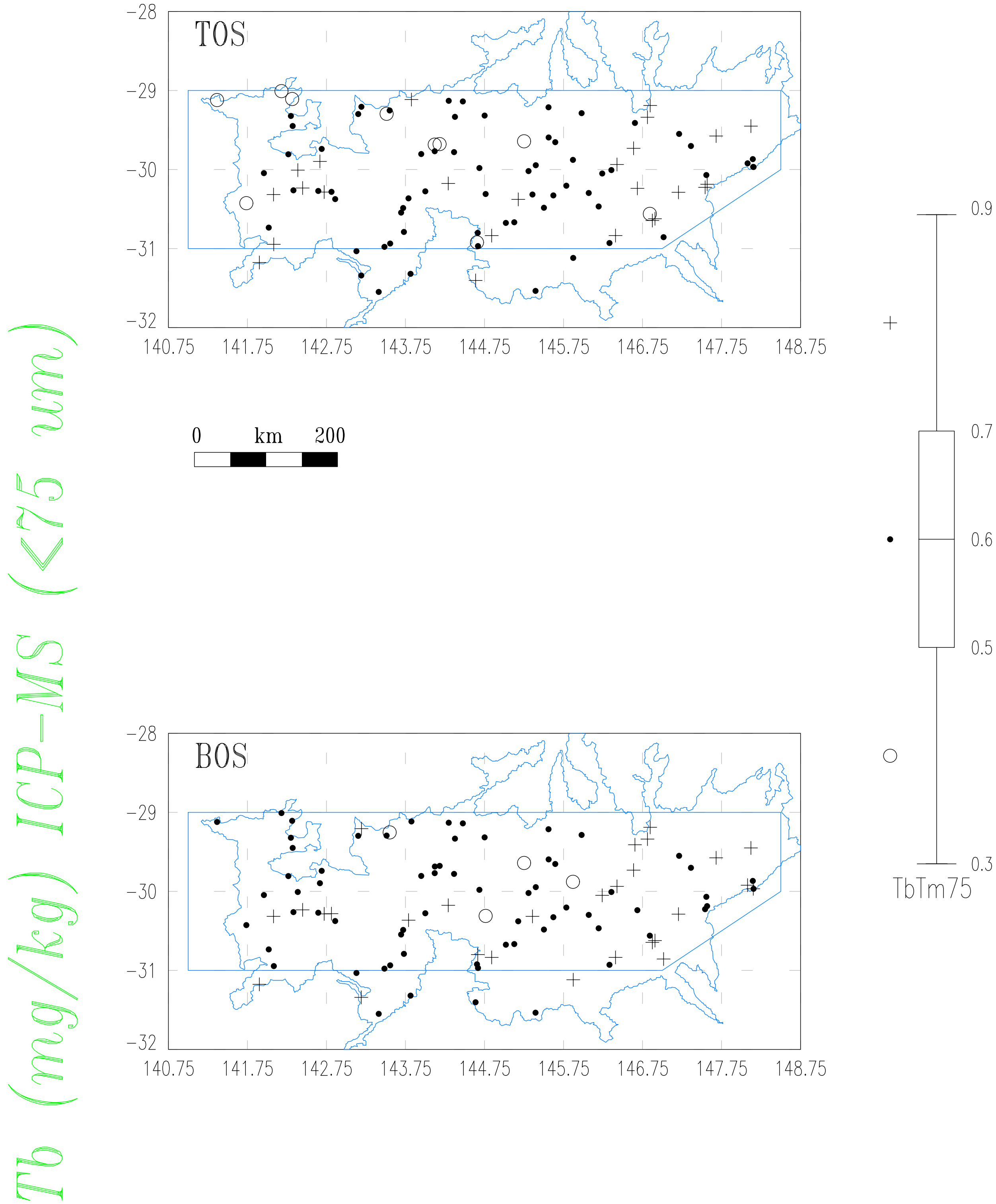
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



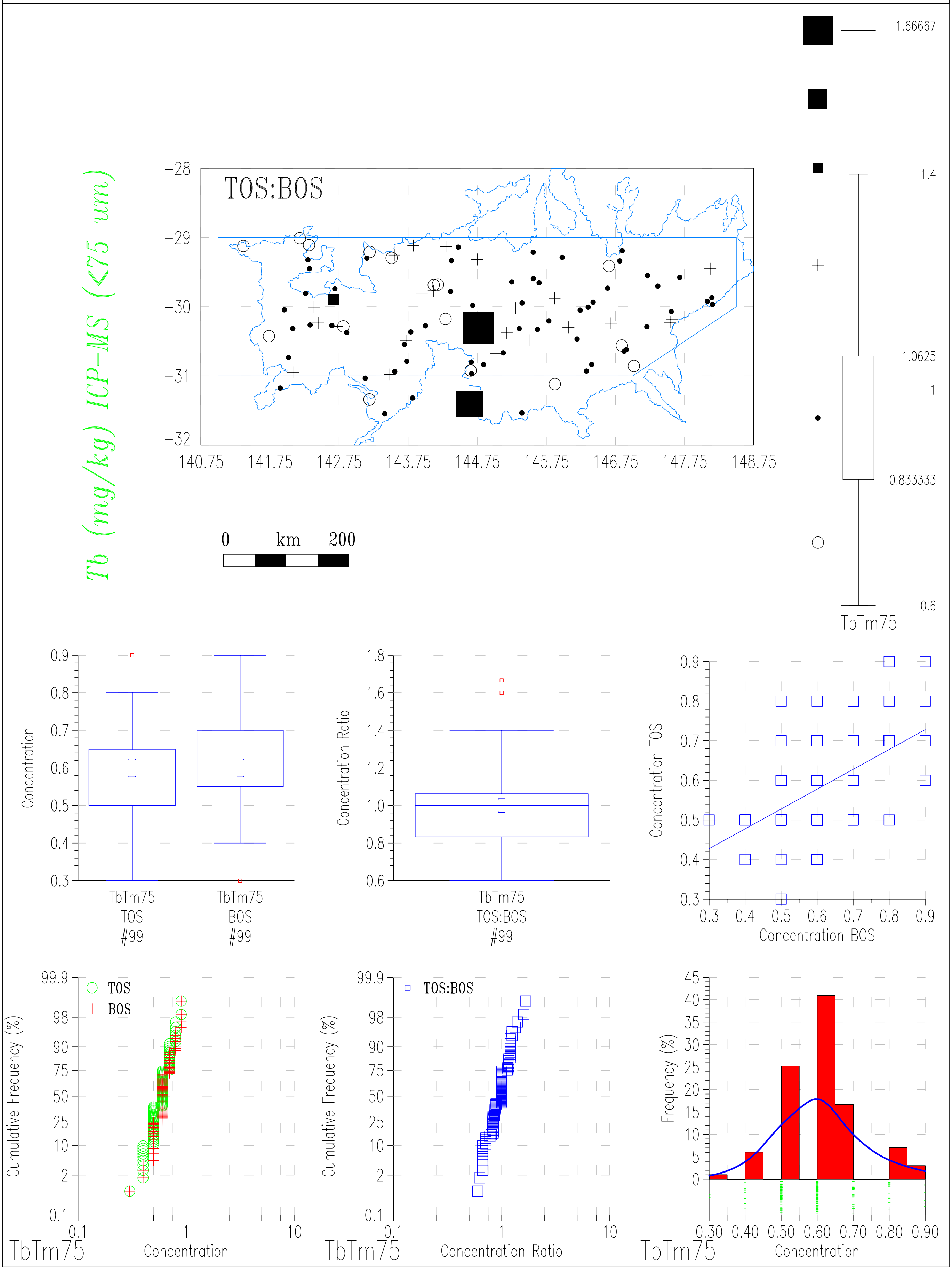

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Tb (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.66667
1.25
1
0.857143
0.8
0.5
TbTm180
Concentration
TbTm180 TOS #99
TbTm180 BOS #99
Concentration Ratio
TbTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TbTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)



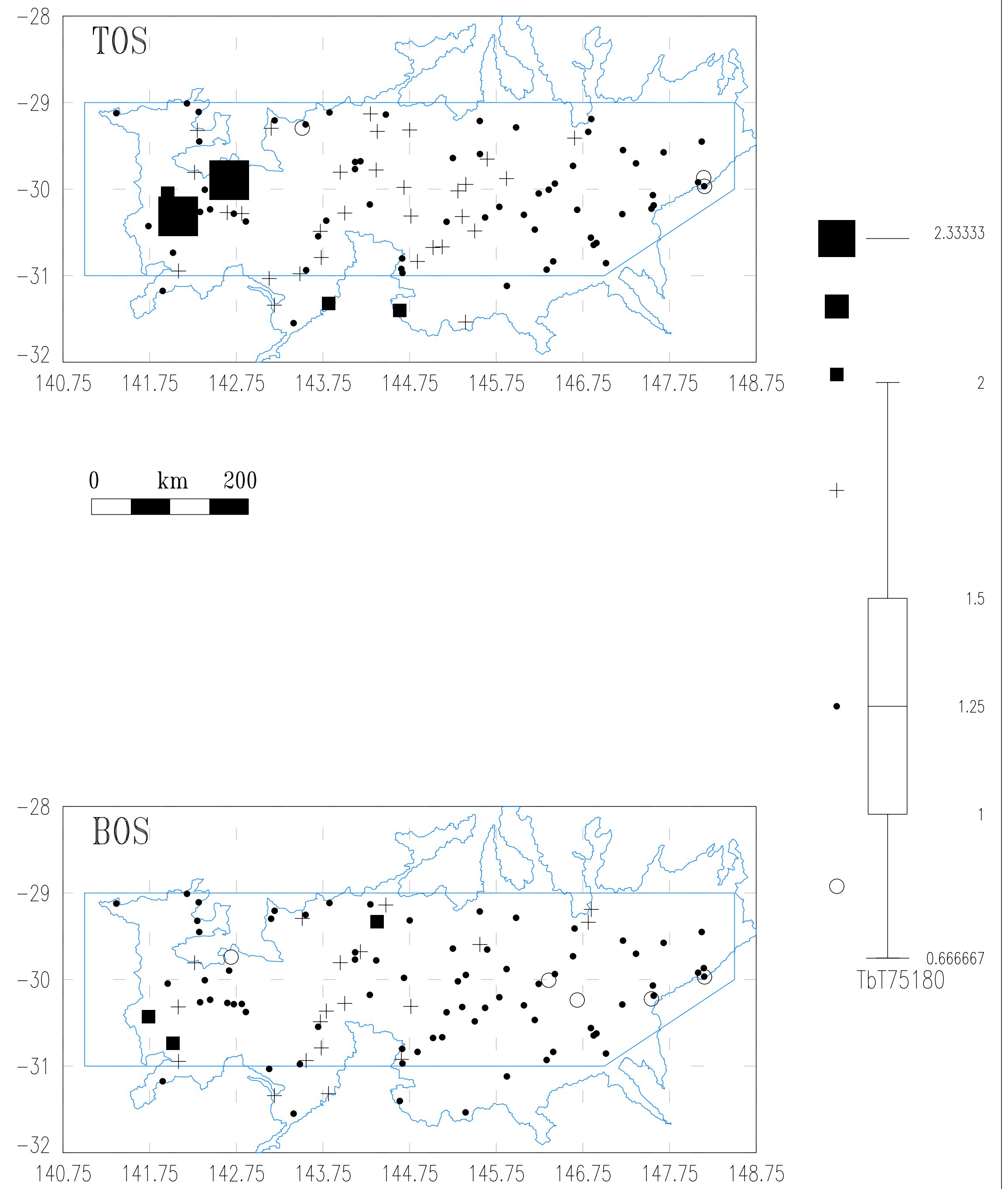
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

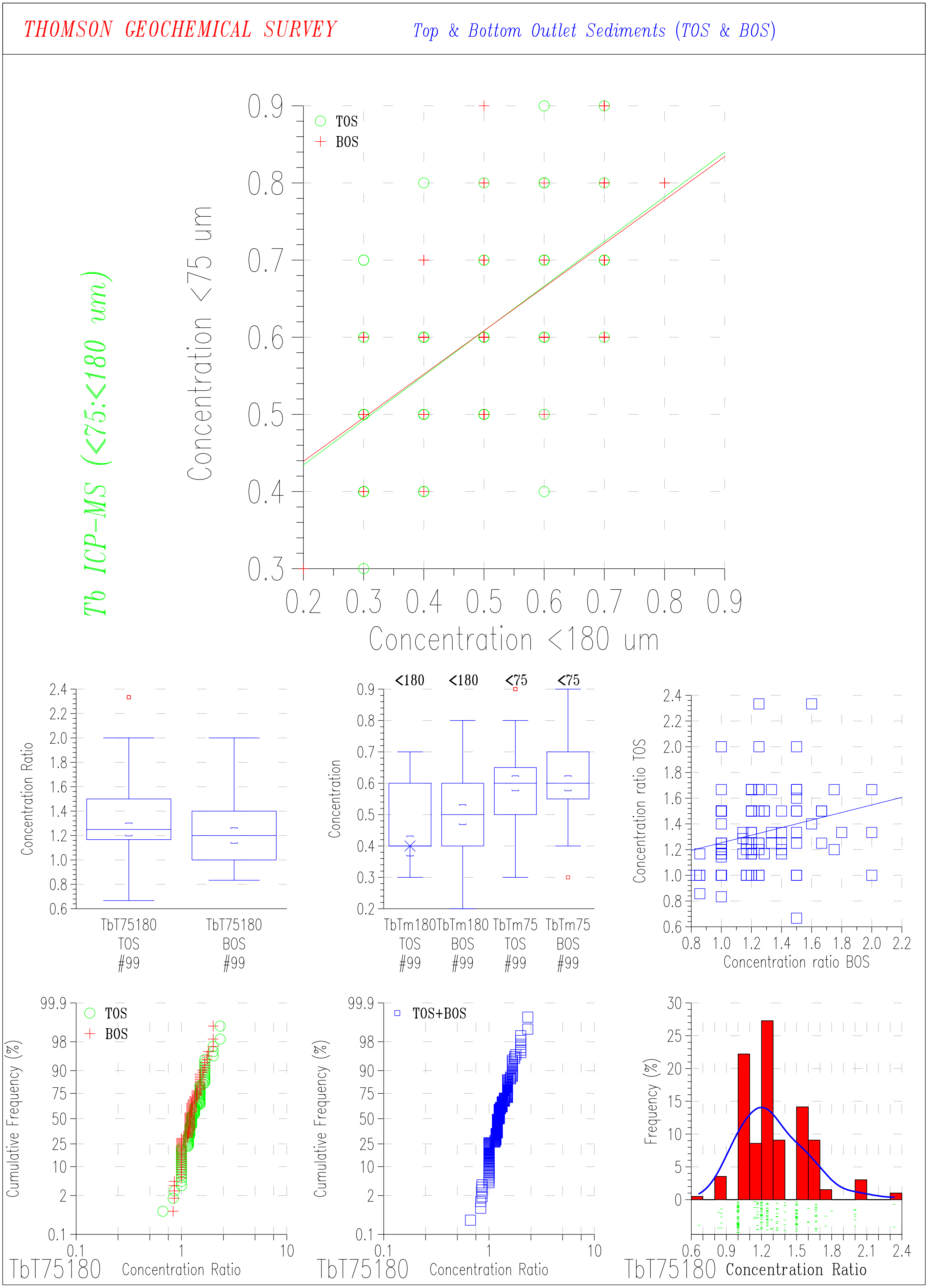


THOMSON GEOCHEMICAL SURVEY

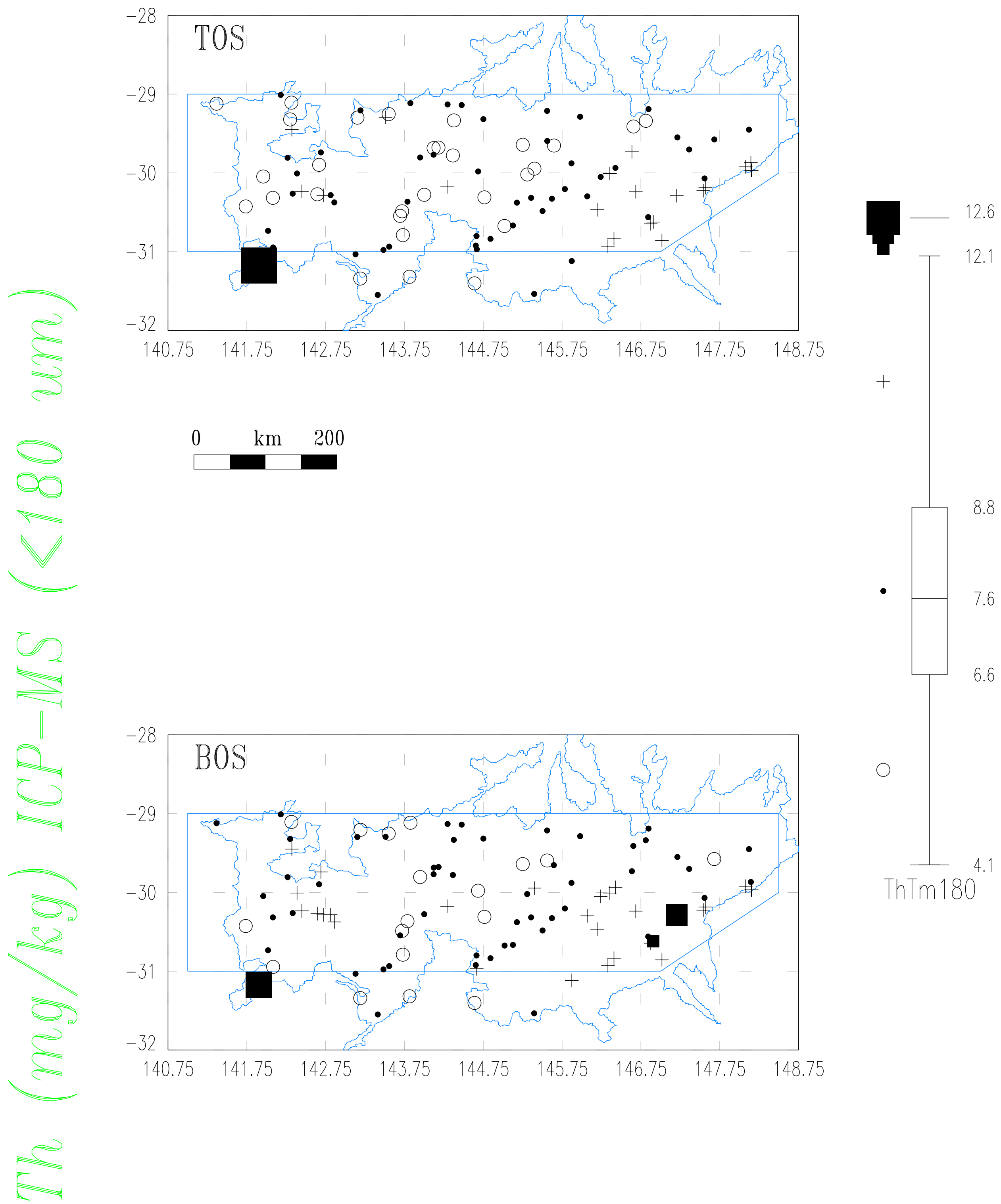
Top & Bottom Outlet Sediments (TOS & BOS)

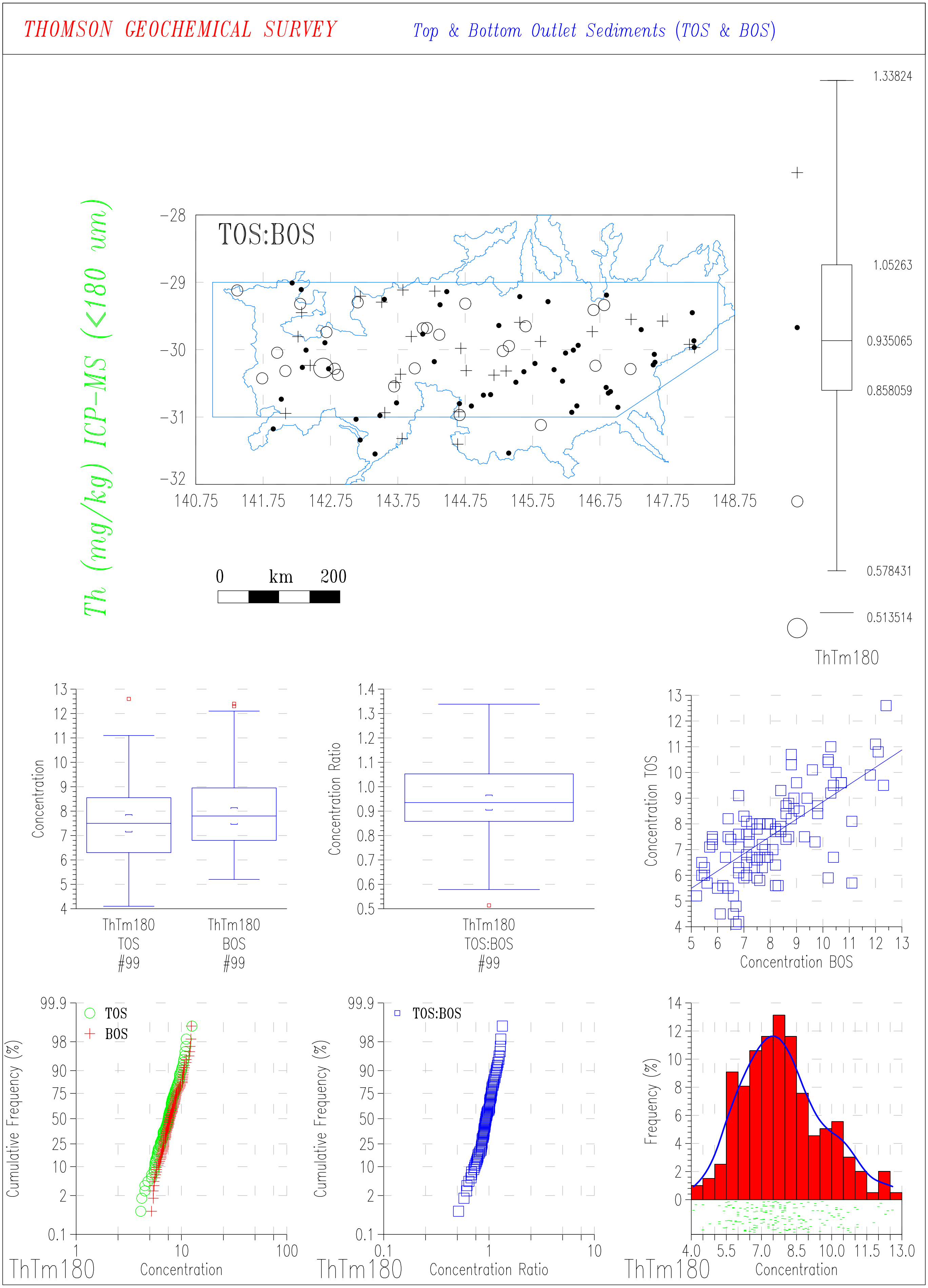
Tb ICP-MS (<75:<180 um)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Tb ICP-MS (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
TbT75180 TOS #99
TbT75180 BOS #99
<180
<180
<75
<75
Concentration
TbTm180 TOS #99
TbTm180 BOS #99
TbTm75 TOS #99
TbTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TbT75180
Concentration Ratio
TOS+BOS
Frequency (%)

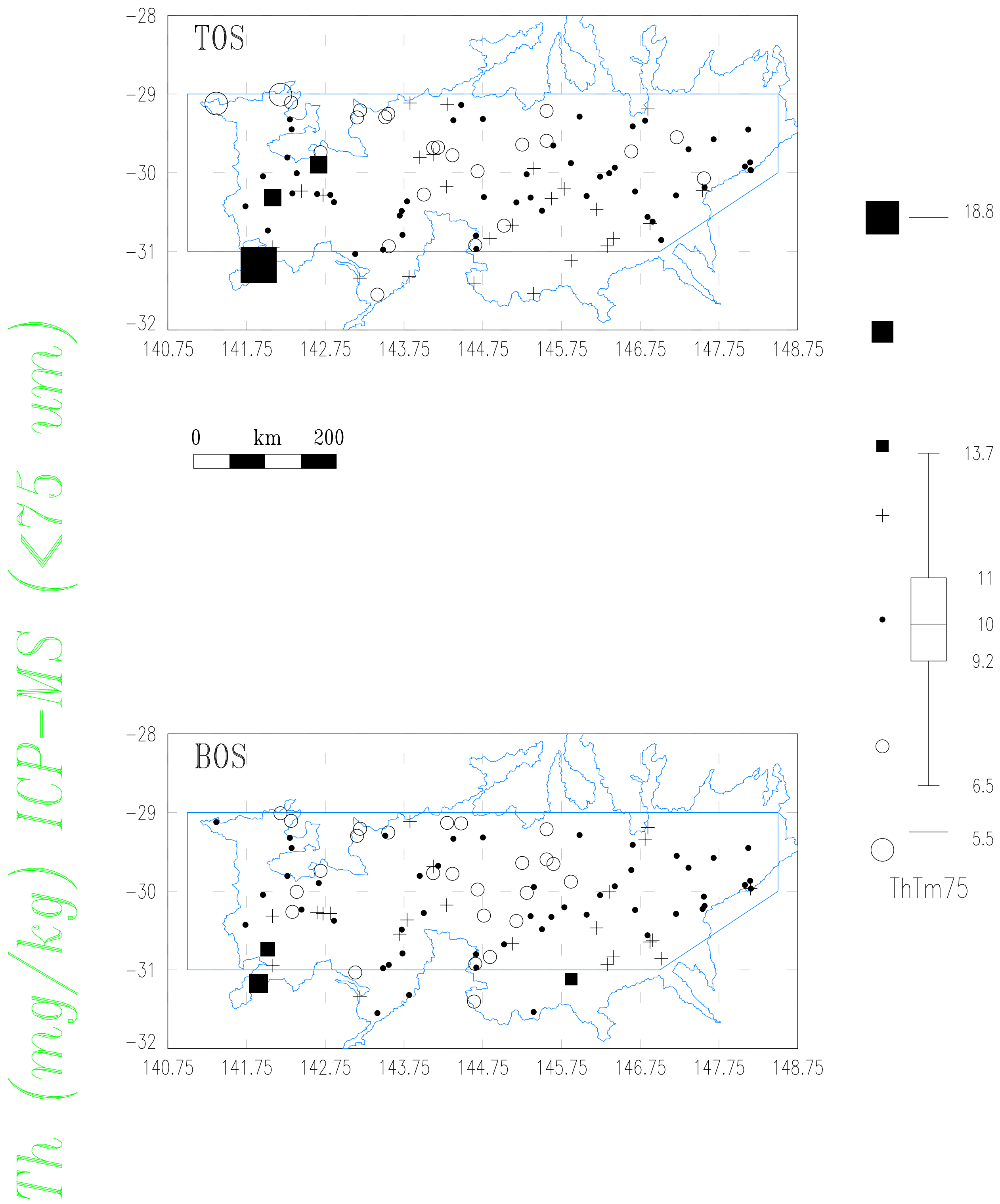
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

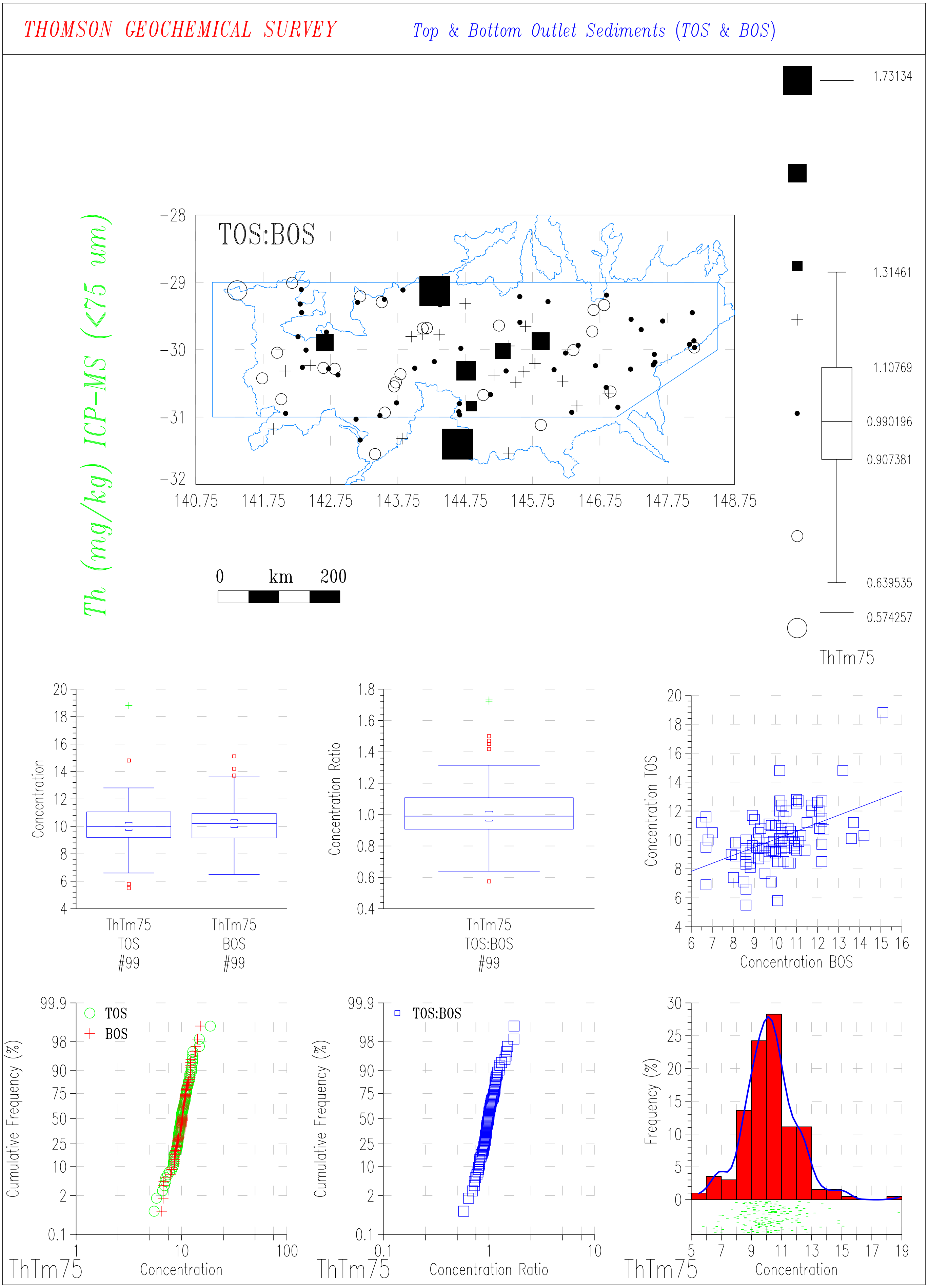



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Th (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.33824
1.05263
0.935065
0.858059
0.578431
0.513514
ThTm180
Concentration
ThTm180 TOS #99
ThTm180 BOS #99
Concentration Ratio
ThTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

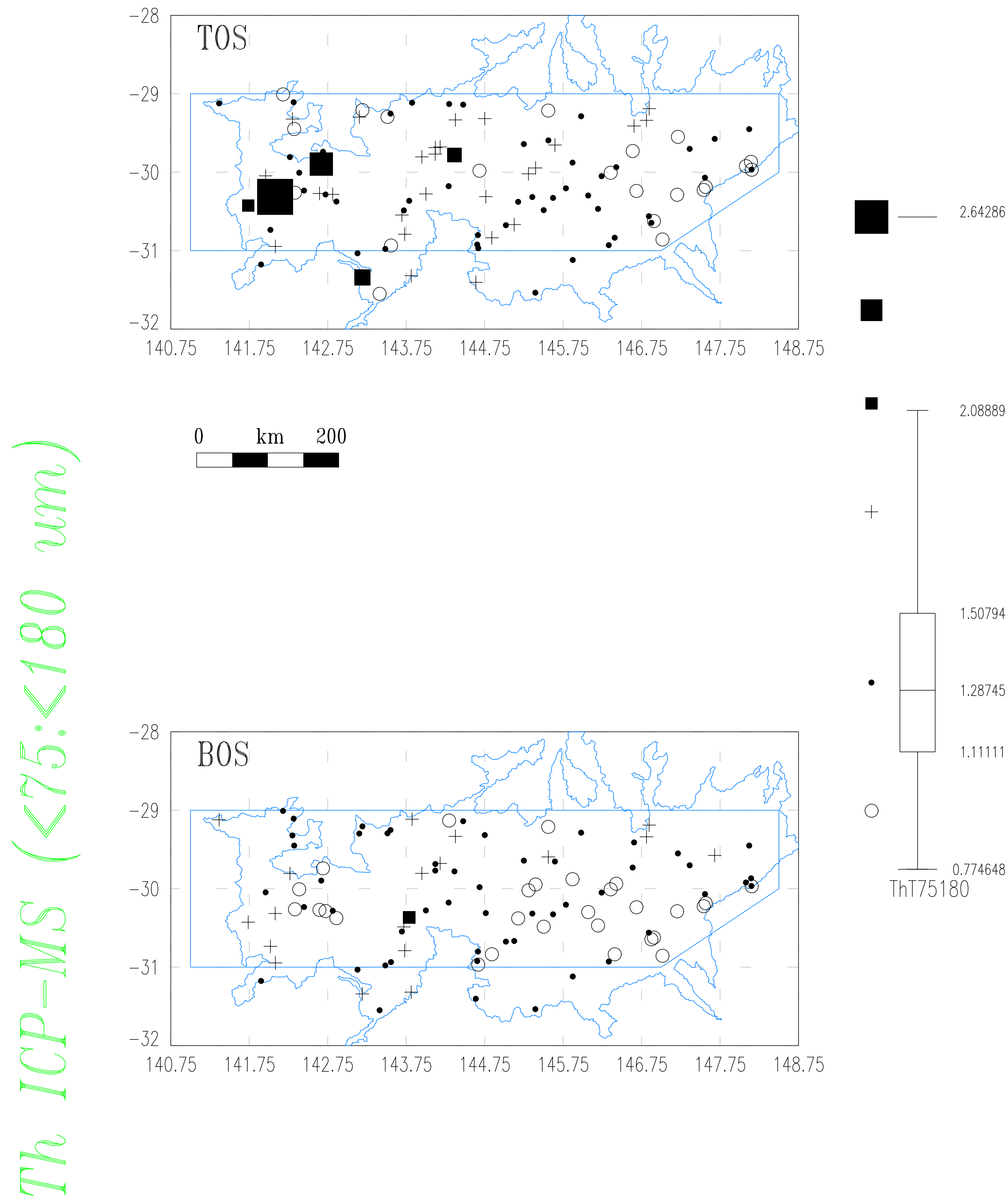
Top & Bottom Outlet Sediments (TOS & BOS)



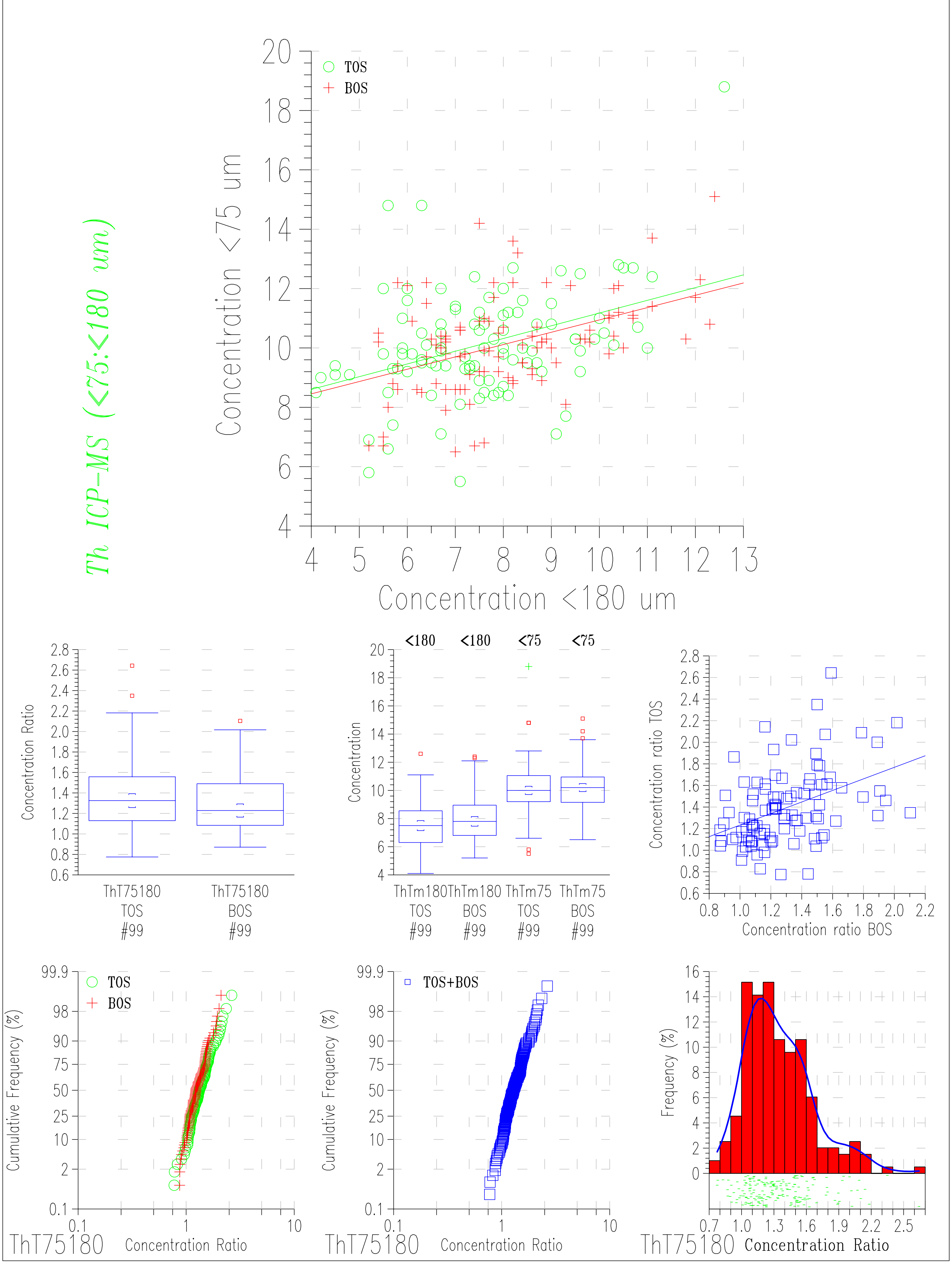

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Th (mg/kg) ICP–MS (<75 um)
TOS:BOS
0 km 200
1.73134
1.31461
1.10769
0.990196
0.907381
0.639535
0.574257
ThTm75
Concentration
ThTm75 TOS #99
ThTm75 BOS #99
Concentration Ratio
ThTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

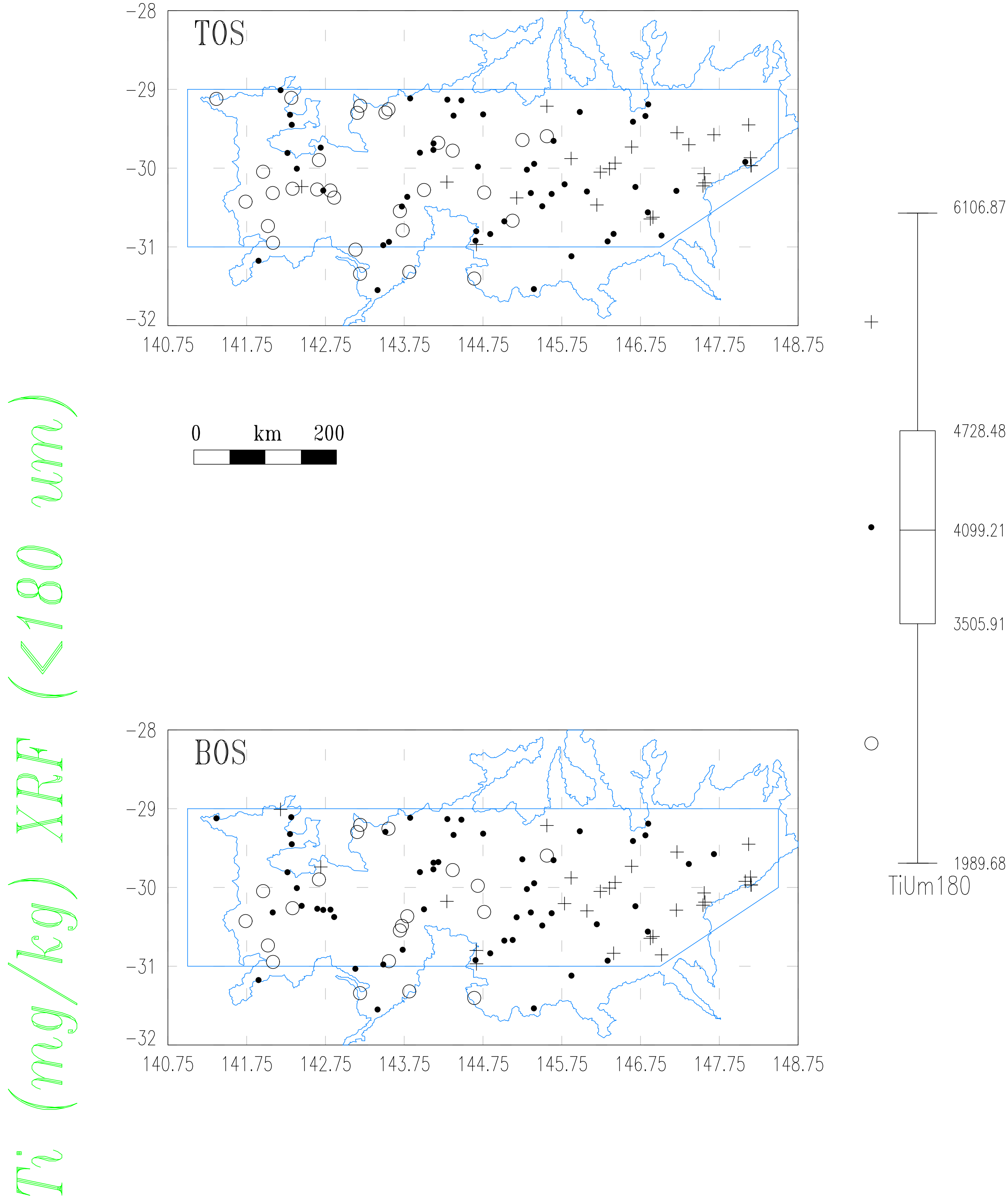
Top & Bottom Outlet Sediments (TOS & BOS)

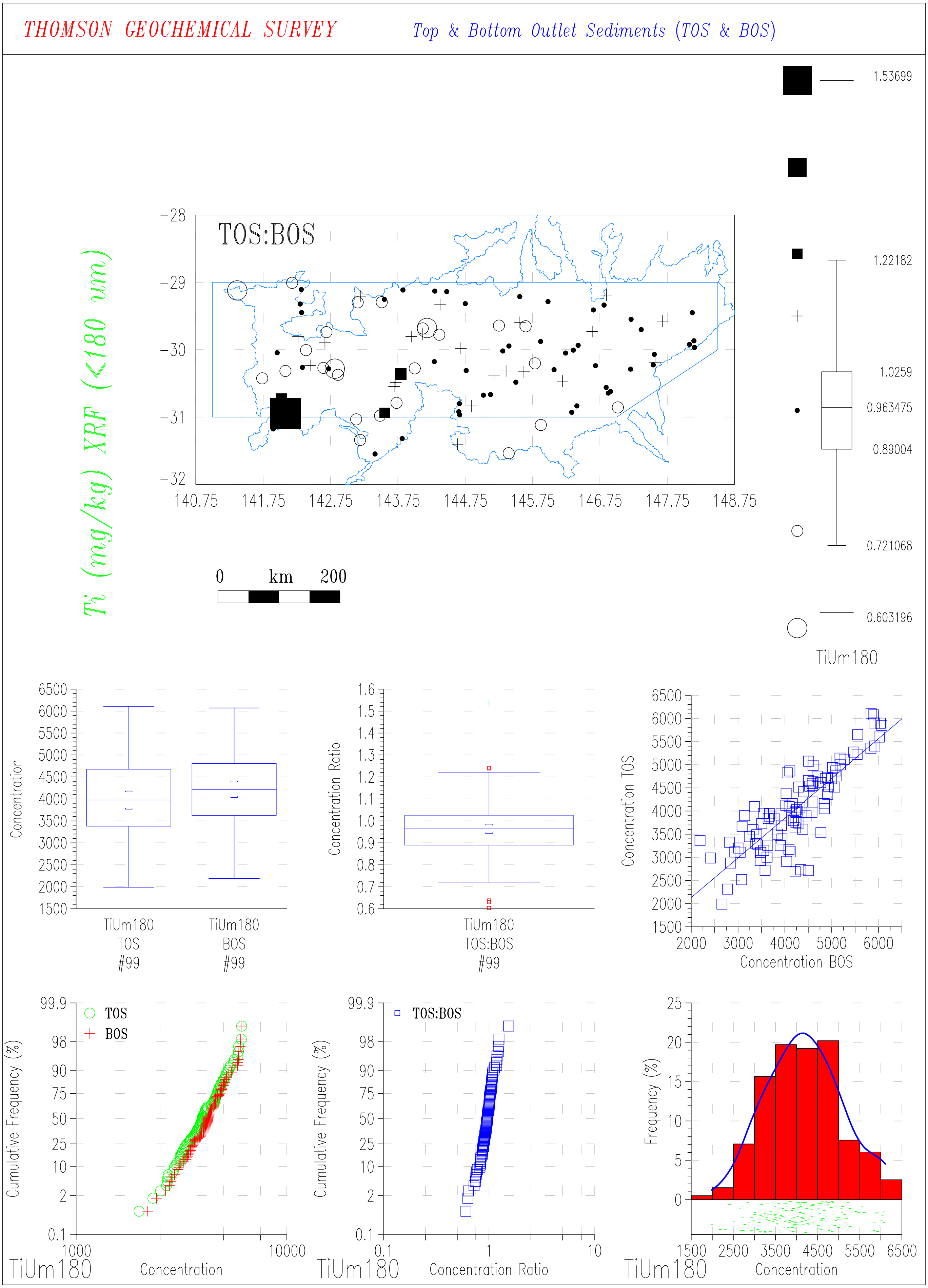


THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

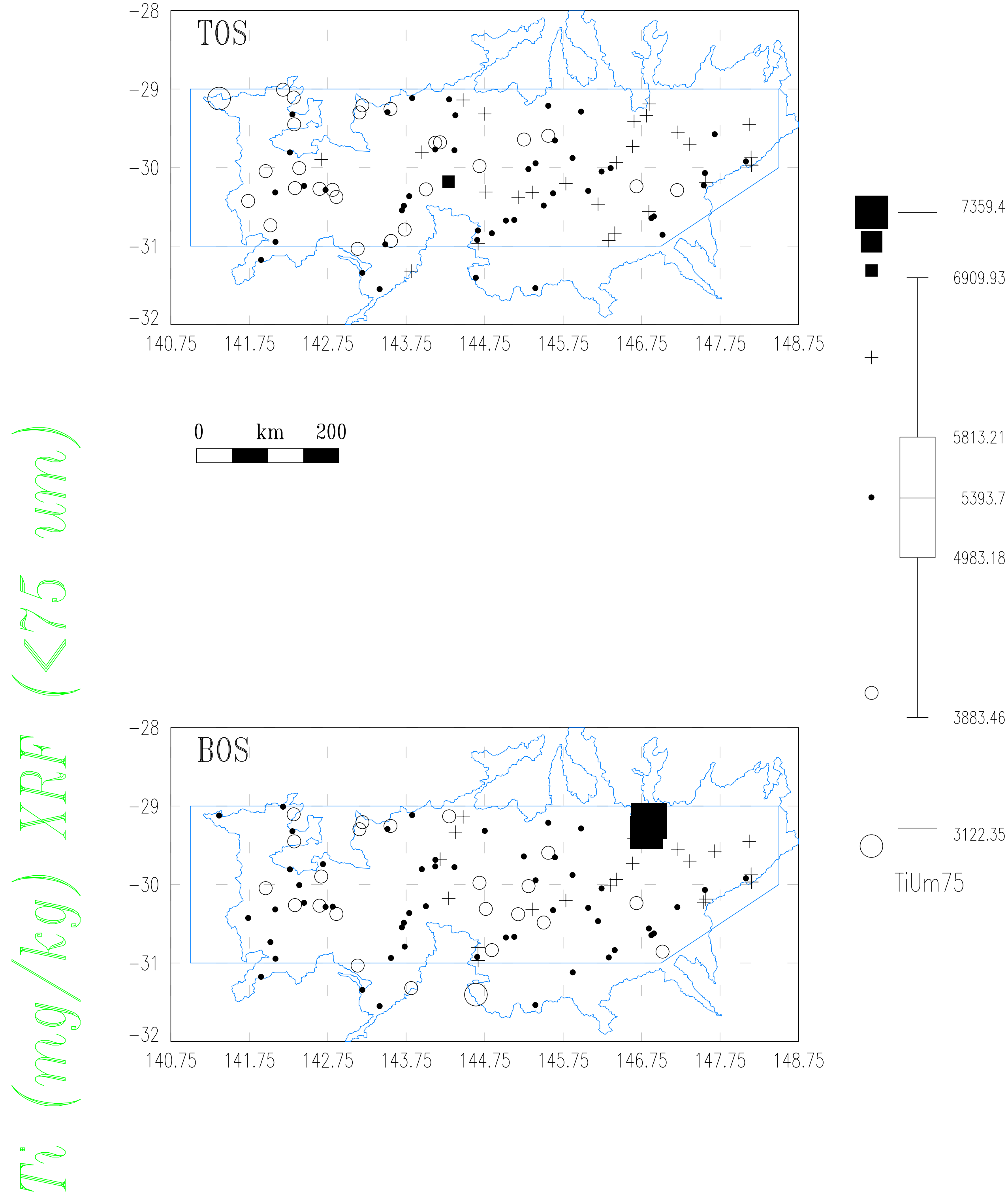


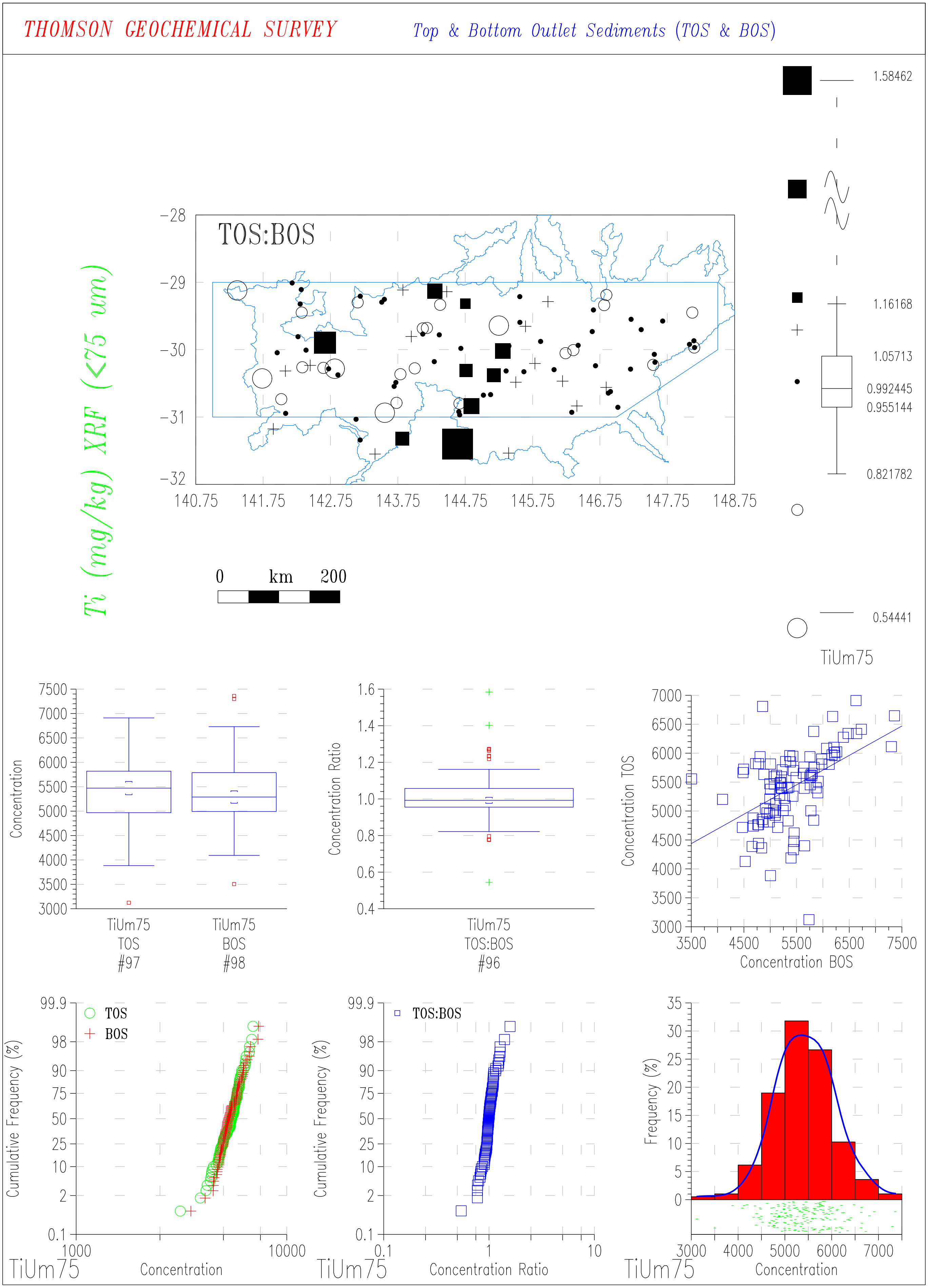
THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS:BOS
Ti (mg/kg) XRF (<180 um)
1.53699
1.22182
1.0259
0.963475
0.89004
0.721068
0.603196
TiUm180
0 km 200
Concentration
TiUm180 TOS #99
TiUm180 BOS #99
Concentration Ratio
TiUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TiUm180
TOS:BOS
Concentration Ratio
Frequency (%)

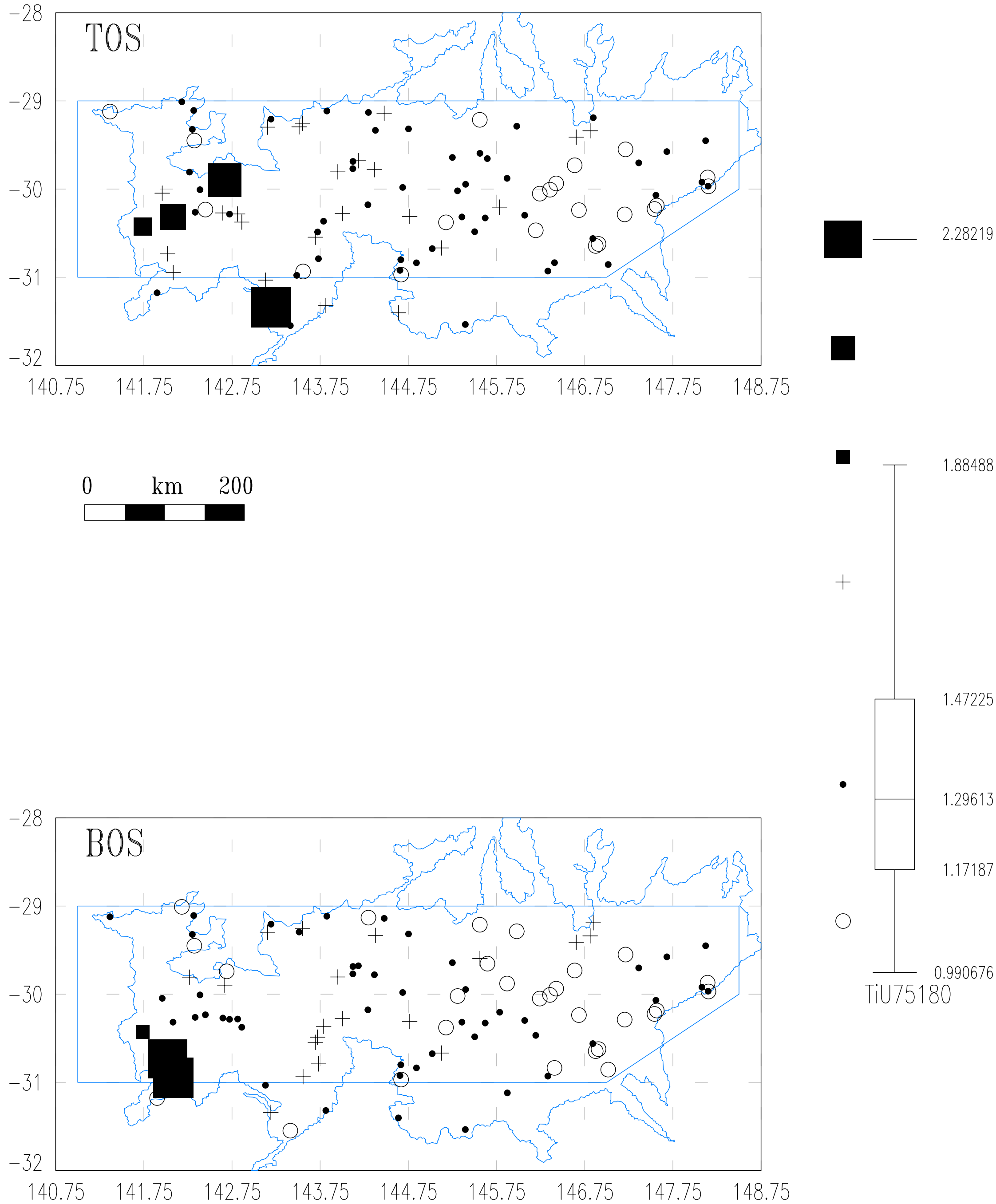
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS:BOS
Ti (mg/kg) XRF (<75 um)
0 km 200
1.58462
1.16168
1.05713
0.992445
0.955144
0.821782
0.54441
TiUm75
Concentration
TiUm75 TOS #97
TiUm75 BOS #98
Concentration Ratio
TiUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
TOS
BOS
Cumulative Frequency (%)
TiUm75
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

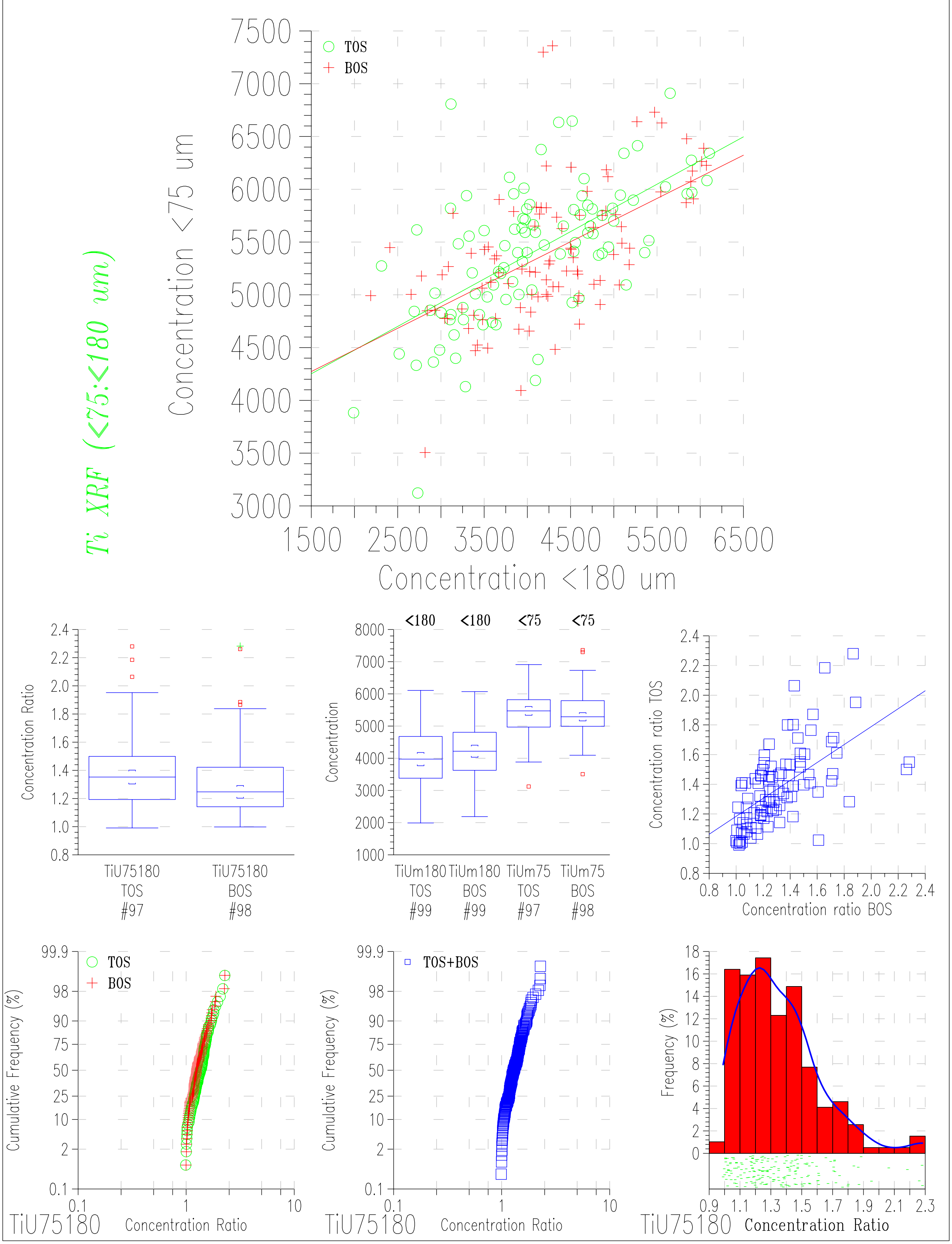
Top & Bottom Outlet Sediments (TOS & BOS)



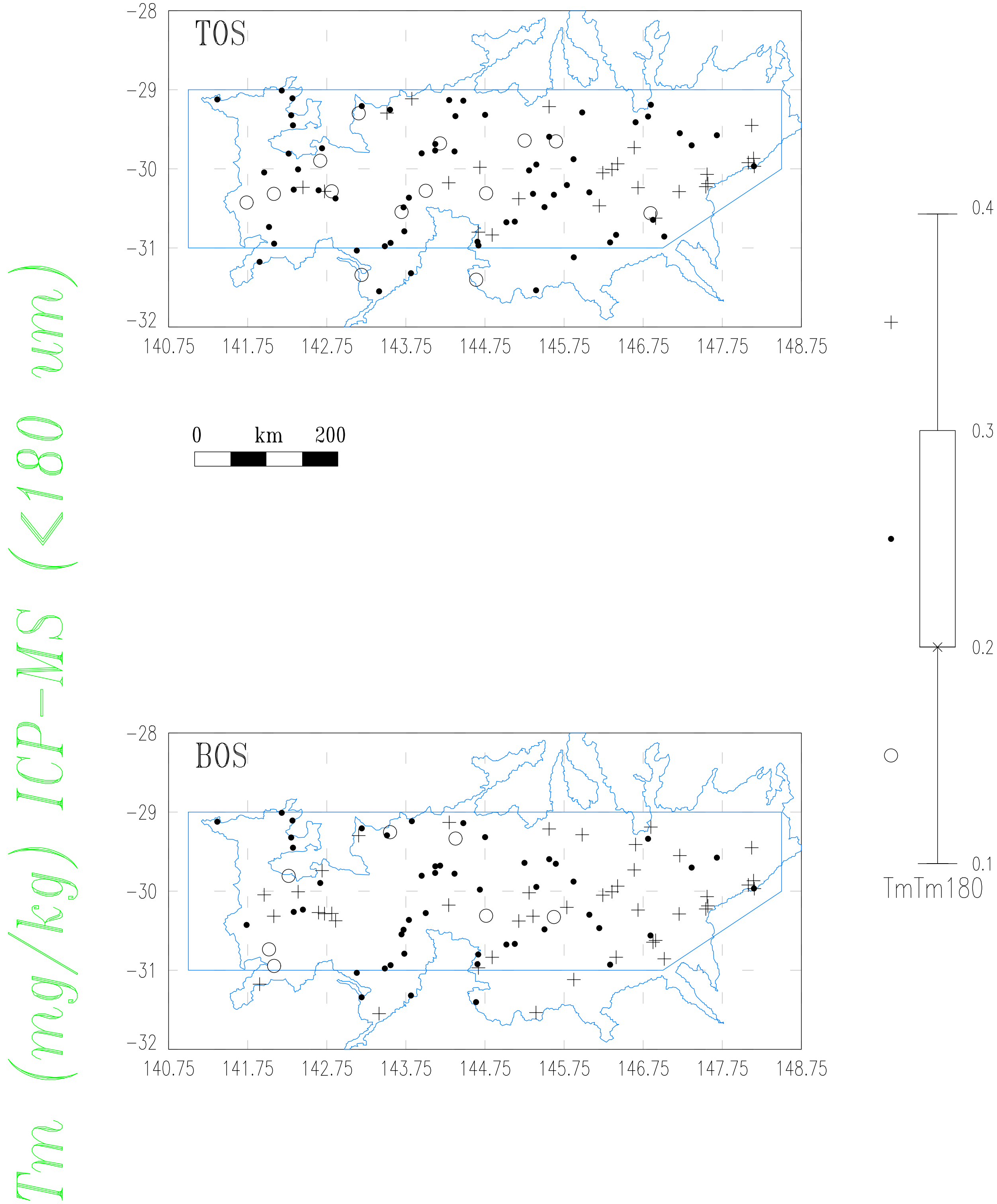
Ti XRF (<75:<180 um)

THOMSON GEOCHEMICAL SURVEY

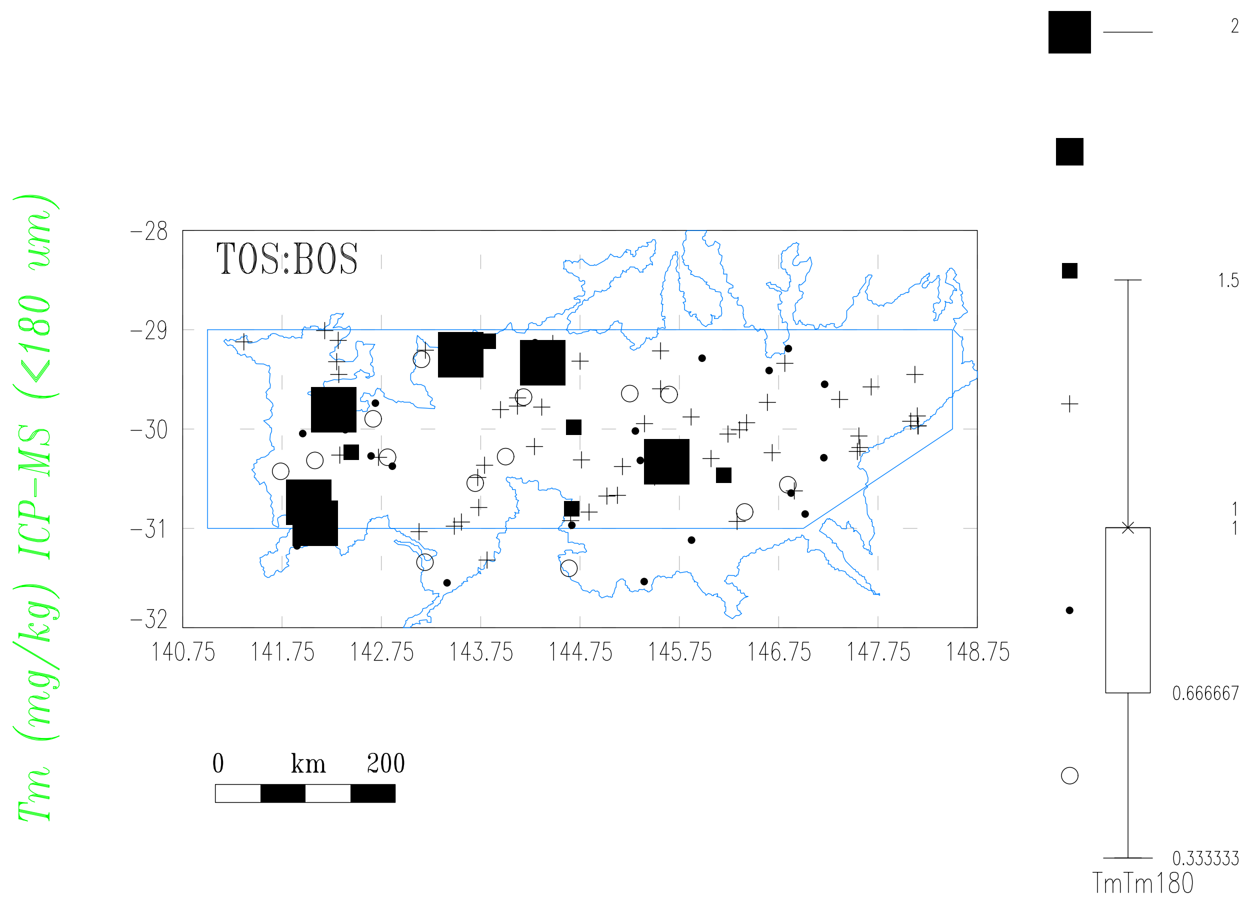
Top & Bottom Outlet Sediments (TOS & BOS)

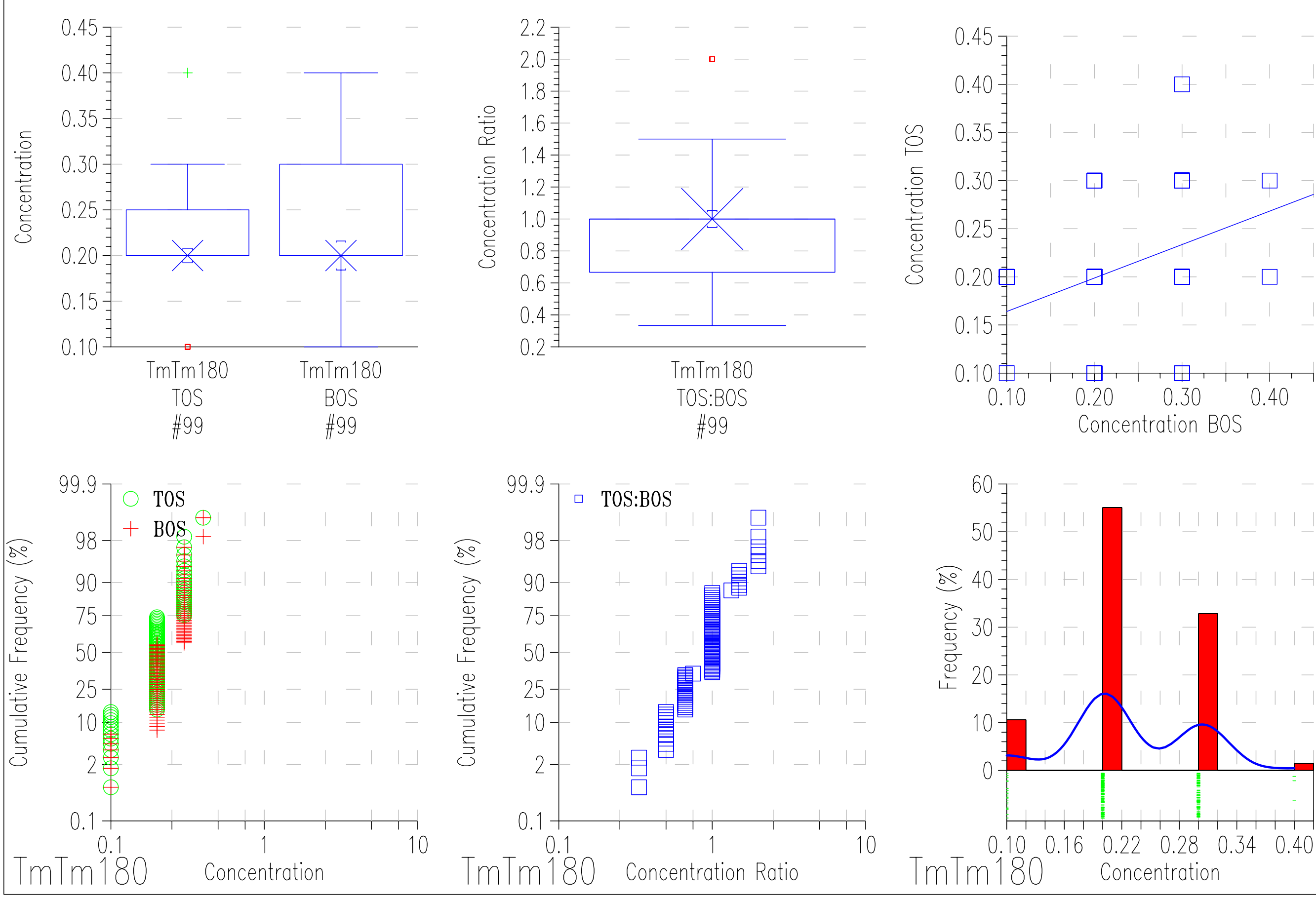


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

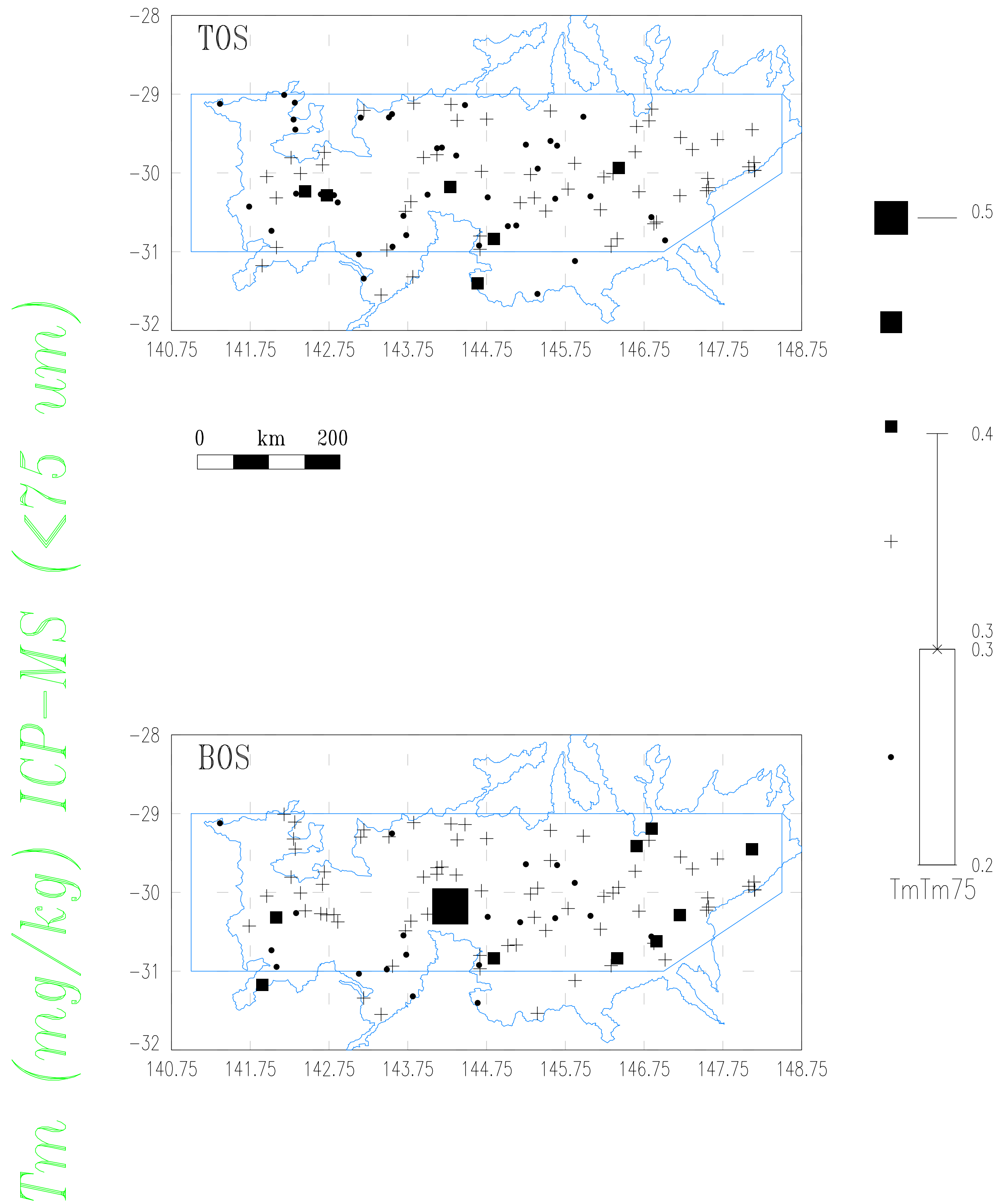


THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

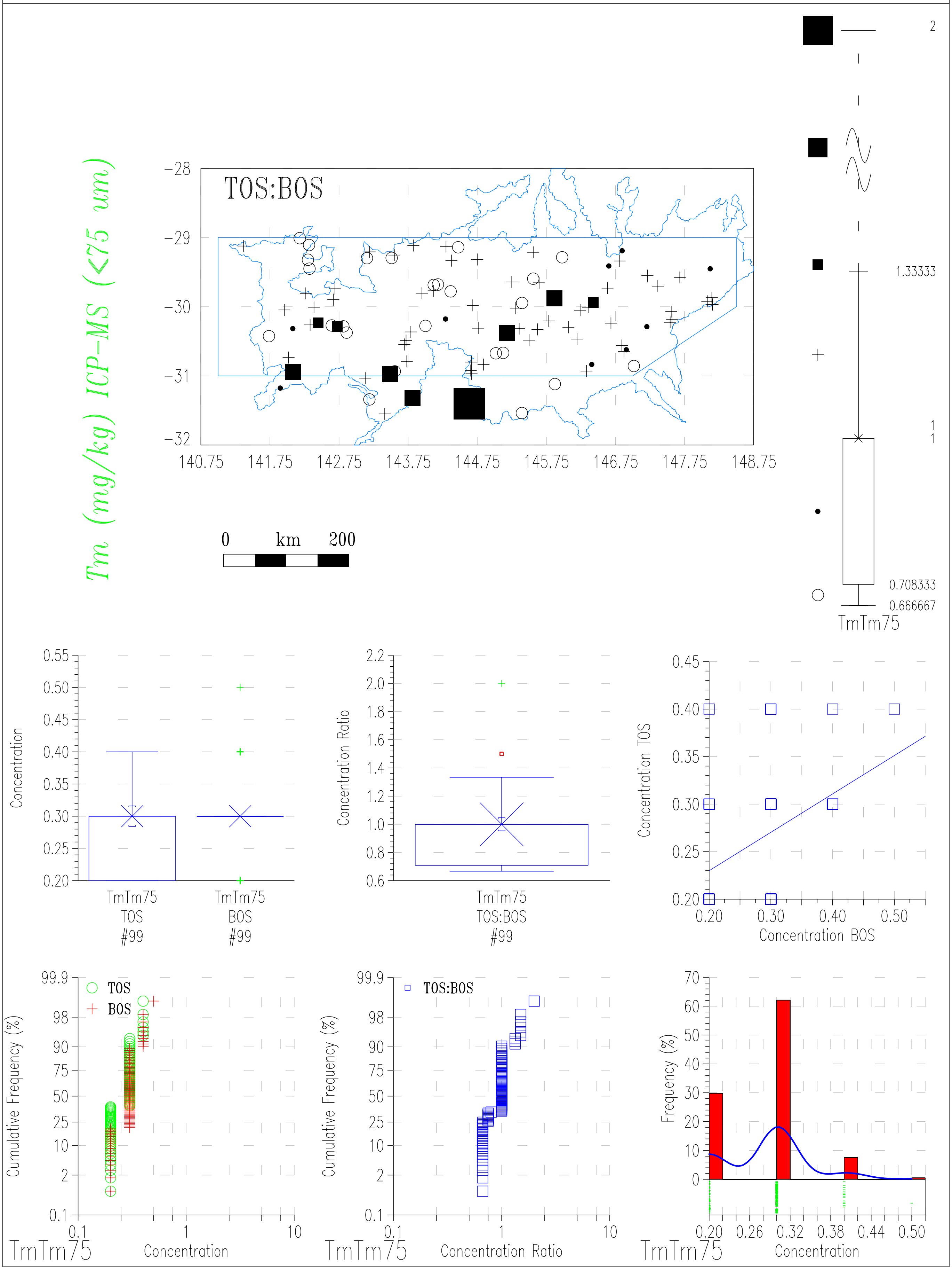




THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

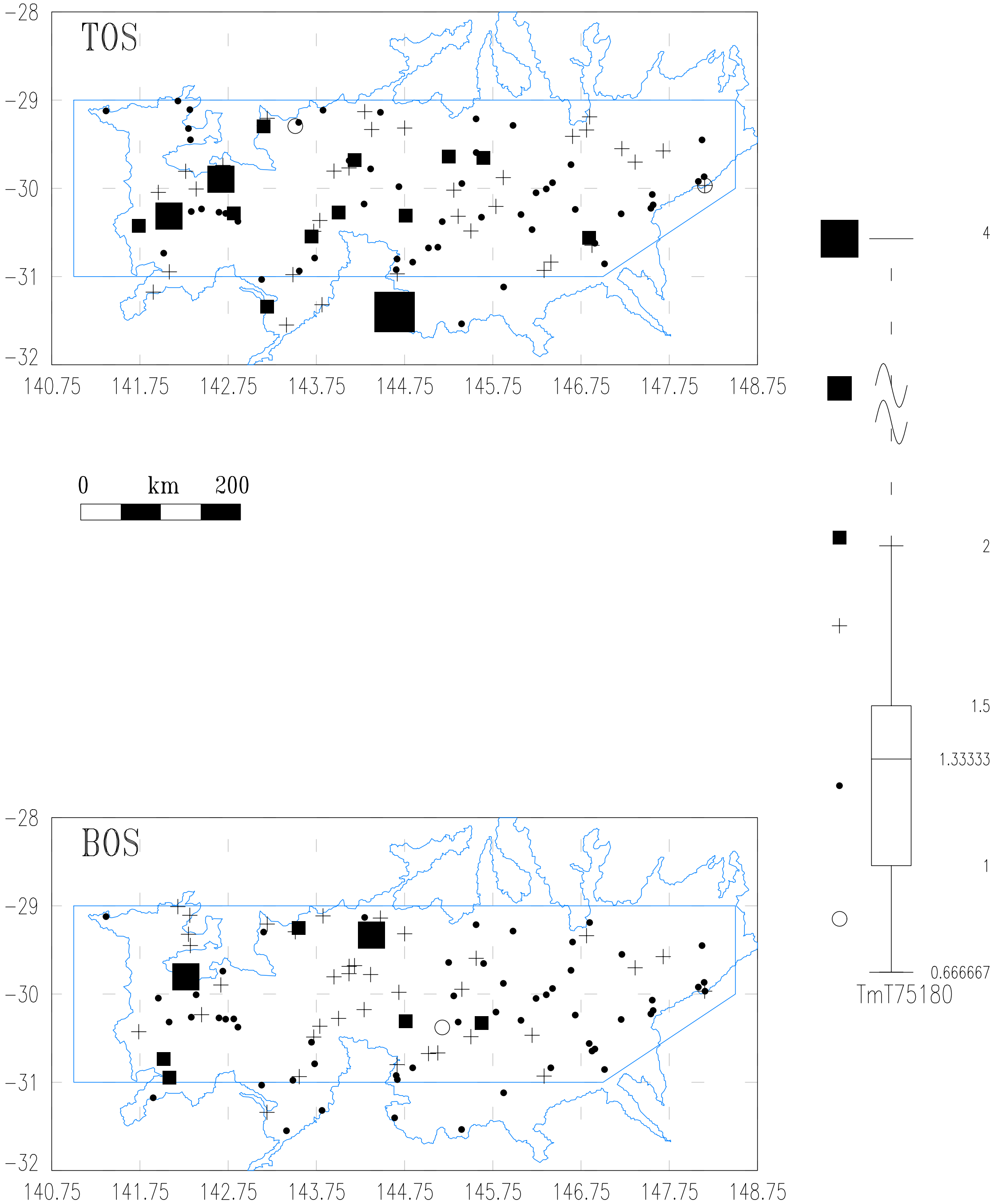


THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

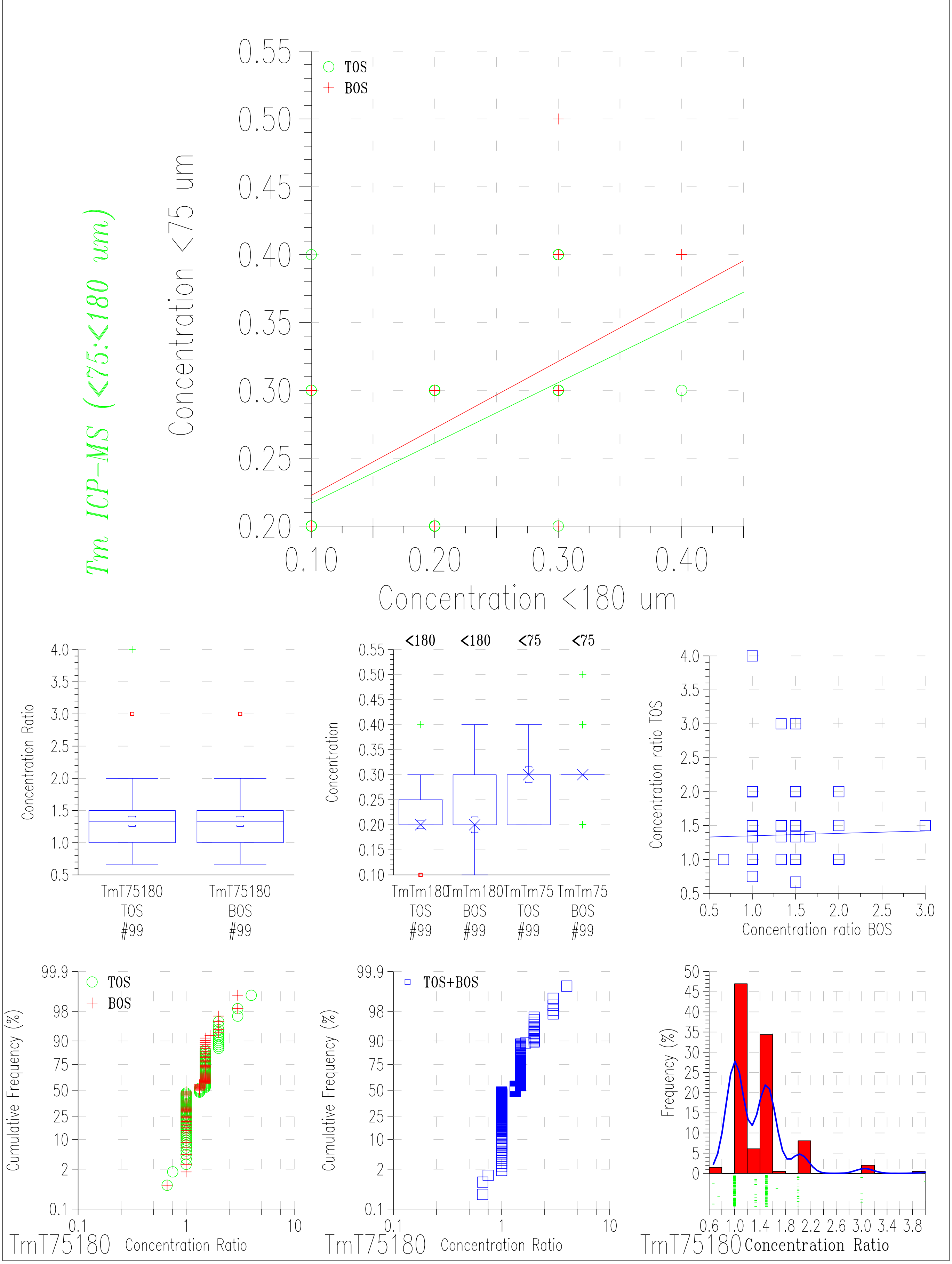


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*

Tm ICP-MS (<75:<180 um)

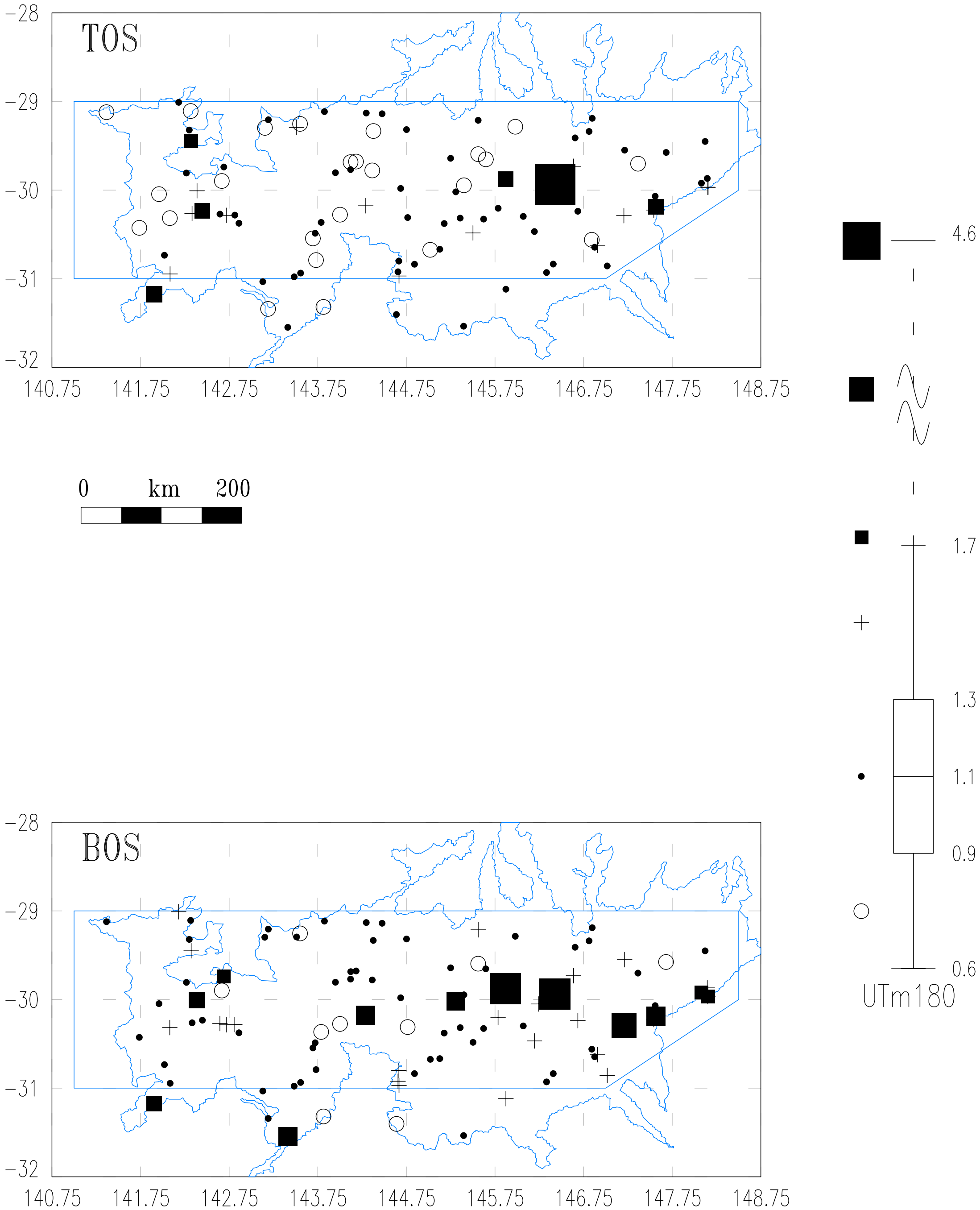


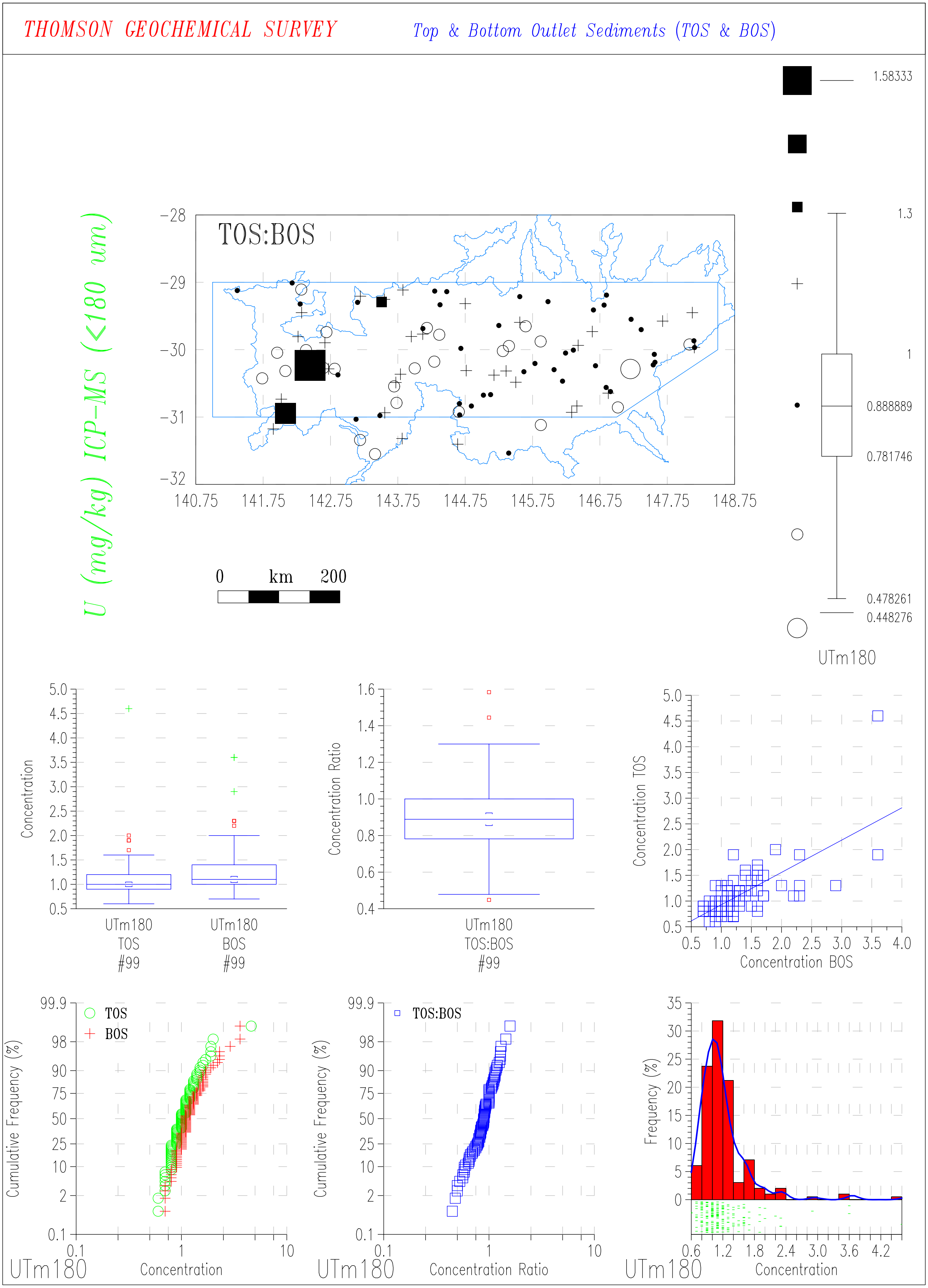
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

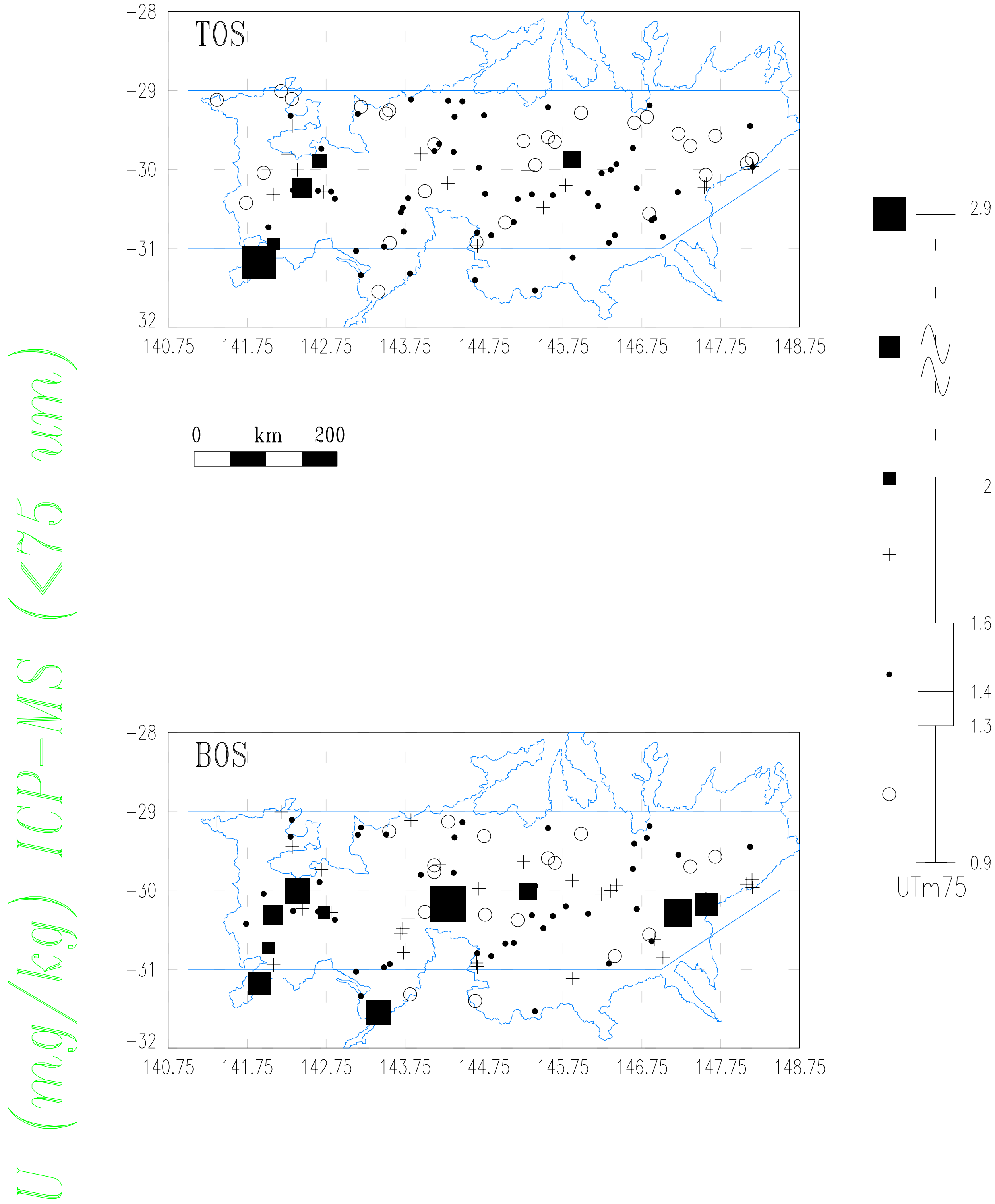
U (mg/kg) ICP-MS (<180 um)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
U (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.58333
1.3
1
0.888889
0.781746
0.478261
0.448276
UTm180
Concentration
UTm180 TOS #99
UTm180 BOS #99
Concentration Ratio
UTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)

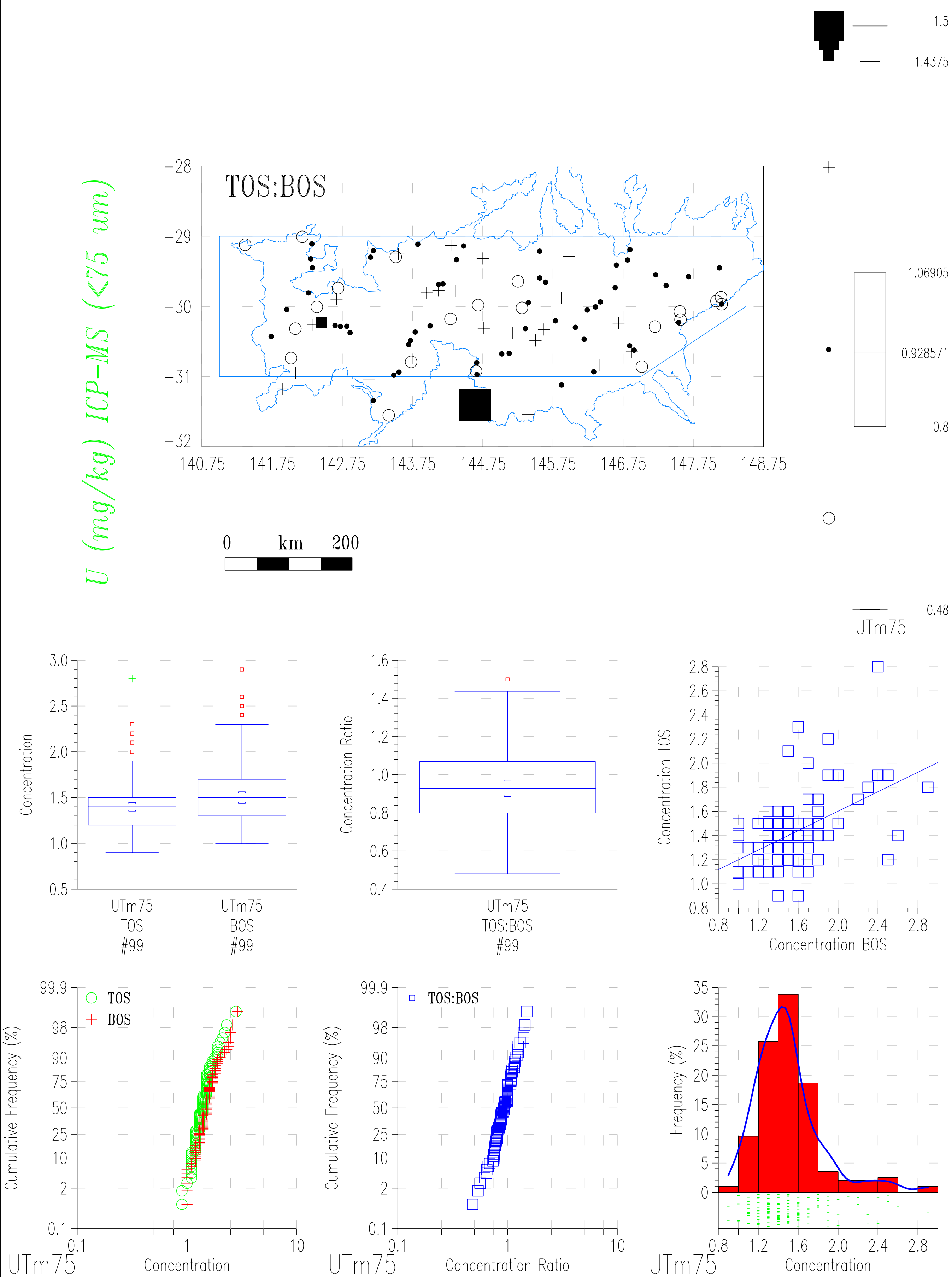
THOMSON GEOCHEMICAL SURVEY

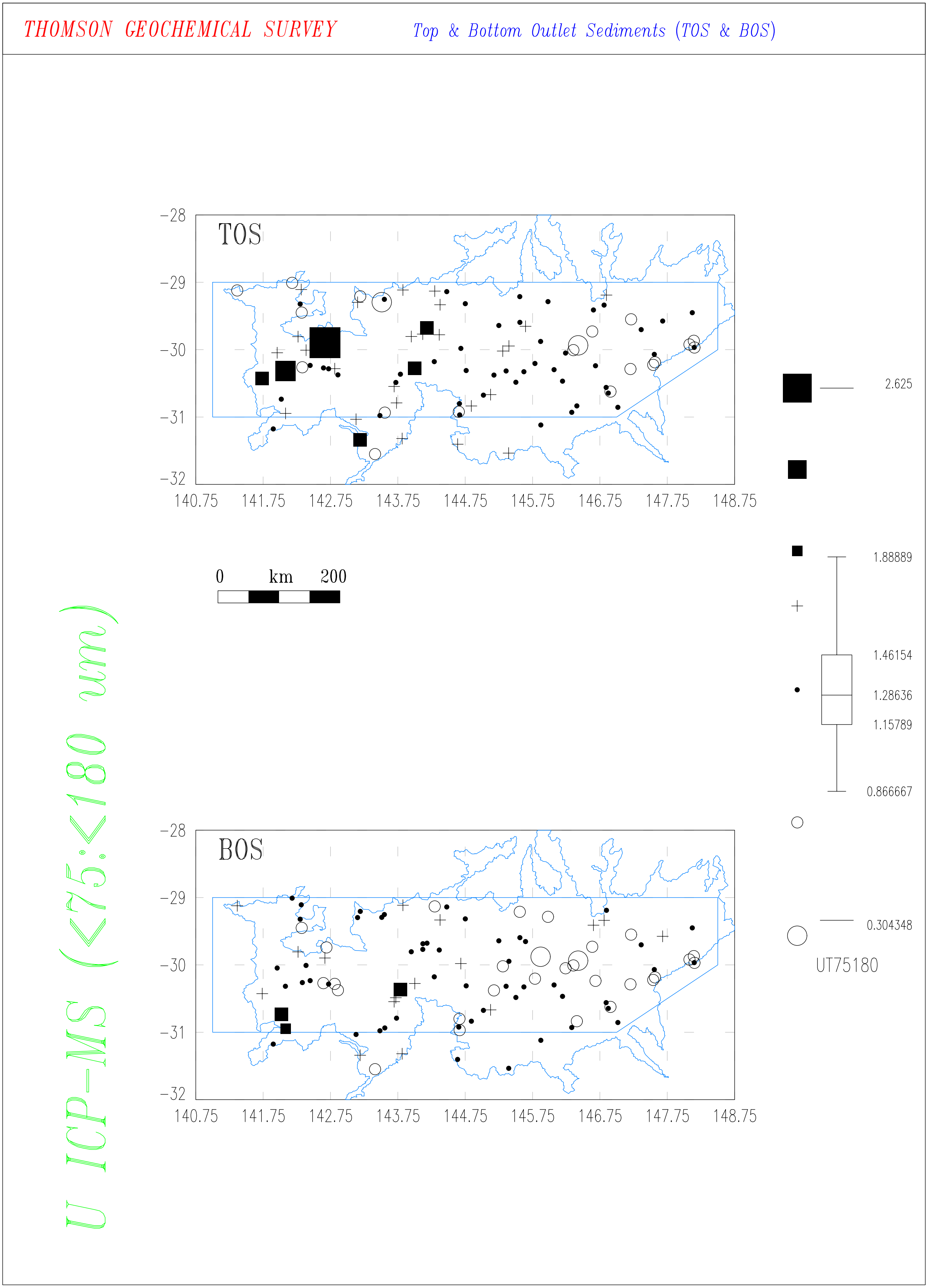
Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

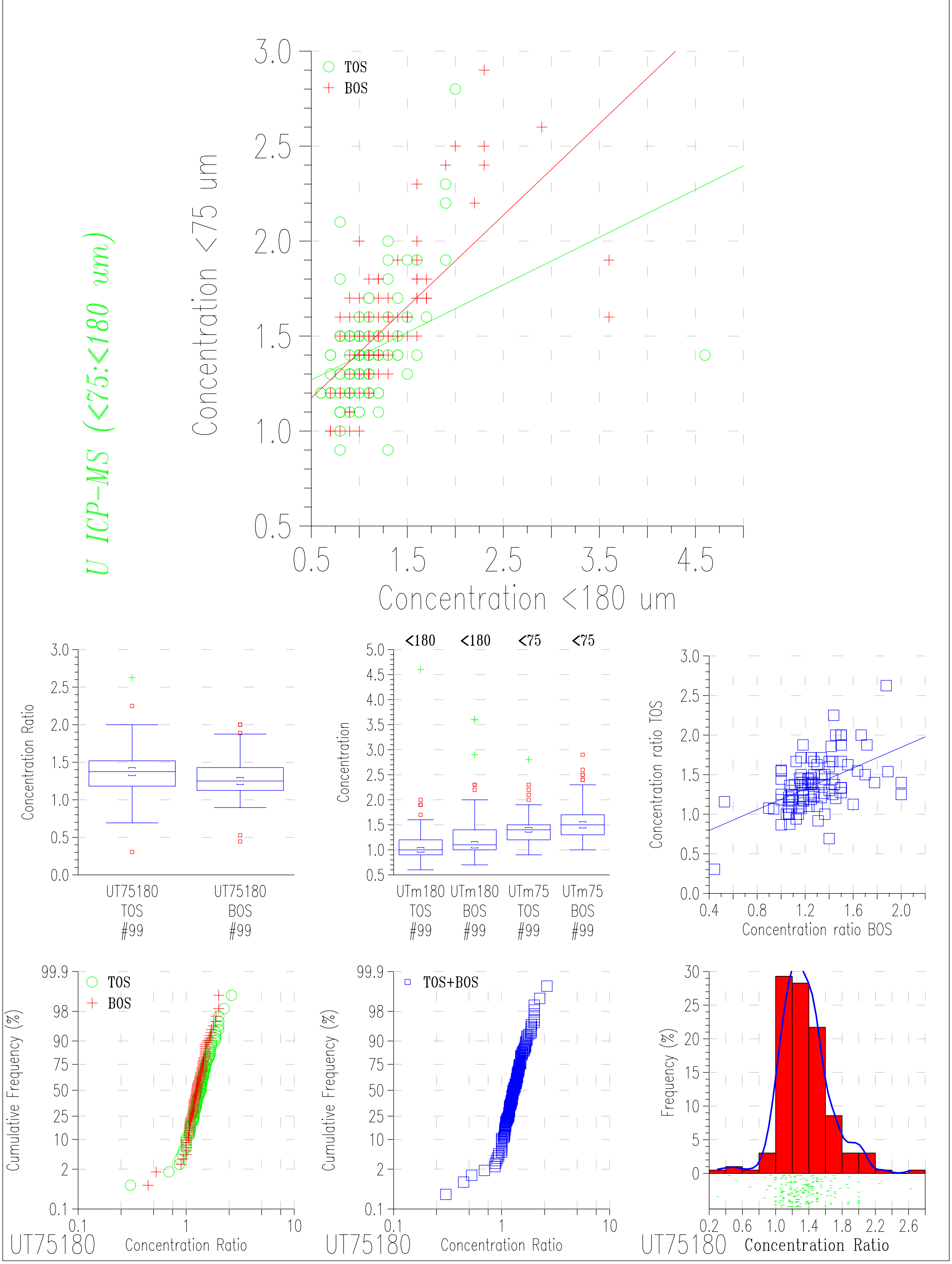
Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
2.625
1.88889
1.46154
1.28636
1.15789
0.866667
0.304348
UT75180
U ICP-MS (<75:<180 um)

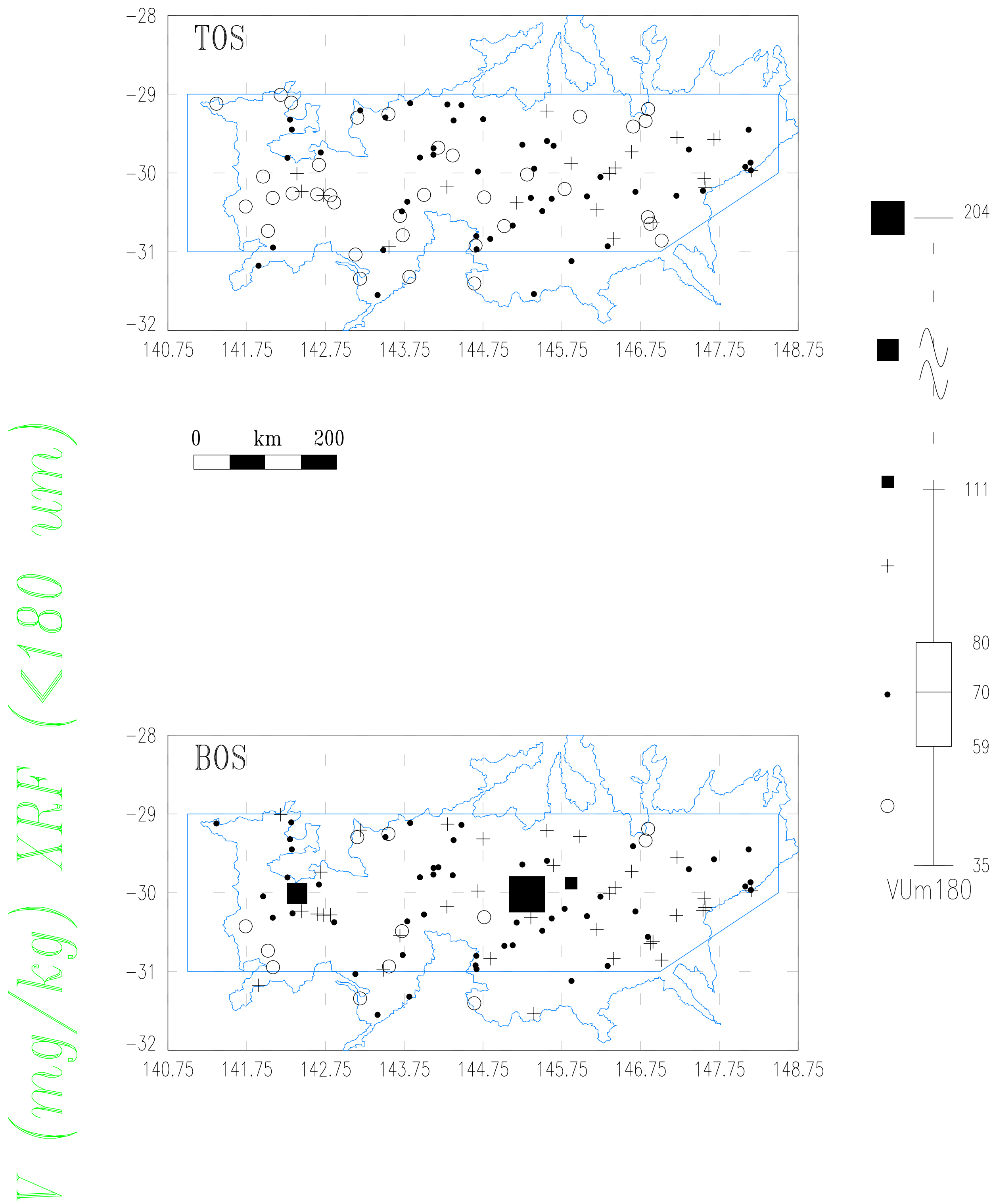
THOMSON GEOCHEMICAL SURVEY

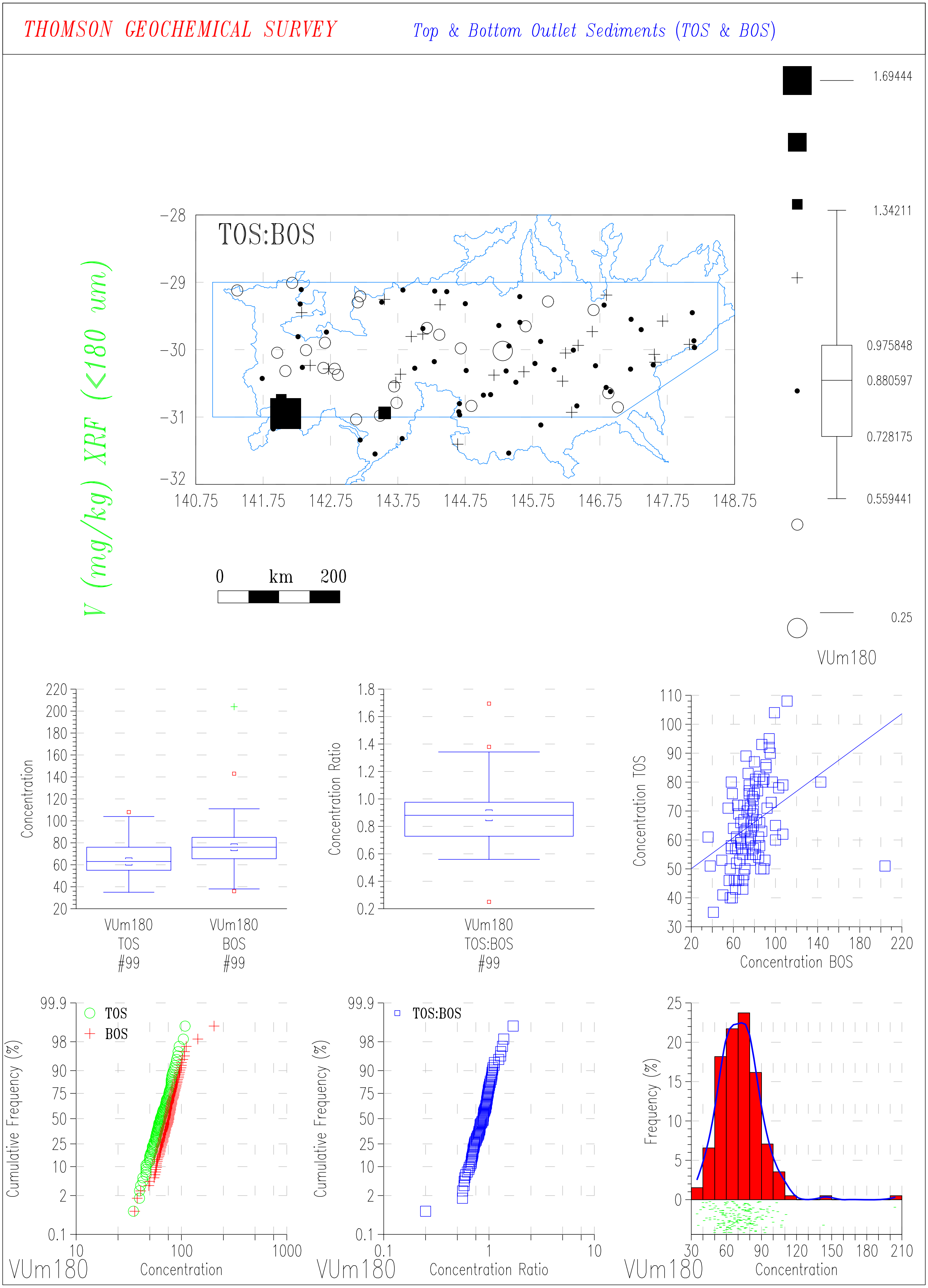
Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)

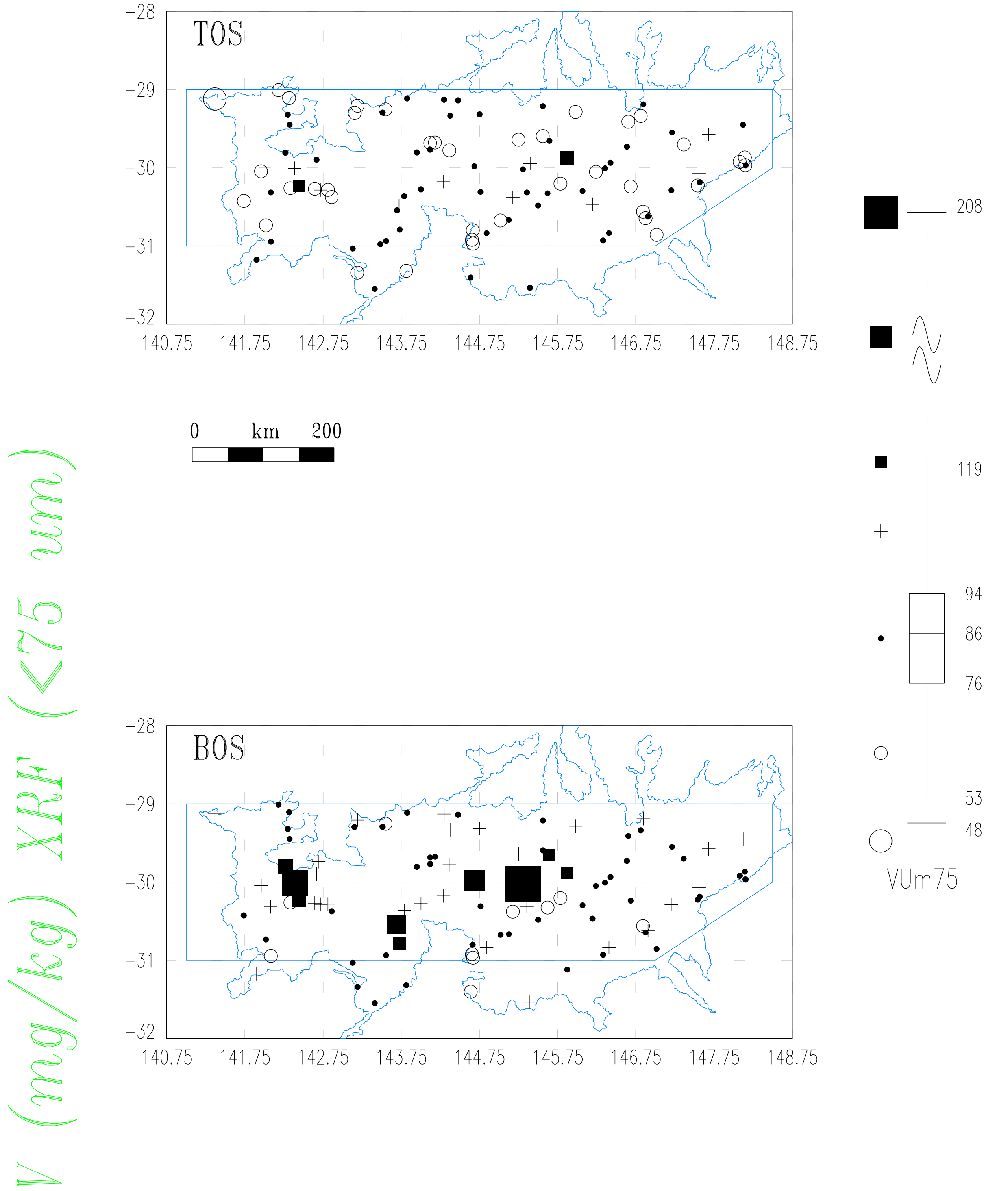


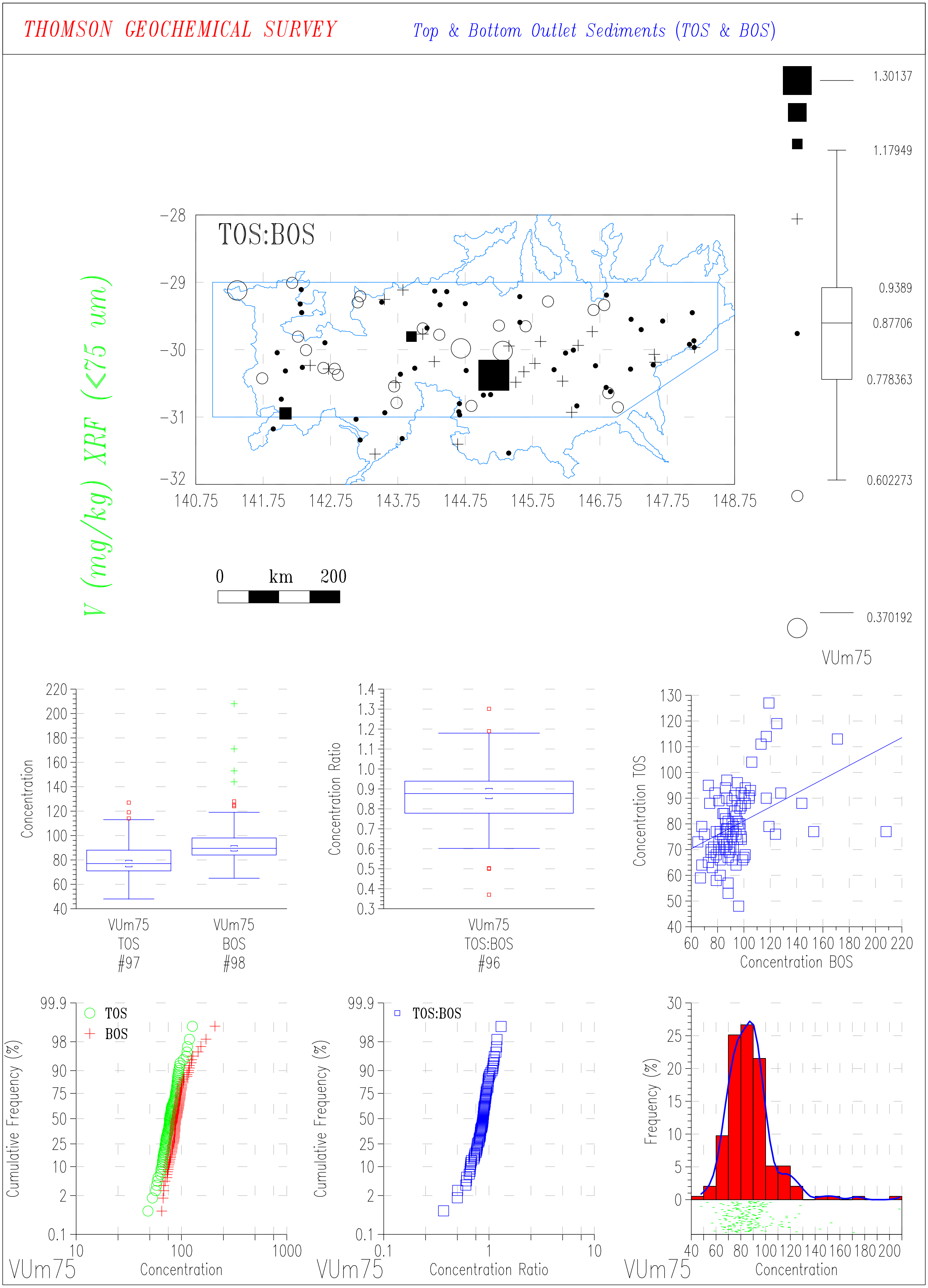


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
V (mg/kg) XRF (<180 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
1.69444
1.34211
0.975848
0.880597
0.728175
0.559441
0.25
VUm180
Concentration
VUm180 TOS #99
VUm180 BOS #99
Concentration Ratio
VUm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)

THOMSON GEOCHEMICAL SURVEY

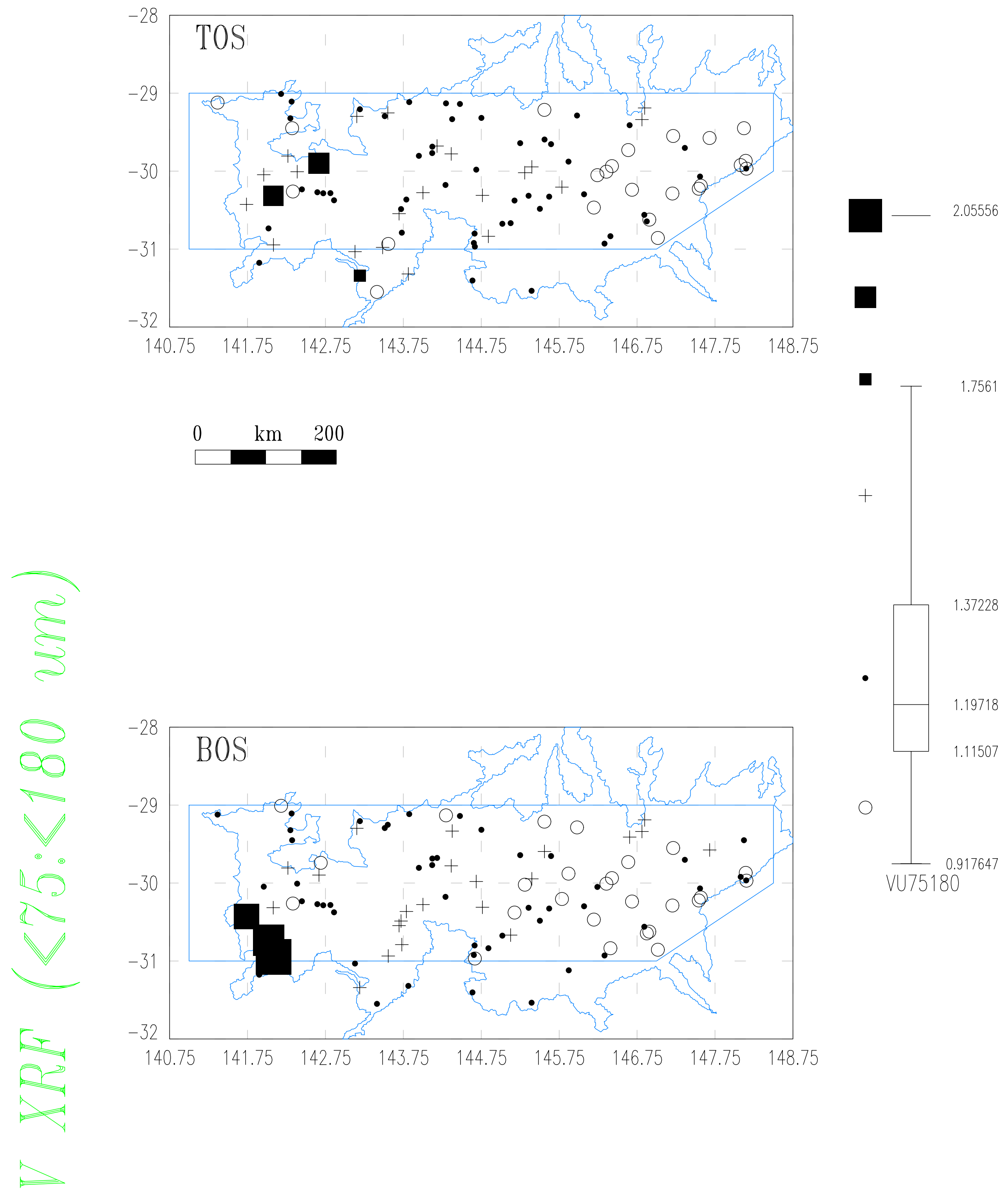
Top & Bottom Outlet Sediments (TOS & BOS)

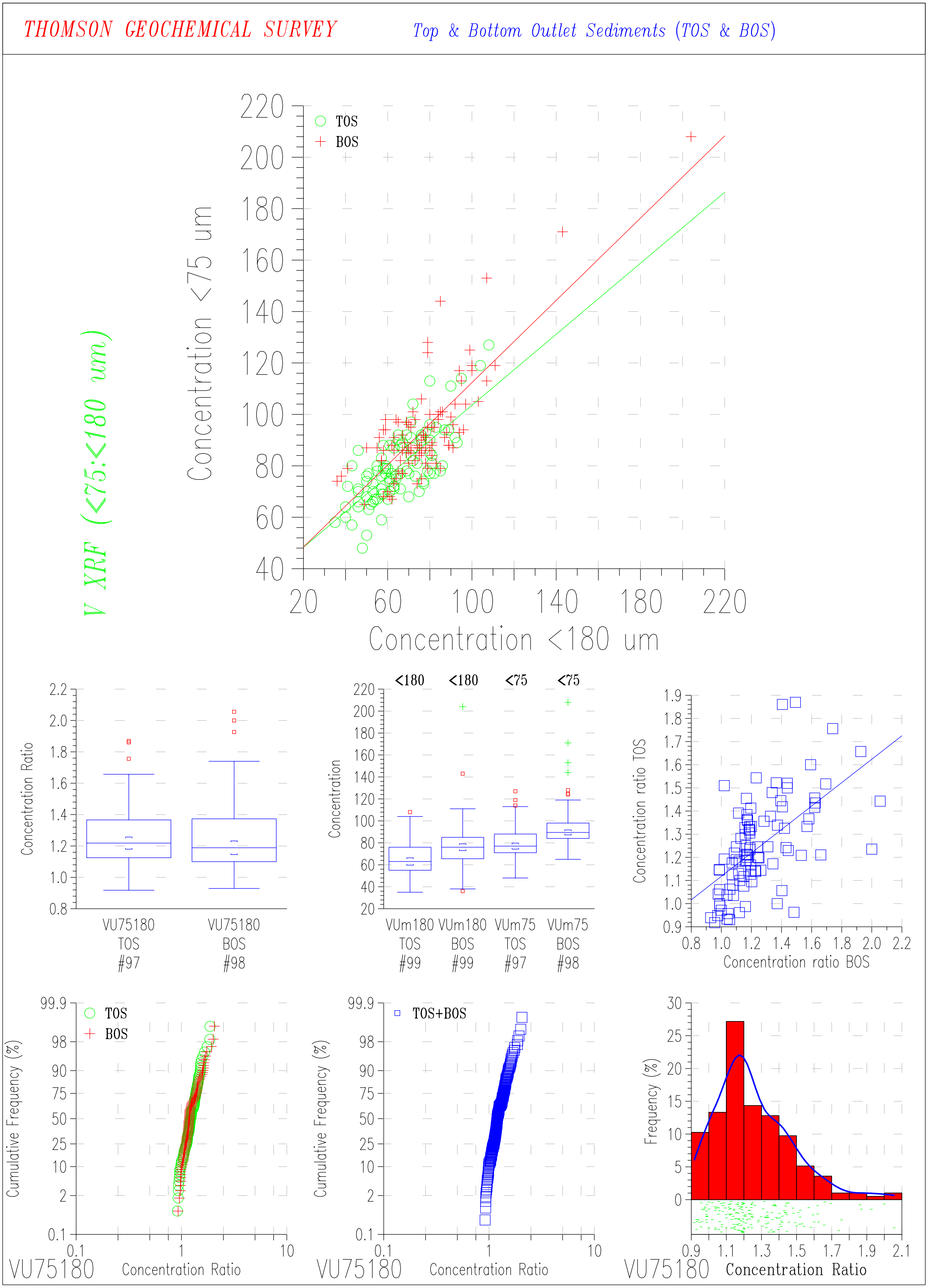



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
V (mg/kg) XRF (<75 um)
TOS:BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
1.30137
1.17949
0.9389
0.87706
0.778363
0.602273
0.370192
VUm75
Concentration
VUm75 TOS #97
VUm75 BOS #98
Concentration Ratio
VUm75 TOS:BOS #96
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration
VUm75
VUm75
VUm75

THOMSON GEOCHEMICAL SURVEY

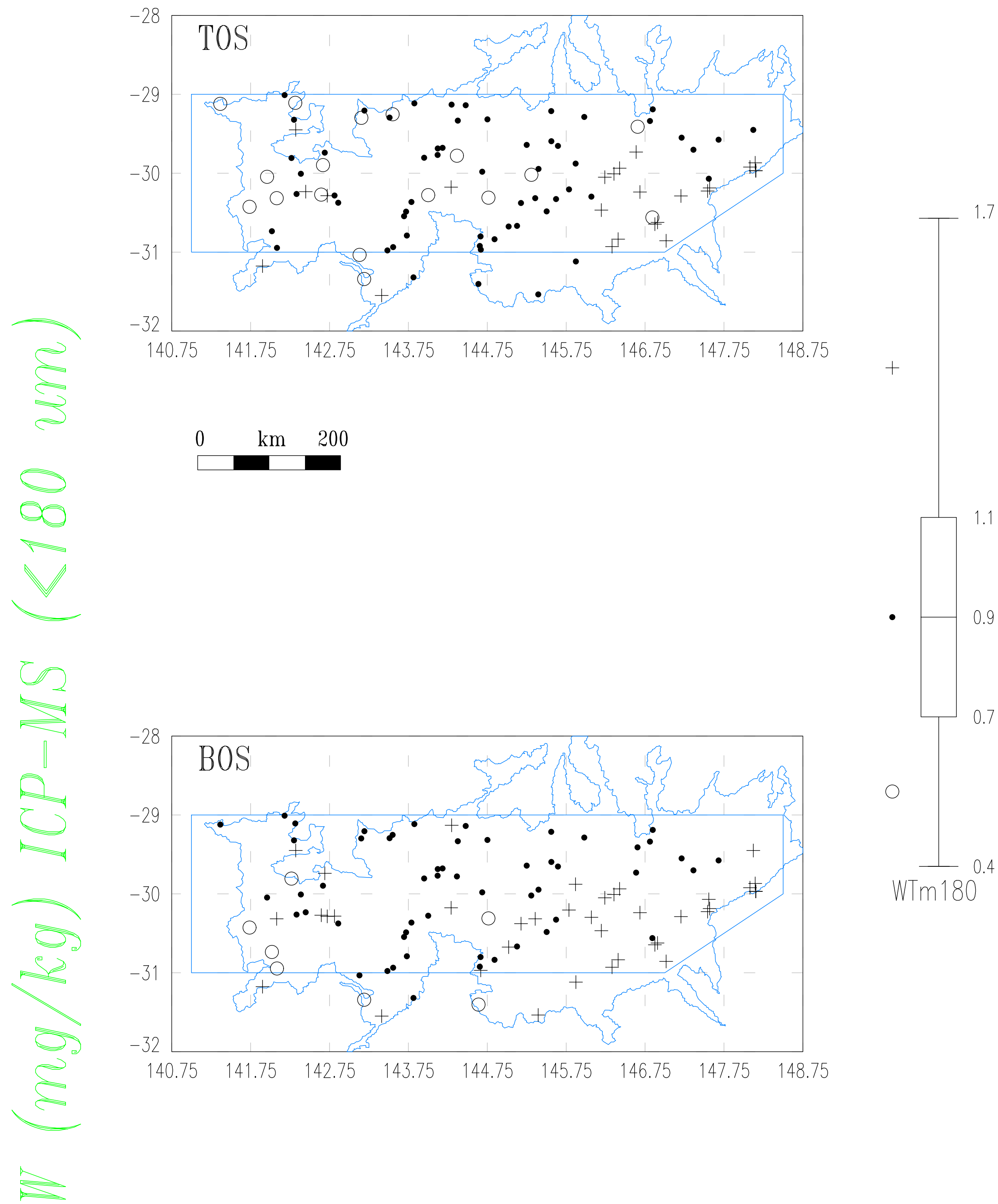
Top & Bottom Outlet Sediments (TOS & BOS)



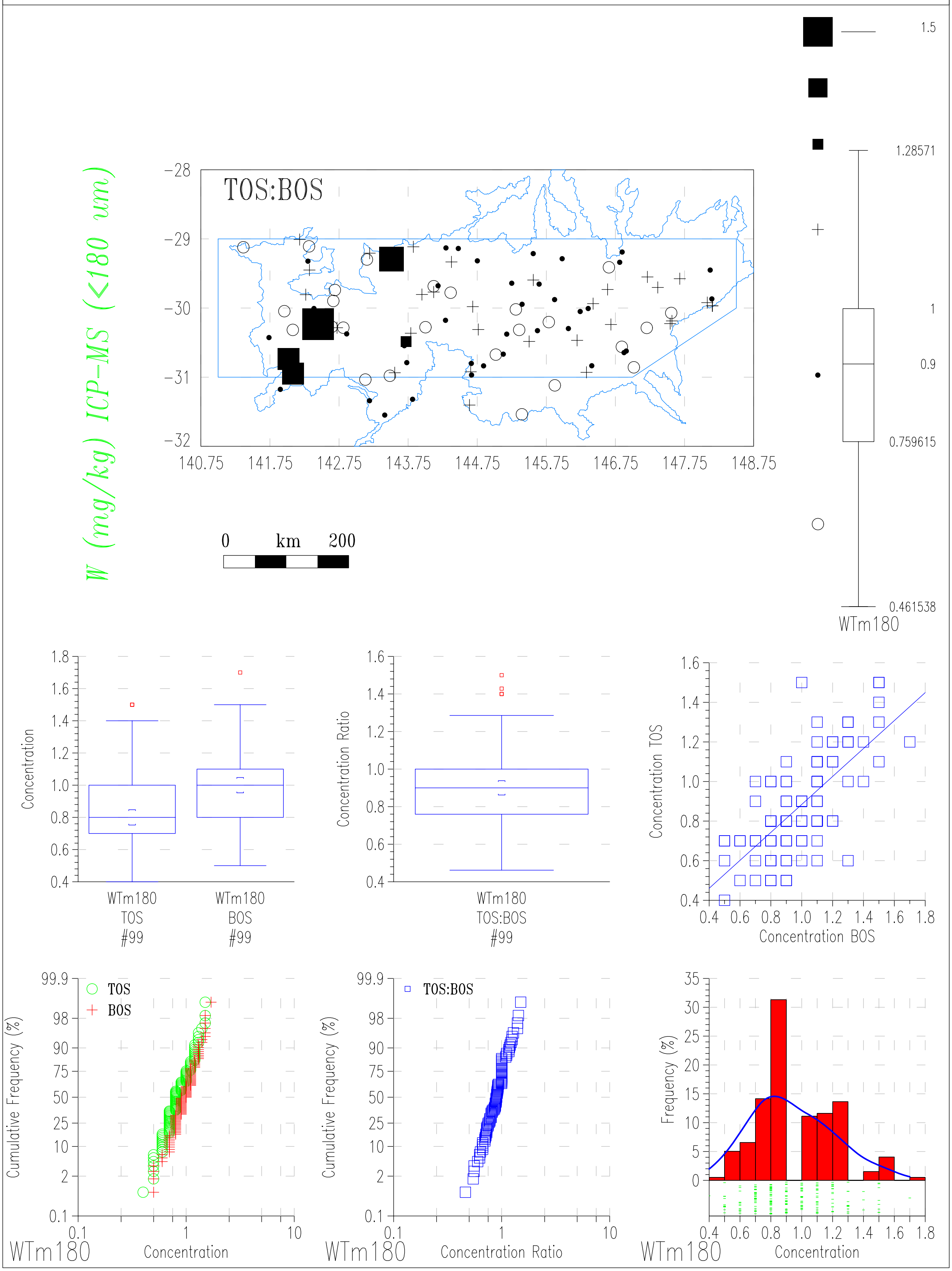

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
V XRF (<75:<180 um)
TOS
BOS
Concentration <75 um
Concentration <180 um
Concentration Ratio
VU75180 TOS #97
VU75180 BOS #98
Concentration
<180 <180 <75 <75
VUm180 TOS #99
VUm180 BOS #99
VUm75 TOS #97
VUm75 BOS #98
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
VU75180 Concentration Ratio

THOMSON GEOCHEMICAL SURVEY

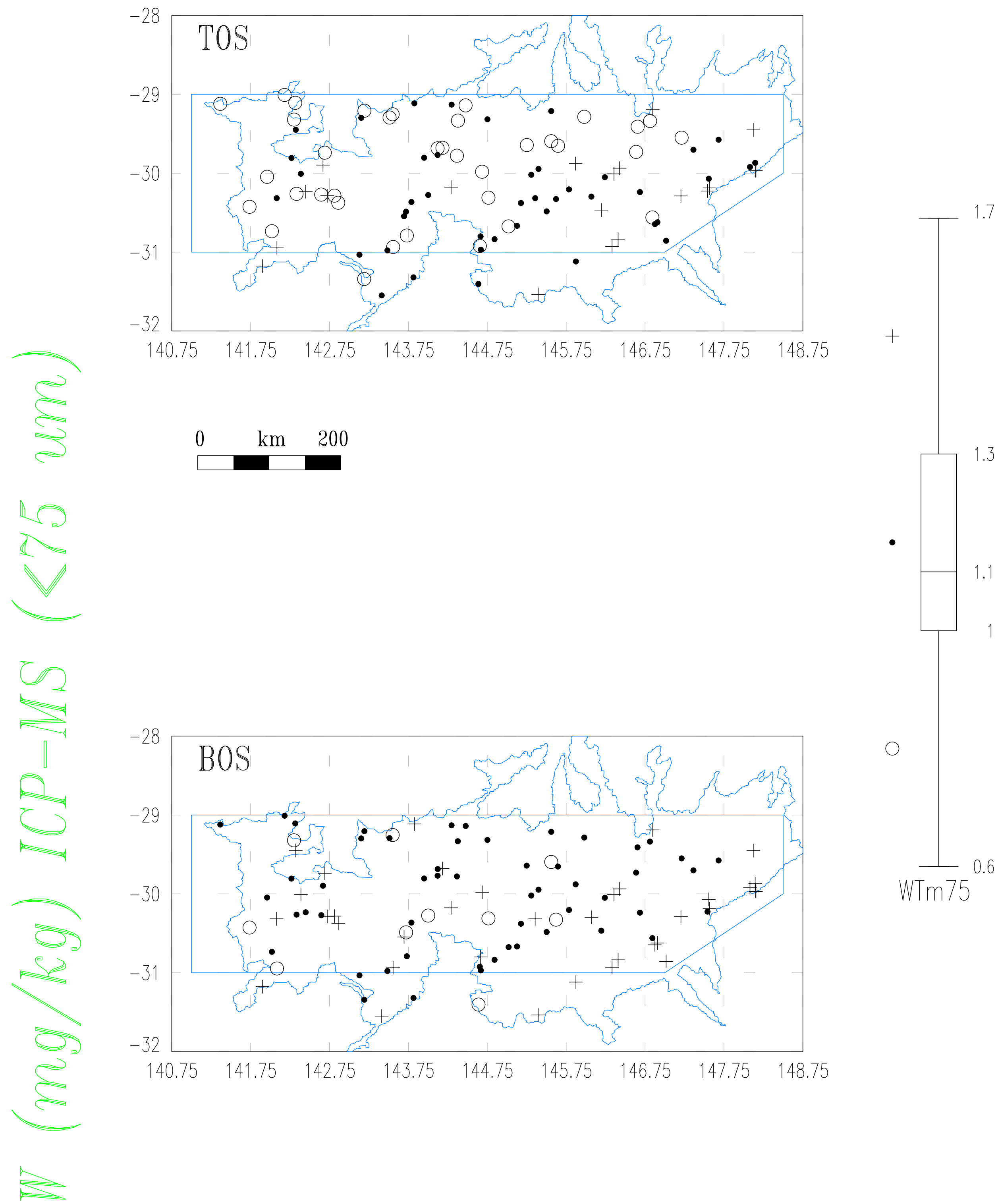
Top & Bottom Outlet Sediments (TOS & BOS)

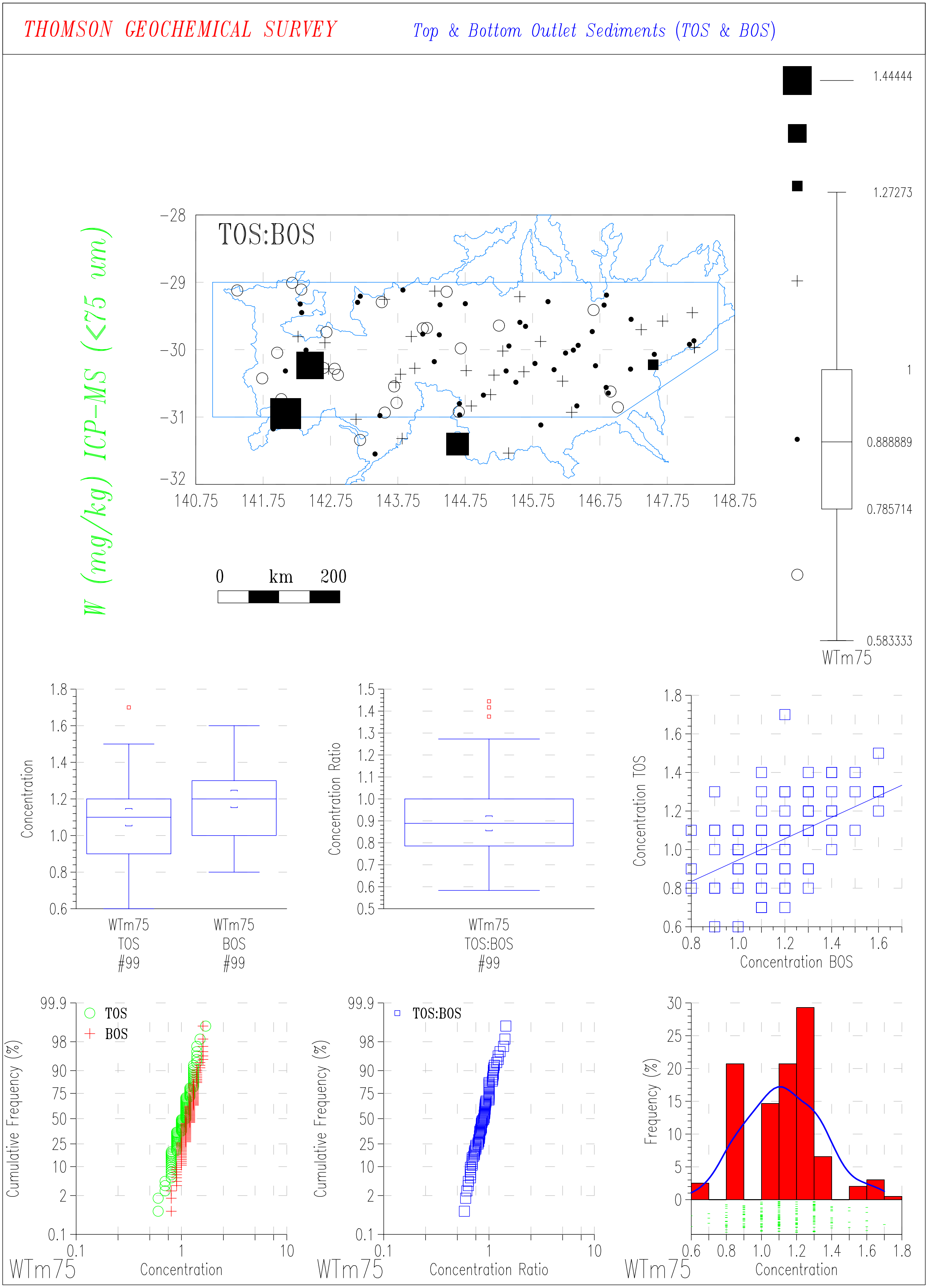


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



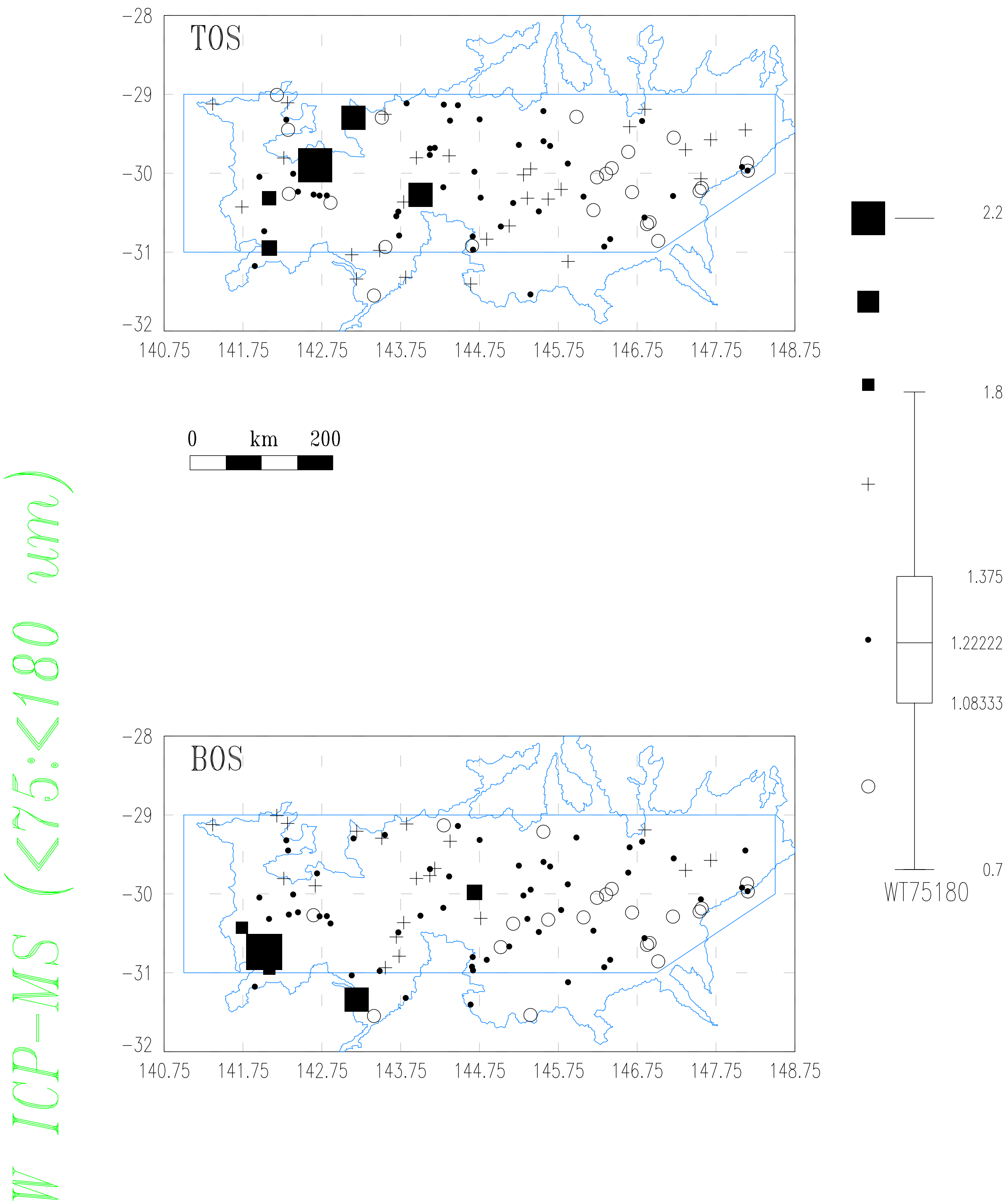
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



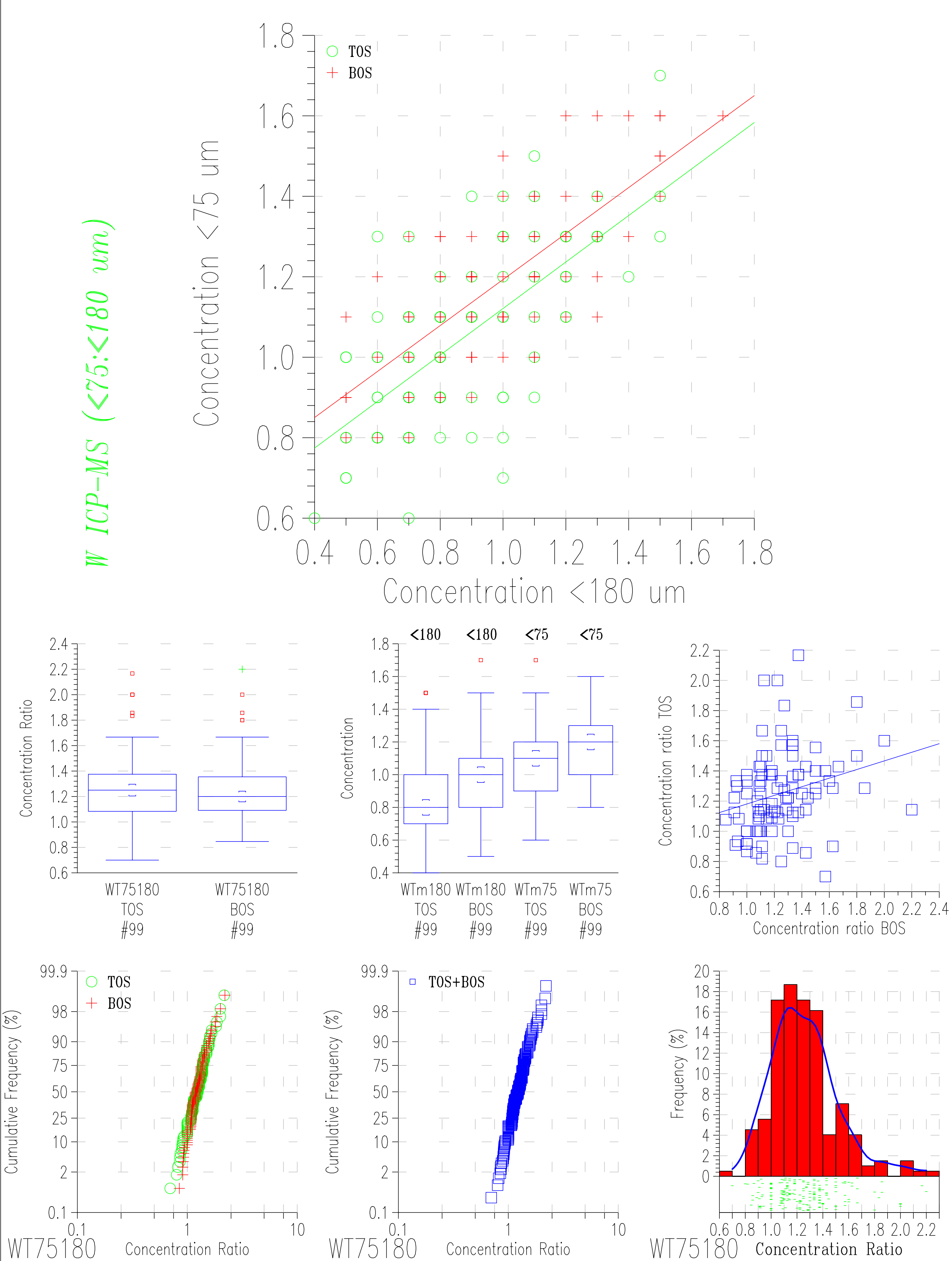

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
W (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.44444
1.27273
1
0.888889
0.785714
0.583333
WTm75
Concentration
WTm75 TOS #99
WTm75 BOS #99
Concentration Ratio
WTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)
Concentration

THOMSON GEOCHEMICAL SURVEY

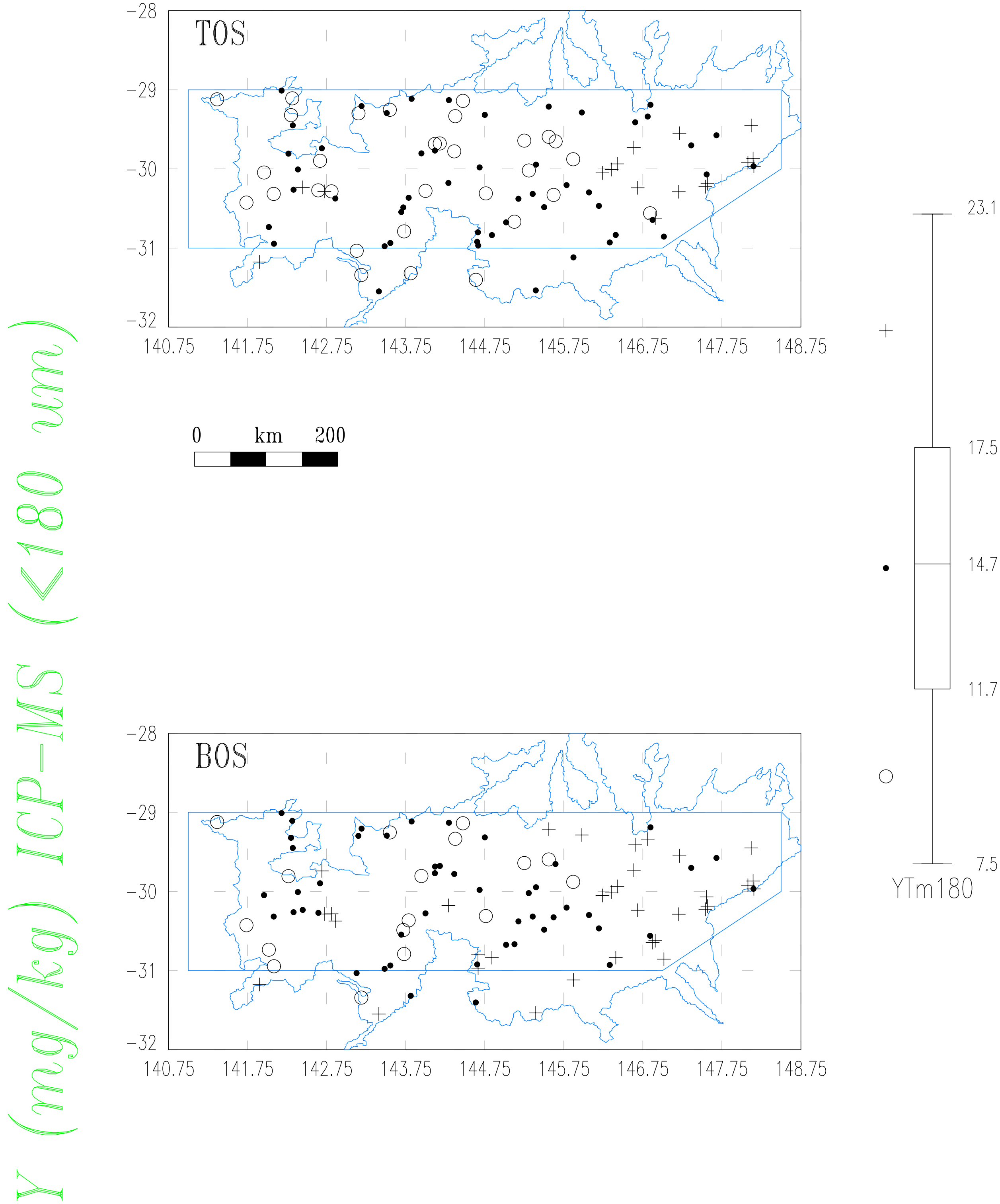
Top & Bottom Outlet Sediments (TOS & BOS)



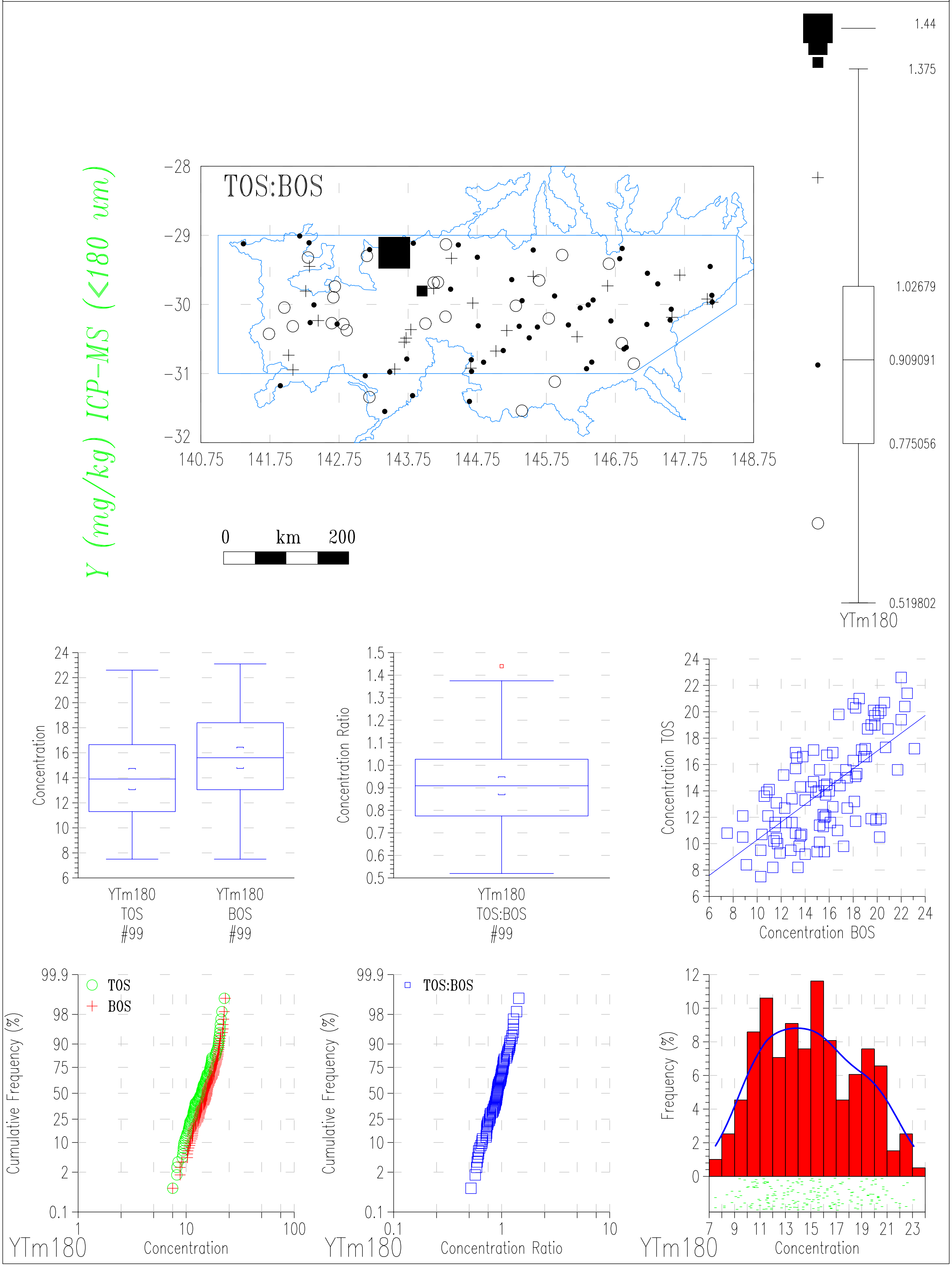
THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*



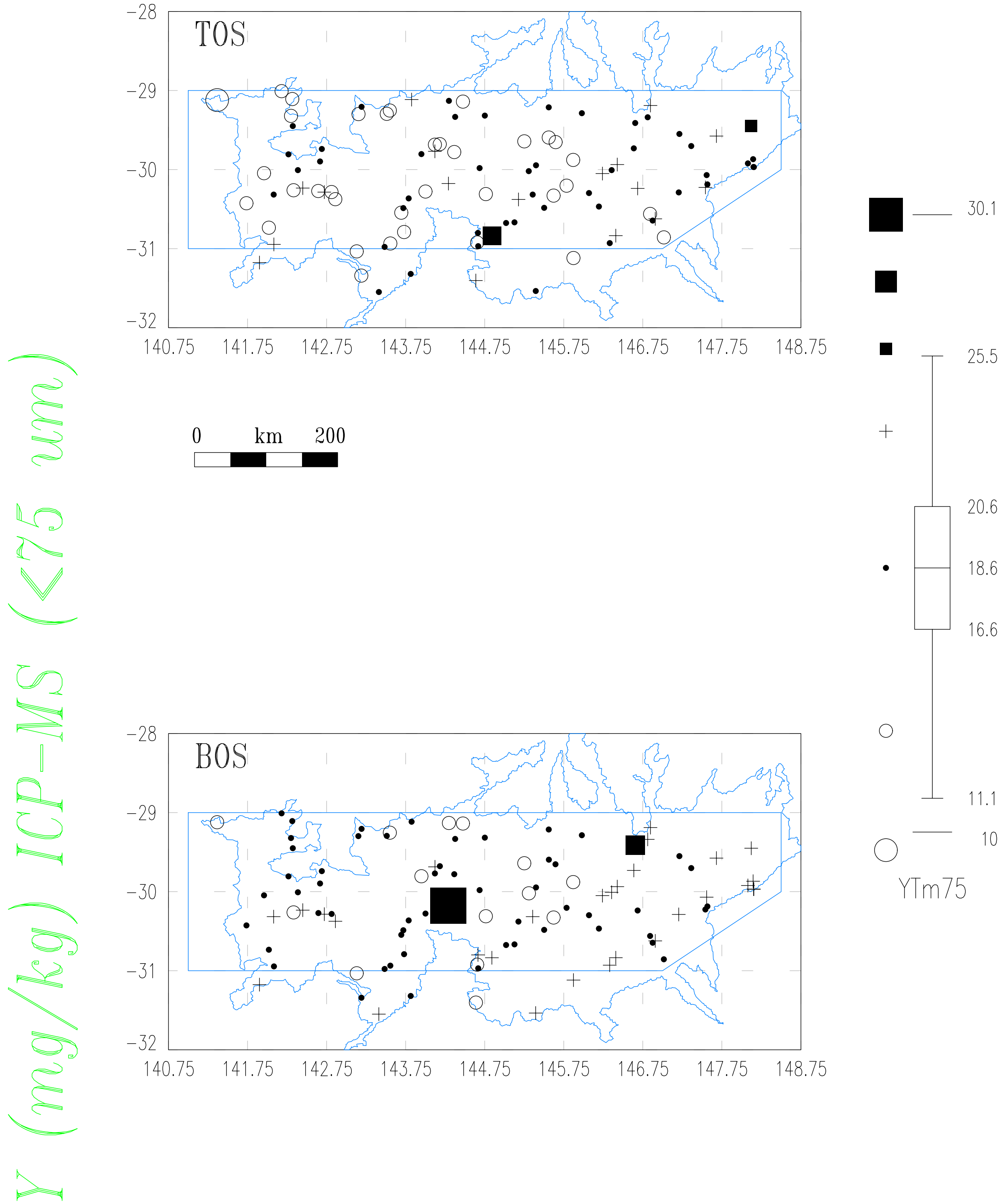
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)



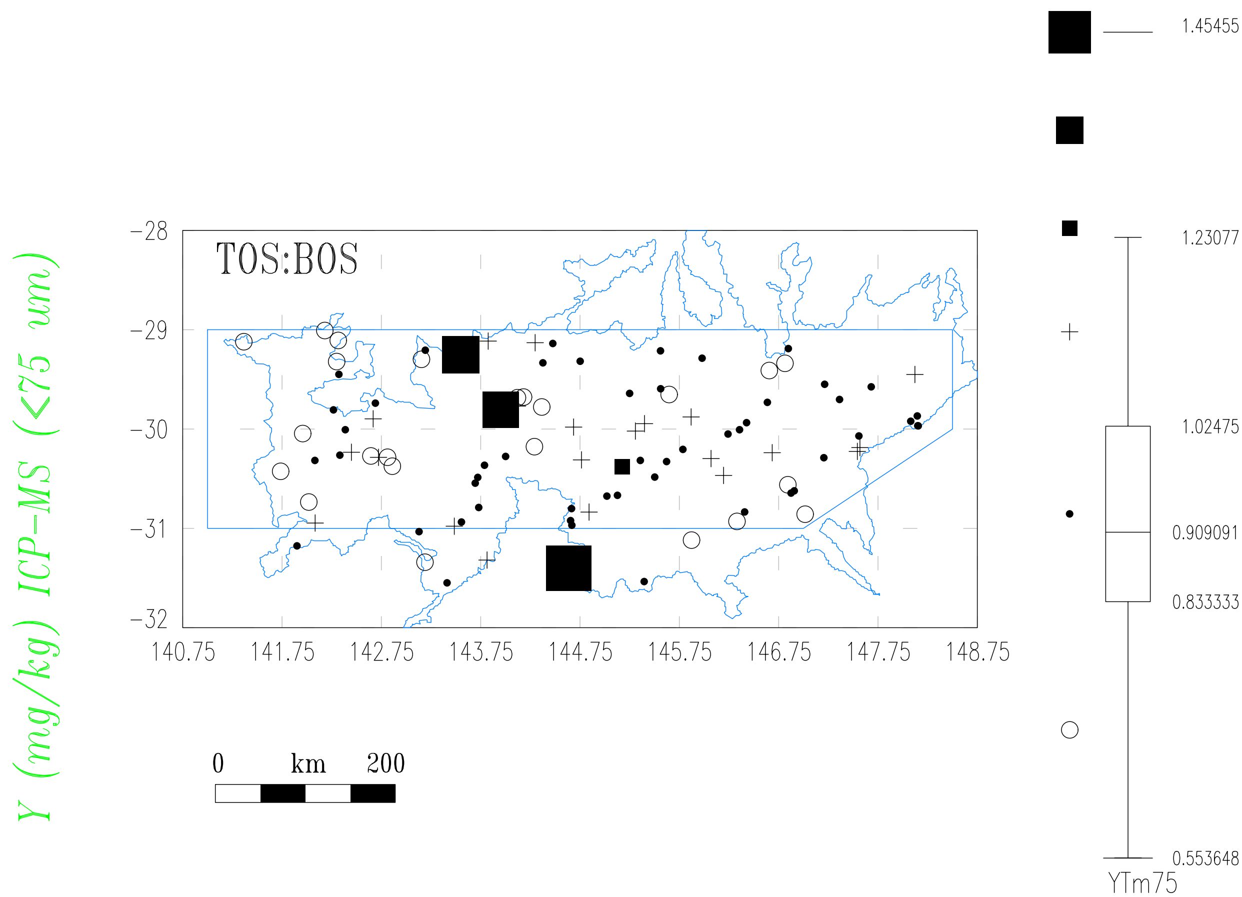
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

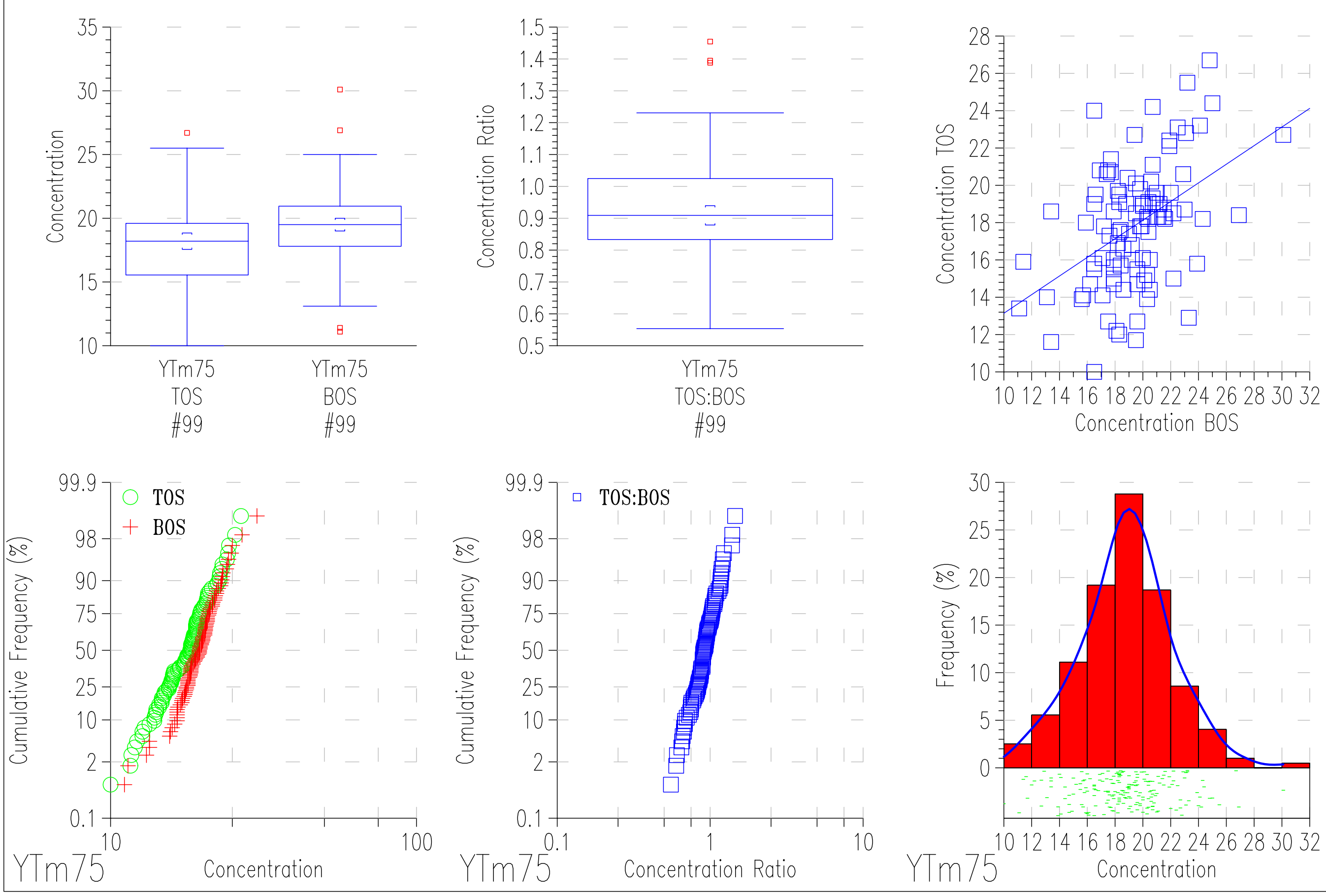


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

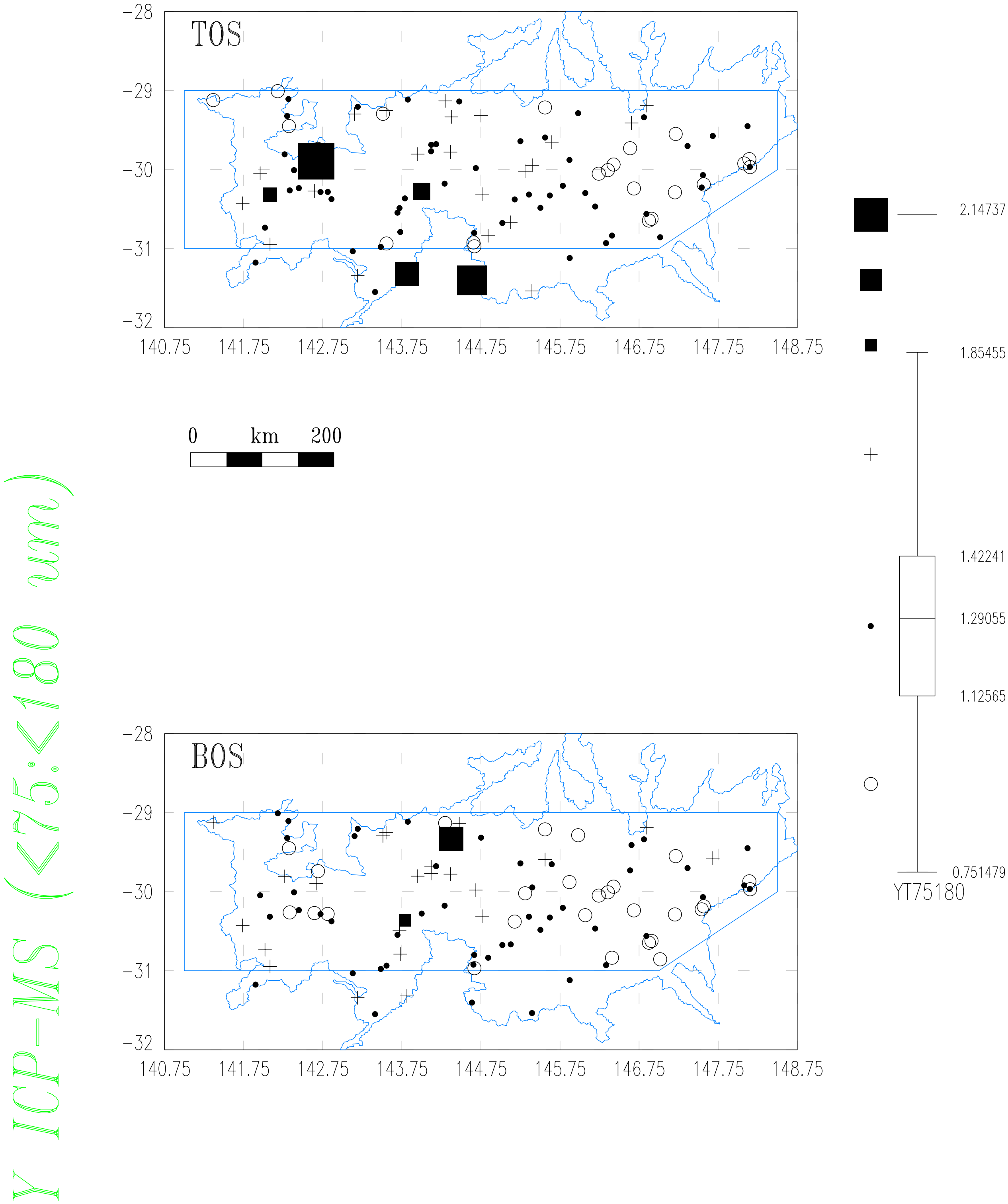


THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



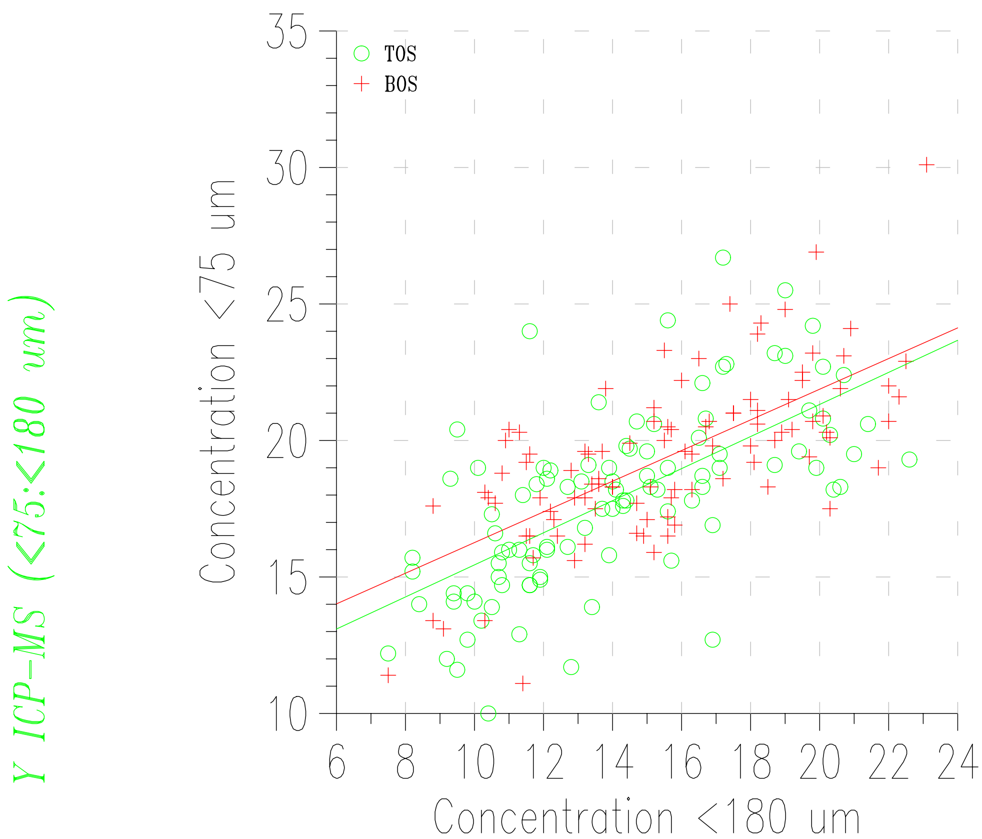


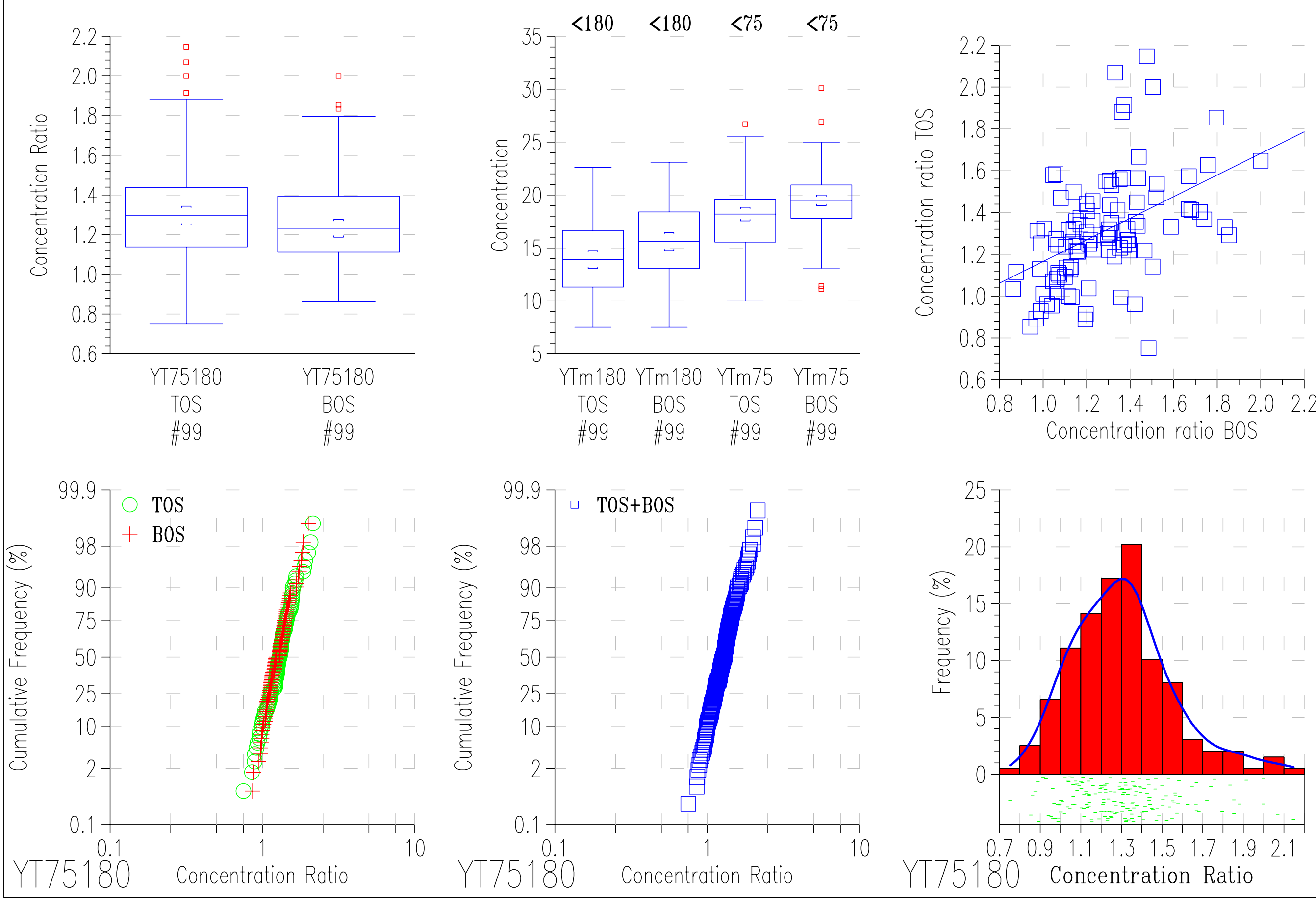
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



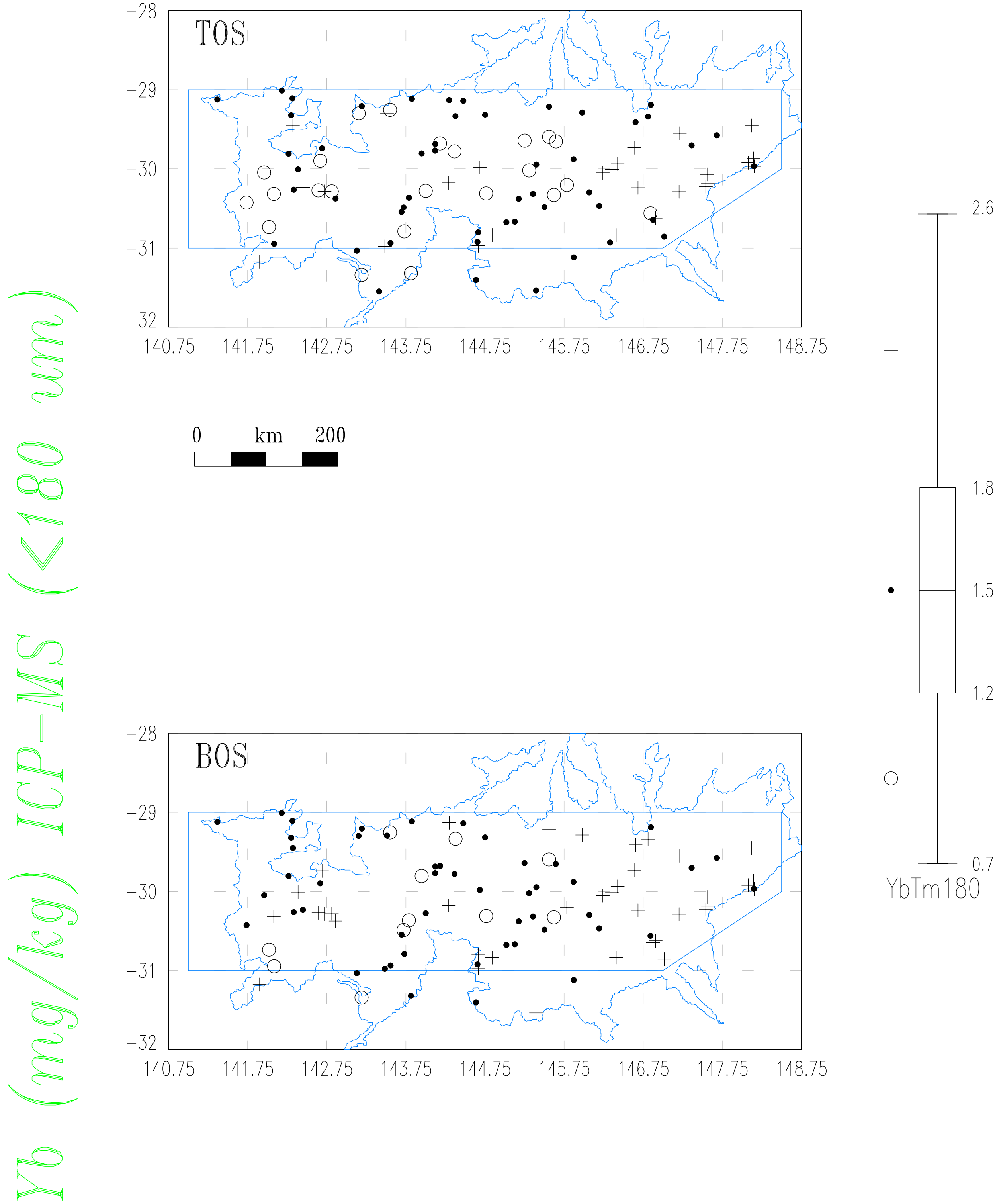
THOMSON GEOCHEMICAL SURVEY

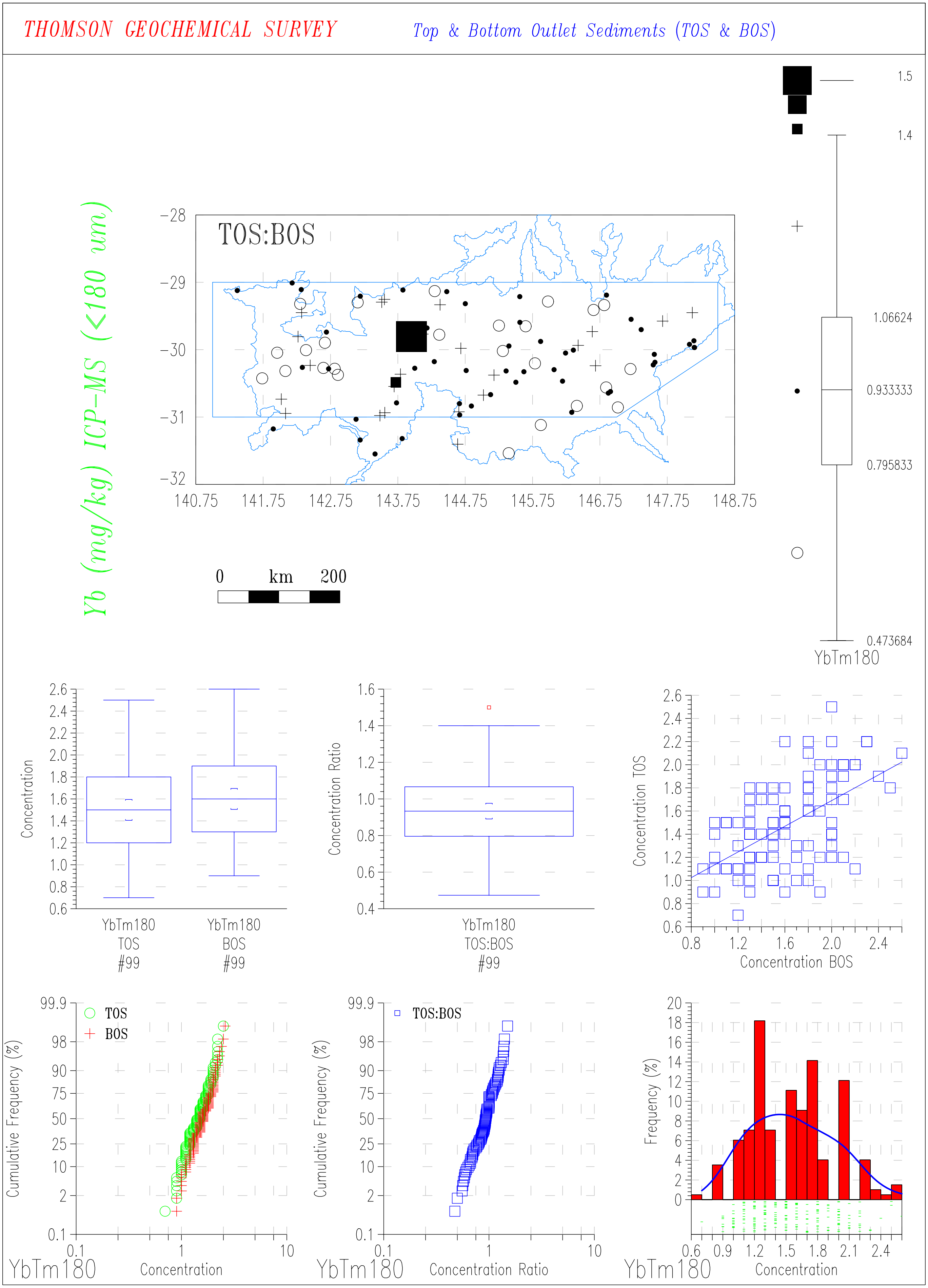
Top & Bottom Outlet Sediments (TOS & BOS)





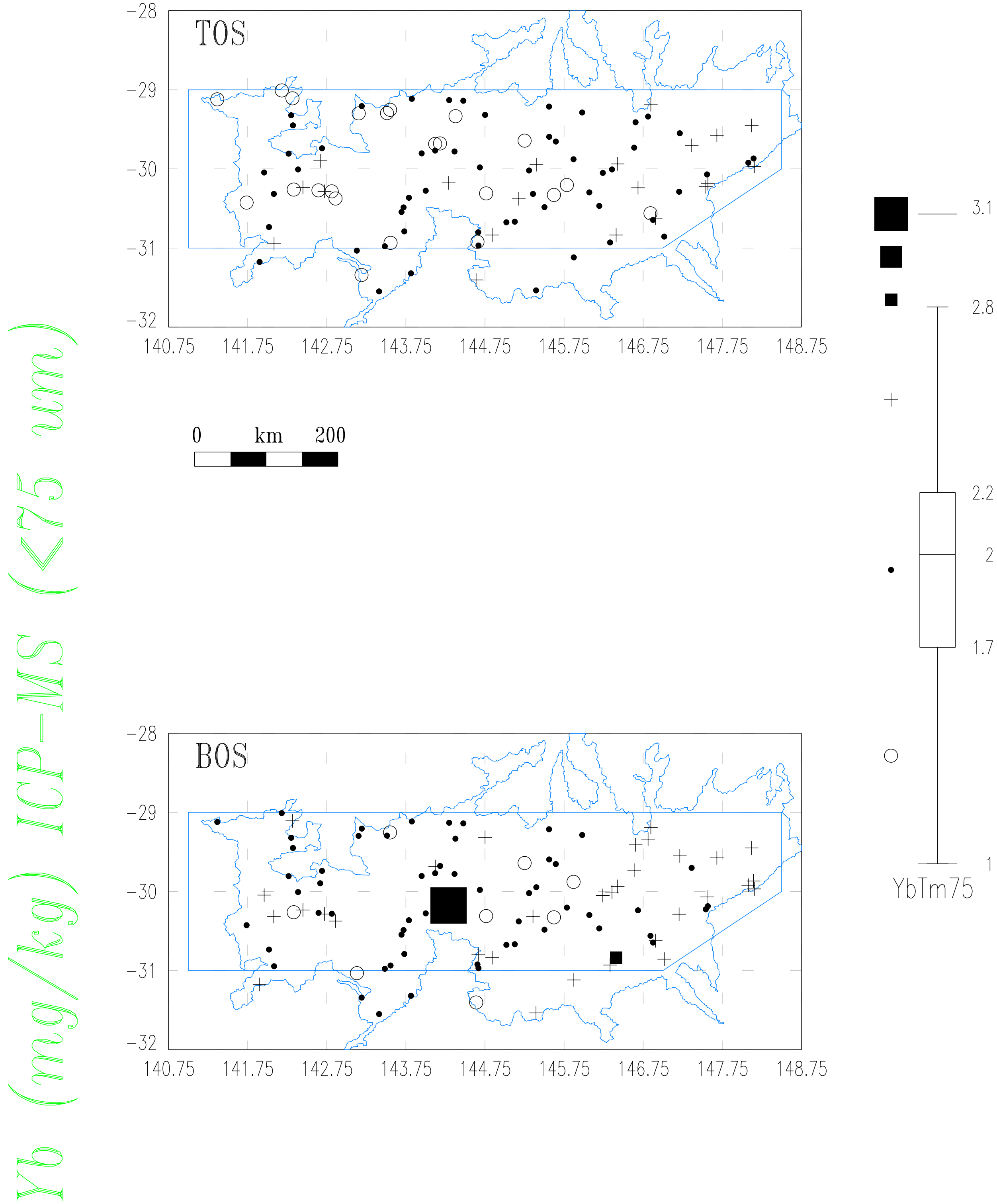
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



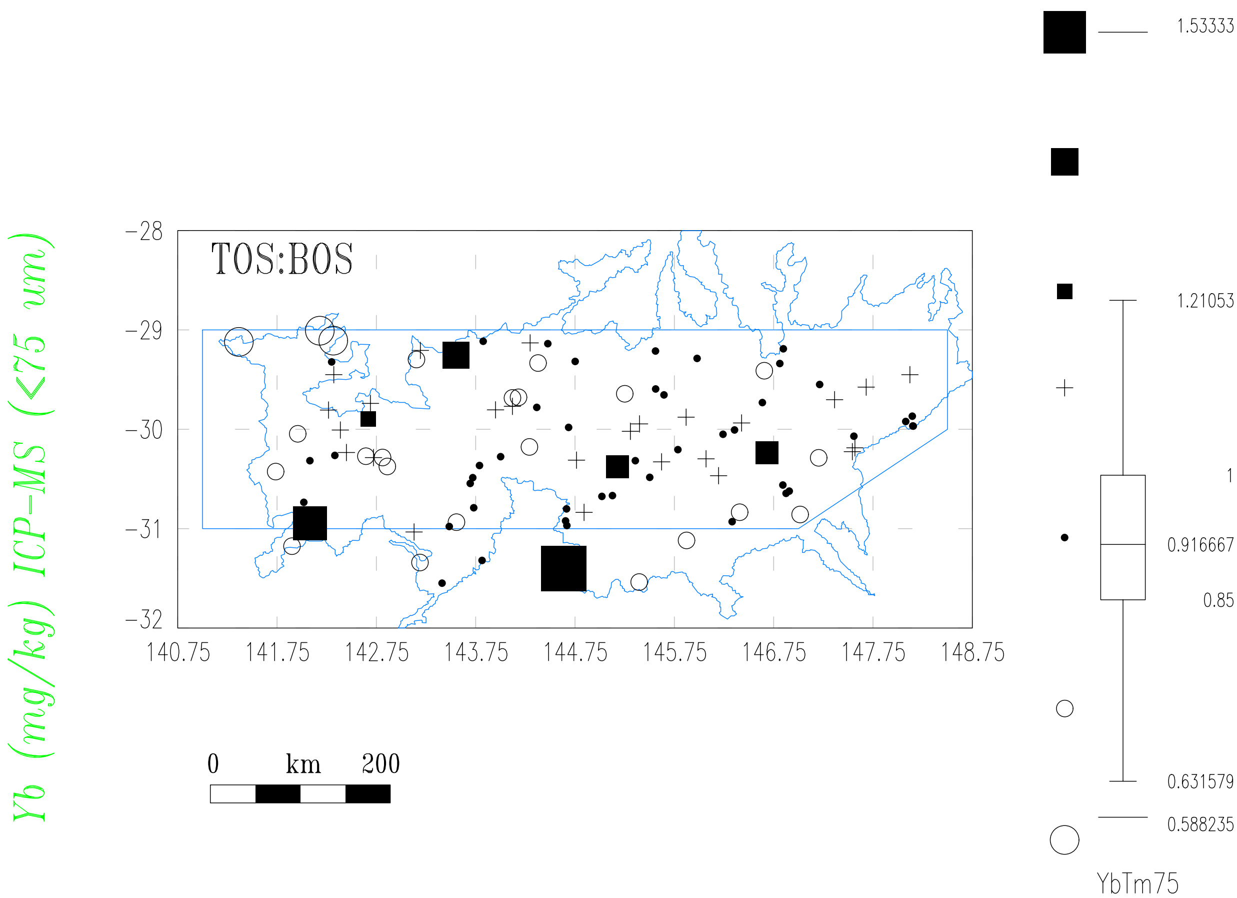


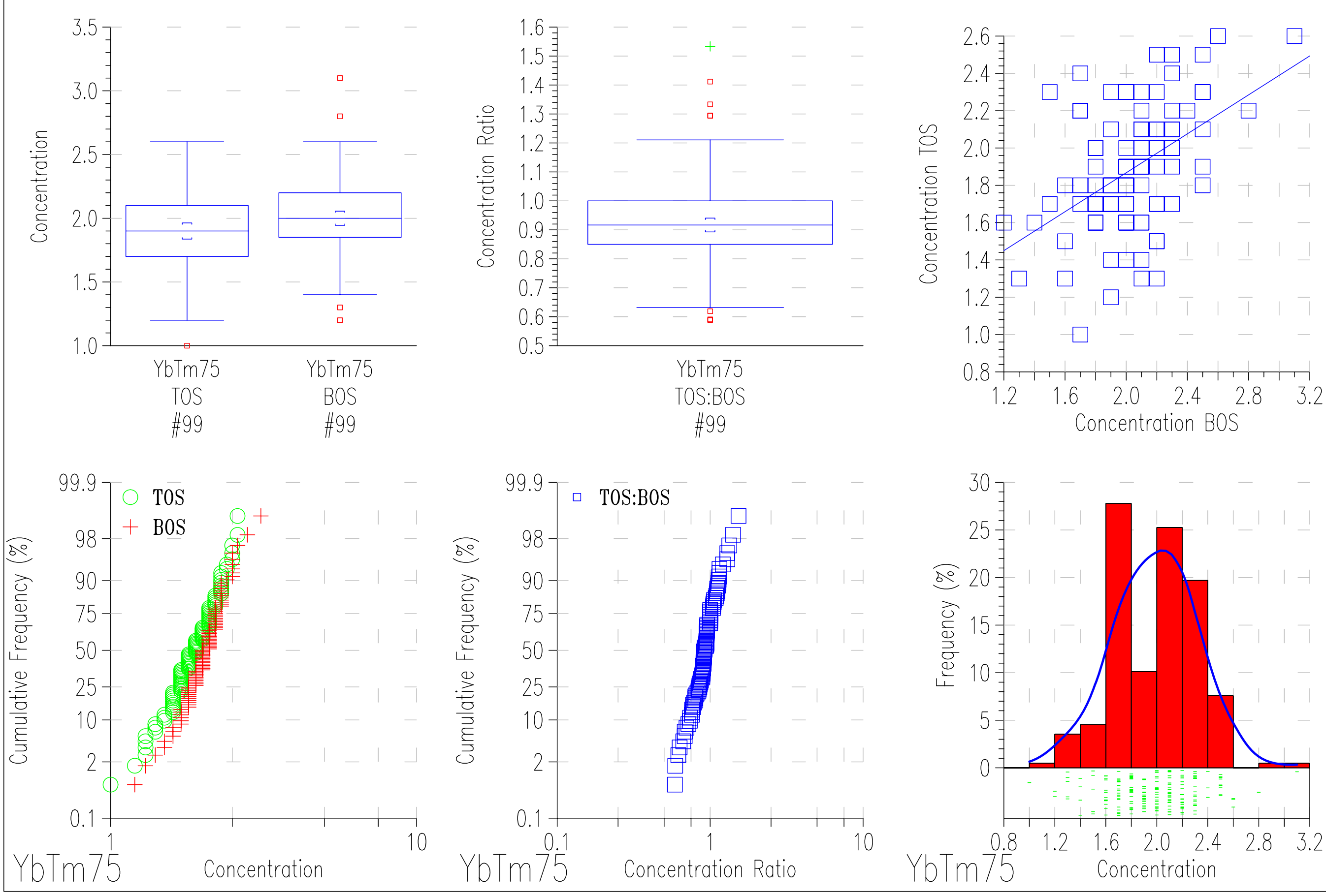
THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Yb (mg/kg) ICP-MS (<180 um)
TOS:BOS
0 km 200
1.5
1.4
1.06624
0.933333
0.795833
0.473684
YbTm180
Concentration
YbTm180 TOS #99
YbTm180 BOS #99
Concentration Ratio
YbTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
TOS:BOS
Frequency (%)
YbTm180

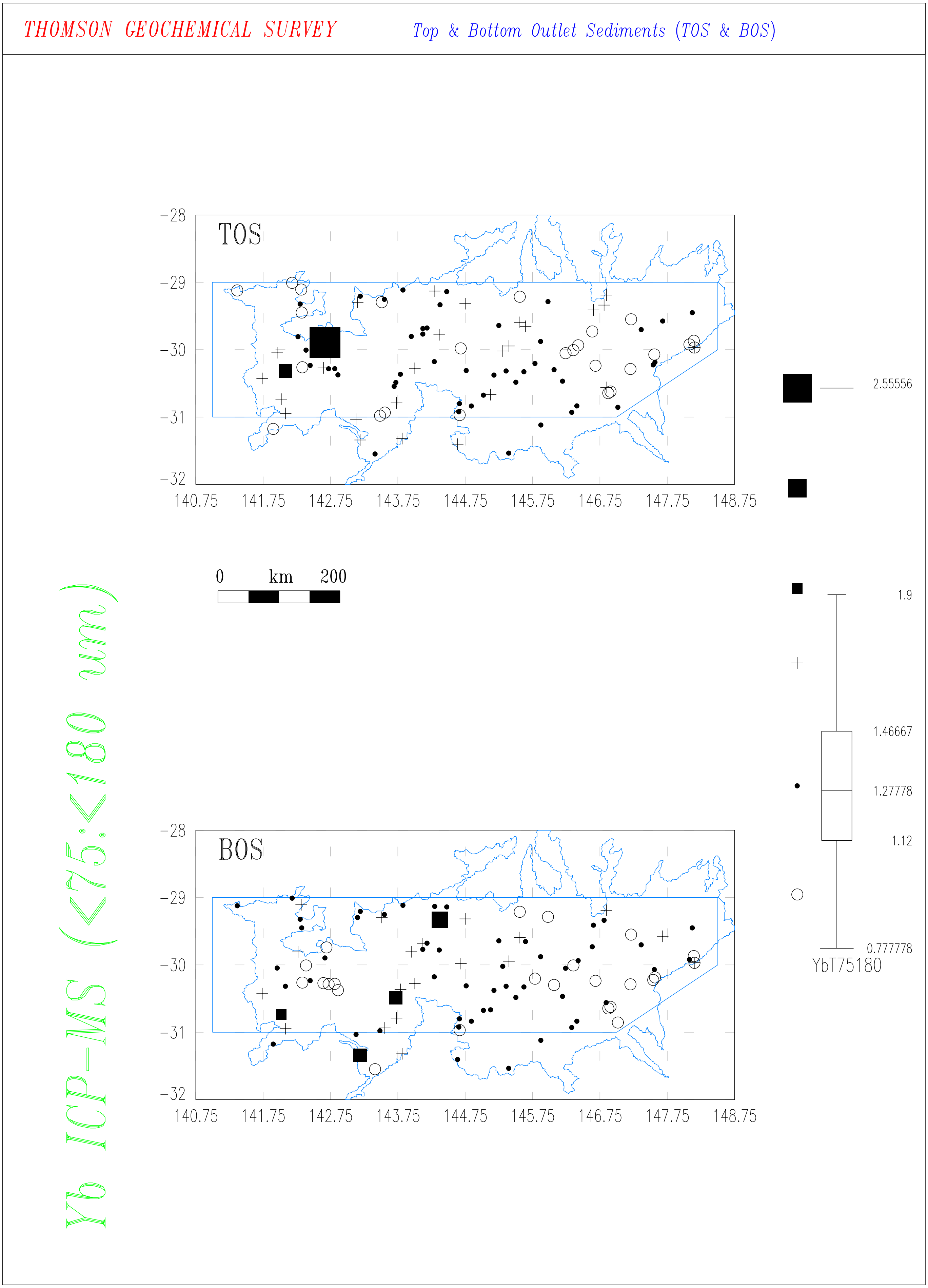
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

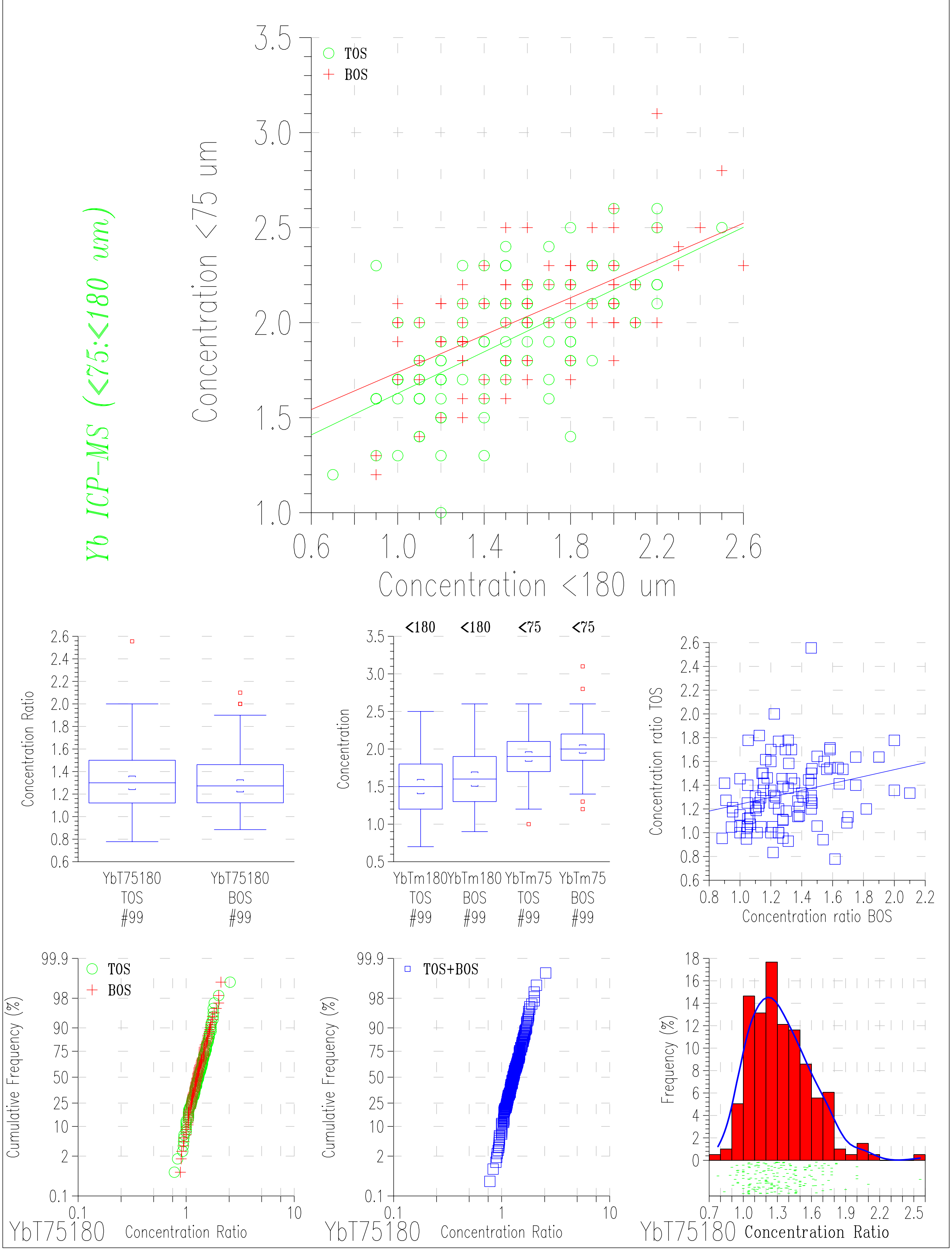




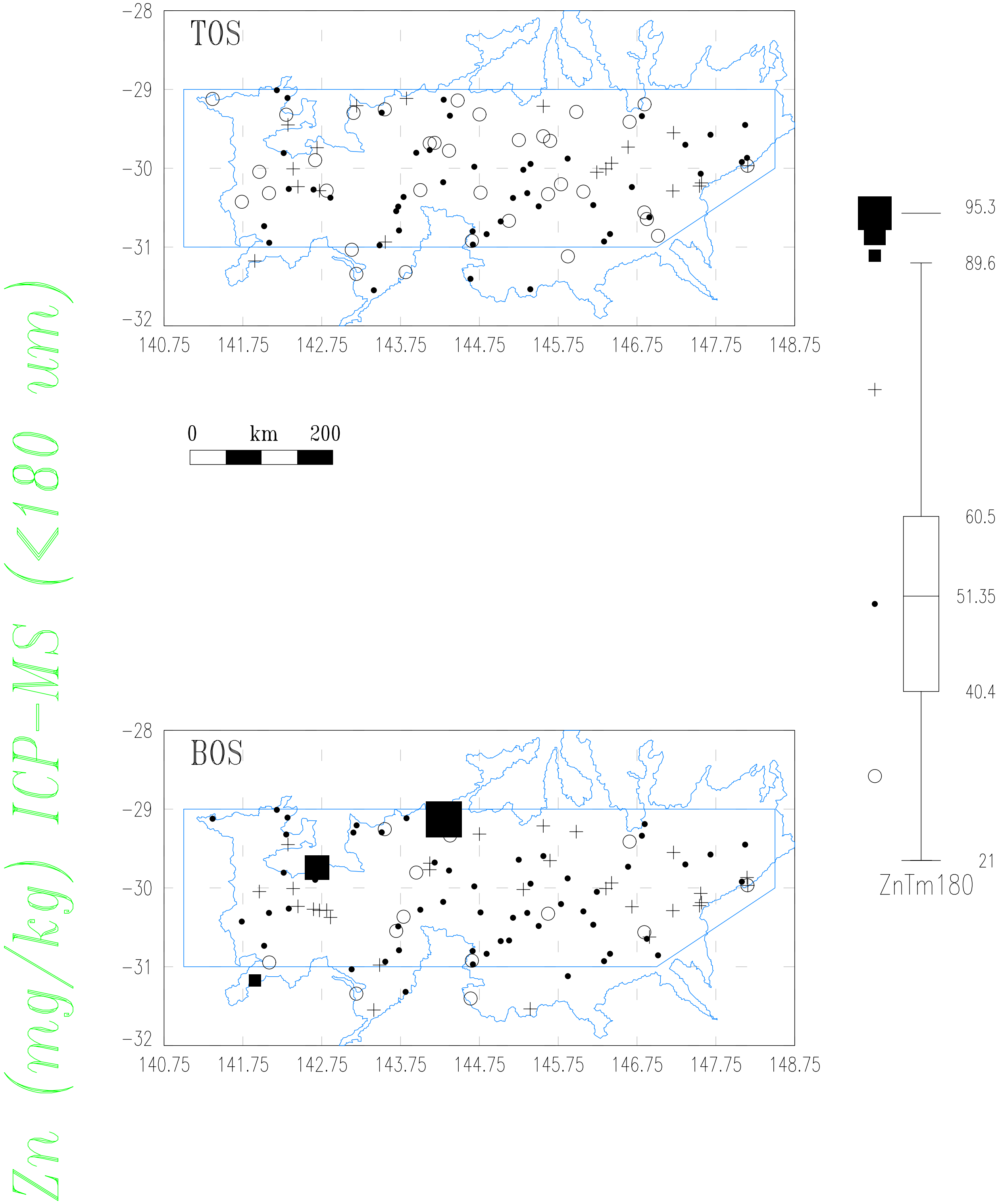


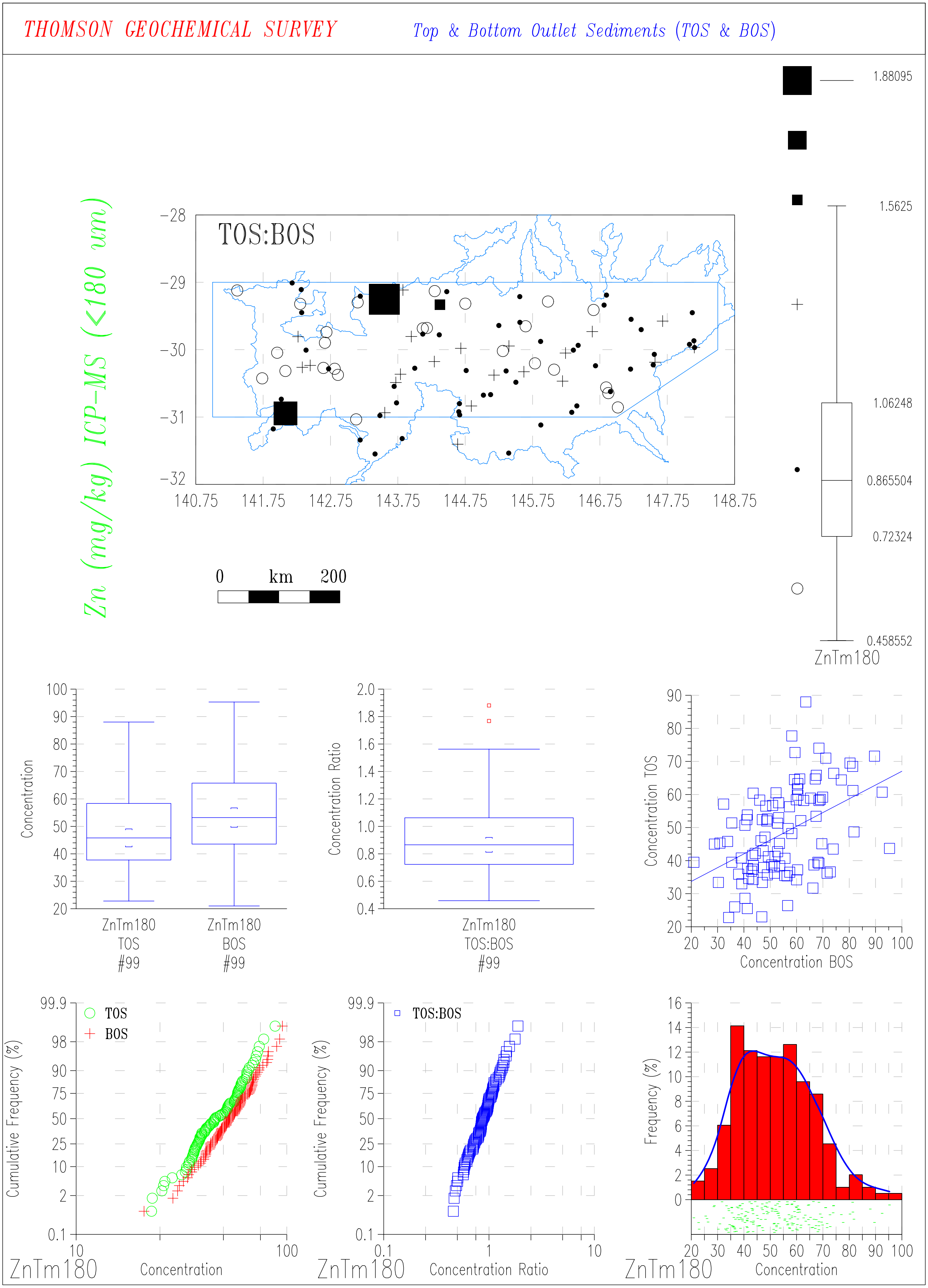
THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Yb ICP-MS (<75:<180 um)
TOS
BOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0
km
200
2.55556
1.9
1.46667
1.27778
1.12
0.777778
YbT75180

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



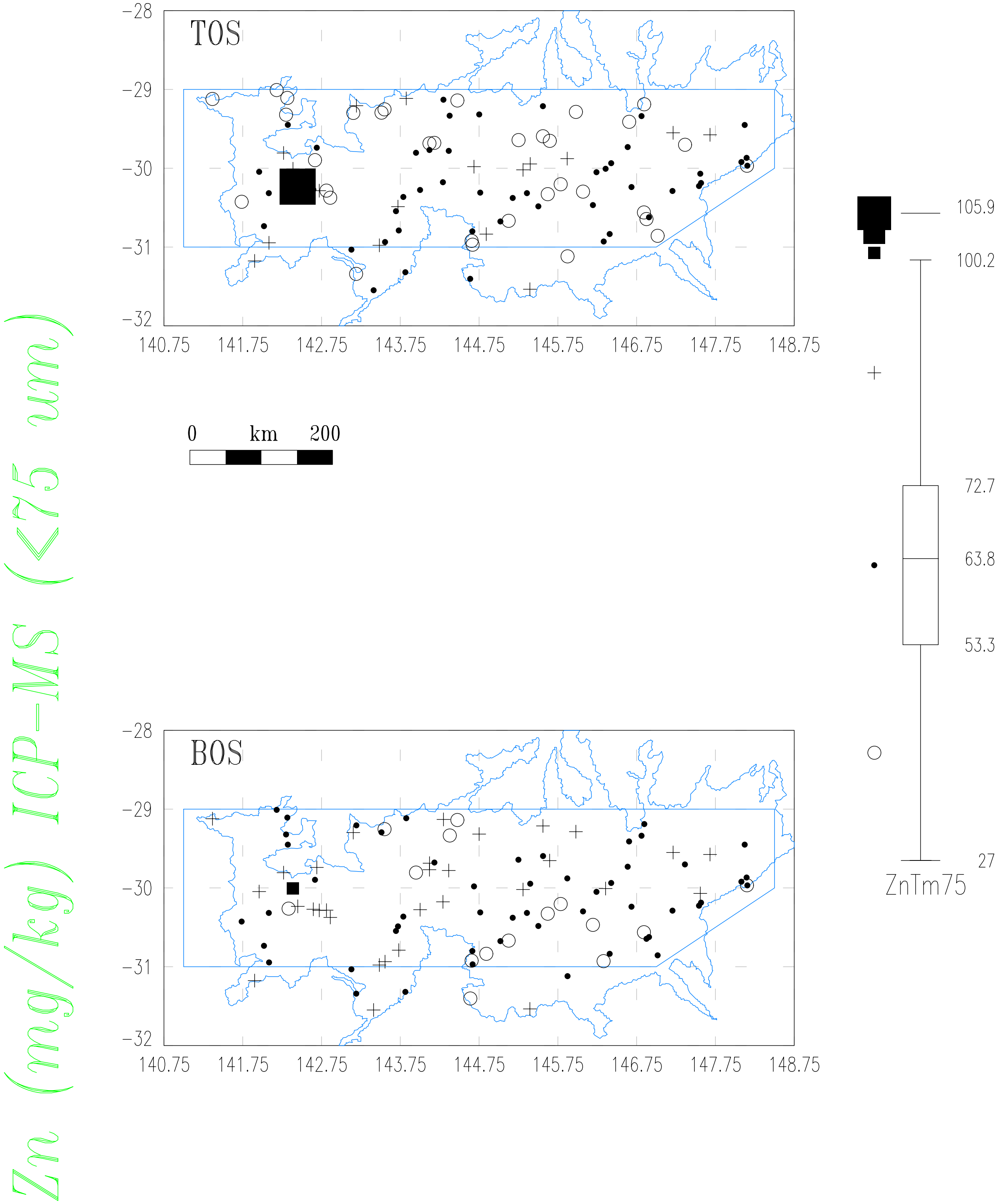
THOMSON GEOCHEMICAL SURVEY Top & Bottom Outlet Sediments (TOS & BOS)

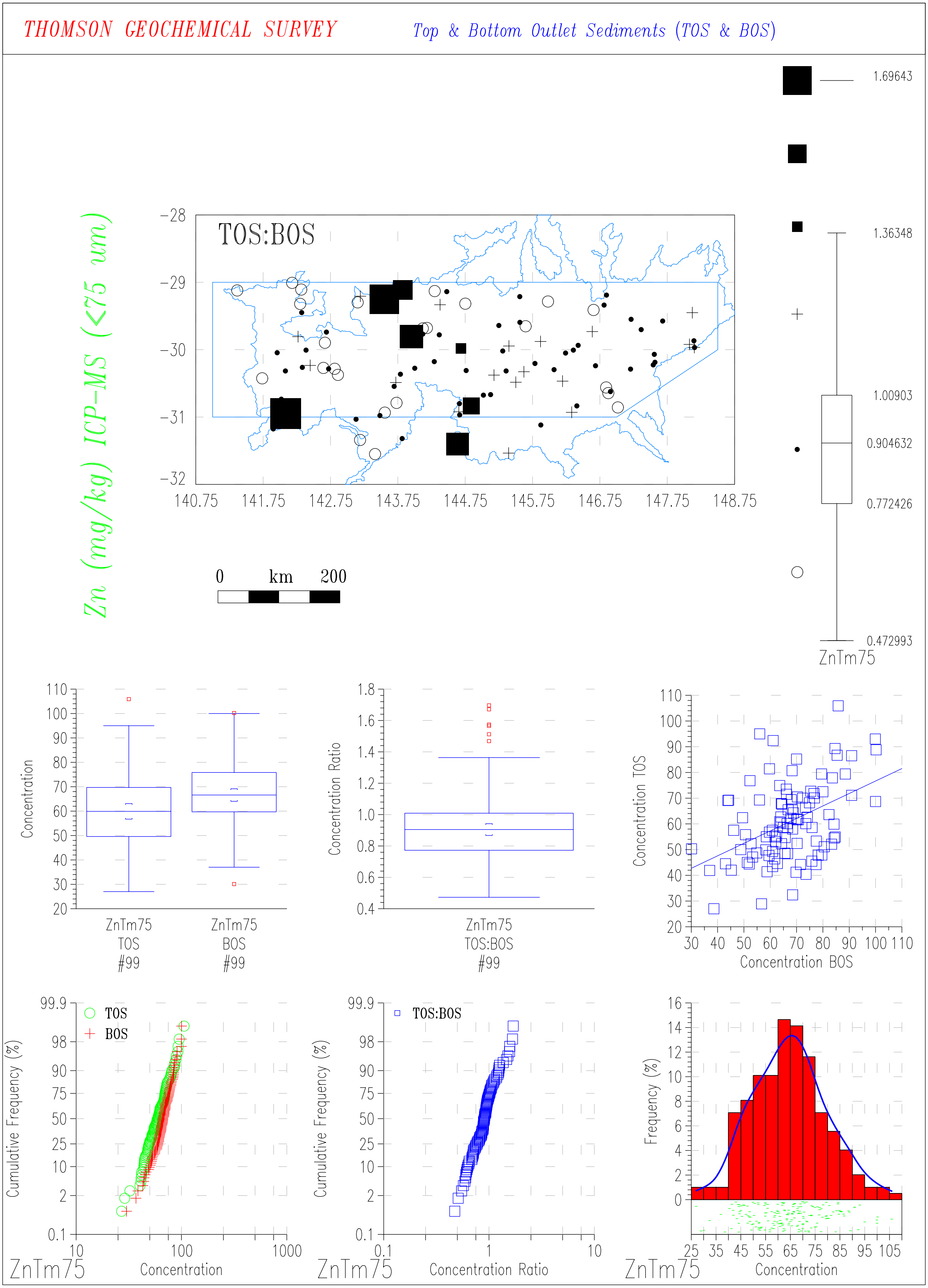



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Zn (mg/kg) ICP–MS (<180 um)
TOS:BOS
0 km 200
1.88095
1.5625
1.06248
0.865504
0.72324
0.458552
ZnTm180
Concentration
ZnTm180 TOS #99
ZnTm180 BOS #99
Concentration Ratio
ZnTm180 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
ZnTm180
Concentration
TOS:BOS
Concentration Ratio
Frequency (%)

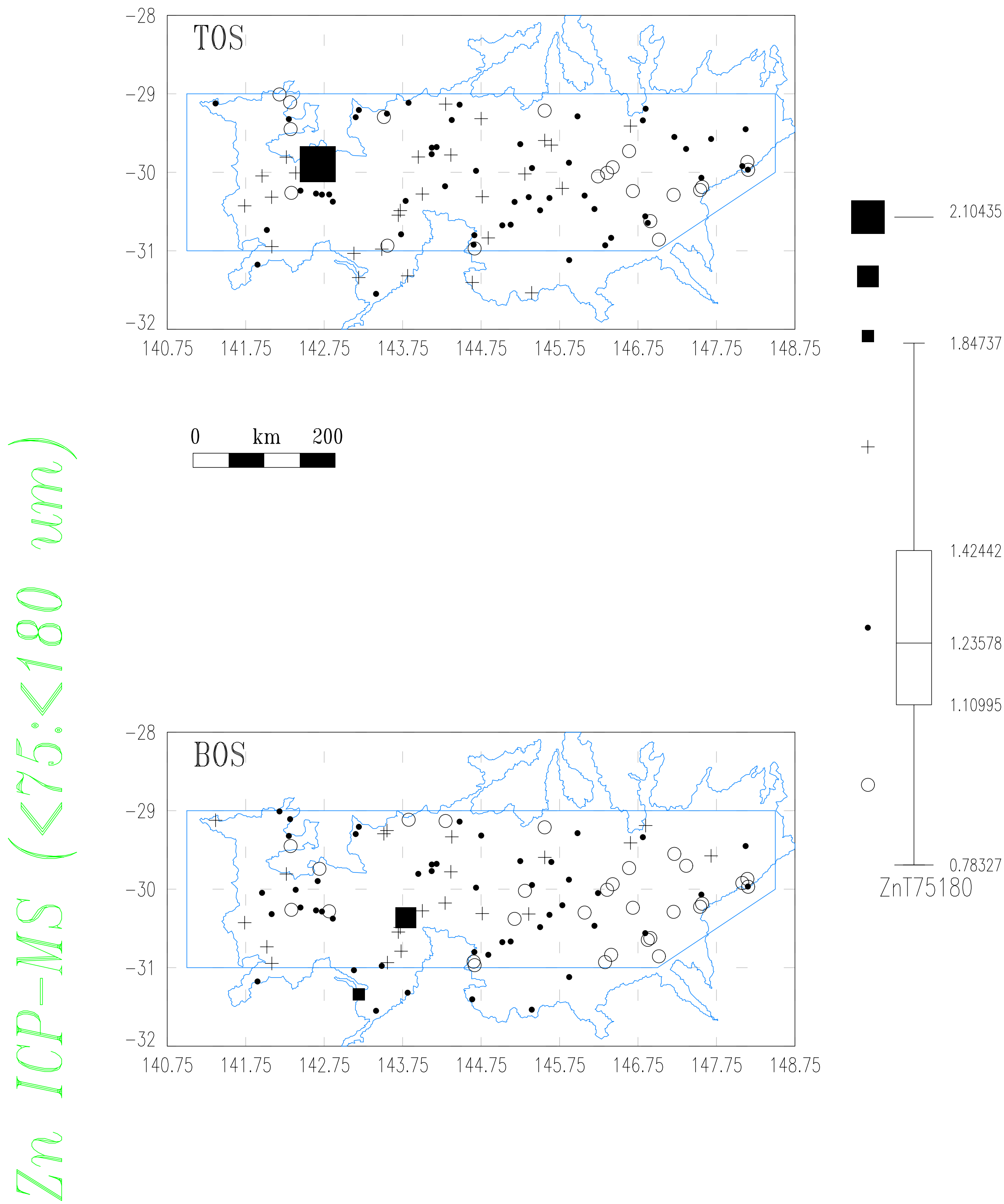
THOMSON GEOCHEMICAL SURVEY

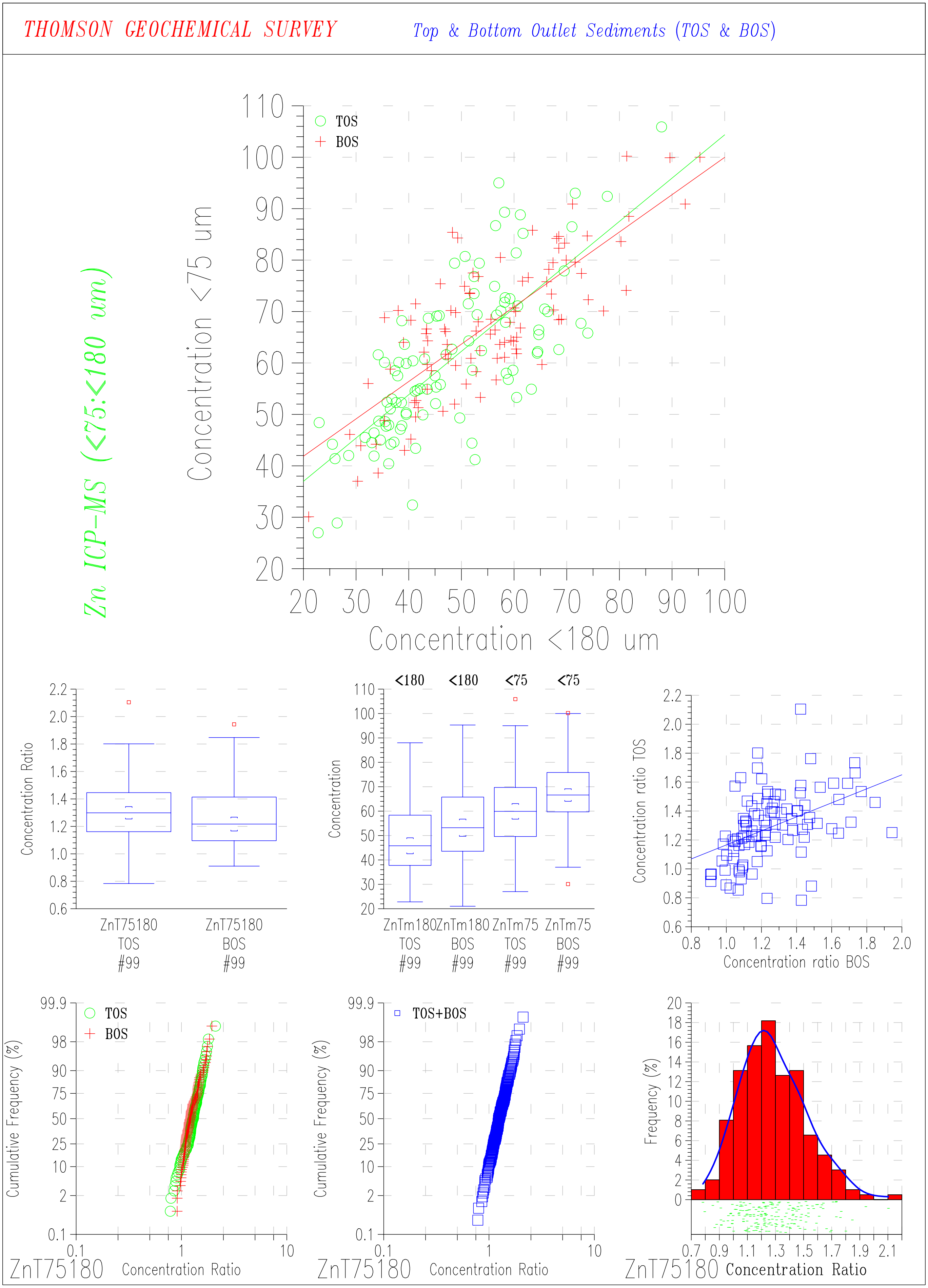
Top & Bottom Outlet Sediments (TOS & BOS)



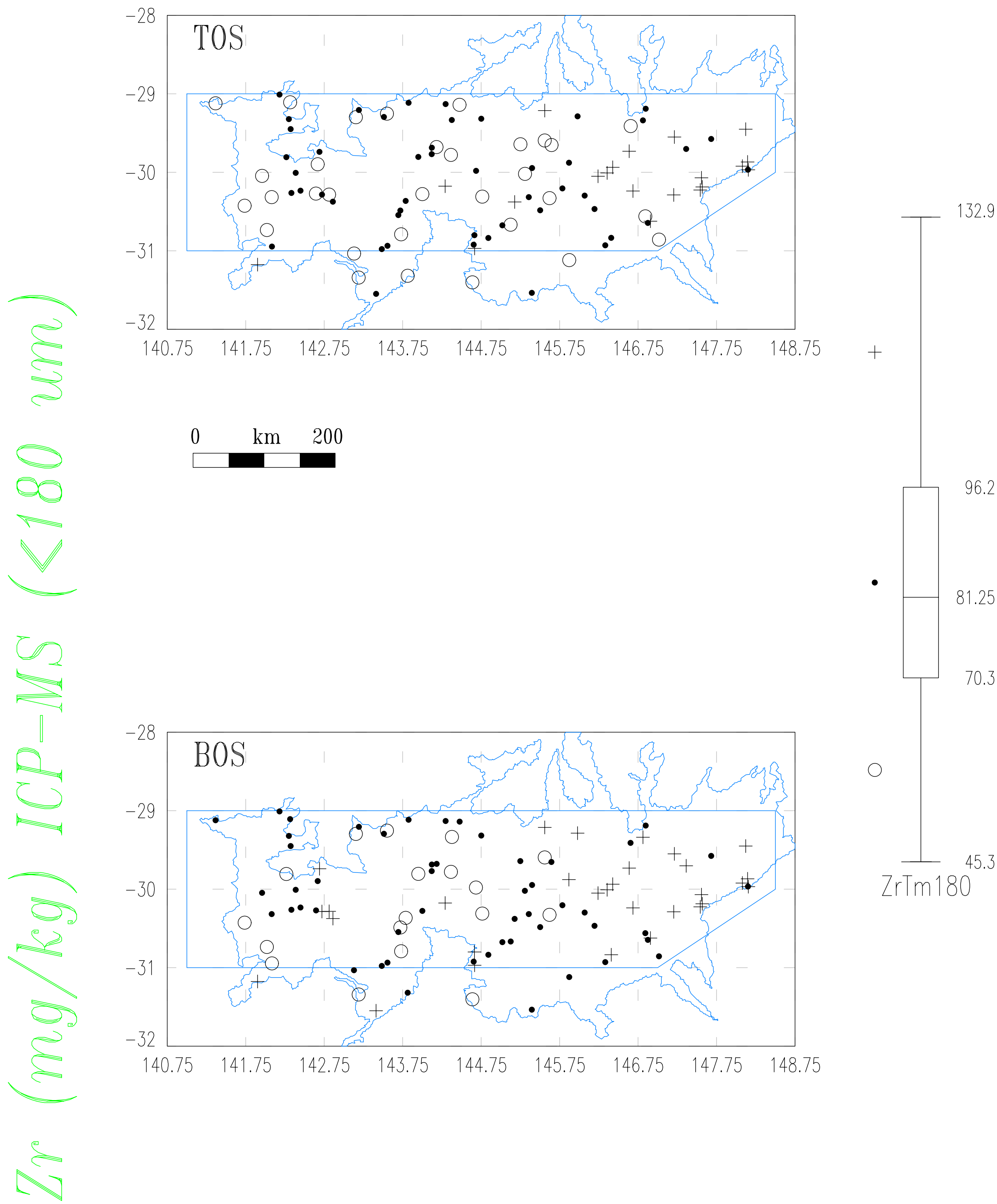

THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Zn (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.69643
1.36348
1.00903
0.904632
0.772426
0.472993
ZnTm75
Concentration
ZnTm75 TOS #99
ZnTm75 BOS #99
Concentration Ratio
ZnTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
ZnTm75
Concentration
TOS:BOS
ZnTm75
Concentration Ratio
Frequency (%)
ZnTm75
Concentration

THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

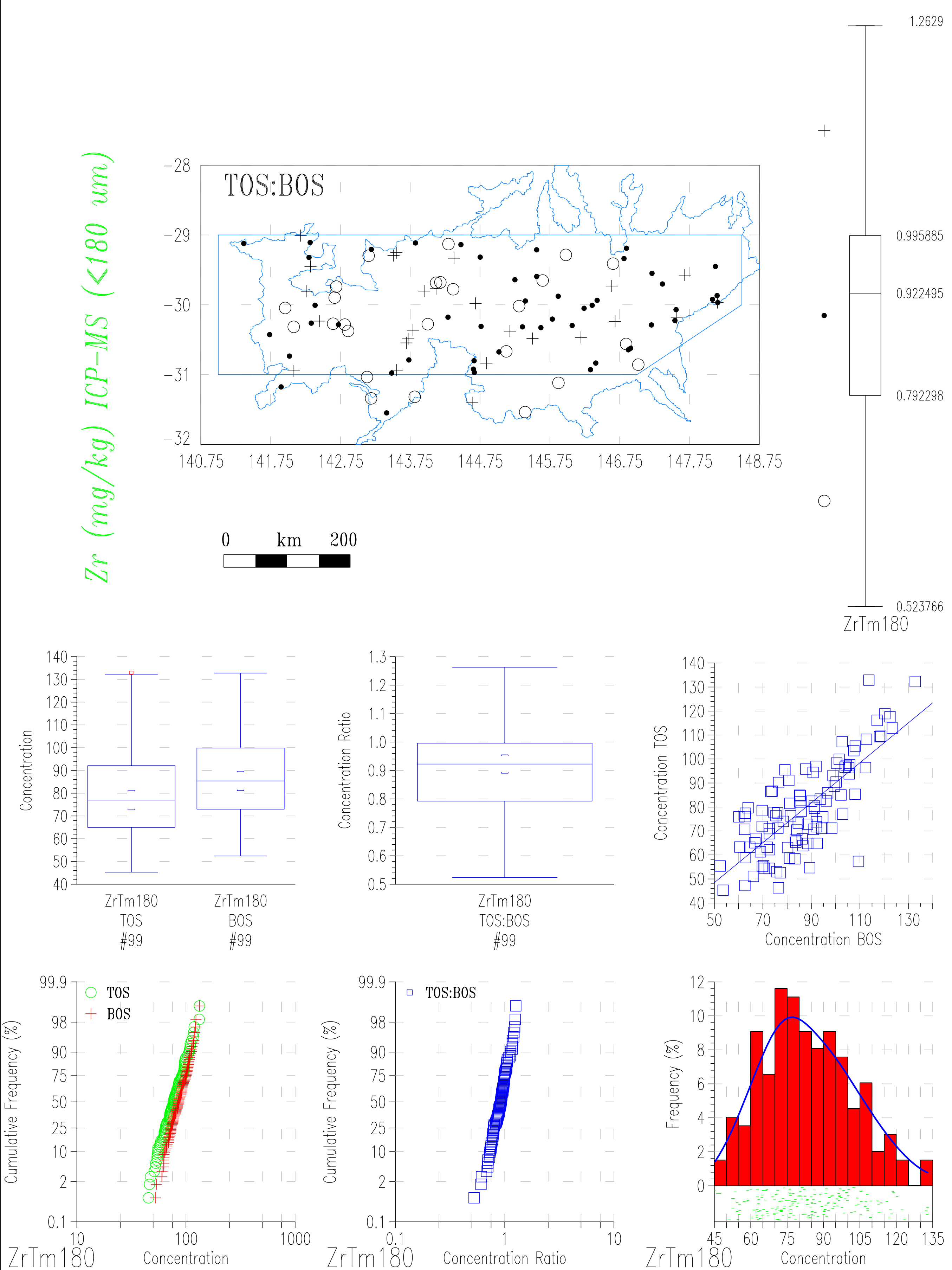



THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Zn ICP-MS (<75:<180 um)
Concentration <75 um
Concentration <180 um
TOS
BOS
Concentration Ratio
ZnT75180 TOS #99
ZnT75180 BOS #99
Concentration
<180
<75
ZnTm180 TOS #99
ZnTm180 BOS #99
ZnTm75 TOS #99
ZnTm75 BOS #99
Concentration ratio TOS
Concentration ratio BOS
Cumulative Frequency (%)
TOS+BOS
Frequency (%)
ZnT75180
Concentration Ratio

THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)

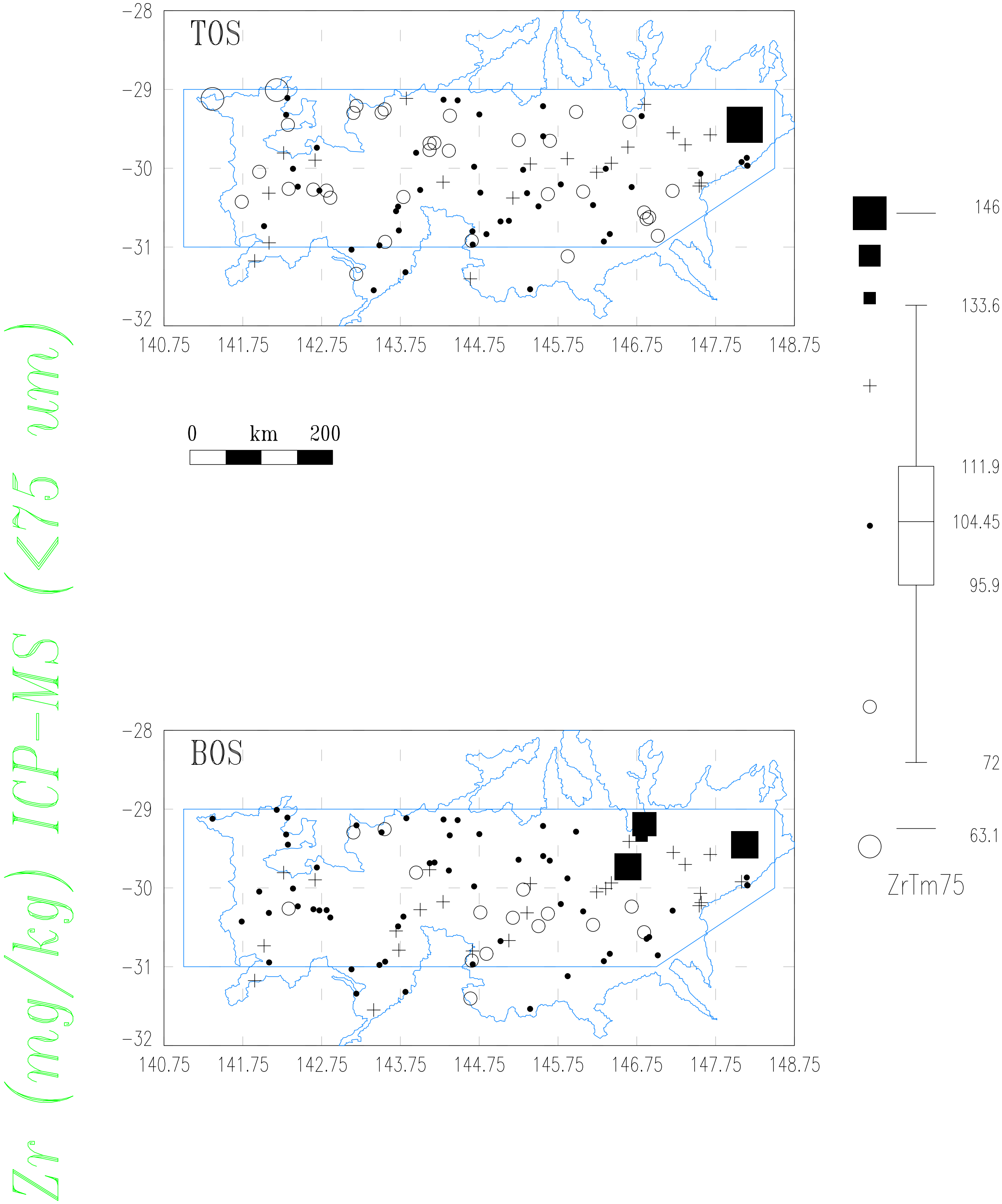


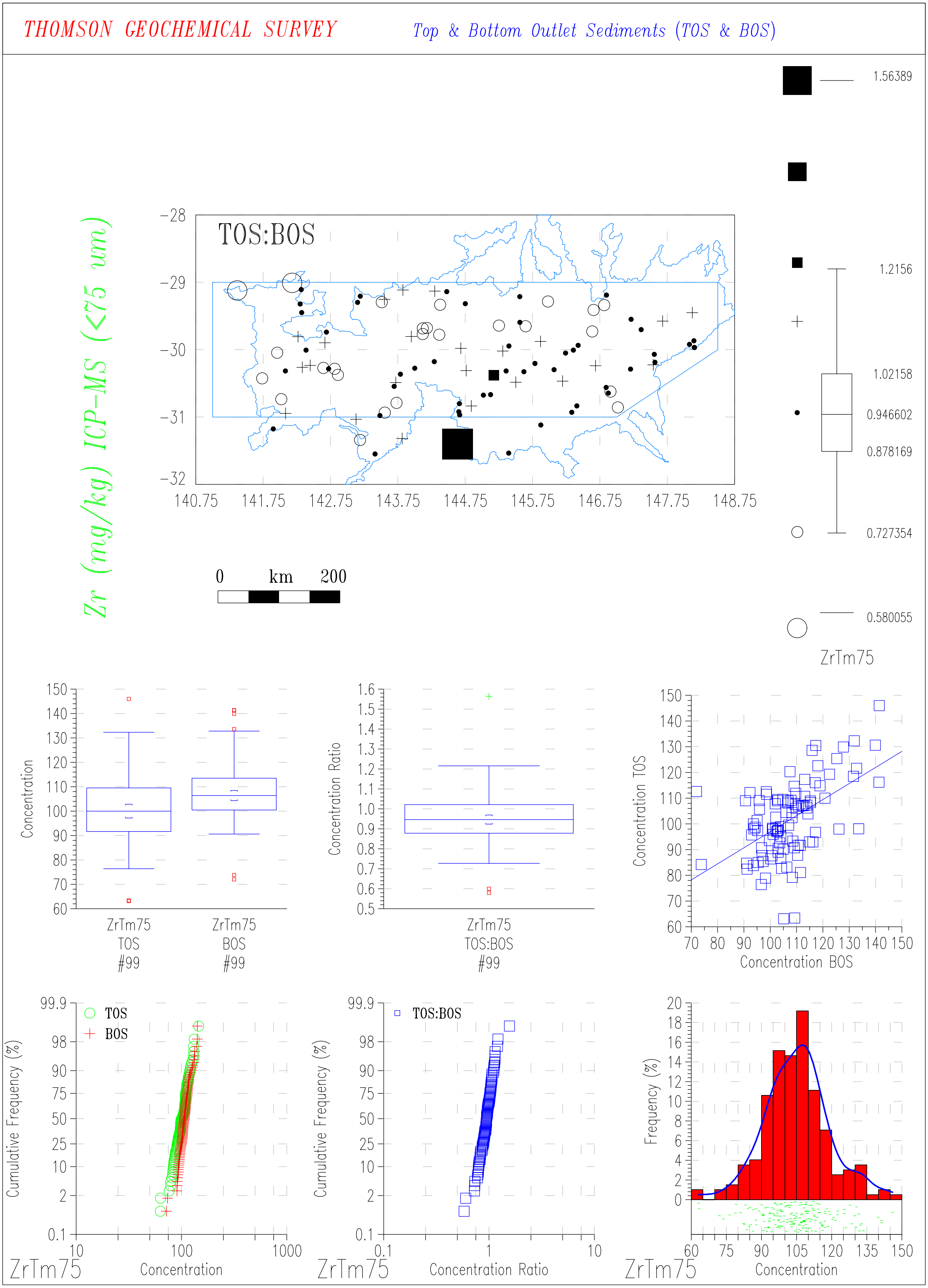
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



THOMSON GEOCHEMICAL SURVEY

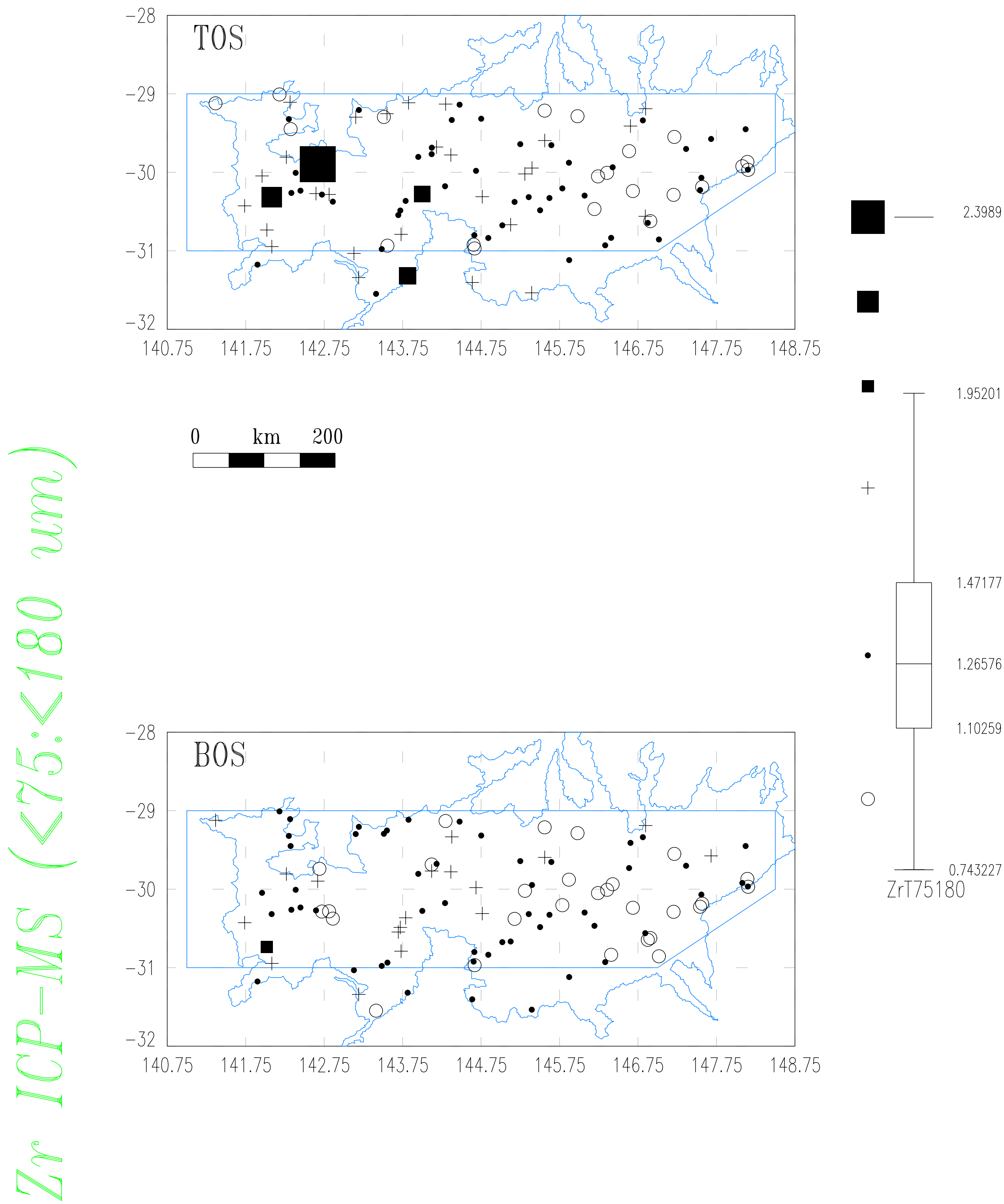
Top & Bottom Outlet Sediments (TOS & BOS)



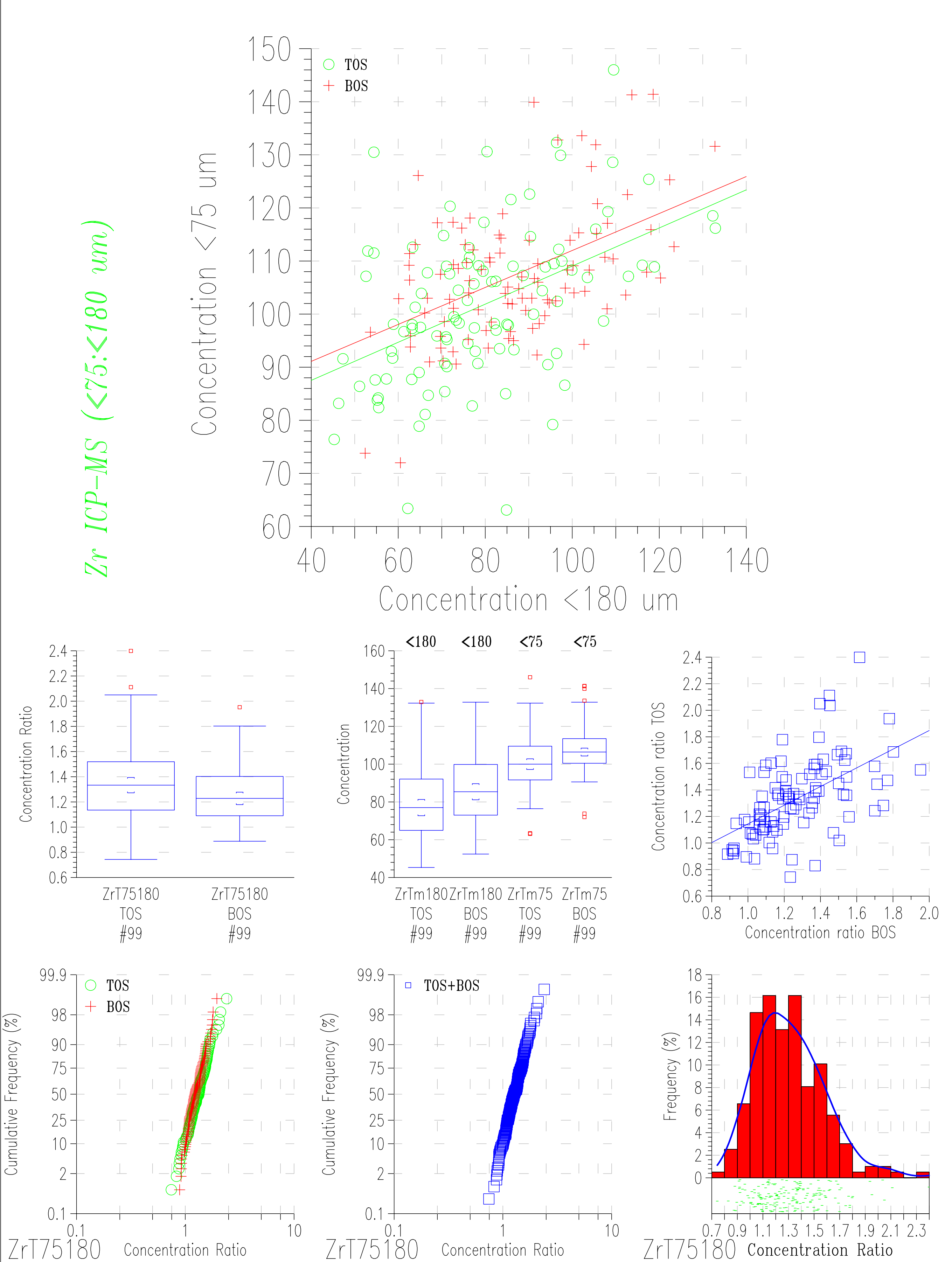


THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
Zr (mg/kg) ICP-MS (<75 um)
TOS:BOS
0 km 200
1.56389
1.2156
1.02158
0.946602
0.878169
0.727354
0.580055
ZrTm75
Concentration
ZrTm75 TOS #99
ZrTm75 BOS #99
Concentration Ratio
ZrTm75 TOS:BOS #99
Concentration TOS
Concentration BOS
Cumulative Frequency (%)
TOS
BOS
Frequency (%)

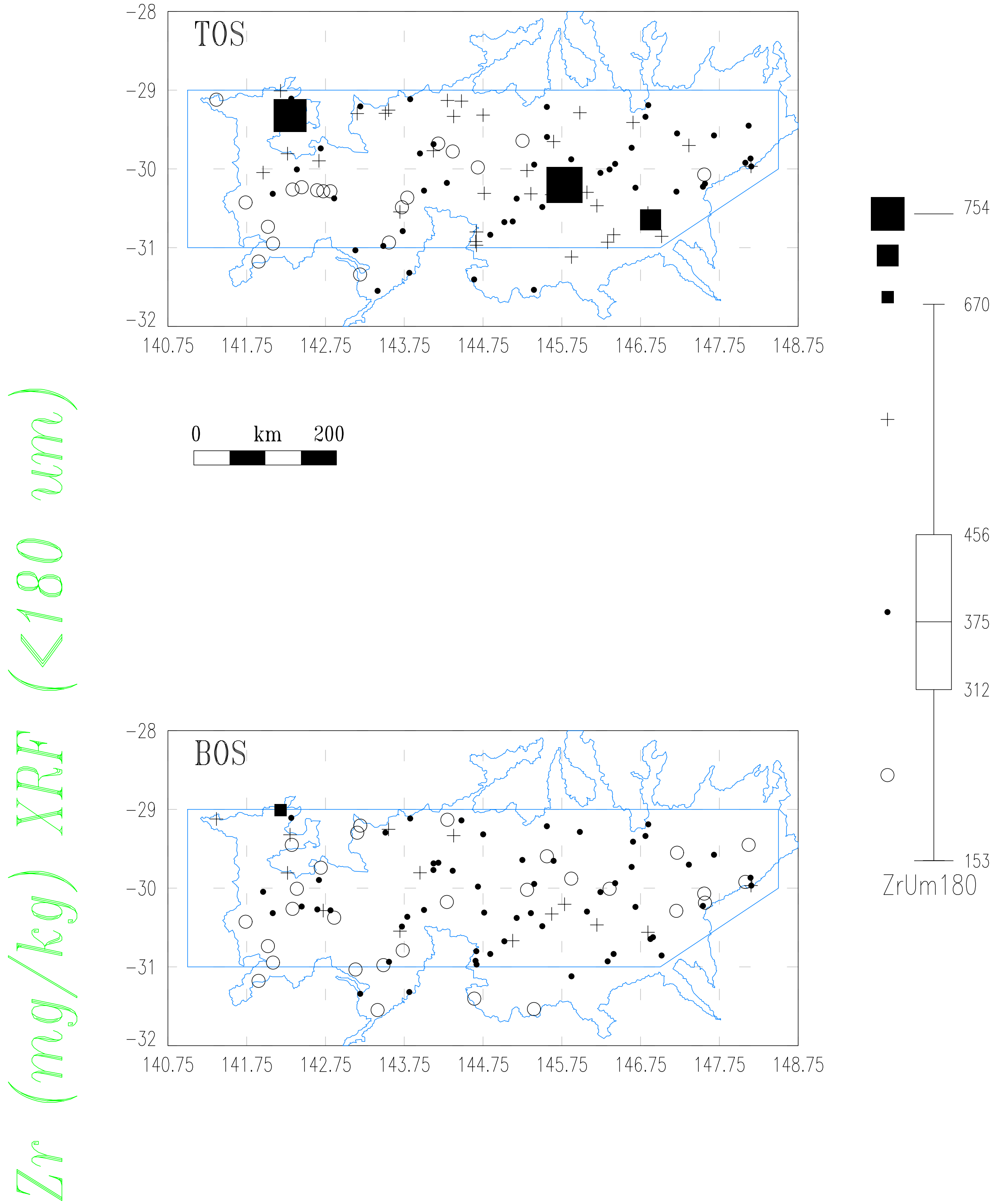
THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)



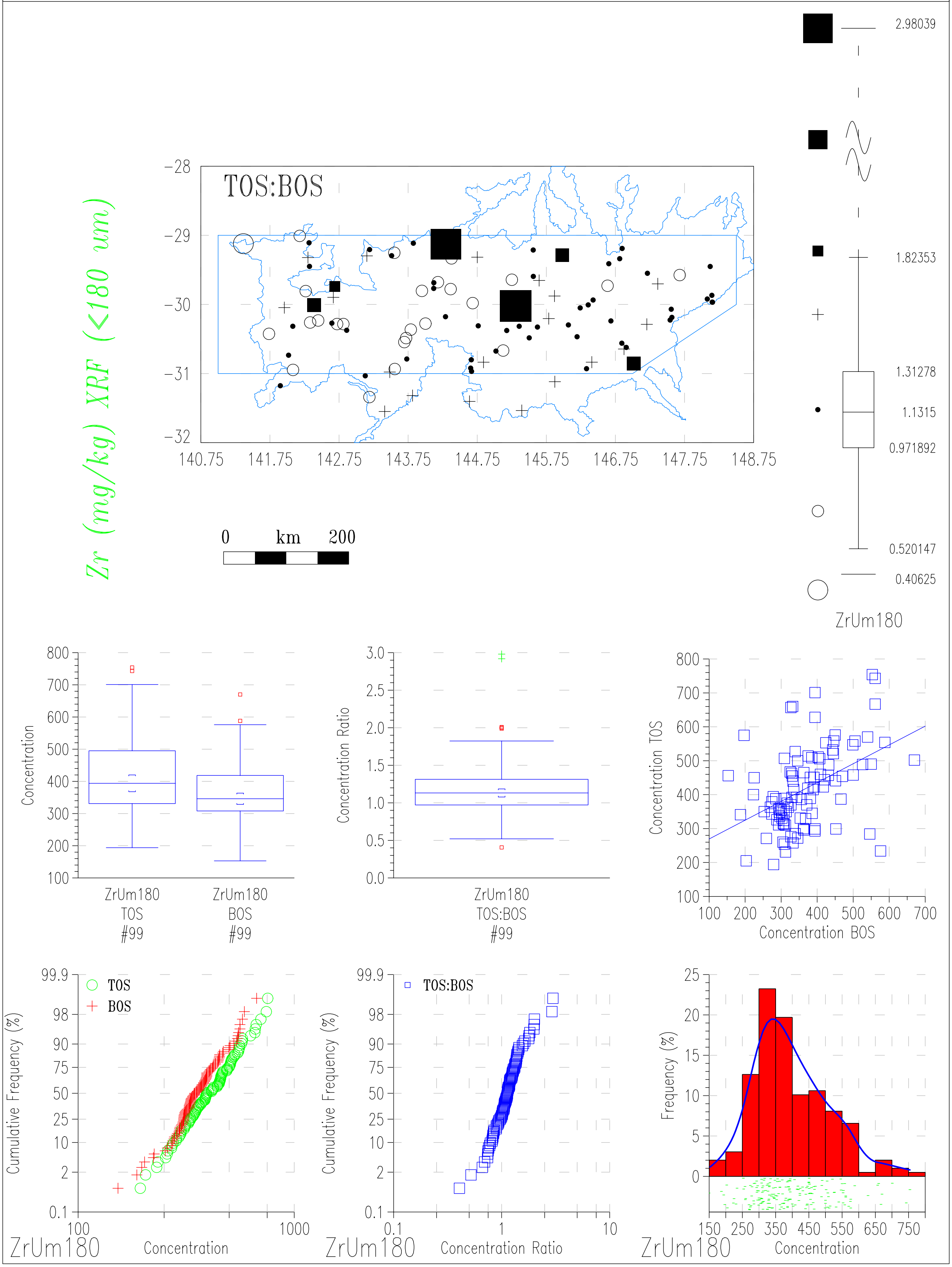
THOMSON GEOCHEMICAL SURVEY   *Top & Bottom Outlet Sediments (TOS & BOS)*



THOMSON GEOCHEMICAL SURVEY   Top & Bottom Outlet Sediments (TOS & BOS)

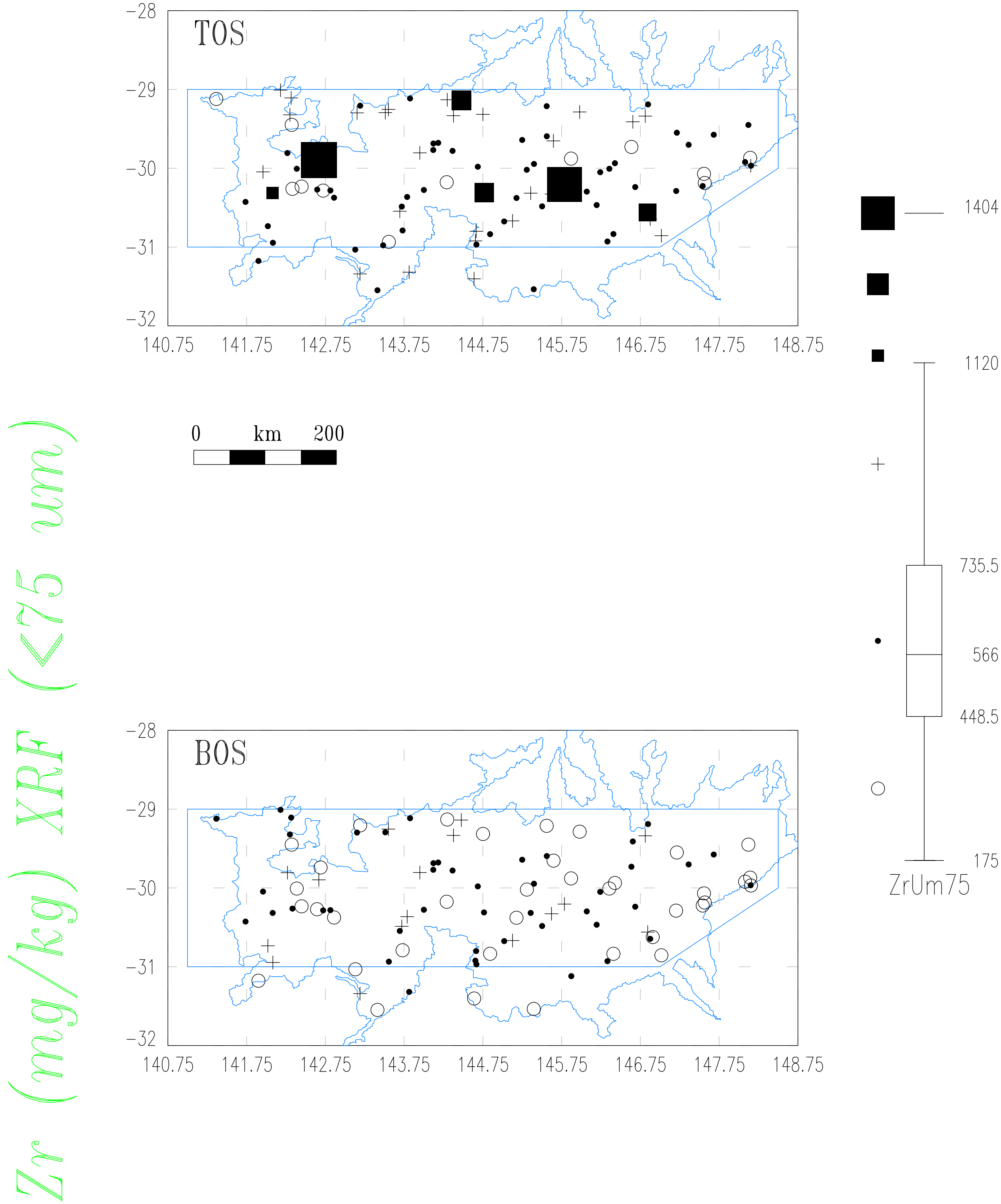


THOMSON GEOCHEMICAL SURVEY *Top & Bottom Outlet Sediments (TOS & BOS)*

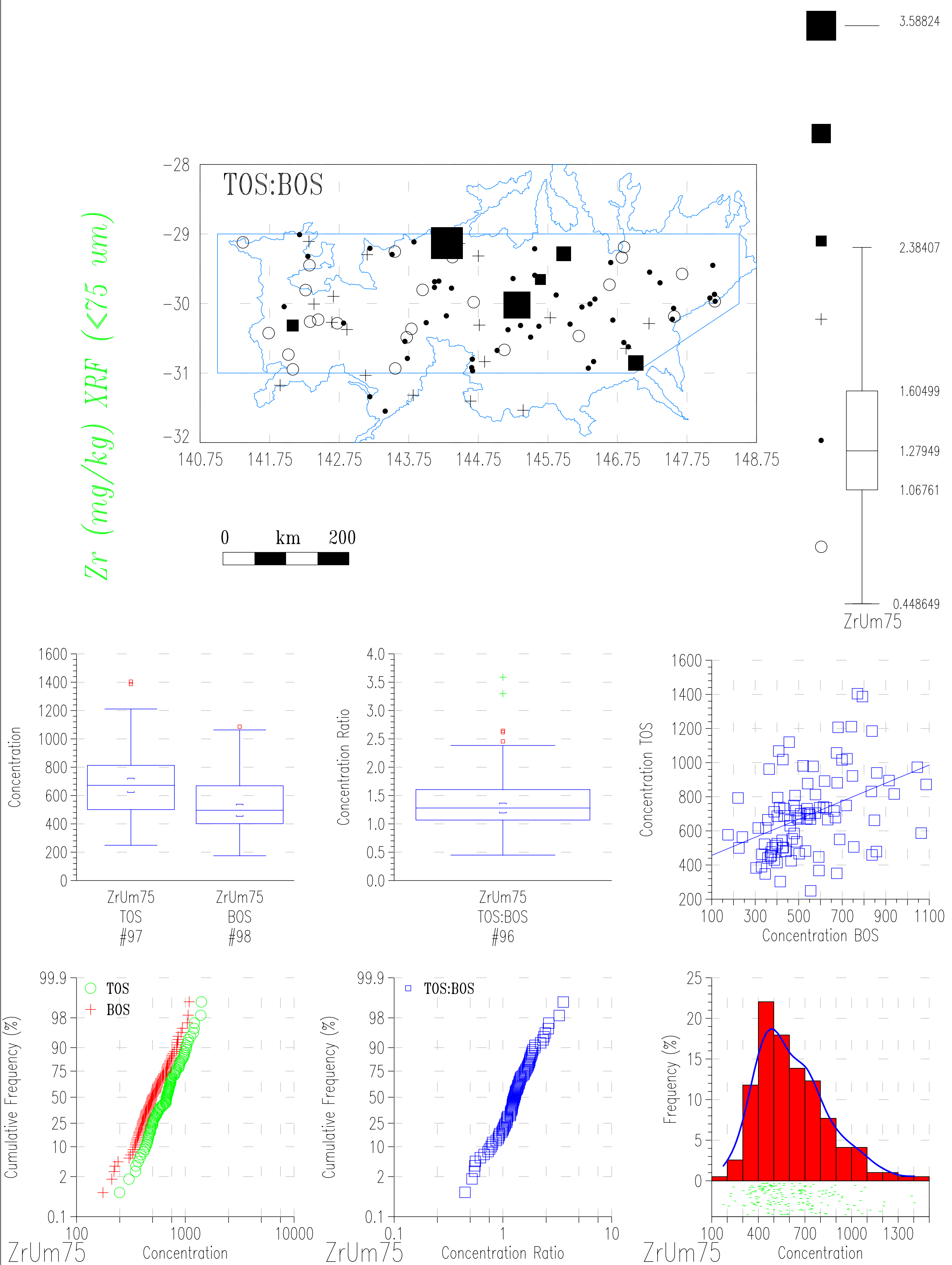


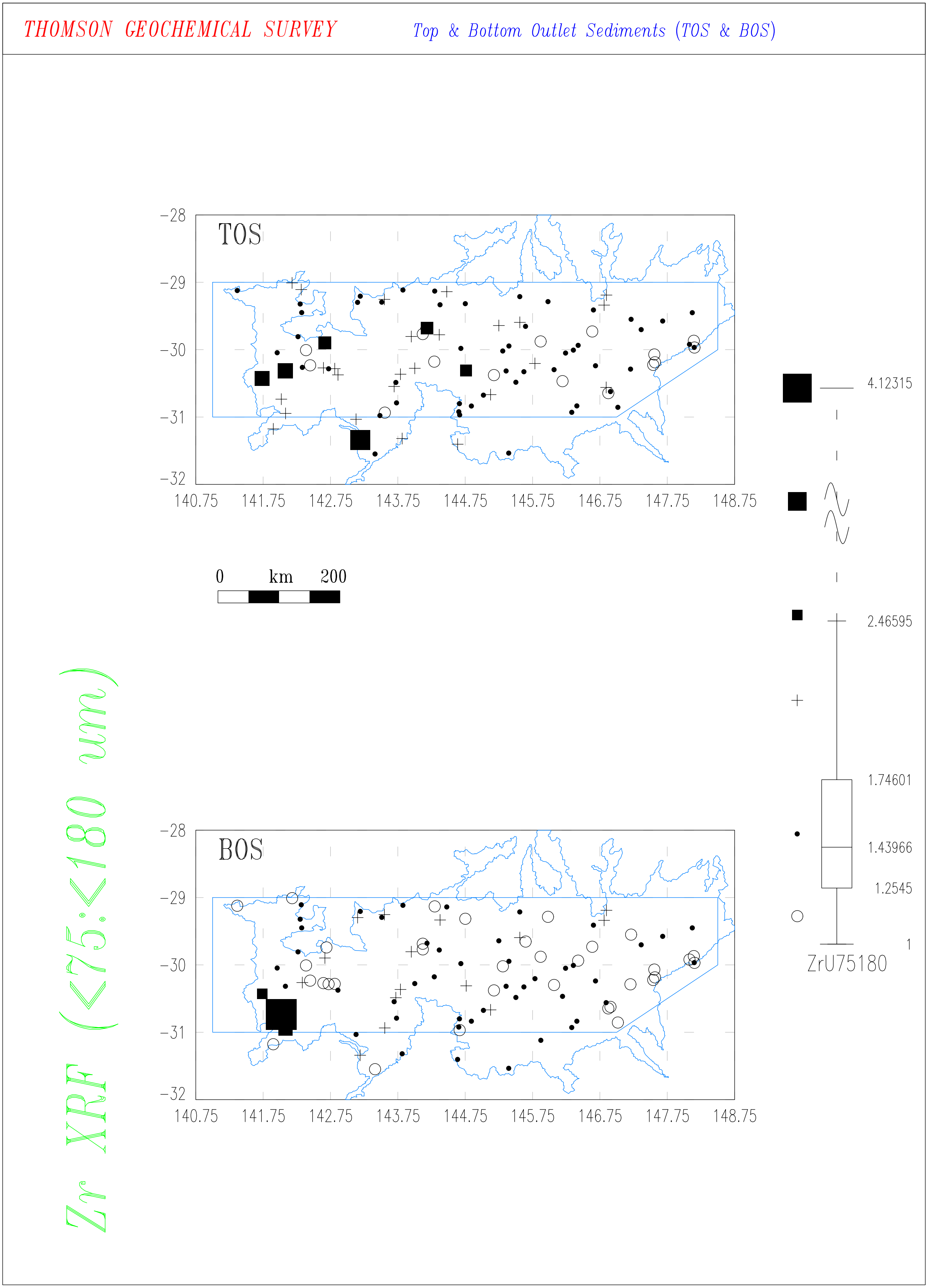
THOMSON GEOCHEMICAL SURVEY

Top & Bottom Outlet Sediments (TOS & BOS)



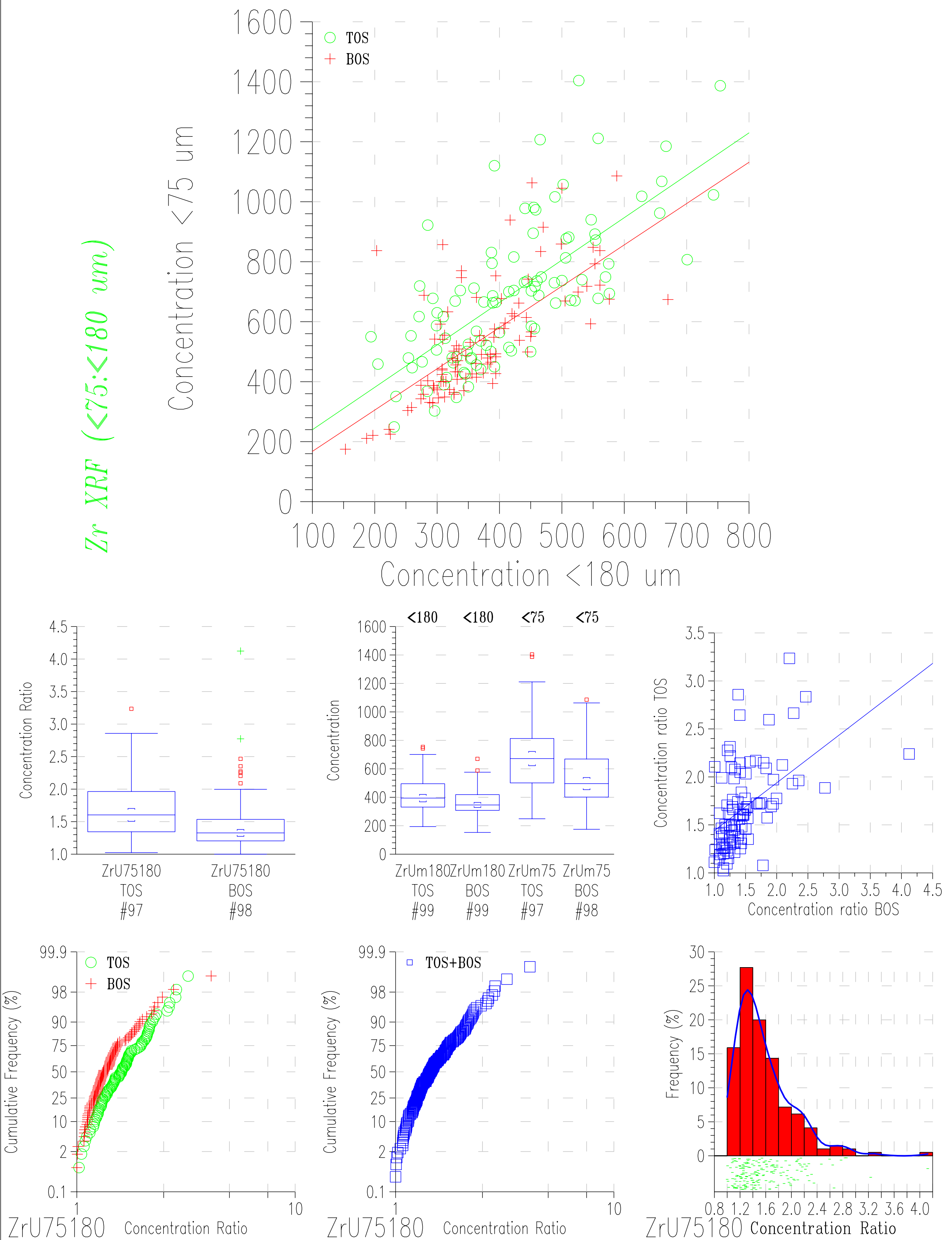
THOMSON GEOCHEMICAL SURVEY — Top & Bottom Outlet Sediments (TOS & BOS)




THOMSON GEOCHEMICAL SURVEY
Top & Bottom Outlet Sediments (TOS & BOS)
TOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
BOS
4.12315
2.46595
1.74601
1.43966
1.2545
1
ZrU75180
Zr XRF (<75:<180 um)

THOMSON GEOCHEMICAL SURVEY

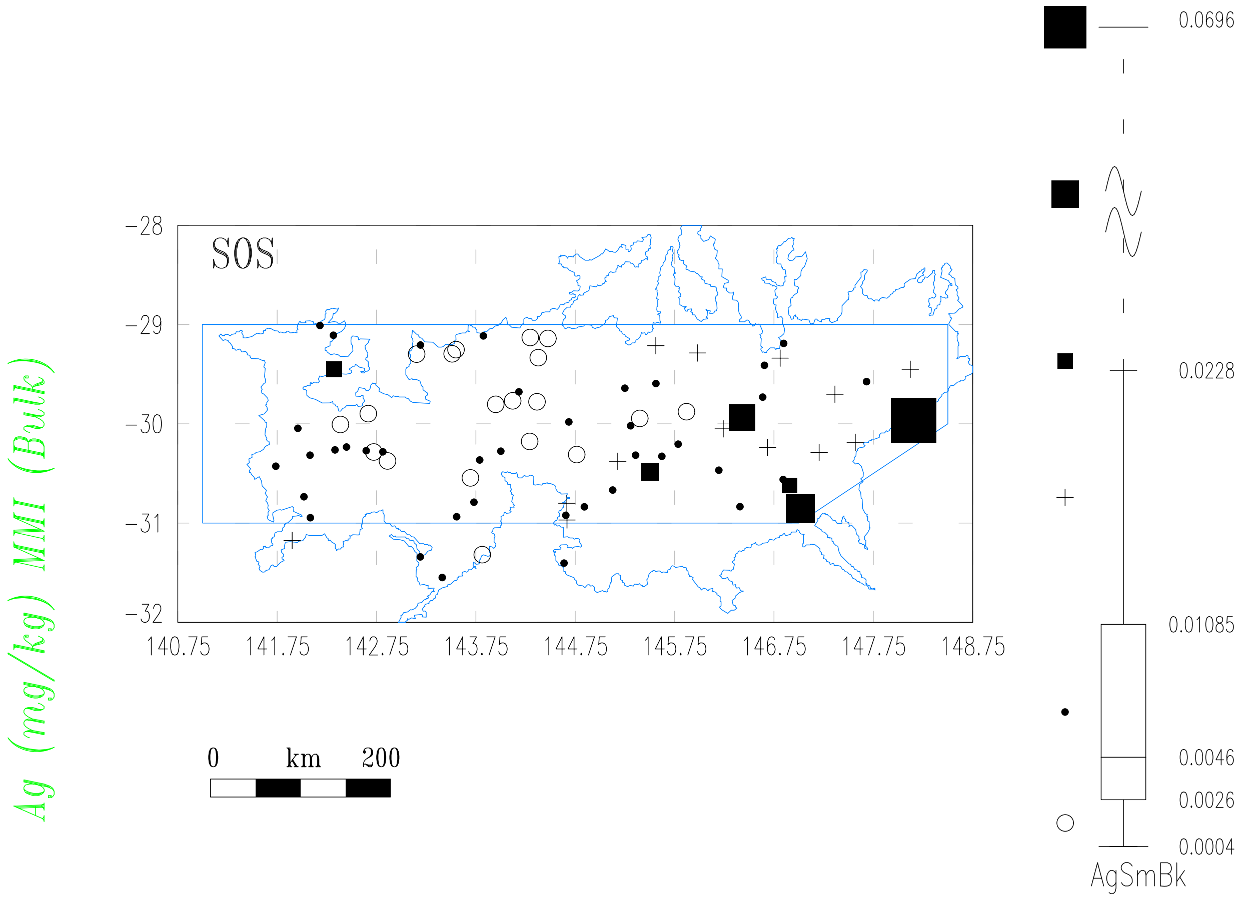
Top & Bottom Outlet Sediments (TOS & BOS)

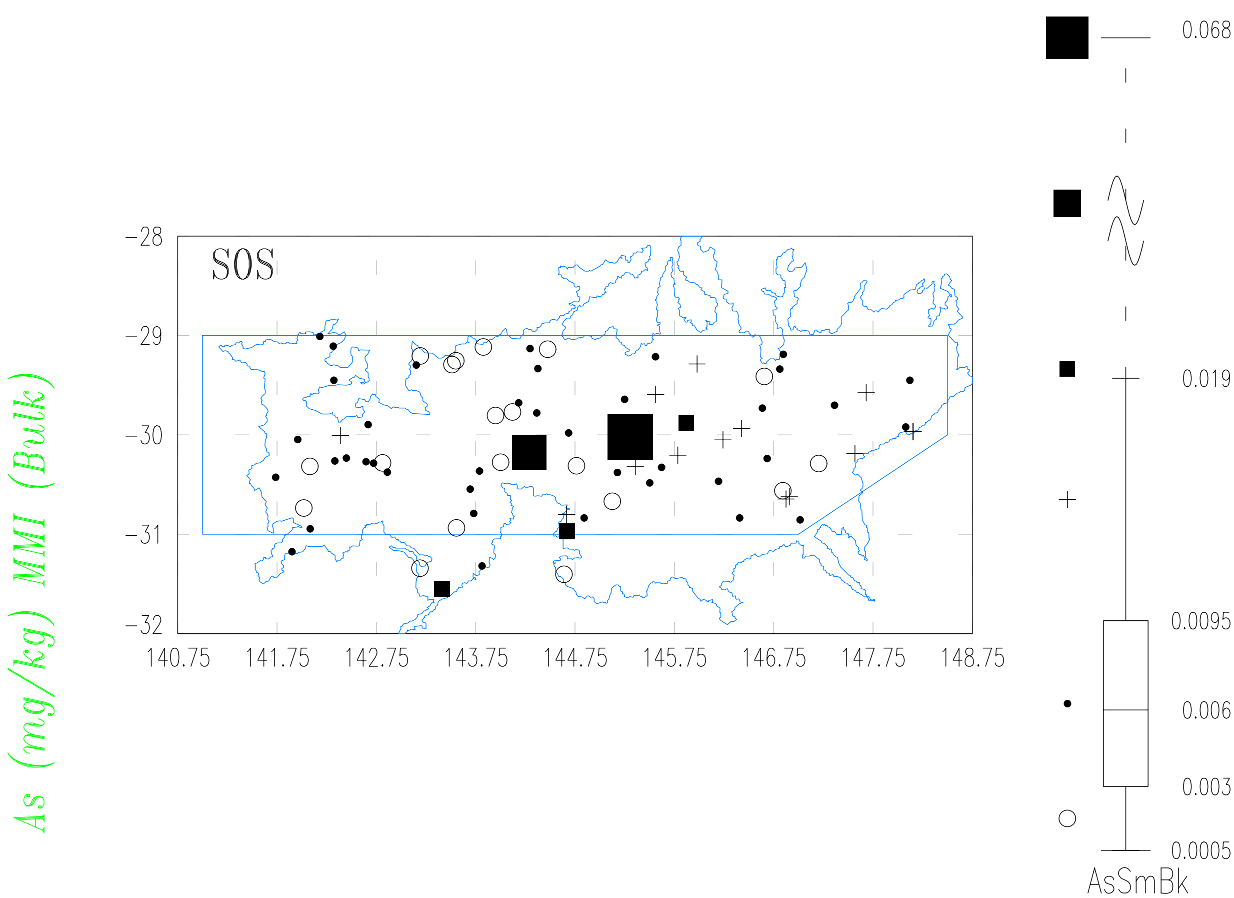


APPENDIX 3: MMI GEOCHEMICAL MAPS

THOMSON GEOCHEMICAL SURVEY

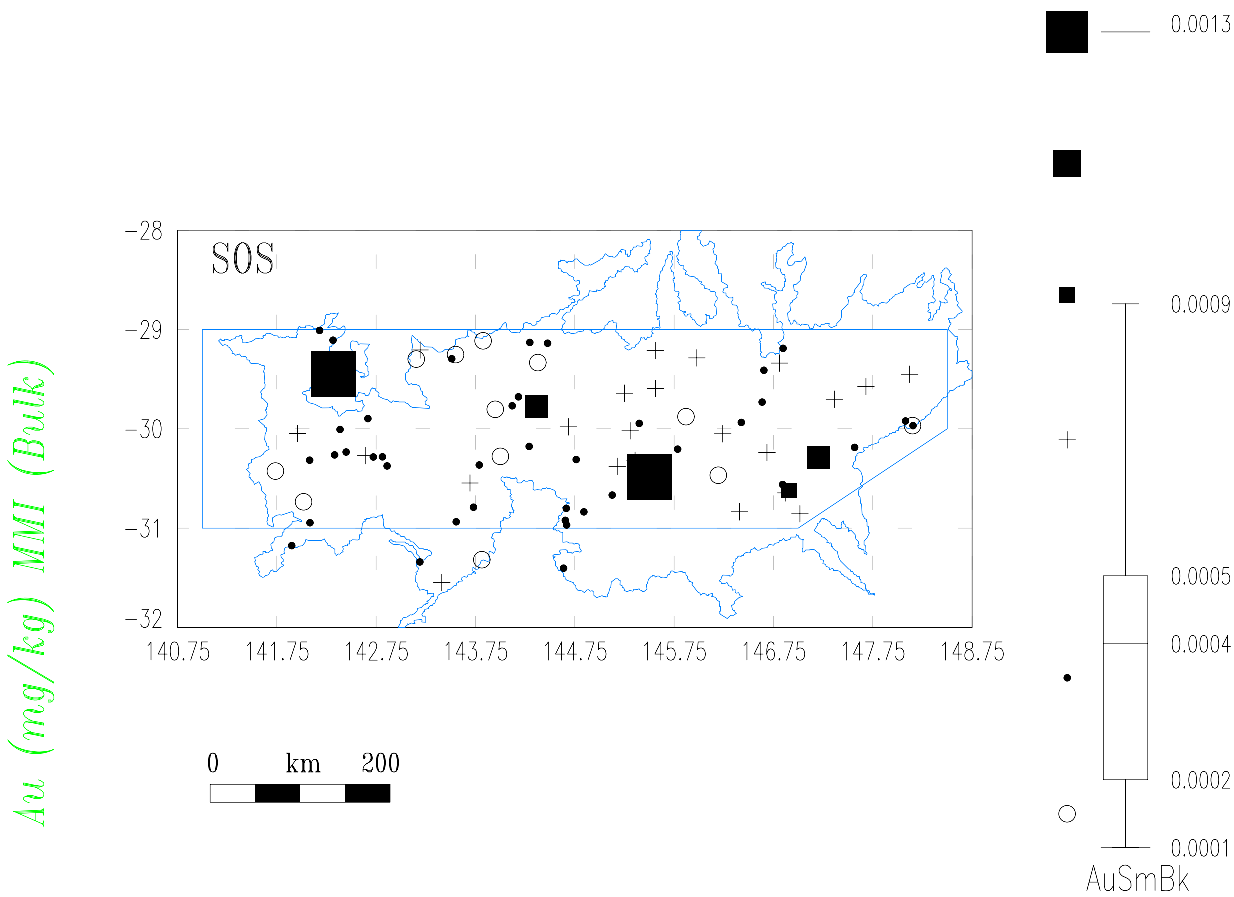
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

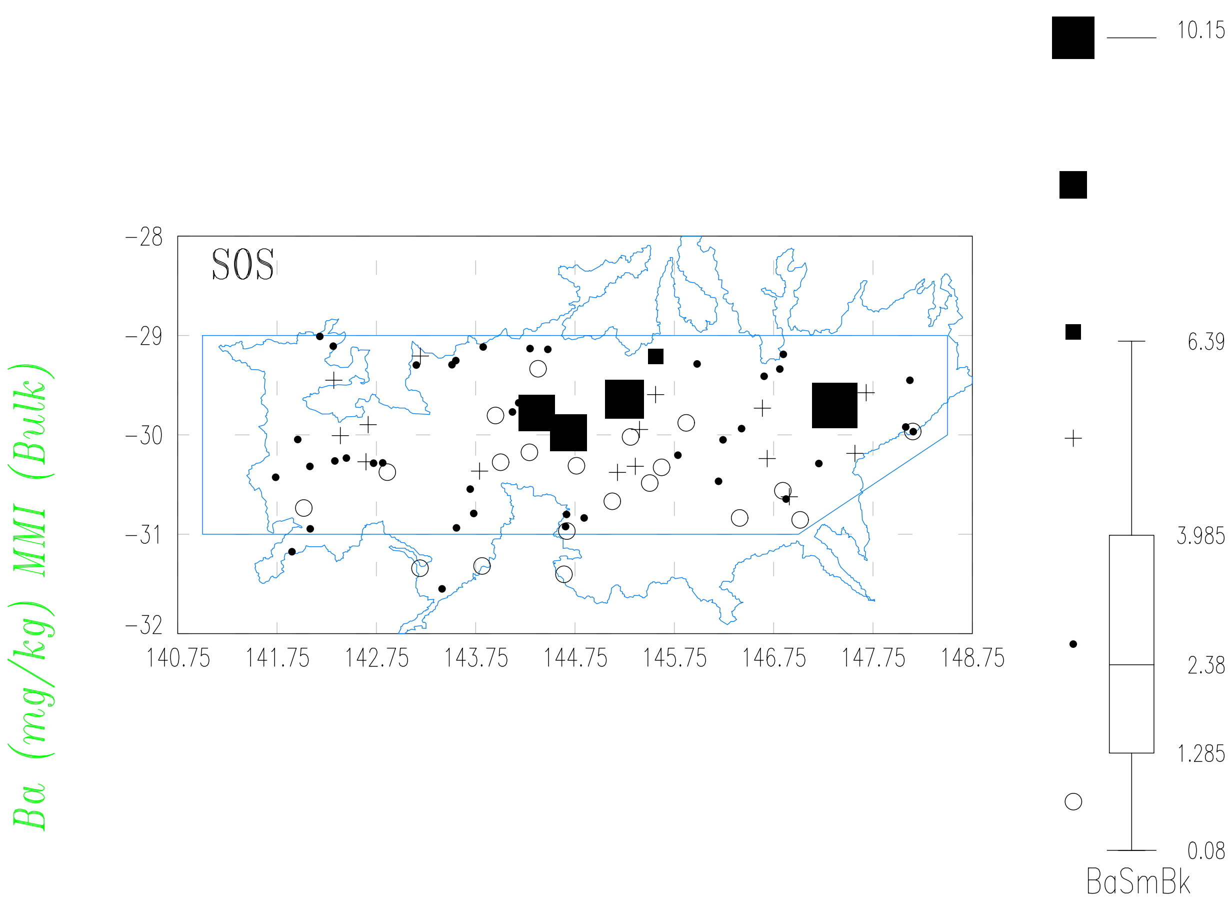




THOMSON GEOCHEMICAL SURVEY

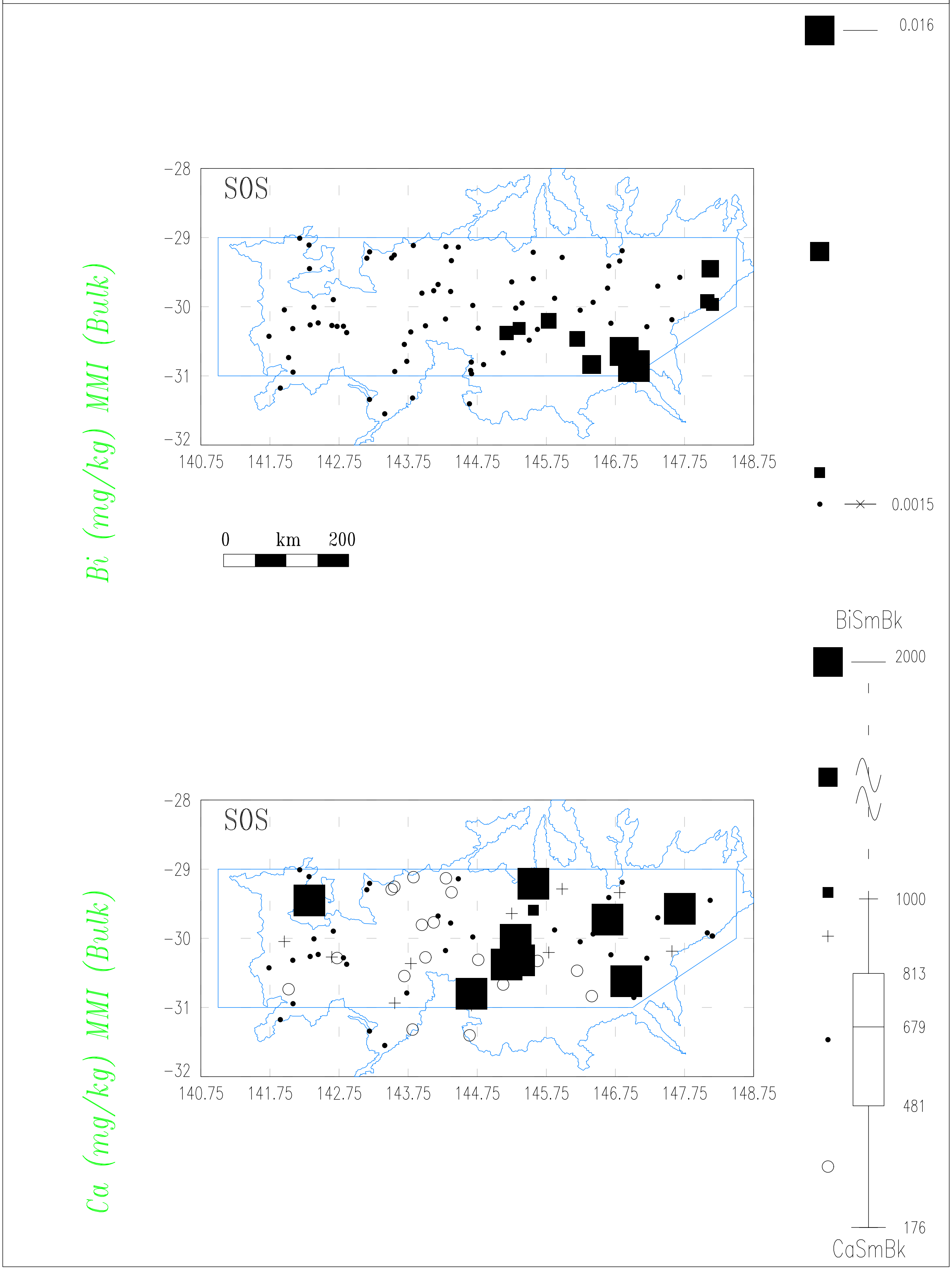
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





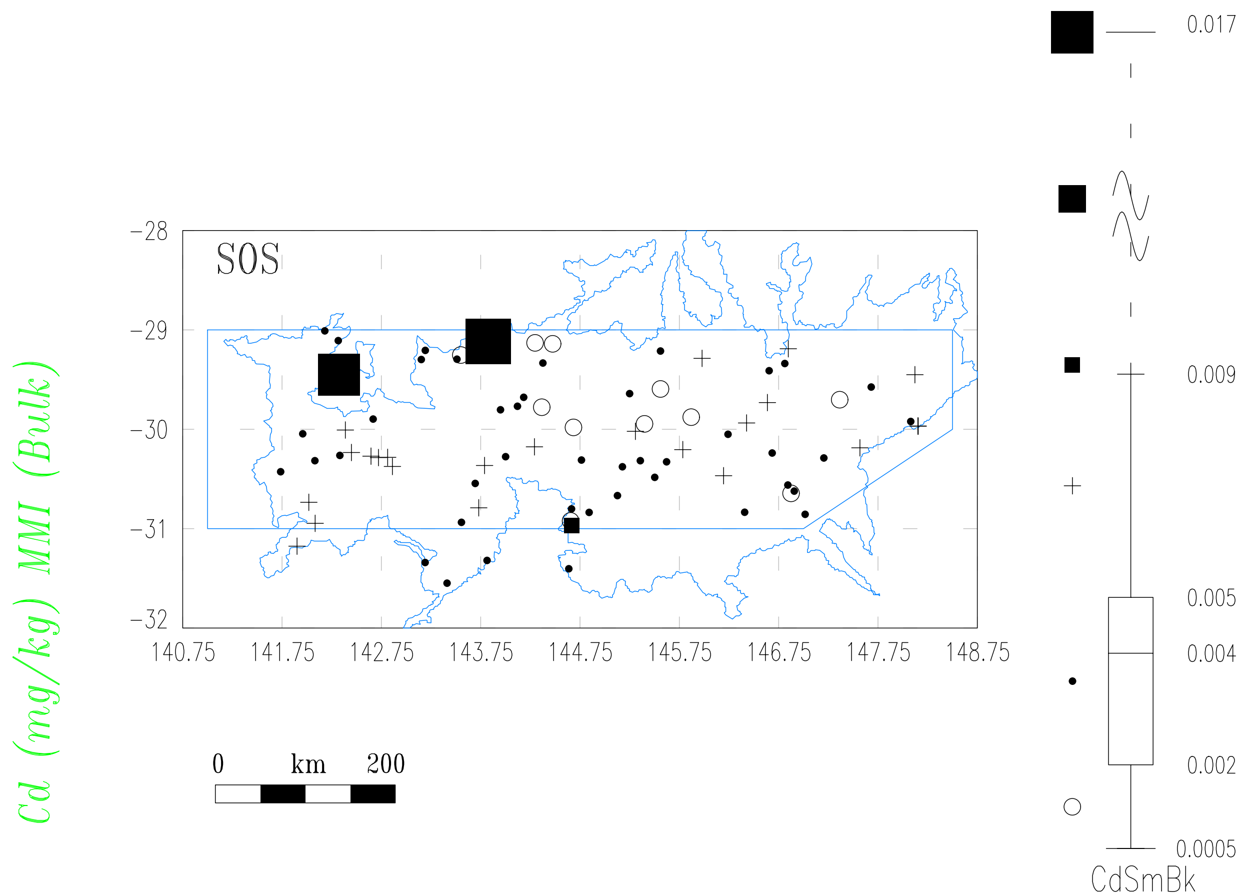
THOMSON GEOCHEMICAL SURVEY

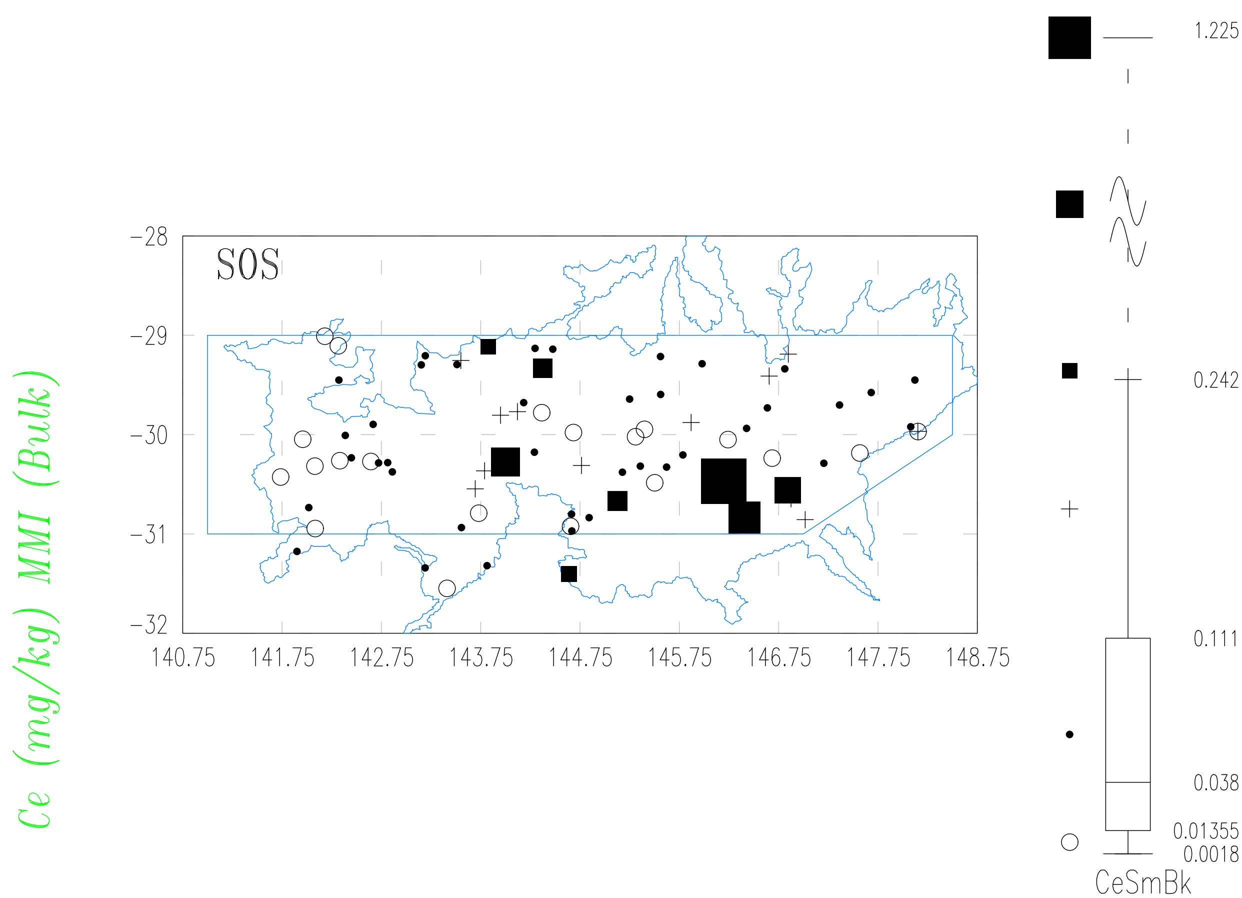
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)



THOMSON GEOCHEMICAL SURVEY

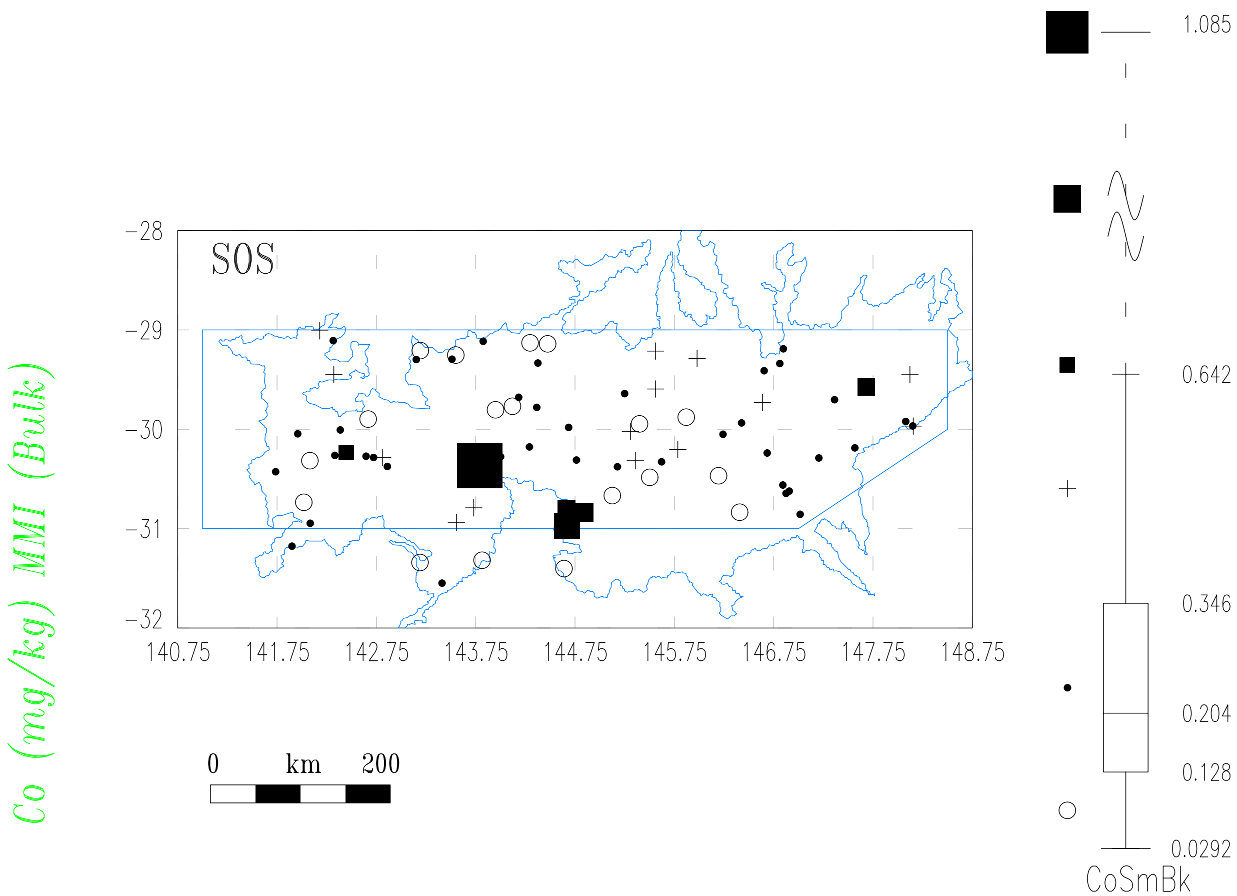
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

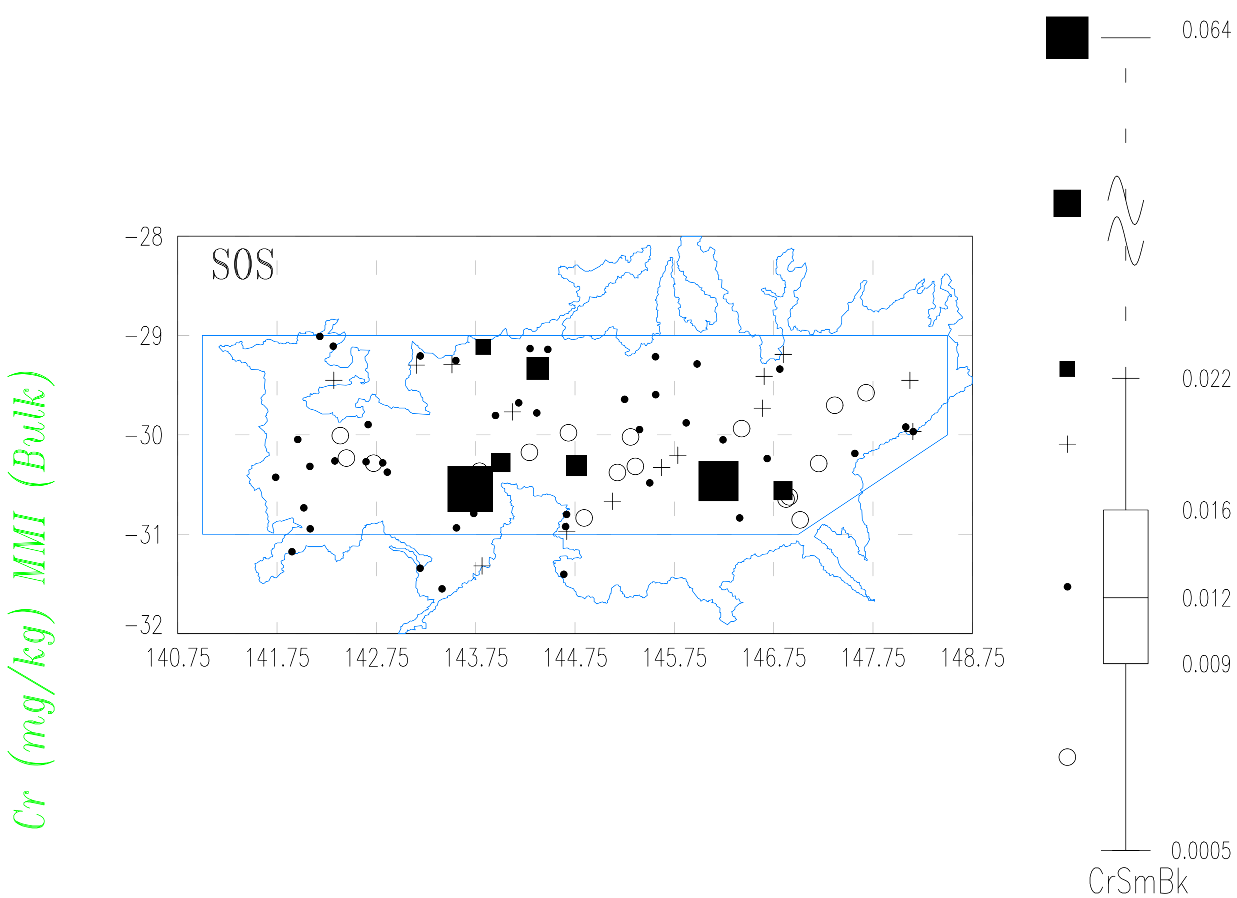




THOMSON GEOCHEMICAL SURVEY

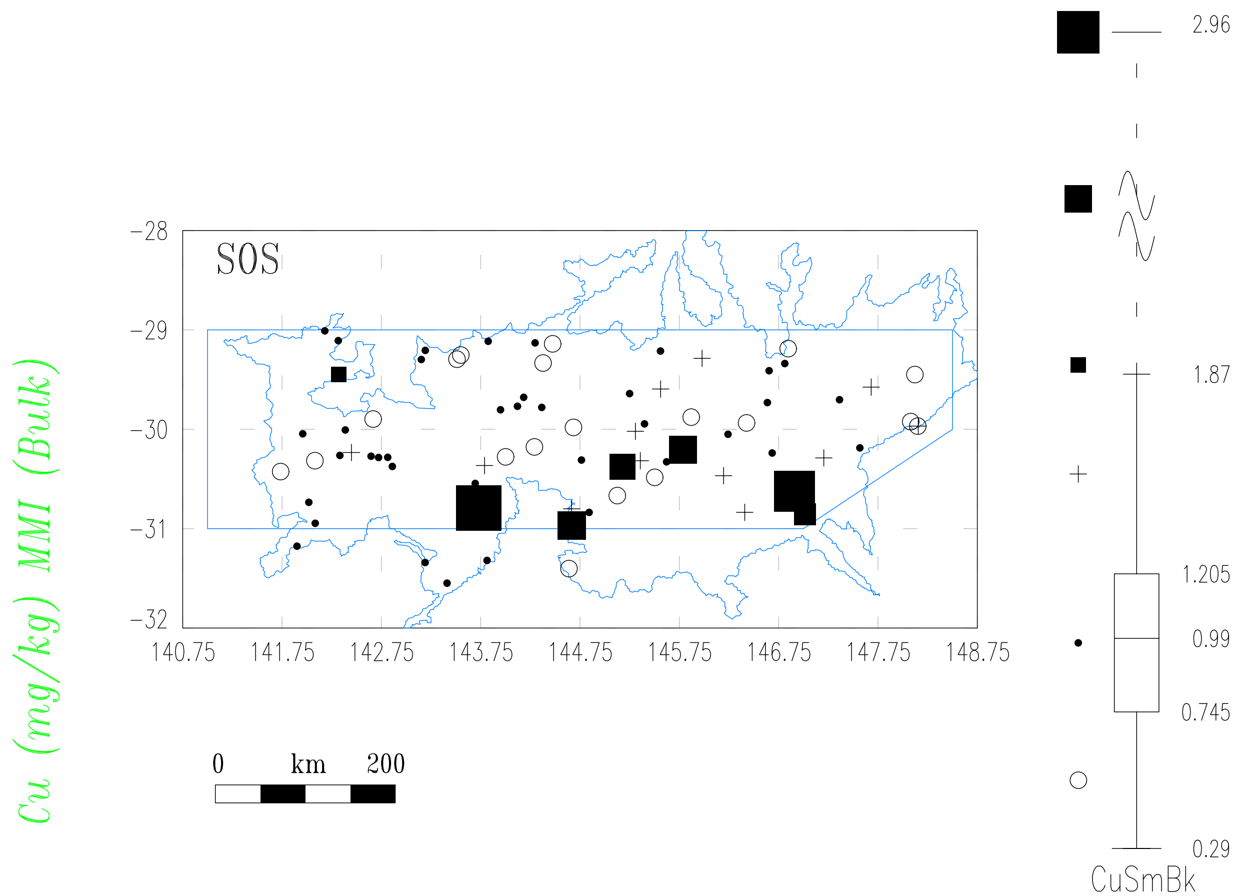
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

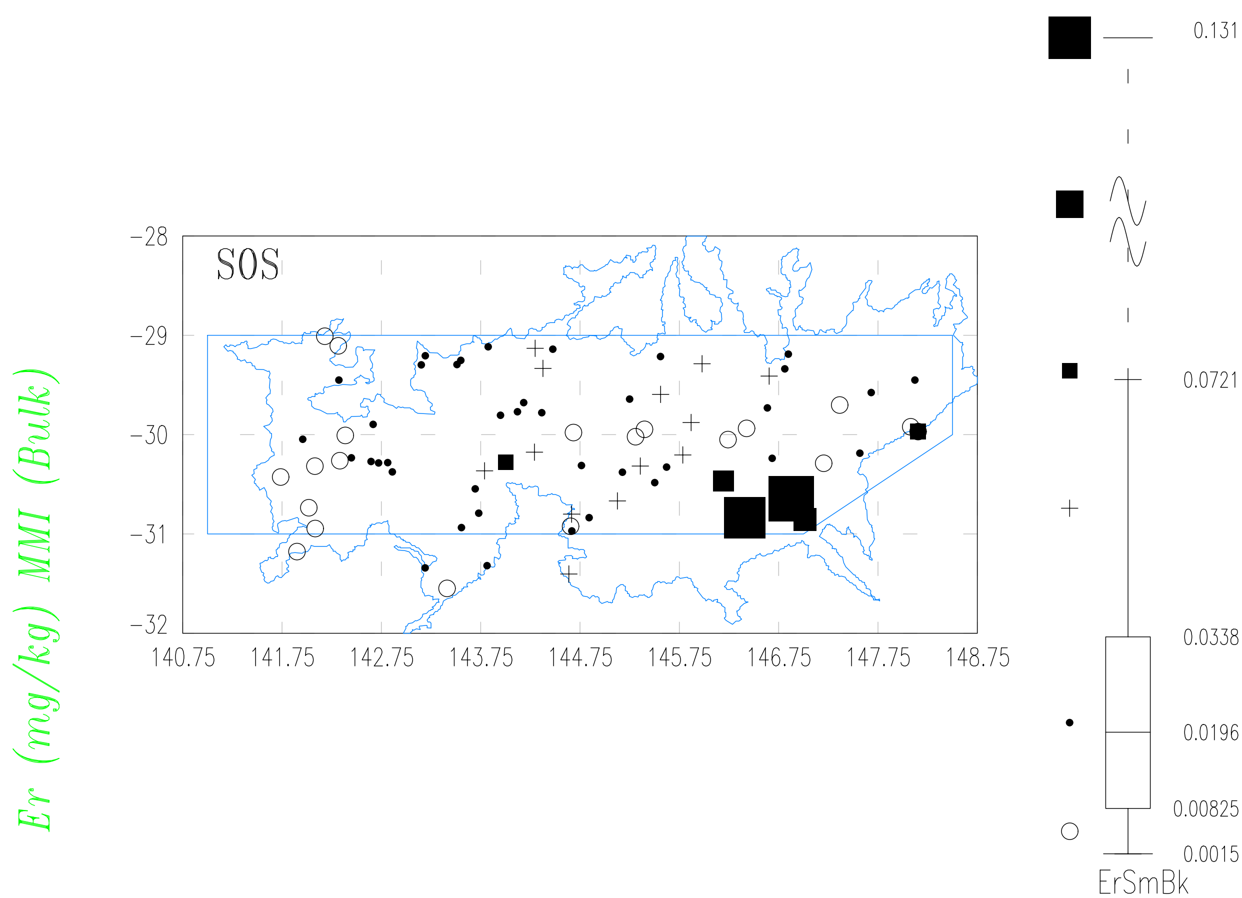




THOMSON GEOCHEMICAL SURVEY

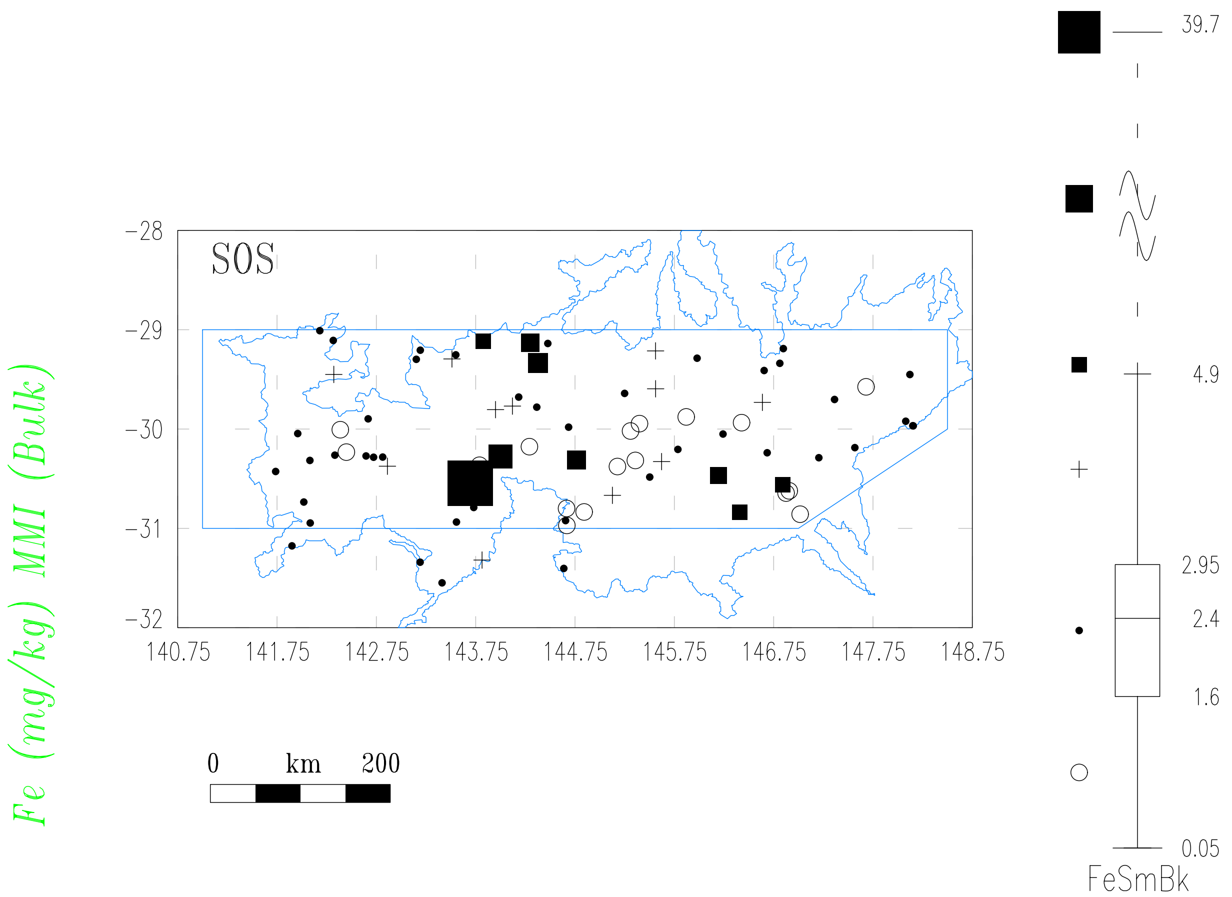
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

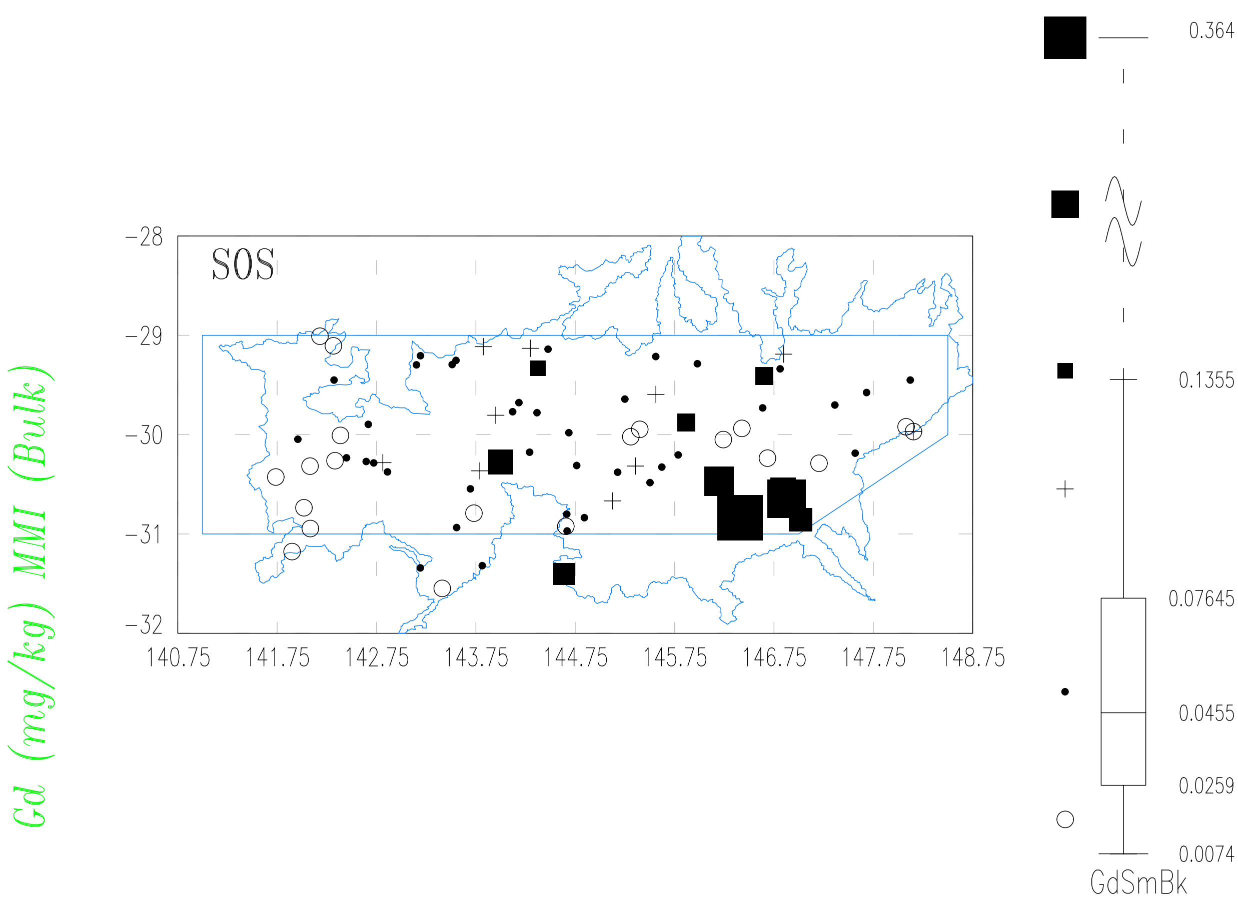




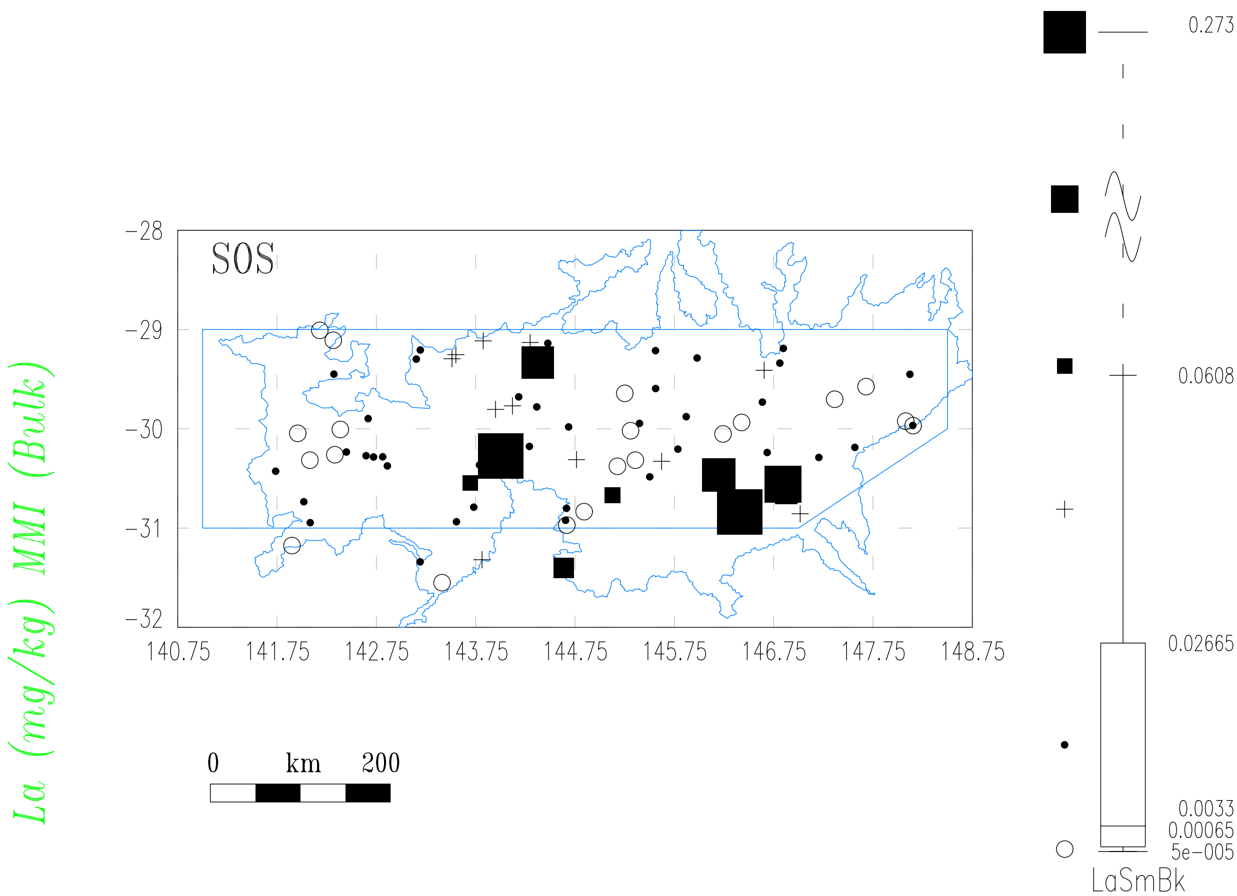
THOMSON GEOCHEMICAL SURVEY

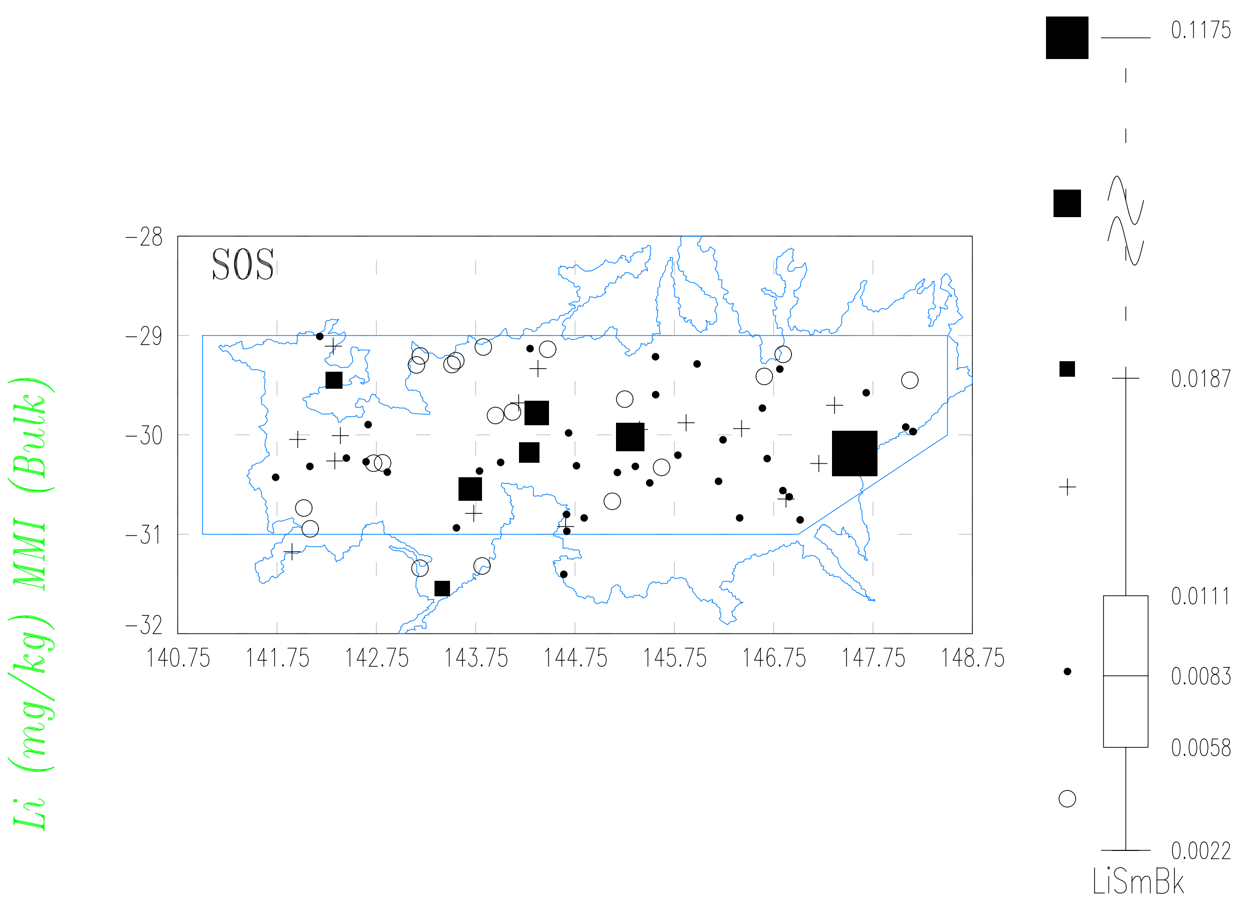
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





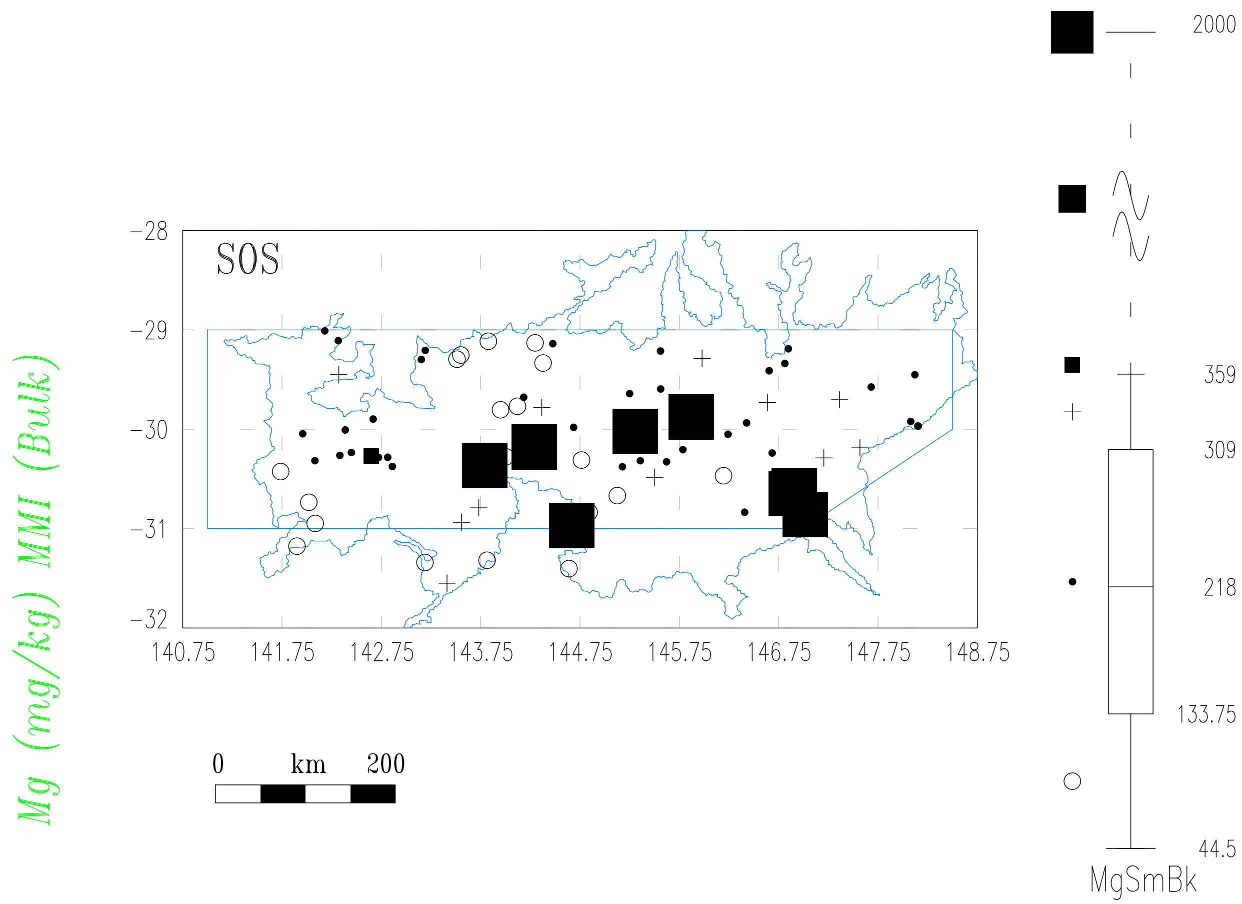
THOMSON GEOCHEMICAL SURVEY — Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

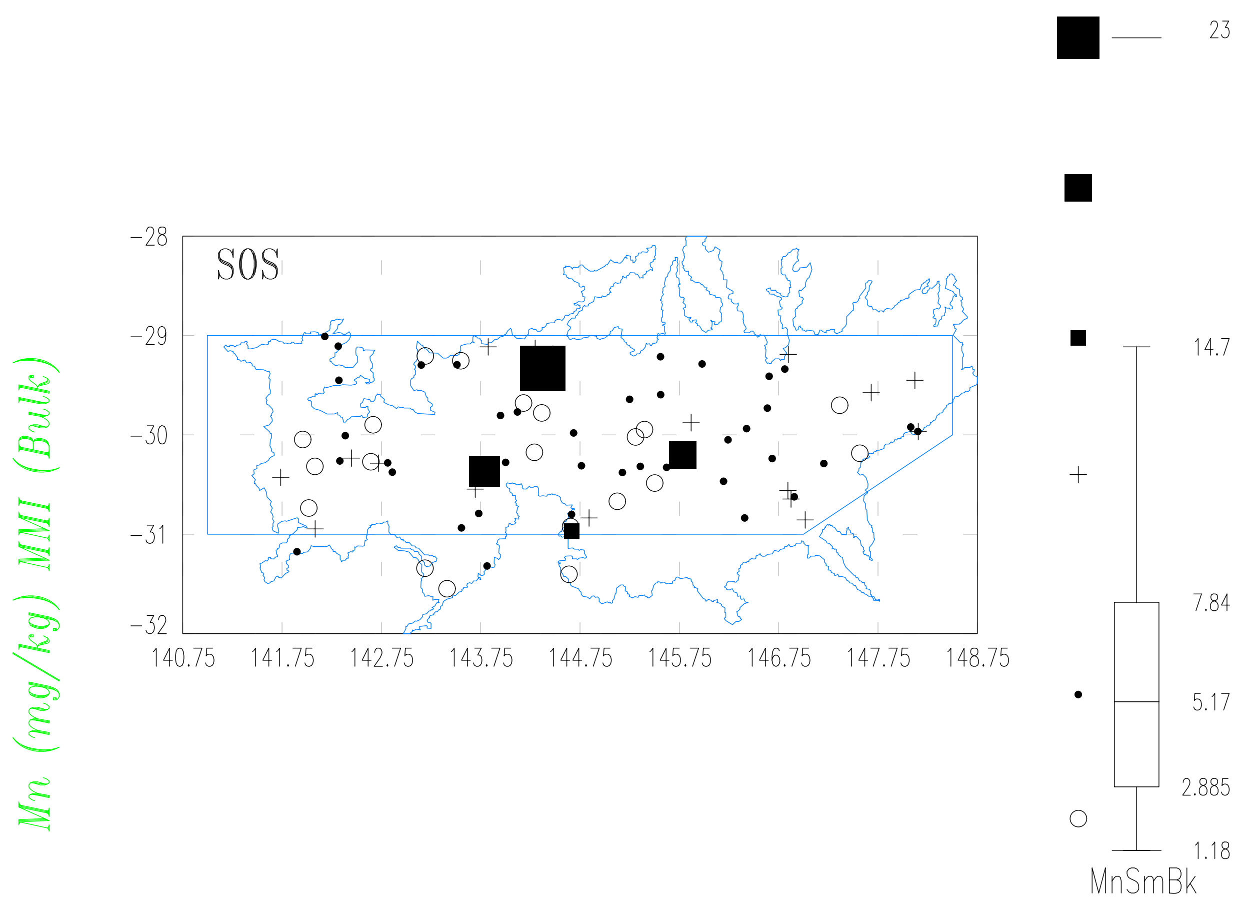




THOMSON GEOCHEMICAL SURVEY

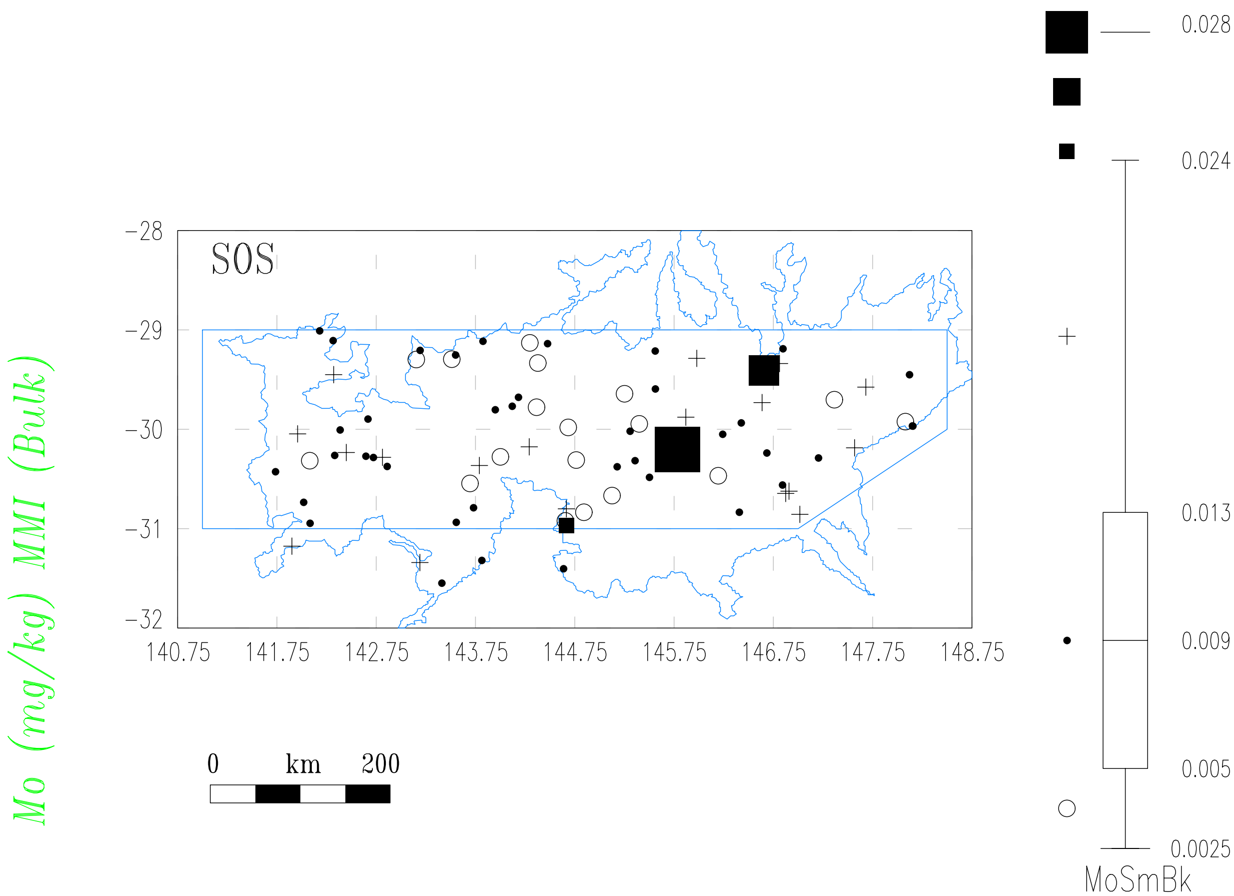
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

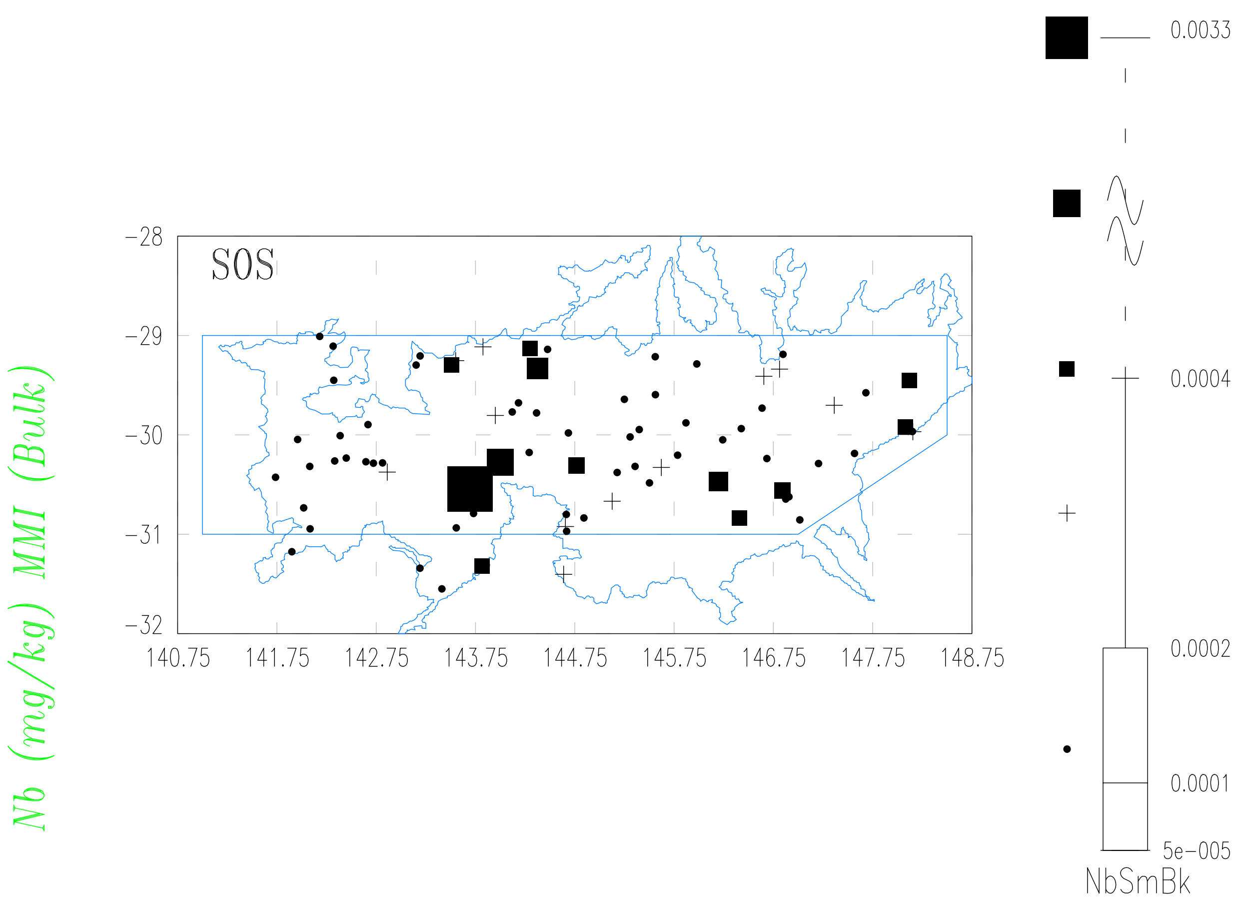




THOMSON GEOCHEMICAL SURVEY

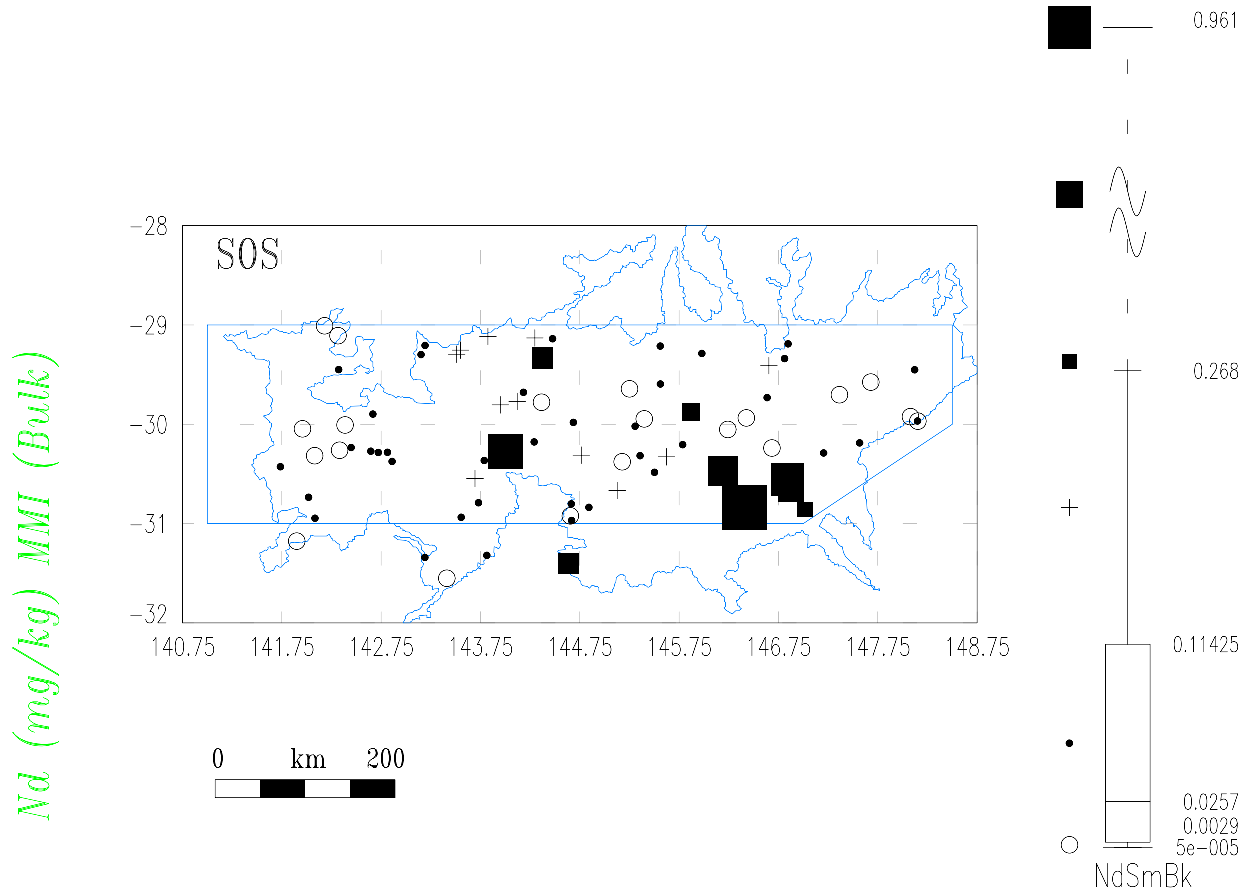
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

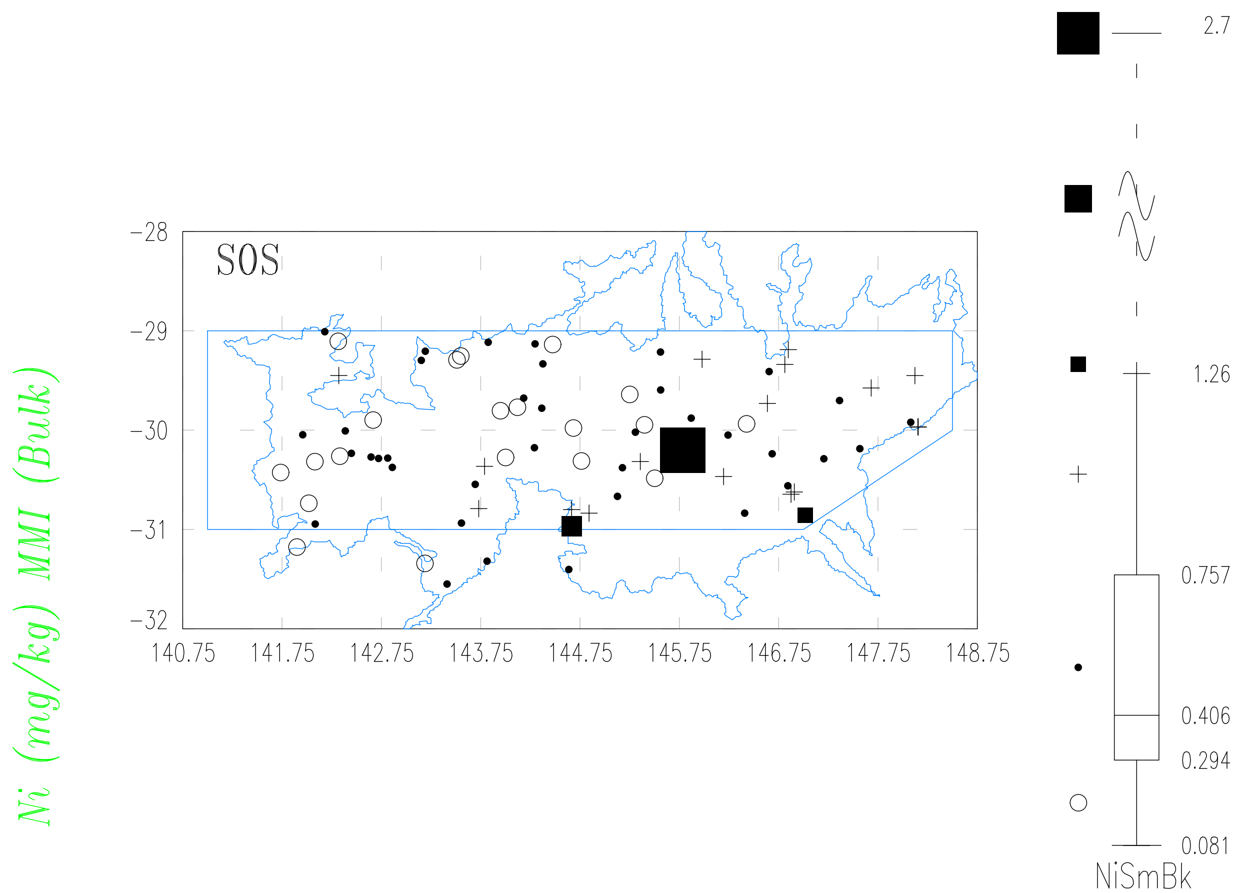




THOMSON GEOCHEMICAL SURVEY

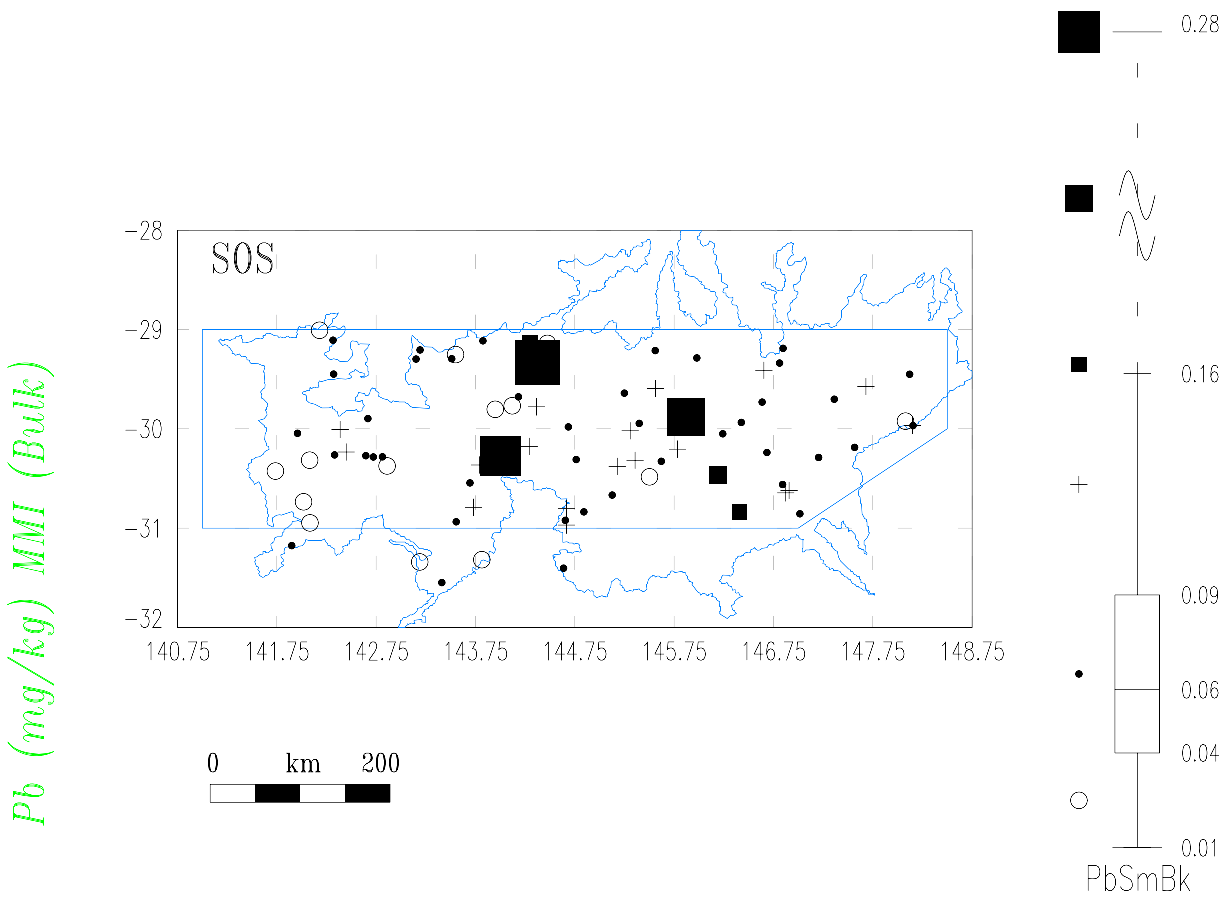
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

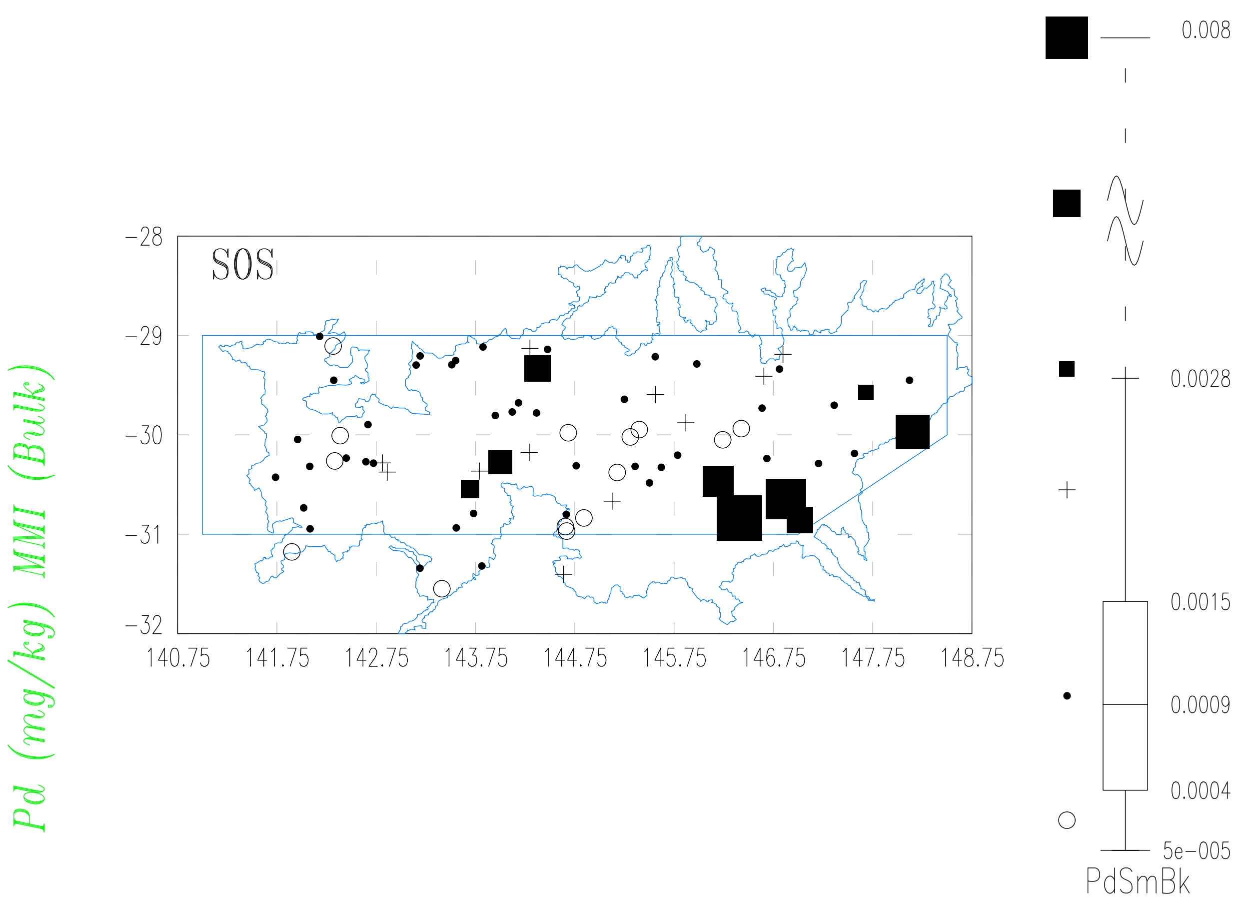




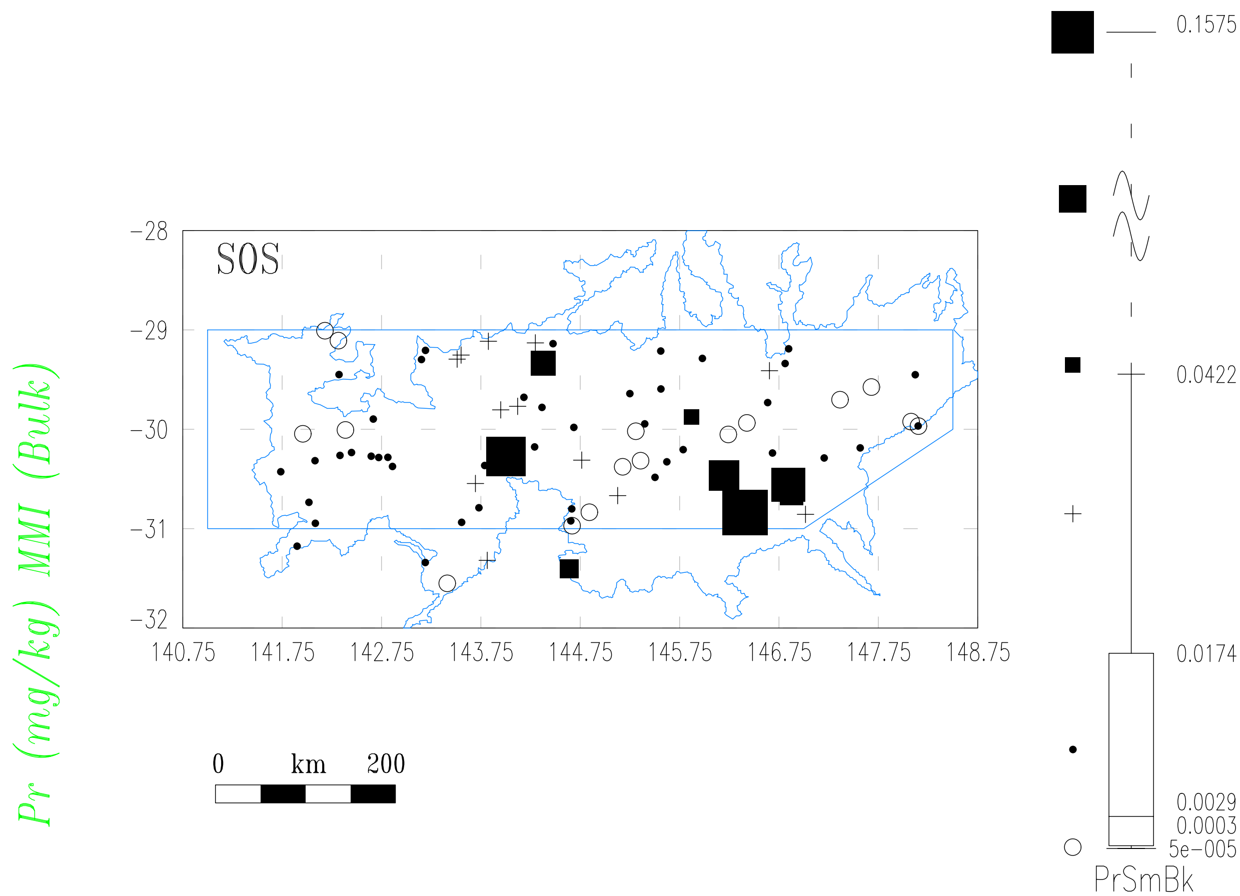
THOMSON GEOCHEMICAL SURVEY

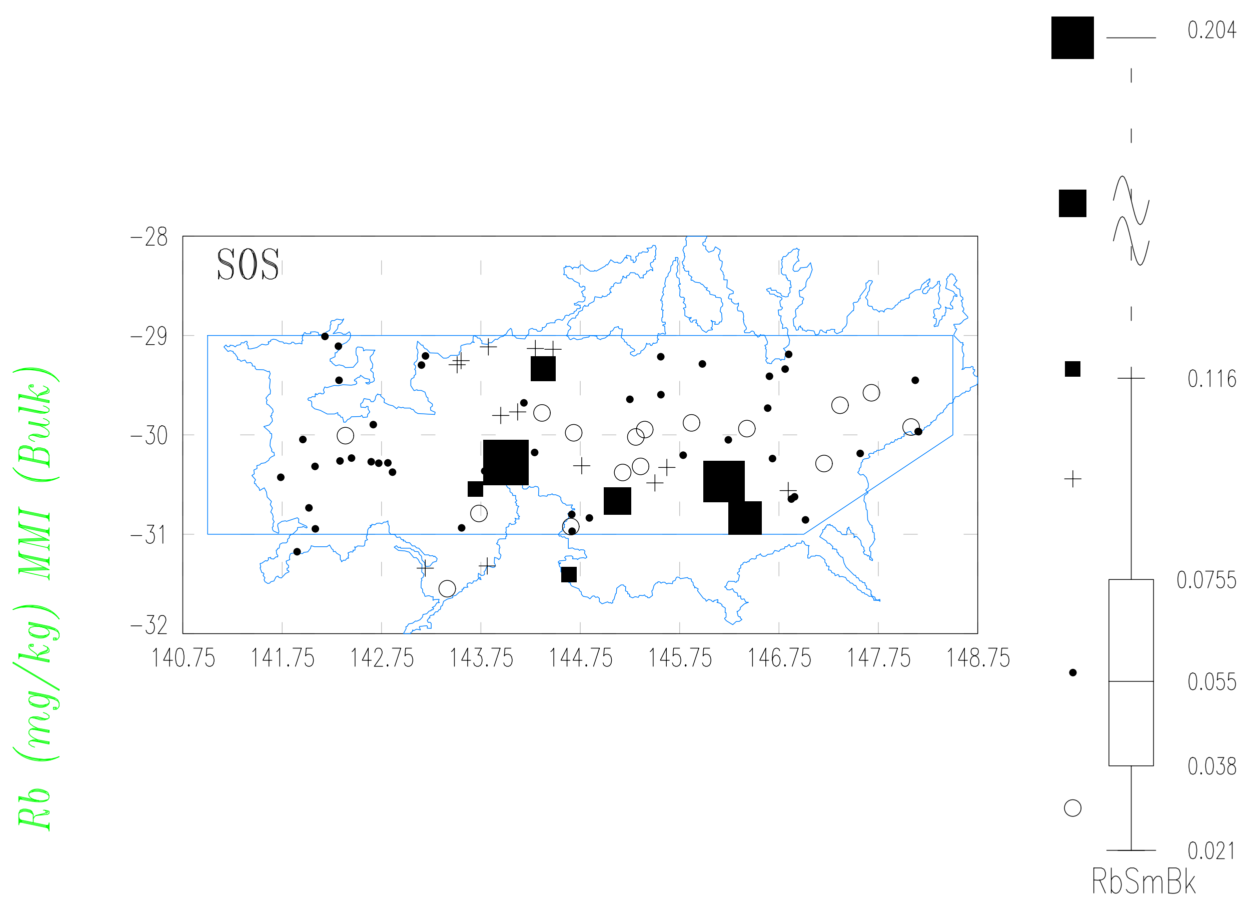
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





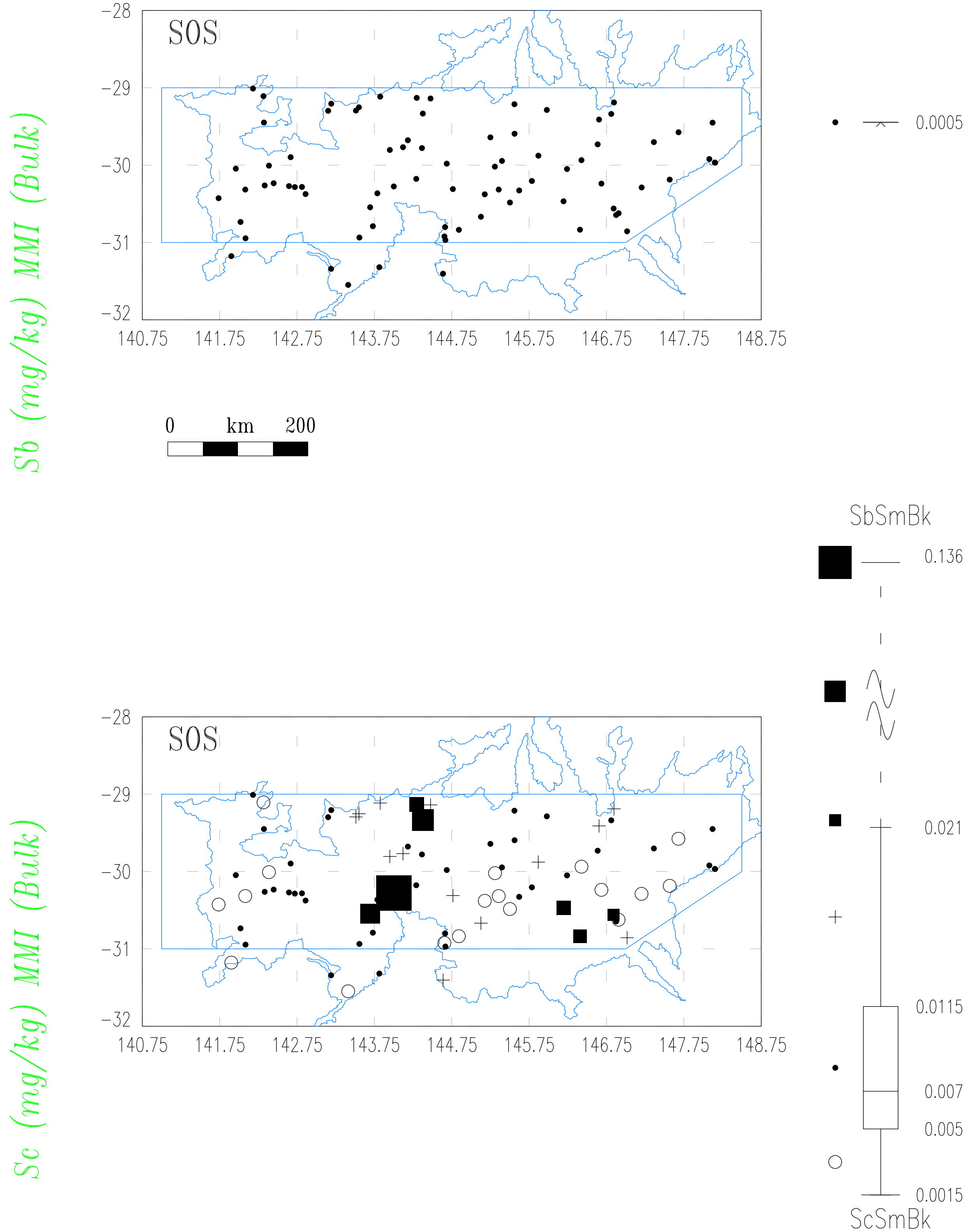
THOMSON GEOCHEMICAL SURVEY   Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





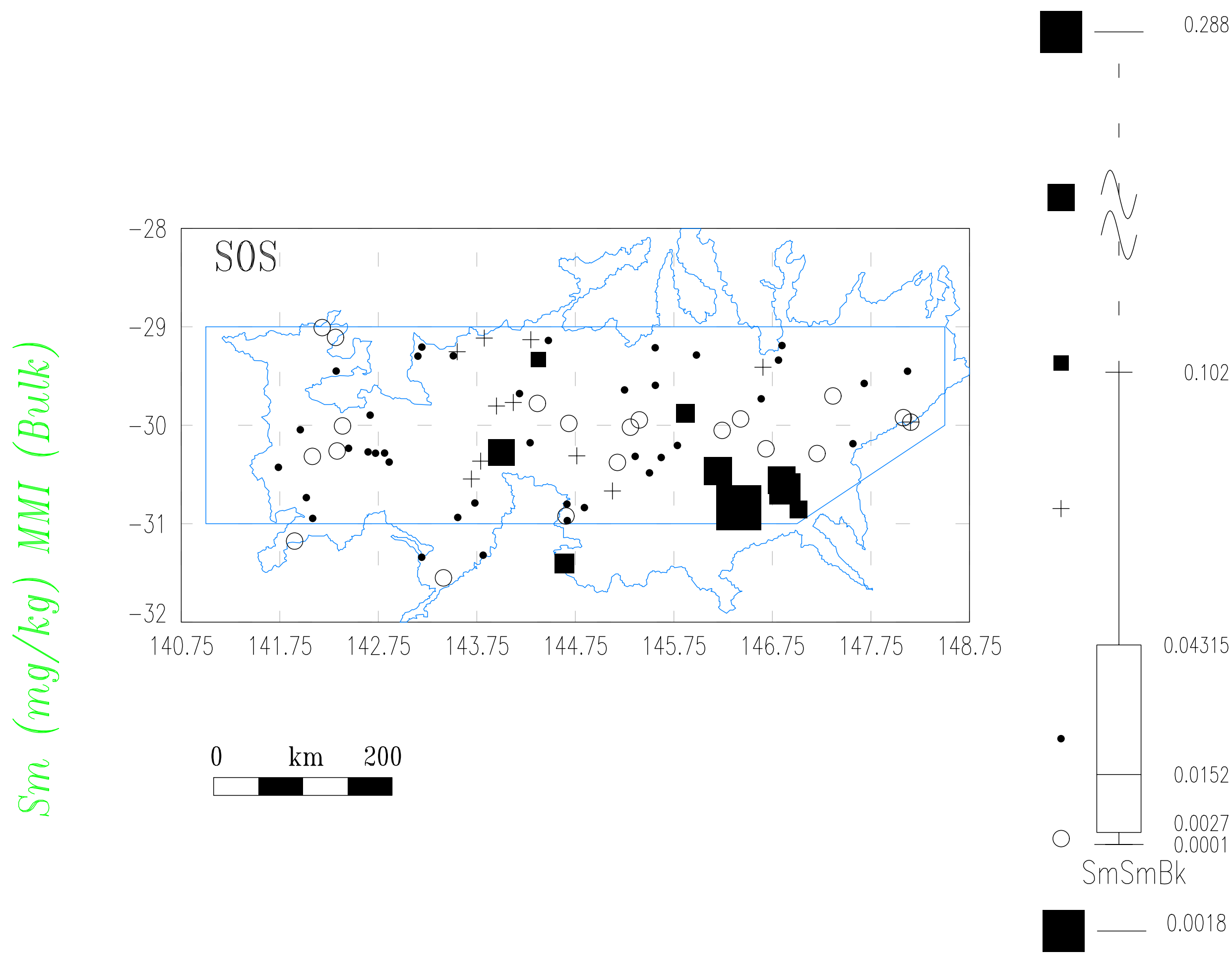
THOMSON GEOCHEMICAL SURVEY

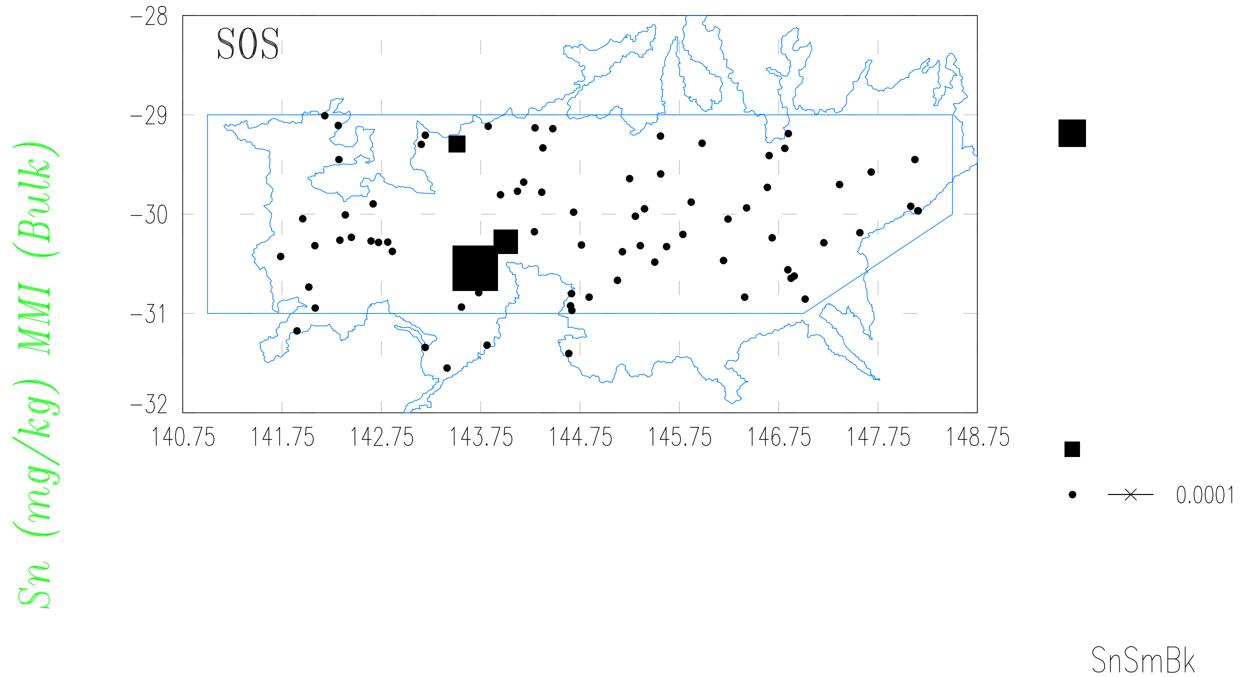
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)



THOMSON GEOCHEMICAL SURVEY

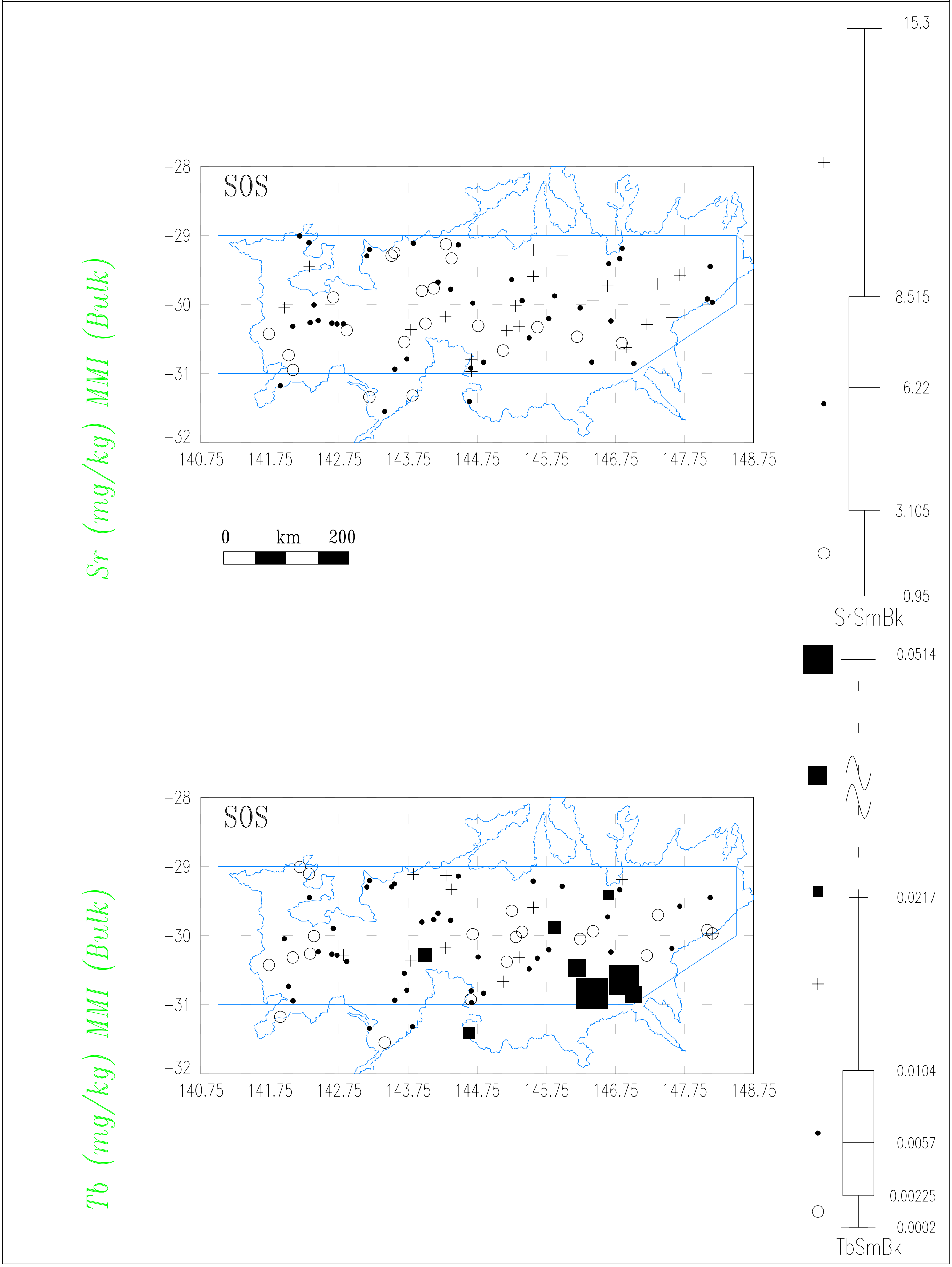
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





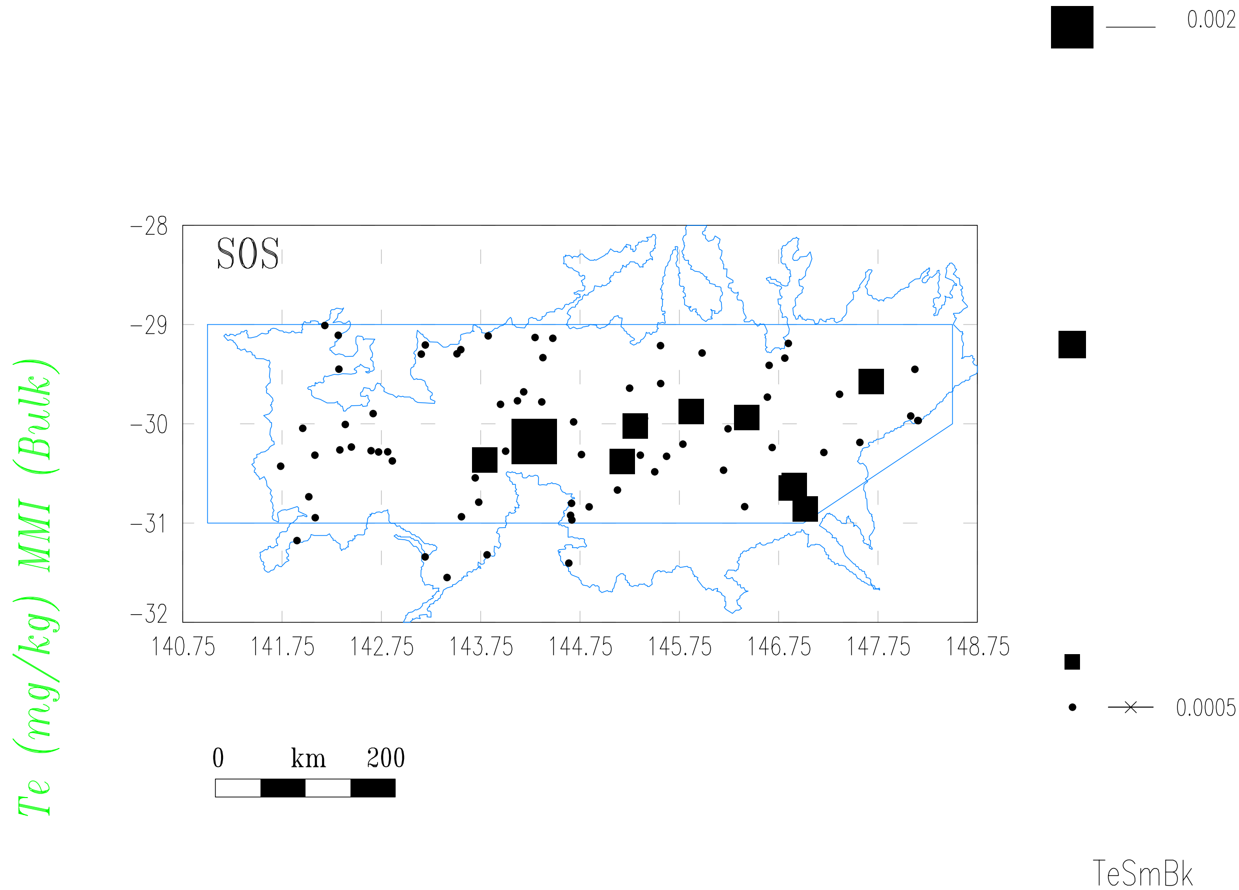
THOMSON GEOCHEMICAL SURVEY

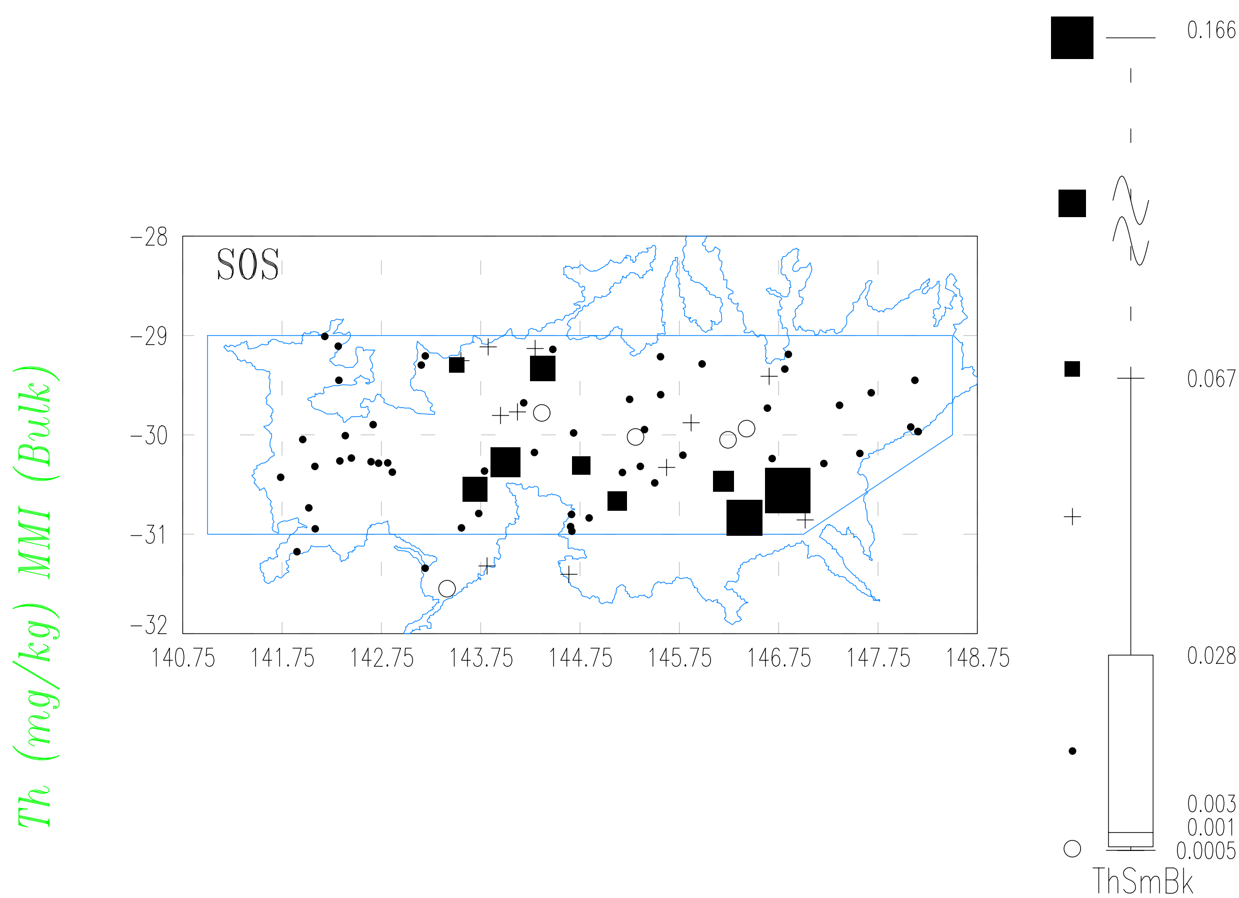
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)



THOMSON GEOCHEMICAL SURVEY

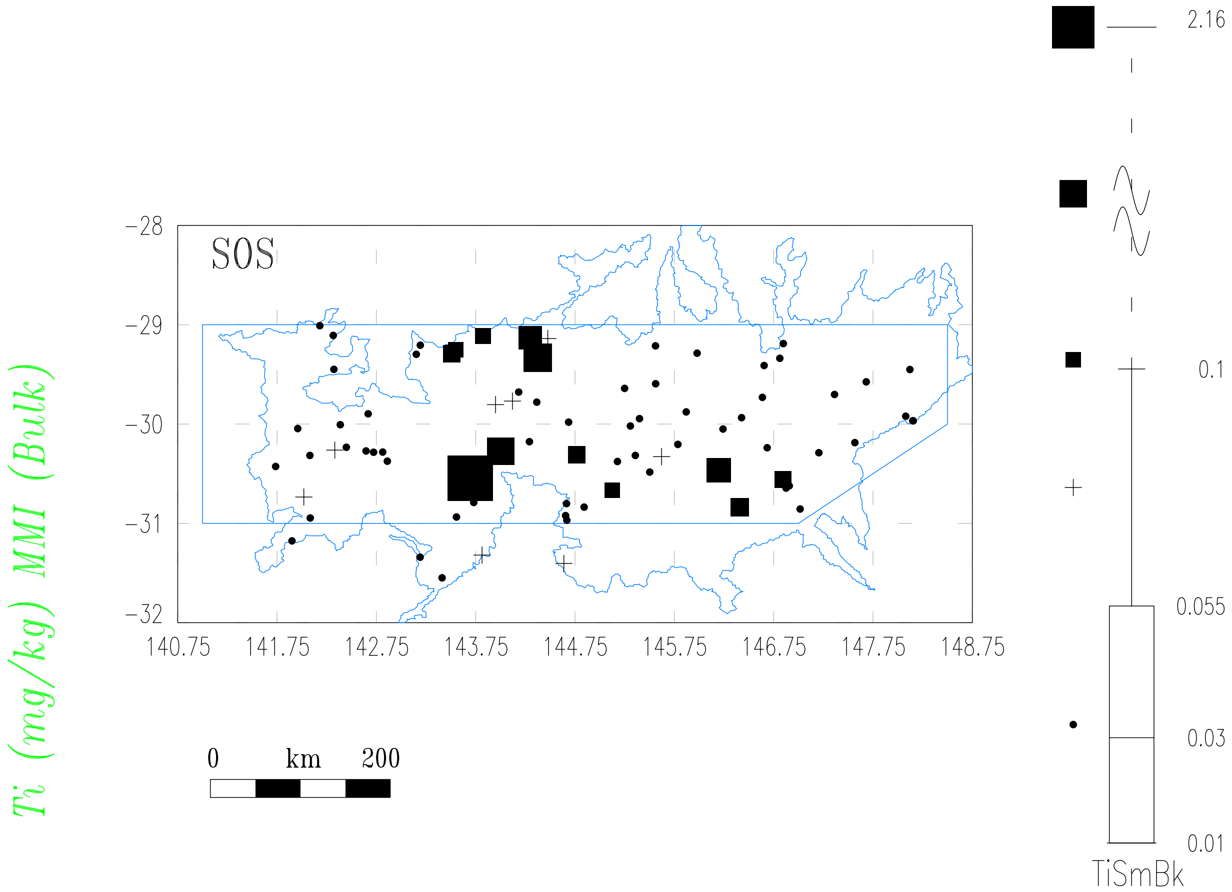
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

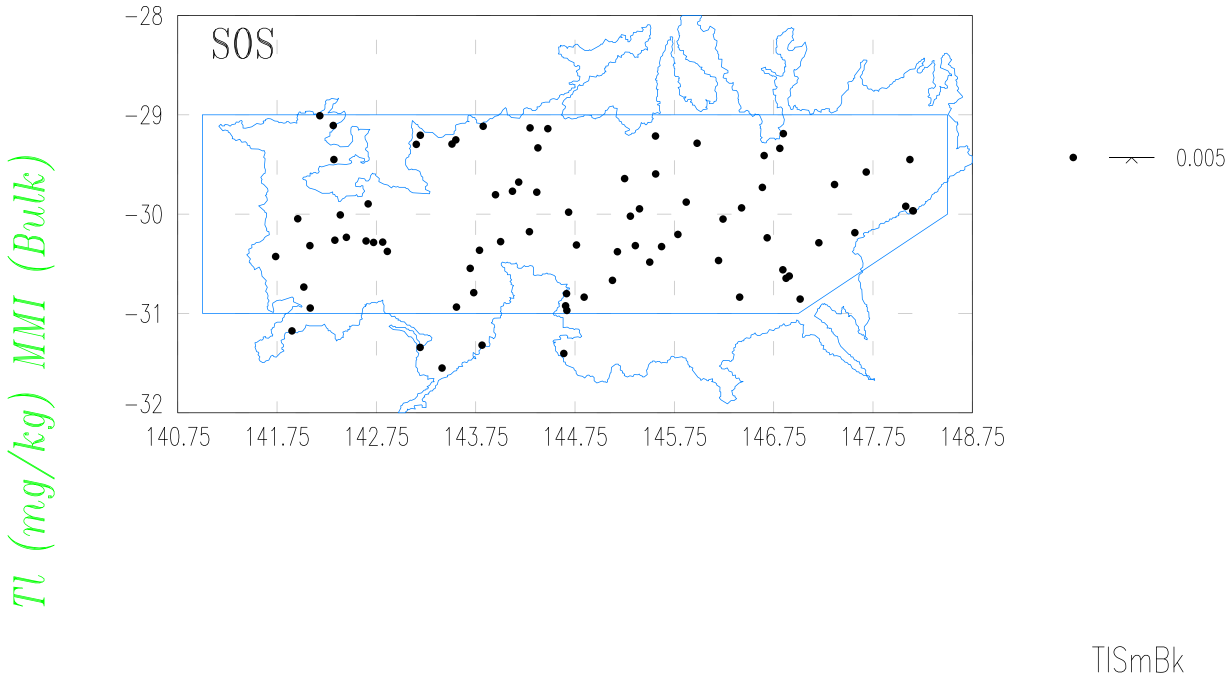


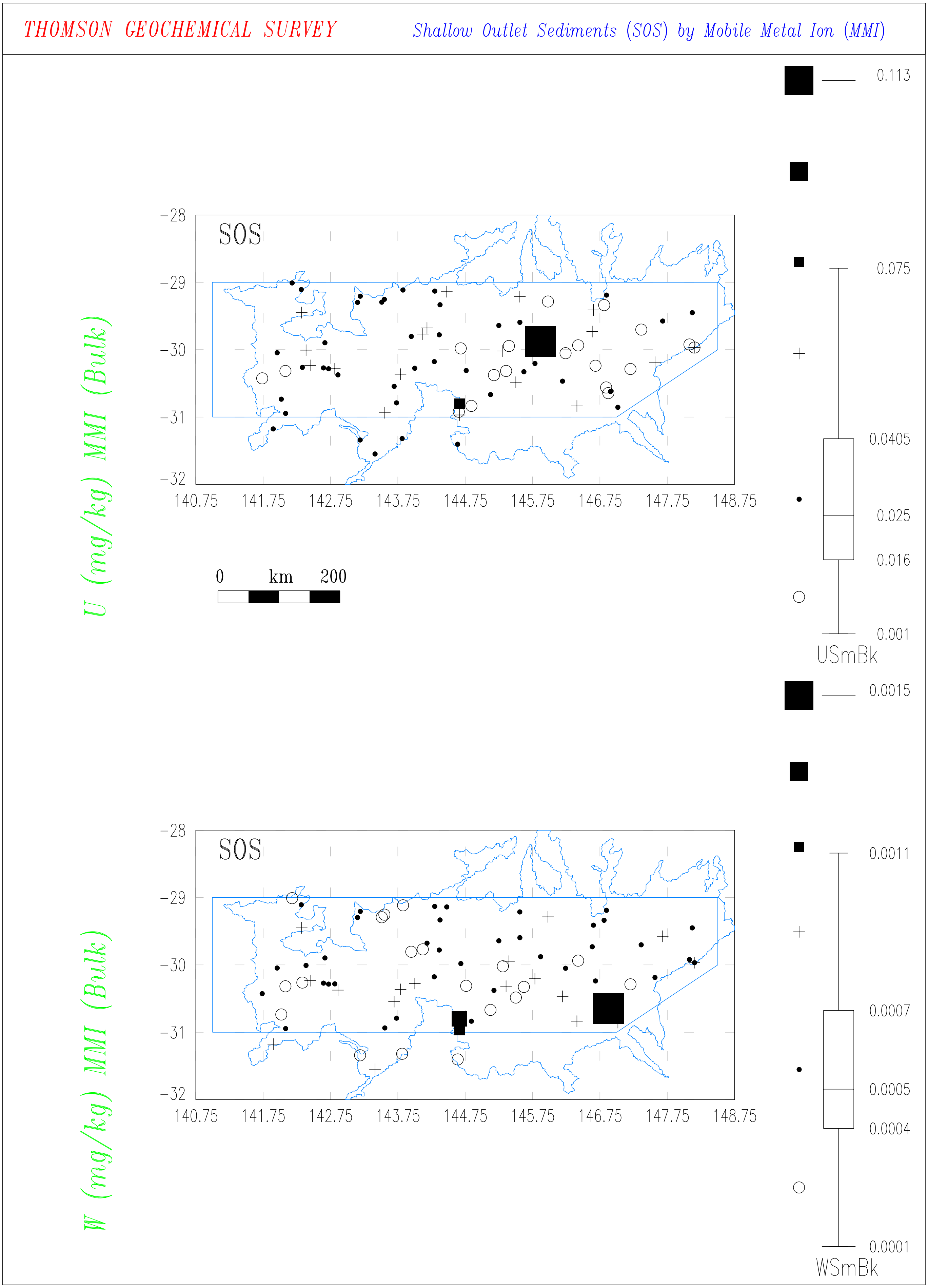


THOMSON GEOCHEMICAL SURVEY

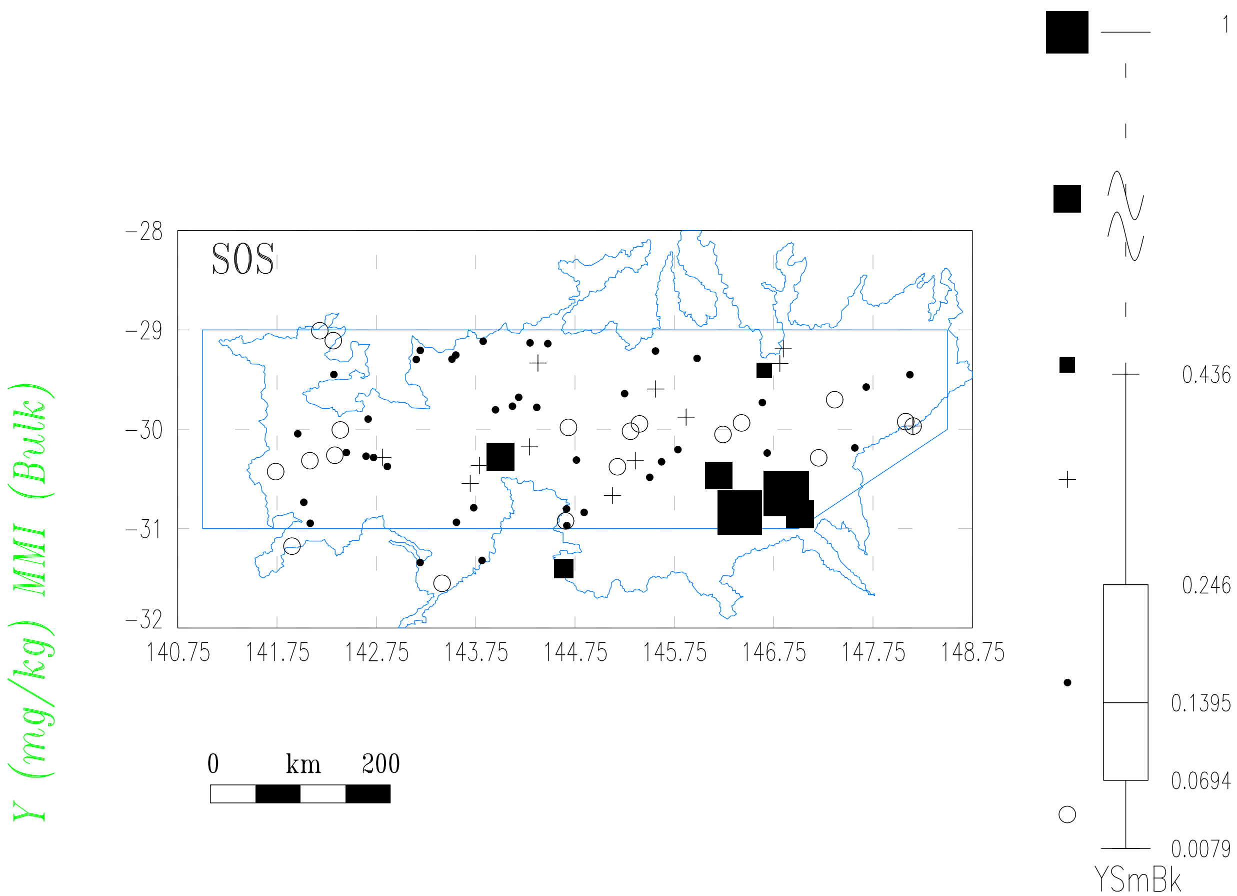
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

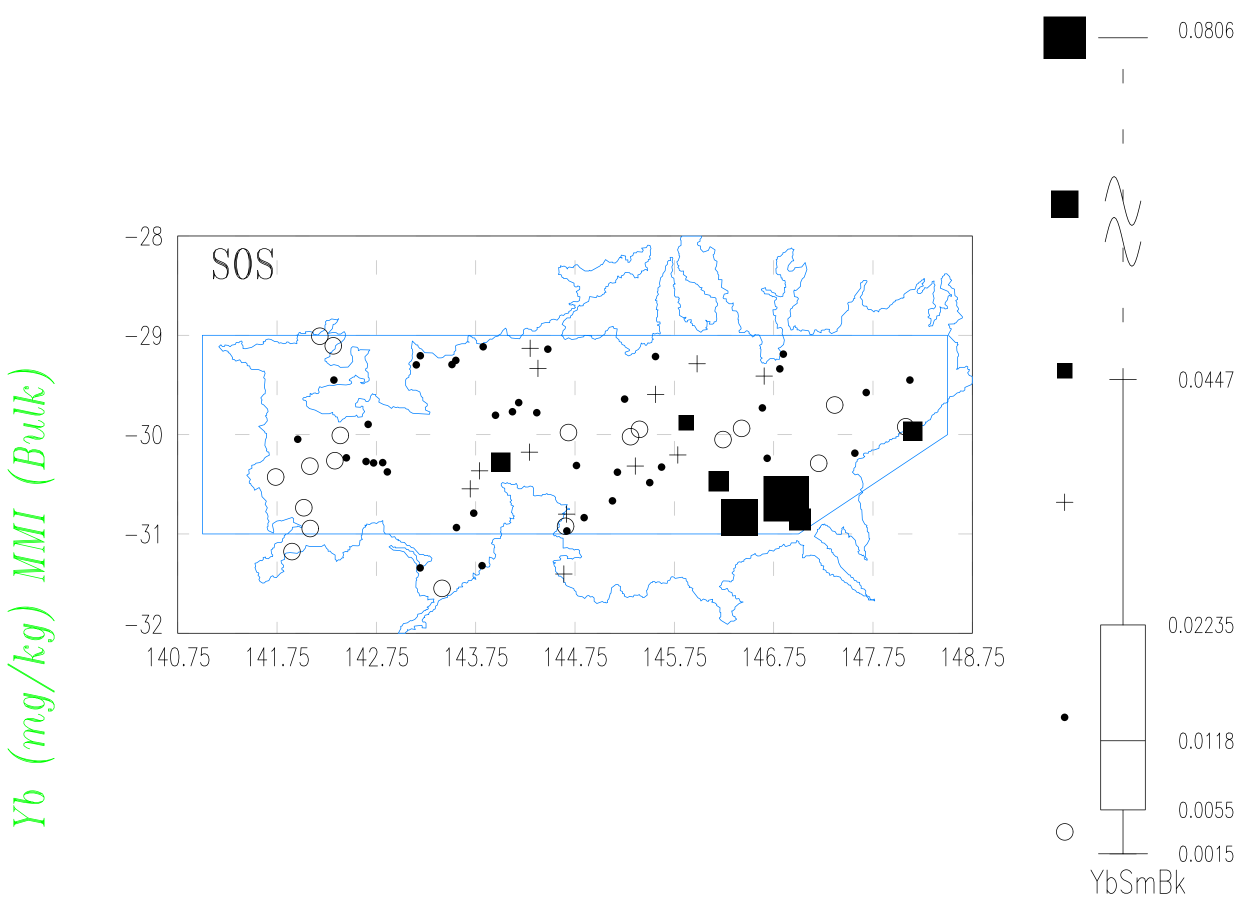





THOMSON GEOCHEMICAL SURVEY
Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)
U (mg/kg) MMI (Bulk)
SOS
-28
-29
-30
-31
-32
140.75
141.75
142.75
143.75
144.75
145.75
146.75
147.75
148.75
0 km 200
0.113
0.075
0.0405
0.025
0.016
0.001
USmBk
W (mg/kg) MMI (Bulk)
SOS
0.0015
0.0011
0.0007
0.0005
0.0004
0.0001
WSmBk

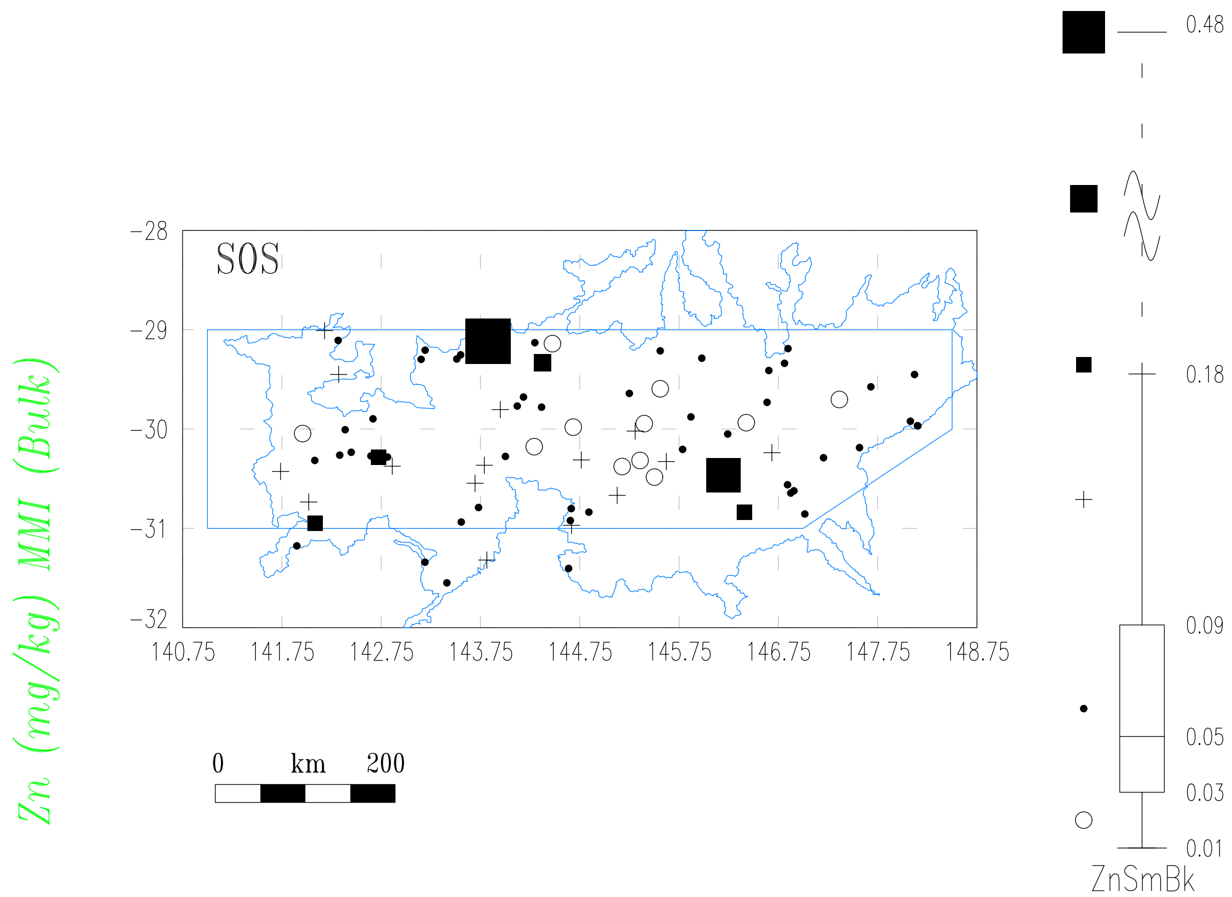
THOMSON GEOCHEMICAL SURVEY Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)

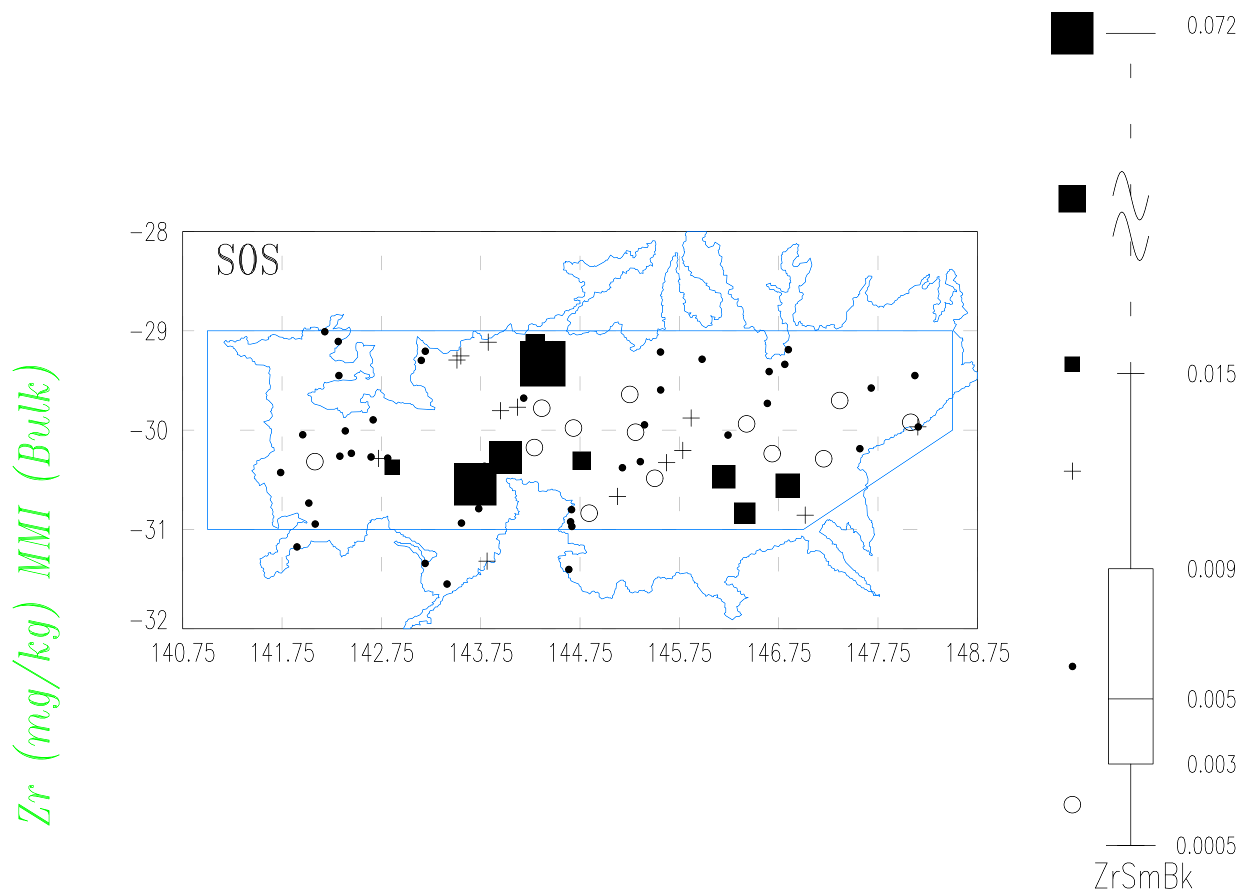




THOMSON GEOCHEMICAL SURVEY

Shallow Outlet Sediments (SOS) by Mobile Metal Ion (MMI)





APPENDIX 4: QUALITY CONTROL DATA

A4.1 Multi-element XRF data (Geoscience Australia)

A4.1.1 Blind replicates

Appendix 4.1.1

SAMPLE	SAMPLEID	Al mg/kg	Ba mg/kg	Ca mg/kg	Cl mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	LOI mg/kg	Mg mg/kg
2005861005001<180um	2005861005001<180um	59556.836	374	6003.48	38	46	13	28430.61	12584.316	95470	5004.9
2005861005001<180um_replicate	2005861020001<180um	59752.677	396	6024.921	43	41	18	28626.442	12667.326	89620	5029.02
Ave		59654.757	385	6014.2005	40.5	43.5	15.5	28528.526	12625.821	92545	5016.96
RSD		0%	4%	0%	9%	8%	23%	0%	0%	4%	0%
2005861010002<180um	2005861010002<180um	89282.324	336	6775.356	8087	58	25	42558.49	14003.787	121620	8243.01
2005861010002<180um_replicate	2005861021002<180um	87567.392	346	6632.416	7963	42	22	41803.138	13704.951	134380	8007.84
Ave		88424.858	341	6703.886	8025	50	23.5	42180.814	13854.369	128000	8125.43
RSD		1%	2%	2%	1%	23%	9%	1%	2%	7%	2%
2005861015001<180um	2005861015001<180um	54724.327	257	2773.036	44	36	15	27346.54	9961.2	69700	4824
2005861015001<180um_replicate	2005861022001<180um	54962.512	273	2808.771	19	43	17	27451.45	9994.404	62870	4938.57
Ave		54843.42	265	2790.9035	31.5	39.5	16	27398.995	9977.802	66285	4881.29
RSD		0%	4%	1%	56%	13%	9%	0%	0%	7%	2%
2005861019002<180um	2005861019002<180um	58958.727	297	1572.34	2.5	55	17	29255.902	11945.139	53500	2635.11
2005861019002<180um_replicate	2005861023002<180um	58244.172	283	1543.752	2.5	50	18	28871.232	11754.216	53550	2623.05
Ave		58601.45	290	1558.046	2.5	52.5	17.5	29063.567	11849.678	53525	2629.08
RSD		1%	3%	1%	0%	7%	4%	1%	1%	0%	0%
2006861105001<180um	2006861105001<180um	56841.527	334	5453.161	60	53	17	29339.83	11090.136	91290	5999.85
2006861105001<180um_replicate	2006861158001<180um	57397.292	334	5524.631	49	56	19	29584.62	11181.447	78130	6066.18
Ave		57119.41	334	5488.896	54.5	54.5	18	29462.225	11135.792	84710	6033.02
RSD		1%	0%	1%	14%	4%	8%	1%	1%	11%	1%
2006861105001<75um	2006861105001<75um	56375.743	304	5496.043	47	47	18	29025.1	11056.932	88840	5861.16
2006861105001<75um_replicate	2006861158001<75um	55661.188	318	5438.867	38	47	17	28703.376	10940.718	88280	5800.86
Ave		56018.466	311	5467.455	42.5	47	17.5	28864.238	10998.825	88560	5831.01
RSD		1%	3%	1%	15%	0%	4%	1%	1%	0%	1%
2006861105002<180um	2006861105002<180um	57942.471	360	5210.163	810	52	15	29885.362	10758.096	89980	6162.66
2006861105002<180um_replicate	2006861158002<180um	57783.681	349	5167.281	759	52	20	29913.338	10849.407	75910	6138.54
Ave		57863.076	354.5	5188.722	784.5	52	17.5	29899.35	10803.752	82945	6150.6
RSD		0%	2%	1%	5%	0%	20%	0%	1%	12%	0%
2006861105002<75um	2006861105002<75um	62806.738	334	5960.598	820	56	25	32878.794	11496.885	81040	6693.3
2006861105002<75um_replicate	2006861158002<75um	62039.253	377	5846.246	835	65	21	32494.124	11355.768	90670	6639.03
Ave		62422.996	355.5	5903.422	827.5	60.5	23	32686.459	11426.327	85855	6666.17
RSD		1%	9%	1%	1%	11%	12%	1%	1%	8%	1%
2006861115001<180um	2006861115001<180um	37114.516	247	1243.578	12	43	10	17722.796	5744.292	43060	1525.59
2006861115001<180um_replicate	2006861159001<180um	36680.49	276	1250.725	2.5	31	9	17624.88	5744.292	30980	1501.47

Appendix 4.1.1

SAMPLE	SAMPLEID	Al mg/kg	Ba mg/kg	Ca mg/kg	Cl mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	LOI mg/kg	Mg mg/kg
Ave		36897.503	261.5	1247.1515	7.25	37	9.5	17673.838	5744.292	37020	1513.53
RSD		1%	8%	0%	93%	23%	7%	0%	0%	23%	1%
2006861115001<75um	2006861115001<75um	50669.889	272	1779.603	43	59	15	24423.048	7719.93	51410	2158.74
2006861115001<75um_replicate	2006861159001<75um	46737.19	230	1622.369	41	46	14	22548.656	7213.569	53570	1989.9
Ave		48703.54	251	1700.986	42	52.5	14.5	23485.852	7466.7495	52490	2074.32
RSD		6%	12%	7%	3%	18%	5%	6%	5%	3%	6%
2006861115002<180um	2006861115002<180um	46276.699	241	1851.073	2.5	36	8	21422.622	6051.429	59480	1935.63
2006861115002<180um_replicate	2006861159002<180um	44027.174	266	1765.309	43	32	8	20457.45	5918.613	30650	1881.36
Ave		45151.937	253.5	1808.191	22.75	34	8	20940.036	5985.021	45065	1908.5
RSD		4%	7%	3%	126%	8%	0%	3%	2%	45%	2%
2006861115002<75um	2006861115002<75um	61494.074	310	2587.214	2.5	50	15	28997.124	7944.057	65750	2635.11
2006861115002<75um_replicate	2006861159002<75um	62547.381	300	2630.096	21	56	17	29437.746	7927.455	66730	2719.53
Ave		62020.728	305	2608.655	11.75	53	16	29217.435	7935.756	66240	2677.32
RSD		1%	2%	1%	111%	8%	9%	1%	0%	1%	2%
2006861125001<180um	2006861125001<180um	50087.659	184	771.876	46	43	15	26010.686	6964.539	55180	1712.52
2006861125001<180um_replicate	2006861160001<180um	50045.315	182	786.17	32	37	17	26283.452	6989.442	41780	1778.85
Ave		50066.487	183	779.023	39	40	16	26147.069	6976.9905	48480	1745.69
RSD		0%	1%	1%	25%	11%	9%	1%	0%	20%	3%
2006861125001<75um	2006861125001<75um	66607.112	248	1164.961	39	58	17	32689.956	10060.812	82330	2532.6
2006861125001<75um_replicate	2006861160001<75um	61922.807	247	1079.197	55	54	22	30864.522	9463.14	66550	2327.58
Ave		64264.96	247.5	1122.079	47	56	19.5	31777.239	9761.976	74440	2430.09
RSD		5%	0%	5%	24%	5%	18%	4%	4%	15%	6%
2006861125002<180um	2006861125002<180um	43455.53	203	543.172	2.5	44	9	22681.542	6151.041	58120	1501.47
2006861125002<180um_replicate	2006861160002<180um	43180.294	164	543.172	22	39	12	22919.338	6101.235	33030	1501.47
Ave		43317.912	183.5	543.172	12.25	41.5	10.5	22800.44	6126.138	45575	1501.47
RSD		0%	15%	0%	113%	9%	20%	1%	1%	39%	0%
2006861125002<75um	2006861125002<75um	54105.046	206	721.847	37	42	16	27059.786	8525.127	54250	2007.99
2006861125002<75um_replicate	2006861160002<75um	53099.376	198	714.7	19	49	13	26675.116	8508.525	54690	1965.78
Ave		53602.211	202	718.2735	28	45.5	14.5	26867.451	8516.826	54470	1986.89
RSD		1%	3%	1%	45%	11%	15%	1%	0%	1%	2%
2006861135001<180um	2006861135001<180um	34012.818	221	1943.984	26	26	4	17044.378	6881.529	32090	3033.09
2006861135001<180um_replicate	2006861161001<180um	27719.441	217	1529.458	16	26	8	13855.114	5636.379	20360	2442.15
Ave		30866.13	219	1736.721	21	26	6	15449.746	6258.954	26225	2737.62
RSD		14%	1%	17%	34%	0%	47%	15%	14%	32%	15%

Appendix 4.1.1

SAMPLE	SAMPLEID	Al mg/kg	Ba mg/kg	Ca mg/kg	Cl mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	LOI mg/kg	Mg mg/kg
2006861135001<75um	2006861135001<75um	55756.462	282	3366.237	54	43	15	28059.928	11090.136	82140	5203.89
2006861135001<75um_replicate	2006861161001<75um	55438.882	291	3337.649	46	45	12	27822.132	10998.825	74370	5077.26
Ave		55597.672	286.5	3351.943	50	44	13.5	27941.03	11044.481	78255	5140.58
RSD		0%	2%	1%	11%	3%	16%	1%	1%	7%	2%
2006861135002<180um	2006861135002<180um	49680.098	379	8454.901	1970	35	14	24877.658	8533.428	75540	5680.26
2006861135002<180um_replicate	2006861161002<180um	48621.498	390	8440.607	1797	27	15	24485.994	8342.505	63890	5565.69
Ave		49150.798	384.5	8447.754	1884	31	14.5	24681.826	8437.9665	69715	5622.98
RSD		2%	2%	0%	6%	18%	5%	1%	2%	12%	1%
2006861135002<75um	2006861135002<75um	68888.395	523	13722.24	2698	43	20	35144.85	11430.477	117290	8019.9
2006861135002<75um_replicate	2006861161002<75um	69624.122	589	15144.493	2636	47	23	35711.364	11571.594	116570	8098.29
Ave		69256.259	556	14433.367	2667	45	21.5	35428.107	11501.035	116930	8059.1
RSD		1%	8%	7%	2%	6%	10%	1%	1%	0%	1%
2006861145001<180um	2006861145001<180um	55174.232	328	3623.529	154	47	14	28269.748	10359.648	83000	6102.36
2006861145001<180um_replicate	2006861162001<180um	53512.23	322	3487.736	146	41	12	27297.582	10177.026	83060	5818.95
Ave		54343.231	325	3555.6325	150	44	13	27783.665	10268.337	83030	5960.66
RSD		2%	1%	3%	4%	10%	11%	2%	1%	0%	3%
2006861145001<75um	2006861145001<75um	62563.26	367	4173.848	187	49	20	31969.574	11762.517	119120	6807.87
2006861145001<75um_replicate	2006861162001<75um	61716.38	361	4159.554	147	53	18	31556.928	11745.915	107250	6651.09
Ave		62139.82	364	4166.701	167	51	19	31763.251	11754.216	113185	6729.48
RSD		1%	1%	0%	17%	6%	7%	1%	0%	7%	2%
2006861145002<180um	2006861145002<180um	60657.78	289	9119.572	2878	46	14	31095.324	10633.581	113250	7223.94
2006861145002<180um_replicate	2006861162002<180um	61012.411	345	8597.841	2732	46	14	31417.048	10683.387	110160	7314.39
Ave		60835.096	317	8858.7065	2805	46	14	31256.186	10658.484	111705	7269.17
RSD		0%	12%	4%	4%	0%	0%	1%	0%	2%	1%
2006861145002<75um	2006861145002<75um	66252.481	382	8419.166	2991	55	15	34151.702	11687.808	132260	7887.24
2006861145002<75um_replicate	2006861162002<75um	66210.137	412	9112.425	2863	47	21	34137.714	11687.808	131730	7923.42
Ave		66231.309	397	8765.7955	2927	51	18	34144.708	11687.808	131995	7905.33
RSD		0%	5%	6%	3%	11%	24%	0%	0%	0%	0%
2006861155001<180um	2006861155001<180um	56963.266	335	4859.96	53	59	24	28577.484	14153.205	80380	5457.15
2006861155001<180um_replicate	2006861163001<180um	57640.77	345	4938.577	66	51	22	28913.196	14335.827	82190	5523.48
Ave		57302.018	340	4899.2685	59.5	55	23	28745.34	14244.516	81285	5490.32
RSD		1%	2%	1%	15%	10%	6%	1%	1%	2%	1%
2006861155001<75um	2006861155001<75um	57159.107	340	4788.49	78	58	24	29060.07	13962.282	86600	5583.78
2006861155001<75um_replicate	2006861163001<75um	53835.103	348	4538.345	56	61	17	27248.624	13339.707	85610	5149.62

Appendix 4.1.1

SAMPLE	SAMPLEID	Al	Ba	Ca	Cl	Cr	Cu	Fe	K	LOI	Mg
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ave		55497.105	344	4663.4175	67	59.5	20.5	28154.347	13650.995	86105	5366.7
RSD		4%	2%	4%	23%	4%	24%	5%	3%	1%	6%
2006861155002<180um	2006861155002<180um	76123.926	417	7983.199	1016	69	27	38599.886	14850.489	123730	7236
2006861155002<180um_replicate	2006861163002<180um	76505.022	412	7825.965	921	61	30	38907.622	14925.198	120360	7199.82
Ave		76314.474	414.5	7904.582	968.5	65	28.5	38753.754	14887.844	122045	7217.91
RSD		0%	1%	1%	7%	9%	7%	1%	0%	2%	0%
2006861156002<180um	2006861156002<180um	63304.28	267	4724.167	462	50	21	31179.252	11787.42	96200	4956.66
2006861156002<180um_replicate	2006861164002<180um	63410.14	312	4624.109	435	49	22	31305.144	11828.925	104500	5016.96
Ave		63357.21	289.5	4674.138	448.5	49.5	21.5	31242.198	11808.173	100350	4986.81
RSD		0%	11%	2%	4%	1%	3%	0%	0%	6%	1%
2006861156002<75um	2006861156002<75um	61531.125	291	4595.521	449	57	19	30305.002	11496.885	110060	4793.85
2006861156002<75um_replicate	2006861164002<75um	61737.552	319	4767.049	382	67	18	30500.834	11604.798	93070	4878.27
Ave		61634.339	305	4681.285	415.5	62	18.5	30402.918	11550.842	101565	4836.06
RSD		0%	6%	3%	11%	11%	4%	0%	1%	12%	1%
2006861202001<75um	2006861202001<75um	47684.637	293	1801.044	2.5	60	9	22303.866	10608.678	65660	2604.96
2006861202001<75um_replicate	2006861224001<75um	43656.664	235	1700.986	2.5	65	18	20499.414	10085.715	65650	2297.43
Ave		45670.651	264	1751.015	2.5	62.5	13.5	21401.64	10347.197	65655	2451.2
RSD		6%	16%	4%	0%	6%	47%	6%	4%	0%	9%
2006861202001<180um	2006861202001<180um	41057.801	243	1600.928	2.5	60	18	19324.422	9620.859	41500	2134.62
2006861202001<180um_replicate	2006861224001<180um	40195.042	251	1579.487	2.5	47	16	18869.812	9446.538	40490	2128.59
Ave		40626.422	247	1590.2075	2.5	53.5	17	19097.117	9533.6985	40995	2131.61
RSD		2%	2%	1%	0%	17%	8%	2%	1%	2%	0%
2006861202002<75um	2006861202002<75um	67115.24	327	2858.8	667	75	19	32256.328	13190.289	92660	5487.3
2006861202002<75um_replicate	2006861224002<75um	65267.983	344	2794.477	669	72	22	31340.114	12941.259	84330	5300.37
Ave		66191.612	335.5	2826.6385	668	73.5	20.5	31798.221	13065.774	88495	5393.84
RSD		2%	4%	2%	0%	3%	10%	2%	1%	7%	2%
2006861202002<180um	2006861202002<180um	65342.085	356	2737.301	647	66	14	31410.054	12949.56	75240	5414.94
2006861202002<180um_replicate	2006861224002<180um	63881.217	363	2651.537	691	61	22	30430.894	12592.617	76660	5215.95
Ave		64611.651	359.5	2694.419	669	63.5	18	30920.474	12771.089	75950	5315.45
RSD		2%	1%	2%	5%	6%	31%	2%	2%	1%	3%
2006861212001<75um	2006861212001<75um	82655.488	411	3066.063	2.5	71	22	41936.024	17017.05	101180	6584.76
2006861212001<75um_replicate	2006861225001<75um	79749.631	434	2944.564	16	79	23	40719.068	16668.408	100520	6349.59
Ave		81202.56	422.5	3005.3135	9.25	75	22.5	41327.546	16842.729	100850	6467.18
RSD		3%	4%	3%	103%	8%	3%	2%	1%	0%	3%

Appendix 4.1.1

SAMPLE	SAMPLEID	Al mg/kg	Ba mg/kg	Ca mg/kg	Cl mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	LOI mg/kg	Mg mg/kg
2006861212001<180um	2006861212001<180um	69200.682	369	2487.156	2.5	69	20	35291.724	14294.322	76140	5408.91
2006861212001<180um_replicate	2006861225001<180um	66098.984	351	2444.274	2.5	64	13	34501.402	14012.088	104940	5234.04
Ave		67649.833	360	2465.715	2.5	66.5	16.5	34896.563	14153.205	90540	5321.48
RSD		3%	4%	1%	0%	5%	30%	2%	1%	22%	2%
2006861212002<75um	2006861212002<75um	89340.547	479	3659.264	2136	88	25	47650.122	16411.077	129050	7597.8
2006861212002<75um_replicate	2006861225002<75um	85487.243	547	3523.471	2148	80	29	45733.766	15854.91	138220	7278.21
Ave		87413.895	513	3591.3675	2142	84	27	46691.944	16132.994	133635	7438.01
RSD		3%	9%	3%	0%	7%	10%	3%	2%	5%	3%
2006861212002<180um	2006861212002<180um	65426.773	386	2665.831	1483	68	18	35361.664	12592.617	83620	5451.12
2006861212002<180um_replicate	2006861225002<180um	63209.006	338	2558.626	1474	60	23	33997.834	12177.567	81690	5209.92
Ave		64317.89	362	2612.2285	1479	64	20.5	34679.749	12385.092	82655	5330.52
RSD		2%	9%	3%	0%	9%	17%	3%	2%	2%	3%
2006861222001<75um	2006861222001<75um	66628.284	350	5560.366	7	63	15	33760.038	12700.53	125060	6325.47
2006861222001<75um_replicate	2006861226001<75um	65146.244	303	5360.25	116	60	15	33025.668	12551.112	142880	6126.48
Ave		65887.264	326.5	5460.308	61.5	61.5	15	33392.853	12625.821	133970	6225.98
RSD		2%	10%	3%	125%	3%	0%	2%	1%	9%	2%
2006861222001<180um	2006861222001<180um	59699.747	295	5031.488	2.5	61	15	30235.062	11505.186	121900	5619.96
2006861222001<180um_replicate	2006861226001<180um	60371.958	315	5145.84	74	61	18	30794.582	11662.905	135130	5668.2
Ave		60035.853	305	5088.664	38.25	61	16.5	30514.822	11584.046	128515	5644.08
RSD		1%	5%	2%	132%	0%	13%	1%	1%	7%	1%
2006861222002<75um	2006861222002<75um	67771.572	376	7418.586	2.5	74	23	34564.348	11795.721	134910	6337.53
2006861222002<75um_replicate	2006861226002<75um	66443.029	328	7254.205	25	70	13	34088.756	11613.099	155110	6241.05
Ave		67107.301	352	7336.3955	13.75	72	18	34326.552	11704.41	145010	6289.29
RSD		1%	10%	2%	116%	4%	39%	1%	1%	10%	1%
2006861222002<180um	2006861222002<180um	49346.639	295	5167.281	2.5	49	9	24842.688	9048.09	80730	4492.35
2006861222002<180um_replicate	2006861226002<180um	52067.241	267	5603.248	13	47	11	26290.446	9363.528	83580	4793.85
Ave		50706.94	281	5385.2645	7.75	48	10	25566.567	9205.809	82155	4643.1
RSD		4%	7%	6%	96%	3%	14%	4%	2%	2%	5%
2006861150001<180um	2006861150001<180um	43720.18	243	1300.754	11	43	13	21366.67	7977.261	44730	1833.12
2006861150001<180um_replicate	2006861229001<180um	47589.363	220	1543.752	2.5	55	16	23702.666	8807.361	46090	1947.69
Ave		45654.772	231.5	1422.253	6.75	49	14.5	22534.668	8392.311	45410	1890.41
RSD		6%	7%	12%	89%	17%	15%	7%	7%	2%	4%
2006861139001<75um	2006861139001<75um	50945.125	340	2065.483	50	50	19	26773.032	12227.373	67240	3485.34
2006861139001<75um_replicate	2006861229001<75um	47457.038	302	1951.131	2.5	64	19	24395.072	11596.497	48380	3111.48

Appendix 4.1.1

SAMPLE	SAMPLEID	Al mg/kg	Ba mg/kg	Ca mg/kg	Cl mg/kg	Cr mg/kg	Cu mg/kg	Fe mg/kg	K mg/kg	LOI mg/kg	Mg mg/kg
Ave		49201.082	321	2008.307	26.25	57	19	25584.052	11911.935	57810	3298.41
RSD		5%	8%	4%	128%	17%	0%	7%	4%	23%	8%
2006861143002<180um	2006861143002<180um	76822.602	343	3809.351	45	54	24	40138.566	17789.043	101410	9014.85
2006861143002<180um_replicate	2006861229002<180um	79516.739	378	3988.026	2.5	76	24	42012.958	18768.561	98340	9346.5
Ave		78169.671	360.5	3898.6885	23.75	65	24	41075.762	18278.802	99875	9180.68
RSD		2%	7%	3%	127%	24%	0%	3%	4%	2%	3%
2006861134002<75um	2006861134002<75um	73694.439	732	12585.867	67	58	25	37522.81	15672.288	104970	8634.96
2006861134002<75um_replicate	2006861229002<75um	77695.947	572	9941.477	2.5	75	22	39628.004	16643.505	99990	9159.57
Ave		75695.193	652	11263.672	34.75	66.5	23.5	38575.407	16157.897	102480	8897.27
RSD		4%	17%	17%	131%	18%	9%	4%	4%	3%	4%
Min RSD		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD		**2%**	**6%**	**3%**	**41%**	**9%**	**13%**	**2%**	**2%**	**8%**	**3%**
Max RSD		**14%**	**17%**	**17%**	**132%**	**24%**	**47%**	**15%**	**14%**	**45%**	**15%**

Note: Values <LLD have been halved (= 0.5 LLD)

SAMPLE	Mn	Na	Ni	P	Rb	S	Si	Sr	Ti	V	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2005861005001<180um	828.715	5809.077	21	440.764	68.3	160.2	326380.746	104.5	5849.168	75	370
2005861005001<180um_replicate	828.715	5883.267	30	432.036	68.9	160.2	328498.068	106.2	5891.119	73	356
Ave	828.715	5846.172	25.5	436.4	68.6	160.2	327439.407	105.4	5870.144	74	363
RSD	0%	1%	25%	1%	1%	0%	0%	1%	1%	2%	3%
2005861010002<180um	356.27	9414.711	23	506.224	66.7	881.1	268820.436	152.1	4842.344	107	187
2005861010002<180um_replicate	348.525	9266.331	22	501.86	64.9	837.045	265670.16	147.2	4752.449	106	169
Ave	352.398	9340.521	22.5	504.042	65.8	859.0725	267245.298	149.7	4797.397	106.5	178
RSD	2%	1%	3%	1%	2%	4%	1%	2%	1%	1%	7%
2005861015001<180um	271.075	2351.823	12	257.476	49.3	212.265	351671.76	89.1	3607.786	63	363
2005861015001<180um_replicate	263.33	2336.985	19	266.204	49.2	216.27	354448.116	92.3	3589.807	62	333
Ave	267.203	2344.404	15.5	261.84	49.25	214.2675	353059.938	90.7	3598.797	62.5	348
RSD	2%	0%	32%	2%	0%	1%	1%	2%	0%	1%	6%
2005861019002<180um	518.915	1810.236	21	296.752	77.4	100.125	355163.238	56.6	4452.799	76	385
2005861019002<180um_replicate	511.17	1773.141	19	301.116	75.7	104.13	356308.368	52.9	4362.904	72	347
Ave	515.043	1791.6885	20	298.934	76.55	102.1275	355735.803	54.75	4407.852	74	366
RSD	1%	1%	7%	1%	2%	3%	0%	5%	1%	4%	7%
2006861105001<180um	774.5	3835.623	23	462.584	61.3	108.135	332587.818	100	4938.232	77	370
2006861105001<180um_replicate	789.99	3865.299	24	466.948	64.9	108.135	337696.5	102.5	5010.148	77	364
Ave	782.245	3850.461	23.5	464.766	63.1	108.135	335142.159	101.3	4974.19	77	367
RSD	1%	1%	3%	1%	4%	0%	1%	2%	1%	0%	1%
2006861105001<75um	658.325	4058.193	18	475.676	61.7	108.135	333933.93	100.3	5453.63	74	536
2006861105001<75um_replicate	642.835	3924.651	20	453.856	62.7	104.13	335223.954	98.4	5465.616	78	557
Ave	650.58	3991.422	19	464.766	62.2	106.1325	334578.942	99.35	5459.623	76	546.5
RSD	2%	2%	7%	3%	1%	3%	0%	1%	0%	4%	3%
2006861105002<180um	867.44	5616.183	26	401.488	64.6	156.195	330348.972	109.7	5022.134	75	371
2006861105002<180um_replicate	882.93	5638.44	24	418.944	63.2	164.205	337074.858	112.2	5088.057	74	383
Ave	875.185	5627.3115	25	410.216	63.9	160.2	333711.915	111	5055.096	74.5	377
RSD	1%	0%	6%	3%	2%	4%	1%	2%	1%	1%	2%
2006861105002<75um	968.125	6090.999	25	453.856	70.2	188.235	325852.584	123.5	5759.273	84	491
2006861105002<75um_replicate	968.125	6039.066	24	445.128	65.8	188.235	322692.96	118.9	5693.35	81	480
Ave	968.125	6065.0325	24.5	449.492	68	188.235	324272.772	121.2	5726.312	82.5	485.5
RSD	0%	1%	3%	1%	5%	0%	1%	3%	1%	3%	2%
2006861115001<180um	333.035	1669.275	9	288.024	31.7	116.145	391975.662	58.1	4159.142	59	558
2006861115001<180um_replicate	340.78	1691.532	11	305.48	30.2	108.135	398093.928	57.3	4207.086	57	596

Appendix 4.1.1

SAMPLE	Mn mg/kg	Na mg/kg	Ni mg/kg	P mg/kg	Rb mg/kg	S mg/kg	Si mg/kg	Sr mg/kg	Ti mg/kg	V mg/kg	Zr mg/kg
Ave	336.908	1680.4035	10	296.752	30.95	112.14	395034.795	57.7	4183.114	58	577
RSD	2%	1%	14%	4%	3%	5%	1%	1%	1%	2%	5%
2006861115001<75um	480.19	2247.957	14	384.032	42.5	144.18	367016.502	77.1	6376.552	80	1211
2006861115001<75um_replicate	433.72	2144.091	7	366.576	35.8	128.16	371854.092	71.8	5933.07	75	1112
Ave	456.955	2196.024	10.5	375.304	39.15	136.17	369435.297	74.45	6154.811	77.5	1162
RSD	7%	3%	47%	3%	12%	8%	1%	5%	5%	5%	6%
2006861115002<180um	356.27	1721.208	13	222.564	36	104.13	372924.438	68	4159.142	67	446
2006861115002<180um_replicate	340.78	1750.884	15	222.564	31.7	96.12	389559.204	67.6	3847.506	62	401
Ave	348.525	1736.046	14	222.564	33.85	100.125	381241.821	67.8	4003.324	64.5	423.5
RSD	3%	1%	10%	0%	9%	6%	3%	0%	6%	5%	8%
2006861115002<75um	573.13	2359.242	14	296.752	47.1	116.145	347240.808	90.1	5825.196	86	742
2006861115002<75um_replicate	542.15	2307.309	14	292.388	46.4	116.145	345637.626	94.1	5789.238	88	730
Ave	557.64	2333.2755	14	294.57	46.75	116.145	346439.217	92.1	5807.217	87	736
RSD	4%	2%	0%	1%	1%	0%	0%	3%	0%	2%	1%
2006861125001<180um	193.625	1491.219	13	392.76	41.1	92.115	369372.198	50.3	3841.513	69	454
2006861125001<180um_replicate	201.37	1520.895	18	401.488	37.9	100.125	375345.57	49.9	3901.443	69	465
Ave	197.498	1506.057	15.5	397.124	39.5	96.12	372358.884	50.1	3871.478	69	459.5
RSD	3%	1%	23%	2%	6%	6%	1%	1%	1%	0%	2%
2006861125001<75um	340.78	2285.052	20	523.68	57.7	140.175	332251.29	71.3	5957.042	92	895
2006861125001<75um_replicate	309.8	2136.672	17	484.404	52.6	132.165	345974.154	66.8	5609.448	85	852
Ave	325.29	2210.862	18.5	504.042	55.15	136.17	339112.722	69.05	5783.245	88.5	873.5
RSD	7%	5%	11%	6%	7%	4%	3%	5%	4%	6%	3%
2006861125002<180um	69.705	1365.096	9	235.656	35.6	88.11	377243.214	41.5	3643.744	65	470
2006861125002<180um_replicate	69.705	1342.839	14	240.02	34	84.105	389189.958	44.1	3541.863	63	471
Ave	69.705	1353.9675	11.5	237.838	34.8	86.1075	383216.586	42.8	3592.804	64	470.5
RSD	0%	1%	31%	1%	3%	3%	2%	4%	2%	2%	0%
2006861125002<75um	108.43	1973.454	14	261.84	46.5	112.14	362828.598	59.3	5369.728	78	915
2006861125002<75um_replicate	108.43	1943.778	11	270.568	47.6	108.135	363772.746	56.9	5345.756	79	921
Ave	108.43	1958.616	12.5	266.204	47.05	110.1375	363300.672	58.1	5357.742	78.5	918
RSD	0%	1%	17%	2%	2%	3%	0%	3%	0%	1%	0%
2006861135001<180um	201.37	2648.583	14	231.292	32.2	152.19	398379.042	69.6	3104.374	50	467
2006861135001<180um_replicate	154.9	2314.728	9	196.38	25.6	132.165	413999.55	58.7	2451.137	39	267
Ave	178.135	2481.6555	11.5	213.836	28.9	142.1775	406189.296	64.15	2777.756	44.5	367
RSD	18%	10%	31%	12%	16%	10%	3%	12%	17%	17%	39%

Appendix 4.1.1

SAMPLE	Mn	Na	Ni	P	Rb	S	Si	Sr	Ti	V	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2006861135001<75um	348.525	4021.098	17	340.392	54.4	236.295	340809.384	112.1	4764.435	74	749
2006861135001<75um_replicate	333.035	4124.964	14	327.3	52.1	224.28	344852.394	110	4806.386	74	767
Ave	340.78	4073.031	15.5	333.846	53.25	230.2875	342830.889	111.1	4785.411	74	758
RSD	3%	2%	14%	3%	3%	4%	1%	1%	1%	0%	2%
2006861135002<180um	309.8	4666.551	15	344.756	46.3	1826.28	347156.676	129	3481.933	71	325
2006861135002<180um_replicate	302.055	4555.266	13	340.392	43.5	1822.275	354270.504	125.7	3332.108	69	287
Ave	305.928	4610.9085	14	342.574	44.9	1824.278	350713.59	127.4	3407.021	70	306
RSD	2%	2%	10%	1%	4%	0%	1%	2%	3%	2%	9%
2006861135002<75um	425.975	6150.351	20	493.132	62.2	3135.915	292746.642	188	4764.435	95	478
2006861135002<75um_replicate	449.21	6231.96	27	506.224	62.2	4000.995	289643.106	193.5	4854.33	98	495
Ave	437.593	6191.1555	23.5	499.678	62.2	3568.455	291194.874	190.8	4809.383	96.5	486.5
RSD	4%	1%	21%	2%	0%	17%	1%	2%	1%	2%	2%
2006861145001<180um	487.935	4481.076	27	353.484	56.3	132.165	340360.68	90	4554.68	70	379
2006861145001<180um_replicate	472.445	4421.724	19	357.848	51.2	144.18	342940.728	85.4	4446.806	66	359
Ave	480.19	4451.4	23	355.666	53.75	138.1725	341650.704	87.7	4500.743	68	369
RSD	2%	1%	25%	1%	7%	6%	1%	4%	2%	4%	4%
2006861145001<75um	549.895	5267.49	24	397.124	60.6	164.205	311307.096	101.3	5495.581	77	522
2006861145001<75um_replicate	549.895	5267.49	23	401.488	59.4	164.205	317981.568	100.5	5537.532	80	567
Ave	549.895	5267.49	23.5	399.306	60	164.205	314644.332	100.9	5516.557	78.5	544.5
RSD	0%	0%	3%	1%	1%	0%	1%	1%	1%	3%	6%
2006861145002<180um	658.325	10045.326	30	375.304	58.4	7016.76	301814.202	117.5	4584.645	73	274
2006861145002<180um_replicate	642.835	10045.326	26	392.76	57.4	6632.28	303534.234	116.4	4578.652	69	257
Ave	650.58	10045.326	28	384.032	57.9	6824.52	302674.218	117	4581.649	71	265.5
RSD	2%	0%	10%	3%	1%	4%	0%	1%	0%	4%	5%
2006861145002<75um	828.715	11002.377	27	410.216	64.3	5751.18	285380.418	135.8	5195.931	82	343
2006861145002<75um_replicate	844.205	11113.662	27	423.308	62.8	6043.545	284861.604	139.6	5219.903	80	351
Ave	836.46	11058.02	27	416.762	63.55	5897.363	285121.011	137.7	5207.917	81	347
RSD	1%	1%	0%	2%	2%	4%	0%	2%	0%	2%	2%
2006861155001<180um	526.66	4273.344	28	497.496	81.3	164.205	337359.972	98.5	4518.722	73	400
2006861155001<180um_replicate	534.405	4369.791	26	506.224	80	168.21	335359.5	98.5	4476.771	75	380
Ave	530.533	4321.5675	27	501.86	80.65	166.2075	336359.736	98.5	4497.747	74	390
RSD	1%	2%	5%	1%	1%	2%	0%	0%	1%	2%	4%
2006861155001<75um	472.445	3969.165	24	484.404	80.4	172.215	333723.6	97.9	4926.246	76	564
2006861155001<75um_replicate	449.21	4050.774	25	480.04	74.9	172.215	339206.202	94.2	4794.4	71	569

Appendix 4.1.1

SAMPLE	Mn	Na	Ni	P	Rb	S	Si	Sr	Ti	V	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ave	460.828	4009.9695	24.5	482.222	77.65	172.215	336464.901	96.05	4860.323	73.5	566.5
RSD	4%	1%	3%	1%	5%	0%	1%	3%	2%	5%	1%
2006861155002<180um	596.365	6380.34	33	449.492	97	3688.605	283118.202	145.1	5064.085	96	223
2006861155002<180um_replicate	604.11	6528.72	33	449.492	94.9	3496.365	284511.054	138.8	5100.043	92	216
Ave	600.238	6454.53	33	449.492	95.95	3592.485	283814.628	142	5082.064	94	219.5
RSD	1%	2%	0%	0%	2%	4%	0%	3%	1%	3%	2%
2006861156002<180um	495.68	5927.781	23	331.664	73.7	160.2	322258.278	114.3	5837.182	83	374
2006861156002<180um_replicate	503.425	5950.038	24	327.3	74.1	168.21	318299.4	112.3	5843.175	81	370
Ave	499.553	5938.9095	23.5	329.482	73.9	164.205	320278.839	113.3	5840.179	82	372
RSD	1%	0%	3%	1%	0%	3%	1%	1%	0%	2%	1%
2006861156002<75um	472.445	5920.362	24	318.572	71.9	164.205	318341.466	112.6	5873.14	81	429
2006861156002<75um_replicate	518.915	5868.429	26	327.3	70.7	164.205	325618.884	113.7	5933.07	81	427
Ave	495.68	5894.3955	25	322.936	71.3	164.205	321980.175	113.2	5903.105	81	428
RSD	7%	1%	6%	2%	1%	0%	2%	1%	1%	0%	0%
2006861202001<75um	433.72	2670.84	21	283.66	64.1	305	362875.338	62.3	5699.343	67	807
2006861202001<75um_replicate	379.505	2626.326	17	274.932	58.6	318	368521.53	57.5	5525.546	62	862
Ave	406.613	2648.583	19	279.296	61.35	311.5	365698.434	59.9	5612.445	64.5	834.5
RSD	9%	1%	15%	2%	6%	3%	1%	6%	2%	5%	5%
2006861202001<180um	364.015	2411.175	18	261.84	58.8	288	383828.88	57.2	4998.162	55	701
2006861202001<180um_replicate	356.27	2492.784	18	248.748	57.8	314	385656.414	56.4	4854.33	56	717
Ave	360.143	2451.9795	18	255.294	58.3	301	384742.647	56.8	4926.246	55.5	709
RSD	2%	2%	0%	4%	1%	6%	0%	1%	2%	1%	2%
2006861202002<75um	534.405	4488.495	23	183.288	79.9	451	320814.012	102.7	5441.644	88	483
2006861202002<75um_replicate	511.17	4451.4	25	178.924	78.7	445	327282.828	101	5417.672	86	492
Ave	522.788	4469.9475	24	181.106	79.3	448	324048.42	101.9	5429.658	87	487.5
RSD	3%	1%	6%	2%	1%	1%	1%	1%	0%	2%	1%
2006861202002<180um	487.935	4340.115	27	183.288	79.1	444	331545.516	101.3	5183.945	81	394
2006861202002<180um_replicate	472.445	4354.953	21	183.288	76.3	458	333410.442	100.6	5088.057	80	404
Ave	480.19	4347.534	24	183.288	77.7	451	332477.979	101	5136.001	80.5	399
RSD	2%	0%	18%	0%	3%	2%	0%	0%	1%	1%	2%
2006861212001<75um	766.755	2685.678	29	593.504	90.5	513	294190.908	107	5411.679	114	368
2006861212001<75um_replicate	751.265	2656.002	25	571.684	89.1	484	298448.922	104.9	5381.714	108	378
Ave	759.01	2670.84	27	582.594	89.8	498.5	296319.915	106	5396.697	111	373
RSD	1%	1%	10%	3%	1%	4%	1%	1%	0%	4%	2%

Appendix 4.1.1

SAMPLE	Mn	Na	Ni	P	Rb	S	Si	Sr	Ti	V	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2006861212001<180um	604.11	2218.281	22	497.496	76.9	445	326450.856	91.5	4536.701	95	284
2006861212001<180um_replicate	596.365	2158.929	21	471.312	75.6	428	316864.482	91.3	4452.799	93	274
Ave	600.238	2188.605	21.5	484.404	76.25	436.5	321657.669	91.4	4494.75	94	279
RSD	1%	2%	3%	4%	1%	3%	2%	0%	1%	2%	3%
2006861212002<75um	518.915	4814.931	32	405.852	90	560	268502.604	109	5351.749	117	593
2006861212002<75um_replicate	495.68	4688.808	29	379.668	85.9	515	269942.196	108.4	5159.973	119	513
Ave	507.298	4751.8695	30.5	392.76	87.95	537.5	269222.4	108.7	5255.861	118	553
RSD	3%	2%	7%	5%	3%	6%	0%	0%	3%	1%	10%
2006861212002<180um	371.76	3776.271	28	305.48	69.9	464	325670.298	84.5	4530.708	94	546
2006861212002<180um_replicate	348.525	3672.405	26	288.024	67.5	426	330190.056	81	4296.981	88	461
Ave	360.143	3724.338	27	296.752	68.7	445	327930.177	82.75	4413.845	91	503.5
RSD	5%	2%	5%	4%	2%	6%	1%	3%	4%	5%	12%
2006861222001<75um	472.445	2210.862	31	336.028	62.2	371	304389.576	90	5753.28	94	482
2006861222001<75um_replicate	456.955	2144.091	28	327.3	58.8	365	298378.812	86.4	5579.483	95	463
Ave	464.7	2177.4765	29.5	331.664	60.5	368	301384.194	88.2	5666.382	94.5	472.5
RSD	2%	2%	7%	2%	4%	1%	1%	3%	2%	1%	3%
2006861222001<180um	410.485	1817.655	23	296.752	58.2	359	317042.094	86.1	4866.316	89	331
2006861222001<180um_replicate	425.975	1877.007	20	305.48	56.9	358	309540.324	82.6	4908.267	90	334
Ave	418.23	1847.331	21.5	301.116	57.55	358.5	313291.209	84.35	4887.292	89.5	332.5
RSD	3%	2%	10%	2%	2%	0%	2%	3%	1%	1%	1%
2006861222002<75um	487.935	1691.532	28	274.932	61.3	339	297902.064	102.6	5831.189	101	531
2006861222002<75um_replicate	487.935	1639.599	21	270.568	60.4	333	290316.162	100.7	5693.35	104	514
Ave	487.935	1665.5655	24.5	272.75	60.85	336	294109.113	101.7	5762.27	102.5	522.5
RSD	0%	2%	20%	1%	1%	1%	2%	1%	2%	2%	2%
2006861222002<180um	340.78	1209.297	21	200.744	49.8	309	352386.882	77	4105.205	72	353
2006861222002<180um_replicate	356.27	1276.068	26	209.472	50.6	311	346614.492	79.9	4290.988	77	371
Ave	348.525	1242.6825	23.5	205.108	50.2	310	349500.687	78.45	4198.097	74.5	362
RSD	3%	4%	15%	3%	1%	0%	1%	3%	3%	5%	4%
2006861150001<180um	216.86	1780.56	14	283.66	44.7	116.145	381987.324	45.9	3499.912	59	387
2006861150001<180um_replicate	240.095	1216.716	20	261.84	53.2	330	375280.134	49.4	3997.331	69	471
Ave	228.478	1498.638	17	272.75	48.95	223.0725	378633.729	47.65	3748.622	64	429
RSD	7%	27%	25%	6%	12%	68%	1%	5%	9%	11%	14%
2006861139001<75um	557.64	3946.908	15	392.76	52.6	276.345	352251.336	100.2	6808.048	86	1404
2006861139001<75um_replicate	526.66	2826.639	20	336.028	56.6	484	368002.716	84.5	5921.084	81	1187

Appendix 4.1.1

SAMPLE	Mn	Na	Ni	P	Rb	S	Si	Sr	Ti	V	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ave	542.15	3386.7735	17.5	364.394	54.6	380.1725	360127.026	92.35	6364.566	83.5	1296
RSD	4%	23%	20%	11%	5%	39%	3%	12%	10%	4%	12%
2006861143002<180um	480.19	4013.679	23	344.756	96.3	156.195	298360.116	110	4596.631	92	259
2006861143002<180um_replicate	511.17	3331.131	29	322.936	95.7	296	295331.364	149.7	4728.477	106	259
Ave	495.68	3672.405	26	333.846	96	226.0975	296845.74	129.9	4662.554	99	259
RSD	4%	13%	16%	5%	0%	44%	1%	22%	2%	10%	0%
2006861134002<75um	642.835	5504.898	25	466.948	88.8	512.64	294471.348	166.4	5118.022	97	456
2006861134002<75um_replicate	580.875	4777.836	36	449.492	96.9	581	293200.02	104.6	5285.826	111	448
Ave	611.855	5141.367	30.5	458.22	92.85	546.82	293835.684	135.5	5201.924	104	452
RSD	7%	10%	26%	3%	6%	9%	0%	32%	2%	10%	1%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**3%**	**3%**	**13%**	**3%**	**3%**	**7%**	**1%**	**4%**	**2%**	**3%**	**5%**
Max RSD	**18%**	**27%**	**47%**	**12%**	**16%**	**68%**	**3%**	**32%**	**17%**	**17%**	**39%**

Note: Values <LLD have been halve

A4.1.2 Blind standards

Appendix 4.1.2

SAMPLE	SAMPLEID	Al	Ba	Ca	Cr	Cu	Fe	K
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
GA9	2006861227001<75um	63257	572	5082	52	-1	14464	36599
GA9	2006861227002<75um	63050	554	5060	70	-1	14352	36607
Min		**63050**	**554**	**5060**	**52**	**-1**	**14352**	**36599**
Ave		63153	563	5071	61	-1	14408	36603
RSD		0%	2%	0%	21%	0%	1%	0%
Max		**63257**	**572**	**5082**	**70**	**-1**	**14464**	**36607**
Target Value		62256	567	4989	74	12	14191	36134
Target Range-Min	Target Value - 10%	**56031**	**510**	**4490**	**66**	**11**	**12772**	**32521**
Target Range-Max	Target Value + 10%	**68482**	**624**	**5487**	**81**	**14**	**15610**	**39748**
Replicates > TR Min?		Yes	Yes	Yes	No	No	Yes	Yes
Replicates < TR Max?		Yes	Yes	Yes	Yes	Max < TR Min	Yes	Yes
Ave WRT Target Value		+1%	-1%	+2%	-17%	-108%	+2%	+1%
GA25	2006861227001<180um	87409	1151	52416	131	40	87334	20678
GA25	2006861227002<180um	86668	1213	52445	133	40	87544	20761
Min		**86668**	**1151**	**52416**	**131**	**40**	**87334**	**20678**
Ave		87038	1182	52430	132	40	87439	20719
RSD		1%	4%	0%	1%	0%	0%	0%
Max		**87409**	**1213**	**52445**	**133**	**40**	**87544**	**20761**
Target Value		86424	1126	52366	99	52	87712	20371
Target Range-Min	Target Value - 10%	**77782**	**1013**	**47129**	**89**	**47**	**78941**	**18334**
Target Range-Max	Target Value + 10%	**95067**	**1238**	**57603**	**109**	**57**	**96483**	**22408**
Replicates > TR Min?		Yes	Yes	Yes	Min > TR Max	No	Yes	Yes
Replicates < TR Max?		Yes	Yes	Yes	No	Max < TR Min	Yes	Yes
Ave WRT Target Value		+1%	+5%	+0%	+34%	-23%	-0%	+2%

Appendix 4.1.2

SAMPLE	Mg mg/kg	Mn mg/kg	Na mg/kg	Ni mg/kg	P mg/kg	Rb mg/kg	S mg/kg	Si mg/kg	Sr mg/kg
GA9	597	217	24653	96	74	210	119	362744	4
GA9	567	209	24557	95	70	212	130	360379	4
Min	**567**	**209**	**24557**	**95**	**70**	**210**	**119**	**360379**	**4**
Ave	582	213	24605	96	72	211	125	361562	4
RSD	4%	3%	0%	1%	4%	1%	6%	0%	6%
Max	**597**	**217**	**24653**	**96**	**74**	**212**	**130**	**362744**	**4**
Target Value	754	232	24542	79	127	198	100	359211	32
Target Range-Min	**678**	**209**	**22088**	**71**	**114**	**179**	**90**	**323290**	**29**
Target Range-Max	**829**	**256**	**26996**	**87**	**139**	**218**	**110**	**395132**	**36**
Replicates > TR Min?	No	Yes	Yes	Min > TR Max	No	Yes	Min > TR Max	Yes	No
Replicates < TR Max?	Max < TR Min	Yes	Yes	No	Max < TR Min	Yes	No	Yes	Max < TR Min
Ave WRT Target Value	-23%	-8%	+0%	+20%	-43%	+6%	+24%	+1%	-88%
GA25	31911	1572	31998	53	2854	90	371	219771	1210
GA25	32086	1572	31902	48	2880	89	374	218748	1207
Min	**31911**	**1572**	**31902**	**48**	**2854**	**89**	**371**	**218748**	**1207**
Ave	31998	1572	31950	51	2867	90	373	219260	1208
RSD	0%	0%	0%	7%	1%	1%	1%	0%	0%
Max	**32086**	**1572**	**31998**	**53**	**2880**	**90**	**374**	**219771**	**1210**
Target Value	32224	1626	31798	63	2824	85	777	217224	1228
Target Range-Min	**29002**	**1464**	**28618**	**57**	**2541**	**77**	**699**	**195502**	**1106**
Target Range-Max	**35447**	**1789**	**34978**	**70**	**3106**	**94**	**855**	**238947**	**1351**
Replicates > TR Min?	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Replicates < TR Max?	Yes	Yes	Yes	Max < TR Min	Yes	Yes	Max < TR Min	Yes	Yes
Ave WRT Target Value	-1%	-3%	+0%	-20%	+2%	+5%	-52%	+1%	-2%

SAMPLE	Ti mg/kg	V mg/kg	Zr mg/kg
GA9	1097	3	201
GA9	1079	8	205
Min	**1079**	**3**	**201**
Ave	1088	6	203
RSD	1%	64%	1%
Max	**1097**	**8**	**205**
Target Value	1025	4	205
Target Range-Min	**922**	**3**	**184**
Target Range-Max	**1127**	**4**	**225**
Replicates > TR Min?	Yes	No	Yes
Replicates < TR Max?	Yes	No	Yes
Ave WRT Target Value	+6%	+56%	-1%
GA25	15210	162	148
GA25	15228	158	148
Min	**15210**	**158**	**148**
Ave	15219	160	148
RSD	0%	2%	0%
Max	**15228**	**162**	**148**
Target Value	14539	161	159
Target Range-Min	**13085**	**145**	**143**
Target Range-Max	**15993**	**178**	**175**
Replicates > TR Min?	Yes	Yes	Yes
Replicates < TR Max?	Yes	Yes	Yes
Ave WRT Target Value	+5%	-1%	-7%

A4.2 Multi-element ICP-MS data (Acme Laboratory)

A4.2.1 Blind replicates

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
005-001-180um	005-001-180um	77	5.7	4.5	0.05	366	1	0.25	0.65	0.12	53.71	14.5	49	4	20.59
005-001-180um_replicate	020-001-180um	78	5.6	3.8	0.05	343	1	0.28	0.64	0.13	48.34	13.5	47	3.7	22.5
Ave		77.5	5.65	4.15	0.05	354.5	1	0.265	0.645	0.125	51.025	14	48	3.85	21.545
RSD		1%	1%	12%	0%	5%	0%	8%	1%	6%	7%	5%	3%	6%	6%
005-002-75um	005-002-75um	89	6.64	4.3	0.05	394	1	0.25	0.65	0.1	60.04	15.3	60	4.1	23.01
005-002-75um_replicate	020-002-75um	101	6.53	4.2	0.05	399	2	0.27	0.65	0.11	61.8	16.1	63	4.2	23.65
Ave		95	6.585	4.25	0.05	396.5	1.5	0.26	0.65	0.105	60.92	15.7	61.5	4.15	23.33
RSD		9%	1%	2%	0%	1%	47%	5%	0%	7%	2%	4%	3%	2%	2%
010-001-75um	010-001-75um	10	7.03	4.7	0.05	314	1	0.21	0.44	0.09	51.55	10.5	37	3.6	23.86
010-001-75um_replicate	021-001-75um	40	6.72	4.5	0.05	320	1	0.23	0.44	0.05	52.56	10.9	40	3.8	25.42
Ave		25	6.875	4.6	0.05	317	1	0.22	0.44	0.07	52.055	10.7	38.5	3.7	24.64
RSD		85%	3%	3%	0%	1%	0%	6%	0%	40%	1%	3%	6%	4%	4%
010-002-180um	010-002-180um	20	8.97	7.4	0.05	368	2	0.26	0.74	0.07	58.54	13.6	52	5	32.44
010-002-180um_replicate	021-002-180um	10	9.58	6.8	0.05	355	2	0.26	0.73	0.08	59.73	13.7	50	4.9	31.77
Ave		15	9.275	7.1	0.05	361.5	2	0.26	0.735	0.075	59.135	13.65	51	4.95	32.105
RSD		47%	5%	6%	0%	3%	0%	0%	1%	9%	1%	1%	3%	1%	1%
015-001-180um	015-001-180um	10	5.03	4.5	0.05	266	1	0.17	0.31	0.04	36.3	7.9	28	3.1	18.21
015-001-180um_replicate	022-001-180um	10	5.26	4.2	0.05	253	1	0.2	0.31	0.04	36.14	8	29	3.1	18.48
Ave		10	5.145	4.35	0.05	259.5	1	0.185	0.31	0.04	36.22	7.95	28.5	3.1	18.345
RSD		0%	3%	5%	0%	4%	0%	11%	0%	0%	0%	1%	2%	0%	1%
015-002-75um	015-002-75um	10	7.79	7.5	0.05	587	1	0.26	0.46	0.05	58.05	15.8	49	3.9	25.97
015-002-75um_replicate	022-002-75um	29	7.36	7	0.05	548	2	0.27	0.44	0.08	50.03	15.7	47	3.8	25.18
Ave		19.5	7.575	7.25	0.05	567.5	1.5	0.265	0.45	0.065	54.04	15.75	48	3.85	25.575
RSD		69%	4%	5%	0%	5%	47%	3%	3%	33%	10%	0%	3%	2%	2%
019-001-75um	019-001-75um	33	4.59	5.3	0.05	285	1	0.32	0.15	0.04	60.34	8.8	39	3.5	22.49
019-001-75um_replicate	023-001-75um	32	4.51	5.2	0.05	284	1	0.32	0.15	0.07	60.01	8.9	41	3.5	22.26
Ave		32.5	4.55	5.25	0.05	284.5	1	0.32	0.15	0.055	60.175	8.85	40	3.5	22.375
RSD		2%	1%	1%	0%	0%	0%	0%	0%	39%	0%	1%	4%	0%	1%
019-002-180um	019-002-180um	45	5.75	5.8	0.05	301	2	0.3	0.17	0.03	62.71	9.5	41	4.4	23.95
019-002-180um_replicate	023-002-180um	44	5.7	5.4	0.05	300	2	0.29	0.17	0.04	60.92	9.5	42	4.4	22.91
Ave		44.5	5.725	5.6	0.05	300.5	2	0.295	0.17	0.035	61.815	9.5	41.5	4.4	23.43
RSD		2%	1%	5%	0%	0%	0%	2%	0%	20%	2%	0%	2%	0%	3%
105-001-180um	105-001-180um	62	5.46	5.1	0.05	368	2	0.19	0.59	0.15	50.45	13.7	50	3.9	23.18
105-001-180um_replicate	158-001-180um	10	5.58	4.3	0.05	322	1	0.23	0.59	0.1	53.78	14.8	55	3.6	22.35

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
Ave		36	5.52	4.7	0.05	345	1.5	0.21	0.59	0.125	52.115	14.25	52.5	3.75	22.765
RSD		102%	2%	12%	0%	9%	47%	13%	0%	28%	5%	5%	7%	6%	3%
105-001-75um	105-001-75um	53	5.83	5.9	0.05	337	2	0.23	0.63	0.11	55.38	13.4	48	3.8	23.75
105-001-75um_replicate	158-001-75um	28	5.57	3.5	0.05	293	1	0.27	0.59	0.1	52.19	11.1	48	3.5	22.68
Ave		40.5	5.7	4.7	0.05	315	1.5	0.25	0.61	0.105	53.785	12.25	48	3.65	23.215
RSD		44%	3%	36%	0%	10%	47%	11%	5%	7%	4%	13%	0%	6%	3%
105-002-180um	105-002-180um	38	5.8	4.7	0.05	383	1	0.24	0.57	0.07	57.97	15.3	41	3.7	22.74
105-002-180um_replicate	158-002-180um	38	5.67	5.3	0.05	324	1	0.21	0.57	0.09	54.38	15.3	50	3.6	23.97
Ave		38	5.735	5	0.05	353.5	1	0.225	0.57	0.08	56.175	15.3	45.5	3.65	23.355
RSD		0%	2%	8%	0%	12%	0%	9%	0%	18%	5%	0%	14%	2%	4%
105-002-75um	105-002-75um	46	6.32	5.7	0.05	373	2	0.29	0.65	0.17	62.47	17.4	57	4.1	25.95
105-002-75um_replicate	158-002-75um	44	6.19	6	0.05	395	1	0.24	0.65	0.12	62.94	17.6	56	4.1	25.72
Ave		45	6.255	5.85	0.05	384	1.5	0.265	0.65	0.145	62.705	17.5	56.5	4.1	25.835
RSD		3%	1%	4%	0%	4%	47%	13%	0%	24%	1%	1%	1%	0%	1%
115-001-180um	115-001-180um	30	3.67	3.3	0.05	277	1	0.31	0.17	0.1	40.37	6.9	21	2	16.35
115-001-180um_replicate	159-001-180um	10	3.62	3	0.05	287	1	0.17	0.17	0.1	44.28	6.6	26	1.9	15.47
Ave		20	3.645	3.15	0.05	282	1	0.24	0.17	0.1	42.325	6.75	23.5	1.95	15.91
RSD		71%	1%	7%	0%	3%	0%	41%	0%	0%	7%	3%	15%	4%	4%
115-001-75um	115-001-75um	37	4.91	3.9	0.05	262	1	0.19	0.2	0.08	49.94	9.6	34	2.4	19.93
115-001-75um_replicate	159-001-75um	27	4.4	3.6	0.05	257	1	0.18	0.18	0.07	52.7	8.1	32	2.3	19.34
Ave		32	4.655	3.75	0.05	259.5	1	0.185	0.19	0.075	51.32	8.85	33	2.35	19.635
RSD		22%	8%	6%	0%	1%	0%	4%	7%	9%	4%	12%	4%	3%	2%
115-002-180um	115-002-180um	101	4.45	3.6	0.05	279	1	0.17	0.2	0.1	37.01	8.2	29	2.3	17.25
115-002-180um_replicate	159-002-180um	60	4.45	3.5	0.05	260	1	0.16	0.21	0.1	38.54	7.5	33	2.1	15.38
Ave		80.5	4.45	3.55	0.05	269.5	1	0.165	0.205	0.1	37.775	7.85	31	2.2	16.315
RSD		36%	0%	2%	0%	5%	0%	4%	3%	0%	3%	6%	9%	6%	8%
115-002-75um	115-002-75um	81	6.09	4.1	0.05	262	1	0.22	0.29	0.06	53.02	11.1	41	2.8	20.84
115-002-75um_replicate	159-002-75um	69	6.14	2.6	0.05	273	1	0.21	0.29	0.05	56.46	12.3	52	3.1	19.4
Ave		75	6.115	3.35	0.05	267.5	1	0.215	0.29	0.055	54.74	11.7	46.5	2.95	20.12
RSD		11%	1%	32%	0%	3%	0%	3%	0%	13%	4%	7%	17%	7%	5%
125-001-180um	125-001-180um	31	4.8	4.2	0.05	192	1	0.19	0.11	0.08	35.26	5.6	37	2.7	19.1
125-001-180um_replicate	160-001-180um	35	4.75	3.8	0.05	179	1	0.17	0.09	0.08	35.77	6.2	43	2.6	19.7
Ave		33	4.775	4	0.05	185.5	1	0.18	0.1	0.08	35.515	5.9	40	2.65	19.4
RSD		9%	1%	7%	0%	5%	0%	8%	14%	0%	1%	7%	11%	3%	2%

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
125-001-75um	125-001-75um	35	6.69	5.3	0.05	249	2	0.25	0.13	0.08	58.86	10.4	48	4.1	26.81
125-001-75um_replicate	160-001-75um	35	6.01	5.3	0.05	200	1	0.26	0.13	0.08	51.61	8	45	3.3	23.07
Ave		35	6.35	5.3	0.05	224.5	1.5	0.255	0.13	0.08	55.235	9.2	46.5	3.7	24.94
RSD		0%	8%	0%	0%	15%	47%	3%	0%	0%	9%	18%	5%	15%	11%
125-002-180um	125-002-180um	34	4.45	4.1	0.05	188	1	0.18	0.06	0.04	29.84	5.2	33	2.7	17.14
125-002-180um_replicate	160-002-180um	34	4.28	5.2	0.05	180	1	0.2	0.09	0.04	28.18	5.3	37	2.4	15.98
Ave		34	4.365	4.65	0.05	184	1	0.19	0.075	0.04	29.01	5.25	35	2.55	16.56
RSD		0%	3%	17%	0%	3%	0%	7%	28%	0%	4%	1%	8%	8%	5%
125-002-75um	125-002-75um	41	5.48	4	0.05	207	1	0.21	0.09	0.08	43.62	6.6	40	3	19.66
125-002-75um_replicate	160-002-75um	28	5.38	4.8	0.05	238	1	0.2	0.1	0.07	46.96	6.6	38	3.3	17.78
Ave		34.5	5.43	4.4	0.05	222.5	1	0.205	0.095	0.075	45.29	6.6	39	3.15	18.72
RSD		27%	1%	13%	0%	10%	0%	3%	7%	9%	5%	0%	4%	7%	7%
135-001-180um	135-001-180um	38	3.34	3	0.05	241	1	0.14	0.21	0.05	32.08	5.3	21	2.2	12.54
135-001-180um_replicate	161-001-180um	45	2.79	3.2	0.05	233	1	0.16	0.19	0.08	28.57	4.4	16	1.9	10.3
Ave		41.5	3.065	3.1	0.05	237	1	0.15	0.2	0.065	30.325	4.85	18.5	2.05	11.42
RSD		12%	13%	5%	0%	2%	0%	9%	7%	33%	8%	13%	19%	10%	14%
135-001-75um	135-001-75um	10	5.44	4.9	0.05	291	1	0.2	0.38	0.09	54.3	9.5	41	3.4	18.52
135-001-75um_replicate	161-001-75um	30	5.45	5.6	0.05	280	1	0.2	0.37	0.08	52.63	8.8	39	3.5	18.67
Ave		20	5.445	5.25	0.05	285.5	1	0.2	0.375	0.085	53.465	9.15	40	3.45	18.595
RSD		71%	0%	9%	0%	3%	0%	0%	2%	8%	2%	5%	4%	2%	1%
135-002-180um	135-002-180um	36	5.34	7.6	0.05	472	1	0.2	1.06	0.12	47.14	10.6	31	3.7	21.61
135-002-180um_replicate	161-002-180um	10	4.91	5.2	0.05	461	2	0.19	0.97	0.07	44.58	9.6	34	3.2	19.2
Ave		23	5.125	6.4	0.05	466.5	1.5	0.195	1.015	0.095	45.86	10.1	32.5	3.45	20.405
RSD		80%	6%	27%	0%	2%	47%	4%	6%	37%	4%	7%	7%	10%	8%
135-002-75um	135-002-75um	35	6.74	7.5	0.05	534	2	0.21	1.46	0.11	63.62	12.9	43	4.6	27.1
135-002-75um_replicate	161-002-75um	39	6.97	7.6	0.05	524	1	0.22	1.64	0.12	57.47	12.3	47	4.2	24.23
Ave		37	6.855	7.55	0.05	529	1.5	0.215	1.55	0.115	60.545	12.6	45	4.4	25.665
RSD		8%	2%	1%	0%	1%	47%	3%	8%	6%	7%	3%	6%	6%	8%
145-001-180um	145-001-180um	33	5.35	3.9	0.05	324	1	0.18	0.39	0.09	46.29	11.2	43	3.6	19.12
145-001-180um_replicate	162-001-180um	10	5.31	3.3	0.05	326	1	0.21	0.39	0.08	47.94	11.7	46	3.4	18.46
Ave		21.5	5.33	3.6	0.05	325	1	0.195	0.39	0.085	47.115	11.45	44.5	3.5	18.79
RSD		76%	1%	12%	0%	0%	0%	11%	0%	8%	2%	3%	5%	4%	2%
145-001-75um	145-001-75um	37	6.23	4.7	0.05	355	1	0.23	0.46	0.08	54.74	12.6	50	3.9	21.69
145-001-75um_replicate	162-001-75um	10	6.14	4.4	0.05	375	2	0.23	0.46	0.1	54.68	12.9	54	3.9	22.42

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
		ppb	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
Ave		23.5	6.185	4.55	0.05	365	1.5	0.23	0.46	0.09	54.71	12.75	52	3.9	22.055
RSD		81%	1%	5%	0%	4%	47%	0%	0%	16%	0%	2%	5%	0%	2%
145-002-180um	145-002-180um	10	6.13	5.8	0.05	343	1	0.22	1.01	0.1	54.39	17	41	4.2	23.08
145-002-180um_replicate	162-002-180um	27	6.14	4	0.05	350	1	0.23	0.93	0.1	56.27	16.8	45	4.1	24.64
Ave		18.5	6.135	4.9	0.05	346.5	1	0.225	0.97	0.1	55.33	16.9	43	4.15	23.86
RSD		65%	0%	26%	0%	1%	0%	3%	6%	0%	2%	1%	7%	2%	5%
145-002-75um	145-002-75um	26	6.68	4.6	0.05	424	2	0.26	0.97	0.12	63.87	22.5	56	4.6	27.58
145-002-75um_replicate	162-002-75um	10	6.62	4.3	0.05	365	1	0.28	0.99	0.1	60.59	20.2	48	4.3	24.57
Ave		18	6.65	4.45	0.05	394.5	1.5	0.27	0.98	0.11	62.23	21.35	52	4.45	26.075
RSD		63%	1%	5%	0%	11%	47%	5%	1%	13%	4%	8%	11%	5%	8%
155-001-180um	155-001-180um	77	5.56	4.6	0.05	365	1	0.21	0.52	0.07	59.07	11.3	55	4.3	30.22
155-001-180um_replicate	163-001-180um	59	5.64	4.9	0.05	344	2	0.22	0.53	0.11	55.62	11.5	55	4.1	28.68
Ave		68	5.6	4.75	0.05	354.5	1.5	0.215	0.525	0.09	57.345	11.4	55	4.2	29.45
RSD		19%	1%	4%	0%	4%	47%	3%	1%	31%	4%	1%	0%	3%	4%
155-001-75um	155-001-75um	70	5.62	4.1	0.05	376	2	0.24	0.53	0.1	64.37	13.3	70	4.4	31.24
155-001-75um_replicate	163-001-75um	67	5.36	5.9	0.05	368	1	0.23	0.51	0.11	54.15	10.7	61	4.4	29.56
Ave		68.5	5.49	5	0.05	372	1.5	0.235	0.52	0.105	59.26	12	65.5	4.4	30.4
RSD		3%	3%	25%	0%	2%	47%	3%	3%	7%	12%	15%	10%	0%	4%
155-002-180um	155-002-180um	69	7.63	6.1	0.05	448	2	0.31	0.88	0.12	70.94	15.6	70	6.3	36.35
155-002-180um_replicate	163-002-180um	87	7.74	6.3	0.05	503	2	0.36	0.86	0.12	85.34	19	83	6.4	40.25
Ave		78	7.685	6.2	0.05	475.5	2	0.335	0.87	0.12	78.14	17.3	76.5	6.35	38.3
RSD		16%	1%	2%	0%	8%	0%	11%	2%	0%	13%	14%	12%	1%	7%
156-002-180um	156-002-180um	115	6.21	4.3	0.05	331	2	0.27	0.5	0.08	61.68	12.2	61	4.3	24.56
156-002-180um_replicate	164-002-180um	104	6.37	3.9	0.05	312	2	0.22	0.52	0.05	66.25	11.8	56	4.3	26.76
Ave		109.5	6.29	4.1	0.05	321.5	2	0.245	0.51	0.065	63.965	12	58.5	4.3	25.66
RSD		7%	2%	7%	0%	4%	0%	14%	3%	33%	5%	2%	6%	0%	6%
156-002-75um	156-002-75um	115	6.06	3.3	0.05	286	1	0.21	0.52	0.11	65.33	11.3	62	4	24.13
156-002-75um_replicate	164-002-75um	103	6.15	3	0.05	283	2	0.25	0.52	0.09	60.14	11.3	55	4.1	25.46
Ave		109	6.105	3.15	0.05	284.5	1.5	0.23	0.52	0.1	62.735	11.3	58.5	4.05	24.795
RSD		8%	1%	7%	0%	1%	47%	12%	0%	14%	6%	0%	8%	2%	4%
2006861202001-180um	2006861202001-180um	36	3.83	2.6	0.05	265	1	0.27	0.17	0.08	57.32	9.1	30	2.7	19.8
2006861202001-180um_replicate	2006861224001-180um	35	4.13	2.7	0.05	245	1	0.2	0.15	0.05	50.53	8.7	31	2.3	18.38
Ave		35.5	3.98	2.65	0.05	255	1	0.235	0.16	0.065	53.925	8.9	30.5	2.5	19.09
RSD		2%	5%	3%	0%	6%	0%	21%	9%	33%	9%	3%	2%	11%	5%

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
2006861202001-75um	2006861202001-75um	53	4.64	2.9	0.05	295	1	0.27	0.19	0.08	65.42	11.3	39	3.1	22.44
2006861202001-75um_replicate	2006861224001-75um	25	4.2	3	0.05	281	1	0.24	0.18	0.07	63.39	10.1	46	2.8	21.36
Ave		39	4.42	2.95	0.05	288	1	0.255	0.185	0.075	64.405	10.7	42.5	2.95	21.9
RSD		51%	7%	2%	0%	3%	0%	8%	4%	9%	2%	8%	12%	7%	3%
2006861202002-180um	2006861202002-180um	10	6.26	3.8	0.05	354	2	0.27	0.26	0.06	64.8	10.9	40	4.1	24.47
2006861202002-180um_replicate	2006861224002-180um	40	6.4	3.5	0.05	345	1	0.27	0.27	0.05	59.85	11	47	3.9	24.57
Ave		25	6.33	3.65	0.05	349.5	1.5	0.27	0.265	0.055	62.325	10.95	43.5	4	24.52
RSD		85%	2%	6%	0%	2%	47%	0%	3%	13%	6%	1%	11%	4%	0%
2006861202002-75um	2006861202002-75um	40	6.27	4.5	0.05	383	1	0.28	0.27	0.08	61.91	13.4	50	4.2	26.81
2006861202002-75um_replicate	2006861224002-75um	21	6.47	4.1	0.05	354	2	0.26	0.27	0.08	64.45	12.2	60	4	25.25
Ave		30.5	6.37	4.3	0.05	368.5	1.5	0.27	0.27	0.08	63.18	12.8	55	4.1	26.03
RSD		44%	2%	7%	0%	6%	47%	5%	0%	0%	3%	7%	13%	3%	4%
2006861212001-180um	2006861212001-180um	25	6.73	6.5	0.05	371	2	0.29	0.24	0.14	66.52	14.8	43	4.1	25.31
2006861212001-180um_replicate	2006861225001-180um	28	6.79	5.3	0.05	372	1	0.27	0.25	0.12	65.05	14	46	3.8	23.87
Ave		26.5	6.76	5.9	0.05	371.5	1.5	0.28	0.245	0.13	65.785	14.4	44.5	3.95	24.59
RSD		8%	1%	14%	0%	0%	47%	5%	3%	11%	2%	4%	5%	5%	4%
2006861212001-75um	2006861212001-75um	50	8.45	7.7	0.05	417	2	0.32	0.29	0.13	76.47	18.3	57	4.7	28.71
2006861212001-75um_replicate	2006861225001-75um	32	7.74	6.4	0.05	392	2	0.29	0.28	0.14	73.29	16.8	56	4.3	26.94
Ave		41	8.095	7.05	0.05	404.5	2	0.305	0.285	0.135	74.88	17.55	56.5	4.5	27.825
RSD		31%	6%	13%	0%	4%	0%	7%	2%	5%	3%	6%	1%	6%	4%
2006861212002-180um	2006861212002-180um	10	6.83	8	0.05	431	2	0.25	0.28	0.08	62.89	10.9	43	4.1	26.4
2006861212002-180um_replicate	2006861225002-180um	10	6.73	6.2	0.05	388	2	0.24	0.28	0.1	58.25	10.6	44	3.7	25.46
Ave		10	6.78	7.1	0.05	409.5	2	0.245	0.28	0.09	60.57	10.75	43.5	3.9	25.93
RSD		0%	1%	18%	0%	7%	0%	3%	0%	16%	5%	2%	2%	7%	3%
2006861212002-75um	2006861212002-75um	25	8.64	8.9	0.05	498	2	0.3	0.32	0.1	64.54	14.5	60	4.4	33.07
2006861212002-75um_replicate	2006861225002-75um	21	8.6	9.1	0.05	555	2	0.3	0.34	0.12	70.43	14	63	4.7	33.28
Ave		23	8.62	9	0.05	526.5	2	0.3	0.33	0.11	67.485	14.25	61.5	4.55	33.175
RSD		12%	0%	2%	0%	8%	0%	0%	4%	13%	6%	2%	3%	5%	0%
2006861222001-180um	2006861222001-180um	30	5.9	3.1	0.05	299	1	0.19	0.5	0.08	51.51	12.4	44	2.8	21.27
2006861222001-180um_replicate	2006861226001-180um	10	6.02	2.9	0.05	299	1	0.19	0.5	0.06	50.92	12.8	43	2.9	21.42
Ave		20	5.96	3	0.05	299	1	0.19	0.5	0.07	51.215	12.6	43.5	2.85	21.345
RSD		71%	1%	5%	0%	0%	0%	0%	0%	20%	1%	2%	2%	2%	0%
2006861222001-75um	2006861222001-75um	35	6.68	4.3	0.05	342	1	0.22	0.57	0.11	61.6	15.5	66	3.4	25.04
2006861222001-75um_replicate	2006861226001-75um	30	6.72	3.9	0.05	321	1	0.21	0.57	0.09	60.4	14.8	55	3.3	24.25

Appendix 4.2.1

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
Ave		32.5	6.7	4.1	0.05	331.5	1	0.215	0.57	0.1	61	15.15	60.5	3.35	24.645
RSD		11%	0%	7%	0%	4%	0%	3%	0%	14%	1%	3%	13%	2%	2%
2006861222002-180um	2006861222002-180um	25	4.96	2.8	0.05	287	1	0.15	0.52	0.06	42.18	10.4	33	2.3	17.65
2006861222002-180um_replicate	2006861226002-180um	10	5.31	3.3	0.05	307	1	0.17	0.58	0.06	43.78	11.5	37	2.5	18.63
Ave		17.5	5.135	3.05	0.05	297	1	0.16	0.55	0.06	42.98	10.95	35	2.4	18.14
RSD		61%	5%	12%	0%	5%	0%	9%	8%	0%	3%	7%	8%	6%	4%
2006861222002-75um	2006861222002-75um	51	7.02	5.2	0.05	389	2	0.21	0.77	0.13	63.82	16.4	66	3.6	25.86
2006861222002-75um_replicate	2006861226002-75um	42	6.8	4.7	0.05	360	1	0.21	0.76	0.1	58.1	15.7	50	3.2	24.72
Ave		46.5	6.91	4.95	0.05	374.5	1.5	0.21	0.765	0.115	60.96	16.05	58	3.4	25.29
RSD		14%	2%	7%	0%	5%	47%	0%	1%	18%	7%	3%	20%	8%	3%
150-001-180um	150-001-180um	47	4.29	4.4	0.05	216	0.5	0.18	0.17	0.09	36.57	5.8	34	2.9	17.81
150-001-180um_replicate	2006861229001-180um	10	4.81	3	0.05	214	1	0.18	0.14	0.04	40.74	6.1	37	2.6	17.72
Ave		28.5	4.55	3.7	0.05	215	0.75	0.18	0.155	0.065	38.655	5.95	35.5	2.75	17.765
RSD		92%	8%	27%	0%	1%	47%	0%	14%	54%	8%	4%	6%	8%	0%
139-001-75um	139-001-75um	38	5.07	6.1	0.05	351	2	0.27	0.24	0.17	88.57	15	43	3.1	21.65
139-001-75um_replicate	2006861229001-75um	30	4.57	4.7	0.05	337	1	0.22	0.2	0.13	63.66	14.7	36	2.5	21.09
Ave		34	4.82	5.4	0.05	344	1.5	0.245	0.22	0.15	76.115	14.85	39.5	2.8	21.37
RSD		17%	7%	18%	0%	3%	47%	14%	13%	19%	23%	1%	13%	15%	2%
143-002-180um	143-002-180um	65	7.68	7.9	0.05	350	2	0.38	0.43	0.09	68.85	13.3	59	6.1	31.68
143-002-180um_replicate	2006861229002-180um	61	7.76	7.2	0.05	346	2	0.39	0.4	0.13	68.82	14.2	47	5.4	31.57
Ave		63	7.72	7.55	0.05	348	2	0.385	0.415	0.11	68.835	13.75	53	5.75	31.625
RSD		4%	1%	7%	0%	1%	0%	2%	5%	26%	0%	5%	16%	9%	0%
134-002-75um	134-002-75um	10	7.48	8.5	0.05	792	3	0.35	1.38	0.1	71.77	17.7	51	5.5	28.46
134-002-75um_replicate	2006861229002-75um	25	7.68	8.5	0.05	575	2	0.34	1.01	0.11	68.7	16.2	57	4.8	30.4
Ave		17.5	7.58	8.5	0.05	683.5	2.5	0.345	1.195	0.105	70.235	16.95	54	5.15	29.43
RSD		61%	2%	0%	0%	22%	28%	2%	22%	7%	3%	6%	8%	10%	5%
Min RSD		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD		**33%**	**3%**	**9%**	**0%**	**4%**	**19%**	**6%**	**4%**	**15%**	**5%**	**5%**	**7%**	**5%**	**4%**
Max RSD		**102%**	**13%**	**36%**	**0%**	**22%**	**47%**	**41%**	**28%**	**54%**	**23%**	**18%**	**20%**	**15%**	**14%**

Note: Values <LLD have been halved (= 0.5 LLD)

Appendix 4.2.1

SAMPLE	Dy	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm
005-001-180um	3.7	2	1.1	2.97	14.26	4.5	3.31	0.7	1.23	24	21.7	0.3	0.47	856	0.42	0.512	11.74
005-001-180um_replicate	3.3	1.9	0.9	2.88	13.3	4.1	3.24	0.7	1.2	21.8	20.7	0.3	0.46	857	0.41	0.506	10.46
Ave	3.5	1.95	1	2.925	13.78	4.3	3.275	0.7	1.215	22.9	21.2	0.3	0.465	856.5	0.415	0.509	11.1
RSD	8%	4%	14%	2%	5%	7%	2%	0%	2%	7%	3%	0%	2%	0%	2%	1%	8%
005-002-75um	3.9	2	1	3.27	14.62	4.3	3.4	0.7	1.12	25.9	21.1	0.3	0.54	841	0.62	0.649	11.38
005-002-75um_replicate	4.1	2.2	1.1	3.33	15.42	4.4	3.61	0.7	1.15	26.4	23.3	0.3	0.56	863	0.64	0.661	11.87
Ave	4	2.1	1.05	3.3	15.02	4.35	3.505	0.7	1.135	26.15	22.2	0.3	0.55	852	0.63	0.655	11.625
RSD	4%	7%	7%	1%	4%	2%	4%	0%	2%	1%	7%	0%	3%	2%	2%	1%	3%
010-001-75um	3	1.8	1.1	3.62	16.49	3.7	3.25	0.6	1.34	24.2	27.9	0.3	0.59	370	0.37	0.341	7.09
010-001-75um_replicate	3.4	1.8	1	3.66	17.37	3.9	3.17	0.7	1.26	25.2	25.1	0.3	0.57	371	0.37	0.348	7.25
Ave	3.2	1.8	1.05	3.64	16.93	3.8	3.21	0.65	1.3	24.7	26.5	0.3	0.58	370.5	0.37	0.3445	7.17
RSD	9%	0%	7%	1%	4%	4%	2%	11%	4%	3%	7%	0%	2%	0%	0%	1%	2%
010-002-180um	3.9	2.3	1.2	4.68	22.26	4.9	3.4	0.8	1.25	29.5	34.5	0.3	0.74	404	0.4	0.87	8.04
010-002-180um_replicate	3.8	2.2	1.1	4.69	22.07	4.7	3.27	0.7	1.37	28.5	35.3	0.3	0.78	410	0.43	0.891	8.07
Ave	3.85	2.25	1.15	4.685	22.165	4.8	3.335	0.75	1.31	29	34.9	0.3	0.76	407	0.415	0.8805	8.055
RSD	2%	3%	6%	0%	1%	3%	3%	9%	6%	2%	2%	0%	4%	1%	5%	2%	0%
015-001-180um	2.5	1.6	0.8	2.88	13.34	3.2	2.55	0.5	0.99	19.3	24.7	0.2	0.43	286	0.45	0.187	5.98
015-001-180um_replicate	2.3	1.5	0.8	2.88	12.94	2.7	2.46	0.5	0.99	18.5	24.5	0.2	0.46	292	0.48	0.183	5.57
Ave	2.4	1.55	0.8	2.88	13.14	2.95	2.505	0.5	0.99	18.9	24.6	0.2	0.445	289	0.465	0.185	5.775
RSD	6%	5%	0%	0%	2%	12%	3%	0%	0%	3%	1%	0%	5%	1%	5%	2%	5%
015-002-75um	3.4	1.9	0.9	4.2	18.73	4	3.31	0.6	1.09	24.8	29.8	0.3	0.73	541	0.88	0.419	8.15
015-002-75um_replicate	3.4	1.9	0.8	4.14	18.37	4.1	3.32	0.6	1.09	21	31.2	0.3	0.72	522	0.98	0.399	7.86
Ave	3.4	1.9	0.85	4.17	18.55	4.05	3.315	0.6	1.09	22.9	30.5	0.3	0.725	531.5	0.93	0.409	8.005
RSD	0%	0%	8%	1%	1%	2%	0%	0%	0%	12%	3%	0%	1%	3%	8%	3%	3%
019-001-75um	3.2	1.6	0.9	2.87	12.17	3.9	2.68	0.6	1.02	28.6	18.2	0.2	0.2	668	0.5	0.157	8.02
019-001-75um_replicate	3.2	1.6	0.9	2.87	11.92	3.9	2.61	0.6	1.01	29	19.6	0.2	0.21	653	0.59	0.158	8.21
Ave	3.2	1.6	0.9	2.87	12.045	3.9	2.645	0.6	1.015	28.8	18.9	0.2	0.205	660.5	0.545	0.1575	8.115
RSD	0%	0%	0%	0%	1%	0%	2%	0%	1%	1%	5%	0%	3%	2%	12%	0%	2%
019-002-180um	3.4	1.8	1.1	3.15	14.87	4.7	2.49	0.7	1.16	30.7	25.9	0.3	0.25	575	0.47	0.128	7.36
019-002-180um_replicate	3.2	1.8	1.1	3.11	14.55	4.6	2.63	0.6	1.15	30.1	24.5	0.3	0.24	579	0.49	0.123	7.18
Ave	3.3	1.8	1.1	3.13	14.71	4.65	2.56	0.65	1.155	30.4	25.2	0.3	0.245	577	0.48	0.1255	7.27
RSD	4%	0%	0%	1%	2%	2%	4%	11%	1%	1%	4%	0%	3%	0%	3%	3%	2%
105-001-180um	4.3	2.1	1.2	3.14	14.17	4	3.63	0.7	1	24.8	24.6	0.3	0.52	795	0.36	0.31	11.19
105-001-180um_replicate	3.7	2.1	1.1	3.05	13.7	4.6	3.14	0.8	1.1	24.8	23.3	0.3	0.55	827	0.34	0.322	10.92

SAMPLE	Dy	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm
Ave	4	2.1	1.15	3.095	13.935	4.3	3.385	0.75	1.05	24.8	23.95	0.3	0.535	811	0.35	0.316	11.055
RSD	11%	0%	6%	2%	2%	10%	10%	9%	7%	0%	4%	0%	4%	3%	4%	3%	2%
105-001-75um	3.5	1.9	1.1	3.21	14.48	4.3	3.77	0.7	1.17	26	24.1	0.3	0.54	716	0.42	0.34	11.71
105-001-75um_replicate	3.8	2.2	1.1	2.97	13.43	4.2	3.25	0.8	1.15	23.7	21.5	0.3	0.53	691	0.41	0.333	11.17
Ave	3.65	2.05	1.1	3.09	13.955	4.25	3.51	0.75	1.16	24.85	22.8	0.3	0.535	703.5	0.415	0.3365	11.44
RSD	6%	10%	0%	5%	5%	2%	10%	9%	1%	7%	8%	0%	1%	3%	2%	1%	3%
105-002-180um	3.7	1.9	1.2	3.12	14.16	4.6	3.5	0.7	1.1	26	22.9	0.3	0.57	933	0.62	0.498	10.92
105-002-180um_replicate	3.6	2	1.2	3.22	14.26	4.1	3.03	0.8	1.08	22.9	21.3	0.3	0.57	924	0.56	0.494	11.14
Ave	3.65	1.95	1.2	3.17	14.21	4.35	3.265	0.75	1.09	24.45	22.1	0.3	0.57	928.5	0.59	0.496	11.03
RSD	2%	4%	0%	2%	0%	8%	10%	9%	1%	9%	5%	0%	0%	1%	7%	1%	1%
105-002-75um	3.8	2.3	1.2	3.43	15.94	4.2	3.64	0.8	1.1	26.9	26.2	0.3	0.63	1023	0.62	0.546	12.14
105-002-75um_replicate	3.9	2.1	1.2	3.53	16.42	4.4	3.52	0.7	1.06	27.2	26.9	0.4	0.62	1031	0.61	0.55	12.78
Ave	3.85	2.2	1.2	3.48	16.18	4.3	3.58	0.75	1.08	27.05	26.55	0.35	0.625	1027	0.615	0.548	12.46
RSD	2%	6%	0%	2%	2%	3%	2%	9%	3%	1%	2%	20%	1%	1%	1%	1%	4%
115-001-180um	2.6	1.2	0.8	1.93	8.86	2.6	1.98	0.5	0.6	19.2	14.7	0.2	0.17	381	0.37	0.103	7.03
115-001-180um_replicate	2.8	1.2	0.8	1.98	9.28	3	2.5	0.5	0.57	21.5	16	0.2	0.14	356	0.33	0.105	7.54
Ave	2.7	1.2	0.8	1.955	9.07	2.8	2.24	0.5	0.585	20.35	15.35	0.2	0.155	368.5	0.35	0.104	7.285
RSD	5%	0%	0%	2%	3%	10%	16%	0%	4%	8%	6%	0%	14%	5%	8%	1%	5%
115-001-75um	2.6	1.7	0.9	2.61	11.13	3.2	3.05	0.6	0.76	23.4	17.8	0.3	0.2	510	0.52	0.151	8.93
115-001-75um_replicate	3	1.7	0.9	2.41	11.11	3.5	3.22	0.6	0.73	23.8	15.6	0.3	0.21	463	0.44	0.15	8.9
Ave	2.8	1.7	0.9	2.51	11.12	3.35	3.135	0.6	0.745	23.6	16.7	0.3	0.205	486.5	0.48	0.1505	8.915
RSD	10%	0%	0%	6%	0%	6%	4%	0%	3%	1%	9%	0%	3%	7%	12%	0%	0%
115-002-180um	2.6	1.3	0.7	2.39	11.54	2.9	2.17	0.5	0.62	16.9	16.5	0.2	0.21	403	0.36	0.111	6.84
115-002-180um_replicate	2.4	1.2	0.7	2.39	11.63	2.7	2.29	0.5	0.58	17	16.7	0.2	0.18	411	0.41	0.11	6.77
Ave	2.5	1.25	0.7	2.39	11.585	2.8	2.23	0.5	0.6	16.95	16.6	0.2	0.195	407	0.385	0.1105	6.805
RSD	6%	6%	0%	0%	1%	5%	4%	0%	5%	0%	1%	0%	11%	1%	9%	1%	1%
115-002-75um	3.1	1.8	1	3.18	14.63	3.9	3.72	0.7	0.81	23.1	17.8	0.3	0.26	628	0.52	0.159	8.96
115-002-75um_replicate	2.9	1.6	1.1	3.14	14.26	3.6	2.98	0.6	0.72	25.7	21.8	0.2	0.25	583	0.47	0.162	8.13
Ave	3	1.7	1.05	3.16	14.445	3.75	3.35	0.65	0.765	24.4	19.8	0.25	0.255	605.5	0.495	0.1605	8.545
RSD	5%	8%	7%	1%	2%	6%	16%	11%	8%	8%	14%	28%	3%	5%	7%	1%	7%
125-001-180um	2.3	1.2	0.7	2.75	12.36	2.3	2.52	0.5	0.73	17.5	15.9	0.2	0.19	212	0.58	0.087	6.66
125-001-180um_replicate	2	1.3	0.8	2.83	11.3	2.4	2.09	0.4	0.63	17.7	16.4	0.2	0.19	214	0.58	0.08	5.42
Ave	2.15	1.25	0.75	2.79	11.83	2.35	2.305	0.45	0.68	17.6	16.15	0.2	0.19	213	0.58	0.0835	6.04
RSD	10%	6%	9%	2%	6%	3%	13%	16%	10%	1%	2%	0%	0%	1%	0%	6%	15%

Appendix 4.2.1

SAMPLE	Dy ppm	Er ppm	Eu ppm	Fe %	Ga ppm	Gd ppm	Hf ppm	Ho ppm	K %	La ppm	Li ppm	Lu ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm
125-001-75um	3.5	1.9	1.1	3.75	15.08	3.8	3.43	0.7	0.98	28.5	22.1	0.3	0.25	396	0.86	0.172	7.83
125-001-75um_replicate	3.4	1.9	0.9	3.25	14.54	4	3.32	0.7	1.01	24.5	18.8	0.3	0.21	326	0.81	0.134	8.02
Ave	3.45	1.9	1	3.5	14.81	3.9	3.375	0.7	0.995	26.5	20.45	0.3	0.23	361	0.835	0.153	7.925
RSD	2%	0%	14%	10%	3%	4%	2%	0%	2%	11%	11%	0%	12%	14%	4%	18%	2%
125-002-180um	1.5	1.1	0.5	2.58	9.4	1.8	2.3	0.3	0.65	15.2	18.2	0.2	0.15	83	0.57	0.084	5.28
125-002-180um_replicate	1.9	1.1	0.5	2.57	10.03	2	2.48	0.3	0.63	14.5	18.4	0.1	0.17	81	0.51	0.078	6.07
Ave	1.7	1.1	0.5	2.575	9.715	1.9	2.39	0.3	0.64	14.85	18.3	0.15	0.16	82	0.54	0.081	5.675
RSD	17%	0%	0%	0%	5%	7%	5%	0%	2%	3%	1%	47%	9%	2%	8%	5%	10%
125-002-75um	2.7	1.6	0.8	3.05	13.26	3.6	3.56	0.5	0.94	21.3	18.4	0.3	0.2	121	0.68	0.13	8.34
125-002-75um_replicate	2.8	1.5	0.8	3.03	13.23	3	3.25	0.5	0.84	22.6	23.9	0.2	0.22	120	0.55	0.134	8.47
Ave	2.75	1.55	0.8	3.04	13.245	3.3	3.405	0.5	0.89	21.95	21.15	0.25	0.21	120.5	0.615	0.132	8.405
RSD	3%	5%	0%	0%	0%	13%	6%	0%	8%	4%	18%	28%	7%	1%	15%	2%	1%
135-001-180um	1.9	1.2	0.7	1.86	7.93	2.7	1.99	0.4	0.73	14.8	15.3	0.1	0.27	221	0.28	0.202	4.76
135-001-180um_replicate	2	1	0.6	1.53	6.59	2.4	1.64	0.4	0.6	14.5	15.9	0.1	0.23	190	0.25	0.191	4.73
Ave	1.95	1.1	0.65	1.695	7.26	2.55	1.815	0.4	0.665	14.65	15.6	0.1	0.25	205.5	0.265	0.1965	4.745
RSD	4%	13%	11%	14%	13%	8%	14%	0%	14%	1%	3%	0%	11%	11%	8%	4%	0%
135-001-75um	3.2	1.8	1.1	3.04	13.4	3.6	2.9	0.6	1.11	26	25.2	0.3	0.46	385	0.43	0.337	6.78
135-001-75um_replicate	3	1.6	1	3.03	11.99	4	2.65	0.6	1.07	24.3	24	0.2	0.47	377	0.44	0.341	7.02
Ave	3.1	1.7	1.05	3.035	12.695	3.8	2.775	0.6	1.09	25.15	24.6	0.25	0.465	381	0.435	0.339	6.9
RSD	5%	8%	7%	0%	8%	7%	6%	0%	3%	5%	3%	28%	2%	1%	2%	1%	2%
135-002-180um	3.3	1.8	1	3.03	14.63	3.6	2.91	0.8	0.86	22.1	27.4	0.3	0.57	368	0.48	0.442	6.39
135-002-180um_replicate	2.7	1.5	0.9	2.63	11.94	3.5	2.06	0.6	0.82	21.3	24.5	0.2	0.53	333	0.41	0.407	5.31
Ave	3	1.65	0.95	2.83	13.285	3.55	2.485	0.7	0.84	21.7	25.95	0.25	0.55	350.5	0.445	0.4245	5.85
RSD	14%	13%	7%	10%	14%	2%	24%	20%	3%	3%	8%	28%	5%	7%	11%	6%	13%
135-002-75um	4.1	2	1.3	3.75	17.23	4.7	3.21	0.8	1.12	28.9	30.8	0.3	0.74	462	0.51	0.553	8.25
135-002-75um_replicate	4	2.2	1.1	3.76	16.35	4.3	3.06	0.8	1.16	25.5	28.9	0.3	0.76	479	0.65	0.563	7.77
Ave	4.05	2.1	1.2	3.755	16.79	4.5	3.135	0.8	1.14	27.2	29.85	0.3	0.75	470.5	0.58	0.558	8.01
RSD	2%	7%	12%	0%	4%	6%	3%	0%	2%	9%	5%	0%	2%	3%	17%	1%	4%
145-001-180um	2.9	1.4	0.9	3.02	12.82	2.9	2.74	0.6	0.97	21.4	19.4	0.3	0.57	521	0.35	0.386	8.84
145-001-180um_replicate	2.6	1.6	0.8	2.91	13.11	3.3	2.69	0.5	1	22.2	20.6	0.3	0.54	514	0.37	0.377	9.04
Ave	2.75	1.5	0.85	2.965	12.965	3.1	2.715	0.55	0.985	21.8	20	0.3	0.555	517.5	0.36	0.3815	8.94
RSD	8%	9%	8%	3%	2%	9%	1%	13%	2%	3%	4%	0%	4%	1%	4%	2%	2%
145-001-75um	3.3	1.9	1.1	3.49	14.69	4.2	3.11	0.7	1.13	24.2	21.5	0.3	0.65	601	0.41	0.463	10.71
145-001-75um_replicate	2.9	2	1	3.49	14.8	4.2	3.19	0.7	1.13	24.7	23.3	0.3	0.63	601	0.44	0.455	10.77

SAMPLE	Dy ppm	Er ppm	Eu ppm	Fe %	Ga ppm	Gd ppm	Hf ppm	Ho ppm	K %	La ppm	Li ppm	Lu ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm
Ave	3.1	1.95	1.05	3.49	14.745	4.2	3.15	0.7	1.13	24.45	22.4	0.3	0.64	601	0.425	0.459	10.74
RSD	9%	4%	7%	0%	1%	0%	2%	0%	0%	1%	6%	0%	2%	0%	5%	1%	0%
145-002-180um	3.7	2.3	1.1	3.47	16.03	4	3.65	0.8	1.01	24.5	25.1	0.3	0.69	698	1.26	0.96	11.19
145-002-180um_replicate	3.4	2	1.1	3.35	15.86	4.1	3.04	0.7	1.13	24.9	24.1	0.3	0.68	690	1.33	0.94	10.63
Ave	3.55	2.15	1.1	3.41	15.945	4.05	3.345	0.75	1.07	24.7	24.6	0.3	0.685	694	1.295	0.95	10.91
RSD	6%	10%	0%	2%	1%	2%	13%	9%	8%	1%	3%	0%	1%	1%	4%	1%	4%
145-002-75um	3.8	2	1.2	3.86	17.83	4.1	3.4	0.7	1.2	27.9	27.8	0.3	0.73	913	1.62	1.048	11.55
145-002-75um_replicate	4	2.2	1.1	3.7	17.17	4.6	3.67	0.7	1.24	26.4	25.2	0.4	0.76	906	1.73	1.059	12.09
Ave	3.9	2.1	1.15	3.78	17.5	4.35	3.535	0.7	1.22	27.15	26.5	0.35	0.745	909.5	1.675	1.0535	11.82
RSD	4%	7%	6%	3%	3%	8%	5%	0%	2%	4%	7%	20%	3%	1%	5%	1%	3%
155-001-180um	3.7	1.7	1	3.01	14.81	4	2.93	0.7	1.42	26.8	21.8	0.3	0.5	538	0.38	0.354	10.25
155-001-180um_replicate	3.4	1.9	1	3.06	13.85	4.3	2.44	0.7	1.4	25.2	21.9	0.2	0.5	545	0.4	0.358	9.63
Ave	3.55	1.8	1	3.035	14.33	4.15	2.685	0.7	1.41	26	21.85	0.25	0.5	541.5	0.39	0.356	9.94
RSD	6%	8%	0%	1%	5%	5%	13%	0%	1%	4%	0%	28%	0%	1%	4%	1%	4%
155-001-75um	3.8	1.9	1.1	3.06	14.95	4.3	2.79	0.8	1.36	30.2	25.1	0.3	0.5	513	0.44	0.336	10.69
155-001-75um_replicate	4.1	2.1	1.1	3.04	14.47	4.7	3.23	0.7	1.25	27.6	25.7	0.3	0.49	486	0.47	0.341	11.33
Ave	3.95	2	1.1	3.05	14.71	4.5	3.01	0.75	1.305	28.9	25.4	0.3	0.495	499.5	0.455	0.3385	11.01
RSD	5%	7%	0%	0%	2%	6%	10%	9%	6%	6%	2%	0%	1%	4%	5%	1%	4%
155-002-180um	4.5	2.5	1.4	4.22	19.52	4.9	3.44	0.8	1.45	33.5	30.6	0.4	0.68	623	0.65	0.593	12.67
155-002-180um_replicate	4.9	2.6	1.6	4.2	20.73	6.2	3.83	1.1	1.47	38.8	33.4	0.4	0.68	661	0.82	0.585	13.84
Ave	4.7	2.55	1.5	4.21	20.125	5.55	3.635	0.95	1.46	36.15	32	0.4	0.68	642	0.735	0.589	13.255
RSD	6%	3%	9%	0%	4%	17%	8%	22%	1%	10%	6%	0%	0%	4%	16%	1%	6%
156-002-180um	4.2	2.6	1.3	3.34	15.39	5	4.14	0.8	1.13	29.4	24.5	0.3	0.47	534	0.48	0.518	15.03
156-002-180um_replicate	3.9	2.4	1.3	3.39	16.08	4.8	3.88	0.8	1.21	29.7	21.2	0.3	0.44	538	0.6	0.508	16.75
Ave	4.05	2.5	1.3	3.365	15.735	4.9	4.01	0.8	1.17	29.55	22.85	0.3	0.455	536	0.54	0.513	15.89
RSD	5%	6%	0%	1%	3%	3%	5%	0%	5%	1%	10%	0%	5%	1%	16%	1%	8%
156-002-75um	3.9	2.1	1.2	3.3	15.48	4.5	3.41	0.8	1.02	29.4	23.1	0.3	0.43	521	0.44	0.524	13.8
156-002-75um_replicate	3.8	2.2	1.1	3.29	14.71	4.3	3.55	0.7	1.19	27.9	21.2	0.3	0.45	541	0.56	0.52	15.45
Ave	3.85	2.15	1.15	3.295	15.095	4.4	3.48	0.75	1.105	28.65	22.15	0.3	0.44	531	0.5	0.522	14.625
RSD	2%	3%	6%	0%	4%	3%	3%	9%	11%	4%	6%	0%	3%	3%	17%	1%	8%
2006861202001-180um	3.3	1.7	1.1	1.91	9.61	3.7	2.71	0.6	0.95	26.7	16.9	0.3	0.22	402	0.37	0.25	9.92
2006861202001-180um_replicate	3	1.5	0.8	1.92	8.91	4	2.27	0.5	0.88	23.2	14.8	0.2	0.22	402	0.33	0.256	7.77
Ave	3.15	1.6	0.95	1.915	9.26	3.85	2.49	0.55	0.915	24.95	15.85	0.25	0.22	402	0.35	0.253	8.845
RSD	7%	9%	22%	0%	5%	6%	12%	13%	5%	10%	9%	28%	0%	0%	8%	2%	17%

Appendix 4.2.1

SAMPLE	Dy	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm
2006861202001-75um	4.2	1.8	1.1	2.26	11.72	4.5	2.94	0.7	1.07	31.4	20.2	0.3	0.27	491	0.46	0.279	11.31
2006861202001-75um_replicate	3.9	1.9	1	2.11	10.32	4.5	2.73	0.6	1.03	30.1	18	0.3	0.25	418	0.44	0.275	10.55
Ave	4.05	1.85	1.05	2.185	11.02	4.5	2.835	0.65	1.05	30.75	19.1	0.3	0.26	454.5	0.45	0.277	10.93
RSD	5%	4%	7%	5%	9%	0%	5%	11%	3%	3%	8%	0%	5%	11%	3%	1%	5%
2006861202002-180um	3.8	1.9	1.2	3.02	15.93	4	3.1	0.7	1.23	32.3	23.6	0.3	0.51	503	0.48	0.437	10.23
2006861202002-180um_replicate	3.7	1.8	1.1	3.14	14.87	4.5	2.97	0.6	1.12	29.5	22.1	0.3	0.51	518	0.48	0.449	9.02
Ave	3.75	1.85	1.15	3.08	15.4	4.25	3.035	0.65	1.175	30.9	22.85	0.3	0.51	510.5	0.48	0.443	9.625
RSD	2%	4%	6%	3%	5%	8%	3%	11%	7%	6%	5%	0%	0%	2%	0%	2%	9%
2006861202002-75um	4	1.9	1.1	3.25	16.98	4.6	3.1	0.7	1.32	30.2	26.9	0.3	0.55	565	0.57	0.458	11.48
2006861202002-75um_replicate	3.8	1.8	1.1	3.13	15.22	4.6	2.9	0.7	1.23	31.3	25.1	0.3	0.53	554	0.51	0.448	10.27
Ave	3.9	1.85	1.1	3.19	16.1	4.6	3	0.7	1.275	30.75	26	0.3	0.54	559.5	0.54	0.453	10.875
RSD	4%	4%	0%	3%	8%	0%	5%	0%	5%	3%	5%	0%	3%	1%	8%	2%	8%
2006861212001-180um	3.7	1.7	1.2	3.54	17.32	4.2	2.94	0.7	1.38	31.3	25.3	0.3	0.52	631	0.53	0.207	8.54
2006861212001-180um_replicate	3.7	1.8	1.1	3.58	16.43	4.4	2.94	0.6	1.28	30.9	25	0.3	0.52	631	0.58	0.222	7.5
Ave	3.7	1.75	1.15	3.56	16.875	4.3	2.94	0.65	1.33	31.1	25.15	0.3	0.52	631	0.555	0.2145	8.02
RSD	0%	4%	6%	1%	4%	3%	0%	11%	5%	1%	1%	0%	0%	0%	6%	5%	9%
2006861212001-75um	4.7	2.1	1.3	4.45	20.36	5.3	3.3	0.8	1.56	36.6	28.7	0.4	0.64	818	0.63	0.257	9.88
2006861212001-75um_replicate	4.5	2.1	1.3	4.15	18.36	4.9	3.08	0.8	1.57	35.1	29.8	0.3	0.61	773	0.59	0.261	9
Ave	4.6	2.1	1.3	4.3	19.36	5.1	3.19	0.8	1.565	35.85	29.25	0.35	0.625	795.5	0.61	0.259	9.44
RSD	3%	0%	0%	5%	7%	6%	5%	0%	0%	3%	3%	20%	3%	4%	5%	1%	7%
2006861212002-180um	3.9	1.9	1	3.7	16.73	3.7	3.33	0.7	1.26	31.3	26.9	0.3	0.55	431	0.81	0.4	7.98
2006861212002-180um_replicate	3.7	1.8	1.1	3.74	16.4	4.6	2.87	0.7	1.18	29.3	26.1	0.3	0.54	425	0.71	0.391	7.01
Ave	3.8	1.85	1.05	3.72	16.565	4.15	3.1	0.7	1.22	30.3	26.5	0.3	0.545	428	0.76	0.3955	7.495
RSD	4%	4%	7%	1%	1%	15%	10%	0%	5%	5%	2%	0%	1%	1%	9%	2%	9%
2006861212002-75um	4	2	1.1	4.92	21.82	5.1	3.46	0.8	1.53	31.9	36.2	0.3	0.7	553	1.05	0.479	9.06
2006861212002-75um_replicate	4.7	2.2	1.2	4.84	21.18	5.2	3.36	0.8	1.58	35.9	37.6	0.3	0.7	559	1.04	0.482	9.08
Ave	4.35	2.1	1.15	4.88	21.5	5.15	3.41	0.8	1.555	33.9	36.9	0.3	0.7	556	1.045	0.4805	9.07
RSD	11%	7%	6%	1%	2%	1%	2%	0%	2%	8%	3%	0%	0%	1%	1%	0%	0%
2006861222001-180um	3.3	1.6	1.1	3.03	13.67	4.2	2.77	0.6	1.05	23.5	20	0.2	0.55	457	0.36	0.17	8.1
2006861222001-180um_replicate	3.5	1.8	1.1	3.14	14.73	4	3.09	0.6	1.06	23.4	21.3	0.3	0.56	471	0.4	0.171	8.29
Ave	3.4	1.7	1.1	3.085	14.2	4.1	2.93	0.6	1.055	23.45	20.65	0.25	0.555	464	0.38	0.1705	8.195
RSD	4%	8%	0%	3%	5%	3%	8%	0%	1%	0%	4%	28%	1%	2%	7%	0%	2%
2006861222001-75um	6	2	1.3	3.49	16.52	4.9	3.56	0.8	1.3	28.2	24.9	0.3	0.63	526	0.53	0.22	11.05
2006861222001-75um_replicate	4.2	2	1.2	3.45	15.78	4.4	3.48	0.8	1.24	28.3	25.3	0.3	0.63	520	0.51	0.219	10.37

Appendix 4.2.1

SAMPLE	Dy	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm
Ave	5.1	2	1.25	3.47	16.15	4.65	3.52	0.8	1.27	28.25	25.1	0.3	0.63	523	0.52	0.2195	10.71
RSD	25%	0%	6%	1%	3%	8%	2%	0%	3%	0%	1%	0%	0%	1%	3%	0%	4%
2006861222002-180um	2.7	1.4	0.8	2.45	11.38	3.6	2.38	0.5	0.82	19.2	17.2	0.2	0.44	371	0.33	0.109	7.06
2006861222002-180um_replicate	3	1.5	0.9	2.68	12.06	3.7	2.67	0.6	0.85	19.7	18.5	0.2	0.48	399	0.38	0.11	7.2
Ave	2.85	1.45	0.85	2.565	11.72	3.65	2.525	0.55	0.835	19.45	17.85	0.2	0.46	385	0.355	0.1095	7.13
RSD	7%	5%	8%	6%	4%	2%	8%	13%	3%	2%	5%	0%	6%	5%	10%	1%	1%
2006861222002-75um	4.3	2	1.2	3.59	16.55	5.1	3.63	0.8	1.18	28.9	26.3	0.4	0.65	554	0.57	0.171	10.92
2006861222002-75um_replicate	3.9	1.8	1.1	3.65	15.62	4.2	3.22	0.7	1.1	26.6	24.5	0.3	0.64	558	0.46	0.157	10.09
Ave	4.1	1.9	1.15	3.62	16.085	4.65	3.425	0.75	1.14	27.75	25.4	0.35	0.645	556	0.515	0.164	10.505
RSD	7%	7%	6%	1%	4%	14%	8%	9%	5%	6%	5%	20%	1%	1%	15%	6%	6%
150-001-180um	2.2	1.3	0.7	2.4	11.22	2.2	2.19	0.5	0.76	17	18.7	0.2	0.21	240	0.4	0.117	6.17
150-001-180um_replicate	2.2	1	0.6	2.41	10.74	2.5	2.22	0.4	0.79	19.9	15.2	0.2	0.19	256	0.45	0.101	5.99
Ave	2.2	1.15	0.65	2.405	10.98	2.35	2.205	0.45	0.775	18.45	16.95	0.2	0.2	248	0.425	0.109	6.08
RSD	0%	18%	11%	0%	3%	9%	1%	16%	3%	11%	15%	0%	7%	5%	8%	10%	2%
139-001-75um	4.3	2.5	1.4	2.9	12.27	5	4.35	0.8	1.2	40.9	23.4	0.3	0.34	596	0.48	0.345	10.87
139-001-75um_replicate	3.5	1.6	1	2.45	10.33	3.8	2.97	0.6	1.14	31.9	19.8	0.3	0.31	553	0.4	0.289	8.92
Ave	3.9	2.05	1.2	2.675	11.3	4.4	3.66	0.7	1.17	36.4	21.6	0.3	0.325	574.5	0.44	0.317	9.895
RSD	15%	31%	24%	12%	12%	19%	27%	20%	4%	17%	12%	0%	7%	5%	13%	12%	14%
143-002-180um	4.3	2.4	1.2	4.45	19.41	5.2	3.31	0.8	1.73	34.1	40.8	0.3	0.82	510	0.71	0.324	7.64
143-002-180um_replicate	4.1	2.1	1.2	4.36	19.48	4.8	3.48	0.7	1.74	34.1	36	0.3	0.89	574	0.66	0.335	7.45
Ave	4.2	2.25	1.2	4.405	19.445	5	3.395	0.75	1.735	34.1	38.4	0.3	0.855	542	0.685	0.3295	7.545
RSD	3%	9%	0%	1%	0%	6%	4%	9%	0%	0%	9%	0%	6%	8%	5%	2%	2%
134-002-75um	4.7	2.6	1.3	4.03	18.27	5	3.78	0.9	1.5	32.2	33.7	0.4	0.83	681	0.87	0.484	10.46
134-002-75um_replicate	4.5	2.1	1.1	4.16	18.75	4.7	3.12	0.8	1.58	33.1	31.4	0.3	0.87	625	0.9	0.488	9.19
Ave	4.6	2.35	1.2	4.095	18.51	4.85	3.45	0.85	1.54	32.65	32.55	0.35	0.85	653	0.885	0.486	9.825
RSD	3%	15%	12%	2%	2%	4%	14%	8%	4%	2%	5%	20%	3%	6%	2%	1%	9%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**6%**	**6%**	**6%**	**2%**	**4%**	**6%**	**7%**	**6%**	**4%**	**4%**	**5%**	**7%**	**3%**	**3%**	**7%**	**3%**	**5%**
Max RSD	**25%**	**31%**	**24%**	**14%**	**14%**	**19%**	**27%**	**22%**	**14%**	**17%**	**18%**	**47%**	**14%**	**14%**	**17%**	**18%**	**17%**

Note: Values <LLD have been halv

Appendix 4.2.1

SAMPLE	Nd ppm	Ni ppm	P %	Pb ppm	Pr ppm	Rb ppm	S %	Sb ppm	Sc ppm	Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %	Tm ppm	U ppm
005-001-180um	24.2	25.6	0.047	16.44	5.7	68.6	0.02	0.46	10	5.1	2	113	1	0.6	8.8	0.653	0.3	1.2
005-001-180um_replicate	22.2	24.5	0.046	14.75	5.1	62.5	0.02	0.42	9.7	4.5	1.8	106	0.9	0.5	8.3	0.623	0.3	1.2
Ave	23.2	25.05	0.0465	15.595	5.4	65.55	0.02	0.44	9.85	4.8	1.9	109.5	0.95	0.55	8.55	0.638	0.3	1.2
RSD	6%	3%	2%	8%	8%	7%	0%	6%	2%	9%	7%	5%	7%	13%	4%	3%	0%	0%
005-002-75um	26.6	27.4	0.033	16.35	6.3	71.3	0.02	0.5	10.7	5.2	2.1	138	1	0.6	10	0.679	0.3	1.6
005-002-75um_replicate	28.3	29	0.035	17.39	6.5	72.4	0.02	0.56	11	5.6	2.2	137	1	0.6	10.5	0.67	0.3	1.7
Ave	27.45	28.2	0.034	16.87	6.4	71.85	0.02	0.53	10.85	5.4	2.15	137.5	1	0.6	10.25	0.6745	0.3	1.65
RSD	4%	4%	4%	4%	2%	1%	0%	8%	2%	5%	3%	1%	0%	0%	3%	1%	0%	4%
010-001-75um	23.7	19.4	0.053	14.86	5.8	52.9	0.02	0.37	12.7	4.8	1.9	109	0.6	0.5	8.9	0.508	0.3	1.3
010-001-75um_replicate	24.5	18.5	0.051	14.96	5.8	54.8	0.02	0.4	11.2	4.7	2	109	0.6	0.6	9	0.55	0.3	1.4
Ave	24.1	18.95	0.052	14.91	5.8	53.85	0.02	0.385	11.95	4.75	1.95	109	0.6	0.55	8.95	0.529	0.3	1.35
RSD	2%	3%	3%	0%	0%	2%	0%	6%	9%	1%	4%	0%	0%	13%	1%	6%	0%	5%
010-002-180um	28.1	23.7	0.059	17.61	6.4	67	0.08	0.46	14.8	5.6	2.5	158	0.7	0.6	9.3	0.582	0.3	1.7
010-002-180um_replicate	28.3	25.1	0.058	17.54	6.3	64.5	0.09	0.42	15.1	5.5	2.6	162	0.7	0.6	9.5	0.554	0.3	1.7
Ave	28.2	24.4	0.0585	17.575	6.35	65.75	0.085	0.44	14.95	5.55	2.55	160	0.7	0.6	9.4	0.568	0.3	1.7
RSD	1%	4%	1%	0%	1%	3%	8%	6%	1%	1%	3%	2%	0%	0%	2%	3%	0%	0%
015-001-180um	19	16.3	0.028	12.84	4.3	48.5	0.02	0.35	9.6	3.8	1.6	89	0.5	0.4	6.7	0.404	0.2	0.9
015-001-180um_replicate	17.8	16.7	0.027	12.41	4.2	47.3	0.02	0.35	9.7	3.4	1.5	92	0.5	0.4	6.7	0.378	0.2	0.9
Ave	18.4	16.5	0.0275	12.625	4.25	47.9	0.02	0.35	9.65	3.6	1.55	90.5	0.5	0.4	6.7	0.391	0.2	0.9
RSD	5%	2%	3%	2%	2%	2%	0%	0%	1%	8%	5%	2%	0%	0%	0%	5%	0%	0%
015-002-75um	26.6	21.6	0.031	18.08	6.1	62.1	0.13	0.43	13.1	5.1	2.1	185	0.8	0.5	9.9	0.559	0.2	1.5
015-002-75um_replicate	23.9	20.9	0.03	18	5.3	57.4	0.13	0.41	13	4.4	2.1	181	0.7	0.5	9.3	0.559	0.3	1.5
Ave	25.25	21.25	0.0305	18.04	5.7	59.75	0.13	0.42	13.05	4.75	2.1	183	0.75	0.5	9.6	0.559	0.25	1.5
RSD	8%	2%	2%	0%	10%	6%	0%	3%	1%	10%	0%	2%	9%	0%	4%	0%	28%	0%
019-001-75um	27.2	16.8	0.05	19.1	6.7	61.7	0.02	0.76	7.7	5.3	2	51	0.7	0.5	11.2	0.492	0.2	1.3
019-001-75um_replicate	26.9	16.3	0.05	19.02	6.7	62.7	0.02	0.75	7.7	5	2	51	0.7	0.5	11.8	0.519	0.2	1.3
Ave	27.05	16.55	0.05	19.06	6.7	62.2	0.02	0.755	7.7	5.15	2	51	0.7	0.5	11.5	0.5055	0.2	1.3
RSD	1%	2%	0%	0%	0%	1%	0%	1%	0%	4%	0%	0%	0%	0%	4%	4%	0%	0%
019-002-180um	30.6	20.1	0.032	19.52	7.2	74.5	0.02	0.86	9.9	5.9	2.7	58	0.7	0.6	11.1	0.439	0.3	1.3
019-002-180um_replicate	29	19.3	0.032	19.43	6.9	72.6	0.02	0.88	9.9	5.5	2.4	58	0.7	0.6	10.4	0.428	0.3	1.3
Ave	29.8	19.7	0.032	19.475	7.05	73.55	0.02	0.87	9.9	5.7	2.55	58	0.7	0.6	10.75	0.4335	0.3	1.3
RSD	4%	3%	0%	0%	3%	2%	0%	2%	0%	5%	8%	0%	0%	0%	5%	2%	0%	0%
105-001-180um	27	22.2	0.048	15.35	5.6	70.4	0.02	0.48	10.3	4.9	1.7	110	1.3	0.6	8.6	0.512	0.3	1.2
105-001-180um_replicate	23.3	24.2	0.049	15.94	5.7	63.4	0.02	0.43	9.8	4.4	1.9	105	1.1	0.6	8.8	0.523	0.3	1.2

Appendix 4.2.1

SAMPLE	Nd ppm	Ni ppm	P %	Pb ppm	Pr ppm	Rb ppm	S %	Sb ppm	Sc ppm	Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %	Tm ppm	U ppm
Ave	25.15	23.2	0.0485	15.645	5.65	66.9	0.02	0.455	10.05	4.65	1.8	107.5	1.2	0.6	8.7	0.5175	0.3	1.2
RSD	10%	6%	1%	3%	1%	7%	0%	8%	4%	8%	8%	3%	12%	0%	2%	2%	0%	0%
105-001-75um	25.8	24.3	0.053	14.92	6	74.3	0.02	0.54	9.8	5.3	1.9	124	1.3	0.6	9.9	0.64	0.3	1.4
105-001-75um_replicate	23.6	22.1	0.046	15.88	5.6	63.2	0.02	0.51	9.5	5.1	2	109	1.1	0.6	8.6	0.592	0.3	1.2
Ave	24.7	23.2	0.0495	15.4	5.8	68.75	0.02	0.525	9.65	5.2	1.95	116.5	1.2	0.6	9.25	0.616	0.3	1.3
RSD	6%	7%	10%	4%	5%	11%	0%	4%	2%	3%	4%	9%	12%	0%	10%	6%	0%	11%
105-002-180um	25.5	25.8	0.041	16.05	6.2	64.6	0.02	0.47	9.6	5.2	2.1	129	1.2	0.7	8.9	0.572	0.3	1.5
105-002-180um_replicate	23.3	25.6	0.04	15.33	5.4	65.9	0.02	0.44	10	5	2	124	1	0.6	8.1	0.573	0.3	1.2
Ave	24.4	25.7	0.0405	15.69	5.8	65.25	0.02	0.455	9.8	5.1	2.05	126.5	1.1	0.65	8.5	0.5725	0.3	1.35
RSD	6%	1%	2%	3%	10%	1%	0%	5%	3%	3%	3%	3%	13%	11%	7%	0%	0%	16%
105-002-75um	27.2	27.1	0.05	16.79	6.5	71.2	0.02	0.53	12.1	5.5	2.3	132	1.3	0.7	10.3	0.582	0.3	1.6
105-002-75um_replicate	26.8	27.5	0.047	16.14	6.3	77.4	0.02	0.55	11.3	5	2.1	135	1.2	0.7	9.1	0.652	0.3	1.5
Ave	27	27.3	0.0485	16.465	6.4	74.3	0.02	0.54	11.7	5.25	2.2	133.5	1.25	0.7	9.7	0.617	0.3	1.55
RSD	1%	1%	4%	3%	2%	6%	0%	3%	5%	7%	6%	2%	6%	0%	9%	8%	0%	5%
115-001-180um	20.2	9.9	0.03	10.96	4.5	33.8	0.02	0.34	5.9	3.9	1.2	64	0.8	0.4	6.8	0.433	0.2	1
115-001-180um_replicate	21.3	9.7	0.03	12.26	4.6	35.7	0.02	0.35	6.4	4	1.3	64	0.7	0.4	8.1	0.48	0.2	1.1
Ave	20.75	9.8	0.03	11.61	4.55	34.75	0.02	0.345	6.15	3.95	1.25	64	0.75	0.4	7.45	0.4565	0.2	1.05
RSD	4%	1%	0%	8%	2%	4%	0%	2%	6%	2%	6%	0%	9%	0%	12%	7%	0%	7%
115-001-75um	23	12.5	0.038	13.85	5.4	42.1	0.02	0.36	7.9	4.7	1.9	82	1	0.5	9.4	0.593	0.2	1.4
115-001-75um_replicate	22.9	12.6	0.036	14.93	5.4	40.8	0.02	0.33	7.2	4.8	1.6	77	0.9	0.5	9.3	0.565	0.2	1.4
Ave	22.95	12.55	0.037	14.39	5.4	41.45	0.02	0.345	7.55	4.75	1.75	79.5	0.95	0.5	9.35	0.579	0.2	1.4
RSD	0%	1%	4%	5%	0%	2%	0%	6%	7%	1%	12%	4%	7%	0%	1%	3%	0%	0%
115-002-180um	16.9	12.3	0.022	12.99	4.4	37.8	0.02	0.35	7	3.4	1.4	73	0.7	0.4	7.1	0.429	0.2	1.2
115-002-180um_replicate	16.7	11.1	0.022	12.1	3.7	38.7	0.02	0.33	6.6	3.6	1.4	71	0.7	0.4	6.5	0.491	0.2	1
Ave	16.8	11.7	0.022	12.545	4.05	38.25	0.02	0.34	6.8	3.5	1.4	72	0.7	0.4	6.8	0.46	0.2	1.1
RSD	1%	7%	0%	5%	12%	2%	0%	4%	4%	4%	0%	2%	0%	0%	6%	10%	0%	13%
115-002-75um	22.3	17.4	0.029	17.22	5.3	44.9	0.02	0.4	10.3	4.4	1.8	101	0.9	0.6	8.6	0.666	0.3	1.4
115-002-75um_replicate	22	15.5	0.026	15.23	5.5	46.2	0.02	0.37	9.4	4.3	1.7	94	0.8	0.5	9.3	0.581	0.3	1.6
Ave	22.15	16.45	0.0275	16.225	5.4	45.55	0.02	0.385	9.85	4.35	1.75	97.5	0.85	0.55	8.95	0.6235	0.3	1.5
RSD	1%	8%	8%	9%	3%	2%	0%	6%	6%	2%	4%	5%	8%	13%	6%	10%	0%	9%
125-001-180um	16.1	15	0.042	12.98	4.1	43.8	0.02	0.38	7.9	2.8	1.5	54	0.8	0.4	7.4	0.425	0.2	1
125-001-180um_replicate	15.6	14.1	0.039	10.81	4	38.8	0.02	0.35	7	2.9	1.3	48	0.6	0.4	6.3	0.389	0.2	0.9
Ave	15.85	14.55	0.0405	11.895	4.05	41.3	0.02	0.365	7.45	2.85	1.4	51	0.7	0.4	6.85	0.407	0.2	0.95
RSD	2%	4%	5%	13%	2%	9%	0%	6%	9%	2%	10%	8%	20%	0%	11%	6%	0%	7%

Appendix 4.2.1

SAMPLE	Nd	Ni	P	Pb	Pr	Rb	S	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tm	U
	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
125-001-75um	27.3	23.6	0.053	17.38	6.4	50.7	0.02	0.45	12.5	5.8	2	79	0.8	0.6	12.4	0.695	0.3	1.6
125-001-75um_replicate	23.7	17.5	0.045	17.11	5.5	51.5	0.02	0.41	10.4	5	2.1	65	0.8	0.6	9.6	0.571	0.3	1.3
Ave	25.5	20.55	0.049	17.245	5.95	51.1	0.02	0.43	11.45	5.4	2.05	72	0.8	0.6	11	0.633	0.3	1.45
RSD	10%	21%	12%	1%	11%	1%	0%	7%	13%	10%	3%	14%	0%	0%	18%	14%	0%	15%
125-002-180um	13.5	14.7	0.022	11.71	3.4	32	0.02	0.39	8.1	2.6	1.4	51	0.5	0.3	6.5	0.447	0.2	1
125-002-180um_replicate	13.3	12.4	0.024	11.55	3.2	37.6	0.02	0.4	6.5	2.5	1.5	49	0.7	0.3	6.4	0.404	0.2	1
Ave	13.4	13.55	0.023	11.63	3.3	34.8	0.02	0.395	7.3	2.55	1.45	50	0.6	0.3	6.45	0.4255	0.2	1
RSD	1%	12%	6%	1%	4%	11%	0%	2%	15%	3%	5%	3%	24%	0%	1%	7%	0%	0%
125-002-75um	20.9	16.6	0.027	15.02	4.8	48.9	0.02	0.43	10.6	4.1	1.8	64	0.9	0.5	10.3	0.608	0.3	1.4
125-002-75um_replicate	20.6	13.7	0.027	13.55	5.3	52.6	0.02	0.45	9.4	3.8	1.6	62	0.9	0.4	10.9	0.574	0.2	1.5
Ave	20.75	15.15	0.027	14.285	5.05	50.75	0.02	0.44	10	3.95	1.7	63	0.9	0.45	10.6	0.591	0.25	1.45
RSD	1%	14%	0%	7%	7%	5%	0%	3%	8%	5%	8%	2%	0%	16%	4%	4%	28%	5%
135-001-180um	15.1	10.1	0.021	10	3.5	35.8	0.02	0.33	5.6	3.4	1.1	77	0.5	0.3	5.9	0.336	0.2	0.7
135-001-180um_replicate	15.1	7.9	0.018	8.91	3.2	33.2	0.02	0.31	4.6	3.1	1.1	69	0.5	0.3	5.7	0.285	0.1	0.8
Ave	15.1	9	0.0195	9.455	3.35	34.5	0.02	0.32	5.1	3.25	1.1	73	0.5	0.3	5.8	0.3105	0.15	0.75
RSD	0%	17%	11%	8%	6%	5%	0%	4%	14%	7%	0%	8%	0%	0%	2%	12%	47%	9%
135-001-75um	23	16	0.032	14.23	5.9	56	0.02	0.39	9.5	4.8	1.6	117	0.7	0.6	9.8	0.446	0.3	1.2
135-001-75um_replicate	23.3	15.7	0.029	14.14	5.4	53.8	0.02	0.37	8.7	4.8	1.7	115	0.6	0.5	9.7	0.5	0.2	1.2
Ave	23.15	15.85	0.0305	14.185	5.65	54.9	0.02	0.38	9.1	4.8	1.65	116	0.65	0.55	9.75	0.473	0.25	1.2
RSD	1%	1%	7%	0%	6%	3%	0%	4%	6%	0%	4%	1%	11%	13%	1%	8%	28%	0%
135-002-180um	22.3	17.5	0.04	13.3	5.2	54.5	0.2	0.38	9.2	4.4	1.7	155	0.8	0.6	7.5	0.431	0.3	1.2
135-002-180um_replicate	19.5	16.7	0.038	11.45	4.6	45.8	0.19	0.42	8.3	3.8	1.4	144	0.5	0.5	7.2	0.349	0.2	1.1
Ave	20.9	17.1	0.039	12.375	4.9	50.15	0.195	0.4	8.75	4.1	1.55	149.5	0.65	0.55	7.35	0.39	0.25	1.15
RSD	9%	3%	4%	11%	9%	12%	4%	7%	7%	10%	14%	5%	33%	13%	3%	15%	28%	6%
135-002-75um	27.2	23	0.05	15.88	6.6	62.5	0.3	0.32	11.5	5.2	1.9	204	1.1	0.6	10.9	0.483	0.3	1.5
135-002-75um_replicate	25.9	20.9	0.046	15.98	6.3	61.3	0.4	0.37	11.6	4.8	2	198	0.7	0.6	8.9	0.481	0.3	1.2
Ave	26.55	21.95	0.048	15.93	6.45	61.9	0.35	0.345	11.55	5	1.95	201	0.9	0.6	9.9	0.482	0.3	1.35
RSD	3%	7%	6%	0%	3%	1%	20%	10%	1%	6%	4%	2%	31%	0%	14%	0%	0%	16%
145-001-180um	20.3	23	0.034	14.28	4.8	52.7	0.02	0.42	8.6	4.3	1.7	89	0.9	0.5	7.9	0.475	0.2	1.1
145-001-180um_replicate	20.5	21.1	0.034	13.58	4.9	53.1	0.02	0.46	9.2	4.1	1.8	90	0.9	0.5	7.9	0.478	0.2	1.1
Ave	20.4	22.05	0.034	13.93	4.85	52.9	0.02	0.44	8.9	4.2	1.75	89.5	0.9	0.5	7.9	0.4765	0.2	1.1
RSD	1%	6%	0%	4%	1%	1%	0%	6%	5%	3%	4%	1%	0%	0%	0%	0%	0%	0%
145-001-75um	23.8	24.9	0.039	15.01	5.6	60.3	0.02	0.48	9.8	4.7	2	105	1	0.6	8.5	0.613	0.3	1.2
145-001-75um_replicate	23.9	24	0.038	15.74	5.3	58.6	0.02	0.46	10.1	4.8	1.9	104	1	0.6	9.3	0.62	0.2	1.3

SAMPLE	Nd ppm	Ni ppm	P %	Pb ppm	Pr ppm	Rb ppm	S %	Sb ppm	Sc ppm	Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %	Tm ppm	U ppm
Ave	23.85	24.45	0.0385	15.375	5.45	59.45	0.02	0.47	9.95	4.75	1.95	104.5	1	0.6	8.9	0.6165	0.25	1.25
RSD	0%	3%	2%	3%	4%	2%	0%	3%	2%	1%	4%	1%	0%	0%	6%	1%	28%	6%
145-002-180um	23.5	27.7	0.039	15.93	5.9	61.8	0.68	0.5	11.1	4.8	2.2	133	1.2	0.6	8.4	0.531	0.3	2.3
145-002-180um_replicate	24	28.7	0.042	15.91	5.8	64.8	0.63	0.5	10.6	5	2.2	135	0.9	0.6	8.4	0.532	0.3	2.2
Ave	23.75	28.2	0.0405	15.92	5.85	63.3	0.655	0.5	10.85	4.9	2.2	134	1.05	0.6	8.4	0.5315	0.3	2.25
RSD	1%	3%	5%	0%	1%	3%	5%	0%	3%	3%	0%	1%	20%	0%	0%	0%	0%	3%
145-002-75um	27.4	33.3	0.046	17.89	6.1	67.1	0.6	0.49	12	5.4	2.3	156	1.1	0.6	10.1	0.64	0.3	2.5
145-002-75um_replicate	25.4	30.2	0.042	18.06	5.9	67.6	0.59	0.5	11.9	5.2	2.4	156	1.1	0.6	9.3	0.588	0.3	2.4
Ave	26.4	31.75	0.044	17.975	6	67.35	0.595	0.495	11.95	5.3	2.35	156	1.1	0.6	9.7	0.614	0.3	2.45
RSD	5%	7%	6%	1%	2%	1%	1%	1%	1%	3%	3%	0%	0%	0%	6%	6%	0%	3%
155-001-180um	24.8	27.9	0.052	16.87	5.7	84.3	0.02	0.63	10.2	5.2	2.1	110	1	0.6	9.5	0.434	0.3	1.3
155-001-180um_replicate	23.9	27.6	0.049	15.67	5.6	76.5	0.02	0.62	9.6	4.9	2.1	102	1	0.6	8.9	0.473	0.2	1.1
Ave	24.35	27.75	0.0505	16.27	5.65	80.4	0.02	0.625	9.9	5.05	2.1	106	1	0.6	9.2	0.4535	0.25	1.2
RSD	3%	1%	4%	5%	1%	7%	0%	1%	4%	4%	0%	5%	0%	0%	5%	6%	28%	12%
155-001-75um	27.1	29.3	0.058	15.49	6.9	84.7	0.02	0.75	10.2	5.4	2.2	104	1	0.7	10.3	0.463	0.3	1.4
155-001-75um_replicate	24.9	24.3	0.052	15.64	6.2	81.3	0.02	0.61	10.7	5	2.2	105	1.2	0.7	10.4	0.498	0.3	1.5
Ave	26	26.8	0.055	15.565	6.55	83	0.02	0.68	10.45	5.2	2.2	104.5	1.1	0.7	10.35	0.4805	0.3	1.45
RSD	6%	13%	8%	1%	8%	3%	0%	15%	3%	5%	0%	1%	13%	0%	1%	5%	0%	5%
155-002-180um	29.8	36.5	0.045	20.18	7.4	97.8	0.35	0.79	13.2	6	3	154	1.8	0.7	12.3	0.53	0.4	2.9
155-002-180um_replicate	36.2	39.6	0.052	20.38	8.7	106	0.33	0.91	14.5	6.8	2.5	167	1.3	0.9	13.3	0.533	0.4	3.2
Ave	33	38.05	0.0485	20.28	8.05	101.9	0.34	0.85	13.85	6.4	2.75	160.5	1.55	0.8	12.8	0.5315	0.4	3.05
RSD	14%	6%	10%	1%	11%	6%	4%	10%	7%	9%	13%	6%	23%	18%	6%	0%	0%	7%
156-002-180um	29.2	22.7	0.032	18.94	6.7	70.9	0.02	0.55	10.7	5.9	2.2	121	1.6	0.7	10.5	0.642	0.3	1.6
156-002-180um_replicate	29.4	23.7	0.034	18.04	6.5	77.1	0.02	0.56	11.5	5.8	2.6	130	1.6	0.6	10	0.681	0.3	1.3
Ave	29.3	23.2	0.033	18.49	6.6	74	0.02	0.555	11.1	5.85	2.4	125.5	1.6	0.65	10.25	0.6615	0.3	1.45
RSD	0%	3%	4%	3%	2%	6%	0%	1%	5%	1%	12%	5%	0%	11%	3%	4%	0%	15%
156-002-75um	26	21.9	0.031	15.04	6.5	71.6	0.02	0.53	10.5	5.2	2.2	115	1.4	0.6	10	0.606	0.3	1.5
156-002-75um_replicate	26	22.8	0.03	17.08	6	68.6	0.02	0.57	11	5.3	2.3	118	1.5	0.6	10.2	0.66	0.3	1.4
Ave	26	22.35	0.0305	16.06	6.25	70.1	0.02	0.55	10.75	5.25	2.25	116.5	1.45	0.6	10.1	0.633	0.3	1.45
RSD	0%	3%	2%	9%	6%	3%	0%	5%	3%	1%	3%	2%	5%	0%	1%	6%	0%	5%
2006861202001-180um	24.5	14.9	0.029	16.4	6.3	56.2	0.02	0.53	7.5	5.2	1.6	70	0.9	0.6	9.6	0.426	0.2	1.1
2006861202001-180um_replicate	20.6	14.6	0.027	13.55	5.3	50.9	0.02	0.45	6.3	4.1	1.5	62	0.7	0.5	8.6	0.437	0.2	1.1
Ave	22.55	14.75	0.028	14.975	5.8	53.55	0.02	0.49	6.9	4.65	1.55	66	0.8	0.55	9.1	0.4315	0.2	1.1
RSD	12%	1%	5%	13%	12%	7%	0%	12%	12%	17%	5%	9%	18%	13%	8%	2%	0%	0%

Appendix 4.2.1

SAMPLE	Nd ppm	Ni ppm	P %	Pb ppm	Pr ppm	Rb ppm	S %	Sb ppm	Sc ppm	Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %	Tm ppm	U ppm
2006861202001-75um	29.1	18.5	0.032	18.42	7.2	64.3	0.02	0.56	8.8	5.5	1.9	78	0.9	0.7	12.5	0.498	0.3	1.4
2006861202001-75um_replicate	27.3	17.4	0.031	16.04	6.8	63.8	0.02	0.54	7.7	5.2	1.8	74	0.9	0.6	12.1	0.498	0.3	1.3
Ave	28.2	17.95	0.0315	17.23	7	64.05	0.02	0.55	8.25	5.35	1.85	76	0.9	0.65	12.3	0.498	0.3	1.35
RSD	5%	4%	2%	10%	4%	1%	0%	3%	9%	4%	4%	4%	0%	11%	2%	0%	0%	5%
2006861202002-180um	28.2	23.3	0.02	17.46	7.1	75.8	0.02	0.57	11.4	5.7	2.2	113	0.9	0.7	10.7	0.476	0.3	1.1
2006861202002-180um_replicate	26.1	23.1	0.02	16.07	6.5	72.6	0.04	0.54	10.2	4.8	2.3	106	0.9	0.6	10	0.481	0.3	1.2
Ave	27.15	23.2	0.02	16.765	6.8	74.2	0.03	0.555	10.8	5.25	2.25	109.5	0.9	0.65	10.35	0.4785	0.3	1.15
RSD	5%	1%	0%	6%	6%	3%	47%	4%	8%	12%	3%	5%	0%	11%	5%	1%	0%	6%
2006861202002-75um	27.9	27	0.024	18.45	7	76.1	0.05	0.61	11.8	5.1	2.5	115	1	0.7	11	0.518	0.3	1.3
2006861202002-75um_replicate	26.4	25	0.022	16.75	6.9	79.4	0.02	0.57	11	5.1	2.3	109	0.9	0.6	11	0.505	0.3	1.2
Ave	27.15	26	0.023	17.6	6.95	77.75	0.035	0.59	11.4	5.1	2.4	112	0.95	0.65	11	0.5115	0.3	1.25
RSD	4%	5%	6%	7%	1%	3%	61%	5%	5%	0%	6%	4%	7%	11%	0%	2%	0%	6%
2006861212001-180um	30.5	21.9	0.056	21.05	6.8	76.5	0.04	0.62	12.2	5.1	2.3	103	0.8	0.7	11.1	0.433	0.3	1.6
2006861212001-180um_replicate	26.8	21.9	0.051	20.03	6.7	74.9	0.04	0.58	10.6	5.3	2.2	99	0.7	0.6	10.3	0.456	0.3	1.4
Ave	28.65	21.9	0.0535	20.54	6.75	75.7	0.04	0.6	11.4	5.2	2.25	101	0.75	0.65	10.7	0.4445	0.3	1.5
RSD	9%	0%	7%	4%	1%	1%	0%	5%	10%	3%	3%	3%	9%	11%	5%	4%	0%	9%
2006861212001-75um	32	26.4	0.064	24.17	8.1	79.9	0.06	0.64	13.5	5.8	2.6	112	0.9	0.8	12.4	0.522	0.4	1.9
2006861212001-75um_replicate	31.1	24.4	0.06	22.02	7.8	89.9	0.05	0.6	13	5.7	2.5	109	0.8	0.8	11.8	0.503	0.4	1.7
Ave	31.55	25.4	0.062	23.095	7.95	84.9	0.055	0.62	13.25	5.75	2.55	110.5	0.85	0.8	12.1	0.5125	0.4	1.8
RSD	2%	6%	5%	7%	3%	8%	13%	5%	3%	1%	3%	2%	8%	0%	4%	3%	0%	8%
2006861212002-180um	28.9	23.2	0.036	18.36	6.7	73.8	0.05	0.62	12.4	5.3	2.4	101	0.8	0.7	12	0.42	0.3	1.6
2006861212002-180um_replicate	25.8	22.8	0.033	15.85	6.6	66.7	0.04	0.58	10.4	5.2	2.3	94	0.6	0.7	9.7	0.417	0.3	1.4
Ave	27.35	23	0.0345	17.105	6.65	70.25	0.045	0.6	11.4	5.25	2.35	97.5	0.7	0.7	10.85	0.4185	0.3	1.5
RSD	8%	1%	6%	10%	1%	7%	16%	5%	12%	1%	3%	5%	20%	0%	15%	1%	0%	9%
2006861212002-75um	29.3	30.2	0.043	21.08	7.2	74.4	0.06	0.65	14.2	5.5	2.7	113	0.8	0.7	11.7	0.497	0.3	2
2006861212002-75um_replicate	31.9	30.7	0.045	20.45	8.1	89.1	0.05	0.66	14.4	6.1	2.8	117	0.8	0.8	12.5	0.506	0.3	1.9
Ave	30.6	30.45	0.044	20.765	7.65	81.75	0.055	0.655	14.3	5.8	2.75	115	0.8	0.75	12.1	0.5015	0.3	1.95
RSD	6%	1%	3%	2%	8%	13%	13%	1%	1%	7%	3%	2%	0%	9%	5%	1%	0%	4%
2006861222001-180um	21.7	22.7	0.032	12.12	5.6	51.8	0.02	0.33	9	4.7	1.7	84	0.7	0.6	7.4	0.492	0.2	0.9
2006861222001-180um_replicate	22	23.2	0.032	12.98	5.4	51.7	0.02	0.34	9.3	4.2	1.9	86	0.7	0.6	7.7	0.494	0.2	0.9
Ave	21.85	22.95	0.032	12.55	5.5	51.75	0.02	0.335	9.15	4.45	1.8	85	0.7	0.6	7.55	0.493	0.2	0.9
RSD	1%	2%	0%	5%	3%	0%	0%	2%	2%	8%	8%	2%	0%	0%	3%	0%	0%	0%
2006861222001-75um	26.9	26.3	0.039	15.62	6.5	66.6	0.04	0.43	11.8	5	2	104	0.9	0.7	9.4	0.576	0.3	1.2
2006861222001-75um_replicate	26	25.8	0.039	15.69	6.4	62.8	0.02	0.37	10.9	5.1	1.9	99	0.8	0.7	9.4	0.577	0.3	1.2

SAMPLE	Nd	Ni	P	Pb	Pr	Rb	S	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tm	U
	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm
Ave	26.45	26.05	0.039	15.655	6.45	64.7	0.03	0.4	11.35	5.05	1.95	101.5	0.85	0.7	9.4	0.5765	0.3	1.2
RSD	2%	1%	0%	0%	1%	4%	47%	11%	6%	1%	4%	3%	8%	0%	0%	0%	0%	0%
2006861222002-180um	17.3	18.5	0.021	11.26	4.5	43.2	0.02	0.31	7.6	3.7	1.4	80	0.7	0.5	5.8	0.392	0.2	0.8
2006861222002-180um_replicate	17.8	20.2	0.022	11.91	4.5	44.3	0.02	0.32	7.9	4	1.3	83	0.7	0.5	6.4	0.445	0.2	0.8
Ave	17.55	19.35	0.0215	11.585	4.5	43.75	0.02	0.315	7.75	3.85	1.35	81.5	0.7	0.5	6.1	0.4185	0.2	0.8
RSD	2%	6%	3%	4%	0%	2%	0%	2%	3%	6%	5%	3%	0%	0%	7%	9%	0%	0%
2006861222002-75um	27.7	28.5	0.032	16.5	6.6	66.8	0.04	0.44	11.5	5.3	2	117	0.9	0.7	9.4	0.583	0.3	1.2
2006861222002-75um_replicate	24.6	27.4	0.03	15.5	6.2	61.3	0.02	0.4	11	4.9	1.9	112	0.8	0.7	8.5	0.582	0.3	1.1
Ave	26.15	27.95	0.031	16	6.4	64.05	0.03	0.42	11.25	5.1	1.95	114.5	0.85	0.7	8.95	0.5825	0.3	1.15
RSD	8%	3%	5%	4%	4%	6%	47%	7%	3%	6%	4%	3%	8%	0%	7%	0%	0%	6%
150-001-180um	15	13.6	0.027	13.34	4	48.2	0.02	0.42	6.6	3.3	1.5	48	0.7	0.4	6.7	0.38	0.2	0.9
150-001-180um_replicate	16.6	14.7	0.027	12.11	4.1	46.8	0.02	0.41	6.7	3.2	1.5	49	0.6	0.4	7.3	0.347	0.1	1
Ave	15.8	14.15	0.027	12.725	4.05	47.5	0.02	0.415	6.65	3.25	1.5	48.5	0.65	0.4	7	0.3635	0.15	0.95
RSD	7%	5%	0%	7%	2%	2%	0%	2%	1%	2%	0%	1%	11%	0%	6%	6%	47%	7%
139-001-75um	36	15.6	0.043	19.47	8.8	55.6	0.02	0.49	9.3	6.8	2	109	1.2	0.7	14.8	0.693	0.3	2.1
139-001-75um_replicate	26.6	14.7	0.039	17.13	6.8	52.3	0.02	0.44	8.3	4.8	1.6	95	0.7	0.6	11.1	0.511	0.3	1.5
Ave	31.3	15.15	0.041	18.3	7.8	53.95	0.02	0.465	8.8	5.8	1.8	102	0.95	0.65	12.95	0.602	0.3	1.8
RSD	21%	4%	7%	9%	18%	4%	0%	8%	8%	24%	16%	10%	37%	11%	20%	21%	0%	24%
143-002-180um	29.3	26.1	0.035	21.7	7.6	94.5	0.02	0.5	13.5	5.4	2.8	112	0.9	0.7	12.4	0.461	0.3	1.9
143-002-180um_replicate	29.7	27.1	0.035	20.95	7.7	88.7	0.05	0.47	12.9	5.9	2.7	110	0.8	0.7	12.3	0.459	0.3	2.2
Ave	29.5	26.6	0.035	21.325	7.65	91.6	0.035	0.485	13.2	5.65	2.75	111	0.85	0.7	12.35	0.46	0.3	2.05
RSD	1%	3%	0%	2%	1%	4%	61%	4%	3%	6%	3%	1%	8%	0%	1%	0%	0%	10%
134-002-75um	30.4	27.2	0.044	20.19	7.7	93.5	0.04	0.69	13.3	5.9	3	179	1.1	0.8	13.2	0.552	0.4	2.3
134-002-75um_replicate	28.7	25.9	0.051	20.54	7.2	88.1	0.04	0.7	13.1	5.7	2.9	159	0.8	0.7	12	0.504	0.3	2.3
Ave	29.55	26.55	0.0475	20.365	7.45	90.8	0.04	0.695	13.2	5.8	2.95	169	0.95	0.75	12.6	0.528	0.35	2.3
RSD	4%	3%	10%	1%	5%	4%	0%	1%	1%	2%	2%	8%	22%	9%	7%	6%	20%	0%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**4%**	**5%**	**4%**	**4%**	**4%**	**4%**	**7%**	**5%**	**5%**	**5%**	**5%**	**3%**	**9%**	**4%**	**5%**	**4%**	**6%**	**6%**
Max RSD	**21%**	**21%**	**12%**	**13%**	**18%**	**13%**	**61%**	**15%**	**15%**	**24%**	**16%**	**14%**	**37%**	**18%**	**20%**	**21%**	**47%**	**24%**

Note: Values <LLD have been halv

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
005-001-180um	74	1.2	19.9	2	58.9	116.1
005-001-180um_replicate	72	1.2	17.6	2	56	102.5
Ave	73	1.2	18.75	2	57.45	109.3
RSD	2%	0%	9%	0%	4%	9%
005-002-75um	81	1.3	20.9	2.2	59.7	107.9
005-002-75um_replicate	84	1.3	21.2	2.1	63.6	112.7
Ave	82.5	1.3	21.05	2.15	61.65	110.3
RSD	3%	0%	1%	3%	4%	3%
010-001-75um	95	0.9	17.4	2	71.1	97.9
010-001-75um_replicate	102	1	17.5	1.8	74.1	103.6
Ave	98.5	0.95	17.45	1.9	72.6	100.75
RSD	5%	7%	0%	7%	3%	4%
010-002-180um	146	1.2	21.7	2.1	92.5	108
010-002-180um_replicate	141	1.4	21.4	2.2	88.8	107.4
Ave	143.5	1.3	21.55	2.15	90.65	107.7
RSD	2%	11%	1%	3%	3%	0%
015-001-180um	74	0.7	14.5	1.8	53.4	79.5
015-001-180um_replicate	72	0.7	13.8	1.4	54.9	74.1
Ave	73	0.7	14.15	1.6	54.15	76.8
RSD	2%	0%	3%	18%	2%	5%
015-002-75um	126	1.1	18.2	2	79.5	106.7
015-002-75um_replicate	119	1	16.7	1.8	80	104.9
Ave	122.5	1.05	17.45	1.9	79.75	105.8
RSD	4%	7%	6%	7%	0%	1%
019-001-75um	78	1.1	15.8	1.7	47.7	87.7
019-001-75um_replicate	78	1	16.2	1.5	48.1	89.5
Ave	78	1.05	16	1.6	47.9	88.6
RSD	0%	7%	2%	9%	1%	1%
019-002-180um	88	1.2	18.2	1.7	48.9	80.2
019-002-180um_replicate	87	1.2	18.1	1.8	47.8	78.2
Ave	87.5	1.2	18.15	1.75	48.35	79.2
RSD	1%	0%	0%	4%	2%	2%
105-001-180um	85	1.1	19.7	2	64.5	105.4
105-001-180um_replicate	71	1.2	19.1	2	57.1	103

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
Ave	78	1.15	19.4	2	60.8	104.2
RSD	13%	6%	2%	0%	9%	2%
105-001-75um	81	1	21.1	2.1	62.2	116
105-001-75um_replicate	65	1.2	19.1	2.2	58.2	108
Ave	73	1.1	20.1	2.15	60.2	112
RSD	15%	13%	7%	3%	5%	5%
105-002-180um	79	1.2	19.8	1.9	59.2	108.1
105-002-180um_replicate	75	1.1	19.7	1.9	64.1	106.7
Ave	77	1.15	19.75	1.9	61.65	107.4
RSD	4%	6%	0%	0%	6%	1%
105-002-75um	88	1.1	20.7	2.3	67.9	117.1
105-002-75um_replicate	90	1.3	21.6	2	66.2	123.2
Ave	89	1.2	21.15	2.15	67.05	120.15
RSD	2%	12%	3%	10%	2%	4%
115-001-180um	67	0.8	11.6	1.2	34.6	68.9
115-001-180um_replicate	65	0.8	13	1.3	32.6	77.2
Ave	66	0.8	12.3	1.25	33.6	73.05
RSD	2%	0%	8%	6%	4%	8%
115-001-75um	84	0.9	15.5	1.7	45	95.9
115-001-75um_replicate	74	0.9	15.6	1.6	43.3	103.7
Ave	79	0.9	15.55	1.65	44.15	99.8
RSD	9%	0%	0%	4%	3%	6%
115-002-180um	77	0.9	11.5	1.3	41.8	72.7
115-002-180um_replicate	75	0.8	11.8	1.3	38	75.9
Ave	76	0.85	11.65	1.3	39.9	74.3
RSD	2%	8%	2%	0%	7%	3%
115-002-75um	96	1.2	16.5	1.9	51.3	101.1
115-002-75um_replicate	83	1	15.7	1.7	51	94.7
Ave	89.5	1.1	16.1	1.8	51.15	97.9
RSD	10%	13%	4%	8%	0%	5%
125-001-180um	78	0.8	12.1	1.5	45.3	78.5
125-001-180um_replicate	73	0.7	10.9	1.1	48.9	66
Ave	75.5	0.75	11.5	1.3	47.1	72.25
RSD	5%	9%	7%	22%	5%	12%

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
125-001-75um	105	1.1	18.6	1.7	69.1	109.1
125-001-75um_replicate	79	1	17.6	2	57.9	99.8
Ave	92	1.05	18.1	1.85	63.5	104.45
RSD	20%	7%	4%	11%	12%	6%
125-002-180um	79	0.8	8.8	1	30.9	69.7
125-002-180um_replicate	81	0.7	9.1	1	29.7	70.1
Ave	80	0.75	8.95	1	30.3	69.9
RSD	2%	9%	2%	0%	3%	0%
125-002-75um	93	1.1	13.4	1.7	43.9	95.8
125-002-75um_replicate	95	1.1	12.7	1.6	37.8	95.7
Ave	94	1.1	13.05	1.65	40.85	95.75
RSD	2%	0%	4%	4%	11%	0%
135-001-180um	48	0.6	11	1	39.2	58.7
135-001-180um_replicate	45	0.6	9.4	0.9	31.7	55.3
Ave	46.5	0.6	10.2	0.95	35.45	57
RSD	5%	0%	11%	7%	15%	4%
135-001-75um	83	0.8	16	1.7	63.6	91.7
135-001-75um_replicate	75	0.9	16.3	1.8	57.3	92.5
Ave	79	0.85	16.15	1.75	60.45	92.1
RSD	7%	8%	1%	4%	7%	1%
135-002-180um	104	1	16.7	1.7	68.5	81
135-002-180um_replicate	82	0.7	14.5	1.3	55.6	72.2
Ave	93	0.85	15.6	1.5	62.05	76.6
RSD	17%	25%	10%	19%	15%	8%
135-002-75um	129	1.1	20.5	2.2	82.3	110.6
135-002-75um_replicate	122	1	20	2.2	79.2	100.6
Ave	125.5	1.05	20.25	2.2	80.75	105.6
RSD	4%	7%	2%	0%	3%	7%
145-001-180um	72	1.2	15.1	1.6	52.1	93.8
145-001-180um_replicate	69	0.8	15.6	1.6	52.6	89.7
Ave	70.5	1	15.35	1.6	52.35	91.75
RSD	3%	28%	2%	0%	1%	3%
145-001-75um	74	1.1	18.3	1.9	58.6	108.9
145-001-75um_replicate	78	1	18.3	1.8	62.5	106.2

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
Ave	76	1.05	18.3	1.85	60.55	107.55
RSD	4%	7%	0%	4%	5%	2%
145-002-180um	91	1.3	18.2	1.9	61.6	105.6
145-002-180um_replicate	81	1.1	19	1.9	62.1	109.2
Ave	86	1.2	18.6	1.9	61.85	107.4
RSD	8%	12%	3%	0%	1%	2%
145-002-75um	97	1.3	21.1	2.1	75.9	115.2
145-002-75um_replicate	86	1.4	20.1	2.3	65.3	117.9
Ave	91.5	1.35	20.6	2.2	70.6	116.55
RSD	9%	5%	3%	6%	11%	2%
155-001-180um	80	1.2	19.4	1.9	64.4	96.4
155-001-180um_replicate	69	1.1	18	1.8	59.9	82.6
Ave	74.5	1.15	18.7	1.85	62.15	89.5
RSD	10%	6%	5%	4%	5%	11%
155-001-75um	74	1.3	19.6	1.8	61.9	92.6
155-001-75um_replicate	84	1.4	18.5	2.1	62	91.1
Ave	79	1.35	19.05	1.95	61.95	91.85
RSD	9%	5%	4%	11%	0%	1%
155-002-180um	116	1.7	22	2.4	77	112.3
155-002-180um_replicate	99	15.4	25.9	2.7	77.2	114.4
Ave	107.5	8.55	23.95	2.55	77.1	113.35
RSD	11%	113%	12%	8%	0%	1%
156-002-180um	88	1.3	19.7	2.1	61.2	118.1
156-002-180um_replicate	79	1.5	23.1	2.4	69.3	136.8
Ave	83.5	1.4	21.4	2.25	65.25	127.45
RSD	8%	10%	11%	9%	9%	10%
156-002-75um	75	1.1	19.4	2	66.8	115.9
156-002-75um_replicate	79	1.3	20.4	2.3	61.9	125.5
Ave	77	1.2	19.9	2.15	64.35	120.7
RSD	4%	12%	4%	10%	5%	6%
2006861202001-180um	53	1.2	17.1	1.7	37.2	83.3
2006861202001-180um_replicate	52	1	15.2	1.5	35.9	71.9
Ave	52.5	1.1	16.15	1.6	36.55	77.6
RSD	1%	13%	8%	9%	3%	10%

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
2006861202001-75um	61	1.2	19	1.9	44.6	93.5
2006861202001-75um_replicate	59	1.3	18.6	2.1	42.3	93.9
Ave	60	1.25	18.8	2	43.45	93.7
RSD	2%	6%	2%	7%	4%	0%
2006861202002-180um	81	1.3	18.7	2	60.4	93.7
2006861202002-180um_replicate	82	1.3	18.5	2	55.3	86.9
Ave	81.5	1.3	18.6	2	57.85	90.3
RSD	1%	0%	1%	0%	6%	5%
2006861202002-75um	91	1.4	20	2.1	62.7	99.7
2006861202002-75um_replicate	84	1.3	19.6	2.1	59.6	92.2
Ave	87.5	1.35	19.8	2.1	61.15	95.95
RSD	6%	5%	1%	0%	4%	6%
2006861212001-180um	100	1.2	19	1.9	71	93.1
2006861212001-180um_replicate	94	1	19.7	1.9	69.6	88.8
Ave	97	1.1	19.35	1.9	70.3	90.95
RSD	4%	13%	3%	0%	1%	3%
2006861212001-75um	115	1.3	23.1	2.3	86.5	104.4
2006861212001-75um_replicate	106	1.3	22	2.5	81.4	99.7
Ave	110.5	1.3	22.55	2.4	83.95	102.05
RSD	6%	0%	3%	6%	4%	3%
2006861212002-180um	99	1.2	19.5	2	71.1	98.9
2006861212002-180um_replicate	93	1.1	19.2	1.9	63.6	88.5
Ave	96	1.15	19.35	1.95	67.35	93.7
RSD	4%	6%	1%	4%	8%	8%
2006861212002-75um	118	1.3	22.5	2.2	90.9	108.3
2006861212002-75um_replicate	120	1.3	23.8	2.6	92.1	111.4
Ave	119	1.3	23.15	2.4	91.5	109.85
RSD	1%	0%	4%	12%	1%	2%
2006861222001-180um	82	0.8	16.6	1.7	58.3	90.2
2006861222001-180um_replicate	85	0.8	17.4	1.7	58.8	94.5
Ave	83.5	0.8	17	1.7	58.55	92.35
RSD	3%	0%	3%	0%	1%	3%
2006861222001-75um	101	1.1	22.1	2.4	72.7	122.6
2006861222001-75um_replicate	94	1.1	20.6	2.4	71	107.9

SAMPLE	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm
Ave	97.5	1.1	21.35	2.4	71.85	115.25
RSD	5%	0%	5%	0%	2%	9%
2006861222002-180um	75	0.8	13.8	1.4	46	76.5
2006861222002-180um_replicate	76	0.8	14.6	1.5	49.9	84.1
Ave	75.5	0.8	14.2	1.45	47.95	80.3
RSD	1%	0%	4%	5%	6%	7%
2006861222002-75um	107	1.1	21.9	2.3	75.4	118.1
2006861222002-75um_replicate	97	1.1	19.8	2.2	72.7	106.1
Ave	102	1.1	20.85	2.25	74.05	112.1
RSD	7%	0%	7%	3%	3%	8%
150-001-180um	70	0.8	10.6	1.2	37.6	65.3
150-001-180um_replicate	65	0.8	11.1	1.1	38.2	65.8
Ave	67.5	0.8	10.85	1.15	37.9	65.55
RSD	5%	0%	3%	6%	1%	1%
139-001-75um	94	1.3	20.4	2.3	48.4	130.5
139-001-75um_replicate	76	1	18	1.9	46.9	101.3
Ave	85	1.15	19.2	2.1	47.65	115.9
RSD	15%	18%	9%	13%	2%	18%
143-002-180um	109	1.3	20.9	2.2	89.6	105.4
143-002-180um_replicate	110	1.3	21.3	2.1	85.8	101.8
Ave	109.5	1.3	21.1	2.15	87.7	103.6
RSD	1%	0%	1%	3%	3%	2%
134-002-75um	117	1.4	20.7	2.2	70.7	109.7
134-002-75um_replicate	111	1.4	21.9	2.4	82.1	100.3
Ave	114	1.4	21.3	2.3	76.4	105
RSD	4%	0%	4%	6%	11%	6%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**5%**	**8%**	**4%**	**6%**	**4%**	**5%**
Max RSD	**20%**	**113%**	**12%**	**22%**	**15%**	**18%**

Note: Values <LLD have been halv

A4.2.2 Lab replicates

Appendix 4.2.2

SAMPLE	SAMPLEID	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy
		ppb	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
008-001-180um	008-001-180um	10	4.07	4.5	0.05	232	1	0.16	0.17	0.08	34.3	8.2	31	2.2	21.27	2.1
RE 008-001-180um	008-001-180um	10	3.94	4.6	0.05	228	1	0.17	0.16	0.07	38.04	8.1	28	2.2	20.77	2.2
Ave		10	4.005	4.55	0.05	230	1	0.165	0.165	0.075	36.17	8.15	29.5	2.2	21.02	2.15
RSD		0%	2%	2%	0%	1%	0%	4%	4%	9%	7%	1%	7%	0%	2%	3%
011-002-180um	011-002-180um	47	5.19	5.7	0.05	371	1	0.19	0.45	0.06	43.83	9.3	33	3	20.18	3
RE 011-002-180um	011-002-180um	43	5.23	5.6	0.05	386	1	0.19	0.45	0.08	43.86	9.3	33	2.9	20.55	3.1
Ave		45	5.21	5.65	0.05	378.5	1	0.19	0.45	0.07	43.845	9.3	33	2.95	20.365	3.05
RSD		6%	1%	1%	0%	3%	0%	0%	0%	20%	0%	0%	0%	2%	1%	2%
008-002-75um	008-002-75um	23	9.27	8.6	0.05	370	2	0.23	0.77	0.08	54.83	12.6	61	4.5	30.21	3.4
RE 008-002-75um	008-002-75um	40	9.24	8.8	0.05	375	2	0.22	0.78	0.07	51.13	12	62	4.4	29.84	3.5
Ave		31.5	9.255	8.7	0.05	372.5	2	0.225	0.775	0.075	52.98	12.3	61.5	4.45	30.025	3.45
RSD		38%	0%	2%	0%	1%	0%	3%	1%	9%	5%	3%	1%	2%	1%	2%
117-001-75um	117-001-75um	36	4.47	3	0.05	255	1	0.16	0.18	0.08	42.79	8.2	34	2.3	22.73	3.1
RE 117-001-75um	117-001-75um	42	4.58	3.4	0.05	257	1	0.17	0.19	0.08	45.34	8.1	32	2.5	21.95	3.1
Ave		39	4.525	3.2	0.05	256	1	0.165	0.185	0.08	44.065	8.15	33	2.4	22.34	3.1
RSD		11%	2%	9%	0%	1%	0%	4%	4%	0%	4%	1%	4%	6%	2%	0%
115-002-180um	115-002-180um	101	4.45	3.6	0.05	279	1	0.17	0.2	0.1	37.01	8.2	29	2.3	17.25	2.6
RE 115-002-180um	115-002-180um	88	4.5	2.8	0.05	284	1	0.21	0.2	0.09	43.12	8.2	32	2.4	17.75	2.9
Ave		94.5	4.475	3.2	0.05	281.5	1	0.19	0.2	0.095	40.065	8.2	30.5	2.35	17.5	2.75
RSD		10%	1%	18%	0%	1%	0%	15%	0%	7%	11%	0%	7%	3%	2%	8%
105-001-75um	105-001-75um	53	5.83	5.9	0.05	337	2	0.23	0.63	0.11	55.38	13.4	48	3.8	23.75	3.5
RE 105-001-75um	105-001-75um	53	5.7	6.2	0.05	367	2	0.26	0.63	0.13	58.1	14.4	57	3.9	25.04	3.7
Ave		53	5.765	6.05	0.05	352	2	0.245	0.63	0.12	56.74	13.9	52.5	3.85	24.395	3.6
RSD		0%	2%	4%	0%	6%	0%	9%	0%	12%	3%	5%	12%	2%	4%	4%
154-002-75um	154-002-75um	26	5.01	4.8	0.05	363	1	0.2	0.29	0.1	60.51	11.7	42	3.4	18.06	3.5
RE 154-002-75um	154-002-75um	38	5.09	4.6	0.05	334	2	0.25	0.3	0.06	63.32	12.2	46	3.5	19.13	3.9
Ave		32	5.05	4.7	0.05	348.5	1.5	0.225	0.295	0.08	61.915	11.95	44	3.45	18.595	3.7
RSD		27%	1%	3%	0%	6%	47%	16%	2%	35%	3%	3%	6%	2%	4%	8%
146-001-180um	146-001-180um	39	3.17	2.4	0.05	242	1	0.13	0.21	0.07	34.58	4.3	22	2	12.22	2
RE 146-001-180um	146-001-180um	10	3.27	2.8	0.05	258	1	0.16	0.21	0.09	35.56	4.5	26	2.1	12.96	2.2
Ave		24.5	3.22	2.6	0.05	250	1	0.145	0.21	0.08	35.07	4.4	24	2.05	12.59	2.1
RSD		84%	2%	11%	0%	5%	0%	15%	0%	18%	2%	3%	12%	3%	4%	7%
142-002-75um	142-002-75um	89	4.89	6.1	0.05	324	1	0.2	0.33	0.07	66.25	10.2	44	3.3	20.6	3.5
RE 142-002-75um	142-002-75um	109	4.96	7.1	0.05	309	1	0.22	0.34	0.09	67.28	9.4	38	3.3	18.44	3.7

Appendix 4.2.2

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Dy ppm
Ave		99	4.925	6.6	0.05	316.5	1	0.21	0.335	0.08	66.765	9.8	41	3.3	19.52	3.6
RSD		14%	1%	11%	0%	3%	0%	7%	2%	18%	1%	6%	10%	0%	8%	4%
156-001-180um	156-001-180um	104	5.75	2.8	0.05	339	2	0.24	0.49	0.13	66.15	15.1	61	4.1	25.98	3.9
RE 156-001-180um	156-001-180um	65	5.7	2.1	0.05	337	2	0.24	0.48	0.09	67.59	16.1	59	4	25.12	4.1
Ave		84.5	5.725	2.45	0.05	338	2	0.24	0.485	0.11	66.87	15.6	60	4.05	25.55	4
RSD		33%	1%	20%	0%	0%	0%	0%	1%	26%	2%	5%	2%	2%	2%	4%
135-001-180um	135-001-180um	38	3.34	3	0.05	241	1	0.14	0.21	0.05	32.08	5.3	21	2.2	12.54	1.9
RE 135-001-180um	135-001-180um	32	3.29	4.1	0.05	237	1	0.16	0.22	0.05	28.49	5.2	23	2.1	12.33	1.9
Ave		35	3.315	3.55	0.05	239	1	0.15	0.215	0.05	30.285	5.25	22	2.15	12.435	1.9
RSD		12%	1%	22%	0%	1%	0%	9%	3%	0%	8%	1%	6%	3%	1%	0%
2006861209002-180um	2006861209002-180um	44	5.2	3.7	0.05	322	1	0.19	0.46	0.09	49.39	15.4	40	3.2	20.17	3
RE 2006861209002-180um	2006861209002-180um	44	5.3	4.1	0.05	345	1	0.19	0.48	0.09	50.56	15.9	37	3.3	20.02	3.1
Ave		44	5.25	3.9	0.05	333.5	1	0.19	0.47	0.09	49.975	15.65	38.5	3.25	20.095	3.05
RSD		0%	1%	7%	0%	5%	0%	0%	3%	0%	2%	2%	6%	2%	1%	2%
2006861218001-180um	2006861218001-180um	67	6.14	4.9	0.05	485	1	0.25	0.17	0.12	58.54	13.9	35	2.9	24.77	3.4
RE 2006861218001-180um	2006861218001-180um	30	5.92	4.8	0.05	528	1	0.25	0.17	0.07	56.33	14.1	34	2.7	21.8	3.6
Ave		48.5	6.03	4.85	0.05	506.5	1	0.25	0.17	0.095	57.435	14	34.5	2.8	23.285	3.5
RSD		54%	3%	1%	0%	6%	0%	0%	0%	37%	3%	1%	2%	5%	9%	4%
2006861213002-75um	2006861213002-75um	44	8.29	10.1	0.05	524	2	0.29	1.55	0.13	57.72	14.4	52	4.5	30.84	4.2
RE 2006861213002-75um	2006861213002-75um	28	8.19	10	0.05	550	2	0.28	1.54	0.14	59.37	14.7	54	4.4	30.36	4
Ave		36	8.24	10.05	0.05	537	2	0.285	1.545	0.135	58.545	14.55	53	4.45	30.6	4.1
RSD		31%	1%	1%	0%	3%	0%	2%	0%	5%	2%	1%	3%	2%	1%	3%
2006861227001-75um	2006861227001-75um	10	5.97	0.6	0.05	611	4	0.16	0.49	0.08	116.78	27.2	54	2.6	10.15	16.2
RE 2006861227001-75um	2006861227001-75um	10	6.07	1	0.05	596	3	0.16	0.5	0.1	111.65	27	47	2.6	9.65	15.1
Ave		10	6.02	0.8	0.05	603.5	3.5	0.16	0.495	0.09	114.215	27.1	50.5	2.6	9.9	15.65
RSD		0%	1%	35%	0%	2%	20%	0%	1%	16%	3%	1%	10%	0%	4%	5%
Min RSD		**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**
Ave RSD		**21%**	**1%**	**10%**	**0%**	**3%**	**4%**	**6%**	**2%**	**14%**	**4%**	**2%**	**6%**	**2%**	**3%**	**4%**
Max RSD		**84%**	**3%**	**35%**	**0%**	**6%**	**47%**	**16%**	**4%**	**37%**	**11%**	**6%**	**12%**	**6%**	**9%**	**8%**

Note: Values <LLD have been halved (= 0.5 LLD)

SAMPLE	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni
	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm
008-001-180um	1.2	0.7	2.39	10.25	2.9	2.21	0.4	0.84	16.3	20.5	0.2	0.2	331	0.29	0.1	6.32	16	13.4
RE 008-001-180um	1.2	0.7	2.34	10	2.9	2.13	0.4	0.82	17.9	20.3	0.2	0.2	326	0.36	0.101	6.12	18.1	13.1
Ave	1.2	0.7	2.365	10.125	2.9	2.17	0.4	0.83	17.1	20.4	0.2	0.2	328.5	0.325	0.1005	6.22	17.05	13.25
RSD	0%	0%	1%	2%	0%	3%	0%	2%	7%	1%	0%	0%	1%	15%	1%	2%	9%	2%
011-002-180um	1.6	0.9	2.94	13.82	3.5	2.85	0.6	0.75	22	21.4	0.2	0.43	350	0.43	0.343	6.16	20.9	13.5
RE 011-002-180um	1.8	0.8	2.91	13.57	3.5	2.91	0.6	0.75	22.1	21.1	0.2	0.42	358	0.39	0.348	5.96	21.9	13.6
Ave	1.7	0.85	2.925	13.695	3.5	2.88	0.6	0.75	22.05	21.25	0.2	0.425	354	0.41	0.3455	6.06	21.4	13.55
RSD	8%	8%	1%	1%	0%	1%	0%	0%	0%	1%	0%	2%	2%	7%	1%	2%	3%	1%
008-002-75um	2	1	4.67	21.3	4.7	3.35	0.7	1.51	26	37.4	0.3	0.74	352	0.41	0.167	7.88	27.3	29.3
RE 008-002-75um	1.9	1	4.75	21.28	4.3	3.48	0.6	1.54	24.2	37.1	0.3	0.74	357	0.39	0.166	7.87	26.3	29.6
Ave	1.95	1	4.71	21.29	4.5	3.415	0.65	1.525	25.1	37.25	0.3	0.74	354.5	0.4	0.1665	7.875	26.8	29.45
RSD	4%	0%	1%	0%	6%	3%	11%	1%	5%	1%	0%	0%	1%	4%	0%	0%	3%	1%
117-001-75um	1.7	1	2.54	10.59	3.4	2.71	0.6	0.83	19.9	15.8	0.2	0.22	329	0.49	0.205	6.69	21.8	15.7
RE 117-001-75um	1.7	0.9	2.58	10.46	3.8	3.15	0.6	0.94	20.3	17	0.3	0.22	333	0.51	0.205	6.73	24	15.3
Ave	1.7	0.95	2.56	10.525	3.6	2.93	0.6	0.885	20.1	16.4	0.25	0.22	331	0.5	0.205	6.71	22.9	15.5
RSD	0%	7%	1%	1%	8%	11%	0%	9%	1%	5%	28%	0%	1%	3%	0%	0%	7%	2%
115-002-180um	1.3	0.7	2.39	11.54	2.9	2.17	0.5	0.62	16.9	16.5	0.2	0.21	403	0.36	0.111	6.84	16.9	12.3
RE 115-002-180um	1.3	0.8	2.4	11.98	2.8	2.48	0.5	0.62	20.3	18.4	0.2	0.21	403	0.39	0.114	6.95	20	12.4
Ave	1.3	0.75	2.395	11.76	2.85	2.325	0.5	0.62	18.6	17.45	0.2	0.21	403	0.375	0.1125	6.895	18.45	12.35
RSD	0%	9%	0%	3%	2%	9%	0%	0%	13%	8%	0%	0%	0%	6%	2%	1%	12%	1%
105-001-75um	1.9	1.1	3.21	14.48	4.3	3.77	0.7	1.17	26	24.1	0.3	0.54	716	0.42	0.34	11.71	25.8	24.3
RE 105-001-75um	1.8	1.1	3.16	15.55	4.5	3.63	0.7	1.2	27.2	24.7	0.3	0.55	714	0.45	0.335	11.96	26.9	27.7
Ave	1.85	1.1	3.185	15.015	4.4	3.7	0.7	1.185	26.6	24.4	0.3	0.545	715	0.435	0.3375	11.835	26.35	26
RSD	4%	0%	1%	5%	3%	3%	0%	2%	3%	2%	0%	1%	0%	5%	1%	1%	3%	9%
154-002-75um	1.8	1	2.76	13.11	4.2	2.95	0.7	0.9	27.8	21.9	0.3	0.32	372	0.37	0.168	9.14	27.3	18.7
RE 154-002-75um	1.8	1.1	2.78	13.53	4.6	2.98	0.7	0.91	29	24	0.3	0.32	375	0.43	0.17	9.29	27.7	17.7
Ave	1.8	1.05	2.77	13.32	4.4	2.965	0.7	0.905	28.4	22.95	0.3	0.32	373.5	0.4	0.169	9.215	27.5	18.2
RSD	0%	7%	1%	2%	6%	1%	0%	1%	3%	6%	0%	0%	1%	11%	1%	1%	1%	4%
146-001-180um	1.2	0.5	1.66	7.65	2.3	1.84	0.4	0.85	15.5	15.5	0.2	0.19	153	0.23	0.215	5.92	15.7	11.2
RE 146-001-180um	1.2	0.7	1.74	7.75	2.3	1.97	0.4	0.87	16.4	16.1	0.1	0.2	158	0.22	0.219	6.44	15.7	11.8
Ave	1.2	0.6	1.7	7.7	2.3	1.905	0.4	0.86	15.95	15.8	0.15	0.195	155.5	0.225	0.217	6.18	15.7	11.5
RSD	0%	24%	3%	1%	0%	5%	0%	2%	4%	3%	47%	4%	2%	3%	1%	6%	0%	4%
142-002-75um	1.6	0.9	2.9	13.37	3.7	3	0.6	1.12	31.5	22	0.3	0.35	328	0.41	0.339	7.05	28.5	19.7
RE 142-002-75um	1.6	1.1	2.9	12.02	4.2	3.22	0.7	1.12	30.1	20.9	0.3	0.35	330	0.42	0.344	7.24	28.7	18.4

Appendix 4.2.2

SAMPLE	Er	Eu	Fe	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni
	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm
Ave	1.6	1	2.9	12.695	3.95	3.11	0.65	1.12	30.8	21.45	0.3	0.35	329	0.415	0.3415	7.145	28.6	19.05
RSD	0%	14%	0%	8%	9%	5%	11%	0%	3%	4%	0%	0%	0%	2%	1%	2%	0%	5%
156-001-180um	2.2	1.2	3.03	14.5	5	3.45	0.8	1.13	29.4	22.4	0.3	0.4	733	0.49	0.372	13.67	27.7	25.9
RE 156-001-180um	2.3	1.2	3.03	15.44	4.7	3.5	0.8	1.19	30.6	23.6	0.3	0.4	746	0.45	0.374	14.26	29.4	24.9
Ave	2.25	1.2	3.03	14.97	4.85	3.475	0.8	1.16	30	23	0.3	0.4	739.5	0.47	0.373	13.965	28.55	25.4
RSD	3%	0%	0%	4%	4%	1%	0%	4%	3%	4%	0%	0%	1%	6%	0%	3%	4%	3%
135-001-180um	1.2	0.7	1.86	7.93	2.7	1.99	0.4	0.73	14.8	15.3	0.1	0.27	221	0.28	0.202	4.76	15.1	10.1
RE 135-001-180um	1.1	0.6	1.88	7.66	2.1	1.7	0.4	0.67	13.3	15.5	0.2	0.27	224	0.29	0.202	4.41	13.2	8.6
Ave	1.15	0.65	1.87	7.795	2.4	1.845	0.4	0.7	14.05	15.4	0.15	0.27	222.5	0.285	0.202	4.585	14.15	9.35
RSD	6%	11%	1%	2%	18%	11%	0%	6%	8%	1%	47%	0%	1%	2%	0%	5%	9%	11%
2006861209002-180um	1.7	1	2.69	12.91	3.4	3.33	0.6	1.01	22.7	19.5	0.3	0.49	718	0.49	0.388	10.1	22.1	22
RE 2006861209002-180um	1.6	0.9	2.73	13.13	3.5	3.13	0.6	1.03	23.6	18.3	0.3	0.49	722	0.49	0.4	10.31	21.8	21.9
Ave	1.65	0.95	2.71	13.02	3.45	3.23	0.6	1.02	23.15	18.9	0.3	0.49	720	0.49	0.394	10.205	21.95	21.95
RSD	4%	7%	1%	1%	2%	4%	0%	1%	3%	4%	0%	0%	0%	0%	2%	1%	1%	0%
2006861218001-180um	1.7	1.1	2.88	13.7	4.2	3.09	0.6	1	27	20.5	0.3	0.39	527	0.64	0.574	8.85	24.9	16.9
RE 2006861218001-180um	1.7	1	2.82	13.55	4.4	3.1	0.6	0.96	26.2	19.7	0.3	0.38	520	0.51	0.578	9	23.4	16.2
Ave	1.7	1.05	2.85	13.625	4.3	3.095	0.6	0.98	26.6	20.1	0.3	0.385	523.5	0.575	0.576	8.925	24.15	16.55
RSD	0%	7%	1%	1%	3%	0%	0%	3%	2%	3%	0%	2%	1%	16%	0%	1%	4%	3%
2006861213002-75um	2	1.2	4.51	20.22	4.5	3.36	0.8	1.38	28.4	34.8	0.3	0.93	518	0.91	0.535	8.88	26.7	27.4
RE 2006861213002-75um	1.9	1.1	4.58	20.46	4.7	3.22	0.7	1.34	28.9	33.5	0.3	0.92	514	0.84	0.526	8.77	27	27.2
Ave	1.95	1.15	4.545	20.34	4.6	3.29	0.75	1.36	28.65	34.15	0.3	0.925	516	0.875	0.5305	8.825	26.85	27.3
RSD	4%	6%	1%	1%	3%	3%	9%	2%	1%	3%	0%	1%	1%	6%	1%	1%	1%	1%
2006861227001-75um	8.5	1.3	1.48	19.51	13.1	4.49	3.1	2.74	56.2	11.9	1.3	0.06	231	1.15	2.446	11.6	54.2	101.8
RE 2006861227001-75um	8.2	1.2	1.44	18.66	12.3	4.37	2.9	2.54	53.8	12.2	1.3	0.06	231	1.07	2.392	11.5	50.8	97.4
Ave	8.35	1.25	1.46	19.085	12.7	4.43	3	2.64	55	12.05	1.3	0.06	231	1.11	2.419	11.55	52.5	99.6
RSD	3%	6%	2%	3%	4%	2%	5%	5%	3%	2%	0%	0%	0%	5%	2%	1%	5%	3%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**2%**	**7%**	**1%**	**2%**	**5%**	**4%**	**2%**	**3%**	**4%**	**3%**	**8%**	**1%**	**1%**	**6%**	**1%**	**2%**	**4%**	**3%**
Max RSD	**8%**	**24%**	**3%**	**8%**	**18%**	**11%**	**11%**	**9%**	**13%**	**8%**	**47%**	**4%**	**2%**	**16%**	**2%**	**6%**	**12%**	**11%**

Note: Values <LLD have been

Appendix 4.2.2

SAMPLE	P	Pb	Pr	Rb	S	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tm	U	V	W
	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
008-001-180um	0.04	12.05	3.9	36.9	0.02	0.29	7.2	3.3	1.3	57	0.7	0.4	6.7	0.426	0.2	0.9	68	0.8
RE 008-001-180um	0.039	11.95	4.1	36.3	0.02	0.33	7.3	3.7	1.1	57	0.5	0.4	7.3	0.416	0.2	0.9	67	0.7
Ave	0.0395	12	4	36.6	0.02	0.31	7.25	3.5	1.2	57	0.6	0.4	7	0.421	0.2	0.9	67.5	0.75
RSD	2%	1%	4%	1%	0%	9%	1%	8%	12%	0%	24%	0%	6%	2%	0%	0%	1%	9%
011-002-180um	0.031	13.57	4.9	41.4	0.02	0.35	8.7	4.5	1.5	128	0.5	0.5	7.1	0.463	0.2	1.2	93	0.8
RE 011-002-180um	0.029	13.39	5	41.5	0.02	0.33	8.5	4.4	1.6	127	0.5	0.5	7.7	0.458	0.2	1.2	90	0.9
Ave	0.03	13.48	4.95	41.45	0.02	0.34	8.6	4.45	1.55	127.5	0.5	0.5	7.4	0.4605	0.2	1.2	91.5	0.85
RSD	5%	1%	1%	0%	0%	4%	2%	2%	5%	1%	0%	0%	6%	1%	0%	0%	2%	8%
008-002-75um	0.034	15.17	6.4	73.2	0.02	0.43	15.4	5.2	2.2	166	0.7	0.5	9.2	0.564	0.3	1.1	123	1.1
RE 008-002-75um	0.034	15.49	6	72.1	0.02	0.44	15	5.1	2.4	165	0.7	0.5	8.9	0.571	0.3	1	125	1
Ave	0.034	15.33	6.2	72.65	0.02	0.435	15.2	5.15	2.3	165.5	0.7	0.5	9.05	0.5675	0.3	1.05	124	1.05
RSD	0%	1%	5%	1%	0%	2%	2%	1%	6%	0%	0%	0%	2%	1%	0%	7%	1%	7%
117-001-75um	0.044	11.48	5.1	40.8	0.02	0.32	7.9	4.5	1.3	77	0.8	0.5	6.9	0.508	0.2	1.1	78	0.9
RE 117-001-75um	0.044	13.14	5.2	41.8	0.02	0.38	8.4	4.6	1.5	78	0.7	0.6	7.6	0.523	0.2	1.1	78	0.9
Ave	0.044	12.31	5.15	41.3	0.02	0.35	8.15	4.55	1.4	77.5	0.75	0.55	7.25	0.5155	0.2	1.1	78	0.9
RSD	0%	10%	1%	2%	0%	12%	4%	2%	10%	1%	9%	13%	7%	2%	0%	0%	0%	0%
115-002-180um	0.022	12.99	4.4	37.8	0.02	0.35	7	3.4	1.4	73	0.7	0.4	7.1	0.429	0.2	1.2	77	0.9
RE 115-002-180um	0.022	14.43	4.8	39.9	0.02	0.38	7.5	3.7	1.6	81	0.8	0.5	7.8	0.449	0.2	1.3	77	0.9
Ave	0.022	13.71	4.6	38.85	0.02	0.365	7.25	3.55	1.5	77	0.75	0.45	7.45	0.439	0.2	1.25	77	0.9
RSD	0%	7%	6%	4%	0%	6%	5%	6%	9%	7%	9%	16%	7%	3%	0%	6%	0%	0%
105-001-75um	0.053	14.92	6	74.3	0.02	0.54	9.8	5.3	1.9	124	1.3	0.6	9.9	0.64	0.3	1.4	81	1
RE 105-001-75um	0.056	16.06	6.5	68.1	0.02	0.54	10.8	5.9	2.1	122	1.3	0.6	10.4	0.645	0.3	1.6	80	1.3
Ave	0.0545	15.49	6.25	71.2	0.02	0.54	10.3	5.6	2	123	1.3	0.6	10.15	0.6425	0.3	1.5	80.5	1.15
RSD	4%	5%	6%	6%	0%	0%	7%	8%	7%	1%	0%	0%	3%	1%	0%	9%	1%	18%
154-002-75um	0.021	14.76	6.2	59.7	0.02	0.5	8.6	5.2	2	79	1	0.6	10.7	0.544	0.2	1.1	75	1
RE 154-002-75um	0.022	15.42	6.4	64.1	0.02	0.53	8.8	5.8	1.8	82	1	0.6	11	0.549	0.3	1.2	76	1.1
Ave	0.0215	15.09	6.3	61.9	0.02	0.515	8.7	5.5	1.9	80.5	1	0.6	10.85	0.5465	0.25	1.15	75.5	1.05
RSD	3%	3%	2%	5%	0%	4%	2%	8%	7%	3%	0%	0%	2%	1%	28%	6%	1%	7%
146-001-180um	0.034	10.12	3.7	41.3	0.02	0.3	4.7	2.7	1	52	0.7	0.3	6	0.35	0.2	0.8	48	0.7
RE 146-001-180um	0.033	11.1	3.7	40.7	0.02	0.34	5.2	3.3	1.2	55	0.8	0.3	6.9	0.366	0.2	0.8	50	0.8
Ave	0.0335	10.61	3.7	41	0.02	0.32	4.95	3	1.1	53.5	0.75	0.3	6.45	0.358	0.2	0.8	49	0.75
RSD	2%	7%	0%	1%	0%	9%	7%	14%	13%	4%	9%	0%	10%	3%	0%	0%	3%	9%
142-002-75um	0.036	15.75	6.7	60.1	0.02	0.48	8.2	5.5	1.8	86	0.7	0.6	12.2	0.419	0.2	1.7	79	0.9
RE 142-002-75um	0.034	14.94	6.6	57.4	0.02	0.52	8.3	5.2	1.6	81	0.8	0.5	11.8	0.429	0.3	1.7	74	0.9

SAMPLE	P	Pb	Pr	Rb	S	Sb	Sc	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tm	U	V	W
	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Ave	0.035	15.345	6.65	58.75	0.02	0.5	8.25	5.35	1.7	83.5	0.75	0.55	12	0.424	0.25	1.7	76.5	0.9
RSD	4%	4%	1%	3%	0%	6%	1%	4%	8%	4%	9%	13%	2%	2%	28%	0%	5%	0%
156-001-180um	0.056	16.38	6.8	71	0.02	0.55	9.8	4.4	1.9	98	1.3	0.7	10	0.539	0.3	1.5	68	1.3
RE 156-001-180um	0.056	17.1	6.6	77.3	0.02	0.51	9.9	5.5	2	107	1.4	0.7	9.8	0.547	0.4	1.5	67	1.2
Ave	0.056	16.74	6.7	74.15	0.02	0.53	9.85	4.95	1.95	102.5	1.35	0.7	9.9	0.543	0.35	1.5	67.5	1.25
RSD	0%	3%	2%	6%	0%	5%	1%	16%	4%	6%	5%	0%	1%	1%	20%	0%	1%	6%
135-001-180um	0.021	10	3.5	35.8	0.02	0.33	5.6	3.4	1.1	77	0.5	0.3	5.9	0.336	0.2	0.7	48	0.6
RE 135-001-180um	0.02	9.59	3.1	32.2	0.02	0.31	5.5	2.7	0.9	72	0.5	0.3	5.2	0.335	0.1	0.7	52	0.6
Ave	0.0205	9.795	3.3	34	0.02	0.32	5.55	3.05	1	74.5	0.5	0.3	5.55	0.3355	0.15	0.7	50	0.6
RSD	3%	3%	9%	7%	0%	4%	1%	16%	14%	5%	0%	0%	9%	0%	47%	0%	6%	0%
2006861209002-180um	0.031	14.34	5	60.8	0.02	0.46	9.3	4.4	1.7	108	0.8	0.6	7.7	0.484	0.2	1.4	70	1
RE 2006861209002-180um	0.03	14.39	5.2	60.4	0.02	0.48	9.3	4.4	1.8	110	0.8	0.5	8.1	0.502	0.3	1.2	69	1
Ave	0.0305	14.365	5.1	60.6	0.02	0.47	9.3	4.4	1.75	109	0.8	0.55	7.9	0.493	0.25	1.3	69.5	1
RSD	2%	0%	3%	0%	0%	3%	0%	0%	4%	1%	0%	13%	4%	3%	28%	11%	1%	0%
2006861218001-180um	0.032	19.12	6.2	51.2	0.04	0.38	9.4	5.1	1.8	111	0.9	0.6	9	0.56	0.3	1.3	93	1.1
RE 2006861218001-180um	0.031	16.91	6.3	48.6	0.02	0.4	9.4	4.9	1.8	112	0.9	0.6	8.5	0.576	0.3	1.4	92	1.1
Ave	0.0315	18.015	6.25	49.9	0.03	0.39	9.4	5	1.8	111.5	0.9	0.6	8.75	0.568	0.3	1.35	92.5	1.1
RSD	2%	9%	1%	4%	47%	4%	0%	3%	0%	1%	0%	0%	4%	2%	0%	5%	1%	0%
2006861213002-75um	0.042	18.47	6.5	51.4	0.06	0.58	13.5	5.2	2.5	180	0.8	0.7	10.2	0.513	0.3	1.6	126	1.2
RE 2006861213002-75um	0.04	18.5	6.6	51.8	0.07	0.59	13.3	4.9	2.6	182	0.8	0.7	10.8	0.478	0.3	1.7	126	1.3
Ave	0.041	18.485	6.55	51.6	0.065	0.585	13.4	5.05	2.55	181	0.8	0.7	10.5	0.4955	0.3	1.65	126	1.25
RSD	3%	0%	1%	1%	11%	1%	1%	4%	3%	1%	0%	0%	4%	5%	0%	4%	0%	6%
2006861227001-75um	0.01	23.54	13.8	161.2	0.02	0.27	5.7	12.5	5.1	36	1.5	2.3	26.7	0.113	1.3	6	3	184.3
RE 2006861227001-75um	0.009	23.03	12.7	150.2	0.02	0.28	5.3	11.4	5.3	34	1.4	2.2	25.8	0.113	1.3	5.8	3	179.6
Ave	0.0095	23.285	13.25	155.7	0.02	0.275	5.5	11.95	5.2	35	1.45	2.25	26.25	0.113	1.3	5.9	3	181.95
RSD	7%	2%	6%	5%	0%	3%	5%	7%	3%	4%	5%	3%	2%	0%	0%	2%	0%	2%
Min RSD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD	**3%**	**4%**	**3%**	**3%**	**4%**	**5%**	**3%**	**6%**	**7%**	**3%**	**5%**	**4%**	**5%**	**2%**	**10%**	**3%**	**1%**	**5%**
Max RSD	**7%**	**10%**	**9%**	**7%**	**47%**	**12%**	**7%**	**16%**	**14%**	**7%**	**24%**	**16%**	**10%**	**5%**	**47%**	**11%**	**6%**	**18%**

Note: Values <LLD have been

SAMPLE	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm
008-001-180um	12.2	1.3	39.5	73.8
RE 008-001-180um	12.4	1.3	39	70.6
Ave	12.3	1.3	39.25	72.2
RSD	1%	0%	1%	3%
011-002-180um	16.1	1.7	55.5	88.4
RE 011-002-180um	16.4	1.6	54.7	86.7
Ave	16.25	1.65	55.1	87.55
RSD	1%	4%	1%	1%
008-002-75um	20	2.2	84.2	106
RE 008-002-75um	19.4	2	81.2	104.7
Ave	19.7	2.1	82.7	105.35
RSD	2%	7%	3%	1%
117-001-75um	15.9	1.6	50.3	84.2
RE 117-001-75um	16.5	1.9	47.3	84.6
Ave	16.2	1.75	48.8	84.4
RSD	3%	12%	4%	0%
115-002-180um	11.5	1.3	41.8	72.7
RE 115-002-180um	12.5	1.4	38.3	75.6
Ave	12	1.35	40.05	74.15
RSD	6%	5%	6%	3%
105-001-75um	21.1	2.1	62.2	116
RE 105-001-75um	21.3	2.2	64.7	121.4
Ave	21.2	2.15	63.45	118.7
RSD	1%	3%	3%	3%
154-002-75um	17.5	1.8	38.6	91.2
RE 154-002-75um	17.2	2	39	91.7
Ave	17.35	1.9	38.8	91.45
RSD	1%	7%	1%	0%
146-001-180um	9.3	1.1	37.9	54.4
RE 146-001-180um	10	1.3	32.6	55.3
Ave	9.65	1.2	35.25	54.85
RSD	5%	12%	11%	1%
142-002-75um	17.7	1.7	56	107.5
RE 142-002-75um	17.4	1.7	51.7	102.8

SAMPLE	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm
Ave	17.55	1.7	53.85	105.15
RSD	1%	0%	6%	3%
156-001-180um	20.1	1.9	64.7	109.3
RE 156-001-180um	22	2.2	62.7	119.3
Ave	21.05	2.05	63.7	114.3
RSD	6%	10%	2%	6%
135-001-180um	11	1	39.2	58.7
RE 135-001-180um	10.1	1	36.7	55.2
Ave	10.55	1	37.95	56.95
RSD	6%	0%	5%	4%
2006861209002-180um	17.5	1.8	53.5	99.5
RE 2006861209002-180um	17.2	1.9	55.2	101.3
Ave	17.35	1.85	54.35	100.4
RSD	1%	4%	2%	1%
2006861218001-180um	17.2	2	57.5	97.3
RE 2006861218001-180um	17.2	1.8	53.2	98.9
Ave	17.2	1.9	55.35	98.1
RSD	0%	7%	5%	1%
2006861213002-75um	20.7	2.2	85.8	104.8
RE 2006861213002-75um	21.1	2.1	87.2	103.1
Ave	20.9	2.15	86.5	103.95
RSD	1%	3%	1%	1%
2006861227001-75um	82	9.8	42.8	92.8
RE 2006861227001-75um	79.9	9.4	42.5	90.7
Ave	80.95	9.6	42.65	91.75
RSD	2%	3%	0%	2%
Min RSD	**0%**	**0%**	**0%**	**0%**
Ave RSD	**3%**	**5%**	**3%**	**2%**
Max RSD	**6%**	**12%**	**11%**	**6%**

Note: Values <LLD have been

A4.2.3 Blind standards

SAMPLE	SAMPLEID	Ag ppb	Al %	As ppm	Au ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm
GA9	024-001-75um	10	6.03	1.3	0.05	614	3	0.18	0.55	0.06
GA9	164-001-180um	10	5.30	1.8	0.05	510	3	0.11	0.49	0.05
GA9	2006861227001-75um	10	5.97	0.6	0.05	611	4	0.16	0.49	0.08
GA9	2006861227002-75um	10	5.94	1.2	0.05	612	3	0.17	0.49	0.11
Min		**10**	**5.30**	**0.6**	**0.05**	**510**	**3**	**0.11**	**0.49**	**0.05**
Ave		10	5.81	1.2	0.05	587	3	0.16	0.51	0.08
RSD		0%	6%	40%	0%	9%	15%	20%	6%	35%
Max		**10**	**6.03**	**1.8**	**0.05**	**614**	**4**	**0.18**	**0.55**	**0.11**
Target Value		170		1.0	N/A	567	3	0.37		0.03
Target Range-Min	Target Value - 10%	**153**		**0.9**	**N/A**	**510**	**3**	**0.33**		**0.03**
Target Range-Max	Target Value + 10%	**187**		**1.1**	**N/A**	**624**	**4**	**0.40**		**0.03**
Replicates > TR Min?		No		No	N/A	No	Yes	No		Min > TR Max
Replicates < TR Max?		Max < TR Min		No	N/A	Yes	No	Max < TR Min		No
Ave WRT Target Value		-94%		+28%	N/A	+3%	-1%	-58%		+141%
GA25	025-002-75um	10	9.99	1.2	0.05	1189	2	0.02	5.39	0.29
GA25	163-002-75um	10	9.10	2.4	0.05	1186	2	0.02	5.38	0.43
GA25	164-001-75um	57	8.62	1.1	0.05	1094	2	0.02	5.11	0.25
GA25	2006861227001-180um	10	8.63	1.2	0.05	1203	2	0.02	5.49	0.29
GA25	2006861227002-180um	24	8.65	0.7	0.05	1189	2	0.02	5.71	0.33
Min		**10**	**8.62**	**0.7**	**0.05**	**1094**	**2**	**0.02**	**5**	**0.25**
Ave		22	9.00	1.3	0.05	1172	2	0.02	5	0.32
RSD		92%	7%	48%	0%	4%	0%	0%	4%	22%
Max		**57**	**9.99**	**2.4**	**0.05**	**1203**	**2**	**0.02**	**6**	**0.43**
Target Value		110		0.4	N/A	1126	2	0.46		0.16
Target Range-Min	Target Value - 10%	**99**		**0.4**	**N/A**	**1013**	**2**	**0.42**		**0.15**
Target Range-Max	Target Value + 10%	**121**		**0.5**	**N/A**	**1238**	**2**	**0.51**		**0.18**
Replicates > TR Min?		No		Min > TR Max	N/A	Yes	Yes	No		Min > TR Max
Replicates < TR Max?		Max < TR Min		No	N/A	Yes	Yes	Max < TR Min		No
Ave WRT Target Value		-80%		+219%	N/A	+4%	+6%	-96%		+97%

Note: Values <LLD have been halved (= 0.5 LLD); Values >ULD have been doubled (= 2 ULD) (latter only for W)

Appendix 4.2.3

SAMPLE	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe %	Ga ppm	Gd ppm	Hf ppm	Ho ppm
GA9	107.36	27.7	43	2.9	10.69	14.1	8.4	1.0	1.55	20.17	13.0	4.68	2.8
GA9	99.13	22.8	35	2.4	8.54	13.1	7.0	1.1	1.38	17.79	10.4	4.04	2.6
GA9	116.78	27.2	54	2.6	10.15	16.2	8.5	1.3	1.48	19.51	13.1	4.49	3.1
GA9	114.25	27.2	54	2.7	10.30	15.2	8.1	1.1	1.47	19.44	12.5	4.33	2.9
Min	**99.13**	**22.8**	**35**	**2.4**	**8.54**	**13.1**	**7.0**	**1.0**	**1.38**	**17.79**	**10.4**	**4.04**	**2.6**
Ave	109.38	26.2	47	2.7	9.92	14.7	8.0	1.1	1.47	19.23	12.3	4.39	2.9
RSD	7%	9%	20%	8%	10%	9%	9%	11%	5%	5%	10%	6%	7%
Max	**116.78**	**27.7**	**54**	**2.9**	**10.69**	**16.2**	**8.5**	**1.3**	**1.55**	**20.17**	**13.1**	**4.68**	**3.1**
Target Value	105.55	25.4	74	2.5	12.36	13.9	9.1	1.3		17.91	11.8	7.15	3.1
Target Range-Min	**94.99**	**22.9**	**66**	**2.3**	**11.12**	**12.5**	**8.2**	**1.1**		**16.12**	**10.6**	**6.44**	**2.8**
Target Range-Max	**116.10**	**27.9**	**81**	**2.8**	**13.59**	**15.3**	**10.0**	**1.4**		**19.70**	**12.9**	**7.87**	**3.4**
Replicates > TR Min?	Yes	No	No	Yes	No	Yes	No	No		Yes	No	No	No
Replicates < TR Max?	No	Yes	Max < TR Min	No	Max < TR Min	No	Yes	Yes		No	No	Max < TR Min	Yes
Ave WRT Target Value	+4%	+3%	-37%	+5%	-20%	+6%	-12%	-11%		+7%	+4%	-39%	-8%
GA25	104.94	48.9	90	1.3	46.79	4.2	2.0	2.0	9.94	16.85	5.2	3.90	0.7
GA25	102.34	46.8	89	1.6	45.82	5.0	2.3	2.3	9.59	17.06	5.6	4.03	0.8
GA25	97.94	46.7	91	1.4	45.92	4.1	1.9	2.2	9.03	16.12	5.2	3.88	0.8
GA25	105.33	48.9	108	1.5	48.73	4.4	1.9	2.2	9.43	17.56	5.7	4.07	0.7
GA25	106.35	50.6	100	1.5	49.92	4.3	2.0	2.2	9.74	17.57	5.3	4.33	0.8
Min	**97.94**	**46.7**	**89**	**1.3**	**45.82**	**4.1**	**1.9**	**2.0**	**9.03**	**16.12**	**5.2**	**3.88**	**0.7**
Ave	103.38	48.4	96	1.5	47.44	4.4	2.0	2.2	9.55	17.03	5.4	4.04	0.8
RSD	3%	3%	9%	8%	4%	8%	8%	5%	4%	4%	4%	4%	7%
Max	**106.35**	**50.6**	**108**	**1.6**	**49.92**	**5.0**	**2.3**	**2.3**	**9.94**	**17.57**	**5.7**	**4.33**	**0.8**
Target Value	96.11	49.3	99	1.4	51.73	3.9	2.0	2.3		15.18	5.0	3.55	0.8
Target Range-Min	**86.50**	**44.4**	**89**	**1.2**	**46.56**	**3.6**	**1.8**	**2.1**		**13.66**	**4.5**	**3.20**	**0.7**
Target Range-Max	**105.72**	**54.3**	**109**	**1.5**	**56.90**	**4.3**	**2.2**	**2.6**		**16.70**	**5.5**	**3.91**	**0.8**
Replicates > TR Min?	Yes	Yes	Yes	Yes	No	Yes	Yes	No		Yes	Yes	Yes	Yes
Replicates < TR Max?	No	Yes	Yes	No	Yes	No	No	Yes		No	No	No	Yes
Ave WRT Target Value	+8%	-2%	-3%	+6%	-8%	+12%	-0%	-7%		+12%	+7%	+14%	-2%

Note: Values <LLD have

SAMPLE	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni	P	Pb
	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm
GA9	3.39	51.1	12.5	1.2	0.07	257	1.12	2.440	12.21	51.1	111.8	0.011	22.71
GA9	2.96	41.7	9.8	1.2	0.06	214	0.99	2.166	9.37	44.7	96.6	0.009	19.19
GA9	2.74	56.2	11.9	1.3	0.06	231	1.15	2.446	11.60	54.2	101.8	0.010	23.54
GA9	2.83	54.5	11.8	1.3	0.06	234	1.12	2.536	11.83	52.8	101.9	0.010	30.21
Min	**2.74**	**41.7**	**9.8**	**1.2**	**0.06**	**214**	**0.99**	**2.166**	**9.37**	**44.7**	**96.6**	**0.009**	**19.19**
Ave	2.98	50.9	11.5	1.3	0.06	234	1.10	2.397	11.25	50.7	103.0	0.010	23.91
RSD	10%	13%	10%	5%	8%	8%	7%	7%	11%	8%	6%	8%	19%
Max	**3.39**	**56.2**	**12.5**	**1.3**	**0.07**	**257**	**1.15**	**2.536**	**12.21**	**54.2**	**111.8**	**0.011**	**30.21**
Target Value		50.8		1.3			1.07		12.07	51.3	79.3		22.04
Target Range-Min		**45.7**		**1.2**			**0.96**		**10.86**	**46.1**	**71.4**		**19.84**
Target Range-Max		**55.9**		**1.5**			**1.17**		**13.27**	**56.4**	**87.2**		**24.25**
Replicates > TR Min?		No		No			Yes		No	No	Min > TR Max		No
Replicates < TR Max?		No		Yes			Yes		Yes	Yes	No		No
Ave WRT Target Value		+0%		-6%			+3%		-7%	-1%	+30%		+8%
GA25	1.99	56.7	10.0	0.2	3.22	1776	2.20	3.184	88.01	41.7	50.7	0.308	8.15
GA25	1.90	56.6	13.1	0.3	3.07	1716	2.10	3.196	90.95	40.1	48.5	0.297	8.10
GA25	1.82	53.7	11.5	0.2	2.96	1650	2.07	3.059	83.54	38.4	49.6	0.291	7.09
GA25	2.03	58.7	10.3	0.3	3.04	1774	2.26	3.314	78.79	39.1	53.2	0.306	8.09
GA25	2.08	59.5	11.1	0.3	3.13	1739	2.30	3.364	82.92	38.7	52.7	0.316	8.62
Min	**1.82**	**53.7**	**10.0**	**0.2**	**2.96**	**1650**	**2.07**	**3.059**	**78.79**	**38.4**	**48.5**	**0.291**	**7.09**
Ave	1.96	57.0	11.2	0.3	3.08	1731	2.19	3.223	84.84	39.6	50.9	0.304	8.01
RSD	5%	4%	11%	21%	3%	3%	5%	4%	6%	3%	4%	3%	7%
Max	**2.08**	**59.5**	**13.1**	**0.3**	**3.22**	**1776**	**2.30**	**3.364**	**90.95**	**41.7**	**53.2**	**0.316**	**8.62**
Target Value		53.7		0.3			1.91		87.04	37.5	63.3		7.33
Target Range-Min		**48.3**		**0.2**			**1.72**		**78.33**	**33.8**	**57.0**		**6.60**
Target Range-Max		**59.1**		**0.3**			**2.11**		**95.74**	**41.3**	**69.7**		**8.07**
Replicates > TR Min?		Yes		No			Yes		Yes	Yes	No		Yes
Replicates < TR Max?		No		No			No		Yes	No	Max < TR Min		No
Ave WRT Target Value		+6%		+2%			+14%		-3%	+5%	-20%		+9%

Note: Values <LLD have

SAMPLE	Pr ppm	Rb ppm	S %	Sb ppm	Sc ppm	Sm ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %
GA9	12.3	194.3	0.02	0.27	5.5	12.3	5.8	35	1.4	2.0	25.7	0.131
GA9	10.0	162.8	0.02	0.22	4.8	10.4	4.6	29	1.3	2.0	20.3	0.106
GA9	13.8	161.2	0.02	0.27	5.7	12.5	5.1	36	1.5	2.3	26.7	0.113
GA9	13.1	172.2	0.02	0.29	5.6	11.8	12.7	35	1.4	2.2	26.3	0.110
Min	**10.0**	**161.2**	**0.02**	**0.22**	**4.8**	**10.4**	**4.6**	**29**	**1.3**	**2.0**	**20.3**	**0.106**
Ave	12.3	172.6	0.02	0.26	5.4	11.8	7.1	34	1.4	2.1	24.8	0.115
RSD	13%	9%	0%	11%	8%	8%	54%	9%	6%	7%	12%	10%
Max	**13.8**	**194.3**	**0.02**	**0.29**	**5.7**	**12.5**	**12.7**	**36**	**1.5**	**2.3**	**26.7**	**0.131**
Target Value	13.5	198.5		0.44	6.8	12.3	5.3	32	1.1	2.3	24.7	
Target Range-Min	**12.2**	**178.6**		**0.40**	**6.1**	**11.1**	**4.8**	**29**	**1.0**	**2.1**	**22.2**	
Target Range-Max	**14.9**	**218.3**		**0.48**	**7.4**	**13.5**	**5.9**	**36**	**1.2**	**2.6**	**27.2**	
Replicates > TR Min?	No	No		No	No	No	No	No	Min > TR Max	No	No	
Replicates < TR Max?	Yes	Yes		Max < TR Min	Max < TR Min	Yes	No	No	No	Yes	Yes	
Ave WRT Target Value	-9%	-13%		-40%	-20%	-4%	+32%	+4%	+27%	-9%	+0%	
GA25	10.4	80.9	0.07	0.08	13.5	6.7	1.6	1417	5.6	0.7	8.6	1.728
GA25	9.6	90.4	0.07	0.04	13.5	7.5	1.6	1299	7.8	0.8	8.8	1.716
GA25	9.3	80.3	0.07	0.06	12.7	5.9	1.5	1225	6.7	0.7	7.6	1.554
GA25	10.4	86.3	0.13	0.06	13.5	6.7	1.6	1301	6.2	0.8	9.2	1.922
GA25	10.3	88.9	0.14	0.06	13.8	6.3	1.6	1388	6.4	0.8	9.2	1.879
Min	**9.3**	**80.3**	**0.07**	**0.04**	**12.7**	**5.9**	**1.5**	**1225**	**5.6**	**0.7**	**7.6**	**1.554**
Ave	10.0	85.4	0.10	0.06	13.4	6.6	1.6	1326	6.5	0.8	8.7	1.760
RSD	5%	5%	37%	24%	3%	9%	3%	6%	12%	7%	8%	8%
Max	**10.4**	**90.4**	**0.14**	**0.08**	**13.8**	**7.5**	**1.6**	**1417**	**7.8**	**0.8**	**9.2**	**1.922**
Target Value	10.4	85.5		0.28	14.5	6.7	1.3	1228	4.7	0.8	7.7	
Target Range-Min	**9.3**	**76.9**		**0.25**	**13.1**	**6.1**	**1.2**	**1106**	**4.2**	**0.7**	**7.0**	
Target Range-Max	**11.4**	**94.0**		**0.31**	**16.0**	**7.4**	**1.4**	**1351**	**5.1**	**0.8**	**8.5**	
Replicates > TR Min?	No	Yes		No	No	No	Min > TR Max	Yes	Min > TR Max	Yes	Yes	
Replicates < TR Max?	Yes	Yes		Max < TR Min	Yes	No	No	No	No	Yes	No	
Ave WRT Target Value	-3%	-0%		-79%	-8%	-2%	+20%	+8%	+40%	+0%	+12%	

Note: Values <LLD have

SAMPLE	Tm ppm	U ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm
GA9	1.2	5.7	5	400.0	81.9	8.8	46.2	99.8
GA9	1.1	4.7	0.5	161.0	73.9	7.5	37.5	88.4
GA9	1.3	6.0	3	184.3	82.0	9.8	42.8	92.8
GA9	1.3	5.8	2	179.2	82.2	9.3	43.9	93.0
Min	**1.1**	**4.7**	**1**	**161.0**	**73.9**	**7.5**	**37.5**	**88.4**
Ave	1.2	5.6	3	231.1	80.0	8.9	42.6	93.5
RSD	8%	10%	72%	49%	5%	11%	9%	5%
Max	**1.3**	**6.0**	**5**	**400.0**	**82.2**	**9.8**	**46.2**	**99.8**
Target Value		5.4	4		91.8	8.5	35.4	204.7
Target Range-Min		**4.8**	**3**		**82.6**	**7.6**	**31.8**	**184.2**
Target Range-Max		**5.9**	**4**		**101.0**	**9.3**	**38.9**	**225.1**
Replicates > TR Min?		No	No		No	No	Yes	No
Replicates < TR Max?		No	No		Max < TR Min	No	No	Max < TR Min
Ave WRT Target Value		+3%	-26%		-13%	+5%	+20%	-54%
GA25	0.3	1.6	173	53.8	21.3	1.9	74.5	163.7
GA25	0.3	1.6	168	53.4	21.0	1.8	78.1	169.5
GA25	0.3	1.4	161	51.8	19.2	1.8	76.4	154.5
GA25	0.3	1.5	172	55.0	21.0	1.7	81.7	154.9
GA25	0.3	1.6	182	57.7	22.0	1.9	81.0	161.7
Min	**0.3**	**1.4**	**161**	**51.8**	**19.2**	**1.7**	**74.5**	**154.5**
Ave	0.3	1.5	171	54.3	20.9	1.8	78.3	160.9
RSD	0%	6%	4%	4%	5%	5%	4%	4%
Max	**0.3**	**1.6**	**182**	**57.7**	**22.0**	**1.9**	**81.7**	**169.5**
Target Value		1.4	161		20.8	1.7	75.0	159.3
Target Range-Min		**1.3**	**145**		**18.7**	**1.5**	**67.5**	**143.4**
Target Range-Max		**1.6**	**178**		**22.9**	**1.8**	**82.5**	**175.3**
Replicates > TR Min?		Yes	Yes		Yes	Yes	Yes	Yes
Replicates < TR Max?		No	No		Yes	No	Yes	Yes
Ave WRT Target Value		+7%	+6%		+0%	+10%	+4%	+1%

Note: Values <LLD have

A4.2.4 Lab standards

SAMPLE	SAMPLEID	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Fe
		ppb	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
STANDARD DST6	STANDARD DST6	321	7.05	25.6	0.05	703	3	4.68	2.30	5.84	52.88	14.0	230	8.6	129.96	2.9	1.6	0.9	4.10
STANDARD DST6	STANDARD DST6	309	7.00	23.9	0.05	702	3	4.72	2.29	5.73	52.76	13.9	227	8.5	128.66	2.8	1.5	0.8	4.08
STANDARD DST6	STANDARD DST6	324	6.97	24.9	0.05	699	3	4.76	2.30	5.71	50.51	13.9	233	8.2	129.04	2.8	1.4	0.7	4.09
STANDARD DST6	STANDARD DST6	331	7.00	23.8	0.05	688	3	4.69	2.29	5.78	56.30	14.1	232	8.4	130.64	3.0	1.6	1.0	4.08
STANDARD DST6	STANDARD DST6	306	6.98	24.3	0.05	700	4	4.81	2.29	5.78	52.62	13.8	229	8.7	128.63	2.9	1.6	1.1	4.08
STANDARD DST6	STANDARD DST6	319	6.96	23.3	0.05	688	3	4.78	2.28	5.65	50.77	13.7	205	8.0	127.97	2.9	1.5	1.0	4.07
STANDARD DST6	STANDARD DST6	301	6.96	24.5	0.05	691	4	4.88	2.28	5.76	53.02	13.7	210	8.1	127.89	2.8	1.6	1.0	4.07
STANDARD DST6	STANDARD DST6	299	6.98	25.9	0.05	707	4	4.79	2.29	5.72	53.63	14.0	230	8.8	127.88	2.9	1.5	1.1	4.07
STANDARD DST6	STANDARD DST6	345	7.02	22.0	0.05	692	3	4.92	2.30	6.35	57.94	14.5	233	9.1	128.45	2.6	1.4	0.9	4.09
STANDARD DST6	STANDARD DST6	347	6.99	25.1	0.05	680	3	4.85	2.29	5.65	54.61	14.3	225	8.2	129.04	2.9	1.5	1.0	4.08
STANDARD DST6	STANDARD DST6	304	6.99	23.2	0.05	676	3	4.92	2.29	5.53	55.89	14.0	228	8.7	127.31	2.5	1.5	0.9	4.08
STANDARD DST6	STANDARD DST6	323	6.96	24.5	0.05	680	3	4.83	2.25	5.66	53.63	13.7	233	7.9	129.58	2.9	1.4	1.0	4.09
STANDARD DST6	STANDARD DST6	310	6.94	21.9	0.05	682	3	5.26	2.27	6.23	52.90	14.2	233	7.8	130.48	2.9	1.5	0.9	4.07
STANDARD DST6	STANDARD DST6	340	6.89	23.8	0.05	682	3	4.91	2.24	6.27	52.85	14.0	233	8.1	128.13	2.9	1.4	0.9	4.08
STANDARD DST6	STANDARD DST6	325	6.98	23.7	0.05	673	3	4.86	2.26	5.93	52.60	14.2	229	7.6	129.21	2.9	1.4	0.8	4.08
Min		**299**	**6.89**	**21.9**	**0.05**	**673**	**3**	**4.68**	**2.24**	**5.53**	**50.51**	**13.7**	**205**	**7.6**	**127.31**	**2.5**	**1.4**	**0.7**	**4.07**
Ave		320	6.98	24.0	0.05	690	3	4.84	2.28	5.84	53.53	14.0	227	8.3	128.86	2.8	1.5	0.9	4.08
RSD		5%	1%	5%	0%	2%	13%	3%	1%	4%	4%	2%	4%	5%	1%	5%	5%	12%	0%
Max		**347**	**7.05**	**25.9**	**0.05**	**707**	**4**	**5.26**	**2.30**	**6.35**	**57.94**	**14.5**	**233**	**9.1**	**130.64**	**3.0**	**1.6**	**1.1**	**4.10**
Official Value		365	6.92	24.3	<1	702	3.3	4.70	2.26	5.60	52.00	13.7	230	8.4	129.70	2.9	1.6	1.0	3.91
Target Range-Min	Official Value - 10%	**329**	**6.23**	**21.9**	**<1**	**632**	**3.0**	**4.23**	**2.03**	**5.04**	**46.80**	**12.3**	**207**	**7.6**	**116.73**	**2.6**	**1.4**	**0.9**	**3.52**
Target Range-Max	Official Value + 10%	**402**	**7.61**	**26.7**	**<1**	**772**	**3.6**	**5.17**	**2.49**	**6.16**	**57.20**	**15.1**	**253**	**9.2**	**142.67**	**3.2**	**1.8**	**1.1**	**4.30**
Replicates > TR Min?		No	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes
Replicates < TR Max?		Yes	Yes	Yes	N/A	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ave WRT Official Value		-12%	1%	-1%	N/A	-2%	-3%	3%	1%	4%	3%	2%	-1%	-1%	-1%	-2%	-7%	-7%	4%

Note: Values <LLD have been halved (= 0.5 LLD)

Appendix 4.2.4

SAMPLE	Ga	Gd	Hf	Ho	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni	P	Pb	Pr	Rb	S	Sb	Sc
	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
STANDARD DST6	17.46	3.5	1.93	0.5	1.38	24.9	26.6	0.2	1.00	971	12.65	1.637	9.13	22.8	30.1	0.102	35.27	5.5	60.7	0.02	5.69	11.9
STANDARD DST6	16.63	3.5	1.75	0.5	1.36	24.8	27.1	0.2	1.00	964	12.67	1.629	8.44	22.6	30.6	0.100	35.03	5.5	56.7	0.04	5.57	11.2
STANDARD DST6	16.41	3.5	1.77	0.5	1.38	22.3	25.0	0.2	1.00	966	12.61	1.637	8.44	21.8	30.4	0.100	35.24	5.2	58.7	0.02	5.47	11.8
STANDARD DST6	17.20	3.7	1.91	0.6	1.38	25.3	24.1	0.2	1.03	965	12.96	1.629	8.92	23.7	34.8	0.099	35.38	5.7	59.9	0.02	5.27	11.8
STANDARD DST6	17.16	3.7	1.85	0.6	1.36	25.1	28.0	0.3	0.99	966	12.64	1.629	8.90	23.0	30.6	0.099	35.22	5.6	60.6	0.02	5.44	12.1
STANDARD DST6	15.77	3.6	1.85	0.6	1.39	24.1	26.0	0.3	0.99	965	12.36	1.629	8.94	23.0	29.4	0.096	35.29	5.4	54.2	0.02	5.35	11.0
STANDARD DST6	17.22	3.7	1.97	0.6	1.35	24.9	26.9	0.2	0.99	963	12.65	1.626	9.50	22.9	29.9	0.096	35.58	5.5	60.4	0.02	5.46	11.0
STANDARD DST6	16.35	3.6	1.92	0.5	1.36	25.2	26.2	0.2	0.99	963	12.67	1.630	8.74	23.4	29.9	0.099	34.86	5.6	57.9	0.02	5.49	11.1
STANDARD DST6	17.13	3.7	1.69	0.6	1.39	26.0	27.2	0.2	1.00	967	12.55	1.632	8.39	23.2	32.3	0.098	36.00	5.6	60.0	0.02	5.38	11.1
STANDARD DST6	16.31	3.6	1.91	0.6	1.39	26.0	26.9	0.2	1.00	966	12.84	1.630	8.35	23.1	30.9	0.098	36.07	5.5	59.7	0.02	5.40	11.4
STANDARD DST6	17.06	3.6	1.73	0.5	1.39	25.8	26.3	0.2	1.00	964	12.68	1.629	8.33	23.0	30.4	0.092	37.72	5.6	58.9	0.02	5.47	11.5
STANDARD DST6	17.54	3.7	2.02	0.6	1.38	25.3	24.8	0.2	1.01	959	12.36	1.635	9.22	23.2	30.0	0.099	35.32	5.6	58.3	0.05	5.54	12.0
STANDARD DST6	16.51	3.5	1.78	0.5	1.36	25.5	24.3	0.2	1.02	963	12.61	1.648	8.35	22.4	30.0	0.098	35.68	5.5	59.5	0.04	5.51	11.0
STANDARD DST6	16.89	3.6	1.68	0.5	1.37	25.1	24.9	0.2	1.01	961	12.47	1.635	9.18	21.9	29.7	0.099	35.32	5.5	53.5	0.05	5.56	11.6
STANDARD DST6	15.98	3.6	1.63	0.5	1.36	25.1	23.5	0.2	1.01	962	12.46	1.641	8.56	21.7	29.9	0.099	35.87	5.5	58.7	0.05	5.48	11.3
Min	**15.77**	**3.5**	**1.63**	**0.5**	**1.35**	**22.3**	**23.5**	**0.2**	**0.99**	**959**	**12.36**	**1.626**	**8.33**	**21.7**	**29.4**	**0.092**	**34.86**	**5.2**	**53.5**	**0.0200**	**5.27**	**11.0**
Ave	16.77	3.6	1.83	0.5	1.37	25.0	25.9	0.2	1.00	964	12.61	1.633	8.76	22.8	30.6	0.098	35.59	5.5	58.5	0.0287	5.47	11.5
RSD	3%	2%	6%	9%	1%	4%	5%	16%	1%	0%	1%	0%	4%	3%	4%	2%	2%	2%	4%	45%	2%	3%
Max	**17.54**	**3.7**	**2.02**	**0.6**	**1.39**	**26.0**	**28.0**	**0.3**	**1.03**	**971**	**12.96**	**1.648**	**9.50**	**23.7**	**34.8**	**0.102**	**37.72**	**5.7**	**60.7**	**0.0500**	**5.69**	**12.1**
Official Value	16.10	3.6	1.80	0.5	1.42	25.7	25.4	0.2	1.03	980	12.70	1.673	8.11	23.0	30.4	0.099	36.70	5.4	61.2	<0.04	5.39	10.1
Target Range-Min	**14.49**	**3.2**	**1.62**	**0.5**	**1.28**	**23.1**	**22.9**	**0.2**	**0.93**	**882**	**11.43**	**1.506**	**7.30**	**20.7**	**27.4**	**0.089**	**33.03**	**4.9**	**55.1**	**<0.04**	**4.85**	**9.1**
Target Range-Max	**17.71**	**4.0**	**1.98**	**0.6**	**1.56**	**28.3**	**27.9**	**0.2**	**1.13**	**1078**	**13.97**	**1.840**	**8.92**	**25.3**	**33.4**	**0.109**	**40.37**	**5.9**	**67.3**	**<0.04**	**5.93**	**11.1**
Replicates > TR Min?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	Yes	Yes
Replicates < TR Max?	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	N/A	Yes	No
Ave WRT Official Value	4%	0%	1%	9%	-3%	-3%	2%	7%	-3%	-2%	-1%	-2%	8%	-1%	1%	-1%	-3%	2%	-4%	N/A	2%	13%

Note: Values <LLD have b

SAMPLE	Sm	Sn	Sr	Ta	Tb	Th	Ti	Tm	U	V	W	Y	Yb	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
STANDARD DST6	4.4	6.5	322	0.8	0.5	7.1	0.441	0.2	7.7	112	7.8	15.2	1.6	176.7	60.7
STANDARD DST6	4.4	6.4	321	0.6	0.5	7.1	0.439	0.2	7.6	112	7.5	15.1	1.5	176.0	57.1
STANDARD DST6	4.1	6.4	318	0.7	0.4	6.9	0.440	0.2	7.5	112	7.7	14.4	1.5	176.5	54.7
STANDARD DST6	4.6	6.3	320	0.8	0.5	6.9	0.439	0.3	7.4	111	7.6	15.6	1.6	177.4	56.1
STANDARD DST6	4.4	6.4	323	0.9	0.5	7.1	0.404	0.2	7.5	110	7.6	15.4	1.6	171.7	57.3
STANDARD DST6	4.4	6.4	310	0.9	0.5	7.0	0.439	0.2	7.6	112	7.6	14.9	1.5	176.1	56.4
STANDARD DST6	4.5	6.4	313	0.8	0.5	7.1	0.439	0.2	7.6	111	8.0	15.0	1.4	174.7	60.1
STANDARD DST6	4.6	6.5	317	0.8	0.6	7.1	0.440	0.3	7.6	109	7.7	15.2	1.7	171.5	56.4
STANDARD DST6	4.4	6.1	309	0.7	0.5	7.2	0.401	0.2	8.3	112	7.6	15.2	1.5	171.6	59.7
STANDARD DST6	3.8	6.2	314	0.8	0.5	7.1	0.397	0.2	7.6	112	7.7	15.6	1.5	172.8	59.0
STANDARD DST6	4.5	6.1	304	0.7	0.5	7.1	0.439	0.2	7.8	112	7.7	15.1	1.5	170.8	55.8
STANDARD DST6	4.3	6.5	312	0.8	0.5	7.0	0.409	0.2	7.5	111	7.8	15.3	1.6	176.2	58.8
STANDARD DST6	4.4	6.3	310	0.7	0.5	7.0	0.428	0.2	7.6	109	7.7	15.4	1.5	175.2	57.7
STANDARD DST6	4.0	6.5	314	0.7	0.5	6.9	0.390	0.2	7.4	110	7.5	15.1	1.5	175.0	54.8
STANDARD DST6	4.0	6.5	308	0.6	0.5	7.0	0.410	0.2	7.6	109	7.4	15.1	1.5	176.4	56.4
Min	**3.8**	**6.1**	**304**	**0.6**	**0.4**	**6.9**	**0.390**	**0.2**	**7.4**	**109**	**7.4**	**14.4**	**1.4**	**170.8**	**54.7**
Ave	4.3	6.4	314	0.8	0.5	7.0	0.424	0.2	7.6	111	7.7	15.2	1.5	174.6	57.4
RSD	5%	2%	2%	12%	8%	1%	5%	16%	3%	1%	2%	2%	5%	1%	3%
Max	**4.6**	**6.5**	**323**	**0.9**	**0.6**	**7.2**	**0.441**	**0.3**	**8.3**	**112**	**8.0**	**15.6**	**1.7**	**177.4**	**60.7**
Official Value	4.5	6.3	298	0.6	0.5	6.9	0.387	0.2	7.8	115	7.4	15.2	1.6	176.0	50.1
Target Range-Min	**4.1**	**5.7**	**268**	**0.5**	**0.5**	**6.2**	**0.348**	**0.2**	**7.0**	**104**	**6.7**	**13.7**	**1.4**	**158.4**	**45.1**
Target Range-Max	**5.0**	**6.9**	**328**	**0.7**	**0.6**	**7.6**	**0.426**	**0.2**	**8.6**	**127**	**8.1**	**16.7**	**1.8**	**193.6**	**55.1**
Replicates > TR Min?	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Replicates < TR Max?	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Ave WRT Official Value	-4%	1%	5%	26%	0%	2%	9%	7%	-2%	-4%	4%	0%	-4%	-1%	15%

Note: Values <LLD have b

A4.3 Gold GA-AAS data (ALS Chemex Laboratory)

A4.3.1 Blind replicates

Appendix 4.3.1

SAMPLE	SAMPLEID	Au mg/kg
2005861005001<180um	2005861005001<180um	0.0001
2005861005001<180um_replicate	2005861020001<180um	0.0001
Ave		0.0001
RSD		0%
2005861005002<75um	2005861005002<75um	0.0002
2005861005002<75um_replicate	2005861020002<75um	0.0002
Ave		0.0002
RSD		0%
2005861010001<75um	2005861010001<75um	0.0003
2005861010001<75um_replicate	2005861021001<75um	0.0021
Ave		0.0012
RSD		106%
2005861010002<180um	2005861010002<180um	0.0007
2005861010002<180um_replicate	2005861021002<180um	0.0005
Ave		0.0006
RSD		24%
2005861015001<180um	2005861015001<180um	0.0002
2005861015001<180um_replicate	2005861022001<180um	0.0001
Ave		0.00015
RSD		47%
2005861015002<75um	2005861015002<75um	0.0008
2005861015002<75um_replicate	2005861022002<75um	0.0007
Ave		0.00075
RSD		9%
2005861019001<75um	2005861019001<75um	0.0008
2005861019001<75um_replicate	2005861023001<75um	0.00005
Ave		0.000425
RSD		125%
2005861019002<180um	2005861019002<180um	0.0001
2005861019002<180um_replicate	2005861023002<180um	0.0001
Ave		0.0001
RSD		0%
2006861105001<180um	2006861105001<180um	0.0003
2006861105001<180um_replicate	2006861158001<180um	0.0002
Ave		0.00025
RSD		28%
2006861105001<75um	2006861105001<75um	0.0002
2006861105001<75um_replicate	2006861158001<75um	0.0002
Ave		0.0002
RSD		0%
2006861105002<180um	2006861105002<180um	0.0007
2006861105002<180um_replicate	2006861158002<180um	0.0006
Ave		0.00065
RSD		11%
2006861105002<75um	2006861105002<75um	0.0008
2006861105002<75um_replicate	2006861158002<75um	0.0007
Ave		0.00075
RSD		9%
2006861115001<180um	2006861115001<180um	0.00005
2006861115001<180um_replicate	2006861159001<180um	0.00005
Ave		0.00005
RSD		0%
2006861115001<75um	2006861115001<75um	0.0002
2006861115001<75um_replicate	2006861159001<75um	0.0001

SAMPLE	SAMPLEID	Au mg/kg
Ave		0.00015
RSD		47%
2006861115002<180um	2006861115002<180um	0.0002
2006861115002<180um_replicate	2006861159002<180um	0.0002
Ave		0.0002
RSD		0%
2006861115002<75um	2006861115002<75um	0.0003
2006861115002<75um_replicate	2006861159002<75um	0.0003
Ave		0.0003
RSD		0%
2006861125001<180um	2006861125001<180um	0.00005
2006861125001<180um_replicate	2006861160001<180um	0.00005
Ave		0.00005
RSD		0%
2006861125001<75um	2006861125001<75um	0.00005
2006861125001<75um_replicate	2006861160001<75um	0.00005
Ave		0.00005
RSD		0%
2006861125002<180um	2006861125002<180um	0.0001
2006861125002<180um_replicate	2006861160002<180um	0.00005
Ave		0.000075
RSD		47%
2006861125002<75um	2006861125002<75um	0.00005
2006861125002<75um_replicate	2006861160002<75um	0.0001
Ave		0.000075
RSD		47%
2006861135001<180um	2006861135001<180um	0.00005
2006861135001<180um_replicate	2006861161001<180um	0.0001
Ave		0.000075
RSD		47%
2006861135001<75um	2006861135001<75um	0.0001
2006861135001<75um_replicate	2006861161001<75um	0.0004
Ave		0.00025
RSD		85%
2006861135002<180um	2006861135002<180um	0.0003
2006861135002<180um_replicate	2006861161002<180um	0.0005
Ave		0.0004
RSD		35%
2006861135002<75um	2006861135002<75um	0.001
2006861135002<75um_replicate	2006861161002<75um	0.0015
Ave		0.00125
RSD		28%
2006861145001<180um	2006861145001<180um	0.0002
2006861145001<180um_replicate	2006861162001<180um	0.0003
Ave		0.00025
RSD		28%
2006861145001<75um	2006861145001<75um	0.0002
2006861145001<75um_replicate	2006861162001<75um	0.0003
Ave		0.00025
RSD		28%
2006861145002<180um	2006861145002<180um	0.0004
2006861145002<180um_replicate	2006861162002<180um	0.0005
Ave		0.00045
RSD		16%

Appendix 4.3.1

SAMPLE	SAMPLEID	Au mg/kg
2006861145002<75um	2006861145002<75um	0.0008
2006861145002<75um_replicate	2006861162002<75um	0.0008
Ave		0.0008
RSD		0%
2006861155001<180um	2006861155001<180um	0.0002
2006861155001<180um_replicate	2006861163001<180um	0.0002
Ave		0.0002
RSD		0%
2006861155001<75um	2006861155001<75um	0.0003
2006861155001<75um_replicate	2006861163001<75um	0.0004
Ave		0.00035
RSD		20%
2006861155002<180um	2006861155002<180um	0.0012
2006861155002<180um_replicate	2006861163002<180um	0.0052
Ave		0.0032
RSD		88%
2006861156002<180um	2006861156002<180um	0.0004
2006861156002<180um_replicate	2006861164002<180um	0.0018
Ave		0.0011
RSD		90%
2006861156002<75um	2006861156002<75um	0.0004
2006861156002<75um_replicate	2006861164002<75um	0.002
Ave		0.0012
RSD		94%
2006861202001<75um	2006861202001<75um	0.0001
2006861202001<75um_replicate	2006861224001<75um	0.0002
Ave		0.00015
RSD		47%
2006861202001<180um	2006861202001<180um	0.0004
2006861202001<180um_replicate	2006861224001<180um	0.0001
Ave		0.00025
RSD		85%
2006861202002<75um	2006861202002<75um	0.0006
2006861202002<75um_replicate	2006861224002<75um	0.0006
Ave		0.0006
RSD		0%
2006861202002<180um	2006861202002<180um	0.0007
2006861202002<180um_replicate	2006861224002<180um	0.0005
Ave		0.0006
RSD		24%
2006861212001<75um	2006861212001<75um	0.0003
2006861212001<75um_replicate	2006861225001<75um	0.0002
Ave		0.00025
RSD		28%
2006861212001<180um	2006861212001<180um	0.0003
2006861212001<180um_replicate	2006861225001<180um	0.0002
Ave		0.00025
RSD		28%
2006861212002<75um	2006861212002<75um	0.0006
2006861212002<75um_replicate	2006861225002<75um	0.0005
Ave		0.00055
RSD		13%
2006861212002<180um	2006861212002<180um	0.0004
2006861212002<180um_replicate	2006861225002<180um	0.0002

SAMPLE	SAMPLEID	Au mg/kg
Ave		0.0003
RSD		47%
2006861222001<75um	2006861222001<75um	0.0002
2006861222001<75um_replicate	2006861226001<75um	0.0002
Ave		0.0002
RSD		0%
2006861222001<180um	2006861222001<180um	0.0001
2006861222001<180um_replicate	2006861226001<180um	0.0001
Ave		0.0001
RSD		0%
2006861222002<75um	2006861222002<75um	0.0002
2006861222002<75um_replicate	2006861226002<75um	0.0002
Ave		0.0002
RSD		0%
2006861222002<180um	2006861222002<180um	0.0001
2006861222002<180um_replicate	2006861226002<180um	0.0001
Ave		0.0001
RSD		0%
Min RSD		**0%**
Ave RSD		**30%**
Max RSD		**125%**

Note: Values <LLD have been halved (= 0.5 LLD)

A4.3.2 Lab replicates

SAMPLE	SAMPLEID	Au mg/kg
2005861008002<180um	2005861008002<180um	0.0005
DUP	2005861008002<180um	0.0003
Ave		0.0004
RSD		35%
2005861012001<75um	2005861012001<75um	0.0001
DUP	2005861012001<75um	0.0001
Ave		0.0001
RSD		0%
2005861017001<75um	2005861017001<75um	0.0001
DUP	2005861017001<75um	0.0002
Ave		0.00015
RSD		47%
2005861022001<180um	2005861022001<180um	0.0001
DUP	2005861022001<180um	0.00005
Ave		0.000075
RSD		47%
2006861103001<75um	2006861103001<75um	0.0001
DUP	2006861103001<75um	0.00005
Ave		0.000075
RSD		47%
2006861108001<75um	2006861108001<75um	0.00005
DUP	2006861108001<75um	0.00005
Ave		0.00005
RSD		0%
2006861112001<180um	2006861112001<180um	0.0001
DUP	2006861112001<180um	0.0002
Ave		0.00015
RSD		47%
2006861117001<180um	2006861117001<180um	0.00005
DUP	2006861117001<180um	0.0001
Ave		0.000075
RSD		47%
2006861120002<75um	2006861120002<75um	0.0003
DUP	2006861120002<75um	0.0001
Ave		0.0002
RSD		71%
2006861125002<75um	2006861125002<75um	0.00005
DUP	2006861125002<75um	0.00005
Ave		0.00005
RSD		0%
2006861129002<180um	2006861129002<180um	0.0001
DUP	2006861129002<180um	0.0001
Ave		0.0001
RSD		0%
2006861134002<180um	2006861134002<180um	0.0003
DUP	2006861134002<180um	0.0004
Ave		0.00035
RSD		20%
2006861138001<75um	2006861138001<75um	0.0002
DUP	2006861138001<75um	0.0001
Ave		0.00015
RSD		47%
2006861143001<75um	2006861143001<75um	0.0003

SAMPLE	SAMPLEID	Au mg/kg
DUP	2006861143001<75um	0.0001
Ave		0.0002
RSD		71%
2006861147001<180um	2006861147001<180um	0.0001
DUP	2006861147001<180um	0.0001
Ave		0.0001
RSD		0%
2006861152001<180um	2006861152001<180um	0.0002
DUP	2006861152001<180um	0.0002
Ave		0.0002
RSD		0%
2006861155002<75um	2006861155002<75um	0.0008
DUP	2006861155002<75um	0.0004
Ave		0.0006
RSD		47%
2006861160002<75um	2006861160002<75um	0.0001
DUP	2006861160002<75um	0.00005
Ave		0.000075
RSD		47%
2006861204001<75um	2006861204001<75um	0.0003
DUP	2006861204001<75um	0.0003
Ave		0.0003
RSD		0%
2006861205002<180um	2006861205002<180um	0.0004
DUP	2006861205002<180um	0.0003
Ave		0.00035
RSD		20%
2006861211002<75um	2006861211002<75um	0.0008
DUP	2006861211002<75um	0.0006
Ave		0.0007
RSD		20%
2006861220001<75um	2006861220001<75um	0.0002
DUP	2006861220001<75um	0.0002
Ave		0.0002
RSD		0%
2006861221002<180um	2006861221002<180um	0.0001
DUP	2006861221002<180um	0.0001
Ave		0.0001
RSD		0%
2006861226001<75um	2006861226001<75um	0.0002
DUP	2006861226001<75um	0.0001
Ave		0.00015
RSD		47%
Min RSD		**0%**
Ave RSD		**28%**
Max RSD		**71%**

Note: Values <LLD have been halved (= 0.5 LLD)

A4.3.3 Blind standards

SAMPLE	SAMPLEID	Au mg/kg
CH	2006861165002<180um	85.5
Target Value		70.6
Reported value WRT Target Value		+21%
CORO1	2006861165002<75um	6.25
Target Value		3.55
Reported value WRT Target Value		+76%

Note: Au determination in these samples was done using a different method (Au-OG43) because the standard method used on the samples (Au-ST43) has an ULD of 0.1 ppm

Note: Au Target Values for CH and CORO1 standards are the median values of numerous repeat analyses

A4.3.4 Lab standards

SAMPLE	SAMPLEID	Au ppm	SAMPLE	SAMPLEID	Au ppm
LIQSTD24-BR06000620	LIQSTD24	0.0385			
LIQSTD24-BR06000620	LIQSTD24	0.0438			
LIQSTD24-BR06000620	LIQSTD24	0.0419			
LIQSTD24-BR06000620	LIQSTD24	0.0430			
LIQSTD24-BR06075306	LIQSTD24	0.0417			
LIQSTD24-BR06075306	LIQSTD24	0.0398			
LIQSTD24-BR06075306	LIQSTD24	0.0407			
LIQSTD24-BR06075306	LIQSTD24	0.0396			
LIQSTD24-BR06075306	LIQSTD24	0.0391			
LIQSTD24-BR06075306	LIQSTD24	0.0409			
LIQSTD24-BR06075306	LIQSTD24	0.0417			
LIQSTD24-BR06075306	LIQSTD24	0.0415			
LIQSTD24-BR07000182	LIQSTD24	0.0390			
LIQSTD24-BR07000182	LIQSTD24	0.0402			
LIQSTD24-BR07000182	LIQSTD24	0.0412			
LIQSTD24-BR07000182	LIQSTD24	0.0425			
Min		**0.0385**			
Ave		0.0409			
RSD		4%			
Max		**0.0438**			
Target Value		0.0400			
Target Range-Min		**0.0349**			
Target Range-Max		**0.0451**			
Replicates > TR Min?		Yes			
Replicates < TR Max?		Yes			
Ave WRT Target Value		+2%			

ST252-BR06000620	ST252	0.0606	ST252-BR06075306	ST252	0.0549
ST252-BR06000620	ST252	0.0520	ST252-BR06075306	ST252	0.0463
Min		**0.0520**	ST252-BR06075306	ST252	0.0500
Ave		0.0563	ST252-BR06075306	ST252	0.0519
RSD		11%	ST252-BR07000182	ST252	0.0616
Max		**0.0606**	ST252-BR07000182	ST252	0.0558
Target Value		0.0590	**Min**		**0.0463**
Target Range-Min		**0.0515**	Ave		0.0534
Target Range-Max		**0.0665**	RSD		10%
Replicates > TR Min?		Yes	**Max**		**0.0616**
Replicates < TR Max?		Yes	Target Value		0.0525
Ave WRT Target Value		-5%	**Target Range-Min**		**0.0458**
			Target Range-Max		**0.0592**
			Replicates > TR Min?		Yes
			Replicates < TR Max?		No
			Ave WRT Target Value		+2%

SAMPLE	SAMPLEID	Au ppm
ST299-BR06000620	ST299	0.0071
ST299-BR06000620	ST299	0.0082
Min		**0.0071**
Ave		0.0077
RSD		10%
Max		**0.0082**
Target Value		0.0065
Target Range-Min		**0.0056**
Target Range-Max		**0.0074**
Replicates > TR Min?		Yes
Replicates < TR Max?		No
Ave WRT Target Value		+18%

SAMPLE	SAMPLEID	Au ppm
ST299-BR06075306	ST299	0.0070
ST299-BR06075306	ST299	0.0069
ST299-BR06075306	ST299	0.0069
ST299-BR06075306	ST299	0.0069
ST299-BR06075306	ST299	0.0076
Min		**0.0069**
Ave		0.0071
RSD		4%
Max		**0.0076**
Target Value		0.0074
Target Range-Min		**0.0064**
Target Range-Max		**0.0084**
Replicates > TR Min?		Yes
Replicates < TR Max?		Yes
Ave WRT Target Value		-5%

OXA45-BR07000182	OXA45	0.0814
OXA45-BR07000182	OXA45	0.0826
Min		**0.0814**
Ave		0.0820
RSD		1%
Max		**0.0826**
Target Value		0.0811
Target Range-Min		**0.0709**
Target Range-Max		**0.0913**
Replicates > TR Min?		Yes
Replicates < TR Max?		Yes
Ave WRT Target Value		+1%

Note: Target Value calculated as average of TR Min and TR Max

A4.4 Fluoride ISE data (ALS Chemex Laboratory)

A4.4.1 Blind replicates

Appendix 4.4.1

SAMPLE	SAMPLEID	F mg/kg
2005861005001<180um	2005861005001<180um	210
2005861005001<180um_replicate	2005861020001<180um	210
Ave		210
RSD		0%
2005861015002<75um	2005861015002<75um	330
2005861015002<75um_replicate	2005861022002<75um	340
Ave		335
RSD		2%
2006861105001<180um	2006861105001<180um	250
2006861105001<180um_replicate	2006861158001<180um	210
Ave		230
RSD		12%
2006861105001<75um	2006861105001<75um	270
2006861105001<75um_replicate	2006861158001<75um	230
Ave		250
RSD		11%
2006861105002<180um	2006861105002<180um	280
2006861105002<180um_replicate	2006861158002<180um	250
Ave		265
RSD		8%
2006861105002<75um	2006861105002<75um	280
2006861105002<75um_replicate	2006861158002<75um	270
Ave		275
RSD		3%
2006861115001<180um	2006861115001<180um	160
2006861115001<180um_replicate	2006861159001<180um	160
Ave		160
RSD		0%
2006861115001<75um	2006861115001<75um	180
2006861115001<75um_replicate	2006861159001<75um	160
Ave		170
RSD		8%
2006861115002<180um	2006861115002<180um	140
2006861115002<180um_replicate	2006861159002<180um	160
Ave		150
RSD		9%
2006861115002<75um	2006861115002<75um	230
2006861115002<75um_replicate	2006861159002<75um	210
Ave		220
RSD		6%
2006861125001<180um	2006861125001<180um	220
2006861125001<180um_replicate	2006861160001<180um	170
Ave		195
RSD		18%
2006861125001<75um	2006861125001<75um	240
2006861125001<75um_replicate	2006861160001<75um	140
Ave		190
RSD		37%
2006861125002<180um	2006861125002<180um	170
2006861125002<180um_replicate	2006861160002<180um	100
Ave		135
RSD		37%
2006861125002<75um	2006861125002<75um	230
2006861125002<75um_replicate	2006861160002<75um	160

Appendix 4.4.1

SAMPLE	SAMPLEID	F mg/kg
Ave		195
RSD		25%
2006861135001<180um	2006861135001<180um	170
2006861135001<180um_replicate	2006861161001<180um	150
Ave		160
RSD		9%
2006861135001<75um	2006861135001<75um	300
2006861135001<75um_replicate	2006861161001<75um	290
Ave		295
RSD		2%
2006861135002<180um	2006861135002<180um	260
2006861135002<180um_replicate	2006861161002<180um	280
Ave		270
RSD		5%
2006861135002<75um	2006861135002<75um	400
2006861135002<75um_replicate	2006861161002<75um	370
Ave		385
RSD		6%
2006861145001<180um	2006861145001<180um	320
2006861145001<180um_replicate	2006861162001<180um	260
Ave		290
RSD		15%
2006861145001<75um	2006861145001<75um	230
2006861145001<75um_replicate	2006861162001<75um	310
Ave		270
RSD		21%
2006861145002<180um	2006861145002<180um	220
2006861145002<180um_replicate	2006861162002<180um	270
Ave		245
RSD		14%
2006861145002<75um	2006861145002<75um	320
2006861145002<75um_replicate	2006861162002<75um	340
Ave		330
RSD		4%
2006861155001<180um	2006861155001<180um	260
2006861155001<180um_replicate	2006861163001<180um	320
Ave		290
RSD		15%
2006861155001<75um	2006861155001<75um	270
2006861155001<75um_replicate	2006861163001<75um	260
Ave		265
RSD		3%
2006861155002<180um	2006861155002<180um	170
2006861155002<180um_replicate	2006861163002<180um	320
Ave		245
RSD		43%
2006861156002<180um	2006861156002<180um	110
2006861156002<180um_replicate	2006861164002<180um	300
Ave		205
RSD		66%
2006861156002<75um	2006861156002<75um	660
2006861156002<75um_replicate	2006861164002<75um	260
Ave		460
RSD		61%

SAMPLE	SAMPLEID	F mg/kg
2006861202001<75um	2006861202001<75um	130
2006861202001<75um_replicate	2006861224001<75um	160
Ave		145
RSD		15%
2006861202001<180um	2006861202001<180um	170
2006861202001<180um_replicate	2006861224001<180um	180
Ave		175
RSD		4%
2006861202002<75um	2006861202002<75um	200
2006861202002<75um_replicate	2006861224002<75um	230
Ave		215
RSD		10%
2006861202002<180um	2006861202002<180um	280
2006861202002<180um_replicate	2006861224002<180um	210
Ave		245
RSD		20%
2006861212001<75um	2006861212001<75um	260
2006861212001<75um_replicate	2006861225001<75um	290
Ave		275
RSD		8%
2006861212001<180um	2006861212001<180um	370
2006861212001<180um_replicate	2006861225001<180um	220
Ave		295
RSD		36%
2006861212002<75um	2006861212002<75um	260
2006861212002<75um_replicate	2006861225002<75um	340
Ave		300
RSD		19%
2006861212002<180um	2006861212002<180um	390
2006861212002<180um_replicate	2006861225002<180um	270
Ave		330
RSD		26%
2006861222001<75um	2006861222001<75um	200
2006861222001<75um_replicate	2006861226001<75um	190
Ave		195
RSD		4%
2006861222001<180um	2006861222001<180um	180
2006861222001<180um_replicate	2006861226001<180um	140
Ave		160
RSD		18%
2006861222002<75um	2006861222002<75um	130
2006861222002<75um_replicate	2006861226002<75um	210
Ave		170
RSD		33%
2006861222002<180um	2006861222002<180um	260
2006861222002<180um_replicate	2006861226002<180um	90
Ave		175
RSD		69%
2006861150001<180um	2006861150001<180um	150
2006861150001<180um_replicate	2006861229001<180um	190
Ave		170
RSD		17%
2006861139001<75um	2006861139001<75um	210
2006861139001<75um_replicate	2006861229001<75um	170

SAMPLE	SAMPLEID	F
		mg/kg
Ave		190
RSD		15%
2006861143002<180um	2006861143002<180um	370
2006861143002<180um_replicate	2006861229002<180um	330
Ave		350
RSD		8%
2006861134002<75um	2006861134002<75um	500
2006861134002<75um_replicate	2006861229002<75um	350
Ave		425
RSD		25%
Min RSD		**0%**
Ave RSD		**18%**
Max RSD		**69%**

A4.4.2 Lab replicates

SAMPLE	SAMPLEID	F mg/kg
2005861005002<75um	2005861005002<75um	240
DUP	2005861005002<75um	230
Ave		235
RSD		3%
2005861013001<75um	2005861013001<75um	320
DUP	2005861013001<75um	330
Ave		325
RSD		2%
2005861022002<75um	2005861022002<75um	340
DUP	2005861022002<75um	350
Ave		345
RSD		2%
2006861103001<75um	2006861103001<75um	210
DUP	2006861103001<75um	210
Ave		210
RSD		0%
2006861105002<75um	2006861105002<75um	280
DUP	2006861105002<75um	290
Ave		285
RSD		2%
2006861108001<75um	2006861108001<75um	170
DUP	2006861108001<75um	180
Ave		175
RSD		4%
2006861113001<75um	2006861113001<75um	260
DUP	2006861113001<75um	280
Ave		270
RSD		5%
2006861115002<75um	2006861115002<75um	230
DUP	2006861115002<75um	230
Ave		230
RSD		0%
2006861118001<75um	2006861118001<75um	90
DUP	2006861118001<75um	100
Ave		95
RSD		7%
2006861123001<75um	2006861123001<75um	130
DUP	2006861123001<75um	140
Ave		135
RSD		5%
2006861125002<75um	2006861125002<75um	230
DUP	2006861125002<75um	220
Ave		225
RSD		3%
2006861128001<75um	2006861128001<75um	200
DUP	2006861128001<75um	210
Ave		205
RSD		3%
2006861130002<75um	2006861130002<75um	320
DUP	2006861130002<75um	290
Ave		305
RSD		7%
2006861131001<75um	2006861131001<75um	210

SAMPLE	SAMPLEID	F mg/kg
DUP	2006861131001<75um	200
Ave		205
RSD		3%
2006861133001<75um	2006861133001<75um	250
DUP	2006861133001<75um	250
Ave		250
RSD		0%
2006861135002<75um	2006861135002<75um	400
DUP	2006861135002<75um	370
Ave		385
RSD		6%
2006861140002<75um	2006861140002<75um	320
DUP	2006861140002<75um	350
Ave		335
RSD		6%
2006861143001<75um	2006861143001<75um	440
DUP	2006861143001<75um	430
Ave		435
RSD		2%
2006861145002<75um	2006861145002<75um	320
DUP	2006861145002<75um	330
Ave		325
RSD		2%
2006861150002<75um	2006861150002<75um	240
DUP	2006861150002<75um	250
Ave		245
RSD		3%
2006861153001<75um	2006861153001<75um	210
DUP	2006861153001<75um	200
Ave		205
RSD		3%
2006861155002<75um	2006861155002<75um	420
DUP	2006861155002<75um	400
Ave		410
RSD		3%
2006861158001<75um	2006861158001<75um	230
DUP	2006861158001<75um	240
Ave		235
RSD		3%
2006861160002<75um	2006861160002<75um	160
DUP	2006861160002<75um	170
Ave		165
RSD		4%
2006861163001<75um	2006861163001<75um	260
DUP	2006861163001<75um	250
Ave		255
RSD		3%
2006861165001<75um	2006861165001<75um	300
DUP	2006861165001<75um	280
Ave		290
RSD		5%
2006861202001<75um	2006861202001<75um	170
DUP	2006861202001<75um	170

SAMPLE	SAMPLEID	F mg/kg
Ave		170
RSD		0%
2006861204002<180um	2006861204002<180um	240
DUP	2006861204002<180um	240
Ave		240
RSD		0%
2006861207001<75um	2006861207001<75um	250
DUP	2006861207001<75um	270
Ave		260
RSD		5%
2006861212002<180um	2006861212002<180um	260
DUP	2006861212002<180um	240
Ave		250
RSD		6%
2006861216001<75um	2006861216001<75um	110
DUP	2006861216001<75um	120
Ave		115
RSD		6%
2006861220002<75um	2006861220002<75um	360
DUP	2006861220002<75um	340
Ave		350
RSD		4%
2006861224001<180um	2006861224001<180um	180
DUP	2006861224001<180um	170
Ave		175
RSD		4%
2006861224001<75um	2006861224001<75um	160
DUP	2006861224001<75um	150
Ave		155
RSD		5%
2006861229002<75um	2006861229002<75um	350
DUP	2006861229002<75um	330
Ave		340
RSD		4%
Min RSD		**0%**
Ave RSD		**4%**
Max RSD		**7%**

A4.4.3 Blind standards

SAMPLE	SAMPLEID	F mg/kg
GA25	2006861163002<75um	1250
Target Value		1622
Ave WRT Target Value		-23%
GSD6	2006861165001<180um	600
GSD6	2006861228002<180um	500
Min		**500**
Ave		550
RSD		13%
Max		**600**
Target Value		690
Target Range-Min	Target Value - 10%	**621**
Target Range-Max	Target Value + 10%	**759**
Replicates > TR Min?		No
Replicates < TR Max?		Max < TR Min
Ave WRT Target Value		-20%
GSD8	2006861165001<75um	300
GSD8	2006861228002<75um	210
Min		**210**
Ave		255
RSD		25%
Max		**300**
Target Value		204
Target Range-Min	Target Value - 10%	**184**
Target Range-Max	Target Value + 10%	**224**
Replicates > TR Min?		Yes
Replicates < TR Max?		No
Ave WRT Target Value		+25%

A4.5 Selenium ICP-MS data (CSIRO Laboratory)

A4.5.1 Blind replicates

Appendix 4.5.1

SAMPLE	SAMPLEID	Se mg/kg
2005861010001<75um	2005861010001<75um	0.087
2005861010001<75um_replicate	2005861021001<75um	0.090
Ave		0.089
RSD		3%
2005861010002<180um	2005861010002<180um	0.111
2005861010002<180um_replicate	2005861021002<180um	0.103
Ave		0.107
RSD		6%
2005861019001<75um	2005861019001<75um	0.195
2005861019001<75um_replicate	2005861023001<75um	0.216
Ave		0.206
RSD		7%
2005861019002<180um	2005861019002<180um	0.141
2005861019002<180um_replicate	2005861023002<180um	0.129
Ave		0.135
RSD		6%
2006861105001<180um	2006861105001<180um	0.144
2006861105001<180um_replicate	2006861158001<180um	0.111
Ave		0.128
RSD		18%
2006861105001<75um	2006861105001<75um	0.149
2006861105001<75um_replicate	2006861158001<75um	0.166
Ave		0.157
RSD		8%
2006861105002<180um	2006861105002<180um	0.158
2006861105002<180um_replicate	2006861158002<180um	0.140
Ave		0.149
RSD		8%
2006861105002<75um	2006861105002<75um	0.156
2006861105002<75um_replicate	2006861158002<75um	0.135
Ave		0.145
RSD		10%
2006861115001<180um	2006861115001<180um	0.149
2006861115001<180um_replicate	2006861159001<180um	0.140
Ave		0.144
RSD		5%
2006861115001<75um	2006861115001<75um	0.194
2006861115001<75um_replicate	2006861159001<75um	0.164
Ave		0.179
RSD		12%
2006861115002<180um	2006861115002<180um	0.139
2006861115002<180um_replicate	2006861159002<180um	0.117
Ave		0.128
RSD		12%
2006861115002<75um	2006861115002<75um	0.172
2006861115002<75um_replicate	2006861159002<75um	0.158
Ave		0.165
RSD		6%
2006861125001<180um	2006861125001<180um	0.306
2006861125001<180um_replicate	2006861160001<180um	0.309
Ave		0.307
RSD		1%
2006861125001<75um	2006861125001<75um	0.337
2006861125001<75um_replicate	2006861160001<75um	0.371

SAMPLE	SAMPLEID	Se mg/kg
Ave		0.354
RSD		7%
2006861125002<180um	2006861125002<180um	0.386
2006861125002<180um_replicate	2006861160002<180um	0.388
Ave		0.387
RSD		0%
2006861125002<75um	2006861125002<75um	0.479
2006861125002<75um_replicate	2006861160002<75um	0.452
Ave		0.465
RSD		4%
2006861135001<180um	2006861135001<180um	0.119
2006861135001<180um_replicate	2006861161001<180um	0.105
Ave		0.112
RSD		9%
2006861135001<75um	2006861135001<75um	0.182
2006861135001<75um_replicate	2006861161001<75um	0.179
Ave		0.181
RSD		1%
2006861135002<180um	2006861135002<180um	0.317
2006861135002<180um_replicate	2006861161002<180um	0.292
Ave		0.304
RSD		6%
2006861135002<75um	2006861135002<75um	0.423
2006861135002<75um_replicate	2006861161002<75um	0.439
Ave		0.431
RSD		3%
2006861145001<180um	2006861145001<180um	0.144
2006861145001<180um_replicate	2006861162001<180um	0.117
Ave		0.131
RSD		15%
2006861145001<75um	2006861145001<75um	0.177
2006861145001<75um_replicate	2006861162001<75um	0.132
Ave		0.154
RSD		20%
2006861145002<180um	2006861145002<180um	0.234
2006861145002<180um_replicate	2006861162002<180um	0.252
Ave		0.243
RSD		5%
2006861145002<75um	2006861145002<75um	0.259
2006861145002<75um_replicate	2006861162002<75um	0.247
Ave		0.253
RSD		3%
2006861155001<180um	2006861155001<180um	0.170
2006861155001<180um_replicate	2006861163001<180um	0.174
Ave		0.172
RSD		2%
2006861155001<75um	2006861155001<75um	0.180
2006861155001<75um_replicate	2006861163001<75um	0.165
Ave		0.172
RSD		6%
2006861155002<180um	2006861155002<180um	0.182
2006861155002<180um_replicate	2006861163002<180um	0.178
Ave		0.180
RSD		2%

Appendix 4.5.1

SAMPLE	SAMPLEID	Se mg/kg
2006861156002<180um	2006861156002<180um	0.177
2006861156002<180um_replicate	2006861164002<180um	0.161
Ave		0.169
RSD		6%
2006861156002<75um	2006861156002<75um	0.186
2006861156002<75um_replicate	2006861164002<75um	0.168
Ave		0.177
RSD		7%
2006861202001<75um	2006861202001<75um	0.138
2006861202001<75um_replicate	2006861224001<75um	0.139
Ave		0.138
RSD		0%
2006861202001<180um	2006861202001<180um	0.109
2006861202001<180um_replicate	2006861224001<180um	0.141
Ave		0.125
RSD		19%
2006861202002<75um	2006861202002<75um	0.230
2006861202002<75um_replicate	2006861224002<75um	0.114
Ave		0.172
RSD		47%
2006861202002<180um	2006861202002<180um	0.105
2006861202002<180um_replicate	2006861224002<180um	0.137
Ave		0.121
RSD		19%
2006861212001<75um	2006861212001<75um	0.204
2006861212001<75um_replicate	2006861225001<75um	0.160
Ave		0.182
RSD		17%
2006861212001<180um	2006861212001<180um	0.170
2006861212001<180um_replicate	2006861225001<180um	0.188
Ave		0.179
RSD		7%
2006861212002<75um	2006861212002<75um	0.175
2006861212002<75um_replicate	2006861225002<75um	0.160
Ave		0.168
RSD		6%
2006861212002<180um	2006861212002<180um	0.164
2006861212002<180um_replicate	2006861225002<180um	0.267
Ave		0.215
RSD		34%
2006861222001<75um	2006861222001<75um	0.163
2006861222001<75um_replicate	2006861226001<75um	0.152
Ave		0.158
RSD		5%
2006861222001<180um	2006861222001<180um	0.171
2006861222001<180um_replicate	2006861226001<180um	0.178
Ave		0.175
RSD		3%
2006861222002<75um	2006861222002<75um	0.153
2006861222002<75um_replicate	2006861226002<75um	0.162
Ave		0.157
RSD		4%
2006861222002<180um	2006861222002<180um	0.228
2006861222002<180um_replicate	2006861226002<180um	0.141

Appendix 4.5.1

SAMPLE	SAMPLEID	Se mg/kg
Ave		0.185
RSD		33%
2006861150001<180um	2006861150001<180um	0.189
2006861150001<180um_replicate	2006861229001<180um	0.197
Ave		0.193
RSD		3%
2006861139001<75um	2006861139001<75um	0.178
2006861139001<75um_replicate	2006861229001<75um	0.161
Ave		0.169
RSD		7%
2006861143002<180um	2006861143002<180um	0.229
2006861143002<180um_replicate	2006861229002<180um	0.180
Ave		0.204
RSD		17%
2006861134002<75um	2006861134002<75um	0.635
2006861134002<75um_replicate	2006861229002<75um	0.503
Ave		0.569
RSD		16%
Min RSD		**0%**
Ave RSD		**10%**
Max RSD		**47%**

A4.5.2 Blind standards

SAMPLE	SAMPLEID	Se mg/kg
GSD3	C3	1.011
GSD3	D3	1.010
GSD3	2006861166001<180um	1.127
Min		**1.010**
Ave		1.049
RSD		6%
Max		**1.127**
Target Value		1.060
Target Range-Min	Target Value - 10%	**0.954**
Target Range-Max	Target Value + 10%	**1.166**
Replicates > TR Min?		Yes
Replicates < TR Max?		Yes
Ave WRT Target Value		-1%
GSD6	A2	0.349
GSD6	B2	0.333
Min		**0.333**
Ave		0.341
RSD		3%
Max		**0.349**
Target Value		0.300
Target Range-Min	Target Value - 10%	**0.270**
Target Range-Max	Target Value + 10%	**0.330**
Replicates > TR Min?		Min > TR Max
Replicates < TR Max?		No
Ave WRT Target Value		+14%
GSD2	2006861166001<75um	0.355
Target Value		0.210
Reported value WRT Target Value		+69%
GSD8	2006861167001<75um	0.154
Target Value		0.150
Reported value WRT Target Value		+3%
GSD5	2006861228001<180um	0.384
Target Value		0.360
Reported value WRT Target Value		+7%
GSD1	2006861228001<75um	0.236
Target Value		0.110
Reported value WRT Target Value		+114%

A4.6 Multi-element MMI® ICP-MS data (ALS Chemex Laboratory)

A4.6.1 Blind replicates

SAMPLE	SAMPLEID	Ag mg/kg	As mg/kg	Au mg/kg	Ba mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Ce mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Er mg/kg	Fe mg/kg	Gd mg/kg	La mg/kg	Li mg/kg	Mg mg/kg	Mn mg/kg	Mo mg/kg	Nb mg/kg
2006861201005	2006861201005	0.044	0.007	0.0007	0.34	0.016	488	0.004	0.209	0.311	0.005	2.11	0.0868	0.05	0.1965	0.0495	0.008	2000	9.37	0.019	0.00005
2006861201005_replicate	2006861276005	0.0483	0.008	0.001	0.4	0.0015	404	0.004	0.124	0.257	0.006	0.8	0.0967	0.6	0.191	0.0334	0.0071	256	6.56	0.014	0.00005
Ave		0.04615	0.0075	0.00085	0.37	0.00875	446	0.004	0.1665	0.284	0.0055	1.455	0.09175	0.325	0.19375	0.04145	0.00755	1128	7.965	0.0165	0.00005
RSD		7%	9%	25%	11%	117%	13%	0%	36%	13%	13%	64%	8%	120%	2%	27%	8%	109%	25%	21%	0%
2006861202005	2006861202005	0.0032	0.016	0.0007	1.45	0.014	702	0.001	0.226	0.259	0.001	1.54	0.131	0.05	0.312	0.1125	0.0111	2000	7.89	0.013	0.00005
2006861202005_replicate	2006861270005	0.003	0.013	0.0007	1.11	0.0015	448	0.001	0.163	0.238	0.002	0.66	0.145	0.5	0.319	0.0883	0.0086	198	6.75	0.011	0.00005
Ave		0.0031	0.0145	0.0007	1.28	0.00775	575	0.001	0.1945	0.2485	0.0015	1.1	0.138	0.275	0.3155	0.1004	0.00985	1099	7.32	0.012	0.00005
RSD		5%	15%	0%	19%	114%	31%	0%	23%	6%	47%	57%	7%	116%	2%	17%	18%	116%	11%	12%	0%
2006861203005	2006861203005	0.0228	0.01	0.0009	5.87	0.01	2000	0.002	0.0385	0.335	0.006	2.8	0.0287	0.05	0.0508	0.0031	0.0067	2000	6.89	0.017	0.00005
2006861203005_replicate	2006861262005	0.0252	0.006	0.0009	5.85	0.0015	907	0.003	0.0327	0.293	0.011	1.33	0.0376	0.6	0.0598	0.0017	0.0059	287	6.06	0.015	0.00005
Ave		0.024	0.008	0.0009	5.86	0.00575	1453.5	0.0025	0.0356	0.314	0.0085	2.065	0.03315	0.325	0.0553	0.0024	0.0063	1143.5	6.475	0.016	0.00005
RSD		7%	35%	0%	0%	105%	53%	28%	12%	9%	42%	50%	19%	120%	12%	41%	9%	106%	9%	9%	0%
2006861204005	2006861204005	0.004	0.007	0.0005	0.35	0.007	350	0.003	0.788	0.121	0.015	1.39	0.123	4.9	0.364	0.273	0.006	135.5	6.57	0.007	0.0004
2006861204005_replicate	2006861283005	0.0023	0.002	0.0005	0.31	0.0015	203	0.002	0.409	0.0471	0.013	0.35	0.109	6.1	0.274	0.186	0.008	63.5	2.88	0.0025	0.0021
Ave		0.00315	0.0045	0.0005	0.33	0.00425	276.5	0.0025	0.5985	0.08405	0.014	0.87	0.116	5.5	0.319	0.2295	0.007	99.5	4.725	0.00475	0.00125
RSD		38%	79%	0%	9%	92%	38%	28%	45%	62%	10%	85%	9%	15%	20%	27%	20%	51%	55%	67%	96%
2006861205005	2006861205005	0.0029	0.003	0.0001	2.03	0.005	346	0.008	1.225	0.0315	0.056	1.45	0.0829	6.9	0.242	0.1875	0.0096	90.5	5.48	0.0025	0.0008
2006861205005_replicate	2006861281005	0.0025	0.005	0.0001	1.94	0.0015	209	0.007	0.389	0.0453	0.032	0.61	0.1105	12	0.187	0.0966	0.0159	49.6	5.18	0.0025	0.0027
Ave		0.0027	0.004	0.0001	1.985	0.00325	277.5	0.0075	0.807	0.0384	0.044	1.03	0.0967	9.45	0.2145	0.14205	0.01275	70.05	5.33	0.0025	0.00175
RSD		10%	35%	0%	3%	76%	35%	9%	73%	25%	39%	58%	20%	38%	18%	45%	35%	41%	4%	0%	77%
2006861206005	2006861206005	0.0046	0.015	0.0002	1.94	0.005	842	0.008	0.102	0.465	0.016	2.32	0.0369	1.8	0.0641	0.0152	0.0095	284	18	0.028	0.00005
2006861206005_replicate	2006861266005	0.0046	0.009	0.0003	2.22	0.0015	612	0.008	0.0521	0.439	0.011	0.87	0.0411	1.4	0.058	0.011	0.0079	189.5	14.55	0.024	0.00005
Ave		0.0046	0.012	0.00025	2.08	0.00325	727	0.008	0.07705	0.452	0.0135	1.595	0.039	1.6	0.06105	0.0131	0.0087	236.75	16.275	0.026	0.00005
RSD		0%	35%	28%	10%	76%	22%	0%	46%	4%	26%	64%	8%	18%	7%	23%	13%	28%	15%	11%	0%
2006861207005	2006861207005	0.0111	0.008	0.0005	4.98	0.004	2000	0.003	0.0278	0.284	0.0005	2.25	0.0118	0.05	0.0287	0.00005	0.009	263	3.88	0.005	0.00005
2006861207005_replicate	2006861257005	0.0095	0.005	0.0006	4.83	0.004	916	0.002	0.0147	0.252	0.003	1.03	0.0125	0.2	0.0289	0.00005	0.0071	194	3.57	0.006	0.00005
Ave		0.0103	0.0065	0.00055	4.905	0.004	1458	0.0025	0.02125	0.268	0.00175	1.64	0.01215	0.125	0.0288	0.00005	0.00805	228.5	3.725	0.0055	0.00005
RSD		11%	33%	13%	2%	0%	53%	28%	44%	8%	101%	53%	4%	85%	0%	0%	17%	21%	6%	13%	0%
2006861208005	2006861208005	0.0043	0.01	0.0005	6.1	0.003	2000	0.002	0.0307	0.382	0.0005	1.61	0.0451	0.05	0.0795	0.00005	0.0072	263	3.87	0.011	0.00005
2006861208005_replicate	2006861280005	0.0036	0.005	0.0004	5.12	0.0015	817	0.002	0.0291	0.258	0.0005	0.68	0.0435	0.3	0.0856	0.0025	0.0053	156.5	2.53	0.006	0.00005
Ave		0.00395	0.0075	0.00045	5.61	0.00225	1408.5	0.002	0.0299	0.32	0.0005	1.145	0.0443	0.175	0.08255	0.001275	0.00625	209.75	3.2	0.0085	0.00005
RSD		13%	47%	16%	12%	47%	59%	0%	4%	27%	0%	57%	3%	101%	5%	136%	21%	36%	30%	42%	0%
2006861209005	2006861209005	0.0152	0.012	0.0004	3.86	0.0015	2000	0.003	0.0534	0.683	0.01	1.7	0.0393	0.05	0.0685	0.0045	0.0079	296	6.46	0.022	0.00005
2006861209005_replicate	2006861260005	0.0125	0.02	0.0005	2.3	0.0015	796	0.008	0.0256	1.04	0.022	1.63	0.0205	1	0.0279	0.0018	0.012	289	21.1	0.027	0.00005
Ave		0.01385	0.016	0.00045	3.08	0.0015	1398	0.0055	0.0395	0.8615	0.016	1.665	0.0299	0.525	0.0482	0.00315	0.00995	292.5	13.78	0.0245	0.00005
RSD		14%	35%	16%	36%	0%	61%	64%	50%	29%	53%	3%	44%	128%	60%	61%	29%	2%	75%	14%	0%
2006861210005	2006861210005	0.0152	0.02	0.0003	0.79	0.0015	992	0.009	0.0269	0.8	0.016	2.34	0.0253	0.3	0.0291	0.00005	0.0108	2000	14.7	0.024	0.00005
2006861210005_replicate	2006861258005	0.0145	0.009	0.0004	3.96	0.003	966	0.003	0.0376	0.712	0.012	1	0.0425	0.3	0.069	0.0052	0.0069	234	6.69	0.021	0.00005
Ave		0.01485	0.0145	0.00035	2.375	0.00225	979	0.006	0.03225	0.756	0.014	1.67	0.0339	0.3	0.04905	0.002625	0.00885	1117	10.695	0.0225	0.00005
RSD		3%	54%	20%	94%	47%	2%	71%	23%	8%	20%	57%	36%	0%	58%	139%	31%	112%	53%	9%	0%
2006861211005	2006861211005	0.0079	0.006	0.0004	2.64	0.0015	792	0.004	0.0465	0.695	0.0005	1.13	0.0128	0.1	0.0264	0.00005	0.0101	104.5	10.3	0.0025	0.00005
2006861211005_replicate	2006861261005	0.0067	0.006	0.0004	2.76	0.0015	631	0.004	0.0337	0.583	0.002	0.72	0.0129	0.4	0.0253	0.00005	0.0083	68.1	6.64	0.0025	0.00005
Ave		0.0073	0.006	0.0004	2.7	0.0015	711.5	0.004	0.0401	0.639	0.00125	0.925	0.01285	0.25	0.02585	0.00005	0.0092	86.3	8.47	0.0025	0.00005
RSD		12%	0%	0%	3%	0%	16%	0%	23%	12%	85%	31%	1%	85%	3%	0%	14%	30%	31%	0%	0%
2006861212005	2006861212005	0.0025	0.005	0.0002	2.21	0.0015	457	0.007	0.0698	0.317	0.002	1.09	0.0234	1.6	0.0611	0.0073	0.0054	176	11.35	0.01	0.00005
2006861212005_replicate	2006861284005	0.0025	0.003	0.0002	1.91	0.0015	320	0.006	0.0359	0.31	0.002	0.59	0.0188	1.4	0.0471	0.0057	0.0047	110	7.02	0.008	0.00005
Ave		0.0025	0.004	0.0002	2.06	0.0015	388.5	0.0065	0.05285	0.3135	0.002	0.84	0.0211	1.5	0.0541	0.0065	0.00505	143	9.185	0.009	0.00005
RSD		0%	35%	0%	10%	0%	25%	11%	45%	2%	0%	42%	15%	9%	18%	17%	10%	33%	33%	16%	0%
2006861213005	2006861213005	0.0066	0.007	0.0003	3.89	0.0015	719	0.006	0.0738	0.642	0.007	1.59	0.0277	0.3	0.0691	0.0045	0.0109	207	11.25	0.023	0.00005
2006861213005_replicate	2006861273005	0.0052	0.002	0.0004	2.85	0.0015	458	0.005	0.0379	0.432	0.002	0.74	0.0221	0.6	0.0538	0.0043	0.0084	123	4.95	0.014	0.00005
Ave		0.0059	0.0045	0.00035	3.37	0.0015	588.5	0.0055	0.05585	0.537	0.0045	1.165	0.0249	0.45	0.06145	0.0044	0.00965	165	8.1	0.0185	0.00005
RSD		17%	79%	20%	22%	0%	31%	13%	45%	28%	79%	52%	16%	47%	18%	3%	18%	36%	55%	34%	0%
2006861214005	2006861214005	0.0006	0.01	0.0002	3.99	0.0015	732	0.005	0.0174	0.209	0.0005	1.16	0.0033	0.2	0.0177	0.00005	0.0117	146	4.03	0.007	0.00005
2006861214005_replicate	2006861264005	0.0008	0.006	0.0002	4.23	0.0015	675	0.004	0.009	0.164	0.002	0.89	0.0022	0.6	0.0171	0.00005	0.0111	121.5	3.01	0.007	0.00005

SAMPLE	SAMPLEID	Ag	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Er	Fe	Gd	La	Li	Mg	Mn	Mo	Nb
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ave		0.0007	0.008	0.0002	4.11	0.0015	703.5	0.0045	0.0132	0.1865	0.00125	1.025	0.00275	0.4	0.0174	0.00005	0.0114	133.75	3.52	0.007	0.00005
RSD		20%	35%	0%	4%	0%	6%	16%	45%	17%	85%	19%	28%	71%	2%	0%	4%	13%	20%	0%	0%
2006861215005	2006861215005	0.005	0.009	0.0004	4.51	0.0015	829	0.007	0.123	1.085	0.007	1.47	0.0627	0.3	0.1165	0.0138	0.0109	2000	18.95	0.013	0.00005
2006861215005_replicate	2006861253005	0.0047	0.007	0.0004	4.17	0.0015	760	0.007	0.0981	0.91	0.006	1.2	0.0491	0.7	0.1	0.0117	0.0132	296	16.15	0.012	0.00005
Ave		0.00485	0.008	0.0004	4.34	0.0015	794.5	0.007	0.11055	0.9975	0.0065	1.335	0.0559	0.5	0.10825	0.01275	0.01205	1148	17.55	0.0125	0.00005
RSD		4%	18%	0%	6%	0%	6%	0%	16%	12%	11%	14%	17%	57%	11%	12%	13%	105%	11%	6%	0%
2006861216005	2006861216005	0.0016	0.006	0.0001	1.27	0.0015	207	0.004	0.377	0.343	0.032	0.54	0.0466	10.5	0.1355	0.18	0.0111	73.8	23	0.0025	0.001
2006861216005_replicate	2006861265005	0.0014	0.004	0.0001	1.23	0.0015	157	0.003	0.282	0.272	0.03	0.45	0.0415	14	0.1055	0.137	0.0132	51.7	17.85	0.0025	0.0019
Ave		0.0015	0.005	0.0001	1.25	0.0015	182	0.0035	0.3295	0.3075	0.031	0.495	0.04405	12.25	0.1205	0.1585	0.01215	62.75	20.425	0.0025	0.00145
RSD		9%	28%	0%	2%	0%	19%	20%	20%	16%	5%	13%	8%	20%	18%	19%	12%	25%	18%	0%	44%
2006861217005	2006861217005	0.0011	0.003	0.0002	1.55	0.0015	284	0.001	0.1055	0.109	0.013	0.81	0.0396	8.5	0.0885	0.0479	0.0083	81.3	7.87	0.0025	0.0004
2006861217005_replicate	2006861277005	0.0011	0.002	0.0001	1.61	0.0015	208	0.001	0.1	0.0914	0.029	0.54	0.041	18.2	0.0801	0.0516	0.0563	56.5	7.19	0.0025	0.003
Ave		0.0011	0.0025	0.00015	1.58	0.0015	246	0.001	0.10275	0.1002	0.021	0.675	0.0403	13.35	0.0843	0.04975	0.0323	68.9	7.53	0.0025	0.0017
RSD		0%	28%	47%	3%	0%	22%	0%	4%	12%	54%	28%	2%	51%	7%	5%	105%	25%	6%	0%	108%
2006861218005	2006861218005	0.0009	0.05	0.0003	0.21	0.0015	650	0.005	0.0159	0.134	0.003	0.65	0.0527	0.6	0.055	0.0026	0.0362	2000	2.84	0.018	0.00005
2006861218005_replicate	2006861256005	0.0011	0.041	0.0004	0.51	0.007	567	0.004	0.0172	0.1855	0.012	0.62	0.0464	0.8	0.0555	0.0014	0.0308	2000	3.9	0.017	0.00005
Ave		0.001	0.0455	0.00035	0.36	0.00425	608.5	0.0045	0.01655	0.15975	0.0075	0.635	0.04955	0.7	0.05525	0.002	0.0335	2000	3.37	0.0175	0.00005
RSD		14%	14%	20%	59%	92%	10%	16%	6%	23%	85%	3%	9%	20%	1%	42%	11%	0%	22%	4%	0%
2006861219005	2006861219005	0.0069	0.068	0.0007	0.19	0.0015	2000	0.005	0.0082	0.415	0.0005	1.65	0.0055	0.9	0.0074	0.00005	0.0619	2000	2.13	0.007	0.00005
2006861219005_replicate	2006861274005	0.0061	0.066	0.0006	0.27	0.0015	2000	0.005	0.0084	0.511	0.002	1.25	0.0065	1.2	0.0109	0.0001	0.055	2000	2.67	0.006	0.00005
Ave		0.0065	0.067	0.00065	0.23	0.0015	2000	0.005	0.0083	0.463	0.00125	1.45	0.006	1.05	0.00915	0.000075	0.05845	2000	2.4	0.0065	0.00005
RSD		9%	2%	11%	25%	0%	0%	0%	2%	15%	85%	20%	12%	20%	27%	47%	8%	0%	16%	11%	0%
2006861220005	2006861220005	0.0004	0.019	0.0001	0.08	0.0015	770	0.001	0.112	0.117	0.012	0.29	0.066	1.2	0.1565	0.0253	0.0176	2000	11.3	0.013	0.00005
2006861220005_replicate	2006861271005	0.0003	0.017	0.0001	0.09	0.0015	756	0.001	0.14	0.0922	0.009	0.31	0.0755	1.6	0.145	0.0299	0.0165	2000	10.5	0.009	0.00005
Ave		0.00035	0.018	0.0001	0.085	0.0015	763	0.001	0.126	0.1046	0.0105	0.3	0.07075	1.4	0.15075	0.0276	0.01705	2000	10.9	0.011	0.00005
RSD		20%	8%	0%	8%	0%	1%	0%	16%	17%	20%	5%	9%	20%	5%	12%	5%	0%	5%	26%	0%
2006861221005	2006861221005	0.0399	0.011	0.0004	2.82	0.0015	771	0.005	0.0159	0.268	0.0005	0.53	0.0015	0.1	0.0128	0.00005	0.016	254	3.87	0.006	0.00005
2006861221005_replicate	2006861275005	0.0373	0.008	0.0004	2.97	0.0015	850	0.004	0.0115	0.1935	0.001	0.55	0.0015	0.4	0.0121	0.00005	0.0134	206	3.61	0.006	0.00005
Ave		0.0386	0.0095	0.0004	2.895	0.0015	810.5	0.0045	0.0137	0.23075	0.00075	0.54	0.0015	0.25	0.01245	0.00005	0.0147	230	3.74	0.006	0.00005
RSD		5%	22%	0%	4%	0%	7%	16%	23%	23%	47%	3%	0%	85%	4%	0%	13%	15%	5%	0%	0%
2006861222005	2006861222005	0.0047	0.012	0.0005	4.17	0.0015	2000	0.002	0.0248	0.676	0.0005	1.33	0.0209	0.2	0.0375	0.00005	0.011	201	10.7	0.016	0.00005
2006861222005_replicate	2006861278005	0.0041	0.008	0.0005	3.64	0.0015	851	0.002	0.0192	0.414	0.001	0.96	0.0164	0.3	0.0297	0.00005	0.008	161	5.84	0.011	0.00005
Ave		0.0044	0.01	0.0005	3.905	0.0015	1425.5	0.002	0.022	0.545	0.00075	1.145	0.01865	0.25	0.0336	0.00005	0.0095	181	8.27	0.0135	0.00005
RSD		10%	28%	0%	10%	0%	57%	0%	18%	34%	47%	23%	17%	28%	16%	0%	22%	16%	42%	26%	0%
2006861223005	2006861223005	0.0041	0.014	0.0001	1.16	0.0015	596	0.005	0.1175	0.1425	0.017	0.72	0.0734	1.6	0.1215	0.0199	0.0075	207	6.38	0.007	0.00005
2006861223005_replicate	2006861252005	0.0047	0.016	0.0002	1.09	0.0015	602	0.006	0.1165	0.14	0.02	0.77	0.0757	1.9	0.119	0.0174	0.0087	213	6.69	0.008	0.00005
Ave		0.0044	0.015	0.00015	1.125	0.0015	599	0.0055	0.117	0.14125	0.0185	0.745	0.07455	1.75	0.12025	0.01865	0.0081	210	6.535	0.0075	0.00005
RSD		10%	9%	47%	4%	0%	1%	13%	1%	1%	11%	5%	2%	12%	1%	9%	10%	2%	3%	9%	0%
Min RSD		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**1%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**4%**	**0%**	**3%**	**0%**	**0%**
Ave RSD		**10%**	**30%**	**11%**	**15%**	**33%**	**25%**	**14%**	**27%**	**18%**	**42%**	**35%**	**13%**	**55%**	**14%**	**30%**	**19%**	**40%**	**24%**	**14%**	**14%**
Max RSD		**38%**	**79%**	**47%**	**94%**	**117%**	**61%**	**71%**	**73%**	**62%**	**101%**	**85%**	**44%**	**128%**	**60%**	**139%**	**105%**	**116%**	**75%**	**67%**	**108%**

Note: Values <LLD have been halved (= 0.5 LLD); Values >ULD have been doubled (= 2 ULD) (latter only for Ca and Mg)

SAMPLE	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2006861201005	0.268	1.26	0.08	0.0047	0.0366	0.07	0.0005	0.015	0.117	0.0001	7.6	0.0311	0.001	0.031	0.03	0.005	0.02	0.0009	0.671	0.0525	0.06	0.01
2006861201005_replicate	0.208	0.554	0.09	0.0196	0.0257	0.047	0.0005	0.015	0.0995	0.0001	7.79	0.0314	0.0005	0.02	0.01	0.005	0.02	0.001	0.647	0.0564	0.07	0.004
Ave	0.238	0.907	0.085	0.01215	0.03115	0.0585	0.0005	0.015	0.10825	0.0001	7.695	0.03125	0.00075	0.0255	0.02	0.005	0.02	0.00095	0.659	0.05445	0.065	0.007
RSD	18%	55%	8%	87%	25%	28%	0%	0%	11%	0%	2%	1%	47%	31%	71%	0%	0%	7%	3%	5%	11%	61%
2006861202005	0.52	1.16	0.13	0.0071	0.074	0.059	0.0005	0.01	0.2	0.0001	10.9	0.0478	0.001	0.026	0.03	0.005	0.011	0.0015	1	0.0806	0.03	0.004
2006861202005_replicate	0.449	0.632	0.14	0.0227	0.0614	0.042	0.0005	0.014	0.1805	0.0001	8.35	0.0492	0.0005	0.024	0.02	0.005	0.012	0.0015	0.964	0.0927	0.05	0.003
Ave	0.4845	0.896	0.135	0.0149	0.0677	0.0505	0.0005	0.012	0.19025	0.0001	9.625	0.0485	0.00075	0.025	0.025	0.005	0.0115	0.0015	0.982	0.08665	0.04	0.0035
RSD	10%	42%	5%	74%	13%	24%	0%	24%	7%	0%	19%	2%	47%	6%	28%	0%	6%	0%	3%	10%	35%	20%
2006861203005	0.019	0.983	0.12	0.0003	0.0016	0.038	0.0005	0.003	0.0092	0.0001	13.5	0.0054	0.001	0.001	0.01	0.005	0.018	0.0008	0.175	0.0222	0.03	0.005
2006861203005_replicate	0.0207	0.675	0.12	0.0173	0.0015	0.034	0.0005	0.006	0.0117	0.0001	13.7	0.0076	0.0005	0.002	0.01	0.005	0.028	0.0008	0.224	0.0268	0.06	0.003
Ave	0.01985	0.829	0.12	0.0088	0.00155	0.036	0.0005	0.0045	0.01045	0.0001	13.6	0.0065	0.00075	0.0015	0.01	0.005	0.023	0.0008	0.1995	0.0245	0.045	0.004
RSD	6%	26%	0%	137%	5%	8%	0%	47%	17%	0%	1%	24%	47%	47%	0%	0%	31%	0%	17%	13%	47%	35%
2006861204005	0.961	0.568	0.16	0.008	0.1575	0.169	0.0005	0.03	0.288	0.0001	3.15	0.0514	0.0005	0.135	0.32	0.005	0.041	0.0009	0.975	0.0706	0.18	0.027
2006861204005_replicate	0.621	0.308	0.13	0.0218	0.102	0.124	0.0005	0.033	0.19	0.0002	2.4	0.0398	0.0005	0.054	0.82	0.005	0.026	0.001	0.719	0.069	0.11	0.026
Ave	0.791	0.438	0.145	0.0149	0.12975	0.1465	0.0005	0.0315	0.239	0.00015	2.775	0.0456	0.0005	0.0945	0.57	0.005	0.0335	0.00095	0.847	0.0698	0.145	0.0265
RSD	30%	42%	15%	65%	30%	22%	0%	7%	29%	47%	19%	18%	0%	61%	62%	0%	32%	7%	21%	2%	34%	3%
2006861205005	0.608	0.787	0.17	0.0055	0.0995	0.192	0.0005	0.033	0.182	0.0001	2.03	0.0327	0.0005	0.086	0.72	0.005	0.021	0.0007	0.659	0.0508	0.37	0.03
2006861205005_replicate	0.343	0.382	0.18	0.0221	0.053	0.143	0.0005	0.058	0.115	0.0005	1.68	0.0285	0.0005	0.019	1.19	0.005	0.016	0.0012	0.715	0.0754	0.42	0.044
Ave	0.4755	0.5845	0.175	0.0138	0.07625	0.1675	0.0005	0.0455	0.1485	0.0003	1.855	0.0306	0.0005	0.0525	0.955	0.005	0.0185	0.00095	0.687	0.0631	0.395	0.037
RSD	39%	49%	4%	85%	43%	21%	0%	39%	32%	94%	13%	10%	0%	90%	35%	0%	19%	37%	6%	28%	9%	27%
2006861206005	0.0643	2.7	0.11	0.001	0.0081	0.056	0.0005	0.007	0.0274	0.0001	8.04	0.0096	0.0005	0.009	0.04	0.005	0.04	0.001	0.238	0.0257	0.05	0.011
2006861206005_replicate	0.0474	1.05	0.12	0.0169	0.0055	0.042	0.0005	0.01	0.0211	0.0001	7.28	0.0092	0.0005	0.007	0.03	0.005	0.038	0.0009	0.22	0.0271	0.08	0.005
Ave	0.05585	1.875	0.115	0.00895	0.0068	0.049	0.0005	0.0085	0.02425	0.0001	7.66	0.0094	0.0005	0.008	0.035	0.005	0.039	0.00095	0.229	0.0264	0.065	0.008
RSD	21%	62%	6%	126%	27%	20%	0%	25%	18%	0%	7%	3%	0%	18%	20%	0%	4%	7%	6%	4%	33%	53%
2006861207005	0.001	0.61	0.09	0.00005	0.00005	0.037	0.0005	0.0015	0.0018	0.0001	14.4	0.002	0.001	0.001	0.01	0.005	0.009	0.0005	0.0684	0.0098	0.02	0.003
2006861207005_replicate	0.0044	0.387	0.08	0.0152	0.00005	0.032	0.0005	0.004	0.0026	0.0001	13.8	0.0023	0.001	0.001	0.01	0.005	0.011	0.0006	0.0656	0.0096	0.04	0.003
Ave	0.0027	0.4985	0.085	0.007625	0.00005	0.0345	0.0005	0.00275	0.0022	0.0001	14.1	0.00215	0.001	0.001	0.01	0.005	0.01	0.00055	0.067	0.0097	0.03	0.003
RSD	89%	32%	8%	140%	0%	10%	0%	64%	26%	0%	3%	10%	0%	0%	0%	0%	14%	13%	3%	1%	47%	0%
2006861208005	0.0119	0.872	0.09	0.0009	0.00005	0.028	0.0005	0.004	0.0143	0.0001	12.4	0.0106	0.0005	0.002	0.01	0.005	0.012	0.0008	0.251	0.0297	0.01	0.005
2006861208005_replicate	0.0351	0.481	0.09	0.0155	0.0029	0.019	0.0005	0.005	0.0221	0.0001	10.3	0.0122	0.0005	0.003	0.005	0.005	0.011	0.0007	0.254	0.0275	0.02	0.002
Ave	0.0235	0.6765	0.09	0.0082	0.001475	0.0235	0.0005	0.0045	0.0182	0.0001	11.35	0.0114	0.0005	0.0025	0.0075	0.005	0.0115	0.00075	0.2525	0.0286	0.015	0.0035
RSD	70%	41%	0%	126%	137%	27%	0%	16%	30%	0%	13%	10%	0%	28%	47%	0%	6%	9%	1%	5%	47%	61%
2006861209005	0.0337	1.09	0.14	0.0009	0.0029	0.048	0.0005	0.006	0.0192	0.0001	11.7	0.0094	0.0005	0.002	0.02	0.005	0.075	0.0012	0.241	0.0263	0.03	0.007
2006861209005_replicate	0.0182	1.13	0.12	0.017	0.0013	0.043	0.0005	0.007	0.008	0.0001	9.93	0.0038	0.0005	0.005	0.01	0.005	0.047	0.0012	0.108	0.0149	0.11	0.007
Ave	0.02595	1.11	0.13	0.00895	0.0021	0.0455	0.0005	0.0065	0.0136	0.0001	10.815	0.0066	0.0005	0.0035	0.015	0.005	0.061	0.0012	0.1745	0.0206	0.07	0.007
RSD	42%	3%	11%	127%	54%	8%	0%	11%	58%	0%	12%	60%	0%	61%	47%	0%	32%	0%	54%	39%	81%	0%
2006861210005	0.013	1.51	0.14	0.00005	0.00005	0.042	0.0005	0.005	0.0084	0.0001	9.69	0.005	0.0005	0.002	0.02	0.005	0.041	0.0011	0.148	0.0188	0.11	0.007
2006861210005_replicate	0.0354	0.694	0.14	0.0172	0.0032	0.041	0.0005	0.009	0.0188	0.0001	12	0.0097	0.0005	0.002	0.01	0.005	0.087	0.0012	0.233	0.0285	0.04	0.005
Ave	0.0242	1.102	0.14	0.008625	0.001625	0.0415	0.0005	0.007	0.0136	0.0001	10.845	0.00735	0.0005	0.002	0.015	0.005	0.064	0.00115	0.1905	0.02365	0.075	0.006
RSD	65%	52%	0%	141%	137%	2%	0%	40%	54%	0%	15%	45%	0%	0%	47%	0%	51%	6%	32%	29%	66%	24%
2006861211005	0.0044	0.765	0.05	0.00005	0.00005	0.073	0.0005	0.004	0.0057	0.0001	5.93	0.0032	0.0005	0.001	0.01	0.005	0.007	0.0004	0.11	0.0098	0.06	0.001
2006861211005_replicate	0.0088	0.432	0.04	0.0158	0.00005	0.064	0.0005	0.006	0.006	0.0001	5.43	0.0033	0.0005	0.002	0.01	0.005	0.009	0.0005	0.106	0.0096	0.07	0.002
Ave	0.0066	0.5985	0.045	0.007925	0.00005	0.0685	0.0005	0.005	0.00585	0.0001	5.68	0.00325	0.0005	0.0015	0.01	0.005	0.008	0.00045	0.108	0.0097	0.065	0.0015
RSD	47%	39%	16%	141%	0%	9%	0%	28%	4%	0%	6%	2%	0%	47%	0%	0%	18%	16%	3%	1%	11%	47%
2006861212005	0.0702	0.572	0.08	0.0006	0.0075	0.071	0.0005	0.009	0.0313	0.0001	3.96	0.0085	0.0005	0.016	0.05	0.005	0.026	0.0006	0.202	0.0148	0.18	0.009
2006861212005_replicate	0.0419	0.305	0.07	0.0155	0.0046	0.047	0.0005	0.009	0.0189	0.0001	3.38	0.0067	0.0005	0.01	0.07	0.005	0.024	0.0005	0.1435	0.0133	0.2	0.004
Ave	0.05605	0.4385	0.075	0.00805	0.00605	0.059	0.0005	0.009	0.0251	0.0001	3.67	0.0076	0.0005	0.013	0.06	0.005	0.025	0.00055	0.17275	0.01405	0.19	0.0065
RSD	36%	43%	9%	131%	34%	29%	0%	0%	35%	0%	11%	17%	0%	33%	24%	0%	6%	13%	24%	8%	7%	54%
2006861213005	0.0557	0.72	0.11	0.0006	0.0056	0.059	0.0005	0.005	0.0287	0.0001	6.56	0.0091	0.0005	0.009	0.03	0.005	0.052	0.0008	0.209	0.0188	0.07	0.008
2006861213005_replicate	0.0422	0.413	0.07	0.0153	0.0044	0.035	0.0005	0.006	0.0201	0.0001	5.03	0.007	0.0005	0.007	0.01	0.005	0.056	0.0005	0.16	0.0139	0.07	0.003
Ave	0.04895	0.5665	0.09	0.00795	0.005	0.047	0.0005	0.0055	0.0244	0.0001	5.795	0.00805	0.0005	0.008	0.02	0.005	0.054	0.00065	0.1845	0.01635	0.07	0.0055
RSD	20%	38%	31%	131%	17%	36%	0%	13%	25%	0%	19%	18%	0%	18%	71%	0%	5%	33%	19%	21%	0%	64%
2006861214005	0.00005	0.401	0.09	0.00005	0.00005	0.037	0.0005	0.0015	0.0004	0.0001	5.51	0.0006	0.0005	0.001	0.01	0.005	0.059	0.0006	0.0201	0.0028	0.03	0.003
2006861214005_replicate	0.0027	0.35	0.08	0.0147	0.00005	0.029	0.0005	0.004	0.0009	0.0001	6.2	0.0005	0.0005	0.001	0.01	0.005	0.073	0.0006	0.0142	0.002	0.04	0.002

SAMPLE	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ave	0.001375	0.3755	0.085	0.007375	0.00005	0.033	0.0005	0.00275	0.00065	0.0001	5.855	0.00055	0.0005	0.001	0.01	0.005	0.066	0.0006	0.01715	0.0024	0.035	0.0025
RSD	136%	10%	8%	140%	0%	17%	0%	64%	54%	0%	8%	13%	0%	0%	0%	0%	15%	0%	24%	24%	20%	28%
2006861215005	0.103	0.839	0.11	0.0023	0.0126	0.06	0.0005	0.009	0.0492	0.0001	11	0.017	0.001	0.019	0.02	0.005	0.07	0.0008	0.388	0.0413	0.13	0.008
2006861215005_replicate	0.0898	0.804	0.09	0.0041	0.0109	0.061	0.0005	0.008	0.0412	0.0001	10	0.014	0.001	0.016	0.02	0.005	0.063	0.0007	0.292	0.0329	0.12	0.007
Ave	0.0964	0.8215	0.1	0.0032	0.01175	0.0605	0.0005	0.0085	0.0452	0.0001	10.5	0.0155	0.001	0.0175	0.02	0.005	0.0665	0.00075	0.34	0.0371	0.125	0.0075
RSD	10%	3%	14%	40%	10%	1%	0%	8%	13%	0%	7%	14%	0%	12%	0%	0%	7%	9%	20%	16%	6%	9%
2006861216005	0.407	0.421	0.28	0.0047	0.0792	0.144	0.0005	0.069	0.102	0.0001	2.05	0.0176	0.0005	0.1	0.99	0.005	0.026	0.0005	0.285	0.0318	0.2	0.072
2006861216005_replicate	0.316	0.306	0.26	0.0208	0.0608	0.121	0.0005	0.097	0.0786	0.0003	1.86	0.0139	0.0005	0.067	1	0.005	0.026	0.0006	0.244	0.0321	0.24	0.068
Ave	0.3615	0.3635	0.27	0.01275	0.07	0.1325	0.0005	0.083	0.0903	0.0002	1.955	0.01575	0.0005	0.0835	0.995	0.005	0.026	0.00055	0.2645	0.03195	0.22	0.07
RSD	18%	22%	5%	89%	19%	12%	0%	24%	18%	71%	7%	17%	0%	28%	1%	0%	0%	13%	11%	1%	13%	4%
2006861217005	0.1785	0.313	0.16	0.0015	0.0272	0.114	0.0005	0.034	0.0579	0.0001	2.28	0.0122	0.0005	0.044	0.64	0.005	0.023	0.0004	0.239	0.0264	0.03	0.023
2006861217005_replicate	0.166	0.239	0.15	0.0188	0.0265	0.113	0.0005	0.07	0.0515	0.0008	2.08	0.0114	0.0005	0.024	1.63	0.005	0.02	0.0007	0.237	0.0289	0.09	0.055
Ave	0.17225	0.276	0.155	0.01015	0.02685	0.1135	0.0005	0.052	0.0547	0.00045	2.18	0.0118	0.0005	0.034	1.135	0.005	0.0215	0.00055	0.238	0.02765	0.06	0.039
RSD	5%	19%	5%	121%	2%	1%	0%	49%	8%	110%	6%	5%	0%	42%	62%	0%	10%	39%	1%	6%	71%	58%
2006861218005	0.0296	0.409	0.09	0.002	0.0019	0.041	0.0005	0.007	0.0183	0.0001	13.5	0.0105	0.002	0.002	0.02	0.005	0.025	0.0006	0.393	0.0362	0.02	0.001
2006861218005_replicate	0.0318	0.298	0.1	0.0205	0.0023	0.043	0.0005	0.011	0.0181	0.0001	13.4	0.01	0.001	0.004	0.02	0.005	0.035	0.0006	0.283	0.0312	0.09	0.003
Ave	0.0307	0.3535	0.095	0.01125	0.0021	0.042	0.0005	0.009	0.0182	0.0001	13.45	0.01025	0.0015	0.003	0.02	0.005	0.03	0.0006	0.338	0.0337	0.055	0.002
RSD	5%	22%	7%	116%	13%	3%	0%	31%	1%	0%	1%	3%	47%	47%	0%	0%	24%	0%	23%	10%	90%	71%
2006861219005	0.0032	0.646	0.1	0.00005	0.00005	0.021	0.0005	0.003	0.0025	0.0001	15.3	0.0014	0.001	0.0005	0.02	0.005	0.047	0.0003	0.0432	0.0043	0.09	0.001
2006861219005_replicate	0.0124	0.799	0.08	0.015	0.0004	0.015	0.0005	0.005	0.0052	0.0001	16.4	0.0019	0.0005	0.001	0.01	0.005	0.054	0.0003	0.0592	0.0048	0.11	0.001
Ave	0.0078	0.7225	0.09	0.007525	0.000225	0.018	0.0005	0.004	0.00385	0.0001	15.85	0.00165	0.00075	0.00075	0.015	0.005	0.0505	0.0003	0.0512	0.00455	0.1	0.001
RSD	83%	15%	16%	140%	110%	24%	0%	35%	50%	0%	5%	21%	47%	47%	47%	0%	10%	0%	22%	8%	14%	0%
2006861220005	0.318	0.317	0.25	0.0017	0.0422	0.034	0.0005	0.016	0.1255	0.0001	7.52	0.0258	0.001	0.036	0.05	0.005	0.113	0.0004	0.322	0.0447	0.05	0.012
2006861220005_replicate	0.307	0.412	0.26	0.0173	0.0429	0.025	0.0005	0.023	0.1175	0.0001	7.18	0.0249	0.0005	0.033	0.02	0.005	0.093	0.0005	0.331	0.0565	0.08	0.009
Ave	0.3125	0.3645	0.255	0.0095	0.04255	0.0295	0.0005	0.0195	0.1215	0.0001	7.35	0.02535	0.00075	0.0345	0.035	0.005	0.103	0.00045	0.3265	0.0506	0.065	0.0105
RSD	2%	18%	3%	116%	1%	22%	0%	25%	5%	0%	3%	3%	47%	6%	61%	0%	14%	16%	2%	16%	33%	20%
2006861221005	0.0006	0.286	0.07	0.00005	0.00005	0.034	0.0005	0.0015	0.0001	0.0001	14.5	0.0002	0.001	0.0005	0.01	0.005	0.011	0.0003	0.0079	0.0016	0.02	0.0005
2006861221005_replicate	0.0033	0.331	0.06	0.0133	0.00005	0.031	0.0005	0.004	0.0008	0.0001	15.1	0.0002	0.0005	0.0005	0.01	0.005	0.015	0.0003	0.0092	0.0014	0.03	0.001
Ave	0.00195	0.3085	0.065	0.006675	0.00005	0.0325	0.0005	0.00275	0.00045	0.0001	14.8	0.0002	0.00075	0.0005	0.01	0.005	0.013	0.0003	0.00855	0.0015	0.025	0.00075
RSD	98%	10%	11%	140%	0%	7%	0%	64%	110%	0%	3%	0%	47%	0%	0%	0%	22%	0%	11%	9%	28%	47%
2006861222005	0.0028	0.759	0.14	0.0028	0.00005	0.033	0.0005	0.003	0.0043	0.0001	10.8	0.0044	0.001	0.003	0.01	0.005	0.018	0.0009	0.114	0.0164	0.06	0.003
2006861222005_replicate	0.0087	0.516	0.1	0.0143	0.00005	0.024	0.0005	0.004	0.0049	0.0001	10.6	0.0036	0.0005	0.002	0.01	0.005	0.017	0.0006	0.0964	0.0127	0.04	0.002
Ave	0.00575	0.6375	0.12	0.00855	0.00005	0.0285	0.0005	0.0035	0.0046	0.0001	10.7	0.004	0.00075	0.0025	0.01	0.005	0.0175	0.00075	0.1052	0.01455	0.05	0.0025
RSD	73%	27%	24%	95%	0%	22%	0%	20%	9%	0%	1%	14%	47%	28%	0%	0%	4%	28%	12%	18%	28%	28%
2006861223005	0.1135	0.81	0.14	0.006	0.0134	0.055	0.0005	0.006	0.0555	0.0001	5.1	0.0209	0.0005	0.015	0.04	0.005	0.061	0.0008	0.405	0.0497	0.06	0.009
2006861223005_replicate	0.0999	0.96	0.14	0.0061	0.0116	0.054	0.0005	0.006	0.0526	0.0001	5.1	0.0205	0.0005	0.013	0.04	0.005	0.071	0.0009	0.404	0.0489	0.06	0.01
Ave	0.1067	0.885	0.14	0.00605	0.0125	0.0545	0.0005	0.006	0.05405	0.0001	5.1	0.0207	0.0005	0.014	0.04	0.005	0.066	0.00085	0.4045	0.0493	0.06	0.0095
RSD	9%	12%	0%	1%	10%	1%	0%	0%	4%	0%	0%	1%	0%	10%	0%	0%	11%	8%	0%	1%	0%	7%
Min RSD	**2%**	**3%**	**0%**	**1%**	**0%**	**1%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**
Ave RSD	**41%**	**30%**	**9%**	**109%**	**30%**	**15%**	**0%**	**28%**	**27%**	**14%**	**8%**	**14%**	**16%**	**29%**	**27%**	**0%**	**15%**	**11%**	**14%**	**12%**	**32%**	**31%**
Max RSD	**136%**	**62%**	**31%**	**141%**	**137%**	**36%**	**0%**	**64%**	**110%**	**110%**	**19%**	**60%**	**47%**	**90%**	**71%**	**0%**	**51%**	**39%**	**54%**	**39%**	**90%**	**71%**

Note: Values <LLD have be

A4.6.2 Lab replicates

Appendix 4.6.2

SAMPLE	SAMPLEID	Ag mg/kg	As mg/kg	Au mg/kg	Ba mg/kg	Bi mg/kg	Ca mg/kg	Cd mg/kg	Ce mg/kg	Co mg/kg	Cr mg/kg	Cu mg/kg	Er mg/kg	Fe mg/kg
2006861220005	2006861220005	0.0004	0.019	0.0001	0.08	0.0015	770	0.001	0.112	0.117	0.012	0.29	0.066	1.2
2006861220005_repeat	2006861220005	0.0004	0.017	0.0002	0.08	0.0015	770	0.001	0.111	0.1145	0.014	0.39	0.0656	1.4
Ave		0.0004	0.018	0.00015	0.08	0.0015	770	0.001	0.1115	0.11575	0.013	0.34	0.0658	1.3
RSD		0%	8%	47%	0%	0%	0%	0%	1%	2%	11%	21%	0%	11%
2006861261005	2006861261005	0.0067	0.006	0.0004	2.76	0.0015	631	0.004	0.0337	0.583	0.002	0.72	0.0129	0.4
2006861261005_repeat	2006861261005	0.0067	0.004	0.0003	2.48	0.0015	631	0.003	0.027	0.583	0.0005	0.72	0.0106	0.4
Ave		0.0067	0.005	0.00035	2.62	0.0015	631	0.0035	0.03035	0.583	0.00125	0.72	0.01175	0.4
RSD		0%	28%	20%	8%	0%	0%	20%	16%	0%	85%	0%	14%	0%
2006861284005	2006861284005	0.0025	0.003	0.0002	1.91	0.0015	320	0.006	0.0359	0.31	0.002	0.59	0.0188	1.4
2006861284005_repeat	2006861284005	0.0023	0.005	0.0002	1.88	0.0015	306	0.006	0.0331	0.256	0.002	0.53	0.0187	1.3
Ave		0.0024	0.004	0.0002	1.895	0.0015	313	0.006	0.0345	0.283	0.002	0.56	0.01875	1.35
RSD		6%	35%	0%	1%	0%	3%	0%	6%	13%	0%	8%	0%	5%
Min RSD		**0%**	**8%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**
Ave RSD		**2%**	**24%**	**22%**	**3%**	**0%**	**1%**	**7%**	**7%**	**5%**	**32%**	**9%**	**5%**	**5%**
Max RSD		**6%**	**35%**	**47%**	**8%**	**0%**	**3%**	**20%**	**16%**	**13%**	**85%**	**21%**	**14%**	**11%**

Note: Values <LLD have been halved (= 0.5 LLD); Values >ULD have been doubled (= 2 ULD) (latter only for Ca and Mg)

Appendix 4.6.2

SAMPLE	Gd	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2006861220005	0.1565	0.0253	0.0176	2000	11.3	0.013	0.00005	0.318	0.317	0.25	0.0017	0.0422	0.034	0.0005	0.016
2006861220005_repeat	0.143	0.0233	0.0154	2000	10.4	0.013	0.00005	0.264	0.405	0.25	0.0162	0.0347	0.03	0.0005	0.022
Ave	0.14975	0.0243	0.0165	2000	10.85	0.013	0.00005	0.291	0.361	0.25	0.00895	0.03845	0.032	0.0005	0.019
RSD	6%	6%	9%	0%	6%	0%	0%	13%	17%	0%	115%	14%	9%	0%	22%
2006861261005	0.0253	0.00005	0.0083	68.1	6.64	0.0025	0.00005	0.0088	0.432	0.04	0.0158	0.00005	0.064	0.0005	0.006
2006861261005_repeat	0.0224	0.00005	0.0078	68	6.63	0.0025	0.00005	0.0088	0.432	0.03	0.0157	0.0004	0.055	0.0005	0.006
Ave	0.02385	0.00005	0.00805	68.05	6.635	0.0025	0.00005	0.0088	0.432	0.035	0.01575	0.000225	0.0595	0.0005	0.006
RSD	9%	0%	4%	0%	0%	0%	0%	0%	0%	20%	0%	110%	11%	0%	0%
2006861284005	0.0471	0.0057	0.0047	110	7.02	0.008	0.00005	0.0419	0.305	0.07	0.0155	0.0046	0.047	0.0005	0.009
2006861284005_repeat	0.0436	0.0056	0.0045	108.5	6.01	0.007	0.00005	0.0394	0.285	0.06	0.0154	0.0041	0.047	0.0005	0.009
Ave	0.04535	0.00565	0.0046	109.25	6.515	0.0075	0.00005	0.04065	0.295	0.065	0.01545	0.00435	0.047	0.0005	0.009
RSD	5%	1%	3%	1%	11%	9%	0%	4%	5%	11%	0%	8%	0%	0%	0%
Min RSD	**5%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**8%**	**0%**	**0%**	**0%**
Ave RSD	**7%**	**2%**	**6%**	**0%**	**6%**	**3%**	**0%**	**6%**	**7%**	**10%**	**38%**	**44%**	**7%**	**0%**	**7%**
Max RSD	**9%**	**6%**	**9%**	**1%**	**11%**	**9%**	**0%**	**13%**	**17%**	**20%**	**115%**	**110%**	**11%**	**0%**	**22%**

Note: Values <LLD have b

SAMPLE	Sm	Sn	Sr	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2006861220005	0.1255	0.0001	7.52	0.0258	0.001	0.036	0.05	0.005	0.113	0.0004	0.322	0.0447	0.05	0.012
2006861220005_repeat	0.107	0.0001	7.53	0.0232	0.0005	0.034	0.03	0.005	0.113	0.0005	0.284	0.0474	0.08	0.009
Ave	0.11625	0.0001	7.525	0.0245	0.00075	0.035	0.04	0.005	0.113	0.00045	0.303	0.04605	0.065	0.0105
RSD	11%	0%	0%	8%	47%	4%	35%	0%	0%	16%	9%	4%	33%	20%
2006861261005	0.006	0.0001	5.43	0.0033	0.0005	0.002	0.01	0.005	0.009	0.0005	0.106	0.0096	0.07	0.002
2006861261005_repeat	0.0056	0.0001	5.42	0.0027	0.0005	0.002	0.01	0.005	0.011	0.0004	0.0847	0.0079	0.04	0.001
Ave	0.0058	0.0001	5.425	0.003	0.0005	0.002	0.01	0.005	0.01	0.00045	0.09535	0.00875	0.055	0.0015
RSD	5%	0%	0%	14%	0%	0%	0%	0%	14%	16%	16%	14%	39%	47%
2006861284005	0.0189	0.0001	3.38	0.0067	0.0005	0.01	0.07	0.005	0.024	0.0005	0.1435	0.0133	0.2	0.004
2006861284005_repeat	0.0187	0.0001	3.22	0.0061	0.0005	0.009	0.08	0.005	0.021	0.0005	0.1335	0.0119	0.19	0.005
Ave	0.0188	0.0001	3.3	0.0064	0.0005	0.0095	0.075	0.005	0.0225	0.0005	0.1385	0.0126	0.195	0.0045
RSD	1%	0%	3%	7%	0%	7%	9%	0%	9%	0%	5%	8%	4%	16%
Min RSD	**1%**	**0%**	**0%**	**7%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**5%**	**4%**	**4%**	**16%**
Ave RSD	**6%**	**0%**	**1%**	**9%**	**16%**	**4%**	**15%**	**0%**	**8%**	**10%**	**10%**	**9%**	**25%**	**28%**
Max RSD	**11%**	**0%**	**3%**	**14%**	**47%**	**7%**	**35%**	**0%**	**14%**	**16%**	**16%**	**14%**	**39%**	**47%**

Note: Values <LLD have b

A4.6.3 Lab standards

SAMPLE	SAMPLEID	Ag	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Er	Fe	Gd	La
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MMI-SRM14	MMI-SRM14	0.0189	0.014	0.0374	0.110	0.0015	275	0.009	0.0126	0.0659	0.049	0.890	0.0010	0.60	0.0034	0.0009
MMI-SRM14	MMI-SRM14	0.0181	0.010	0.0432	0.120	0.0015	238	0.009	0.0096	0.0638	0.036	0.760	0.0007	0.40	0.0027	0.0011
MMI-SRM14	MMI-SRM14	0.0180	0.012	0.0376	0.130	0.0015	246	0.008	0.0140	0.0628	0.052	0.700	0.0010	2.00	0.0039	0.0039
MMI-SRM14	MMI-SRM14	0.0171	0.011	0.0354	0.110	0.0015	236	0.008	0.0129	0.0629	0.049	0.680	0.0009	1.80	0.0034	0.0022
Min		**0.0171**	**0.010**	**0.0354**	**0.110**	**0.0015**	**236**	**0.008**	**0.0096**	**0.0628**	**0.036**	**0.680**	**0.0007**	**0.40**	**0.0027**	**0.0009**
Ave		0.0180	0.012	0.0384	0.118	0.0015	249	0.009	0.0123	0.0639	0.047	0.758	0.0009	1.20	0.0034	0.0020
RSD		4%	15%	9%	8%	0%	7%	7%	15%	2%	15%	12%	16%	68%	15%	68%
Max		**0.0189**	**0.014**	**0.0432**	**0.130**	**0.0015**	**275**	**0.009**	**0.0140**	**0.0659**	**0.052**	**0.890**	**0.0010**	**2.00**	**0.0039**	**0.0039**
Target Value		0.0188		0.0402	0.1300		261.0000	0.0100		0.0663	0.0540	0.8300				
Target Range-Min		**0.0168**		**0.0361**	**0.110**		**235**	**0.008**		**0.0594**	**0.048**	**0.740**				
Target Range-Max		**0.0208**		**0.0443**	**0.150**		**287**	**0.012**		**0.0732**	**0.060**	**0.920**				
Replicates > TR Min?		Yes		No	Yes		Yes	Yes		Yes	No	No				
Replicates < TR Max?		Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes				
Ave WRT Target Value		-4%		-4%	-10%		-5%	-15%		-4%	-14%	-9%				

Note: Target Value calculated as average of TR Min and TR Max

Note: Values <LLD have been halved (= 0.5 LLD)

Appendix 4.6.3

SAMPLE	Li	Mg	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MMI-SRM14	0.0008	39.5	0.18	0.036	0.00005	0.0119	0.410	0.180	0.0472	0.0007	0.292	0.001	0.007	0.0037	0.0001	0.660
MMI-SRM14	0.0008	29.5	1.01	0.035	0.00005	0.0114	0.409	0.140	0.0490	0.0008	0.256	0.001	0.007	0.0030	0.0001	0.700
MMI-SRM14	0.0014	28.6	1.06	0.037	0.0001	0.0152	0.408	0.160	0.0507	0.0016	0.267	0.001	0.010	0.0040	0.0001	0.710
MMI-SRM14	0.0014	26.3	1.00	0.035	0.0002	0.0134	0.397	0.150	0.0482	0.0012	0.257	0.001	0.009	0.0037	0.0001	0.670
Min	**0.0008**	**26.3**	**0.18**	**0.035**	**0.00005**	**0.0114**	**0.397**	**0.140**	**0.0472**	**0.0007**	**0.256**	**0.001**	**0.007**	**0.0030**	**0.0001**	**0.660**
Ave	0.0011	31.0	0.81	0.036	0.0001	0.0130	0.406	0.158	0.0488	0.0011	0.268	0.001	0.008	0.0036	0.0001	0.685
RSD	31%	19%	52%	3%	71%	13%	1%	11%	3%	38%	6%	0%	18%	12%	0%	3%
Max	**0.0014**	**39.5**	**1.06**	**0.037**	**0.0002**	**0.0152**	**0.410**	**0.180**	**0.0507**	**0.0016**	**0.292**	**0.001**	**0.010**	**0.0040**	**0.0001**	**0.710**
Target Value	0.0016						0.3970	0.1600	0.0546				0.0120			0.7300
Target Range-Min	**0.0012**						**0.354**	**0.130**	**0.0490**				**0.008**			**0.650**
Target Range-Max	**0.0019**						**0.440**	**0.190**	**0.0602**				**0.016**			**0.810**
Replicates > TR Min?	No						Yes	Yes	No				No			Yes
Replicates < TR Max?	Yes						Yes	Yes	Yes				Yes			Yes
Ave WRT Target Value	-29%						+2%	-2%	-11%				-31%			-6%

Note: Target Value calcula
Note: Values <LLD have b

SAMPLE	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MMI-SRM14	0.0004	0.001	0.014	0.020	0.005	0.038	0.0001	0.0089	0.0007	0.300	0.010
MMI-SRM14	0.0003	0.0005	0.009	0.020	0.005	0.033	0.0001	0.0070	0.0005	0.280	0.006
MMI-SRM14	0.0004	0.0005	0.013	0.060	0.005	0.037	0.0001	0.0090	0.0007	0.330	0.010
MMI-SRM14	0.0004	0.0005	0.013	0.050	0.005	0.036	0.0001	0.0081	0.0006	0.290	0.009
Min	**0.0003**	**0.0005**	**0.009**	**0.020**	**0.005**	**0.033**	**0.0001**	**0.0070**	**0.0005**	**0.280**	**0.006**
Ave	0.0004	0.0006	0.012	0.038	0.005	0.036	0.0001	0.0083	0.0006	0.300	0.009
RSD	13%	40%	18%	55%	0%	6%	0%	11%	15%	7%	22%
Max	**0.0004**	**0.001**	**0.014**	**0.060**	**0.005**	**0.038**	**0.0001**	**0.0090**	**0.0007**	**0.330**	**0.010**
Target Value			0.0140			0.0370				0.3200	0.0100
Target Range-Min			**0.012**			**0.032**				**0.270**	**0.008**
Target Range-Max			**0.016**			**0.042**				**0.370**	**0.012**
Replicates > TR Min?			No			Yes				Yes	No
Replicates < TR Max?			Yes			Yes				Yes	Yes
Ave WRT Target Value			-13%			-3%				-6%	-13%

Note: Target Value calcula

Note: Values <LLD have b

A4.7 Field duplicate

SAMPLEID	2006861103001	2006861223001	Ave	RSD	2006861103002	2006861223002	Ave	RSD
Cy_L_c_Bk	25	13	19	46%	35	15	25	56%
St_L_c_Bk	54	38	46	26%	47	32	40	26%
Sd_L_c_Bk	20	49	35	59%	17	52	35	71%
pH_F_p_Bk	7.5	5.5	6.5	22%	7.5	7.5	7.5	0%
pH15_P_p_Bk	8.74	6.36	7.55	22%	8.88	7.56	8.22	11%
EC15_E_u_Bk	193.3	66	129.65	69%	1171	41.8	606.4	132%
Ag_T_m_75	0.152	0.079	0.1155	45%	0.182	0.072	0.127	61%
Ag_T_m_180	0.227	0.055	0.141	86%	0.179	0.048	0.1135	82%
Au_A_m_75	0.0001	0.0001	0.0001	0%	0.0002	0.0001	0.00015	47%
Au_A_m_180	0.0001	0.00005	0.000075	47%	0.0003	0.0001	0.0002	71%
Al_U_m_75	58853	51289	55071	10%	64659	56757	60708	9%
Al_U_m_180	61796	49294	55545	16%	64093	52919	58506	14%
Al_T_m_75	58500	49500	54000	12%	64000	54800	59400	11%
Al_T_m_180	62000	49700	55850	16%	65100	51600	58350	16%
As_U_m_75	6.1	9.3	7.7	29%	3.9	13.6	8.75	78%
As_U_m_180	6.7	10.1	8.4	29%	5.3	12.7	9	58%
As_T_m_75	4.7	2.4	3.55	46%	4.4	4.1	4.25	5%
As_T_m_180	6.2	2.3	4.25	65%	5.1	3.2	4.15	32%
Ba_U_m_75	333	365	349	6%	332	348	340	3%
Ba_U_m_180	374	337	355.5	7%	349	346	347.5	1%
Ba_T_m_75	346	360	353	3%	334	391	362.5	11%
Ba_T_m_180	425	358	391.5	12%	437	338	387.5	18%
Be_T_m_75	2	1	1.5	47%	2	2	2	0%
Be_T_m_180	1	1	1	0%	1	1	1	0%
Bi_T_m_75	0.26	0.24	0.25	6%	0.26	0.26	0.26	0%
Bi_T_m_180	0.3	0.21	0.255	25%	0.36	0.21	0.285	37%
Ca_U_m_75	7176	4574	5875	31%	6897	6075	6486	9%
Ca_U_m_180	7497	4553	6025	35%	7083	5553	6318	17%
Ca_T_m_75	7600	4600	6100	35%	7300	6200	6750	12%
Ca_T_m_180	8100	4700	6400	38%	7700	5600	6650	22%
Cd_T_m_75	0.13	0.1	0.115	18%	0.14	0.09	0.115	31%
Cd_T_m_180	0.15	0.06	0.105	61%	0.11	0.07	0.09	31%
Ce_T_m_75	51.14	57.7	54.42	9%	55.94	60.98	58.46	6%
Ce_T_m_180	61.55	47.93	54.74	18%	59.37	47.03	53.2	16%
Cl_U_m_75	101	2.5	51.75	135%	979	2.5	490.75	141%
Cl_U_m_180	107	2.5	54.75	135%	1035	2.5	518.75	141%
Co_U_m_75	12	11	11.5	6%	14	16	15	9%
Co_U_m_180	15	11	13	22%	12	11	11.5	6%
Co_T_m_75	13.9	11.2	12.55	15%	13.8	14.5	14.15	3%
Co_T_m_180	18.6	9.8	14.2	44%	16.9	10.6	13.75	32%
Cr_U_m_75	59	81	70	22%	66	82	74	15%
Cr_U_m_180	63	61	62	2%	59	70	64.5	12%
Cr_T_m_75	56	57	56.5	1%	57	67	62	11%
Cr_T_m_180	58	43	50.5	21%	52	51	51.5	1%
Cs_T_m_75	4.5	3.8	4.15	12%	5.1	4.4	4.75	10%
Cs_T_m_180	5.1	3.6	4.35	24%	5.1	3.6	4.35	24%
Cu_U_m_75	16	11	13.5	26%	23	9	16	62%
Cu_U_m_180	19	9	14	51%	20	12	16	35%
Cu_T_m_75	22.07	17.93	20	15%	23.82	19.28	21.55	15%
Cu_T_m_180	25.98	14.65	20.315	39%	24.69	14.35	19.52	37%
Dy_T_m_75	3.6	3.7	3.65	2%	4	4.2	4.1	3%
Dy_T_m_180	4.1	3.1	3.6	20%	4.1	2.9	3.5	24%
Er_T_m_75	2	1.8	1.9	7%	1.9	2	1.95	4%
Er_T_m_180	2.3	1.5	1.9	30%	2.1	1.5	1.8	24%
Eu_T_m_75	1	0.9	0.95	7%	1.3	1.1	1.2	12%
Eu_T_m_180	1.2	0.8	1	28%	1.2	0.7	0.95	37%
F_I_m_75	210	140	175	28%	240	160	200	28%
F_I_m_180	220	160	190	22%	220	160	190	22%
Fet_U_m_75	28151	22171	25161	17%	31543	25801	28672	14%
Fet_U_m_180	30193	19576	24885	30%	31340	21814	26577	25%
Fet_T_m_75	28700	23000	25850	16%	32800	26700	29750	14%
Fet_T_m_180	31700	19500	25600	34%	33900	20600	27250	35%
Ga_T_m_75	13.98	11.79	12.885	12%	15.08	12.96	14.02	11%
Ga_T_m_180	16.08	10.72	13.4	28%	15.38	10.46	12.92	27%

SAMPLEID	2006861103001	2006861223001	Ave	RSD	2006861103002	2006861223002	Ave	RSD
Gd_T_m_75	3.9	4.3	4.1	7%	3.9	5	4.45	17%
Gd_T_m_180	4.9	3.9	4.4	16%	4.2	3.5	3.85	13%
Hf_T_m_75	3.45	3.34	3.395	2%	3.52	3.5	3.51	0%
Hf_T_m_180	3.64	2.6	3.12	24%	3.55	2.65	3.1	21%
Ho_T_m_75	0.7	0.7	0.7	0%	0.8	0.8	0.8	0%
Ho_T_m_180	0.9	0.6	0.75	28%	0.9	0.6	0.75	28%
K_U_m_75	13448	13580	13514	1%	13099	13813	13456	4%
K_U_m_180	13746	14834	14290	5%	12900	15191	14045	12%
K_T_m_75	13900	13600	13750	2%	12300	14000	13150	9%
K_T_m_180	14400	13700	14050	4%	13900	12700	13300	6%
La_T_m_75	24.7	26.8	25.75	6%	24.8	28.6	26.7	10%
La_T_m_180	27.6	22.2	24.9	15%	26	22.3	24.15	11%
Li_T_m_75	19.1	15	17.05	17%	20.6	17.8	19.2	10%
Li_T_m_180	22.6	12.8	17.7	39%	22.5	13.2	17.85	37%
Lu_T_m_75	0.3	0.3	0.3	0%	0.3	0.3	0.3	0%
Lu_T_m_180	0.4	0.2	0.3	47%	0.4	0.2	0.3	47%
Mg_U_m_75	5517	3027	4272	41%	6133	3672	4902	35%
Mg_U_m_180	5915	2732	4324	52%	5946	3087	4516	45%
Mg_T_m_75	5100	3100	4100	34%	5600	3800	4700	27%
Mg_T_m_180	5500	2700	4100	48%	5800	2900	4350	47%
LOIc_Z_m_75	96850	91460	94155	4%	82970	76990	79980	5%
LOIc_Z_m_180	97000	75700	86350	17%	96590	52310	74450	42%
Mn_U_m_75	751	542	647	23%	728	666	697	6%
Mn_U_m_180	906	527	716	37%	751	573	662	19%
Mn_T_m_75	802	579	690.5	23%	763	711	737	5%
Mn_T_m_180	933	551	742	36%	808	587	697.5	22%
Mo_T_m_75	0.46	0.55	0.505	13%	0.6	0.78	0.69	18%
Mo_T_m_180	0.54	0.48	0.51	8%	0.66	0.63	0.645	3%
Na_U_m_75	8020	8243	8131	2%	10750	8747	9749	15%
Na_U_m_180	7760	8465	8113	6%	10505	8895	9700	12%
Na_T_m_75	7400	8390	7895	9%	10080	8810	9445	10%
Na_T_m_180	7210	9080	8145	16%	10190	8870	9530	10%
Nb_T_m_75	12.39	12.11	12.25	2%	12.55	12.57	12.56	0%
Nb_T_m_180	13.1	9.12	11.11	25%	12.85	8.81	10.83	26%
Nd_T_m_75	25.1	24.3	24.7	2%	25.7	26.2	25.95	1%
Nd_T_m_180	27.3	19.9	23.6	22%	25.2	19.9	22.55	17%
Ni_U_m_75	25	18	21.5	23%	29	20	24.5	26%
Ni_U_m_180	29	19	24	29%	32	20	26	33%
Ni_T_m_75	25.4	18.3	21.85	23%	25.4	22.9	24.15	7%
Ni_T_m_180	30.5	15.1	22.8	48%	30.5	16.8	23.65	41%
P_U_m_75	532	454	493	11%	489	249	369	46%
P_U_m_180	559	415	487	21%	467	209	338	54%
P_T_m_75	570	530	550	5%	480	280	380	37%
P_T_m_180	600	430	515	23%	520	220	370	57%
Pb_T_m_75	15.57	15.87	15.72	1%	16.93	16.52	16.725	2%
Pb_T_m_180	17.34	14.16	15.75	14%	17.06	12.75	14.905	20%
Pr_T_m_75	5.8	6.2	6	5%	6.3	6.5	6.4	2%
Pr_T_m_180	6.7	5.3	6	16%	6.2	5.2	5.7	12%
Rb_U_m_75	78.6	78.9	78.75	0%	84.4	83.5	83.95	1%
Rb_U_m_180	82.8	86.2	84.5	3%	84.2	89	86.6	4%
Rb_T_m_75	82.3	82.5	82.4	0%	85.1	87.7	86.4	2%
Rb_T_m_180	90.5	79.8	85.15	9%	89.4	77	83.2	11%
Sb_T_m_75	0.56	0.54	0.55	3%	0.63	0.62	0.625	1%
Sb_T_m_180	0.66	0.49	0.575	21%	0.69	0.5	0.595	23%
Sc_U_m_75	13	9	11	26%	12	9	10.5	20%
Sc_U_m_180	2	9	5.5	90%	6	7	6.5	11%
Sc_T_m_75	9.5	7.6	8.55	16%	10.6	8.9	9.75	12%
Sc_T_m_180	9.8	6.2	8	32%	10.6	6.5	8.55	34%
Se_C_m_75	0.163	0.190	0.176	11%	0.177	0.143	0.160	15%
Se_C_m_180	0.174	0.223	0.198	17%	0.160	0.147	0.154	6%
Si_U_m_75	323389	339482	331436	3%	319795	337098	328447	4%
Si_U_m_180	318599	350756	334677	7%	314584	355668	335126	9%
Sm_T_m_75	5.4	4.6	5	11%	5.1	5.3	5.2	3%
Sm_T_m_180	6.3	4.2	5.25	28%	6.8	4.2	5.5	33%

SAMPLEID	2006861103001	2006861223001	Ave	RSD	2006861103002	2006861223002	Ave	RSD
Sn_T_m_75	2.2	1.9	2.05	10%	2.2	2.3	2.25	3%
Sn_T_m_180	2.4	1.8	2.1	20%	2.4	1.7	2.05	24%
S_U_m_75	132	391	262	70%	348	228	288	30%
S_U_m_180	144	388	266	65%	356	225	291	32%
Sr_U_m_75	122.2	100.2	111.2	14%	149.2	115.4	132.3	18%
Sr_U_m_180	127.5	102.5	115	15%	151.2	112	131.6	21%
Sr_T_m_75	140	117	128.5	13%	156	134	145	11%
Sr_T_m_180	158	110	134	25%	174	112	143	31%
Ta_T_m_75	1.3	1	1.15	18%	1.3	1.1	1.2	12%
Ta_T_m_180	1.4	0.9	1.15	31%	1.3	0.8	1.05	34%
Tb_T_m_75	0.6	0.6	0.6	0%	0.6	0.7	0.65	11%
Tb_T_m_180	0.7	0.5	0.6	24%	0.7	0.5	0.6	24%
Th_T_m_75	10	10.8	10.4	5%	10.4	12.1	11.25	11%
Th_T_m_180	11	9	10	14%	10.3	9.4	9.85	6%
Ti_U_m_75	5969	6413	6191	5%	6173	6730	6451	6%
Ti_U_m_180	5903	5274	5588	8%	5909	5472	5690	5%
Ti_T_m_75	6580	6250	6415	4%	6290	6470	6380	2%
Ti_T_m_180	6770	5140	5955	19%	6920	5200	6060	20%
Tm_T_m_75	0.3	0.3	0.3	0%	0.3	0.3	0.3	0%
Tm_T_m_180	0.4	0.2	0.3	47%	0.3	0.2	0.25	28%
U_T_m_75	1.3	1.9	1.6	27%	1.7	1.9	1.8	8%
U_T_m_180	1.5	1.5	1.5	0%	1.7	1.4	1.55	14%
V_U_m_75	77	67	72	10%	79	77	78	2%
V_U_m_180	82	60	71	22%	85	67	76	17%
V_T_m_75	72	66	69	6%	80	74	77	6%
V_T_m_180	78	55	66.5	24%	85	57	71	28%
W_U_m_75	4	8	6	47%	1	7	4	106%
W_U_m_180	2	5	3.5	61%	2	2	2	0%
W_T_m_75	1.4	1.4	1.4	0%	1.4	1.4	1.4	0%
W_T_m_180	1.5	1.1	1.3	22%	1.5	1.1	1.3	22%
Y_T_m_75	19.3	19	19.15	1%	20.7	21.2	20.95	2%
Y_T_m_180	22.6	15.6	19.1	26%	22	15.2	18.6	26%
Yb_T_m_75	2.2	2.3	2.25	3%	2.4	2.5	2.45	3%
Yb_T_m_180	2.2	1.5	1.85	27%	2.3	1.6	1.95	25%
Zn_U_m_75	51	46	48.5	7%	57	44	50.5	18%
Zn_U_m_180	57	39	48	27%	56	37	46.5	29%
Zn_T_m_75	54.9	50	52.45	7%	61.8	48.8	55.3	17%
Zn_T_m_180	63.3	39.5	51.4	33%	60.5	35.4	47.95	37%
Zr_U_m_75	450	749	599.5	35%	370	718	544	45%
Zr_U_m_180	392	570	481	26%	343	540	441.5	32%
Zr_T_m_75	108.9	106.1	107.5	2%	106.8	109.8	108.3	2%
Zr_T_m_180	118.9	81.5	100.2	26%	120.3	81.1	100.7	28%

Note: Values <LLD have been halved (= 0.5 LLD)

APPENDIX 5: DATA

A5.1 Geographical coordinates of sampling sites

SITEID	SITE#	LAT	LONG
2005861001	1	-30.30	146.07
2005861002	2	-30.93	146.33
2005861003	3	-30.01	146.36
2005861004	4	-30.07	147.56
2005861005	5	-29.87	148.15
2005861006	6	-29.55	147.21
2005861007	7	-29.65	145.65
2005861008	8	-29.32	144.75
2005861009	9	-29.69	144.12
2005861010	10	-29.74	142.69
2005861011	11	-29.32	142.30
2005861012	12	-29.12	141.37
2005861013	13	-29.81	142.27
2005861014	14	-31.03	143.13
2005861015	15	-30.98	143.48
2005861016	16	-30.49	143.72
2005861017	17	-30.67	145.02
2005861018	18	-31.54	145.40
2005861019	19	-31.12	145.87
2006861101	101	-29.45	148.12
2006861102	102	-29.92	148.08
2006861103	103	-29.97	148.16
2006861104	104	-29.70	147.36
2006861105	105	-30.05	146.24
2006861106	106	-29.73	146.64
2006861107	107	-29.41	146.65
2006861108	108	-29.34	146.81
2006861109	109	-29.19	146.85
2006861110	110	-29.29	145.98
2006861111	111	-29.21	145.56
2006861112	112	-29.59	145.56
2006861113	113	-29.95	145.40
2006861114	114	-29.64	145.25
2006861115	115	-29.14	144.48
2006861116	116	-29.11	143.83
2006861117	117	-29.25	143.55
2006861118	118	-29.29	143.51
2006861119	119	-29.21	143.19
2006861120	120	-29.30	143.15
2006861121	121	-29.98	144.69
2006861122	122	-29.78	144.36
2006861123	123	-29.68	144.18
2006861124	124	-29.77	144.12
2006861125	125	-29.80	143.95
2006861126	126	-30.28	144.00
2006861127	127	-30.55	143.70
2006861128	128	-30.79	143.73
2006861129	129	-30.94	143.56
2006861130	130	-30.37	142.86
2006861131	131	-30.28	142.81

SITEID	SITE#	LAT	LONG
2006861132	132	-30.27	142.65
2006861133	133	-30.26	142.33
2006861134	134	-30.32	142.08
2006861135	135	-30.05	141.96
2006861136	136	-29.01	142.18
2006861137	137	-29.11	142.32
2006861138	138	-29.45	142.32
2006861139	139	-29.90	142.67
2006861140	140	-30.43	141.74
2006861141	141	-30.73	142.02
2006861142	142	-30.95	142.08
2006861143	143	-31.18	141.90
2006861144	144	-31.34	143.19
2006861145	145	-31.55	143.41
2006861146	146	-31.32	143.81
2006861147	147	-30.92	144.66
2006861148	148	-31.40	144.64
2006861149	149	-30.31	144.76
2006861150	150	-30.67	145.13
2006861151	151	-30.48	145.50
2006861152	152	-30.33	145.62
2006861153	153	-30.24	146.69
2006861154	154	-30.56	146.84
2006861155	155	-30.29	147.20
2006861156	156	-30.23	147.54
2006861157	157	-30.19	147.57
2006861201	201	-30.86	147.02
2006861202	202	-30.65	146.87
2006861203	203	-30.62	146.91
2006861204	204	-30.84	146.41
2006861205	205	-30.47	146.20
2006861206	206	-30.20	145.78
2006861207	207	-30.38	145.18
2006861208	208	-30.32	145.36
2006861209	209	-30.80	144.67
2006861210	210	-30.97	144.67
2006861211	211	-30.84	144.84
2006861212	212	-30.28	142.72
2006861213	213	-30.23	142.45
2006861214	214	-30.01	142.39
2006861215	215	-30.36	143.79
2006861216	216	-29.33	144.38
2006861217	217	-29.13	144.30
2006861218	218	-30.18	144.29
2006861219	219	-30.02	145.31
2006861220	220	-29.88	145.87
2006861221	221	-29.94	146.43
2006861222	222	-29.58	147.68
2006861223	223	-29.97	148.15

A5.2 Multi-element XRF data (Geoscience Australia)

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2005861001001	10.406	9.131	55078.958	48330.383	2.9	2.7	278	217	0.174
2005861002001	13.071	10.887	69184.803	57624.891	3	3.1	266	211	0.161
2005861003001	10.986	11.963	58148.898	63320.159	4.7	2.7	374	378	0.69
2005861004001	13.793	11.406	73006.349	60371.958	6.9	5.6	320	320	2.129
2005861005001	10.693	11.252	56598.049	59556.836	4.7	2.3	316	374	0.813
2005861006001	13.486	12.773	71381.398	67607.489	4.4	3.1	332	385	0.966
2005861007001	10.328	7.138	54666.104	37781.434	2.7	3.4	230	161	0.287
2005861008001	12.19	8.219	64521.67	43503.167	4.9	3.6	270	232	0.34
2005861009001	10.001	8.877	52935.293	46985.961	-2	2.6	248	240	0.232
2005861010001		12.377		65511.461		2		326	
2005861011001	9.575	7.624	50680.475	40353.832	2.6	4.1	311	266	0.403
2005861012001	7.51	7.589	39750.43	40168.577	2.9	2	309	267	0.393
2005861013001	13.405	9.207	70952.665	48732.651	6.3	3.6	375	322	0.582
2005861014001	10.788	7.61	57100.884	40279.73	6.6	3.3	327	292	0.393
2005861015001	14.166	10.339	74980.638	54724.327	4.2	5.5	321	257	0.55
2005861016001	14.98	10.867	79289.14	57519.031	5.2	3.8	229	272	0.472
2005861017001	10.661	8.699	56428.673	46043.807	3.9	4.7	304	296	0.588
2005861018001	13.762	10.123	72842.266	53581.039	3.6	3.7	283	239	0.283
2005861019001		8.096		42852.128		4.3		264	
2006861101001	11.751	9.938	62198.043	52601.834	4	3.7	350	294	0.602
2006861102001	11.73	10.741	62086.89	56852.113	4.9	5.7	290	330	1.078
2006861103001	11.119	11.675	58852.867	61795.775	6.1	6.7	333	374	1.004
2006861104001	10.581	9.175	56005.233	48563.275	3.7	4.4	403	424	0.934
2006861105001	10.651	10.739	56375.743	56841.527	5.5	3.5	304	334	0.769
2006861106001	12.333	12.692	65278.569	67178.756	3.3	2.9	272	351	0.624
2006861107001	6.182	4.634	32721.326	24527.762	-2	3.1	305	225	0.255
2006861108001	8.721	6.823	46160.253	36114.139	3	-2	337	305	0.405
2006861109001	10.107	7.543	53496.351	39925.099	5.2	3.7	340	302	0.348
2006861110001	8.388	6.74	44397.684	35674.82	4.2	2.5	267	197	0.275
2006861111001	11.292	11.418	59768.556	60435.474	4.6	2.4	313	285	0.58
2006861112001	10.73	8.381	56793.89	44360.633	4.4	4.4	269	251	0.471
2006861113001	12.984	8.448	68724.312	44715.264	4.5	3.7	396	316	0.529
2006861114001	9.736	8.42	51532.648	44567.06	4.9	5.3	431	401	2.524
2006861115001	9.573	7.012	50669.889	37114.516	2.8	4	272	247	0.249
2006861116001	11.82	9.579	62563.26	50701.647	-2	2.7	323	274	0.245

Appendix 5.2

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2006861117001	8.666	6.397	45869.138	33859.321	4.9	4.9	235	254	0.228
2006861118001	9.997	7.926	52914.121	41952.318	5.1	6.1	236	207	0.213
2006861119001	15.175	11.66	80321.275	61716.38	4.7	4.8	269	359	0.383
2006861120001	8.975	5.785	47504.675	30620.005	3.7	2.6	293	412	0.334
2006861121001	13.406	10.685	70957.958	56555.705	4	2.8	353	329	0.47
2006861122001	10.597	6.076	56089.921	32160.268	3.9	2.3	285	251	0.343
2006861123001	8.888	5.629	47044.184	29794.297	3.9	2.9	254	260	0.244
2006861124001	12.354	9.714	65389.722	51416.202	3.3	3.7	291	259	0.339
2006861125001	12.584	9.463	66607.112	50087.659	6	3.6	248	184	0.163
2006861126001	11.722	7.464	62044.546	39506.952	2.3	2.5	225	264	0.206
2006861127001	12.813	7.589	67819.209	40168.577	7.2	4.8	362	305	0.814
2006861128001	10.702	7.899	56645.686	41809.407	2	3.6	281	297	0.439
2006861129001	12.166	12.24	64394.638	64786.32	4.5	5.2	275	278	0.386
2006861130001	9.535	6.991	50468.755	37003.363	4.2	4.3	306	246	0.36
2006861131001	8.775	6.451	46446.075	34145.143	4.4	-2	288	234	0.252
2006861132001	9.828	7.346	52019.604	38882.378	5.4	3.1	293	287	0.303
2006861133001	8.229	8.261	43556.097	43725.473	5.4	3.5	357	330	0.463
2006861134001	10.565	5.447	55920.545	28830.971	4.8	4.7	348	239	0.386
2006861135001	10.534	6.426	55756.462	34012.818	4.5	2.9	282	221	0.471
2006861136001	7.732	7.144	40925.476	37813.192	3.8	4.7	381	377	0.533
2006861137001	7.947	7.398	42063.471	39157.614	5.7	4.5	276	331	0.468
2006861138001	11.388	11.76	60276.684	62245.68	6	4	345	353	0.556
2006861139001	9.625	4.731	50945.125	25041.183	5.8	-2	340	266	0.289
2006861140001	7.696	4.696	40734.928	24855.928	4.6	-2	305	209	0.473
2006861141001	8.326	6.418	44069.518	33970.474	6.7	4.1	356	283	0.274
2006861142001	14.106	9.213	74663.058	48764.409	7.4	4.9	358	260	0.614
2006861143001	12.843	10.214	67977.999	54062.702	6	3.4	422	341	0.654
2006861144001	9.545	5.761	50521.685	30492.973	5.4	4.1	276	141	0.385
2006861145001	11.82	10.424	62563.26	55174.232	6.3	3.5	367	328	0.584
2006861146001	9.35	6.048	49489.55	32012.064	3.1	-2	295	236	0.436
2006861147001	8.623	7.271	45641.539	38485.403	3.5	4.2	357	303	0.514
2006861148001	11.815	8.103	62536.795	42889.179	5.6	2	266	192	0.311
2006861149001	9.379	6.125	49643.047	32419.625	-2	3.4	271	206	0.239
2006861150001	11.086	8.26	58678.198	43720.18	4.8	4.1	262	243	0.263
2006861151001	14.566	10.342	77097.838	54740.206	4.2	2.8	317	205	0.387

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2006861152001	9.426	7.661	49891.818	40549.673	4.3	4.8	243	237	0.218
2006861153001	10.819	11.067	57264.967	58577.631	3.9	2.1	335	343	0.489
2006861154001	6.142	5.209	32509.606	27571.237	4.8	4.3	268	214	0.149
2006861155001	10.799	10.762	57159.107	56963.266	2.9	4.1	340	335	0.67
2006861156001	10.559	11.222	55888.787	59398.046	-2	4.4	314	306	0.602
2006861157001	12.786	13.068	67676.298	69168.924	5.2	5.1	376	391	0.761
2006861201001	5.785	5.542	30620.005	29333.806	4.2	7.7	244	235	0.229
2006861202001	9.009	7.757	47684.637	41057.801	11.8	15	293	243	0.252
2006861203001	11.832	12.796	62626.776	67729.228	13.5	15.3	342	407	0.569
2006861204001	13.534	10.871	71635.462	57540.203	16.9	11.5	227	186	0.223
2006861205001	13.344	11.661	70629.792	61721.673	17	13.9	313	258	0.234
2006861206001	7.654	6.224	40512.622	32943.632	13.4	12.5	303	290	0.434
2006861207001	12.572	10.961	66543.596	58016.573	13.2	13	369	344	0.845
2006861208001	11.109	8.999	58799.937	47631.707	14	11.4	325	212	0.573
2006861209001	10.134	8.764	53639.262	46387.852	12.5	11.3	313	278	0.585
2006861210001	9.395	9.399	49727.735	49748.907	10.4	11	278	302	0.586
2006861211001	12.577	8.909	66570.061	47155.337	15.1	13	340	312	1.991
2006861212001	15.616	13.074	82655.488	69200.682	14.2	15.3	411	369	0.429
2006861213001	17.285	15.017	91489.505	79484.981	11.7	15.8	479	466	0.544
2006861214001	15.58	10.641	82464.94	56322.813	16.6	12.6	487	381	2.538
2006861215001	12.351	10.869	65373.843	57529.617	12.3	9.7	315	273	0.41
2006861216001	10.794	8.107	57132.642	42910.351	14.7	10.8	191	190	0.189
2006861217001	12.686	9.243	67146.998	48923.199	14.1	10.2	209	195	0.205
2006861218001	13.423	11.237	71047.939	59477.441	16	14.4	550	486	0.291
2006861219001	14.723	9.596	77928.839	50791.628	11.3	12.9	281	258	0.421
2006861220001	16.361	13.982	86598.773	74006.726	11.4	10.8	404	388	0.486
2006861221001	12.096	11.967	64024.128	63341.331	13.2	11.6	362	363	1.095
2006861222001	12.588	11.279	66628.284	59699.747	11.9	3.2	350	295	0.778
2006861223001	9.69	9.313	51289.17	49293.709	9.3	10.1	365	337	0.64
2005861001002	13.684	12.301	72429.412	65109.193	3.8	5.7	278	244	0.348
2005861002002	13.899	11.806	73567.407	62489.158	4	4.4	258	198	0.254
2005861003002	12.829	13.532	67903.897	71624.876	2.8	2.9	332	356	0.789
2005861004002	14.538	12.359	76949.634	65416.187	5.1	4.1	391	366	2.345
2005861005002	12.014	12.072	63590.102	63897.096	5.2	3.7	394	403	0.865
2005861006002	14.758	14.001	78114.094	74107.293	3.3	-2	404	332	0.914

Appendix 5.2

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2005861007002	14.624	12.311	77404.832	65162.123	5.6	5.2	671	534	0.609
2005861008002	16.138	13.149	85418.434	69597.657	5.8	5.4	340	298	1.027
2005861009002	15.56	12.766	82359.08	67570.438	6.2	5.4	445	393	0.493
2005861010002	17.692	16.868	93643.756	89282.324	5.9	4.5	423	336	1.008
2005861011002	12.613	10.655	66760.609	56396.915	5.9	-2	414	367	0.684
2005861012002	14.204	9.721	75181.772	51453.253	6.3	3.1	310	259	0.582
2005861013002	13.286	8.153	70322.798	43153.829	12.7	8.7	567	401	2.215
2005861014002	13.995	11.897	74075.535	62970.821	6.5	5.4	702	539	1.01
2005861015002		12.267		64929.231		6.3		521	
2005861016002	12.889	7.645	68221.477	40464.985	5.6	3.4	276	247	0.429
2005861017002	11.957	9.233	63288.401	48870.269	6.1	6.1	366	292	1.445
2005861018002	17.998	15.387	95263.414	81443.391	3.8	5.2	407	319	0.48
2005861019002	12.811	11.139	67808.623	58958.727	4.7	3.1	375	297	0.264
2006861101002	12.346	10.257	65347.378	54290.301	4.3	3.1	451	339	0.828
2006861102002	12.514	11.19	66236.602	59228.67	3.8	4.7	333	327	1.364
2006861103002	12.216	12.109	64659.288	64092.937	3.9	5.3	332	349	0.965
2006861104002	12.159	9.969	64357.587	52765.917	3.5	5.4	460	443	1.17
2006861105002	11.866	10.947	62806.738	57942.471	4.3	6.5	334	360	0.834
2006861106002	12.149	11.559	64304.657	61181.787	-2	3.7	345	356	0.727
2006861107002	10.708	7.454	56677.444	39454.022	3.6	2.3	466	371	0.482
2006861108002	11.113	7.899	58821.109	41809.407	6.6	3.7	404	331	0.675
2006861109002	12.031	7.6	63680.083	40226.8	2.8	-2	290	282	0.513
2006861110002	14.811	12.673	78394.623	67078.189	4.9	4.4	332	298	1.353
2006861111002	12.967	12.267	68634.331	64929.231	3.4	4.7	327	344	0.734
2006861112002	12.593	8.173	66654.749	43259.689	6.9	4	342	208	1.919
2006861113002	14.868	9.607	78696.324	50849.851	6.6	5.5	365	256	0.613
2006861114002	14.765	10.59	78151.145	56052.87	3.8	4.6	295	219	0.947
2006861115002	11.618	8.743	61494.074	46276.699	6.9	-2	310	241	0.362
2006861116002	12.568	10.468	66522.424	55407.124	3.1	7	322	265	0.304
2006861117002	6.336	5.122	33536.448	27110.746	5.2	4.7	279	226	0.14
2006861118002	13.407	10.837	70963.251	57360.241	5.9	6	289	249	0.43
2006861119002	14.231	11.333	75324.683	59985.569	7.6	7.6	443	425	2.339
2006861120002	15.404	10.308	81533.372	54560.244	3.7	3.4	367	388	0.904
2006861121002	12.037	7.972	63711.841	42195.796	13.3	9.5	443	348	4.325
2006861122002	13.642	8.289	72207.106	43873.677	4	3.2	453	341	2.702

Appendix 5.2

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2006861123002	15.311	10.545	81041.123	55814.685	4	3.9	287	295	0.478
2006861124002	16.436	11.718	86995.748	62023.374	5	5.6	258	219	0.767
2006861125002	10.222	8.21	54105.046	43455.53	4.3	5.4	206	203	0.101
2006861126002	16.268	10.234	86106.524	54168.562	4.5	4.5	343	261	0.332
2006861127002	13.709	7.41	72561.737	39221.13	10.2	7.5	325	311	0.624
2006861128002	16.192	10.004	85704.256	52951.172	8.4	7.1	378	298	1.047
2006861129002	13.876	8.713	73445.668	46117.909	6.1	3.7	297	268	0.399
2006861130002	15.272	12.531	80834.696	66326.583	4.8	6.2	374	324	1.152
2006861131002	14.289	11.632	75631.677	61568.176	8.8	5.7	408	348	0.353
2006861132002	16.203	13.141	85762.479	69555.313	6.3	7	634	500	1.973
2006861133002	9.635	9.006	50998.055	47668.758	5.4	4.7	345	319	0.528
2006861134002	13.923	9.748	73694.439	51596.164	9.3	5.4	732	495	1.761
2006861135002	13.015	9.386	68888.395	49680.098	6.9	2.9	523	379	1.92
2006861136002	10.748	8.49	56889.164	44937.57	6.5	6.2	397	383	0.813
2006861137002	11.719	9.031	62028.667	47801.083	5.3	4.1	547	428	0.799
2006861138002	12.453	11.373	65913.729	60197.289	5.6	4.1	430	342	0.673
2006861139002	12.457	7.72	65934.901	40861.96	11.8	6	422	326	2.142
2006861140002	11.334	6.118	59990.862	32382.574	6.1	3.6	356	232	0.851
2006861141002	10.066	5	53279.338	26465	4.6	3.3	348	161	0.36
2006861142002	9.825	4.644	52003.725	24580.692	4.6	2.7	323	173	0.435
2006861143002	16.59	14.514	87810.87	76822.602	7.6	7.2	388	343	0.606
2006861144002	13.12	7.477	69444.16	39575.761	5.4	4.1	279	164	0.501
2006861145002	12.517	11.46	66252.481	60657.78	5	3.1	382	289	1.178
2006861146002	11.724	8.491	62055.132	44942.863	7.3	6.4	319	283	4.591
2006861147002	9.161	7.831	48489.173	41449.483	6.3	4	333	332	0.781
2006861148002	9.559	7.956	50595.787	42111.108	6.9	5.2	189	183	15.884
2006861149002	13.242	8.058	70089.906	42650.994	4.9	2.7	213	200	1.171
2006861150002	14.003	9.702	74117.879	51352.686	5.2	3	301	223	0.318
2006861151002	14.141	11.554	74848.313	61155.322	4.4	2.6	456	378	0.4
2006861152002	8.09	6.908	42820.37	36564.044	7.2	2.7	273	220	0.212
2006861153002	12.094	11.669	64013.542	61764.017	2.8	3.8	343	354	0.517
2006861154002	9.864	8.541	52210.152	45207.513	3.4	4.3	303	295	0.388
2006861155002	14.253	14.382	75441.129	76123.926	6	6.8	364	417	0.926
2006861156002	11.625	11.96	61531.125	63304.28	4.4	2.7	291	267	0.643
2006861157002	13.071	13.006	69184.803	68840.758	5.6	4.9	380	405	1.061

Appendix 5.2

SAMPLEID	Al2O3_U_c_75	Al2O3_U_c_180	Al_U_m_75	Al_U_m_180	As_U_m_75	As_U_m_180	Ba_U_m_75	Ba_U_m_180	CaO_U_c_75
2006861201002	11.52	11.69	60975.36	61875.17	14.4	18.3	520	551	0.907
2006861202002	12.68	12.345	67115.24	65342.085	13.6	15.9	327	356	0.4
2006861203002	13.167	13.276	69692.931	70269.868	10.5	14.5	436	425	0.561
2006861204002	16.659	15.818	88176.087	83724.674	15.9	14.7	511	360	0.383
2006861205002	12.967	11.093	68634.331	58715.249	14.9	12	375	295	0.288
2006861206002	9.126	8.189	48303.918	43344.377	11.4	12.9	349	286	0.817
2006861207002	10.086	10.06	53385.198	53247.58	13	8.3	325	319	0.632
2006861208002	12.688	9.144	67157.584	48399.192	15.2	9.4	333	325	0.921
2006861209002	11.763	10.067	62261.559	53284.631	13	7	341	333	0.797
2006861210002	10.876	10.883	57566.668	57603.719	11.2	10.5	286	336	0.706
2006861211002	10.813	8.535	57233.209	45175.755	19.4	15.6	514	439	10.521
2006861212002	16.879	12.361	89340.547	65426.773	19.6	16.1	479	386	0.512
2006861213002	15.319	11.771	81083.467	62303.903	18.3	12	549	508	2.054
2006861214002	17.306	14.389	91600.658	76160.977	21.3	17.8	505	369	1.572
2006861215002	12.524	6.892	66289.532	36479.356	7.4	11.1	345	299	0.49
2006861216002	11.167	7.638	59106.931	40427.934	17.3	12.8	238	158	0.189
2006861217002	19.026	18.161	100704.618	96126.173	11.9	15.8	280	300	0.788
2006861218002	13.37	11.329	70767.41	59964.397	11.5	14.3	434	367	0.66
2006861219002	15.961	15.291	84481.573	80935.263	14.3	19	299	334	3.653
2006861220002	16.69	15.915	88340.17	84238.095	11.9	13.2	266	177	0.264
2006861221002	12.793	12.521	67713.349	66273.653	13.2	10.4	330	396	0.879
2006861222002	12.804	9.323	67771.572	49346.639	10.6	7.7	376	295	1.038
2006861223002	10.723	9.998	56756.839	52919.414	13.6	12.7	348	346	0.85

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2005861001001	0.144	1243.578	1029.168	21	5	7	7	51	47	18
2005861002001	0.127	1150.667	907.669	13	51	12	6	62	54	22
2005861003001	0.726	4931.43	5188.722	28	43	11	15	54	56	22
2005861004001	1.69	15215.963	12078.43	61	50	12	7	62	44	25
2005861005001	0.84	5810.511	6003.48	16	38	12	10	51	46	16
2005861006001	0.899	6904.002	6425.153	26	44	11	10	55	45	20
2005861007001	0.185	2051.189	1322.195	223	153	6	3	68	31	16
2005861008001	0.21	2429.98	1500.87	61	15	10	7	45	45	22
2005861009001	0.199	1658.104	1422.253	-5	39	7	4	42	42	13
2005861010001	0.522		3730.734		1064		7		40	
2005861011001	0.326	2880.241	2329.922	46	33	4	8	50	55	13
2005861012001	0.385	2808.771	2751.595	63	32	4	6	33	30	10
2005861013001	0.413	4159.554	2951.711	113	50	10	5	40	47	19
2005861014001	0.26	2808.771	1858.22	75	41	8	6	42	38	16
2005861015001	0.388	3930.85	2773.036	26	44	5	7	53	36	21
2005861016001	0.334	3373.384	2387.098	20	46	11	5	48	29	21
2005861017001	0.476	4202.436	3401.972	41	25	11	4	58	38	20
2005861018001	0.202	2022.601	1443.694	31	21	4	5	55	49	26
2005861019001	0.16		1143.52		58		5		43	
2006861101001	0.489	4302.494	3494.883	78	115	14	11	50	45	14
2006861102001	0.967	7704.466	6911.149	87	45	11	11	61	55	21
2006861103001	1.049	7175.588	7497.203	101	107	12	15	59	63	16
2006861104001	0.814	6675.298	5817.658	167	105	10	10	50	41	13
2006861105001	0.763	5496.043	5453.161	47	60	6	10	47	53	18
2006861106001	0.627	4459.728	4481.169	15	46	13	12	50	52	14
2006861107001	0.176	1822.485	1257.872	33	28	7	5	46	26	14
2006861108001	0.314	2894.535	2244.158	45	21	12	7	43	33	14
2006861109001	0.255	2487.156	1822.485	20	14	15	11	47	39	14
2006861110001	0.219	1965.425	1565.193	191	210	8	7	45	33	10
2006861111001	0.578	4145.26	4130.966	38	19	10	8	39	49	14
2006861112001	0.355	3366.237	2537.185	60	39	5	4	55	33	17
2006861113001	0.326	3780.763	2329.922	235	141	9	6	53	31	20
2006861114001	2.293	18039.028	16388.071	78	32	5	7	44	36	14
2006861115001	0.174	1779.603	1243.578	43	12	7	3	59	43	15
2006861116001	0.182	1751.015	1300.754	60	22	7	5	49	38	20

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2006861117001	0.147	1629.516	1050.609	74	-5	4	4	49	45	13
2006861118001	0.152	1522.311	1086.344	-5	23	8	6	52	43	15
2006861119001	0.294	2737.301	2101.218	29	31	8	7	52	42	23
2006861120001	0.215	2387.098	1536.605	87	57	6	4	38	20	12
2006861121001	0.371	3359.09	2651.537	85	71	11	8	53	33	13
2006861122001	0.187	2451.421	1336.489	50	24	6	4	44	32	17
2006861123001	0.142	1743.868	1014.874	64	15	5	4	49	31	14
2006861124001	0.255	2422.833	1822.485	29	52	8	7	55	42	20
2006861125001	0.108	1164.961	771.876	39	46	10	6	58	43	17
2006861126001	0.124	1472.282	886.228	56	21	2	3	57	39	18
2006861127001	0.4	5817.658	2858.8	70	37	7	5	56	30	18
2006861128001	0.315	3137.533	2251.305	118	115	7	5	48	31	15
2006861129001	0.391	2758.742	2794.477	119	78	10	7	35	57	11
2006861130001	0.263	2572.92	1879.661	88	46	5	6	38	34	9
2006861131001	0.162	1801.044	1157.814	17	8	4	1	37	36	13
2006861132001	0.207	2165.541	1479.429	52	15	6	1	46	35	12
2006861133001	0.443	3309.061	3166.121	53	28	8	8	36	41	8
2006861134001	0.191	2758.742	1365.077	42	-5	7	2	59	30	18
2006861135001	0.272	3366.237	1943.984	54	26	8	4	43	26	15
2006861136001	0.502	3809.351	3587.794	72	65	6	4	54	35	10
2006861137001	0.434	3344.796	3101.798	70	49	11	6	53	32	9
2006861138001	0.576	3973.732	4116.672	100	27	9	10	50	53	18
2006861139001	0.129	2065.483	921.963	50	25	12	2	50	24	19
2006861140001	0.262	3380.531	1872.514	103	85	5	4	31	22	6
2006861141001	0.186	1958.278	1329.342	60	25	8	8	38	24	16
2006861142001	0.397	4388.258	2837.359	63	13	10	7	56	38	21
2006861143001	0.524	4674.138	3745.028	24	13	10	12	50	34	24
2006861144001	0.195	2751.595	1393.665	43	21	6	5	55	24	13
2006861145001	0.507	4173.848	3623.529	187	154	10	9	49	47	20
2006861146001	0.259	3116.092	1851.073	63	-5	5	3	60	30	14
2006861147001	0.424	3673.558	3030.328	98	24	8	8	47	48	7
2006861148001	0.191	2222.717	1365.077	11	32	8	7	55	31	19
2006861149001	0.135	1708.133	964.845	50	12	6	3	56	31	11
2006861150001	0.182	1879.661	1300.754	8	11	8	5	61	43	16
2006861151001	0.249	2765.889	1779.603	115	84	10	8	47	47	19

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2006861152001	0.167	1558.046	1193.549	47	34	4	4	52	39	13
2006861153001	0.497	3494.883	3552.059	8	24	10	10	63	62	15
2006861154001	0.118	1064.903	843.346	-5	-5	5	6	56	32	14
2006861155001	0.68	4788.49	4859.96	78	53	9	6	58	59	24
2006861156001	0.633	4302.494	4524.051	75	71	11	12	54	57	19
2006861157001	0.779	5438.867	5567.513	77	81	15	15	66	61	27
2006861201001	0.216	1636.663	1543.752	-5	-5	8	4	66	63	11
2006861202001	0.224	1801.044	1600.928	-5	-5	12	9	60	60	9
2006861203001	0.602	4066.643	4302.494	-5	-5	9	11	79	72	16
2006861204001	0.175	1593.781	1250.725	-5	-5	10	8	63	66	24
2006861205001	0.201	1672.398	1436.547	-5	-5	8	7	81	75	18
2006861206001	0.346	3101.798	2472.862	-5	-5	7	8	80	54	13
2006861207001	0.729	6039.215	5210.163	-5	-5	7	11	79	69	18
2006861208001	0.461	4095.231	3294.767	-5	-5	9	8	67	48	18
2006861209001	0.488	4180.995	3487.736	5	-5	12	10	68	48	12
2006861210001	0.583	4188.142	4166.701	-5	-5	6	8	66	74	11
2006861211001	1.331	14229.677	9512.657	-5	-5	15	10	81	49	18
2006861212001	0.348	3066.063	2487.156	-5	-5	19	15	71	69	22
2006861213001	0.48	3887.968	3430.56	-5	-5	14	13	87	79	32
2006861214001	0.974	18139.086	6961.178	-5	-5	15	12	76	44	20
2006861215001	0.355	2930.27	2537.185	-5	-5	9	9	60	55	20
2006861216001	0.131	1350.783	936.257	-5	-5	10	5	64	56	18
2006861217001	0.147	1465.135	1050.609	-5	-5	5	5	78	53	16
2006861218001	0.239	2079.777	1708.133	2561	2111	15	14	84	44	21
2006861219001	0.275	3008.887	1965.425	4327	2367	11	7	73	45	16
2006861220001	0.405	3473.442	2894.535	3049	2571	7	4	67	68	22
2006861221001	1.104	7825.965	7890.288	62	-5	14	18	84	72	17
2006861222001	0.704	5560.366	5031.488	7	-5	9	14	63	61	15
2006861223001	0.637	4574.08	4552.639	-5	-5	11	11	81	61	11
2005861001002	0.3	2487.156	2144.1	233	206	12	5	60	55	21
2005861002002	0.201	1815.338	1436.547	28	51	8	11	59	48	17
2005861003002	0.758	5638.983	5417.426	87	101	14	13	69	68	24
2005861004002	1.877	16759.715	13414.919	756	654	16	11	55	54	26
2005861005002	0.826	6182.155	5903.422	381	398	14	15	66	53	16
2005861006002	0.825	6532.358	5896.275	849	787	15	11	58	45	22

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2005861007002	0.481	4352.523	3437.707	4448	3848	12	11	56	48	21
2005861008002	0.726	7339.969	5188.722	1066	876	10	6	55	62	21
2005861009002	0.411	3523.471	2937.417	970	751	10	9	65	45	24
2005861010002	0.948	7204.176	6775.356	8446	8087	12	11	67	58	24
2005861011002	0.566	4888.548	4045.202	310	238	10	7	50	43	18
2005861012002	0.392	4159.554	2801.624	49	11	6	6	49	42	17
2005861013002	1.078	15830.605	7704.466	561	325	16	7	55	34	24
2005861014002	0.792	7218.47	5660.424	557	509	6	7	44	37	18
2005861015002	0.571		4080.937		447		11		42	
2005861016002	0.238	3066.063	1700.986	192	96	8	4	56	35	19
2005861017002	1.077	10327.415	7697.319	450	313	13	10	51	34	21
2005861018002	0.402	3430.56	2873.094	54	10	13	7	64	50	22
2005861019002	0.22	1886.808	1572.34	33	-5	8	9	50	55	18
2006861101002	0.608	5917.716	4345.376	554	444	20	13	57	41	14
2006861102002	1.2	9748.508	8576.4	1098	1037	18	12	66	53	23
2006861103002	0.991	6896.855	7082.677	979	1035	14	12	66	59	23
2006861104002	0.961	8361.99	6868.267	1421	1164	14	10	57	44	20
2006861105002	0.729	5960.598	5210.163	820	810	14	13	56	52	25
2006861106002	0.653	5195.869	4666.991	286	238	11	12	51	47	20
2006861107002	0.326	3444.854	2329.922	17	45	25	11	42	36	15
2006861108002	0.453	4824.225	3237.591	38	14	21	7	59	43	18
2006861109002	0.31	3666.411	2215.57	37	23	16	8	49	30	16
2006861110002	1.128	9669.891	8061.816	3710	3134	13	10	58	40	24
2006861111002	0.676	5245.898	4831.372	310	324	10	10	50	44	18
2006861112002	1.07	13715.093	7647.29	95	104	10	7	53	43	19
2006861113002	0.36	4381.111	2572.92	942	541	15	5	53	47	23
2006861114002	0.63	6768.209	4502.61	197	136	7	4	60	41	17
2006861115002	0.259	2587.214	1851.073	-5	-5	11	5	50	36	15
2006861116002	0.242	2172.688	1729.574	36	-5	10	6	54	47	21
2006861117002	0.092	1000.58	657.524	77	48	3	3	42	30	9
2006861118002	0.332	3073.21	2372.804	60	127	8	6	50	39	20
2006861119002	1.699	16716.833	12142.753	43	52	13	8	53	43	21
2006861120002	0.574	6460.888	4102.378	39	-5	8	4	53	37	24
2006861121002	2.823	30910.775	20175.981	391	250	10	7	51	28	15
2006861122002	1.407	19311.194	10055.829	206	172	10	7	51	36	22

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2006861123002	0.32	3416.266	2287.04	41	47	11	5	44	35	18
2006861124002	0.51	5481.749	3644.97	218	141	9	7	59	45	24
2006861125002	0.076	721.847	543.172	37	-5	7	2	42	44	16
2006861126002	0.208	2372.804	1486.576	162	100	12	8	58	35	27
2006861127002	0.319	4459.728	2279.893	185	165	12	7	67	32	21
2006861128002	0.584	7482.909	4173.848	2792	1590	12	3	60	43	23
2006861129002	0.239	2851.653	1708.133	1436	861	9	4	47	37	20
2006861130002	0.891	8233.344	6367.977	54	48	9	8	49	40	27
2006861131002	0.284	2522.891	2029.748	55	39	11	8	51	54	21
2006861132002	1.387	14101.031	9912.889	1307	984	9	9	55	52	25
2006861133002	0.477	3773.616	3409.119	681	742	6	8	43	36	15
2006861134002	0.958	12585.867	6846.826	67	81	12	10	58	43	25
2006861135002	1.183	13722.24	8454.901	2698	1970	12	6	43	35	20
2006861136002	0.663	5810.511	4738.461	48	15	12	7	48	81	21
2006861137002	0.588	5710.453	4202.436	88	63	11	7	41	39	15
2006861138002	0.618	4809.931	4416.846	230	181	14	9	47	42	20
2006861139002	1.012	15308.874	7232.764	211	136	10	5	58	37	18
2006861140002	0.367	6082.097	2622.949	477	229	11	3	49	23	17
2006861141002	0.149	2572.92	1064.903	45	18	8	5	50	24	16
2006861142002	0.181	3108.945	1293.607	83	-5	8	2	53	33	16
2006861143002	0.533	4331.082	3809.351	72	45	11	10	59	54	32
2006861144002	0.264	3580.647	1886.808	47	14	9	2	61	36	17
2006861145002	1.276	8419.166	9119.572	2991	2878	14	14	55	46	15
2006861146002	2.885	32811.877	20619.095	64	31	10	4	56	40	18
2006861147002	0.699	5581.807	4995.753	329	313	11	5	54	38	11
2006861148002	9.578	113522.948	68453.966	86	28	4	3	35	38	15
2006861149002	0.574	8369.137	4102.378	53	23	6	3	52	34	19
2006861150002	0.211	2272.746	1508.017	29	43	4	6	56	32	15
2006861151002	0.307	2858.8	2194.129	1703	1344	12	8	53	50	12
2006861152002	0.168	1515.164	1200.696	62	8	6	4	42	47	11
2006861153002	0.48	3694.999	3430.56	554	515	11	10	64	52	22
2006861154002	0.318	2773.036	2272.746	31	8	9	6	45	51	14
2006861155002	1.117	6618.122	7983.199	909	1016	14	14	72	69	29
2006861156002	0.661	4595.521	4724.167	449	462	10	8	57	50	19
2006861157002	1.292	7582.967	9233.924	898	950	14	13	68	59	22

Appendix 5.2

SAMPLEID	CaO_U_c_180	Ca_U_m_75	Ca_U_m_180	Cl_U_m_75	Cl_U_m_180	Co_U_m_75	Co_U_m_180	Cr_U_m_75	Cr_U_m_180	Cu_U_m_75
2006861201002	0.888	6482.329	6346.536	1379	1501	12	12	68	80	22
2006861202002	0.383	2858.8	2737.301	667	647	10	13	75	66	19
2006861203002	0.569	4009.467	4066.643	410	436	15	17	85	75	21
2006861204002	0.368	2737.301	2630.096	245	176	25	18	77	87	20
2006861205002	0.242	2058.336	1729.574	-5	-5	12	9	88	66	16
2006861206002	0.702	5839.099	5017.194	-5	-5	11	9	85	56	9
2006861207002	0.62	4516.904	4431.14	37	25	7	12	48	61	15
2006861208002	0.636	6582.387	4545.492	-5	-5	13	8	80	55	22
2006861209002	0.651	5696.159	4652.697	6	-5	18	16	79	49	17
2006861210002	0.699	5045.782	4995.753	-5	-5	8	13	68	65	14
2006861211002	7.881	75193.587	56325.507	-5	-5	18	8	67	56	14
2006861212002	0.373	3659.264	2665.831	2136	1483	11	9	88	68	25
2006861213002	1.436	14679.938	10263.092	670	447	12	12	87	47	20
2006861214002	1.035	11235.084	7397.145	3044	2526	16	11	81	66	28
2006861215002	0.232	3502.03	1658.104	206	63	10	3	84	42	13
2006861216002	0.118	1350.783	843.346	-5	-5	5	8	71	43	16
2006861217002	0.72	5631.836	5145.84	-5	-5	12	11	78	69	27
2006861218002	0.624	4717.02	4459.728	6890	5588	20	16	75	51	17
2006861219002	3.659	26107.991	26150.873	9291	8683	12	10	68	74	20
2006861220002	0.29	1886.808	2072.63	9836	8874	9	7	81	71	14
2006861221002	0.847	6282.213	6053.509	958	891	17	24	72	70	14
2006861222002	0.723	7418.586	5167.281	-5	-5	17	8	74	49	23
2006861223002	0.777	6074.95	5553.219	-5	-5	16	11	82	70	9

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2005861001001	15	4.069	3.606	28458.586	25220.364	1.395	1.194	11579.895	9911.394
2005861002001	14	4.929	4.221	34473.426	29521.674	1.375	1.123	11413.875	9322.023
2005861003001	20	4.247	4.657	29703.518	32571.058	1.573	1.673	13057.473	13887.573
2005861004001	18	5.315	4.267	37173.11	29843.398	1.906	1.733	15821.706	14385.633
2005861005001	13	3.848	4.065	26912.912	28430.61	1.459	1.516	12111.159	12584.316
2005861006001	13	5.213	4.9	36459.722	34270.6	1.53	1.453	12700.53	12061.353
2005861007001	11	3.501	2.437	24485.994	17044.378	0.929	0.677	7711.629	5619.777
2005861008001	17	4.617	3.208	32291.298	22436.752	1.483	1.001	12310.383	8309.301
2005861009001	13	3.729	3.33	26080.626	23290.02	1.155	0.981	9587.655	8143.281
2005861010001	21		4.39		30703.66		1.448		12019.848
2005861011001	12	3.569	2.903	24961.586	20303.582	1.113	0.883	9239.013	7329.783
2005861012001	8	2.526	2.65	17666.844	18534.1	1.088	1.016	9031.488	8433.816
2005861013001	13	5.239	3.492	36641.566	24423.048	1.831	1.331	15199.131	11048.631
2005861014001	12	4.243	3.15	29675.542	22031.1	1.303	0.919	10816.203	7628.619
2005861015001	15	5.342	3.91	37361.948	27346.54	1.596	1.2	13248.396	9961.2
2005861016001	15	5.607	4.062	39215.358	28409.628	1.554	1.16	12899.754	9629.16
2005861017001	9	4.152	3.304	29039.088	23108.176	1.45	1.228	12036.45	10193.628
2005861018001	21	4.282	3.151	29948.308	22038.094	1.66	1.2	13779.66	9961.2
2005861019001	15		3.283		22961.302		1.069		8873.769
2006861101001	13	4.442	3.714	31067.348	25975.716	1.195	1.055	9919.695	8757.555
2006861102001	18	4.445	4.025	31088.33	28150.85	1.631	1.597	13538.931	13256.697
2006861103001	19	4.025	4.317	28150.85	30193.098	1.62	1.656	13447.62	13746.456
2006861104001	13	3.935	3.339	27521.39	23352.966	1.197	1.054	9936.297	8749.254
2006861105001	17	4.15	4.195	29025.1	29339.83	1.332	1.336	11056.932	11090.136
2006861106001	15	4.718	4.828	32997.692	33767.032	1.197	1.213	9936.297	10069.113
2006861107001	4	2.126	1.527	14869.244	10679.838	0.936	0.752	7769.736	6242.352
2006861108001	14	3.287	2.368	22989.278	16561.792	1.184	1.054	9828.384	8749.254
2006861109001	7	3.612	2.552	25262.328	17848.688	1.092	0.952	9064.692	7902.552
2006861110001	12	3.152	2.495	22045.088	17450.03	0.966	0.747	8018.766	6200.847
2006861111001	15	4.222	4.236	29528.668	29626.584	1.024	1.015	8500.224	8425.515
2006861112001	8	4.054	3.093	28353.676	21632.442	1.213	0.958	10069.113	7952.358
2006861113001	12	4.901	3.113	34277.594	21772.322	1.342	0.967	11139.942	8027.067
2006861114001	8	3.564	3.069	24926.616	21464.586	1.076	0.904	8931.876	7504.104
2006861115001	10	3.492	2.534	24423.048	17722.796	0.93	0.692	7719.93	5744.292
2006861116001	17	4.521	3.77	31619.874	26367.38	1.385	1.061	11496.885	8807.361

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2006861117001	12	3.397	2.685	23758.618	18778.89	1.07	0.659	8882.07	5470.359
2006861118001	16	3.813	3.205	26668.122	22415.77	1.138	0.804	9446.538	6674.004
2006861119001	15	5.293	4.098	37019.242	28661.412	1.665	1.268	13821.165	10525.668
2006861120001	6	3.217	2.065	22499.698	14442.61	1.232	0.756	10226.832	6275.556
2006861121001	12	4.833	3.818	33802.002	26703.092	1.95	1.611	16186.95	13372.911
2006861122001	8	3.744	2.078	26185.536	14533.532	1.343	0.851	11148.243	7064.151
2006861123001	9	3.228	2.045	22576.632	14302.73	0.938	0.629	7786.338	5221.329
2006861124001	19	4.584	3.774	32060.496	26395.356	1.376	1.051	11422.176	8724.351
2006861125001	15	4.674	3.719	32689.956	26010.686	1.212	0.839	10060.812	6964.539
2006861126001	9	4.04	2.539	28255.76	17757.766	1.289	0.899	10699.989	7462.599
2006861127001	7	5.153	3.092	36040.082	21625.448	1.201	0.77	9969.501	6391.77
2006861128001	15	3.819	2.769	26710.086	19366.386	1.362	1.06	11305.962	8799.06
2006861129001	15	4.222	4.304	29528.668	30102.176	1.39	1.357	11538.39	11264.457
2006861130001	9	3.672	2.784	25681.968	19471.296	1.408	0.983	11687.808	8159.883
2006861131001	13	3.362	2.673	23513.828	18694.962	1.291	0.9	10716.591	7470.9
2006861132001	12	3.671	2.897	25674.974	20261.618	1.419	1.035	11779.119	8591.535
2006861133001	12	2.984	3.034	20870.096	21219.796	1.376	1.31	11422.176	10874.31
2006861134001	9	4.159	2.128	29088.046	14883.232	1.608	0.836	13348.008	6939.636
2006861135001	4	4.012	2.437	28059.928	17044.378	1.336	0.829	11090.136	6881.529
2006861136001	10	2.991	2.731	20919.054	19100.614	0.929	0.805	7711.629	6682.305
2006861137001	13	3.027	2.717	21170.838	19002.698	1.056	0.936	8765.856	7769.736
2006861138001	20	4.124	4.28	28843.256	29934.32	1.626	1.637	13497.426	13588.737
2006861139001	9	3.828	1.745	26773.032	12204.53	1.473	0.771	12227.373	6400.071
2006861140001	6	2.747	1.732	19212.518	12113.608	1.291	0.714	10716.591	5926.914
2006861141001	13	3.35	2.785	23429.9	19478.29	1.552	1.129	12883.152	9371.829
2006861142001	14	5.375	3.571	37592.75	24975.574	1.86	1.182	15439.86	9811.782
2006861143001	18	5.115	4.087	35774.31	28584.478	2.206	1.72	18312.006	14277.72
2006861144001	13	3.657	2.185	25577.058	15281.89	1.427	0.816	11845.527	6773.616
2006861145001	14	4.571	4.042	31969.574	28269.748	1.417	1.248	11762.517	10359.648
2006861146001	6	3.532	2.177	24702.808	15225.938	1.455	1.04	12077.955	8633.04
2006861147001	11	3.239	2.666	22653.566	18646.004	1.159	1.043	9620.859	8657.943
2006861148001	14	4.439	3.054	31046.366	21359.676	1.456	1.023	12086.256	8491.923
2006861149001	6	3.696	2.42	25849.824	16925.48	1.188	0.824	9861.588	6840.024
2006861150001	13	4.069	3.055	28458.586	21366.67	1.28	0.961	10625.28	7977.261
2006861151001	18	5.302	3.901	37082.188	27283.594	1.588	1.169	13181.988	9703.869

Appendix 5.2

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2006861152001	17	3.634	2.99	25416.196	20912.06	1.301	1.054	10799.601	8749.254
2006861153001	19	4.128	4.254	28871.232	29752.476	1.506	1.52	12501.306	12617.52
2006861154001	11	2.463	2.079	17226.222	14540.526	0.987	0.804	8193.087	6674.004
2006861155001	24	4.155	4.086	29060.07	28577.484	1.682	1.705	13962.282	14153.205
2006861156001	19	3.949	4.212	27619.306	29458.728	1.403	1.491	11646.303	12376.791
2006861157001	24	5.088	5.271	35585.472	36865.374	1.564	1.601	12982.764	13289.901
2006861201001	13	2.172	1.96	15190.968	13708.24	1.113	1.109	9239.013	9205.809
2006861202001	18	3.189	2.763	22303.866	19324.422	1.278	1.159	10608.678	9620.859
2006861203001	19	4.552	4.944	31836.688	34578.336	1.468	1.559	12185.868	12941.259
2006861204001	18	4.969	4.176	34753.186	29206.944	1.511	1.222	12542.811	10143.822
2006861205001	17	5.065	4.516	35424.61	31584.904	1.463	1.281	12144.363	10633.581
2006861206001	8	2.902	2.115	20296.588	14792.31	1.179	1.123	9786.879	9322.023
2006861207001	14	4.841	4.191	33857.954	29311.854	1.414	1.294	11737.614	10741.494
2006861208001	13	4.208	3.367	29430.752	23548.798	1.363	1.145	11314.263	9504.645
2006861209001	17	3.896	3.302	27248.624	23094.188	1.363	1.225	11314.263	10168.725
2006861210001	6	3.418	3.407	23905.492	23828.558	1.372	1.382	11388.972	11471.982
2006861211001	14	4.788	3.37	33487.272	23569.78	1.787	1.338	14833.887	11106.738
2006861212001	20	5.996	5.046	41936.024	35291.724	2.05	1.722	17017.05	14294.322
2006861213001	27	6.638	5.836	46426.172	40816.984	2.586	2.262	21466.386	18776.862
2006861214001	16	6.05	4.11	42313.7	28745.34	2.054	1.42	17050.254	11787.42
2006861215001	18	4.7	4.129	32871.8	28878.226	1.382	1.209	11471.982	10035.909
2006861216001	13	4.197	3.314	29353.818	23178.116	1.142	0.826	9479.742	6856.626
2006861217001	20	4.608	3.441	32228.352	24066.354	1.354	0.998	11239.554	8284.398
2006861218001	18	4.784	3.976	33459.296	27808.144	1.527	1.297	12675.627	10766.397
2006861219001	13	5.661	3.648	39593.034	25514.112	1.973	1.365	16377.873	11330.865
2006861220001	21	5.16	4.393	36089.04	30724.642	1.078	0.924	8948.478	7670.124
2006861221001	13	4.858	4.812	33976.852	33655.128	1.689	1.669	14020.389	13854.369
2006861222001	15	4.827	4.323	33760.038	30235.062	1.53	1.386	12700.53	11505.186
2006861223001	9	3.17	2.799	22170.98	19576.206	1.636	1.787	13580.436	14833.887
2005861001002	15	4.951	4.514	34627.294	31570.916	1.52	1.338	12617.52	11106.738
2005861002002	17	5.071	4.459	35466.574	31186.246	1.419	1.187	11779.119	9853.287
2005861003002	23	4.932	5.227	34494.408	36557.638	1.669	1.737	13854.369	14418.837
2005861004002	20	5.606	4.644	39208.364	32480.136	1.534	1.449	12733.734	12028.149
2005861005002	19	4.392	4.412	30717.648	30857.528	1.369	1.375	11364.069	11413.875
2005861006002	18	5.689	5.383	39788.866	37648.702	1.598	1.526	13264.998	12667.326

Appendix 5.2

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2005861007002	17	5.363	4.5	37508.822	31473	1.288	1.1	10691.688	9131.1
2005861008002	19	5.983	4.906	41845.102	34312.564	1.822	1.493	15124.422	12393.393
2005861009002	17	5.697	4.666	39844.818	32634.004	1.676	1.386	13912.476	11505.186
2005861010002	25	6.361	6.085	44488.834	42558.49	1.762	1.687	14626.362	14003.787
2005861011002	17	4.512	3.847	31556.928	26905.918	1.153	0.978	9571.053	8118.378
2005861012002	13	5.395	3.745	37732.63	26192.53	1.276	0.894	10592.076	7421.094
2005861013002	13	5.504	3.222	38494.976	22534.668	1.655	1.162	13738.155	9645.762
2005861014002	13	4.781	4.144	33438.314	28983.136	1.076	0.942	8931.876	7819.542
2005861015002	17		4.616		32284.304		1.122		9313.722
2005861016002	12	5.054	2.972	35347.676	20786.168	1.33	0.845	11040.33	7014.345
2005861017002	14	4.659	3.49	32585.046	24409.06	1.37	1.148	11372.37	9529.548
2005861018002	19	6.235	5.33	43607.59	37278.02	2.049	1.752	17008.749	14543.352
2005861019002	17	4.724	4.183	33039.656	29255.902	1.659	1.439	13771.359	11945.139
2006861101002	12	4.685	3.802	32766.89	26591.188	1.169	1.012	9703.869	8400.612
2006861102002	20	4.817	4.173	33690.098	29185.962	1.592	1.528	13215.192	12683.928
2006861103002	20	4.51	4.481	31542.94	31340.114	1.578	1.554	13098.978	12899.754
2006861104002	12	4.487	3.593	31382.078	25129.442	1.159	0.994	9620.859	8251.194
2006861105002	15	4.701	4.273	32878.794	29885.362	1.385	1.296	11496.885	10758.096
2006861106002	11	4.611	4.329	32249.334	30277.026	1.22	1.172	10127.22	9728.772
2006861107002	11	4.144	2.747	28983.136	19212.518	1.083	0.834	8989.983	6923.034
2006861108002	6	4.356	2.706	30465.864	18925.764	1.204	1.063	9994.404	8823.963
2006861109002	8	4.24	2.44	29654.56	17065.36	1.212	0.973	10060.812	8076.873
2006861110002	15	5.44	4.604	38047.36	32200.376	1.326	1.135	11007.126	9421.635
2006861111002	18	4.821	4.513	33718.074	31563.922	1.14	1.084	9463.14	8998.284
2006861112002	9	4.715	2.999	32976.71	20975.006	1.278	0.879	10608.678	7296.579
2006861113002	12	5.513	3.488	38557.922	24395.072	1.365	0.997	11330.865	8276.097
2006861114002	8	5.544	3.9	38774.736	27276.6	1.112	0.83	9230.712	6889.83
2006861115002	8	4.146	3.063	28997.124	21422.622	0.957	0.729	7944.057	6051.429
2006861116002	15	4.559	3.883	31885.646	27157.702	1.388	1.111	11521.788	9222.411
2006861117002	4	2.482	2.076	17359.108	14519.544	0.929	0.618	7711.629	5130.018
2006861118002	14	4.921	4.093	34417.474	28626.442	1.351	1.054	11214.651	8749.254
2006861119002	16	5.266	4.174	36830.404	29192.956	1.466	1.155	12169.266	9587.655
2006861120002	14	5.529	3.625	38669.826	25353.25	1.546	1.057	12833.346	8774.157
2006861121002	9	4.297	2.745	30053.218	19198.53	1.548	1.118	12849.948	9280.518
2006861122002	10	5.081	3.053	35536.514	21352.682	1.293	0.89	10733.193	7387.89

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2006861123002	14	5.196	3.603	36340.824	25199.382	1.202	0.892	9977.802	7404.492
2006861124002	13	5.778	4.219	40411.332	29507.686	1.592	1.159	13215.192	9620.859
2006861125002	9	3.869	3.243	27059.786	22681.542	1.027	0.741	8525.127	6151.041
2006861126002	15	5.864	3.732	41012.816	26101.608	1.627	1.101	13505.727	9139.401
2006861127002	8	7.032	3.846	49181.808	26898.924	1.085	0.647	9006.585	5370.747
2006861128002	12	5.937	3.585	41523.378	25073.49	1.821	1.243	15116.121	10318.143
2006861129002	13	4.989	3.141	34893.066	21968.154	1.425	0.938	11828.925	7786.338
2006861130002	23	5.955	4.885	41649.27	34165.69	1.567	1.294	13007.667	10741.494
2006861131002	21	5.319	4.484	37201.086	31361.096	1.656	1.358	13746.456	11272.758
2006861132002	15	6.129	5.023	42866.226	35130.862	1.912	1.579	15871.512	13107.279
2006861133002	14	3.639	3.393	25451.166	23730.642	1.46	1.299	12119.46	10782.999
2006861134002	17	5.365	3.739	37522.81	26150.566	1.888	1.342	15672.288	11139.942
2006861135002	14	5.025	3.557	35144.85	24877.658	1.377	1.028	11430.477	8533.428
2006861136002	14	5.287	4.371	36977.278	30570.774	1.129	0.973	9371.829	8076.873
2006861137002	11	4.589	3.452	32095.466	24143.288	1.179	0.942	9786.879	7819.542
2006861138002	14	4.613	4.175	32263.322	29199.95	1.586	1.451	13165.386	12044.751
2006861139002	11	5.02	3.081	35109.88	21548.514	1.504	0.98	12484.704	8134.98
2006861140002	7	4.344	2.278	30381.936	15932.332	1.823	0.987	15132.723	8193.087
2006861141002	6	4.112	2.528	28759.328	17680.832	1.74	0.758	14443.74	6292.158
2006861142002	3	3.881	1.842	27143.714	12882.948	1.447	0.623	12011.547	5171.523
2006861143002	24	6.532	5.739	45684.808	40138.566	2.445	2.143	20295.945	17789.043
2006861144002	10	4.897	2.803	34249.618	19604.182	1.605	0.934	13323.105	7753.134
2006861145002	14	4.883	4.446	34151.702	31095.324	1.408	1.281	11687.808	10633.581
2006861146002	13	4.536	3.168	31724.784	22156.992	1.418	1.13	11770.818	9380.13
2006861147002	11	3.439	2.85	24052.366	19932.9	1.181	1.077	9803.481	8940.177
2006861148002	9	3.47	2.912	24269.18	20366.528	1.167	1.026	9687.267	8516.826
2006861149002	13	5.079	3.081	35522.526	21548.514	1.595	1.07	13240.095	8882.07
2006861150002	10	4.89	3.464	34200.66	24227.216	1.442	1.04	11970.042	8633.04
2006861151002	15	5.057	4.199	35368.658	29367.806	1.528	1.287	12683.928	10683.387
2006861152002	14	3.04	2.611	21261.76	18261.334	1.169	0.959	9703.869	7960.659
2006861153002	20	4.615	4.475	32277.31	31298.15	1.566	1.509	12999.366	12526.209
2006861154002	10	3.627	3.118	25367.238	21807.292	1.159	0.986	9620.859	8184.786
2006861155002	27	5.461	5.519	38194.234	38599.886	1.768	1.789	14676.168	14850.489
2006861156002	21	4.333	4.458	30305.002	31179.252	1.385	1.42	11496.885	11787.42
2006861157002	20	5.205	5.179	36403.77	36221.926	1.475	1.472	12243.975	12219.072

Appendix 5.2

SAMPLEID	Cu_U_m_180	Fe2O3t_U_c_75	Fe2O3t_U_c_180	Fet_U_m_75	Fet_U_m_180	K2O_U_c_75	K2O_U_c_180	K_U_m_75	K_U_m_180
2006861201002	21	4.302	4.344	30088.188	30381.936	1.631	1.669	13538.931	13854.369
2006861202002	14	4.612	4.491	32256.328	31410.054	1.589	1.56	13190.289	12949.56
2006861203002	25	5.089	5.13	35592.466	35879.22	1.571	1.569	13040.871	13024.269
2006861204002	19	5.848	5.613	40900.912	39257.322	1.759	1.66	14601.459	13779.66
2006861205002	16	4.993	4.338	34921.042	30339.972	1.379	1.188	11447.079	9861.588
2006861206002	10	3.367	2.903	23548.798	20303.582	1.196	1.165	9927.996	9670.665
2006861207002	17	3.83	3.829	26787.02	26780.026	1.191	1.191	9886.491	9886.491
2006861208002	11	4.835	3.448	33815.99	24115.312	1.302	1.059	10807.902	8790.759
2006861209002	13	4.601	3.861	32179.394	27003.834	1.407	1.27	11679.507	10542.27
2006861210002	13	4.04	4.032	28255.76	28199.808	1.456	1.463	12086.256	12144.363
2006861211002	17	4.152	3.276	29039.088	22912.344	1.402	1.181	11638.002	9803.481
2006861212002	18	6.813	5.056	47650.122	35361.664	1.977	1.517	16411.077	12592.617
2006861213002	17	6.041	4.699	42250.754	32864.806	1.798	1.421	14925.198	11795.721
2006861214002	23	6.61	5.477	46230.34	38306.138	2.065	1.728	17141.565	14344.128
2006861215002	17	4.902	2.739	34284.588	19156.566	1.302	0.808	10807.902	6707.208
2006861216002	7	4.342	3.114	30367.948	21779.316	1.128	0.752	9363.528	6242.352
2006861217002	22	7.041	6.732	49244.754	47083.608	2.086	1.994	17315.886	16552.194
2006861218002	17	4.707	3.925	32920.758	27451.45	1.239	1.097	10284.939	9106.197
2006861219002	21	6.102	5.861	42677.388	40991.834	1.861	1.786	15448.161	14825.586
2006861220002	20	5.385	5.139	37662.69	35942.166	1.157	1.063	9604.257	8823.963
2006861221002	18	5.13	5.034	35879.22	35207.796	1.541	1.516	12791.841	12584.316
2006861222002	9	4.942	3.552	34564.348	24842.688	1.421	1.09	11795.721	9048.09
2006861223002	12	3.689	3.119	25800.866	21814.286	1.664	1.83	13812.864	15190.83

Appendix 5.2

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2005861001001	0.388	0.329	2339.64	1983.87	4.369	4.4	43690	44000	0.06
2005861002001	0.432	0.344	2604.96	2074.32	7.592	7.147	75920	71470	0.05
2005861003001	0.808	0.896	4872.24	5402.88	8.287	10.868	82870	108680	0.073
2005861004001	1.197	0.952	7217.91	5740.56	12.856	11.472	128560	114720	0.107
2005861005001	0.776	0.83	4679.28	5004.9	8.217	9.547	82170	95470	0.097
2005861006001	1.239	1.172	7471.17	7067.16	11.403	11.932	114030	119320	0.06
2005861007001	0.479	0.312	2888.37	1881.36	6.865	4.644	68650	46440	0.029
2005861008001	0.577	0.367	3479.31	2213.01	7.497	5.669	74970	56690	0.063
2005861009001	0.535	0.465	3226.05	2803.95	5.025	5.611	50250	56110	0.031
2005861010001		0.942		5680.26		4.524		45240	
2005861011001	0.631	0.484	3804.93	2918.52	6.933	4.448	69330	44480	0.046
2005861012001	0.527	0.566	3177.81	3412.98	4.56	3.782	45600	37820	0.018
2005861013001	1.095	0.717	6602.85	4323.51	10.816	5.939	108160	59390	0.061
2005861014001	0.781	0.534	4709.43	3220.02	8.203	3.92	82030	39200	0.053
2005861015001	1.139	0.8	6868.17	4824	11.171	6.97	111710	69700	0.048
2005861016001	1.059	0.754	6385.77	4546.62	10.128	7.478	101280	74780	0.051
2005861017001	0.978	0.768	5897.34	4631.04	8.029	7.327	80290	73270	0.068
2005861018001	0.631	0.449	3804.93	2707.47	9.351	7.42	93510	74200	0.02
2005861019001		0.296		1784.88		5.244		52440	
2006861101001	0.75	0.63	4522.5	3798.9	11.645	9.409	116450	94090	0.153
2006861102001	1.059	0.952	6385.77	5740.56	11.742	9.879	117420	98790	0.149
2006861103001	0.915	0.981	5517.45	5915.43	9.685	9.7	96850	97000	0.097
2006861104001	1.104	0.953	6657.12	5746.59	10.953	9.065	109530	90650	0.054
2006861105001	0.972	0.995	5861.16	5999.85	8.884	9.129	88840	91290	0.085
2006861106001	0.856	0.881	5161.68	5312.43	10.759	10.058	107590	100580	0.062
2006861107001	0.276	0.191	1664.28	1151.73	4.943	3.781	49430	37810	0.033
2006861108001	0.535	0.399	3226.05	2405.97	6.629	5.241	66290	52410	0.11
2006861109001	0.471	0.33	2840.13	1989.9	8.165	5.709	81650	57090	0.099
2006861110001	0.469	0.381	2828.07	2297.43	6.621	4.802	66210	48020	0.069
2006861111001	0.683	0.691	4118.49	4166.73	8.85	9.276	88500	92760	0.048
2006861112001	0.77	0.587	4643.1	3539.61	9.41	7.2	94100	72000	0.028
2006861113001	1.059	0.647	6385.77	3901.41	10.071	5.776	100710	57760	0.052
2006861114001	1.059	0.913	6385.77	5505.39	9.931	8.392	99310	83920	0.028
2006861115001	0.358	0.253	2158.74	1525.59	5.141	4.306	51410	43060	0.062
2006861116001	0.522	0.397	3147.66	2393.91	7.577	6.458	75770	64580	0.05

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2006861117001	0.383	0.264	2309.49	1591.92	5.006	4.106	50060	41060	0.039
2006861118001	0.434	0.32	2617.02	1929.6	6.573	5.201	65730	52010	0.038
2006861119001	0.978	0.754	5897.34	4546.62	11.991	8.43	119910	84300	0.045
2006861120001	0.563	0.358	3394.89	2158.74	8.008	4.62	80080	46200	0.036
2006861121001	1.325	1.057	7989.75	6373.71	12.993	9.222	129930	92220	0.032
2006861122001	0.624	0.332	3762.72	2001.96	9.62	4.709	96200	47090	0.043
2006861123001	0.368	0.217	2219.04	1308.51	6.867	3.808	68670	38080	0.037
2006861124001	0.623	0.469	3756.69	2828.07	10.83	7.493	108300	74930	0.06
2006861125001	0.42	0.284	2532.6	1712.52	8.233	5.518	82330	55180	0.044
2006861126001	0.591	0.353	3563.73	2128.59	10.262	5.562	102620	55620	0.023
2006861127001	1.397	0.735	8423.91	4432.05	11.9	6.077	119000	60770	0.055
2006861128001	0.672	0.493	4052.16	2972.79	10.76	7.032	107600	70320	0.035
2006861129001	0.762	0.777	4594.86	4685.31	8.863	8.201	88630	82010	0.044
2006861130001	0.598	0.435	3605.94	2623.05	8.137	4.927	81370	49270	0.046
2006861131001	0.537	0.38	3238.11	2291.4	6.011	2.396	60110	23960	0.039
2006861132001	0.657	0.479	3961.71	2888.37	7.309	3.134	73090	31340	0.04
2006861133001	0.648	0.688	3907.44	4148.64	5.464	3.282	54640	32820	0.041
2006861134001	0.86	0.398	5185.8	2399.94	7.368	1.776	73680	17760	0.054
2006861135001	0.863	0.503	5203.89	3033.09	8.214	3.209	82140	32090	0.045
2006861136001	0.595	0.543	3587.85	3274.29	6.326	3.748	63260	37480	0.034
2006861137001	0.621	0.585	3744.63	3527.55	7.024	3.801	70240	38010	0.037
2006861138001	0.933	0.966	5625.99	5824.98	9.42	7.899	94200	78990	0.057
2006861139001	0.578	0.266	3485.34	1603.98	6.724	1.274	67240	12740	0.072
2006861140001	0.628	0.369	3786.84	2225.07	6.427	3.174	64270	31740	0.027
2006861141001	0.544	0.413	3280.32	2490.39	5.27	2.345	52700	23450	0.062
2006861142001	1.124	0.718	6777.72	4329.54	11.67	5.335	116700	53350	0.062
2006861143001	1.359	1.037	8194.77	6253.11	8.486	4.332	84860	43320	0.079
2006861144001	0.57	0.32	3437.1	1929.6	7.805	2.215	78050	22150	0.052
2006861145001	1.129	1.012	6807.87	6102.36	11.912	8.3	119120	83000	0.071
2006861146001	0.568	0.339	3425.04	2044.17	7.722	2.782	77220	27820	0.031
2006861147001	0.729	0.608	4395.87	3666.24	8.38	4.692	83800	46920	0.053
2006861148001	0.635	0.407	3829.05	2454.21	9.006	4.241	90060	42410	0.061
2006861149001	0.445	0.271	2683.35	1634.13	7.724	3.467	77240	34670	0.027
2006861150001	0.437	0.304	2635.11	1833.12	7.925	4.473	79250	44730	0.043
2006861151001	0.928	0.616	5595.84	3714.48	10.082	5.209	100820	52090	0.115

Appendix 5.2

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2006861152001	0.437	0.344	2635.11	2074.32	6.492	3.991	64920	39910	0.035
2006861153001	0.769	0.8	4637.07	4824	9.981	9.355	99810	93550	0.069
2006861154001	0.261	0.221	1573.83	1332.63	3.912	2.391	39120	23910	0.043
2006861155001	0.926	0.905	5583.78	5457.15	8.66	8.038	86600	80380	0.061
2006861156001	0.678	0.727	4088.34	4383.81	10.74	10.136	107400	101360	0.083
2006861157001	0.931	0.97	5613.93	5849.1	11.557	10.895	115570	108950	0.091
2006861201001	0.239	0.207	1441.17	1248.21	3.248	2.345	32480	23450	0.057
2006861202001	0.432	0.354	2604.96	2134.62	6.566	4.15	65660	41500	0.056
2006861203001	0.785	0.872	4733.55	5258.16	8.599	8.172	85990	81720	0.083
2006861204001	0.475	0.369	2864.25	2225.07	8.135	5.638	81350	56380	0.1
2006861205001	0.48	0.404	2894.4	2436.12	8.083	6.327	80830	63270	0.048
2006861206001	0.441	0.319	2659.23	1923.57	6.377	3.253	63770	32530	0.051
2006861207001	1.06	0.911	6391.8	5493.33	10.798	7.995	107980	79950	0.061
2006861208001	0.788	0.623	4751.64	3756.69	9.279	6.574	92790	65740	0.045
2006861209001	0.801	0.679	4830.03	4094.37	8.339	5.956	83390	59560	0.065
2006861210001	0.638	0.657	3847.14	3961.71	6.559	6.237	65590	62370	0.035
2006861211001	1.164	0.771	7018.92	4649.13	10.055	6.016	100550	60160	0.064
2006861212001	1.092	0.897	6584.76	5408.91	10.118	7.614	101180	76140	0.099
2006861213001	1.489	1.287	8978.67	7760.61	12.265	8.965	122650	89650	0.092
2006861214001	1.461	0.95	8809.83	5728.5	14.454	7.924	144540	79240	0.08
2006861215001	0.847	0.742	5107.41	4474.26	9.07	7.416	90700	74160	0.051
2006861216001	0.424	0.276	2556.72	1664.28	7.491	4.805	74910	48050	0.034
2006861217001	0.47	0.316	2834.1	1905.48	7.642	4.496	76420	44960	0.024
2006861218001	0.79	0.646	4763.7	3895.38	9.346	7.112	93460	71120	0.076
2006861219001	1.335	0.82	8050.05	4944.6	12.654	6.498	126540	64980	0.049
2006861220001	0.873	0.746	5264.19	4498.38	15.778	12.442	157780	124420	0.025
2006861221001	1.111	1.112	6699.33	6705.36	10.934	10.933	109340	109330	0.101
2006861222001	1.049	0.932	6325.47	5619.96	12.506	12.19	125060	121900	0.061
2006861223001	0.502	0.453	3027.06	2731.59	9.146	7.57	91460	75700	0.07
2005861001002	0.747	0.653	4504.41	3937.59	6.393	6.724	63930	67240	0.049
2005861002002	0.528	0.44	3183.84	2653.2	7.314	6.424	73140	64240	0.043
2005861003002	1.011	1.076	6096.33	6488.28	9.562	9.988	95620	99880	0.079
2005861004002	1.284	1.07	7742.52	6452.1	12.989	11.407	129890	114070	0.135
2005861005002	0.921	0.924	5553.63	5571.72	8.606	9.947	86060	99470	0.1
2005861006002	1.373	1.294	8279.19	7802.82	12.99	12.903	129900	129030	0.076

Appendix 5.2

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2005861007002	1.378	1.158	8309.34	6982.74	12.529	11.254	125290	112540	0.071
2005861008002	1.251	0.991	7543.53	5975.73	12.943	10.788	129430	107880	0.039
2005861009002	1.202	0.98	7248.06	5909.4	11.09	9.407	110900	94070	0.048
2005861010002	1.426	1.367	8598.78	8243.01	14.974	12.162	149740	121620	0.05
2005861011002	0.956	0.778	5764.68	4691.34	10.056	5.534	100560	55340	0.049
2005861012002	1.087	0.745	6554.61	4492.35	11.963	6.803	119630	68030	0.041
2005861013002	1.264	0.708	7621.92	4269.24	11.675	5.079	116750	50790	0.086
2005861014002	1.343	1.099	8098.29	6626.97	13.948	10.067	139480	100670	0.041
2005861015002		1.028		6198.84		9.702		97020	
2005861016002	0.95	0.53	5728.5	3195.9	9.714	5.562	97140	55620	0.05
2005861017002	1.315	0.977	7929.45	5891.31	10.678	8.28	106780	82800	0.068
2005861018002	1.137	0.96	6856.11	5788.8	11.975	10.884	119750	108840	0.076
2005861019002	0.502	0.437	3027.06	2635.11	7.595	5.35	75950	53500	0.079
2006861101002	0.876	0.711	5282.28	4287.33	10.835	9.415	108350	94150	0.156
2006861102002	1.203	1.046	7254.09	6307.38	10.484	10.196	104840	101960	0.158
2006861103002	1.017	0.986	6132.51	5945.58	8.297	9.659	82970	96590	0.094
2006861104002	1.392	1.111	8393.76	6699.33	10.085	10.05	100850	100500	0.063
2006861105002	1.11	1.022	6693.3	6162.66	8.104	8.998	81040	89980	0.125
2006861106002	0.848	0.797	5113.44	4805.91	8.919	9.563	89190	95630	0.075
2006861107002	0.688	0.453	4148.64	2731.59	7.011	6.42	70110	64200	0.208
2006861108002	0.842	0.541	5077.26	3262.23	6.731	5.693	67310	56930	0.154
2006861109002	0.576	0.33	3473.28	1989.9	6.939	4.977	69390	49770	0.081
2006861110002	1.259	1.061	7591.77	6397.83	10.302	10.203	103020	102030	0.066
2006861111002	0.804	0.754	4848.12	4546.62	9.52	10.328	95200	103280	0.061
2006861112002	1.087	0.658	6554.61	3967.74	10.84	7.083	108400	70830	0.043
2006861113002	1.151	0.697	6940.53	4202.91	10.26	7.504	102600	75040	0.034
2006861114002	1.134	0.778	6838.02	4691.34	11.565	9.313	115650	93130	0.031
2006861115002	0.437	0.321	2635.11	1935.63	6.575	5.948	65750	59480	0.074
2006861116002	0.561	0.454	3382.83	2737.62	7.005	7.72	70050	77200	0.045
2006861117002	0.255	0.186	1537.65	1121.58	1.967	3.76	19670	37600	0.015
2006861118002	0.799	0.623	4817.97	3756.69	10.258	8.924	102580	89240	0.037
2006861119002	1.307	1.019	7881.21	6144.57	13.606	10.847	136060	108470	0.06
2006861120002	1.363	0.889	8218.89	5360.67	13.876	9.369	138760	93690	0.043
2006861121002	1.41	0.891	8502.3	5372.73	14.169	9.305	141690	93050	0.029
2006861122002	1.171	0.668	7061.13	4028.04	13.744	8.879	137440	88790	0.072

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2006861123002	0.73	0.486	4401.9	2930.58	12.318	8.455	123180	84550	0.049
2006861124002	1.245	0.852	7507.35	5137.56	13.672	10.223	136720	102230	0.047
2006861125002	0.333	0.249	2007.99	1501.47	5.425	5.812	54250	58120	0.014
2006861126002	1.149	0.675	6928.47	4070.25	11.223	7.272	112230	72720	0.072
2006861127002	1.437	0.753	8665.11	4540.59	11.465	6.654	114650	66540	0.087
2006861128002	1.484	0.887	8948.52	5348.61	12.083	8.011	120830	80110	0.055
2006861129002	0.93	0.574	5607.9	3461.22	9.352	6.091	93520	60910	0.059
2006861130002	1.649	1.335	9943.47	8050.05	12.778	10.167	127780	101670	0.059
2006861131002	0.851	0.692	5131.53	4172.76	9.177	6.403	91770	64030	0.063
2006861132002	1.607	1.276	9690.21	7694.28	13.296	10.454	132960	104540	0.051
2006861133002	0.827	0.788	4986.81	4751.64	6.235	5.311	62350	53110	0.049
2006861134002	1.432	0.975	8634.96	5879.25	10.497	6.092	104970	60920	0.083
2006861135002	1.33	0.942	8019.9	5680.26	11.729	7.554	117290	75540	0.055
2006861136002	0.847	0.633	5107.41	3816.99	9.551	6.586	95510	65860	0.077
2006861137002	1.019	0.742	6144.57	4474.26	11.451	6.884	114510	68840	0.069
2006861138002	1.036	0.939	6247.08	5662.17	10.976	8.473	109760	84730	0.074
2006861139002	1.185	0.709	7145.55	4275.27	13.466	6.994	134660	69940	0.046
2006861140002	1.404	0.711	8466.12	4287.33	9.137	4.424	91370	44240	0.052
2006861141002	0.697	0.338	4202.91	2038.14	6.115	1.539	61150	15390	0.046
2006861142002	0.655	0.289	3949.65	1742.67	5.664	1.99	56640	19900	0.04
2006861143002	1.745	1.495	10522.35	9014.85	12.46	10.141	124600	101410	0.068
2006861144002	0.88	0.47	5306.4	2834.1	10.315	4.813	103150	48130	0.059
2006861145002	1.308	1.198	7887.24	7223.94	13.226	11.325	132260	113250	0.107
2006861146002	1.351	0.921	8146.53	5553.63	15.829	9.983	158290	99830	0.052
2006861147002	0.791	0.666	4769.73	4015.98	8.791	6.324	87910	63240	0.076
2006861148002	1.782	1.263	10745.46	7615.89	25.399	16.365	253990	163650	0.027
2006861149002	1.094	0.63	6596.82	3798.9	14.165	6.654	141650	66540	0.039
2006861150002	0.615	0.404	3708.45	2436.12	10.433	5.773	104330	57730	0.033
2006861151002	1.308	1.036	7887.24	6247.08	12.916	9.121	129160	91210	0.058
2006861152002	0.36	0.306	2170.8	1845.18	6.945	4.074	69450	40740	0.025
2006861153002	0.96	0.924	5788.8	5571.72	12.154	11.536	121540	115360	0.067
2006861154002	0.586	0.496	3533.58	2990.88	8.176	5.661	81760	56610	0.044
2006861155002	1.178	1.2	7103.34	7236	13.18	12.373	131800	123730	0.081
2006861156002	0.795	0.822	4793.85	4956.66	11.006	9.62	110060	96200	0.061
2006861157002	1.001	1.011	6036.03	6096.33	10.968	10.712	109680	107120	0.064

Appendix 5.2

SAMPLEID	MgO_U_c_75	MgO_U_c_180	Mg_U_m_75	Mg_U_m_180	MLOIc_c_75	MLOIc_c_180	LOIc_Z_m_75	LOIc_Z_m_180	MnO_U_c_75
2006861201002	1.076	1.08	6488.28	6512.4	7.802	6.814	78020	68140	0.049
2006861202002	0.91	0.898	5487.3	5414.94	9.266	7.524	92660	75240	0.069
2006861203002	0.922	0.93	5559.66	5607.9	9.748	8.823	97480	88230	0.099
2006861204002	0.918	0.871	5535.54	5252.13	11.187	9.149	111870	91490	0.059
2006861205002	0.58	0.489	3497.4	2948.67	7.926	6.455	79260	64550	0.042
2006861206002	0.64	0.557	3859.2	3358.71	6.73	5.233	67300	52330	0.065
2006861207002	0.798	0.784	4811.94	4727.52	7.746	8.787	77460	87870	0.055
2006861208002	0.91	0.628	5487.3	3786.84	11.015	7.18	110150	71800	0.06
2006861209002	0.986	0.816	5945.58	4920.48	10.234	7.92	102340	79200	0.115
2006861210002	0.761	0.761	4588.83	4588.83	8.396	7.711	83960	77110	0.046
2006861211002	1.7	1.283	10251	7736.49	17.21	12.387	172100	123870	0.041
2006861212002	1.26	0.904	7597.8	5451.12	12.905	8.362	129050	83620	0.067
2006861213002	1.627	1.203	9810.81	7254.09	14.475	9.649	144750	96490	0.058
2006861214002	1.775	1.438	10703.25	8671.14	16.607	12.459	166070	124590	0.083
2006861215002	0.867	0.425	5228.01	2562.75	11.555	3.265	115550	32650	0.067
2006861216002	0.407	0.23	2454.21	1386.9	6.263	2.928	62630	29280	0.027
2006861217002	1.432	1.361	8634.96	8206.83	17.676	15.282	176760	152820	0.043
2006861218002	0.978	0.814	5897.34	4908.42	12.53	8.475	125300	84750	0.136
2006861219002	1.803	1.729	10872.09	10425.87	21.711	19.091	217110	190910	0.039
2006861220002	1.188	1.123	7163.64	6771.69	15.399	15.398	153990	153980	0.027
2006861221002	1.149	1.133	6928.47	6831.99	11.787	11.162	117870	111620	0.119
2006861222002	1.051	0.745	6337.53	4492.35	13.491	8.073	134910	80730	0.063
2006861223002	0.609	0.512	3672.27	3087.36	7.699	5.231	76990	52310	0.086

Appendix 5.2

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2005861001001	0.05	464.7	387.25	0.327	0.265	2426.013	1966.035	21	17
2005861002001	0.038	387.25	294.31	0.269	0.209	1995.711	1550.571	21	17
2005861003001	0.084	565.385	650.58	0.59	0.577	4377.21	4280.763	24	30
2005861004001	0.093	828.715	720.285	0.549	0.524	4073.031	3887.556	29	25
2005861005001	0.107	751.265	828.715	0.796	0.783	5905.524	5809.077	28	21
2005861006001	0.06	464.7	464.7	0.474	0.432	3516.606	3205.008	25	21
2005861007001	0.018	224.605	139.41	0.311	0.226	2307.309	1676.694	16	15
2005861008001	0.038	487.935	294.31	0.313	0.219	2322.147	1624.761	21	17
2005861009001	0.026	240.095	201.37	0.365	0.285	2707.935	2114.415	16	10
2005861010001	0.037		286.565		0.504		3739.176		12
2005861011001	0.037	356.27	286.565	0.569	0.479	4221.411	3553.701	14	11
2005861012001	0.021	139.41	162.645	0.545	0.453	4043.355	3360.807	9	11
2005861013001	0.04	472.445	309.8	0.678	0.568	5030.082	4213.992	18	18
2005861014001	0.032	410.485	247.84	0.495	0.355	3672.405	2633.745	14	9
2005861015001	0.035	371.76	271.075	0.392	0.317	2908.248	2351.823	21	12
2005861016001	0.035	394.995	271.075	0.405	0.319	3004.695	2366.661	25	18
2005861017001	0.058	526.66	449.21	0.438	0.381	3249.522	2826.639	25	17
2005861018001	0.013	154.9	100.685	0.293	0.212	2173.767	1572.828	25	19
2005861019001	0.061		472.445		0.208		1543.152		12
2006861101001	0.126	1184.985	975.87	0.415	0.359	3078.885	2663.421	22	24
2006861102001	0.147	1154.005	1138.515	0.701	0.664	5200.719	4926.216	32	31
2006861103001	0.117	751.265	906.165	1.081	1.046	8019.939	7760.274	25	29
2006861104001	0.048	418.23	371.76	0.427	0.363	3167.913	2693.097	22	19
2006861105001	0.1	658.325	774.5	0.547	0.517	4058.193	3835.623	18	23
2006861106001	0.064	480.19	495.68	0.509	0.49	3776.271	3635.31	22	22
2006861107001	0.022	255.585	170.39	0.376	0.296	2789.544	2196.024	12	3
2006861108001	0.081	851.95	627.345	0.495	0.413	3672.405	3064.047	19	14
2006861109001	0.073	766.755	565.385	0.418	0.343	3101.142	2544.717	15	12
2006861110001	0.05	534.405	387.25	0.349	0.264	2589.231	1958.616	12	15
2006861111001	0.05	371.76	387.25	0.359	0.343	2663.421	2544.717	20	22
2006861112001	0.021	216.86	162.645	0.287	0.215	2129.253	1595.085	17	14
2006861113001	0.03	402.74	232.35	0.459	0.322	3405.321	2388.918	27	12
2006861114001	0.023	216.86	178.135	0.282	0.222	2092.158	1647.018	15	14
2006861115001	0.043	480.19	333.035	0.303	0.225	2247.957	1669.275	14	9
2006861116001	0.038	387.25	294.31	0.377	0.276	2796.963	2047.644	17	11

Appendix 5.2

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2006861117001	0.023	302.055	178.135	0.357	0.212	2648.583	1572.828	12	14
2006861118001	0.026	294.31	201.37	0.346	0.239	2566.974	1773.141	14	12
2006861119001	0.034	348.525	263.33	0.307	0.247	2277.633	1832.493	20	18
2006861120001	0.022	278.82	170.39	0.419	0.266	3108.561	1973.454	13	7
2006861121001	0.025	247.84	193.625	0.395	0.313	2930.505	2322.147	19	19
2006861122001	0.021	333.035	162.645	0.346	0.229	2566.974	1698.951	14	10
2006861123001	0.021	286.565	162.645	0.326	0.208	2418.594	1543.152	12	11
2006861124001	0.048	464.7	371.76	0.388	0.291	2878.572	2158.929	21	19
2006861125001	0.025	340.78	193.625	0.308	0.201	2285.052	1491.219	20	13
2006861126001	0.014	178.135	108.43	0.374	0.26	2774.706	1928.94	20	12
2006861127001	0.031	425.975	240.095	0.355	0.249	2633.745	1847.331	19	12
2006861128001	0.025	271.075	193.625	0.511	0.37	3791.109	2745.03	13	14
2006861129001	0.048	340.78	371.76	0.497	0.451	3687.243	3345.969	14	20
2006861130001	0.033	356.27	255.585	0.522	0.339	3872.718	2515.041	14	10
2006861131001	0.026	302.055	201.37	0.473	0.304	3509.187	2255.376	10	14
2006861132001	0.028	309.8	216.86	0.496	0.353	3679.824	2618.907	14	13
2006861133001	0.047	317.545	364.015	0.734	0.649	5445.546	4814.931	14	16
2006861134001	0.024	418.23	185.88	0.548	0.409	4065.612	3034.371	18	10
2006861135001	0.026	348.525	201.37	0.542	0.357	4021.098	2648.583	17	14
2006861136001	0.033	263.33	255.585	0.637	0.615	4725.903	4562.685	7	10
2006861137001	0.038	286.565	294.31	0.662	0.57	4911.378	4228.83	10	14
2006861138001	0.065	441.465	503.425	0.63	0.584	4673.97	4332.696	14	12
2006861139001	0.028	557.64	216.86	0.532	0.327	3946.908	2426.013	15	9
2006861140001	0.015	209.115	116.175	0.587	0.333	4354.953	2470.527	11	9
2006861141001	0.048	480.19	371.76	0.636	0.45	4718.484	3338.55	17	9
2006861142001	0.04	480.19	309.8	0.525	0.355	3894.975	2633.745	23	15
2006861143001	0.078	611.855	604.11	0.655	0.638	4859.445	4733.322	22	15
2006861144001	0.023	402.74	178.135	0.506	0.284	3754.014	2106.996	15	13
2006861145001	0.063	549.895	487.935	0.71	0.604	5267.49	4481.076	24	27
2006861146001	0.017	240.095	131.665	0.53	0.362	3932.07	2685.678	19	12
2006861147001	0.047	410.485	364.015	0.707	0.589	5245.233	4369.791	17	14
2006861148001	0.036	472.445	278.82	0.411	0.265	3049.209	1966.035	24	17
2006861149001	0.014	209.115	108.43	0.373	0.223	2767.287	1654.437	21	10
2006861150001	0.028	333.035	216.86	0.335	0.24	2485.365	1780.56	14	14
2006861151001	0.077	890.675	596.365	0.325	0.256	2411.175	1899.264	27	20

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2006861152001	0.026	271.075	201.37	0.305	0.235	2262.795	1743.465	13	13
2006861153001	0.076	534.405	588.62	0.373	0.343	2767.287	2544.717	21	27
2006861154001	0.033	333.035	255.585	0.31	0.236	2299.89	1750.884	13	9
2006861155001	0.068	472.445	526.66	0.535	0.576	3969.165	4273.344	24	28
2006861156001	0.093	642.835	720.285	0.594	0.589	4406.886	4369.791	18	24
2006861157001	0.097	704.795	751.265	0.893	0.875	6625.167	6491.625	30	27
2006861201001	0.05	441.465	387.25	0.467	0.518	3464.673	3843.042	16	14
2006861202001	0.047	433.72	364.015	0.36	0.325	2670.84	2411.175	21	18
2006861203001	0.102	642.835	789.99	0.338	0.347	2507.622	2574.393	25	33
2006861204001	0.076	774.5	588.62	0.163	0.12	1209.297	890.28	24	22
2006861205001	0.042	371.76	325.29	0.183	0.152	1357.677	1127.688	22	21
2006861206001	0.038	394.995	294.31	0.549	0.476	4073.031	3531.444	18	18
2006861207001	0.057	472.445	441.465	0.452	0.394	3353.388	2923.086	25	23
2006861208001	0.036	348.525	278.82	0.393	0.316	2915.667	2344.404	20	20
2006861209001	0.055	503.425	425.975	0.52	0.423	3857.88	3138.237	26	22
2006861210001	0.038	271.075	294.31	0.65	0.631	4822.35	4681.389	16	29
2006861211001	0.041	495.68	317.545	0.294	0.214	2181.186	1587.666	28	23
2006861212001	0.078	766.755	604.11	0.362	0.299	2685.678	2218.281	29	22
2006861213001	0.079	712.54	611.855	0.434	0.397	3219.846	2945.343	31	27
2006861214001	0.049	619.6	379.505	0.327	0.247	2426.013	1832.493	22	15
2006861215001	0.045	394.995	348.525	0.325	0.241	2411.175	1787.979	21	17
2006861216001	0.022	263.33	170.39	0.216	0.124	1602.504	919.956	18	15
2006861217001	0.017	185.88	131.665	0.165	0.11	1224.135	816.09	27	19
2006861218001	0.063	588.62	487.935	0.877	0.739	6506.463	5482.641	22	21
2006861219001	0.032	379.505	247.84	0.857	0.539	6358.083	3998.841	29	18
2006861220001	0.02	193.625	154.9	0.761	0.65	5645.859	4822.35	21	18
2006861221001	0.112	782.245	867.44	0.587	0.562	4354.953	4169.478	29	28
2006861222001	0.053	472.445	410.485	0.298	0.245	2210.862	1817.655	31	23
2006861223001	0.068	542.15	526.66	1.111	1.141	8242.509	8465.079	18	19
2005861001002	0.043	379.505	333.035	0.405	0.351	3004.695	2604.069	32	21
2005861002002	0.037	333.035	286.565	0.253	0.213	1877.007	1580.247	25	23
2005861003002	0.078	611.855	604.11	0.71	0.721	5267.49	5349.099	29	31
2005861004002	0.108	1045.575	836.46	0.71	0.663	5267.49	4918.797	31	24
2005861005002	0.101	774.5	782.245	0.954	0.94	7077.726	6973.86	31	30
2005861006002	0.071	588.62	549.895	0.829	0.793	6150.351	5883.267	30	26

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2005861007002	0.052	549.895	402.74	1.025	0.863	7604.475	6402.597	26	21
2005861008002	0.03	302.055	232.35	0.296	0.252	2196.024	1869.588	26	23
2005861009002	0.036	371.76	278.82	0.743	0.614	5512.317	4555.266	34	21
2005861010002	0.046	387.25	356.27	1.326	1.269	9837.594	9414.711	20	23
2005861011002	0.041	379.505	317.545	0.645	0.556	4785.255	4124.964	19	15
2005861012002	0.03	317.545	232.35	0.593	0.429	4399.467	3182.751	19	14
2005861013002	0.047	666.07	364.015	0.883	0.708	6550.977	5252.652	20	11
2005861014002	0.033	317.545	255.585	0.516	0.449	3828.204	3331.131	19	17
2005861015002	0.049		379.505		0.549		4073.031		15
2005861016002	0.026	387.25	201.37	0.43	0.29	3190.17	2151.51	18	6
2005861017002	0.046	526.66	356.27	0.667	0.549	4948.473	4073.031	30	21
2005861018002	0.062	588.62	480.19	0.267	0.229	1980.873	1698.951	38	28
2005861019002	0.067	611.855	518.915	0.289	0.244	2144.091	1810.236	20	21
2006861101002	0.112	1208.22	867.44	0.607	0.515	4503.333	3820.785	27	22
2006861102002	0.132	1223.71	1022.34	1.029	0.943	7634.151	6996.117	31	29
2006861103002	0.097	728.03	751.265	1.449	1.416	10750.131	10505.304	29	32
2006861104002	0.048	487.935	371.76	0.827	0.681	6135.513	5052.339	31	23
2006861105002	0.112	968.125	867.44	0.821	0.757	6090.999	5616.183	25	26
2006861106002	0.064	580.875	495.68	0.599	0.56	4443.981	4154.64	27	21
2006861107002	0.128	1610.96	991.36	0.399	0.311	2960.181	2307.309	28	14
2006861108002	0.069	1192.73	534.405	0.565	0.473	4191.735	3509.187	24	14
2006861109002	0.04	627.345	309.8	0.463	0.37	3434.997	2745.03	19	14
2006861110002	0.048	511.17	371.76	0.783	0.665	5809.077	4933.635	26	21
2006861111002	0.055	472.445	425.975	0.476	0.451	3531.444	3345.969	24	16
2006861112002	0.023	333.035	178.135	0.325	0.232	2411.175	1721.208	17	15
2006861113002	0.019	263.33	147.155	0.594	0.411	4406.886	3049.209	24	13
2006861114002	0.019	240.095	147.155	0.261	0.203	1936.359	1506.057	21	14
2006861115002	0.046	573.13	356.27	0.318	0.232	2359.242	1721.208	14	13
2006861116002	0.036	348.525	278.82	0.344	0.264	2552.136	1958.616	20	13
2006861117002	0.008	116.175	61.96	0.401	0.254	2975.019	1884.426	10	7
2006861118002	0.028	286.565	216.86	0.359	0.279	2663.421	2069.901	14	16
2006861119002	0.038	464.7	294.31	0.334	0.258	2477.946	1914.102	25	17
2006861120002	0.027	333.035	209.115	0.355	0.284	2633.745	2106.996	21	14
2006861121002	0.017	224.605	131.665	0.542	0.396	4021.098	2937.924	26	11
2006861122002	0.037	557.64	286.565	0.459	0.306	3405.321	2270.214	21	14

Appendix 5.2

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2006861123002	0.033	379.505	255.585	0.318	0.238	2359.242	1765.722	19	10
2006861124002	0.03	364.015	232.35	0.51	0.374	3783.69	2774.706	26	14
2006861125002	0.009	108.43	69.705	0.266	0.184	1973.454	1365.096	14	9
2006861126002	0.041	557.64	317.545	0.687	0.456	5096.853	3383.064	34	15
2006861127002	0.037	673.815	286.565	0.367	0.245	2722.773	1817.655	22	11
2006861128002	0.029	425.975	224.605	1.09	0.716	8086.71	5312.004	25	14
2006861129002	0.034	456.955	263.33	0.8	0.525	5935.2	3894.975	21	14
2006861130002	0.043	456.955	333.035	0.383	0.327	2841.477	2426.013	28	17
2006861131002	0.049	487.935	379.505	0.402	0.336	2982.438	2492.784	20	15
2006861132002	0.04	394.995	309.8	0.758	0.628	5623.602	4659.132	28	23
2006861133002	0.049	379.505	379.505	0.71	0.618	5267.49	4584.942	20	17
2006861134002	0.051	642.835	394.995	0.742	0.595	5504.898	4414.305	25	20
2006861135002	0.04	425.975	309.8	0.829	0.629	6150.351	4666.551	20	15
2006861136002	0.061	596.365	472.445	0.73	0.736	5415.87	5460.384	18	13
2006861137002	0.049	534.405	379.505	0.753	0.635	5586.507	4711.065	17	8
2006861138002	0.067	573.13	518.915	0.663	0.596	4918.797	4421.724	17	18
2006861139002	0.024	356.27	185.88	0.4	0.301	2967.6	2233.119	16	12
2006861140002	0.024	402.74	185.88	0.747	0.412	5541.993	3056.628	22	15
2006861141002	0.02	356.27	154.9	0.597	0.28	4429.143	2077.32	19	9
2006861142002	0.014	309.8	108.43	0.572	0.294	4243.668	2181.186	14	8
2006861143002	0.062	526.66	480.19	0.536	0.541	3976.584	4013.679	26	23
2006861144002	0.027	456.955	209.115	0.428	0.292	3175.332	2166.348	26	15
2006861145002	0.085	828.715	658.325	1.483	1.354	11002.377	10045.326	27	30
2006861146002	0.03	402.74	232.35	0.403	0.331	2989.857	2455.689	23	18
2006861147002	0.058	588.62	449.21	0.946	0.81	7018.374	6009.39	20	15
2006861148002	0.021	209.115	162.645	0.316	0.267	2344.404	1980.873	10	14
2006861149002	0.021	302.055	162.645	0.368	0.256	2730.192	1899.264	18	15
2006861150002	0.022	255.585	170.39	0.281	0.211	2084.739	1565.409	23	15
2006861151002	0.044	449.21	340.78	0.571	0.462	4236.249	3427.578	29	26
2006861152002	0.018	193.625	139.41	0.311	0.224	2307.309	1661.856	11	14
2006861153002	0.067	518.915	518.915	0.596	0.555	4421.724	4117.545	27	25
2006861154002	0.034	340.78	263.33	0.318	0.267	2359.242	1980.873	17	16
2006861155002	0.077	627.345	596.365	0.857	0.86	6358.083	6380.34	31	33
2006861156002	0.064	472.445	495.68	0.798	0.799	5920.362	5927.781	24	23
2006861157002	0.064	495.68	495.68	1.153	1.131	8554.107	8390.889	27	24

SAMPLEID	MnO_U_c_180	Mn_U_m_75	Mn_U_m_180	Na2O_U_c_75	Na2O_U_c_180	Na_U_m_75	Na_U_m_180	Ni_U_m_75	Ni_U_m_180
2006861201002	0.056	379.505	433.72	0.798	0.82	5920.362	6083.58	23	28
2006861202002	0.063	534.405	487.935	0.605	0.585	4488.495	4340.115	23	27
2006861203002	0.105	766.755	813.225	0.565	0.569	4191.735	4221.411	25	34
2006861204002	0.052	456.955	402.74	0.283	0.256	2099.577	1899.264	37	30
2006861205002	0.035	325.29	271.075	0.155	0.12	1149.945	890.28	30	20
2006861206002	0.052	503.425	402.74	0.773	0.662	5734.887	4911.378	25	20
2006861207002	0.055	425.975	425.975	0.496	0.485	3679.824	3598.215	20	25
2006861208002	0.039	464.7	302.055	0.429	0.328	3182.751	2433.432	27	22
2006861209002	0.085	890.675	658.325	0.603	0.517	4473.657	3835.623	28	25
2006861210002	0.047	356.27	364.015	0.692	0.671	5133.948	4978.149	27	23
2006861211002	0.03	317.545	232.35	0.245	0.204	1817.655	1513.476	22	21
2006861212002	0.048	518.915	371.76	0.649	0.509	4814.931	3776.271	32	28
2006861213002	0.044	449.21	340.78	0.679	0.547	5037.501	4058.193	32	35
2006861214002	0.061	642.835	472.445	1.228	1.031	9110.532	7648.989	28	24
2006861215002	0.03	518.915	232.35	0.375	0.206	2782.125	1528.314	24	14
2006861216002	0.015	209.115	116.175	0.175	0.085	1298.325	630.615	24	18
2006861217002	0.039	333.035	302.055	0.151	0.144	1120.269	1068.336	32	30
2006861218002	0.099	1053.32	766.755	1.16	0.982	8606.04	7285.458	33	21
2006861219002	0.036	302.055	278.82	1.61	1.554	11944.59	11529.126	29	25
2006861220002	0.026	209.115	201.37	1.647	1.534	12219.093	11380.746	23	22
2006861221002	0.119	921.655	921.655	0.915	0.889	6788.385	6595.491	29	33
2006861222002	0.044	487.935	340.78	0.228	0.163	1691.532	1209.297	28	21
2006861223002	0.074	666.07	573.13	1.179	1.199	8747.001	8895.381	20	20

Appendix 5.2

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2005861001001	0.094	0.084	410.216	366.576	64	54.8	10	8	77.611
2005861002001	0.124	0.1	541.136	436.4	76.1	60.7	8	13	70.84
2005861003001	0.112	0.116	488.768	506.224	72.2	78.8	7	12	71.541
2005861004001	0.16	0.134	698.24	584.776	79.1	70.2	13	11	60.882
2005861005001	0.098	0.101	427.672	440.764	64.7	68.3	10	4	72.048
2005861006001	0.121	0.118	528.044	514.952	58	53.5	9	11	64.383
2005861007001	0.092	0.064	401.488	279.296	43	28.2	10	9	76.026
2005861008001	0.126	0.087	549.864	379.668	55.5	35.9	15	5	71.648
2005861009001	0.078	0.071	340.392	309.844	47.7	39.6	9	7	77.924
2005861010001		0.103		449.492		52.1		9	
2005861011001	0.074	0.062	322.936	270.568	43.1	34.9	8	10	75.951
2005861012001	0.057	0.058	248.748	253.112	38.5	37.3	5	6	82.157
2005861013001	0.13	0.089	567.32	388.396	70.7	49.6	17	10	65.069
2005861014001	0.083	0.064	362.212	279.296	52.7	38.5	9	3	72.644
2005861015001	0.078	0.059	340.392	257.476	65.7	49.3	17	9	64.476
2005861016001	0.068	0.052	296.752	226.928	68.1	49.6	10	9	64.633
2005861017001	0.072	0.058	314.208	253.112	59.8	46.8	12	6	72.521
2005861018001	0.126	0.095	549.864	414.58	81.3	55.9	14	12	68.501
2005861019001		0.095		414.58		55.4		4	
2006861101001	0.098	0.08	427.672	349.12	52.4	52.3	14	9	67.704
2006861102001	0.112	0.101	488.768	440.764	77.9	77.4	10	7	66.234
2006861103001	0.122	0.128	532.408	558.592	78.6	82.8	13	2	69.189
2006861104001	0.096	0.081	418.944	353.484	46.8	43.1	9	-1	69.546
2006861105001	0.109	0.106	475.676	462.584	61.7	61.3	11	10	71.445
2006861106001	0.095	0.096	414.58	418.944	53.6	56.6	12	7	67.682
2006861107001	0.091	0.066	397.124	288.024	34.6	27.7	8	6	83.607
2006861108001	0.109	0.084	475.676	366.576	49.6	41.8	7	-1	77.326
2006861109001	0.112	0.08	488.768	349.12	48	40	6	-1	74.271
2006861110001	0.073	0.055	318.572	240.02	38.1	32.7	7	7	78.527
2006861111001	0.081	0.075	353.484	327.3	46.6	47.2	6	13	71.814
2006861112001	0.08	0.062	349.12	270.568	48.7	38.2	11	6	71.971
2006861113001	0.061	0.042	266.204	183.288	54.6	37.5	11	4	67.427
2006861114001	0.055	0.05	240.02	218.2	40.9	35.8	3	2	70.825
2006861115001	0.088	0.066	384.032	288.024	42.5	31.7	17	6	78.523
2006861116001	0.201	0.162	877.164	706.968	56.1	44.6	11	10	72.189

Appendix 5.2

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2006861117001	0.097	0.079	423.308	344.756	41.3	28.2	3	2	79.775
2006861118001	0.091	0.08	397.124	349.12	44.3	31.7	10	6	76.349
2006861119001	0.095	0.074	414.58	322.936	60.6	45.1	18	9	63.16
2006861120001	0.1	0.07	436.4	305.48	38.6	23.5	10	8	76.196
2006861121001	0.057	0.049	248.748	213.836	56.3	45.2	10	9	63.588
2006861122001	0.099	0.061	432.036	266.204	48.3	29.2	14	2	72.256
2006861123001	0.085	0.058	370.94	253.112	38.9	25.3	11	5	78.063
2006861124001	0.141	0.116	615.324	506.224	57.6	44.4	11	3	68.227
2006861125001	0.12	0.09	523.68	392.76	57.7	41.1	10	6	71.085
2006861126001	0.119	0.075	519.316	327.3	54.3	36.2	10	7	70.403
2006861127001	0.068	0.049	296.752	213.836	54.1	31.9	10	6	65.109
2006861128001	0.099	0.075	432.036	327.3	49.2	38.3	10	6	70.637
2006861129001	0.079	0.079	344.756	344.756	58.9	58.6	8	7	70.791
2006861130001	0.118	0.096	514.952	418.944	51.8	38.9	8	7	74.604
2006861131001	0.088	0.073	384.032	318.572	51.6	37.7	9	8	78.291
2006861132001	0.101	0.079	440.764	344.756	58.4	42.9	7	4	75.271
2006861133001	0.066	0.062	288.024	270.568	54.4	55.2	8	9	79.182
2006861134001	0.086	0.052	375.304	226.928	68.7	34.8	8	4	73.181
2006861135001	0.078	0.053	340.392	231.292	54.4	32.2	12	5	72.916
2006861136001	0.058	0.049	253.112	213.836	34	31.2	6	5	79.121
2006861137001	0.065	0.057	283.66	248.748	35.2	34.4	8	3	78.104
2006861138001	0.11	0.115	480.04	501.86	62.9	65.5	11	8	70.242
2006861139001	0.09	0.05	392.76	218.2	52.6	28.8	8	-1	75.364
2006861140001	0.077	0.055	336.028	240.02	44.8	26.9	9	-1	79.244
2006861141001	0.108	0.092	471.312	401.488	58.7	45.8	6	5	78.96
2006861142001	0.119	0.086	519.316	375.304	81.7	52.5	12	7	63.46
2006861143001	0.126	0.098	549.864	427.672	93.6	75.4	11	9	67.354
2006861144001	0.081	0.052	353.484	226.928	54.7	31.7	10	-1	74.899
2006861145001	0.091	0.081	397.124	353.484	60.6	56.3	8	8	66.604
2006861146001	0.12	0.077	523.68	336.028	54.9	39.5	12	4	75.08
2006861147001	0.051	0.045	222.564	196.38	49.3	44.4	10	6	75.44
2006861148001	0.081	0.058	353.484	253.112	64.5	46.1	9	5	70.694
2006861149001	0.111	0.074	484.404	322.936	47.2	31.1	5	3	75.642
2006861150001	0.083	0.065	362.212	283.66	59.2	44.7	10	7	73.361
2006861151001	0.071	0.057	309.844	248.748	78	59	10	9	65.494

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2006861152001	0.093	0.077	405.852	336.028	60.3	48.8	8	3	76.982
2006861153001	0.081	0.083	353.484	362.212	68.6	73.3	11	11	70.802
2006861154001	0.075	0.064	327.3	279.296	41.1	34.1	5	-1	84.495
2006861155001	0.111	0.114	484.404	497.496	80.4	81.3	15	13	71.4
2006861156001	0.109	0.116	475.676	506.224	66.5	72.6	10	10	70.196
2006861157001	0.123	0.13	536.772	567.32	72.4	73.7	12	11	65.035
2006861201001	0.064	0.058	279.296	253.112	52.7	51.9	7	8	85.594
2006861202001	0.065	0.06	283.66	261.84	64.1	58.8	10	10	77.637
2006861203001	0.072	0.079	314.208	344.756	79	86.9	11	10	70.644
2006861204001	0.108	0.089	471.312	388.396	80.7	65	12	7	69.612
2006861205001	0.115	0.102	501.86	445.128	76.4	68.9	12	12	69.768
2006861206001	0.081	0.059	353.484	257.476	57	52	10	7	78.94
2006861207001	0.081	0.069	353.484	301.116	66.7	60.4	13	10	66.688
2006861208001	0.096	0.072	418.944	314.208	57.7	50.2	10	6	70.914
2006861209001	0.076	0.065	331.664	283.66	60.5	54.6	10	8	73.04
2006861210001	0.065	0.065	283.66	283.66	61.2	62	7	6	76.072
2006861211001	0.072	0.048	314.208	209.472	70.9	54.9	11	9	66.011
2006861212001	0.136	0.114	593.504	497.496	90.5	76.9	15	11	62.942
2006861213001	0.127	0.116	554.228	506.224	119.2	99.8	12	13	57.406
2006861214001	0.164	0.106	715.696	462.584	77.9	56	12	9	56.215
2006861215001	0.08	0.069	349.12	301.116	61	51.9	12	8	69.741
2006861216001	0.087	0.066	379.668	288.024	57.6	43.9	10	9	74.321
2006861217001	0.128	0.094	558.592	410.216	60.3	49.4	11	11	71.563
2006861218001	0.079	0.065	344.756	283.66	60.3	53.7	12	9	67.176
2006861219001	0.091	0.059	397.124	257.476	62.4	49.4	11	9	60.702
2006861220001	0.058	0.049	253.112	213.836	53.7	46.4	12	10	57.908
2006861221001	0.148	0.141	645.872	615.324	74.1	76.2	9	13	66.142
2006861222001	0.077	0.068	336.028	296.752	62.2	58.2	13	10	65.124
2006861223001	0.104	0.095	453.856	414.58	78.9	86.2	9	9	72.632
2005861001002	0.076	0.067	331.664	292.388	77.6	70.9	13	13	70.721
2005861002002	0.084	0.072	366.576	314.208	76.3	66	14	9	70.03
2005861003002	0.092	0.092	401.488	401.488	81.9	86.4	13	12	67.189
2005861004002	0.12	0.101	523.68	440.764	79.1	71.6	8	9	59.509
2005861005002	0.075	0.073	327.3	318.572	67.2	69.5	9	12	69.485
2005861006002	0.124	0.119	541.136	519.316	62.9	59.7	11	11	60.407

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2005861007002	0.054	0.046	235.656	200.744	57.7	48.1	12	13	61.303
2005861008002	0.071	0.061	309.844	266.204	67.8	53.5	14	13	59.364
2005861009002	0.074	0.061	322.936	266.204	68.9	55.6	10	8	62.121
2005861010002	0.121	0.116	528.044	506.224	67.6	66.7	16	8	53.233
2005861011002	0.077	0.066	336.028	288.024	49	41.1	10	8	68.123
2005861012002	0.07	0.049	305.48	213.836	57.3	40.9	14	8	63.604
2005861013002	0.177	0.099	772.428	432.036	66	42	9	8	61.766
2005861014002	0.081	0.068	353.484	296.752	49.1	44.2	14	14	62.022
2005861015002		0.058		253.112		51.6		13	
2005861016002	0.058	0.041	253.112	178.924	58	35	9	6	68.046
2005861017002	0.063	0.05	274.932	218.2	63.5	50.7	9	4	66.695
2005861018002	0.061	0.054	266.204	235.656	101.7	86.3	16	14	58.704
2005861019002	0.075	0.068	327.3	296.752	87	77.4	10	12	70.986
2006861101002	0.079	0.064	344.756	279.296	55.6	51.8	10	6	67.073
2006861102002	0.081	0.07	353.484	305.48	81	79.1	7	15	65.475
2006861103002	0.112	0.107	488.768	466.948	84.4	84.2	12	6	68.42
2006861104002	0.09	0.071	392.76	309.844	54.1	43.7	13	6	67.18
2006861105002	0.104	0.092	453.856	401.488	70.2	64.6	8	12	69.716
2006861106002	0.085	0.078	370.94	340.392	54.2	52.2	7	4	69.5
2006861107002	0.051	0.039	222.564	170.196	49.4	36.4	13	9	73.985
2006861108002	0.07	0.045	305.48	196.38	53.5	44.7	5	5	72.829
2006861109002	0.07	0.046	305.48	200.744	56.1	39.7	15	1	72.481
2006861110002	0.062	0.051	270.568	222.564	60.9	50.7	8	7	62.103
2006861111002	0.093	0.084	405.852	366.576	53.1	50.5	13	9	68.247
2006861112002	0.064	0.043	279.296	187.652	53.5	36.6	9	6	66.171
2006861113002	0.065	0.044	283.66	192.016	65.6	45	12	5	64.282
2006861114002	0.051	0.039	222.564	170.196	42.9	31.6	13	7	63.51
2006861115002	0.068	0.051	296.752	222.564	47.1	36	9	9	74.292
2006861116002	0.099	0.083	432.036	362.212	58.8	46.4	10	8	72.098
2006861117002	0.052	0.043	226.928	187.652	33.3	22.2	12	3	86.452
2006861118002	0.062	0.054	270.568	235.656	56.8	43.8	11	7	67.34
2006861119002	0.087	0.07	379.668	305.48	56.5	44.7	9	4	60.377
2006861120002	0.103	0.071	449.492	309.844	55.9	39.3	11	9	59.935
2006861121002	0.056	0.037	244.384	161.468	48.8	36.9	3	-1	60.346
2006861122002	0.109	0.062	475.676	270.568	53	34.4	6	2	60.665

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2006861123002	0.066	0.05	288.024	218.2	56.2	40.3	11	4	63.216
2006861124002	0.064	0.052	279.296	226.928	69.3	49.5	11	12	58.855
2006861125002	0.06	0.054	261.84	235.656	46.5	35.6	6	6	77.627
2006861126002	0.084	0.057	366.576	248.748	73.3	49.5	12	8	61.639
2006861127002	0.074	0.048	322.936	209.472	50.9	26.9	12	6	63.026
2006861128002	0.082	0.053	357.848	231.292	65.2	44	11	9	58.617
2006861129002	0.095	0.065	414.58	283.66	66.3	42	11	7	66.838
2006861130002	0.087	0.07	379.668	305.48	70.4	60.4	9	12	60.055
2006861131002	0.095	0.082	414.58	357.848	79.1	65.1	14	7	66.677
2006861132002	0.074	0.062	322.936	270.568	86.8	70.7	13	11	56.784
2006861133002	0.074	0.068	322.936	296.752	59.3	58.1	8	9	75.851
2006861134002	0.107	0.077	466.948	336.028	88.8	62.6	7	9	63.002
2006861135002	0.113	0.079	493.132	344.756	62.2	46.3	12	6	62.633
2006861136002	0.106	0.082	462.584	357.848	42.6	36.2	9	4	69.664
2006861137002	0.074	0.06	322.936	261.84	49.4	39.8	8	8	67.34
2006861138002	0.099	0.091	432.036	397.124	65.6	62.8	16	9	66.831
2006861139002	0.078	0.049	340.392	213.836	58.2	38.9	12	2	62.665
2006861140002	0.148	0.079	645.872	344.756	62.4	32.4	7	5	69.043
2006861141002	0.109	0.069	475.676	301.116	67.8	32.6	11	5	75.033
2006861142002	0.082	0.045	357.848	196.38	60.5	25.5	9	3	76.373
2006861143002	0.091	0.079	397.124	344.756	109.6	96.3	23	17	57.917
2006861144002	0.066	0.042	288.024	183.288	72.7	41.4	7	3	67.069
2006861145002	0.094	0.086	410.216	375.304	64.3	58.4	6	9	61.057
2006861146002	0.061	0.045	266.204	196.38	58.4	45.7	4	-1	59.072
2006861147002	0.063	0.052	274.932	226.928	51.1	46.9	11	7	73.538
2006861148002	0.043	0.036	187.652	157.104	47.9	42.6	-1	-1	41.575
2006861149002	0.056	0.042	244.384	183.288	60.1	40.2	13	8	62.28
2006861150002	0.064	0.047	279.296	205.108	76.3	53	17	14	66.774
2006861151002	0.054	0.045	235.656	196.38	73.4	63.7	16	10	62.774
2006861152002	0.066	0.059	288.024	257.476	53.1	45	9	1	78.769
2006861153002	0.063	0.063	274.932	274.932	73.4	74	8	12	66.308
2006861154002	0.048	0.047	209.472	205.108	57.9	48.3	11	6	74.748
2006861155002	0.101	0.103	440.764	449.492	95.4	97	14	13	60.519
2006861156002	0.073	0.076	318.572	331.664	71.9	73.7	7	9	68.109
2006861157002	0.09	0.092	392.76	401.488	74.1	73.1	14	10	63.983

SAMPLEID	P2O5_U_c_75	P2O5_U_c_180	P_U_m_75	P_U_m_180	Rb_U_m_75	Rb_U_m_180	Sc_U_m_75	Sc_U_m_180	SiO2_U_c_75
2006861201002	0.067	0.068	292.388	296.752	83.5	85.9	14	9	70.584
2006861202002	0.042	0.042	183.288	183.288	79.9	79.1	14	13	68.638
2006861203002	0.067	0.068	292.388	296.752	88	90	14	12	67.077
2006861204002	0.044	0.043	192.016	187.652	94.6	89.3	15	10	61.691
2006861205002	0.046	0.041	200.744	178.924	76.2	67.2	11	9	70.496
2006861206002	0.062	0.052	270.568	226.928	59.4	56.4	11	11	75.975
2006861207002	0.059	0.058	257.476	253.112	57.1	55.6	11	10	74.134
2006861208002	0.056	0.039	244.384	170.196	63.6	49.1	11	10	66.534
2006861209002	0.071	0.06	309.844	261.84	67.2	58.6	12	7	68.188
2006861210002	0.065	0.065	283.66	283.66	67.6	67.4	9	8	71.723
2006861211002	0.049	0.038	213.836	165.832	59	50.4	11	9	52.823
2006861212002	0.093	0.07	405.852	305.48	90	69.9	12	11	57.446
2006861213002	0.082	0.062	357.848	270.568	78.8	64.4	14	10	56.668
2006861214002	0.137	0.113	597.868	493.132	86.9	72.3	11	10	51.12
2006861215002	0.065	0.039	283.66	170.196	64.2	44.1	12	10	66.623
2006861216002	0.063	0.043	274.932	187.652	58.2	42.8	10	9	75
2006861217002	0.125	0.12	545.5	523.68	81.7	79.2	14	11	50.704
2006861218002	0.084	0.067	366.576	292.388	60.7	55.6	11	9	62.897
2006861219002	0.109	0.104	475.676	453.856	63.1	62.7	13	14	44.755
2006861220002	0.041	0.039	178.924	170.196	54.3	52.6	17	10	55.989
2006861221002	0.114	0.111	497.496	484.404	75.4	74	12	12	64.23
2006861222002	0.063	0.046	274.932	200.744	61.3	49.8	14	9	63.736
2006861223002	0.057	0.048	248.748	209.472	83.5	89	9	7	72.122

Appendix 5.2

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2005861001001	79.914	362753.814	373518.036	0.038	0.029	152.19	116.145	61.6	49.8	0.961
2005861002001	74.903	331106.16	350096.622	0.04	0.032	160.2	128.16	64.6	51.5	0.991
2005861003001	67.376	334382.634	314915.424	0.043	0.046	172.215	184.23	96.9	105.2	0.92
2005861004001	66.796	284562.468	312204.504	0.067	0.055	268.335	220.275	130.9	113.2	0.943
2005861005001	69.829	336752.352	326380.746	0.038	0.04	152.19	160.2	103.7	104.5	0.994
2005861006001	65.248	300926.142	304969.152	0.026	0.026	104.13	104.13	126.2	116.5	0.984
2005861007001	83.511	355345.524	390330.414	0.034	0.022	136.17	88.11	70.5	49.4	0.953
2005861008001	80.203	334882.752	374868.822	0.034	0.026	136.17	104.13	83	55.1	0.97
2005861009001	79.44	364216.776	371302.56	0.027	0.028	108.135	112.14	65.3	55.7	0.787
2005861010001	74.213		346871.562		0.048		192.24		96.5	
2005861011001	81.905	354994.974	382823.97	0.049	0.052	196.245	208.26	102.5	88.7	0.901
2005861012001	82.917	384001.818	387554.058	0.041	0.049	164.205	196.245	87.1	83.6	0.521
2005861013001	77.414	304132.506	361833.036	0.065	0.048	260.325	192.24	123.6	94.9	0.877
2005861014001	82.476	339538.056	385492.824	0.062	0.047	248.31	188.235	93.8	66.9	0.814
2005861015001	75.24	301360.824	351671.76	0.072	0.053	288.36	212.265	120.4	89.1	0.85
2005861016001	74.232	302094.642	346960.368	0.05	0.029	200.25	116.145	117.7	86	0.871
2005861017001	76.953	338963.154	359678.322	0.035	0.029	140.175	116.145	85.4	69.3	0.855
2005861018001	76.396	320173.674	357074.904	0.058	0.044	232.29	176.22	71.8	51.3	0.912
2005861019001	80.682		377107.668		0.03		120.15		39.3	
2006861101001	73.2	316448.496	342136.8	0.039	0.029	156.195	116.145	97.9	86	1.058
2006861102001	69.99	309577.716	327133.26	0.035	0.031	140.175	124.155	100.2	95.4	0.932
2006861103001	68.164	323389.386	318598.536	0.033	0.036	132.165	144.18	122.2	127.5	0.996
2006861104001	74.147	325058.004	346563.078	0.051	0.041	204.255	164.205	104.5	92.1	0.97
2006861105001	71.157	333933.93	332587.818	0.027	0.027	108.135	108.135	100.3	100	0.91
2006861106001	67.907	316345.668	317397.318	0.024	0.024	96.12	96.12	109.6	112.6	1.058
2006861107001	87.759	390779.118	410185.566	0.04	0.03	160.2	120.15	62.9	49.9	1.003
2006861108001	82.47	361421.724	385464.78	0.031	0.024	124.155	96.12	85.2	70.5	1.02
2006861109001	81.276	347142.654	379884.024	0.044	0.034	176.22	136.17	88	70.7	1.109
2006861110001	83.451	367035.198	390049.974	0.028	0.021	112.14	84.105	70.7	58.8	0.933
2006861111001	71.396	335658.636	333704.904	0.026	0.024	104.13	96.12	101.4	102.9	0.9
2006861112001	78.459	336392.454	366717.366	0.037	0.032	148.185	128.16	78.8	62	0.803
2006861113001	79.566	315153.798	371891.484	0.026	0.02	104.13	80.1	107.9	74.4	0.938
2006861114001	75.047	331036.05	350769.678	0.056	0.05	224.28	200.25	94.6	82.5	0.734
2006861115001	83.863	367016.502	391975.662	0.036	0.029	144.18	116.145	77.1	58.1	1.064
2006861116001	77.269	337411.386	361155.306	0.047	0.037	188.235	148.185	84.5	65.1	0.933

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2006861117001	84.85	372868.35	396588.9	0.042	0.026	168.21	104.13	72.2	47.9	0.81
2006861118001	81.369	356855.226	380318.706	0.034	0.028	136.17	112.14	68.6	53.1	0.836
2006861119001	72.434	295209.84	338556.516	0.032	0.033	128.16	132.165	90.5	73.3	0.787
2006861120001	85.282	356140.104	398608.068	0.042	0.048	168.21	192.24	75.3	55.6	0.741
2006861121001	72.133	297210.312	337149.642	0.037	0.032	148.185	128.16	90.2	75.7	0.791
2006861122001	84.874	337724.544	396701.076	0.04	0.029	160.2	116.145	79	50.1	0.837
2006861123001	86.697	364866.462	405221.778	0.035	0.026	140.175	104.13	70.6	44.9	0.808
2006861124001	75.911	318892.998	354808.014	0.05	0.038	200.25	152.19	86.4	66.4	0.899
2006861125001	79.027	332251.29	369372.198	0.035	0.023	140.175	92.115	71.3	50.3	0.994
2006861126001	82.076	329063.622	383623.224	0.049	0.035	196.245	140.175	68.7	46.9	0.806
2006861127001	80.36	304319.466	375602.64	0.044	0.037	176.22	148.185	116.9	71.4	0.915
2006861128001	79.249	330157.338	370409.826	0.08	0.074	320.4	296.37	83.6	64.5	0.771
2006861129001	71.319	330877.134	333345.006	0.047	0.05	188.235	200.25	92.1	93.5	0.699
2006861130001	82.457	348699.096	385404.018	0.065	0.053	260.325	212.265	83.6	60.2	0.803
2006861131001	86.078	365932.134	402328.572	0.041	0.032	164.205	128.16	73.3	51.2	0.723
2006861132001	83.832	351816.654	391830.768	0.049	0.039	196.245	156.195	77.8	58.5	0.728
2006861133001	81.561	370096.668	381216.114	0.025	0.028	100.125	112.14	87.5	82.7	0.689
2006861134001	88.17	342047.994	412106.58	0.06	0.028	240.3	112.14	94.4	52.3	0.937
2006861135001	85.233	340809.384	398379.042	0.059	0.038	236.295	152.19	112.1	69.6	0.795
2006861136001	83.087	369811.554	388348.638	0.038	0.037	152.19	148.185	117.5	110.9	0.831
2006861137001	82.771	365058.096	386871.654	0.034	0.033	136.17	132.165	103.3	98.7	0.795
2006861138001	71.27	328311.108	333115.98	0.06	0.064	240.3	256.32	112	115.7	0.732
2006861139001	90.034	352251.336	420818.916	0.069	0.038	276.345	152.19	100.2	53.4	1.136
2006861140001	88.248	370386.456	412471.152	0.042	0.028	168.21	112.14	75	43.3	0.648
2006861141001	85.532	369059.04	399776.568	0.047	0.036	188.235	144.18	79	59.1	0.747
2006861142001	78.423	296612.04	366549.102	0.065	0.042	260.325	168.21	98.7	69.1	0.869
2006861143001	76.427	314812.596	357219.798	0.046	0.032	184.23	128.16	98.7	77.4	0.913
2006861144001	87.695	350077.926	409886.43	0.033	0.017	132.165	68.085	67.9	39	0.88
2006861145001	72.82	311307.096	340360.68	0.041	0.033	164.205	132.165	101.3	90	0.917
2006861146001	86.26	350923.92	403179.24	0.032	0.02	128.16	80.1	69.9	47.1	0.991
2006861147001	81.727	352606.56	381991.998	0.023	0.019	92.115	76.095	88.3	76	0.943
2006861148001	81.952	330423.756	383043.648	0.032	0.018	128.16	72.09	79.8	53.2	0.927
2006861149001	85.806	353550.708	401057.244	0.044	0.028	176.22	112.14	64.6	40.8	0.971
2006861150001	81.726	342889.314	381987.324	0.043	0.029	172.215	116.145	61.9	45.9	0.936
2006861151001	77.345	306118.956	361510.53	0.033	0.022	132.165	88.11	82.1	57.6	0.94

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2006861152001	82.675	359813.868	386422.95	0.03	0.027	120.15	108.135	53	42.5	0.901
2006861153001	71.065	330928.548	332157.81	0.03	0.027	120.15	108.135	72.1	73.5	0.829
2006861154001	88.033	394929.63	411466.242	0.018	0.016	72.09	64.08	46	36.6	0.977
2006861155001	72.178	333723.6	337359.972	0.043	0.041	172.215	164.205	97.9	98.5	0.822
2006861156001	69.696	328096.104	325759.104	0.057	0.057	228.285	228.285	91.1	94.6	0.901
2006861157001	65.112	303973.59	304333.488	0.046	0.046	184.23	184.23	123.2	121.8	1.015
2006861201001	87.129	400066.356	407240.946			265	235	55.4	59.5	0.842
2006861202001	82.12	362875.338	383828.88			305	288	62.3	57.2	0.951
2006861203001	69.493	330190.056	324810.282			250	239	86.9	93	0.85
2006861204001	76.308	325366.488	356663.592			270	257	50.8	43.5	0.976
2006861205001	74.267	326095.632	347123.958			305	309	52.9	49.9	0.992
2006861206001	85.102	368965.56	397766.748			359	328	73.1	70.1	1.107
2006861207001	72.375	311699.712	338280.75			276	256	115.1	102.1	0.971
2006861208001	77.442	331452.036	361963.908			355	325	89.5	77.3	1.018
2006861209001	78.112	341388.96	365095.488			314	286	87.5	76.4	0.969
2006861210001	76.464	355560.528	357392.736			260	255	92.8	94.1	1.005
2006861211001	77.1	308535.414	360365.4			366	339	96.7	75.3	0.955
2006861212001	69.844	294190.908	326450.856			513	445	107	91.5	0.903
2006861213001	64.529	268315.644	301608.546			451	433	110	97.4	0.897
2006861214001	72.738	262748.91	339977.412			493	391	134.4	89.8	0.827
2006861215001	74.081	325969.434	346254.594			343	327	94.8	86.1	0.835
2006861216001	81.502	347376.354	380940.348			398	338	60.9	46.9	0.887
2006861217001	80.276	334485.462	375210.024			322	302	62.6	52.3	0.945
2006861218001	73.26	313980.624	342417.24			422	418	119	104.9	1.153
2006861219001	76.123	283721.148	355798.902			454	389	81.5	61.4	0.868
2006861220001	65.056	270661.992	304071.744			1420	1199	117.5	106.3	0.931
2006861221001	66.43	309147.708	310493.82			290	283	120.4	121.3	1.047
2006861222001	67.831	304389.576	317042.094			371	359	90	86.1	0.96
2006861223001	75.044	339481.968	350755.656			391	388	100.2	102.5	1.07
2005861001002	72.786	330549.954	340201.764	0.035	0.031	140.175	124.155	80.9	72.7	0.941
2005861002002	74.27	327320.22	347137.98	0.031	0.024	124.155	96.12	74.2	60.9	0.96
2005861003002	65.678	314041.386	306978.972	0.025	0.021	100.125	84.105	120.7	125.8	0.986
2005861004002	65.278	278145.066	305109.372	0.044	0.036	176.22	144.18	173.6	151.8	0.967
2005861005002	68.108	324772.89	318336.792	0.03	0.032	120.15	128.16	129.5	129	1.039
2005861006002	61.952	282342.318	289563.648	0.052	0.048	208.26	192.24	141.8	133.2	0.997

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2005861007002	66.751	286530.222	311994.174	0.287	0.205	1149.435	821.025	152.7	123.4	0.872
2005861008002	66.706	277467.336	311783.844	0.039	0.028	156.195	112.14	148.8	116.7	0.835
2005861009002	68.591	290353.554	320594.334	0.222	0.215	889.11	861.075	108.9	88.9	0.858
2005861010002	57.514	248811.042	268820.436	0.229	0.22	917.145	881.1	162.6	152.1	0.857
2005861011002	76.036	318406.902	355392.264	0.068	0.064	272.34	256.32	144.9	126	0.888
2005861012002	76.301	297285.096	356630.874	0.1	0.069	400.5	276.345	142.2	98.7	0.957
2005861013002	78.828	288694.284	368442.072	0.338	0.168	1353.69	672.84	173.9	119	0.906
2005861014002	69.561	289890.828	325128.114	0.204	0.127	817.02	508.635	130.9	108.7	0.78
2005861015002	68.807		321603.918		0.344		1377.72		153.5	
2005861016002	81.235	318047.004	379692.39	0.035	0.026	140.175	104.13	108.3	66.1	0.879
2005861017002	74.377	311732.43	347638.098	0.034	0.025	136.17	100.125	135	104.4	0.852
2005861018002	64.093	274382.496	299570.682	0.037	0.029	148.185	116.145	97.7	80.6	0.847
2005861019002	75.987	331788.564	355163.238	0.031	0.025	124.155	100.125	64.5	56.6	0.872
2006861101002	72.457	313499.202	338664.018	0.04	0.029	160.2	116.145	128.8	107.2	1.108
2006861102002	68.413	306030.15	319762.362	0.074	0.065	296.37	260.325	149.5	135	0.96
2006861103002	67.305	319795.08	314583.57	0.087	0.089	348.435	356.445	149.2	151.2	1.03
2006861104002	71.437	313999.32	333896.538	0.088	0.074	352.44	296.37	171.1	139.5	0.998
2006861105002	70.678	325852.584	330348.972	0.047	0.039	188.235	156.195	123.5	109.7	0.961
2006861106002	70.074	324843	327525.876	0.037	0.032	148.185	128.16	120.2	111.1	1.081
2006861107002	80.423	345805.89	375897.102	0.029	0.019	116.145	76.095	98.4	69.1	1.038
2006861108002	80.233	340402.746	375009.042	0.024	0.017	96.12	68.085	114.8	87.4	1.218
2006861109002	82.099	338776.194	383730.726	0.028	0.017	112.14	68.085	108.4	75.1	1.228
2006861110002	66.283	290269.422	309806.742	1.139	1.004	4561.695	4021.02	158.3	132	0.847
2006861111002	68.754	318986.478	321356.196	0.057	0.051	228.285	204.255	123.9	116.5	0.942
2006861112002	78.188	309283.254	365450.712	0.029	0.02	116.145	80.1	117.9	76.7	0.812
2006861113002	76	300454.068	355224	0.075	0.045	300.375	180.225	117.3	77.3	0.962
2006861114002	72.892	296845.74	340697.208	0.037	0.027	148.185	108.135	93	68.2	0.943
2006861115002	79.787	347240.808	372924.438	0.029	0.026	116.145	104.13	90.1	68	0.972
2006861116002	74.937	336986.052	350255.538	0.035	0.029	140.175	116.145	88.6	72.4	0.87
2006861117002	87.276	404076.648	407928.024	0.026	0.02	104.13	80.1	60.5	41.6	0.809
2006861118002	73.015	314747.16	341272.11	0.039	0.035	156.195	140.175	94.6	73.9	0.875
2006861119002	68.664	282202.098	320935.536	0.059	0.051	236.295	204.255	115.3	92.7	0.746
2006861120002	73.173	280136.19	342010.602	0.03	0.029	120.15	116.145	119.2	80.9	0.797
2006861121002	73.815	282057.204	345011.31	0.249	0.183	997.245	732.915	178.6	122.5	0.781
2006861122002	75.667	283548.21	353667.558	0.067	0.04	268.335	160.2	151.4	86.5	0.845

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2006861123002	74.555	295471.584	348470.07	0.032	0.028	128.16	112.14	108.6	76.2	0.972
2006861124002	70.054	275088.27	327432.396	0.039	0.028	156.195	112.14	143.7	98.7	0.871
2006861125002	80.711	362828.598	377243.214	0.028	0.022	112.14	88.11	59.3	41.5	0.896
2006861126002	75.509	288100.686	352929.066	0.034	0.025	136.17	100.125	106.4	68.6	0.891
2006861127002	79.372	294583.524	370984.728	0.051	0.043	204.255	172.215	136.1	80.2	0.866
2006861128002	73.871	273975.858	345273.054	0.264	0.17	1057.32	680.85	128.5	81.6	0.91
2006861129002	78.93	312400.812	368918.82	0.079	0.048	316.395	192.24	110.5	71.4	0.9
2006861130002	67.598	280697.07	315953.052	0.069	0.053	276.345	212.265	135.9	108.6	0.831
2006861131002	73.746	311648.298	344688.804	0.08	0.059	320.4	236.295	107.5	91.7	0.908
2006861132002	65.408	265408.416	305716.992	0.141	0.108	564.705	432.54	174.5	133.6	0.807
2006861133002	78.206	354527.574	365534.844	0.04	0.037	160.2	148.185	99.8	88.2	0.755
2006861134002	75.61	294471.348	353401.14	0.128	0.083	512.64	332.415	166.4	113.6	0.854
2006861135002	74.274	292746.642	347156.676	0.783	0.456	3135.915	1826.28	188	129	0.795
2006861136002	76.457	325609.536	357360.018	0.048	0.043	192.24	172.215	162.6	143.7	0.851
2006861137002	76.839	314747.16	359145.486	0.06	0.046	240.3	184.23	147.9	119.9	0.797
2006861138002	71.33	312368.094	333396.42	0.071	0.063	284.355	252.315	132.9	123.1	0.777
2006861139002	78.497	292896.21	366894.978	0.061	0.035	244.305	140.175	101.7	65	0.81
2006861140002	84.03	322706.982	392756.22	0.082	0.042	328.41	168.21	115.8	58.6	0.835
2006861141002	88.853	350704.242	415298.922	0.049	0.023	196.245	92.115	89.5	43.6	0.909
2006861142002	89.624	356967.402	418902.576	0.039	0.016	156.195	64.08	83.4	38.4	0.833
2006861143002	63.834	270704.058	298360.116	0.051	0.039	204.255	156.195	127	110	0.833
2006861144002	82.325	313480.506	384787.05	0.029	0.015	116.145	60.075	92.7	52.8	0.864
2006861145002	64.573	285380.418	301814.202	1.436	1.752	5751.18	7016.76	135.8	117.5	0.867
2006861146002	72.322	276102.528	338033.028	0.038	0.026	152.19	104.13	145.8	98.1	0.802
2006861147002	78.575	343716.612	367259.55	0.126	0.167	504.63	668.835	116.2	98	0.939
2006861148002	59.984	194321.55	280365.216	0.052	0.037	208.26	148.185	444.5	291.6	0.585
2006861149002	79.017	291096.72	369325.458	0.026	0.018	104.13	72.09	83.3	54.2	0.797
2006861150002	78.367	312101.676	366287.358	0.039	0.024	156.195	96.12	72.8	50.7	0.966
2006861151002	71.004	293405.676	331872.696	0.068	0.053	272.34	212.265	90.3	72.6	0.814
2006861152002	83.935	368166.306	392312.19	0.02	0.016	80.1	64.08	49.9	42.5	0.869
2006861153002	67.777	309923.592	316789.698	0.042	0.039	168.21	156.195	96.5	93.5	0.824
2006861154002	79.689	349372.152	372466.386	0.021	0.019	84.105	76.095	77.5	63.6	0.883
2006861155002	60.573	282865.806	283118.202	0.617	0.921	2471.085	3688.605	135.4	145.1	0.85
2006861156002	68.947	318341.466	322258.278	0.041	0.04	164.205	160.2	112.6	114.3	0.98
2006861157002	63.76	299056.542	298014.24	0.713	1.078	2855.565	4317.39	151.3	150.2	1.013

Appendix 5.2

SAMPLEID	SiO2_U_c_180	Si_U_m_75	Si_U_m_180	SO3_U_c_75	SO3_U_c_180	S_U_m_75	S_U_m_180	Sr_U_m_75	Sr_U_m_180	TiO2_U_c_75
2006861201002	71.307	329909.616	333288.918			992	985	119.7	122.7	0.819
2006861202002	70.934	320814.012	331545.516			451	444	102.7	101.3	0.908
2006861203002	67.846	313517.898	317112.204			331	326	104.7	106.5	0.882
2006861204002	65.108	288343.734	304314.792			358	312	80.9	75.8	0.898
2006861205002	75.053	329498.304	350797.722			247	250	53.7	48.8	0.906
2006861206002	79.494	355107.15	371554.956			248	242	102.5	93.2	1.032
2006861207002	73.183	346502.316	342057.342			264	248	99.7	98	0.788
2006861208002	76.563	310979.916	357855.462			249	276	107.7	84.3	1.036
2006861209002	73.768	318710.712	344791.632			253	259	111	97	1.021
2006861210002	72.463	335233.302	338692.062			203	206	107.2	106.6	1.045
2006861211002	64.353	246894.702	300785.922			361	334	346.5	268.5	0.75
2006861212002	69.677	268502.604	325670.298			560	464	109	84.5	0.893
2006861213002	68.192	264866.232	318729.408			520	447	163.8	130.6	0.835
2006861214002	61.003	238934.88	285128.022			1417	1213	146	120.4	0.832
2006861215002	84.681	311395.902	395798.994			400	329	103.9	65.2	0.963
2006861216002	84.3	350550	394018.2			343	290	60.1	43.3	0.985
2006861217002	54.54	236990.496	254919.96			246	243	103.6	99.6	0.748
2006861218002	70.673	293980.578	330325.602			2827	2861	168.2	137.5	1.106
2006861219002	48.552	209184.87	226932.048			6234	6427	153.9	150.1	0.683
2006861220002	57.405	261692.586	268310.97			1625	1835	104.2	99.1	0.916
2006861221002	65.386	300211.02	305614.164			346	311	133.3	131.1	1.066
2006861222002	75.393	297902.064	352386.882			339	309	102.6	77	0.973
2006861223002	76.095	337098.228	355668.03			228	225	115.4	112	1.123

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2005861001001	0.77	5759.273	4614.61	78	69	3	-2	45	38	730
2005861002001	0.773	5939.063	4632.589	90	76	-2	-2	57	43	717
2005861003001	0.902	5513.56	5405.686	78	85	-2	-2	58	63	501
2005861004001	0.789	5651.399	4728.477	96	80	-2	-2	70	57	390
2005861005001	0.976	5957.042	5849.168	70	75	2	2	52	53	441
2005861006001	0.872	5897.112	5225.896	85	80	-2	-2	69	65	463
2005861007001	0.663	5711.329	3973.359	79	60	-2	2	43	27	1018
2005861008001	0.666	5813.21	3991.338	88	66	-2	3	55	37	737
2005861009001	0.607	4716.491	3637.751	71	63	6	-2	42	36	663
2005861010001	0.694		4159.142		79		7		56	
2005861011001	0.667	5399.693	3997.331	77	59	-2	-2	46	34	1023
2005861012001	0.456	3122.353	2732.808	48	48	-2	-2	32	33	351
2005861013001	0.622	5255.861	3727.646	92	65	-2	-2	76	51	662
2005861014001	0.543	4878.302	3254.199	80	55	2	-2	52	36	686
2005861015001	0.602	5094.05	3607.786	87	63	4	-2	69	50	568
2005861016001	0.612	5219.903	3667.716	97	71	-2	-2	67	47	506
2005861017001	0.639	5124.015	3829.527	71	57	2	-2	53	39	700
2005861018001	0.624	5465.616	3739.632	87	67	4	-2	75	52	665
2005861019001	0.65		3895.45		60		7		32	
2006861101001	0.854	6340.594	5118.022	81	74	-2	-2	58	49	480
2006861102001	0.784	5585.476	4698.512	71	66	2	-2	60	54	476
2006861103001	0.985	5969.028	5903.105	77	82	4	2	51	57	450
2006861104001	0.793	5813.21	4752.449	72	63	-2	-2	50	41	672
2006861105001	0.824	5453.63	4938.232	74	77	-2	6	55	55	536
2006861106001	1.019	6340.594	6106.867	89	93	-2	-2	63	65	425
2006861107001	0.661	6010.979	3961.373	57	43	-2	-2	34	23	882
2006861108001	0.633	6112.86	3793.569	66	46	2	-2	52	39	816
2006861109001	0.754	6646.237	4518.722	83	57	8	-2	49	37	666
2006861110001	0.663	5591.469	3973.359	66	53	-2	-2	40	36	1068
2006861111001	0.812	5393.7	4866.316	81	81	-2	-2	55	56	525
2006861112001	0.575	4812.379	3445.975	75	61	2	-2	50	38	704
2006861113001	0.643	5621.434	3853.499	104	72	-2	-2	60	38	735
2006861114001	0.529	4398.862	3170.297	75	64	-2	-2	42	34	553
2006861115001	0.694	6376.552	4159.142	80	59	2	6	41	28	1211
2006861116001	0.683	5591.469	4093.219	84	71	-2	-2	84	64	703

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2006861117001	0.48	4854.33	2876.64	73	53	-2	-2	41	28	973
2006861118001	0.567	5010.148	3398.031	77	66	-2	-2	46	36	892
2006861119001	0.582	4716.491	3487.926	74	61	5	-2	69	52	480
2006861120001	0.42	4440.813	2517.06	60	40	-2	-2	45	29	877
2006861121001	0.6	4740.463	3595.8	77	62	-2	-2	66	52	466
2006861122001	0.489	5016.141	2930.577	64	40	7	-2	54	33	630
2006861123001	0.449	4842.344	2690.857	71	46	2	-2	36	23	719
2006861124001	0.731	5387.707	4380.883	82	72	3	-2	63	49	694
2006861125001	0.641	5957.042	3841.513	92	69	6	3	59	41	895
2006861126001	0.501	4830.358	3002.493	78	55	-2	-2	50	31	669
2006861127001	0.534	5483.595	3200.262	88	58	2	-2	59	33	1016
2006861128001	0.526	4620.603	3152.318	76	57	2	-2	48	36	545
2006861129001	0.683	4189.107	4093.219	77	80	-2	-2	50	53	249
2006861130001	0.52	4812.379	3116.36	70	53	4	-2	50	38	712
2006861131001	0.453	4332.939	2714.829	68	50	-2	8	42	32	678
2006861132001	0.486	4362.904	2912.598	67	54	7	-2	48	37	617
2006861133001	0.548	4129.177	3284.164	59	57	-2	3	36	39	447
2006861134001	0.454	5615.441	2720.822	80	43	-2	-2	54	25	1120
2006861135001	0.518	4764.435	3104.374	74	50	2	-2	54	34	749
2006861136001	0.59	4980.183	3535.87	69	58	2	-2	37	32	1057
2006861137001	0.544	4764.435	3260.192	66	53	-2	6	35	33	978
2006861138001	0.688	4386.876	4123.184	78	79	3	5	62	63	414
2006861139001	0.52	6808.048	3116.36	86	46	8	-2	47	20	1404
2006861140001	0.332	3883.464	1989.676	58	35	-2	-2	37	22	550
2006861141001	0.498	4476.771	2984.514	63	51	-2	-2	44	39	459
2006861142001	0.561	5207.917	3362.073	88	61	-2	-2	70	47	479
2006861143001	0.7	5471.609	4195.1	91	71	4	-2	77	65	617
2006861144001	0.386	5273.84	2313.298	72	41	-2	-2	47	28	922
2006861145001	0.76	5495.581	4554.68	77	70	7	2	56	51	522
2006861146001	0.55	5939.063	3296.15	70	46	2	-2	48	31	981
2006861147001	0.737	5651.399	4416.841	69	57	6	-2	38	34	740
2006861148001	0.555	5555.511	3326.115	79	58	-2	-2	59	39	795
2006861149001	0.519	5819.203	3110.367	76	50	-2	-2	51	30	1207
2006861150001	0.584	5609.448	3499.912	79	59	-2	5	50	34	831
2006861151001	0.657	5633.42	3937.401	89	67	2	-2	61	40	704

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2006861152001	0.649	5399.693	3889.457	76	64	-2	-2	41	31	940
2006861153001	0.767	4968.197	4596.631	68	70	4	7	47	54	585
2006861154001	0.672	5855.161	4027.296	65	52	-2	-2	25	19	1185
2006861155001	0.754	4926.246	4518.722	76	73	-2	7	54	52	564
2006861156001	0.894	5399.693	5357.742	73	77	-2	3	55	57	503
2006861157001	1.014	6082.895	6076.902	91	92	-2	-2	62	64	348
2006861201001	0.676	5046.106	4051.268	53	50	-2	3	25	22	962
2006861202001	0.834	5699.343	4998.162	67	55	-2	-2	39	35	807
2006861203001	0.858	5094.05	5141.994	80	86	12	-2	54	54	501
2006861204001	0.784	5849.168	4698.512	90	80	-2	13	51	43	688
2006861205001	0.847	5945.056	5076.071	94	87	-2	-2	58	49	678
2006861206001	0.728	6634.251	4362.904	64	46	10	-2	37	28	1387
2006861207001	0.832	5819.203	4986.176	95	83	8	-2	59	49	514
2006861208001	0.777	6100.874	4656.561	91	76	2	-2	55	41	813
2006861209001	0.757	5807.217	4536.701	72	63	3	3	48	40	736
2006861210001	0.934	6022.965	5597.462	70	61	-2	-2	43	42	670
2006861211001	0.659	5723.315	3949.387	90	65	-2	-2	64	41	731
2006861212001	0.757	5411.679	4536.701	114	95	8	2	76	65	368
2006861213001	0.805	5375.721	4824.365	119	104	-2	-2	93	80	303
2006861214001	0.626	4956.211	3751.618	113	80	-2	3	83	56	500
2006861215001	0.651	5004.155	3901.443	92	76	-2	4	56	46	587
2006861216001	0.658	5315.791	3943.394	87	72	-2	2	51	34	872
2006861217001	0.679	5663.385	4069.247	93	78	8	-2	56	38	793
2006861218001	0.943	6909.929	5651.399	111	90	4	4	60	51	430
2006861219001	0.616	5201.924	3691.688	77	51	-2	5	71	47	577
2006861220001	0.794	5579.483	4758.442	127	108	5	-2	61	52	383
2006861221001	0.984	6274.671	5897.112	84	81	10	2	60	57	456
2006861222001	0.812	5753.28	4866.316	94	89	6	3	60	55	482
2006861223001	0.88	6412.51	5273.84	67	60	8	5	46	39	749
2005861001002	0.795	5639.413	4764.435	87	78	3	2	51	45	538
2005861002002	0.768	5753.28	4602.624	87	75	-2	-2	44	38	662
2005861003002	0.988	5909.098	5921.084	87	91	5	6	64	67	379
2005861004002	0.819	5795.231	4908.267	95	81	5	-2	72	59	329
2005861005002	1.013	6226.727	6070.909	81	78	-2	-2	55	54	358
2005861006002	0.925	5975.021	5543.525	93	88	4	-2	74	70	331

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2005861007002	0.764	5225.896	4578.652	119	100	-2	4	67	56	427
2005861008002	0.704	5004.155	4219.072	101	85	-2	-2	73	58	412
2005861009002	0.704	5141.994	4219.072	92	77	4	-2	69	57	459
2005861010002	0.808	5136.001	4842.344	113	107	3	5	82	83	211
2005861011002	0.711	5321.784	4261.023	88	74	3	-2	58	48	722
2005861012002	0.724	5735.301	4338.932	96	70	-2	-2	64	44	675
2005861013002	0.585	5429.658	3505.905	128	79	-2	-2	75	43	848
2005861014002	0.651	4674.54	3901.443	91	78	5	2	60	48	401
2005861015002	0.731		4380.883		87		5		57	
2005861016002	0.515	5267.847	3086.395	87	55	5	-2	58	36	753
2005861017002	0.631	5106.036	3781.583	89	68	4	-2	55	40	509
2005861018002	0.717	5076.071	4296.981	95	82	2	2	74	61	358
2005861019002	0.743	5225.896	4452.799	86	76	2	3	50	42	491
2006861101002	0.879	6640.244	5267.847	95	79	-2	-2	60	46	443
2006861102002	0.812	5753.28	4866.316	77	67	5	-2	56	49	373
2006861103002	0.986	6172.79	5909.098	79	85	-2	2	57	56	370
2006861104002	0.783	5981.014	4692.519	87	71	-2	-2	56	45	537
2006861105002	0.838	5759.273	5022.134	84	75	10	-2	61	57	491
2006861106002	0.975	6478.433	5843.175	91	87	2	-2	60	63	465
2006861107002	0.704	6220.734	4219.072	88	62	2	-2	52	35	677
2006861108002	0.698	7299.474	4183.114	91	56	4	-2	58	37	939
2006861109002	0.716	7359.404	4290.988	94	58	6	-2	58	33	633
2006861110002	0.728	5076.071	4362.904	99	90	-2	4	71	61	408
2006861111002	0.849	5645.406	5088.057	88	89	-2	2	65	60	401
2006861112002	0.541	4866.316	3242.213	91	63	-2	3	57	39	542
2006861113002	0.691	5765.266	4141.163	106	76	-2	3	62	37	627
2006861114002	0.682	5651.399	4087.226	98	73	6	-2	54	37	470
2006861115002	0.694	5825.196	4159.142	86	67	-2	4	42	32	742
2006861116002	0.683	5213.91	4093.219	85	76	3	-2	58	48	548
2006861117002	0.474	4848.337	2840.682	65	49	-2	-2	26	17	1045
2006861118002	0.657	5243.875	3937.401	92	77	2	-2	56	43	619
2006861119002	0.567	4470.778	3398.031	98	84	7	-2	62	48	439
2006861120002	0.513	4776.421	3074.409	82	57	7	3	73	45	541
2006861121002	0.554	4680.533	3320.122	153	107	2	-2	51	33	502
2006861122002	0.58	5064.085	3475.94	94	59	7	2	64	39	461

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2006861123002	0.704	5825.196	4219.072	85	69	-2	2	59	41	487
2006861124002	0.672	5219.903	4027.296	86	70	5	-2	73	51	551
2006861125002	0.608	5369.728	3643.744	78	65	6	-2	36	29	915
2006861126002	0.604	5339.763	3619.772	97	69	7	3	67	40	554
2006861127002	0.503	5189.938	3014.479	144	85	5	-2	59	31	699
2006861128002	0.592	5453.63	3547.856	124	79	5	4	74	43	424
2006861129002	0.559	5393.7	3350.087	86	58	3	-2	68	39	555
2006861130002	0.688	4980.183	4123.184	90	76	-2	6	76	61	387
2006861131002	0.751	5441.644	4500.743	101	86	3	-2	65	52	493
2006861132002	0.674	4836.351	4039.282	100	84	6	-2	76	61	349
2006861133002	0.571	4524.715	3422.003	67	62	-2	3	49	47	592
2006861134002	0.597	5118.022	3577.821	97	69	2	-2	71	50	456
2006861135002	0.581	4764.435	3481.933	95	71	4	5	71	50	478
2006861136002	0.796	5100.043	4770.428	89	81	-2	2	55	45	674
2006861137002	0.606	4776.421	3631.758	82	66	-2	-2	60	44	566
2006861138002	0.671	4656.561	4021.303	87	75	-2	-2	65	61	400
2006861139002	0.489	4854.33	2930.577	97	65	5	-2	59	35	770
2006861140002	0.443	5004.155	2654.899	79	41	-2	-2	64	32	688
2006861141002	0.402	5447.637	2409.186	76	38	-2	3	54	28	837
2006861142002	0.365	4992.169	2187.445	74	36	4	-2	44	22	857
2006861143002	0.767	4992.169	4596.631	104	92	-2	-2	89	79	314
2006861144002	0.463	5177.952	2774.759	87	50	-2	-2	58	33	747
2006861145002	0.765	5195.931	4584.645	82	73	5	2	56	55	343
2006861146002	0.564	4806.386	3380.052	86	63	-2	-2	54	39	520
2006861147002	0.734	5627.427	4398.862	75	64	2	-2	41	35	614
2006861148002	0.47	3505.905	2816.71	68	58	-2	-2	37	31	403
2006861149002	0.508	4776.421	3044.444	82	57	5	-2	54	34	681
2006861150002	0.641	5789.238	3841.513	92	67	-2	-2	51	35	834
2006861151002	0.654	4878.302	3919.422	81	70	4	-2	55	47	576
2006861152002	0.612	5207.917	3667.716	70	60	2	-2	31	27	859
2006861153002	0.765	4938.232	4584.645	79	79	-2	-2	56	54	479
2006861154002	0.709	5291.819	4249.037	73	63	-2	3	36	31	837
2006861155002	0.845	5094.05	5064.085	94	96	4	4	65	65	241
2006861156002	0.974	5873.14	5837.182	81	83	2	-2	58	59	429
2006861157002	0.983	6070.909	5891.119	93	94	-2	5	60	58	346

Appendix 5.2

SAMPLEID	TiO2_U_c_180	Ti_U_m_75	Ti_U_m_180	V_U_m_75	V_U_m_180	W_U_m_75	W_U_m_180	Zn_U_m_75	Zn_U_m_180	Zr_U_m_75
2006861201002	0.808	4908.267	4842.344	88	89	5	-2	48	52	364
2006861202002	0.865	5441.644	5183.945	88	81	-2	14	56	54	483
2006861203002	0.864	5285.826	5177.952	96	91	-2	-2	58	58	426
2006861204002	0.834	5381.714	4998.162	104	97	4	2	54	51	433
2006861205002	0.752	5429.658	4506.736	86	80	8	5	46	38	669
2006861206002	0.82	6184.776	4914.26	68	61	2	13	39	33	793
2006861207002	0.768	4722.484	4602.624	73	74	4	12	44	45	394
2006861208002	0.752	6208.748	4506.736	100	80	8	-2	58	40	577
2006861209002	0.823	6118.853	4932.239	85	71	3	-2	56	45	596
2006861210002	1.004	6262.685	6016.972	75	76	7	3	51	50	499
2006861211002	0.591	4494.75	3541.863	117	100	-2	3	44	40	433
2006861212002	0.756	5351.749	4530.708	117	94	-2	-2	83	61	593
2006861213002	0.676	5004.155	4051.268	125	99	-2	6	77	58	415
2006861214002	0.707	4986.176	4237.051	171	143	5	-2	88	74	225
2006861215002	0.524	5771.259	3140.332	98	59	-2	-2	53	31	1063
2006861216002	0.613	5903.105	3673.709	98	64	-2	-2	38	25	1086
2006861217002	0.721	4482.764	4320.953	105	103	-2	6	88	82	221
2006861218002	0.927	6628.258	5555.511	113	95	-2	-2	59	47	388
2006861219002	0.655	4093.219	3925.415	208	204	9	2	76	77	175
2006861220002	0.85	5489.588	5094.05	119	111	4	-2	55	55	304
2006861221002	1.008	6388.538	6040.944	84	81	6	15	60	60	374
2006861222002	0.685	5831.189	4105.205	101	72	10	-2	61	44	531
2006861223002	0.913	6730.139	5471.609	77	67	7	2	44	37	718

SAMPLEID	Zr_U_m_180
2005861001001	488
2005861002001	457
2005861003001	348
2005861004001	311
2005861005001	370
2005861006001	326
2005861007001	628
2005861008001	500
2005861009001	389
2005861010001	341
2005861011001	743
2005861012001	234
2005861013001	490
2005861014001	389
2005861015001	363
2005861016001	299
2005861017001	415
2005861018001	394
2005861019001	509
2006861101001	324
2006861102001	354
2006861103001	392
2006861104001	514
2006861105001	370
2006861106001	345
2006861107001	511
2006861108001	423
2006861109001	375
2006861110001	660
2006861111001	350
2006861112001	337
2006861113001	444
2006861114001	258
2006861115001	558
2006861116001	451

SAMPLEID	Zr_U_m_180
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2006861119001	355
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2006861121001	276
2006861122001	300
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2006861124001	576
2006861125001	454
2006861126001	329
2006861127001	489
2006861128001	313
2006861129001	231
2006861130001	359
2006861131001	293
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2006861135001	467
2006861136001	502
2006861137001	441
2006861138001	315
2006861139001	527
2006861140001	194
2006861141001	205
2006861142001	254
2006861143001	271
2006861144001	285
2006861145001	379
2006861146001	455
2006861147001	532
2006861148001	388
2006861149001	465
2006861150001	387
2006861151001	423

SAMPLEID	Zr_U_m_180
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2006861153001	451
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2006861156001	419
2006861157001	331
2006861201001	657
2006861202001	701
2006861203001	386
2006861204001	463
2006861205001	558
2006861206001	754
2006861207001	415
2006861208001	506
2006861209001	460
2006861210001	521
2006861211001	440
2006861212001	284
2006861213001	296
2006861214001	450
2006861215001	299
2006861216001	554
2006861217001	575
2006861218001	343
2006861219001	456
2006861220001	350
2006861221001	363
2006861222001	331
2006861223001	570
2005861001002	432
2005861002002	431
2005861003002	295
2005861004002	293
2005861005002	327
2005861006002	288

SAMPLEID	Zr_U_m_180
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2005861008002	346
2005861009002	381
2005861010002	187
2005861011002	561
2005861012002	576
2005861013002	550
2005861014002	310
2005861015002	270
2005861016002	394
2005861017002	335
2005861018002	278
2005861019002	385
2006861101002	308
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2006861105002	371
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2006861110002	332
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2006861116002	391
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2006861119002	308
2006861120002	309
2006861121002	327
2006861122002	362

SAMPLEID	Zr_U_m_180
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2006861127002	526
2006861128002	308
2006861129002	312
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2006861131002	394
2006861132002	312
2006861133002	305
2006861134002	330
2006861135002	325
2006861136002	670
2006861137002	451
2006861138002	306
2006861139002	339
2006861140002	279
2006861141002	203
2006861142002	309
2006861143002	259
2006861144002	339
2006861145002	274
2006861146002	331
2006861147002	443
2006861148002	285
2006861149002	363
2006861150002	466
2006861151002	392
2006861152002	499
2006861153002	381
2006861154002	561
2006861155002	223
2006861156002	374
2006861157002	302

SAMPLEID	Zr_U_m_180
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2006861202002	394
2006861203002	356
2006861204002	329
2006861205002	505
2006861206002	553
2006861207002	389
2006861208002	407
2006861209002	409
2006861210002	445
2006861211002	333
2006861212002	546
2006861213002	363
2006861214002	225
2006861215002	452
2006861216002	588
2006861217002	197
2006861218002	274
2006861219002	153
2006861220002	253
2006861221002	320
2006861222002	353
2006861223002	540

A5.3 Multi-element ICP-MS data (Acme Laboratory)

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT
To Geoscience Australia PROJECT 2005861
Acme file # A603352 Page 1 (a) Received: JUL 4 2006 * 89 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME M

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
001-001-180um	0.47	22.24	15.79	38.4	29	15.4	8	428	2.63	4.3	1	<.1	8.7	51	0.07	0.47	0.26	73	0.11	0.038	22
002-001-180um	0.58	21.13	16.81	46	28	15.9	9.3	329	3.17	5.1	1.1	<.1	9.2	53	0.06	0.55	0.27	82	0.1	0.047	23.2
003-001-180um	0.48	26.4	18.31	68.5	71	27.8	16	693	3.48	4.4	1.4	<.1	9.6	111	0.1	0.59	0.32	88	0.57	0.058	26.2
004-001-180um	0.34	22.59	13.52	59.2	92	24.2	12.3	754	3.12	6.7	0.9	<.1	7.7	118	0.07	0.37	0.18	88	1.28	0.062	22.4
005-001-180um	0.42	20.59	16.44	58.9	77	25.6	14.5	856	2.97	4.5	1.2	<.1	8.8	113	0.12	0.46	0.25	74	0.65	0.047	24
006-001-180um	0.3	20.87	14.54	69.5	25	25	14.2	497	3.65	4.1	1.1	<.1	8	124	0.09	0.28	0.18	89	0.7	0.053	23.3
007-001-180um	0.31	13.4	9.99	31.7	<20	10.5	5.5	160	1.8	3.1	0.7	<.1	5.9	52	0.04	0.31	0.12	63	0.15	0.027	13.7
008-001-180um	0.29	21.27	12.05	39.5	<20	13.4	8.2	331	2.39	4.5	0.9	<.1	6.7	57	0.08	0.29	0.16	68	0.17	0.04	16.3
RE 008-001-180um	0.36	20.77	11.95	39	<20	13.1	8.1	326	2.34	4.6	0.9	<.1	7.3	57	0.07	0.33	0.17	67	0.16	0.039	17.9
009-001-180um	0.35	17.86	11.78	38.7	<20	13.6	6.7	229	2.5	3.9	0.8	<.1	5.6	57	0.06	0.34	0.17	68	0.15	0.033	14.8
010-001-180um	0.3	20.83	13.15	60.7	<20	15.7	9.1	307	3.18	4.5	1.1	<.1	7.5	93	0.06	0.35	0.18	87	0.38	0.042	21.1
011-001-180um	0.34	13.89	10.78	35.5	29	9.4	6.9	305	2.06	4.2	1	<.1	6	87	0.07	0.28	0.13	62	0.25	0.026	16.9
012-001-180um	0.23	12.9	10.09	36.2	<20	9.1	5.2	178	1.91	3.9	0.8	<.1	5.2	86	0.05	0.29	0.15	59	0.29	0.024	13.5
013-001-180um	0.3	16.8	12.43	56.5	<20	12.4	8.5	343	2.6	6	1.1	<.1	7.6	96	0.06	0.31	0.18	74	0.33	0.041	20.2
014-001-180um	0.43	14.52	11.5	35.4	<20	10.4	5.9	265	2.26	4.2	0.9	<.1	6.7	65	0.06	0.33	0.15	64	0.2	0.027	18.9
015-001-180um	0.45	18.21	12.84	53.4	<20	16.3	7.9	286	2.88	4.5	0.9	<.1	6.7	89	0.04	0.35	0.17	74	0.31	0.028	19.3
016-001-180um	0.36	19.19	12.28	50.7	<20	15.4	8.5	294	2.97	4.8	1	<.1	6.5	84	0.06	0.34	0.18	81	0.26	0.022	19
017-001-180um	0.28	18.85	11.69	43	23	18.3	9.8	477	2.44	3.8	0.8	<.1	6.5	69	0.04	0.36	0.18	62	0.38	0.025	18.8
018-001-180um	0.41	22.42	17.26	58.2	<20	16.5	5.3	110	2.3	3.6	1	<.1	8.4	51	0.06	0.51	0.24	75	0.16	0.04	21.6
019-001-180um	0.43	17.31	15.47	35.7	<20	13.6	6.6	465	2.32	4.6	0.9	<.1	8.1	36	0.04	0.65	0.25	63	0.12	0.041	23
020-001-180um	0.41	22.5	14.75	56	78	24.5	13.5	857	2.88	3.8	1.2	<.1	8.3	106	0.13	0.42	0.28	72	0.64	0.046	21.8
022-001-180um	0.48	18.48	12.41	54.9	<20	16.7	8	292	2.88	4.2	0.9	<.1	6.7	92	0.04	0.35	0.2	72	0.31	0.027	18.5
001-001-75um	0.59	24.83	17.74	47.1	28	18.1	10.1	491	2.94	4.4	1.3	<.1	10.8	61	0.08	0.49	0.24	78	0.13	0.039	27.7
002-001-75um	0.73	24.13	19.12	55.8	50	21.6	11.6	416	3.53	5.8	1.3	<.1	12.6	65	0.07	0.55	0.3	95	0.13	0.057	31
003-001-75um	0.43	24.16	17.12	62.6	60	24.3	13.8	599	3.08	4.3	1.4	<.1	9.9	103	0.09	0.53	0.27	84	0.52	0.051	24.9
004-001-75um	0.41	27.27	14.23	72.5	85	29.9	14	874	3.82	7.8	1.1	<.1	8.9	132	0.1	0.43	0.19	106	1.65	0.075	24.6
005-001-75um	0.38	20.52	15.28	56.8	61	25.5	13	821	2.93	3.8	1.2	<.1	9.2	113	0.09	0.43	0.22	72	0.66	0.051	23.7
006-001-75um	0.34	21.93	14.76	77.9	40	28.3	14.1	507	3.94	3.9	1.2	<.1	8.7	134	0.11	0.29	0.2	95	0.77	0.057	25
007-001-75um	0.54	17.86	12.93	45.5	22	15.1	7.7	246	2.57	3.7	1.2	<.1	10	72	0.05	0.37	0.18	84	0.22	0.04	22.9
008-001-75um	0.62	29.24	16.48	59.9	34	21.4	13.2	513	3.48	6	1.3	<.1	10.5	85	0.09	0.41	0.24	91	0.27	0.06	25.8

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
009-001-75um	0.43	19.95	13.41	47.8	30	16.1	7.8	273	2.8	4.2	1.1	<.1	8.5	68	0.05	0.39	0.19	73	0.18	0.036	19.1
010-001-75um	0.37	23.86	14.86	71.1	<20	19.4	10.5	370	3.62	4.7	1.3	<.1	8.9	109	0.09	0.37	0.21	95	0.44	0.053	24.2
011-001-75um	0.36	16.94	13.19	48.6	25	13.3	8.7	405	2.61	4.5	1.4	<.1	9.2	104	0.06	0.34	0.17	72	0.32	0.032	21.3
012-001-75um	0.27	13.11	11.16	40.4	33	9.9	4.5	169	1.91	3.7	0.9	<.1	5.8	99	0.04	0.32	0.15	57	0.31	0.025	14.8
STANDARD DST6	12.65	129.96	35.27	176.7	321	30.1	14	971	4.1	25.6	7.7	<.1	7.1	322	5.84	5.69	4.68	112	2.3	0.102	24.9
013-001-75um	0.56	25.69	17.35	86.7	34	19.7	12.7	516	3.99	7.5	1.7	<.1	10.8	130	0.11	0.43	0.28	112	0.44	0.061	27.9
014-001-75um	0.74	21.97	16.27	60.1	63	15.7	9.8	464	3.3	5.8	1.5	<.1	10	102	0.08	0.45	0.27	93	0.29	0.038	24
015-001-75um	0.6	25.7	16.77	79.4	26	21.3	11.3	423	4.09	5.5	1.3	<.1	9.9	126	0.03	0.44	0.28	99	0.42	0.035	27.3
016-001-75um	0.52	26.61	16.54	80.7	59	23.8	11.7	451	4.43	6.1	1.4	<.1	9.5	125	0.07	0.45	0.3	111	0.37	0.031	26.9
017-001-75um	0.36	24.17	13.77	60.8	42	22.6	11.4	565	3.1	4.1	1.1	<.1	8.4	89	0.06	0.45	0.24	73	0.45	0.031	23.4
018-001-75um	0.55	29.19	23.31	89.3	42	24.3	7.6	176	3.31	4.2	1.5	<.1	11.6	74	0.07	0.62	0.32	95	0.22	0.059	29.2
019-001-75um	0.5	22.49	19.1	47.7	33	16.8	8.8	668	2.87	5.3	1.3	<.1	11.2	51	0.04	0.76	0.32	78	0.15	0.05	28.6
021-001-75um	0.37	25.42	14.96	74.1	40	18.5	10.9	371	3.66	4.5	1.4	<.1	9	109	0.05	0.4	0.23	102	0.44	0.051	25.2
023-001-75um	0.59	22.26	19.02	48.1	32	16.3	8.9	653	2.87	5.2	1.3	<.1	11.8	51	0.07	0.75	0.32	78	0.15	0.05	29
024-001-75um	1.12	10.69	22.71	46.2	<20	111.8	27.7	257	1.55	1.3	5.7	<.1	25.7	35	0.06	0.27	0.18	5	0.55	0.011	51.1
001-002-180um	0.51	22.18	16.81	53.6	24	22.4	10.5	376	3.51	4.6	1.1	<.1	9.8	74	0.06	0.51	0.24	90	0.24	0.03	26.8
002-002-180um	0.61	21.33	17.27	46.5	38	20.2	10.6	315	3.41	5.8	1.1	<.1	10.3	62	0.07	0.59	0.26	93	0.16	0.032	26.6
003-002-180um	0.46	30.23	18.22	81.3	171	28.5	16.8	654	3.91	4.8	1.5	<.1	10.7	131	0.1	0.62	0.29	103	0.58	0.042	30.4
004-002-180um	0.64	24.73	15.06	69.9	140	26.9	15.2	924	3.54	5.3	1.1	<.1	8.4	158	0.1	0.38	0.2	95	1.47	0.049	24.4
005-002-180um	0.61	22.81	16.57	65.3	90	26.2	16.5	849	3.24	4.1	1.4	<.1	8.7	131	0.06	0.48	0.24	87	0.63	0.033	24.2
006-002-180um	1.25	21.96	14.86	80.3	62	26.8	15.5	577	3.95	3.9	1.3	<.1	7.6	134	0.13	0.29	0.2	101	0.63	0.056	24.5
007-002-180um	0.39	22.55	13.65	66.2	31	21.1	11.9	449	3.41	6.6	0.9	<.1	7	123	0.1	0.36	0.19	131	0.38	0.019	20.9
008-002-180um	0.32	25.07	13.38	68.1	37	22.6	9.2	278	3.86	7.1	0.9	<.1	7.9	123	0.04	0.39	0.2	110	0.58	0.027	21.8
009-002-180um	0.5	24.21	14.74	66.6	23	20.8	10.9	322	3.61	6	1	<.1	8.2	94	0.05	0.35	0.22	101	0.32	0.03	22.9
010-002-180um	0.4	32.44	17.61	92.5	20	23.7	13.6	404	4.68	7.4	1.7	<.1	9.3	158	0.07	0.46	0.26	146	0.74	0.059	29.5
011-002-180um	0.43	20.18	13.57	55.5	47	13.5	9.3	350	2.94	5.7	1.2	<.1	7.1	128	0.06	0.35	0.19	93	0.45	0.031	22
RE 011-002-180um	0.39	20.55	13.39	54.7	43	13.6	9.3	358	2.91	5.6	1.2	<.1	7.7	127	0.08	0.33	0.19	90	0.45	0.029	22.1
012-002-180um	0.27	15.66	11.42	51.6	36	12.6	6.7	247	2.71	4.5	1	<.1	6.6	95	0.06	0.31	0.18	80	0.3	0.021	18.6
013-002-180um	0.53	15.74	12.38	48.3	37	11.7	9.2	405	2.28	9.1	1.1	<.1	6.8	116	0.02	0.34	0.16	100	0.77	0.042	17.9
014-002-180um	0.56	19.35	12.44	56.4	51	13.7	8.2	281	3.1	5.4	1	<.1	7.3	105	0.05	0.33	0.22	98	0.6	0.029	22
015-002-180um	0.84	21.96	15.42	67.4	<20	16.2	12.1	428	3.49	6.6	1.1	<.1	7.6	155	0.05	0.38	0.23	114	0.45	0.026	22.9
016-002-180um	0.28	16.59	10.57	40.4	46	12.7	6.8	243	2.26	3.8	0.9	<.1	5.4	71	0.05	0.32	0.22	67	0.19	0.017	14.6
017-002-180um	0.33	20.23	12.7	47.3	41	20.9	10.6	418	2.65	5.7	0.9	<.1	7.1	116	0.03	0.43	0.18	88	0.83	0.023	18.8
018-002-180um	0.45	24.84	18.26	68.5	25	30.2	12.9	530	4.01	6.1	1.2	<.1	8.6	87	0.06	0.59	0.25	99	0.31	0.024	23.8

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
019-002-180um	0.47	23.95	19.52	48.9	45	20.1	9.5	575	3.15	5.8	1.3	<.1	11.1	58	0.03	0.86	0.3	88	0.17	0.032	30.7
021-002-180um	0.43	31.77	17.54	88.8	<20	25.1	13.7	410	4.69	6.8	1.7	<.1	9.5	162	0.08	0.42	0.26	141	0.73	0.058	28.5
023-002-180um	0.49	22.91	19.43	47.8	44	19.3	9.5	579	3.11	5.4	1.3	<.1	10.4	58	0.04	0.88	0.29	87	0.17	0.032	30.1
001-002-75um	0.52	22.58	17.74	53.3	20	24.4	12	417	3.64	4.7	1.3	<.1	10.6	83	0.07	0.48	0.25	93	0.26	0.033	28.1
002-002-75um	0.71	22.46	18.79	50.6	33	23.7	11.8	368	3.83	5.7	1.3	<.1	12	79	0.06	0.59	0.27	104	0.21	0.038	29.8
STANDARD DST6	12.67	128.66	35.03	176	309	30.6	13.9	964	4.08	23.9	7.6	<.1	7.1	321	5.73	5.57	4.72	112	2.29	0.1	24.8
003-002-75um	0.55	29.93	18.38	74.1	108	28.2	15.3	656	3.73	4.3	1.6	<.1	11.1	133	0.12	0.68	0.3	100	0.59	0.042	28.9
004-002-75um	0.88	32.3	17.22	80	177	36.5	19.4	1161	4.27	6.6	1.4	<.1	9.5	193	0.11	0.48	0.26	117	1.78	0.061	25.5
005-002-75um	0.62	23.01	16.35	59.7	89	27.4	15.3	841	3.27	4.3	1.6	<.1	10	138	0.1	0.5	0.25	81	0.65	0.033	25.9
006-002-75um	1.35	23.99	16.21	83.6	37	31	16.8	645	4.38	4.2	1.5	<.1	9.2	150	0.13	0.34	0.23	103	0.66	0.06	25.2
007-002-75um	0.53	26.84	16.24	75.8	<20	27.2	16	602	4.14	8	1.2	<.1	8.6	161	0.07	0.43	0.25	153	0.42	0.024	20.9
008-002-75um	0.41	30.21	15.17	84.2	23	29.3	12.6	352	4.67	8.6	1.1	<.1	9.2	166	0.08	0.43	0.23	123	0.77	0.034	26
RE 008-002-75um	0.39	29.84	15.49	81.2	40	29.6	12	357	4.75	8.8	1	<.1	8.9	165	0.07	0.44	0.22	125	0.78	0.034	24.2
009-002-75um	0.55	27.28	16.49	78.2	<20	27.1	13.1	429	4.44	7.3	1.2	<.1	12.2	135	0.07	0.46	0.24	115	0.39	0.034	35.9
010-002-75um	0.43	31.77	16.44	90.9	<20	25.1	14.2	432	4.83	6.9	1.7	<.1	8.1	158	0.07	0.46	0.27	134	0.65	0.056	21
011-002-75um	0.51	24.07	15.02	65.6	44	18	11.7	440	3.51	6.1	1.5	<.1	9.7	151	0.08	0.42	0.22	104	0.51	0.036	25.9
012-002-75um	0.54	23.3	16.16	73.6	27	20	10	362	4.22	6.4	1.6	<.1	10.1	147	0.09	0.42	0.25	112	0.4	0.031	23.5
013-002-75um	0.89	27.68	16.89	85.4	28	23.6	17.3	768	4.25	14.6	1.8	<.1	10.3	181	0.13	0.46	0.25	163	1.76	0.085	26.2
014-002-75um	0.68	24.7	14.93	66.4	49	20.2	10.7	389	3.82	6.5	1.4	<.1	9.1	145	0.07	0.42	0.28	117	0.78	0.04	25.7
015-002-75um	0.88	25.97	18.08	79.5	<20	21.6	15.8	541	4.2	7.5	1.5	<.1	9.9	185	0.05	0.43	0.26	126	0.46	0.031	24.8
016-002-75um	0.51	24.64	15.8	68.3	38	20.6	12.5	450	3.95	5.3	1.6	<.1	10.5	118	0.07	0.42	0.23	104	0.32	0.027	26
017-002-75um	0.41	26.59	15.82	63.6	40	29.7	14.9	593	3.59	7.3	1.3	<.1	10.7	153	0.08	0.54	0.24	112	1.12	0.03	25.9
018-002-75um	0.53	27.43	20.96	84.6	37	36.6	15.8	637	4.83	6.4	1.4	<.1	10.4	104	0.07	0.7	0.31	115	0.33	0.029	22.9
019-002-75um	0.63	25.78	22.75	59.5	55	23	11.2	722	3.77	6.2	1.6	<.1	13.7	72	0.06	1	0.33	101	0.21	0.037	38.6
020-002-75um	0.64	23.65	17.39	63.6	101	29	16.1	863	3.33	4.2	1.7	<.1	10.5	137	0.11	0.56	0.27	84	0.65	0.035	26.4
022-002-75um	0.98	25.18	18	80	29	20.9	15.7	522	4.14	7	1.5	<.1	9.3	181	0.08	0.41	0.27	119	0.44	0.03	21
025-002-75um	2.2	46.79	8.15	74.5	<20	50.7	48.9	1776	9.94	1.2	1.6	<.1	8.6	1417	0.29	0.08	<.04	173	5.39	0.308	56.7
STANDARD DST6	12.61	129.04	35.24	176.5	324	30.4	13.9	966	4.09	24.9	7.5	<.1	6.9	318	5.71	5.47	4.76	112	2.3	0.1	22.3

From ACME ANALYTI(FORMAT
To Geoscience Australi:
Acme file # A603352 P
Analysis: GROUP 1T-M/INERALS MAY BE PARTIALLY

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
001-001-180um	39	0.19	230	0.44	4.54	0.141	0.96	1	78.3	1.8	1	8.2	<.04
002-001-180um	45	0.19	204	0.465	5.5	0.084	0.92	1.1	82.1	2.2	2	10	<.04
003-001-180um	55	0.52	368	0.584	6.18	0.356	1.35	1.3	112.9	2.7	2	12.2	<.04
004-001-180um	40	0.55	329	0.497	5.76	0.311	1.39	0.8	97.6	1.7	1	10.2	<.04
005-001-180um	49	0.47	366	0.653	5.7	0.512	1.23	1.2	116.1	2	1	10	<.04
006-001-180um	44	0.66	363	0.591	6.59	0.245	1.18	1	117.6	1.8	2	11.7	<.04
007-001-180um	25	0.2	210	0.416	3.48	0.112	0.57	0.7	64.8	1.3	1	5.9	<.04
008-001-180um	31	0.2	232	0.426	4.07	0.1	0.84	0.8	73.8	1.3	1	7.2	<.04
RE 008-001-180um	28	0.2	228	0.416	3.94	0.101	0.82	0.7	70.6	1.1	1	7.3	<.04
009-001-180um	27	0.25	251	0.391	4.29	0.163	0.82	0.7	70.7	1.4	1	7.4	<.04
010-001-180um	33	0.5	310	0.442	5.83	0.275	1.14	0.8	85.3	1.7	1	10.7	<.04
011-001-180um	22	0.26	267	0.424	3.55	0.272	0.72	0.7	72.8	1.1	1	6.4	<.04
012-001-180um	17	0.3	299	0.294	3.58	0.249	0.83	0.5	62.2	1.1	1	6.7	<.04
013-001-180um	27	0.4	318	0.415	4.57	0.339	1.11	0.7	79.7	1.5	1	8.6	<.04
014-001-180um	24	0.28	271	0.334	3.56	0.223	0.76	0.6	66.7	1.2	<1	6.7	<.04
015-001-180um	28	0.43	266	0.404	5.03	0.187	0.99	0.7	79.5	1.6	1	9.6	<.04
016-001-180um	30	0.39	250	0.4	5.15	0.188	0.95	0.9	75.9	1.5	1	9.9	<.04
017-001-180um	30	0.42	288	0.432	4.19	0.209	1.02	0.8	74	1.3	1	8.3	<.04
018-001-180um	35	0.23	218	0.402	4.75	0.097	0.99	1	71.8	2.1	1	8.9	<.04
019-001-180um	32	0.17	229	0.351	3.7	0.085	0.88	0.8	63.1	1.5	1	7.2	<.04
020-001-180um	47	0.46	343	0.623	5.6	0.506	1.2	1.2	102.5	1.8	1	9.7	<.04
022-001-180um	29	0.46	253	0.378	5.26	0.183	0.99	0.7	74.1	1.5	1	9.7	<.04
001-001-75um	40	0.21	260	0.543	5.2	0.192	1.14	1.2	90.7	2.1	1	10.1	<.04
002-001-75um	50	0.23	242	0.56	6.48	0.139	1.1	1.3	98.2	2.4	1	12.5	<.04
003-001-75um	50	0.46	351	0.577	5.48	0.358	1.27	1.3	107.1	2.3	1	10.7	<.04
004-001-75um	51	0.68	328	0.614	7.28	0.326	1.54	1.1	110	2	2	12.7	<.04
005-001-75um	48	0.46	357	0.648	5.69	0.537	1.25	1.2	109.2	1.7	1	9.9	<.04
006-001-75um	49	0.73	383	0.666	7.33	0.28	1.28	0.9	125.4	2	1	12.9	<.04
007-001-75um	37	0.27	231	0.576	5.16	0.19	0.77	0.9	89	1.7	1	9.2	<.04
008-001-75um	43	0.34	278	0.594	6.12	0.178	1.24	1	104.5	2	1	11.7	<.04

Appendix 5.3

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
009-001-75um	31	0.31	261	0.456	5.06	0.202	0.97	0.8	85.4	1.5	1	9	<.04
010-001-75um	37	0.59	314	0.508	7.03	0.341	1.34	0.9	97.9	1.9	1	12.7	<.04
011-001-75um	29	0.36	289	0.52	4.88	0.363	0.93	0.8	99.5	1.4	1	8.5	<.04
012-001-75um	19	0.31	326	0.304	3.81	0.341	0.93	0.7	63.4	1.1	1	6.7	<.04
STANDARD DST6	230	1	703	0.441	7.05	1.637	1.38	7.8	60.7	6.5	3	11.9	<.04
013-001-75um	45	0.63	370	0.582	6.8	0.454	1.47	1	117.3	2	1	11.5	<.04
014-001-75um	39	0.46	355	0.528	5.17	0.323	1.09	1	107.8	1.9	1	8.9	<.04
015-001-75um	46	0.66	298	0.561	7.48	0.233	1.28	1	108.1	2.3	1	12	<.04
016-001-75um	50	0.63	269	0.589	8.09	0.243	1.27	1.1	109.5	2.3	2	12.5	<.04
017-001-75um	41	0.55	320	0.555	5.29	0.258	1.15	0.9	98.3	2	2	9.1	<.04
018-001-75um	53	0.36	277	0.566	7.01	0.171	1.32	1.3	107.6	2.8	1	11.2	<.04
019-001-75um	39	0.2	285	0.492	4.59	0.157	1.02	1.1	87.7	2	1	7.7	<.04
021-001-75um	40	0.57	320	0.55	6.72	0.348	1.26	1	103.6	2	1	11.2	<.04
023-001-75um	41	0.21	284	0.519	4.51	0.158	1.01	1	89.5	2	1	7.7	<.04
024-001-75um	43	0.07	614	0.131	6.03	2.44	3.39	>200	99.8	5.8	3	5.5	<.04
001-002-180um	44	0.38	249	0.507	6.28	0.219	1.07	1.3	85.8	2.3	2	10.3	<.04
002-002-180um	47	0.24	218	0.496	5.79	0.086	0.93	1.1	85.2	2.5	1	9.9	<.04
003-002-180um	64	0.59	356	0.684	6.84	0.453	1.32	1.5	123.4	2.6	2	12.2	<.04
004-002-180um	47	0.6	391	0.589	6.36	0.427	1.14	1.1	105.8	2	1	10.3	<.04
005-002-180um	54	0.51	383	0.709	6.04	0.638	1.06	1.3	117.1	2.1	2	10	<.04
006-002-180um	52	0.71	344	0.636	7.22	0.52	1.17	0.9	122.4	2.2	2	11.8	<.04
007-002-180um	47	0.63	507	0.523	6.13	0.567	0.84	0.9	88.5	1.7	1	9.9	0.08
008-002-180um	47	0.56	296	0.519	6.68	0.133	1.17	1	92.1	1.9	2	11.1	<.04
009-002-180um	45	0.54	396	0.504	6.46	0.399	1.06	1	90.9	2.1	2	11.2	0.08
010-002-180um	52	0.74	368	0.582	8.97	0.87	1.25	1.2	108	2.5	2	14.8	0.08
011-002-180um	33	0.43	371	0.463	5.19	0.343	0.75	0.8	88.4	1.5	1	8.7	<.04
RE 011-002-180um	33	0.42	386	0.458	5.23	0.348	0.75	0.9	86.7	1.6	1	8.5	<.04
012-002-180um	27	0.38	252	0.468	4.78	0.247	0.67	0.8	72.7	1.5	1	7.9	<.04
013-002-180um	23	0.35	375	0.358	3.8	0.452	0.86	0.6	63.9	1.1	1	6.3	0.06
014-002-180um	34	0.58	541	0.436	5.73	0.257	0.71	0.8	86.2	1.7	1	10.4	0.05
015-002-180um	38	0.54	623	0.488	6.04	0.334	0.84	1	91.3	1.8	1	10.7	0.14
016-002-180um	26	0.31	259	0.335	3.96	0.172	0.7	0.7	60.1	1.2	1	6.1	<.04
017-002-180um	37	0.56	357	0.436	4.74	0.34	0.93	1.1	78.4	1.5	1	7.9	<.04
018-002-180um	51	0.54	336	0.478	8.03	0.111	1.38	1.4	92.1	2.9	2	12.4	<.04

Appendix 5.3

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
019-002-180um	41	0.25	301	0.439	5.75	0.128	1.16	1.2	80.2	2.7	2	9.9	<.04
021-002-180um	50	0.78	355	0.554	9.58	0.891	1.37	1.4	107.4	2.6	2	15.1	0.09
023-002-180um	42	0.24	300	0.428	5.7	0.123	1.15	1.2	78.2	2.4	2	9.9	<.04
001-002-75um	51	0.41	272	0.572	7.03	0.227	1.18	1.4	96.7	2.4	2	11.3	<.04
002-002-75um	48	0.3	248	0.59	7.26	0.133	1.13	1.3	102	2.8	2	12.3	<.04
STANDARD DST6	227	1	702	0.439	7	1.629	1.36	7.5	57.1	6.4	3	11.2	0.04
003-002-75um	66	0.6	363	0.645	6.91	0.469	1.37	1.6	112.7	2.5	2	12.9	<.04
004-002-75um	64	0.75	434	0.661	7.98	0.481	1.27	1.3	120.8	2.5	2	13.9	<.04
005-002-75um	60	0.54	394	0.679	6.64	0.649	1.12	1.3	107.9	2.1	1	10.7	<.04
006-002-75um	59	0.81	366	0.695	7.99	0.566	1.32	1	125.3	2.2	2	13.1	<.04
007-002-75um	51	0.82	718	0.59	7.68	0.694	1.06	1.1	103	2	1	12.9	0.11
008-002-75um	61	0.74	370	0.564	9.27	0.167	1.51	1.1	106	2.2	2	15.4	<.04
RE 008-002-75um	62	0.74	375	0.571	9.24	0.166	1.54	1	104.7	2.4	2	15	<.04
009-002-75um	54	0.74	495	0.552	9.57	0.498	1.4	1.1	97.3	2.2	2	17.6	0.09
010-002-75um	55	0.81	379	0.607	9.16	0.94	1.44	1.3	101	2.3	2	15	0.09
011-002-75um	44	0.58	410	0.558	6.94	0.414	0.98	0.9	107	1.8	1	11.3	<.04
012-002-75um	51	0.64	276	0.636	7.5	0.369	1.06	1.2	109.3	2	1	13.1	0.04
013-002-75um	47	0.75	534	0.573	7.47	0.615	1.39	1	113.1	2.1	2	12.4	0.13
014-002-75um	50	0.84	779	0.495	8.05	0.324	0.94	1	101.9	2	1	14.2	0.08
015-002-75um	49	0.73	587	0.559	7.79	0.419	1.09	1.1	106.7	2.1	1	13.1	0.13
016-002-75um	52	0.58	274	0.549	7.03	0.256	1.13	0.9	102.9	2.1	1	11.8	<.04
017-002-75um	55	0.79	394	0.529	6.41	0.431	1.16	1	100.8	2.3	1	12	<.04
018-002-75um	67	0.64	398	0.543	10.04	0.146	1.69	1.3	109.5	3.5	2	16.4	<.04
019-002-75um	57	0.31	351	0.519	7.51	0.177	1.43	1.4	96.9	2.9	2	12.4	<.04
020-002-75um	63	0.56	399	0.67	6.53	0.661	1.15	1.3	112.7	2.2	2	11	<.04
022-002-75um	47	0.72	548	0.559	7.36	0.399	1.09	1	104.9	2.1	2	13	0.13
025-002-75um	90	3.22	1189	1.728	9.99	3.184	1.99	53.8	163.7	1.6	2	13.5	0.07
STANDARD DST6	233	1	699	0.44	6.97	1.637	1.38	7.7	54.7	6.4	3	11.8	<.04

Appendix 5.3

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEX
To Geoscience Australia PROJECT 2005861
Acme file # A603352 Page 1 (b) Received: JUL 4 2006 * 89 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
001-001-180um	14.4	46.29	5.2	21.9	4.6	0.9	3.8	0.5	2.7	0.5	1.5	0.2
002-001-180um	15	50.08	5.4	22.6	4.5	1	3.6	0.5	2.9	0.6	1.5	0.2
003-001-180um	20.4	57	6.2	25.7	5.4	1.1	4.7	0.6	3.8	0.7	2.1	0.3
004-001-180um	16.6	47.59	5.3	23	4.6	1	4	0.6	2.9	0.6	1.8	0.3
005-001-180um	19.9	53.71	5.7	24.2	5.1	1.1	4.5	0.6	3.7	0.7	2	0.3
006-001-180um	18.7	49.98	5.5	23.9	5.3	1.1	4.3	0.6	3.5	0.7	2	0.2
007-001-180um	9.4	28.59	3.2	13.3	2.7	0.5	2.1	0.3	1.7	0.3	1	0.1
008-001-180um	12.2	34.3	3.9	16	3.3	0.7	2.9	0.4	2.1	0.4	1.2	0.2
RE 008-001-180um	12.4	38.04	4.1	18.1	3.7	0.7	2.9	0.4	2.2	0.4	1.2	0.2
009-001-180um	11.3	30.62	3.4	14.4	3	0.6	2.7	0.3	1.9	0.4	1.2	0.2
010-001-180um	15.6	43.06	5	21	4.2	0.8	3.6	0.5	2.9	0.6	1.6	0.2
011-001-180um	11.6	33.87	3.9	16.4	3	0.6	2.6	0.3	2.1	0.4	1.2	0.2
012-001-180um	10.4	25.88	3.1	12.9	2.7	0.6	2.2	0.3	1.7	0.4	1.1	0.2
013-001-180um	13.1	40.12	4.6	19.7	3.8	0.7	3.3	0.4	2.4	0.5	1.4	0.2
014-001-180um	10.8	36.2	4.1	16.9	3.4	0.6	2.4	0.3	2	0.4	1.1	0.2
015-001-180um	14.5	36.3	4.3	19	3.8	0.8	3.2	0.4	2.5	0.5	1.6	0.2
016-001-180um	13.9	35.15	4.1	18.2	3.8	0.7	3.1	0.4	2.3	0.5	1.4	0.2
017-001-180um	14.3	37.56	4.2	19	4.1	0.8	3.4	0.4	2.5	0.5	1.4	0.2
018-001-180um	12.7	39.83	4.6	18.9	3.9	0.7	3	0.4	2.3	0.5	1.3	0.2
019-001-180um	11.7	44.02	4.9	20.8	4.2	0.7	2.8	0.4	2.1	0.4	1.2	0.2
020-001-180um	17.6	48.34	5.1	22.2	4.5	0.9	4.1	0.5	3.3	0.7	1.9	0.3
022-001-180um	13.8	36.14	4.2	17.8	3.4	0.8	2.7	0.4	2.3	0.5	1.5	0.2
001-001-75um	17.8	58.93	6.6	27.9	5.5	1	4.3	0.6	3.1	0.6	1.7	0.2
002-001-75um	18.7	66.64	7.3	29.7	5.9	1.1	4.5	0.6	3.7	0.7	2	0.3
003-001-75um	18.2	53.87	6	24.3	5.1	1	4.1	0.6	3.3	0.6	2	0.3
004-001-75um	18.7	51.26	6	25.1	5.2	1	4.1	0.6	3.4	0.7	1.9	0.3
005-001-75um	19	51.9	5.7	24.4	5.2	1	3.9	0.5	3.5	0.7	1.9	0.3
006-001-75um	19.1	54.08	6.1	26.1	5.5	1.2	4.1	0.6	3.4	0.7	2	0.3
007-001-75um	14.1	48.68	5.6	22.6	4.7	0.8	3.6	0.5	2.8	0.5	1.5	0.2
008-001-75um	18.9	56.43	6.4	27.2	5.8	1.2	4.6	0.6	3.4	0.7	2.1	0.3

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
009-001-75um	12.9	39.94	4.5	18.2	3.8	0.7	2.7	0.4	2.3	0.5	1.4	0.2
010-001-75um	17.4	51.55	5.8	23.7	4.8	1.1	3.7	0.5	3	0.6	1.8	0.3
011-001-75um	14.7	45.02	4.9	20.5	4.3	0.8	3.3	0.5	2.7	0.5	1.6	0.2
012-001-75um	10	29.76	3.3	14.2	2.9	0.6	2.3	0.3	1.9	0.4	1	0.2
STANDARD DST6	15.2	52.88	5.5	22.8	4.4	0.9	3.5	0.5	2.9	0.5	1.6	0.2
013-001-75um	18.5	60.89	6.6	26.9	5.4	1.1	4.2	0.6	3.7	0.7	2	0.3
014-001-75um	14.7	53.21	5.7	23.9	4.7	0.8	3.5	0.5	3.1	0.6	1.7	0.2
015-001-75um	19.7	55.57	6.3	25.7	5.4	1	4.3	0.6	3.9	0.7	2	0.3
016-001-75um	19	54.17	6.1	25.2	4.9	1.1	4	0.6	3.7	0.7	2.1	0.3
017-001-75um	17.6	48.27	5.4	22.9	4.7	0.9	4.1	0.6	3.6	0.6	1.8	0.2
018-001-75um	18.3	58.8	6.5	26.3	5.2	1	4.2	0.6	3.6	0.7	1.9	0.2
019-001-75um	15.8	60.34	6.7	27.2	5.3	0.9	3.9	0.5	3.2	0.6	1.6	0.2
021-001-75um	17.5	52.56	5.8	24.5	4.7	1	3.9	0.6	3.4	0.7	1.8	0.3
023-001-75um	16.2	60.01	6.7	26.9	5	0.9	3.9	0.5	3.2	0.6	1.6	0.2
024-001-75um	81.9	107.36	12.3	51.1	12.3	1	13	2	14.1	2.8	8.4	1.2
001-002-180um	15.6	53.75	5.9	23.9	4.4	0.9	3.7	0.5	3.1	0.5	1.7	0.2
002-002-180um	16.5	55.85	5.9	25.1	4.8	1	3.9	0.5	3.4	0.6	1.7	0.2
003-002-180um	22.3	63.07	6.8	29.2	5.8	1.2	4.6	0.7	4.3	0.8	2.3	0.3
004-002-180um	19.1	52.05	5.7	25.3	5.3	1.1	4.3	0.6	3.7	0.7	1.8	0.3
005-002-180um	20.1	53.21	5.7	24.5	4.7	1.1	4.4	0.6	3.8	0.7	2.1	0.3
006-002-180um	19.2	51.54	5.7	24	5.1	1.2	4.2	0.6	3.8	0.7	2.2	0.3
007-002-180um	15	42.38	4.7	20.6	4.2	0.8	3.3	0.4	3.1	0.5	1.5	0.2
008-002-180um	15.5	39.85	4.7	20.6	4	0.8	3.5	0.5	2.8	0.5	1.5	0.2
009-002-180um	15.5	45.99	4.9	21.2	4	0.8	3.3	0.5	3.1	0.5	1.6	0.2
010-002-180um	21.7	58.54	6.4	28.1	5.6	1.2	4.9	0.6	3.9	0.8	2.3	0.3
011-002-180um	16.1	43.83	4.9	20.9	4.5	0.9	3.5	0.5	3	0.6	1.6	0.2
RE 011-002-180um	16.4	43.86	5	21.9	4.4	0.8	3.5	0.5	3.1	0.6	1.8	0.2
012-002-180um	11.6	33.02	3.9	16.2	3.3	0.6	2.6	0.4	2.3	0.4	1.2	0.2
013-002-180um	11.6	35.28	4.1	18.4	3.6	0.7	2.7	0.4	2.1	0.4	1.2	0.1
014-002-180um	13.2	41.45	4.5	18.9	3.6	0.7	3	0.4	2.6	0.4	1.4	0.2
015-002-180um	15.8	45.48	4.9	21.2	4.2	0.8	3.4	0.5	3.1	0.6	1.7	0.2
016-002-180um	10.8	31.11	3.5	15.4	3	0.6	2.7	0.3	2	0.4	1.2	0.2
017-002-180um	13.6	40.49	4.4	18.7	3.7	0.7	2.9	0.4	2.7	0.5	1.4	0.2
018-002-180um	17.5	50.76	5.7	25.1	4.8	1	4.3	0.5	3.1	0.6	1.9	0.3

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
019-002-180um	18.2	62.71	7.2	30.6	5.9	1.1	4.7	0.6	3.4	0.7	1.8	0.3
021-002-180um	21.4	59.73	6.3	28.3	5.5	1.1	4.7	0.6	3.8	0.7	2.2	0.3
023-002-180um	18.1	60.92	6.9	29	5.5	1.1	4.6	0.6	3.2	0.6	1.8	0.3
001-002-75um	17.2	59.37	6.2	26.1	4.9	1	4	0.5	3.2	0.6	1.8	0.2
002-002-75um	23	64.61	6.9	30.2	6.1	1.2	4.8	0.6	3.8	0.8	2.1	0.3
STANDARD DST6	15.1	52.76	5.5	22.6	4.4	0.8	3.5	0.5	2.8	0.5	1.5	0.2
003-002-75um	21.6	64.12	7	29.3	5.3	1.1	4.8	0.6	4	0.7	2.3	0.3
004-002-75um	21.5	59.46	6.5	29.3	5.7	1.1	5.2	0.6	4.3	0.8	2.2	0.3
005-002-75um	20.9	60.04	6.3	26.6	5.2	1	4.3	0.6	3.9	0.7	2	0.3
006-002-75um	20.4	59.46	6.5	27.5	5.4	1.1	4.4	0.6	4.1	0.7	2	0.3
007-002-75um	17.1	49.48	5.4	23.2	4.3	0.9	3.7	0.5	3.2	0.6	1.8	0.2
008-002-75um	20	54.83	6.4	27.3	5.2	1	4.7	0.5	3.4	0.7	2	0.3
RE 008-002-75um	19.4	51.13	6	26.3	5.1	1	4.3	0.5	3.5	0.6	1.9	0.3
009-002-75um	23.3	79.63	8.1	33.4	5.6	1.2	5	0.6	4.1	0.7	2.1	0.3
010-002-75um	19	49.98	5.7	24.7	4.8	1	4	0.5	3.9	0.7	2.1	0.3
011-002-75um	19.6	58.53	6.4	27.4	5.2	1	4.2	0.6	3.6	0.6	2	0.3
012-002-75um	16.5	49.8	5.9	23.9	4.6	0.8	4	0.5	3.3	0.6	1.8	0.2
013-002-75um	19.5	58.53	6.5	28.6	5.3	1.1	4.7	0.6	3.7	0.7	2	0.3
014-002-75um	16.2	53.51	5.9	24.3	4.6	0.8	3.9	0.5	3.1	0.5	1.6	0.2
015-002-75um	18.2	58.05	6.1	26.6	5.1	0.9	4	0.5	3.4	0.6	1.9	0.2
016-002-75um	18.8	58.44	6.3	27.4	5.2	1	4	0.5	3.5	0.6	1.8	0.3
017-002-75um	18.4	58.32	6.3	27.1	5.1	1	4.3	0.5	3.6	0.6	1.8	0.3
018-002-75um	21	53.96	6.4	28.2	5.5	1	5.2	0.6	4.3	0.8	2.1	0.3
019-002-75um	23.9	78.46	9.3	39.9	7.2	1.4	6.1	0.7	4.7	0.8	2.4	0.3
020-002-75um	21.2	61.8	6.5	28.3	5.6	1.1	4.4	0.6	4.1	0.7	2.2	0.3
022-002-75um	16.7	50.03	5.3	23.9	4.4	0.8	4.1	0.5	3.4	0.6	1.9	0.3
025-002-75um	21.3	104.94	10.4	41.7	6.7	2	5.2	0.7	4.2	0.7	2	0.3
STANDARD DST6	14.4	50.51	5.2	21.8	4.1	0.7	3.5	0.4	2.8	0.5	1.4	0.2

From ACME ANALYTT FORMAT
To Geoscience Austra
Acme file # A603352
Analysis: GROUP 1T- MINERALS MAY BE PARTIALLY

ELEMENT	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
001-001-180um	1.6	0.2	2.5	20.1	53.5	0.8	8.03	2.9	11.22
002-001-180um	1.6	0.2	2.68	22.1	60.3	0.8	8.43	3.6	14.12
003-001-180um	2.1	0.3	3.4	23.7	77.2	1.2	12.85	4.4	15.82
004-001-180um	1.8	0.3	2.9	22.4	67.3	0.9	9.5	3.8	14.7
005-001-180um	2	0.3	3.31	21.7	68.6	1	11.74	4	14.26
006-001-180um	2	0.3	3.61	23.2	54.7	0.9	10.26	3.5	16.94
007-001-180um	1	0.2	1.92	17	31	0.6	6.34	1.9	9
008-001-180um	1.3	0.2	2.21	20.5	36.9	0.7	6.32	2.2	10.25
RE 008-001-180um	1.3	0.2	2.13	20.3	36.3	0.5	6.12	2.2	10
009-001-180um	1.2	0.2	2.17	19.5	41.2	0.6	5.6	2.5	11.24
010-001-180um	1.7	0.2	2.69	24.4	48.2	0.6	6.22	3.3	15.04
011-001-180um	1.3	0.2	2.24	16.7	33.6	0.5	5.75	2	9.14
012-001-180um	1.2	0.2	1.97	19	38.3	0.4	4.59	2.3	9.55
013-001-180um	1.5	0.2	2.52	24.3	48.9	0.5	6.06	3.6	11.84
014-001-180um	1.2	0.1	2.22	16.5	37.2	0.6	6.09	2.3	9.21
015-001-180um	1.8	0.2	2.55	24.7	48.5	0.5	5.98	3.1	13.34
016-001-180um	1.4	0.2	2.52	26.6	48.6	0.6	5.89	3.2	13.87
017-001-180um	1.5	0.2	2.25	19.3	48.8	0.7	6.94	2.9	10.9
018-001-180um	1.4	0.2	2.31	33.9	55.4	0.6	6.27	3.7	13.04
019-001-180um	1.2	0.2	1.97	16.6	52.4	0.6	5.95	3	10.4
020-001-180um	2	0.3	3.24	20.7	62.5	0.9	10.46	3.7	13.3
022-001-180um	1.4	0.2	2.46	24.5	47.3	0.5	5.57	3.1	12.94
001-001-75um	1.8	0.3	2.88	22	59.9	0.8	8.92	3.4	12.75
002-001-75um	2.1	0.3	3.24	27.9	68.8	0.9	9.4	4.3	16.2
003-001-75um	2	0.3	3.44	23.9	66.7	1	11.35	3.9	13.52
004-001-75um	2	0.3	3.43	26.5	71	0.9	10.41	4.2	17.1
005-001-75um	2.1	0.3	3.34	21.7	63.1	1	11.17	3.8	13.53
006-001-75um	2.1	0.3	4.04	26.4	56.3	0.9	10.8	3.7	18.06
007-001-75um	1.7	0.2	2.88	22.8	41.4	0.7	7.95	2.6	12.59
008-001-75um	2	0.3	3.38	29.5	51.7	0.8	8.36	3.3	14.9

Appendix 5.3

ELEMENT	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
009-001-75um	1.5	0.2	3.03	24.5	45.9	0.6	6.28	2.8	12.29
010-001-75um	2	0.3	3.25	27.9	52.9	0.6	7.09	3.6	16.49
011-001-75um	1.9	0.2	3.52	19.6	41.6	0.6	6.81	2.5	11.58
012-001-75um	1	0.2	2.16	19.6	40.1	0.5	4.68	2.3	9.45
STANDARD DST6	1.6	0.2	1.93	26.6	60.7	0.8	9.13	8.6	17.46
013-001-75um	2.1	0.3	3.65	31.9	68.4	0.7	7.78	5	17.29
014-001-75um	1.8	0.2	3.38	23.2	56	0.7	7.67	3.2	14.19
015-001-75um	1.8	0.3	3.44	30.3	65.8	0.7	8.07	4.3	18.09
016-001-75um	1.9	0.3	3.26	31.6	68.1	0.7	8.38	4.6	20.22
017-001-75um	1.8	0.2	2.92	21.6	58.1	0.7	8.92	3.6	13.72
018-001-75um	1.9	0.3	3.12	39.3	77.2	0.8	9.03	5.2	18.07
019-001-75um	1.7	0.2	2.68	18.2	61.7	0.7	8.02	3.5	12.17
021-001-75um	1.8	0.3	3.17	25.1	54.8	0.6	7.25	3.8	17.37
023-001-75um	1.5	0.2	2.61	19.6	62.7	0.7	8.21	3.5	11.92
024-001-75um	8.8	1.2	4.68	12.5	194.3	1.4	12.21	2.9	20.17
001-002-180um	1.6	0.2	2.72	27.3	67	0.7	7.83	4.1	15.86
002-002-180um	1.8	0.2	2.66	29.1	64.1	0.7	8.02	4	15.7
003-002-180um	2.6	0.3	3.52	26.3	83.9	1.1	13.85	5.1	17.56
004-002-180um	1.8	0.3	3.12	23.3	72	0.8	9.95	4.1	16.29
005-002-180um	2.1	0.3	3.28	21.3	67.6	1	11.97	4.3	15.13
006-002-180um	2.1	0.3	3.68	24.3	57.8	0.8	10.51	3.8	18.05
007-002-180um	1.5	0.2	2.55	28.3	46.8	0.6	6.86	3.3	15.39
008-002-180um	1.5	0.2	2.96	30	53.9	0.5	6.76	3.7	17.33
009-002-180um	1.5	0.2	2.85	30.5	57.8	0.7	7.09	3.9	17.02
010-002-180um	2.1	0.3	3.4	34.5	67	0.7	8.04	5	22.26
011-002-180um	1.7	0.2	2.85	21.4	41.4	0.5	6.16	3	13.82
RE 011-002-180um	1.6	0.2	2.91	21.1	41.5	0.5	5.96	2.9	13.57
012-002-180um	1.4	0.2	2.29	21.3	37.9	0.5	5.82	2.8	12.1
013-002-180um	1.2	0.2	1.95	19.9	41.4	0.4	4.86	3.1	10.06
014-002-180um	1.4	0.2	2.57	20.2	41.9	0.5	6.07	3.2	14.33
015-002-180um	1.6	0.2	2.79	25.4	51	0.5	7.01	3.7	15.61
016-002-180um	1	0.2	1.89	17.4	35.9	0.5	5	2.3	9.84
017-002-180um	1.3	0.2	2.54	20.8	50.5	0.6	7.27	3.2	11.81
018-002-180um	2	0.3	2.91	53.9	80.3	0.7	7.53	5.9	20.13

Appendix 5.3

ELEMENT	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
019-002-180um	1.7	0.3	2.49	25.9	74.5	0.7	7.36	4.4	14.87
021-002-180um	2.2	0.3	3.27	35.3	64.5	0.7	8.07	4.9	22.07
023-002-180um	1.8	0.3	2.63	24.5	72.6	0.7	7.18	4.4	14.55
001-002-75um	1.7	0.3	3.08	30.6	71	0.8	9	4.4	16.82
002-002-75um	2.2	0.3	3.24	36.2	73.9	0.8	9.39	4.8	18.1
STANDARD DST6	1.5	0.2	1.75	27.1	56.7	0.6	8.44	8.5	16.63
003-002-75um	2.3	0.3	3.69	25.1	84.6	1.1	12.62	4.7	16.6
004-002-75um	2.3	0.3	3.79	27.1	79.4	1	11.4	4.6	19.14
005-002-75um	2.2	0.3	3.4	21.1	71.3	1	11.38	4.1	14.62
006-002-75um	2.2	0.3	3.91	24.8	63.6	0.8	10.89	3.7	18.71
007-002-75um	1.8	0.2	3.38	32.6	57.8	0.7	8.34	3.8	18.71
008-002-75um	2.2	0.3	3.35	37.4	73.2	0.7	7.88	4.5	21.3
RE 008-002-75um	2	0.3	3.48	37.1	72.1	0.7	7.87	4.4	21.28
009-002-75um	2.2	0.3	3.29	33.1	86.7	0.7	7.54	5.2	20.29
010-002-75um	2	0.3	3.27	33.8	62.5	0.7	7.68	4.2	21.47
011-002-75um	2	0.3	3.44	24.1	53.9	0.7	7.25	3.3	16.19
012-002-75um	1.7	0.2	3.49	30.5	58.2	0.8	8.47	3.7	18.29
013-002-75um	2.1	0.3	3.56	32.9	68.6	0.7	7.35	5.1	16.65
014-002-75um	1.6	0.2	3.31	23.8	55.1	0.7	7.31	3.7	18.08
015-002-75um	2	0.3	3.31	29.8	62.1	0.8	8.15	3.9	18.73
016-002-75um	2	0.2	3.23	28.3	63	0.7	7.61	3.8	17.32
017-002-75um	1.9	0.3	3.02	26.7	70.5	0.9	9.54	4.2	16.19
018-002-75um	2.3	0.3	3.46	64.2	96.2	0.8	8.94	6.7	24.29
019-002-75um	2.3	0.3	3.04	29.9	95.2	0.8	9.05	5.1	17.51
020-002-75um	2.1	0.3	3.61	23.3	72.4	1	11.87	4.2	15.42
022-002-75um	1.8	0.3	3.32	31.2	57.4	0.7	7.86	3.8	18.37
025-002-75um	1.9	0.2	3.9	10	80.9	5.6	88.01	1.3	16.85
STANDARD DST6	1.5	0.2	1.77	25	58.7	0.7	8.44	8.2	16.41

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEX
To Geoscience Australia PROJECT 2006861
Acme file # A604528 Page 1 (a) Received: AUG 3 2006 * 264 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML, ANALYSIS BY ICP-MS.

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
120-002-180um	0.35	23.86	13.72	57.4	<20	18.3	7.2	261	2.93	2.3	1	<.1	6.6	96	0.08	0.36	0.19	72	0.49	0.032	17.7
122-002-180um	0.29	20.55	14.94	51.6	30	16.6	8.4	357	2.49	3.4	1.1	<.1	6.8	104	0.09	0.36	0.19	71	1.24	0.03	16.6
120-001-75um	0.38	20.29	14.26	51.1	<20	15.5	7.4	337	2.51	2.5	1.3	<.1	9.1	85	0.09	0.4	0.21	65	0.27	0.044	19.7
116-002-75um	0.54	25.95	17.23	61.1	<20	20.7	8.8	392	3.46	6	1.7	<.1	11.5	96	0.06	0.46	0.26	99	0.24	0.04	24.8
123-001-75um	0.44	19.5	13.53	46.4	44	15.3	7.7	341	2.55	3.7	1.4	<.1	8.5	79	0.06	0.38	0.21	79	0.2	0.036	19.8
124-002-180um	0.34	23.64	11.69	62.7	69	24.2	8.6	267	3.26	3.4	0.9	<.1	8.1	113	0.04	0.36	0.17	80	0.44	0.022	21.3
120-001-180um	0.22	13.96	7.83	36.5	36	10.2	4.8	205	1.69	1.1	0.8	<.1	4.5	61	0.05	0.25	0.12	46	0.15	0.032	12.6
121-002-180um	0.25	17.72	10.59	43.5	35	18	8.9	167	2.17	10.6	1.2	<.1	5.8	140	0.04	0.36	0.14	143	2.26	0.018	17
115-002-75um	0.52	20.84	17.22	51.3	81	17.4	11.1	628	3.18	4.1	1.4	<.1	8.6	101	0.06	0.4	0.22	96	0.29	0.029	23.1
118-001-180um	0.65	22.83	15.28	52.6	<20	16.7	8	342	2.97	4.6	1.3	<.1	9.1	79	0.09	0.42	0.21	86	0.18	0.042	22.4
121-002-75um	0.44	21.94	14.31	59.7	<20	25.3	12.7	257	3.39	16.6	1.8	<.1	8.6	196	0.08	0.46	0.2	215	3.46	0.025	21.4
125-002-75um	0.68	19.66	15.02	43.9	41	16.6	6.6	121	3.05	4	1.4	<.1	10.3	64	0.08	0.43	0.21	93	0.09	0.027	21.3
124-001-180um	0.53	23.72	13.1	58.2	41	18.9	9.8	415	2.94	2.5	1	<.1	7	74	0.1	0.36	0.18	78	0.21	0.054	19.6
122-001-75um	0.31	24.8	14.13	60.1	39	19.3	10.2	364	2.81	1.7	1.5	<.1	9	86	0.08	0.35	0.2	69	0.27	0.044	22.3
123-002-75um	0.54	25.33	18.07	61.7	23	23.7	11.5	427	4.06	4.2	1.6	<.1	10.4	120	0.07	0.44	0.25	99	0.39	0.028	27.1
110-001-75um	0.41	20.11	15.42	47.9	41	16.2	10.3	574	2.34	3.3	1.1	<.1	9.4	79	0.08	0.37	0.19	67	0.21	0.031	22
117-001-180um	0.4	18.09	9.95	39.5	30	12.6	5.4	221	2.12	2.4	0.8	<.1	5.2	55	0.04	0.33	0.15	68	0.12	0.037	14.5
119-001-75um	0.4	33.03	11.72	85.2	40	28.5	11.1	401	4.16	2.5	1.1	<.1	7.1	98	0.07	0.34	0.17	90	0.31	0.043	22.8
125-001-75um	0.86	26.81	17.38	69.1	35	23.6	10.4	396	3.75	5.3	1.6	<.1	12.4	79	0.08	0.45	0.25	105	0.13	0.053	28.5
120-002-75um	0.42	31	17.21	80.5	<20	25.8	10.3	382	4.31	4.7	1.3	<.1	8.8	129	0.09	0.45	0.25	104	0.74	0.048	24.1
122-001-180um	0.23	16.18	9.8	38.1	40	11.2	5.8	196	1.69	1.7	0.8	<.1	4.2	57	0.04	0.27	0.12	46	0.14	0.029	12.1
119-001-180um	0.36	25.14	11.43	61.7	33	21.9	8.3	308	3.28	3.2	1	<.1	6.7	82	0.05	0.36	0.18	74	0.25	0.034	18.9
113-001-180um	0.28	18.62	10.72	52.4	<20	18.5	8.5	302	2.7	2.5	0.7	<.1	5.9	87	0.05	0.32	0.13	96	0.29	0.019	17.8
124-001-75um	0.76	28.59	17.73	71.8	20	24.5	12.4	512	3.63	4.5	1.5	<.1	11.4	92	0.09	0.47	0.25	97	0.28	0.064	28.1
123-001-180um	0.31	14.71	10.13	33.4	30	10.1	4.7	198	1.7	1.1	0.7	<.1	4.1	51	0.03	0.29	0.15	59	0.12	0.028	12.7
119-002-180um	0.35	27.64	11.46	60.3	56	25	12.1	385	3.33	7.6	1	<.1	6.3	107	0.05	0.37	0.17	111	1.46	0.036	20.8
117-001-75um	0.49	22.73	11.48	50.3	36	15.7	8.2	329	2.54	3	1.1	<.1	6.9	77	0.08	0.32	0.16	78	0.18	0.044	19.9
RE 117-001-75um	0.51	21.95	13.14	47.3	42	15.3	8.1	333	2.58	3.4	1.1	<.1	7.6	78	0.08	0.38	0.17	78	0.19	0.044	20.3
116-002-180um	0.47	23.34	12.12	58.2	39	17.2	7.2	318	2.99	4	1	<.1	6.4	81	0.04	0.36	0.17	91	0.17	0.038	19.7
117-002-75um	0.42	14.28	11.47	30.1	84	9.2	4.8	113	1.83	3.2	1	<.1	6.7	64	0.08	0.35	0.16	68	0.11	0.021	17.5

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
112-002-180um	0.25	17.46	9.97	42.9	72	18.6	7.9	260	2.45	4.2	0.7	<.1	5.7	92	0.04	0.31	0.14	82	0.96	0.019	15.5
118-002-180um	0.43	20.95	11.36	48.9	58	18.7	8.5	249	3.2	3.6	1	<.1	6.8	85	0.05	0.33	0.18	95	0.27	0.024	20.1
125-002-180um	0.57	17.14	11.71	30.9	34	14.7	5.2	83	2.58	4.1	1	<.1	6.5	51	0.04	0.39	0.18	79	0.06	0.022	15.2
122-002-75um	0.4	29.33	16.15	73.5	70	24	14.3	606	3.83	4.3	1.3	<.1	7.9	162	0.12	0.37	0.21	112	2.15	0.053	24.5
STANDARD DST6	12.96	130.64	35.38	177.4	331	34.8	14.1	965	4.08	23.8	7.4	<.1	6.9	320	5.78	5.27	4.69	111	2.29	0.099	25.3
115-001-180um	0.37	16.35	10.96	34.6	30	9.9	6.9	381	1.93	3.3	1	<.1	6.8	64	0.1	0.34	0.31	67	0.17	0.03	19.2
114-001-75um	0.31	16.9	11.34	48.7	60	17.3	7.7	237	2.67	5.4	1.2	<.1	6.6	103	0.11	0.38	0.28	89	1.95	0.024	18.7
123-002-180um	0.34	20.18	12.73	47	51	15	8.9	324	2.92	3.1	1.1	<.1	6.7	85	0.12	0.33	0.26	76	0.27	0.022	19.7
109-002-180um	0.45	15.19	14.96	43.6	49	15.7	14	482	2.11	3.7	1.1	<.1	7.8	92	0.12	0.36	0.21	70	0.28	0.022	25.2
111-001-75um	0.37	20.73	14.45	66.4	52	17.8	11.8	400	3.1	5	1.3	<.1	8.4	120	0.11	0.34	0.21	84	0.44	0.038	25.4
110-002-75um	0.51	26.11	15.36	79.6	<20	28	14.4	535	4.02	6	1	<.1	9.2	170	0.11	0.39	0.24	121	1.04	0.027	27.7
111-002-75um	0.53	23.63	15.53	73.4	84	22.6	14.3	507	3.64	4.5	1.4	<.1	8.8	139	0.14	0.32	0.2	99	0.57	0.038	26.6
115-001-75um	0.52	19.93	13.85	45	37	12.5	9.6	510	2.61	3.9	1.4	<.1	9.4	82	0.08	0.36	0.19	84	0.2	0.038	23.4
107-002-180um	0.59	16.69	15.59	36.5	70	17.1	19.5	1177	2.1	3.8	1	<.1	7.7	82	0.12	0.34	0.19	73	0.27	0.018	24.8
112-001-180um	0.28	14.43	10.02	36.8	38	12.9	5.5	182	2.3	3.3	0.8	<.1	7.1	69	0.07	0.32	0.15	69	0.27	0.024	18.5
118-002-75um	0.59	25.02	15.14	69.8	45	20.9	11.1	317	3.78	5.8	1.4	<.1	9.8	110	0.19	0.45	0.22	106	0.34	0.027	27.8
116-001-180um	0.51	21.51	13.52	77.7	45	14.3	7.5	329	2.96	4	1	<.1	7.5	68	0.1	0.36	0.16	84	0.15	0.077	19.8
109-001-180um	0.35	13.77	14.57	38.6	27	12.2	12.3	577	1.88	2.5	1	<.1	7	72	0.11	0.32	0.16	61	0.21	0.035	21.6
117-002-180um	0.27	11.62	9.26	21	67	6.4	3.8	73	1.61	4.3	0.8	<.1	5.2	45	0.06	0.34	0.15	62	0.08	0.018	12.6
119-002-75um	0.35	27.37	13.96	70	44	25.4	15.7	513	4.12	10.3	1.3	<.1	8.5	122	0.13	0.4	0.19	133	1.87	0.036	24.7
106-001-75um	0.48	18.4	13.9	67.7	50	22.7	12.8	520	3.6	3.5	1.4	<.1	7.7	109	0.15	0.31	0.15	98	0.48	0.04	23.9
121-001-180um	0.3	15.53	12.59	60.4	<20	18.5	10	221	3.06	2.6	1.1	<.1	7.5	78	0.07	0.34	0.13	76	0.3	0.021	19.2
108-001-75um	0.38	20.02	14.35	55	49	17.6	12.7	903	2.39	3.3	1.2	<.1	10.1	84	0.15	0.34	0.14	66	0.32	0.053	26
105-001-180um	0.36	23.18	15.35	64.5	62	22.2	13.7	795	3.14	5.1	1.2	<.1	8.6	110	0.15	0.48	0.19	85	0.59	0.048	24.8
107-001-75um	0.44	16.99	14.12	41.4	41	10.3	5.8	267	1.58	2.1	1.2	<.1	9.6	64	0.12	0.34	0.15	56	0.21	0.038	25.5
105-002-75um	0.62	25.95	16.79	67.9	46	27.1	17.4	1023	3.43	5.7	1.6	<.1	10.3	132	0.17	0.53	0.29	88	0.65	0.05	26.9
102-002-180um	0.62	24.15	16.37	59.9	74	27.7	15.5	1138	3.14	4.9	1.7	<.1	8.8	146	0.12	0.51	0.23	74	0.95	0.032	21.6
103-002-75um	0.6	23.82	16.93	61.8	182	25.4	13.8	763	3.28	4.4	1.7	<.1	10.4	156	0.14	0.63	0.26	80	0.73	0.048	24.8
106-002-180um	0.47	16.77	15.17	59.4	50	19.7	12.8	501	3.18	3	1.4	<.1	8.4	113	0.09	0.32	0.18	90	0.5	0.034	23.5
111-001-180um	0.34	18.48	14.6	64.7	59	16.9	10	418	3.14	3.5	1.1	<.1	7.8	106	0.11	0.32	0.17	84	0.44	0.031	20.9
104-001-180um	0.3	14.4	12.36	42.7	57	16.1	8.8	396	2.44	3.4	0.8	<.1	7.3	93	0.12	0.29	0.14	60	0.61	0.035	20
101-002-75um	0.71	23.24	21.31	68	91	27.3	23.1	1307	3.49	4.6	1.4	<.1	10.7	146	0.17	0.37	0.2	103	0.64	0.036	32.1
113-002-180um	0.44	17.93	14.23	47	62	17.4	11.2	183	2.86	5.8	1.2	<.1	10.2	94	0.11	0.35	0.19	93	0.3	0.02	24.1
106-001-180um	0.5	20.96	17.34	72.7	73	24.3	15.1	518	3.58	4.2	1.6	<.1	9.3	129	0.14	0.4	0.21	94	0.48	0.043	26.5

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
115-002-180um	0.36	17.25	12.99	41.8	101	12.3	8.2	403	2.39	3.6	1.2	<.1	7.1	73	0.1	0.35	0.17	77	0.2	0.022	16.9
RE 115-002-180um	0.39	17.75	14.43	38.3	88	12.4	8.2	403	2.4	2.8	1.3	<.1	7.8	81	0.09	0.38	0.21	77	0.2	0.022	20.3
114-002-75um	0.57	19.92	11.82	54.9	89	19.3	8.6	253	4.05	4.1	1.6	<.1	8.6	100	0.14	0.45	0.26	114	0.72	0.02	18.9
113-001-75um	0.33	25.07	16.1	73.5	36	23.2	13.3	442	3.72	5.3	1.2	<.1	11	124	0.09	0.38	0.24	123	0.41	0.025	29.1
107-001-180um	0.23	12.44	12.19	26	49	7.2	4.3	193	1.14	1.1	0.9	<.1	6.3	51	0.07	0.25	0.13	41	0.14	0.027	17.1
STANDARD DST6	12.64	128.63	35.22	171.7	306	30.6	13.8	966	4.08	24.3	7.5	<.1	7.1	323	5.78	5.44	4.81	110	2.29	0.099	25.1
104-002-75um	0.65	23.13	15.8	58.3	52	26.9	15.1	512	3.29	4.9	1.2	<.1	9.8	206	0.1	0.44	0.39	88	0.89	0.039	27.7
109-001-75um	0.62	21.08	19.53	52.3	22	18.3	19.5	810	2.63	2.9	1.5	<.1	11.3	104	0.18	0.42	0.32	79	0.26	0.053	30.2
113-002-75um	0.68	25.16	16.43	66.1	<20	26.9	16.5	276	4.07	7.5	1.4	<.1	9.8	130	0.08	0.5	0.31	122	0.43	0.026	27
111-002-180um	0.47	22.15	15.21	67.1	46	20.2	12.2	451	3.31	3.6	1.3	<.1	8.2	130	0.08	0.32	0.25	92	0.51	0.037	23.6
104-001-75um	0.44	18.18	14.5	49.9	49	23.8	12.1	455	2.92	3.9	1.1	<.1	9.3	122	0.13	0.39	0.22	70	0.71	0.043	24.7
105-002-180um	0.62	22.74	16.05	59.2	38	25.8	15.3	933	3.12	4.7	1.5	<.1	8.9	129	0.07	0.47	0.24	79	0.57	0.041	26
108-001-180um	0.39	17.62	13.02	42.2	48	16.2	10.3	703	1.76	2.7	0.9	<.1	6.4	88	0.09	0.35	0.15	44	0.24	0.039	18.5
114-001-180um	0.31	13.27	10.28	34.3	<20	12.1	5.9	185	2.13	3.9	1	<.1	5.6	89	0.08	0.35	0.19	72	1.58	0.018	13.8
124-002-75um	0.51	28.09	14.37	76.6	<20	27.2	11.7	391	4.34	4.9	1.2	<.1	9	164	0.08	0.47	0.2	96	0.56	0.029	25.2
107-002-75um	0.89	21.87	21.25	58.8	<20	24.5	25.6	1696	2.99	5.2	1.5	<.1	10.9	115	0.15	0.43	0.22	96	0.37	0.024	32.9
110-001-180um	0.34	16.14	12.45	36.2	44	12	8.5	442	1.87	2.1	0.8	<.1	6.6	76	0.08	0.39	0.16	52	0.18	0.022	16.7
103-002-180um	0.66	24.69	17.06	60.5	179	30.5	16.9	808	3.39	5.1	1.7	<.1	10.3	174	0.11	0.69	0.36	85	0.77	0.052	26
108-002-180um	0.39	15.64	13.99	44.3	37	19.3	13.7	722	2.24	4	1	<.1	8.2	115	0.08	0.41	0.16	65	0.4	0.023	25.1
103-001-180um	0.54	25.98	17.34	63.3	227	30.5	18.6	933	3.17	6.2	1.5	<.1	11	158	0.15	0.66	0.3	78	0.81	0.06	27.6
112-002-75um	0.37	23.14	14.46	62.1	39	23.9	10.6	345	3.42	6.7	1	<.1	8.8	143	0.11	0.4	0.21	104	1.45	0.028	24.4
116-001-75um	0.6	26.32	17.05	92.4	<20	16.9	8.8	416	3.44	4.4	1.5	<.1	11.2	91	0.16	0.42	0.23	90	0.21	0.097	27.4
102-001-180um	0.41	22.56	15.27	58.4	67	25.9	13	1182	2.89	4.2	1.1	<.1	10.3	112	0.16	0.5	0.21	64	0.76	0.049	24.1
106-002-75um	0.54	19.21	15.93	64.4	47	24.4	15.1	603	3.51	3.2	1.5	<.1	9.5	140	0.13	0.42	0.19	97	0.57	0.039	28
121-001-75um	0.41	19.59	14.44	81.4	<20	23	12.1	283	3.86	3.4	1.4	<.1	8.3	102	0.1	0.39	0.22	88	0.38	0.027	22.2
105-001-75um	0.42	23.75	14.92	62.2	53	24.3	13.4	716	3.21	5.9	1.4	<.1	9.9	124	0.11	0.54	0.23	81	0.63	0.053	26
RE 105-001-75um	0.45	25.04	16.06	64.7	53	27.7	14.4	714	3.16	6.2	1.6	<.1	10.4	122	0.13	0.54	0.26	80	0.63	0.056	27.2
118-001-75um	0.54	19.38	11.21	41.2	50	12.4	6.6	232	2.54	4.7	0.9	<.1	7.1	58	0.1	0.37	0.19	77	0.13	0.037	16.6
110-002-180um	0.44	23.69	13.78	71.6	<20	22.3	11	416	3.49	5.1	0.9	<.1	7.5	153	0.11	0.38	0.23	103	0.9	0.022	22.8
108-002-75um	0.59	21.82	16.79	58.5	46	26.6	20.7	1228	3.06	5.3	1.5	<.1	13.6	128	0.14	0.39	0.19	87	0.5	0.029	37.8
102-002-75um	0.68	26.02	17.17	64.2	77	32.9	16.9	1267	3.46	5.6	1.8	<.1	10.2	164	0.12	0.54	0.24	78	1.06	0.033	25.4
103-001-75um	0.46	22.07	15.57	54.9	152	25.4	13.9	802	2.87	4.7	1.3	<.1	10	140	0.13	0.56	0.26	72	0.76	0.057	24.7
104-002-180um	0.48	17.25	13.56	52.8	70	23.3	11	414	2.7	4.6	0.9	<.1	7.2	151	0.07	0.35	0.16	75	0.75	0.031	20.9
114-002-180um	0.4	15.22	9.62	43.5	54	14.1	5.5	173	3.01	3.8	1.1	<.1	6.2	76	0.09	0.38	0.18	85	0.51	0.017	14.1

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
112-001-75um	0.4	19.22	12.64	53	37	20.1	7.2	235	3.02	3.1	1	<.1	8.1	88	0.06	0.34	0.17	84	0.36	0.035	22
102-001-75um	0.4	24.73	14.83	67.9	88	28.1	12.6	1218	3.19	4.5	1.2	<.1	10.1	110	0.16	0.52	0.22	69	0.81	0.051	24.2
125-001-180um	0.58	19.1	12.98	45.3	31	15	5.6	212	2.75	4.2	1	<.1	7.4	54	0.08	0.38	0.19	78	0.11	0.042	17.5
101-001-75um	0.65	23.86	20.51	69.4	61	27.6	20.4	1248	3.28	4.1	1.4	<.1	10.6	123	0.14	0.37	0.2	87	0.47	0.045	31.5
109-002-75um	0.49	22.08	20.75	64.3	41	21.8	19.9	660	3.03	3.8	1.5	<.1	12.2	125	0.1	0.44	0.25	94	0.38	0.031	35.5
101-001-180um	0.45	18.1	15.27	53	75	21.6	16.4	1012	2.63	3.2	1.1	<.1	8	97	0.1	0.31	0.17	71	0.38	0.037	25.7
STANDARD DST6	12.36	127.97	35.29	176.1	319	29.4	13.7	965	4.07	23.3	7.6	<.1	7	310	5.65	5.35	4.78	112	2.28	0.096	24.1
101-002-180um	0.65	20.13	16.61	53.2	65	21.9	17.2	952	2.93	3.9	1.1	<.1	8	125	0.2	0.36	0.38	85	0.49	0.028	27.7
149-001-180um	0.34	14.68	9.75	37.4	40	10.8	4.3	137	2.02	3.1	0.9	<.1	6.3	48	0.08	0.34	0.24	59	0.12	0.033	15.6
148-002-180um	0.3	15.43	9.69	33.8	57	15	5.8	183	2.21	5.1	0.7	<.1	5.5	306	0.09	0.36	0.2	69	7.49	0.016	16.6
128-001-75um	0.37	20.95	14.79	54.5	<20	18.7	8.8	304	2.91	3.5	1.3	<.1	9.8	91	0.14	0.37	0.28	83	0.35	0.043	24.1
130-002-180um	0.45	28.51	14.94	69.6	32	25.1	10.9	358	3.67	5.9	1.2	<.1	9.7	122	0.14	0.44	0.36	86	0.7	0.03	28.7
148-001-75um	0.63	28.48	19.52	69.2	34	27.2	11.7	521	3.42	5.9	1.5	<.1	11.6	93	0.12	0.54	0.19	85	0.25	0.036	32.4
127-002-180um	0.42	15.82	12.36	39	92	12.4	9.3	382	3.26	8.3	1.2	<.1	7.6	95	0.09	0.36	0.24	114	0.28	0.021	16.9
144-002-75um	0.65	26.41	15.93	70.2	48	27.1	11.2	518	3.85	7.3	1.5	<.1	12.1	107	0.13	0.48	0.28	96	0.4	0.028	29.4
161-001-180um	0.25	10.3	8.91	31.7	45	7.9	4.4	190	1.53	3.2	0.8	<.1	5.7	69	0.08	0.31	0.16	45	0.19	0.018	14.5
140-001-180um	0.25	9.39	8.21	25.5	56	6.7	3.8	139	1.4	3.4	0.6	<.1	4.5	49	0.06	0.3	0.14	42	0.22	0.023	11.8
150-001-75um	0.67	20.63	16.26	52.3	23	17.7	8.6	367	3.09	5.4	1.5	<.1	12	69	0.13	0.5	0.24	85	0.21	0.037	28.9
141-001-180um	0.28	17.68	12.43	41.6	24	15.7	9.8	410	2.16	5.2	1.2	<.1	7.8	64	0.12	0.44	0.2	54	0.17	0.042	20.2
153-002-180um	0.52	29.28	18.47	60.5	57	28.7	15.8	544	3.45	5.2	1.3	<.1	11.8	103	0.11	0.67	0.25	86	0.38	0.028	28.7
159-001-180um	0.33	15.47	12.26	32.6	<20	9.7	6.6	356	1.98	3	1.1	<.1	8.1	64	0.1	0.35	0.17	65	0.17	0.03	21.5
163-002-75um	2.1	45.82	8.1	78.1	<20	48.5	46.8	1716	9.59	2.4	1.6	<.1	8.8	1299	0.43	0.04	<.04	168	5.38	0.297	56.6
158-002-75um	0.61	25.72	16.14	66.2	44	27.5	17.6	1031	3.53	6	1.5	<.1	9.1	135	0.12	0.55	0.24	90	0.65	0.047	27.2
154-002-75um	0.37	18.06	14.76	38.6	26	18.7	11.7	372	2.76	4.8	1.1	<.1	10.7	79	0.1	0.5	0.2	75	0.29	0.021	27.8
RE 154-002-75um	0.43	19.13	15.42	39	38	17.7	12.2	375	2.78	4.6	1.2	<.1	11	82	0.06	0.53	0.25	76	0.3	0.022	29
156-001-75um	0.52	23.14	17.57	65.5	38	22.8	14	699	3.02	4	1.6	<.1	11	102	0.14	0.56	0.25	77	0.46	0.049	28.4
136-002-75um	0.62	22.18	14.98	68.5	48	16.8	15.4	645	4.14	8.7	1.7	<.1	8.6	170	0.14	0.35	0.19	108	0.66	0.047	24.6
126-002-180um	0.6	18.84	11.86	50.6	22	19	9.2	379	3.01	4.9	0.8	<.1	6.7	79	0.11	0.4	0.17	83	0.19	0.025	19.8
143-001-180um	0.51	22.96	21.19	71.6	41	19.6	13.8	633	3.08	7.8	2	<.1	12.6	87	0.14	0.5	0.35	78	0.41	0.042	33.9
141-002-75um	0.45	23.73	16.78	65.7	61	18.5	10.9	397	3.19	7.8	2	<.1	14.2	102	0.13	0.53	0.26	82	0.29	0.049	36.8
159-002-180um	0.41	15.38	12.1	38	60	11.1	7.5	411	2.39	3.5	1	<.1	6.5	71	0.1	0.33	0.16	75	0.21	0.022	17
152-002-180um	0.45	15.67	12.08	30.3	21	11.9	4.9	161	2.09	5	1.1	<.1	7.9	45	0.08	0.52	0.21	68	0.17	0.025	19
129-002-180um	0.4	19.8	12.7	52.2	40	13.4	9	311	2.6	3.9	1.1	<.1	7.1	80	0.06	0.36	0.21	71	0.21	0.031	21.4
130-001-180um	0.34	14.9	11.79	45.1	22	11.2	6.2	292	2.2	3.5	1	<.1	7.3	66	0.11	0.39	0.17	62	0.21	0.043	18.2

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
149-002-180um	0.3	16.79	9.33	43.4	45	13.4	5	196	2.46	4.8	0.7	<.1	5.5	62	0.05	0.36	0.14	68	0.48	0.017	15.1
127-001-180um	0.29	15.68	10.08	40.8	50	11.6	6.6	263	2.43	5.2	0.8	<.1	5.8	80	0.07	0.34	0.15	69	0.33	0.021	17.6
141-002-180um	0.29	15.47	10.28	43.3	62	11.7	6.1	215	2.19	5.8	1	<.1	7.5	57	0.09	0.41	0.16	54	0.16	0.033	20.1
157-001-180um	0.65	28.05	15.36	74	80	28	19	814	4.1	5.7	1.9	<.1	10.1	120	0.14	0.54	0.24	101	0.63	0.062	27.6
141-001-75um	0.35	21.85	14.96	54.7	65	17.1	12.1	521	2.55	6	1.5	<.1	10.3	93	0.18	0.53	0.31	66	0.22	0.049	26.8
153-001-180um	0.33	22.81	17.09	59.8	56	23.6	13.3	599	3.09	5.2	1.2	<.1	9.9	80	0.1	0.53	0.29	67	0.37	0.034	25.2
154-001-75um	0.35	17.3	12.67	27	44	11.1	7.2	357	1.79	5.4	1.1	<.1	10.6	51	0.06	0.4	0.2	55	0.13	0.03	24.9
STANDARD DST6	12.65	127.89	35.58	174.7	301	29.9	13.7	963	4.07	24.5	7.6	<.1	7.1	313	5.76	5.46	4.88	111	2.28	0.096	24.9
136-001-75um	0.32	12.57	9.77	32.4	30	9.7	6.4	272	2.06	3.7	1.1	<.1	5.5	117	0.08	0.29	0.23	65	0.39	0.019	16.8
127-001-75um	0.44	22.11	13.43	60.4	51	19.2	10.7	478	3.91	6.7	1.5	<.1	9.3	117	0.1	0.36	0.27	105	0.62	0.028	23.8
147-002-75um	0.79	18.15	13.85	43	49	19.7	14.2	632	2.57	6.1	1.6	<.1	8.6	128	0.1	0.46	0.24	81	0.62	0.025	23.5
134-002-75um	0.87	28.46	20.19	70.7	<20	27.2	17.7	681	4.03	8.5	2.3	<.1	13.2	179	0.1	0.69	0.35	117	1.38	0.044	32.2
129-002-75um	0.54	26.66	18.49	77.5	25	21.1	13.5	512	3.91	4.6	1.5	<.1	10.6	115	0.16	0.42	0.28	101	0.32	0.041	28.6
153-001-75um	0.33	25.57	17.33	58.6	63	25.8	13.7	556	3.13	4.3	1.5	<.1	10.3	86	0.09	0.58	0.27	71	0.39	0.039	28.5
140-002-180um	0.29	12.66	9.71	41.3	30	11.5	6.1	230	1.86	2.6	0.9	<.1	6.1	68	0.06	0.29	0.14	52	0.31	0.034	15.6
146-001-180um	0.23	12.22	10.12	37.9	39	11.2	4.3	153	1.66	2.4	0.8	<.1	6	52	0.07	0.3	0.13	48	0.21	0.034	15.5
RE 146-001-180um	0.22	12.96	11.1	32.6	<20	11.8	4.5	158	1.74	2.8	0.8	<.1	6.9	55	0.09	0.34	0.16	50	0.21	0.033	16.4
142-001-180um	0.3	18.22	14.49	57.1	28	14.8	8	341	2.78	4.9	1.3	<.1	8.2	71	0.1	0.45	0.2	75	0.33	0.037	22.8
148-001-180um	0.57	18.94	12.48	45.8	42	15.9	6.9	305	2.37	3.9	0.9	<.1	6	60	0.1	0.38	0.15	64	0.18	0.023	16.4
139-001-75um	0.48	21.65	19.47	48.4	38	15.6	15	596	2.9	6.1	2.1	<.1	14.8	109	0.17	0.49	0.27	94	0.24	0.043	40.9
128-002-180um	0.28	18.84	11.4	49.3	<20	16.5	7.6	272	2.91	7.6	1.2	<.1	6.4	83	0.09	0.35	0.17	110	0.5	0.024	17.8
144-002-180um	0.34	16.67	10.47	38	44	16.4	6.2	276	2.41	4.5	1	<.1	6	64	0.03	0.4	0.16	69	0.24	0.018	16.8
155-002-75um	0.64	33.91	18.3	70.1	37	33.7	17	672	4.3	8.3	2.6	<.1	10.8	146	0.08	0.87	0.28	111	0.74	0.043	30.9
160-002-75um	0.55	17.78	13.55	37.8	28	13.7	6.6	120	3.03	4.8	1.5	<.1	10.9	62	0.07	0.45	0.2	95	0.1	0.027	22.6
137-002-75um	0.44	21.84	14.61	60.9	74	17.9	14.8	543	3.49	6.4	1.4	<.1	8	162	0.15	0.34	0.16	102	0.64	0.031	23.8
137-002-180um	0.38	16.89	12.12	51.8	48	12.2	10.6	414	2.64	5	1.1	<.1	5.6	127	0.1	0.31	0.14	79	0.47	0.024	16.1
145-002-180um	1.26	23.08	15.93	61.6	<20	27.7	17	698	3.47	5.8	2.3	<.1	8.4	133	0.1	0.5	0.22	91	1.01	0.039	24.5
132-001-75um	0.43	18.09	15.66	54.9	<20	14	7.6	351	2.93	5.1	1.3	<.1	9.3	86	0.1	0.44	0.2	83	0.25	0.043	25
163-001-75um	0.47	29.56	15.64	62	67	24.3	10.7	486	3.04	5.9	1.5	<.1	10.4	105	0.11	0.61	0.23	84	0.51	0.052	27.6
150-001-180um	0.4	17.81	13.34	37.6	47	13.6	5.8	240	2.4	4.4	0.9	<.1	6.7	48	0.09	0.42	0.18	70	0.17	0.027	17
131-002-75um	0.86	28.62	21.43	77.4	50	23.6	12.9	529	4.16	8.7	1.8	<.1	12.1	114	0.09	0.59	0.25	128	0.28	0.042	33.5
135-002-180um	0.48	21.61	13.3	68.5	36	17.5	10.6	368	3.03	7.6	1.2	<.1	7.5	155	0.12	0.38	0.2	104	1.06	0.04	22.1
151-001-180um	0.49	21.29	13.62	51.3	49	21.4	9.1	668	3.13	5.1	1.3	<.1	7.4	64	0.09	0.48	0.19	88	0.21	0.024	19.2
142-001-75um	0.65	29.58	22.84	95	53	28.1	14.1	542	4.36	8.8	2	<.1	12.7	113	0.17	0.61	0.3	120	0.5	0.057	33

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
151-002-75um	0.56	23.37	16.09	66.2	60	28	14.2	506	4.02	4.9	1.3	<.1	9.3	95	0.11	0.55	0.23	102	0.33	0.02	25.7
148-002-75um	0.31	19.02	10.2	44.2	81	20.6	9.8	241	2.74	7.3	1	<.1	6.7	456	0.09	0.34	0.11	89	12.9	0.018	21.2
132-001-180um	0.39	16.25	11.97	43.5	36	11.4	5.8	234	2.31	5.1	0.9	<.1	5.7	60	0.08	0.39	0.16	69	0.19	0.036	16.6
134-002-180um	0.6	21.97	16.08	60	21	18.7	11.1	437	2.9	8	1.6	<.1	8.3	119	0.11	0.54	0.26	91	0.78	0.033	23.6
160-002-180um	0.51	15.98	11.55	29.7	34	12.4	5.3	81	2.57	5.2	1	<.1	6.4	49	0.04	0.4	0.2	81	0.09	0.024	14.5
140-001-75um	0.42	13.59	13.4	44.2	37	12.1	5.9	242	2.1	5.2	1.2	<.1	9.4	87	0.12	0.34	0.17	66	0.37	0.033	22
157-001-75um	0.71	26.79	16.33	65.8	33	27.9	15.9	777	3.78	5.6	1.9	<.1	10.5	128	0.16	0.6	0.25	94	0.58	0.055	27
156-002-180um	0.48	24.56	18.94	61.2	115	22.7	12.2	534	3.34	4.3	1.6	<.1	10.5	121	0.08	0.55	0.27	88	0.5	0.032	29.4
STANDARD DST6	12.67	127.88	34.86	171.5	299	29.9	14	963	4.07	25.9	7.6	<.1	7.1	317	5.72	5.49	4.79	109	2.29	0.099	25.2
147-002-180um	0.62	16.32	12.67	39.2	78	17.9	10.5	481	2.14	3	1.3	<.1	7.2	108	0.07	0.42	0.21	66	0.54	0.022	19.1
152-001-180um	0.38	17.4	13.23	33.4	45	14.6	5.5	221	2.29	4	1	<.1	8	44	0.05	0.52	0.22	62	0.13	0.034	19.3
155-002-180um	0.65	36.35	20.18	77	69	36.5	15.6	623	4.22	6.1	2.9	<.1	12.3	154	0.12	0.79	0.31	116	0.88	0.045	33.5
131-001-75um	0.41	18.31	15.49	44.2	54	14.8	7.5	340	2.62	2.7	1.5	<.1	10.8	77	0.09	0.45	0.2	74	0.2	0.04	25.4
143-002-75um	0.72	36.46	24.4	99.9	122	32	14.1	569	5.01	6.6	2.4	<.1	15.1	134	0.12	0.52	0.43	139	0.47	0.041	39.3
144-001-75um	0.52	20.67	14.02	52.4	55	18.7	7.6	429	2.7	3.9	1.4	<.1	12	72	0.09	0.4	0.18	71	0.29	0.033	28.2
138-002-75um	0.53	24.35	17.02	72.3	92	20.8	14.5	631	3.6	5.6	1.8	<.1	10	144	0.13	0.37	0.22	107	0.53	0.043	28.7
138-002-180um	0.51	22.5	15.84	74.1	43	19.5	12.9	559	3.16	4.2	1.6	<.1	9	130	0.11	0.33	0.2	94	0.48	0.039	24.3
138-001-180um	0.49	21.74	16.29	66.4	38	20.5	11.8	526	3.2	4.2	1.7	<.1	9.6	122	0.14	0.38	0.22	97	0.44	0.049	24.4
126-002-75um	0.73	30.5	15.66	74.9	35	31.3	14.5	598	4.43	5.1	1.2	<.1	10	109	0.05	0.38	0.19	116	0.26	0.035	27.1
145-001-180um	0.35	19.12	14.28	52.1	33	23	11.2	521	3.02	3.9	1.1	<.1	7.9	89	0.09	0.42	0.18	72	0.39	0.034	21.4
135-002-75um	0.51	27.1	15.88	82.3	35	23	12.9	462	3.75	7.5	1.5	<.1	10.9	204	0.11	0.32	0.21	129	1.46	0.05	28.9
127-002-75um	0.75	23.48	16.1	64	97	23.9	16.9	710	5.34	10.4	1.8	<.1	11	137	0.09	0.46	0.24	197	0.48	0.032	24.7
147-001-180um	0.27	14.51	11.46	33	45	15.4	8.3	386	2	4	1	<.1	7.6	82	0.06	0.4	0.16	60	0.33	0.018	19.8
159-001-75um	0.44	19.34	14.93	43.3	27	12.6	8.1	463	2.41	3.6	1.4	<.1	9.3	77	0.07	0.33	0.18	74	0.18	0.036	23.8
155-001-180um	0.38	30.22	16.87	64.4	77	27.9	11.3	538	3.01	4.6	1.3	<.1	9.5	110	0.07	0.63	0.21	80	0.52	0.052	26.8
133-001-75um	0.33	17.96	13.61	44.4	45	14.7	8.1	350	2.32	5.2	1.5	<.1	9.5	95	0.07	0.56	0.19	60	0.37	0.028	25.4
149-001-75um	0.42	21.22	13.03	58.5	41	17.2	6.8	222	2.8	3.2	1.3	<.1	10.5	68	0.07	0.35	0.19	78	0.19	0.05	24.3
129-001-75um	0.64	21.32	15.58	53.3	43	17.8	9	381	3.2	4.8	1.2	<.1	8.4	96	0.05	0.42	0.21	90	0.3	0.034	21.6
139-002-75um	0.36	25.72	15.16	66.6	30	20.6	10.2	389	3.86	11.5	1.5	<.1	10.2	112	0.11	0.48	0.21	125	1.65	0.034	27.5
150-002-180um	0.37	17.85	12.23	41.4	36	18.7	7	198	2.83	4	1	<.1	7.8	56	0.05	0.45	0.18	71	0.17	0.023	21
142-002-75um	0.41	20.6	15.75	56	89	19.7	10.2	328	2.9	6.1	1.7	<.1	12.2	86	0.07	0.48	0.2	79	0.33	0.036	31.5
RE 142-002-75um	0.42	18.44	14.94	51.7	109	18.4	9.4	330	2.9	7.1	1.7	<.1	11.8	81	0.09	0.52	0.22	74	0.34	0.034	30.1
152-002-75um	0.54	18.47	14.67	37	36	14.6	6.1	221	2.39	5.2	1.3	<.1	9.7	57	0.06	0.52	0.23	67	0.17	0.027	24.5
136-002-180um	0.49	19.35	12.7	55.6	42	16	11.9	499	3.31	6.2	1.3	<.1	6.8	158	0.04	0.3	0.13	85	0.53	0.039	22.4

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
143-001-75um	0.58	31.66	23.52	93	60	26.3	14.9	645	3.82	8.6	2.8	<.1	18.8	105	0.16	0.45	0.38	103	0.51	0.064	44.2
150-002-75um	0.53	21.99	16.33	52.7	<20	24.7	8.9	274	3.72	6.2	1.5	<.1	11.7	73	0.05	0.53	0.24	99	0.25	0.026	28.7
146-002-180um	0.27	19.48	10.06	47.5	36	18.7	6.9	254	2.38	6.6	0.7	<.1	5.4	110	0.08	0.34	0.15	81	2.2	0.02	16.2
131-002-180um	0.85	27.31	19.48	72.8	30	22.1	11.2	429	3.49	7.3	1.6	<.1	10.4	107	0.05	0.56	0.26	106	0.23	0.041	30.5
137-001-75um	0.28	14.88	11.33	43.4	23	11.3	7.6	331	2.36	5.8	1.2	<.1	7.4	106	0.07	0.34	0.15	65	0.38	0.026	19.7
142-002-180um	0.23	11.94	9.35	32.3	42	10.4	4.5	158	1.72	4.6	0.9	<.1	6.4	49	0.03	0.34	0.15	41	0.19	0.021	16.8
126-001-75um	0.58	22.84	14.73	68.2	<20	20.6	7.9	209	3.14	6.5	1.2	<.1	9.1	80	0.09	0.39	0.21	92	0.19	0.056	22.5
164-001-180um	0.99	8.54	19.19	37.5	<20	96.6	22.8	214	1.38	1.8	4.7	<.1	20.3	29	0.05	0.22	0.11	<1	0.49	0.009	41.7
134-001-180um	0.17	13.36	8.52	34.2	30	9.6	4.7	212	1.68	3.7	0.8	<.1	5.6	55	0.09	0.34	0.17	45	0.14	0.021	15.5
STANDARD DST6	12.55	128.45	36	171.6	345	32.3	14.5	967	4.09	22	8.3	<.1	7.2	309	6.35	5.38	4.92	112	2.3	0.098	26
146-002-75um	0.4	26.5	14.25	60.8	<20	25.6	11	435	3.3	6.6	1.2	<.1	10.2	161	0.11	0.49	0.26	93	3.42	0.027	26.1
163-002-180um	0.82	40.25	20.38	77.2	87	39.6	19	661	4.2	6.3	3.2	<.1	13.3	167	0.12	0.91	0.36	99	0.86	0.052	38.8
132-002-180um	0.67	27.29	19.22	73.9	<20	25.8	11.3	348	3.81	6.4	1.5	<.1	11.1	153	0.13	0.7	0.31	103	1.1	0.03	28.6
146-001-75um	0.47	23.38	15.99	57.5	48	20.6	8.8	272	2.7	3.1	1.5	<.1	12	82	0.14	0.47	0.23	62	0.35	0.063	30.9
133-001-180um	0.45	16.33	16.35	52	44	14.5	9.6	375	2.17	5.3	1.4	<.1	8.7	85	0.11	0.84	0.24	53	0.34	0.026	22.4
156-001-180um	0.49	25.98	16.38	64.7	104	25.9	15.1	733	3.03	2.8	1.5	<.1	10	98	0.13	0.55	0.24	68	0.49	0.056	29.4
RE 156-001-180um	0.45	25.12	17.1	62.7	65	24.9	16.1	746	3.03	2.1	1.5	<.1	9.8	107	0.09	0.51	0.24	67	0.48	0.056	30.6
158-001-180um	0.34	22.35	15.94	57.1	<20	24.2	14.8	827	3.05	4.3	1.2	<.1	8.8	105	0.1	0.43	0.23	71	0.59	0.049	24.8
159-002-75um	0.47	19.4	15.23	51	69	15.5	12.3	583	3.14	2.6	1.6	<.1	9.3	94	0.05	0.37	0.21	83	0.29	0.026	25.7
164-001-75um	2.07	45.92	7.09	76.4	57	49.6	46.7	1650	9.03	1.1	1.4	<.1	7.6	1225	0.25	0.06	<.04	161	5.11	0.291	53.7
157-002-75um	0.88	27.34	16.32	68.4	36	27.6	14.5	542	4.03	5.2	2.4	<.1	10.3	159	0.1	0.68	0.28	93	0.85	0.041	26.1
161-002-180um	0.41	19.2	11.45	55.6	<20	16.7	9.6	333	2.63	5.2	1.1	<.1	7.2	144	0.07	0.42	0.19	82	0.97	0.038	21.3
155-001-75um	0.44	31.24	15.49	61.9	70	29.3	13.3	513	3.06	4.1	1.4	<.1	10.3	104	0.1	0.75	0.24	74	0.53	0.058	30.2
151-002-180um	0.5	19.42	12.98	52.8	38	23.3	11.4	393	3.27	2.2	1.1	<.1	8.6	76	0.05	0.47	0.19	70	0.25	0.021	24.6
132-002-75um	0.6	26.94	19.13	84.7	<20	27.3	13.4	427	4.55	7.4	1.5	<.1	11.4	171	0.06	0.57	0.3	122	1.51	0.032	31.9
162-001-180um	0.37	18.46	13.58	52.6	<20	21.1	11.7	514	2.91	3.3	1.1	<.1	7.9	90	0.08	0.46	0.21	69	0.39	0.034	22.2
136-001-180um	0.33	13.55	10.32	40.7	<20	10.7	7.5	289	2.25	2.9	1.2	<.1	7.1	118	0.07	0.31	0.14	66	0.42	0.023	18.8
140-002-75um	0.49	22.99	14.27	71.5	28	21.8	12.8	437	3.25	4.7	1.5	<.1	10.9	119	0.09	0.43	0.21	86	0.67	0.071	31.2
154-001-180um	0.28	15.32	10.69	22.8	21	9.7	6.6	284	1.6	2.5	0.8	<.1	7.5	38	0.03	0.39	0.16	46	0.09	0.027	19
149-002-75um	0.38	25.43	11.32	66.6	20	24.3	9.9	355	3.96	6.2	1	<.1	7	89	0.06	0.42	0.16	99	0.95	0.025	21.1
134-001-75um	0.38	24.27	16.25	61.6	45	20.6	11	444	3.1	5.5	1.8	<.1	14.8	101	0.07	0.62	0.26	83	0.31	0.042	35.6
143-002-180um	0.71	31.68	21.7	89.6	65	26.1	13.3	510	4.45	7.9	1.9	<.1	12.4	112	0.09	0.5	0.38	109	0.43	0.035	34.1
157-002-180um	0.86	27.01	16.18	68.5	55	27.1	14.1	511	3.95	5.4	2.3	<.1	9.6	167	0.15	0.68	0.25	100	1.02	0.043	26.4
160-001-180um	0.58	19.7	10.81	48.9	35	14.1	6.2	214	2.83	3.8	0.9	<.1	6.3	48	0.08	0.35	0.17	73	0.09	0.039	17.7

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
156-002-75um	0.44	24.13	15.04	66.8	115	21.9	11.3	521	3.3	3.3	1.5	<.1	10	115	0.11	0.53	0.21	75	0.52	0.031	29.4
135-001-75um	0.43	18.52	14.23	63.6	<20	16	9.5	385	3.04	4.9	1.2	<.1	9.8	117	0.09	0.39	0.2	83	0.38	0.032	26
151-001-75um	0.64	24.32	16.29	71.5	54	27.5	12.1	969	4.02	6.2	1.6	<.1	10.8	75	0.07	0.5	0.24	100	0.32	0.029	27.7
153-002-75um	0.62	26.59	17.66	65	50	27.7	13.6	563	3.55	5.4	1.3	<.1	10.3	98	0.08	0.64	0.26	83	0.42	0.027	27.2
138-001-75um	0.51	21.29	16.25	70	31	17.2	11.2	479	3.11	5.7	1.6	<.1	9.2	118	0.16	0.39	0.24	93	0.45	0.046	23.6
126-001-180um	0.35	14.72	9.9	38.7	27	11.2	4.5	123	1.96	3.1	0.6	<.1	4.8	50	0.05	0.32	0.14	60	0.11	0.032	12.4
147-001-75um	0.31	17.29	11.51	44.5	46	17.5	9.4	439	2.37	4.2	1.1	<.1	8.5	87	0.07	0.41	0.18	68	0.4	0.021	21.3
161-002-75um	0.65	24.23	15.98	79.2	39	20.9	12.3	479	3.76	7.6	1.2	<.1	8.9	198	0.12	0.37	0.22	122	1.64	0.046	25.5
144-001-180um	0.38	14.27	8.59	35.9	42	12.2	4.5	241	1.85	3.4	0.7	<.1	5.5	44	0.06	0.3	0.14	52	0.17	0.022	14
129-001-180um	0.56	22.01	16.21	60.5	26	17.8	9.9	412	3.24	6.4	1.2	<.1	8.1	96	0.07	0.42	0.23	92	0.31	0.032	21.4
STANDARD DST6	12.84	129.04	36.07	172.8	347	30.9	14.3	966	4.08	25.1	7.6	<.1	7.1	314	5.65	5.4	4.85	112	2.29	0.098	26
152-001-75um	0.5	19.89	15.68	41.9	49	16.7	7.2	300	2.78	4.1	1.4	<.1	11.1	57	0.05	0.66	0.31	65	0.17	0.039	26.8
158-001-75um	0.41	22.68	15.88	58.2	28	22.1	11.1	691	2.97	3.5	1.2	<.1	8.6	109	0.1	0.51	0.27	65	0.59	0.046	23.7
154-002-180um	0.36	17.51	13.88	34.2	35	16.1	9.1	282	2.38	3.2	0.9	<.1	8.7	67	0.04	0.51	0.22	55	0.25	0.017	21.1
162-002-75um	1.73	24.57	18.06	65.3	<20	30.2	20.2	906	3.7	4.3	2.4	<.1	9.3	156	0.1	0.5	0.28	86	0.99	0.042	26.4
160-001-75um	0.81	23.07	17.11	57.9	35	17.5	8	326	3.25	5.3	1.3	<.1	9.6	65	0.08	0.41	0.26	79	0.13	0.045	24.5
145-001-75um	0.41	21.69	15.01	58.6	37	24.9	12.6	601	3.49	4.7	1.2	<.1	8.5	105	0.08	0.48	0.23	74	0.46	0.039	24.2
162-002-180um	1.33	24.64	15.91	62.1	27	28.7	16.8	690	3.35	4	2.2	<.1	8.4	135	0.1	0.5	0.23	81	0.93	0.042	24.9
164-002-75um	0.56	25.46	17.08	61.9	103	22.8	11.3	541	3.29	3	1.4	<.1	10.2	118	0.09	0.57	0.25	79	0.52	0.03	27.9
130-001-75um	0.42	18.63	14.85	52.1	<20	14.3	8.3	393	2.81	3.9	1.3	<.1	9.4	89	0.09	0.41	0.21	66	0.29	0.05	22.7
163-001-180um	0.4	28.68	15.67	59.9	59	27.6	11.5	545	3.06	4.9	1.1	<.1	8.9	102	0.11	0.62	0.22	69	0.53	0.049	25.2
158-002-180um	0.56	23.97	15.33	64.1	38	25.6	15.3	924	3.22	5.3	1.2	<.1	8.1	124	0.09	0.44	0.21	75	0.57	0.04	22.9
161-001-75um	0.44	18.67	14.14	57.3	30	15.7	8.8	377	3.03	5.6	1.2	<.1	9.7	115	0.08	0.37	0.2	75	0.37	0.029	24.3
162-001-75um	0.44	22.42	15.74	62.5	<20	24	12.9	601	3.49	4.4	1.3	<.1	9.3	104	0.1	0.46	0.23	78	0.46	0.038	24.7
128-001-180um	0.29	15.71	11.07	41.2	28	12.7	6.1	219	2.2	3.2	0.7	<.1	5.5	67	0.07	0.33	0.14	53	0.26	0.032	15.9
133-002-75um	0.41	19.77	14.41	52	33	16.2	9	404	2.71	5.8	1.4	<.1	9.1	102	0.06	0.54	0.21	64	0.41	0.031	24.1
139-002-180um	0.32	17.78	12.49	46.8	<20	13.6	6	221	2.44	8.8	0.8	<.1	6.8	78	0.07	0.44	0.16	79	0.83	0.022	18.6
135-001-180um	0.28	12.54	10	39.2	38	10.1	5.3	221	1.86	3	0.7	<.1	5.9	77	0.05	0.33	0.14	48	0.21	0.021	14.8
RE 135-001-180um	0.29	12.33	9.59	36.7	32	8.6	5.2	224	1.88	4.1	0.7	<.1	5.2	72	0.05	0.31	0.16	52	0.22	0.02	13.3
164-002-180um	0.6	26.76	18.04	69.3	104	23.7	11.8	538	3.39	3.9	1.3	<.1	10	130	0.05	0.56	0.22	79	0.52	0.034	29.7
139-001-180um	0.22	11.63	10.4	23	21	7.4	6	237	1.32	4	0.8	<.1	6.3	54	0.05	0.29	0.14	39	0.1	0.02	17
137-001-180um	0.32	14.15	9.74	41.3	36	9.8	7.2	304	2.06	4	0.8	<.1	5.7	100	0.06	0.27	0.11	54	0.34	0.023	16.2
145-002-75um	1.62	27.58	17.89	75.9	26	33.3	22.5	913	3.86	4.6	2.5	<.1	10.1	156	0.12	0.49	0.26	97	0.97	0.046	27.9
128-002-75um	0.46	29.44	17.1	84.3	<20	25.3	13.4	462	4.57	9.8	1.7	<.1	9.7	132	0.09	0.47	0.25	158	0.84	0.036	26.3

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
133-002-180um	0.39	18.31	15.35	48.7	<20	15.5	8.8	405	2.57	5	1.2	<.1	8.6	92	0.06	0.58	0.21	64	0.37	0.027	22.3
131-001-180um	0.37	15.09	11.45	36.6	32	11.7	5.7	233	2.15	4.3	0.9	<.1	6.7	58	0.07	0.42	0.2	60	0.14	0.032	16.7
130-002-75um	0.55	32.43	17.6	83.3	<20	27.1	12.9	474	4.48	7.6	1.3	<.1	10.3	141	0.11	0.49	0.25	103	0.87	0.036	30.2
STANDARD DST6	12.68	127.31	37.72	170.8	304	30.4	14	964	4.08	23.2	7.8	<.1	7.1	304	5.53	5.47	4.92	112	2.29	0.092	25.8

From ACME ANALYTIC FORMAT
To Geoscience Australia
Acme file # A604528 Pa
Analysis: GROUP 1T-MS

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
120-002-180um	29	0.57	376	0.389	5.86	0.156	1.03	0.9	69.8	1.6	1	11	<.04
122-002-180um	30	0.44	403	0.41	4.82	0.176	0.92	0.9	66.1	1.6	1	9	<.04
120-001-75um	31	0.35	290	0.466	4.85	0.254	1.22	1	83.8	1.6	1	9.6	<.04
116-002-75um	44	0.33	316	0.581	6.72	0.189	1.23	1.3	98.5	2.2	2	13.1	<.04
123-001-75um	35	0.22	283	0.535	4.8	0.193	0.71	0.9	83.2	1.4	1	7.7	<.04
124-002-180um	41	0.52	248	0.466	6.43	0.218	0.91	0.8	74.6	1.6	1	9.8	<.04
120-001-180um	19	0.23	430	0.309	3.17	0.153	0.64	0.5	55.2	0.9	1	4.8	<.04
121-002-180um	24	0.56	435	0.397	4.35	0.239	0.96	0.7	62.8	1.3	1	7.3	0.07
115-002-75um	41	0.26	262	0.666	6.09	0.159	0.81	1.2	101.1	1.8	1	10.3	<.04
118-001-180um	40	0.26	238	0.568	5.43	0.203	1.06	1	95.5	1.8	1	10.4	<.04
121-002-75um	40	0.86	444	0.55	6.62	0.347	1.51	1.3	95.9	2.1	1	12.8	0.1
125-002-75um	40	0.2	207	0.608	5.48	0.13	0.94	1.1	95.8	1.8	1	10.6	<.04
124-001-180um	47	0.28	248	0.515	5.15	0.156	0.81	0.8	77.7	1.4	1	8.5	<.04
122-001-75um	34	0.36	277	0.588	5.51	0.204	1.02	0.9	86.4	1.4	1	9.9	<.04
123-002-75um	48	0.43	282	0.698	8.1	0.168	1.01	1.3	106.3	2.1	2	14.6	<.04
110-001-75um	32	0.26	212	0.623	4.23	0.2	0.87	0.9	82.7	1.4	1	9.2	<.04
117-001-180um	30	0.16	266	0.358	3.42	0.113	0.59	0.6	55.4	1.1	1	5.9	<.04
119-001-75um	43	0.57	284	0.61	7.98	0.173	1.18	0.8	95.2	1.9	1	13.2	<.04
125-001-75um	48	0.25	249	0.695	6.69	0.172	0.98	1.1	109.1	2	2	12.5	<.04
120-002-75um	47	0.79	361	0.605	8.2	0.21	1.37	1.1	93.6	2.3	1	16.7	<.04
122-001-180um	19	0.2	280	0.383	3.19	0.123	0.69	0.6	51.1	0.9	1	5.5	<.04
119-001-180um	37	0.45	370	0.47	6.27	0.131	1.02	0.7	71.2	1.6	1	11.2	<.04
113-001-180um	32	0.42	318	0.564	4.85	0.204	0.78	0.7	70.4	1.3	1	7.6	<.04
124-001-75um	47	0.36	292	0.657	6.54	0.228	1.13	1	93	2	2	13.1	<.04
123-001-180um	20	0.12	293	0.365	2.94	0.103	0.56	0.7	46.3	1.1	1	5.1	<.04
119-002-180um	37	0.65	493	0.45	6.41	0.161	0.92	0.7	76.2	1.5	2	11	<.04
117-001-75um	34	0.22	255	0.508	4.47	0.205	0.83	0.9	84.2	1.3	1	7.9	<.04
RE 117-001-75um	32	0.22	257	0.523	4.58	0.205	0.94	0.9	84.6	1.5	1	8.4	<.04
116-002-180um	37	0.27	265	0.487	5.62	0.139	0.85	0.9	81.4	1.5	1	9	<.04
117-002-75um	30	0.13	239	0.489	3.18	0.242	0.81	0.8	73.8	1.2	1	5.5	<.04

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
112-002-180um	32	0.43	282	0.432	4.58	0.125	0.68	0.7	66.7	1.1	1	7.6	<.04
118-002-180um	36	0.39	275	0.465	5.81	0.164	0.78	0.7	79.1	1.4	1	9.8	<.04
125-002-180um	33	0.15	188	0.447	4.45	0.084	0.65	0.8	69.7	1.4	1	8.1	<.04
122-002-75um	44	0.7	462	0.605	7.28	0.282	1.09	1	100.2	1.9	1	13.4	<.04
STANDARD DST6	232	1.03	688	0.439	7	1.629	1.38	7.6	56.1	6.3	3	11.8	<.04
115-001-180um	21	0.17	277	0.433	3.67	0.103	0.6	0.8	68.9	1.2	1	5.9	<.04
114-001-75um	33	0.6	459	0.434	5.17	0.135	0.88	0.9	81.1	1.6	1	8.5	<.04
123-002-180um	36	0.3	300	0.474	5.66	0.118	0.78	0.8	76.4	1.4	1	8.8	<.04
109-002-180um	35	0.22	275	0.533	4.59	0.227	0.84	1	91.2	1.4	1	7.9	<.04
111-001-75um	44	0.38	304	0.524	5.89	0.209	0.82	1	102.4	1.8	1	11	<.04
110-002-75um	46	0.71	322	0.527	7.85	0.511	1.06	1.1	104.3	2.2	2	13.3	0.4
111-002-75um	47	0.46	330	0.574	6.82	0.286	0.93	1	108.3	2	2	12.2	<.04
115-001-75um	34	0.2	262	0.593	4.91	0.151	0.76	0.9	95.9	1.9	1	7.9	<.04
107-002-180um	24	0.27	413	0.457	4.05	0.182	0.71	0.9	83.2	1.1	1	6.9	<.04
112-001-180um	29	0.33	221	0.392	4.24	0.1	0.78	0.7	65.1	1.1	<1	7.2	<.04
118-002-75um	48	0.45	290	0.53	7.03	0.206	1.07	1.1	108.4	2	1	12.3	<.04
116-001-180um	35	0.22	266	0.409	5.07	0.138	0.86	0.9	76.3	1.7	1	7.8	<.04
109-001-180um	30	0.21	295	0.491	3.79	0.192	0.76	0.9	80.4	1.1	1	6.5	<.04
117-002-180um	21	0.13	260	0.291	2.55	0.133	0.52	0.7	52.4	0.9	1	3.8	<.04
119-002-75um	50	0.73	489	0.483	7.75	0.168	1.16	1	104	2	2	13.2	<.04
106-001-75um	49	0.47	314	0.665	6.36	0.302	0.93	0.9	116.2	1.9	2	9.8	<.04
121-001-180um	40	0.59	378	0.402	5.67	0.162	1.26	0.7	77.4	1.5	1	9.8	<.04
108-001-75um	39	0.29	315	0.61	4.44	0.298	0.92	0.9	98.1	1.4	2	6.8	<.04
105-001-180um	50	0.52	368	0.512	5.46	0.31	1	1.1	105.4	1.7	2	10.3	<.04
107-001-75um	36	0.17	286	0.538	3.01	0.211	0.71	0.8	93	1.2	1	6.2	<.04
105-002-75um	57	0.63	373	0.582	6.32	0.546	1.1	1.1	117.1	2.3	2	12.1	<.04
102-002-180um	45	0.61	367	0.547	6.09	0.663	1.24	1.1	101.5	1.9	2	10.6	<.04
103-002-75um	57	0.56	334	0.629	6.4	1.008	1.23	1.4	106.8	2.2	2	10.6	<.04
106-002-180um	47	0.45	332	0.61	6.08	0.353	0.94	0.9	113.7	1.7	1	10.4	<.04
111-001-180um	41	0.39	285	0.502	5.94	0.177	0.81	0.8	96.6	1.5	1	9.6	<.04
104-001-180um	33	0.54	378	0.472	4.78	0.202	0.85	0.8	85.9	1.3	1	7.6	<.04
101-002-75um	57	0.5	496	0.697	6.58	0.382	0.95	1.3	141.4	1.9	1	10.8	<.04
113-002-180um	38	0.43	306	0.454	5.36	0.262	0.84	0.9	84	1.7	1	9	<.04
106-001-180um	56	0.49	352	0.638	6.66	0.295	0.97	1.1	132.9	2.1	2	11.1	<.04

Appendix 5.3

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
115-002-180um	29	0.21	279	0.429	4.45	0.111	0.62	0.9	72.7	1.4	1	7	<.04
RE 115-002-180um	32	0.21	284	0.449	4.5	0.114	0.62	0.9	75.6	1.6	1	7.5	<.04
114-002-75um	58	0.62	288	0.593	7.8	0.115	0.87	1.2	111.5	2.3	1	10.7	<.04
113-001-75um	48	0.6	416	0.577	6.75	0.271	1.08	1.1	114.8	2	1	12.1	<.04
107-001-180um	20	0.13	249	0.388	2.3	0.156	0.63	0.5	58.4	0.9	<1	4.1	<.04
STANDARD DST6	229	0.99	700	0.404	6.98	1.629	1.36	7.6	57.3	6.4	4	12.1	<.04
104-002-75um	47	0.77	505	0.633	6.44	0.532	1.02	1.1	132.8	2.2	2	10.2	<.04
109-001-75um	42	0.26	330	0.742	5.09	0.242	0.99	1.4	130.6	1.8	2	8.7	<.04
113-002-75um	43	0.62	411	0.639	7.62	0.373	1.18	1.2	118.9	2.4	1	11.9	<.04
111-002-180um	37	0.41	312	0.577	6.39	0.26	0.92	1	103.9	1.8	2	9.7	<.04
104-001-75um	45	0.63	476	0.62	5.58	0.238	1.06	1.1	121.6	1.6	1	9	<.04
105-002-180um	41	0.57	383	0.572	5.8	0.498	1.1	1.2	108.1	2.1	1	9.6	<.04
108-001-180um	26	0.23	327	0.457	3.56	0.243	0.97	0.8	85	1.2	<1	5.5	<.04
114-001-180um	22	0.48	418	0.355	4.23	0.095	0.79	0.7	66.2	1.3	1	6.1	<.04
124-002-75um	46	0.69	287	0.589	8.41	0.305	1.28	1.2	116.2	2.3	2	13.3	<.04
107-002-75um	38	0.39	483	0.682	5.66	0.226	0.91	1.2	114.9	1.6	1	8.8	<.04
110-001-180um	22	0.22	218	0.445	3.58	0.138	0.72	0.9	77	1.3	1	6.1	<.04
103-002-180um	52	0.58	437	0.692	6.51	1.019	1.39	1.5	120.3	2.4	1	10.6	<.04
108-002-180um	28	0.34	392	0.565	4.66	0.313	1.01	0.9	102.2	1.3	1	7.1	<.04
103-001-180um	58	0.55	425	0.677	6.2	0.721	1.44	1.5	118.9	2.4	1	9.8	<.04
112-002-75um	43	0.58	321	0.527	6.58	0.173	1.1	0.9	103	2	2	11.1	<.04
116-001-75um	45	0.28	328	0.601	6.28	0.209	1.18	1.1	112.5	2	2	10.7	<.04
102-001-180um	46	0.51	360	0.556	5.73	0.435	1.39	1.1	99.9	2.2	1	8.9	<.04
106-002-75um	47	0.47	399	0.746	6.48	0.375	1.04	1	141.3	1.8	1	10.3	<.04
121-001-75um	45	0.74	368	0.58	7.35	0.221	1.73	0.9	105.7	1.8	2	11.1	<.04
105-001-75um	48	0.54	337	0.64	5.83	0.34	1.17	1	116	1.9	2	9.8	<.04
RE 105-001-75um	57	0.55	367	0.645	5.7	0.335	1.2	1.3	121.4	2.1	2	10.8	<.04
118-001-75um	37	0.21	240	0.429	4.07	0.128	0.75	0.7	79.2	1.3	2	6.7	<.04
110-002-180um	39	0.62	269	0.488	6.99	0.437	0.98	1	102.9	1.6	1	10.8	0.37
108-002-75um	50	0.46	428	0.747	5.76	0.339	1.03	1.1	133.6	1.7	1	9.2	<.04
102-002-75um	57	0.68	351	0.636	6.7	0.696	1.32	1.3	115.3	2.1	2	11.1	<.04
103-001-75um	56	0.51	346	0.658	5.85	0.74	1.39	1.4	108.9	2.2	2	9.5	<.04
104-002-180um	40	0.65	400	0.53	5.4	0.459	0.87	0.8	96.7	1.6	1	8.3	<.04
114-002-180um	44	0.46	277	0.466	5.75	0.081	0.75	0.9	83.4	1.8	1	7.8	<.04

Appendix 5.3

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
112-001-75um	42	0.43	263	0.507	5.59	0.14	1.02	0.8	97.5	1.5	1	9.5	<.04
102-001-75um	54	0.59	324	0.591	6.06	0.443	1.25	1.2	108.3	2	1	9.6	<.04
125-001-180um	37	0.19	192	0.425	4.8	0.087	0.73	0.8	78.5	1.5	1	7.9	<.04
101-001-75um	57	0.43	370	0.7	6.23	0.238	1.1	1.4	146	1.9	2	11.7	<.04
109-002-75um	54	0.31	310	0.789	6.13	0.273	1.04	1.5	139.9	2	1	11	<.04
101-001-180um	39	0.36	325	0.562	5.11	0.2	0.93	1	109.5	1.6	1	8.8	<.04
STANDARD DST6	205	0.99	688	0.439	6.96	1.629	1.39	7.6	56.4	6.4	3	11	<.04
101-002-180um	40	0.42	372	0.613	5.62	0.337	0.86	1.1	118.6	1.6	2	9.7	<.04
149-001-180um	36	0.16	225	0.371	3.39	0.12	0.72	0.6	58.9	1.2	1	4.9	<.04
148-002-180um	27	0.76	199	0.302	4.24	0.118	0.85	0.6	60.5	1.3	1	6.7	<.04
128-001-75um	38	0.39	322	0.501	5.6	0.317	1.11	0.9	96.7	1.8	1	9.2	<.04
130-002-180um	49	0.76	347	0.456	6.67	0.176	1.04	1	98.4	2	2	12.1	<.04
148-001-75um	72	0.37	277	0.56	6.33	0.236	1.18	1.1	112.6	2.1	2	11.9	<.04
127-002-180um	33	0.48	311	0.357	4.37	0.131	0.59	1	75.4	1.2	2	7.7	<.04
144-002-75um	51	0.52	278	0.53	7.15	0.244	1.3	1.2	111.4	2	2	12	<.04
161-001-180um	16	0.23	233	0.285	2.79	0.191	0.6	0.6	55.3	1.1	1	4.6	<.04
140-001-180um	15	0.21	239	0.225	2.5	0.19	0.6	0.4	45.3	0.8	1	3.9	<.04
150-001-75um	47	0.24	271	0.575	5.81	0.188	1	1.2	103.9	1.8	2	10	<.04
141-001-180um	38	0.23	283	0.3	3.34	0.284	0.92	0.7	63.2	1.3	2	6	<.04
153-002-180um	62	0.53	396	0.494	6.15	0.339	1.19	1.2	102.7	2.4	2	11.9	<.04
159-001-180um	26	0.14	287	0.48	3.62	0.105	0.57	0.8	77.2	1.3	1	6.4	<.04
163-002-75um	89	3.07	1186	1.716	9.1	3.196	1.9	53.4	169.5	1.6	2	13.5	0.07
158-002-75um	56	0.62	395	0.652	6.19	0.55	1.06	1.3	123.2	2.1	1	11.3	<.04
154-002-75um	42	0.32	363	0.544	5.01	0.168	0.9	1	91.2	2	1	8.6	<.04
RE 154-002-75um	46	0.32	334	0.549	5.09	0.17	0.91	1.1	91.7	1.8	2	8.8	<.04
156-001-75um	53	0.38	353	0.608	5.32	0.378	1.1	1.4	128.6	2.2	2	10.5	<.04
136-002-75um	48	0.48	457	0.58	5.77	0.481	0.89	1	105.1	1.5	1	9.8	<.04
126-002-180um	35	0.39	320	0.43	5.51	0.281	0.88	0.8	77.2	1.5	1	8.6	<.04
143-001-180um	36	0.56	399	0.45	5.28	0.4	1.29	1.2	96.4	2.3	1	9.5	<.04
141-002-75um	45	0.38	367	0.555	5.35	0.371	1.34	1.1	126.1	2	1	10.2	<.04
159-002-180um	33	0.18	260	0.491	4.45	0.11	0.58	0.8	75.9	1.4	1	6.6	<.04
152-002-180um	34	0.17	234	0.41	3.52	0.108	0.76	0.9	67.2	1.4	2	6	<.04
129-002-180um	33	0.33	302	0.426	4.74	0.34	0.76	0.8	73.8	1.2	1	8.1	<.04
130-001-180um	29	0.24	273	0.381	3.73	0.21	0.8	0.8	71.2	1.2	1	6.2	<.04

Appendix 5.3

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
149-002-180um	31	0.35	244	0.359	4.32	0.134	0.84	0.5	62.8	1.3	1	7	<.04
127-001-180um	34	0.41	391	0.383	3.94	0.119	0.59	0.8	76.4	1.3	1	7.4	<.04
141-002-180um	25	0.22	249	0.34	3.06	0.197	0.75	0.5	64.6	1.1	1	5.3	<.04
157-001-180um	65	0.53	383	0.744	7.02	0.58	1.19	1.5	132.3	2.3	1	12.8	<.04
141-001-75um	38	0.31	363	0.426	4.37	0.41	1.25	0.8	98	1.5	1	8	<.04
153-001-180um	58	0.44	373	0.492	5.63	0.196	1.17	1.2	107.2	2	2	10.9	<.04
154-001-75um	39	0.14	254	0.525	3	0.154	0.79	0.8	82.4	1.2	1	5.2	<.04
STANDARD DST6	210	0.99	691	0.439	6.96	1.626	1.35	8	60.1	6.4	4	11	<.04
136-001-75um	36	0.31	357	0.403	3.67	0.398	0.67	0.6	63.1	1	1	5.6	<.04
127-001-75um	44	0.81	348	0.6	6.75	0.194	0.97	1	110.7	1.8	1	11.4	<.04
147-002-75um	48	0.46	384	0.606	4.93	0.671	0.96	1.2	95.4	1.7	1	8.7	0.04
134-002-75um	51	0.83	792	0.552	7.48	0.484	1.5	1.4	109.7	3	3	13.3	0.04
129-002-75um	46	0.55	308	0.607	7.64	0.556	1.17	1.3	108.6	2.2	1	12.3	<.04
153-001-75um	60	0.45	395	0.517	5.78	0.21	1.22	1.1	98.7	2.3	1	10.9	<.04
140-002-180um	20	0.44	242	0.309	3.48	0.282	0.85	0.5	53.6	1.1	1	5.3	<.04
146-001-180um	22	0.19	242	0.35	3.17	0.215	0.85	0.7	54.4	1	1	4.7	<.04
RE 146-001-180um	26	0.2	258	0.366	3.27	0.219	0.87	0.8	55.3	1.2	1	5.2	<.04
142-001-180um	34	0.43	269	0.37	5.09	0.222	1.01	0.7	71.9	1.7	1	7.6	<.04
148-001-180um	34	0.23	202	0.375	4.33	0.134	0.84	0.7	63.3	1.3	1	6.9	<.04
139-001-75um	43	0.34	351	0.693	5.07	0.345	1.2	1.3	130.5	2	2	9.3	<.04
128-002-180um	33	0.54	313	0.437	5.52	0.519	1.04	0.8	69	1.3	1	8.6	0.07
144-002-180um	32	0.3	191	0.348	4.29	0.171	0.83	0.6	62.6	1.3	1	7	<.04
155-002-75um	71	0.69	396	0.577	7.66	0.597	1.42	1.6	103.6	2.9	2	13.9	0.23
160-002-75um	38	0.22	238	0.574	5.38	0.134	0.84	1.1	95.7	1.6	1	9.4	<.04
137-002-75um	39	0.57	561	0.524	6.24	0.493	0.93	1.1	102.8	1.7	2	10.3	<.04
137-002-180um	27	0.42	466	0.411	4.64	0.407	0.75	0.7	71.8	1.3	1	7.8	<.04
145-002-180um	41	0.69	343	0.531	6.13	0.96	1.01	1.3	105.6	2.2	1	11.1	0.68
132-001-75um	36	0.38	346	0.46	5.1	0.306	1.12	0.8	87.6	1.8	1	8.8	<.04
163-001-75um	61	0.49	368	0.498	5.36	0.341	1.25	1.4	91.1	2.2	1	10.7	<.04
150-001-180um	34	0.21	216	0.38	4.29	0.117	0.76	0.8	65.3	1.5	<1	6.6	<.04
131-002-75um	46	0.47	414	0.605	7.61	0.22	1.27	1.3	110.4	2.5	2	12.3	<.04
135-002-180um	31	0.57	472	0.431	5.34	0.442	0.86	1	81	1.7	1	9.2	0.2
151-001-180um	45	0.35	252	0.456	5.56	0.129	0.92	1	77.5	1.5	2	9.6	<.04
142-001-75um	61	0.63	401	0.584	7.42	0.326	1.45	1.3	120.3	2.7	1	14	<.04

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
151-002-75um	46	0.73	473	0.557	7.53	0.357	1.17	1.2	95.2	2.2	1	13.4	<.04
148-002-75um	30	1.03	206	0.392	5.24	0.157	0.92	0.8	72	1.2	1	8.4	<.04
132-001-180um	27	0.26	282	0.331	3.82	0.203	0.8	0.6	54.7	1.3	1	5.8	<.04
134-002-180um	37	0.53	560	0.399	5.1	0.372	1	1.1	75.7	2	1	9.9	<.04
160-002-180um	37	0.17	180	0.404	4.28	0.078	0.63	0.7	70.1	1.5	1	6.5	<.04
140-001-75um	28	0.37	327	0.383	4.02	0.379	1.06	0.6	76.4	1.2	<1	6.1	<.04
157-001-75um	66	0.53	399	0.682	6.72	0.6	1.23	1.3	118.5	2.4	2	11.9	<.04
156-002-180um	61	0.47	331	0.642	6.21	0.518	1.13	1.3	118.1	2.2	2	10.7	<.04
STANDARD DST6	230	0.99	707	0.44	6.98	1.63	1.36	7.7	56.4	6.5	4	11.1	<.04
147-002-180um	37	0.38	338	0.45	4.03	0.547	0.87	0.9	85.4	1.3	1	6.1	0.06
152-001-180um	31	0.19	226	0.339	3.95	0.106	0.83	0.8	66.9	1.7	1	5.9	<.04
155-002-180um	70	0.68	448	0.53	7.63	0.593	1.45	1.7	112.3	3	2	13.2	0.35
131-001-75um	33	0.31	293	0.395	4.57	0.29	1.07	0.9	87.8	1.6	1	6.8	<.04
143-002-75um	61	0.99	396	0.507	8.85	0.327	2.05	1.6	131.9	3.2	2	14.8	<.04
144-001-75um	37	0.32	246	0.464	4.86	0.308	1.13	0.8	91.6	1.5	1	7	<.04
138-002-75um	47	0.61	434	0.486	6.64	0.429	1.25	1.3	103	2.1	2	9.9	<.04
138-002-180um	41	0.53	383	0.416	5.93	0.386	1.16	1.1	90.7	1.9	1	9.7	<.04
138-001-180um	40	0.55	344	0.424	6.04	0.386	1.31	1.2	94.4	2.1	1	10.2	<.04
126-002-75um	53	0.64	328	0.56	8.58	0.426	1.28	0.9	112.1	2.4	2	12.8	<.04
145-001-180um	43	0.57	324	0.475	5.35	0.386	0.97	1.2	93.8	1.7	1	8.6	<.04
135-002-75um	43	0.74	534	0.483	6.74	0.553	1.12	1.1	110.6	1.9	2	11.5	0.3
127-002-75um	59	0.83	323	0.521	7.23	0.21	0.84	1.4	113.1	1.9	2	11.5	<.04
147-001-180um	33	0.34	299	0.433	3.7	0.379	0.87	0.9	84.7	1.2	1	6	<.04
159-001-75um	32	0.21	257	0.565	4.4	0.15	0.73	0.9	103.7	1.6	1	7.2	<.04
155-001-180um	55	0.5	365	0.434	5.56	0.354	1.42	1.2	96.4	2.1	1	10.2	<.04
133-001-75um	29	0.37	345	0.374	4.29	0.494	1.08	0.8	95.7	1.5	1	6.2	<.04
149-001-75um	41	0.24	242	0.517	4.72	0.207	0.96	0.8	98.1	1.5	1	7.5	<.04
129-001-75um	39	0.41	295	0.42	6.18	0.297	1.09	0.9	93.3	1.8	2	9.4	<.04
139-002-75um	47	0.66	430	0.477	6.46	0.222	1.24	1.1	117.3	1.9	1	10.9	<.04
150-002-180um	35	0.23	230	0.408	5.22	0.1	0.85	0.9	83.6	1.7	1	7.9	<.04
142-002-75um	44	0.35	324	0.419	4.89	0.339	1.12	0.9	107.5	1.8	1	8.2	<.04
RE 142-002-75um	38	0.35	309	0.429	4.96	0.344	1.12	0.9	102.8	1.6	1	8.3	<.04
152-002-75um	36	0.19	257	0.455	4.11	0.169	0.98	0.9	91	1.9	1	7	<.04
136-002-180um	48	0.35	399	0.479	4.41	0.483	0.8	0.7	85.2	1.2	1	6.7	<.04

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
143-001-75um	51	0.73	438	0.491	6.53	0.413	1.79	1.3	132.3	2.5	2	11.5	<.04
150-002-75um	49	0.32	267	0.562	7.09	0.141	1.15	1.2	114.3	2.1	2	11.7	<.04
146-002-180um	36	0.49	302	0.34	4.33	0.202	0.89	0.8	70.6	1.4	1	6.6	<.04
131-002-180um	46	0.37	382	0.452	6.01	0.214	1.21	1.1	109.4	2.5	1	11	<.04
137-001-75um	35	0.33	333	0.451	4.07	0.419	0.87	0.7	97.3	1.2	1	6.7	<.04
142-002-180um	21	0.23	207	0.253	2.74	0.201	0.62	0.5	69.7	1	1	4.3	<.04
126-001-75um	44	0.31	269	0.468	5.91	0.203	1.1	1	107.1	1.8	1	10.2	<.04
164-001-180um	35	0.06	510	0.106	5.3	2.166	2.96	161	88.4	4.6	3	4.8	<.04
134-001-180um	16	0.24	246	0.262	2.91	0.25	0.64	0.6	53	0.9	1	4	<.04
STANDARD DST6	233	1	692	0.401	7.02	1.632	1.39	7.6	59.7	6.1	3	11.1	<.04
146-002-75um	49	0.75	341	0.483	6.14	0.226	1.14	1	98.6	1.9	1	10.2	<.04
163-002-180um	83	0.68	503	0.533	7.74	0.585	1.47	15.4	114.4	2.5	2	14.5	0.33
132-002-180um	59	0.72	588	0.43	7.03	0.403	1.31	1.3	89.3	2.3	2	12.2	0.04
146-001-75um	50	0.32	305	0.561	4.95	0.329	1.25	1.1	111.5	1.9	2	8.7	<.04
133-001-180um	34	0.36	337	0.314	4.19	0.431	1.03	1	71	1.4	2	6.4	<.04
156-001-180um	61	0.4	339	0.539	5.75	0.372	1.13	1.3	109.3	1.9	2	9.8	<.04
RE 156-001-180um	59	0.4	337	0.547	5.7	0.374	1.19	1.2	119.3	2	2	9.9	<.04
158-001-180um	55	0.55	322	0.523	5.58	0.322	1.1	1.2	103	1.9	1	9.8	<.04
159-002-75um	52	0.25	273	0.581	6.14	0.162	0.72	1	94.7	1.7	1	9.4	<.04
164-001-75um	91	2.96	1094	1.554	8.62	3.059	1.82	51.8	154.5	1.5	2	12.7	0.07
157-002-75um	71	0.58	367	0.659	7.04	0.819	1.23	1.5	131.6	2.3	1	12.7	0.28
161-002-180um	34	0.53	461	0.349	4.91	0.407	0.82	0.7	72.2	1.4	2	8.3	0.19
155-001-75um	70	0.5	376	0.463	5.62	0.336	1.36	1.3	92.6	2.2	2	10.2	<.04
151-002-180um	52	0.6	377	0.426	6.27	0.288	0.96	0.9	76.1	1.6	2	9.5	<.04
132-002-75um	68	0.86	629	0.493	8.32	0.474	1.51	1.2	100.7	2.6	2	14.7	0.05
162-001-180um	46	0.54	326	0.478	5.31	0.377	1	0.8	89.7	1.8	1	9.2	<.04
136-001-180um	39	0.33	374	0.455	3.95	0.413	0.75	0.7	84.9	1.2	1	6.3	<.04
140-002-75um	51	0.78	340	0.476	5.93	0.476	1.42	0.9	96.6	1.8	1	9.8	<.04
154-001-180um	36	0.13	234	0.358	2.45	0.113	0.63	0.6	55.5	1	1	4.1	<.04
149-002-75um	54	0.61	237	0.494	7.06	0.2	1.27	0.8	93.8	1.9	1	10.9	<.04
134-001-75um	50	0.47	382	0.509	5.46	0.342	1.31	1.1	111.9	2.2	1	9.7	<.04
143-002-180um	59	0.82	350	0.461	7.68	0.324	1.73	1.3	105.4	2.8	2	13.5	<.04
157-002-180um	68	0.54	415	0.627	6.73	0.767	1.26	1.5	132.8	2.5	1	13	0.43
160-001-180um	43	0.19	179	0.389	4.75	0.08	0.63	0.7	66	1.3	1	7	<.04

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
156-002-75um	62	0.43	286	0.606	6.06	0.524	1.02	1.1	115.9	2.2	1	10.5	<.04
135-001-75um	41	0.46	291	0.446	5.44	0.337	1.11	0.8	91.7	1.6	1	9.5	<.04
151-001-75um	64	0.49	290	0.566	7.8	0.17	1.2	1.1	97.4	2.3	2	12.3	<.04
153-002-75um	69	0.51	358	0.493	6.3	0.371	1.3	1.2	94.3	2.5	2	11.8	<.04
138-001-75um	45	0.54	326	0.446	6.07	0.404	1.42	1.2	90.5	1.9	1	10.5	<.04
126-001-180um	30	0.2	215	0.307	3.9	0.126	0.74	0.5	52.6	1	1	5.5	<.04
147-001-75um	47	0.41	292	0.544	4.58	0.467	0.89	0.8	85	1.2	1	6.7	<.04
161-002-75um	47	0.76	524	0.481	6.97	0.563	1.16	1	100.6	2	1	11.6	0.4
144-001-180um	29	0.2	172	0.272	3.29	0.169	0.73	0.5	47.3	1	1	4.5	<.04
129-001-180um	45	0.45	279	0.43	6.53	0.277	1.15	1	86.6	1.9	1	10.7	<.04
STANDARD DST6	225	1	680	0.397	6.99	1.63	1.39	7.7	59	6.2	3	11.4	<.04
152-001-75um	42	0.25	266	0.519	4.9	0.156	1.05	1.1	84.7	2	1	7.7	<.04
158-001-75um	48	0.53	293	0.592	5.57	0.333	1.15	1.2	108	2	1	9.5	<.04
154-002-180um	35	0.28	288	0.422	4.49	0.121	0.82	0.8	70.3	1.6	1	6.9	<.04
162-002-75um	48	0.76	365	0.588	6.62	1.059	1.24	1.4	117.9	2.4	1	11.9	0.59
160-001-75um	45	0.21	200	0.571	6.01	0.134	1.01	1	99.8	2.1	1	10.4	<.04
145-001-75um	50	0.65	355	0.613	6.23	0.463	1.13	1.1	108.9	2	1	9.8	<.04
162-002-180um	45	0.68	350	0.532	6.14	0.94	1.13	1.1	109.2	2.2	1	10.6	0.63
164-002-75um	55	0.45	283	0.66	6.15	0.52	1.19	1.3	125.5	2.3	2	11	<.04
130-001-75um	38	0.34	285	0.475	4.99	0.31	1.14	0.8	90.1	1.7	2	7.9	<.04
163-001-180um	55	0.5	344	0.473	5.64	0.358	1.4	1.1	82.6	2.1	2	9.6	<.04
158-002-180um	50	0.57	324	0.573	5.67	0.494	1.08	1.1	106.7	2	1	10	<.04
161-001-75um	39	0.47	280	0.5	5.45	0.341	1.07	0.9	92.5	1.7	1	8.7	<.04
162-001-75um	54	0.63	375	0.62	6.14	0.455	1.13	1	106.2	1.9	2	10.1	<.04
128-001-180um	29	0.28	296	0.362	4.23	0.217	0.87	0.7	61.3	1.1	1	6.2	<.04
133-002-75um	40	0.44	341	0.456	4.97	0.451	1.11	1	92.9	1.7	1	7.8	<.04
139-002-180um	30	0.4	361	0.337	4.08	0.169	0.89	0.8	72.6	1.3	1	7.2	<.04
135-001-180um	21	0.27	241	0.336	3.34	0.202	0.73	0.6	58.7	1.1	1	5.6	<.04
RE 135-001-180um	23	0.27	237	0.335	3.29	0.202	0.67	0.6	55.2	0.9	1	5.5	<.04
164-002-180um	56	0.44	312	0.681	6.37	0.508	1.21	1.5	136.8	2.6	2	11.5	<.04
139-001-180um	16	0.16	303	0.321	2.34	0.171	0.62	0.6	54.4	0.9	1	4	<.04
137-001-180um	28	0.31	337	0.373	3.81	0.355	0.72	0.5	63.2	0.9	1	5.6	<.04
145-002-75um	56	0.73	424	0.64	6.68	1.048	1.2	1.3	115.2	2.3	2	12	0.6
128-002-75um	62	0.79	403	0.68	8.39	0.726	1.49	1.2	117.2	2.4	1	14.5	0.1

ELEMENT	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
133-002-180um	36	0.41	343	0.368	4.55	0.374	1.08	0.8	72.6	1.9	1	8	<.04
131-001-180um	30	0.23	260	0.32	3.54	0.195	0.79	0.8	57.3	1.3	1	5.4	<.04
130-002-75um	58	0.94	380	0.548	7.85	0.211	1.31	1.3	104.9	2.2	2	14.2	<.04
STANDARD DST6	228	1	676	0.439	6.99	1.629	1.39	7.7	55.8	6.1	3	11.5	<.04

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TE
To Geoscience Australia PROJECT 2006861
Acme file # A604528 Page 1 (b)   Received: AUG 3 2006 *   264 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML, ANALYSIS BY ICP-MS.

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
120-002-180um	15.6	38.85	4.5	19.1	3.8	1	3.5	0.5	3	0.6	1.7	0.3	1.6	0.2	2.8	19.5	44.7	0.6	5.68	3	14.59
122-002-180um	13.7	37.74	4.1	17.6	3.8	0.9	3	0.5	2.8	0.6	1.6	0.2	1.5	0.2	2.68	22	41.1	0.7	6.78	2.5	11.59
120-001-75um	14.4	42.29	4.5	18.9	3.8	0.8	3.1	0.5	2.7	0.6	1.7	0.2	1.6	0.3	3.42	17.4	41.7	0.7	6.82	2.5	11.4
116-002-75um	17.7	49.95	5.7	22.3	4.8	1.1	3.7	0.6	3.1	0.7	2	0.3	2.1	0.3	3.74	23.9	57.4	0.8	8.32	3.9	15.63
123-001-75um	12	43.24	4.6	19.1	3.9	0.8	2.6	0.4	2.5	0.5	1.3	0.2	1.4	0.2	2.43	18.8	38.6	0.7	6.51	2.6	10.5
124-002-180um	12.2	46.37	4.9	18.9	3.8	0.8	3	0.4	2.4	0.5	1.4	0.2	1.3	0.2	2.55	25.3	50.6	0.5	5.86	3.5	15.58
120-001-180um	9.4	27.24	3.2	13.4	2.8	0.6	2.2	0.3	1.8	0.3	1.1	0.1	0.9	0.1	1.86	12.2	27.5	0.4	4	1.6	7.41
121-002-180um	13.3	39.16	4.4	19.1	3.8	0.9	3.3	0.5	2.7	0.6	1.5	0.2	1.4	0.2	2.17	21.5	41.2	0.6	6.09	2.7	11.09
115-002-75um	16.5	53.02	5.3	22.3	4.4	1	3.9	0.6	3.1	0.7	1.8	0.3	1.9	0.3	3.72	17.8	44.9	0.9	8.96	2.8	14.63
118-001-180um	16.9	48.52	5.3	22.7	4.2	1	3.9	0.6	3.4	0.7	1.8	0.3	1.8	0.3	3.32	18.9	45.5	0.8	7.77	2.9	12.71
121-002-75um	19.5	48.86	5.2	23.5	4.8	1.2	4.4	0.6	3.6	0.7	2.1	0.3	2.1	0.3	3.53	31.4	51.8	0.8	8.49	4	14.88
125-002-75um	13.4	43.62	4.8	20.9	4.1	0.8	3.6	0.5	2.7	0.5	1.6	0.3	1.7	0.3	3.56	18.4	48.9	0.9	8.34	3	13.26
124-001-180um	15.2	45.39	5	20.9	4.2	1	3.7	0.5	2.9	0.6	1.7	0.2	1.6	0.2	2.55	18.3	43.9	0.6	6.72	2.7	11.84
122-001-75um	15.5	52.79	5.3	22.6	4.5	1	3.3	0.5	2.9	0.6	1.6	0.2	1.7	0.2	2.72	25.7	43	0.8	7.02	3	12.04
123-002-75um	18.3	56.72	5.7	25.1	4.7	1.1	3.9	0.6	3.4	0.7	1.9	0.3	1.9	0.3	3.62	30.3	53.8	0.9	8.7	4.3	17.5
110-001-75um	16.8	50.43	5.1	22.4	4.4	0.9	3.3	0.5	3.3	0.6	1.6	0.2	1.7	0.3	3.18	18.1	38.5	0.8	8.32	2.3	10.36
117-001-180um	10.8	31.26	3.5	14.5	3.3	0.7	2.4	0.4	2	0.4	1.1	0.2	1.1	0.2	2	12.9	30.5	0.4	4.62	1.9	8.42
119-001-75um	17.5	46.78	5	22.6	4.8	1	3.9	0.5	3.2	0.7	2	0.3	1.9	0.3	3.06	28.7	57.4	0.6	6.82	4.1	19.19
125-001-75um	18.6	58.86	6.4	27.3	5.8	1.1	3.8	0.6	3.5	0.7	1.9	0.3	1.7	0.3	3.43	22.1	50.7	0.8	7.83	4.1	15.08
120-002-75um	20.5	51.01	5.5	24.4	5.1	1.1	4	0.6	3.8	0.8	2.2	0.3	2.1	0.3	3.62	28.9	54.9	0.7	7.29	4.2	20.02
122-001-180um	10.7	28.34	3	12.8	2.8	0.7	2.1	0.3	2.1	0.4	1.1	0.2	1	0.2	1.78	15	30.5	0.4	4.81	1.7	7.56
119-001-180um	13.7	39.19	4.2	18.1	3.8	0.7	2.4	0.4	2.6	0.5	1.5	0.2	1.4	0.2	2.4	26.6	43.4	0.5	4.89	3.6	13.46
113-001-180um	13.3	38.46	4	17.9	3.6	0.8	2.7	0.4	2.3	0.5	1.3	0.2	1.4	0.2	2.32	19.6	39.5	0.6	6.3	2.5	11.13
124-001-75um	20.6	60.17	6.3	27.4	5.8	1.2	4.1	0.6	3.6	0.8	2.1	0.3	2.1	0.3	3.17	26.1	52.4	0.8	7.82	4	14.08
123-001-180um	9.2	27.78	2.9	13.2	2.8	0.5	1.9	0.3	1.8	0.4	1	0.1	1.1	0.2	1.88	11.8	27.3	0.5	4.93	1.6	7.65
119-002-180um	15.7	46.85	5	20.8	4.3	0.9	3.3	0.5	2.8	0.6	1.6	0.2	1.5	0.2	2.33	25.7	46.6	0.5	5.24	3.6	15.52
117-001-75um	15.9	42.79	5.1	21.8	4.5	1	3.4	0.5	3.1	0.6	1.7	0.2	1.6	0.2	2.71	15.8	40.8	0.8	6.69	2.3	10.59
RE 117-001-75um	16.5	45.34	5.2	24	4.6	0.9	3.8	0.6	3.1	0.6	1.7	0.2	1.9	0.3	3.15	17	41.8	0.7	6.73	2.5	10.46
116-002-180um	14.7	41.23	4.8	21.2	4.4	0.9	3.4	0.5	3	0.6	1.7	0.2	1.5	0.2	2.69	18.9	45.4	0.6	6.08	2.9	12.47
117-002-75um	11.4	37.28	4	18	3.5	0.7	2.4	0.4	2	0.4	1.2	0.2	1.2	0.2	2.67	14.9	32.4	0.6	6.65	1.7	7.09

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
112-002-180um	10.4	31.58	3.5	16.2	2.9	0.6	2.2	0.3	2	0.4	1	0.2	1.1	0.1	1.99	20.8	32.6	0.5	4.59	2.8	9.51
118-002-180um	13.2	42.72	4.7	20.4	4	0.8	2.9	0.4	2.5	0.5	1.5	0.2	1.3	0.2	2.23	23.9	38.1	0.5	5.07	3.4	12.07
125-002-180um	8.8	29.84	3.4	13.5	2.6	0.5	1.8	0.3	1.5	0.3	1.1	0.2	1	0.2	2.3	18.2	32	0.5	5.28	2.7	9.4
122-002-75um	19.6	56.84	6	26.4	5.4	1.2	4.3	0.6	4.1	0.8	2.2	0.3	2	0.3	3.46	30.1	48.9	0.7	7.54	3.7	16.5
STANDARD DST6	15.6	56.3	5.7	23.7	4.6	1	3.7	0.5	3	0.6	1.6	0.3	1.6	0.2	1.91	24.1	59.9	0.8	8.92	8.4	17.2
115-001-180um	11.6	40.37	4.5	20.2	3.9	0.8	2.6	0.4	2.6	0.5	1.2	0.2	1.2	0.2	1.98	14.7	33.8	0.8	7.03	2	8.86
114-001-75um	11.6	36.57	3.9	16.7	3.3	0.6	2.4	0.4	2.2	0.4	1.3	0.2	1.3	0.2	2.54	20.4	44	0.8	7.37	3	13.43
123-002-180um	14	43.8	4.6	19.9	4.1	0.8	3	0.4	2.6	0.5	1.2	0.2	1.3	0.2	2.3	24	45.4	0.8	7.17	2.8	13.76
109-002-180um	17.4	58.27	6	27.5	5.8	1	4.2	0.5	3.1	0.6	1.7	0.3	1.5	0.3	2.83	16.3	44.2	1.5	11.87	2.4	11.06
111-001-75um	17.8	52.28	5.7	25.5	4.9	1.2	3.7	0.5	3.4	0.7	1.8	0.3	1.7	0.3	3.44	26.6	54.9	1	9.05	3.3	14.52
110-002-75um	19.2	57.77	5.9	26.5	5.4	1.2	3.8	0.6	3.8	0.7	2	0.3	1.8	0.3	3.43	36.1	62.3	1	8.74	4.3	19.46
111-002-75um	19.8	56.57	6.3	27.2	5.2	1.2	4.2	0.6	3.8	0.8	2.2	0.3	2	0.3	3.69	30.2	57.4	1	9.72	3.6	17.32
115-001-75um	15.5	49.94	5.4	23	4.7	0.9	3.2	0.5	2.6	0.6	1.7	0.2	1.7	0.3	3.05	17.8	42.1	1	8.93	2.4	11.13
107-002-180um	19.9	58.28	6	26.6	5.1	1.1	4.8	0.7	3.6	0.8	2	0.3	1.9	0.3	2.93	18.2	38.9	0.8	7.66	2.4	10.28
112-001-180um	10.7	36.61	4.1	17.5	3.4	0.6	2.6	0.4	1.9	0.4	1.2	0.2	1.1	0.2	2.18	20.9	38.5	0.7	5.74	2.2	9.92
118-002-75um	19.6	55.64	6.3	27.3	5.3	1.2	4	0.6	3.6	0.7	2.2	0.3	2.1	0.3	3.46	28.7	64.5	1	8.85	4.1	18.75
116-001-180um	14.7	40.52	4.7	20.5	4	0.9	3.2	0.6	3.3	0.6	1.5	0.3	1.5	0.2	2.57	17.9	46.8	0.7	6.29	2.7	12.48
109-001-180um	15.6	49.21	5.2	23.8	4.8	1.2	3.1	0.6	3.1	0.6	1.7	0.2	1.5	0.3	2.39	14.6	41	1	8.24	2.1	9.29
117-002-180um	7.5	23.67	2.8	11.3	2.3	0.4	1.6	0.3	1.4	0.3	0.7	0.1	0.9	0.1	1.73	13.6	26.5	0.5	4.44	1.5	6.13
119-002-75um	20.4	51.27	5.4	25.2	4.7	1.1	4	0.7	3.5	0.7	1.9	0.3	1.8	0.3	2.88	30.8	59.3	0.8	7.42	4.1	19.07
106-001-75um	18.3	50.87	5.8	25.9	5	1.2	4.2	0.7	3.7	0.7	1.8	0.3	2.1	0.3	3.7	20.6	52.8	1.2	10.92	3	16.05
121-001-180um	16.5	40.03	4.4	21.8	4.5	0.8	3.3	0.4	3.4	0.6	1.6	0.3	1.8	0.2	2.86	27	51.5	0.8	6.72	3.3	14.67
108-001-75um	18.2	55.02	6.3	28.3	5.9	1	4.1	0.7	3.7	0.6	1.8	0.3	2.1	0.3	3.41	19.1	50	1.1	9.58	2.5	11.12
105-001-180um	19.7	50.45	5.6	27	4.9	1.2	4	0.6	4.3	0.7	2.1	0.3	2	0.3	3.63	24.6	70.4	1.3	11.19	3.9	14.17
107-001-75um	18.4	54.3	5.8	26	5.2	1.1	4.4	0.6	4.4	0.6	1.8	0.3	1.9	0.3	2.77	14	39.3	1	9.76	1.8	7.31
105-002-75um	20.7	62.47	6.5	27.2	5.5	1.2	4.2	0.7	3.8	0.8	2.3	0.3	2.3	0.3	3.64	26.2	71.2	1.3	12.14	4.1	15.94
102-002-180um	18.2	51.37	5.3	21.8	4.7	1.1	4	0.6	3.7	0.7	1.9	0.3	1.8	0.3	3.16	21.7	79.6	1.1	10.44	4.2	14.68
103-002-75um	20.7	55.94	6.3	25.7	5.1	1.3	3.9	0.6	4	0.8	1.9	0.3	2.4	0.3	3.52	20.6	85.1	1.3	12.55	5.1	15.08
106-002-180um	18	49.86	5.5	21.7	4.7	1.1	4.2	0.6	3.8	0.7	1.8	0.3	1.8	0.3	3.42	20	53.6	1.1	10.65	3	15.51
111-001-180um	16.3	45.36	5	22.5	4	1.1	3.7	0.5	3.4	0.7	1.6	0.3	1.7	0.2	2.85	25.3	49.2	0.8	7.66	2.9	13.36
104-001-180um	14.3	43.64	5	20.1	4.4	0.9	3.5	0.5	3.1	0.6	1.6	0.2	1.6	0.2	2.71	18	42.4	0.9	7.6	2.5	11.46
101-002-75um	23.2	75.22	8.2	33.8	7.6	1.6	5.6	0.8	5	0.9	2.3	0.4	2.6	0.3	4.19	26.2	60.7	1.3	13.61	3.5	16.81
113-002-180um	14	53.39	5.7	23.9	4.4	0.9	3.4	0.5	3.3	0.5	1.3	0.2	1.4	0.2	2.74	28.5	51.5	0.8	7.53	3.1	13.69
106-001-180um	20.6	55.43	6.6	27.9	5.4	1.3	4.5	0.7	4.1	0.8	2.1	0.3	2.2	0.3	3.83	23.3	61.4	1.2	12.44	3.6	18.81

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
115-002-180um	11.5	37.01	4.4	16.9	3.4	0.7	2.9	0.4	2.6	0.5	1.3	0.2	1.3	0.2	2.17	16.5	37.8	0.7	6.84	2.3	11.54
RE 115-002-180um	12.5	43.12	4.8	20	3.7	0.8	2.8	0.5	2.9	0.5	1.3	0.2	1.4	0.2	2.48	18.4	39.9	0.8	6.95	2.4	11.98
114-002-75um	13.4	38.63	4.3	17.7	3.4	0.7	2.8	0.4	2.7	0.5	1.6	0.2	1.6	0.3	3.7	26	45.3	1.1	9.11	3.3	22.19
113-001-75um	19.1	60.22	7.2	30.7	5.4	1.4	4.8	0.6	4	0.8	1.9	0.2	2.3	0.3	3.78	29.6	59.2	1	9.1	3.9	18.24
107-001-180um	11.8	40.51	4.4	18.4	4	0.9	3.3	0.4	2.6	0.5	1.2	0.2	1.2	0.2	1.97	11.9	28.8	0.3	5.16	1.4	5.76
STANDARD DST6	15.4	52.62	5.6	23	4.4	1.1	3.7	0.5	2.9	0.6	1.6	0.2	1.6	0.3	1.85	28	60.6	0.9	8.9	8.7	17.16
104-002-75um	19.9	61.73	6.4	27.3	5.6	1.2	4.7	0.6	3.5	0.8	2	0.3	2.1	0.4	3.8	25.2	61.8	1.3	11.94	3.4	17.52
109-001-75um	24.4	74.55	7.9	34.1	6.5	1.5	5.5	0.8	4	0.8	2.2	0.3	2.3	0.3	3.95	20.3	53.3	1.2	12.71	2.7	14.11
113-002-75um	18.3	61.17	6.2	25.7	5.6	1	4.2	0.6	3.1	0.7	1.7	0.3	2.1	0.3	3.6	36.6	67.3	1	10.15	4	19.8
111-002-180um	18	49.24	5.5	23.5	4.6	1.1	3.8	0.5	3.2	0.6	1.8	0.3	1.8	0.3	3.17	23.1	55	1	8.61	3.1	14.93
104-001-75um	17.8	53.01	5.8	25.5	5.2	1.2	4.6	0.6	3.9	0.7	2	0.3	2.2	0.3	3.78	23.8	53.3	1.1	10.24	2.9	14.07
105-002-180um	19.8	57.97	6.2	25.5	5.2	1.2	4.6	0.7	3.7	0.7	1.9	0.3	1.9	0.3	3.5	22.9	64.6	1.2	10.92	3.7	14.16
108-001-180um	15.3	42.52	4.7	19.1	4	1	3.2	0.5	2.8	0.6	1.5	0.2	1.4	0.2	2.57	16.9	51.1	0.8	8.08	2	9.37
114-001-180um	9.5	26.72	3	11.6	2.5	0.4	1.6	0.3	1.6	0.3	1	0.1	1	0.2	2.02	17.6	38.4	0.7	6.02	2.4	10.5
124-002-75um	17.4	57.29	5.8	22.9	4.4	1.1	3.5	0.5	3.5	0.7	1.8	0.3	1.9	0.3	3.85	33.4	75.3	1	9.01	4.4	22.34
107-002-75um	26.9	78.99	8.1	35.3	7.5	1.7	6.3	0.9	5.3	1	2.5	0.4	2.5	0.4	3.58	24	51.6	1.2	10.39	2.9	13.73
110-001-180um	13.2	37.59	4.1	17.2	3.5	0.8	2.7	0.4	2.4	0.4	1.3	0.2	1.2	0.2	2.14	17	37.3	0.7	7.17	2	9.61
103-002-180um	22	59.37	6.2	25.2	6.8	1.2	4.2	0.7	4.1	0.9	2.1	0.3	2.3	0.4	3.55	22.5	89.4	1.3	12.85	5.1	15.38
108-002-180um	18.3	55.87	6.2	25.3	5.8	1.2	4.8	0.5	3.3	0.7	1.8	0.2	2	0.3	2.98	17.8	51.5	0.9	9.21	2.6	11.48
103-001-180um	22.6	61.55	6.7	27.3	6.3	1.2	4.9	0.7	4.1	0.9	2.3	0.4	2.2	0.4	3.64	22.6	90.5	1.4	13.1	5.1	16.08
112-002-75um	17.9	51.26	5.6	23	4.6	1	3.6	0.5	3.2	0.6	1.7	0.3	1.8	0.3	3.55	30.1	59.7	0.9	8.51	3.7	17.65
116-001-75um	20.7	61.64	6.6	28.2	6.2	1.3	4.8	0.7	3.7	0.8	2.1	0.3	2	0.3	3.75	19.1	59.8	1.1	8.96	3.3	15.42
102-001-180um	20.3	55.86	5.9	24.7	5.6	1	4.9	0.6	3.4	0.7	1.7	0.3	1.9	0.3	2.95	22.7	85	1.1	10.22	4.3	13.88
106-002-75um	21.5	60.88	6.4	27.5	6.1	1.3	4.7	0.7	4	0.8	2	0.3	2.3	0.3	4.22	22.3	59.4	1.3	12.68	3.2	16.3
121-001-75um	20.1	48.06	5.4	22	4.8	1.2	4.6	0.6	3.2	0.7	1.8	0.3	1.9	0.3	3.29	33.8	61.1	0.8	8.05	3.8	18.09
105-001-75um	21.1	55.38	6	25.8	5.3	1.1	4.3	0.6	3.5	0.7	1.9	0.3	2.1	0.3	3.77	24.1	74.3	1.3	11.71	3.8	14.48
RE 105-001-75um	21.3	58.1	6.5	26.9	5.9	1.1	4.5	0.6	3.7	0.7	1.8	0.3	2.2	0.3	3.63	24.7	68.1	1.3	11.96	3.9	15.55
118-001-75um	12.7	34.5	4	17.4	3.5	0.7	3.4	0.4	2.6	0.5	1.2	0.2	1.4	0.2	2.48	17.3	37.1	0.7	5.97	2.2	10.36
110-002-180um	18.1	47.65	5.4	23.3	4.3	1.1	3.5	0.6	3.2	0.7	1.9	0.3	2	0.3	3.06	27.7	64	0.8	8.27	3.7	19.27
108-002-75um	24.3	81.16	8.8	35.4	7.4	1.5	6.8	0.8	4.7	1	2.2	0.3	2.3	0.4	4.2	23.3	61.7	1.3	12.15	3.2	14.15
102-002-75um	20.6	61.41	6	24.9	5.7	1.2	4.4	0.7	3.7	0.8	1.9	0.3	2.3	0.3	3.39	23.4	83.1	1.2	11.78	4.6	16.52
103-001-75um	19.3	51.14	5.8	25.1	5.4	1	3.9	0.6	3.6	0.7	2	0.3	2.2	0.3	3.45	19.1	82.3	1.3	12.39	4.5	13.98
104-002-180um	14.5	45.64	4.9	20.5	4.1	1	3.4	0.5	3.1	0.6	1.7	0.2	1.6	0.3	3.12	21.6	46.8	0.9	8.69	2.8	14.21
114-002-180um	10.3	28.74	3.2	13.1	2.4	0.5	2.1	0.3	1.7	0.4	1	0.2	1.3	0.1	2.96	20.3	33.7	0.8	7.15	2.5	16.24

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
112-001-75um	15	44.12	4.7	21.8	4.3	0.8	3.8	0.5	2.8	0.6	1.7	0.2	1.7	0.2	2.98	26.1	51.1	0.9	7.79	3	13.91
102-001-75um	20.2	51.75	5.8	24.6	5.4	1	4	0.6	3.7	0.6	1.8	0.3	2.1	0.4	3.28	23.8	80.1	1.2	11.5	4.3	15
125-001-180um	12.1	35.26	4.1	16.1	2.8	0.7	2.3	0.4	2.3	0.5	1.2	0.2	1.5	0.2	2.52	15.9	43.8	0.8	6.66	2.7	12.36
101-001-75um	25.5	76.44	7.8	32.8	6.4	1.6	5.8	0.9	4.8	0.9	2.7	0.3	2.6	0.4	4.65	23.6	66	1.6	14.18	3.5	17.17
109-002-75um	25	82.39	8	34.4	7.1	1.5	5.3	0.9	4.3	0.9	2.5	0.4	2.5	0.4	4.35	23.7	61	1.6	14.19	3.4	16.04
101-001-180um	19	59.85	5.9	26.3	5.6	1.3	5.1	0.7	3.6	0.7	1.7	0.3	2.2	0.3	3.47	17.9	49.1	1.1	10.75	2.8	13.9
STANDARD DST6	14.9	50.77	5.4	23	4.4	1	3.6	0.5	2.9	0.6	1.5	0.2	1.5	0.3	1.85	26	54.2	0.9	8.94	8	15.77
101-002-180um	19.8	64.94	6.6	28.4	5.2	1.3	4.9	0.7	4.3	0.8	2	0.3	2	0.3	3.28	21.2	55.2	1.1	11.1	3.1	13.67
149-001-180um	8.4	31.36	3.3	13.7	2.7	0.4	1.8	0.3	1.8	0.3	0.7	0.1	0.9	0.1	1.85	16.9	36	0.6	5.92	2	8.1
148-002-180um	12.4	35.44	4	18	3.3	0.7	2.8	0.4	2.6	0.4	1.7	0.2	1.2	0.2	1.84	20	46.3	0.5	5.15	2.6	8.92
128-001-75um	16	52.08	5.5	23.6	4.1	0.9	3.4	0.6	3.7	0.6	1.7	0.2	1.7	0.2	2.89	23.4	54.9	0.9	8.69	3.1	14.31
130-002-180um	19.5	55.87	6.3	28.8	5.1	1.2	4.1	0.6	3.8	0.7	1.9	0.3	2.1	0.3	3.05	32.3	66	0.8	7.8	4	17.47
148-001-75um	24	68.82	7.6	35.3	6.7	1.6	5.5	0.8	4.5	0.9	2.3	0.4	2.3	0.3	3.35	34.1	79.8	1	10.16	4.1	16.48
127-002-180um	12.3	35.06	3.6	16.5	2.8	0.7	2.6	0.4	2.8	0.4	1.2	0.2	1.3	0.2	2.48	18.8	36	0.6	5.57	2.8	11.52
144-002-75um	20.3	65.35	6.7	29.6	6.4	1.1	5.6	0.7	4.4	0.9	1.9	0.3	2	0.3	3.55	40.7	83.9	1	9.1	4.3	18.85
161-001-180um	9.4	28.57	3.2	15.1	3.1	0.6	2.4	0.3	2	0.4	1	0.1	0.9	0.1	1.64	15.9	33.2	0.5	4.73	1.9	6.59
140-001-180um	7.5	23.86	2.6	11.1	2.2	0.4	1.4	0.3	1.6	0.3	0.9	0.1	0.7	0.1	1.41	14.9	29	0.4	3.67	1.6	5.88
150-001-75um	16.6	60.9	6.6	27.5	5.2	1.1	3.9	0.6	3.3	0.6	1.9	0.2	1.8	0.3	3.07	22	64	1	9.83	3.9	14.76
141-001-180um	12.1	42.74	4.4	18.9	3.7	0.8	3	0.5	2.7	0.5	1.3	0.2	1.1	0.2	2.06	16.3	50.7	0.7	6.23	2.4	9.06
153-002-180um	20.3	63.79	6.3	28.1	4.7	1.1	4.3	0.7	4.1	0.8	2	0.3	1.8	0.3	3.26	30	84.5	1.1	11.13	4.7	17.54
159-001-180um	13	44.28	4.6	21.3	4	0.8	3	0.4	2.8	0.5	1.2	0.2	1.3	0.2	2.5	16	35.7	0.7	7.54	1.9	9.28
163-002-75um	21	102.34	9.6	40.1	7.5	2.3	5.6	0.8	5	0.8	2.3	0.3	1.8	0.3	4.03	13.1	90.4	7.8	90.95	1.6	17.06
158-002-75um	21.6	62.94	6.3	26.8	5	1.2	4.4	0.7	3.9	0.7	2.1	0.3	2	0.4	3.52	26.9	77.4	1.2	12.78	4.1	16.42
154-002-75um	17.5	60.51	6.2	27.3	5.2	1	4.2	0.6	3.5	0.7	1.8	0.2	1.8	0.3	2.95	21.9	59.7	1	9.14	3.4	13.11
RE 154-002-75um	17.2	63.32	6.4	27.7	5.8	1.1	4.6	0.6	3.9	0.7	1.8	0.3	2	0.3	2.98	24	64.1	1	9.29	3.5	13.53
156-001-75um	22.7	64.35	6.4	27.5	5.5	1.2	3.9	0.7	4.3	0.9	2.2	0.3	2.3	0.3	3.91	26.4	77.7	1.5	15.87	4	15.89
136-002-75um	19.5	51.62	5.4	24.4	4.7	1.1	4	0.5	4	0.7	2	0.3	2.1	0.3	3.4	24.9	49	0.8	8.05	3.1	14.93
126-002-180um	13.4	41.56	4.4	18.9	3.4	0.8	2.7	0.4	3	0.5	1.4	0.2	1.2	0.2	2.55	28.6	52.8	0.7	6.5	3.2	14.4
143-001-180um	18.7	72.27	6.8	30	6.2	1.1	4.1	0.6	3.7	0.7	1.9	0.2	2	0.3	3.02	29.7	83	0.9	7.99	5	15.01
141-002-75um	20	73	7.7	32.5	6.3	1.2	4.7	0.6	4.2	0.8	1.9	0.2	1.9	0.3	3.48	26.5	77.8	1	9.85	3.7	14.58
159-002-180um	11.8	38.54	3.7	16.7	3.6	0.7	2.7	0.4	2.4	0.5	1.2	0.2	1.3	0.2	2.29	16.7	38.7	0.7	6.77	2.1	11.63
152-002-180um	11.7	37.87	4.1	17.5	3.5	0.6	2.2	0.4	2.4	0.4	1.2	0.1	1.1	0.2	2.2	15.7	54.8	0.8	7.17	2.6	9.37
129-002-180um	13.2	45.18	4.5	18.5	4.1	0.8	3	0.4	2.8	0.5	1.3	0.2	1.3	0.2	2.28	25.3	50.7	0.7	6.21	2.8	12.93
130-001-180um	11.9	37.46	3.9	15.8	3.3	0.6	2.7	0.4	2.3	0.4	1.2	0.2	1.2	0.2	2.31	18.4	41	0.6	6.08	2.3	9.66

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
149-002-180um	9.1	30.25	3	12.4	2.5	0.5	2.1	0.2	1.7	0.3	0.8	0.1	0.9	0.1	1.9	18.9	42.8	0.6	5.35	2.6	11.71
127-001-180um	12.7	34.76	3.9	16	3.2	0.6	2.2	0.4	2.5	0.4	1.1	0.1	1.4	0.2	2.35	16.4	38.6	0.6	5.99	2.5	10.29
141-002-180um	10.9	39.3	4.1	17.7	3.7	0.7	2.6	0.3	2.1	0.4	1.1	0.1	1	0.2	2.05	15.3	43.7	0.7	5.41	2.2	8.61
157-001-180um	21	55.94	5.8	25.6	5.6	1.1	4.2	0.7	4	0.9	2.2	0.3	2	0.4	3.99	22.4	76.3	1.6	16.42	4.6	17.81
141-001-75um	16.1	61.03	6.4	24	5.1	1	3.2	0.5	3	0.6	1.7	0.2	1.8	0.2	2.96	19.5	67.2	0.9	8.79	2.9	11.64
153-001-180um	20.1	55.33	5.8	24.6	5.5	1	3.4	0.6	3.8	0.8	2.2	0.3	2.1	0.3	3.1	25	73.8	1.1	10.65	4	14.66
154-001-75um	12.7	54.08	5.7	23.2	4.7	0.9	3.5	0.4	2.7	0.5	1.5	0.2	1.6	0.2	2.61	15.4	44.7	0.8	9.3	2	7.99
STANDARD DST6	15	53.02	5.5	22.9	4.5	1	3.7	0.5	2.8	0.6	1.6	0.2	1.4	0.2	1.97	26.9	60.4	0.8	9.5	8.1	17.22
136-001-75um	11.7	37.22	3.9	16.9	3.3	0.7	2.3	0.4	2.5	0.5	1.2	0.2	1.3	0.2	2.16	18	32.4	0.7	5.96	1.9	8.75
127-001-75um	16.1	50.1	5.2	21.6	4.4	1	3.8	0.5	3.6	0.6	1.8	0.2	1.7	0.3	3.61	24.9	51.9	0.9	8.29	3.5	17.59
147-002-75um	15.6	51.54	5.4	23.3	4.3	0.9	3.6	0.6	3.3	0.7	1.7	0.2	1.8	0.3	3.53	20.6	53.7	1.2	11.04	3.2	12.47
134-002-75um	20.7	71.77	7.7	30.4	5.9	1.3	5	0.8	4.7	0.9	2.6	0.4	2.2	0.4	3.78	33.7	93.5	1.1	10.46	5.5	18.27
129-002-75um	17.9	64.66	6.7	27.3	5.2	1.3	4.7	0.6	3.9	0.7	2.2	0.3	2	0.3	4.16	39.4	70.6	1.1	9.33	4.3	20.12
153-001-75um	20.8	58.57	6.3	26.8	4.9	1.1	4	0.7	4	0.8	2.3	0.3	2.2	0.3	3.32	26.2	75.6	1.2	11.3	4.4	16.03
140-002-180um	10.3	33.74	3.9	15.8	2.6	0.6	2.3	0.3	2.1	0.4	1.3	0.2	1.2	0.2	1.94	17.6	39.6	0.5	5.03	2.2	7.98
146-001-180um	9.3	34.58	3.7	15.7	2.7	0.5	2.3	0.3	2	0.4	1.2	0.2	1.1	0.2	1.84	15.5	41.3	0.7	5.92	2	7.65
RE 146-001-180um	10	35.56	3.7	15.7	3.3	0.7	2.3	0.3	2.2	0.4	1.2	0.2	1.3	0.1	1.97	16.1	40.7	0.8	6.44	2.1	7.75
142-001-180um	13.6	44.68	5.2	19.9	4	0.8	3.5	0.5	2.7	0.6	1.4	0.2	1.5	0.2	2.6	22.2	51.5	0.9	5.9	3.3	12.04
148-001-180um	11.6	35.25	4	16.8	3.3	0.7	3.2	0.4	2.2	0.4	1.4	0.1	1.3	0.2	1.95	25.1	50.4	0.7	6.11	2.8	11.12
139-001-75um	20.4	88.57	8.8	36	6.8	1.4	5	0.7	4.3	0.8	2.5	0.3	2.3	0.3	4.35	23.4	55.6	1.2	10.87	3.1	12.27
128-002-180um	11.5	37.25	4.3	16.9	3.4	0.8	2.5	0.4	2.4	0.6	1.4	0.2	1.2	0.2	2.38	20.6	45.5	0.7	6.33	2.9	13.88
144-002-180um	11.3	37.47	4	16.3	3.1	0.7	2.8	0.4	2.1	0.5	1.3	0.2	1	0.2	2.3	25.9	47	0.6	5.65	2.6	11.07
155-002-75um	22	68.1	7.3	30.8	6	1.4	5.4	0.8	4.8	0.9	2.7	0.4	2.5	0.3	3.41	31.8	93.7	1.4	12.64	6	19.87
160-002-75um	12.7	46.96	5.3	20.6	3.8	0.8	3	0.4	2.8	0.5	1.5	0.2	1.6	0.2	3.25	23.9	52.6	0.9	8.47	3.3	13.23
137-002-75um	17.9	51.38	5.5	23	4.4	1	3.7	0.6	3.5	0.8	1.9	0.3	2.2	0.2	3.34	28.6	55.9	1	7.73	3.5	15.57
137-002-180um	12.9	35.46	4	17.7	3.5	0.7	2.5	0.5	2.5	0.5	1.5	0.2	1.3	0.3	2.42	20.9	40.4	0.7	5.96	2.6	11.74
145-002-180um	18.2	54.39	5.9	23.5	4.8	1.1	4	0.6	3.7	0.8	2.3	0.3	1.9	0.3	3.65	25.1	61.8	1.2	11.19	4.2	16.03
132-001-75um	14.4	51.98	5.5	21.1	3.7	1	3.8	0.5	2.6	0.5	1.8	0.2	1.6	0.3	3.03	23.3	59.9	0.8	7.5	3.3	13.34
163-001-75um	18.5	54.15	6.2	24.9	5	1.1	4.7	0.7	4.1	0.7	2.1	0.3	2.1	0.3	3.23	25.7	81.3	1.2	11.33	4.4	14.47
150-001-180um	10.6	36.57	4	15	3.3	0.7	2.2	0.4	2.2	0.5	1.3	0.2	1.2	0.2	2.19	18.7	48.2	0.7	6.17	2.9	11.22
131-002-75um	20.3	68.85	7.5	28.4	5.8	1.3	4.3	0.8	4.2	0.8	2.1	0.3	2	0.4	3.71	32.5	81	1	9.82	4.8	19.5
135-002-180um	16.7	47.14	5.2	22.3	4.4	1	3.6	0.6	3.3	0.8	1.8	0.3	1.7	0.3	2.91	27.4	54.5	0.8	6.39	3.7	14.63
151-001-180um	14	41.34	4.4	18	3.6	0.8	2.9	0.4	2.7	0.5	1.7	0.2	1.5	0.2	2.42	28.4	62.9	0.8	7.71	3.5	14.33
142-001-75um	21.4	68.99	8	31.9	5.5	1.4	5.4	0.8	4.6	0.8	2.5	0.3	2.4	0.4	3.97	37.9	91.4	1.2	10.32	5.4	22.08

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
151-002-75um	18.3	57.59	5.8	24.3	4.7	1	3.7	0.5	3.5	0.8	2.1	0.3	2	0.3	3.22	37.4	79.2	1	8.83	4.8	19.91
148-002-75um	16.5	42.47	4.9	20.5	3.8	1.1	3.8	0.5	2.9	0.5	1.7	0.2	1.5	0.2	2.12	22.3	51.5	0.6	6.31	3.3	12.12
132-001-180um	9.8	32.87	3.7	14.3	2.5	0.5	2.1	0.3	1.8	0.4	1	0.2	0.9	0.1	2.02	18.4	44.3	0.5	5.2	2.5	9.51
134-002-180um	15.2	52.49	5.4	21.4	4.5	1	3.8	0.5	3.7	0.6	1.8	0.3	1.8	0.3	2.62	24.7	64.5	1	7.63	4.1	13.91
160-002-180um	9.1	28.18	3.2	13.3	2.5	0.5	2	0.3	1.9	0.3	1.1	0.2	1	0.1	2.48	18.4	37.6	0.7	6.07	2.4	10.03
140-001-75um	12.2	44.02	4.8	17.9	3.3	0.6	2.8	0.4	2.3	0.5	1.5	0.2	1.2	0.2	2.61	20.5	50.2	0.7	6.12	2.5	9.74
157-001-75um	19.5	56.23	6.2	24.7	5.2	1.2	4.5	0.7	4.1	0.8	2.2	0.3	2.3	0.3	4.08	22.6	68.2	1.7	15.6	4.5	16.81
156-002-180um	19.7	61.68	6.7	29.2	5.9	1.3	5	0.7	4.2	0.8	2.6	0.3	2.1	0.3	4.14	24.5	70.9	1.6	15.03	4.3	15.39
STANDARD DST6	15.2	53.63	5.6	23.4	4.6	1.1	3.6	0.6	2.9	0.5	1.5	0.3	1.7	0.2	1.92	26.2	57.9	0.8	8.74	8.8	16.35
147-002-180um	12.9	43.2	4.2	17.8	3.6	0.8	2.6	0.4	2.3	0.5	1.6	0.2	1.3	0.2	2.53	16.6	48.1	0.9	8.23	2.9	9.96
152-001-180um	10	39.31	4.2	16.9	3.4	0.7	2.5	0.4	2.3	0.4	1.1	0.2	1.1	0.2	2.02	17.5	49.4	0.6	5.87	2.9	10.14
155-002-180um	22	70.94	7.4	29.8	6	1.4	4.9	0.7	4.5	0.8	2.5	0.4	2.4	0.4	3.44	30.6	97.8	1.8	12.67	6.3	19.52
131-001-75um	13.9	52.43	5.4	21.8	4	0.7	3	0.5	2.9	0.6	1.4	0.2	1.4	0.2	2.75	19.7	53.1	0.6	6.55	3	11.34
143-002-75um	24.1	79.59	8.5	35.3	7	1.3	5.8	0.8	5.2	0.9	2.6	0.4	2.5	0.4	3.76	45.7	110.1	1	8.81	7.3	23.33
144-001-75um	15.2	61.06	6.3	25.9	5.3	1	4.1	0.5	3	0.6	1.5	0.2	1.6	0.3	2.69	24.1	55.2	2.5	7.17	3	11.92
138-002-75um	18.2	63.68	6.1	25.8	5.7	1.2	4	0.6	3.7	0.7	1.9	0.3	1.8	0.3	3	30.9	68.4	0.9	8.18	5.3	16.44
138-002-180um	16.3	54.04	5.3	23.2	4.6	1	4.1	0.5	3.6	0.6	1.6	0.2	1.5	0.3	2.58	28.4	63.1	0.7	7.64	4.6	15.31
138-001-180um	16.9	52.81	5.5	23.9	4.9	1	4.3	0.5	3.3	0.6	1.8	0.2	1.8	0.3	2.75	29.2	63	0.8	7.6	4.6	14.78
126-002-75um	18.4	60.6	6	26.8	5.6	1.1	4.2	0.6	3.5	0.7	1.8	0.3	1.9	0.3	3.54	39.6	70.5	1.1	8.45	4.8	20.97
145-001-180um	15.1	46.29	4.8	20.3	4.3	0.9	2.9	0.5	2.9	0.6	1.4	0.2	1.6	0.3	2.74	19.4	52.7	0.9	8.84	3.6	12.82
135-002-75um	20.5	63.62	6.6	27.2	5.2	1.3	4.7	0.6	4.1	0.8	2	0.3	2.2	0.3	3.21	30.8	62.5	1.1	8.25	4.6	17.23
127-002-75um	17.1	57.46	5.6	22	4.1	1	3.9	0.5	3.4	0.6	1.6	0.2	1.8	0.2	3.22	25.6	48.5	0.8	7.49	4.5	19.09
147-001-180um	13.4	43.71	4.5	18.6	3.6	0.7	2.4	0.4	2.3	0.5	1.2	0.2	1.4	0.2	2.43	14.5	45.3	0.8	7.92	2.5	8.92
159-001-75um	15.6	52.7	5.4	22.9	4.8	0.9	3.5	0.5	3	0.6	1.7	0.2	1.6	0.3	3.22	15.6	40.8	0.9	8.9	2.3	11.11
155-001-180um	19.4	59.07	5.7	24.8	5.2	1	4	0.6	3.7	0.7	1.7	0.3	1.9	0.3	2.93	21.8	84.3	1	10.25	4.3	14.81
133-001-75um	15.8	55.2	5.7	24.3	4.6	1	2.9	0.5	3.3	0.6	1.6	0.2	1.5	0.3	2.67	17.6	56.4	0.7	6.57	2.9	10.99
149-001-75um	14	53.86	5.3	22.8	4.3	0.8	3.3	0.5	2.7	0.4	1.4	0.2	1.3	0.2	2.65	22	49.5	0.7	8.04	3	12.41
129-001-75um	15.6	45.63	4.8	19.9	4	0.9	3.3	0.5	2.8	0.5	1.4	0.2	1.6	0.2	2.56	24.4	56.7	0.6	6.56	3.6	14.69
139-002-75um	18.9	59.95	5.8	26.5	4.7	1	3.9	0.5	3.7	0.7	1.9	0.3	1.9	0.3	3.43	26	60.6	0.8	7.54	3.8	16.76
150-002-180um	13.6	44.55	4.6	18.7	3.5	0.8	2.9	0.5	2.7	0.5	1.3	0.2	1.3	0.2	2.28	21.7	55.6	0.7	6.69	3.5	13.52
142-002-75um	17.7	66.25	6.7	28.5	5.5	0.9	3.7	0.6	3.5	0.6	1.6	0.2	1.7	0.3	3	22	60.1	0.7	7.05	3.3	13.37
RE 142-002-75um	17.4	67.28	6.6	28.7	5.2	1.1	4.2	0.5	3.7	0.7	1.6	0.3	1.7	0.3	3.22	20.9	57.4	0.8	7.24	3.3	12.02
152-002-75um	15.7	54.51	5.7	23.5	4.9	0.8	3.7	0.5	3.2	0.6	1.4	0.2	1.4	0.2	2.52	16.5	55.1	0.9	8.59	2.9	10.68
136-002-180um	16.3	51.07	5.3	23.2	4.7	0.9	3.7	0.5	2.9	0.6	1.4	0.2	1.6	0.2	2.36	18.1	41.2	0.6	6.7	2.5	11.46

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
143-001-75um	23.2	98.86	10.1	40.5	8.1	1.4	5.8	0.8	5	0.9	2.1	0.3	2.1	0.4	3.68	36.3	92.6	1	8.49	6.1	17.68
150-002-75um	18.6	60.42	6.3	26.8	5.3	1.1	4.4	0.6	3.7	0.7	1.9	0.3	1.9	0.3	3.36	29.1	71.6	1	9	4.8	17.32
146-002-180um	11.9	35.69	3.7	16.3	2.9	0.7	2.4	0.4	2.7	0.5	1.1	0.2	1.2	0.2	1.95	18.8	47.3	0.6	5.57	2.9	11.14
131-002-180um	20.2	66.97	6.7	28.6	4.9	1.2	3.9	0.6	3.8	0.8	1.7	0.3	2.2	0.3	3.04	26.6	74.1	1	8.77	4	17.44
137-001-75um	14.7	45.51	4.5	19.7	3.7	0.8	3	0.4	2.6	0.5	1.4	0.2	1.3	0.2	2.89	18	38.4	0.6	6.21	2.3	9.63
142-002-180um	10.6	36.11	3.7	16	2.9	0.5	2.3	0.4	1.9	0.4	1	0.1	1.1	0.2	2.04	12.6	32.8	0.5	4.28	1.8	7.24
126-001-75um	15.7	52.84	5	21.3	4.1	0.8	3.1	0.5	3	0.6	1.5	0.2	1.7	0.2	2.99	26.3	59.4	0.8	7.84	3.7	16.37
164-001-180um	73.9	99.13	10	44.7	10.4	1.1	10.4	2	13.1	2.6	7	1.1	7.5	1.2	4.04	9.8	162.8	1.3	9.37	2.4	17.79
134-001-180um	10.1	33.66	3.6	15.1	2.9	0.6	2.4	0.3	2.2	0.4	1	0.1	1	0.1	1.43	11.2	32.8	0.5	4.11	2	7.31
STANDARD DST6	15.2	57.94	5.6	23.2	4.4	0.9	3.7	0.5	2.6	0.6	1.4	0.2	1.5	0.2	1.69	27.2	60	0.7	8.39	9.1	17.13
146-002-75um	17.9	54.75	5.8	24.6	4.6	1	3.6	0.6	3.5	0.7	1.8	0.2	2.1	0.3	3.28	26.8	62.7	0.9	8.88	3.7	15.3
163-002-180um	25.9	85.34	8.7	36.2	6.8	1.6	6.2	0.9	4.9	1.1	2.6	0.4	2.7	0.4	3.83	33.4	106	1.3	13.84	6.4	20.73
132-002-180um	17.2	59.06	6.1	24.3	3.9	1.1	3.7	0.5	3.4	0.6	1.8	0.3	1.9	0.3	3.04	39.9	75.3	0.9	7.84	4.5	17.9
146-001-75um	18.6	67.46	7.4	29.6	4.8	1.2	4.5	0.6	3.7	0.8	1.9	0.3	1.8	0.3	3.3	22.1	62.2	1	10.37	3.1	12.69
133-001-180um	13.9	47.14	4.9	20.1	3.4	0.8	3.2	0.5	2.4	0.5	1.5	0.2	1.4	0.2	2.42	19	52	0.7	5.85	2.8	9.89
156-001-180um	20.1	66.15	6.8	27.7	4.4	1.2	5	0.7	3.9	0.8	2.2	0.3	1.9	0.3	3.45	22.4	71	1.3	13.67	4.1	14.5
RE 156-001-180um	22	67.59	6.6	29.4	5.5	1.2	4.7	0.7	4.1	0.8	2.3	0.4	2.2	0.3	3.5	23.6	77.3	1.4	14.26	4	15.44
158-001-180um	19.1	53.78	5.7	23.3	4.4	1.1	4.6	0.6	3.7	0.8	2.1	0.3	2	0.3	3.14	23.3	63.4	1.1	10.92	3.6	13.7
159-002-75um	15.7	56.46	5.5	22	4.3	1.1	3.6	0.5	2.9	0.6	1.6	0.3	1.7	0.2	2.98	21.8	46.2	0.8	8.13	3.1	14.26
164-001-75um	19.2	97.94	9.3	38.4	5.9	2.2	5.2	0.7	4.1	0.8	1.9	0.3	1.8	0.2	3.88	11.5	80.3	6.7	83.54	1.4	16.12
157-002-75um	18.3	52.54	5.6	23.8	4.3	1.1	3.6	0.6	3.4	0.7	1.9	0.3	2	0.3	3.98	24.1	74	1.6	16.23	4.7	17.19
161-002-180um	14.5	44.58	4.6	19.5	3.8	0.9	3.5	0.5	2.7	0.6	1.5	0.2	1.3	0.2	2.06	24.5	45.8	0.5	5.31	3.2	11.94
155-001-75um	19.6	64.37	6.9	27.1	5.4	1.1	4.3	0.7	3.8	0.8	1.9	0.3	1.8	0.3	2.79	25.1	84.7	1	10.69	4.4	14.95
151-002-180um	15.1	55.08	5.5	22.6	3.9	0.9	3.3	0.5	2.7	0.6	1.6	0.2	1.6	0.2	2.28	30.2	62.8	0.7	6.39	3.8	15.51
132-002-75um	18.6	66.03	6.8	26.7	4.5	1	3.8	0.6	3.3	0.6	1.9	0.3	2	0.3	3.11	45.5	80.8	0.9	8.15	5	20.39
162-001-180um	15.6	47.94	4.9	20.5	4.1	0.8	3.3	0.5	2.6	0.5	1.6	0.2	1.6	0.3	2.69	20.6	53.1	0.9	9.04	3.4	13.11
136-001-180um	12.8	39.09	4.4	17.7	3.4	0.7	2.5	0.4	2.4	0.5	1.3	0.2	1.4	0.2	2.58	18.7	36.1	0.6	6.29	2.1	9.79
140-002-75um	18.1	66.74	7	28.3	4.6	1	4.4	0.6	3.6	0.8	1.9	0.3	1.9	0.3	3.17	30.6	64.4	0.8	7.18	3.8	14.28
154-001-180um	9.8	39.64	4.1	17.4	3	0.5	2.6	0.3	1.9	0.4	1	0.1	1	0.2	1.65	12.5	35.4	0.6	5.66	1.7	6.5
149-002-75um	13.1	44.09	4.5	17.5	3.3	0.8	3.1	0.3	2.5	0.5	1.4	0.2	1.3	0.2	2.92	33.2	64.4	0.7	7.51	4.3	18.13
134-001-75um	19	77.53	8.1	30.7	5.6	1.1	4.6	0.7	3.7	0.7	2	0.3	2	0.3	3.33	25.6	73.9	1	8.54	4.2	15.29
143-002-180um	20.9	68.85	7.6	29.3	5.4	1.2	5.2	0.7	4.3	0.8	2.4	0.3	2.2	0.3	3.31	40.8	94.5	0.9	7.64	6.1	19.41
157-002-180um	18.5	56.16	5.9	23.2	4.8	1.1	4.3	0.6	3.9	0.8	2.1	0.3	2	0.3	4.12	23.7	75.4	1.5	16.37	4.8	17.39
160-001-180um	10.9	35.77	4	15.6	2.9	0.8	2.4	0.4	2	0.4	1.3	0.2	1.1	0.2	2.09	16.4	38.8	0.6	5.42	2.6	11.3

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
156-002-75um	19.4	65.33	6.5	26	5.2	1.2	4.5	0.6	3.9	0.8	2.1	0.3	2	0.3	3.41	23.1	71.6	1.4	13.8	4	15.48
135-001-75um	16	54.3	5.9	23	4.8	1.1	3.6	0.6	3.2	0.6	1.8	0.3	1.7	0.3	2.9	25.2	56	0.7	6.78	3.4	13.4
151-001-75um	17.5	61.04	6.3	23.6	4.4	1.1	3.6	0.6	3.1	0.7	1.7	0.3	1.8	0.3	3.03	37.2	75	0.9	8.47	4.8	18.4
153-002-75um	17.5	60.75	6.2	23.3	4.5	1.1	3.7	0.6	3.4	0.7	1.9	0.3	1.7	0.3	3.05	27.3	75.4	1.1	9.7	4.5	16.05
138-001-75um	16.9	52.44	5.8	21.8	4.4	0.9	3.8	0.6	3.2	0.7	1.6	0.2	1.8	0.2	2.66	30.3	63.7	0.8	7.78	4.4	14.07
126-001-180um	8.2	27.1	2.9	10.6	2.2	0.6	1.9	0.3	1.7	0.3	0.9	0.1	1	0.1	1.69	18	39.8	0.4	4.59	2.1	9.37
147-001-75um	13.9	47.22	4.9	19.3	4	0.8	3.2	0.4	2.7	0.6	1.5	0.2	1.6	0.2	2.52	18.1	47.9	0.8	8.76	2.8	10.17
161-002-75um	20	57.47	6.3	25.9	4.8	1.1	4.3	0.6	4	0.8	2.2	0.3	2.2	0.3	3.06	28.9	61.3	0.7	7.77	4.2	16.35
144-001-180um	8.2	30.4	3.4	12.9	2.7	0.6	2.1	0.3	1.8	0.3	1	0.1	0.9	0.1	1.45	18.9	35.8	0.4	4.14	2	7.65
129-001-180um	15.7	45.77	5.1	20	4	1.1	3.4	0.5	3.2	0.6	1.8	0.2	1.7	0.3	2.87	27.9	59.4	0.8	6.78	3.6	15.39
STANDARD DST6	15.6	54.61	5.5	23.1	3.8	1	3.6	0.5	2.9	0.6	1.5	0.2	1.5	0.2	1.91	26.9	59.7	0.8	8.35	8.2	16.31
152-001-75um	14.1	55.04	5.8	25	4.7	0.9	4	0.5	3.1	0.5	1.4	0.2	1.6	0.2	2.76	20.8	58.5	0.9	9.13	3.5	11.89
158-001-75um	19.1	52.19	5.6	23.6	5.1	1.1	4.2	0.6	3.8	0.8	2.2	0.3	2.2	0.3	3.25	21.5	63.2	1.1	11.17	3.5	13.43
154-002-180um	13.5	43.38	4.6	18.5	4	0.8	3.2	0.5	2.7	0.5	1.5	0.2	1.5	0.2	2.05	19.4	49.7	0.7	6.77	3	10.71
162-002-75um	20.1	60.59	5.9	25.4	5.2	1.1	4.6	0.6	4	0.7	2.2	0.3	2.3	0.4	3.67	25.2	67.6	1.1	12.09	4.3	17.17
160-001-75um	17.6	51.61	5.5	23.7	5	0.9	4	0.6	3.4	0.7	1.9	0.3	2	0.3	3.32	18.8	51.5	0.8	8.02	3.3	14.54
145-001-75um	18.3	54.74	5.6	23.8	4.7	1.1	4.2	0.6	3.3	0.7	1.9	0.3	1.9	0.3	3.11	21.5	60.3	1	10.71	3.9	14.69
162-002-180um	19	56.27	5.8	24	5	1.1	4.1	0.6	3.4	0.7	2	0.3	1.9	0.3	3.04	24.1	64.8	0.9	10.63	4.1	15.86
164-002-75um	20.4	60.14	6	26	5.3	1.1	4.3	0.6	3.8	0.7	2.2	0.3	2.3	0.3	3.55	21.2	68.6	1.5	15.45	4.1	14.71
130-001-75um	15	49.37	5	21.1	4	0.9	3.3	0.5	2.9	0.6	1.4	0.2	1.5	0.2	2.66	22.4	53.1	0.7	7.04	2.9	11.42
163-001-180um	18	55.62	5.6	23.9	4.9	1	4.3	0.6	3.4	0.7	1.9	0.2	1.8	0.2	2.44	21.9	76.5	1	9.63	4.1	13.85
158-002-180um	19.7	54.38	5.4	23.3	5	1.2	4.1	0.6	3.6	0.8	2	0.3	1.9	0.3	3.03	21.3	65.9	1	11.14	3.6	14.26
161-001-75um	16.3	52.63	5.4	23.3	4.8	1	4	0.5	3	0.6	1.6	0.2	1.8	0.2	2.65	24	53.8	0.6	7.02	3.5	11.99
162-001-75um	18.3	54.68	5.3	23.9	4.8	1	4.2	0.6	2.9	0.7	2	0.2	1.8	0.3	3.19	23.3	58.6	1	10.77	3.9	14.8
128-001-180um	11.3	34.2	3.6	15.4	3	0.8	2.6	0.4	2	0.4	1.2	0.2	1.1	0.2	1.67	16.5	39.5	0.5	5.01	2.3	10.07
133-002-75um	16.5	52.78	5.5	22.7	4.3	1	3.7	0.5	3.2	0.6	1.8	0.2	1.6	0.2	2.7	20.7	59.4	0.7	6.99	3.3	12.09
139-002-180um	12.8	39.57	4.2	17.1	3.5	0.7	3.1	0.4	2.3	0.5	1.4	0.2	1.3	0.2	2.24	17.5	42.6	0.6	5.44	2.6	10.84
135-001-180um	11	32.08	3.5	15.1	3.4	0.7	2.7	0.3	1.9	0.4	1.2	0.2	1	0.1	1.99	15.3	35.8	0.5	4.76	2.2	7.93
RE 135-001-180um	10.1	28.49	3.1	13.2	2.7	0.6	2.1	0.3	1.9	0.4	1.1	0.1	1	0.2	1.7	15.5	32.2	0.5	4.41	2.1	7.66
164-002-180um	23.1	66.25	6.5	29.4	5.8	1.3	4.8	0.6	3.9	0.8	2.4	0.3	2.4	0.3	3.88	21.2	77.1	1.6	16.75	4.3	16.08
139-001-180um	9.5	37.12	3.5	15.5	2.7	0.6	2.2	0.3	1.7	0.3	1	0.1	0.9	0.1	1.54	11.3	26.5	0.4	4.7	1.5	5.28
137-001-180um	11.6	36.61	3.9	17.4	3.4	0.8	2.7	0.4	2.2	0.4	1.3	0.2	1.2	0.2	1.8	16.4	34.3	0.4	4.63	2.1	8.86
145-002-75um	21.1	63.87	6.1	27.4	5.4	1.2	4.1	0.6	3.8	0.7	2	0.3	2.1	0.3	3.4	27.8	67.1	1.1	11.55	4.6	17.83
128-002-75um	19.2	56.88	5.6	25.9	5.2	1.2	4.2	0.6	3.3	0.6	2	0.2	1.9	0.3	3.5	32.9	63.8	0.9	9.12	4.7	20.9

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
133-002-180um	14.9	48.9	4.9	22.3	3.8	0.8	3.1	0.4	2.4	0.5	1.5	0.2	1.5	0.2	2.11	20.7	53.5	0.7	5.9	3.3	11.32
131-001-180um	10.5	34.2	3.6	14.8	3	0.6	2.4	0.3	1.7	0.3	1.1	0.1	1.1	0.1	1.7	15.3	38.5	0.5	5.37	2.3	8.25
130-002-75um	22.2	59.37	6.6	27.8	5.6	1.3	4.7	0.6	3.6	0.7	2.2	0.3	2.2	0.3	3.21	39.3	67.8	0.9	8.51	4.7	19.32
STANDARD DST6	15.1	55.89	5.6	23	4.5	0.9	3.6	0.5	2.5	0.5	1.5	0.2	1.5	0.2	1.73	26.3	58.9	0.7	8.33	8.7	17.06

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT F
To Geoscience Australia PROJECT 2006861
Acme file # A609495 Page 1 (a) Received: DEC 20 2006 * 64 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MI

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861201001-180um	0.37	16.93	11.43	26.4	45	9.3	6.5	439	1.39	2.2	1.2	<.1	9.5	65	0.04	0.55	0.19	44	0.15	0.028
2006861201002-180um	0.75	25.41	17.07	56.6	158	21.5	12.5	457	3.03	6.7	1.6	<.1	10.4	135	0.08	0.79	0.27	86	0.63	0.033
2006861202001-180um	0.37	19.8	16.4	37.2	36	14.9	9.1	402	1.91	2.6	1.1	<.1	9.6	70	0.08	0.53	0.27	53	0.17	0.029
2006861202002-180um	0.48	24.47	17.46	60.4	<20	23.3	10.9	503	3.02	3.8	1.1	<.1	10.7	113	0.06	0.57	0.27	81	0.26	0.02
2006861203001-180um	0.35	27.7	19.42	58.5	68	27.7	14.2	809	3.35	4.4	1.4	<.1	10.8	103	0.08	0.64	0.28	86	0.41	0.036
2006861203002-180um	0.55	31.44	20.54	69	62	31.6	16.6	856	3.64	4.8	1.6	<.1	12.1	120	0.08	0.71	0.31	91	0.4	0.034
2006861204001-180um	0.66	24.12	16.62	48.2	34	20.3	9.3	621	3.02	4.8	1.2	<.1	10.5	52	0.1	0.67	0.3	82	0.13	0.045
2006861204002-180um	0.63	24.96	18.76	58.2	<20	30.5	21.1	428	3.94	6.2	1.1	<.1	10.2	87	0.07	0.71	0.28	100	0.24	0.02
2006861205001-180um	0.61	23.65	20.03	53.8	22	20.8	9.2	355	3.21	4.3	1.2	<.1	10.4	58	0.09	0.61	0.3	86	0.16	0.049
2006861205002-180um	0.66	19.71	16.78	41.3	20	20.6	10.3	306	3.12	4.3	1.3	<.1	10.2	55	0.07	0.61	0.24	77	0.18	0.021
2006861206001-180um	0.31	12.56	10.83	28.6	<20	10.9	7.1	304	1.43	1.2	1.1	<.1	8	75	0.06	0.38	0.13	42	0.23	0.028
2006861206002-180um	0.44	16.33	12.74	40.4	45	17.6	10.3	452	2.01	3	1.3	<.1	7.9	109	0.08	0.48	0.16	57	0.49	0.025
2006861207001-180um	0.31	20.3	13.56	56.7	44	20.8	11	462	2.87	4.4	1.1	<.1	8	112	0.08	0.46	0.2	78	0.52	0.033
2006861207002-180um	0.53	19.56	12.96	50.9	24	20.7	11.2	465	2.66	4	1.1	<.1	7.3	110	0.08	0.41	0.18	71	0.45	0.029
2006861208001-180um	0.38	17.71	11.91	47.1	31	15.8	8.8	311	2.32	3.4	1	<.1	7.6	84	0.06	0.4	0.16	71	0.33	0.033
2006861208002-180um	0.5	18.18	13.01	48	34	17.3	10.3	354	2.44	4.1	1	<.1	7.1	99	0.08	0.41	0.17	75	0.46	0.022
2006861209001-180um	0.32	17.92	12.7	45.2	32	17.4	10.8	457	2.31	3.3	1.1	<.1	7.2	90	0.08	0.43	0.16	60	0.35	0.033
2006861209002-180um	0.49	20.17	14.34	53.5	44	22	15.4	718	2.69	3.7	1.4	<.1	7.7	108	0.09	0.46	0.19	70	0.46	0.031
RE 2006861209002-180um	0.49	20.02	14.39	55.2	44	21.9	15.9	722	2.73	4.1	1.2	<.1	8.1	110	0.09	0.48	0.19	69	0.48	0.03
2006861210001-180um	0.33	18.46	13.39	49.7	61	18	9.6	330	2.4	2.4	1.4	<.1	8.4	102	0.08	0.43	0.17	65	0.42	0.033
2006861210002-180um	0.48	20.91	14.61	56.8	64	22.1	12.1	410	2.92	3.1	1.6	<.1	9.8	118	0.09	0.49	0.21	72	0.51	0.034
2006861211001-180um	0.34	19.19	14.37	52.4	34	16.6	10.6	355	2.41	3.8	0.9	<.1	7.7	86	0.1	0.47	0.18	65	0.95	0.024
2006861211002-180um	0.37	19.05	12.58	41.1	44	17	13.8	276	2.36	8.6	1.1	<.1	8.2	293	0.08	0.42	0.19	107	5.86	0.022
2006861212001-180um	0.53	25.31	21.05	71	25	21.9	14.8	631	3.54	6.5	1.6	<.1	11.1	103	0.14	0.62	0.29	100	0.24	0.056
2006861212002-180um	0.81	26.4	18.36	71.1	<20	23.2	10.9	431	3.7	8	1.6	<.1	12	101	0.08	0.62	0.25	99	0.28	0.036
2006861213001-180um	0.56	30.67	22.23	88	39	27.3	16.8	654	4.17	7.9	1.9	<.1	10.7	103	0.13	0.76	0.31	109	0.32	0.054
2006861213002-180um	0.61	24.43	15.42	63.5	<20	20.8	10.2	361	3.34	8.3	1.2	<.1	8.8	140	0.08	0.53	0.23	101	1.03	0.032
2006861214001-180um	0.36	20.56	13.84	61.2	<20	15.7	9.3	420	2.88	6.7	1.3	<.1	8.2	95	0.1	0.39	0.19	82	0.72	0.052
2006861214002-180um	0.56	26.98	17.13	81.4	<20	21.4	12.5	534	3.89	12.3	2	<.1	8.8	126	0.11	0.45	0.24	141	0.78	0.052
2006861214d001-180um	0.18	8.77	7.73	23.4	<20	5.8	3.3	138	1.05	2.4	0.7	<.1	6.2	46	0.06	0.33	0.12	31	0.11	0.017

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861214d002-180um	0.17	7.18	6.27	16.5	<20	4.6	2.4	95	0.77	2	0.6	<.1	4.6	40	0.05	0.28	0.09	24	0.07	0.016
2006861215001-180um	0.4	20.19	13.54	51.4	28	16.3	9.6	357	2.75	4.6	1	<.1	7.2	88	0.09	0.39	0.19	78	0.24	0.034
2006861215002-180um	0.35	15.62	11.61	35.4	22	11.1	6.9	270	1.99	3.8	0.8	<.1	5.8	70	0.06	0.33	0.16	59	0.18	0.022
2006861216001-180um	0.41	17.53	11.71	45	<20	12.4	6.6	205	2.32	3.6	0.8	<.1	6.1	52	0.06	0.4	0.16	67	0.1	0.032
STANDARD DST6	12.36	129.58	35.32	176.2	323	30	13.7	959	4.09	24.5	7.5	<.1	7	312	5.66	5.54	4.83	111	2.25	0.099
2006861216002-180um	0.37	15.08	9.91	28.8	<20	11.8	5	137	2.32	3.2	0.9	<.1	6.8	48	0.04	0.38	0.19	64	0.09	0.022
2006861217001-180um	0.4	18.75	16.16	43.7	<20	13.2	4.1	149	2.48	2.7	0.9	<.1	8.3	55	0.21	0.38	0.21	74	0.1	0.046
2006861217002-180um	0.39	31.53	18.03	95.3	31	29	10.8	351	5.06	5.1	1	<.1	7	104	0.25	0.41	0.25	109	0.55	0.057
2006861218001-180um	0.64	24.77	19.12	57.5	67	16.9	13.9	527	2.88	4.9	1.3	<.1	9	111	0.12	0.38	0.25	93	0.17	0.032
RE 2006861218001-180um	0.51	21.8	16.91	53.2	30	16.2	14.1	520	2.82	4.8	1.4	<.1	8.5	112	0.07	0.4	0.25	92	0.17	0.031
2006861218002-180um	1	20.58	18.02	53.2	25	20.4	15.7	840	2.92	4.6	2.3	<.1	8.9	149	0.1	0.4	0.27	97	0.48	0.033
2006861218d001-180um	0.18	9.2	7.7	15.1	<20	4.5	3.7	212	0.79	1.2	0.6	<.1	4.8	42	0.04	0.28	0.11	28	0.07	0.012
2006861219001-180um	0.24	17.04	11.79	48.7	<20	14.6	7.2	256	2.48	1.7	1.1	<.1	6.3	60	0.05	0.3	0.2	48	0.18	0.026
2006861219002-180um	0.4	26.67	12.6	81.8	<20	23.9	10.1	328	4.28	12.5	2.2	<.1	7.4	150	0.09	0.36	0.21	208	2.72	0.05
2006861220001-180um	1.16	26.47	14.65	56.3	<20	15.6	6.3	193	3.23	3.9	1.9	<.1	8	106	0.06	0.42	0.23	112	0.3	0.024
2006861220002-180um	1.05	26.35	15.26	57.3	<20	17.9	8.3	243	3.69	6.2	3.6	<.1	7.6	102	0.1	0.42	0.26	114	0.21	0.021
2006861221001-180um	0.43	24.18	16.31	65.8	105	27.7	17.4	931	3.38	4.5	4.6	<.1	8.5	127	0.21	0.49	0.25	81	0.82	0.067
2006861221002-180um	0.65	25.41	16.98	67.5	110	30.8	20.3	999	3.67	3.8	3.6	<.1	9.1	138	0.15	0.5	0.26	83	0.63	0.052
2006861222001-180um	0.36	21.27	12.12	58.3	30	22.7	12.4	457	3.03	3.1	0.9	<.1	7.4	84	0.08	0.33	0.19	82	0.5	0.032
2006861222002-180um	0.33	17.65	11.26	46	25	18.5	10.4	371	2.45	2.8	0.8	<.1	5.8	80	0.06	0.31	0.15	75	0.52	0.021
2006861223001-180um	0.48	14.65	14.16	39.5	55	15.1	9.8	551	1.95	2.3	1.5	<.1	9	110	0.06	0.49	0.21	55	0.47	0.043
2006861223002-180um	0.63	14.35	12.75	35.4	48	16.8	10.6	587	2.06	3.2	1.4	<.1	9.4	112	0.07	0.5	0.21	57	0.56	0.022
2006861203007-180um	0.43	28.04	18.12	62.6	65	28.9	14.6	830	3.5	4.3	1.3	<.1	11.2	104	0.08	0.66	0.31	86	0.45	0.029
2006861205007-180um	0.42	18.13	14.61	34	25	15.7	8.3	225	2.75	3.9	1.1	<.1	9.6	46	0.04	0.51	0.25	74	0.13	0.022
2006861207007-180um	0.35	19.76	12.33	50.3	34	19.8	11.1	457	2.84	3.6	1.3	<.1	7.4	105	0.06	0.41	0.2	73	0.47	0.028
2006861224001-180um	0.33	18.38	13.55	35.9	35	14.6	8.7	402	1.92	2.7	1.1	<.1	8.6	62	0.05	0.45	0.2	52	0.15	0.027
2006861224002-180um	0.48	24.57	16.07	55.3	40	23.1	11	518	3.14	3.5	1.2	<.1	10	106	0.05	0.54	0.27	82	0.27	0.02
2006861225001-180um	0.58	23.87	20.03	69.6	28	21.9	14	631	3.58	5.3	1.4	<.1	10.3	99	0.12	0.58	0.27	94	0.25	0.051
2006861225002-180um	0.71	25.46	15.85	63.6	<20	22.8	10.6	425	3.74	6.2	1.4	<.1	9.7	94	0.1	0.58	0.24	93	0.28	0.033
2006861226001-180um	0.4	21.42	12.98	58.8	<20	23.2	12.8	471	3.14	2.9	0.9	<.1	7.7	86	0.06	0.34	0.19	85	0.5	0.032
2006861226002-180um	0.38	18.63	11.91	49.9	<20	20.2	11.5	399	2.68	3.3	0.8	<.1	6.4	83	0.06	0.32	0.17	76	0.58	0.022
2006861227001-180um	2.26	48.73	8.09	81.7	<20	53.2	48.9	1774	9.43	1.2	1.5	<.1	9.2	1301	0.29	0.06	<.04	172	5.49	0.306
2006861227002-180um	2.3	49.92	8.62	81	24	52.7	50.6	1739	9.74	0.7	1.6	<.1	9.2	1388	0.33	0.06	<.04	182	5.71	0.316
2006861229001-180um	0.45	17.72	12.11	38.2	<20	14.7	6.1	256	2.41	3	1	<.1	7.3	49	0.04	0.41	0.18	65	0.14	0.027

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861229002-180um	0.66	31.57	20.95	85.8	61	27.1	14.2	574	4.36	7.2	2.2	<.1	12.3	110	0.13	0.47	0.39	110	0.4	0.035
STANDARD DST6	12.61	130.48	35.68	175.2	310	30	14.2	963	4.07	21.9	7.6	<.1	7	310	6.23	5.51	5.26	109	2.27	0.098

From ACME ANALYTICAL LABFORMAT
To Geoscience Australia PROJE
Acme file # A609495 Page 1 (a)
Analysis: GROUP 1T-MS - 0.25INERALS MAY BE PARTIALLY

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861201001-180um	21.3	22	0.14	248	0.35	2.77	0.388	0.89	1.1	64.8	1.4	1	4.6	<.04
2006861201002-180um	30.6	45	0.62	505	0.428	6.07	0.63	1.33	1.5	92.4	2.4	2	11.3	0.09
2006861202001-180um	26.7	30	0.22	265	0.426	3.83	0.25	0.95	1.2	83.3	1.6	1	7.5	<.04
2006861202002-180um	32.3	40	0.51	354	0.476	6.26	0.437	1.23	1.3	93.7	2.2	2	11.4	<.04
2006861203001-180um	30.8	51	0.49	441	0.492	6.5	0.252	1.22	1.4	98.3	2.4	2	12.1	<.04
2006861203002-180um	32.9	56	0.55	455	0.502	7.1	0.441	1.29	1.5	100.4	2.7	2	13.6	<.04
2006861204001-180um	28	40	0.22	212	0.412	5.55	0.093	0.98	1.2	82.5	2.1	2	10.1	<.04
2006861204002-180um	27.4	47	0.49	442	0.474	8.09	0.202	1.31	1.4	96.2	2.9	2	13.2	<.04
2006861205001-180um	28.6	44	0.23	292	0.454	5.94	0.119	1.05	1.3	91.1	2.4	1	10.9	<.04
2006861205002-180um	26.5	39	0.3	286	0.398	5.82	0.092	0.97	1.1	80.7	2.3	1	10	<.04
2006861206001-180um	20.5	25	0.19	284	0.398	3.04	0.358	0.9	0.7	75.9	1.2	1	4.9	<.04
2006861206002-180um	22.3	33	0.32	348	0.462	4.07	0.494	0.96	1.1	94.7	1.5	1	7.3	<.04
2006861207001-180um	23.6	38	0.52	343	0.464	5.56	0.299	1.01	0.9	96.9	1.7	1	9.9	<.04
2006861207002-180um	21.2	36	0.48	355	0.43	5.19	0.37	0.98	1.1	91.9	1.5	1	9.4	<.04
2006861208001-180um	21.1	31	0.37	290	0.431	4.66	0.233	0.88	0.8	82.4	1.4	1	7.8	<.04
2006861208002-180um	21.9	31	0.38	328	0.443	4.69	0.248	0.86	1.1	90.1	1.5	1	8.4	<.04
2006861209001-180um	22.1	31	0.41	287	0.421	4.52	0.329	1	0.9	88.7	1.4	1	7.9	<.04
2006861209002-180um	22.7	40	0.49	322	0.484	5.2	0.388	1.01	1	99.5	1.7	1	9.3	<.04
RE 2006861209002-180um	23.6	37	0.49	345	0.502	5.3	0.4	1.03	1	101.3	1.8	1	9.3	<.04
2006861210001-180um	22.8	42	0.4	297	0.52	4.8	0.485	1.14	1	103.5	1.5	1	8.4	<.04
2006861210002-180um	26.2	51	0.47	312	0.566	5.8	0.518	1.2	1.1	107.5	1.9	1	10.1	<.04
2006861211001-180um	22.9	36	0.47	286	0.369	4.51	0.177	1.13	0.8	86.4	1.5	1	8.3	<.04
2006861211002-180um	23.8	29	0.76	493	0.345	4.55	0.163	0.99	0.9	73.3	1.5	1	8	0.09
2006861212001-180um	31.3	43	0.52	371	0.433	6.73	0.207	1.38	1.2	93.1	2.3	2	12.2	0.04
2006861212002-180um	31.3	43	0.55	431	0.42	6.83	0.4	1.26	1.2	98.9	2.4	2	12.4	0.05
2006861213001-180um	29.9	55	0.72	437	0.46	7.83	0.293	1.74	1.5	95.8	3.1	2	13.8	0.04
2006861213002-180um	24.9	38	0.7	525	0.394	6.16	0.424	1.17	1	87.7	1.9	1	11.4	0.04
2006861214001-180um	24.5	29	0.55	379	0.389	5.5	0.201	1.12	0.9	73.3	1.6	1	9.6	<.04
2006861214002-180um	25.2	37	0.83	405	0.43	7.81	0.796	1.33	1	84.6	2.1	2	13	0.12
2006861214d001-180um	12.9	9	0.16	280	0.231	1.99	0.188	0.55	0.8	44.5	0.7	<1	3.4	<.04

Appendix 5.3

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861214d002-180um	11.3	7	0.09	274	0.175	1.47	0.205	0.46	0.4	40.3	0.6	<1	2.4	<.04
2006861215001-180um	19.3	31	0.42	287	0.378	5.34	0.208	0.96	0.7	76	1.7	1	9	<.04
2006861215002-180um	17.3	21	0.27	347	0.307	3.61	0.175	0.66	0.7	62.6	1.2	1	6.2	<.04
2006861216001-180um	16.6	30	0.18	199	0.348	4.15	0.106	0.69	0.8	70.7	1.5	1	6.8	<.04
STANDARD DST6	25.3	233	1.01	680	0.409	6.96	1.635	1.38	7.8	58.8	6.5	3	12	0.05
2006861216002-180um	17	31	0.14	190	0.362	4.21	0.066	0.58	0.8	62.5	1.3	1	5.7	<.04
2006861217001-180um	19.7	31	0.2	214	0.399	5.06	0.074	0.75	0.9	71.1	1.5	1	7.6	<.04
2006861217002-180um	15.9	53	0.78	301	0.475	9.57	0.091	1.51	1.1	94.3	2.6	2	14.5	<.04
2006861218001-180um	27	35	0.39	485	0.56	6.14	0.574	1	1.1	97.3	1.8	1	9.4	0.04
RE 2006861218001-180um	26.2	34	0.38	528	0.576	5.92	0.578	0.96	1.1	98.9	1.8	1	9.4	<.04
2006861218002-180um	28.1	33	0.5	390	0.588	6.1	0.783	0.87	1.2	104.4	1.8	1	10.1	0.28
2006861218d001-180um	12.3	11	0.08	349	0.269	1.65	0.105	0.48	0.5	41.2	0.6	1	2.3	<.04
2006861219001-180um	17.2	30	0.46	263	0.354	4.78	0.397	0.99	0.6	63.9	1.4	1	7.2	<.04
2006861219002-180um	20.7	47	0.97	316	0.427	8.04	1.208	1.31	0.9	86.5	2	1	12	0.63
2006861220001-180um	20.1	47	0.45	400	0.508	7.55	0.521	0.72	1	90.4	2.1	1	11	0.12
2006861220002-180um	17.6	50	0.67	246	0.545	8.47	1.254	0.8	1.1	100.2	2.2	1	12.4	0.19
2006861221001-180um	26.3	56	0.64	358	0.597	6.4	0.428	1.27	1.3	108.2	2	2	10.3	<.04
2006861221002-180um	27.4	58	0.66	361	0.645	6.8	0.695	1.17	1.3	112.7	2.2	1	11.1	0.04
2006861222001-180um	23.5	44	0.55	299	0.492	5.9	0.17	1.05	0.8	90.2	1.7	1	9	<.04
2006861222002-180um	19.2	33	0.44	287	0.392	4.96	0.109	0.82	0.8	76.5	1.4	1	7.6	<.04
2006861223001-180um	22.2	43	0.27	358	0.514	4.97	0.908	1.37	1.1	81.5	1.8	1	6.2	<.04
2006861223002-180um	22.3	51	0.29	338	0.52	5.16	0.887	1.27	1.1	81.1	1.7	1	6.5	<.04
2006861203007-180um	29.6	69	0.52	431	0.484	6.78	0.317	1.16	1.4	91.5	2.5	2	11.5	0.04
2006861205007-180um	23.1	42	0.22	251	0.413	5.34	0.08	0.86	1	74.4	1.9	1	7.9	<.04
2006861207007-180um	21.7	40	0.5	351	0.458	5.57	0.369	0.93	1.1	87.1	1.6	1	8.7	<.04
2006861224001-180um	23.2	31	0.22	245	0.437	4.13	0.256	0.88	1	71.9	1.5	1	6.3	<.04
2006861224002-180um	29.5	47	0.51	345	0.481	6.4	0.449	1.12	1.3	86.9	2.3	1	10.2	0.04
2006861225001-180um	30.9	46	0.52	372	0.456	6.79	0.222	1.28	1	88.8	2.2	1	10.6	0.04
2006861225002-180um	29.3	44	0.54	388	0.417	6.73	0.391	1.18	1.1	88.5	2.3	2	10.4	0.04
2006861226001-180um	23.4	43	0.56	299	0.494	6.02	0.171	1.06	0.8	94.5	1.9	1	9.3	<.04
2006861226002-180um	19.7	37	0.48	307	0.445	5.31	0.11	0.85	0.8	84.1	1.3	1	7.9	<.04
2006861227001-180um	58.7	108	3.04	1203	1.922	8.63	3.314	2.03	55	154.9	1.6	2	13.5	0.13
2006861227002-180um	59.5	100	3.13	1189	1.879	8.65	3.364	2.08	57.7	161.7	1.6	2	13.8	0.14
2006861229001-180um	19.9	37	0.19	214	0.347	4.81	0.101	0.79	0.8	65.8	1.5	1	6.7	<.04

Appendix 5.3

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861229002-180um	34.1	47	0.89	346	0.459	7.76	0.335	1.74	1.3	101.8	2.7	2	12.9	0.05
STANDARD DST6	25.5	233	1.02	682	0.428	6.94	1.648	1.36	7.7	57.7	6.3	3	11	0.04

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT F
To Geoscience Australia PROJECT 2006861
Acme file # A609495 Page 1 (b) Received: DEC 20 2006 * 64 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MI

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861201001-180um	11.9	45.13	4.8	18.9	4.2	0.7	2.7	0.4	2.5	0.5	1.1	0.2	1.3	0.2	2.13	11.5	49.5	0.8	7.89	2.1	6.18
2006861201002-180um	20.3	60.34	6.8	27	5.8	1.1	3.8	0.7	3.7	0.7	1.9	0.3	2	0.3	3	23.1	85.1	1	10.87	4.7	15.09
2006861202001-180um	17.1	57.32	6.3	24.5	5.2	1.1	3.7	0.6	3.3	0.6	1.7	0.2	1.7	0.3	2.71	16.9	56.2	0.9	9.92	2.7	9.61
2006861202002-180um	18.7	64.8	7.1	28.2	5.7	1.2	4	0.7	3.8	0.7	1.9	0.3	2	0.3	3.1	23.6	75.8	0.9	10.23	4.1	15.93
2006861203001-180um	21.4	64.08	7.1	29.5	5.9	1.2	4.8	0.7	4	0.8	2.1	0.3	2.2	0.4	3.13	24.9	85.1	1.1	11.45	4.8	15.79
2006861203002-180um	22.5	68.57	7.4	30	6.1	1.3	4.9	0.8	4.3	0.9	2.3	0.3	2.3	0.4	3.48	27.7	88.1	1.1	11.76	5	18.19
2006861204001-180um	17.3	52.41	6.3	25.7	5.5	1	3.9	0.6	3.3	0.7	1.6	0.2	1.8	0.3	2.83	23	65.3	0.8	8.55	3.5	14.88
2006861204002-180um	20.7	91.01	6.7	26.8	5.5	1.3	4.4	0.8	4.4	0.9	2.3	0.4	2.5	0.4	3.25	33.1	82.5	0.9	9.34	4.5	20.18
2006861205001-180um	17.1	57.51	6.3	25.1	5.1	0.9	3.8	0.6	3	0.6	1.7	0.3	1.6	0.3	2.97	21.7	71.7	0.9	9.33	3.8	15.17
2006861205002-180um	14.7	54.75	5.7	22.5	4.1	0.9	3.4	0.5	2.9	0.5	1.5	0.2	1.6	0.2	2.62	23.7	68.7	0.7	8.05	3.7	15.17
2006861206001-180um	12.1	41.07	4.4	18.6	3.3	0.6	2.6	0.4	2.1	0.4	1.1	0.2	1.1	0.2	2.29	11.5	44.7	0.6	7.89	2	7.25
2006861206002-180um	15.7	45.77	5	19.9	4.2	0.8	3.1	0.5	2.9	0.6	1.5	0.3	1.8	0.3	2.8	15	56.4	0.8	10.01	2.8	10.04
2006861207001-180um	16.7	48.2	5.3	22.6	4.2	1	3.5	0.6	3.3	0.6	1.5	0.3	1.7	0.3	3.02	20.3	56	0.8	9.55	3.2	13.35
2006861207002-180um	15.8	45.37	4.9	21.2	3.9	0.9	3	0.5	3	0.6	1.8	0.3	1.5	0.2	3.07	19.6	54.3	0.7	8.93	3.1	12.45
2006861208001-180um	14	43.22	4.7	19.6	3.8	0.9	3.2	0.4	2.3	0.5	1.5	0.2	1.5	0.2	2.53	18.5	45.6	0.7	8.11	2.5	10.88
2006861208002-180um	16	46.66	4.9	21.4	4.2	1	3.3	0.5	3	0.6	1.6	0.3	1.6	0.2	2.84	18.5	49.7	0.7	8.36	2.8	11.94
2006861209001-180um	15	44.59	4.6	19.3	4.2	0.8	2.8	0.5	2.8	0.5	1.5	0.3	1.6	0.2	2.56	17.3	51	0.8	8.98	2.8	10.74
2006861209002-180um	17.5	49.39	5	22.1	4.4	1	3.4	0.6	3	0.6	1.7	0.2	1.8	0.3	3.33	19.5	60.8	0.8	10.1	3.2	12.91
RE 2006861209002-180um	17.2	50.56	5.2	21.8	4.4	0.9	3.5	0.5	3.1	0.6	1.6	0.3	1.9	0.3	3.13	18.3	60.4	0.8	10.31	3.3	13.13
2006861210001-180um	16.6	47.82	4.9	20.9	4	0.9	3.3	0.5	3	0.6	1.5	0.2	1.8	0.3	3.18	15.8	58.3	0.9	10.37	3.1	11.84
2006861210002-180um	18.9	53.21	5.7	23.4	4.7	1	3.7	0.6	3.6	0.7	1.9	0.3	2	0.3	3.64	19.4	65.8	1	11.7	3.6	14
2006861211001-180um	17.2	50.56	5.4	23.7	4.4	0.9	4	0.6	3.3	0.7	1.7	0.3	1.8	0.3	2.61	22.1	52	0.6	6.91	2.8	11.4
2006861211002-180um	19	55.76	6	27.8	4.9	1.1	4.4	0.7	3.7	0.7	1.9	0.3	1.8	0.3	2.22	22.7	48.8	0.6	6.67	2.6	11.35
2006861212001-180um	19	66.52	6.8	30.5	5.1	1.2	4.2	0.7	3.7	0.7	1.7	0.3	1.9	0.3	2.94	25.3	76.5	0.8	8.54	4.1	17.32
2006861212002-180um	19.5	62.89	6.7	28.9	5.3	1	3.7	0.7	3.9	0.7	1.9	0.3	2	0.3	3.33	26.9	73.8	0.8	7.98	4.1	16.73
2006861213001-180um	19.8	65.58	6.8	29.9	5.5	1.2	4.3	0.6	3.7	0.7	2	0.3	2.2	0.3	3.17	30.3	86.8	0.8	9.16	5.1	19.7
2006861213002-180um	16.8	48.87	5.2	23.2	4.1	0.9	2.8	0.5	3.6	0.6	1.5	0.2	1.6	0.3	2.79	26.3	62.6	0.7	6.84	3.7	15.51
2006861214001-180um	14.4	48.67	5.4	22.8	4.2	0.9	2.8	0.5	2.8	0.6	1.3	0.2	1.5	0.2	3.23	21.2	52.8	0.6	6.68	3.2	13.05
2006861214002-180um	16.9	54.13	5.4	24.1	4.3	1	3.9	0.6	3.1	0.7	1.7	0.3	2	0.3	2.79	28	68.3	0.7	7.18	4.4	18.03
2006861214d001-180um	7.3	25.2	2.9	12.3	2.1	0.4	1.5	0.2	1.4	0.3	0.8	0.1	0.7	0.1	1.43	10.4	24	0.4	4.04	1.2	4.87

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861214d002-180um	5.9	21.97	2.3	9.6	1.5	0.3	1.2	0.2	1.1	0.2	0.5	0.1	0.6	0.1	1.13	8.2	20.2	0.2	3.32	1	3.72
2006861215001-180um	14.1	39.72	4.2	18.8	3.5	0.8	3	0.5	2.6	0.5	1.5	0.2	1.5	0.2	2.64	21.2	48.1	0.6	6.36	2.9	13.15
2006861215002-180um	11	35.43	3.9	17.1	3.2	0.7	2.6	0.4	2.2	0.4	1	0.2	1.1	0.2	1.95	15.8	35.2	0.5	5.27	2	8.83
2006861216001-180um	10.5	33.89	3.6	15	2.7	0.6	2.1	0.3	1.8	0.4	1	0.2	1.2	0.2	2.17	15.9	38.3	0.5	6.22	2.2	9.88
STANDARD DST6	15.3	53.63	5.6	23.2	4.3	1	3.7	0.5	2.9	0.6	1.4	0.2	1.6	0.2	2.02	24.8	58.3	0.8	9.22	7.9	17.54
2006861216002-180um	8.8	32.01	3.6	13.4	2.7	0.5	2.2	0.3	1.5	0.3	0.8	0.1	1	0.1	1.88	16.4	34.9	0.5	5.36	2	9.23
2006861217001-180um	12	37.84	4.3	17.2	3.4	0.7	2.8	0.4	2.3	0.4	1	0.2	1.3	0.2	2.43	15.2	44.2	0.6	6	2.4	11.4
2006861217002-180um	15.6	32.52	4.3	17.4	4	0.9	4.2	0.5	3.2	0.6	1.7	0.3	1.8	0.3	3.29	33.3	61.1	0.7	6.59	4.3	23.94
2006861218001-180um	17.2	58.54	6.2	24.9	5.1	1.1	4.2	0.6	3.4	0.6	1.7	0.3	2	0.3	3.09	20.5	51.2	0.9	8.85	2.9	13.7
RE 2006861218001-180um	17.2	56.33	6.3	23.4	4.9	1	4.4	0.6	3.6	0.6	1.7	0.3	1.8	0.3	3.1	19.7	48.6	0.9	9	2.7	13.55
2006861218002-180um	23.1	61.79	6.4	25	5.4	1.3	4.9	0.7	4.5	0.9	2.3	0.3	2.2	0.4	3.38	20.3	49.9	0.9	9.29	3	14.78
2006861218d001-180um	6.5	25.36	2.8	10.7	2	0.3	1.7	0.2	1.3	0.2	0.6	0.1	0.7	0.1	1.46	8.5	22.3	0.4	4.29	0.8	3.45
2006861219001-180um	11.4	35.73	4	15.8	3.4	0.7	2.8	0.4	2.3	0.4	1.2	0.2	1.1	0.2	2.16	17.9	39.8	0.5	5.25	2.3	11.14
2006861219002-180um	15.2	41.98	5	19.5	4.1	1	3.7	0.5	3	0.6	1.5	0.3	1.6	0.2	2.94	28	54.3	0.6	6.11	3.8	19.12
2006861220001-180um	10.2	35.85	3.8	13.9	2.7	0.5	2	0.3	2.1	0.4	1	0.2	1.2	0.2	2.85	17.2	42.6	0.7	7.5	3.4	18.91
2006861220002-180um	11.4	33.79	3.8	15	3.2	0.7	2.6	0.4	2.3	0.4	1.2	0.2	1.3	0.2	3.25	20.1	45.3	0.8	8.14	4	21.36
2006861221001-180um	20.7	55.26	6.1	23	5.1	1.1	4.5	0.6	3.8	0.7	1.9	0.3	2.5	0.3	3.46	19.5	70	1	11.25	3.8	15.32
2006861221002-180um	20.6	58.69	6.6	25.3	5.9	1.2	5	0.7	4.5	0.7	2	0.3	2	0.3	3.64	20.2	72.7	1.1	12.02	3.9	15.9
2006861222001-180um	16.6	51.51	5.6	21.7	4.7	1.1	4.2	0.6	3.3	0.6	1.6	0.2	1.7	0.2	2.77	20	51.8	0.7	8.1	2.8	13.67
2006861222002-180um	13.8	42.18	4.5	17.3	3.7	0.8	3.6	0.5	2.7	0.5	1.4	0.2	1.4	0.2	2.38	17.2	43.2	0.7	7.06	2.3	11.38
2006861223001-180um	15.6	47.93	5.3	19.9	4.2	0.8	3.9	0.5	3.1	0.6	1.5	0.2	1.5	0.2	2.6	12.8	79.8	0.9	9.12	3.6	10.72
2006861223002-180um	15.2	47.03	5.2	19.9	4.2	0.7	3.5	0.5	2.9	0.6	1.5	0.2	1.6	0.2	2.65	13.2	77	0.8	8.81	3.6	10.46
2006861203007-180um	20.6	64.81	6.8	26.6	5	1.1	5.1	0.6	3.7	0.7	2	0.3	2.1	0.3	3.05	24.5	81	0.9	10.21	4.4	15.45
2006861205007-180um	12.5	44.98	5.1	18.7	3.7	0.8	3.1	0.4	2.4	0.4	1.1	0.2	1.4	0.2	2.39	18.1	59.1	0.7	7.5	2.9	11.98
2006861207007-180um	15.9	46.16	4.9	20.4	3.9	1	3.7	0.5	3.3	0.6	1.6	0.2	1.5	0.2	2.85	18.6	54.1	0.8	8.43	2.9	13.11
2006861224001-180um	15.2	50.53	5.3	20.6	4.1	0.8	4	0.5	3	0.5	1.5	0.2	1.5	0.2	2.27	14.8	50.9	0.7	7.77	2.3	8.91
2006861224002-180um	18.5	59.85	6.5	26.1	4.8	1.1	4.5	0.6	3.7	0.6	1.8	0.3	2	0.3	2.97	22.1	72.6	0.9	9.02	3.9	14.87
2006861225001-180um	19.7	65.05	6.7	26.8	5.3	1.1	4.4	0.6	3.7	0.6	1.8	0.3	1.9	0.3	2.94	25	74.9	0.7	7.5	3.8	16.43
2006861225002-180um	19.2	58.25	6.6	25.8	5.2	1.1	4.6	0.7	3.7	0.7	1.8	0.3	1.9	0.3	2.87	26.1	66.7	0.6	7.01	3.7	16.4
2006861226001-180um	17.4	50.92	5.4	22	4.2	1.1	4	0.6	3.5	0.6	1.8	0.2	1.7	0.3	3.09	21.3	51.7	0.7	8.29	2.9	14.73
2006861226002-180um	14.6	43.78	4.5	17.8	4	0.9	3.7	0.5	3	0.6	1.5	0.2	1.5	0.2	2.67	18.5	44.3	0.7	7.2	2.5	12.06
2006861227001-180um	21	105.33	10.4	39.1	6.7	2.2	5.7	0.8	4.4	0.7	1.9	0.3	1.7	0.3	4.07	10.3	86.3	6.2	78.79	1.5	17.56
2006861227002-180um	22	106.35	10.3	38.7	6.3	2.2	5.3	0.8	4.3	0.8	2	0.3	1.9	0.3	4.33	11.1	88.9	6.4	82.92	1.5	17.57
2006861229001-180um	11.1	40.74	4.1	16.6	3.2	0.6	2.5	0.4	2.2	0.4	1	0.1	1.1	0.2	2.22	15.2	46.8	0.6	5.99	2.6	10.74

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs	Ga
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861229002-180um	21.3	68.82	7.7	29.7	5.9	1.2	4.8	0.7	4.1	0.7	2.1	0.3	2.1	0.3	3.48	36	88.7	0.8	7.45	5.4	19.48
STANDARD DST6	15.4	52.9	5.5	22.4	4.4	0.9	3.5	0.5	2.9	0.5	1.5	0.2	1.5	0.2	1.78	24.3	59.5	0.7	8.35	7.8	16.51

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TEXT F(
To Geoscience Australia PROJECT 2006861
Acme file # A609494 Page 1 (a)   Received: DEC 20 2006 *   64 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MIN

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861201001-75um	0.42	19.29	12.94	28.9	61	10.8	7.8	494	1.51	2.5	1.4	<.1	10.3	70	0.07	0.59	0.21	47	0.17	0.033
2006861201002-75um	0.74	26.8	16.52	56.7	99	22.8	11.4	419	3.04	7.1	1.9	<.1	11.2	133	0.08	0.8	0.29	90	0.66	0.035
2006861202001-75um	0.46	22.44	18.42	44.6	53	18.5	11.3	491	2.26	2.9	1.4	<.1	12.5	78	0.08	0.56	0.27	61	0.19	0.032
2006861202002-75um	0.57	26.81	18.45	62.7	40	27	13.4	565	3.25	4.5	1.3	<.1	11	115	0.08	0.61	0.28	91	0.27	0.024
2006861203001-75um	0.36	26.32	17.78	58	67	25.9	12.6	682	3.08	4.1	1.4	<.1	10.7	95	0.09	0.62	0.27	79	0.4	0.036
2006861203002-75um	0.59	31.91	21.1	68.5	64	32.1	16.7	818	3.69	5.1	1.7	<.1	12.3	124	0.1	0.73	0.32	95	0.39	0.036
2006861204001-75um	0.78	28.21	19.95	62.7	54	26.2	12	819	3.53	5.7	1.5	<.1	12.7	65	0.09	0.69	0.32	92	0.16	0.055
2006861204002-75um	0.69	26.25	19.29	64	23	35.3	24.8	490	4.12	7	1.2	<.1	11.1	89	0.07	0.72	0.29	107	0.24	0.023
2006861205001-75um	0.73	25.43	22.27	62.4	40	23	10.5	412	3.59	5.5	1.5	<.1	12.8	64	0.1	0.61	0.34	97	0.17	0.058
2006861205002-75um	0.87	21.87	19.03	49.5	30	25.4	12.8	359	3.54	5.4	1.6	<.1	11	62	0.08	0.65	0.29	89	0.2	0.025
2006861206001-75um	0.41	17.33	13.18	42	54	16.6	10.1	438	2	2.3	1.6	<.1	12	83	0.12	0.45	0.17	58	0.31	0.04
2006861206002-75um	0.54	18.66	13.54	45.2	56	21.2	12.1	555	2.33	4	1.5	<.1	10.5	118	0.09	0.5	0.19	69	0.6	0.031
2006861207001-75um	0.37	25.64	15.63	69.3	51	25.7	13.4	539	3.46	5.5	1.3	<.1	9.8	128	0.11	0.5	0.24	94	0.64	0.04
2006861207002-75um	0.58	21.19	14.01	55.9	42	22.4	12.6	478	2.8	4.3	1.2	<.1	8.1	114	0.1	0.45	0.19	78	0.46	0.032
2006861208001-75um	0.44	22.47	14.84	61.6	36	21.1	11.8	384	2.98	4.6	1.3	<.1	10	101	0.12	0.43	0.21	90	0.42	0.047
2006861208002-75um	0.76	25.86	17.65	70.2	44	27.3	16.4	539	3.58	5.8	1.4	<.1	10.6	127	0.11	0.46	0.24	109	0.69	0.031
2006861209001-75um	0.41	22.44	14.24	55.3	65	21.7	13.3	531	2.8	3.7	1.5	<.1	9.3	106	0.11	0.47	0.21	72	0.43	0.04
2006861209002-75um	0.69	24.28	16.27	62.4	68	28.1	20.6	928	3.29	4.5	1.5	<.1	9.9	129	0.12	0.5	0.24	83	0.58	0.035
2006861210001-75um	0.35	18.2	13.59	49.3	66	17.4	9.4	309	2.48	2.6	1.7	<.1	10	110	0.1	0.46	0.2	64	0.44	0.034
2006861210002-75um	0.53	21.57	15.03	60.9	63	21.5	12.2	399	2.97	2.7	1.7	<.1	10.2	125	0.09	0.5	0.23	73	0.53	0.034
2006861211001-75um	0.48	26.34	18.12	76.8	85	25.2	16.4	559	3.54	5.3	1.5	<.1	11.7	122	0.17	0.5	0.25	90	1.52	0.037
2006861211002-75um	0.49	23	14.42	52.3	53	21.5	18.7	362	3.06	11	1.4	<.1	8.9	385	0.11	0.43	0.2	129	8.02	0.026
2006861212001-75um	0.63	28.71	24.17	86.5	50	26.4	18.3	818	4.45	7.7	1.9	<.1	12.4	112	0.13	0.64	0.32	115	0.29	0.064
2006861212002-75um	1.05	33.07	21.08	90.9	25	30.2	14.5	553	4.92	8.9	2	<.1	11.7	113	0.1	0.65	0.3	118	0.32	0.043
2006861213001-75um	0.63	35.72	25.52	105.9	42	33	19.9	794	4.91	8.8	2.3	<.1	12.7	114	0.17	0.82	0.37	121	0.37	0.064
2006861213002-75um	0.91	30.84	18.47	85.8	44	27.4	14.4	518	4.51	10.1	1.6	<.1	10.2	180	0.13	0.58	0.29	126	1.55	0.042
RE 2006861213002-75um	0.84	30.36	18.5	87.2	28	27.2	14.7	514	4.58	10	1.7	<.1	10.8	182	0.14	0.59	0.28	126	1.54	0.04
2006861214001-75um	0.48	29.59	20.03	88.8	32	24.5	14.4	656	4.37	8.6	1.9	<.1	9.6	142	0.19	0.49	0.28	115	1.86	0.076
2006861214002-75um	0.74	34.57	21.23	100.2	<20	27.9	17.9	705	4.83	13.8	2.5	<.1	8.9	157	0.15	0.53	0.3	183	1.13	0.065
2006861214d001-75um	0.32	14.52	11.41	41.7	25	10.4	10.9	268	1.99	3.3	1.2	<.1	8.7	76	0.09	0.39	0.16	53	0.21	0.03

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861214d002-75um	0.39	14.25	11.7	32.4	35	9	5.7	248	1.73	2.7	1.5	<.1	10.8	78	0.09	0.4	0.17	51	0.19	0.035
2006861215001-75um	0.5	23.29	15.92	64.3	26	18.1	11.1	428	3.36	4.1	1.4	<.1	9.7	106	0.12	0.44	0.23	88	0.29	0.04
2006861215002-75um	0.63	25.04	17.61	68.8	31	21.8	14.8	558	3.57	4.8	1.6	<.1	12.2	114	0.09	0.44	0.24	99	0.35	0.034
2006861216001-75um	0.62	20.93	14.78	57.5	22	16.4	9.2	284	2.97	3.4	1.3	<.1	9.8	71	0.13	0.44	0.2	81	0.14	0.043
STANDARD DST6	12.47	128.13	35.32	175	340	29.7	14	961	4.08	23.8	7.4	<.1	6.9	314	6.27	5.56	4.91	110	2.24	0.099
2006861216002-75um	0.55	20.57	14.24	46.1	45	18.1	9.1	243	3.2	5	1.4	<.1	10.4	80	0.08	0.47	0.22	94	0.15	0.032
2006861217001-75um	0.58	25.11	16.76	68.7	58	18.5	6.5	221	3.43	3.2	1.4	<.1	11.2	80	0.1	0.46	0.25	103	0.15	0.066
2006861217002-75um	0.39	33.1	15.33	100	44	31.1	12.1	394	5.3	4.9	1	<.1	6.5	110	0.11	0.4	0.23	113	0.53	0.06
2006861218001-75um	0.63	26.91	21.34	70.1	55	20.4	17.7	620	3.46	5.8	1.8	<.1	11.5	141	0.13	0.47	0.29	115	0.22	0.04
2006861218002-75um	1.54	26.49	25.85	76.8	58	28.4	22.4	1147	3.58	5.9	2.9	<.1	12.2	200	0.18	0.51	0.31	124	0.48	0.045
2006861218d001-75um	0.32	14.85	11.37	31.1	45	8.4	7.4	434	1.45	2.1	1.4	<.1	10.7	68	0.07	0.38	0.14	51	0.13	0.021
2006861219001-75um	0.38	25.35	17.32	79.4	31	23.5	11.8	419	4.07	2.3	1.7	<.1	9.5	88	0.11	0.4	0.24	75	0.28	0.044
2006861219002-75um	0.44	28.35	13.43	88.5	<20	25.8	11.5	366	4.55	14.4	2.2	<.1	6.7	164	0.09	0.37	0.22	223	2.74	0.054
2006861220001-75um	1.44	33.62	18.8	74.9	30	19.9	8.1	237	3.86	5.3	2.2	<.1	10	129	0.1	0.52	0.28	139	0.34	0.033
2006861220002-75um	1.12	27.89	16.53	63.6	20	19.6	8.9	233	3.79	7.9	1.9	<.1	6.8	98	0.08	0.46	0.25	127	0.17	0.022
2006861221001-75um	0.46	25.32	15.48	70.5	116	28.2	17.7	831	3.51	5.1	1.4	<.1	9.5	139	0.15	0.48	0.25	87	0.8	0.073
2006861221002-75um	0.64	25.77	15.97	70.3	138	31	20.3	992	3.68	5.2	1.6	<.1	9.5	144	0.14	0.52	0.25	89	0.64	0.056
2006861222001-75um	0.53	25.04	15.62	72.7	35	26.3	15.5	526	3.49	4.3	1.2	<.1	9.4	104	0.11	0.43	0.22	101	0.57	0.039
2006861222002-75um	0.57	25.86	16.5	75.4	51	28.5	16.4	554	3.59	5.2	1.2	<.1	9.4	117	0.13	0.44	0.21	107	0.77	0.032
2006861223001-75um	0.55	17.93	15.87	50	79	18.3	11.2	579	2.3	2.4	1.9	<.1	10.8	117	0.1	0.54	0.24	66	0.46	0.053
2006861223002-75um	0.78	19.28	16.52	48.8	72	22.9	14.5	711	2.67	4.1	1.9	<.1	12.1	134	0.09	0.62	0.26	74	0.62	0.028
2006861203007-75um	0.44	31.02	19.59	66.1	67	29.7	14.9	765	3.63	4.6	1.5	<.1	12	116	0.09	0.72	0.3	92	0.45	0.032
2006861205007-75um	0.46	20.92	17.55	43.1	35	19.1	10.6	277	3.2	4.6	1.5	<.1	12.2	61	0.07	0.61	0.27	88	0.17	0.028
2006861207007-75um	0.46	25.03	14.88	64.3	37	25.2	14.3	574	3.37	4.7	1.4	<.1	9.9	133	0.09	0.47	0.22	92	0.59	0.034
2006861224001-75um	0.44	21.36	16.04	42.3	25	17.4	10.1	418	2.11	3	1.3	<.1	12.1	74	0.07	0.54	0.24	59	0.18	0.031
2006861224002-75um	0.51	25.25	16.75	59.6	21	25	12.2	554	3.13	4.1	1.2	<.1	11	109	0.08	0.57	0.26	84	0.27	0.022
2006861225001-75um	0.59	26.94	22.02	81.4	32	24.4	16.8	773	4.15	6.4	1.7	<.1	11.8	109	0.14	0.6	0.29	106	0.28	0.06
2006861225002-75um	1.04	33.28	20.45	92.1	21	30.7	14	559	4.84	9.1	1.9	<.1	12.5	117	0.12	0.66	0.3	120	0.34	0.045
2006861226001-75um	0.51	24.25	15.69	71	30	25.8	14.8	520	3.45	3.9	1.2	<.1	9.4	99	0.09	0.37	0.21	94	0.57	0.039
2006861226002-75um	0.46	24.72	15.5	72.7	42	27.4	15.7	558	3.65	4.7	1.1	<.1	8.5	112	0.1	0.4	0.21	97	0.76	0.03
2006861227001-75um	1.15	10.15	23.54	42.8	<20	101.8	27.2	231	1.48	0.6	6	<.1	26.7	36	0.08	0.27	0.16	3	0.49	0.01
RE 2006861227001-75um	1.07	9.65	23.03	42.5	<20	97.4	27	231	1.44	1	5.8	<.1	25.8	34	0.1	0.28	0.16	3	0.5	0.009
2006861227002-75um	1.12	10.3	30.21	43.9	<20	101.9	27.2	234	1.47	1.2	5.8	<.1	26.3	35	0.11	0.29	0.17	2	0.49	0.01
2006861229001-75um	0.4	21.09	17.13	46.9	30	14.7	14.7	553	2.45	4.7	1.5	<.1	11.1	95	0.13	0.44	0.22	76	0.2	0.039

Appendix 5.3

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
SAMPLES	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
2006861229002-75um	0.9	30.4	20.54	82.1	25	25.9	16.2	625	4.16	8.5	2.3	<.1	12	159	0.11	0.7	0.34	111	1.01	0.051
STANDARD DST6	12.46	129.21	35.87	176.4	325	29.9	14.2	962	4.08	23.7	7.6	<.1	7	308	5.93	5.48	4.86	109	2.26	0.099

From ACME ANALYTICAL LABORMAT
To Geoscience Australia PROJEC
Acme file # A609494 Page 1 (a)
Analysis: GROUP 1T-MS - 0.25 GERALS MAY BE PARTIALLY

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861201001-75um	25.8	26	0.16	281	0.397	2.92	0.374	0.92	1.1	78.9	1.5	1	5.4	<.04
2006861201002-75um	28.8	47	0.63	527	0.444	6	0.617	1.29	1.5	98.2	2.4	2	11.1	0.09
2006861202001-75um	31.4	39	0.27	295	0.498	4.64	0.279	1.07	1.2	93.5	1.9	1	8.8	<.04
2006861202002-75um	30.2	50	0.55	383	0.518	6.27	0.458	1.32	1.4	99.7	2.5	1	11.8	0.05
2006861203001-75um	29.8	53	0.46	407	0.45	6.05	0.249	1.16	1.2	86.6	2.4	1	11.4	<.04
2006861203002-75um	33.4	63	0.55	480	0.479	6.99	0.441	1.32	1.6	104	2.8	2	13.2	<.04
2006861204001-75um	35.3	50	0.28	265	0.501	7.02	0.125	1.23	1.3	97	2.7	2	12.6	<.04
2006861204002-75um	31.3	55	0.53	484	0.511	8.5	0.207	1.38	1.6	102.5	3.1	2	13.7	<.04
2006861205001-75um	32.4	60	0.28	332	0.518	6.88	0.142	1.2	1.3	100	2.7	2	12.1	<.04
2006861205002-75um	26.4	52	0.34	336	0.471	6.3	0.118	1.16	1.2	93.6	2.7	1	11	<.04
2006861206001-75um	27.3	39	0.27	297	0.561	3.91	0.423	0.94	1	102.6	1.6	1	6.6	<.04
2006861206002-75um	26.5	46	0.38	375	0.556	4.61	0.572	0.96	1.2	102.1	1.6	1	7.9	<.04
2006861207001-75um	27.9	53	0.64	390	0.57	6.71	0.351	1.17	1.2	112.2	2.1	2	11.7	<.04
2006861207002-75um	23	40	0.49	360	0.446	5.26	0.379	1.01	1.1	92.3	1.8	1	9.6	<.04
2006861208001-75um	27.4	46	0.47	337	0.592	5.86	0.29	1.13	1.1	106.2	1.8	1	10.4	<.04
2006861208002-75um	31.1	57	0.55	383	0.601	6.94	0.327	1.15	1.3	113.9	2.1	2	12.2	<.04
2006861209001-75um	25.7	45	0.48	331	0.53	5.42	0.387	1.15	1.1	107.3	1.8	1	9.5	<.04
2006861209002-75um	28	53	0.59	390	0.577	6.26	0.449	1.16	1.3	113.9	1.9	1	10.9	<.04
2006861210001-75um	26.6	50	0.4	313	0.572	4.92	0.508	1.18	1.1	106.9	1.8	1	8.6	<.04
2006861210002-75um	29.2	57	0.46	327	0.606	5.82	0.527	1.22	1.2	110.7	1.9	1	10	<.04
2006861211001-75um	33.5	56	0.68	354	0.537	6.92	0.214	1.47	1.1	109	2.2	1	11.9	<.04
2006861211002-75um	28.5	41	0.99	537	0.467	5.81	0.179	1.17	1	90.6	1.8	1	9.8	0.06
2006861212001-75um	36.6	57	0.64	417	0.522	8.45	0.257	1.56	1.3	104.4	2.6	2	13.5	0.06
2006861212002-75um	31.9	60	0.7	498	0.497	8.64	0.479	1.53	1.3	108.3	2.7	2	14.2	0.06
2006861213001-75um	36.6	71	0.88	470	0.542	9.42	0.337	1.95	1.7	109.5	3.6	3	15.8	0.06
2006861213002-75um	28.4	52	0.93	524	0.513	8.29	0.535	1.38	1.2	104.8	2.5	2	13.5	0.06
RE 2006861213002-75um	28.9	54	0.92	550	0.478	8.19	0.526	1.34	1.3	103.1	2.6	2	13.3	0.07
2006861214001-75um	26.3	48	0.8	464	0.483	8.07	0.236	1.44	1.1	98.9	2.4	2	12.9	0.06
2006861214002-75um	25	53	0.99	462	0.513	9.01	0.942	1.54	1.3	103.9	2.7	2	14.6	0.16
2006861214d001-75um	25.3	25	0.34	313	0.387	3.72	0.263	0.95	61.6	84.2	1.4	1	6.2	<.04

Appendix 5.3

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861214d002-75um	28.3	26	0.2	311	0.431	3.18	0.416	0.95	0.9	89	1.2	1	5.1	<.04
2006861215001-75um	26.4	44	0.5	290	0.464	6.51	0.231	1.15	1	94.5	2	1	10.6	<.04
2006861215002-75um	31.3	49	0.52	406	0.533	6.63	0.289	1.1	1	106.4	2	2	11.3	0.04
2006861216001-75um	26.3	39	0.25	236	0.457	5.62	0.165	0.94	0.9	90.7	1.9	1	9.3	0.04
STANDARD DST6	25.1	233	1.01	682	0.39	6.89	1.635	1.37	7.5	54.8	6.5	3	11.6	0.05
2006861216002-75um	27.4	62	0.25	267	0.561	5.86	0.134	0.95	1.1	109.2	1.9	1	10.3	<.04
2006861217001-75um	28.7	71	0.29	265	0.545	6.62	0.127	1.12	1.1	109	2.1	1	11.8	<.04
2006861217002-75um	15.4	65	0.77	319	0.503	9.56	0.107	1.6	1	102.7	2.7	2	14.7	0.04
2006861218001-75um	34.7	62	0.47	587	0.668	6.85	0.66	1.22	1.5	129.9	2.3	1	11.9	0.04
2006861218002-75um	38.1	59	0.61	510	0.699	7.04	0.895	1.08	1.6	127.8	2.3	1	12.9	0.34
2006861218d001-75um	25.3	33	0.16	375	0.478	2.52	0.207	0.7	0.7	83.7	1	1	4.4	<.04
2006861219001-75um	25.4	54	0.77	313	0.512	7.32	0.629	1.51	1	101.3	2.3	1	11.8	0.04
2006861219002-75um	18.2	50	1.04	316	0.463	8.16	1.246	1.43	1	95	2.1	2	12.8	0.67
2006861220001-75um	25.4	73	0.54	441	0.594	8.61	0.596	0.92	1.3	114.6	2.7	1	13.7	0.18
2006861220002-75um	16.7	59	0.67	223	0.556	7.49	1.226	0.94	1.2	109.1	2.5	2	11.9	0.18
2006861221001-75um	28.4	69	0.66	379	0.609	6.35	0.443	1.38	1.3	119.3	2.2	1	11.7	0.04
2006861221002-75um	27.7	67	0.68	361	0.642	6.76	0.693	1.24	1.4	122.5	2.3	1	12	0.04
2006861222001-75um	28.2	66	0.63	342	0.576	6.68	0.22	1.3	1.1	122.6	2	1	11.8	0.04
2006861222002-75um	28.9	66	0.65	389	0.583	7.02	0.171	1.18	1.1	118.1	2	2	11.5	0.04
2006861223001-75um	26.8	57	0.31	360	0.625	4.95	0.839	1.36	1.4	106.1	1.9	1	7.6	<.04
2006861223002-75um	28.6	67	0.38	391	0.647	5.48	0.881	1.4	1.4	109.8	2.3	2	8.9	<.04
2006861203007-75um	34	63	0.55	475	0.508	6.52	0.312	1.28	1.5	100.9	2.6	2	12.8	<.04
2006861205007-75um	31.8	53	0.26	310	0.518	6.08	0.118	1.08	1.3	102.3	2.3	2	10.2	<.04
2006861207007-75um	27.2	54	0.6	396	0.566	6.27	0.425	1.1	1.5	109.9	2	1	11	<.04
2006861224001-75um	30.1	46	0.25	281	0.498	4.2	0.275	1.03	1.3	93.9	1.8	1	7.7	<.04
2006861224002-75um	31.3	60	0.53	354	0.505	6.47	0.448	1.23	1.3	92.2	2.3	2	11	<.04
2006861225001-75um	35.1	56	0.61	392	0.503	7.74	0.261	1.57	1.3	99.7	2.5	2	13	0.05
2006861225002-75um	35.9	63	0.7	555	0.506	8.6	0.482	1.58	1.3	111.4	2.8	2	14.4	0.05
2006861226001-75um	28.3	55	0.63	321	0.577	6.72	0.219	1.24	1.1	107.9	1.9	1	10.9	<.04
2006861226002-75um	26.6	50	0.64	360	0.582	6.8	0.157	1.1	1.1	106.1	1.9	1	11	<.04
2006861227001-75um	56.2	54	0.06	611	0.113	5.97	2.446	2.74	184.3	92.8	5.1	4	5.7	<.04
RE 2006861227001-75um	53.8	47	0.06	596	0.113	6.07	2.392	2.54	179.6	90.7	5.3	3	5.3	<.04
2006861227002-75um	54.5	54	0.06	612	0.11	5.94	2.536	2.83	179.2	93	12.7	3	5.6	<.04
2006861229001-75um	31.9	36	0.31	337	0.511	4.57	0.289	1.14	1	101.3	1.6	1	8.3	<.04

Appendix 5.3

ELEMENT	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Zr	Sn	Be	Sc	S
SAMPLES	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	ppm	%
2006861229002-75um	33.1	57	0.87	575	0.504	7.68	0.488	1.58	1.4	100.3	2.9	2	13.1	0.04
STANDARD DST6	25.1	229	1.01	673	0.41	6.98	1.641	1.36	7.4	56.4	6.5	3	11.3	0.05

From ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 @ CSV TE
To Geoscience Australia PROJECT 2006861
Acme file # A609494 Page 1 (b) Received: DEC 20 2006 * 64 samples in this disk file.
Analysis: GROUP 1T-MS - 0.25 GM SAMPLE DIGESTED WITH HCLO4-HNO3-HCL-HF TO 10 ML. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOM

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861201001-75um	14.9	53.71	5.5	22.3	4.2	0.8	3.5	0.5	3.1	0.5	1.5	0.2	1.7	0.2	2.56	13.6	51.5	0.9	10.09	2.3
2006861201002-75um	20.1	55.46	6.7	26.1	5.1	1	5	0.7	4.1	0.7	2	0.3	2.2	0.3	3.12	25.1	78.6	1	11.52	4.7
2006861202001-75um	19	65.42	7.2	29.1	5.5	1.1	4.5	0.7	4.2	0.7	1.8	0.3	1.9	0.3	2.94	20.2	64.3	0.9	11.31	3.1
2006861202002-75um	20	61.91	7	27.9	5.1	1.1	4.6	0.7	4	0.7	1.9	0.3	2.1	0.3	3.1	26.9	76.1	1	11.48	4.2
2006861203001-75um	20.6	59.42	6.6	26.3	5.3	1.1	4.8	0.7	4.1	0.7	2	0.3	2.2	0.3	2.81	25.1	75	0.9	10.77	4.4
2006861203002-75um	22.9	70.4	7.6	30.9	5.7	1.3	5.3	0.8	4.7	0.9	2.2	0.4	2.3	0.3	3.28	29.8	89.2	1.1	12.89	5
2006861204001-75um	22.8	67.66	7.8	31.3	5.9	1.4	5.3	0.7	4.5	0.8	2	0.3	2.2	0.3	3.13	29.4	79.2	0.9	10.42	4.4
2006861204002-75um	23.1	103.98	7.3	29	5.9	1.3	5.4	0.8	4.8	0.9	2.4	0.4	2.8	0.4	3.27	37.7	86.3	0.9	10.24	5
2006861205001-75um	19.5	66.21	7.4	29	5.5	1.2	4.4	0.6	3.9	0.7	1.8	0.3	2	0.3	3.17	25.1	75.3	0.9	10.86	4.3
2006861205002-75um	16.6	56	5.8	24	4.5	1	4	0.6	3.4	0.6	1.6	0.3	1.8	0.3	2.98	28.1	73.2	0.8	9.67	3.9
2006861206001-75um	16	56.42	6.2	24.1	4.4	0.8	4	0.5	3.3	0.6	1.5	0.3	1.6	0.3	3.16	14.7	48.5	0.9	10.83	2.4
2006861206002-75um	17.9	53.9	5.8	23.2	4.6	0.9	4	0.6	3.3	0.6	1.7	0.3	1.8	0.3	3.09	16.8	57.1	1	12.14	3.1
2006861207001-75um	20.8	57.72	6.3	25.6	5	1.1	4.6	0.7	4	0.8	1.9	0.3	2.2	0.3	3.54	24	65.5	0.9	11.73	3.9
2006861207002-75um	16.9	48.59	5.1	21.4	4.1	1	3.8	0.6	3.3	0.6	1.6	0.2	1.7	0.2	2.8	20.5	55.4	0.8	9.67	3.2
2006861208001-75um	18.5	54.73	6.1	24.9	4.5	1	4	0.6	3.7	0.7	1.6	0.3	1.9	0.3	3.17	22.7	55.8	0.8	10.73	3.3
2006861208002-75um	22.2	65.29	6.9	27.8	5.2	1.2	5	0.7	4.2	0.8	2.1	0.3	2.2	0.3	3.5	26.2	63.1	1	11.76	4
2006861209001-75um	19.6	52.47	5.6	23.2	4.4	1	4.1	0.6	3.6	0.7	1.8	0.3	2	0.3	3.21	20.2	60.6	0.9	11.47	3.3
2006861209002-75um	21	59.86	6.2	24.9	5	1.1	4.6	0.7	3.9	0.8	1.9	0.3	2.2	0.3	3.65	22.9	66.4	1.1	12.69	3.9
2006861210001-75um	18.3	52.65	5.8	23.5	4.4	1	4.2	0.6	3.5	0.6	1.7	0.3	1.9	0.3	3.2	17.1	59.9	0.9	11.86	3.2
2006861210002-75um	20.3	56.87	6.4	25	4.7	1	4.5	0.6	3.8	0.7	1.9	0.3	2	0.3	3.45	19.1	65.2	1	12.85	3.7
2006861211001-75um	26.7	74.23	8.1	33.1	6.3	1.4	6	0.9	5	0.9	2.4	0.4	2.5	0.3	3.38	31	68.6	0.8	10.38	3.9
2006861211002-75um	24.8	67.74	7.7	32.9	6.3	1.4	6	0.9	4.7	0.9	2.3	0.4	2.3	0.3	2.77	27.7	58.6	0.7	8.78	3.3
2006861212001-75um	23.1	76.47	8.1	32	5.8	1.3	5.3	0.8	4.7	0.8	2.1	0.4	2.3	0.4	3.3	28.7	79.9	0.9	9.88	4.7
2006861212002-75um	22.5	64.54	7.2	29.3	5.5	1.1	5.1	0.7	4	0.8	2	0.3	2.2	0.3	3.46	36.2	74.4	0.8	9.06	4.4
2006861213001-75um	24.2	76.38	8.3	33.2	6.2	1.3	5.5	0.8	4.8	0.9	2.2	0.4	2.5	0.4	3.46	37.7	87.5	0.9	10.58	5.8
2006861213002-75um	20.7	57.72	6.5	26.7	5.2	1.2	4.5	0.7	4.2	0.8	2	0.3	2.2	0.3	3.36	34.8	51.4	0.8	8.88	4.5
RE 2006861213002-75um	21.1	59.37	6.6	27	4.9	1.1	4.7	0.7	4	0.7	1.9	0.3	2.1	0.3	3.22	33.5	51.8	0.8	8.77	4.4
2006861214001-75um	19.8	53.86	5.8	25.1	4.8	1	4.6	0.7	3.8	0.7	1.9	0.3	2.1	0.3	3.24	31.7	46.2	0.7	8.25	4.2
2006861214002-75um	19.8	55.49	6	23.7	4.7	1.1	4.6	0.6	3.7	0.7	1.8	0.3	2.1	0.3	3.24	35.4	49.9	0.7	8.81	4.7
2006861214d001-75um	13.5	49.5	5.4	21.1	3.7	0.7	3.1	0.5	2.5	0.5	1.1	0.2	1.3	0.2	2.69	16.2	41.9	0.6	6.54	2.2

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861214d002-75um	13.6	54.73	6.2	23.7	4.1	0.8	3.4	0.5	2.9	0.5	1.2	0.2	1.4	0.2	2.86	15.6	41.3	0.6	7.17	1.9
2006861215001-75um	18.2	53.28	5.7	23.2	4.3	1	4.1	0.6	3.3	0.6	1.7	0.3	1.8	0.3	2.97	27.8	55.9	0.7	8.04	3.3
2006861215002-75um	20.4	66.57	6.8	28.5	5	1.1	5.1	0.7	3.7	0.7	1.7	0.3	2	0.3	3.34	27	59.5	0.7	9.14	3.5
2006861216001-75um	17.3	53.06	5.8	23	4	0.9	4.1	0.5	3.1	0.6	1.6	0.3	1.6	0.2	2.94	21.3	53.3	0.7	8.36	3
STANDARD DST6	15.1	52.85	5.5	21.9	4	0.9	3.6	0.5	2.9	0.5	1.4	0.2	1.5	0.2	1.68	24.9	53.5	0.7	9.18	8.1
2006861216002-75um	17.6	54.16	6.1	24	4.6	1.1	4.2	0.6	3.4	0.7	1.8	0.3	2.1	0.3	3.48	25.6	61.7	0.8	9.69	3.4
2006861217001-75um	19	56.43	6.4	25	4.6	1.1	4.5	0.6	3.7	0.7	1.8	0.3	2.1	0.3	3.38	22.5	68.6	0.8	9.5	3.7
2006861217002-75um	16.5	33.6	4.1	17.3	3.8	0.8	3.9	0.5	3.4	0.7	1.8	0.3	2.1	0.3	3.13	38	51.2	0.6	7.64	4.3
2006861218001-75um	22.7	75.37	8	32.9	5.7	1.4	5.1	0.7	4.6	0.9	2.4	0.4	2.6	0.4	4.02	27	66.8	1.1	12.96	3.8
2006861218002-75um	30.1	81.93	8.6	34.6	6.6	1.5	6.6	0.9	5.5	1	2.8	0.5	3.1	0.4	3.98	28.7	66	1.1	12.53	3.8
2006861218d001-75um	12.6	54.48	5.7	22.2	4.2	0.6	3.2	0.4	2.6	0.4	1.2	0.2	1.4	0.2	2.47	13.9	36.5	0.6	7.85	1.5
2006861219001-75um	18	55.02	6	23.5	4.6	1.1	4.4	0.6	3.8	0.7	1.7	0.3	2	0.3	3.2	30.9	61.4	0.7	8.36	3.7
2006861219002-75um	15.9	39.24	4.4	18.1	3.7	0.9	3.8	0.5	3.2	0.6	1.6	0.3	1.8	0.2	2.91	33.5	39.8	0.6	7.34	3.7
2006861220001-75um	13.4	47.1	4.8	18.2	3.5	0.8	2.9	0.5	2.8	0.6	1.3	0.3	1.7	0.3	3.52	23.8	57.8	0.9	10.45	4.4
2006861220002-75um	11.1	34.12	3.8	15	2.8	0.7	2.6	0.4	2.4	0.4	1.1	0.2	1.5	0.2	3.26	23.5	47.5	0.8	10	3.9
2006861221001-75um	22.4	62.02	6.6	27.4	5.2	1.2	5.1	0.7	4.5	0.8	2.1	0.4	2.5	0.3	3.57	21.2	81.7	1.1	13.26	4
2006861221002-75um	21.9	60.1	6.4	25.8	5	1.2	4.9	0.7	4.1	0.8	2.1	0.3	2.5	0.3	3.46	22.1	78.4	1.1	13.2	4
2006861222001-75um	22.1	61.6	6.5	26.9	5	1.3	4.9	0.7	6	0.8	2	0.3	2.4	0.3	3.56	24.9	66.6	0.9	11.05	3.4
2006861222002-75um	21.9	63.82	6.6	27.7	5.3	1.2	5.1	0.7	4.3	0.8	2	0.3	2.3	0.4	3.63	26.3	66.8	0.9	10.92	3.6
2006861223001-75um	19	57.7	6.2	24.3	4.6	0.9	4.3	0.6	3.7	0.7	1.8	0.3	2.3	0.3	3.34	15	82.5	1	12.11	3.8
2006861223002-75um	21.2	60.98	6.5	26.2	5.3	1.1	5	0.7	4.2	0.8	2	0.3	2.5	0.3	3.5	17.8	87.7	1.1	12.57	4.4
2006861203007-75um	23.2	69.98	7.5	29.7	5.8	1.2	5.3	0.7	4.5	0.8	2.2	0.4	2.6	0.4	3.06	27.1	95.4	0.9	12.07	5
2006861205007-75um	17.2	62.1	7.1	28	5.1	1	4.2	0.6	3.6	0.6	1.9	0.3	1.9	0.3	3.03	24.3	78.9	0.9	9.89	3.7
2006861207007-75um	20.2	56.63	6.2	24.7	5	1	4.2	0.7	4	0.8	1.9	0.3	2.1	0.3	3.35	23.9	70.4	0.9	11.22	3.7
2006861224001-75um	18.6	63.39	6.8	27.3	5.2	1	4.5	0.6	3.9	0.6	1.9	0.3	2.1	0.3	2.73	18	63.8	0.9	10.55	2.8
2006861224002-75um	19.6	64.45	6.9	26.4	5.1	1.1	4.6	0.6	3.8	0.7	1.8	0.3	2.1	0.3	2.9	25.1	79.4	0.9	10.27	4
2006861225001-75um	22	73.29	7.8	31.1	5.7	1.3	4.9	0.8	4.5	0.8	2.1	0.4	2.5	0.3	3.08	29.8	89.9	0.8	9	4.3
2006861225002-75um	23.8	70.43	8.1	31.9	6.1	1.2	5.2	0.8	4.7	0.8	2.2	0.3	2.6	0.3	3.36	37.6	89.1	0.8	9.08	4.7
2006861226001-75um	20.6	60.4	6.4	26	5.1	1.2	4.4	0.7	4.2	0.8	2	0.3	2.4	0.3	3.48	25.3	62.8	0.8	10.37	3.3
2006861226002-75um	19.8	58.1	6.2	24.6	4.9	1.1	4.2	0.7	3.9	0.7	1.8	0.3	2.2	0.3	3.22	24.5	61.3	0.8	10.09	3.2
2006861227001-75um	82	116.78	13.8	54.2	12.5	1.3	13.1	2.3	16.2	3.1	8.5	1.3	9.8	1.3	4.49	11.9	161.2	1.5	11.6	2.6
RE 2006861227001-75um	79.9	111.65	12.7	50.8	11.4	1.2	12.3	2.2	15.1	2.9	8.2	1.3	9.4	1.3	4.37	12.2	150.2	1.4	11.5	2.6
2006861227002-75um	82.2	114.25	13.1	52.8	11.8	1.1	12.5	2.2	15.2	2.9	8.1	1.3	9.3	1.3	4.33	11.8	172.2	1.4	11.83	2.7
2006861229001-75um	18	63.66	6.8	26.6	4.8	1	3.8	0.6	3.5	0.6	1.6	0.3	1.9	0.3	2.97	19.8	52.3	0.7	8.92	2.5

Appendix 5.3

ELEMENT	Y	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Li	Rb	Ta	Nb	Cs
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2006861229002-75um	21.9	68.7	7.2	28.7	5.7	1.1	4.7	0.7	4.5	0.8	2.1	0.3	2.4	0.3	3.12	31.4	88.1	0.8	9.19	4.8
STANDARD DST6	15.1	52.6	5.5	21.7	4	0.8	3.6	0.5	2.9	0.5	1.4	0.2	1.5	0.2	1.63	23.5	58.7	0.6	8.56	7.6

From ACME ANALYTICAL LAB XT FORMAT
To Geoscience Australia PROJE
Acme file # A609494 Page 1 (b)
Analysis: GROUP 1T-MS - 0.25 E MINERALS MAY BE PARTIALLY

ELEMENT	Ga
SAMPLES	ppm
2006861201001-75um	6.91
2006861201002-75um	15.05
2006861202001-75um	11.72
2006861202002-75um	16.98
2006861203001-75um	15.04
2006861203002-75um	18.05
2006861204001-75um	18.21
2006861204002-75um	22.02
2006861205001-75um	17.77
2006861205002-75um	17.3
2006861206001-75um	9.54
2006861206002-75um	11.52
2006861207001-75um	16.77
2006861207002-75um	13.3
2006861208001-75um	14.51
2006861208002-75um	16.91
2006861209001-75um	13.19
2006861209002-75um	15.35
2006861210001-75um	11.65
2006861210002-75um	13.98
2006861211001-75um	16.35
2006861211002-75um	14.56
2006861212001-75um	20.36
2006861212002-75um	21.82
2006861213001-75um	23.18
2006861213002-75um	20.22
RE 2006861213002-75um	20.46
2006861214001-75um	19.79
2006861214002-75um	22.18
2006861214d001-75um	8.62

ELEMENT	Ga
SAMPLES	ppm
2006861214d002-75um	7.37
2006861215001-75um	15.43
2006861215002-75um	16.2
2006861216001-75um	13.34
STANDARD DST6	16.89
2006861216002-75um	14.57
2006861217001-75um	16.63
2006861217002-75um	24.84
2006861218001-75um	17.17
2006861218002-75um	17.96
2006861218d001-75um	6.24
2006861219001-75um	17.99
2006861219002-75um	20.09
2006861220001-75um	23.5
2006861220002-75um	22
2006861221001-75um	15.6
2006861221002-75um	15.86
2006861222001-75um	16.52
2006861222002-75um	16.55
2006861223001-75um	11.79
2006861223002-75um	12.96
2006861203007-75um	16.77
2006861205007-75um	14.94
2006861207007-75um	15.44
2006861224001-75um	10.32
2006861224002-75um	15.22
2006861225001-75um	18.36
2006861225002-75um	21.18
2006861226001-75um	15.78
2006861226002-75um	15.62
2006861227001-75um	19.51
RE 2006861227001-75um	18.66
2006861227002-75um	19.44
2006861229001-75um	10.33

ELEMENT	Ga
SAMPLES	ppm
2006861229002-75um	18.75
STANDARD DST6	15.98

A5.4 Gold GA-AAS and fluoride ISE data (ALS Chemex Laboratory)

ALS Chemex
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Finalized Date: 2-FEB-2006
Account: AUSNAT

CERTIFICATE BR06000620

Project:
P.O. No.:
This report is for 84 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 5-JAN-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT	SARAH OCALLAGHAN	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	AAS
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **AUSTRALIAN NATIONAL UNIVERSITY**
ATTN: PATRICE DE CARITAT
DEPARTMENT OF GEOLOGY
CANBERRA ACT 0200

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Comments: NSS is non-sufficient sample.

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Finalized Date: 2-FEB-2006
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR06000620

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
2005861001001 (<180 um)		0.0004	190
2005861001001 (<75 um)		0.0002	190
2005861001002 (<180 um)		0.0006	230
2005861001002 (<75 um)		0.0005	240
2005861002001 (<180 um)		0.0003	
2005861002001 (<75 um)		0.0005	
2005861002002 (<180 um)		0.0013	
2005861002002 (<75 um)		0.0017	
2005861003001 (<180 um)		0.0004	260
2005861003001 (<75 um)		0.0004	240
2005861003002 (<180 um)		0.0004	280
2005861003002 (<75 um)		0.0005	NSS
2005861004001(<180 um)		0.0002	
2005861004001(<75 um)		0.0003	
2005861004002 (<180 um)		0.0004	
2005861004002 (<75 um)		0.0005	
2005861005001 (<180 um)		0.0001	210
2005861005001 (<75 um)		0.0001	190
2005861005002 (<180 um)		0.0002	220
2005861005002 (<75 um)		0.0002	240
2005861006001 (<180 um)		0.0003	
2005861006001 (<75 um)		0.0006	
2005861006002 (<180 um)		0.0002	
2005861006002 (<75 um)		0.0002	
2005861007001 (<180 um)		0.0001	150
2005861007001 (<75 um)		0.0001	170
2005861007002 (<180 um)		0.0005	240
2005861007002 (<75 um)		0.0010	330
2005861008001 (<180 um)		0.0001	
2005861008001 (<75 um)		0.0003	
2005861008002 (<180 um)		0.0005	
2005861008002 (<75 um)		0.0008	
2005861009001 (<180 um)		0.0002	190
2005861009001 (<75 um)		0.0004	190
2005861009002 (<180 um)		0.0008	250
2005861009002 (<75 um)		0.0010	320
2005861010001 (<180 um)		0.0002	
2005861010001 (<75 um)		0.0003	
2005861010002 (<180 um)		0.0007	
2005861010002 (<75 um)		0.0008	

Comments: NSS is non-sufficient sample.

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Finalized Date: 2-FEB-2006
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR06000620

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
2005861011001 (<180 um)		0.0001	180
2005861011001 (<75 um)		0.0002	220
2005861011002 (<180 um)		0.0008	250
2005861011002 (<75 um)		0.0014	320
2005861012001 (<180 um)		0.0001	
2005861012001 (<75 um)		0.0001	
2005861012002 (<180 um)		0.0002	
2005861012002 (<75 um)		0.0004	
2005861013001 (<180 um)		0.0002	250
2005861013001 (<75 um)		0.0003	320
2005861013002 (<180 um)		0.0003	320
2005861013002 (<75 um)		0.0011	370
2005861014001 (<180 um)		0.0001	
2005861014001 (<75 um)		0.0002	
2005861014002 (<180 um)		0.0005	
2005861014002 (<75 um)		0.0048	
2005861015001 (<180 um)		0.0002	260
2005861015001 (<75 um)		0.0002	250
2005861015002 (<180 um)		0.0005	300
2005861015002 (<75 um)		0.0008	330
2005861016001 (<180 um)		0.0003	
2005861016001 (<75 um)		0.0003	
2005861016002 (<180 um)		0.0001	
2005861016002 (<75 um)		0.0003	
2005861017001 (<180 um)		0.0003	220
2005861017001 (<75 um)		0.0001	NSS
2005861017002 (<180 um)		0.0005	290
2005861017002 (<75 um)		0.0010	360
2005861018001 (<180 um)		0.0002	
2005861018001 (<75 um)		0.0003	
2005861018002 (<180 um)		0.0007	
2005861018002 (<75 um)		0.0007	
2005861019001 (<180 um)		0.0002	
2005861019001 (<75 um)		0.0008	
2005861019002 (<180 um)		0.0001	
2005861019002 (<75 um)		0.0002	
2005861020001 (<180 um)		0.0001	210
2005861020002 (<75 um)		0.0002	NSS
2005861021001 (<75 um)		0.0021	
2005861021002 (<180 um)		0.0005	

Comments: NSS is non-sufficient sample.

Finalized Date: 2-FEB-2006
Account: AUSNAT

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CERTIFICATE OF ANALYSIS BR06000620

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
2005861022001 (<180 um)		0.0001	NSS
2005861022002 (<75 um)		0.0007	340
2005861023001 (<75 um)		<0.0001	
2005861023002 (<180 um)		0.0001	

Comments: NSS is non-sufficient sample.

Finalized Date: 2-FEB-2006
Account: AUSNAT

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QC CERTIFICATE BR06000620

Project:
P.O. No.:
This report is for 84 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 5-JAN-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT	SARAH OCALLAGHAN	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	AAS
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **AUSTRALIAN NATIONAL UNIVERSITY**
ATTN: PATRICE DE CARITAT
DEPARTMENT OF GEOLOGY
CANBERRA ACT 0200

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Comments: NSS is non-sufficient sample.

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Finalized Date: 2-FEB-2006
Account: AUSNAT

QC CERTIFICATE OF ANALYSIS BR06000620

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
STANDARDS			
LIQSTD24		0.0385	
LIQSTD24		0.0438	
LIQSTD24		0.0419	
LIQSTD24		0.0430	
Target Range - Lower Bound		0.0349	
Upper Bound		0.0451	
ST-252		0.0606	
ST-252		0.0520	
Target Range - Lower Bound		0.0515	
Upper Bound		0.0665	
ST-299		0.0071	
ST-299		0.0082	
Target Range - Lower Bound		0.0056	
Upper Bound		0.0074	
BLANKS			
BLANK		<0.0001	
BLANK		<0.0001	
BLANK		<0.0001	
BLANK		<0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
DUPLICATES			
2005861005002 (<75 um)			240
DUP			230
Target Range - Lower Bound			190
Upper Bound			280

Comments: NSS is non-sufficient sample.

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Finalized Date: 2-FEB-2006
Account: AUSNAT

QC CERTIFICATE OF ANALYSIS BR06000620

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
DUPLICATES			
2005861008002 (<180 um)		0.0005	
DUP		0.0003	
Target Range - Lower Bound		0.0002	
Upper Bound		0.0006	
2005861012001 (<75 um)		0.0001	
DUP		0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
2005861013001 (<75 um)			320
DUP			330
Target Range - Lower Bound			280
Upper Bound			370
2005861017001 (<75 um)		0.0001	
DUP		0.0002	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
2005861022001 (<180 um)		0.0001	
DUP		<0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
2005861022002 (<75 um)			340
DUP			350
Target Range - Lower Bound			300
Upper Bound			390
ORIGINAL		0.0043	
DUP		0.0036	
Target Range - Lower Bound		0.0035	
Upper Bound		0.0044	
ORIGINAL		0.0020	
DUP		0.0019	
Target Range - Lower Bound		0.0016	
Upper Bound		0.0023	

Comments: NSS is non-sufficient sample.

Finalized Date: 8-SEP-2006
Account: CRCLAN

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CERTIFICATE BR06075306

Project:
P.O. No.:
This report is for 255 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 10-AUG-2006.

The following have access to data associated with this certificate:
PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	VARIABLE
Au-OG43	Ore Grade Au - 25g AR	ICP-MS

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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Finalized Date: 8-SEP-2006
Account: CRCLAN

CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	Au-OG43 Au ppm 0.01
2006 861 101 001 (<180 um) Au		0.0001	
2006 861 101 001 (<75 um) Au		0.0003	
2006 861 101 002 (<180 um) Au		0.0004	
2006 861 101 002 (<75 um) Au		0.0009	
2006 861 102 001 (<180 um) Au		0.0002	
2006 861 102 001 (<75 um) Au		0.0003	
2006 861 102 002 (<180 um) Au		0.0004	
2006 861 102 002 (<75 um) Au		0.0004	
2006 861 103 001 (<180 um) Au		0.0001	
2006 861 103 001 (<75 um) Au		0.0001	
2006 861 103 002 (<180 um) Au		0.0003	
2006 861 103 002 (<75 um) Au		0.0002	
2006 861 104 001 (<180 um) Au		0.0003	
2006 861 104 001 (<75 um) Au		0.0004	
2006 861 104 002 (<180 um) Au		0.0005	
2006 861 104 002 (<75 um) Au		0.0005	
2006 861 105 001 (<180 um) Au		0.0003	
2006 861 105 001 (<75 um) Au		0.0002	
2006 861 105 002 (<180 um) Au		0.0007	
2006 861 105 002 (<75 um) Au		0.0008	
2006 861 106 001 (<180 um) Au		0.0002	
2006 861 106 001 (<75 um) Au		0.0002	
2006 861 106 002 (<180 um) Au		0.0001	
2006 861 106 002 (<75 um) Au		0.0002	
2006 861 107 001 (<180 um) Au		<0.0001	
2006 861 107 001 (<75 um) Au		0.0001	
2006 861 107 002 (<180 um) Au		0.0002	
2006 861 107 002 (<75 um) Au		0.0003	
2006 861 108 001 (<180 um) Au		0.0001	
2006 861 108 001 (<75 um) Au		<0.0001	
2006 861 108 002 (<180 um) Au		0.0002	
2006 861 108 002 (<75 um) Au		0.0008	
2006 861 109 001 (<180 um) Au		0.0001	
2006 861 109 001 (<75 um) Au		0.0001	
2006 861 109 002 (<180 um) Au		0.0002	
2006 861 109 002 (<75 um) Au		0.0003	
2006 861 110 001 (<180 um) Au		0.0001	
2006 861 110 001 (<75 um) Au		0.0002	
2006 861 110 002 (<180 um) Au		0.0006	
2006 861 110 002 (<75 um) Au		0.0010	

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Finalized Date: 8-SEP-2006
Account: CRCLAN

CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	Au-OG43 Au ppm 0.01
2006 861 111 001 (<180 um) Au		0.0002	
2006 861 111 001 (<75 um) Au		0.0002	
2006 861 111 002 (<180 um) Au		0.0002	
2006 861 111 002 (<75 um) Au		0.0004	
2006 861 112 001 (<180 um) Au		0.0001	
2006 861 112 001 (<75 um) Au		0.0003	
2006 861 112 002 (<180 um) Au		0.0002	
2006 861 112 002 (<75 um) Au		0.0004	
2006 861 113 001 (<180 um) Au		0.0002	
2006 861 113 001 (<75 um) Au		0.0003	
2006 861 113 002 (<180 um) Au		0.0007	
2006 861 113 002 (<75 um) Au		0.0012	
2006 861 114 001 (<180 um) Au		0.0004	
2006 861 114 001 (<75 um) Au		0.0003	
2006 861 114 002 (<180 um) Au		0.0002	
2006 861 114 002 (<75 um) Au		0.0002	
2006 861 115 001 (<180 um) Au		<0.0001	
2006 861 115 001 (<75 um) Au		0.0002	
2006 861 115 002 (<180 um) Au		0.0002	
2006 861 115 002 (<75 um) Au		0.0003	
2006 861 116 001 (<180 um) Au		<0.0001	
2006 861 116 001 (<75 um) Au		<0.0001	
2006 861 116 002 (<180 um) Au		0.0002	
2006 861 116 002 (<75 um) Au		0.0004	
2006 861 117 001 (<180 um) Au		<0.0001	
2006 861 117 001 (<75 um) Au		0.0001	
2006 861 117 002 (<180 um) Au		0.0001	
2006 861 117 002 (<75 um) Au		0.0001	
2006 861 118 001 (<180 um) Au		0.0001	
2006 861 118 001 (<75 um) Au		0.0001	
2006 861 118 002 (<180 um) Au		0.0002	
2006 861 118 002 (<75 um) Au		0.0005	
2006 861 119 001 (<180 um) Au		0.0004	
2006 861 119 001 (<75 um) Au		0.0006	
2006 861 119 002 (<180 um) Au		0.0006	
2006 861 119 002 (<75 um) Au		0.0009	
2006 861 120 001 (<180 um) Au		<0.0001	
2006 861 120 001 (<75 um) Au		0.0001	
2006 861 120 002 (<180 um) Au		0.0001	
2006 861 120 002 (<75 um) Au		0.0003	

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CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	Au-OG43 / Au / ppm / 0.01
2006 861 121 001 (<180 um) Au		0.0003	
2006 861 121 001 (<75 um) Au		0.0004	
2006 861 121 002 (<180 um) Au		0.0007	
2006 861 121 002 (<75 um) Au		0.0013	
2006 861 122 001 (<180 um) Au		0.0001	
2006 861 122 001 (<75 um) Au		0.0002	
2006 861 122 002 (<180 um) Au		0.0004	
2006 861 122 002 (<75 um) Au		0.0007	
2006 861 123 001 (<180 um) Au		<0.0001	
2006 861 123 001 (<75 um) Au		0.0001	
2006 861 123 002 (<180 um) Au		0.0003	
2006 861 123 002 (<75 um) Au		0.0005	
2006 861 124 001 (<180 um) Au		<0.0001	
2006 861 124 001 (<75 um) Au		<0.0001	
2006 861 124 002 (<180 um) Au		0.0003	
2006 861 124 002 (<75 um) Au		0.0004	
2006 861 125 001 (<180 um) Au		<0.0001	
2006 861 125 001 (<75 um) Au		<0.0001	
2006 861 125 002 (<180 um) Au		0.0001	
2006 861 125 002 (<75 um) Au		<0.0001	
2006 861 126 001 (<180 um) Au		0.0001	
2006 861 126 001 (<75 um) Au		0.0002	
2006 861 126 002 (<180 um) Au		0.0004	
2006 861 126 002 (<75 um) Au		0.0012	
2006 861 127 001 (<180 um) Au		0.0003	
2006 861 127 001 (<75 um) Au		0.0005	
2006 861 127 002 (<180 um) Au		0.0003	
2006 861 127 002 (<75 um) Au		0.0008	
2006 861 128 001 (<180 um) Au		<0.0001	
2006 861 128 001 (<75 um) Au		0.0001	
2006 861 128 002 (<180 um) Au		0.0005	
2006 861 128 002 (<75 um) Au		0.0010	
2006 861 129 001 (<180 um) Au		0.0001	
2006 861 129 001 (<75 um) Au		0.0001	
2006 861 129 002 (<180 um) Au		0.0001	
2006 861 129 002 (<75 um) Au		0.0003	
2006 861 130 001 (<180 um) Au		<0.0001	
2006 861 130 001 (<75 um) Au		0.0001	
2006 861 130 002 (<180 um) Au		0.0006	
2006 861 130 002 (<75 um) Au		0.0009	

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CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	Au-OG43 Au ppm 0.01
2006 861 131 001 (<180 um) Au		<0.0001	
2006 861 131 001 (<75 um) Au		0.0001	
2006 861 131 002 (<180 um) Au		0.0001	
2006 861 131 002 (<75 um) Au		0.0002	
2006 861 132 001 (<180 um) Au		<0.0001	
2006 861 132 001 (<75 um) Au		<0.0001	
2006 861 132 002 (<180 um) Au		0.0004	
2006 861 132 002 (<75 um) Au		0.0007	
2006 861 133 001 (<180 um) Au		0.0001	
2006 861 133 001 (<75 um) Au		0.0001	
2006 861 133 002 (<180 um) Au		0.0001	
2006 861 133 002 (<75 um) Au		0.0001	
2006 861 134 001 (<180 um) Au		0.0001	
2006 861 134 001 (<75 um) Au		0.0001	
2006 861 134 002 (<180 um) Au		0.0003	
2006 861 134 002 (<75 um) Au		0.0009	
2006 861 135 001 (<180 um) Au		<0.0001	
2006 861 135 001 (<75 um) Au		0.0001	
2006 861 135 002 (<180 um) Au		0.0003	
2006 861 135 002 (<75 um) Au		0.0010	
2006 861 136 001 (<180 um) Au		0.0001	
2006 861 136 001 (<75 um) Au		0.0001	
2006 861 136 002 (<180 um) Au		0.0003	
2006 861 136 002 (<75 um) Au		0.0004	
2006 861 137 001 (<180 um) Au		<0.0001	
2006 861 137 001 (<75 um) Au		0.0002	
2006 861 137 002 (<180 um) Au		0.0002	
2006 861 137 002 (<75 um) Au		0.0003	
2006 861 138 001 (<180 um) Au		0.0003	
2006 861 138 001 (<75 um) Au		0.0002	
2006 861 138 002 (<180 um) Au		0.0003	
2006 861 138 002 (<75 um) Au		0.0002	
2006 861 139 001 (<180 um) Au		0.0001	
2006 861 139 001 (<75 um) Au		0.0002	
2006 861 139 002 (<180 um) Au		0.0001	
2006 861 139 002 (<75 um) Au		0.0005	
2006 861 140 001 (<180 um) Au		<0.0001	
2006 861 140 001 (<75 um) Au		<0.0001	
2006 861 140 002 (<180 um) Au		0.0002	
2006 861 140 002 (<75 um) Au		0.0004	

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CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	Au-OG43 Au ppm 0.01
2006 861 141 001 (<180 um) Au		0.0001	
2006 861 141 001 (<75 um) Au		0.0001	
2006 861 141 002 (<180 um) Au		0.0001	
2006 861 141 002 (<75 um) Au		0.0007	
2006 861 142 001 (<180 um) Au		0.0001	
2006 861 142 001 (<75 um) Au		0.0002	
2006 861 142 002 (<180 um) Au		0.0001	
2006 861 142 002 (<75 um) Au		0.0001	
2006 861 143 001 (<180 um) Au		0.0001	
2006 861 143 001 (<75 um) Au		0.0003	
2006 861 143 002 (<180 um) Au		0.0008	
2006 861 143 002 (<75 um) Au		0.0009	
2006 861 144 001 (<180 um) Au		0.0001	
2006 861 144 001 (<75 um) Au		0.0001	
2006 861 144 002 (<180 um) Au		0.0001	
2006 861 144 002 (<75 um) Au		0.0005	
2006 861 145 001 (<180 um) Au		0.0002	
2006 861 145 001 (<75 um) Au		0.0002	
2006 861 145 002 (<180 um) Au		0.0004	
2006 861 145 002 (<75 um) Au		0.0008	
2006 861 146 001 (<180 um) Au		0.0001	
2006 861 146 001 (<75 um) Au		<0.0001	
2006 861 146 002 (<180 um) Au		0.0002	
2006 861 146 002 (<75 um) Au		0.0004	
2006 861 147 001 (<180 um) Au		0.0001	
2006 861 147 001 (<75 um) Au		0.0001	
2006 861 147 002 (<180 um) Au		0.0001	
2006 861 147 002 (<75 um) Au		0.0002	
2006 861 148 001 (<180 um) Au		<0.0001	
2006 861 148 001 (<75 um) Au		0.0002	
2006 861 148 002 (<180 um) Au		0.0011	
2006 861 148 002 (<75 um) Au		0.0018	
2006 861 149 001 (<180 um) Au		0.0001	
2006 861 149 001 (<75 um) Au		0.0001	
2006 861 149 002 (<180 um) Au		0.0003	
2006 861 149 002 (<75 um) Au		0.0008	
2006 861 150 001 (<180 um) Au		<0.0001	
2006 861 150 001 (<75 um) Au		0.0001	
2006 861 150 002 (<180 um) Au		0.0001	
2006 861 150 002 (<75 um) Au		0.0002	

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Sample Description	Method	Au-ST43	Au-OG43
	Analyte	Au	Au
	Units	ppm	ppm
	LOR	0.0001	0.01
2006 861 151 001 (<180 um) Au		0.0005	
2006 861 151 001 (<75 um) Au		0.0008	
2006 861 151 002 (<180 um) Au		0.0007	
2006 861 151 002 (<75 um) Au		0.0012	
2006 861 152 001 (<180 um) Au		0.0002	
2006 861 152 001 (<75 um) Au		0.0001	
2006 861 152 002 (<180 um) Au		0.0001	
2006 861 152 002 (<75 um) Au		0.0001	
2006 861 153 001 (<180 um) Au		0.0010	
2006 861 153 001 (<75 um) Au		0.0001	
2006 861 153 002 (<180 um) Au		0.0004	
2006 861 153 002 (<75 um) Au		0.0003	
2006 861 154 001 (<180 um) Au		<0.0001	
2006 861 154 001 (<75 um) Au		0.0001	
2006 861 154 002 (<180 um) Au		0.0004	
2006 861 154 002 (<75 um) Au		0.0006	
2006 861 155 001 (<180 um) Au		0.0002	
2006 861 155 001 (<75 um) Au		0.0003	
2006 861 155 002 (<180 um) Au		0.0012	
2006 861 155 002 (<75 um) Au		0.0008	
2006 861 156 001 (<180 um) Au		0.0002	
2006 861 156 001 (<75 um) Au		0.0002	
2006 861 156 002 (<180 um) Au		0.0004	
2006 861 156 002 (<75 um) Au		0.0004	
2006 861 157 001 (<180 um) Au		0.0001	
2006 861 157 001 (<75 um) Au		0.0002	
2006 861 157 002 (<180 um) Au		0.0003	
2006 861 157 002 (<75 um) Au		0.0006	
2006 861 158 001 (<180 um) Au		0.0002	
2006 861 158 001 (<75 um) Au		0.0002	
2006 861 158 002 (<180 um) Au		0.0006	
2006 861 158 002 (<75 um) Au		0.0007	
2006 861 159 001 (<180 um) Au		<0.0001	
2006 861 159 001 (<75 um) Au		0.0001	
2006 861 159 002 (<180 um) Au		0.0002	
2006 861 159 002 (<75 um) Au		0.0003	
2006 861 160 001 (<180 um) Au		<0.0001	
2006 861 160 001 (<75 um) Au		<0.0001	
2006 861 160 002 (<180 um) Au		<0.0001	
2006 861 160 002 (<75 um) Au		0.0001	

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CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	Au-OG43 Au ppm 0.01
2006 861 161 001 (<180 um) Au		0.0001	
2006 861 161 001 (<75 um) Au		0.0004	
2006 861 161 002 (<180 um) Au		0.0005	
2006 861 161 002 (<75 um) Au		0.0015	
2006 861 162 001 (<180 um) Au		0.0003	
2006 861 162 001 (<75 um) Au		0.0003	
2006 861 162 002 (<180 um) Au		0.0005	
2006 861 162 002 (<75 um) Au		0.0008	
2006 861 163 001 (<180 um) Au		0.0002	
2006 861 163 001 (<75 um) Au		0.0004	
2006 861 163 002 (<180 um) Au		0.0052	
2006 861 164 002 (<180 um) Au		0.0018	
2006 861 164 002 (<75 um) Au		0.0020	
2006 861 165 002 (<180 um) Au		>0.1000	85.5
2006 861 165 002 (<75 um) Au		>0.1000	6.25

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CERTIFICATE BR06075307

Project:
P.O. No.:
This report is for 256 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 10-AUG-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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CERTIFICATE OF ANALYSIS BR06075307

Sample Description	Method Analyte Units LOR	F-ELE81a F ppm 20
2006 861 101 001 (<180 um) F		110
2006 861 101 001 (<75 um) F		130
2006 861 101 002 (<180 um) F		120
2006 861 101 002 (<75 um) F		220
2006 861 102 001 (<180 um) F		210
2006 861 102 001 (<75 um) F		200
2006 861 102 002 (<180 um) F		200
2006 861 102 002 (<75 um) F		270
2006 861 103 001 (<180 um) F		220
2006 861 103 001 (<75 um) F		210
2006 861 103 002 (<180 um) F		220
2006 861 103 002 (<75 um) F		240
2006 861 104 001 (<180 um) F		180
2006 861 104 001 (<75 um) F		210
2006 861 104 002 (<180 um) F		230
2006 861 104 002 (<75 um) F		280
2006 861 105 001 (<180 um) F		250
2006 861 105 001 (<75 um) F		270
2006 861 105 002 (<180 um) F		280
2006 861 105 002 (<75 um) F		280
2006 861 106 001 (<180 um) F		250
2006 861 106 001 (<75 um) F		250
2006 861 106 002 (<180 um) F		240
2006 861 106 002 (<75 um) F		290
2006 861 107 001 (<180 um) F		170
2006 861 107 001 (<75 um) F		170
2006 861 107 002 (<180 um) F		190
2006 861 107 002 (<75 um) F		240
2006 861 108 001 (<180 um) F		150
2006 861 108 001 (<75 um) F		170
2006 861 108 002 (<180 um) F		200
2006 861 108 002 (<75 um) F		230
2006 861 109 001 (<180 um) F		150
2006 861 109 001 (<75 um) F		170
2006 861 109 002 (<180 um) F		230
2006 861 109 002 (<75 um) F		150
2006 861 110 001 (<180 um) F		130
2006 861 110 001 (<75 um) F		150
2006 861 110 002 (<180 um) F		140
2006 861 110 002 (<75 um) F		190

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Sample Description	Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
2006 861 111 001 (<180 um) F		290
2006 861 111 001 (<75 um) F		140
2006 861 111 002 (<180 um) F		130
2006 861 111 002 (<75 um) F		180
2006 861 112 001 (<180 um) F		160
2006 861 112 001 (<75 um) F		150
2006 861 112 002 (<180 um) F		140
2006 861 112 002 (<75 um) F		220
2006 861 113 001 (<180 um) F		200
2006 861 113 001 (<75 um) F		260
2006 861 113 002 (<180 um) F		210
2006 861 113 002 (<75 um) F		290
2006 861 114 001 (<180 um) F		310
2006 861 114 001 (<75 um) F		330
2006 861 114 002 (<180 um) F		230
2006 861 114 002 (<75 um) F		310
2006 861 115 001 (<180 um) F		160
2006 861 115 001 (<75 um) F		180
2006 861 115 002 (<180 um) F		140
2006 861 115 002 (<75 um) F		230
2006 861 116 001 (<180 um) F		240
2006 861 116 001 (<75 um) F		240
2006 861 116 002 (<180 um) F		230
2006 861 116 002 (<75 um) F		260
2006 861 117 001 (<180 um) F		170
2006 861 117 001 (<75 um) F		200
2006 861 117 002 (<180 um) F		100
2006 861 117 002 (<75 um) F		70
2006 861 118 001 (<180 um) F		80
2006 861 118 001 (<75 um) F		90
2006 861 118 002 (<180 um) F		100
2006 861 118 002 (<75 um) F		120
2006 861 119 001 (<180 um) F		80
2006 861 119 001 (<75 um) F		130
2006 861 119 002 (<180 um) F		120
2006 861 119 002 (<75 um) F		150
2006 861 120 001 (<180 um) F		110
2006 861 120 001 (<75 um) F		130
2006 861 120 002 (<180 um) F		140
2006 861 120 002 (<75 um) F		170

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Sample Description	Method Analyte Units LOR	F-ELE81a F ppm 20
2006 861 121 001 (<180 um) F		260
2006 861 121 001 (<75 um) F		310
2006 861 121 002 (<180 um) F		410
2006 861 121 002 (<75 um) F		420
2006 861 122 001 (<180 um) F		570
2006 861 122 001 (<75 um) F		190
2006 861 122 002 (<180 um) F		230
2006 861 122 002 (<75 um) F		320
2006 861 123 001 (<180 um) F		110
2006 861 123 001 (<75 um) F		130
2006 861 123 002 (<180 um) F		200
2006 861 123 002 (<75 um) F		260
2006 861 124 001 (<180 um) F		190
2006 861 124 001 (<75 um) F		240
2006 861 124 002 (<180 um) F		320
2006 861 124 002 (<75 um) F		310
2006 861 125 001 (<180 um) F		220
2006 861 125 001 (<75 um) F		240
2006 861 125 002 (<180 um) F		170
2006 861 125 002 (<75 um) F		230
2006 861 126 001 (<180 um) F		100
2006 861 126 001 (<75 um) F		210
2006 861 126 002 (<180 um) F		230
2006 861 126 002 (<75 um) F		250
2006 861 127 001 (<180 um) F		120
2006 861 127 001 (<75 um) F		170
2006 861 127 002 (<180 um) F		190
2006 861 127 002 (<75 um) F		310
2006 861 128 001 (<180 um) F		170
2006 861 128 001 (<75 um) F		200
2006 861 128 002 (<180 um) F		210
2006 861 128 002 (<75 um) F		290
2006 861 129 001 (<180 um) F		210
2006 861 129 001 (<75 um) F		230
2006 861 129 002 (<180 um) F		170
2006 861 129 002 (<75 um) F		260
2006 861 130 001 (<180 um) F		160
2006 861 130 001 (<75 um) F		190
2006 861 130 002 (<180 um) F		220
2006 861 130 002 (<75 um) F		320

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Sample Description	Method / Analyte / Units / LOR	F-ELE81a F ppm 20
2006 861 131 001 (<180 um) F		180
2006 861 131 001 (<75 um) F		210
2006 861 131 002 (<180 um) F		270
2006 861 131 002 (<75 um) F		320
2006 861 132 001 (<180 um) F		190
2006 861 132 001 (<75 um) F		230
2006 861 132 002 (<180 um) F		270
2006 861 132 002 (<75 um) F		400
2006 861 133 001 (<180 um) F		260
2006 861 133 001 (<75 um) F		250
2006 861 133 002 (<180 um) F		240
2006 861 133 002 (<75 um) F		280
2006 861 134 001 (<180 um) F		150
2006 861 134 001 (<75 um) F		250
2006 861 134 002 (<180 um) F		350
2006 861 134 002 (<75 um) F		500
2006 861 135 001 (<180 um) F		170
2006 861 135 001 (<75 um) F		300
2006 861 135 002 (<180 um) F		260
2006 861 135 002 (<75 um) F		400
2006 861 136 001 (<180 um) F		180
2006 861 136 001 (<75 um) F		180
2006 861 136 002 (<180 um) F		170
2006 861 136 002 (<75 um) F		270
2006 861 137 001 (<180 um) F		150
2006 861 137 001 (<75 um) F		180
2006 861 137 002 (<180 um) F		200
2006 861 137 002 (<75 um) F		230
2006 861 138 001 (<180 um) F		310
2006 861 138 001 (<75 um) F		300
2006 861 138 002 (<180 um) F		280
2006 861 138 002 (<75 um) F		320
2006 861 139 001 (<180 um) F		150
2006 861 139 001 (<75 um) F		210
2006 861 139 002 (<180 um) F		180
2006 861 139 002 (<75 um) F		310
2006 861 140 001 (<180 um) F		170
2006 861 140 001 (<75 um) F		140
2006 861 140 002 (<180 um) F		210
2006 861 140 002 (<75 um) F		320

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Sample Description	Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
2006 861 141 001 (<180 um) F		250
2006 861 141 001 (<75 um) F		270
2006 861 141 002 (<180 um) F		110
2006 861 141 002 (<75 um) F		290
2006 861 142 001 (<180 um) F		270
2006 861 142 001 (<75 um) F		330
2006 861 142 002 (<180 um) F		140
2006 861 142 002 (<75 um) F		210
2006 861 143 001 (<180 um) F		310
2006 861 143 001 (<75 um) F		440
2006 861 143 002 (<180 um) F		370
2006 861 143 002 (<75 um) F		410
2006 861 144 001 (<180 um) F		140
2006 861 144 001 (<75 um) F		160
2006 861 144 002 (<180 um) F		160
2006 861 144 002 (<75 um) F		240
2006 861 145 001 (<180 um) F		320
2006 861 145 001 (<75 um) F		230
2006 861 145 002 (<180 um) F		220
2006 861 145 002 (<75 um) F		320
2006 861 146 001 (<180 um) F		150
2006 861 146 001 (<75 um) F		190
2006 861 146 002 (<180 um) F		240
2006 861 146 002 (<75 um) F		200
2006 861 147 001 (<180 um) F		130
2006 861 147 001 (<75 um) F		150
2006 861 147 002 (<180 um) F		160
2006 861 147 002 (<75 um) F		190
2006 861 148 001 (<180 um) F		130
2006 861 148 001 (<75 um) F		200
2006 861 148 002 (<180 um) F		220
2006 861 148 002 (<75 um) F		350
2006 861 149 001 (<180 um) F		130
2006 861 149 001 (<75 um) F		150
2006 861 149 002 (<180 um) F		130
2006 861 149 002 (<75 um) F		180
2006 861 150 001 (<180 um) F		150
2006 861 150 001 (<75 um) F		170
2006 861 150 002 (<180 um) F		190
2006 861 150 002 (<75 um) F		240

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Finalized Date: 4-SEP-2006
Account: CRCLAN

CERTIFICATE OF ANALYSIS BR06075307

Sample Description	Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
2006 861 151 001 (<180 um) F		170
2006 861 151 001 (<75 um) F		210
2006 861 151 002 (<180 um) F		230
2006 861 151 002 (<75 um) F		280
2006 861 152 001 (<180 um) F		180
2006 861 152 001 (<75 um) F		180
2006 861 152 002 (<180 um) F		150
2006 861 152 002 (<75 um) F		170
2006 861 153 001 (<180 um) F		230
2006 861 153 001 (<75 um) F		210
2006 861 153 002 (<180 um) F		240
2006 861 153 002 (<75 um) F		250
2006 861 154 001 (<180 um) F		120
2006 861 154 001 (<75 um) F		100
2006 861 154 002 (<180 um) F		150
2006 861 154 002 (<75 um) F		120
2006 861 155 001 (<180 um) F		260
2006 861 155 001 (<75 um) F		270
2006 861 155 002 (<180 um) F		170
2006 861 155 002 (<75 um) F		420
2006 861 156 001 (<180 um) F		260
2006 861 156 001 (<75 um) F		250
2006 861 156 002 (<180 um) F		110
2006 861 156 002 (<75 um) F		660
2006 861 157 001 (<180 um) F		380
2006 861 157 001 (<75 um) F		310
2006 861 157 002 (<180 um) F		290
2006 861 157 002 (<75 um) F		350
2006 861 158 001 (<180 um) F		210
2006 861 158 001 (<75 um) F		230
2006 861 158 002 (<180 um) F		250
2006 861 158 002 (<75 um) F		270
2006 861 159 001 (<180 um) F		160
2006 861 159 001 (<75 um) F		160
2006 861 159 002 (<180 um) F		160
2006 861 159 002 (<75 um) F		210
2006 861 160 001 (<180 um) F		170
2006 861 160 001 (<75 um) F		140
2006 861 160 002 (<180 um) F		100
2006 861 160 002 (<75 um) F		160

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Finalized Date: 4-SEP-2006
Account: CRCLAN

CERTIFICATE OF ANALYSIS BR06075307

Sample Description	Method / Analyte / Units / LOR	F-ELE81a F ppm 20
2006 861 161 001 (<180 um) F		150
2006 861 161 001 (<75 um) F		290
2006 861 161 002 (<180 um) F		280
2006 861 161 002 (<75 um) F		370
2006 861 162 001 (<180 um) F		260
2006 861 162 001 (<75 um) F		310
2006 861 162 002 (<180 um) F		270
2006 861 162 002 (<75 um) F		340
2006 861 163 001 (<180 um) F		320
2006 861 163 001 (<75 um) F		260
2006 861 163 002 (<180 um) F		320
2006 861 163 002 (<75 um) F		1250
2006 861 164 002 (<180 um) F		300
2006 861 164 002 (<75 um) F		260
2006 861 165 001 (<180 um) F		600
2006 861 165 001 (<75 um) F		300

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QC CERTIFICATE BR06075306

Project:
P.O. No.:
This report is for 255 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 10-AUG-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	VARIABLE
Au-OG43	Ore Grade Au - 25g AR	ICP-MS

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Shaun Kenny, Brisbane Laboratory Manager

ALS Chemex
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Finalized Date: 8-SEP-2006
Account: CRCLAN

QC CERTIFICATE OF ANALYSIS BR06075306

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001
		STANDARDS
LIQSTD24		0.0417
LIQSTD24		0.0398
LIQSTD24		0.0407
LIQSTD24		0.0396
LIQSTD24		0.0391
LIQSTD24		0.0409
LIQSTD24		0.0417
LIQSTD24		0.0415
Target Range - Lower Bound		0.0349
Upper Bound		0.0451
ST-252		0.0549
ST-252		0.0463
ST-252		0.0500
ST-252		0.0519
Target Range - Lower Bound		0.0458
Upper Bound		0.0592
ST-299		0.0070
ST-299		0.0069
ST-299		0.0069
ST-299		0.0076
Target Range - Lower Bound		0.0064
Upper Bound		0.0084
		BLANKS
BLANK		<0.0001
BLANK		0.0001
BLANK		<0.0001
BLANK		<0.0001
BLANK		0.0001
BLANK		<0.0001
BLANK		<0.0001
BLANK		<0.0001
Target Range - Lower Bound		<0.0001
Upper Bound		0.0002

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Finalized Date: 8-SEP-2006
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QC CERTIFICATE OF ANALYSIS BR06075306

Sample Description — Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001
DUPLICATES	
2006 861 103 001 (<75 um) Au	0.0001
DUP	<0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 108 001 (<75 um) Au	<0.0001
DUP	<0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 112 001 (<180 um) Au	0.0001
DUP	0.0002
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 117 001 (<180 um) Au	<0.0001
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 120 002 (<75 um) Au	0.0003
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0004
2006 861 125 002 (<75 um) Au	<0.0001
DUP	<0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 129 002 (<180 um) Au	0.0001
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 134 002 (<180 um) Au	0.0003
DUP	0.0004
Target Range - Lower Bound	<0.0001
Upper Bound	0.0006

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Finalized Date: 8-SEP-2006
Account: CRCLAN

QC CERTIFICATE OF ANALYSIS BR06075306

Sample Description / Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001
DUPLICATES	
2006 861 138 001 (<75 um) Au	0.0002
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 143 001 (<75 um) Au	0.0003
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0004
2006 861 147 001 (<180 um) Au	0.0001
DUP	0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002
2006 861 152 001 (<180 um) Au	0.0002
DUP	0.0002
Target Range - Lower Bound	<0.0001
Upper Bound	0.0004
2006 861 155 002 (<75 um) Au	0.0008
DUP	0.0004
Target Range - Lower Bound	0.0004
Upper Bound	0.0008
2006 861 160 002 (<75 um) Au	0.0001
DUP	<0.0001
Target Range - Lower Bound	<0.0001
Upper Bound	0.0002

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Finalized Date: 4-SEP-2006
Account: CRCLAN

QC CERTIFICATE BR06075307

Project:
P.O. No.:
This report is for 256 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 10-AUG-2006.
The following have access to data associated with this certificate:
PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Shaun Kenny, Brisbane Laboratory Manager

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Finalized Date: 4-SEP-2006
Account: CRCLAN

QC CERTIFICATE OF ANALYSIS BR06075307

Sample Description — Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
DUPLICATES	
2006 861 103 001 (<75 um) F	210
DUP	210
Target Range - Lower Bound	160
Upper Bound	260
2006 861 105 002 (<75 um) F	280
DUP	290
Target Range - Lower Bound	240
Upper Bound	330
2006 861 108 001 (<75 um) F	170
DUP	180
Target Range - Lower Bound	130
Upper Bound	220
2006 861 113 001 (<75 um) F	260
DUP	280
Target Range - Lower Bound	220
Upper Bound	320
2006 861 115 002 (<75 um) F	230
DUP	230
Target Range - Lower Bound	180
Upper Bound	280
2006 861 118 001 (<75 um) F	90
DUP	100
Target Range - Lower Bound	50
Upper Bound	140
2006 861 123 001 (<75 um) F	130
DUP	140
Target Range - Lower Bound	90
Upper Bound	180
2006 861 125 002 (<75 um) F	230
DUP	220
Target Range - Lower Bound	180
Upper Bound	270

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QC CERTIFICATE OF ANALYSIS BR06075307

Sample Description	Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
		DUPLICATES
2006 861 128 001 (<75 um) F		200
DUP		210
Target Range - Lower Bound		160
Upper Bound		250
2006 861 130 002 (<75 um) F		320
DUP		290
Target Range - Lower Bound		260
Upper Bound		350
2006 861 131 001 (<75 um) F		210
DUP		200
Target Range - Lower Bound		160
Upper Bound		250
2006 861 133 001 (<75 um) F		250
DUP		250
Target Range - Lower Bound		200
Upper Bound		300
2006 861 135 002 (<75 um) F		400
DUP		370
Target Range - Lower Bound		340
Upper Bound		430
2006 861 140 002 (<75 um) F		320
DUP		350
Target Range - Lower Bound		290
Upper Bound		380
2006 861 143 001 (<75 um) F		440
DUP		430
Target Range - Lower Bound		380
Upper Bound		490
2006 861 145 002 (<75 um) F		320
DUP		330
Target Range - Lower Bound		280
Upper Bound		370

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Finalized Date: 4-SEP-2006
Account: CRCLAN

QC CERTIFICATE OF ANALYSIS BR06075307

Sample Description / Method / Analyte / Units / LOR	F-ELE81a / F / ppm / 20
DUPLICATES	
2006 861 150 002 (<75 um) F	240
DUP	250
Target Range - Lower Bound	200
Upper Bound	290
2006 861 153 001 (<75 um) F	210
DUP	200
Target Range - Lower Bound	160
Upper Bound	250
2006 861 155 002 (<75 um) F	420
DUP	400
Target Range - Lower Bound	360
Upper Bound	460
2006 861 158 001 (<75 um) F	230
DUP	240
Target Range - Lower Bound	190
Upper Bound	280
2006 861 160 002 (<75 um) F	160
DUP	170
Target Range - Lower Bound	120
Upper Bound	210
2006 861 163 001 (<75 um) F	260
DUP	250
Target Range - Lower Bound	210
Upper Bound	300
2006 861 165 001 (<75 um) F	300
DUP	280
Target Range - Lower Bound	240
Upper Bound	340

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Finalized Date: 30-JAN-2007
Account: AUSNAT

CERTIFICATE BR07000182

Project:
P.O. No.:
This report is for 238 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 2-JAN-2007.

The following have access to data associated with this certificate:

PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	VARIABLE
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **AUSTRALIAN NATIONAL UNIVERSITY**
ATTN: PATRICE DE CARITAT
DEPARTMENT OF GEOLOGY
CANBERRA ACT 0200

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Signature:

Shaun Kenny, Brisbane Laboratory Manager

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Finalized Date: 30-JAN-2007
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
Au <180 2006861201001		0.0001	
Au <180 2006861201002		0.0010	
Au <180 2006861202001		0.0004	
Au <180 2006861202002		0.0007	
Au <180 2006861203001		0.0006	
Au <180 2006861203002		0.0008	
Au <180 2006861204001		0.0004	
Au <180 2006861204002		0.0005	
Au <180 2006861205001		0.0001	
Au <180 2006861205002		0.0004	
Au <180 2006861206001		0.0001	
Au <180 2006861206002		0.0002	
Au <180 2006861207001		0.0003	
Au <180 2006861207002		0.0003	
Au <180 2006861208001		0.0002	
Au <180 2006861208002		0.0002	
Au <180 2006861209001		0.0002	
Au <180 2006861209002		0.0002	
Au <180 2006861210001		0.0001	
Au <180 2006861210002		0.0002	
Au <180 2006861211001		0.0002	
Au <180 2006861211002		0.0009	
Au <180 2006861212001		0.0003	
Au <180 2006861212002		0.0004	
Au <180 2006861213001		0.0006	
Au <180 2006861213002		0.0009	
Au <180 2006861214001		0.0002	
Au <180 2006861214002		0.0009	
Au <180 2006861214d001		0.0001	
Au <180 2006861214d002		<0.0001	
Au <180 2006861215001		0.0002	
Au <180 2006861215002		0.0008	
Au <180 2006861216001		<0.0001	
Au <180 2006861216002		0.0002	
Au <180 2006861217001		0.0001	
Au <180 2006861217002		0.0005	
Au <180 2006861218001		0.0003	
Au <180 2006861218002		0.0002	
Au <180 2006861218d001		0.0001	
Au <180 2006861219001		0.0001	

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Finalized Date: 30-JAN-2007
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
Au <180 2006861219002		0.0008	
Au <180 2006861220001		0.0001	
Au <180 2006861220002		0.0002	
Au <180 2006861221001		<0.0001	
Au <180 2006861221002		0.0001	
Au <180 2006861222001		0.0001	
Au <180 2006861222002		0.0001	
Au <180 2006861223001		<0.0001	
Au <180 2006861223002		0.0001	
Au <180 2006861203007		0.0003	
Au <180 2006861205007		0.0001	
Au <180 2006861207007		0.0002	
Au <180 2006861224001		0.0001	
Au <180 2006861224002		0.0005	
Au <180 2006861225001		0.0002	
Au <180 2006861225002		0.0002	
Au <180 2006861226001		0.0001	
Au <180 2006861226002		0.0001	
Au <75 2006861201001		0.0001	
Au <75 2006861201002		0.0005	
Au <75 2006861202001		0.0001	
Au <75 2006861202002		0.0006	
Au <75 2006861203001		0.0005	
Au <75 2006861203002		0.0004	
Au <75 2006861204001		0.0003	
Au <75 2006861204002		0.0004	
Au <75 2006861205001		0.0001	
Au <75 2006861205002		0.0003	
Au <75 2006861206001		0.0001	
Au <75 2006861206002		0.0002	
Au <75 2006861207001		0.0003	
Au <75 2006861207002		0.0004	
Au <75 2006861208001		0.0003	
Au <75 2006861208002		0.0003	
Au <75 2006861209001		0.0002	
Au <75 2006861209002		0.0003	
Au <75 2006861210001		0.0001	
Au <75 2006861210002		0.0002	
Au <75 2006861211001		0.0003	
Au <75 2006861211002		0.0008	

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Finalized Date: 30-JAN-2007
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
Au <75 2006861212001		0.0003	
Au <75 2006861212002		0.0006	
Au <75 2006861213001		0.0004	
Au <75 2006861213002		0.0010	
Au <75 2006861214001		0.0002	
Au <75 2006861214002		0.0009	
Au <75 2006861214d001		0.0001	
Au <75 2006861214d002		0.0001	
Au <75 2006861215001		0.0001	
Au <75 2006861215002		0.0002	
Au <75 2006861216001		0.0001	
Au <75 2006861216002		0.0002	
Au <75 2006861217001		0.0001	
Au <75 2006861217002		0.0004	
Au <75 2006861218001		0.0006	
Au <75 2006861218002		0.0004	
Au <75 2006861218d001		0.0001	
Au <75 2006861219001		0.0003	
Au <75 2006861219002		0.0011	
Au <75 2006861220001		0.0002	
Au <75 2006861220002		0.0002	
Au <75 2006861221001		0.0001	
Au <75 2006861221002		0.0002	
Au <75 2006861222001		0.0002	
Au <75 2006861222002		0.0002	
Au <75 2006861223001		0.0001	
Au <75 2006861223002		0.0001	
Au <75 2006861203007		0.0004	
Au <75 2006861205007		0.0001	
Au <75 2006861207007		0.0004	
Au <75 2006861224001		0.0002	
Au <75 2006861224002		0.0006	
Au <75 2006861225001		0.0002	
Au <75 2006861225002		0.0005	
Au <75 2006861226001		0.0002	
Au <75 2006861226002		0.0002	
F <180 2006861201001			80
F <180 2006861201002			260
F <180 2006861202001			130
F <180 2006861202002			200

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Finalized Date: 30-JAN-2007
Account: AUSNAT

CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
F <180 2006861203001			1150
F <180 2006861203002			310
F <180 2006861204001			190
F <180 2006861204002			240
F <180 2006861205001			210
F <180 2006861205002			210
F <180 2006861206001			120
F <180 2006861206002			270
F <180 2006861207001			180
F <180 2006861207002			170
F <180 2006861208001			160
F <180 2006861208002			160
F <180 2006861209001			140
F <180 2006861209002			150
F <180 2006861210001			170
F <180 2006861210002			200
F <180 2006861211001			160
F <180 2006861211002			160
F <180 2006861212001			260
F <180 2006861212002			260
F <180 2006861213001			400
F <180 2006861213002			290
F <180 2006861214001			320
F <180 2006861214002			320
F <180 2006861214d001			120
F <180 2006861214d002			90
F <180 2006861215001			180
F <180 2006861215002			130
F <180 2006861216001			150
F <180 2006861216002			180
F <180 2006861217001			140
F <180 2006861217002			240
F <180 2006861218001			190
F <180 2006861218002			190
F <180 2006861218d001			100
F <180 2006861219001			130
F <180 2006861219002			360
F <180 2006861220001			190
F <180 2006861220002			240
F <180 2006861221001			180

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CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
F <180 2006861221002			180
F <180 2006861222001			200
F <180 2006861222002			130
F <180 2006861223001			160
F <180 2006861223002			160
F <180 2006861203007			370
F <180 2006861205007			210
F <180 2006861207007			130
F <180 2006861224001			180
F <180 2006861224002			210
F <180 2006861225001			220
F <180 2006861225002			270
F <180 2006861226001			140
F <180 2006861226002			90
F <180 2006861228002			500
F <180 2006861229001			190
F <180 2006861229002			330
F <75 2006861201001			160
F <75 2006861201002			360
F <75 2006861202001			170
F <75 2006861202002			280
F <75 2006861203001			250
F <75 2006861203002			320
F <75 2006861204001			420
F <75 2006861204002			330
F <75 2006861205001			300
F <75 2006861205002			300
F <75 2006861206001			170
F <75 2006861206002			240
F <75 2006861207001			250
F <75 2006861207002			220
F <75 2006861208001			260
F <75 2006861208002			280
F <75 2006861209001			200
F <75 2006861209002			260
F <75 2006861210001			220
F <75 2006861210002			220
F <75 2006861211001			270
F <75 2006861211002			250
F <75 2006861212001			370

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CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
F <75 2006861212002			390
F <75 2006861213001			540
F <75 2006861213002			510
F <75 2006861214001			220
F <75 2006861214002			350
F <75 2006861214d001			120
F <75 2006861214d002			120
F <75 2006861215001			150
F <75 2006861215002			340
F <75 2006861216001			110
F <75 2006861216002			140
F <75 2006861217001			140
F <75 2006861217002			210
F <75 2006861218001			210
F <75 2006861218002			220
F <75 2006861218d001			90
F <75 2006861219001			140
F <75 2006861219002			420
F <75 2006861220001			250
F <75 2006861220002			360
F <75 2006861221001			210
F <75 2006861221002			170
F <75 2006861222001			180
F <75 2006861222002			260
F <75 2006861223001			140
F <75 2006861223002			160
F <75 2006861203007			230
F <75 2006861205007			190
F <75 2006861207007			200
F <75 2006861224001			160
F <75 2006861224002			230
F <75 2006861225001			290
F <75 2006861225002			340
F <75 2006861226001			190
F <75 2006861226002			210
F <75 2006861228002			210
F <75 2006861229001			170
F <75 2006861229002			350

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QC CERTIFICATE BR07000182

Project:
P.O. No.:
This report is for 238 Pulp samples submitted to our lab in Brisbane, QLD, Australia on 2-JAN-2007.

The following have access to data associated with this certificate:

PATRICE DE CARITAT

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-ST43	Super Trace Au - 25g AR	VARIABLE
F-ELE81a	F by Specific Ion Electrode	WST-SIM

To: **AUSTRALIAN NATIONAL UNIVERSITY**
ATTN: PATRICE DE CARITAT
DEPARTMENT OF GEOLOGY
CANBERRA ACT 0200

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Shaun Kenny, Brisbane Laboratory Manager

Finalized Date: 30-JAN-2007
Account: AUSNAT

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QC CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
STANDARDS			
LIQSTD24		0.0390	
LIQSTD24		0.0402	
LIQSTD24		0.0412	
LIQSTD24		0.0425	
Target Range - Lower Bound		0.0349	
Upper Bound		0.0451	
OXA45		0.0814	
OXA45		0.0826	
Target Range - Lower Bound		0.0709	
Upper Bound		0.0913	
ST-252		0.0616	
ST-252		0.0558	
Target Range - Lower Bound		0.0458	
Upper Bound		0.0592	
BLANKS			
BLANK		<0.0001	
BLANK		<0.0001	
BLANK		<0.0001	
BLANK		<0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
DUPLICATES			
Au <180 2006861205002		0.0004	
DUP		0.0003	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0006	

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QC CERTIFICATE OF ANALYSIS BR07000182

Sample Description	Method / Analyte / Units / LOR	Au-ST43 / Au / ppm / 0.0001	F-ELE81a / F / ppm / 20
DUPLICATES			
Au <180 2006861214d002		<0.0001	
DUP		<0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
Au <180 2006861221002		0.0001	
DUP		0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
Au <75 2006861204001		0.0003	
DUP		0.0003	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0005	
Au <75 2006861211002		0.0008	
DUP		0.0006	
Target Range - Lower Bound		0.0004	
Upper Bound		0.0010	
Au <75 2006861220001		0.0002	
DUP		0.0002	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0004	
Au <75 2006861226001		0.0002	
DUP		0.0001	
Target Range - Lower Bound		<0.0001	
Upper Bound		0.0002	
F <180 2006861204002			240
DUP			240
Target Range - Lower Bound			190
Upper Bound			290
F <180 2006861212002			260
DUP			240
Target Range - Lower Bound			200
Upper Bound			300

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Sample Description	Method / Analyte / Units / LOR	Au-ST43 Au ppm 0.0001	F-ELE81a F ppm 20
DUPLICATES			
F <180 2006861224001			180
DUP			170
Target Range - Lower Bound			130
Upper Bound			220
F <75 2006861202001			170
DUP			170
Target Range - Lower Bound			130
Upper Bound			210
F <75 2006861207001			250
DUP			270
Target Range - Lower Bound			210
Upper Bound			310
F <75 2006861216001			110
DUP			120
Target Range - Lower Bound			70
Upper Bound			160
F <75 2006861220002			360
DUP			340
Target Range - Lower Bound			300
Upper Bound			400
F <75 2006861224001			160
DUP			150
Target Range - Lower Bound			110
Upper Bound			200
F <75 2006861229002			350
DUP			330
Target Range - Lower Bound			290
Upper Bound			390

A5.5 Selenium ICP-MS data (CSIRO Laboratory)

Appendix 5.5

Sample No.	Size (µm)	Se (mg kg^{-1})
2005861002001	< 180	0.321
2005861002001	<75	0.376
2005861002002	< 180	0.333
2005861002002	<75	0.347
2005861004001	< 180	0.189
2005861004001	<75	0.194
2005861004002	< 180	0.184
2005861004002	<75	0.229
2005861006001	< 180	0.151
2005861006001	<75	0.163
2005861006002	< 180	0.124
2005861006002	<75	0.143
2005861008001	< 180	0.238
2005861008001	<75	0.311
2005861008002	< 180	0.098
2005861008002	<75	0.125
2005861010001	< 180	0.072
2005861010001	<75	0.087
2005861010002	< 180	0.111
2005861010002	<75	0.122
2005861012001	< 180	0.073
2005861012001	<75	0.084
2005861012002	< 180	0.087
2005861012002	<75	0.122
2005861014001	< 180	0.166
2005861014001	<75	0.198
2005861014002	< 180	0.346
2005861014002	<75	0.397
2005861016001	< 180	0.100
2005861016001	<75	0.139
2005861016002	< 180	0.056
2005861016002	<75	0.102
2005861018001	< 180	0.237
2005861018001	<75	0.304
2005861018002	< 180	0.113
2005861018002	<75	0.149
2005861019001	< 180	0.180
2005861019001	<75	0.195
2005861019002	< 180	0.141
2005861019002	<75	0.179
2005861021001	<75	0.090
2005861021002	< 180	0.103
2005861023001	<75	0.216
2005861023002	< 180	0.129
A2		0.35
B2		0.33
C3		1.01
D3		1.01

Appendix 5.5

Samples	Se mg kg^{-1}
2006 861 101 001 (<180 um) Se	0.19
2006 861 101 001 (<75 um) Se	0.22
2006 861 101 002 (<180 um) Se	0.16
2006 861 101 002 (<75 um) Se	0.18
2006 861 102 001 (<180 um) Se	0.18
2006 861 102 001 (<75 um) Se	0.17
2006 861 102 002 (<180 um) Se	0.16
2006 861 102 002 (<75 um) Se	0.16
2007 861 103 001 (<180 um) Se	0.17
2006 861 103 001 (<75 um) Se	0.16
2006 861 103 002 (<180 um) Se	0.16
2006 861 103 002 (<75 um) Se	0.18
2006 861 104 001 (<180 um) Se	0.16
2006 861 104 001 (<75 um) Se	0.18
2006 861 104 002 (<180 um) Se	0.22
2006 861 104 002 (<75 um) Se	0.27
2006 861 105 001 (<180 um) Se	0.14
2006 861 105 001 (<75 um) Se	0.15
2006 861 105 002 (<180 um) Se	0.16
2006 861 105 002 (<75 um) Se	0.16
2006 861 106 001 (<180 um) Se	0.17
2006 861 106 001 (<75 um) Se	0.17
2006 861 106 002 (<180 um) Se	0.16
2006 861 106 002 (<75 um) Se	0.20
2006 861 107 001 (<180 um) Se	0.16
2006 861 107 001 (<75 um) Se	0.21
2006 861 107 002 (<180 um) Se	0.14
2006 861 107 002 (<75 um) Se	0.18
2006 861 108 001 (<180 um) Se	0.15
2006 861 108 001 (<75 um) Se	0.18
2006 861 108 002 (<180 um) Se	0.12
2006 861 108 002 (<75 um) Se	0.15
2006 861 109 001 (<180 um) Se	0.15
2006 861 109 001 (<75 um) Se	0.20
2006 861 109 002 (<180 um) Se	0.12
2006 861 109 002 (<75 um) Se	0.17
2006 861 110 001 (<180 um) Se	0.11
2006 861 110 001 (<75 um) Se	0.15
2006 861 110 002 (<180 um) Se	0.15
2006 861 110 002 (<75 um) Se	0.19
2006 861 111 001 (<180 um) Se	0.14
2006 861 111 001 (<75 um) Se	0.12
2006 861 111 002 (<180 um) Se	0.16
2006 861 111 002 (<75 um) Se	0.18
2006 861 112 001 (<180 um) Se	0.12
2006 861 112 001 (<75 um) Se	0.15
2006 861 112 002 (<180 um) Se	0.09
2006 861 112 002 (<75 um) Se	0.11
2006 861 113 001 (<180 um) Se	0.11
2006 861 113 001 (<75 um) Se	0.13
2006 861 113 002 (<180 um) Se	0.16
2006 861 113 002 (<75 um) Se	0.22
2006 861 114 001 (<180 um) Se	0.11
2006 861 114 001 (<75 um) Se	0.12

Appendix 5.5

Samples	Se mg kg^{-1}
2006 861 114 002 (<180 um) Se	0.12
2006 861 114 002 (<75 um) Se	0.17
2006 861 115 001 (<180 um) Se	0.15
2006 861 115 001 (<75 um) Se	0.19
2006 861 115 002 (<180 um) Se	0.14
2006 861 115 002 (<75 um) Se	0.17
2006 861 116 001 (<180 um) Se	0.21
2006 861 116 001 (<75 um) Se	0.20
2006 861 116 002 (<180 um) Se	0.23
2006 861 116 002 (<75 um) Se	0.25
2006 861 117 001 (<180 um) Se	0.21
2006 861 117 001 (<75 um) Se	0.24
2006 861 117 002 (<180 um) Se	0.25
2006 861 117 002 (<75 um) Se	0.28
2006 861 118 001 (<180 um) Se	0.25
2006 861 118 001 (<75 um) Se	0.26
2006 861 118 002 (<180 um) Se	0.14
2006 861 118 002 (<75 um) Se	0.16
2006 861 119 001 (<180 um) Se	0.13
2006 861 119 001 (<75 um) Se	0.12
2006 861 119 002 (<180 um) Se	0.09
2006 861 119 002 (<75 um) Se	0.06
2006 861 120 001 (<180 um) Se	0.11
2006 861 120 001 (<75 um) Se	0.22
2006 861 120 002 (<180 um) Se	0.15
2006 861 120 002 (<75 um) Se	0.15
2006 861 121 001 (<180 um) Se	0.10
2006 861 121 001 (<75 um) Se	0.14
2006 861 121 002 (<180 um) Se	0.07
2006 861 121 002 (<75 um) Se	0.07
2006 861 122 001 (<180 um) Se	0.10
2006 861 122 001 (<75 um) Se	0.19
2006 861 122 002 (<180 um) Se	0.08
2006 861 122 002 (<75 um) Se	0.06
2006 861 123 001 (<180 um) Se	0.11
2006 861 123 001 (<75 um) Se	0.18
2006 861 123 002 (<180 um) Se	0.14
2006 861 123 002 (<75 um) Se	0.18
2006 861 124 001 (<180 um) Se	0.25
2006 861 124 001 (<75 um) Se	0.26
2006 861 124 002 (<180 um) Se	0.14
2006 861 124 002 (<75 um) Se	0.20
2006 861 125 001 (<180 um) Se	0.31
2006 861 125 001 (<75 um) Se	0.34
2006 861 125 002 (<180 um) Se	0.39
2006 861 125 002 (<75 um) Se	0.48
2006 861 126 001 (<180 um) Se	0.13
2006 861 126 001 (<75 um) Se	0.19
2006 861 126 002 (<180 um) Se	0.19
2006 861 126 002 (<75 um) Se	0.25
2006 861 127 001 (<180 um) Se	0.12
2006 861 127 001 (<75 um) Se	0.12
2006 861 127 002 (<180 um) Se	0.16
2006 861 127 002 (<75 um) Se	0.25

Appendix 5.5

Samples	Se mg kg^{-1}
2006 861 128 001 (<180 um) Se	0.13
2006 861 128 001 (<75 um) Se	0.15
2006 861 128 002 (<180 um) Se	0.08
2006 861 128 002 (<75 um) Se	0.10
2006 861 129 001 (<180 um) Se	0.20
2006 861 129 001 (<75 um) Se	0.17
2006 861 129 002 (<180 um) Se	0.12
2006 861 129 002 (<75 um) Se	0.11
2006 861 130 001 (<180 um) Se	0.21
2006 861 130 001 (<75 um) Se	0.18
2006 861 130 002 (<180 um) Se	0.08
2006 861 130 002 (<75 um) Se	0.09
2006 861 131 001 (<180 um) Se	0.14
2006 861 131 001 (<75 um) Se	0.18
2006 861 131 002 (<180 um) Se	0.18
2006 861 131 002 (<75 um) Se	0.15
2006 861 132 001 (<180 um) Se	0.13
2006 861 132 001 (<75 um) Se	0.17
2006 861 132 002 (<180 um) Se	0.12
2006 861 132 002 (<75 um) Se	0.12
2006 861 133 001 (<180 um) Se	0.19
2006 861 133 001 (<75 um) Se	0.19
2006 861 133 002 (<180 um) Se	0.22
2006 861 133 002 (<75 um) Se	0.20
2006 861 134 001 (<180 um) Se	0.12
2006 861 134 001 (<75 um) Se	0.22
2006 861 134 002 (<180 um) Se	0.48
2006 861 134 002 (<75 um) Se	0.63
2006 861 135 001 (<180 um) Se	0.12
2006 861 135 001 (<75 um) Se	0.18
2006 861 135 002 (<180 um) Se	0.32
2006 861 135 002 (<75 um) Se	0.42
2006 861 136 001 (<180 um) Se	0.18
2006 861 136 001 (<75 um) Se	0.21
2006 861 136 002 (<180 um) Se	0.22
2006 861 136 002 (<75 um) Se	0.28
2006 861 137 001 (<180 um) Se	0.17
2006 861 137 001 (<75 um) Se	0.18
2006 861 137 002 (<180 um) Se	0.20
2006 861 137 002 (<75 um) Se	0.24
2006 861 138 001 (<180 um) Se	0.25
2006 861 138 001 (<75 um) Se	0.20
2006 861 138 002 (<180 um) Se	0.21
2006 861 138 002 (<75 um) Se	0.24
2006 861 139 001 (<180 um) Se	0.10
2006 861 139 001 (<75 um) Se	0.18
2006 861 139 002 (<180 um) Se	0.11
2006 861 139 002 (<75 um) Se	0.13
2006 861 140 001 (<180 um) Se	0.08
2006 861 140 001 (<75 um) Se	0.15
2006 861 140 002 (<180 um) Se	0.18
2006 861 140 002 (<75 um) Se	0.30
2006 861 141 001 (<180 um) Se	0.21
2006 861 141 001 (<75 um) Se	0.23

Appendix 5.5

Samples	Se mg kg^{-1}
2006 861 141 002 (<180 um) Se	0.16
2006 861 141 002 (<75 um) Se	0.24
2006 861 142 001 (<180 um) Se	0.18
2006 861 142 001 (<75 um) Se	0.36
2006 861 142 002 (<180 um) Se	0.16
2006 861 142 002 (<75 um) Se	0.25
2006 861 143 001 (<180 um) Se	0.25
2006 861 143 001 (<75 um) Se	0.26
2006 861 143 002 (<180 um) Se	0.23
2006 861 143 002 (<75 um) Se	0.24
2006 861 144 001 (<180 um) Se	0.11
2006 861 144 001 (<75 um) Se	0.21
2006 861 144 002 (<180 um) Se	0.15
2006 861 144 002 (<75 um) Se	0.25
2006 861 142 001 (<180 um) Se	0.14
2006 861 145 001 (<75 um) Se	0.18
2006 861 145 002 (<180 um) Se	0.23
2006 861 145 002 (<75 um) Se	0.26
2006 861 146 001 (<180 um) Se	0.09
2006 861 146 001 (<75 um) Se	0.16
2006 861 146 002 (<180 um) Se	0.07
2006 861 146 002 (<75 um) Se	0.13
2006 861 147 001 (<180 um) Se	0.11
2006 861 147 001 (<75 um) Se	0.12
2006 861 147 002 (<180 um) Se	0.16
2006 861 147 002 (<75 um) Se	0.19
2006 861 148 001 (<180 um) Se	0.16
2006 861 148 001 (<75 um) Se	0.24
2006 861 148 002 (<180 um) Se	0.07
2006 861 148 002 (<75 um) Se	0.06
2006 861 149 001 (<180 um) Se	0.17
2006 861 149 001 (<75 um) Se	0.21
2006 861 149 002 (<180 um) Se	0.08
2006 861 149 002 (<75 um) Se	0.11
2006 861 150 001 (<180 um) Se	0.19
2006 861 150 001 (<75 um) Se	0.27
2006 861 150 002 (<180 um) Se	0.22
2006 861 150 002 (<75 um) Se	0.26
2006 861 151 001 (<180 um) Se	0.18
2006 861 151 001 (<75 um) Se	0.21
2006 861 151 002 (<180 um) Se	0.18
2006 861 151 002 (<75 um) Se	0.15
2006 861 152 001 (<180 um) Se	0.16
2006 861 152 001 (<75 um) Se	0.19
2006 861 152 002 (<180 um) Se	0.25
2006 861 152 002 (<75 um) Se	0.26
2006 861 153 001 (<180 um) Se	0.15
2006 861 153 001 (<75 um) Se	0.15
2006 861 153 002 (<180 um) Se	0.13
2006 861 153 002 (<75 um) Se	0.19
2006 861 154 001 (<180 um) Se	0.18
2006 861 154 001 (<75 um) Se	0.20
2006 861 154 002 (<180 um) Se	0.11
2006 861 154 002 (<75 um) Se	0.13

Appendix 5.5

Samples	Se mg kg^{-1}
2006 861 155 001 (<180 um) Se	0.17
2006 861 155 001 (<75 um) Se	0.18
2006 861 155 002 (<180 um) Se	0.18
2006 861 155 002 (<75 um) Se	0.22
2006 861 156 001 (<180 um) Se	0.17
2006 861 156 001 (<75 um) Se	0.16
2006 861 156 002 (<180 um) Se	0.18
2006 861 156 002 (<75 um) Se	0.19
2006 861 157 001 (<180 um) Se	0.18
2006 861 157 001 (<75 um) Se	0.19
2006 861 157 002 (<180 um) Se	0.23
2006 861 157 002 (<75 um) Se	0.22
2006 861 158 001 (<180 um) Se	0.11
2006 861 158 001 (<75 um) Se	0.17
2006 861 158 002 (<180 um) Se	0.14
2006 861 158 002 (<75 um) Se	0.13
2006 861 159 001 (<180 um) Se	0.14
2006 861 159 001 (<75 um) Se	0.16
2006 861 159 002 (<180 um) Se	0.12
2006 861 159 002 (<75 um) Se	0.16
2006 861 160 001 (<180 um) Se	0.31
2006 861 160 001 (<75 um) Se	0.37
2006 861 160 002 (<180 um) Se	0.39
2006 861 160 002 (<75 um) Se	0.45
2006 861 161 001 (<180 um) Se	0.11
2006 861 161 001 (<75 um) Se	0.18
2006 861 161 002 (<180 um) Se	0.29
2006 861 161 002 (<75 um) Se	0.44
2006 861 162 001 (<180 um) Se	0.12
2006 861 162 001 (<75 um) Se	0.13
2006 861 162 002 (<180 um) Se	0.25
2006 861 162 002 (<75 um) Se	0.25
2006 861 163 001 (<180 um) Se	0.17
2006 861 163 001 (<75 um) Se	0.17
2007 861 163 002 (<180 um) Se	0.18
2006 861 164 002 (<180 um) Se	0.16
2006 861 164 002 (<75 um) Se	0.17
2006 861 166 001 (<180 um) Se	1.13
2006 861 166 001 (<75 um) Se	0.35
2006 861 167 001 (<75 um) Se	0.15

Appendix 5.5

Samples		Se mg kg^{-1}
2006861201001	<180	0.12
2006861201002	<180	0.22
2006861202001	<180	0.11
2006861202002	<180	0.11
2006861203001	<180	0.12
2006861203002	<180	0.13
2006861204001	<180	0.26
2006861204002	<180	0.15
2006861205001	<180	0.21
2006861205002	<180	0.19
2006861206001	<180	0.10
2006861206002	<180	0.07
2006861207001	<180	0.11
2006861207002	<180	0.10
2006861208001	<180	0.10
2006861208002	<180	0.10
2006861209001	<180	0.09
2006861209002	<180	0.07
2006861210001	<180	0.15
2006861210002	<180	0.10
2006861211001	<180	0.13
2006861211002	<180	0.09
2006861212001	<180	0.17
2006861212002	<180	0.16
2006861213001	<180	0.22
2006861213002	<180	0.16
2006861214001	<180	0.13
2006861214002	<180	0.17
2006861214d001	<180	0.14
2006861214d002	<180	0.08
2006861215001	<180	0.16
2006861215002	<180	0.13
2006861216001	<180	0.22
2006861216002	<180	0.27
2006861217001	<180	0.21
2006861217002	<180	0.16
2006861218001	<180	0.20
2006861218002	<180	0.54
2006861218d001	<180	0.21
2006861219001	<180	0.20
2006861219002	<180	0.24
2006861220001	<180	0.28
2006861220002	<180	0.24
2006861221001	<180	0.19
2006861221002	<180	0.16
2006861222001	<180	0.17
2006861222002	<180	0.23
2006861223001	<180	0.22
2006861223002	<180	0.15
2006861203007	<180	0.18
2006861205007	<180	0.20
2006861207007	<180	0.13
2006861224001	<180	0.14
2006861224002	<180	0.14

Samples		Se mg kg^{-1}
2006861225001	<180	0.19
2006861225002	<180	0.27
2006861226001	<180	0.18
2006861226002	<180	0.14
2006861228001	<180	0.38
2006861229001	<180	0.20
2006861229002	<180	0.18
2006861201001	<75	0.16
2006861201002	<75	0.24
2006861202001	<75	0.14
2006861202002	<75	0.23
2006861203001	<75	0.14
2006861203002	<75	0.18
2006861204001	<75	0.29
2006861204002	<75	0.17
2006861205001	<75	0.21
2006861205002	<75	0.19
2006861206001	<75	0.14
2006861206002	<75	0.11
2006861207001	<75	0.24
2006861207002	<75	0.14
2006861208001	<75	0.14
2006861208002	<75	0.13
2006861209001	<75	0.14
2006861209002	<75	0.13
2006861210001	<75	0.11
2006861210002	<75	0.11
2006861211001	<75	0.19
2006861211002	<75	0.15
2006861212001	<75	0.20
2006861212002	<75	0.17
2006861213001	<75	0.21
2006861213002	<75	0.17
2006861214001	<75	0.18
2006861214d001	<75	0.19
2006861214002	<75	0.13
2006861214d002	<75	0.15
2006861215001	<75	0.16
2006861215002	<75	0.30
2006861216001	<75	0.25
2006861216002	<75	0.29
2006861217001	<75	0.22
2006861217002	<75	0.16
2006861218001	<75	0.14
2006861218002	<75	0.13
2006861218d001	<75	0.12
2006861219001	<75	0.13
2006861219002	<75	0.29
2006861220001	<75	0.27
2006861220002	<75	0.23
2006861221001	<75	0.14
2006861221002	<75	0.15
2006861222001	<75	0.16
2006861222002	<75	0.15

Appendix 5.5

Samples		Se mg kg^{-1}
2006861223001	<75	0.19
2006861223002	<75	0.14
2006861203007	<75	0.23
2006861205007	<75	0.23
2006861207007	<75	0.14
2006861224001	<75	0.14
2006861224002	<75	0.11
2006861225001	<75	0.16
2006861225002	<75	0.16
2006861226001	<75	0.15
2006861226002	<75	0.16
2006861228001	<75	0.24
2006861229001	<75	0.16
2006861229002	<75	0.50

A5.6 Multi-element MMI® ICP-MS data (ALS Chemex Laboratory)

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Finalized Date: 8-JUN-2006
This copy reported on 7-NOV-2007
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CERTIFICATE PH06043685

Project:

P.O. No.:

This report is for 57 Soil samples submitted to our lab in Perth, WA, Australia on 22-MAY-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT	TOBY FOSTER	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
LEV-01	Waste Disposal Levy

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS17	MMI-M - Multi element package	ICP-MS

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: W. Abbott

Wayne Abbott, Operations Manager, Western Australia

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CERTIFICATE OF ANALYSIS PH06043685

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	ME-MS17 Ag ppb 0.1	ME-MS17 As ppb 1	ME-MS17 Au ppb 0.1	ME-MS17 Ba ppb 10	ME-MS17 Bi ppb 3	ME-MS17 Ca ppm 0.2	ME-MS17 Cd ppb 1	ME-MS17 Ce ppb 0.1	ME-MS17 Co ppb 0.3	ME-MS17 Cr ppb 1	ME-MS17 Cu ppb 10	ME-MS17 Er ppb 0.1	ME-MS17 Fe ppm 0.1	ME-MS17 Gd ppb 0.1
2006861101005		0.74	11.4	9	0.5	2650	6	802	5	49.0	419	16	640	33.1	2.8	59.4
2006861102005		0.67	20.7	9	0.3	1780	4	708	4	23.4	148.0	9	690	4.7	2.3	10.4
2006861103005		0.56	69.6	12	0.3	2030	3	731	6	11.6	438	15	1220	3.8	2.5	8.7
2006861104005		1.16	20.9	9	0.7	10150	<3	709	1	20.4	162.5	8	1080	6.0	2.2	31.9
2006861105005		1.04	13.0	11	0.6	2440	<3	739	3	8.1	212	10	1190	1.6	2.4	7.5
2006861106005		1.20	10.6	7	0.4	5070	<3	>1000	5	20.1	347	16	940	25.4	3.1	41.1
2006861107005		0.76	6.7	2	0.4	2570	<3	661	4	238	292	17	990	55.4	2.9	157.0
2006861108005		0.68	13.6	5	0.5	1800	<3	824	4	57.4	169.5	14	1130	32.6	2.6	71.8
2006861109005		0.83	4.9	6	0.4	2380	<3	707	6	193.0	204	19	650	33.7	2.9	79.0
2006861110005		0.71	12.5	12	0.7	1450	<3	833	5	15.0	385	12	1260	39.5	2.5	61.5
2006861111005		0.96	11.6	6	0.5	6390	<3	>1000	4	39.9	380	14	1100	29.5	3.4	53.9
2006861112005		0.66	2.8	17	0.5	6380	<3	1000	1	61.8	362	12	1290	35.9	3.0	87.1
2006861113005		1.01	0.8	33	0.3	4510	<3	484	<1	6.3	59.8	9	850	6.3	1.5	16.4
2006861114005		0.60	6.0	7	0.5	9350	<3	876	2	38.0	216	9	990	8.5	2.7	31.3
2006861115005		0.89	1.1	1	0.2	2330	<3	529	1	68.4	51.8	13	710	22.5	2.4	68.1
2006861116005		0.93	3.5	<1	0.1	3170	<3	404	17	242	142.0	22	1180	29.0	5.1	87.8
2006861117005		1.37	0.9	2	0.1	1540	<3	258	1	130.5	35.9	13	520	12.3	2.7	58.4
2006861118005		0.94	1.6	<1	0.2	1410	<3	272	2	110.0	161.0	16	640	12.1	4.6	55.6
2006861119005		1.16	2.6	2	0.7	6130	<3	679	2	37.0	126.0	12	1100	12.9	2.4	41.1
2006861120005		0.81	0.9	3	0.1	2690	<3	532	4	49.2	180.0	16	930	11.2	2.7	35.3
2006861121005		1.24	8.9	7	0.6	9050	<3	747	1	7.5	234	8	740	4.3	2.1	26.6
2006861122005		1.06	0.7	7	1.0	9040	<3	778	1	3.8	192.0	10	1050	14.2	2.0	31.9
2006861123005		1.21	5.1	5	0.4	3420	<3	758	3	34.4	167.5	11	1180	20.2	2.3	47.5
2006861124005		1.12	1.1	2	0.2	1300	<3	385	3	125.5	112.5	17	940	21.2	3.1	70.8
2006861125005		0.97	2.2	2	0.1	1020	<3	351	3	124.5	97.5	14	770	21.3	3.6	76.5
2006861126005		0.92	2.6	2	0.1	530	<3	176.0	2	679	128.0	28	340	72.1	14.8	207
2006861127005		1.05	1.9	6	0.5	1480	<3	262	4	168.5	176.0	64	940	33.4	39.7	76.4
2006861128005		0.81	2.8	7	0.4	2070	<3	740	8	7.5	474	13	2960	13.0	2.6	17.8
2006861129005		0.85	6.0	1	0.4	3960	<3	825	4	14.0	354	9	1020	21.3	2.4	36.2
2006861130005		1.29	1.9	8	0.2	800	<3	481	8	47.7	191.5	15	960	16.6	3.1	44.9
2006861131005		0.73	6.5	2	0.4	2980	<3	751	7	100.5	428	15	1020	32.1	2.6	84.1
2006861132005		1.06	6.7	3	0.6	5860	<3	845	6	10.8	234	10	1040	17.6	2.5	43.9
2006861133005		1.00	4.3	3	0.4	3630	<3	670	2	8.9	130.5	10	830	2.4	2.1	11.4
2006861134005		0.93	3.0	1	0.4	3170	<3	527	2	6.6	44.7	9	590	2.1	1.7	10.2
2006861135005		0.91	8.0	4	0.5	2850	<3	858	2	4.7	234	10	910	16.1	2.4	26.8
2006861136005		1.00	2.9	5	0.2	2020	<3	666	3	1.8	370	12	750	6.8	2.2	14.0
2006861137005		0.87	6.3	3	0.3	2110	<3	694	3	7.4	330	10	990	5.3	2.1	11.6
2006861138005		0.70	23.4	5	1.3	4740	<3	>1000	16	20.0	548	17	1870	16.2	3.6	35.9
2006861139005		0.88	1.2	4	0.3	4480	<3	624	3	18.4	103.5	13	700	19.6	2.3	45.5
2006861140005		0.86	2.8	8	0.1	2070	<3	481	4	9.9	203	11	690	2.6	2.4	10.4

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CERTIFICATE OF ANALYSIS PH06043685

Method	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17
Analyte	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm
Units	ppb	ppb	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Sample Description LOR	0.1	0.2	0.01	0.01	5	0.1	0.1	3	10	0.1	0.1	5	1	3	0.1
2006861101005	5.8	4.8	222	11.85	12	0.4	32.1	838	60	1.3	4.1	50	<1	9	18.0
2006861102005	0.5	7.5	215	5.92	<5	0.4	1.6	354	30	0.3	0.2	35	<1	6	1.7
2006861103005	0.3	9.4	268	8.95	11	0.2	0.7	800	50	0.3	0.1	47	<1	7	0.7
2006861104005	0.3	14.4	316	2.70	<5	0.2	2.1	378	70	0.4	0.2	29	<1	6	2.1
2006861105005	0.2	9.0	240	5.22	5	0.1	0.4	389	40	0.2	0.1	38	<1	6	0.3
2006861106005	1.8	6.5	354	3.34	18	0.1	12.1	813	80	1.0	1.3	45	<1	10	8.3
2006861107005	36.6	5.3	206	5.46	26	0.2	198.5	563	100	2.3	26.4	66	<1	14	84.8
2006861108005	8.7	7.7	269	5.16	22	0.2	52.0	983	60	1.3	6.3	59	<1	8	27.0
2006861109005	13.6	5.7	230	9.96	9	0.1	78.9	817	80	1.5	9.9	65	<1	12	36.0
2006861110005	0.7	8.4	325	5.17	21	<0.1	10.4	968	50	1.3	0.7	43	<1	8	15.2
2006861111005	5.1	7.2	290	3.00	12	0.1	24.7	727	70	1.2	3.2	49	<1	9	13.0
2006861112005	12.8	9.8	306	2.99	10	0.1	66.7	665	90	1.5	8.8	40	<1	8	32.2
2006861113005	1.0	17.5	202	1.68	<5	0.1	2.6	142	40	0.3	0.4	32	<1	7	1.6
2006861114005	0.5	5.4	170.0	7.05	<5	0.1	2.8	228	70	0.5	0.3	40	<1	7	2.9
2006861115005	15.8	2.3	164.5	3.04	9	0.1	94.7	200	20	1.2	12.2	99	<1	12	38.1
2006861116005	33.1	3.6	114.0	11.15	6	0.3	153.0	377	50	1.3	22.0	104	<1	16	52.8
2006861117005	42.5	2.2	68.4	1.20	5	0.2	160.0	150	30	0.9	24.3	90	<1	15	45.3
2006861118005	48.1	4.8	97.3	4.04	<5	0.4	145.0	152	50	0.9	23.2	106	<1	19	41.0
2006861119005	5.2	4.5	280	2.81	9	0.1	25.7	311	50	0.7	3.5	45	<1	8	12.8
2006861120005	8.9	3.5	147.0	5.14	<5	0.1	42.5	469	50	0.7	5.8	62	<1	7	17.3
2006861121005	1.2	5.9	181.0	4.85	<5	<0.1	3.0	192	40	0.3	0.5	33	<1	6	2.0
2006861122005	0.8	48.7	314	2.70	<5	<0.1	1.6	306	120	0.5	0.3	24	<1	7	1.9
2006861123005	5.0	12.5	308	2.77	8	<0.1	30.3	460	70	0.9	3.6	38	<1	7	16.6
2006861124005	28.0	2.7	133.0	6.30	8	0.1	138.0	261	30	1.3	19.6	83	<1	13	48.2
2006861125005	41.1	2.7	112.0	4.71	9	0.2	175.5	238	20	1.4	26.5	94	<1	13	58.0
2006861126005	273	9.4	44.5	6.90	<5	1.5	708	160	260	4.3	135.0	204	<1	136	173.5
2006861127005	60.8	45.5	217	10.90	<5	3.3	170.5	584	80	3.3	29.5	116	<1	60	51.0
2006861128005	2.2	13.7	310	5.38	12	0.1	5.0	1075	110	0.5	0.8	37	<1	6	3.3
2006861129005	1.1	7.7	316	3.67	8	<0.1	4.3	353	40	0.9	0.6	57	<1	7	6.1
2006861130005	10.6	5.9	134.5	7.72	10	0.3	62.4	380	30	1.5	8.4	72	<1	9	25.9
2006861131005	15.4	5.0	275	7.81	21	0.1	92.0	507	50	1.5	12.2	66	<1	11	40.4
2006861132005	1.0	7.6	359	2.53	11	0.1	9.0	366	50	0.8	0.8	48	<1	6	8.9
2006861133005	0.6	11.4	171.0	2.93	12	0.1	1.6	158	40	0.2	0.3	39	<1	5	0.9
2006861134005	0.6	6.7	218	1.18	<5	0.1	1.7	81	30	0.4	0.3	43	<1	4	0.9
2006861135005	0.3	14.0	289	1.83	14	<0.1	2.0	381	50	0.6	0.2	39	<1	5	3.9
2006861136005	0.5	8.4	166.5	6.59	9	<0.1	1.6	327	30	0.5	0.2	45	<1	5	2.0
2006861137005	0.4	11.1	224	5.38	11	<0.1	1.6	293	40	0.3	0.2	46	<1	4	1.6
2006861138005	2.1	24.2	322	4.52	19	<0.1	15.4	859	70	0.8	1.9	49	<1	6	8.8
2006861139005	1.4	9.9	175.0	2.25	8	0.1	19.4	193	60	0.9	2.0	56	<1	8	14.3
2006861140005	1.0	6.5	92.4	7.99	5	0.1	5.3	193	30	0.4	0.7	59	<1	4	2.9

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CERTIFICATE OF ANALYSIS PH06043685

Sample Description	Method / Analyte / Units / LOR	ME-MS17 Sn ppb 0.2	ME-MS17 Sr ppb 10	ME-MS17 Tb ppb 0.1	ME-MS17 Te ppb 1	ME-MS17 Th ppb 1	ME-MS17 Ti ppb 10	ME-MS17 Tl ppb 10	ME-MS17 U ppb 1	ME-MS17 W ppb 0.2	ME-MS17 Y ppb 0.1	ME-MS17 Yb ppb 0.1	ME-MS17 Zn ppb 20	ME-MS17 Zr ppb 1
2006861101005		<0.2	7560	8.5	<1	3	30	<10	18	0.6	214	20.8	40	6
2006861102005		<0.2	6950	1.1	<1	2	10	<10	4	0.4	37.4	3.6	30	2
2006861103005		<0.2	7630	0.7	<1	1	20	<10	9	0.6	23.6	3.3	50	3
2006861104005		<0.2	10350	1.4	<1	2	10	<10	1	0.4	44.7	4.7	20	2
2006861105005		<0.2	7750	0.3	<1	<1	10	<10	10	0.5	10.2	1.5	40	3
2006861106005		<0.2	10300	5.2	<1	1	10	<10	56	0.4	157.0	17.0	50	5
2006861107005		<0.2	6000	21.7	<1	30	40	<10	53	0.5	436	31.1	40	8
2006861108005		<0.2	8340	10.0	<1	3	20	<10	15	0.5	257	18.8	30	4
2006861109005		<0.2	6220	10.8	<1	10	40	<10	29	0.4	270	19.2	70	7
2006861110005		<0.2	13050	10.3	<1	3	10	<10	13	0.7	244	24.3	30	4
2006861111005		<0.2	12450	6.5	<1	2	20	<10	44	0.5	182.0	19.2	50	5
2006861112005		<0.2	9550	11.0	<1	6	30	<10	17	0.6	264	22.5	20	6
2006861113005		<0.2	7280	1.2	<1	1	20	<10	5	0.7	37.7	5.1	20	4
2006861114005		<0.2	6120	2.0	<1	5	10	<10	33	0.5	69.4	7.1	40	2
2006861115005		<0.2	4280	8.7	<1	13	60	<10	41	0.4	211	12.2	20	5
2006861116005		<0.2	3520	11.0	<1	37	140	<10	40	0.3	242	15.0	480	9
2006861117005		<0.2	2180	6.5	<1	49	100	<10	24	<0.2	120.5	6.1	30	9
2006861118005		0.2	2030	6.0	<1	67	230	<10	19	0.2	101.5	6.9	50	11
2006861119005		<0.2	5190	4.2	<1	4	30	<10	23	0.4	105.0	7.8	30	3
2006861120005		<0.2	3840	4.2	<1	8	40	<10	29	0.5	92.0	6.9	60	7
2006861121005		<0.2	6350	1.1	<1	1	10	<10	15	0.6	35.9	3.3	20	1
2006861122005		<0.2	8440	2.7	<1	<1	10	<10	31	0.6	76.0	9.3	30	1
2006861123005		<0.2	6630	6.0	<1	2	30	<10	46	0.4	151.5	12.6	30	4
2006861124005		<0.2	2760	9.0	<1	38	60	<10	49	0.3	194.0	11.8	70	10
2006861125005		<0.2	2490	9.6	<1	44	90	<10	22	0.3	205	11.8	110	13
2006861126005		0.6	950	26.2	<1	115	930	<10	24	0.7	673	49.9	70	48
2006861127005		1.8	2240	10.2	<1	98	2160	<10	18	0.8	248	24.4	170	66
2006861128005		<0.2	4980	2.5	<1	2	20	<10	30	0.6	69.4	10.9	50	4
2006861129005		<0.2	7260	5.0	<1	2	10	<10	56	0.4	139.5	14.4	30	3
2006861130005		<0.2	2530	6.1	<1	25	40	<10	38	0.7	138.0	10.3	90	15
2006861131005		<0.2	5810	11.5	<1	17	30	<10	51	0.5	273	18.9	70	6
2006861132005		<0.2	6740	5.0	<1	2	10	<10	39	0.5	128.5	12.0	50	3
2006861133005		<0.2	6090	0.6	<1	1	60	<10	38	0.3	18.3	2.0	30	3
2006861134005		<0.2	5170	0.6	<1	1	20	<10	13	0.3	16.0	1.6	30	2
2006861135005		<0.2	10250	3.8	<1	1	10	<10	33	0.4	89.6	10.8	20	3
2006861136005		<0.2	6800	1.6	<1	1	10	<10	34	0.3	39.8	5.0	160	7
2006861137005		<0.2	8160	1.3	<1	1	20	<10	20	0.4	38.2	3.9	40	3
2006861138005		<0.2	11750	4.1	<1	3	10	<10	69	0.7	109.0	11.1	90	6
2006861139005		<0.2	3060	5.7	<1	5	50	<10	30	0.5	152.5	11.8	50	4
2006861140005		<0.2	2630	0.8	<1	2	30	<10	7	0.6	23.0	2.0	90	7

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CERTIFICATE OF ANALYSIS PH06043685

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt. kg 0.02	ME-MS17 Ag ppb 0.1	ME-MS17 As ppb 1	ME-MS17 Au ppb 0.1	ME-MS17 Ba ppb 10	ME-MS17 Bi ppb 3	ME-MS17 Ca ppm 0.2	ME-MS17 Cd ppb 1	ME-MS17 Ce ppb 0.1	ME-MS17 Co ppb 0.3	ME-MS17 Cr ppb 1	ME-MS17 Cu ppb 10	ME-MS17 Er ppb 0.1	ME-MS17 Fe ppm 0.1	ME-MS17 Gd ppb 0.1
2006861141005		0.93	4.0	2	0.1	900	<3	435	5	42.8	58.1	14	820	6.8	2.4	25.5
2006861142005		0.83	3.9	3	0.2	2650	<3	560	6	12.8	345	13	900	8.0	2.3	24.2
2006861143005		0.44	15.2	3	0.4	1890	<3	564	8	17.8	210	12	1070	2.3	2.1	7.8
2006861144005		0.86	6.4	1	0.2	830	<3	567	2	19.0	57.7	10	810	10.2	2.0	32.6
2006861145005		0.65	7.8	20	0.5	3980	<3	528	2	2.9	132.0	12	1020	3.1	1.6	13.8
2006861146005		0.88	1.8	6	0.1	690	<3	295	3	91.1	110.5	18	910	14.8	4.7	48.8
2006861147005		0.81	5.2	9	0.4	3540	<3	581	1	4.0	97.1	11	870	6.3	1.8	14.6
2006861148005		0.78	4.6	<1	0.3	870	<3	424	4	261	76.8	14	690	55.9	2.2	186.5
2006861149005		0.90	1.8	1	0.2	810	<3	233	4	140.0	164.5	30	890	18.4	9.2	63.5
2006861150005		0.82	2.9	1	0.2	1240	<3	360	4	386	36.3	18	420	33.9	3.2	106.5
2006861151005		1.01	26.1	5	1.3	460	<3	565	2	8.0	29.2	10	650	12.8	1.6	26.3
2006861152005		0.81	3.1	3	0.2	800	<3	356	3	93.4	177.5	18	880	20.4	3.8	62.0
2006861153005		0.76	12.8	6	0.6	4310	<3	729	3	5.3	169.0	10	950	13.7	2.1	23.7
2006861154005		0.84	3.1	2	0.4	880	<3	227	2	602	277	27	710	55.5	5.2	212
2006861155005		0.65	17.1	2	1.0	3100	<3	605	4	18.4	258	8	1400	5.2	1.8	15.0
2006861156005		Not Recvd														
2006861157005		0.66	12.0	11	0.4	4320	<3	893	5	13.1	128.0	11	1180	13.1	2.8	28.5

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CERTIFICATE OF ANALYSIS PH06043685

Sample Description	Method	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17
	Analyte	La	Li	Mg	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm
	Units	ppb	ppb	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
	LOR	0.1	0.2	0.01	0.01	5	0.1	0.1	3	10	0.1	0.1	5	1	3	0.1
2006861141005		6.2	5.5	94.0	1.96	10	0.1	38.1	277	10	0.7	4.7	72	<1	7	15.6
2006861142005		1.4	3.8	127.0	8.65	6	0.1	13.8	337	30	0.6	1.5	75	<1	6	9.1
2006861143005		0.6	16.6	120.0	5.41	13	0.1	2.3	214	40	0.3	0.3	63	<1	4	1.3
2006861144005		3.1	3.6	84.0	2.23	20	0.1	35.2	180	10	0.6	4.5	109	<1	6	19.2
2006861145005		0.4	18.7	323	1.68	10	0.1	0.7	370	60	0.3	0.1	33	<1	4	0.6
2006861146005		31.2	5.2	73.5	6.79	8	0.4	111.5	360	30	1.0	17.5	76	<1	8	35.0
2006861147005		1.3	12.8	279	1.66	<5	0.3	1.4	295	40	0.3	0.3	33	<1	3	1.0
2006861148005		95.7	6.4	127.0	2.79	7	0.2	382	406	50	2.3	55.8	116	<1	12	129.0
2006861149005		51.5	8.4	92.5	5.16	<5	0.5	162.5	256	40	1.4	26.9	92	<1	17	46.9
2006861150005		66.3	4.9	88.9	2.20	<5	0.3	221	398	60	1.7	34.0	151	<1	16	70.9
2006861151005		2.1	9.0	340	2.29	9	0.1	5.5	168	10	0.6	0.7	100	<1	4	6.7
2006861152005		31.0	4.8	161.5	6.65	7	0.2	115.0	446	40	1.3	17.3	107	<1	11	39.8
2006861153005		1.3	7.5	274	4.00	7	<0.1	2.4	439	60	0.6	0.4	38	<1	3	2.1
2006861154005		214	7.6	87.0	12.00	5	0.5	674	513	70	3.3	114.0	112	<1	21	180.0
2006861155005		3.3	12.9	324	4.90	12	<0.1	4.6	460	70	0.4	1.0	34	<1	<3	2.0
2006861156005																
2006861157005		2.9	117.5	351	2.55	16	0.1	9.5	755	60	0.8	1.3	38	<1	4	5.4

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CERTIFICATE OF ANALYSIS PH06043685

Sample Description	Method / Analyte / Units / LOR	ME-MS17 Sn ppb 0.2	ME-MS17 Sr ppb 10	ME-MS17 Tb ppb 0.1	ME-MS17 Te ppb 1	ME-MS17 Th ppb 1	ME-MS17 Ti ppb 10	ME-MS17 Tl ppb 10	ME-MS17 U ppb 1	ME-MS17 W ppb 0.2	ME-MS17 Y ppb 0.1	ME-MS17 Yb ppb 0.1	ME-MS17 Zn ppb 20	ME-MS17 Zr ppb 1
2006861141005		<0.2	2770	3.1	<1	7	60	<10	22	0.3	70.5	3.8	90	8
2006861142005		<0.2	2870	2.8	<1	4	30	<10	21	0.6	69.4	5.2	180	7
2006861143005		<0.2	4240	0.6	<1	2	30	<10	28	0.8	18.4	1.8	60	4
2006861144005		<0.2	2930	4.3	<1	6	40	<10	18	0.2	96.8	5.8	30	4
2006861145005		<0.2	6630	0.6	<1	<1	10	<10	16	0.7	15.1	2.8	70	4
2006861146005		<0.2	1240	6.2	<1	36	80	<10	16	0.3	128.0	8.6	90	13
2006861147005		<0.2	6330	1.1	<1	1	10	<10	6	0.4	37.9	4.9	30	3
2006861148005		<0.2	4690	23.8	<1	35	70	<10	30	0.3	514	30.2	60	6
2006861149005		<0.2	1420	7.7	<1	78	230	<10	23	<0.2	158.0	11.2	170	21
2006861150005		<0.2	2060	13.4	<1	81	100	<10	27	0.2	296	20.0	150	9
2006861151005		<0.2	5160	4.3	<1	1	10	<10	42	<0.2	107.5	8.2	20	1
2006861152005		<0.2	2530	8.0	<1	51	80	<10	36	<0.2	168.5	12.2	110	12
2006861153005		<0.2	5850	2.5	<1	1	10	<10	12	0.5	86.5	9.6	130	2
2006861154005		<0.2	2550	25.4	<1	166	220	<10	7	0.5	529	33.1	30	32
2006861155005		<0.2	8590	1.2	<1	2	10	<10	9	0.3	41.8	4.0	40	1
2006861156005														
2006861157005		<0.2	9150	3.0	<1	1	10	<10	52	0.4	89.7	9.7	40	6

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QC CERTIFICATE PH06043685

Project:
P.O. No.:
This report is for 57 Soil samples submitted to our lab in Perth, WA, Australia on 22-MAY-2006.

The following have access to data associated with this certificate:

PATRICE DE CARITAT	TOBY FOSTER	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
LEV-01	Waste Disposal Levy

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS17	MMI-M - Multi element package	ICP-MS

To: **CRC FOR LANDSCAPE ENVIRONMENTS AND MINERAL EXPLORA**
ATTN: PATRICE DE CARITAT
C/- GEOSCIENCE AUSTRALIA
GPO BOX 378
CANBERRA ACT 2601

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: W. Abbott
Wayne Abbott, Operations Manager, Western Australia

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QC CERTIFICATE OF ANALYSIS PH06043685

Sample Description / Method / Analyte / Units / LOR	ME-MS17 Ag ppb 0.1	ME-MS17 As ppb 1	ME-MS17 Au ppb 0.1	ME-MS17 Ba ppb 10	ME-MS17 Bi ppb 3	ME-MS17 Ca ppm 0.2	ME-MS17 Cd ppb 1	ME-MS17 Ce ppb 0.1	ME-MS17 Co ppb 0.3	ME-MS17 Cr ppb 1	ME-MS17 Cu ppb 10	ME-MS17 Er ppb 0.1	ME-MS17 Fe ppm 0.1	ME-MS17 Gd ppb 0.1	ME-MS17 La ppb 0.1
STANDARDS															
MMI-SRM14	21.9	11	46.3	120	<3	267	9	16.8	57.5	47	890	1.0	2.2	4.7	5.2
MMI-SRM14	21.2	14	47.9	120	<3	265	9	15.2	57.0	46	880	1.0	2.9	4.3	4.4
MMI-SRM14	20.2	12	45.3	100	<3	221	8	14.4	53.4	39	850	1.0	1.7	4.4	5.0
MMI-SRM14	20.7	11	46.6	110	<3	230	9	19.8	57.2	42	890	1.0	1.7	4.9	8.8
Target Range - Lower Bound	16.8		36.1	110		235	8		59.4	48	740				
Upper Bound	20.8		44.3	150		287	12		73.2	61	930				
BLANKS															
BLANK	0.8	<1	0.1	<10	6	1.5	<1	0.4	<0.3	17	<10	<0.1	<0.1	0.1	0.7
BLANK	<0.1	<1	<0.1	10	<3	1.0	<1	5.3	0.4	13	<10	0.8	0.1	2.5	2.0
Target Range - Lower Bound	<0.1		<0.1	<10		<0.2	<1	<0.1	<0.3	<1	<10				
Upper Bound	0.2		0.2	20		0.4	2	0.2	0.6	2	20				
DUPLICATES															
2006861110005	12.5	12	0.7	1450	<3	833	5	15.0	385	12	1260	39.5	2.5	61.5	0.7
DUP	10.6	11	0.6	1420	<3	955	4	4.6	341	13	1160	32.2	2.6	47.5	0.3
Target Range - Lower Bound	10.8	9	0.4	1340	<3	849	2	9.1	344	10	1130	33.9	2.2	51.6	0.3
Upper Bound	12.3	14	0.9	1530	6	939	7	10.5	382	15	1290	37.8	2.9	57.4	0.7
2006861120005	0.9	3	0.1	2690	<3	532	4	49.2	180.0	16	930	11.2	2.7	35.3	8.9
DUP	0.4	4	0.1	2770	<3	551	4	48.4	165.0	16	970	11.4	2.6	37.3	8.4
Target Range - Lower Bound	0.4	<1	<0.1	2570	<3	514	2	46.2	163.5	13	880	10.5	2.3	34.3	8.0
Upper Bound	0.9	6	0.2	2890	6	569	6	51.4	181.5	19	1020	12.1	3.0	38.3	9.3
2006861130005	1.9	8	0.2	800	<3	481	8	47.7	191.5	15	960	16.6	3.1	44.9	10.6
DUP	1.7	7	0.1	870	<3	470	7	41.4	138.0	14	890	12.0	3.0	37.9	10.5
Target Range - Lower Bound	1.5	5	<0.1	770	<3	451	5	42.1	156.0	12	860	13.4	2.7	39.1	9.8
Upper Bound	2.1	10	0.2	900	6	500	10	47.0	173.5	17	990	15.2	3.4	43.7	11.3
2006861154005	3.1	2	0.4	880	<3	227	2	602	277	27	710	55.5	5.2	212	214
DUP	3.6	1	0.4	880	<3	271	2	652	280	29	760	56.3	6.8	217	212
Target Range - Lower Bound	3.0	<1	0.2	820	<3	236	<1	595	264	25	680	52.9	5.5	204	202
Upper Bound	3.7	2	0.6	940	6	262	4	659	293	31	790	58.9	6.5	225	224

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QC CERTIFICATE OF ANALYSIS PH06043685

Sample Description / Method	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17
Analyte	Li	Mg	Mn	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn
Units	ppb	ppm	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
LOR	0.2	0.01	0.01	5	0.1	0.1	3	10	0.1	0.1	5	1	3	0.1	0.2
STANDARDS															
MMI-SRM14	1.4	42.2	0.13	40	0.3	15.8	330	100	61.3	2.9	293	1	9	4.6	0.3
MMI-SRM14	1.3	40.6	0.14	42	0.2	14.3	326	110	62.6	2.5	297	1	8	4.3	0.3
MMI-SRM14	1.2	40.8	0.09	39	0.2	14.6	299	90	61.4	2.7	289	1	6	4.2	0.3
MMI-SRM14	1.0	43.7	0.17	42	0.2	19.8	314	90	64.8	4.0	300	1	7	4.6	0.2
Target Range - Lower Bound	1.2	<0.01			<0.1		354	130	49.0				8		
Upper Bound	1.9	0.02			0.2		440	180	60.2				16		
BLANKS															
BLANK	0.3	0.47	<0.01	<5	0.3	0.2	3	10	<0.1	0.3	<5	<1	6	0.1	0.4
BLANK	0.3	3.20	0.74	<5	0.7	5.4	3	<10	0.1	1.4	<5	<1	3	2.3	0.4
Target Range - Lower Bound	<0.2	<0.01			<0.1		<3	<10	<0.1				<3		
Upper Bound	0.4	0.02			0.2		6	20	0.2				6		
DUPLICATES															
2006861110005	8.4	325	5.17	21	<0.1	10.4	968	50	1.3	0.7	43	<1	8	15.2	<0.2
DUP	10.1	378	5.05	20	<0.1	4.7	842	50	1.1	0.3	46	<1	6	9.1	<0.2
Target Range - Lower Bound	8.4	334	4.83	9	<0.1	7.0	854	30	0.9	0.3	32	<1	<3	11.3	<0.2
Upper Bound	10.1	369	5.39	32	0.2	8.1	956	70	1.5	0.7	57	2	13	13.0	0.4
2006861120005	3.5	147.0	5.14	<5	0.1	42.5	469	50	0.7	5.8	62	<1	7	17.3	<0.2
DUP	4.5	152.5	4.82	<5	0.1	44.6	500	50	0.6	5.9	62	<1	5	18.4	<0.2
Target Range - Lower Bound	3.4	142.0	4.71	<5	<0.1	41.2	454	30	0.4	5.4	49	<1	<3	16.8	<0.2
Upper Bound	4.6	157.5	5.25	10	0.2	45.9	515	70	0.9	6.3	75	2	12	18.9	0.4
2006861130005	5.9	134.5	7.72	10	0.3	62.4	380	30	1.5	8.4	72	<1	9	25.9	<0.2
DUP	5.4	130.5	6.07	9	0.1	60.7	351	20	1.0	8.1	71	<1	7	23.9	<0.2
Target Range - Lower Bound	5.0	126.0	6.53	<5	<0.1	58.3	341	<10	1.0	7.6	58	<1	<3	23.5	<0.2
Upper Bound	6.3	139.0	7.26	10	0.4	64.8	390	50	1.5	8.9	85	2	14	26.3	0.4
2006861154005	7.6	87.0	12.00	5	0.5	674	513	70	3.3	114.0	112	<1	21	180.0	<0.2
DUP	9.6	103.5	13.10	5	0.6	666	603	70	3.5	113.0	126	<1	23	185.5	0.2
Target Range - Lower Bound	7.8	90.5	11.90	<5	0.3	636	524	50	3.0	107.5	103	<1	15	173.5	<0.2
Upper Bound	9.4	100.0	13.20	10	0.8	704	592	90	3.8	119.5	135	2	29	192.0	0.4

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Finalized Date: 8-JUN-2006
Account: CRCLAN

QC CERTIFICATE OF ANALYSIS PH06043685

Sample Description / Method	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17	ME-MS17
Analyte	Sr	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
LOR	10	0.1	1	1	10	10	1	0.2	0.1	0.1	20	1
STANDARDS												
MMI-SRM14	530	0.5	<1	25	30	<10	40	0.2	11.4	0.7	270	10
MMI-SRM14	550	0.5	<1	24	30	<10	39	0.2	10.9	0.6	270	10
MMI-SRM14	500	0.5	<1	21	20	<10	36	<0.2	10.6	0.7	240	8
MMI-SRM14	520	0.6	1	23	30	<10	38	<0.2	11.6	0.7	260	9
Target Range - Lower Bound	650			12	<10		32		<0.1		270	8
Upper Bound	810			17	20		42		0.2		380	12
BLANKS												
BLANK	10	<0.1	<1	<1	<10	<10	<1	0.3	<0.1	<0.1	20	<1
BLANK	10	0.7	<1	1	<10	<10	<1	<0.2	8.4	0.5	20	<1
Target Range - Lower Bound	<10			<1	<10		<1		<0.1		<20	<1
Upper Bound	20			2	20		2		0.2		40	2
DUPLICATES												
2006861110005	13050	10.3	<1	3	10	<10	13	0.7	244	24.3	30	4
DUP	13900	8.2	<1	2	10	<10	12	0.7	181.0	20.8	30	4
Target Range - Lower Bound	12800	8.6	<1	<1	<10	<10	10	0.3	202	21.2	<20	2
Upper Bound	14150	9.9	2	5	20	20	15	1.1	223	23.9	40	6
2006861120005	3840	4.2	<1	8	40	<10	29	0.5	92.0	6.9	60	7
DUP	3920	4.4	<1	9	30	<10	28	0.4	94.4	6.7	70	6
Target Range - Lower Bound	3670	3.9	<1	6	<10	<10	25	<0.2	88.3	6.3	<20	4
Upper Bound	4090	4.7	2	11	60	20	32	0.9	98.1	7.3	110	9
2006861130005	2530	6.1	<1	25	40	<10	38	0.7	138.0	10.3	90	15
DUP	2520	4.9	<1	22	50	<10	34	0.5	118.0	7.5	80	13
Target Range - Lower Bound	2380	5.0	<1	20	20	<10	32	<0.2	121.5	8.3	40	11
Upper Bound	2670	6.0	2	27	70	20	40	1.0	134.5	9.5	130	17
2006861154005	2550	25.4	<1	166	220	<10	7	0.5	529	33.1	30	32
DUP	2920	26.0	<1	170	330	<10	9	0.6	546	33.7	30	34
Target Range - Lower Bound	2580	24.2	<1	158	240	<10	6	<0.2	510	31.5	<20	29
Upper Bound	2890	27.2	2	178	310	20	10	1.0	565	35.3	40	37

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Finalized Date: 1-DEC-2006
This copy reported on 8-NOV-2007
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CERTIFICATE PH06118498

Project:
P.O. No.:
This report is for 46 Percussion samples submitted to our lab in Perth, WA, Australia on 24-NOV-2006.

The following have access to data associated with this certificate:

PATRICE DECARITAT	JOHN GREENFIELD	PETER HUTCHISON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS18	MMI-M - Complete Multi element package	ICP-MS

To: **CUDECO LIMITED**
ATTN: PATRICE DECARITAT
PO BOX 530
CLONCURRY QLD 4824

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: W. Abbott
Wayne Abbott, Operations Manager, Western Australia

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Finalized Date: 1-DEC-2006
Account: AUSMIN

CERTIFICATE OF ANALYSIS PH06118498

Sample Description	Method / Analyte / Units / LOR	ME-MS18 Ag ppb 0.1	ME-MS18 As ppb 1	ME-MS18 Au ppb 0.1	ME-MS18 Ba ppb 10	ME-MS18 Bi ppb 3	ME-MS18 Ca ppm 0.2	ME-MS18 Cd ppb 1	ME-MS18 Ce ppb 0.1	ME-MS18 Co ppb 0.3	ME-MS18 Cr ppb 1	ME-MS18 Cu ppb 10	ME-MS18 Er ppb 0.1	ME-MS18 Fe ppm 0.1	ME-MS18 Gd ppb 0.1	ME-MS18 La ppb 0.1
2006861201005		44.0	7	0.7	340	16	488	4	209	311	5	2110	86.8	<0.1	196.5	49.5
2006861202005		3.2	16	0.7	1450	14	702	1	226	259	1	1540	131.0	<0.1	312	112.5
2006861203005		22.8	10	0.9	5870	10	>1000	2	38.5	335	6	2800	28.7	<0.1	50.8	3.1
2006861204005		4.0	7	0.5	350	7	350	3	788	121.0	15	1390	123.0	4.9	364	273
2006861205005		2.9	3	0.1	2030	5	346	8	1225	31.5	56	1450	82.9	6.9	242	187.5
2006861206005		4.6	15	0.2	1940	5	842	8	102.0	465	16	2320	36.9	1.8	64.1	15.2
2006861207005		11.1	8	0.5	4980	4	>1000	3	27.8	284	<1	2250	11.8	<0.1	28.7	<0.1
2006861208005		4.3	10	0.5	6100	3	>1000	2	30.7	382	<1	1610	45.1	<0.1	79.5	<0.1
2006861209005		15.2	12	0.4	3860	<3	>1000	3	53.4	683	10	1700	39.3	<0.1	68.5	4.5
2006861210005		15.2	20	0.3	790	<3	992	9	26.9	800	16	2340	25.3	0.3	29.1	<0.1
2006861211005		7.9	6	0.4	2640	<3	792	4	46.5	695	<1	1130	12.8	0.1	26.4	<0.1
2006861212005		2.5	5	0.2	2210	<3	457	7	69.8	317	2	1090	23.4	1.6	61.1	7.3
2006861213005		6.6	7	0.3	3890	<3	719	6	73.8	642	7	1590	27.7	0.3	69.1	4.5
2006861214005		0.6	10	0.2	3990	<3	732	5	17.4	209	<1	1160	3.3	0.2	17.7	<0.1
2006861215005		5.0	9	0.4	4510	<3	829	7	123.0	1085	7	1470	62.7	0.3	116.5	13.8
2006861216005		1.6	6	0.1	1270	<3	207	4	377	343	32	540	46.6	10.5	135.5	180.0
2006861217005		1.1	3	0.2	1550	<3	284	1	105.5	109.0	13	810	39.6	8.5	88.5	47.9
2006861218005		0.9	50	0.3	210	<3	650	5	15.9	134.0	3	650	52.7	0.6	55.0	2.6
2006861219005		6.9	68	0.7	190	<3	>1000	5	8.2	415	<1	1650	5.5	0.9	7.4	<0.1
2006861220005		0.4	19	0.1	80	<3	770	1	112.0	117.0	12	290	66.0	1.2	156.5	25.3
2006861221005		39.9	11	0.4	2820	<3	771	5	15.9	268	<1	530	1.5	0.1	12.8	<0.1
2006861222005		4.7	12	0.5	4170	<3	>1000	2	24.8	676	<1	1330	20.9	0.2	37.5	<0.1
2006861223005		4.1	14	0.1	1160	<3	596	5	117.5	142.5	17	720	73.4	1.6	121.5	19.9
2006861252005		4.7	16	0.2	1090	<3	602	6	116.5	140.0	20	770	75.7	1.9	119.0	17.4
2006861253005		4.7	7	0.4	4170	<3	760	7	98.1	910	6	1200	49.1	0.7	100.0	11.7
2006861256005		1.1	41	0.4	510	7	567	4	17.2	185.5	12	620	46.4	0.8	55.5	1.4
2006861257005		9.5	5	0.6	4830	4	916	2	14.7	252	3	1030	12.5	0.2	28.9	<0.1
2006861258005		14.5	9	0.4	3960	3	966	3	37.6	712	12	1000	42.5	0.3	69.0	5.2
2006861260005		12.5	20	0.5	2300	<3	796	8	25.6	1040	22	1630	20.5	1.0	27.9	1.8
2006861261005		6.7	6	0.4	2760	<3	631	4	33.7	583	2	720	12.9	0.4	25.3	<0.1
2006861262005		25.2	6	0.9	5850	<3	907	3	32.7	293	11	1330	37.6	0.6	59.8	1.7
2006861264005		0.8	6	0.2	4230	<3	675	4	9.0	164.0	2	890	2.2	0.6	17.1	<0.1
2006861265005		1.4	4	0.1	1230	<3	157.0	3	282	272	30	450	41.5	14.0	105.5	137.0
2006861266005		4.6	9	0.3	2220	<3	612	8	52.1	439	11	870	41.1	1.4	58.0	11.0
2006861270005		3.0	13	0.7	1110	<3	448	1	163.0	238	2	660	145.0	0.5	319	88.3
2006861271005		0.3	17	0.1	90	<3	756	1	140.0	92.2	9	310	75.5	1.6	145.0	29.9
2006861273005		5.2	2	0.4	2850	<3	458	5	37.9	432	2	740	22.1	0.6	53.8	4.3
2006861274005		6.1	66	0.6	270	<3	>1000	5	8.4	511	2	1250	6.5	1.2	10.9	0.1
2006861275005		37.3	8	0.4	2970	<3	850	4	11.5	193.5	1	550	1.5	0.4	12.1	<0.1
2006861276005		48.3	8	1.0	400	<3	404	4	124.0	257	6	800	96.7	0.6	191.0	33.4

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CERTIFICATE OF ANALYSIS PH06118498

Sample Description	Method / Analyte / Units / LOR	ME-MS18 Li ppb 0.2	ME-MS18 Mg ppm 0.01	ME-MS18 Mn ppm 0.01	ME-MS18 Mo ppb 5	ME-MS18 Nb ppb 0.1	ME-MS18 Nd ppb 0.1	ME-MS18 Ni ppb 3	ME-MS18 Pb ppb 10	ME-MS18 Pd ppb 0.1	ME-MS18 Pr ppb 0.1	ME-MS18 Rb ppb 5	ME-MS18 Sb ppb 1	ME-MS18 Sc ppb 3	ME-MS18 Sm ppb 0.1	ME-MS18 Sn ppb 0.2
2006861201005		8.0	>1000	9.37	19	<0.1	268	1260	80	4.7	36.6	70	<1	15	117.0	<0.2
2006861202005		11.1	>1000	7.89	13	<0.1	520	1160	130	7.1	74.0	59	<1	10	200	<0.2
2006861203005		6.7	>1000	6.89	17	<0.1	19.0	983	120	0.3	1.6	38	<1	3	9.2	<0.2
2006861204005		6.0	135.5	6.57	7	0.4	961	568	160	8.0	157.5	169	<1	30	288	<0.2
2006861205005		9.6	90.5	5.48	<5	0.8	608	787	170	5.5	99.5	192	<1	33	182.0	<0.2
2006861206005		9.5	284	18.00	28	<0.1	64.3	2700	110	1.0	8.1	56	<1	7	27.4	<0.2
2006861207005		9.0	263	3.88	5	<0.1	1.0	610	90	<0.1	<0.1	37	<1	<3	1.8	<0.2
2006861208005		7.2	263	3.87	11	<0.1	11.9	872	90	0.9	<0.1	28	<1	4	14.3	<0.2
2006861209005		7.9	296	6.46	22	<0.1	33.7	1090	140	0.9	2.9	48	<1	6	19.2	<0.2
2006861210005		10.8	>1000	14.70	24	<0.1	13.0	1510	140	<0.1	<0.1	42	<1	5	8.4	<0.2
2006861211005		10.1	104.5	10.30	<5	<0.1	4.4	765	50	<0.1	<0.1	73	<1	4	5.7	<0.2
2006861212005		5.4	176.0	11.35	10	<0.1	70.2	572	80	0.6	7.5	71	<1	9	31.3	<0.2
2006861213005		10.9	207	11.25	23	<0.1	55.7	720	110	0.6	5.6	59	<1	5	28.7	<0.2
2006861214005		11.7	146.0	4.03	7	<0.1	<0.1	401	90	<0.1	<0.1	37	<1	<3	0.4	<0.2
2006861215005		10.9	>1000	18.95	13	<0.1	103.0	839	110	2.3	12.6	60	<1	9	49.2	<0.2
2006861216005		11.1	73.8	23.0	<5	1.0	407	421	280	4.7	79.2	144	<1	69	102.0	<0.2
2006861217005		8.3	81.3	7.87	<5	0.4	178.5	313	160	1.5	27.2	114	<1	34	57.9	<0.2
2006861218005		36.2	>1000	2.84	18	<0.1	29.6	409	90	2.0	1.9	41	<1	7	18.3	<0.2
2006861219005		61.9	>1000	2.13	7	<0.1	3.2	646	100	<0.1	<0.1	21	<1	3	2.5	<0.2
2006861220005		17.6	>1000	11.30	13	<0.1	318	317	250	1.7	42.2	34	<1	16	125.5	<0.2
2006861221005		16.0	254	3.87	6	<0.1	0.6	286	70	<0.1	<0.1	34	<1	<3	0.1	<0.2
2006861222005		11.0	201	10.70	16	<0.1	2.8	759	140	2.8	<0.1	33	<1	3	4.3	<0.2
2006861223005		7.5	207	6.38	7	<0.1	113.5	810	140	6.0	13.4	55	<1	6	55.5	<0.2
2006861252005		8.7	213	6.69	8	<0.1	99.9	960	140	6.1	11.6	54	<1	6	52.6	<0.2
2006861253005		13.2	296	16.15	12	<0.1	89.8	804	90	4.1	10.9	61	<1	8	41.2	<0.2
2006861256005		30.8	>1000	3.90	17	<0.1	31.8	298	100	20.5	2.3	43	<1	11	18.1	<0.2
2006861257005		7.1	194.0	3.57	6	<0.1	4.4	387	80	15.2	<0.1	32	<1	4	2.6	<0.2
2006861258005		6.9	234	6.69	21	<0.1	35.4	694	140	17.2	3.2	41	<1	9	18.8	<0.2
2006861260005		12.0	289	21.1	27	<0.1	18.2	1130	120	17.0	1.3	43	<1	7	8.0	<0.2
2006861261005		8.3	68.1	6.64	<5	<0.1	8.8	432	40	15.8	<0.1	64	<1	6	6.0	<0.2
2006861262005		5.9	287	6.06	15	<0.1	20.7	675	120	17.3	1.5	34	<1	6	11.7	<0.2
2006861264005		11.1	121.5	3.01	7	<0.1	2.7	350	80	14.7	<0.1	29	<1	4	0.9	<0.2
2006861265005		13.2	51.7	17.85	<5	1.9	316	306	260	20.8	60.8	121	<1	97	78.6	0.3
2006861266005		7.9	189.5	14.55	24	<0.1	47.4	1050	120	16.9	5.5	42	<1	10	21.1	<0.2
2006861270005		8.6	198.0	6.75	11	<0.1	449	632	140	22.7	61.4	42	<1	14	180.5	<0.2
2006861271005		16.5	>1000	10.50	9	<0.1	307	412	260	17.3	42.9	25	<1	23	117.5	<0.2
2006861273005		8.4	123.0	4.95	14	<0.1	42.2	413	70	15.3	4.4	35	<1	6	20.1	<0.2
2006861274005		55.0	>1000	2.67	6	<0.1	12.4	799	80	15.0	0.4	15	<1	5	5.2	<0.2
2006861275005		13.4	206	3.61	6	<0.1	3.3	331	60	13.3	<0.1	31	<1	4	0.8	<0.2
2006861276005		7.1	256	6.56	14	<0.1	208	554	90	19.6	25.7	47	<1	15	99.5	<0.2

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CERTIFICATE OF ANALYSIS PH06118498

Sample Description	Method / Analyte / Units / LOR	ME-MS18 Sr ppb 10	ME-MS18 Tb ppb 0.1	ME-MS18 Te ppb 1	ME-MS18 Th ppb 1	ME-MS18 Ti ppb 10	ME-MS18 Tl ppb 10	ME-MS18 U ppb 1	ME-MS18 W ppb 0.2	ME-MS18 Y ppb 0.1	ME-MS18 Yb ppb 0.1	ME-MS18 Zn ppb 20	ME-MS18 Zr ppb 1
2006861201005		7600	31.1	1	31	30	<10	20	0.9	671	52.5	60	10
2006861202005		10900	47.8	1	26	30	<10	11	1.5	1000	80.6	30	4
2006861203005		13500	5.4	1	1	10	<10	18	0.8	175.0	22.2	30	5
2006861204005		3150	51.4	<1	135	320	<10	41	0.9	975	70.6	180	27
2006861205005		2030	32.7	<1	86	720	<10	21	0.7	659	50.8	370	30
2006861206005		8040	9.6	<1	9	40	<10	40	1.0	238	25.7	50	11
2006861207005		14400	2.0	1	1	10	<10	9	0.5	68.4	9.8	20	3
2006861208005		12400	10.6	<1	2	10	<10	12	0.8	251	29.7	<20	5
2006861209005		11700	9.4	<1	2	20	<10	75	1.2	241	26.3	30	7
2006861210005		9690	5.0	<1	2	20	<10	41	1.1	148.0	18.8	110	7
2006861211005		5930	3.2	<1	1	10	<10	7	0.4	110.0	9.8	60	1
2006861212005		3960	8.5	<1	16	50	<10	26	0.6	202	14.8	180	9
2006861213005		6560	9.1	<1	9	30	<10	52	0.8	209	18.8	70	8
2006861214005		5510	0.6	<1	1	10	<10	59	0.6	20.1	2.8	30	3
2006861215005		11000	17.0	1	19	20	<10	70	0.8	388	41.3	130	8
2006861216005		2050	17.6	<1	100	990	<10	26	0.5	285	31.8	200	72
2006861217005		2280	12.2	<1	44	640	<10	23	0.4	239	26.4	30	23
2006861218005		13500	10.5	2	2	20	<10	25	0.6	393	36.2	20	1
2006861219005		15300	1.4	1	<1	20	<10	47	0.3	43.2	4.3	90	1
2006861220005		7520	25.8	1	36	50	<10	113	0.4	322	44.7	50	12
2006861221005		14500	0.2	1	<1	10	<10	11	0.3	7.9	1.6	20	<1
2006861222005		10800	4.4	1	3	10	<10	18	0.9	114.0	16.4	60	3
2006861223005		5100	20.9	<1	15	40	<10	61	0.8	405	49.7	60	9
2006861252005		5100	20.5	<1	13	40	<10	71	0.9	404	48.9	60	10
2006861253005		10000	14.0	1	16	20	<10	63	0.7	292	32.9	120	7
2006861256005		13400	10.0	1	4	20	<10	35	0.6	283	31.2	90	3
2006861257005		13800	2.3	1	1	10	<10	11	0.6	65.6	9.6	40	3
2006861258005		12000	9.7	<1	2	10	<10	87	1.2	233	28.5	40	5
2006861260005		9930	3.8	<1	5	10	<10	47	1.2	108.0	14.9	110	7
2006861261005		5430	3.3	<1	2	10	<10	9	0.5	106.0	9.6	70	2
2006861262005		13700	7.6	<1	2	10	<10	28	0.8	224	26.8	60	3
2006861264005		6200	0.5	<1	1	10	<10	73	0.6	14.2	2.0	40	2
2006861265005		1860	13.9	<1	67	1000	<10	26	0.6	244	32.1	240	68
2006861266005		7280	9.2	<1	7	30	<10	38	0.9	220	27.1	80	5
2006861270005		8350	49.2	<1	24	20	<10	12	1.5	964	92.7	50	3
2006861271005		7180	24.9	<1	33	20	<10	93	0.5	331	56.5	80	9
2006861273005		5030	7.0	<1	7	10	<10	56	0.5	160.0	13.9	70	3
2006861274005		16400	1.9	<1	1	10	<10	54	0.3	59.2	4.8	110	1
2006861275005		15100	0.2	<1	<1	10	<10	15	0.3	9.2	1.4	30	1
2006861276005		7790	31.4	<1	20	10	<10	20	1.0	647	56.4	70	4

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CERTIFICATE OF ANALYSIS PH06118498

Sample Description / Method / Analyte / Units / LOR	ME-MS18 Ag ppb 0.1	ME-MS18 As ppb 1	ME-MS18 Au ppb 0.1	ME-MS18 Ba ppb 10	ME-MS18 Bi ppb 3	ME-MS18 Ca ppm 0.2	ME-MS18 Cd ppb 1	ME-MS18 Ce ppb 0.1	ME-MS18 Co ppb 0.3	ME-MS18 Cr ppb 1	ME-MS18 Cu ppb 10	ME-MS18 Er ppb 0.1	ME-MS18 Fe ppm 0.1	ME-MS18 Gd ppb 0.1	ME-MS18 La ppb 0.1
2006861277005	1.1	2	0.1	1610	<3	208	1	100.0	91.4	29	540	41.0	18.2	80.1	51.6
2006861278005	4.1	8	0.5	3640	<3	851	2	19.2	414	1	960	16.4	0.3	29.7	<0.1
2006861280005	3.6	5	0.4	5120	<3	817	2	29.1	258	<1	680	43.5	0.3	85.6	2.5
2006861281005	2.5	5	0.1	1940	<3	209	7	389	45.3	32	610	110.5	12.0	187.0	96.6
2006861283005	2.3	2	0.5	310	<3	203	2	409	47.1	13	350	109.0	6.1	274	186.0
2006861284005	2.5	3	0.2	1910	<3	320	6	35.9	310	2	590	18.8	1.4	47.1	5.7

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CERTIFICATE OF ANALYSIS PH06118498

Sample Description	Method / Analyte / Units / LOR	ME-MS18 Li ppb 0.2	ME-MS18 Mg ppm 0.01	ME-MS18 Mn ppm 0.01	ME-MS18 Mo ppb 5	ME-MS18 Nb ppb 0.1	ME-MS18 Nd ppb 0.1	ME-MS18 Ni ppb 3	ME-MS18 Pb ppb 10	ME-MS18 Pd ppb 0.1	ME-MS18 Pr ppb 0.1	ME-MS18 Rb ppb 5	ME-MS18 Sb ppb 1	ME-MS18 Sc ppb 3	ME-MS18 Sm ppb 0.1	ME-MS18 Sn ppb 0.2
2006861277005		56.3	56.5	7.19	<5	3.0	166.0	239	150	18.8	26.5	113	<1	70	51.5	0.8
2006861278005		8.0	161.0	5.84	11	<0.1	8.7	516	100	14.3	<0.1	24	<1	4	4.9	<0.2
2006861280005		5.3	156.5	2.53	6	<0.1	35.1	481	90	15.5	2.9	19	<1	5	22.1	<0.2
2006861281005		15.9	49.6	5.18	<5	2.7	343	382	180	22.1	53.0	143	<1	58	115.0	0.5
2006861283005		8.0	63.5	2.88	<5	2.1	621	308	130	21.8	102.0	124	<1	33	190.0	0.2
2006861284005		4.7	110.0	7.02	8	<0.1	41.9	305	70	15.5	4.6	47	<1	9	18.9	<0.2

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CERTIFICATE OF ANALYSIS PH06118498

Sample Description	Method	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18
	Analyte	Sr	Tb	Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
	Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
	LOR	10	0.1	1	1	10	10	1	0.2	0.1	0.1	20	1
2006861277005		2080	11.4	<1	24	1630	<10	20	0.7	237	28.9	90	55
2006861278005		10600	3.6	<1	2	10	<10	17	0.6	96.4	12.7	40	2
2006861280005		10300	12.2	<1	3	<10	<10	11	0.7	254	27.5	20	2
2006861281005		1680	28.5	<1	19	1190	<10	16	1.2	715	75.4	420	44
2006861283005		2400	39.8	<1	54	820	<10	26	1.0	719	69.0	110	26
2006861284005		3380	6.7	<1	10	70	<10	24	0.5	143.5	13.3	200	4

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Project:
P.O. No.:
This report is for 46 Percussion samples submitted to our lab in Perth, WA, Australia on 24-NOV-2006.

The following have access to data associated with this certificate:

PATRICE DECARITAT	JOHN GREENFIELD	PETER HUTCHISON

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LEV-01	Waste Disposal Levy
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS18	MMI-M - Complete Multi element package	ICP-MS

To: **CUDECO LIMITED**
ATTN: PATRICE DECARITAT
PO BOX 530
CLONCURRY QLD 4824

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: W. Abbott
Wayne Abbott, Operations Manager, Western Australia

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QC CERTIFICATE OF ANALYSIS PH06118498

Sample Description / Method	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18	ME-MS18
Analyte	Ag	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Er	Fe	Gd	La
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb
LOR	0.1	1	0.1	10	3	0.2	1	0.1	0.3	1	10	0.1	0.1	0.1	0.1
STANDARDS															
MMI-SRM14	18.9	14	37.4	110	<3	275	9	12.6	65.9	49	890	1.0	0.6	3.4	0.9
MMI-SRM14	18.1	10	43.2	120	<3	238	9	9.6	63.8	36	760	0.7	0.4	2.7	1.1
MMI-SRM14	18.0	12	37.6	130	<3	246	8	14.0	62.8	52	700	1.0	2.0	3.9	3.9
MMI-SRM14	17.1	11	35.4	110	<3	236	8	12.9	62.9	49	680	0.9	1.8	3.4	2.2
Target Range - Lower Bound	16.8		36.1	110		235	8		59.4	48	740				
Upper Bound	20.8		44.3	150		287	12		73.2	60	920				
BLANKS															
BLANK	<0.1	<1	<0.1	<10	5	0.3	<1	0.2	<0.3	2	10	0.1	<0.1	0.2	0.1
BLANK	0.1	<1	<0.1	<10	<3	<0.2	<1	0.1	<0.3	1	20	<0.1	0.3	<0.1	<0.1
Target Range - Lower Bound	<0.1	<1	<0.1	<10	<3	<0.2	<1	<0.1	<0.3	<1	<10	<0.1	<0.1	<0.1	<0.1
Upper Bound	0.2	2	0.2	20	6	0.4	2	0.2	0.6	2	20	0.2	0.2	0.2	0.2
DUPLICATES															
2006861220005	0.4	19	0.1	80	<3	770	1	112.0	117.0	12	290	66.0	1.2	156.5	25.3
DUP	0.4	17	0.2	80	<3	770	1	111.0	114.5	14	390	65.6	1.4	143.0	23.3
Target Range - Lower Bound	0.2	15	<0.1	60	<3	731	<1	105.5	109.5	10	300	62.3	1.0	142.0	22.9
Upper Bound	0.6	21	0.2	100	6	809	2	117.5	122.0	16	380	69.3	1.6	157.5	25.7
2006861261005	6.7	6	0.4	2760	<3	631	4	33.7	583	2	720	12.9	0.4	25.3	<0.1
DUP	6.7	4	0.3	2480	<3	631	3	27.0	583	<1	720	10.6	0.4	22.4	<0.1
Target Range - Lower Bound	6.2	3	<0.1	2470	<3	599	<1	28.6	553	<1	660	11.0	0.2	22.5	<0.1
Upper Bound	7.2	7	0.6	2770	6	663	6	32.1	613	2	780	12.5	0.6	25.2	0.2
2006861284005	2.5	3	0.2	1910	<3	320	6	35.9	310	2	590	18.8	1.4	47.1	5.7
DUP	2.3	5	0.2	1880	<3	306	6	33.1	256	2	530	18.7	1.3	43.6	5.6
Target Range - Lower Bound	2.1	2	<0.1	1780	<3	297	4	32.6	268	<1	510	17.6	1.1	42.9	5.2
Upper Bound	2.7	6	0.4	2010	6	329	8	36.4	298	4	610	19.9	1.6	47.8	6.1

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QC CERTIFICATE OF ANALYSIS PH06118498

Sample Description / Method / Analyte / Units / LOR	ME-MS18 Li ppb 0.2	ME-MS18 Mg ppm 0.01	ME-MS18 Mn ppm 0.01	ME-MS18 Mo ppb 5	ME-MS18 Nb ppb 0.1	ME-MS18 Nd ppb 0.1	ME-MS18 Ni ppb 3	ME-MS18 Pb ppb 10	ME-MS18 Pd ppb 0.1	ME-MS18 Pr ppb 0.1	ME-MS18 Rb ppb 5	ME-MS18 Sb ppb 1	ME-MS18 Sc ppb 3	ME-MS18 Sm ppb 0.1	ME-MS18 Sn ppb 0.2
STANDARDS															
MMI-SRM14	0.8	39.5	0.18	36	<0.1	11.9	410	180	47.2	0.7	292	1	7	3.7	<0.2
MMI-SRM14	0.8	29.5	1.01	35	<0.1	11.4	409	140	49.0	0.8	256	1	7	3.0	<0.2
MMI-SRM14	1.4	28.6	1.06	37	0.1	15.2	408	160	50.7	1.6	267	1	10	4.0	<0.2
MMI-SRM14	1.4	26.3	1.00	35	0.2	13.4	397	150	48.4	1.2	257	1	9	3.7	<0.2
Target Range - Lower Bound	1.2						354	130	49.0				8		
Upper Bound	1.9						440	190	60.2				16		
BLANKS															
BLANK	1.7	<0.01	<0.01	<5	0.1	<0.1	<3	10	0.1	<0.1	<5	<1	<3	<0.1	<0.2
BLANK	16.4	0.02	0.02	<5	<0.1	<0.1	5	10	0.2	<0.1	<5	<1	<3	0.1	<0.2
Target Range - Lower Bound	<0.2	<0.01	<0.01	<5	<0.1	<0.1	<3	<10	<0.1	<0.1	<5	<1	<3		<0.2
Upper Bound	0.4	0.02	0.02	10	0.2	0.2	6	20	0.2	0.2	10	2	6		0.4
DUPLICATES															
2006861220005	17.6	>1000	11.30	13	<0.1	318	317	250	1.7	42.2	34	<1	16	125.5	<0.2
DUP	15.4	>1000	10.40	13	<0.1	264	405	250	16.2	34.7	30	<1	22	107.0	<0.2
Target Range - Lower Bound	15.3	950	10.30	<5	<0.1	276	337	220	8.3	36.3	20	<1	12	110.0	<0.2
Upper Bound	17.7	>1000	11.40	24	0.2	306	385	280	9.6	40.6	44	2	26	122.5	0.4
2006861261005	8.3	68.1	6.64	<5	<0.1	8.8	432	40	15.8	<0.1	64	<1	6	6.0	<0.2
DUP	7.8	68.0	6.63	<5	<0.1	8.8	432	30	15.7	0.4	55	<1	6	5.6	<0.2
Target Range - Lower Bound	7.2	64.6	6.28	<5	<0.1	8.2	404	<10	14.8	<0.1	47	<1	<3	5.3	<0.2
Upper Bound	8.9	71.5	6.99	10	0.2	9.4	460	60	16.7	0.5	72	2	12	6.3	0.4
2006861284005	4.7	110.0	7.02	8	<0.1	41.9	305	70	15.5	4.6	47	<1	9	18.9	<0.2
DUP	4.5	108.5	6.01	7	<0.1	39.4	285	60	15.4	4.1	47	<1	9	18.7	<0.2
Target Range - Lower Bound	4.0	104.0	6.17	<5	<0.1	38.4	274	40	14.5	3.9	35	<1	<3	17.7	<0.2
Upper Bound	5.2	114.5	6.86	10	0.2	42.9	316	90	16.4	4.8	59	2	15	19.9	0.4

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QC CERTIFICATE OF ANALYSIS PH06118498

Sample Description / Method / Analyte / Units / LOR	ME-MS18 Sr ppb 10	ME-MS18 Tb ppb 0.1	ME-MS18 Te ppb 1	ME-MS18 Th ppb 1	ME-MS18 Ti ppb 10	ME-MS18 Tl ppb 10	ME-MS18 U ppb 1	ME-MS18 W ppb 0.2	ME-MS18 Y ppb 0.1	ME-MS18 Yb ppb 0.1	ME-MS18 Zn ppb 20	ME-MS18 Zr ppb 1
STANDARDS												
MMI-SRM14	660	0.4	1	14	20	<10	38	<0.2	8.9	0.7	300	10
MMI-SRM14	700	0.3	<1	9	20	<10	33	<0.2	7.0	0.5	280	6
MMI-SRM14	710	0.4	<1	13	60	<10	37	<0.2	9.0	0.7	330	10
MMI-SRM14	670	0.4	<1	13	50	<10	36	<0.2	8.1	0.6	290	9
Target Range - Lower Bound	650			12			32				270	8
Upper Bound	810			16			42				370	12
BLANKS												
BLANK	<10	0.1	<1	<1	10	<10	<1	<0.2	0.2	0.1	<20	<1
BLANK	<10	<0.1	<1	<1	<10	<10	<1	0.2	<0.1	<0.1	40	<1
Target Range - Lower Bound	<10	<0.1	<1	<1	<10	<10	<1	<0.2	<0.1	<0.1	<20	<1
Upper Bound	20	0.2	2	2	20	20	2	0.4	0.2	0.2	40	2
DUPLICATES												
2006861220005	7520	25.8	1	36	50	<10	113	0.4	322	44.7	50	12
DUP	7530	23.2	<1	34	30	<10	113	0.5	284	47.4	80	9
Target Range - Lower Bound	7130	23.1	<1	31	20	<10	105	<0.2	288	43.5	<20	8
Upper Bound	7920	25.9	2	39	60	20	121	0.9	318	48.6	110	13
2006861261005	5430	3.3	<1	2	10	<10	9	0.5	106.0	9.6	70	2
DUP	5420	2.7	<1	2	10	<10	11	0.4	84.7	7.9	40	1
Target Range - Lower Bound	5130	2.7	<1	<1	<10	<10	8	<0.2	90.4	8.1	<20	<1
Upper Bound	5720	3.4	2	4	20	20	13	0.9	100.5	9.4	100	2
2006861284005	3380	6.7	<1	10	70	<10	24	0.5	143.5	13.3	200	4
DUP	3220	6.1	<1	9	80	<10	21	0.5	133.5	11.9	190	5
Target Range - Lower Bound	3120	5.9	<1	7	50	<10	19	<0.2	131.5	11.8	150	2
Upper Bound	3490	6.9	2	12	100	20	26	0.9	145.5	13.4	240	7

A5.7 Mineralogy by XRD and Siroquant (Geoscience Australia)

XRD Mineral Report for Megan Lech (Batch 200607) November 2006

38 samples were submitted for XRD analysis. Samples were scanned on a Siemens D500 Diffractometer from 2° to 70° 2θ at 40kV,30mA. Mineral identification was carried out using the program Bruker Diffrac ^{Plus} Eva. Siroquant® was used to quantify minerals.

- The simple scans were very similar for all samples, showing dominant Quartz, some clay and small amounts of feldspars. Muscovite, Goethite, Clinochlore and Calcite were also identified in some samples.
- Specific clays have been identified by peak best-fit using Eva's search/match program. Further work would be required to definitively identify clays, but the presence of Kaolinite Group clays is most likely.
- Clinochlore isn't contained in Siroquant's library of minerals, so Chlorite was used to quantify Clinochlore.
- Specific feldspars have been identified by peak best-fit using Eva's search/match program. Further petrological and mineralogical work would be required to definitively identify feldspars.
- Siroquant failed to quantify some minerals that clearly appeared to be present in small quantities in scans. This generally occurred when more than one feldspar was identified by Eva. In the quantification process, one of the feldspars tended to 'swallow' the other.

Liz Webber and Bill Pappas
23 November 2006

Appendix 5.7

Sample #	Minerals Present	Corrected Weight %
2005861001001	Quartz	79.3
	Halloysite	12.1
	Microcline	5.9
	Albite	1.6
	Muscovite	1.1
		100

2005861001002	Quartz	60.1
	Halloysite	35.3
	Muscovite	3.4
	Albite	1.2
		100

2005861002001	Quartz	73.7
	Halloysite	20.3
	Muscovite	4.3
	Albite	1.8
		100.1

2005861002002	Quartz	79.5
	Kaolin	17.8
	Orthoclase	2.7
		100

2005861003001	Quartz	59.1
	Halloysite	31.4
	Albite	5.6
	Orthoclase	4
		100.1

2005861003002	Quartz	49.1
	Muscovite	25.6
	Kaolin	19.9
	Calcite	3
	Albite	2
	Orthoclase	0.5
		100.1

2005861004001	Quartz	58.3
	Kaolin	23.6
	Muscovite	13.1
	Albite	4.1
	Calcite	0.8
		99.9

2005861004002	Quartz	52.7
	Halloysite	27.9
	Kaolin	8.3
	Albite	4.9
	Calcite	3.9
	Microcline	2.3
		100

Sample #	Minerals Present	Corrected Weight %
2005861005001	Quartz	64.1
	Halloysite	19.7
	Albite	9
	Orthoclase	7.2
		100

2005861005002	Quartz	58.8
	Halloysite	23.9
	Albite	8.5
	Microcline	6.5
	Kaolin	2.3
		100

2005861006001	Quartz	48.6
	Halloysite	35.8
	Microcline	5.7
	Albite	4.3
	Kaolin	4.1
	Calcite	1.5
		100

2005861006002	Quartz	50.5
	Halloysite	32.9
	Kaolin	5.4
	Orthoclase	5.3
	Albite	4.9
	Calcite	1
		100

2005861007001	Quartz	69.5
	Halloysite	21.5
	Kaolin	4.9
	Microcline	4.1
		100

2005861007002	Quartz	70
	Halloysite	18.5
	Anorthite	5.4
	Kaolin	4.4
	Calcite	1.7
		100

2005861008001	Quartz	78.8
	Halloysite	10.7
	Microcline	7.4
	Kaolin	3.1
		100

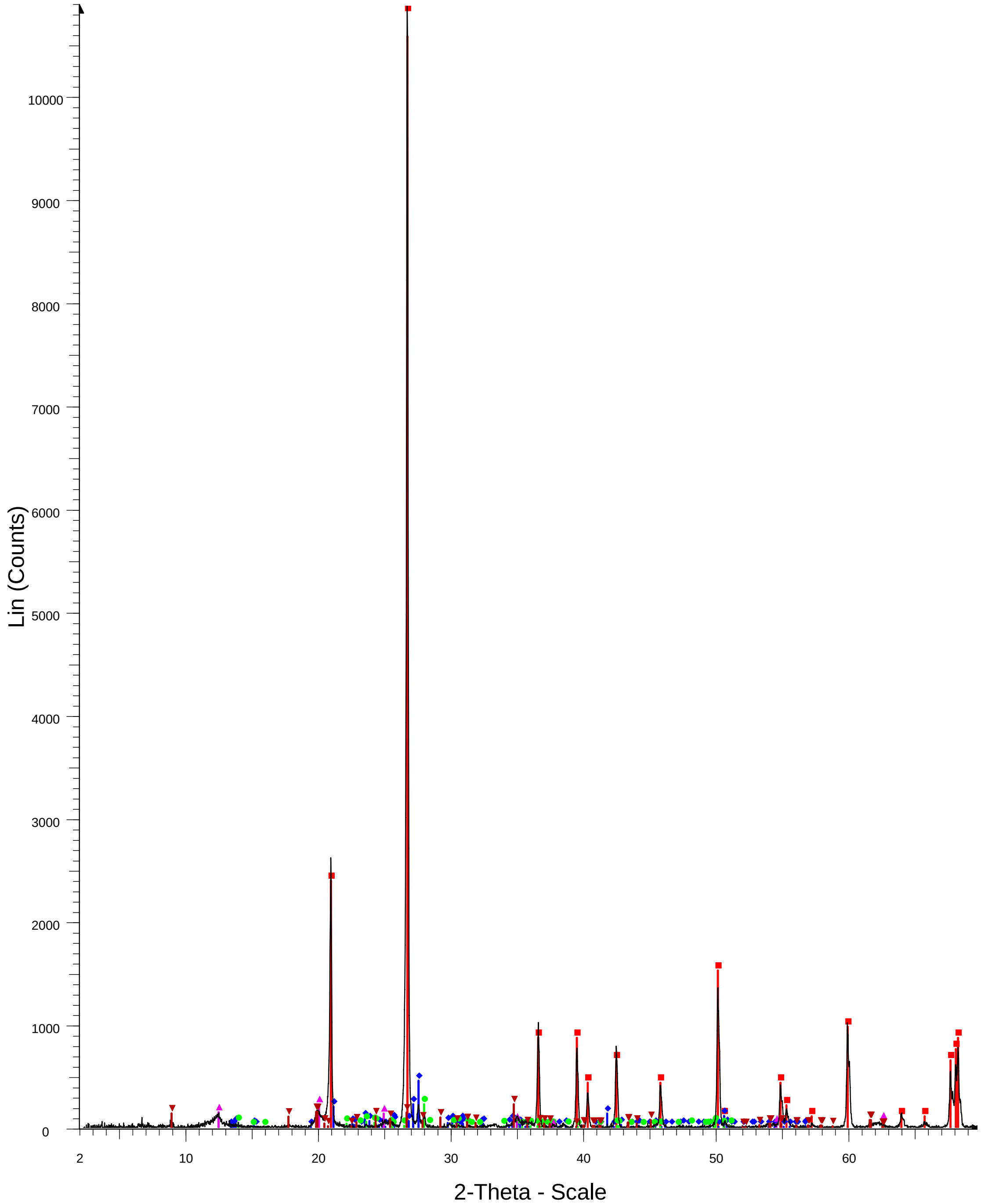
2005861008002	Quartz	61.5
	Halloysite	27
	Kaolin	5.3
	Microcline	4.4
	Calcite	1.7
		99.9

Sample #	Minerals Present	Corrected Weight %
2005861009001	Quartz	73.3
	Halloysite	19.6
	Microcline	4.1
	Kaolin	2.9
		99.9
2005861009002	Quartz	71.7
	Halloysite	26.2
	Albite	2.1
		100
2005861010001	Quartz	54
	Halloysite	32.2
	Microcline	8.7
	Kaolin	5.1
		100
2005861010002	Halloysite	44.2
	Quartz	41.5
	Kaolin	6.7
	Albite	3.9
	Goethite	2.4
	Calcite	1.3
		100
2005861011001	Quartz	80.7
	Halloysite	10.8
	Goethite	5.7
	Albite	2.9
		100.1
2005861011002	Quartz	74.4
	Halloysite	22.8
	Albite	2.8
		100
2005861012001	Quartz	71.9
	Halloysite	15.4
	Albite	5.1
	Microcline	4.6
	Kaolin	3
		100
2005861012002	Quartz	82.9
	Halloysite	13.7
	Kaolin	2.5
	Microcline	0.9
		100
2005861013001	Quartz	76.9
	Halloysite	16.5
	Albite	3.9
	Kaolin	2.8
		100.1

Sample #	Minerals Present	Corrected Weight %
2005861013002	Quartz	86
	Halloysite	7.3
	Albite	4.1
	Kaolin	2.6
		100
2005861014001	Quartz	74.2
	Halloysite	20.1
	Kaolin	2.8
	Albite	2.8
		99.9
2005861014002	Quartz	63.8
	Halloysite	26.7
	Kaolin	4.2
	Chlorite	3
	Anorthoclase 1	2.4
		100.1
2005861015001	Quartz	75.2
	Halloysite	18.2
	Kaolin	3.3
	Anorthoclase 1	3.2
		99.9
2005861015002	Quartz	64.2
	Halloysite	29.1
	Kaolin	4.5
	Anorthoclase 1	2.2
		100
2005861016001	Quartz	70.7
	Halloysite	25.9
	Kaolin	3.4
		100
2005861016002	Quartz	84.7
	Halloysite	15.3
		100
2005861017001	Quartz	68.3
	Halloysite	20.5
	Albite	4.2
	Microcline	3.8
	Kaolin	3.3
		100.1
2005861017002	Quartz	72.1
	Halloysite	18.2
	Microcline	2.8
	Albite	2.4
	Kaolin	2.3
	Calcite	2.2
		100

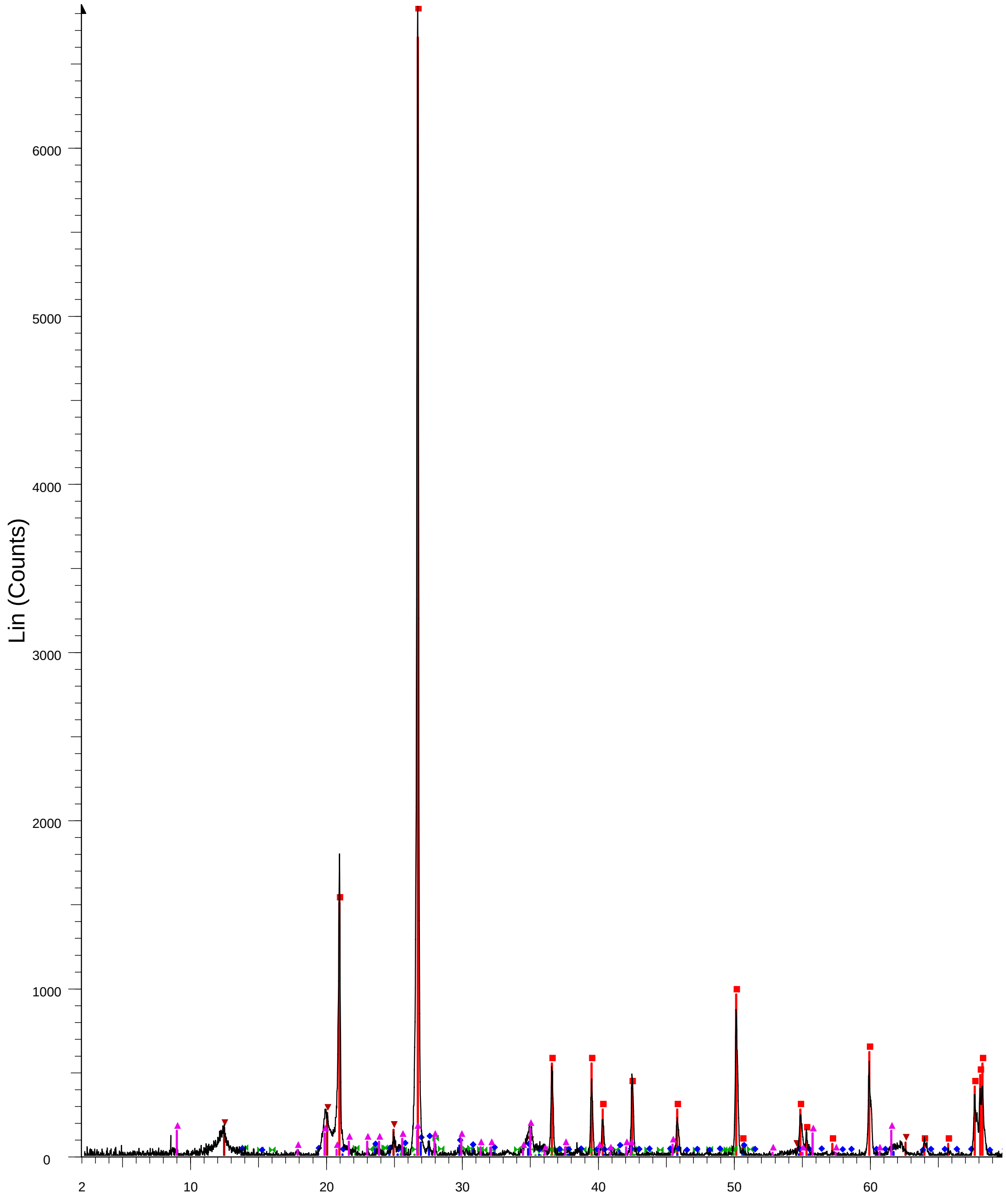
Sample #	Minerals Present	Corrected Weight %
2005861018001	Quartz	65.6
	Halloysite	30.3
	Kaolin	4.1
		100
2005861018002	Quartz	76.8
	Halloysite	16.7
	Kaolin	3.7
	Albite	2.7
		99.9
2005861019001	Quartz	79.4
	Halloysite	16.3
	Albite	2.4
	Kaolin	2
		100.1
2005861019002	Quartz	70.2
	Halloysite	20.8
	Muscovite	4.2
	Albite	2.8
	Kaolin	2
		100

2005861001001



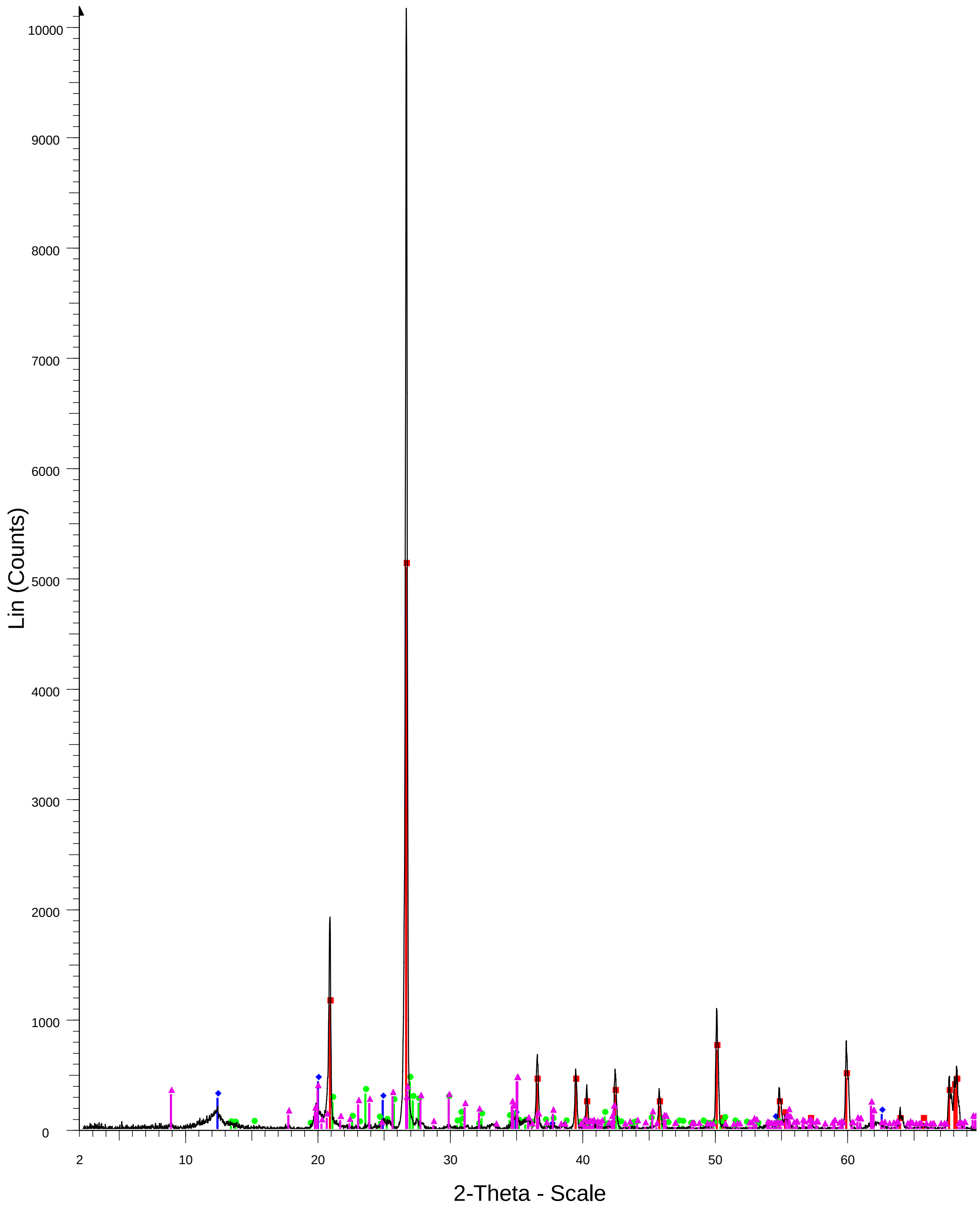
001001 - File: 2005861001001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.042 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-043-0685 (I) - Muscovite-2 ITM RG2 - KAl2(Si3Al)O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 9.01700 - b 5.21000 - c 20

2005861001002

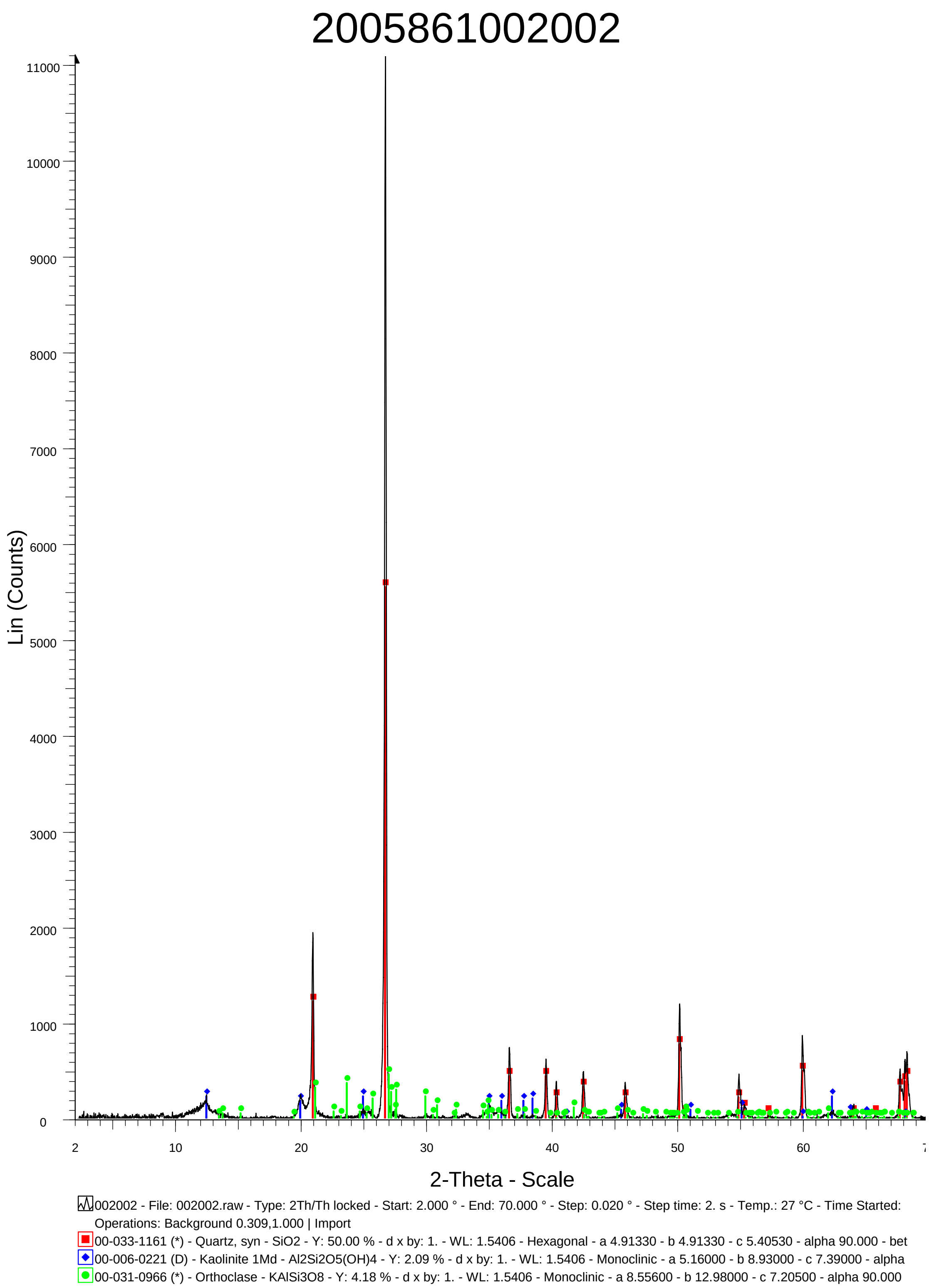


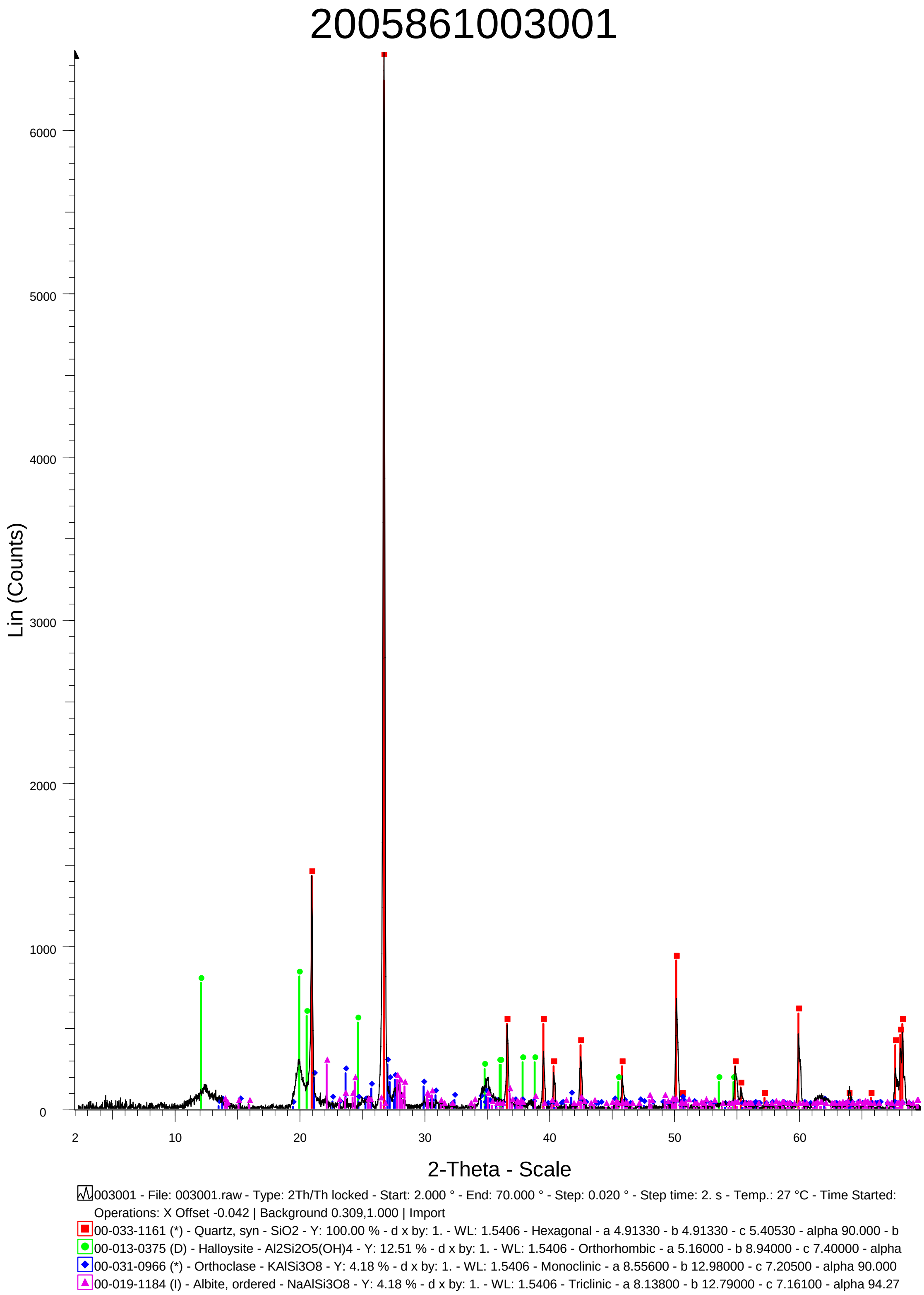
001002 - File: 2005861001002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.033 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 2.39 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 3.72 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.05 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.24 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

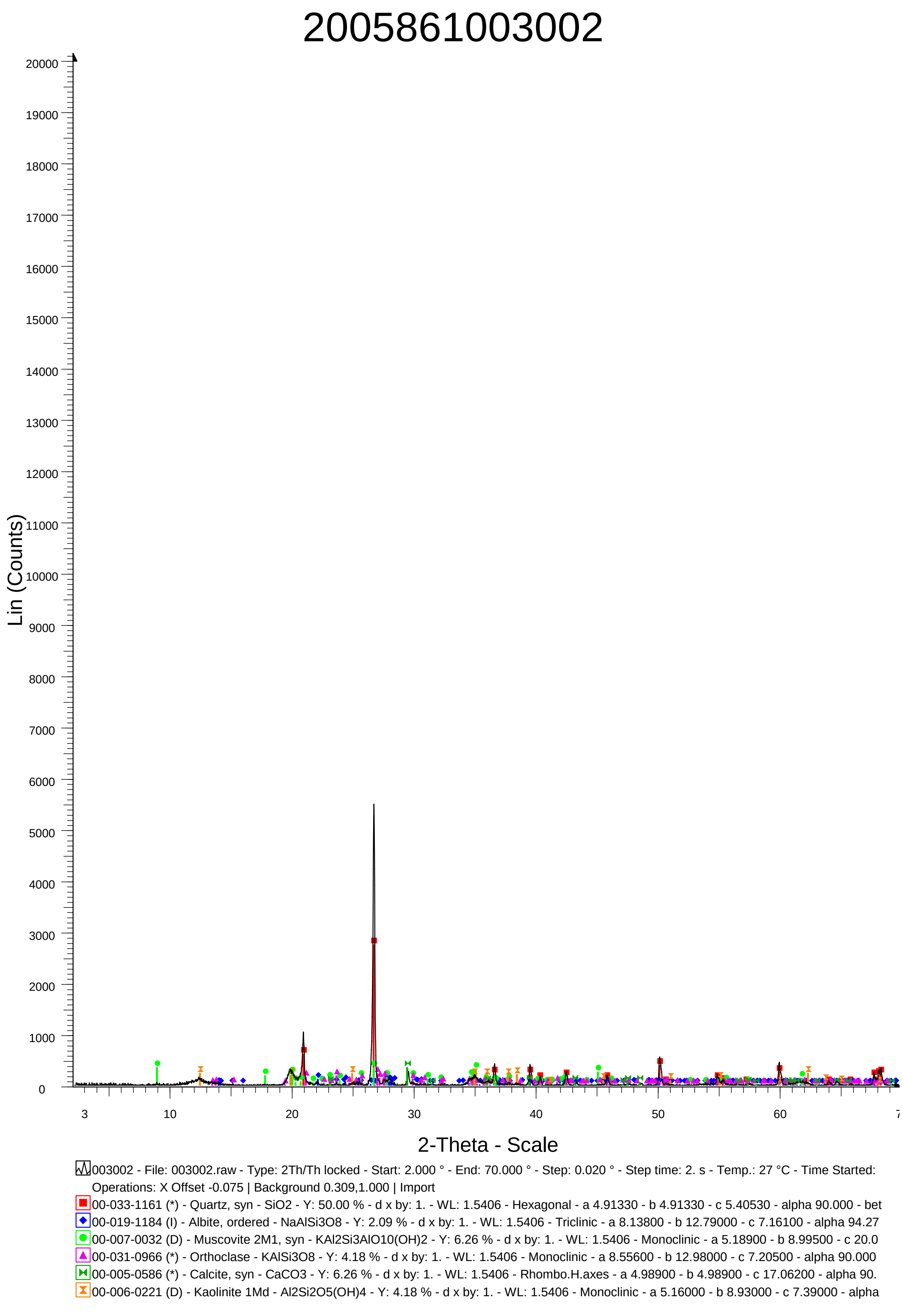
2005861002001



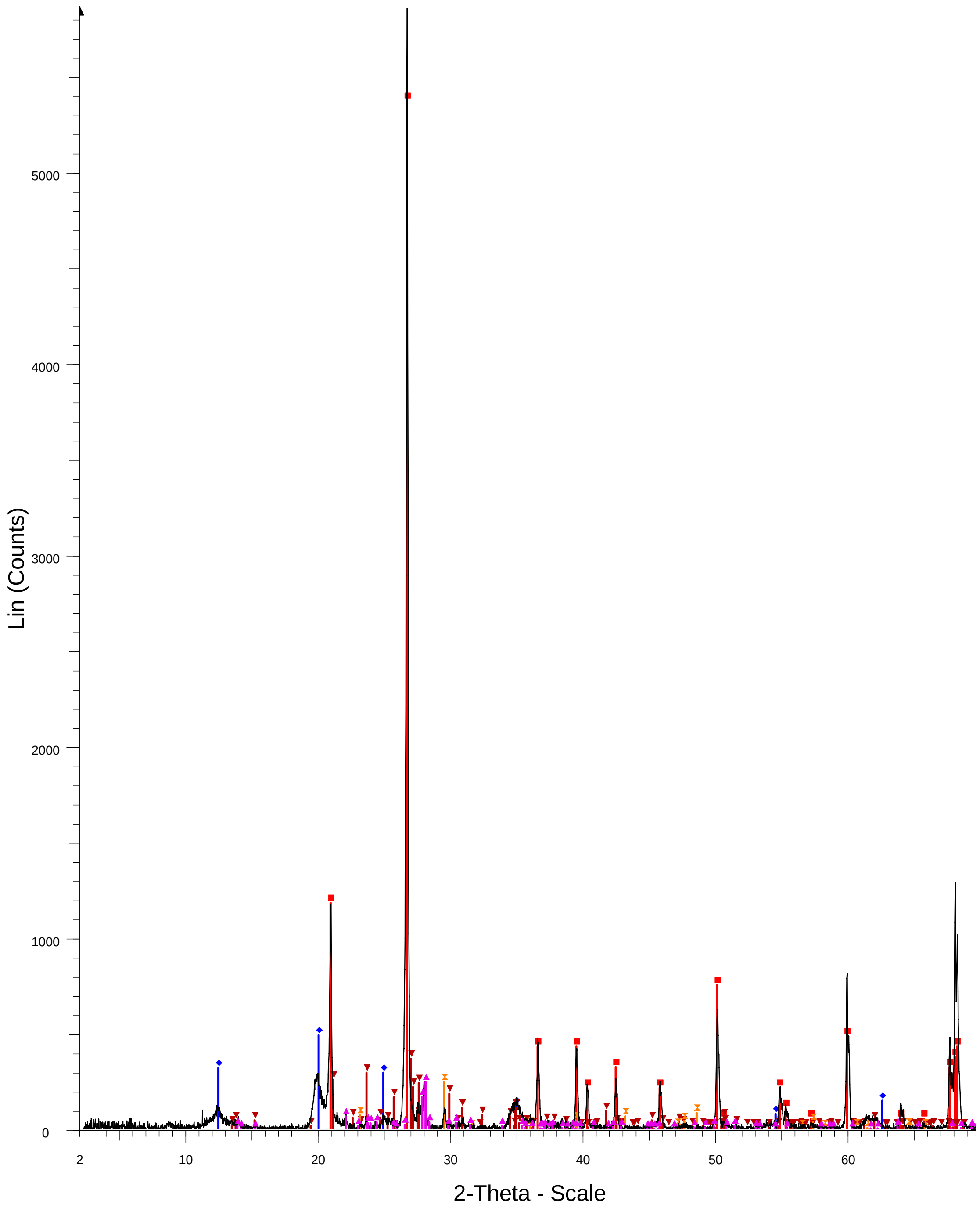
002001 - File: 002001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.025 | X Offset -0.033 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 50.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-022-1212 (D) - Orthoclase - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.56100 - b 12.99600 - c 7.19200 - alpha 90.000
01-076-0637 (I) - Muscovite 2M1 - KAl2(Si3Al)O10(OH)2 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19400 - b 8.99600 - c 20.09600


2005861002002
Lin (Counts)
2-Theta - Scale
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
002002 - File: 002002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 50.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000

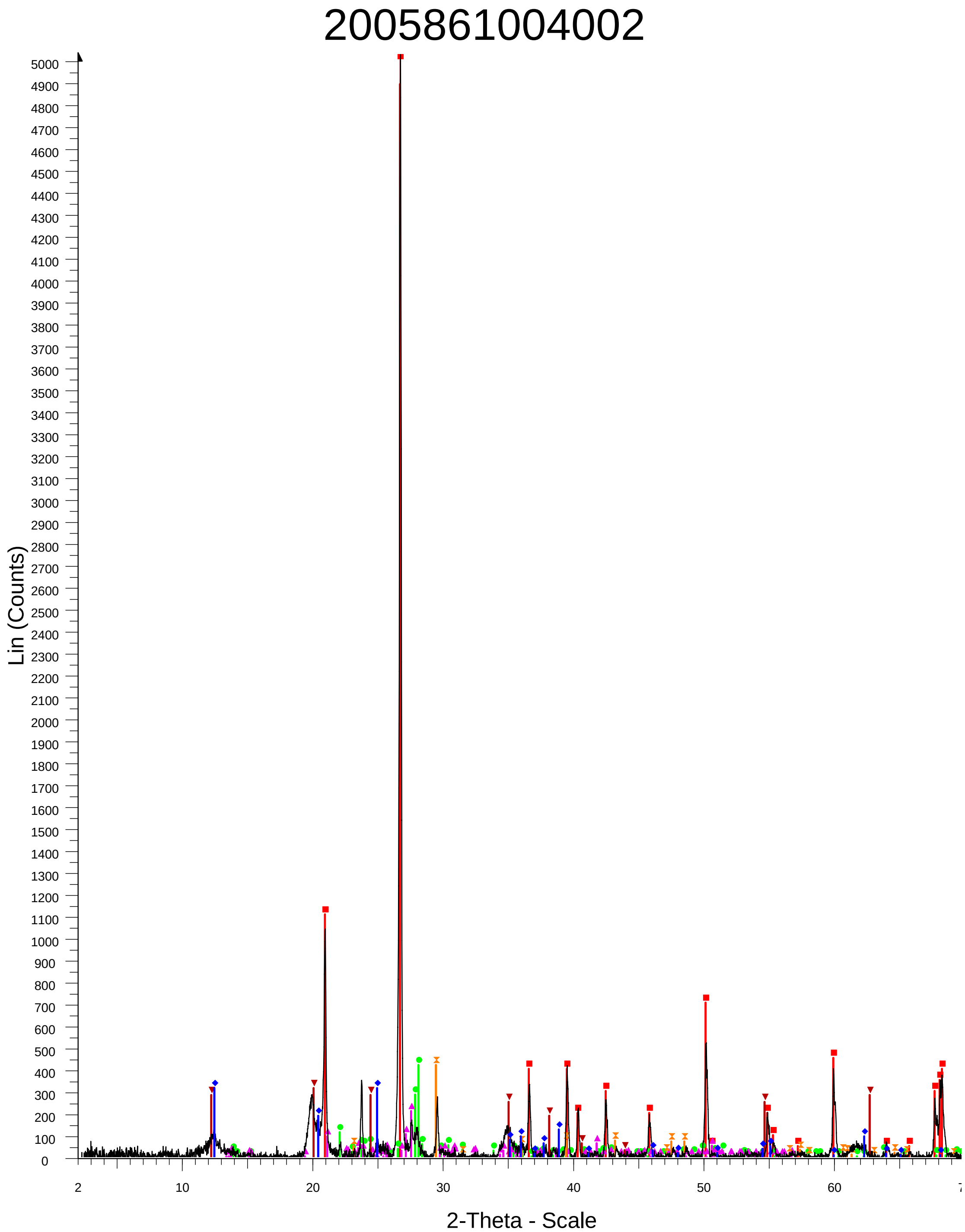

2005861003001
Lin (Counts)
0
1000
2000
3000
4000
5000
6000
2
10
20
30
40
50
60
2-Theta - Scale
003001 - File: 003001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.042 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-013-0375 (D) - Halloysite - Al2Si2O5(OH)4 - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Orthorhombic - a 5.16000 - b 8.94000 - c 7.40000 - alpha
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-019-1184 (I) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13800 - b 12.79000 - c 7.16100 - alpha 94.27


2005861003002
Lin (Counts)
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000
14000
15000
16000
17000
18000
19000
20000
3
10
20
30
40
50
60
2-Theta - Scale
003002 - File: 003002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 50.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-019-1184 (I) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13800 - b 12.79000 - c 7.16100 - alpha 94.27
00-007-0032 (D) - Muscovite 2M1, syn - KAl2Si3AlO10(OH)2 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.18900 - b 8.99500 - c 20.0
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha

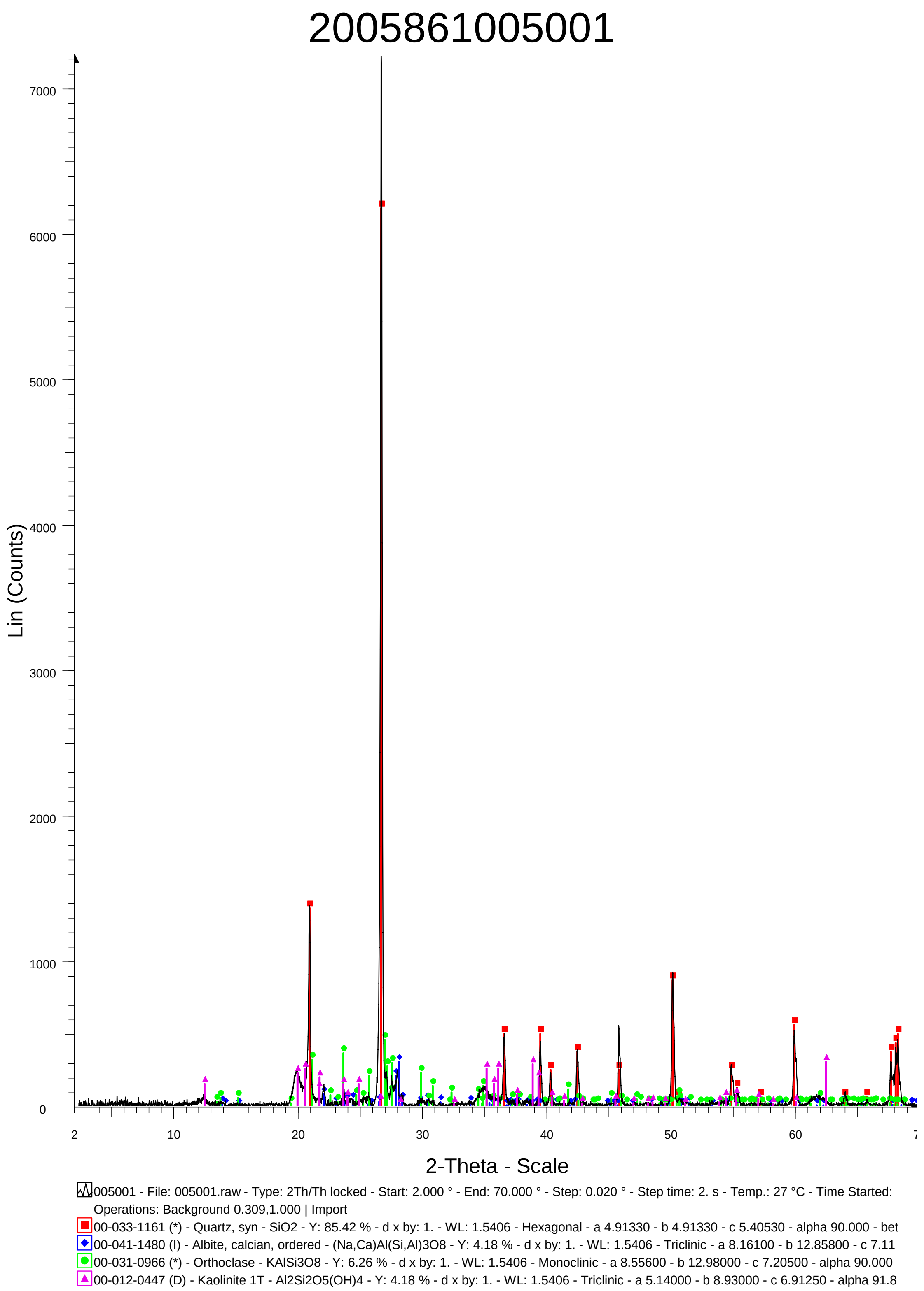
2005861004001



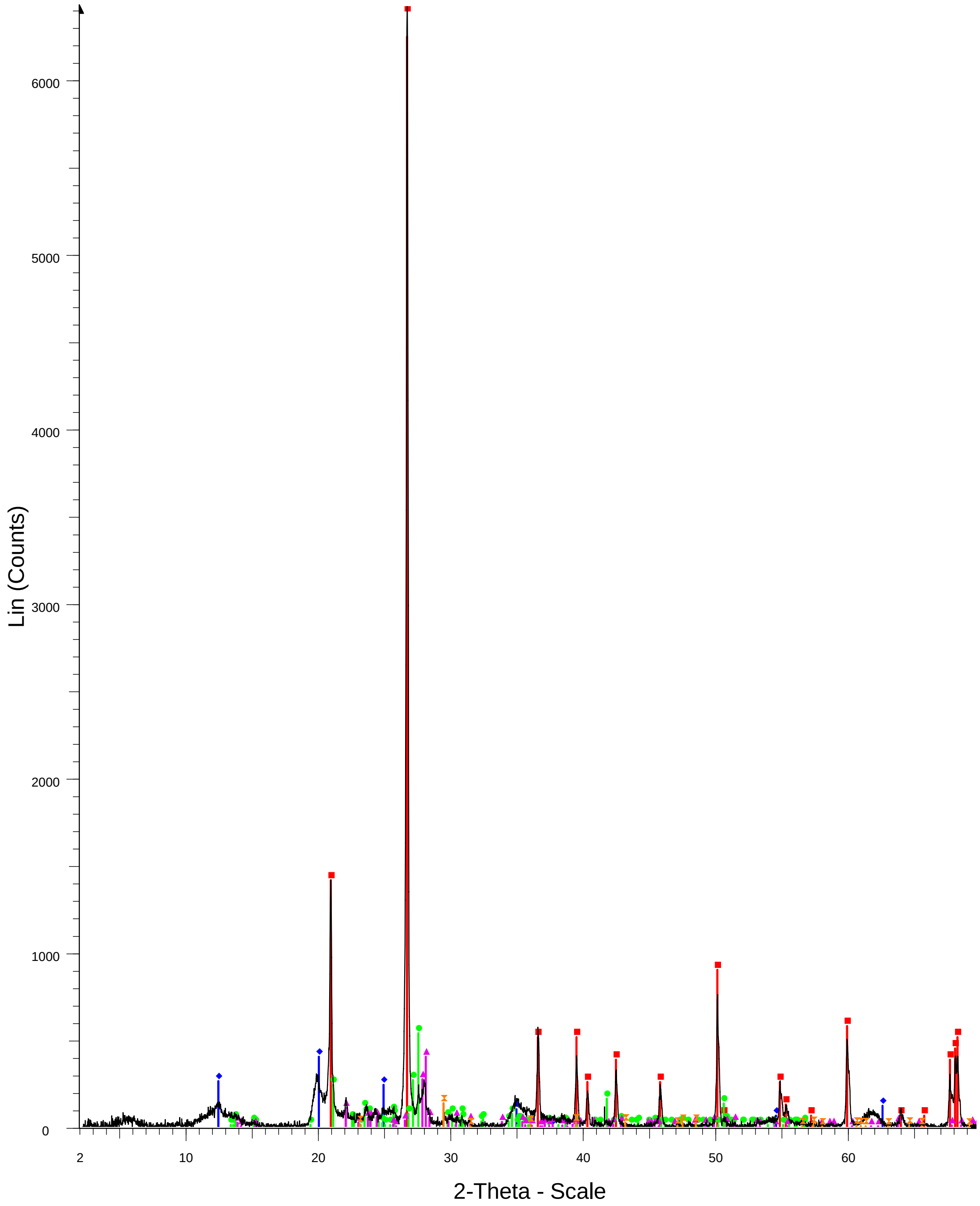
004001 - File: 004001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.042 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 91.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-024-0027 (D) - Calcite - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.99000 - b 4.99000 - c 17.00200 - alpha 90.000



004002 - File: 004002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1488 (N) - Kaolinite-1 ITMd RG - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 -
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-009-0453 (N) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.12500 - b 5.12500 - c 7.30000 - alpha

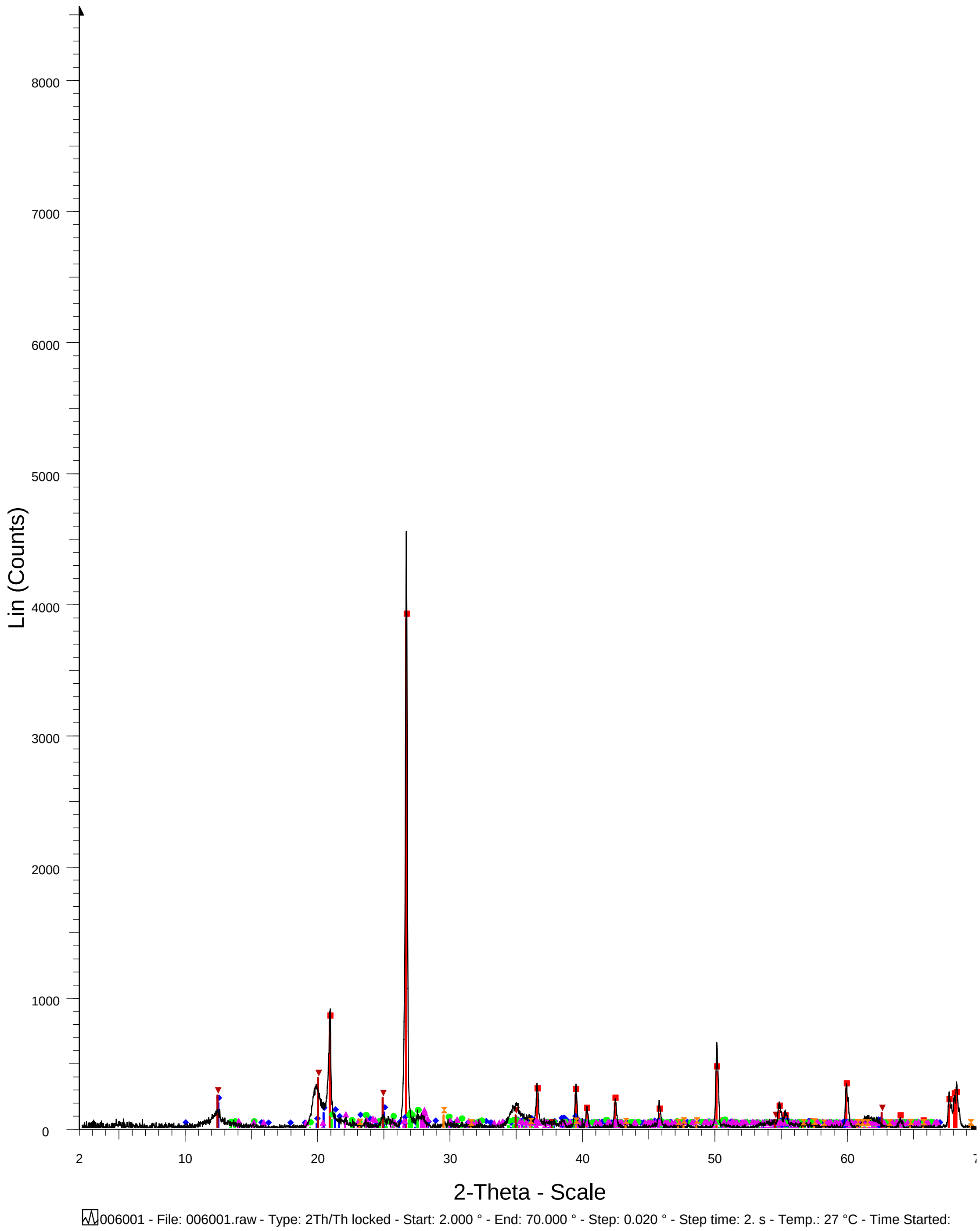

2005861005001
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
005001 - File: 005001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 85.42 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-012-0447 (D) - Kaolinite 1T - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14000 - b 8.93000 - c 6.91250 - alpha 91.8

2005861005002



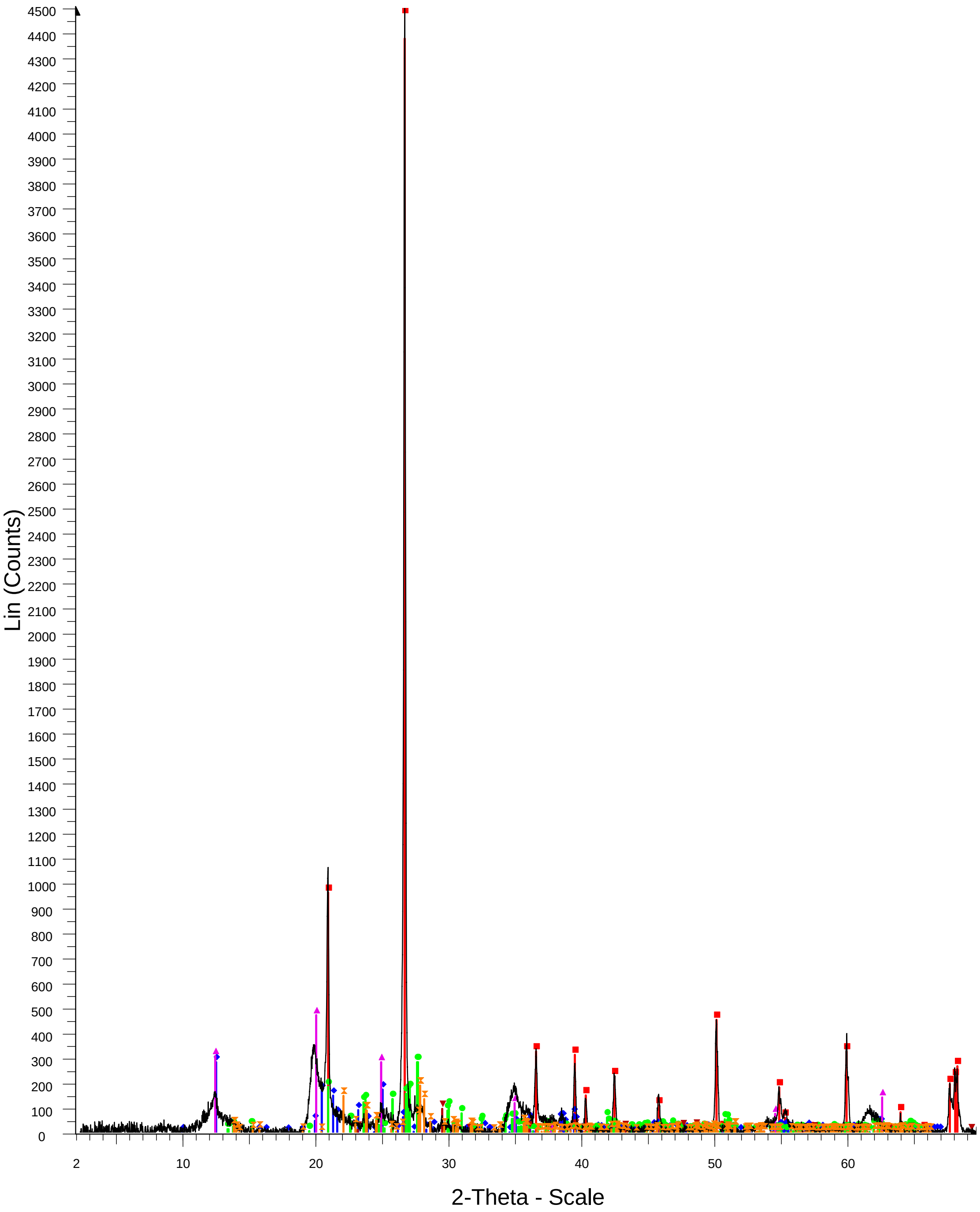
005002 - File: 005002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.058 | Background 0.049,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.10 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.

2005861006001



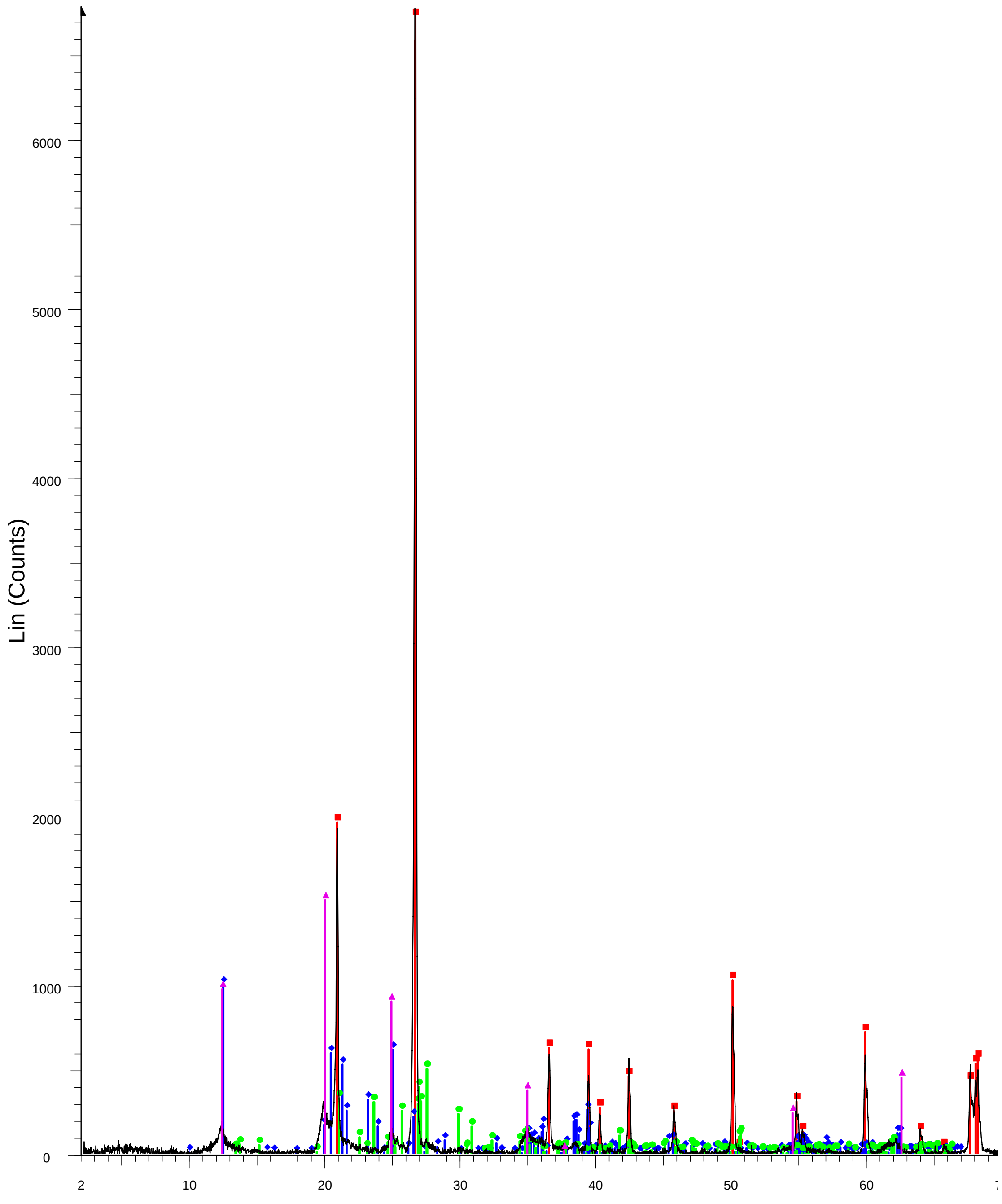
006001 - File: 006001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started: Operations: X Offset -0.067 | Background 0.257,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 85.42 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - bet
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
01-076-0927 (*) - Albite calcian low - (Na0.84Ca0.16)Al1.16Si2.84O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.15530 - b 12.82060 -
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-085-1108 (A) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.

2005861006002



006002 - File: 006002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | Background 0.145,1.000 | Import
01-079-1906 (C) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91340 - b 4.91340 - c 5.40520 - alpha 90.000 - b
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-083-1604 (*) - Microcline - KAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.64300 - b 12.92900 - c 7.19000 - alpha 90.130 - be
01-071-1150 (*) - Albite high - Na(AlSi3O8) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.15350 - b 12.86940 - c 7.10700 - alpha 93.521 -
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.44 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-085-0849 (A) - Calcite, syn - CaCO3 - Y: 2.10 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.

2005861007001



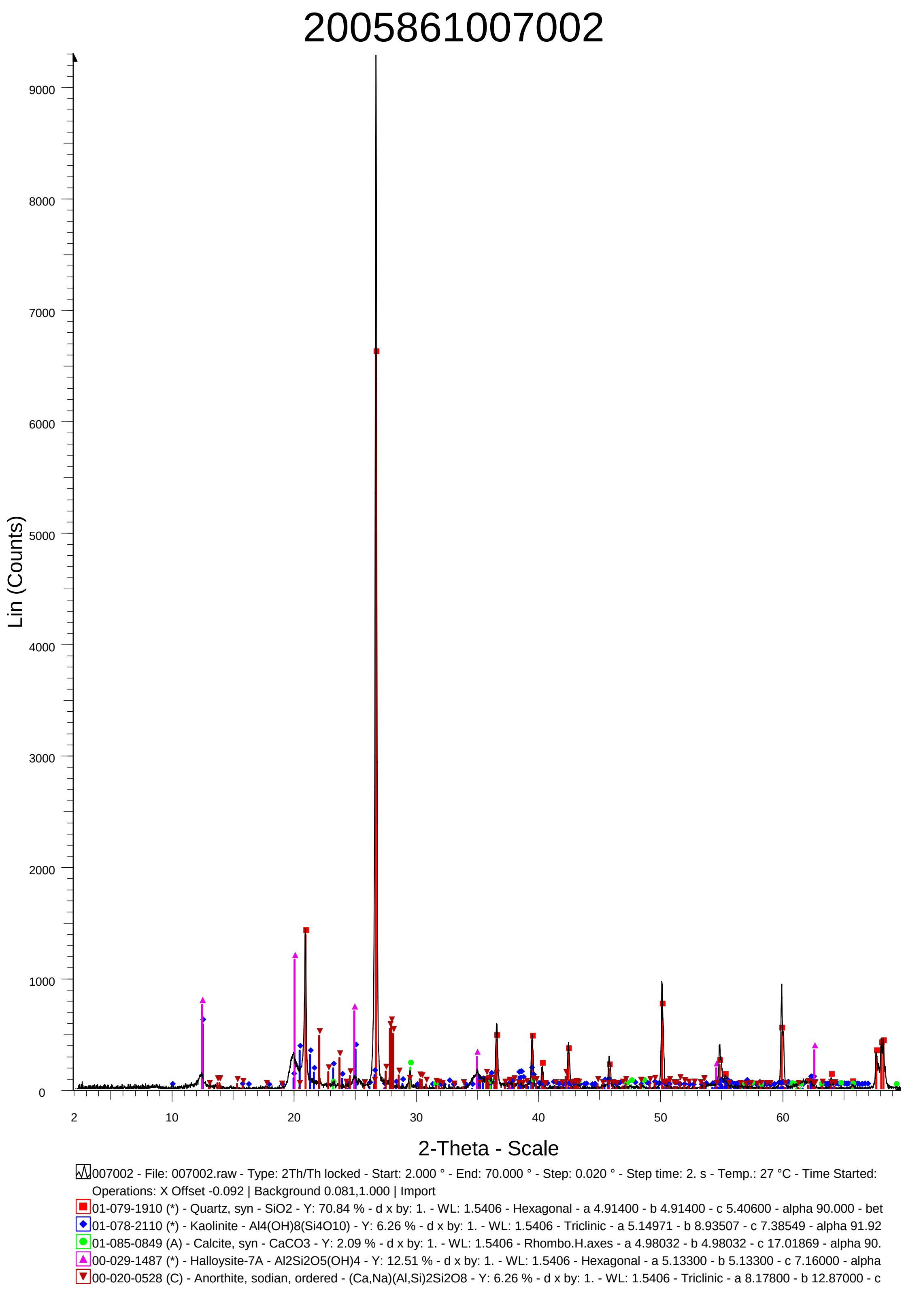
007001 - File: 007001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started: Operations: X Offset -0.117 | X Offset -0.083 | X Offset -0.100 | Background 0.145,1.000 | Import

01-079-1910 (*) - Quartz, syn - SiO2 - Y: 116.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - b

01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.9

01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha

00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 18.76 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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5000
4000
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2000
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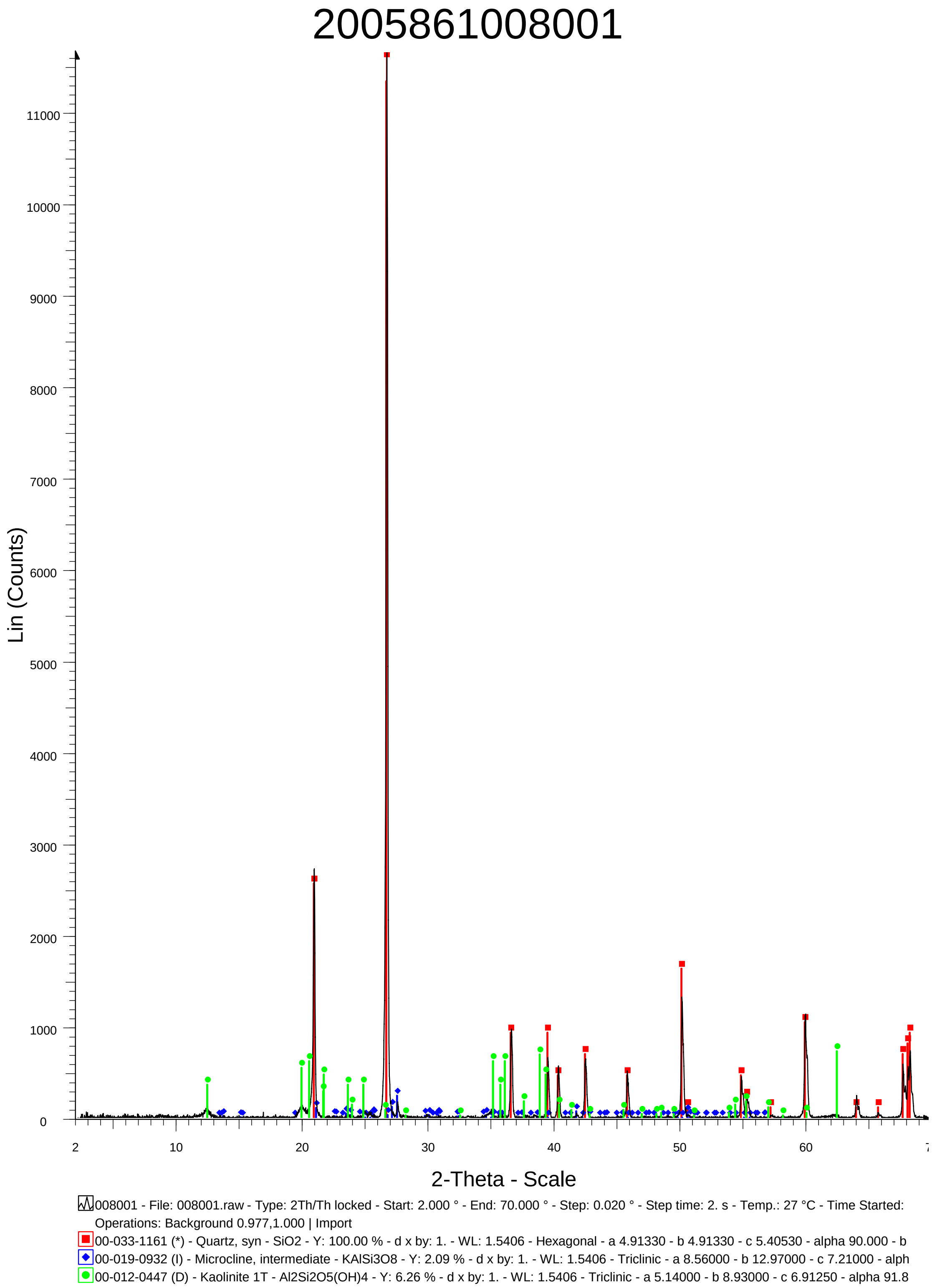
2
10
20
30
40
50
60
2-Theta - Scale
007002 - File: 007002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | Background 0.081,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 70.84 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - bet
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-085-0849 (A) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-020-0528 (C) - Anorthite, sodian, ordered - (Ca,Na)(Al,Si)2Si2O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.17800 - b 12.87000 - c



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1000
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2
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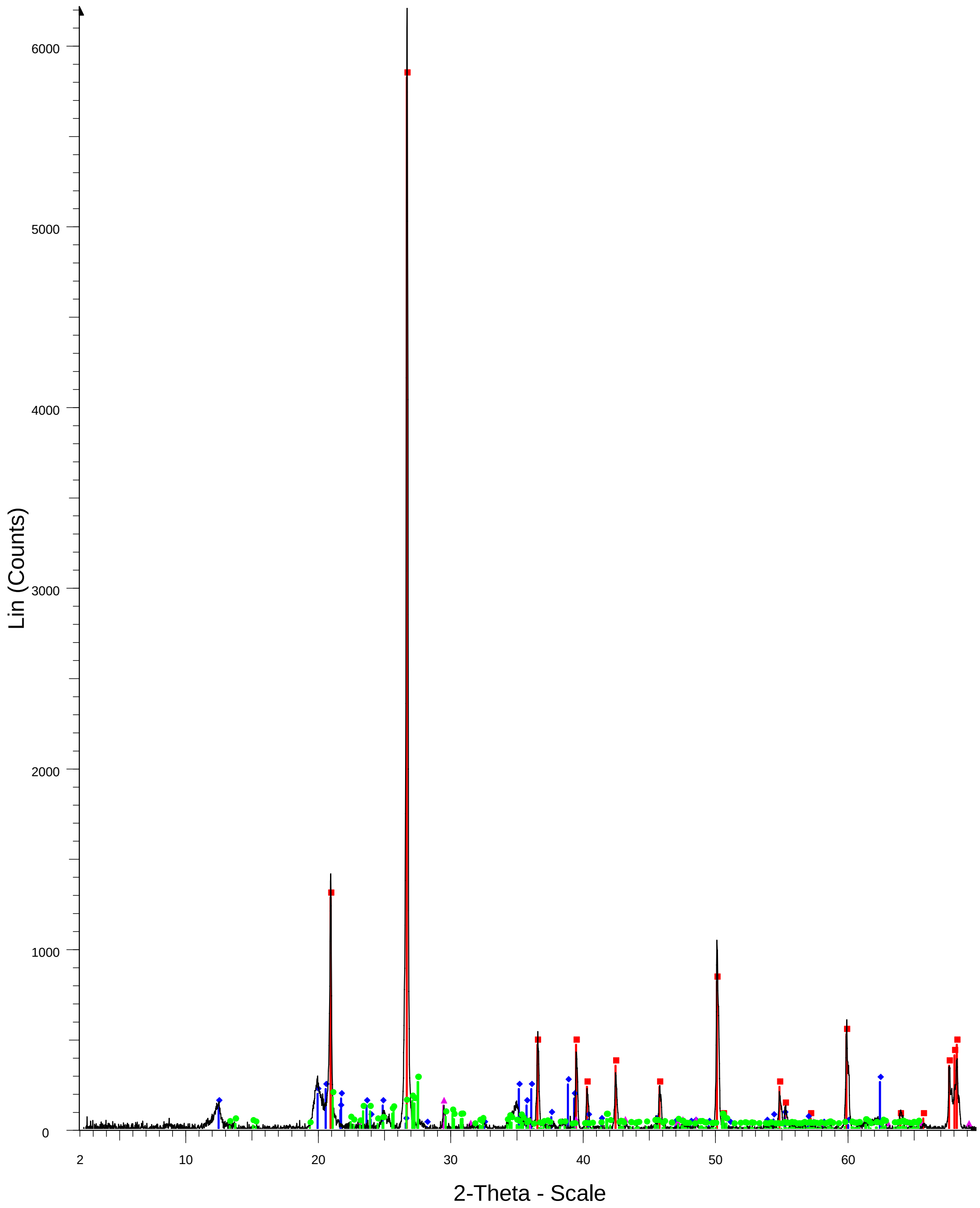
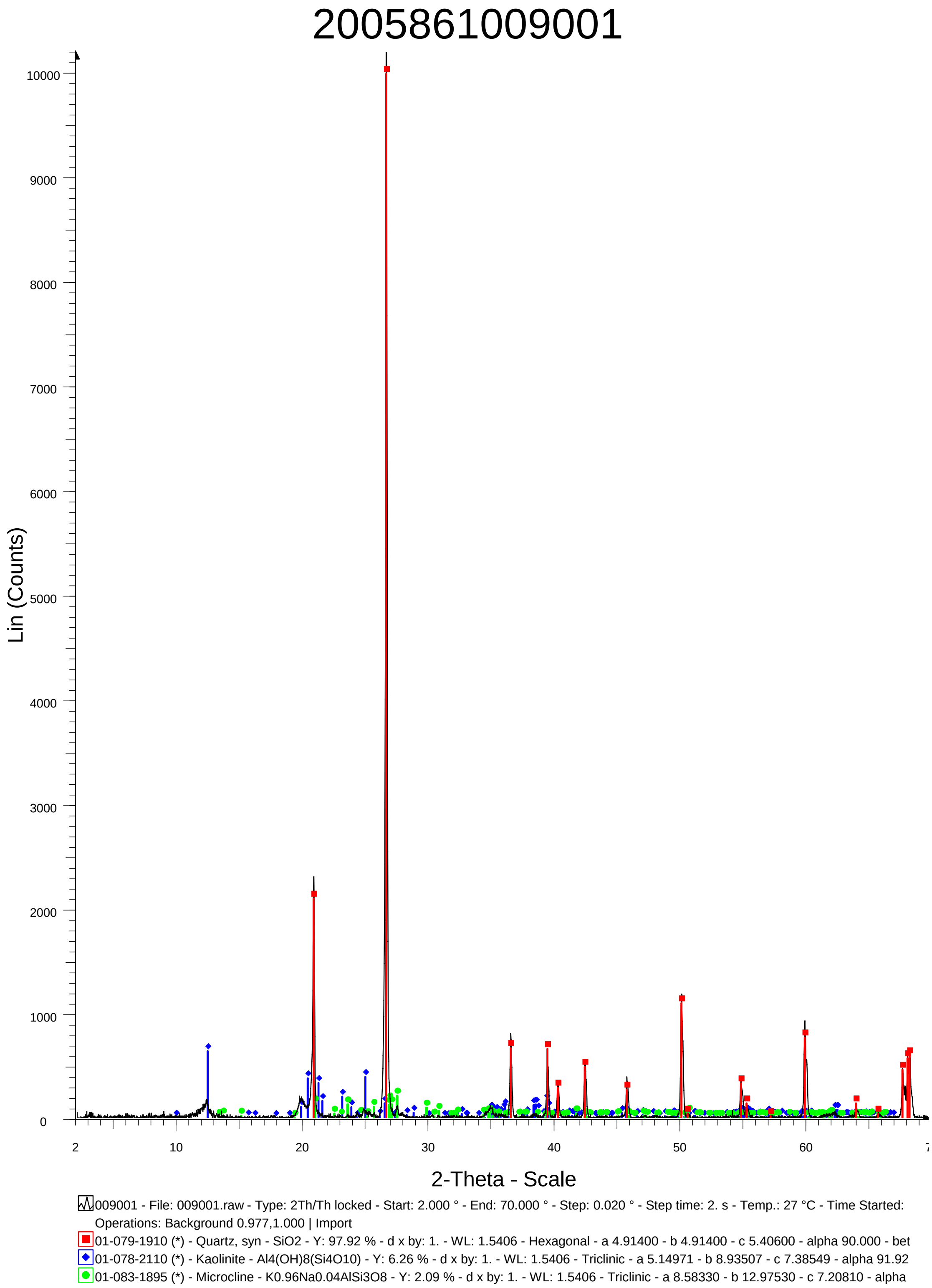
20
30
40
50
60
2-Theta - Scale
008001 - File: 008001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-012-0447 (D) - Kaolinite 1T - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14000 - b 8.93000 - c 6.91250 - alpha 91.8

2005861008002



008001 - File: 008002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.050 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 93.75 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-012-0447 (D) - Kaolinite 1T - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14000 - b 8.93000 - c 6.91250 - alpha 91.8
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
01-076-0830 (*) - Microline intermediate - K0.92Na0.08Al0.99Si3.01O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56700 - b 12.97000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4000
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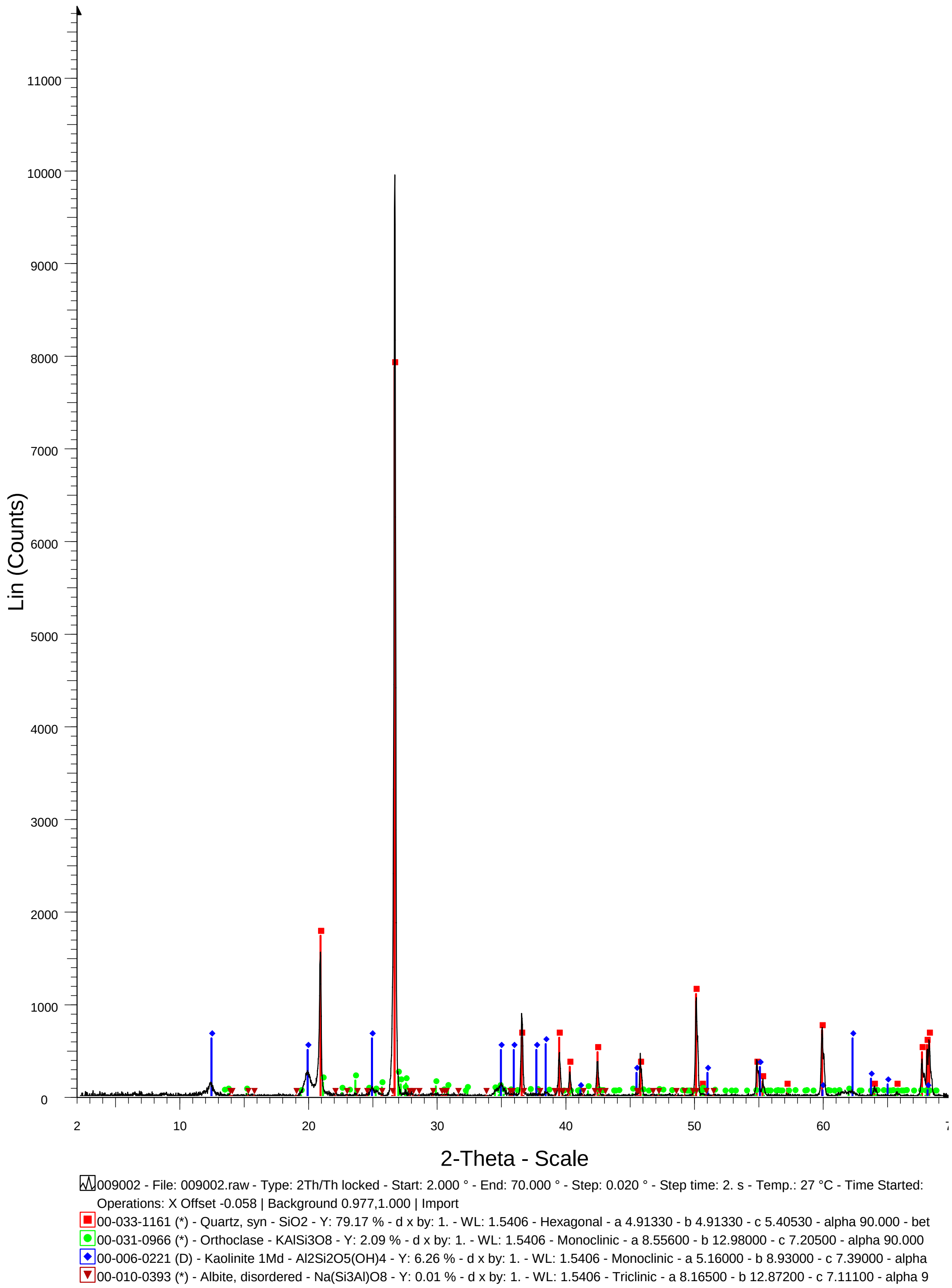
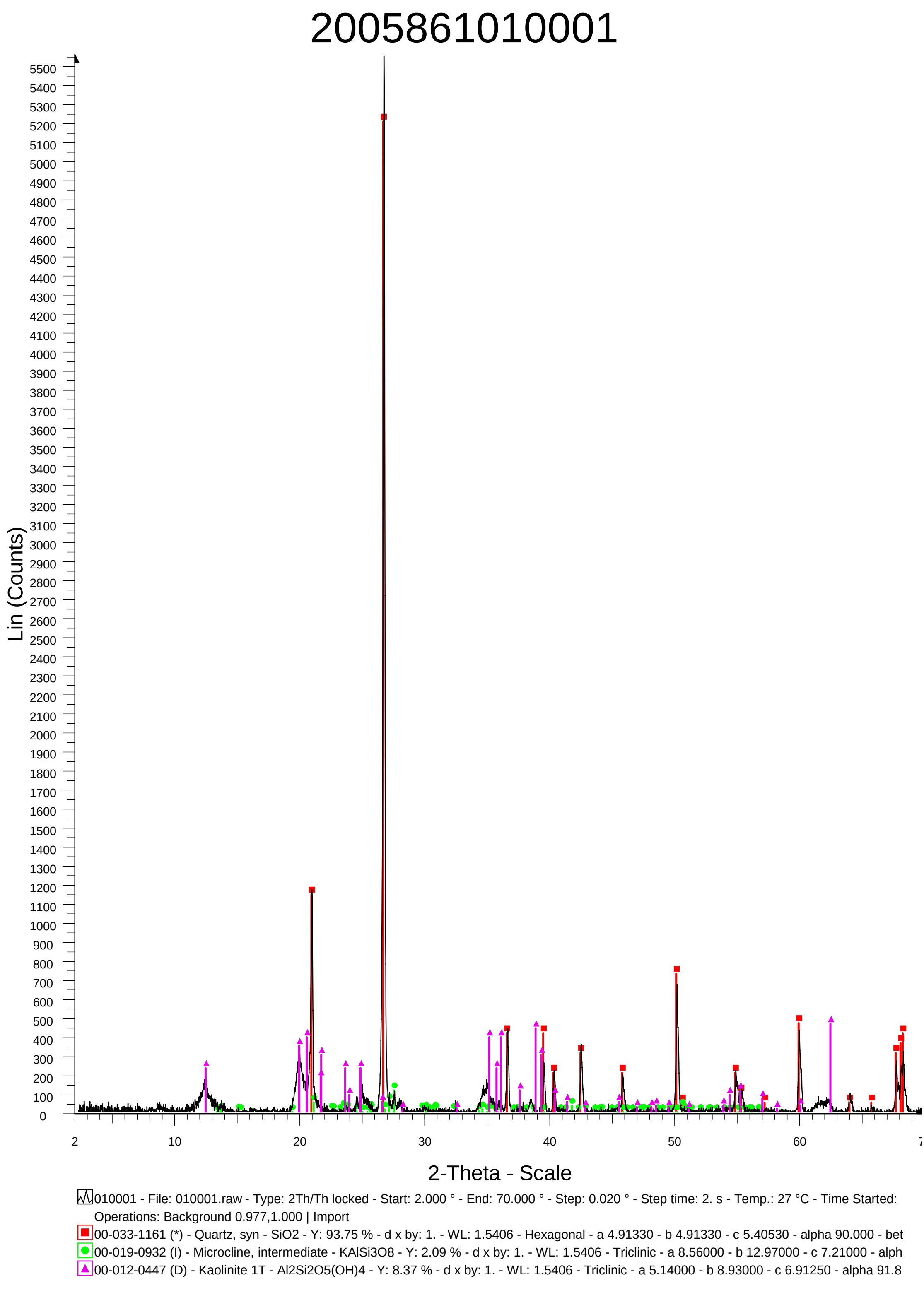
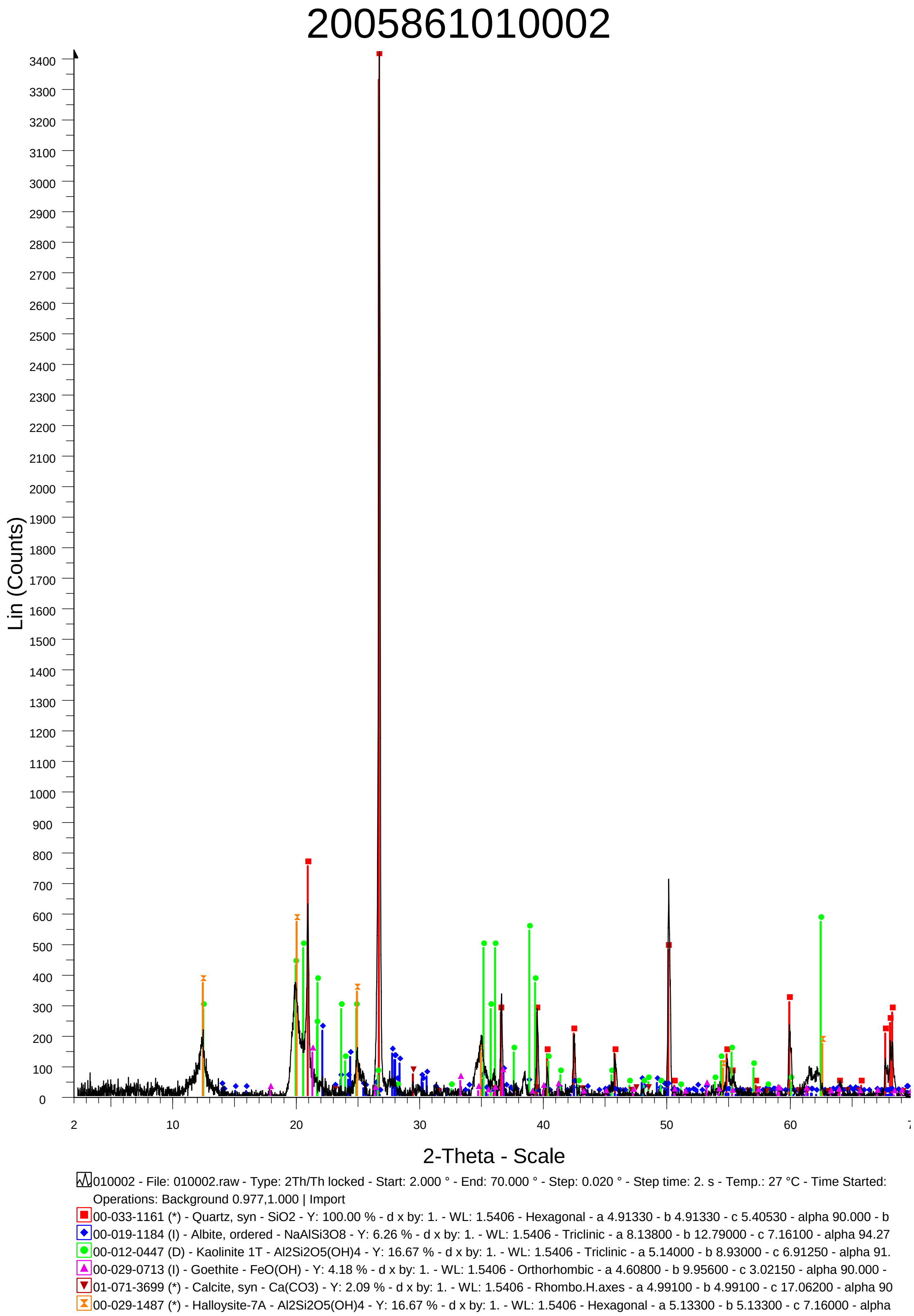
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
009001 - File: 009001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 97.92 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - bet
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha

2005861009002




2005861010001
Lin (Counts)
2-Theta - Scale
010001 - File: 010001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 93.75 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-012-0447 (D) - Kaolinite 1T - Al2Si2O5(OH)4 - Y: 8.37 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14000 - b 8.93000 - c 6.91250 - alpha 91.8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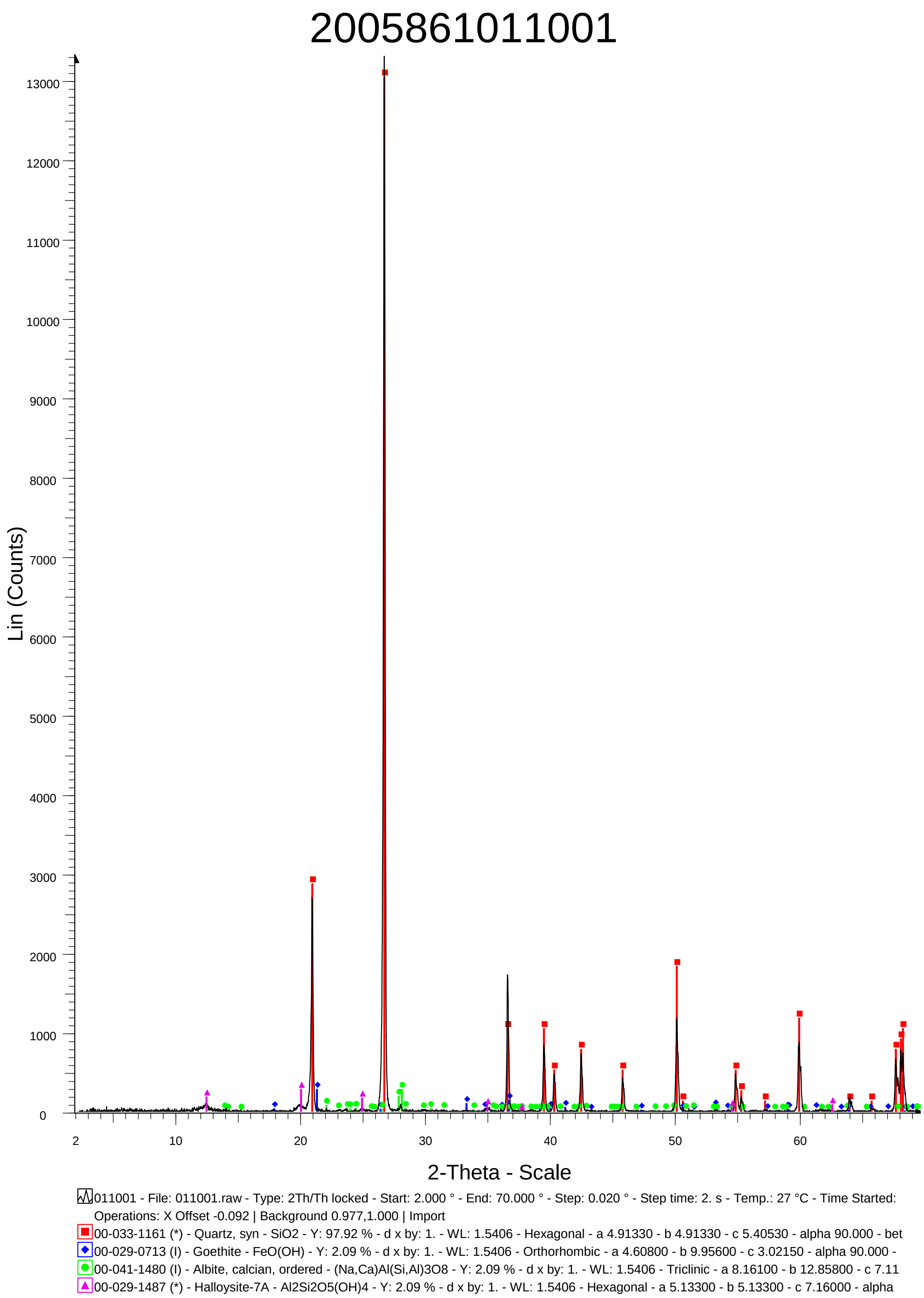
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
2
10
20
30
40
50
60
2-Theta - Scale
010002 - File: 010002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-1184 (I) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13800 - b 12.79000 - c 7.16100 - alpha 94.27
00-012-0447 (D) - Kaolinite 1T - Al2Si2O5(OH)4 - Y: 16.67 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14000 - b 8.93000 - c 6.91250 - alpha 91.
00-029-0713 (I) - Goethite - FeO(OH) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Orthorhombic - a 4.60800 - b 9.95600 - c 3.02150 - alpha 90.000 -
01-071-3699 (*) - Calcite, syn - Ca(CO3) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.99100 - b 4.99100 - c 17.06200 - alpha 90
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 16.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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7000
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4000
3000
2000
1000
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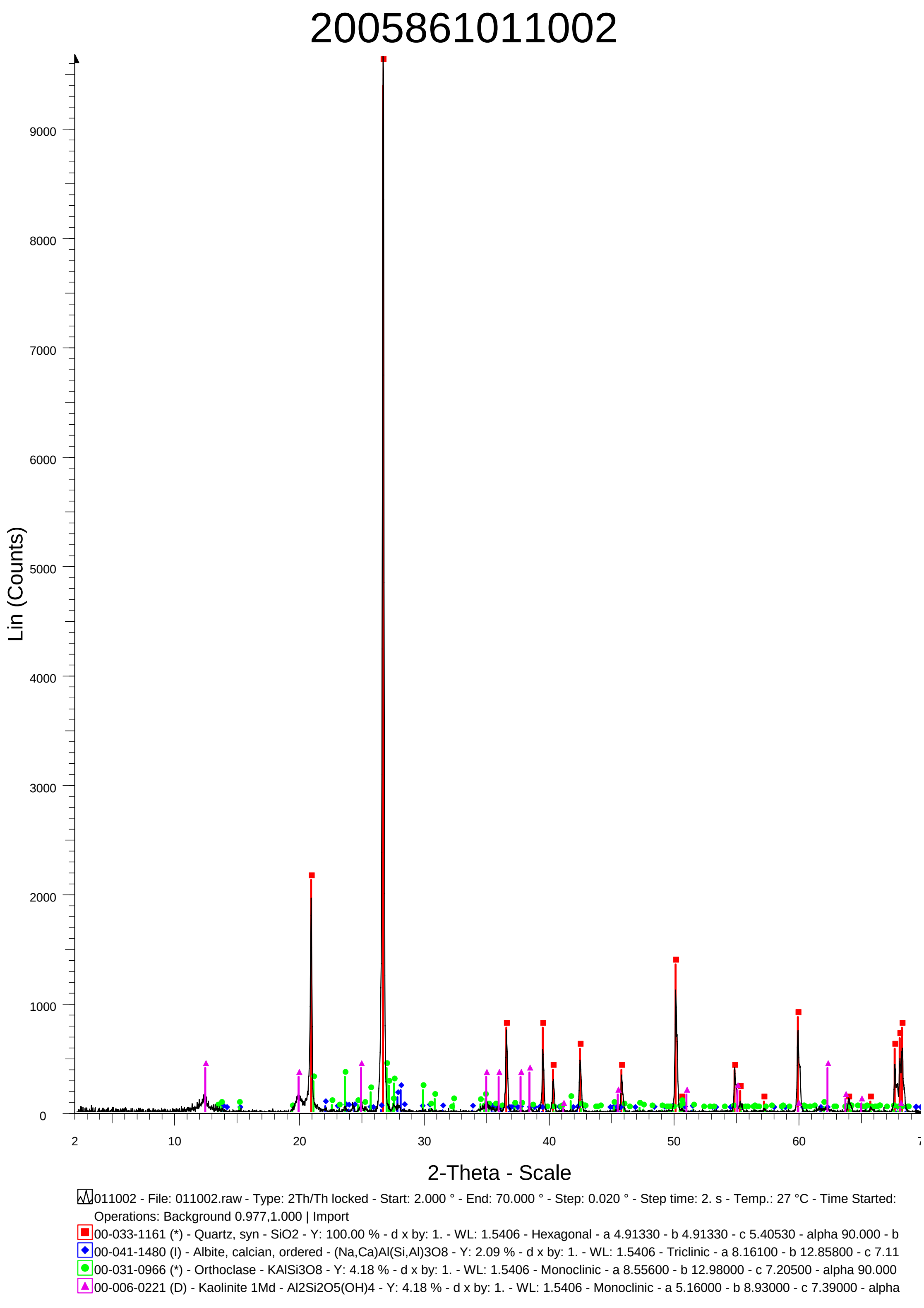
10
20
30
40
50
60
2-Theta - Scale
011001 - File: 011001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 97.92 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-029-0713 (I) - Goethite - FeO(OH) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Orthorhombic - a 4.60800 - b 9.95600 - c 3.02150 - alpha 90.000 -
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2005861011002
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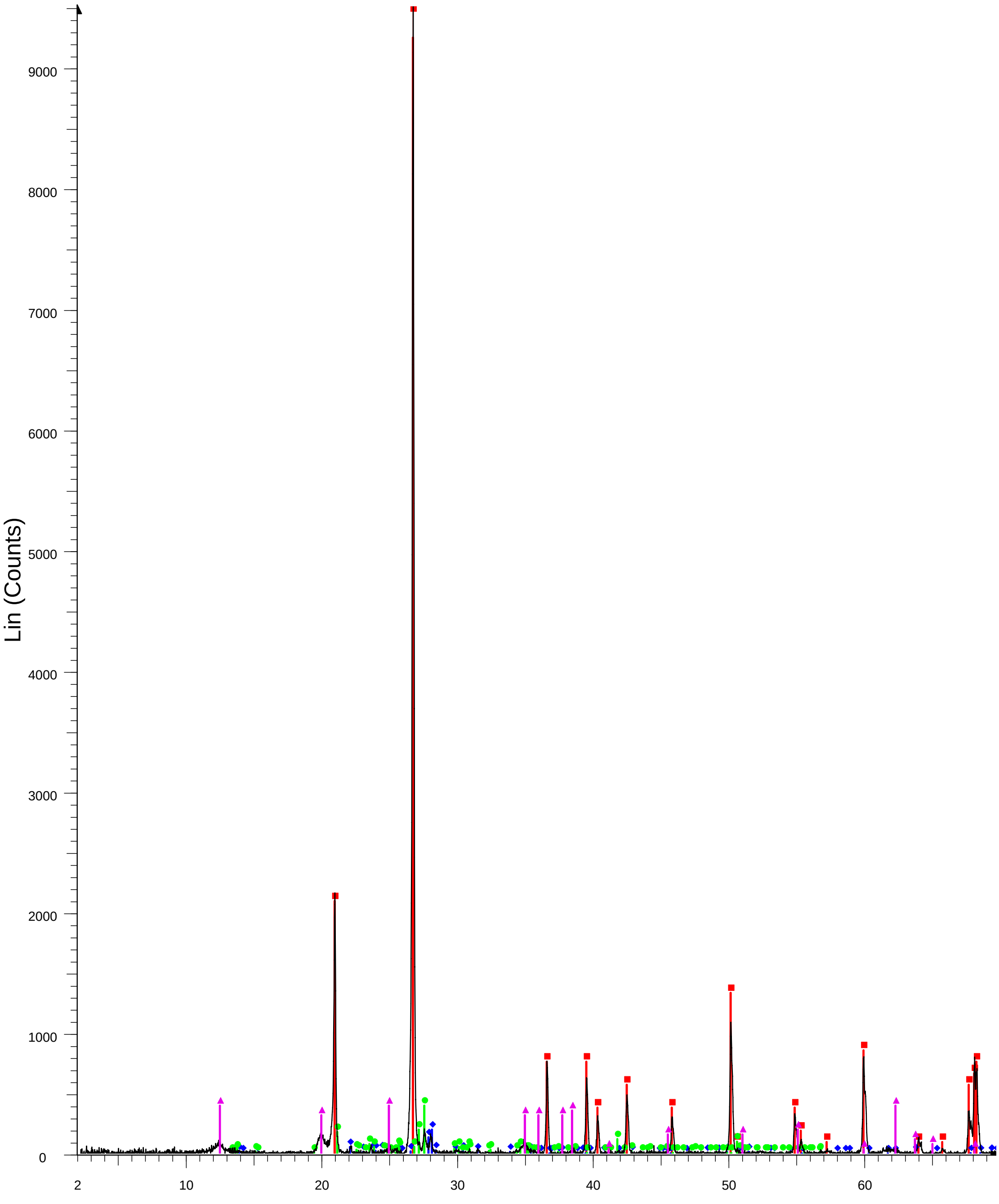
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
011002 - File: 011002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha

2005861012001



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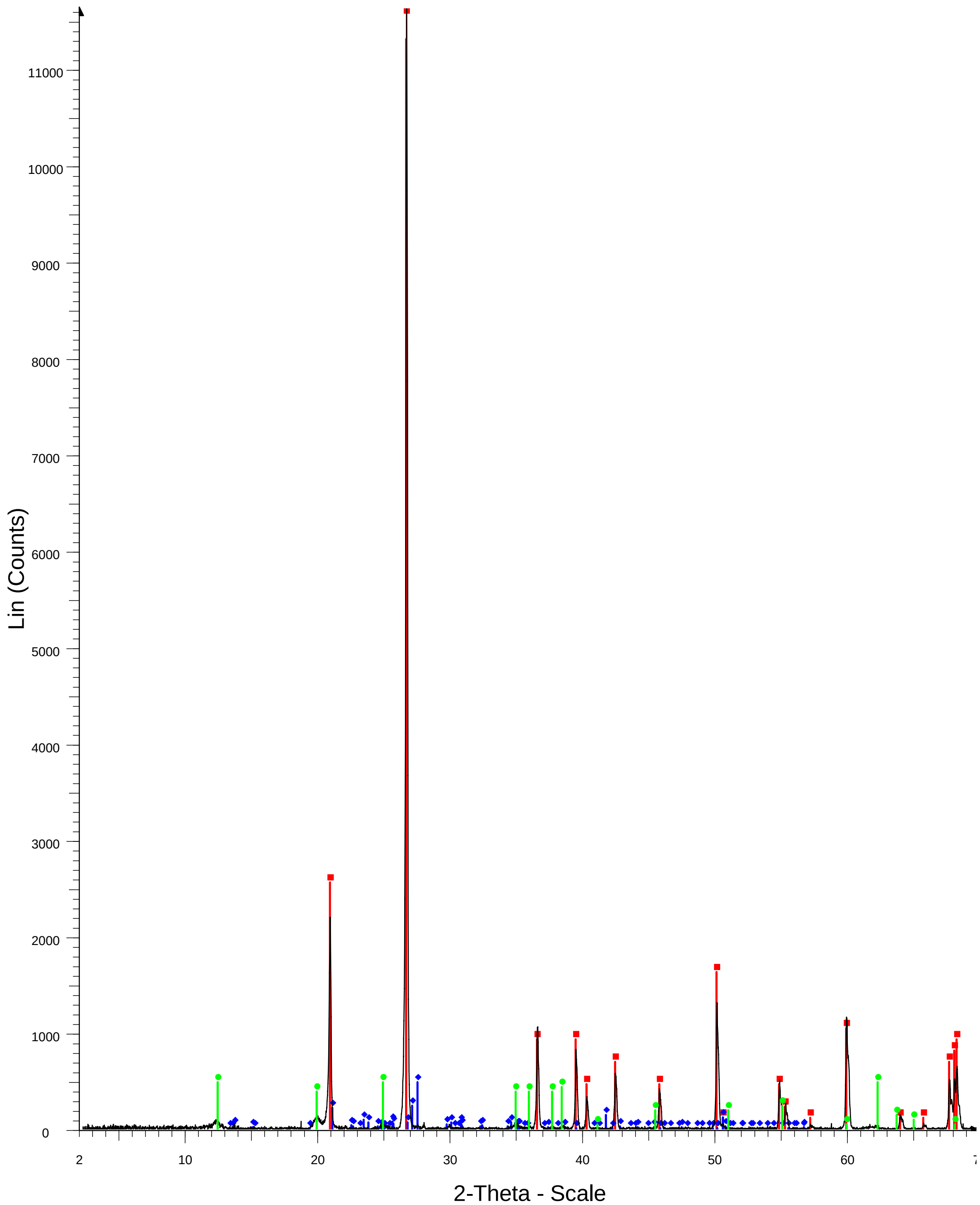
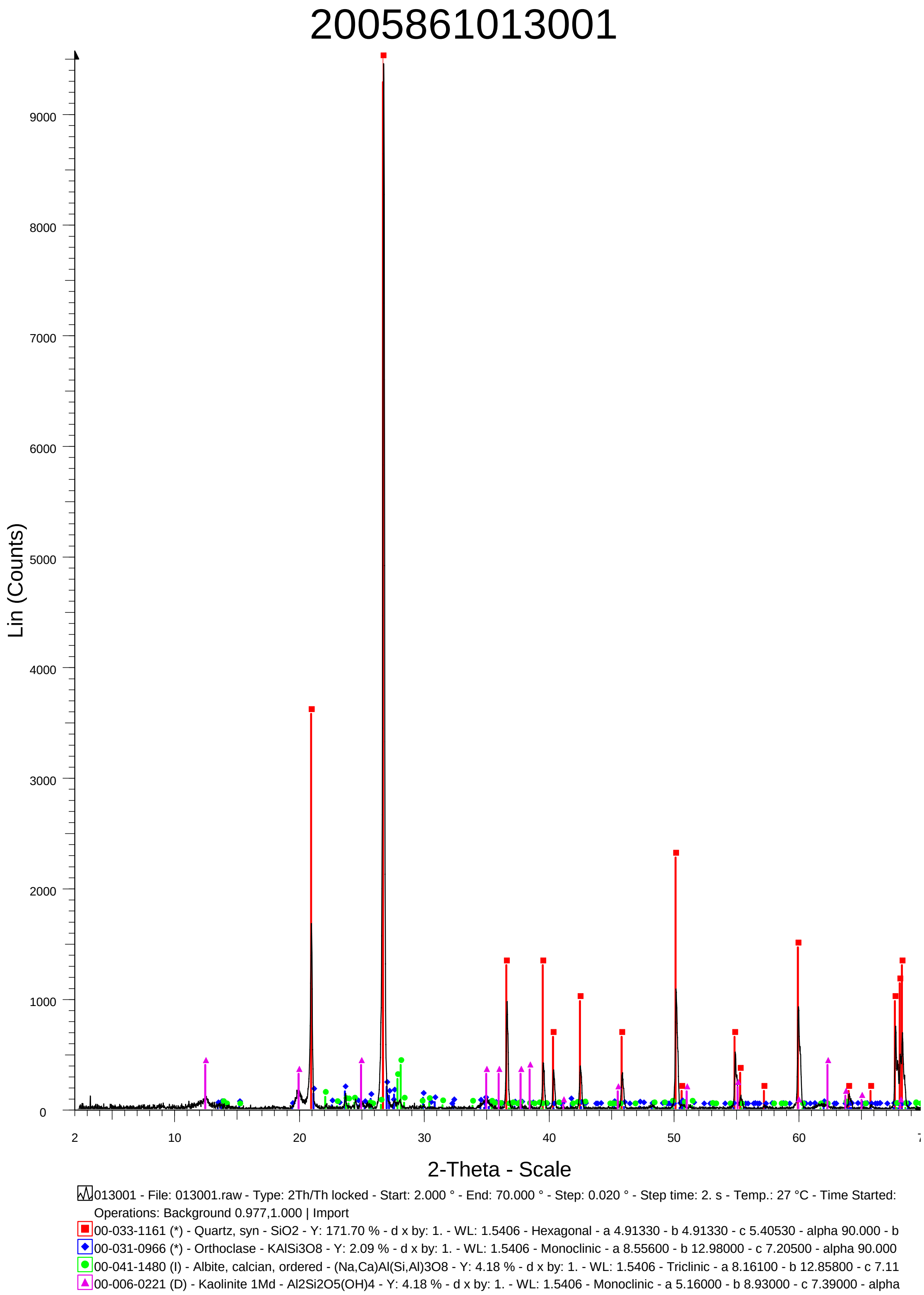
Operations: X Offset -0.042 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha

2005861012002



012002 - File: 012002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha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3000
2000
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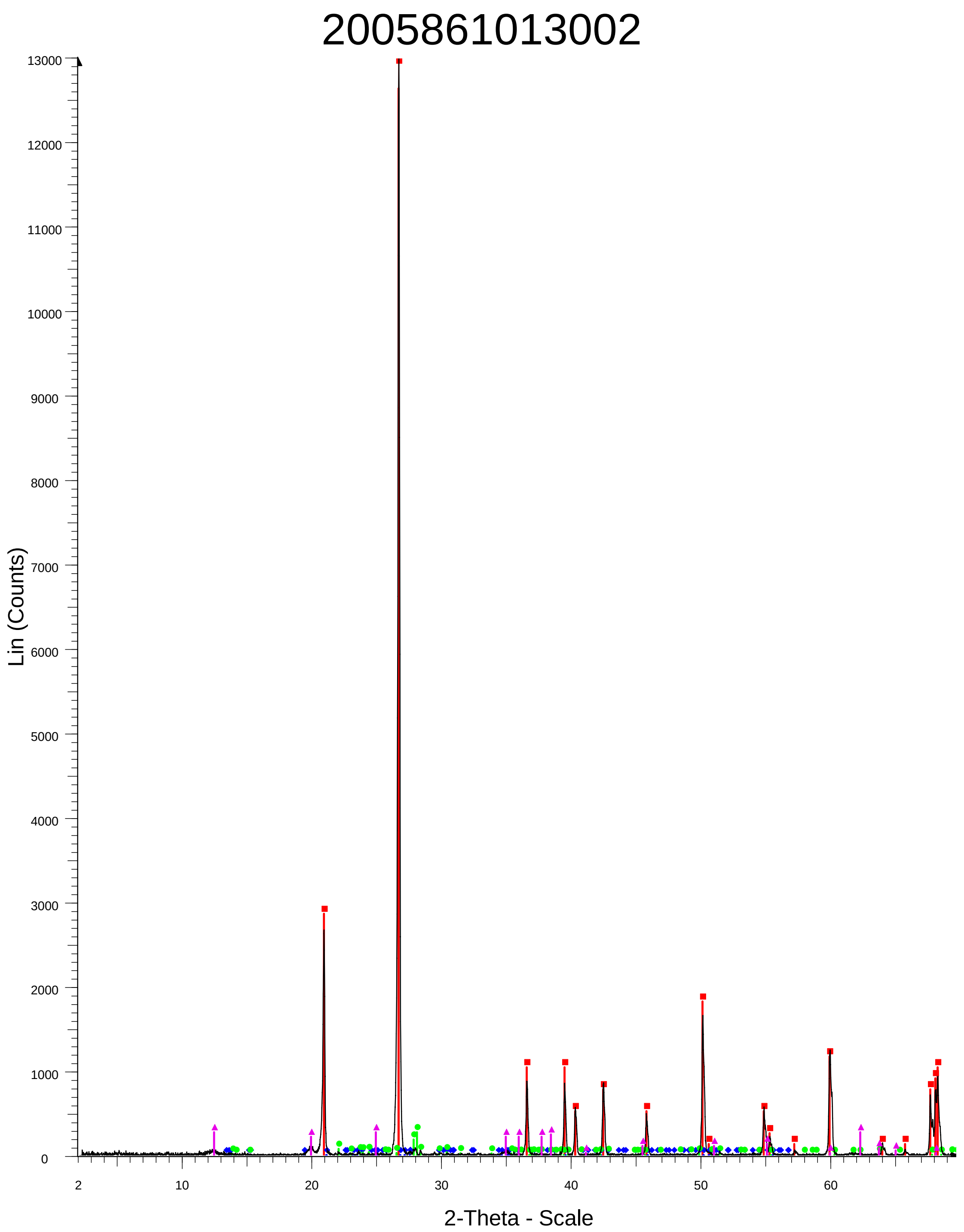
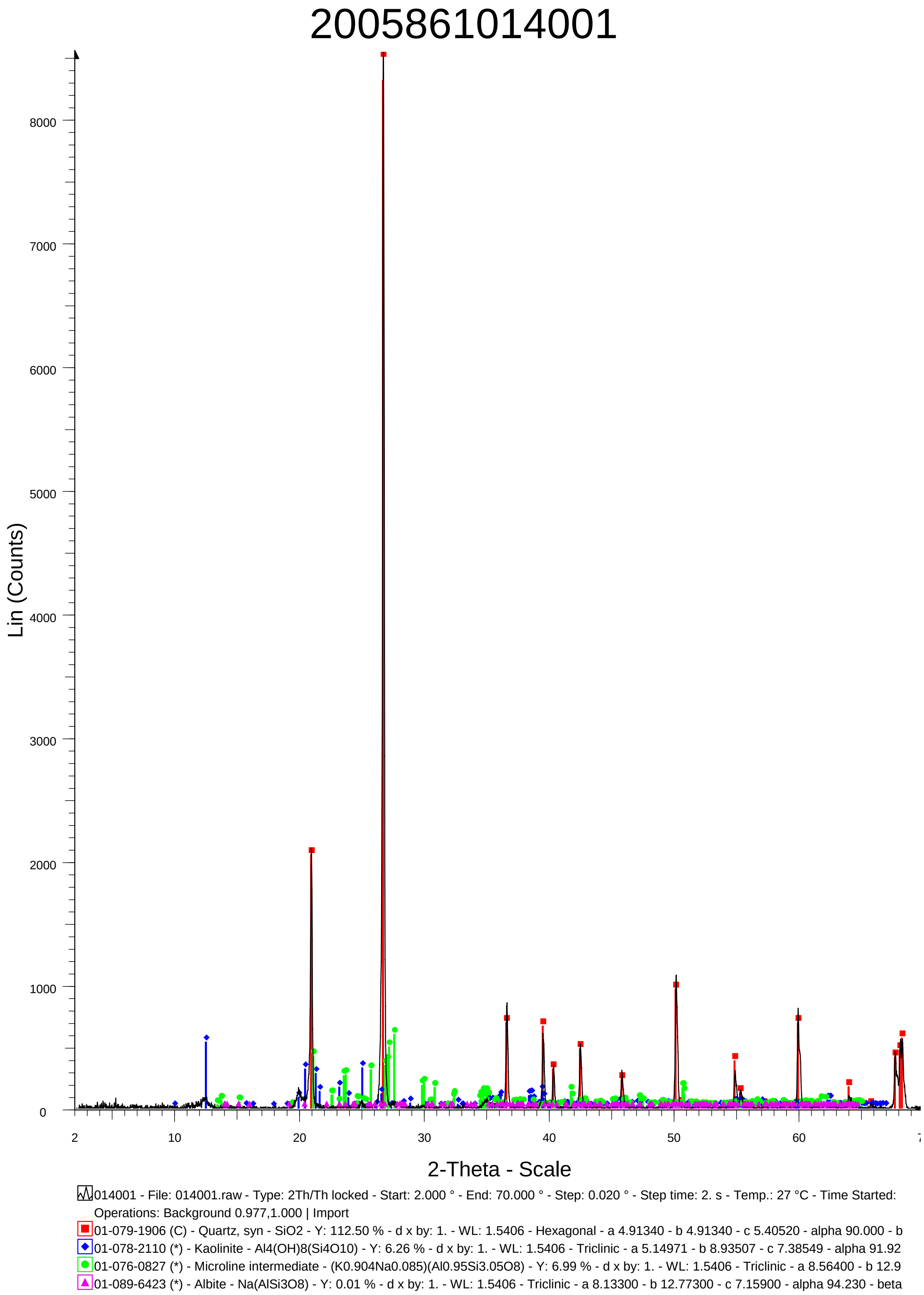
2
10
20
30
40
50
60
7
2-Theta - Scale
013001 - File: 013001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 171.70 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha



013002 - File: 013002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.058 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-006-0221 (D) - Kaolinite 1Md - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.16000 - b 8.93000 - c 7.39000 - alpha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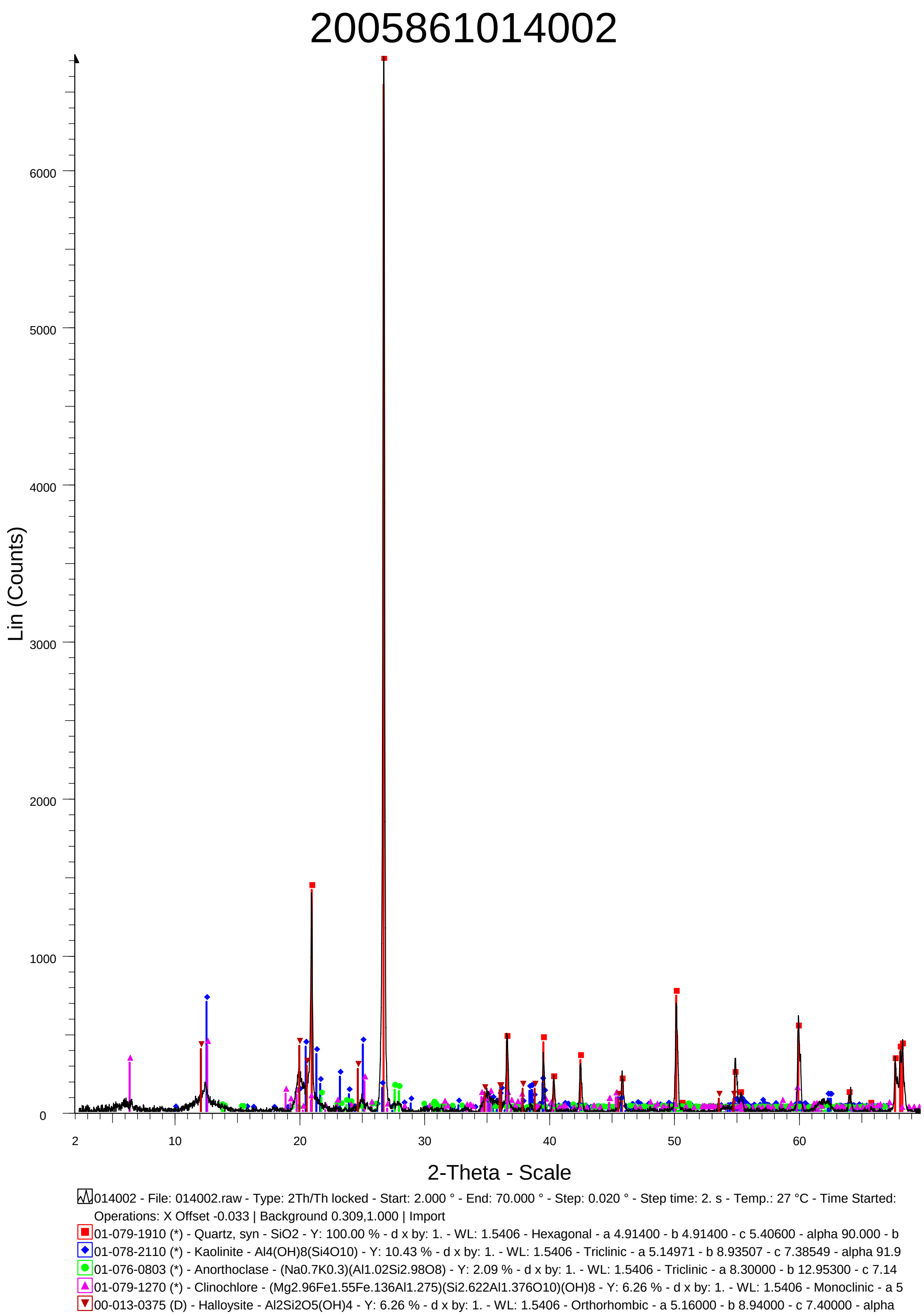
10
20
30
40
50
60
2-Theta - Scale
014001 - File: 014001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
01-079-1906 (C) - Quartz, syn - SiO2 - Y: 112.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91340 - b 4.91340 - c 5.40520 - alpha 90.000 - b
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-076-0827 (*) - Microline intermediate - (K0.904Na0.085)(Al0.95Si3.05O8) - Y: 6.99 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56400 - b 12.9
01-089-6423 (*) - Albite - Na(AlSi3O8) - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13300 - b 12.77300 - c 7.15900 - alpha 94.230 - beta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3000
2000
1000
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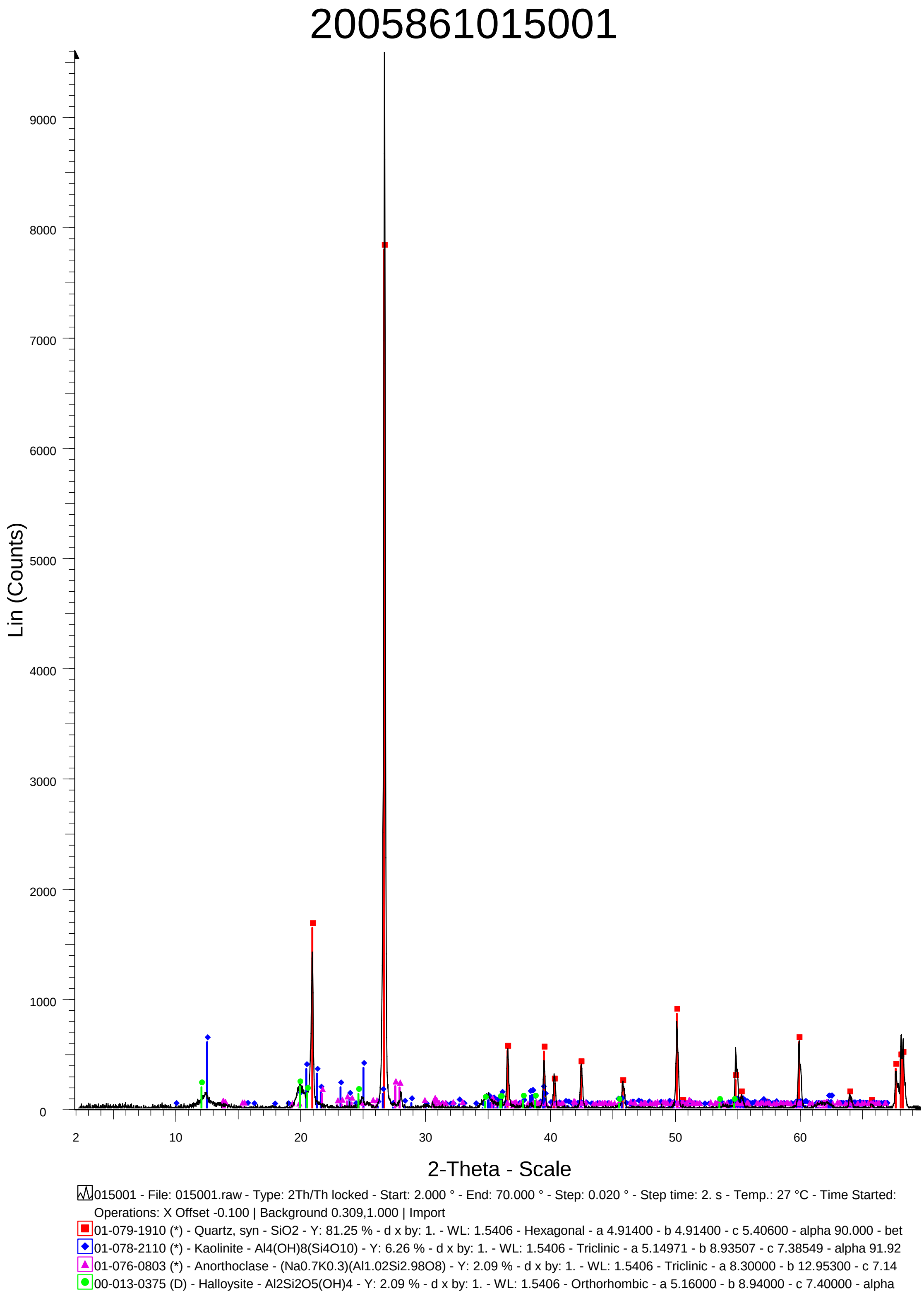
2
10
20
30
40
50
60
2-Theta - Scale
014002 - File: 014002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.033 | Background 0.309,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - b
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.9
01-076-0803 (*) - Anorthoclase - (Na0.7K0.3)(Al1.02Si2.98O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.30000 - b 12.95300 - c 7.14
01-079-1270 (*) - Clinochlore - (Mg2.96Fe1.55Fe.136Al1.275)(Si2.622Al1.376O10)(OH)8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5
00-013-0375 (D) - Halloysite - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Orthorhombic - a 5.16000 - b 8.94000 - c 7.40000 - alpha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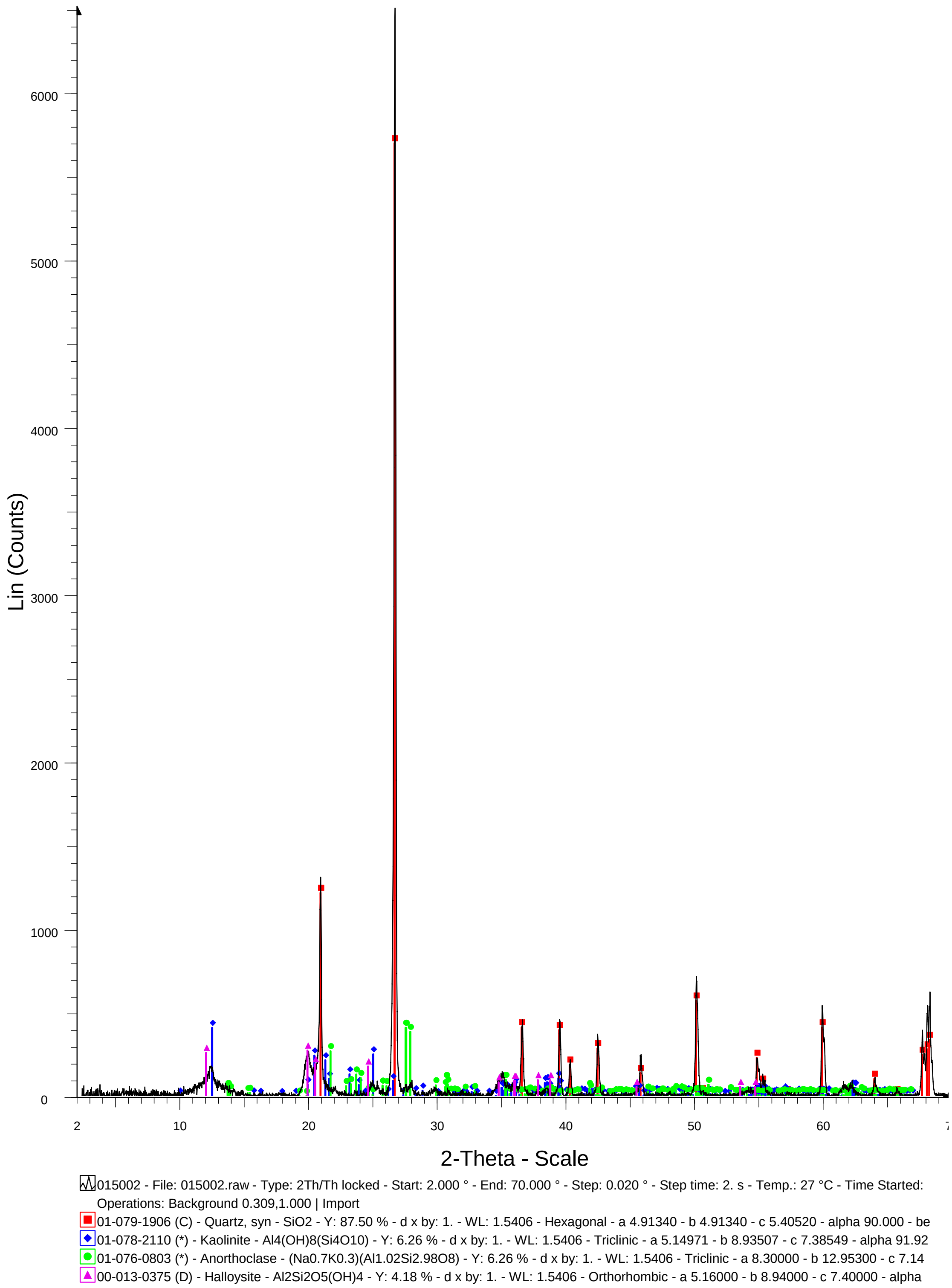
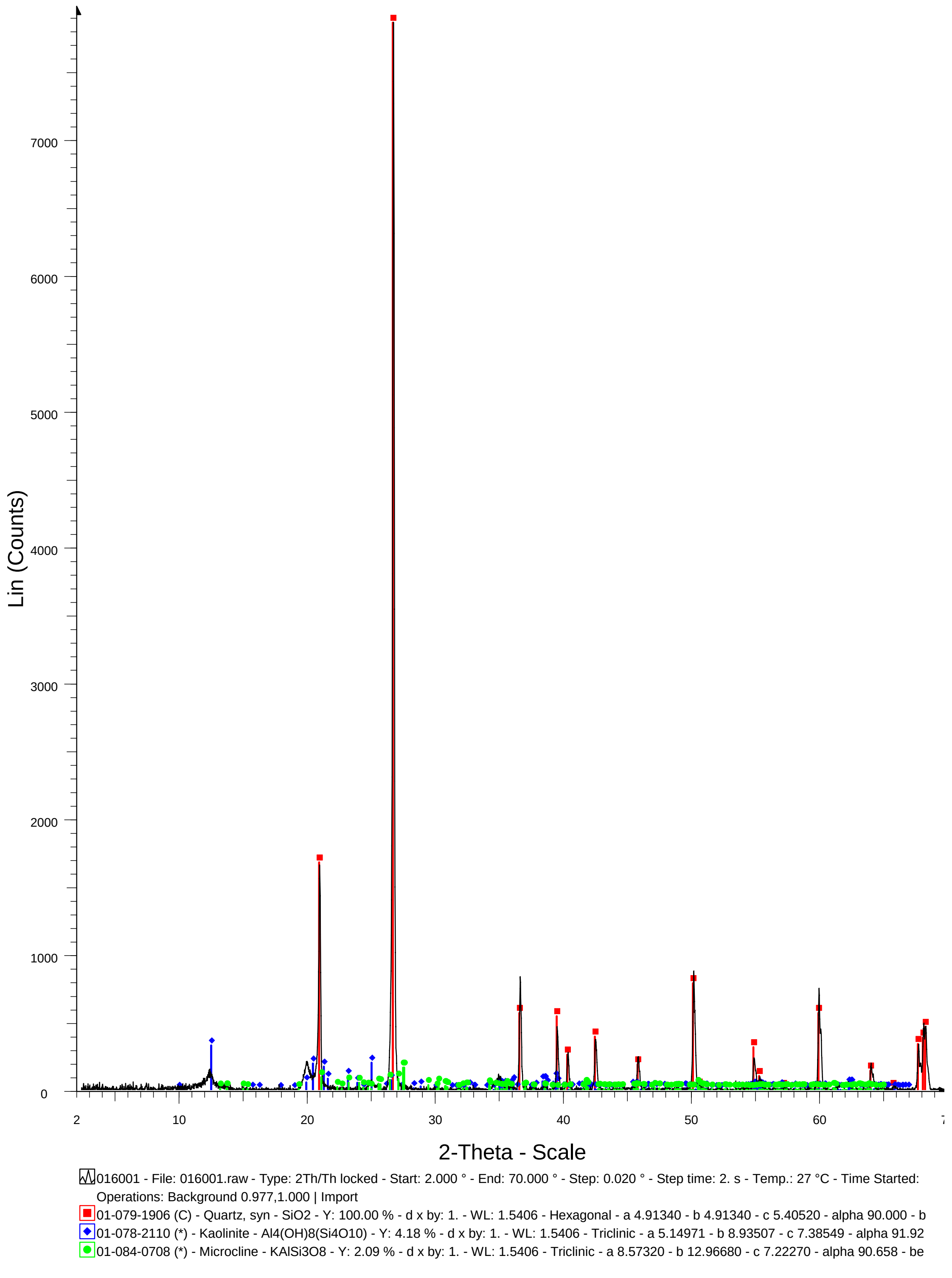
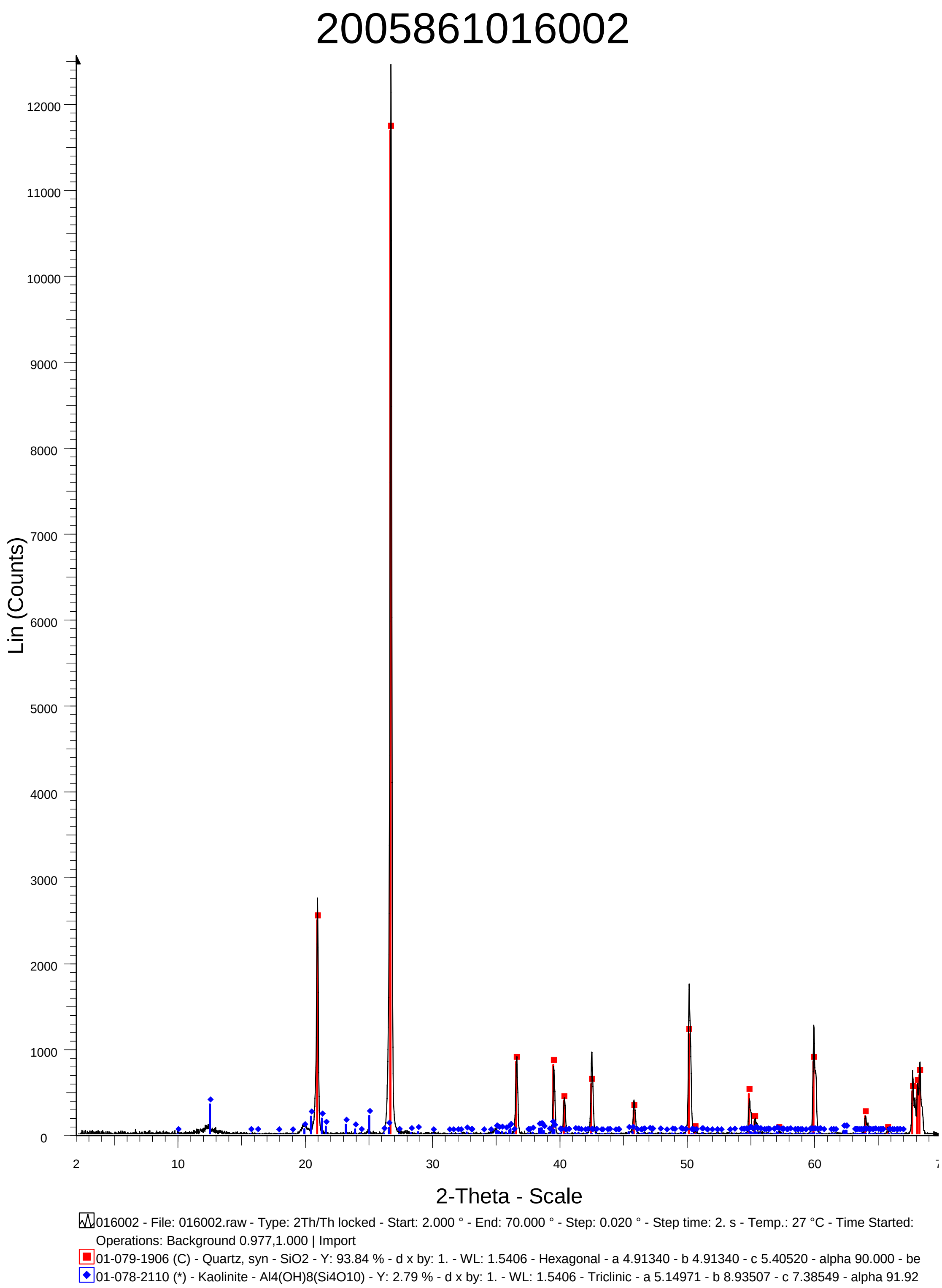
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
015001 - File: 015001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.100 | Background 0.309,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 81.25 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - bet
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-076-0803 (*) - Anorthoclase - (Na0.7K0.3)(Al1.02Si2.98O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.30000 - b 12.95300 - c 7.14
00-013-0375 (D) - Halloysite - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Orthorhombic - a 5.16000 - b 8.94000 - c 7.40000 - alpha

2005861015002



2005861016001

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4000
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1000
0
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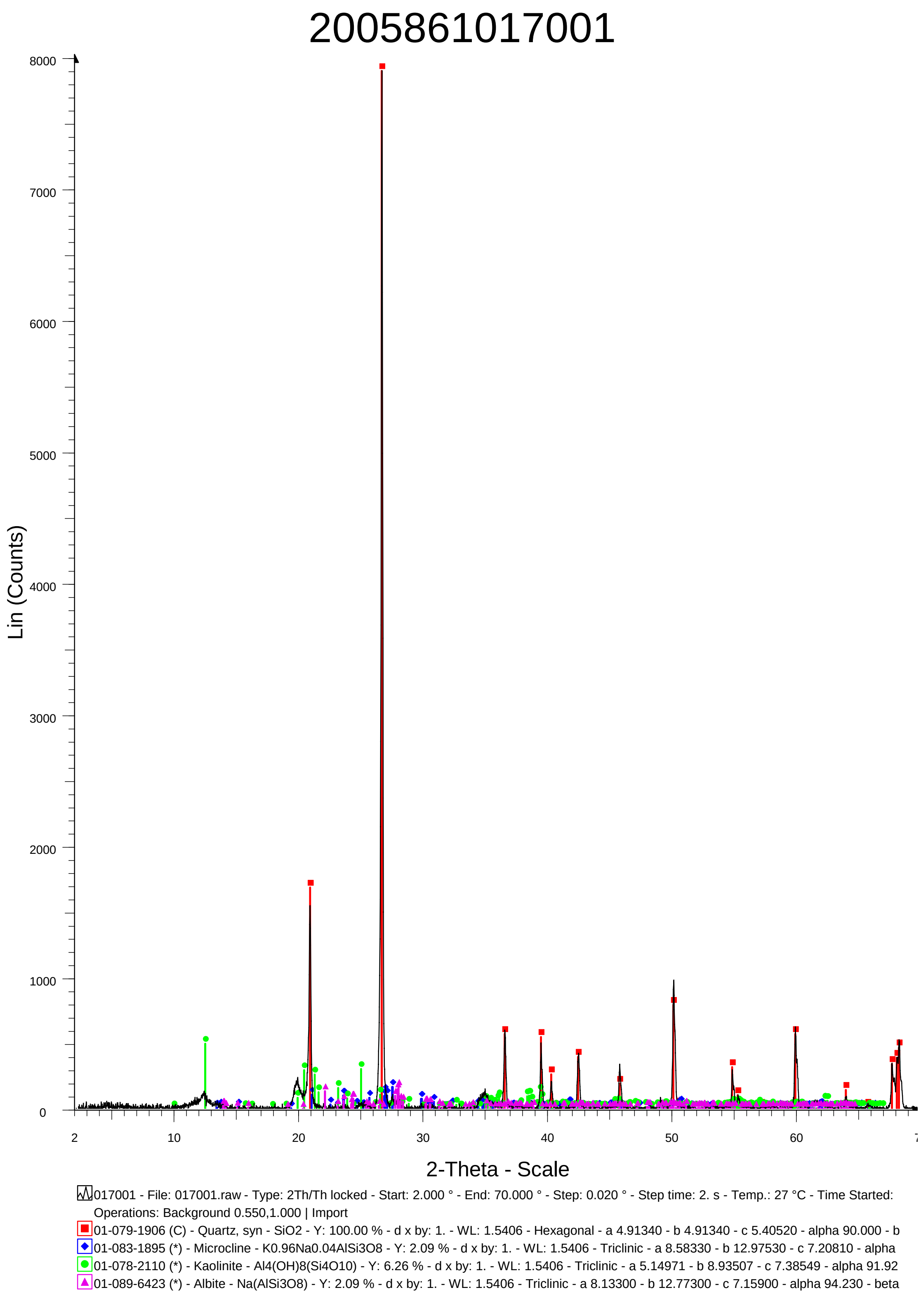
10
20
30
40
50
60
2-Theta - Scale
016002 - File: 016002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.977,1.000 | Import
01-079-1906 (C) - Quartz, syn - SiO2 - Y: 93.84 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91340 - b 4.91340 - c 5.40520 - alpha 90.000 - be
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 2.79 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92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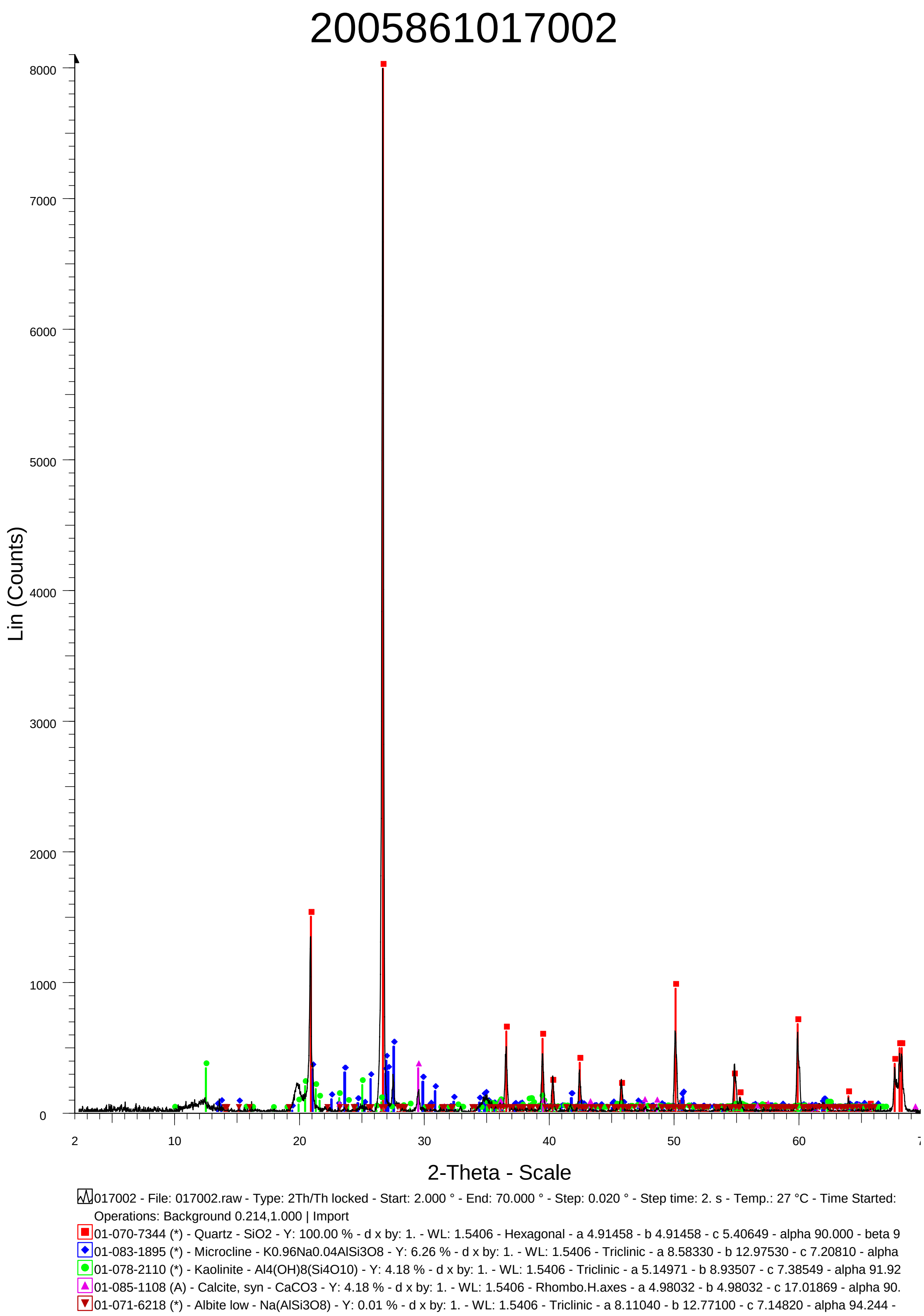
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
017001 - File: 017001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.550,1.000 | Import
01-079-1906 (C) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91340 - b 4.91340 - c 5.40520 - alpha 90.000 - b
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-089-6423 (*) - Albite - Na(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13300 - b 12.77300 - c 7.15900 - alpha 94.230 - beta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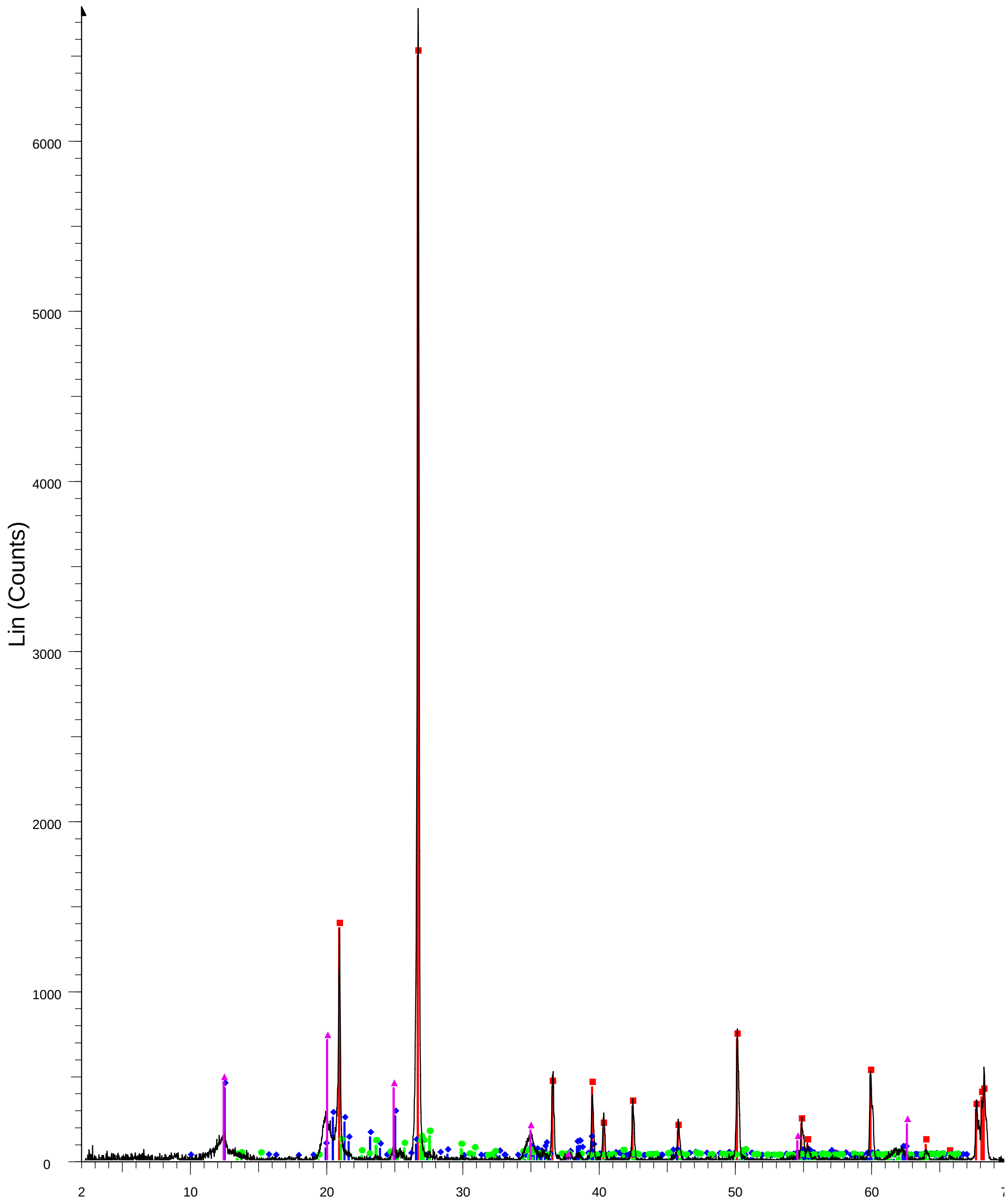
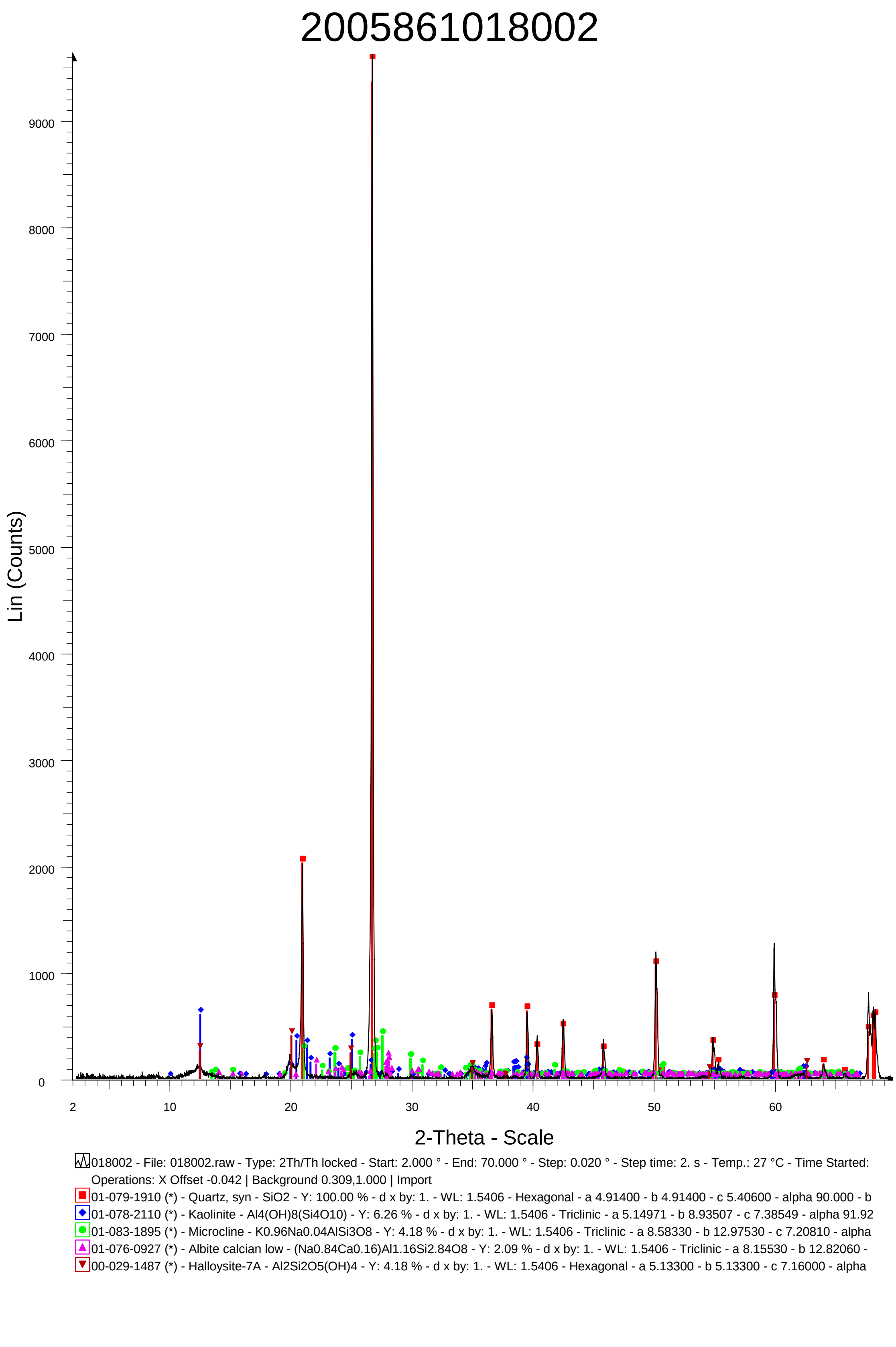
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
017002 - File: 017002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.214,1.000 | Import
01-070-7344 (*) - Quartz - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91458 - b 4.91458 - c 5.40649 - alpha 90.000 - beta 9
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-085-1108 (A) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.
01-071-6218 (*) - Albite low - Na(AlSi3O8) - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.11040 - b 12.77100 - c 7.14820 - alpha 94.244 -

2005861018001



018001 - File: 018001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.676,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 95.83 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - bet
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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3000
4000
5000
6000
7000
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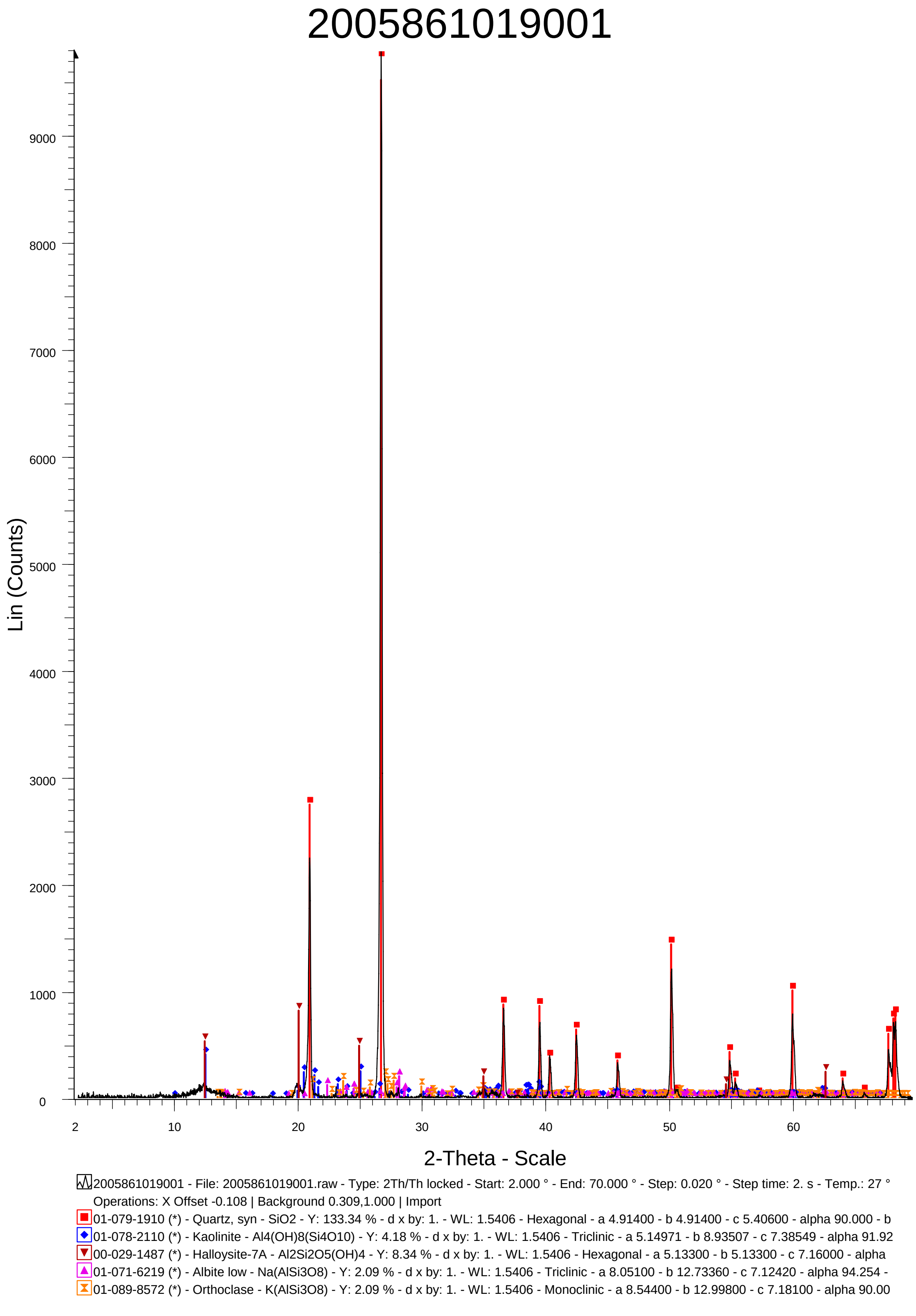
9000
2
10
20
30
40
50
60
2-Theta - Scale
018002 - File: 018002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.042 | Background 0.309,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - b
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
01-076-0927 (*) - Albite calcian low - (Na0.84Ca0.16)Al1.16Si2.84O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.15530 - b 12.82060 -
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2005861019001
Lin (Counts)
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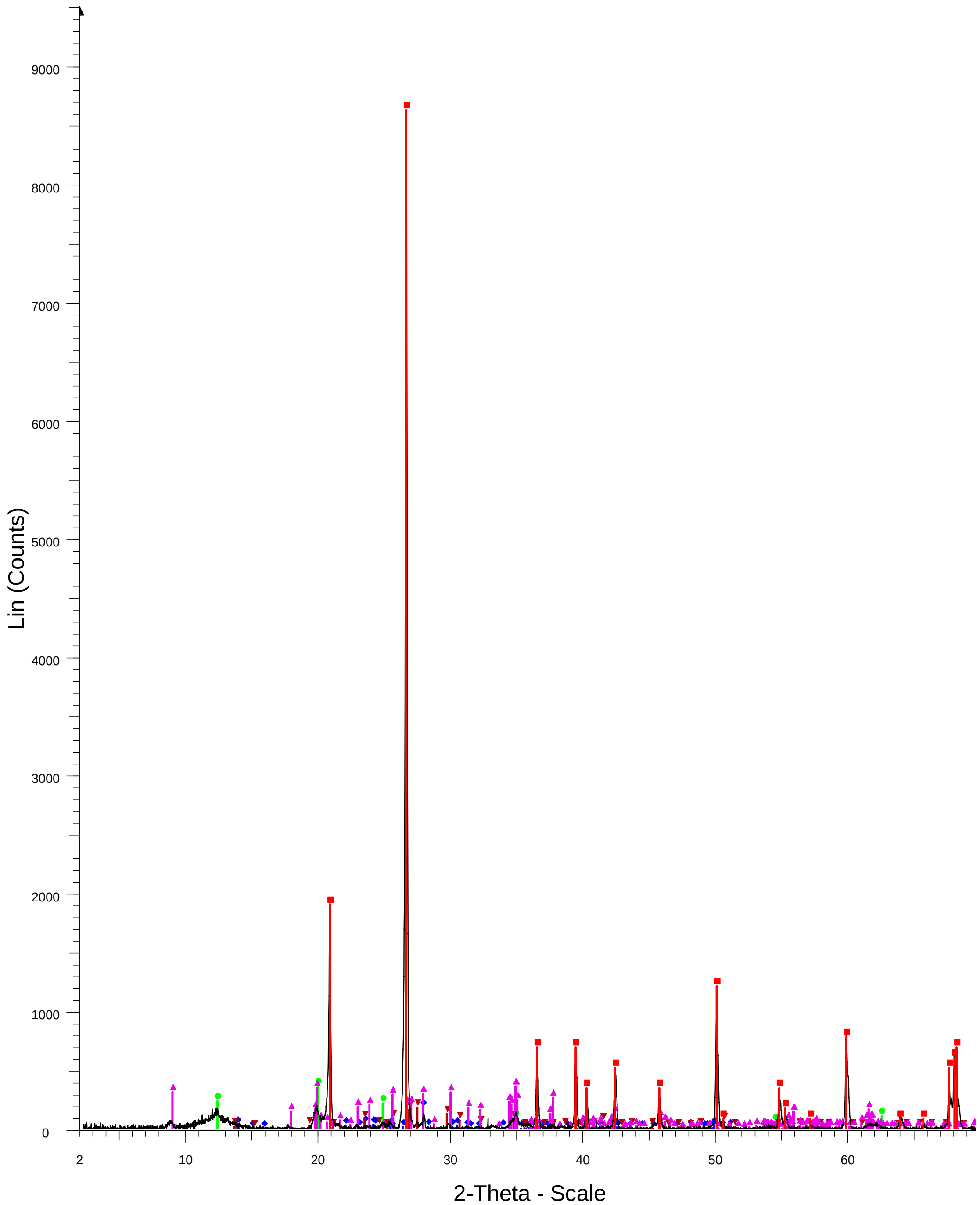
2000
3000
4000
5000
6000
7000
8000
9000
2
10
20
30
40
50
60
2-Theta - Scale
2005861019001 - File: 2005861019001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.108 | Background 0.309,1.000 | Import
01-079-1910 (*) - Quartz, syn - SiO2 - Y: 133.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91400 - b 4.91400 - c 5.40600 - alpha 90.000 - b
01-078-2110 (*) - Kaolinite - Al4(OH)8(Si4O10) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.14971 - b 8.93507 - c 7.38549 - alpha 91.92
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-071-6219 (*) - Albite low - Na(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.05100 - b 12.73360 - c 7.12420 - alpha 94.254 -
01-089-8572 (*) - Orthoclase - K(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.54400 - b 12.99800 - c 7.18100 - alpha 90.00

2005861019002



2005861019002 - File: 2005861019002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.025 | X Offset -0.017 | X Offset -0.042 | Background 0.550,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
01-070-3665 (*) - Muscovite-2M1, syn - $K_{0.964}(Al_{1.21}Mg_{0.75}Fe_{0.04})(Al_{0.19}Si_{3.81})O_{10}((OH)_{1.2}F_{0.8})$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - M

XRD Mineral Report for Megan Lech (Batch 200649) January 2007

114 samples were submitted for XRD analysis. Samples were scanned on a Siemens D500 Diffractometer from 2° to 70° 2θ at 40kV,30mA. Mineral identification was carried out using the program Bruker Diffrac Plus Eva. Siroquant® was used to quantify minerals.

- The simple scans were very similar for all samples, showing dominant Quartz, some clay and small amounts of feldspars. Muscovite and Calcite were commonly found. A small quantity (2.4%) of Hematite was identified in 2006861127002 and Magnetite (2.2%) was identified in 2006861135002. 2006861145002 was predominantly Gypsum. A small amount (0.5%) of Zircon was identified in 2006861154001
- Specific clays have been identified by peak best-fit using Eva's search/match program. Further work would be required to definitively identify clays, but the presence of Kaolinite Group clays is most likely.
- Specific feldspars have been identified by peak best-fit using Eva's search/match program. Further petrological and mineralogical work would be required to definitively identify feldspars.
- Siroquant failed to quantify some minerals that clearly appeared to be present in small quantities in scans. This generally occurred when more than one feldspar was identified by Eva. In the quantification process, one of the feldspars tended to 'swallow' the other.

Liz Webber and Bill Pappas
16 January 2007

Sample #	Minerals Present	Corrected Weight %
2006861101001	Quartz	59.8
	Halloysite	22.7
	Muscovite	8.5
	Kaolin	3.5
	Albite	3.3
	Orthoclase	2.1
		99.9
2006861101002	Quartz	58.3
	Halloysite	24.6
	Muscovite	6.8
	Anorthoclase	5.4
	Kaolin	3.1
	Calcite	1.7
		99.9
2006861102001	Quartz	59.9
	Halloysite	24.8
	Albite	7.6
	Orthoclase	5.4
	Calcite	2.3
		100
2006861102002	Quartz	55.9
	Halloysite	27.4
	Albite	7.4
	Orthoclase	6.1
	Calcite	3.2
		100
2006861103001	Quartz	55.5
	Halloysite	21.9
	Albite	10.8
	Orthoclase	6.9
	Kaolin	3.6
	Calcite	1.3
		100
2006861103002	Quartz	54.6
	Halloysite	20.9
	Albite	11.7
	Orthoclase	8.1
	Kaolin	3.7
	Calcite	1
		100
2006861104001	Quartz	63.1
	Halloysite	24.9
	Kaolin	4.8
	Calcite	4.6
	Albite	2.7
		100.1

Sample #	Minerals Present	Corrected Weight %
2006861104002	Quartz	58
	Halloysite	27.2
	Calcite	5.7
	Kaolin	3.8
	Orthoclase	2.7
	Albite	2.6
		100
2006861105001	Quartz	62
	Halloysite	28.9
	Albite	5.8
	Orthoclase	3.4
		100.1
2006861105002	Quartz	59.1
	Halloysite	31.5
	Albite	6.4
	Orthoclase	2.1
	Calcite	0.8
		99.9
2006861106001	Quartz	54.2
	Halloysite	39.2
	Albite	4.6
	Orthoclase	2
		100
2006861106002	Quartz	60.5
	Halloysite	32.7
	Albite	4.3
	Orthoclase	2.6
		100.1
2006861107001	Quartz	89.7
	Halloysite	9.7
	Orthoclase	0.6
		100
2006861107002	Quartz	76.9
	Halloysite	19.9
	Orthoclase	3.2
		100
2006861108001	Quartz	69.8
	Halloysite	17.3
	Orthoclase	8.4
	Albite	4.4
		99.9
2006861108002	Quartz	77.1
	Halloysite	18
	Albite	4.9
		100

Sample #	Minerals Present	Corrected Weight %
2006861109001	Quartz	72.9
	Halloysite	21.2
	Orthoclase	3
	Albite	2.8
		99.9
2006861109002	Quartz	74.1
	Halloysite	21.5
	Albite	2.9
	Orthoclase	1.6
		100.1
2006861110001	Quartz	72.6
	Halloysite	24.7
	Orthoclase	2.8
		100.1
2006861110002	Quartz	63.8
	Halloysite	33.2
	Albite	3
		100
2006861111001	Quartz	61.1
	Halloysite	31.5
	Albite	3.6
	Orthoclase	3.9
		100.1
2006861111002	Quartz	59
	Halloysite	33.4
	Albite	3.8
	Orthoclase	3.8
		100
2006861112001	Quartz	66
	Halloysite	28.4
	Orthoclase	2.9
	Albite	2.7
		100
2006861112002	Quartz	65.2
	Halloysite	23.3
	Kaolin	5
	Calcite	4.1
	Albite	2.4
		100
2006861113001	Quartz	72.7
	Halloysite	27.3
		100

Sample #	Minerals Present	Corrected Weight %
2006861113002	Quartz	66.3
	Halloysite	27.8
	Albite	3.1
	Orthoclase	2.8
		100
2006861114001	Quartz	61.3
	Halloysite	24.6
	Kaolin	5
	Calcite	4.3
	Albite	2.6
	Orthoclase	2.1
		99.9
2006861114002	Quartz	75.5
	Halloysite	24.5
		100
2006861115001	Quartz	80.4
	Halloysite	17.5
	Albite	2
		99.9
2006861115002	Quartz	76
	Halloysite	24
		100
2006861116001	Quartz	84.4
	Halloysite	13.7
	Albite	1.6
	Orthoclase	0.3
		100
2006861116002	Quartz	85.1
	Halloysite	14.9
		100
2006861117001	Quartz	90.2
	Halloysite	9.8
		100
200686117002	Quartz	100
2006861118001	Quartz	83.9
	Halloysite	16.1
		100
2006861118002	Quartz	80.4
	Halloysite	19.6
		100
2006861119001	Quartz	81.3
	Halloysite	18.7
		100

Sample #	Minerals Present	Corrected Weight %
2006861119002	Quartz	67.3
	Halloysite	26.6
	Calcite	6.1
		100
2006861120001	Quartz	80.3
	Halloysite	19.7
		100
2006861120002	Quartz	72.1
	Halloysite	23.5
	Microcline	4.4
		100
2006861121001	Quartz	66.6
	Halloysite	30.6
	Albite	2.8
		100
2006861121002	Quartz	65.5
	Halloysite	19.3
	Calcite	9.7
	Orthoclase	2.7
	Albite	2.7
		99.9
2006861122001	Quartz	71.7
	Halloysite	24.2
	Microcline	4.1
		100
2006861122002	Quartz	71.2
	Kaolin	23.4
	Microcline	4
	Calcite	1.3
		99.9
2006861123001	Quartz	86.6
	Halloysite	13.2
	Microcline	0.2
		100
2006861123002	Quartz	73.2
	Halloysite	25
	Orthoclase	1.8
		100
2006861124001	Quartz	71.2
	Halloysite	26.3
	Albite	2.5
		100

Sample #	Minerals Present	Corrected Weight %
2006861124002	Quartz	69
	Kaolin	26.5
	Microcline	4.5
		100
2006861125001	Quartz	87.7
	Halloysite	9.5
	Microcline	2.7
		99.9
2006861125002	Quartz	85.8
	Halloysite	13.2
	Orthoclase	1
		100
2006861126001	Quartz	83.3
	Halloysite	16.6
		99.9
2006861126002	Quartz	72.8
	Halloysite	24.9
	Albite	2.3
		100
2006861127001	Quartz	79.2
	Halloysite	18.6
	Orthoclase	2.3
		100.1
2006861127002	Quartz	84.6
	Halloysite	13
	Hematite	2.4
		100
2006861128001	Quartz	63.4
	Halloysite	27
	Orthoclase	7.2
	Albite	2.3
		99.9
2006861128002	Quartz	50.5
	Halloysite	35.6
	Albite	6
	Kaolin	5.6
	Calcite	2.2
		99.9
2006861129001	Quartz	62.8
	Halloysite	30.7
	Albite	3.7
	Orthoclase	2.8
		100

Sample #	Minerals Present	Corrected Weight %
2006861129002	Quartz	71.9
	Halloysite	23.9
	Albite	2.4
	Orthoclase	1.8
		100
2006861130001	Quartz	83.4
	Halloysite	13.4
	Albite	3.2
		100
2006861130002	Quartz	72
	Halloysite	26
	Orthoclase	2
		100
2006861131001	Quartz	80.5
	Halloysite	16.9
	Albite	2.6
		100
2006861131002	Quartz	74
	Halloysite	19.6
	Orthoclase	4.3
	Albite	2.1
		100
2006861132001	Quartz	44
	Halloysite	34.6
	Muscovite	18.7
	Albite	1.4
	Orthoclase	1.2
		99.9
2006861132002	Quartz	65
	Halloysite	28.1
	Muscovite	3.1
	Calcite	2.3
	Albite	1.5
		100
2006861133001	Quartz	68.5
	Halloysite	17.5
	Albite	5.4
	Microcline	4.5
	Muscovite	4.1
		100
2006861133002	Quartz	69
	Halloysite	22
	Albite	6
	Orthoclase	4
		100

Sample #	Minerals Present	Corrected Weight %
2006861134001	Quartz	56.6
	Halloysite	31.4
	Muscovite	7.7
	Albite	4.3
		100
2006861134002	Quartz	57.9
	Halloysite	25.8
	Muscovite	7.1
	Orthoclase	3.8
	Albite	3.6
	Calcite	1.9
		100.1
2006861135001	Quartz	78.2
	Halloysite	18.8
	Albite	2.9
2006861135002	Quartz	77.3
	Halloysite	17.6
	Albite	2.6
	Magnetite	2.2
	Calcite	0.3
		100
2006861136001	Quartz	63.8
	Halloysite	30.5
	Albite	5.7
		100
2006861136002	Quartz	72.2
	Halloysite	20.4
	Albite	7.4
		100
2006861137001	Quartz	77.2
	Halloysite	16.6
	Albite	3.8
	Orthoclase	2.4
		100
2006861137002	Quartz	69.7
	Halloysite	23.1
	Albite	4.1
	Orthoclase	1.8
	Calcite	1.4
		100.1
2006861138001	Quartz	46.6
	Halloysite	28.4
	Muscovite	8.9
	Kaolin	6.5
	Albite	5.6
	Orthoclase	4
		100

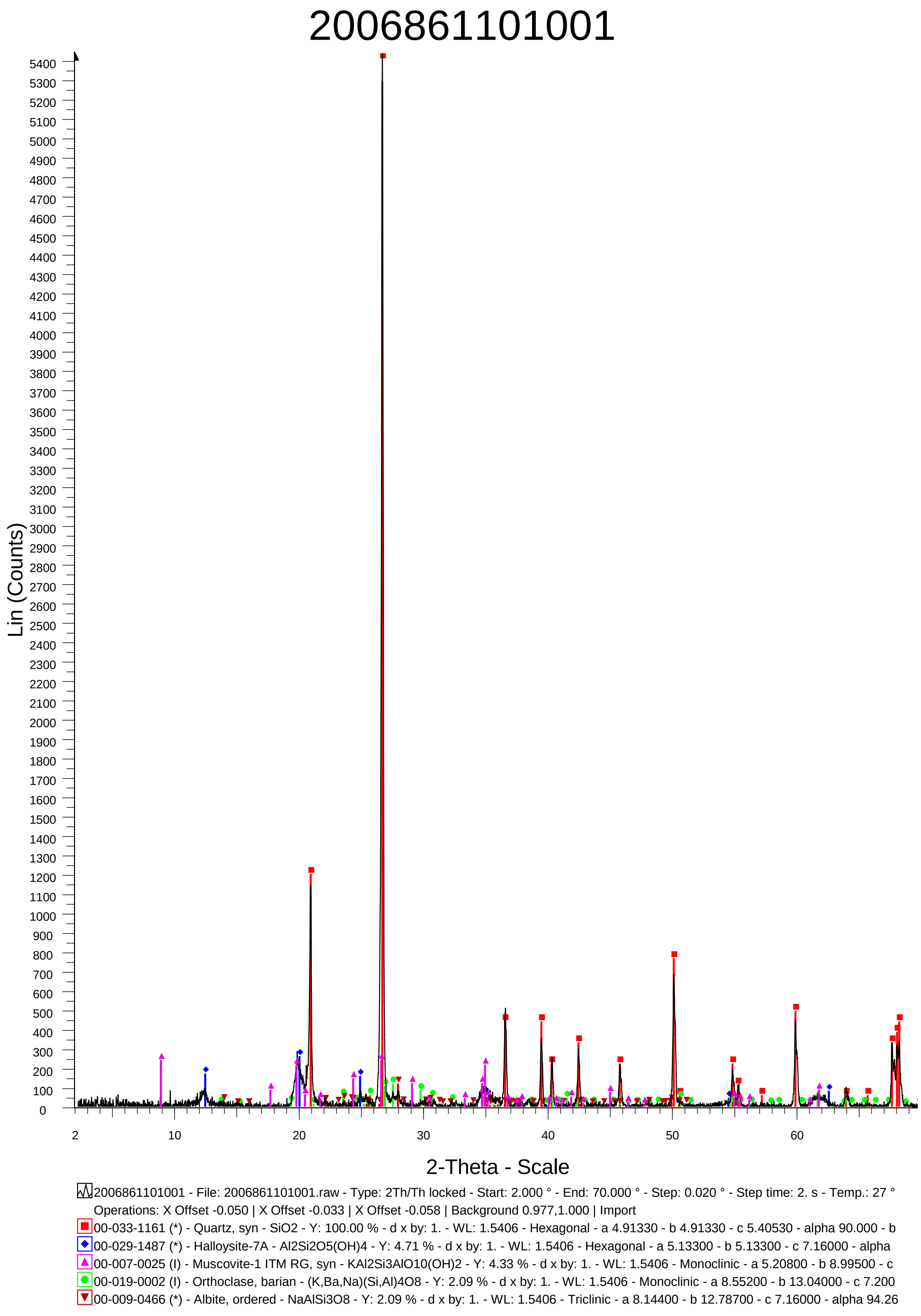
Sample #	Minerals Present	Corrected Weight %
2006861138002	Quartz	59.8
	Halloysite	30.5
	Albite	5.8
	Orthoclase	3.8
		99.9
2006861139001	Quartz	86.7
	Halloysite	11.1
	Albite	2.3
		100.1
2006861139002	Quartz	76.1
	Halloysite	18.1
	Calcite	3.4
	Albite	2.4
		100
2006861140001	Quartz	74.5
	Halloysite	21.9
	Albite	2.6
	Orthoclase	1
		100
2006861140002	Quartz	76
	Halloysite	21.2
	Orthoclase	2.9
		100.1
2006861141001	Quartz	78.6
	Halloysite	14.1
	Albite	5.1
	Muscovite	2.2
		100
2006861141002	Quartz	80.7
	Halloysite	16.3
	Albite	3
		100
2006861142001	Quartz	62.6
	Halloysite	26
	Muscovite	5
	Orthoclase	3.9
	Albite	2.5
		100
2006861142002	Quartz	78.1
	Halloysite	17.9
	Albite	2.8
	Orthoclase	1.2
		100

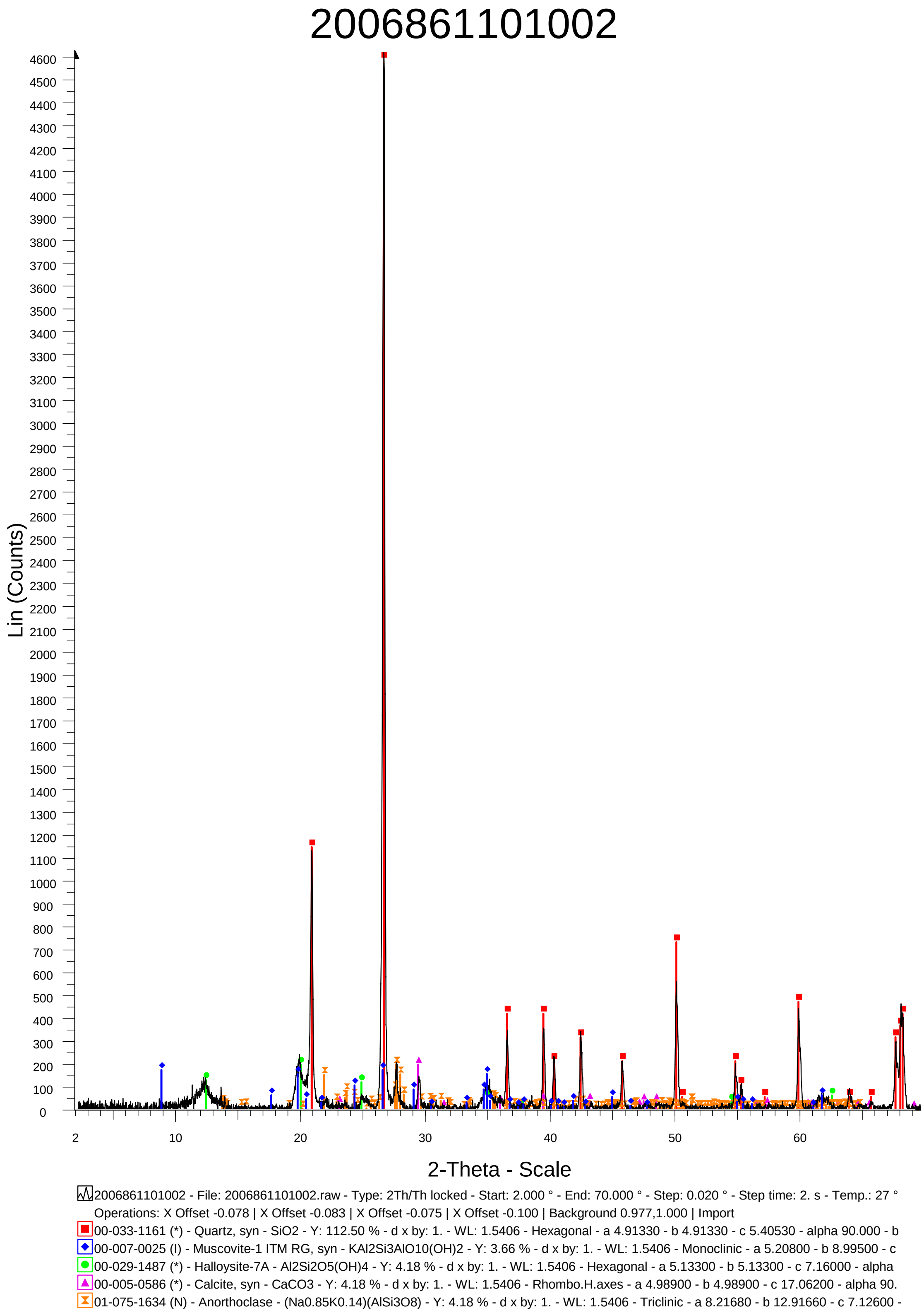
Sample #	Minerals Present	Corrected Weight %
2006861143001	Quartz	61.3
	Halloysite	19.3
	Muscovite	11.3
	Albite	5.7
	Orthoclase	1.9
	Calcite	0.5
		100
2006861143002	Quartz	55.7
	Halloysite	20.4
	Muscovite	14.2
	Albite	5.4
	Orthoclase	4.3
		100
2006861144001	Quartz	91.2
	Halloysite	8.8
		100
2006861144002	Quartz	81.6
	Halloysite	14.8
	Albite	3.6
		100
2006861145001	Quartz	58.6
	Halloysite	33.5
	Albite	5.2
	Orthoclase	2.7
		100
2006861145002	Gypsum	71.6
	Quartz	18.1
	Halloysite	10.3
		100
2006861146001	Quartz	85.2
	Halloysite	11
	Albite	2.9
	Orthoclase	0.9
		100
2006861146002	Quartz	61.5
	Halloysite	26.8
	Calcite	6.8
	Albite	3
	Orthoclase	1.9
		100
2006861147001	Quartz	66
	Halloysite	23.6
	Albite	7.1
	Orthoclase	3.2
		99.9

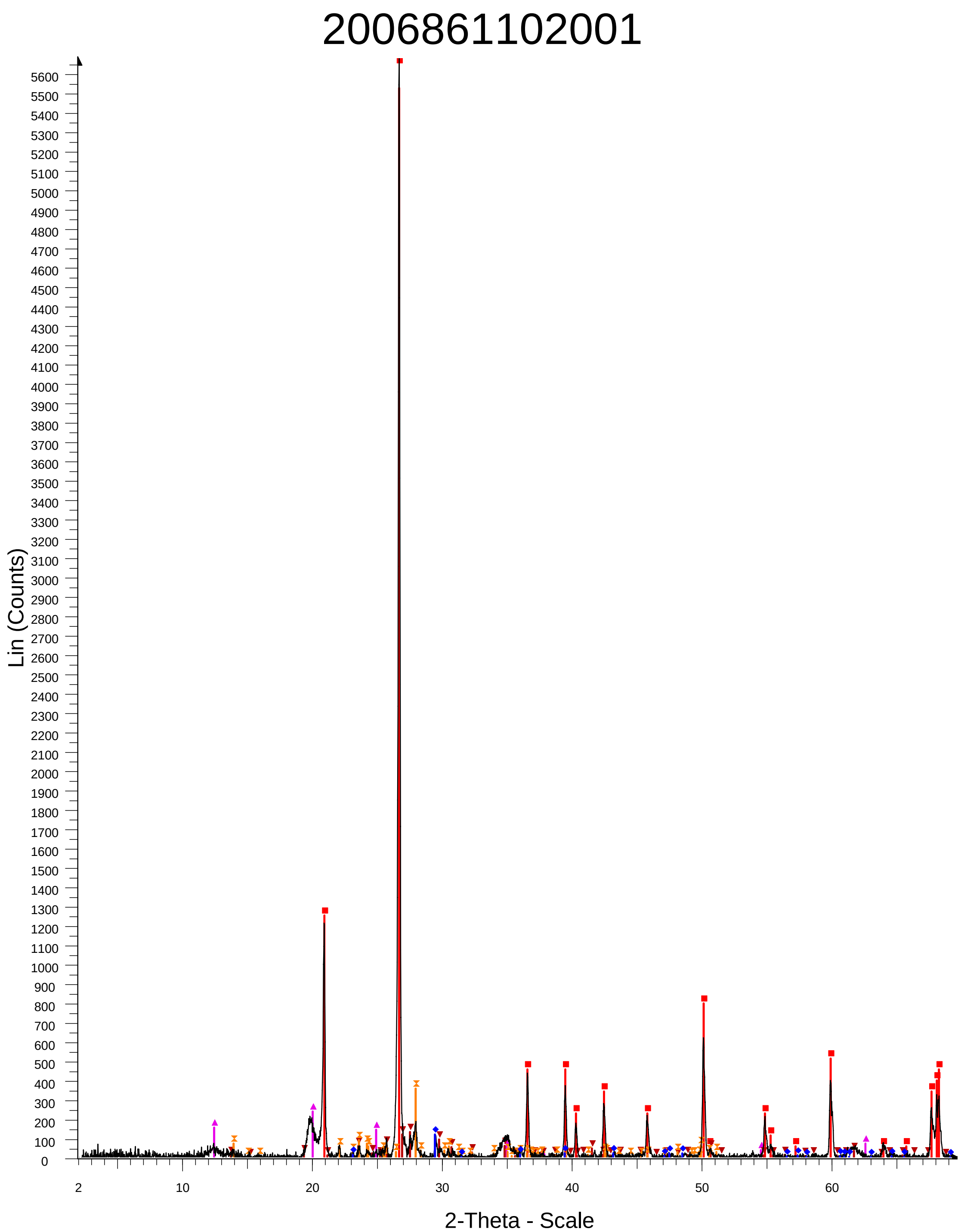
Sample #	Minerals Present	Corrected Weight %
2006861147002	Quartz	65
	Halloysite	26.1
	Albite	6.6
	Orthoclase	2.3
		100
2006861148001	Quartz	77
	Halloysite	16.1
	Orthoclase	5.1
	Albite	1.8
		100
2006861148002	Quartz	52
	Calcite	24.2
	Halloysite	17.9
	Microcline	3
	Phlogopite	2.9
		100
2006861149001	Quartz	78.3
	Halloysite	18.3
	Albite	2.5
	Orthoclase	1
		100.1
2006861149002	Quartz	82.8
	Halloysite	13.5
	Orthoclase	3.7
		100
2006861150001	Quartz	75.1
	Halloysite	21.5
	Orthoclase	1.9
	Albite	1.6
		100.1
2006861150002	Quartz	71.8
	Halloysite	27
	Albite	1.2
		100
2006861151001	Quartz	63
	Halloysite	32.9
	Muscovite	2.5
	Orthoclase	1.5
	Albite	0.2
		100.1
2006861151002	Quartz	60
	Halloysite	34.4
	Albite	2.8
	Orthoclase	2.7
		99.9

Sample #	Minerals Present	Corrected Weight %
2006861152001	Quartz	80.1
	Halloysite	18
	Albite	1.9
		100
2006861152002	Quartz	77.6
	Halloysite	19.6
	Albite	1.8
	Orthoclase	1
		100
2006895153001	Quartz	61.1
	Halloysite	33.8
	Orthoclase	2.7
	Albite	2.4
		100
2006861153002	Quartz	57.8
	Halloysite	31
	Muscovite	6.3
	Albite	2.3
	Orthoclase	1.9
	Calcite	0.7
		100
2006861154001	Quartz	80
	Halloysite	10
	Orthoclase	6.6
	Albite	2.9
	Zircon	0.5
		100
2006861154002	Quartz	72.6
	Halloysite	25.3
	Albite	2.1
		100
2006861155001	Quartz	54.3
	Halloysite	30.2
	Muscovite	8.3
	Albite	4.8
	Calcite	2.3
	Orthoclase	0.1
		100
2006861155002	Quartz	48.9
	Halloysite	33.2
	Muscovite	10.3
	Albite	4.7
	Orthoclase	2.9
		100

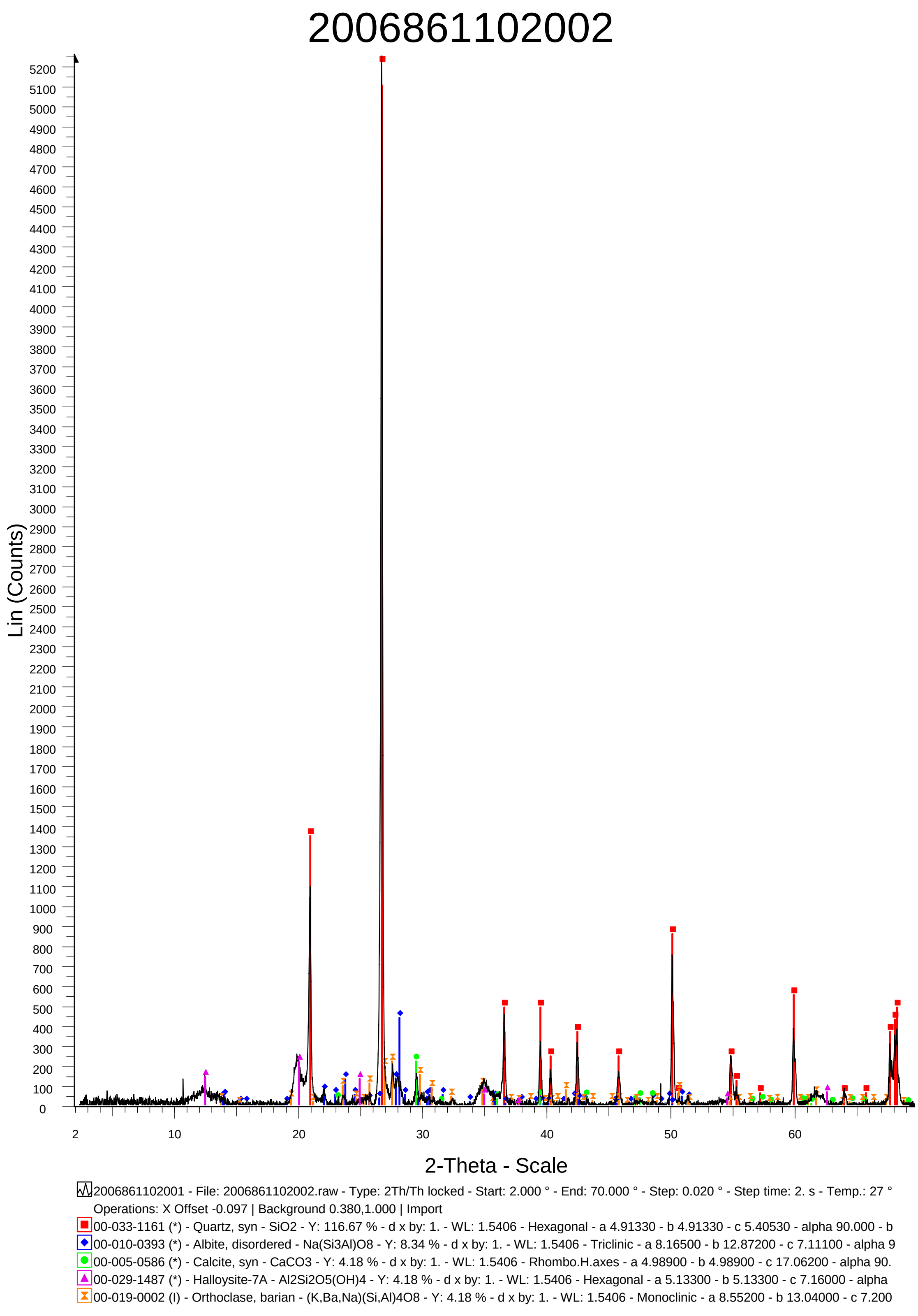
Sample #	Minerals Present	Corrected Weight %
2006861156001	Quartz	61.4
	Halloysite	31.7
	Albite	5.6
	Orthoclase	1.3
		100
2006861156002	Quartz	58.5
	Halloysite	32.4
	Albite	5.5
	Orthoclase	3.6
		100
2006861157001	Quartz	55.7
	Halloysite	32.2
	Albite	9.6
	Orthoclase	2.5
		100
2006861157002	Quartz	52.7
	Halloysite	39.4
	Albite	7.9
		100


2006861101001
Lin (Counts)
2-Theta - Scale
2006861101001 - File: 2006861101001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.050 | X Offset -0.033 | X Offset -0.058 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.71 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-007-0025 (I) - Muscovite-1 ITM RG, syn - KAl2Si3AlO10(OH)2 - Y: 4.33 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.20800 - b 8.99500 - c
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

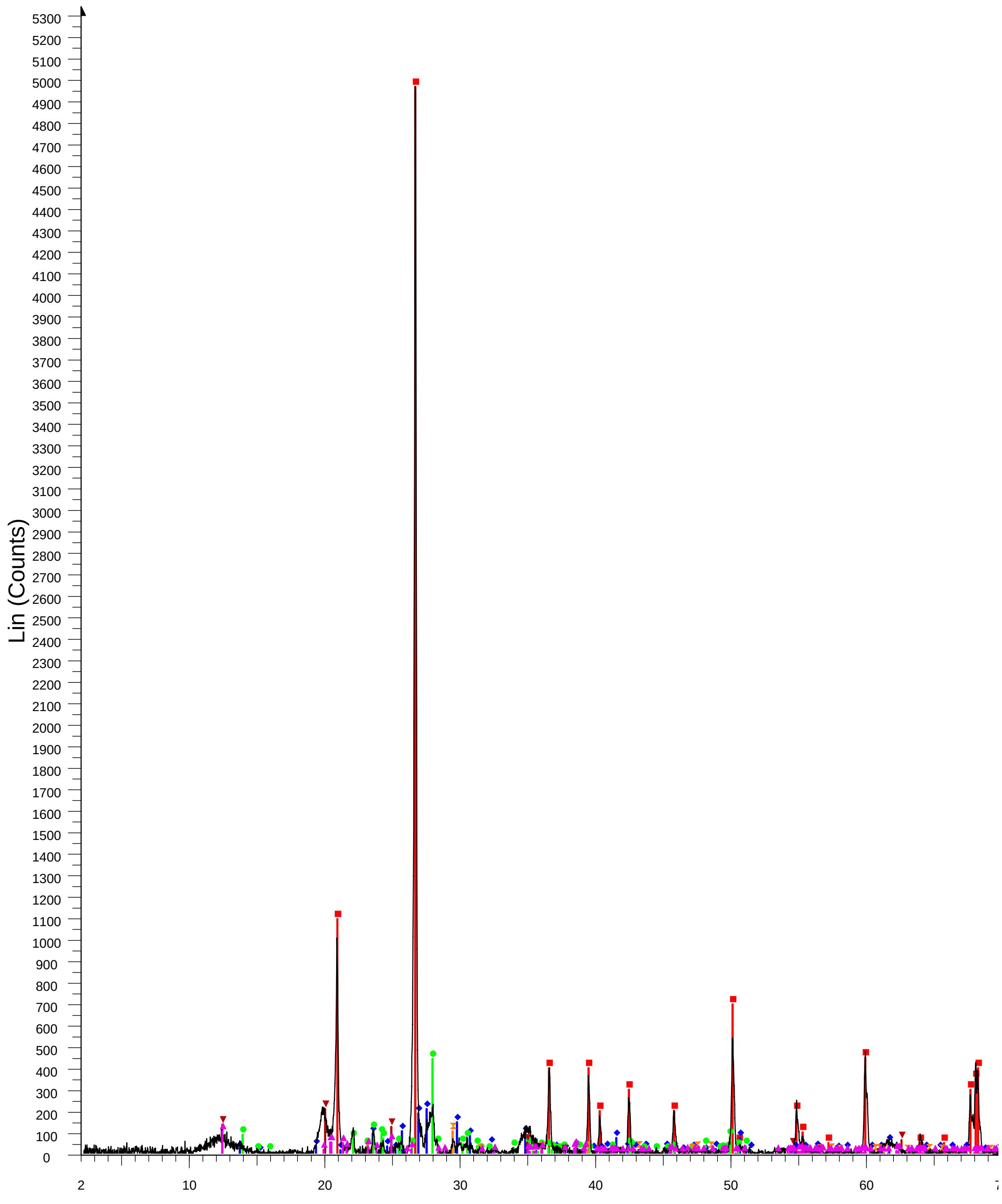

2006861101002
Lin (Counts)
2-Theta - Scale
2006861101002 - File: 2006861101002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.078 | X Offset -0.083 | X Offset -0.075 | X Offset -0.100 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 112.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-007-0025 (I) - Muscovite-1 ITM RG, syn - KAl2Si3AlO10(OH)2 - Y: 3.66 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.20800 - b 8.99500 - c
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
01-075-1634 (N) - Anorthoclase - (Na0.85K0.14)(AlSi3O8) - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.21680 - b 12.91660 - c 7.12600 -



2006861102001 - File: 2006861102001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.075 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.32 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

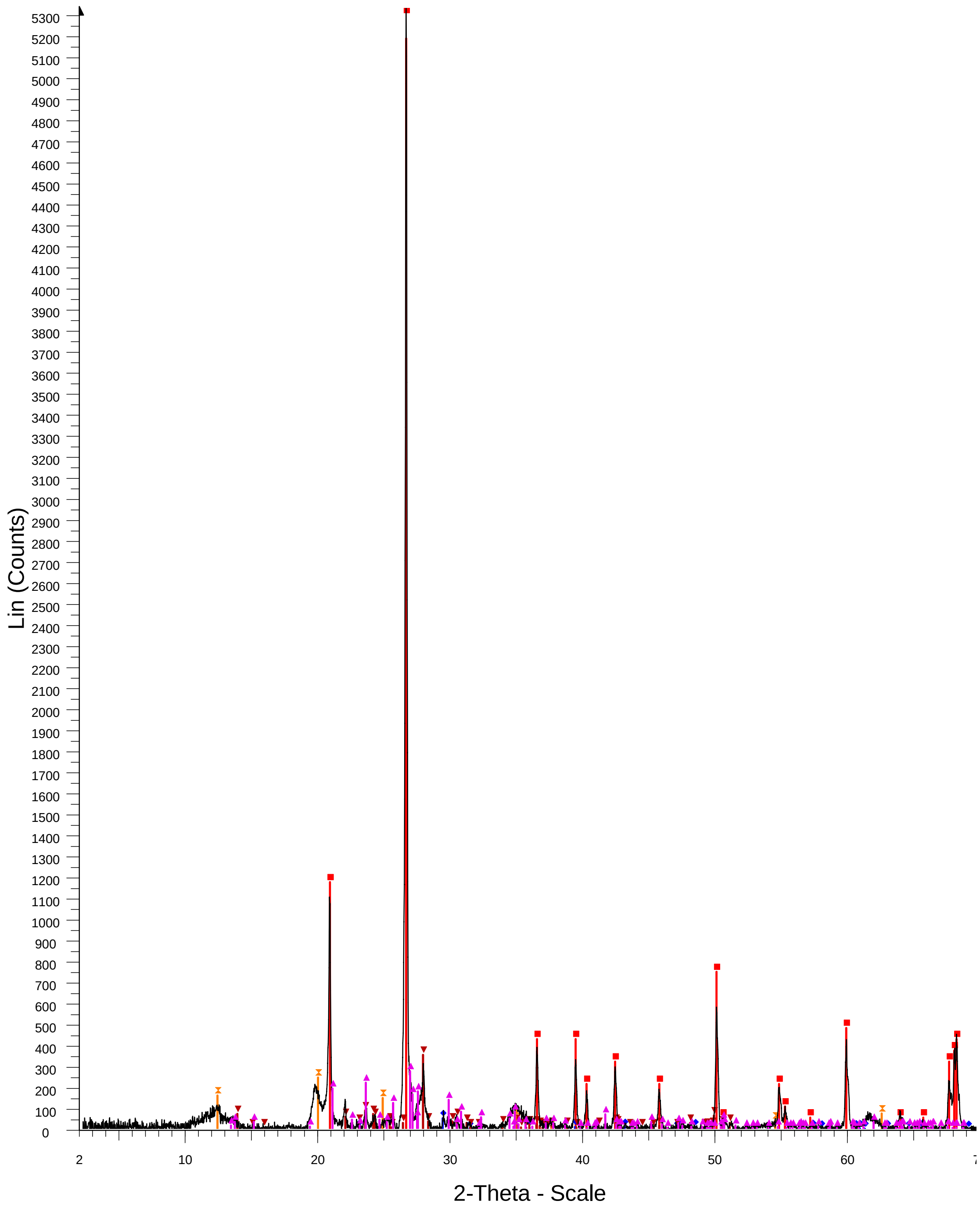

2006861102002
Lin (Counts)
2-Theta - Scale
2006861102001 - File: 2006861102002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.097 | Background 0.380,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 116.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-010-0393 (*) - Albite, disordered - Na(Si3Al)O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16500 - b 12.87200 - c 7.11100 - alpha 9
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861103001

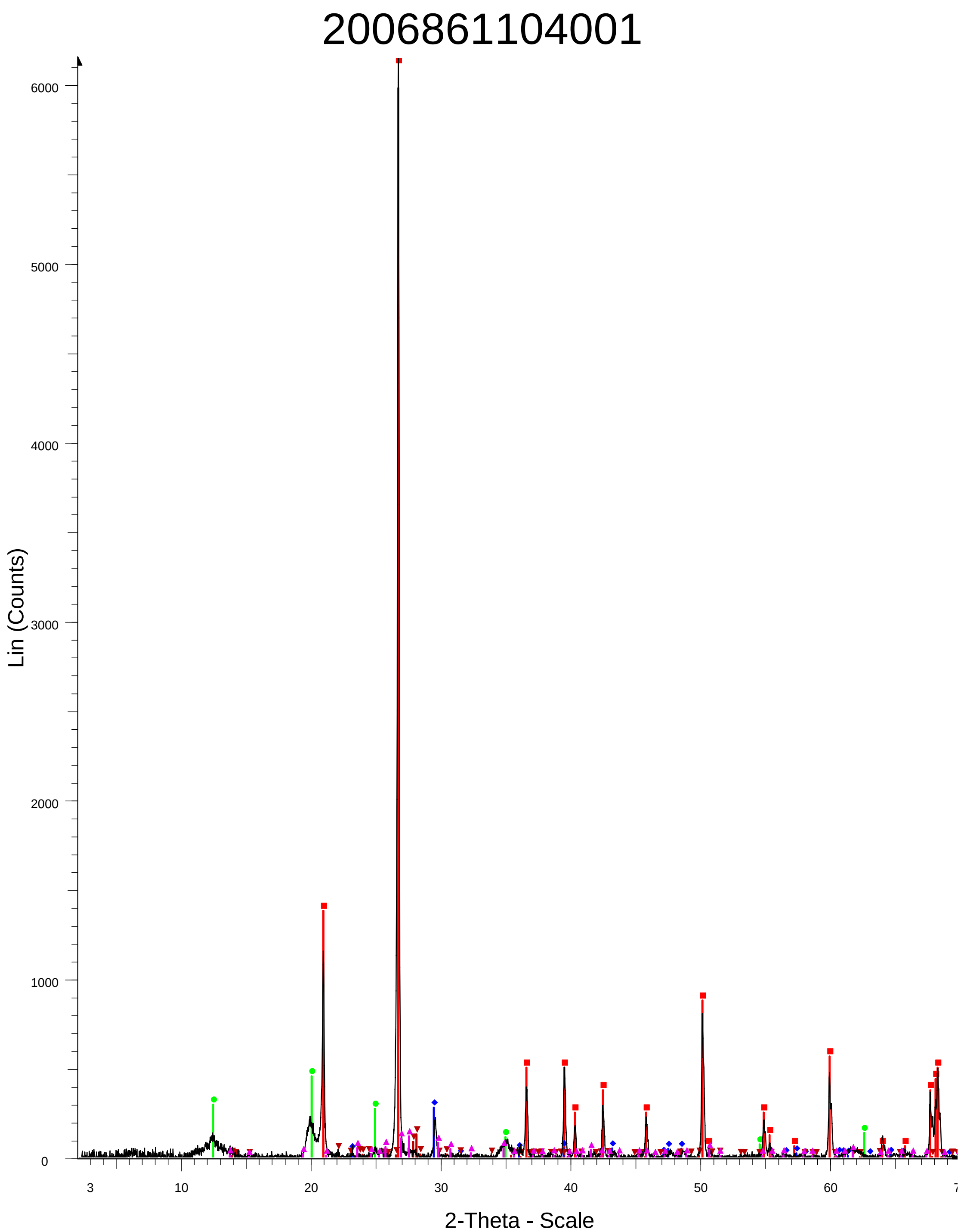


2006861103001 - File: 2006861103001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: X Offset -0.160 | Background 0.380,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 8.87 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
01-089-6538 (N) - Kaolinite - Al2(Si2O5)(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15400 - b 8.94200 - c 7.40100 - alpha 91.69

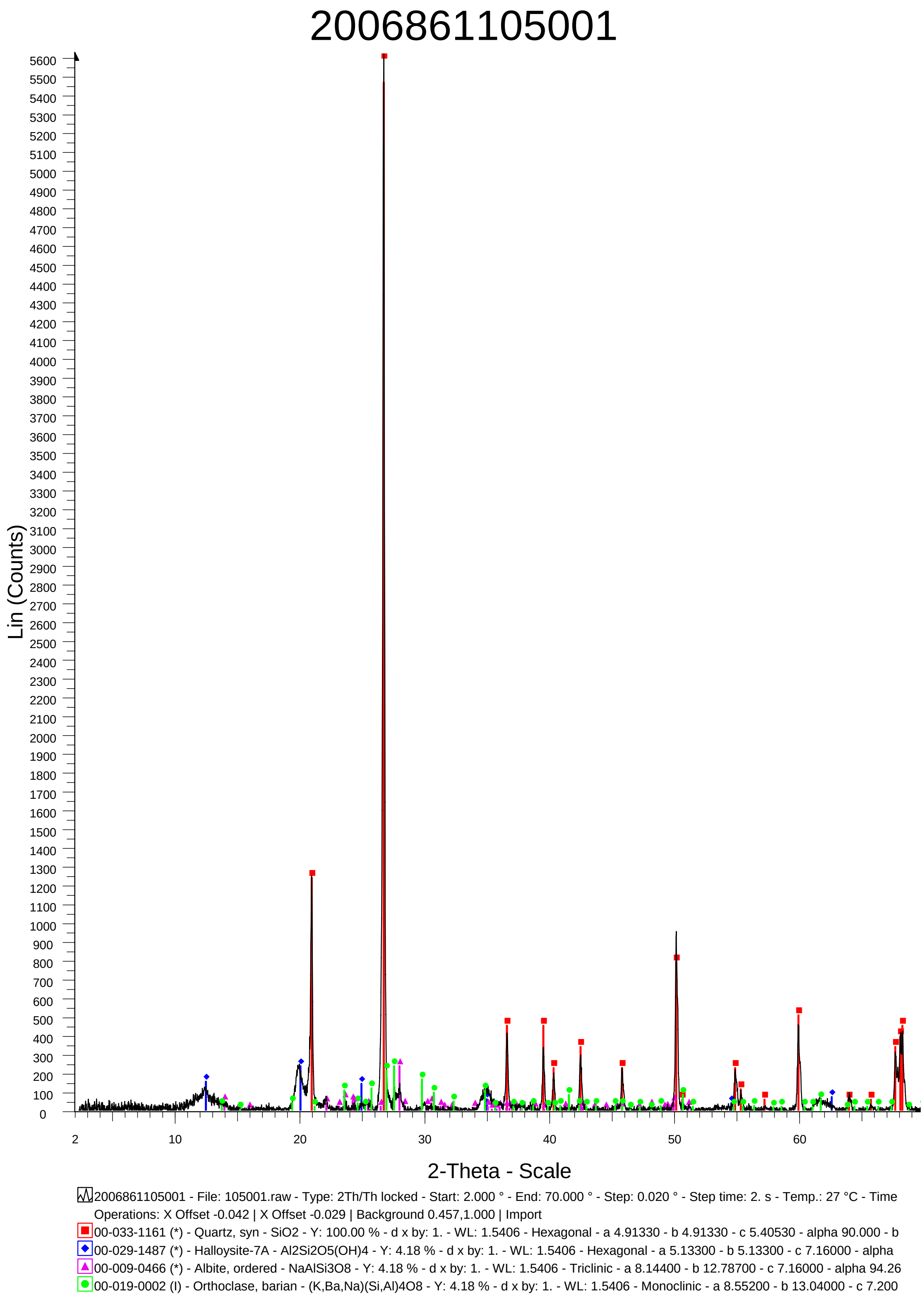
2006861103002



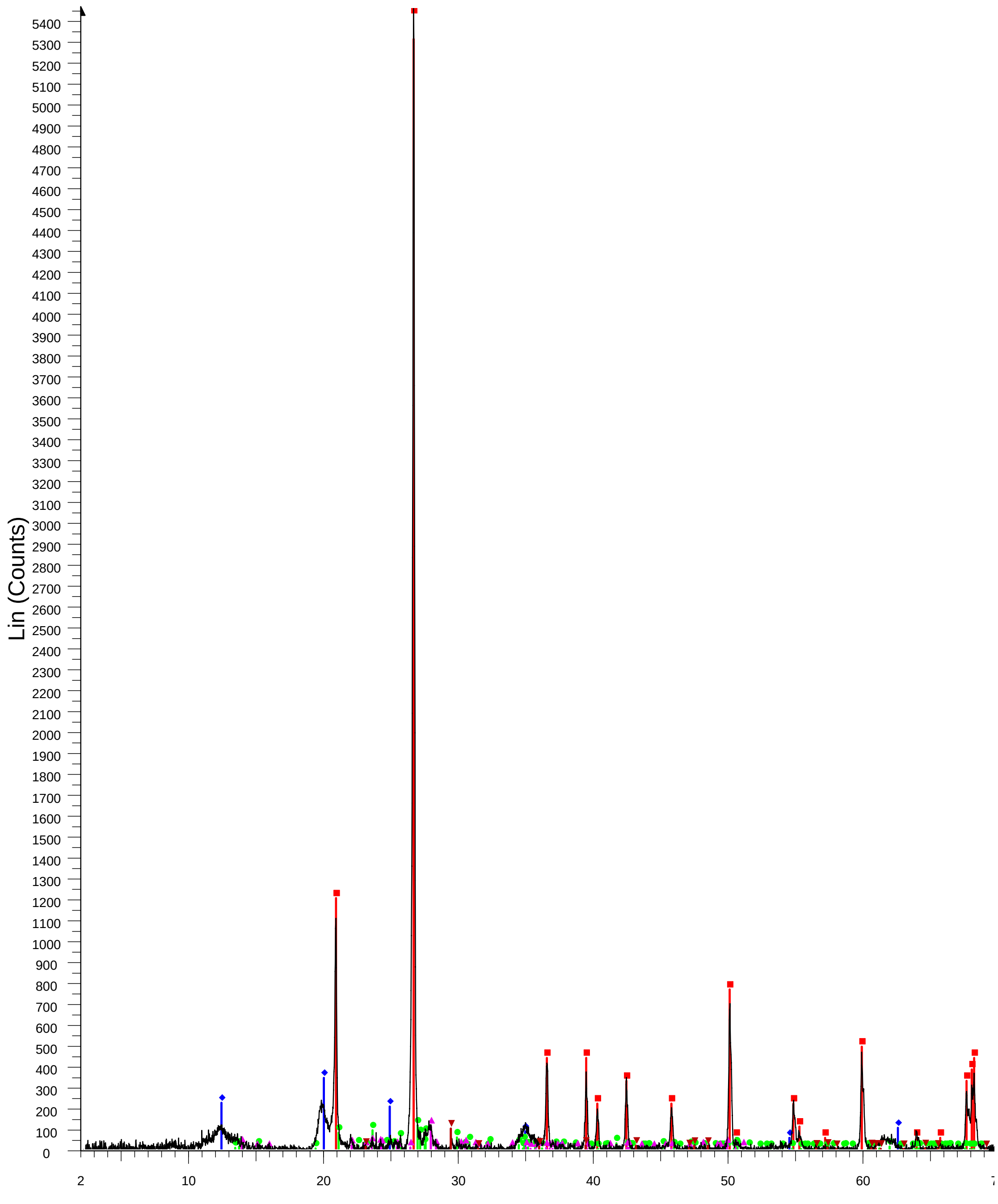
2006861103002 - File: 2006861103002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °
Operations: Background 0.380,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 0.94 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 5.15 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.61 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.57 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha



2006861104001 - File: 104001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset 0.023 | X Offset 0.015 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 101.94 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.54 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 7.38 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.91 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11

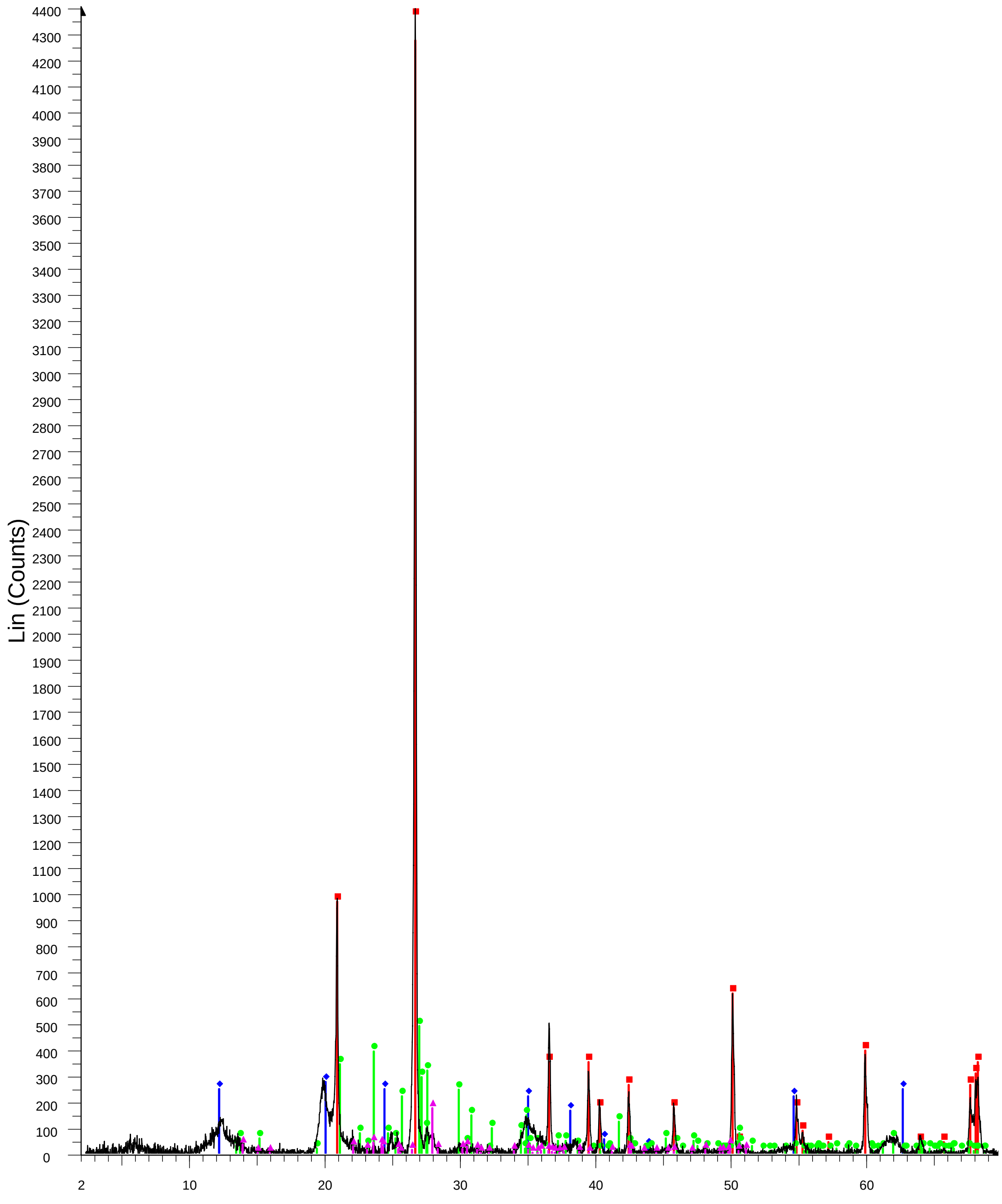

2006861105001
Lin (Counts)
2-Theta - Scale
2006861105001 - File: 105001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.042 | X Offset -0.029 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861105002

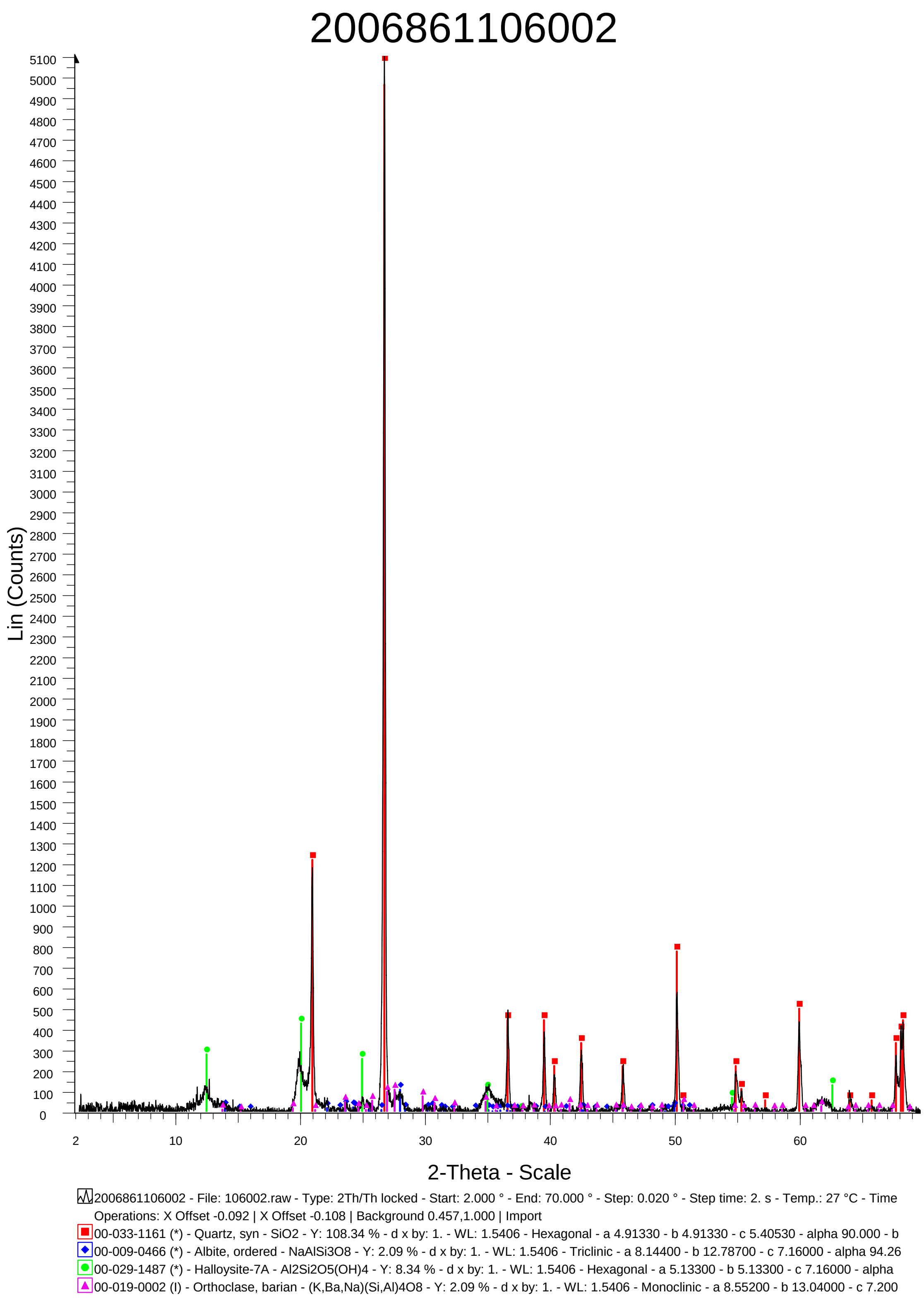


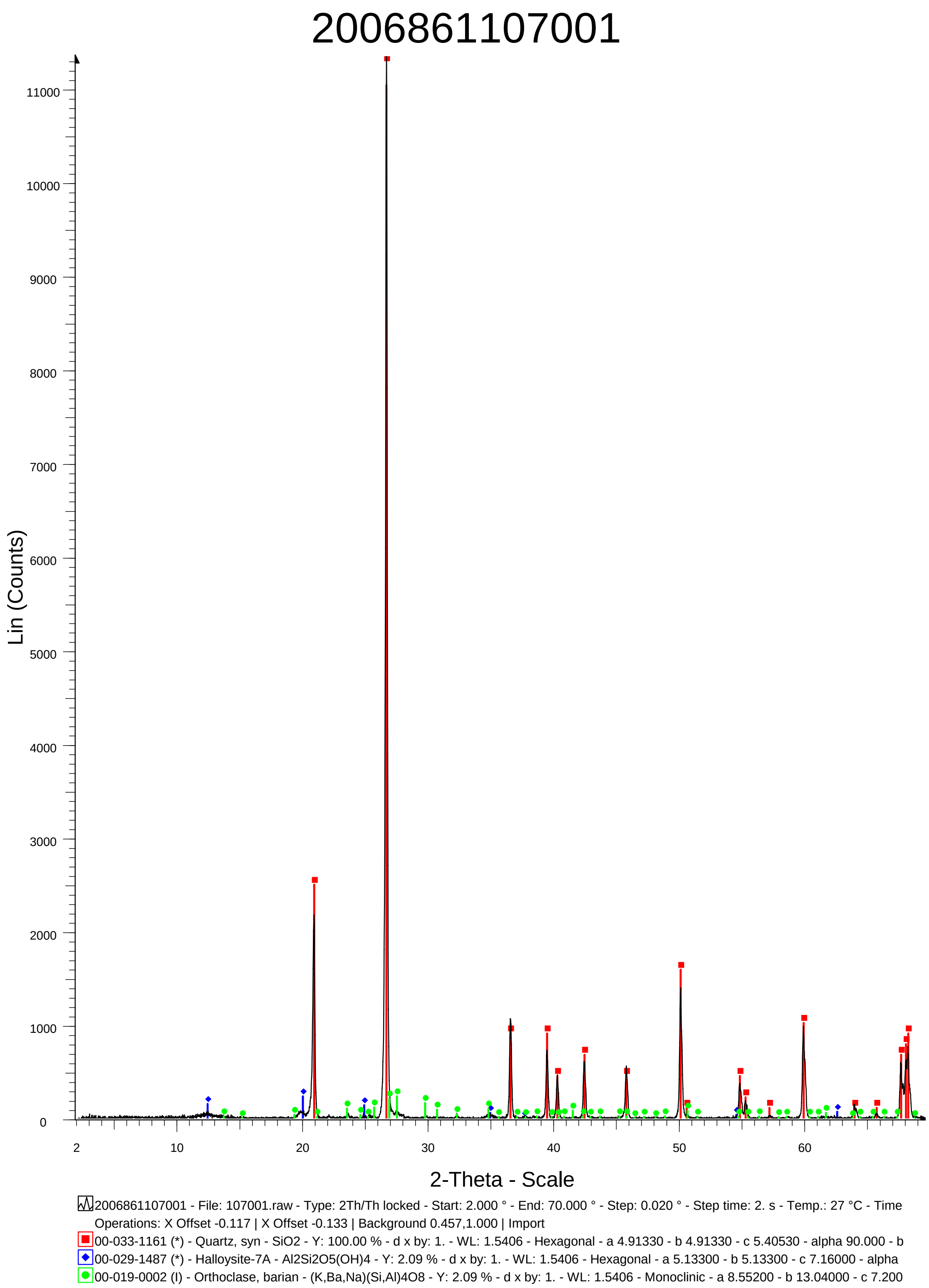
2006861105002 - File: 105002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 1.82 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.

2006861106001

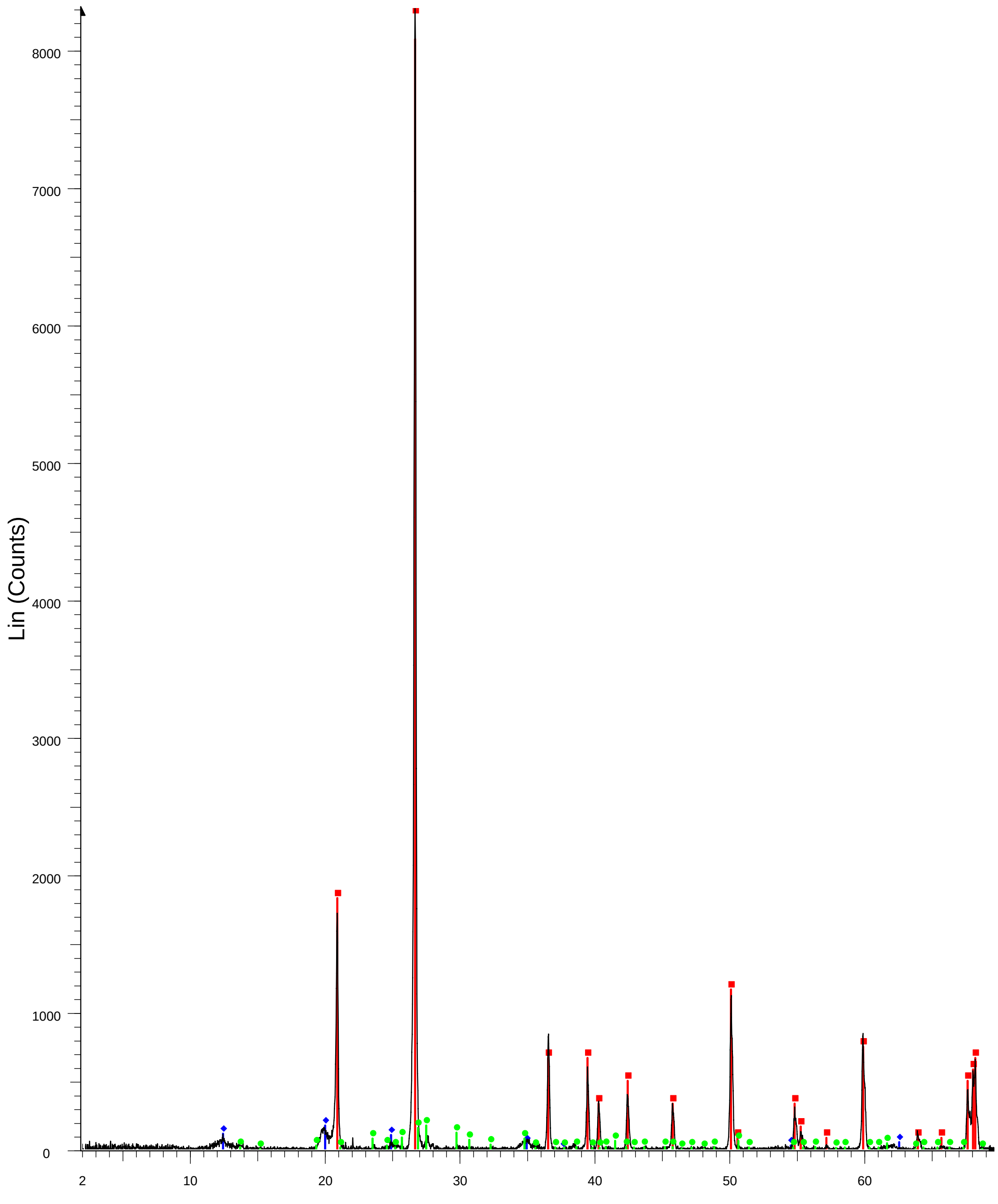


2006861106001 - File: 106001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.017 | X Offset -0.021 | X Offset -0.033 | X Offset -0.019 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0453 (N) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.12500 - b 5.12500 - c 7.30000 - alpha
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 11.15 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.00
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.96 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

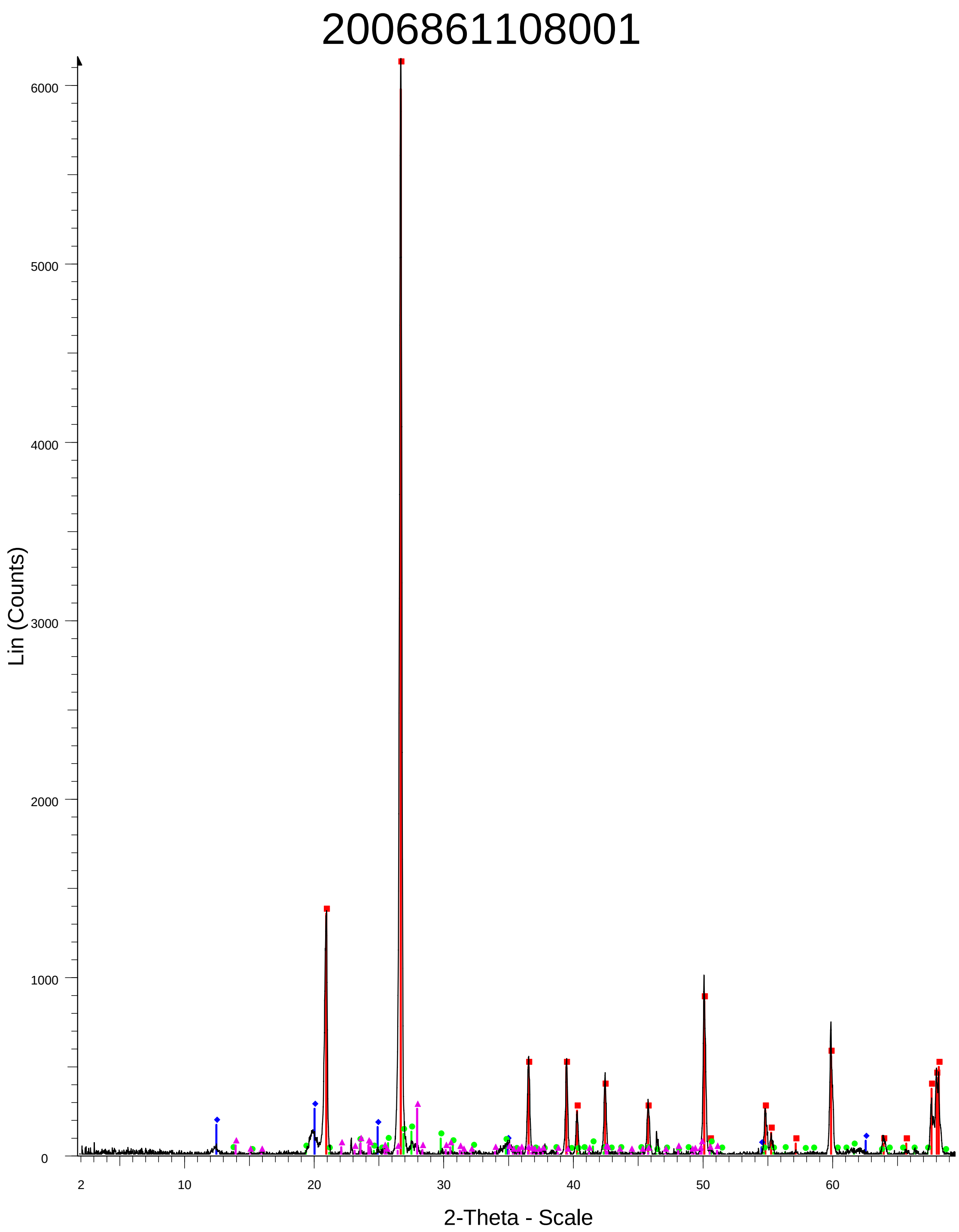

2006861106002
Lin (Counts)
2-Theta - Scale
2006861106002 - File: 106002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.092 | X Offset -0.108 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 108.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


2006861107001
Lin (Counts)
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
2006861107001 - File: 107001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.117 | X Offset -0.133 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

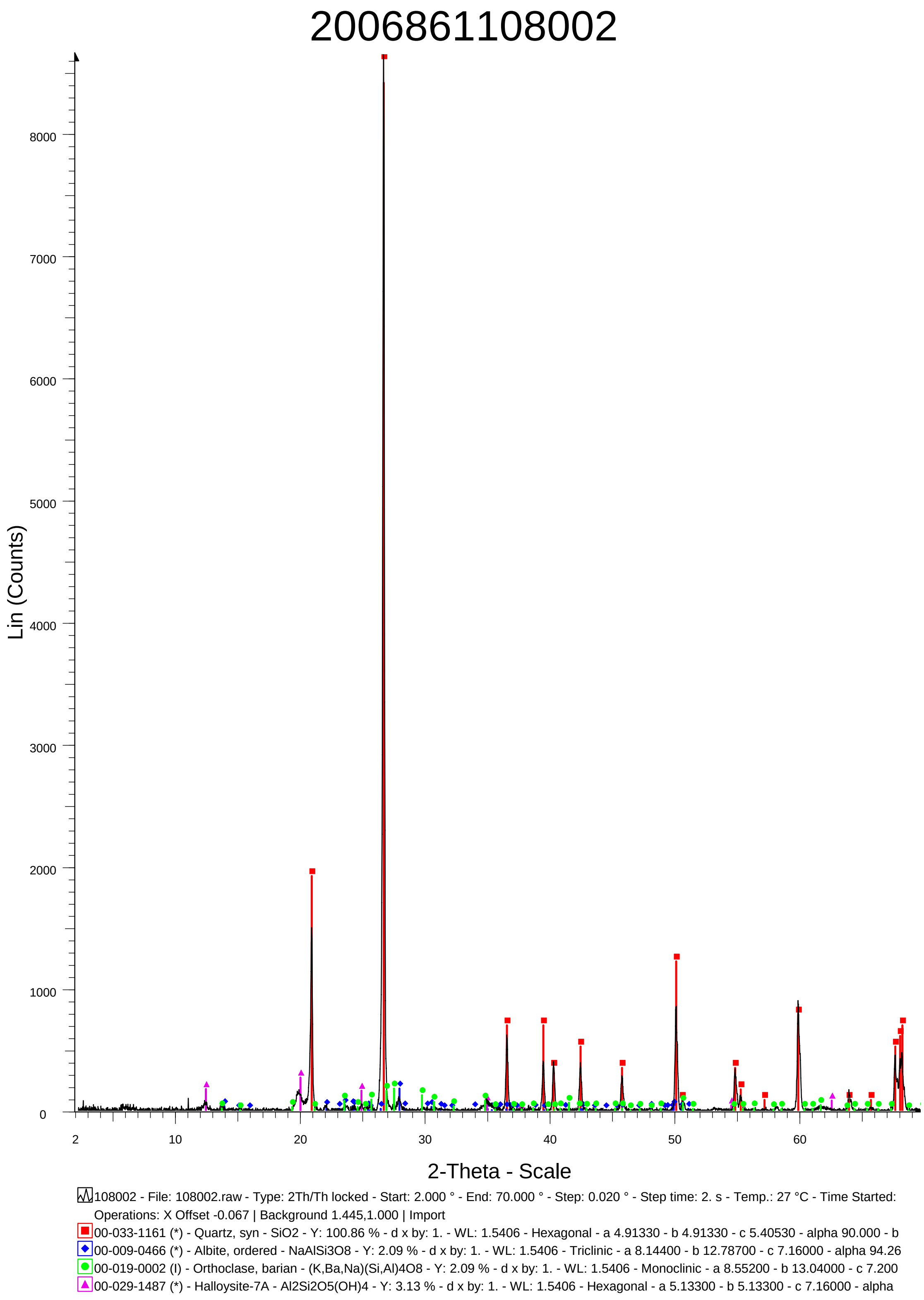
2006861107002



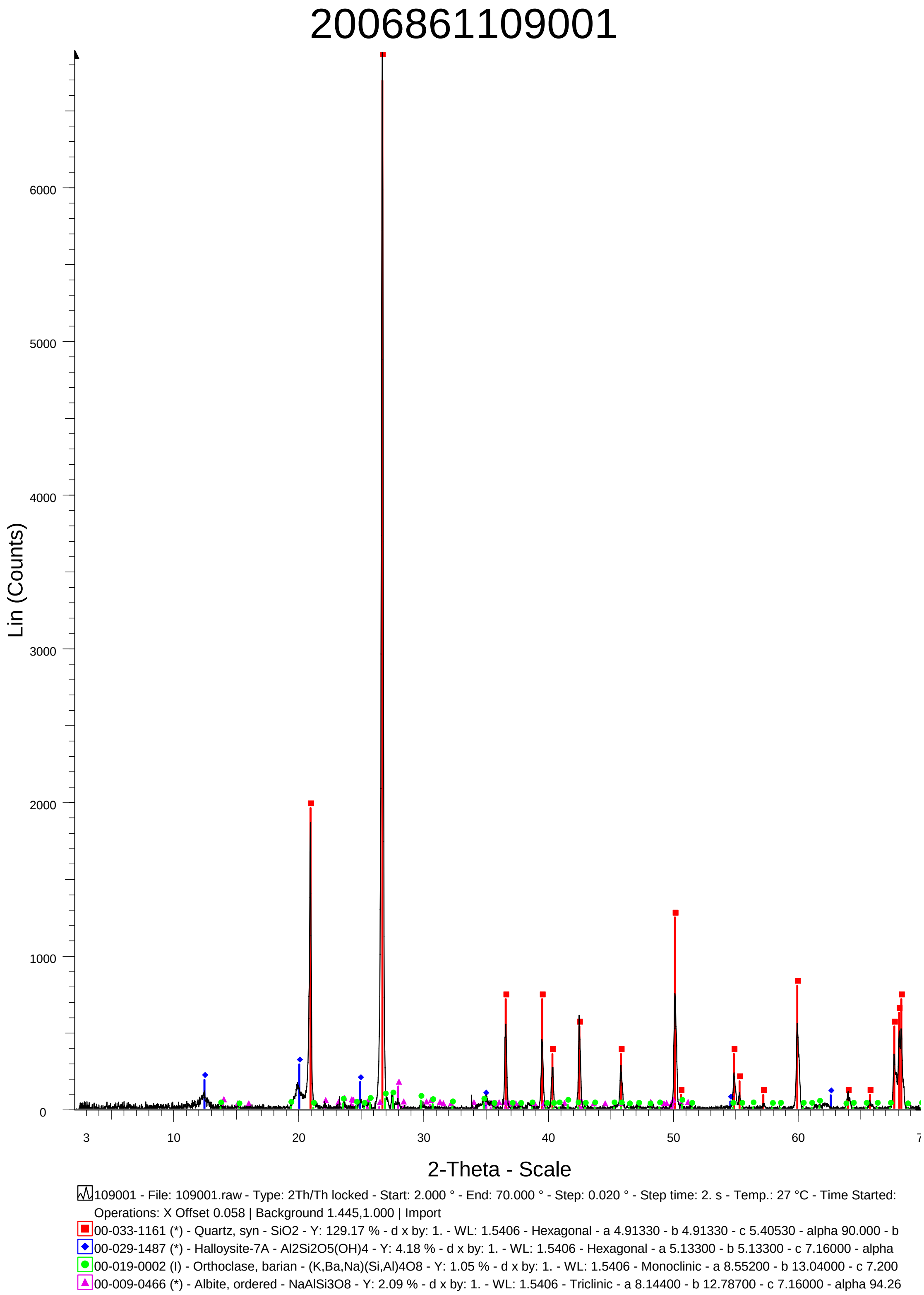
2006861107002 - File: 107002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.130 | X Offset -0.136 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

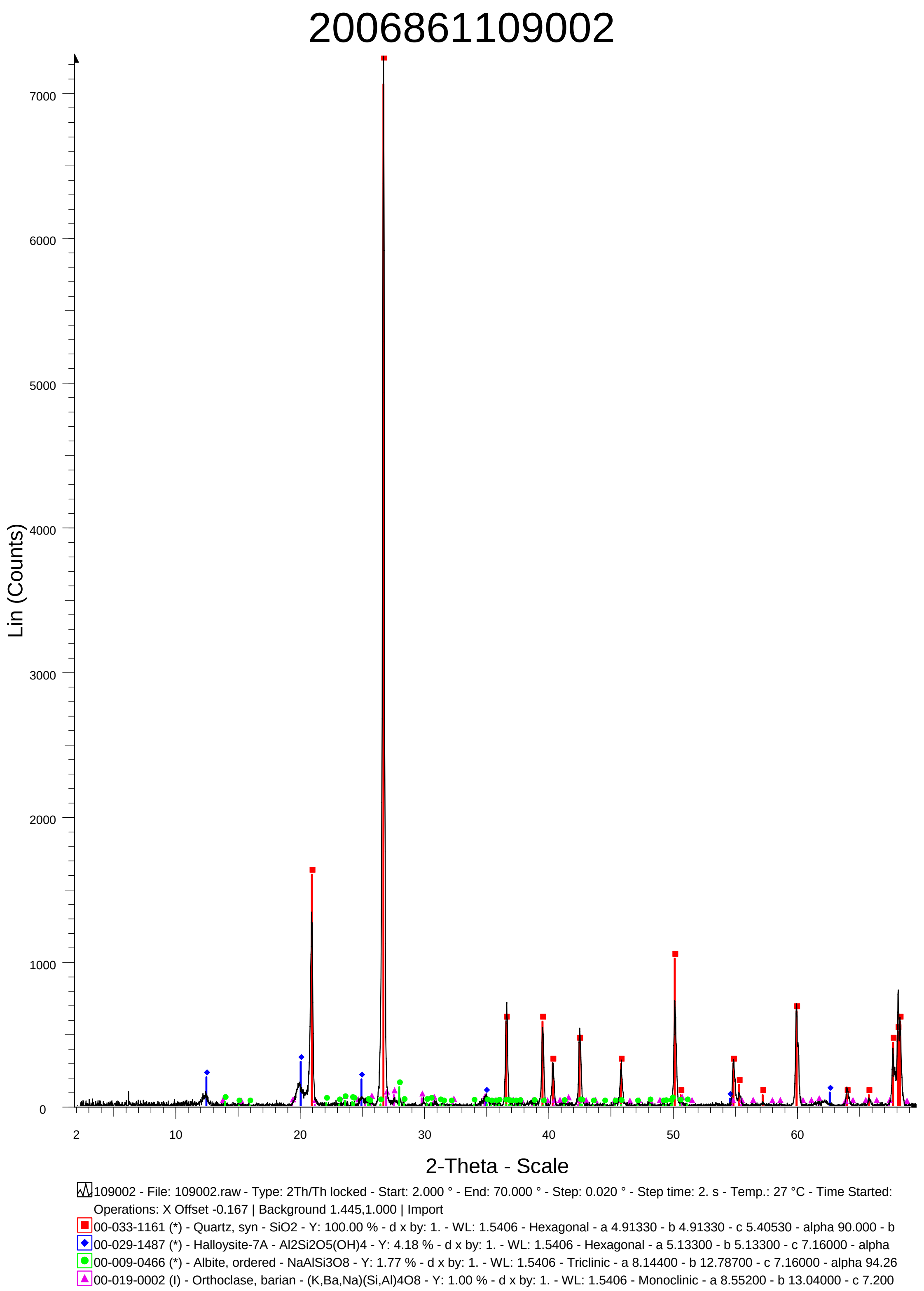


108001 - File: 108001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.263 | X Offset -0.400 | X Offset -0.200 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

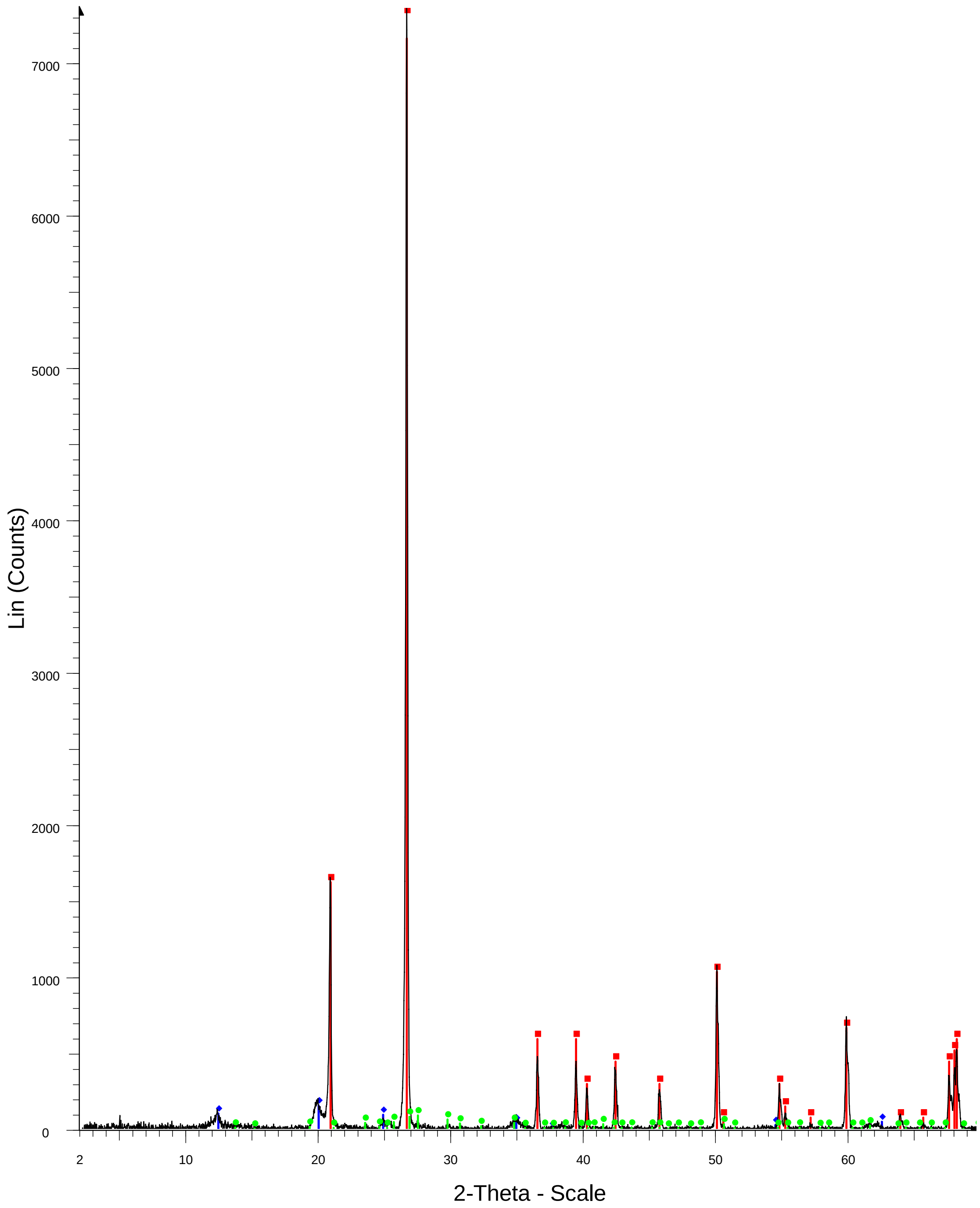


2006861108002
Lin (Counts)
0
1000
2000
3000
4000
5000
6000
7000
8000
2
10
20
30
40
50
60
2-Theta - Scale
108002 - File: 108002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.067 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.86 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

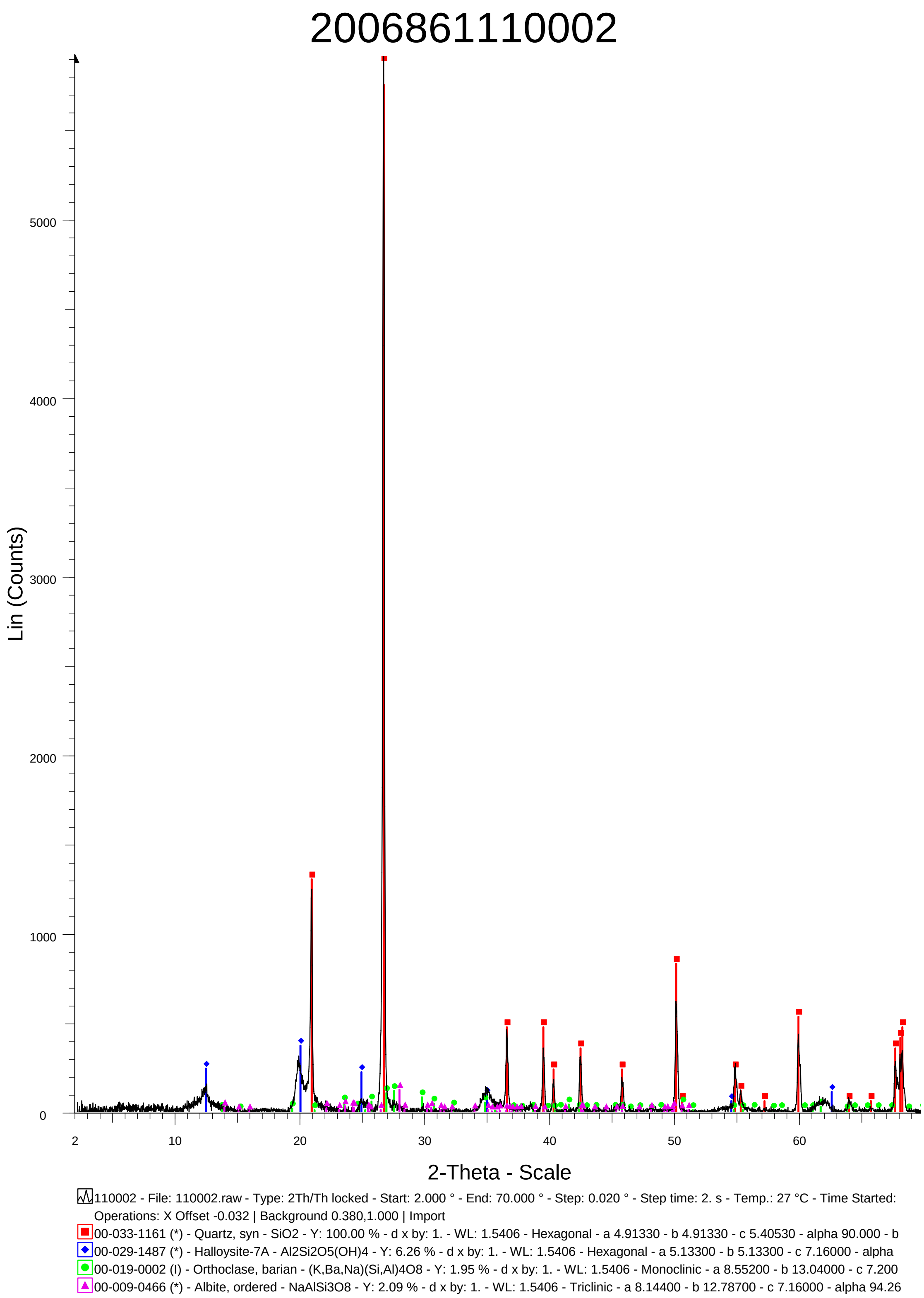

2006861109001
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
3
10
20
30
40
50
60
7
2-Theta - Scale
109001 - File: 109001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset 0.058 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 129.17 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.05 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

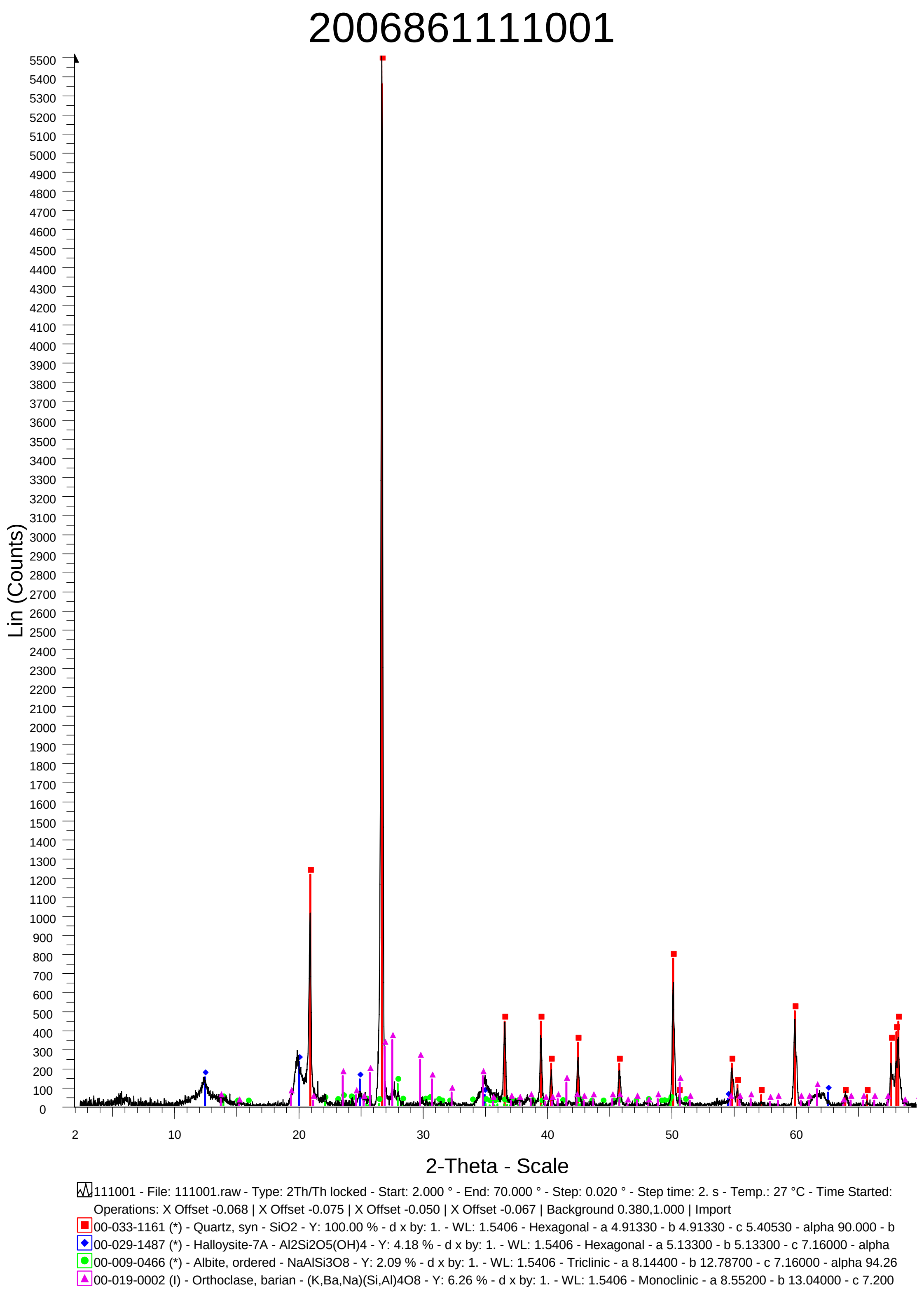

2006861109002
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
109002 - File: 109002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.167 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.77 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.00 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861110001



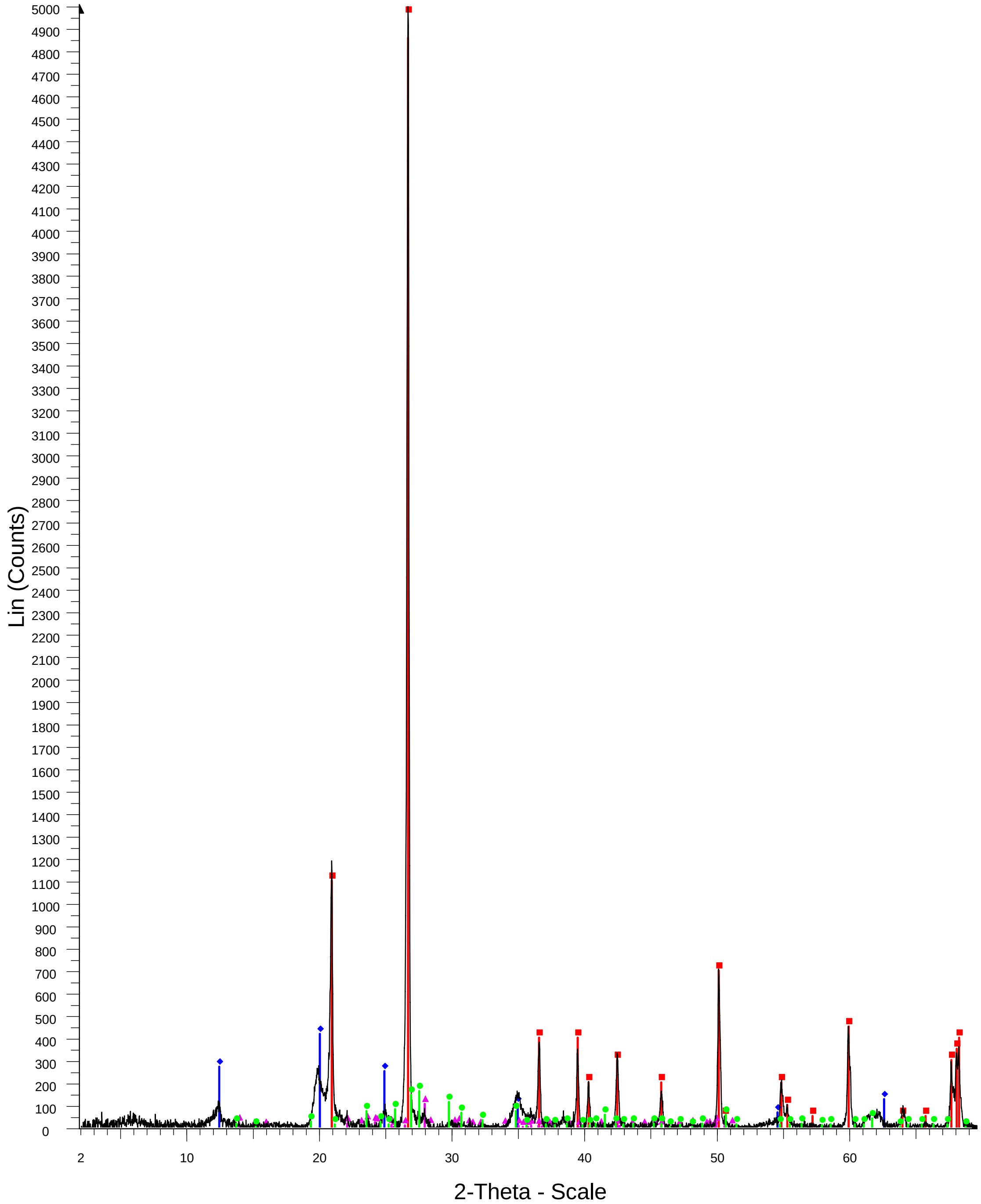
110001 - File: 110001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.045 | X Offset -0.050 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.20 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


2006861110002
Lin (Counts)
0
1000
2000
3000
4000
5000
2
10
20
30
40
50
60
2-Theta - Scale
110002 - File: 110002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.032 | Background 0.380,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.95 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

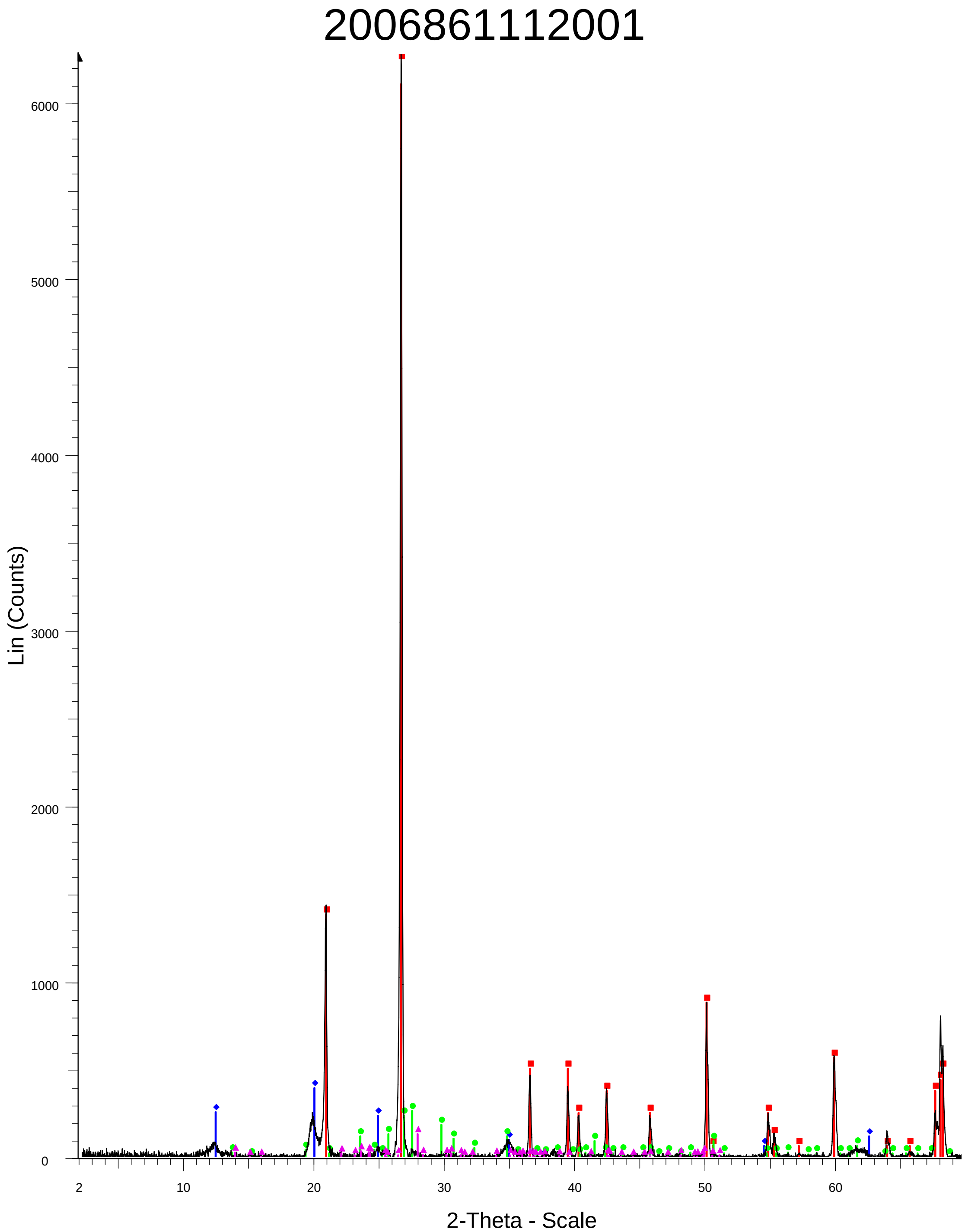


2006861111001
Lin (Counts)
2-Theta - Scale
111001 - File: 111001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.068 | X Offset -0.075 | X Offset -0.050 | X Offset -0.067 | Background 0.380,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861111002



111002 - File: 111002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.117 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 3.22 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26



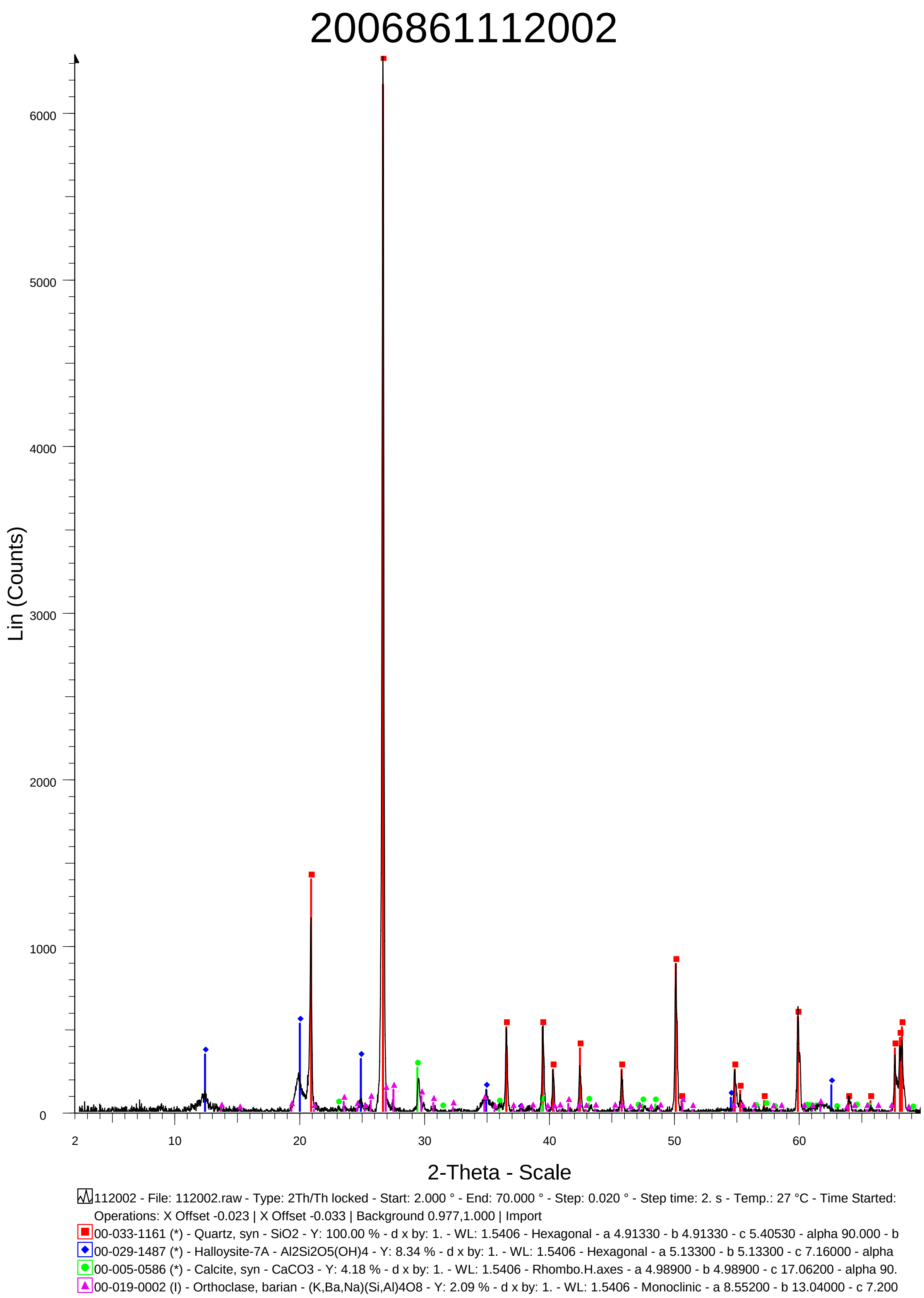
112001 - File: 112001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started: Operations: X Offset -0.083 | Background 1.445,1.000 | Import

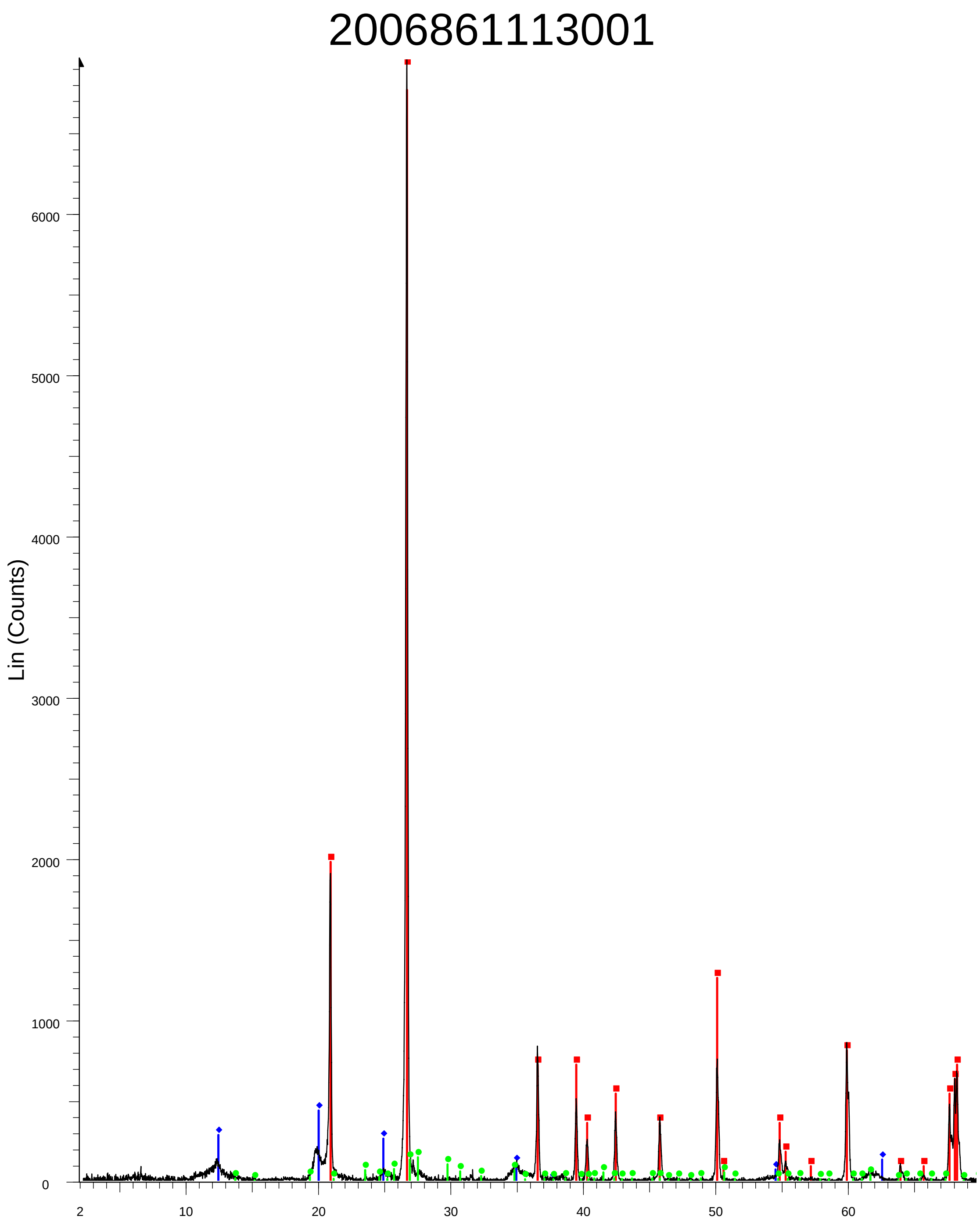
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b

00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

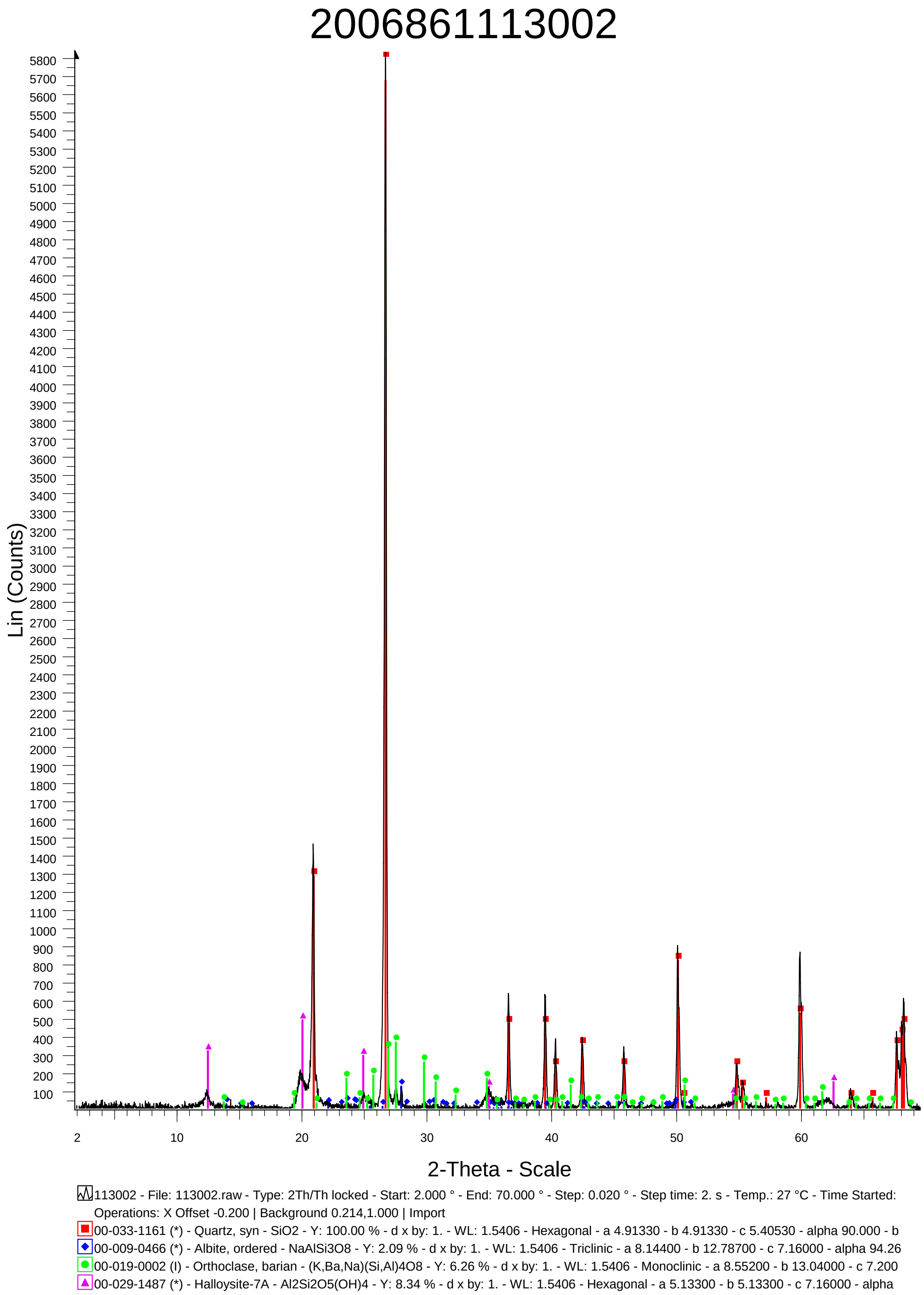
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26


2006861112002
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
112002 - File: 112002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.023 | X Offset -0.033 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

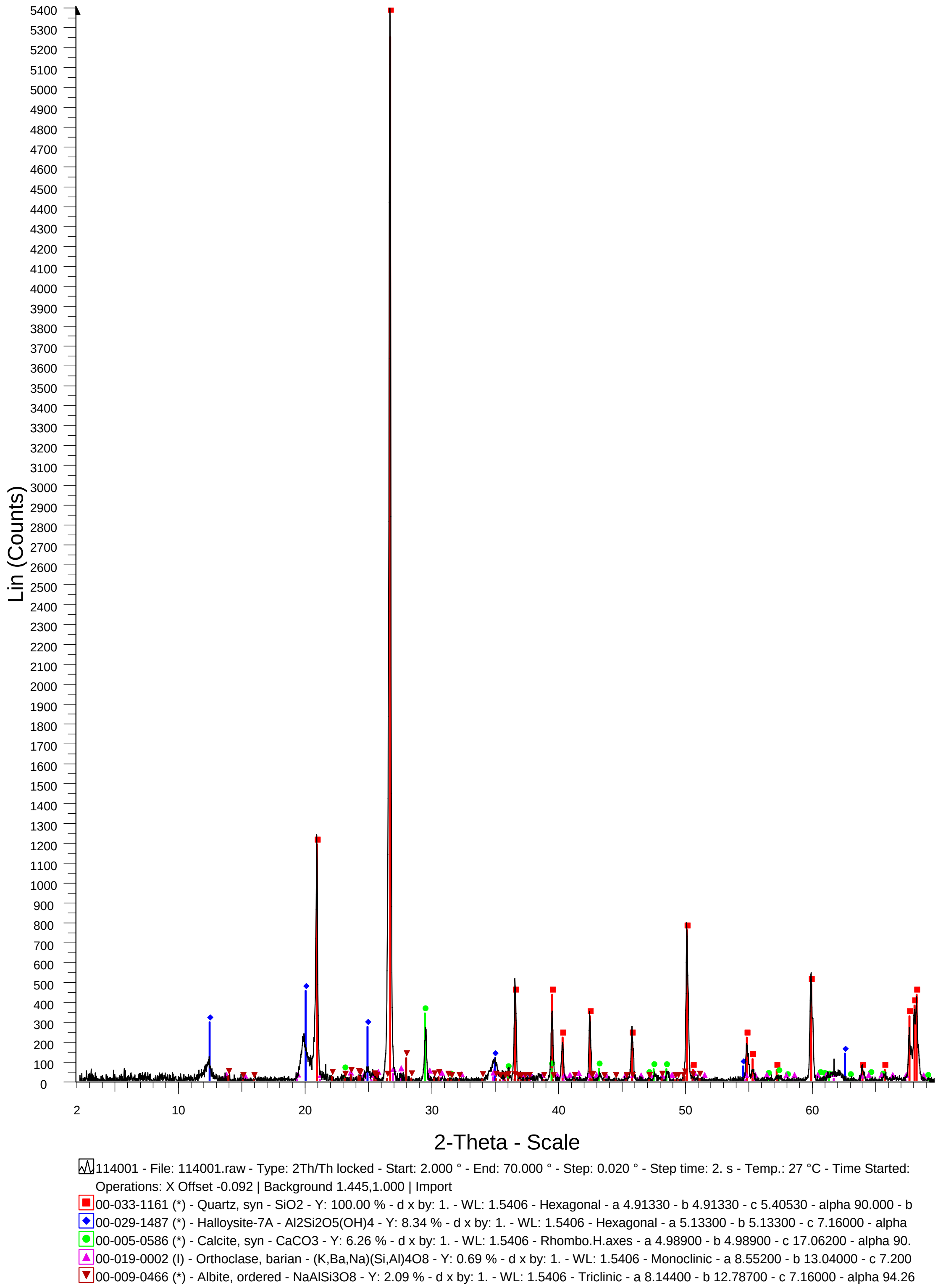


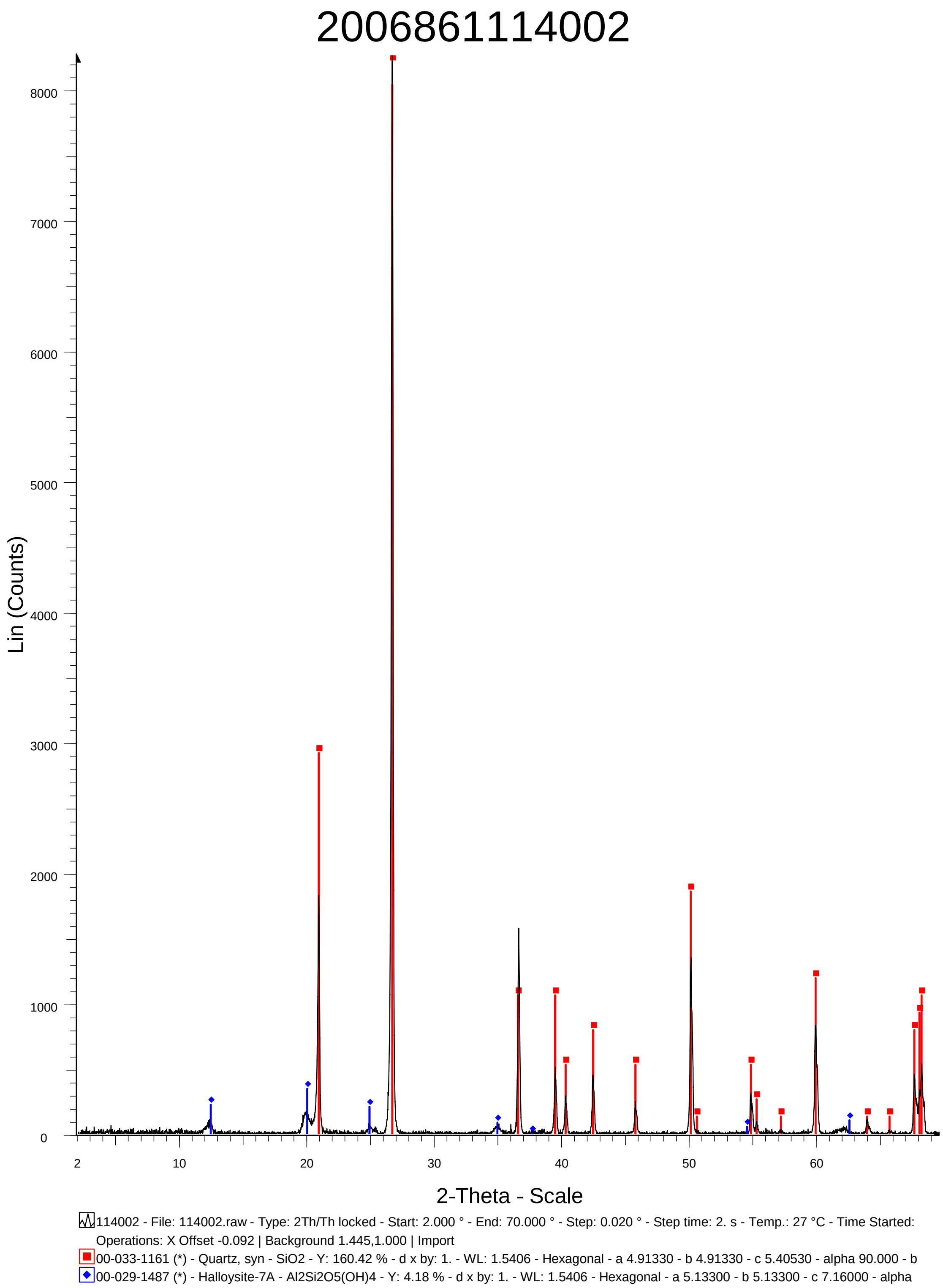
113001 - File: 113001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.067 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 129.17 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

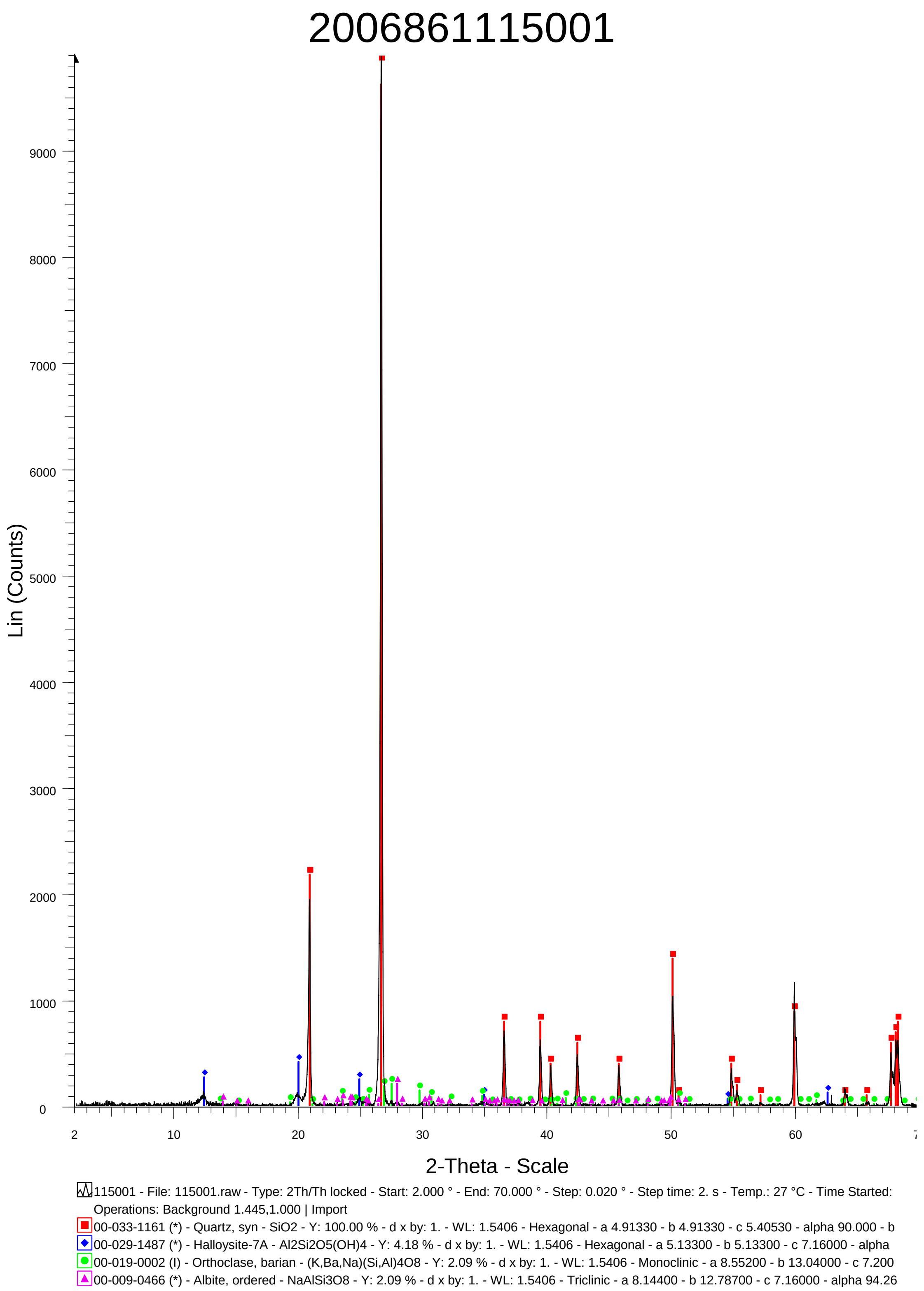


2006861113002
Lin (Counts)
2-Theta - Scale
113002 - File: 113002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.200 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

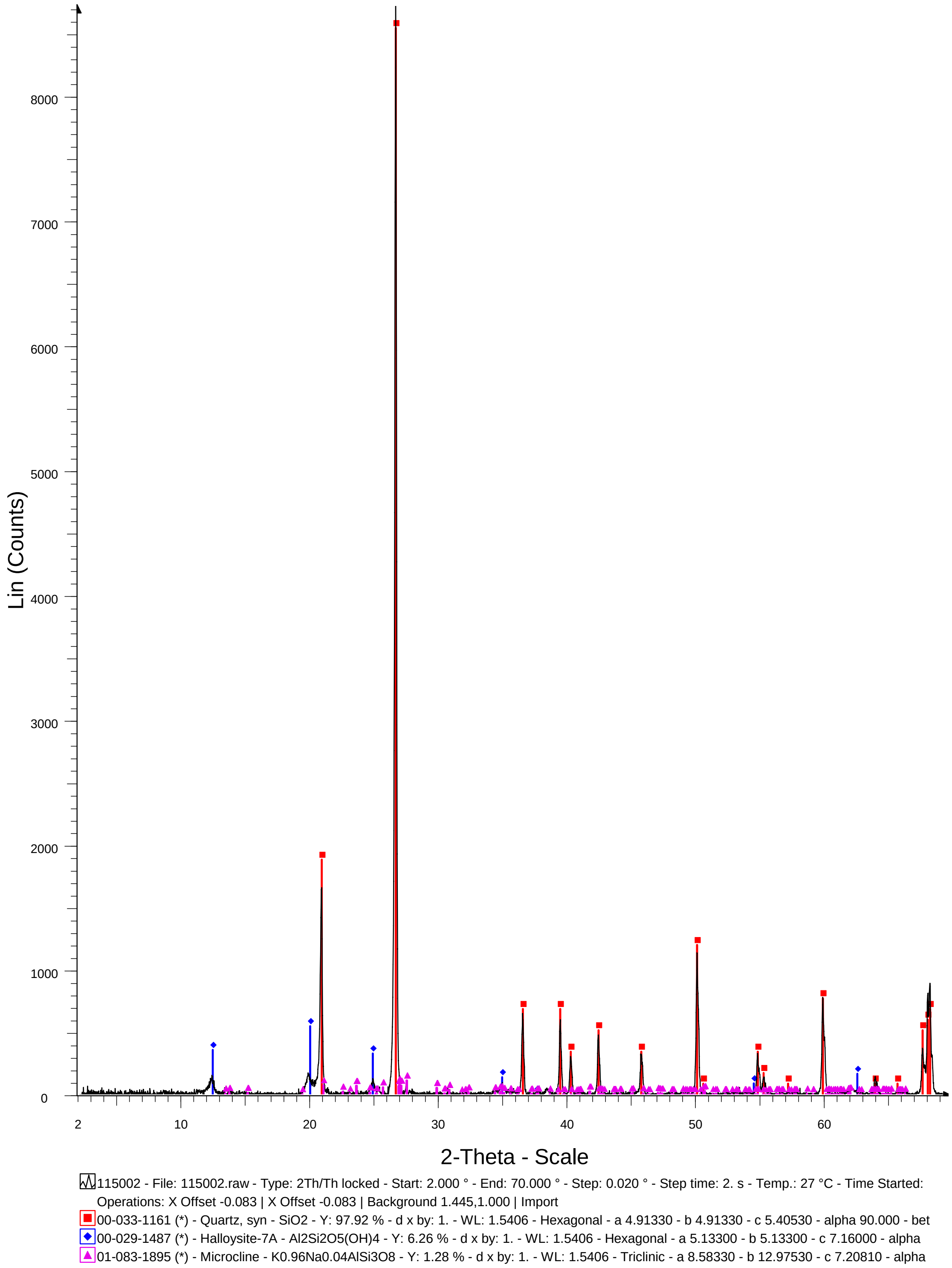
2006861114001



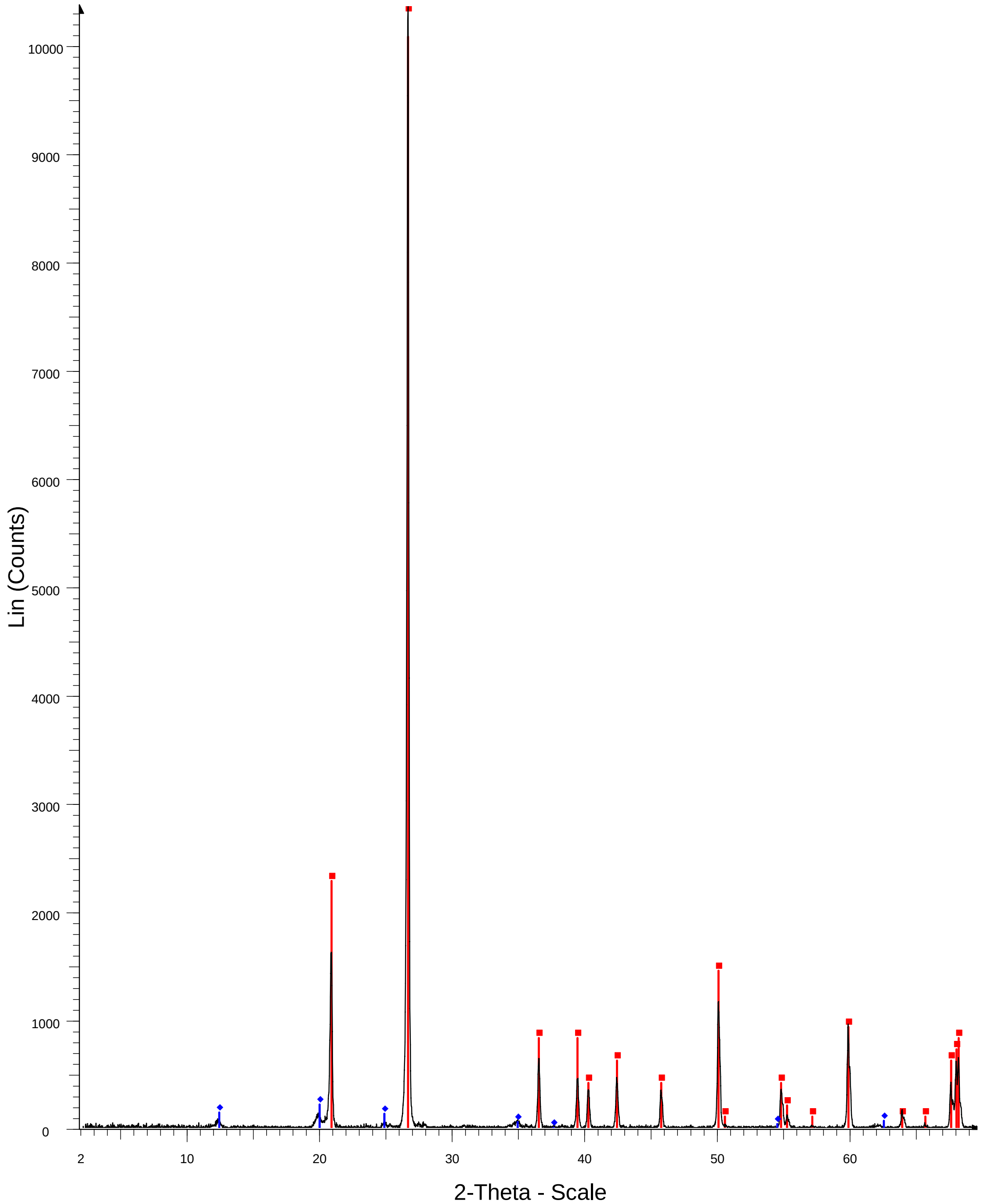

2006861114002
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
114002 - File: 114002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 160.42 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861115001
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
115001 - File: 115001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

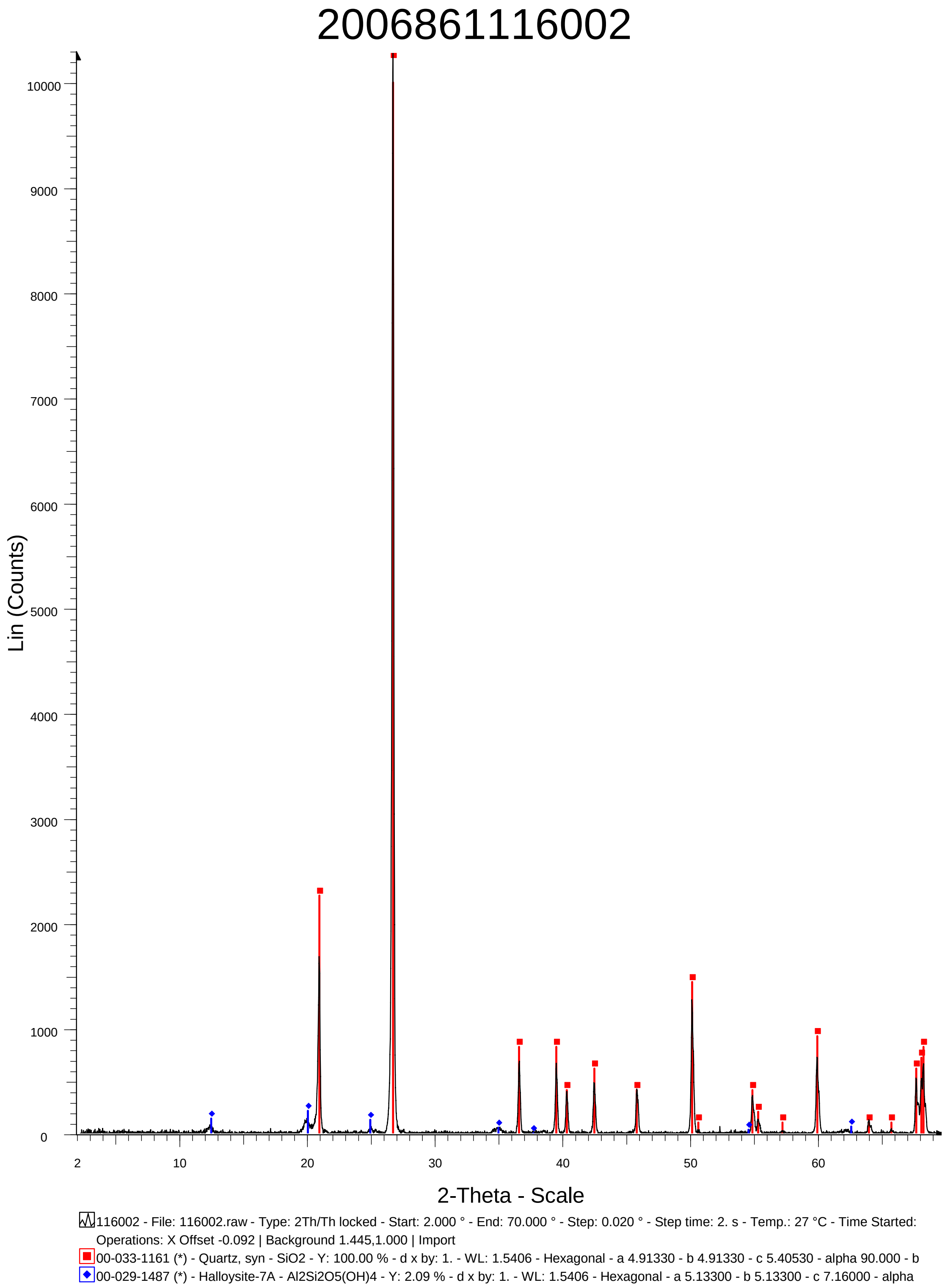
2006861115002



2006861116001



116001 - File: 116001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.125 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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9000
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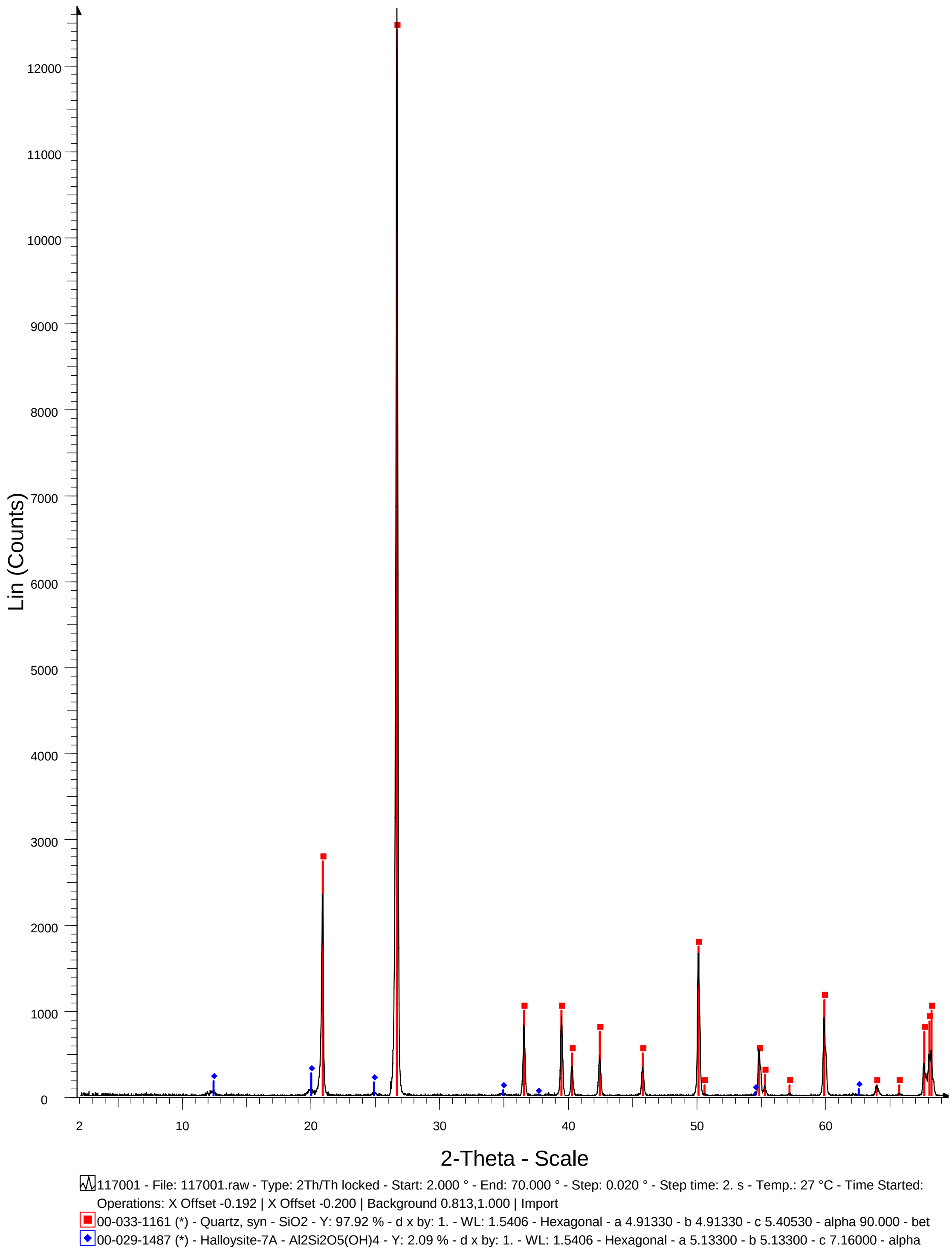
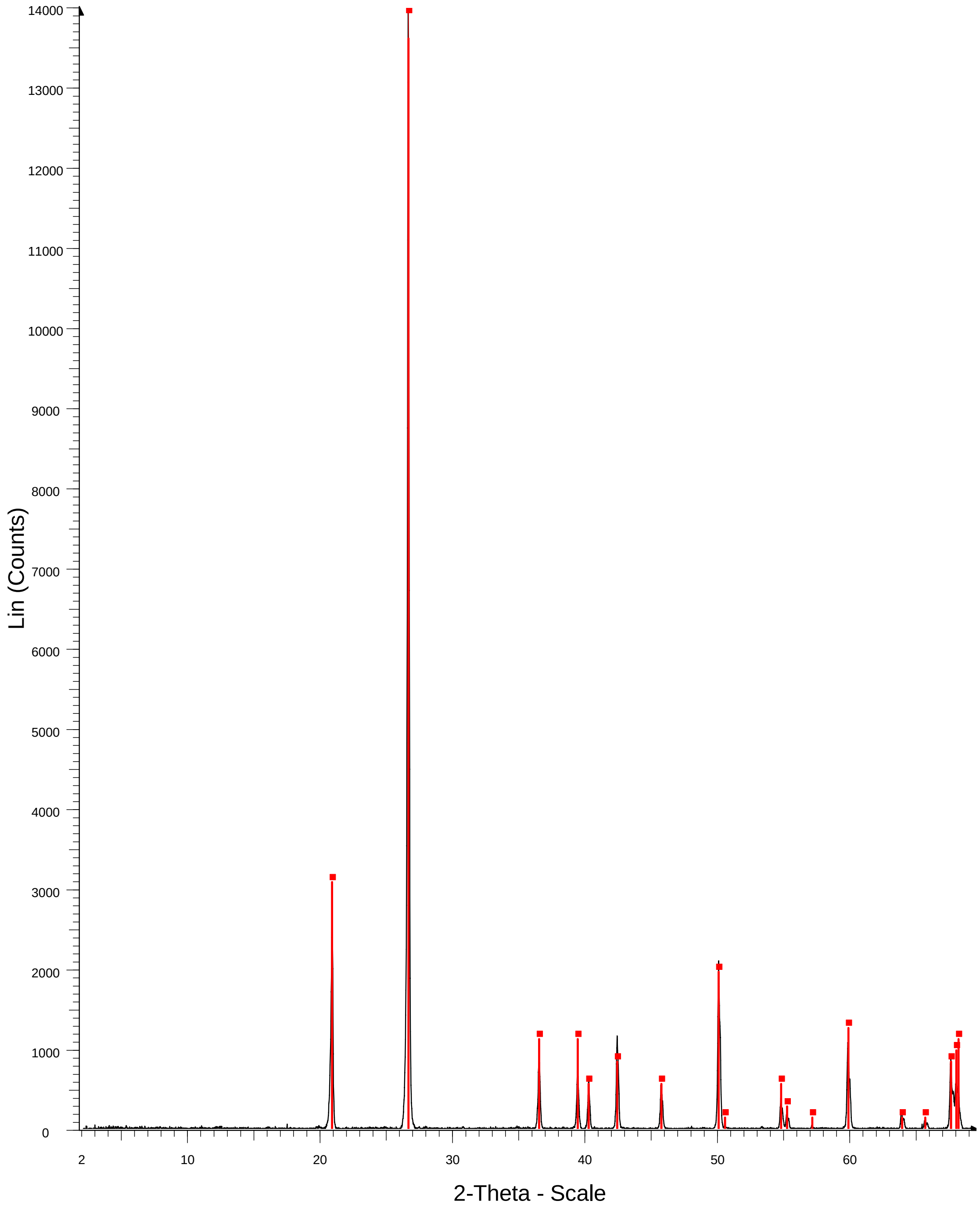
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
116002 - File: 116002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | Background 1.445,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

2006861117001

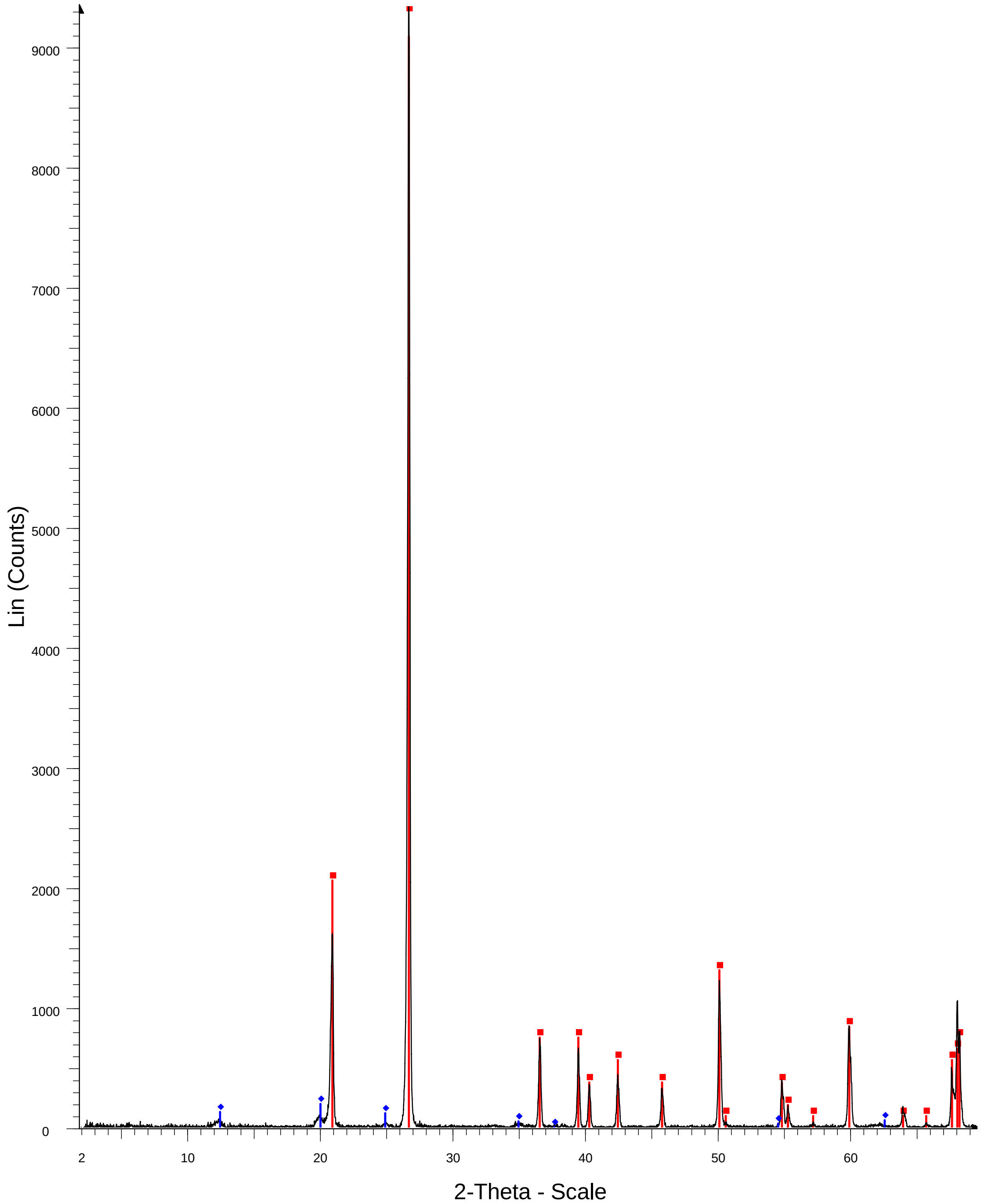


200686117002



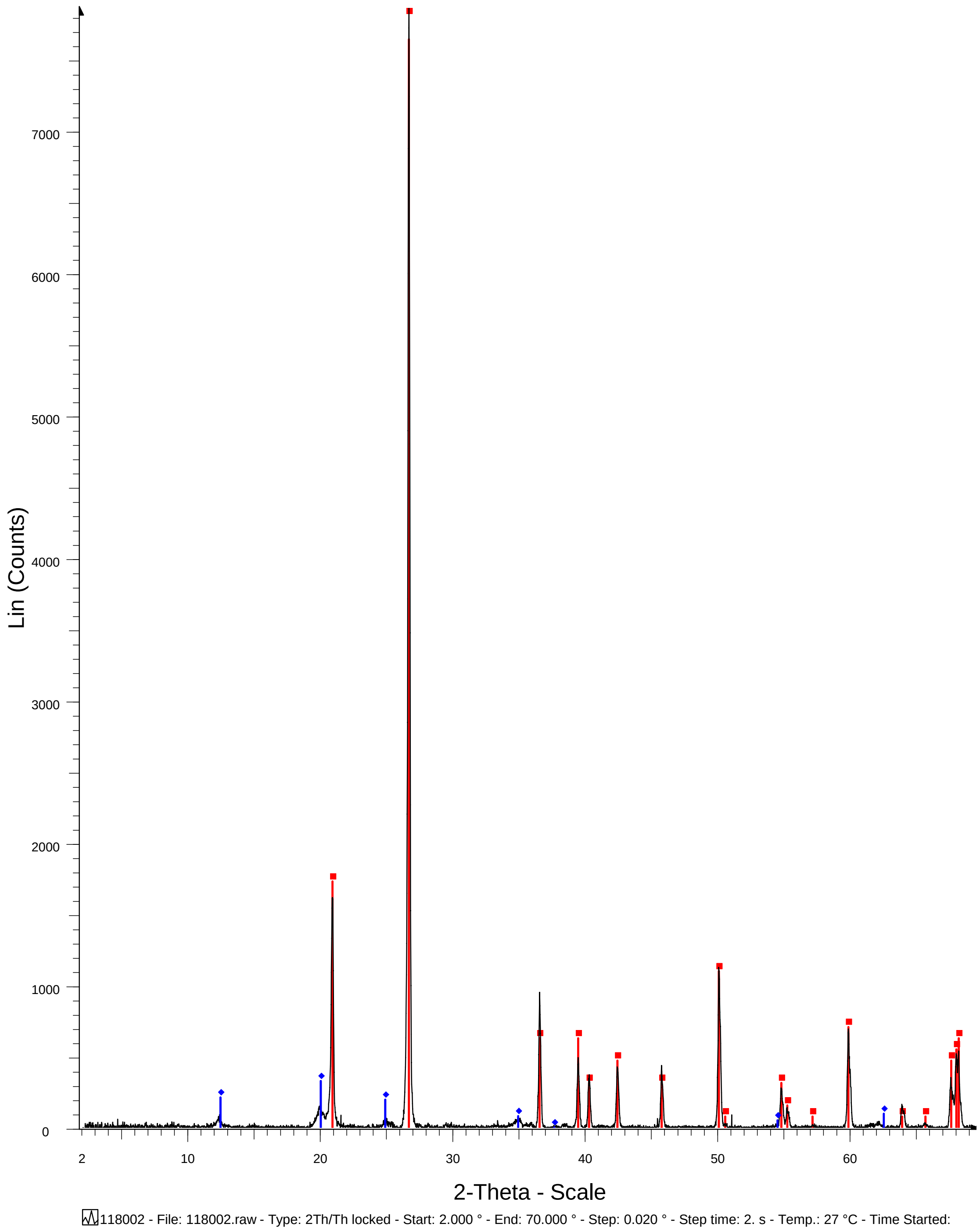
117002 - File: 117002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.183 | Background 3.162,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b

2006861118001

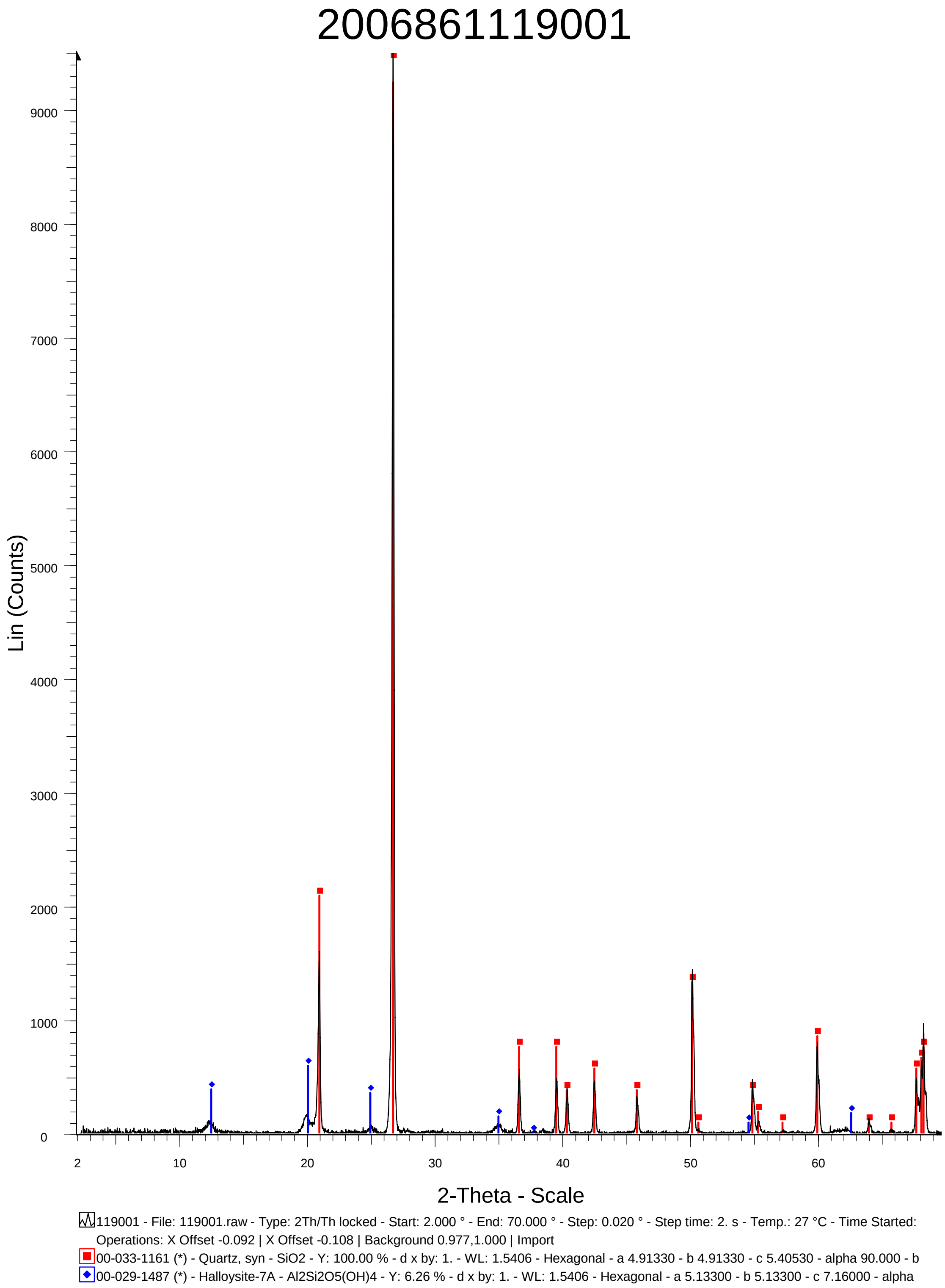


118001 - File: 118001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.183 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

2006861118002



118002 - File: 118002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.200 | Background 0.813,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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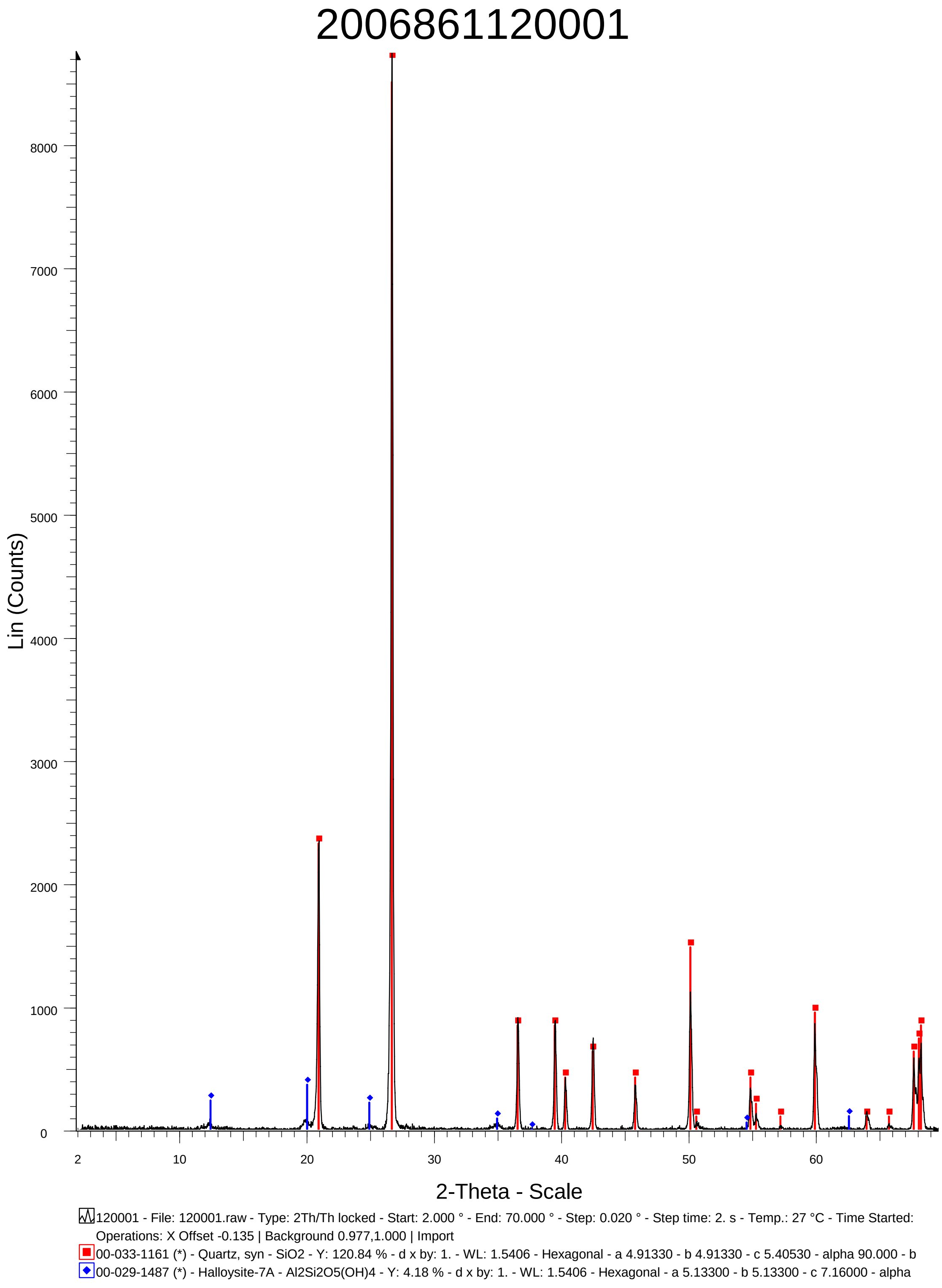
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
119001 - File: 119001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | X Offset -0.108 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861120001
Lin (Counts)
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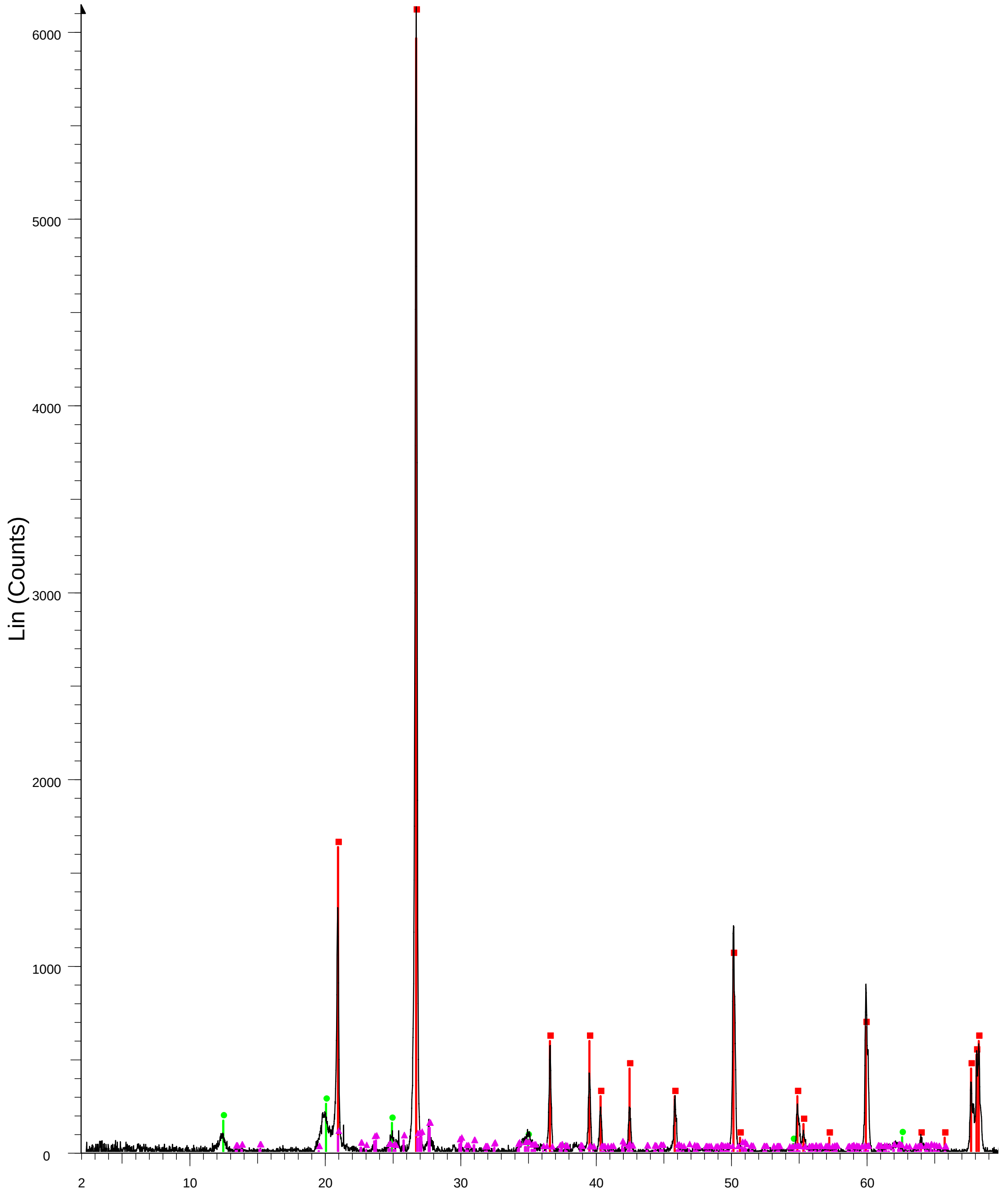
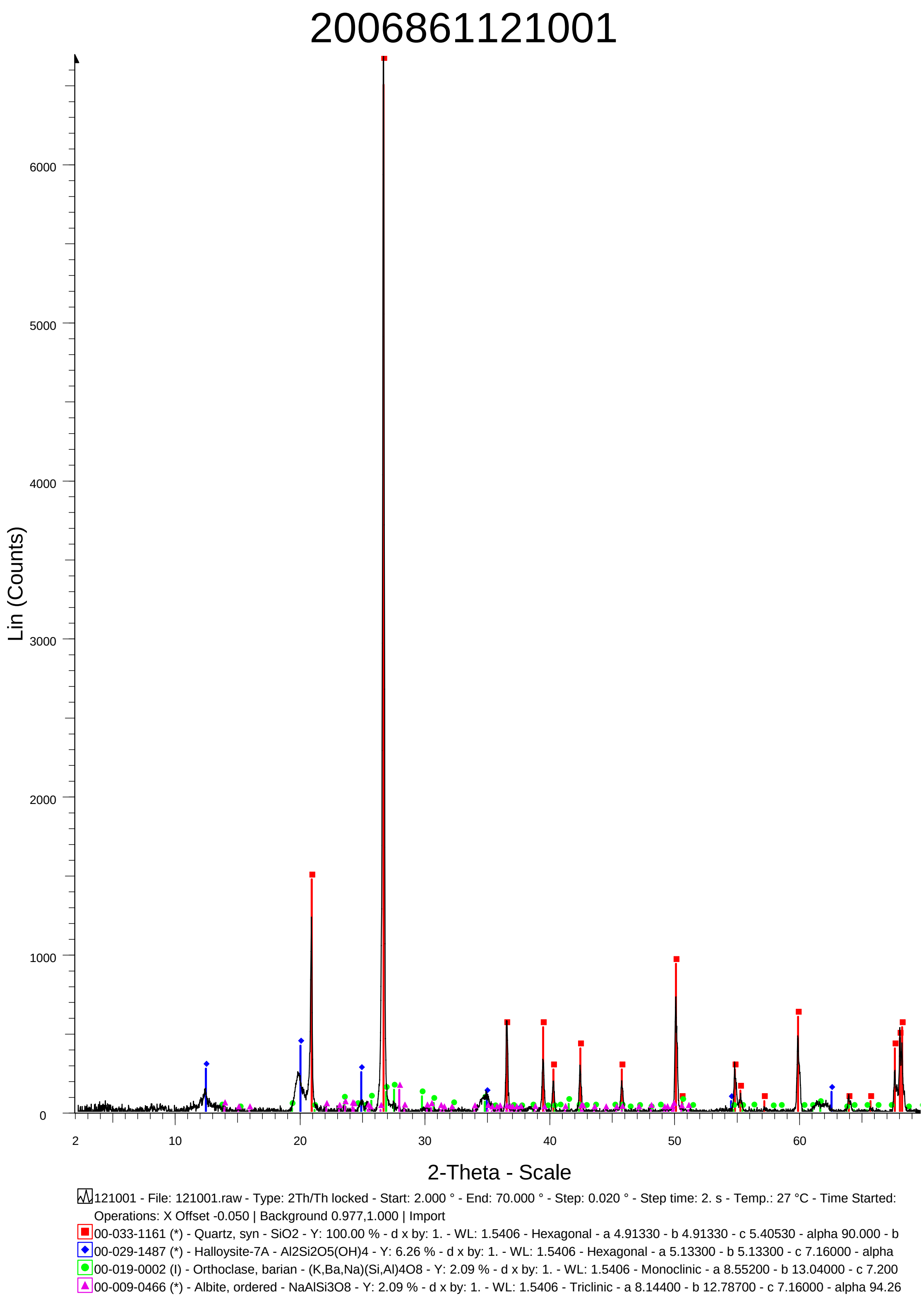
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
120001 - File: 120001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.135 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 120.84 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

2006861120002



120002 - File: 120002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.045 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 120.84 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-083-1604 (*) - Microcline - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.64300 - b 12.92900 - c 7.19000 - alpha 90.130 - be


2006861121001
Lin (Counts)
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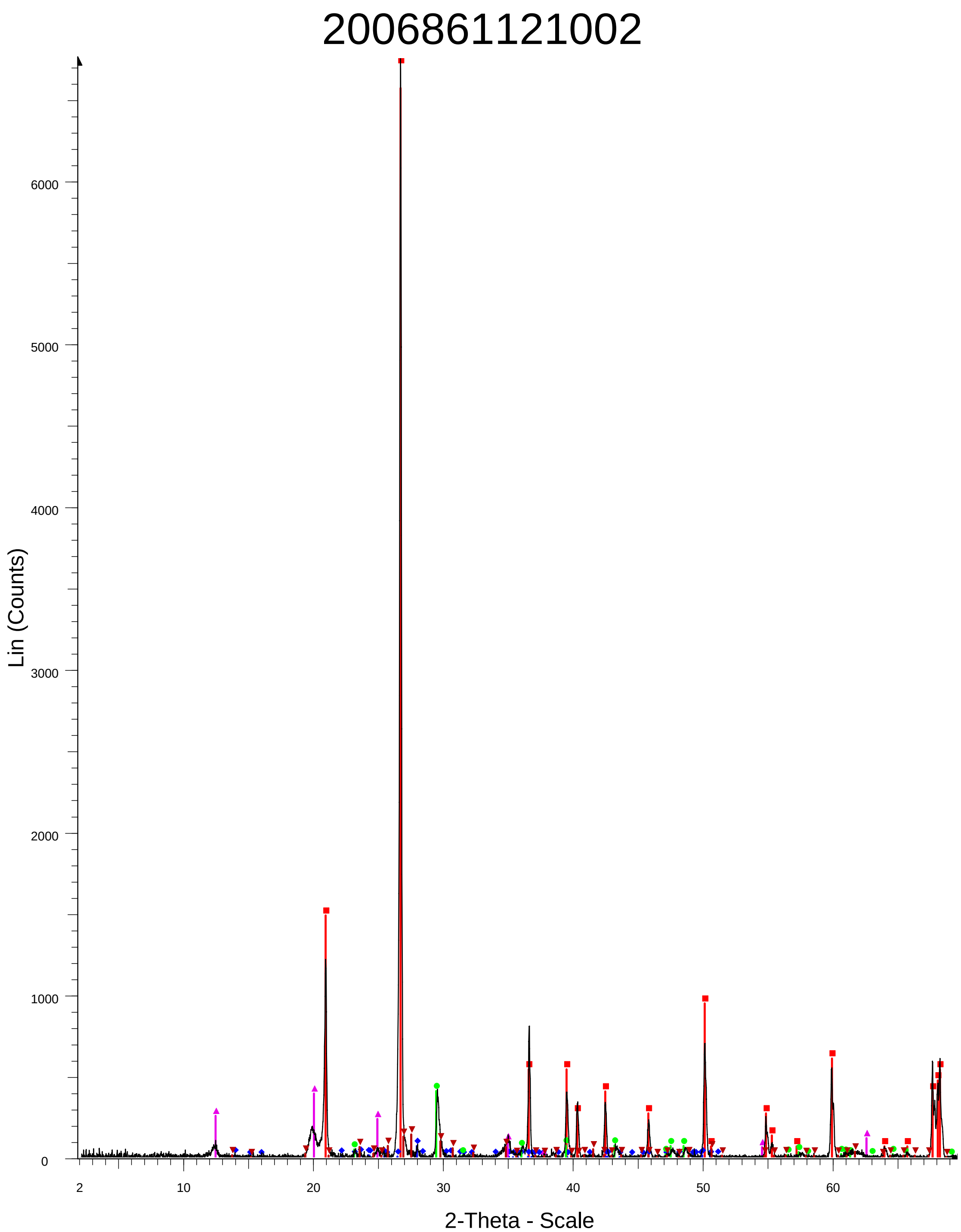
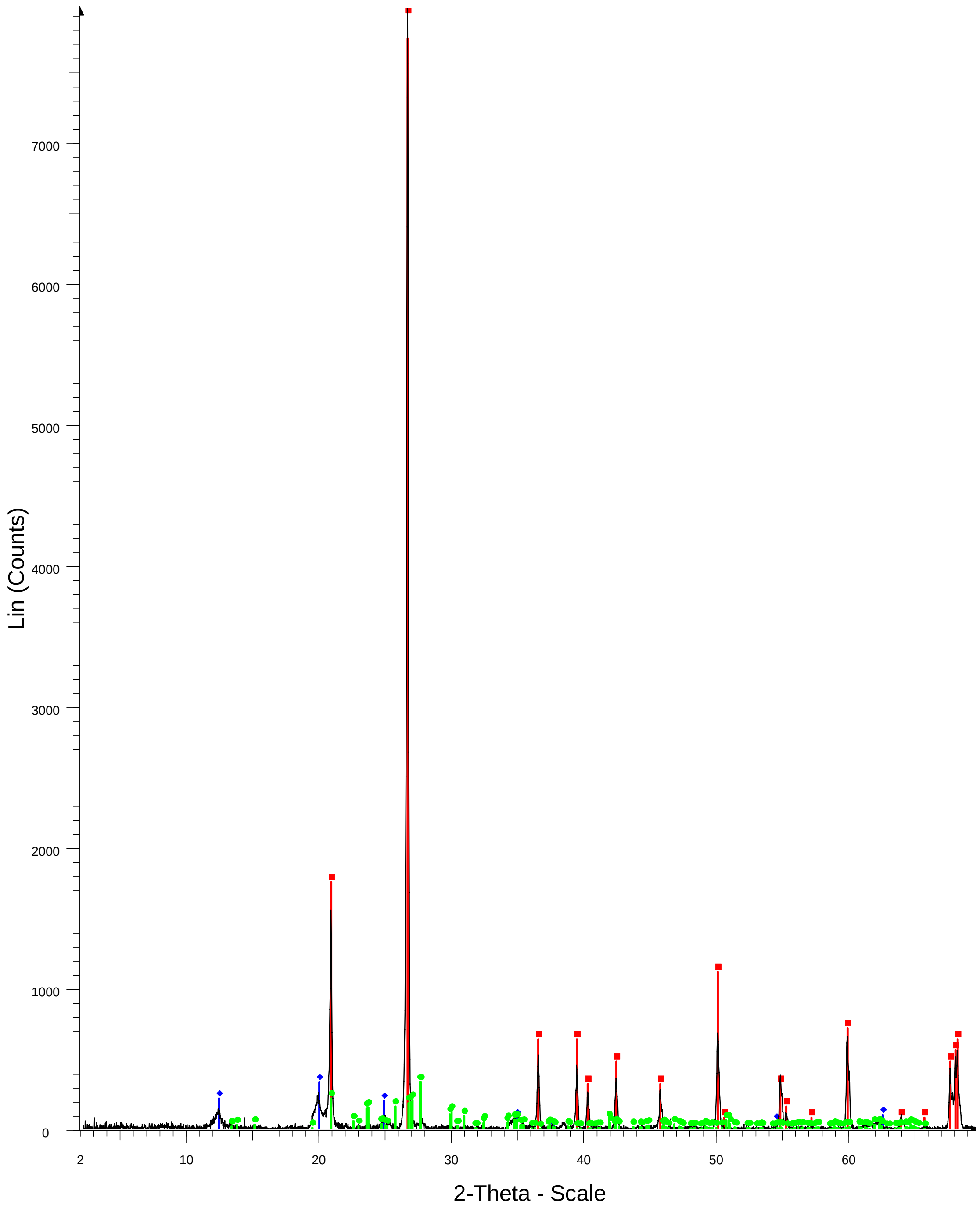
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
121001 - File: 121001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.050 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26



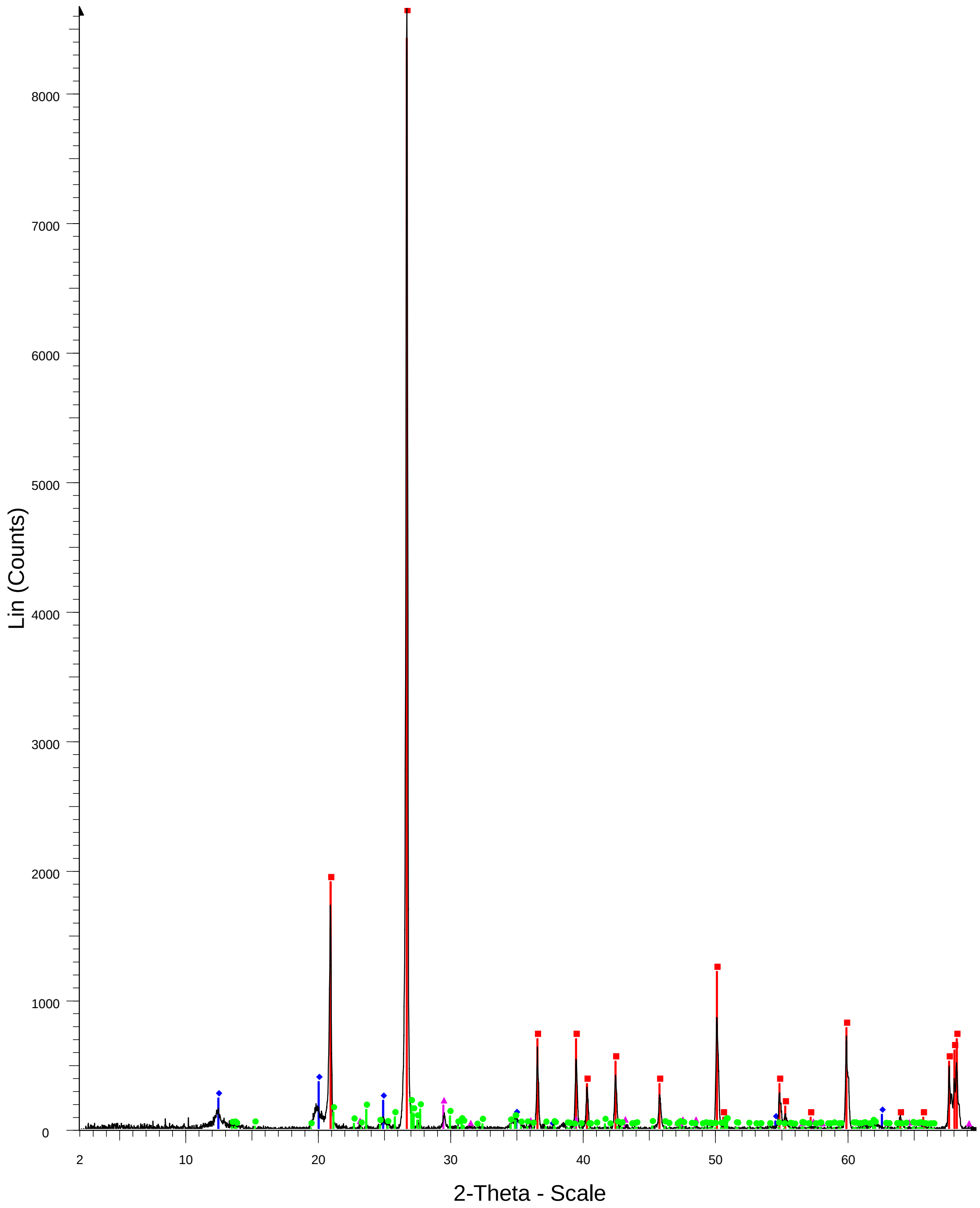
121002 - File: 121002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.156 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.05 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 5.81 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 6.03 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861122001



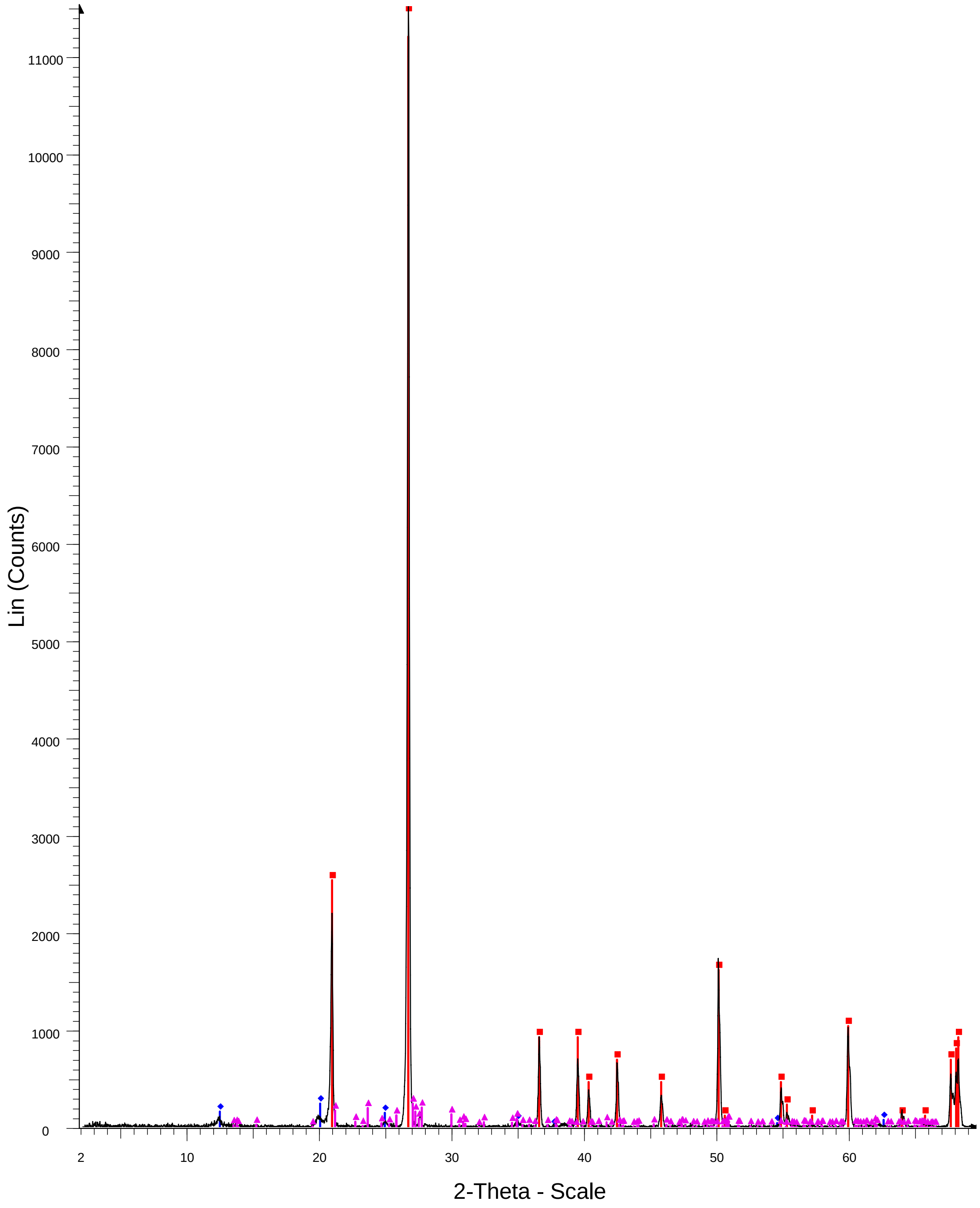
2006861122001 - File: 122001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.092 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-083-1604 (*) - Microcline - KAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.64300 - b 12.92900 - c 7.19000 - alpha 90.130 - be

2006861122002



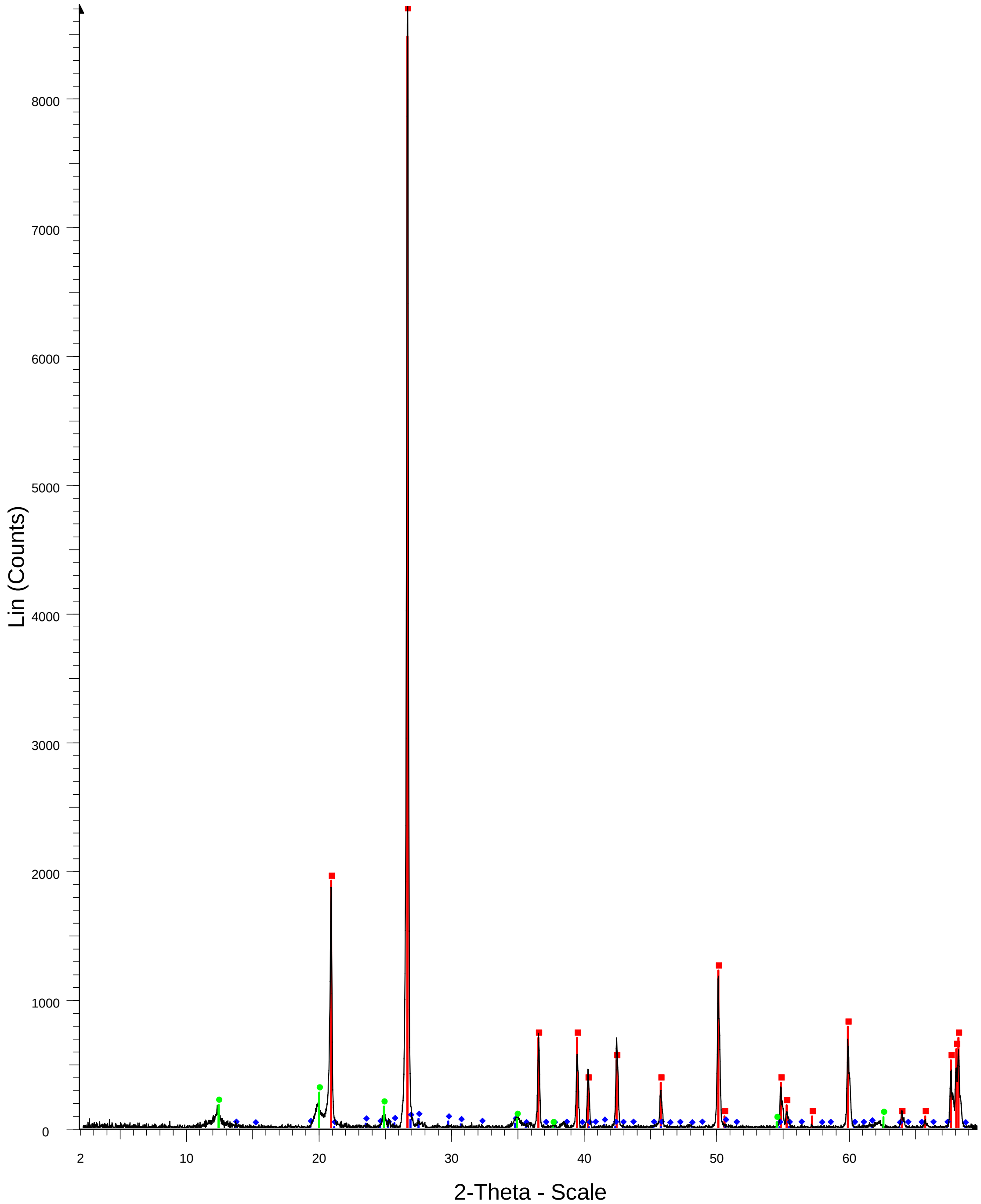
2006861122002 - File: 122002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.048 | X Offset -0.052 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
01-089-8573 (N) - Microcline - K(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.54400 - b 12.99800 - c 7.18100 - alpha 90.000 -

2006861123001



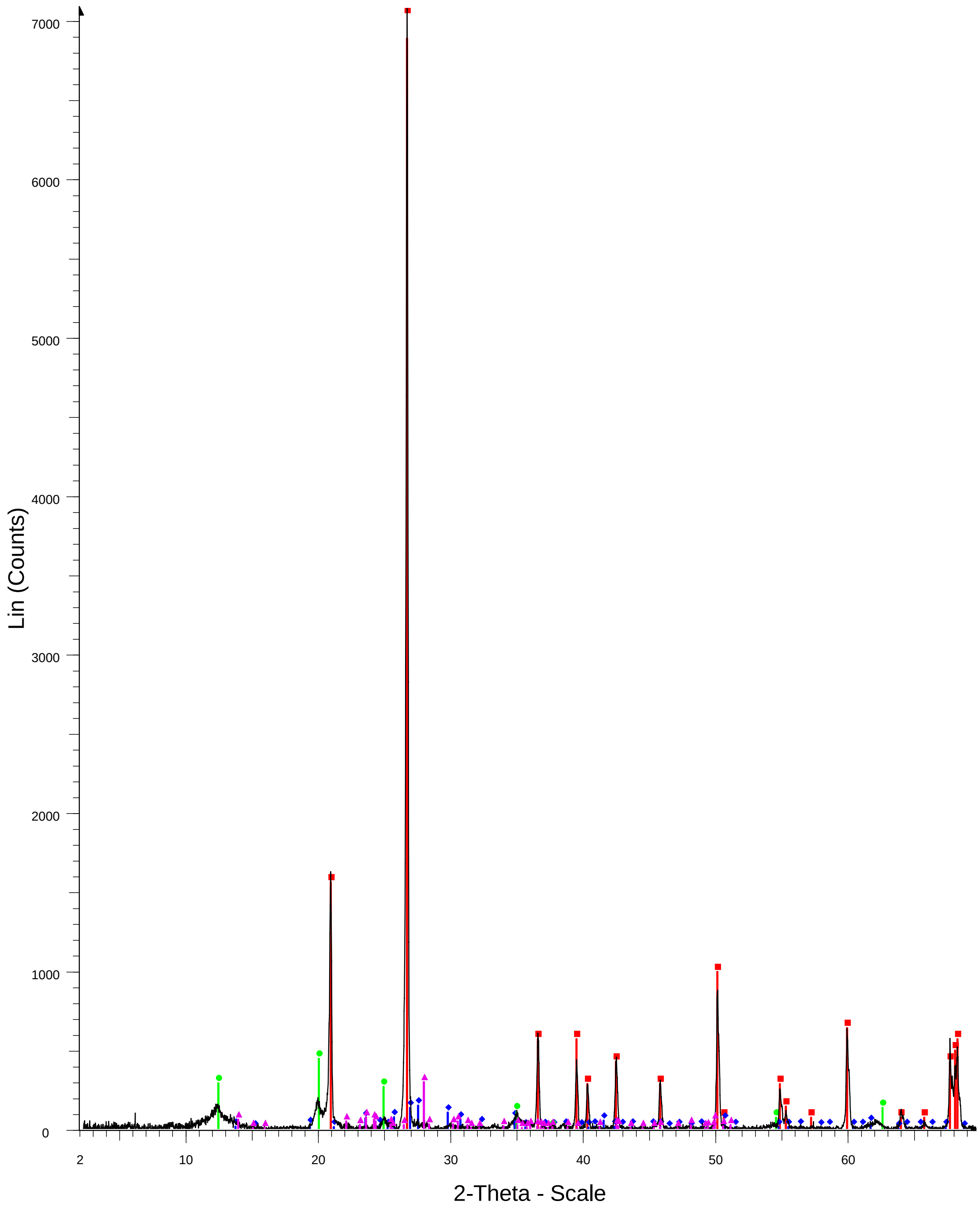
2006861123001 - File: 123001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.142 | X Offset -0.125 | X Offset -0.150 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
01-089-8573 (N) - Microcline - K(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.54400 - b 12.99800 - c 7.18100 - alpha 90.000 -

2006861123002

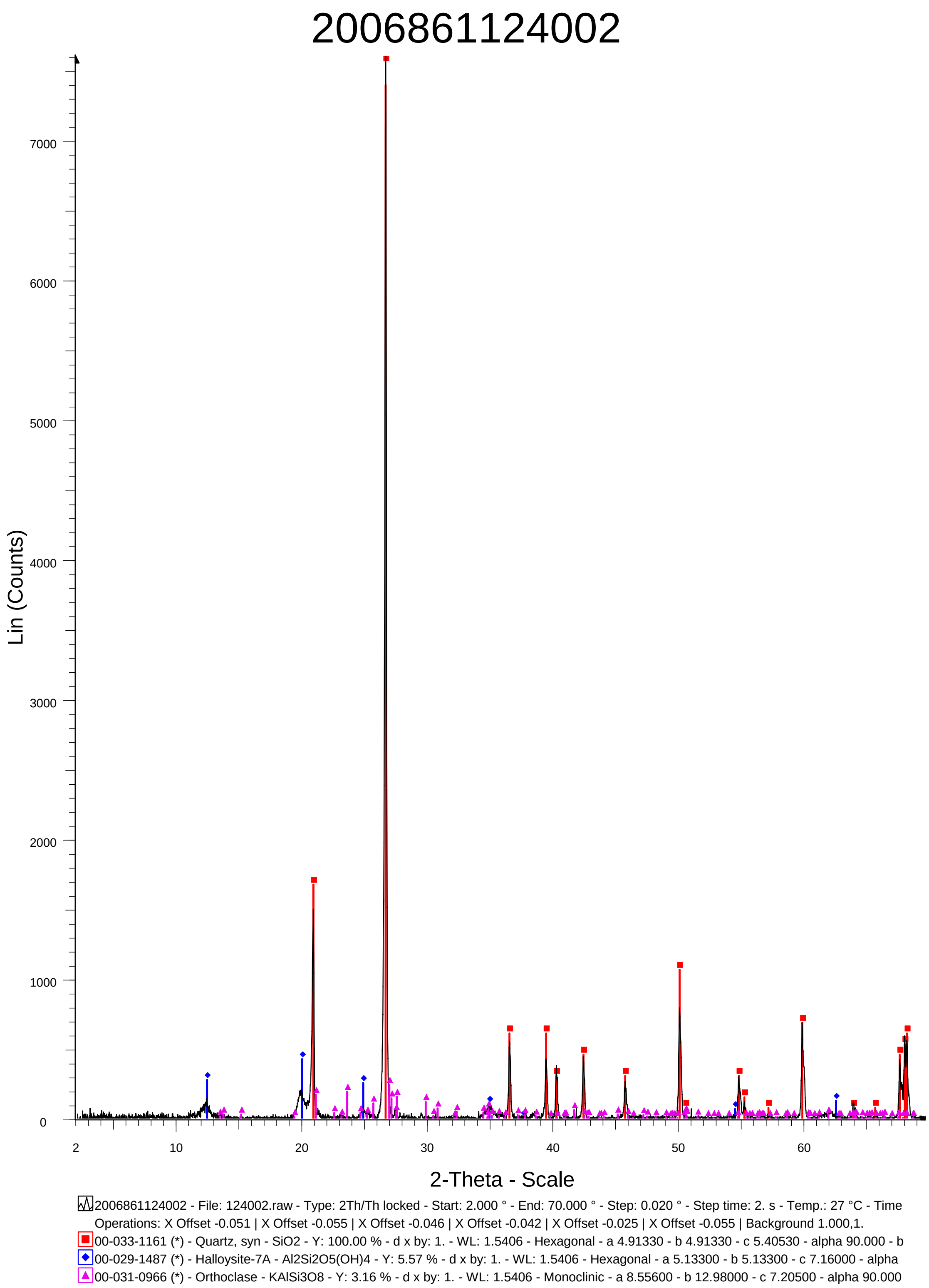


2006861123002 - File: 123002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.082 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 0.78 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

2006861124001



2006861124001 - File: 124001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.057 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26


2006861124002
Lin (Counts)
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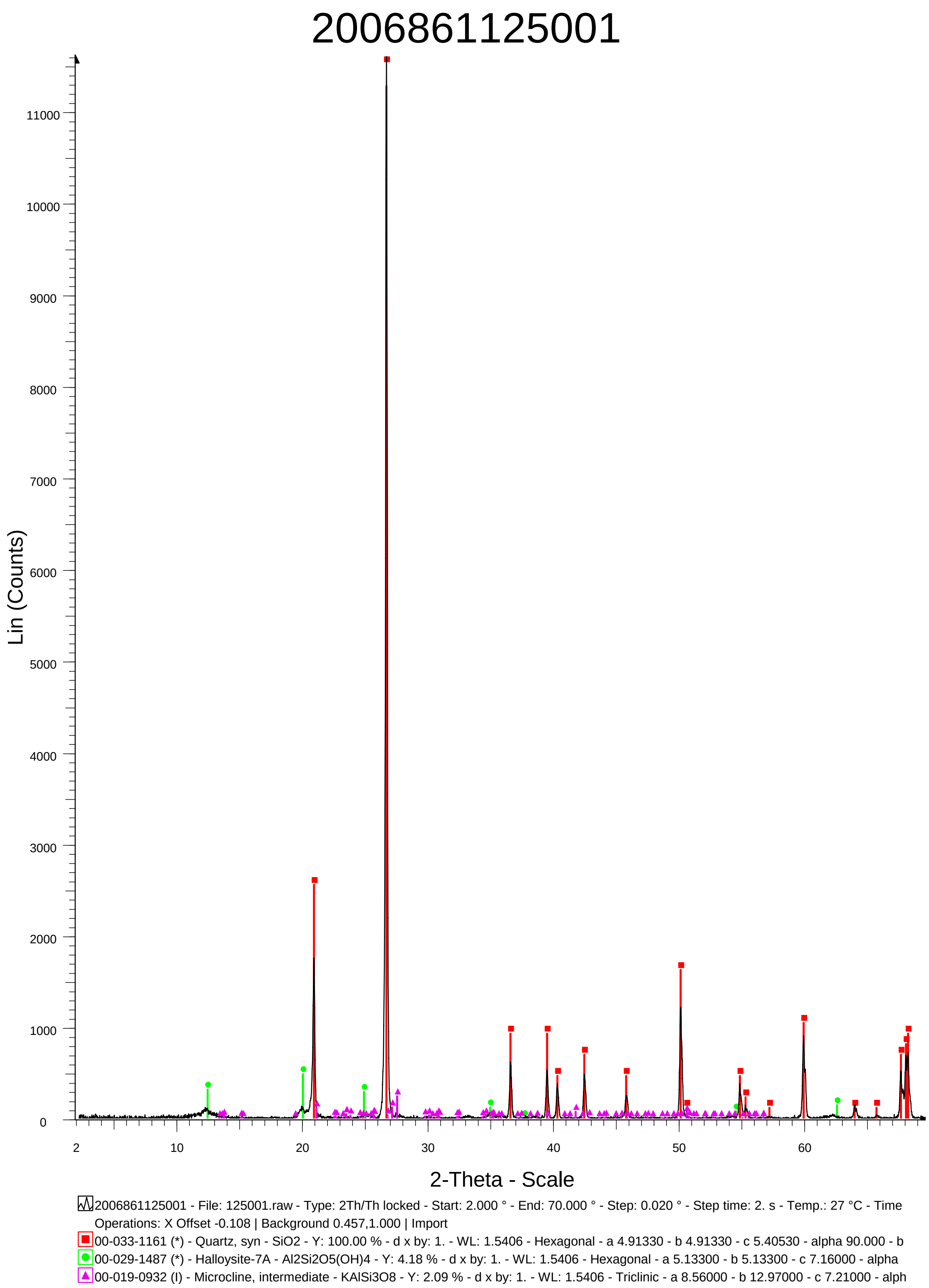
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
2006861124002 - File: 124002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.051 | X Offset -0.055 | X Offset -0.046 | X Offset -0.042 | X Offset -0.025 | X Offset -0.055 | Background 1.000,1.
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 5.57 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-031-0966 (*) - Orthoclase - KAlSi3O8 - Y: 3.16 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55600 - b 12.98000 - c 7.20500 - alpha 90.000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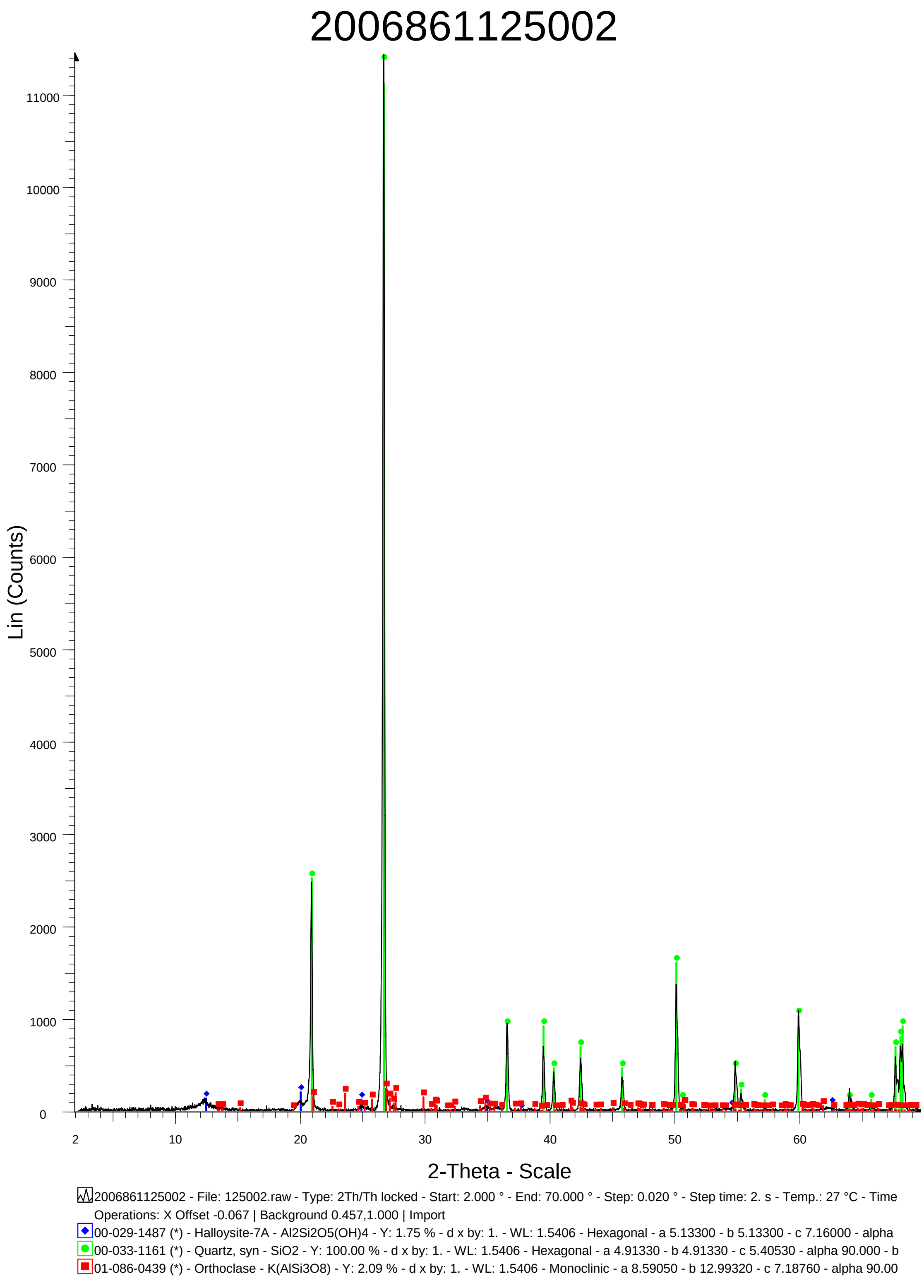
10
20
30
40
50
60
2-Theta - Scale
2006861125001 - File: 125001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.108 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0932 (I) - Microcline, intermediate - KAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.56000 - b 12.97000 - c 7.21000 - alph


2006861125002
Lin (Counts)
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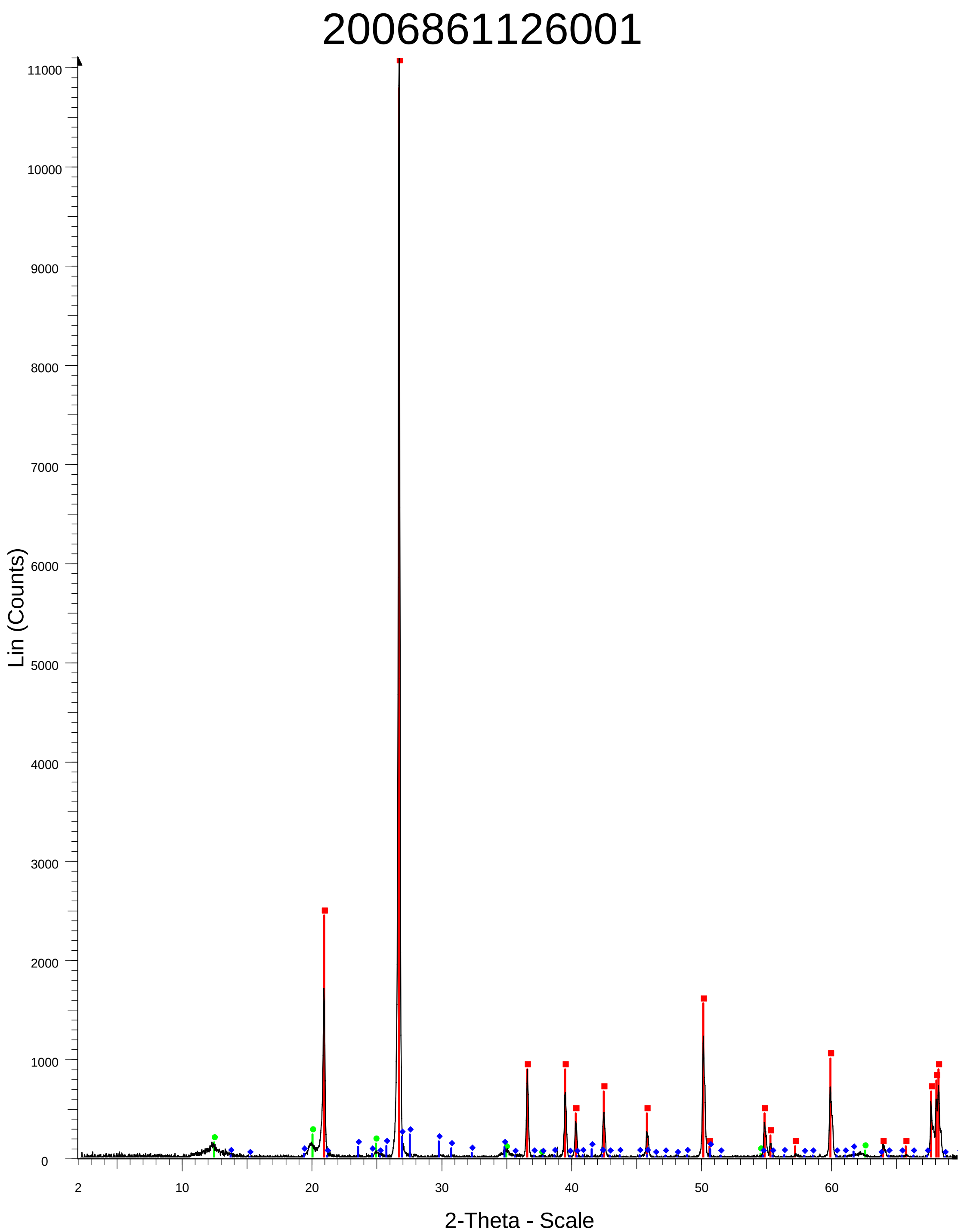
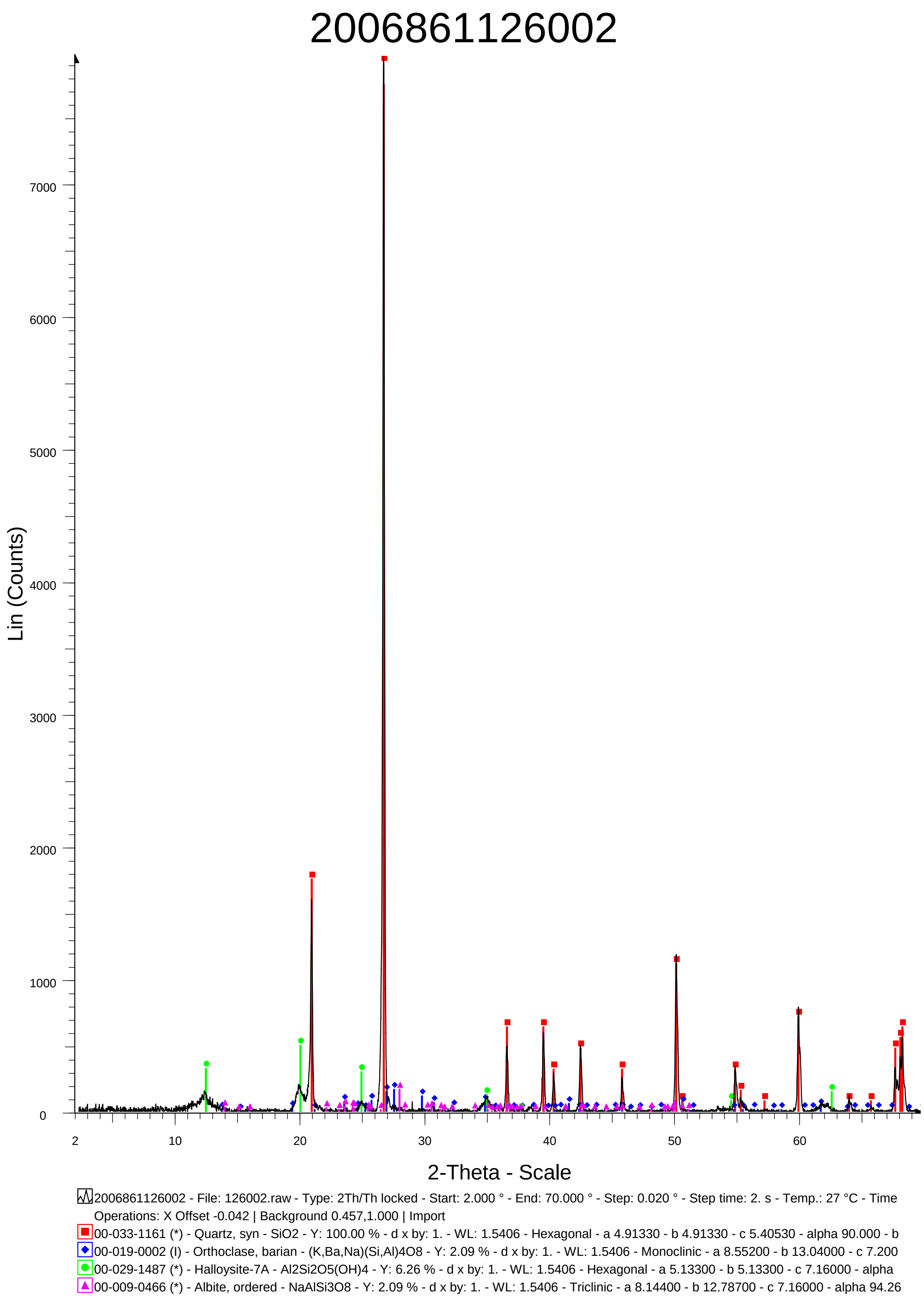
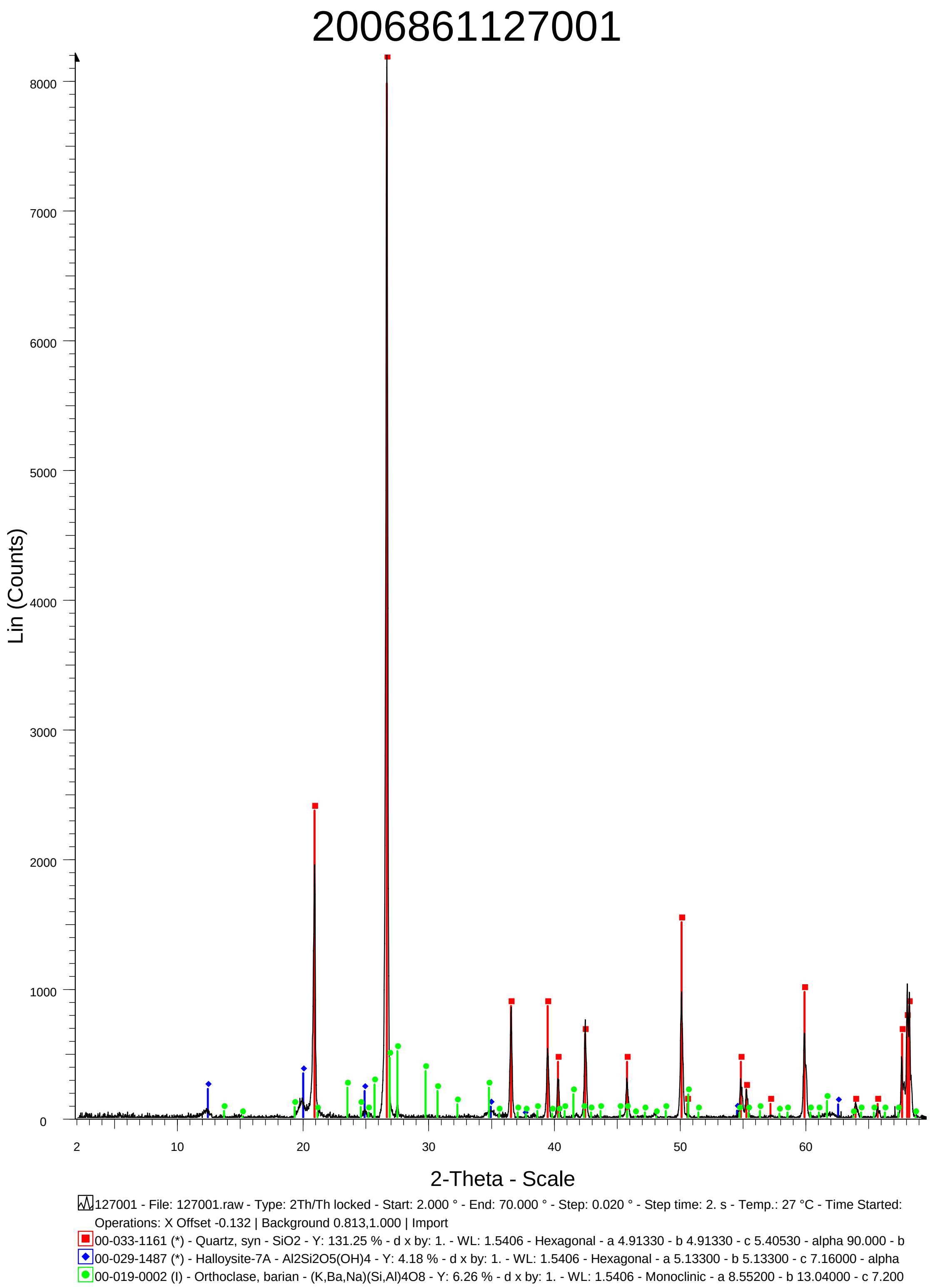
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
2006861125002 - File: 125002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.067 | Background 0.457,1.000 | Import
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 1.75 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
01-086-0439 (*) - Orthoclase - K(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.59050 - b 12.99320 - c 7.18760 - alpha 90.00

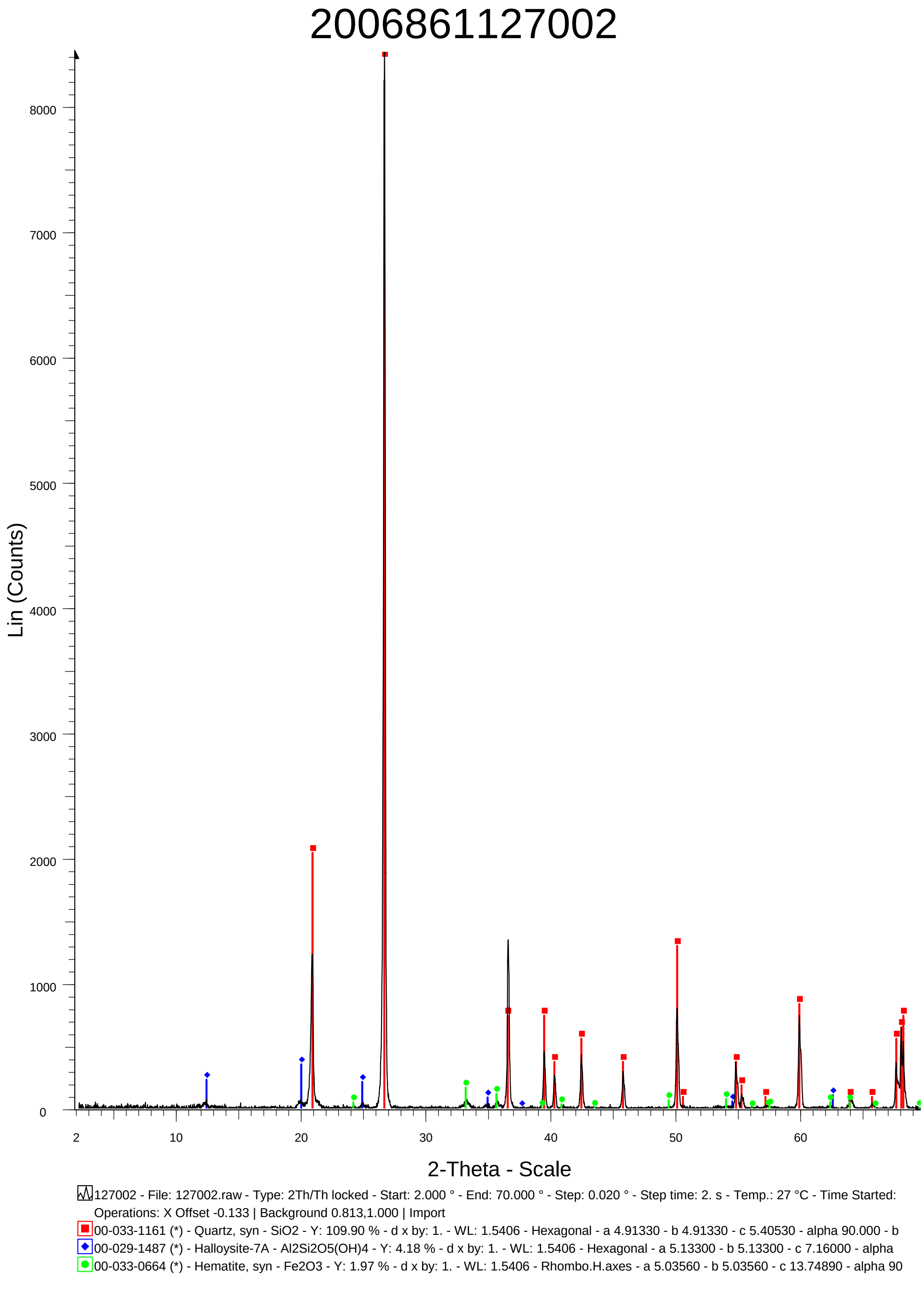


2006861126001 - File: 126001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.042 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

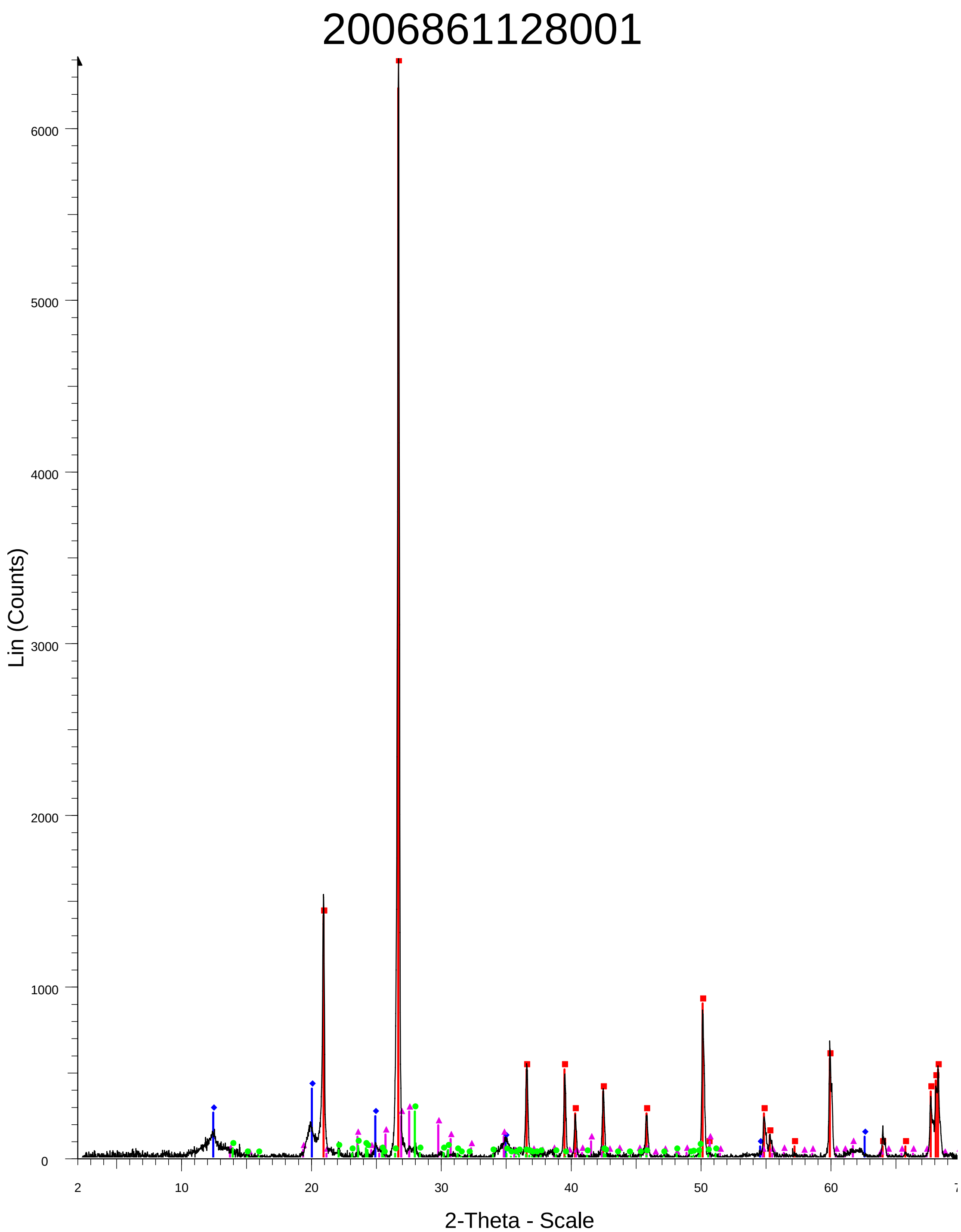

2006861126002
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
2006861126002 - File: 126002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.042 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26



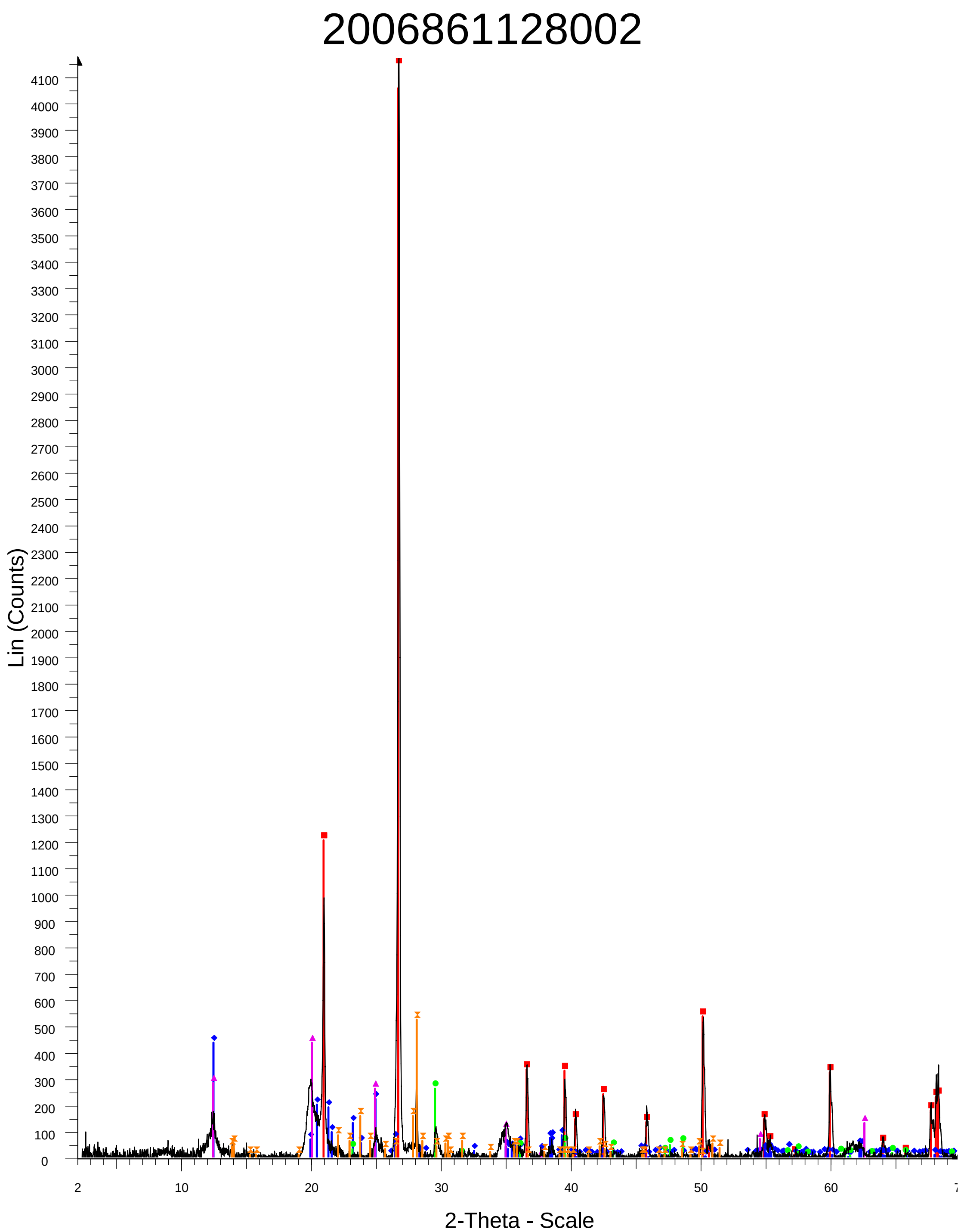
2006861127001
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
127001 - File: 127001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.132 | Background 0.813,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 131.25 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200



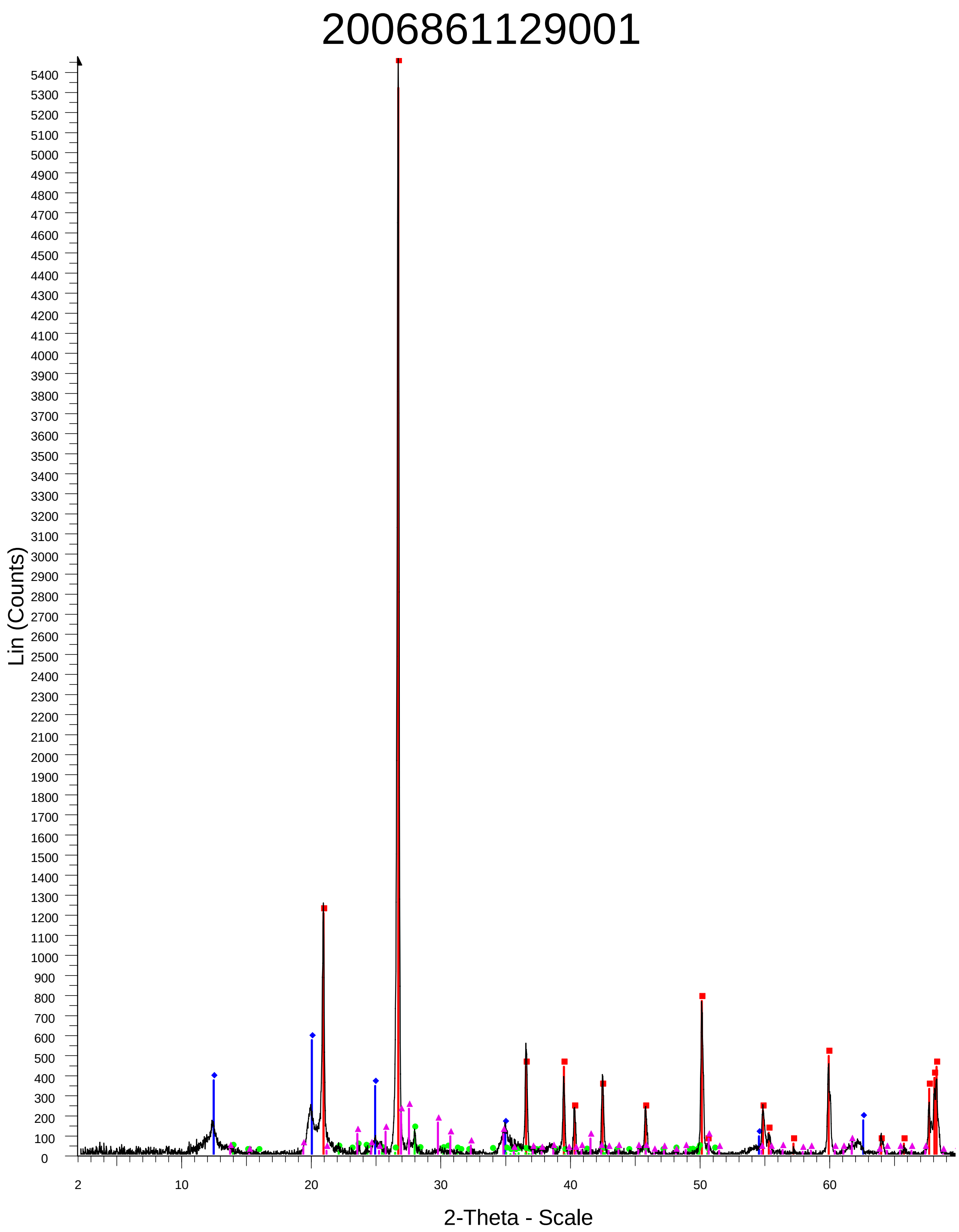
2006861127002
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
127002 - File: 127002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.133 | Background 0.813,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 109.90 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-033-0664 (*) - Hematite, syn - Fe2O3 - Y: 1.97 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 5.03560 - b 5.03560 - c 13.74890 - alpha 90



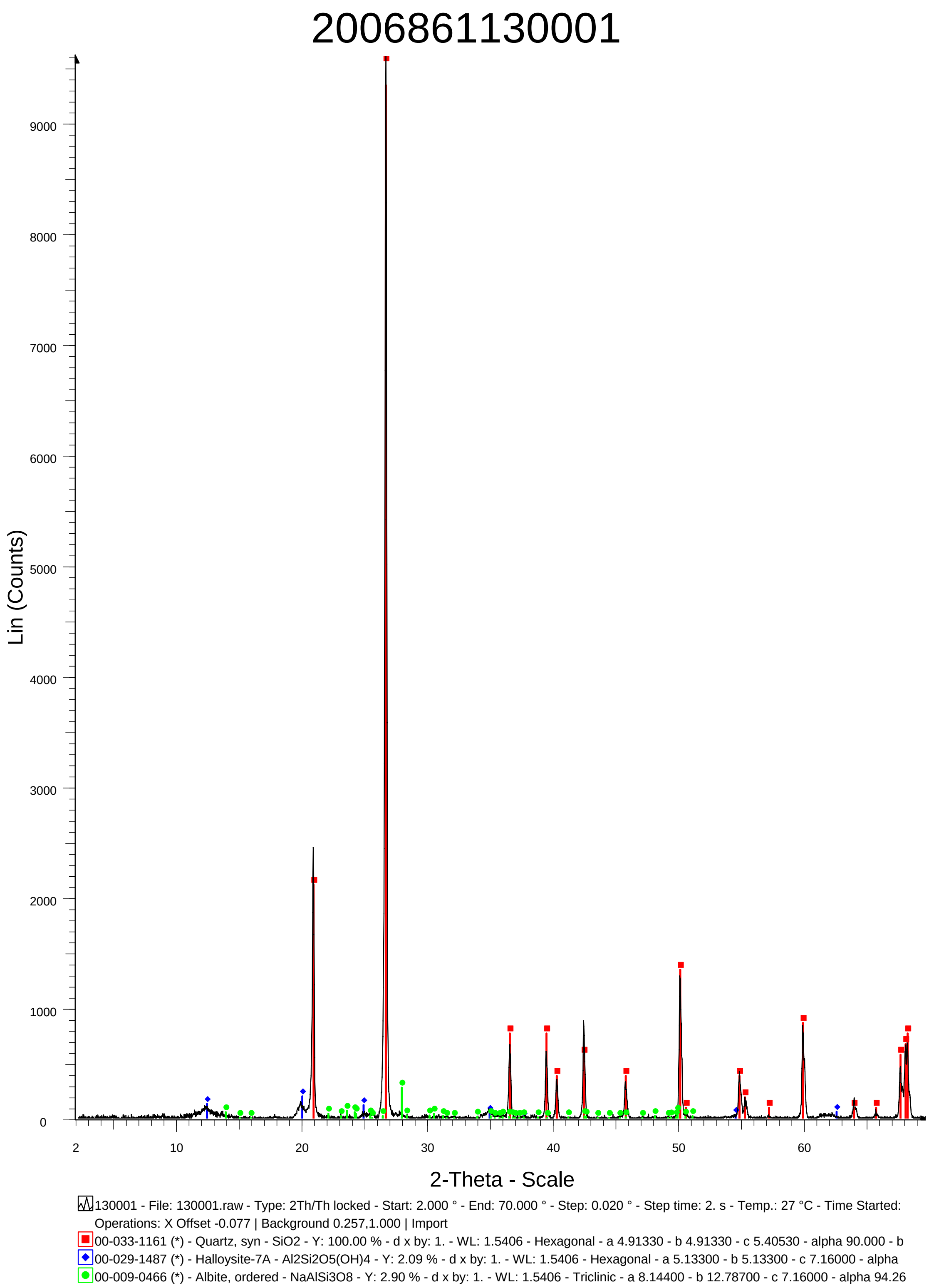
128001 - File: 128001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200



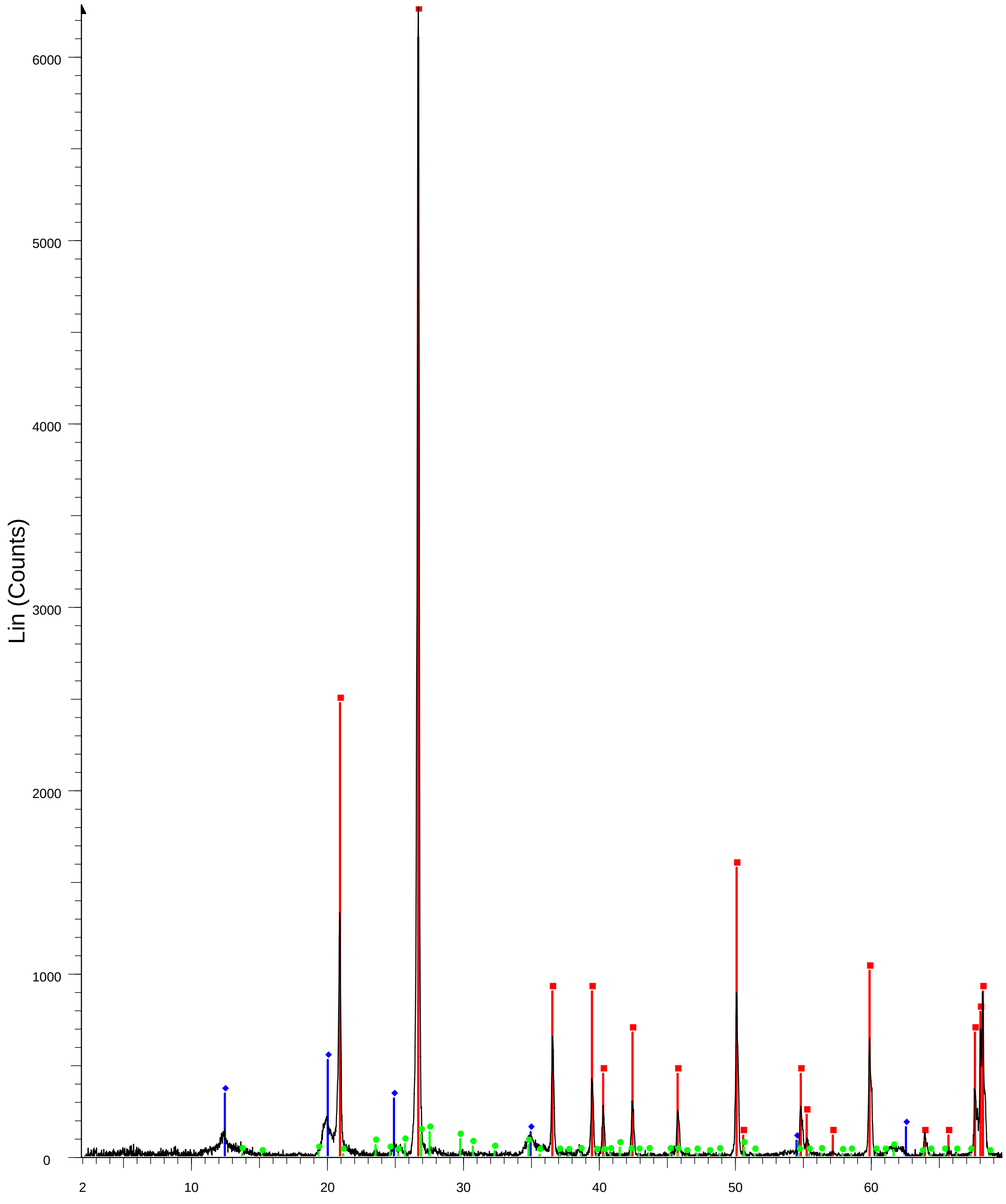
128002 - File: 2006861128002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: Background 0.977,1.000 | Import
01-087-2096 (N) - Quartz low, syn - SiO2 - Y: 133.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91270 - b 4.91270 - c 5.40450 - alpha 90.00
01-078-1996 (I) - Kaolinite-1A - Al2(Si2O5)(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15540 - b 8.94480 - c 7.40480 - alpha 91
01-085-0849 (A) - Calcite, syn - CaCO3 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-010-0393 (*) - Albite, disordered - Na(Si3Al)O8 - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16500 - b 12.87200 - c 7.11100 - alpha



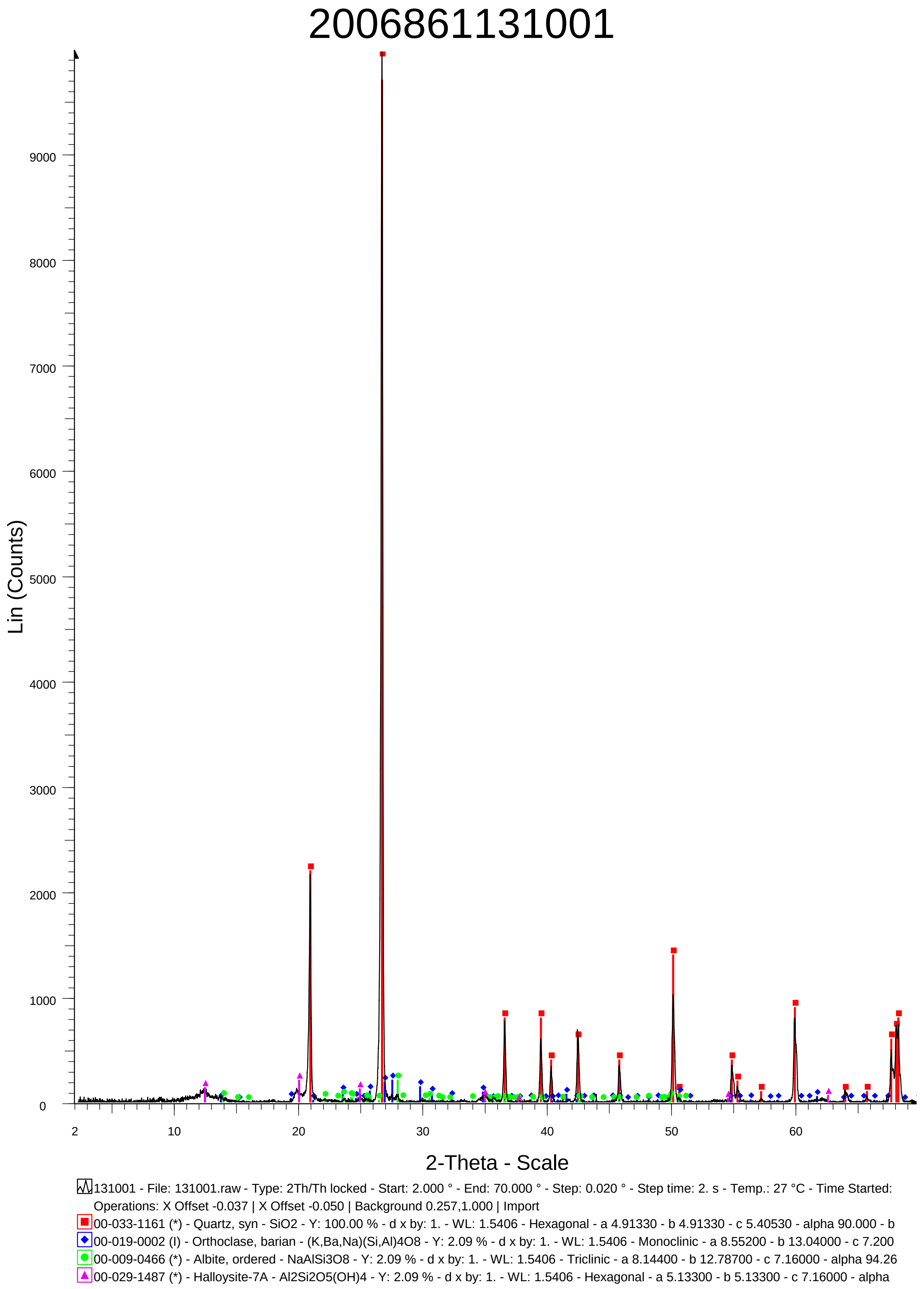
129001 - File: 129001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.036 | Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

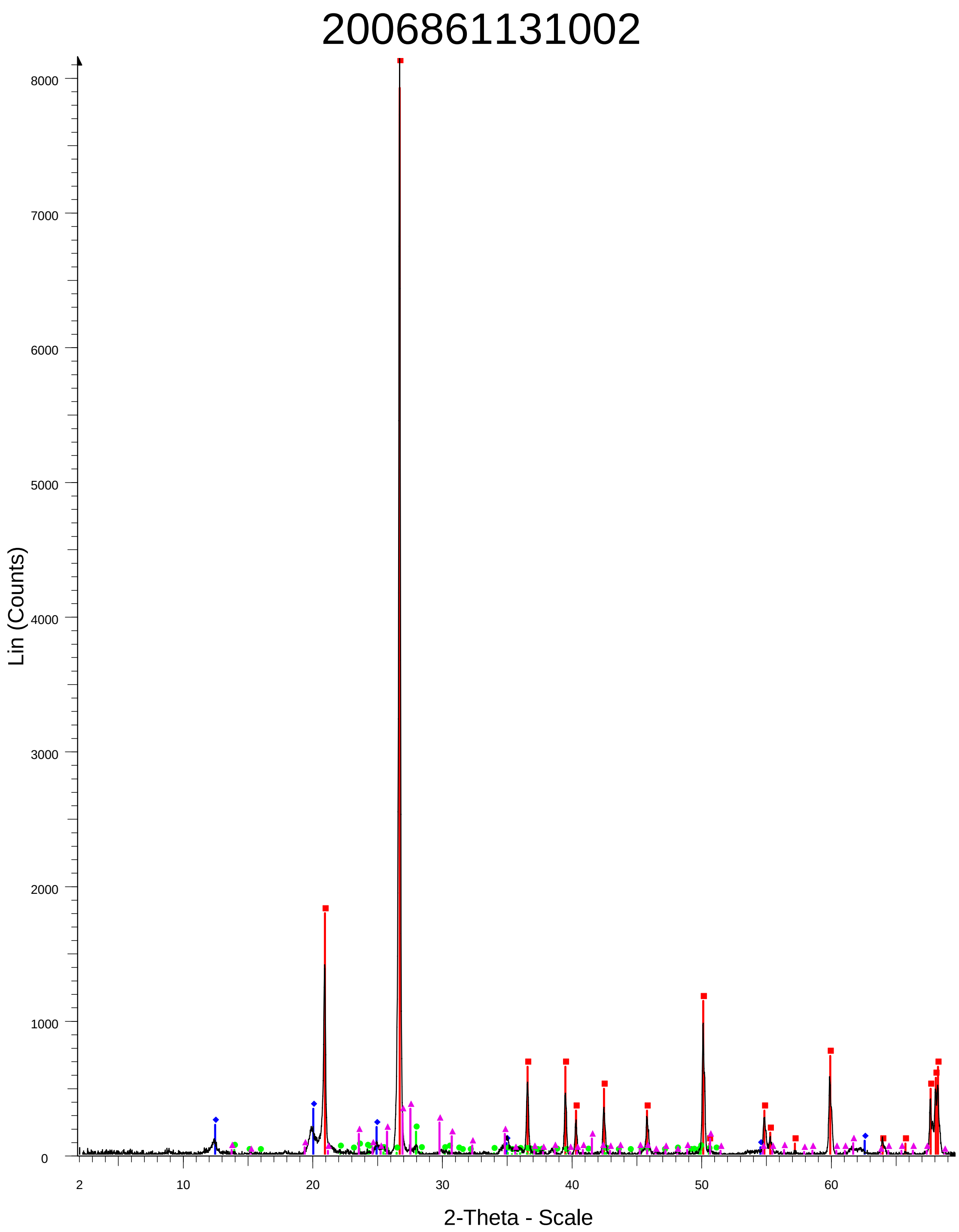

2006861130001
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
130001 - File: 130001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.077 | Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.90 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

2006861130002



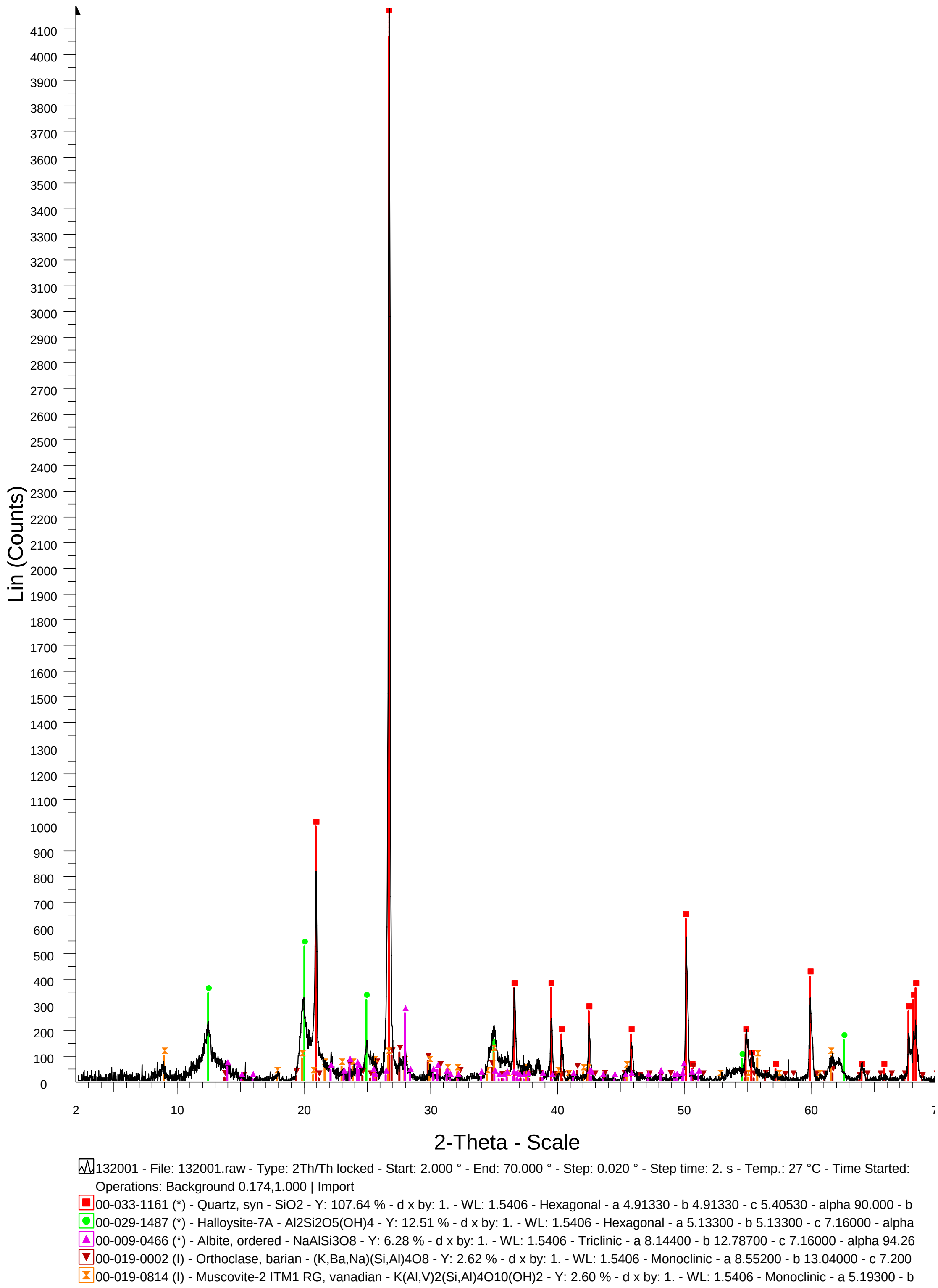
130002 - File: 130002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.105 | X Offset -0.117 | Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 178.99 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

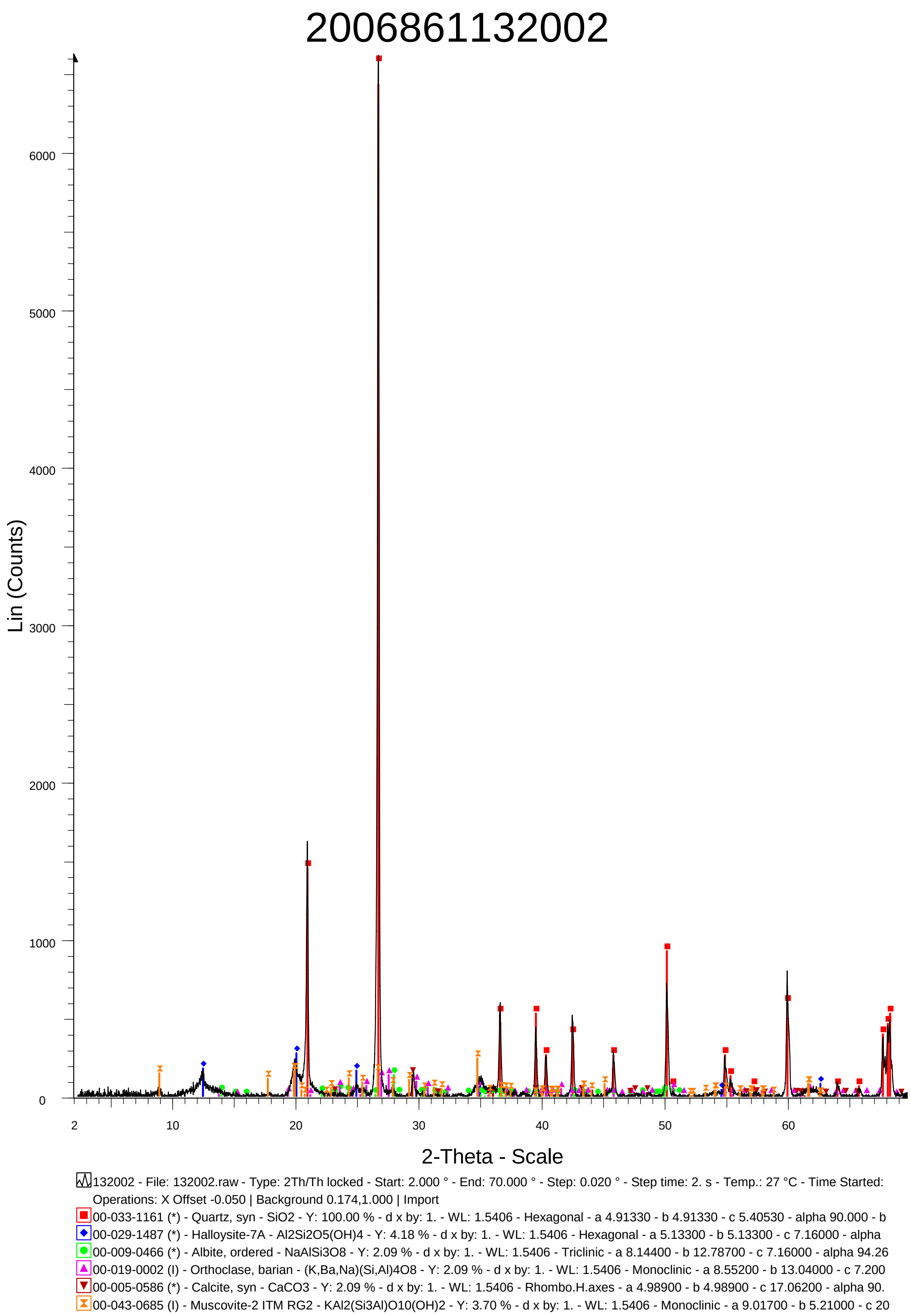

2006861131001
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
131001 - File: 131001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.037 | X Offset -0.050 | Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

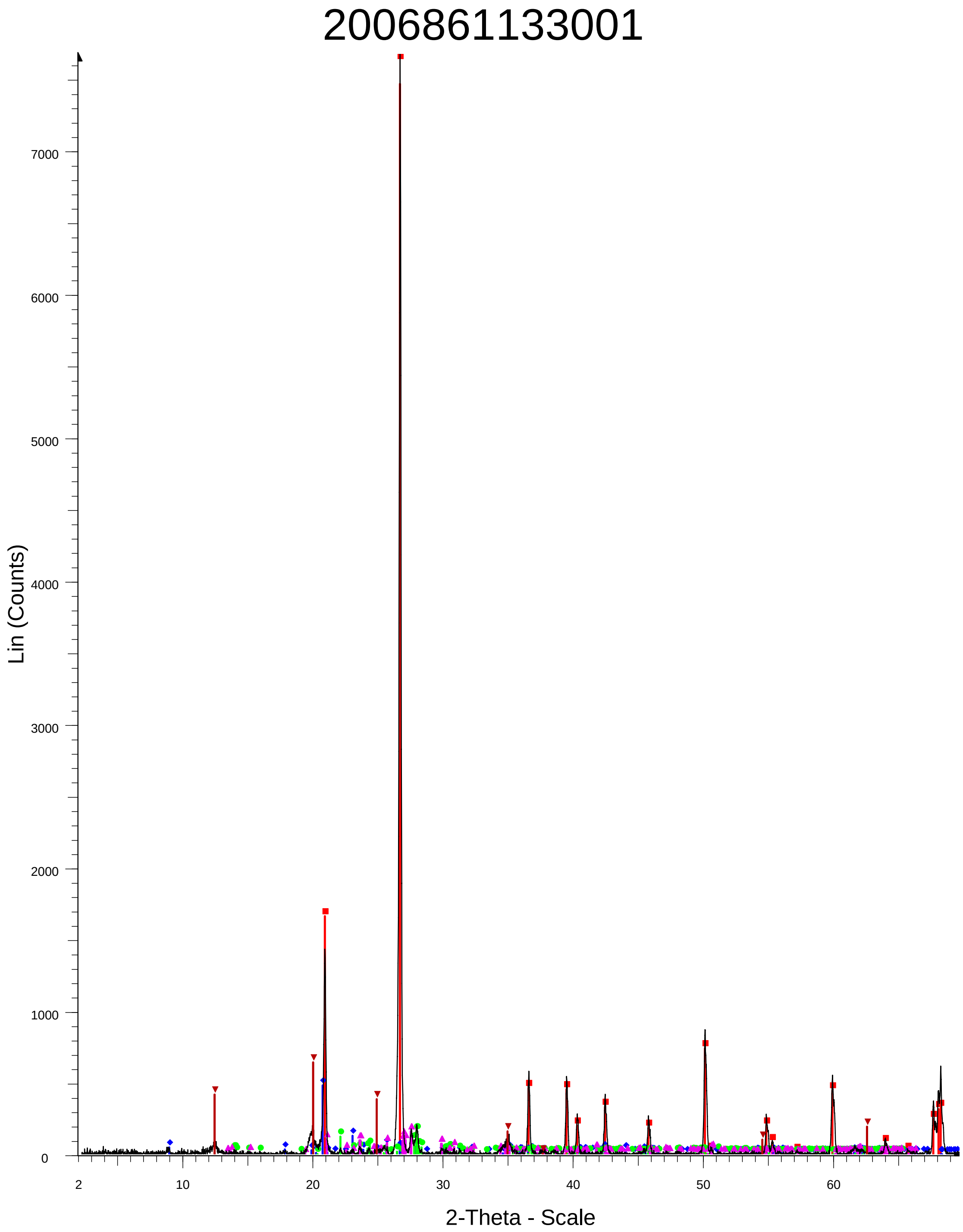


131002 - File: 131002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.158 | Background 0.257,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

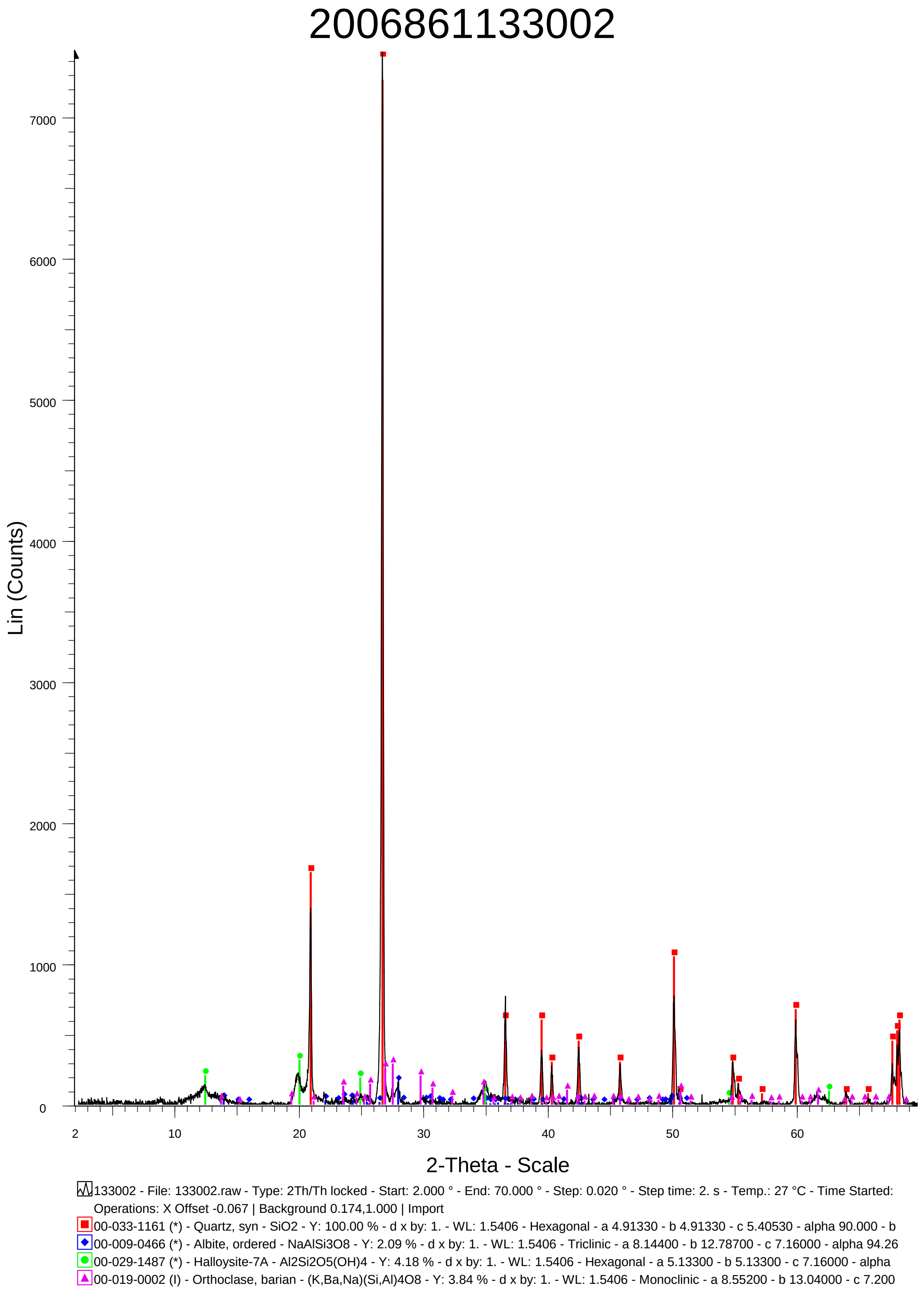
2006861132001



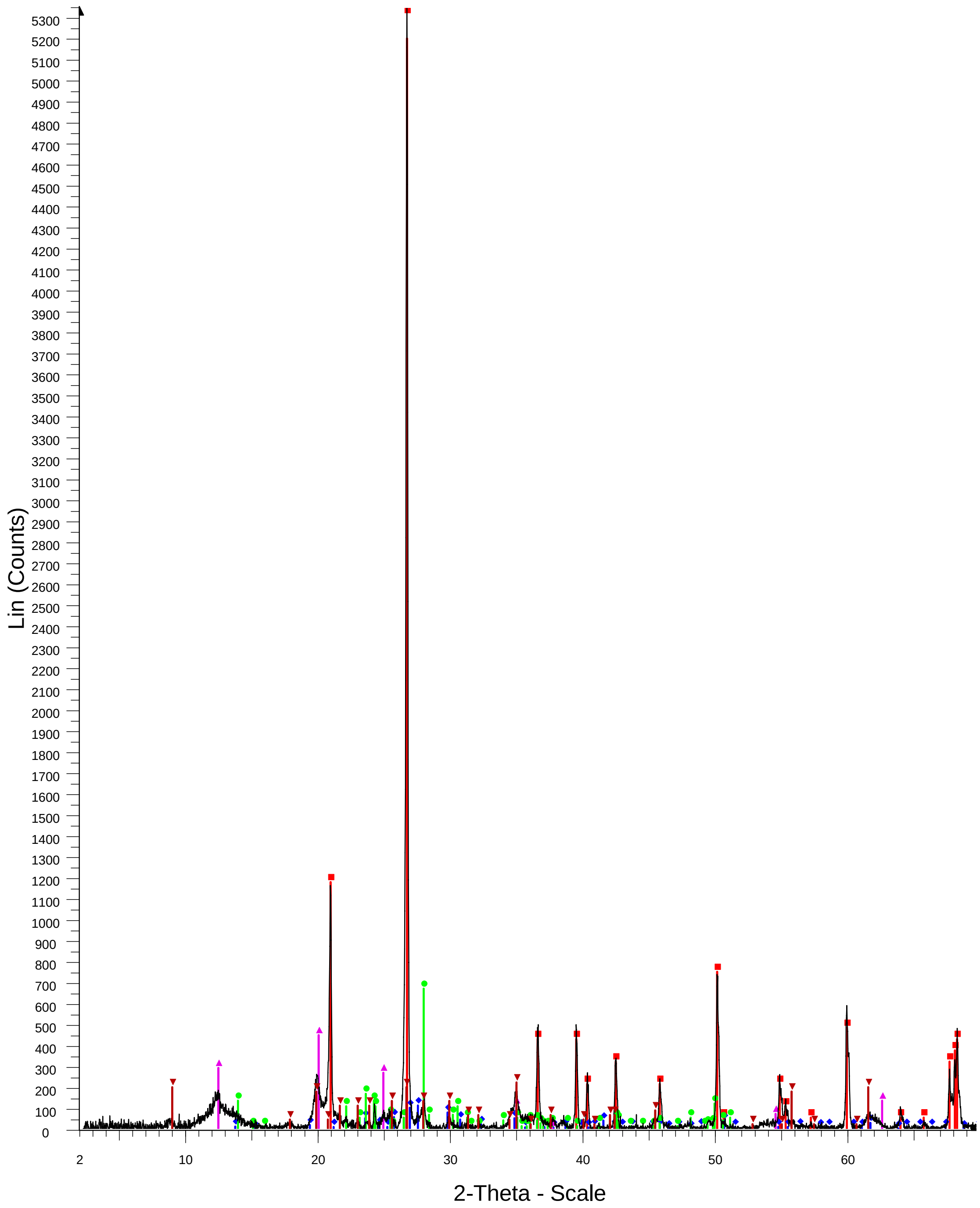

2006861132002
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
132002 - File: 132002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.050 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-043-0685 (I) - Muscovite-2 ITM RG2 - KAl2(Si3Al)O10(OH)2 - Y: 3.70 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 9.01700 - b 5.21000 - c 20



133001 - File: 2006861133001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time
Operations: X Offset -0.058 | Background 0.977,1.000 | Import
01-087-2096 (N) - Quartz low, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91270 - b 4.91270 - c 5.40450 - alpha 90.00
01-075-0948 (D) - Muscovite 2M1 - KAl3Si3O10(OH)2 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.18000 - b 9.02000 - c 20.04000 -
01-075-1142 (N) - Albite high - Na(AlSi3O8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.13800 - b 12.78900 - c 7.15600 - alpha 94.330
01-083-1895 (*) - Microcline - K0.96Na0.04AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.58330 - b 12.97530 - c 7.20810 - alpha
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

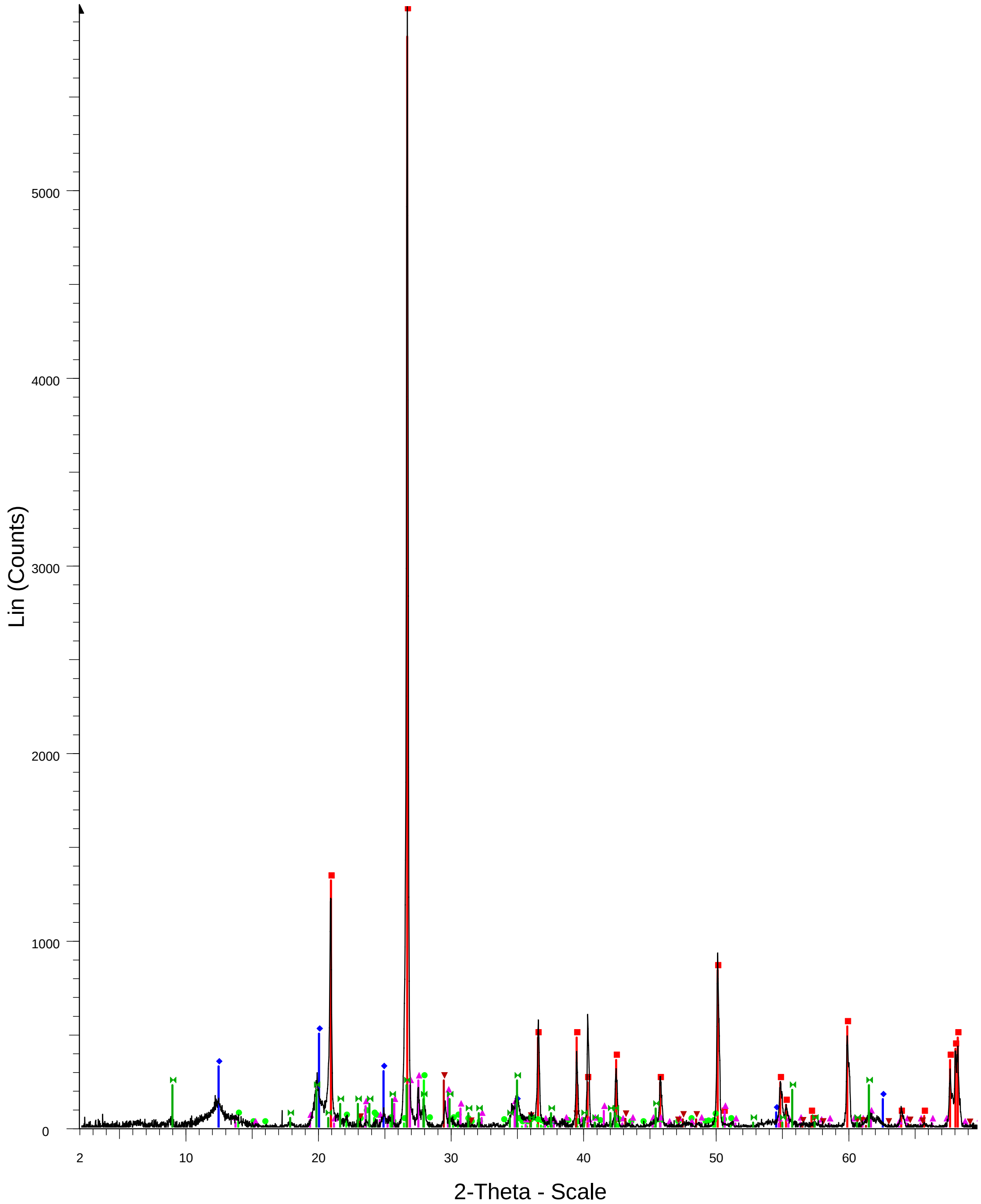

2006861133002
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
133002 - File: 133002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.067 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.84 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861134001



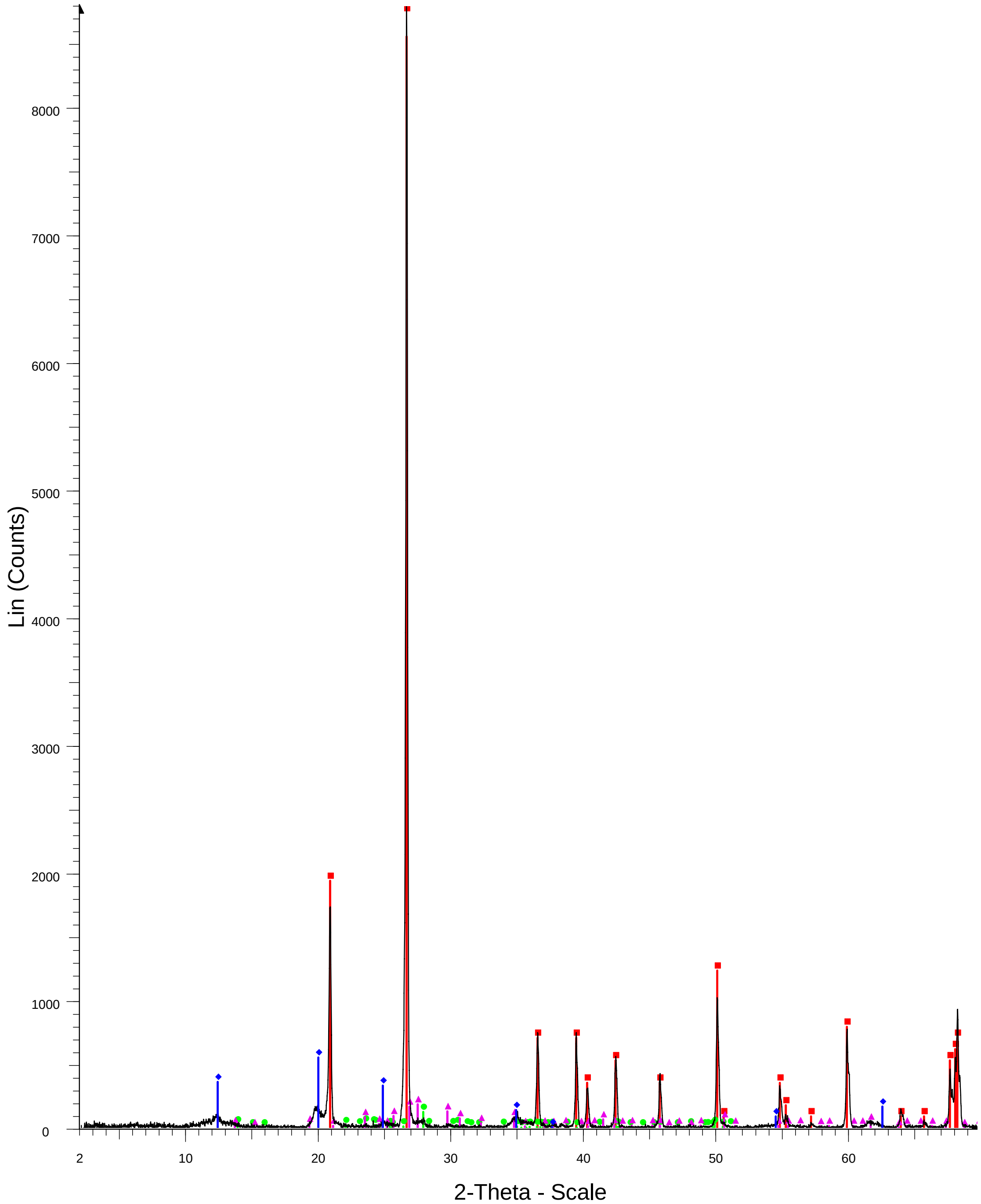
134001 - File: 134001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.033 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.2
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 4.14 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b

2006861134002

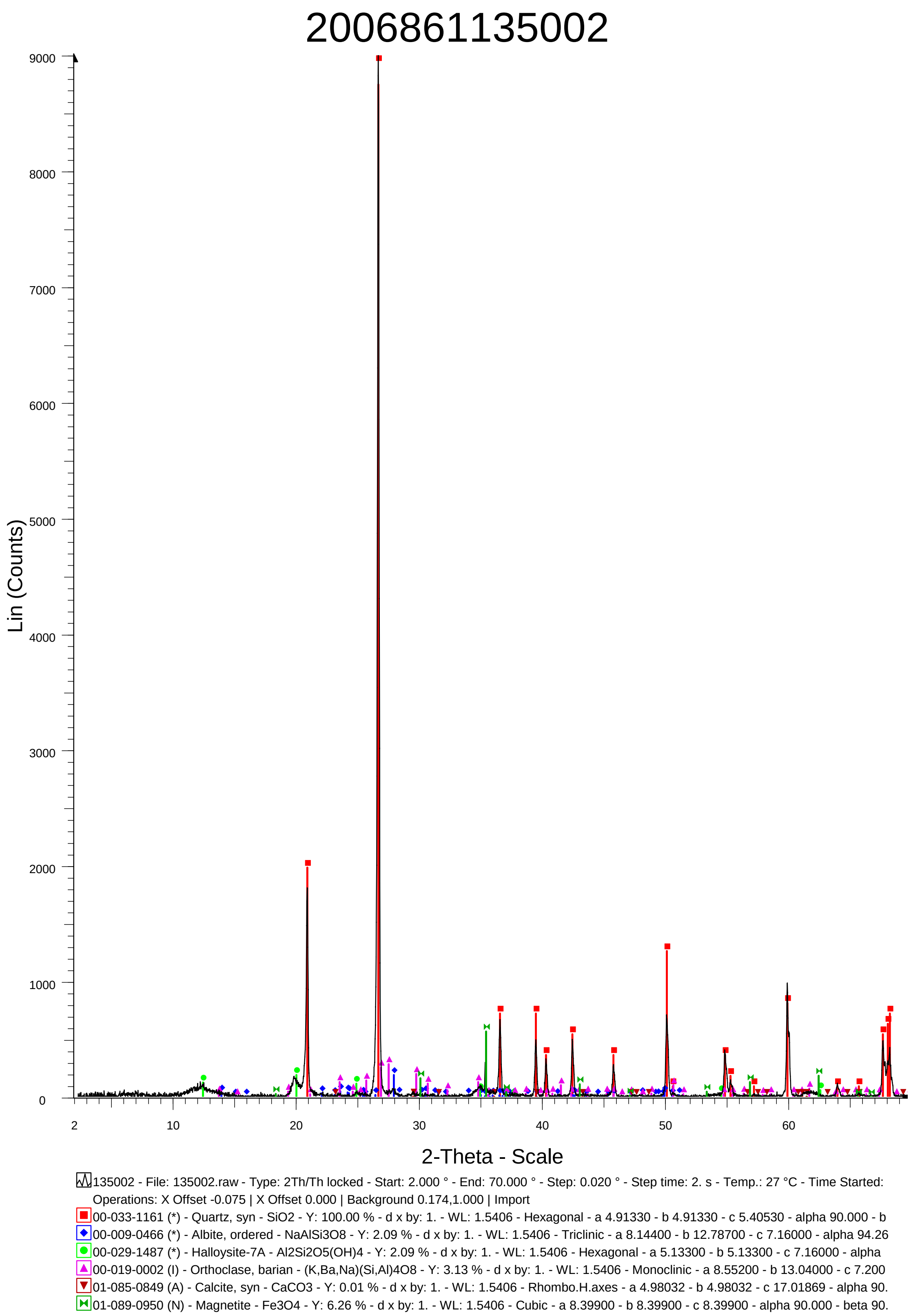


134002 - File: 134002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.044 | X Offset -0.057 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b

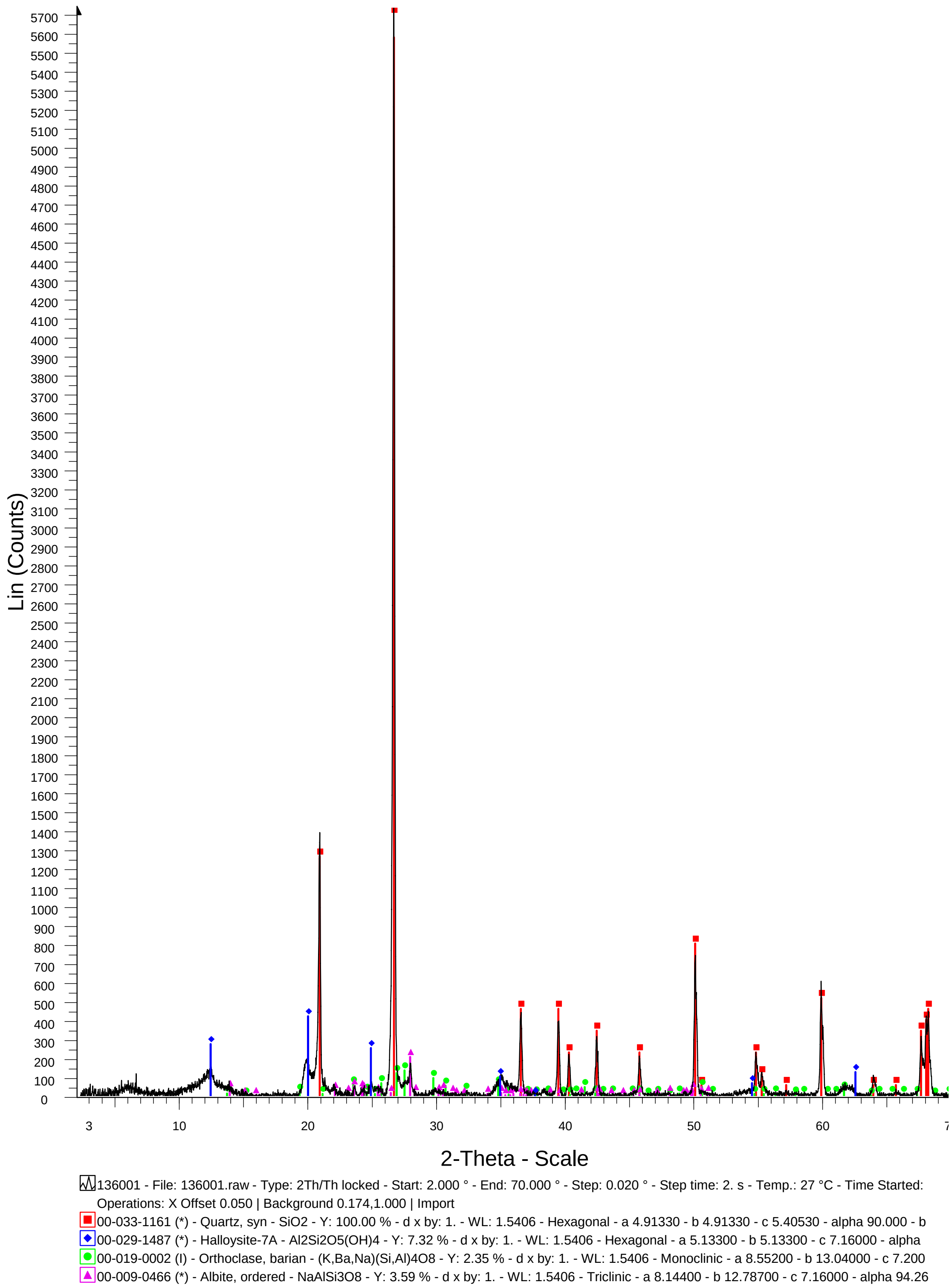
2006861135001



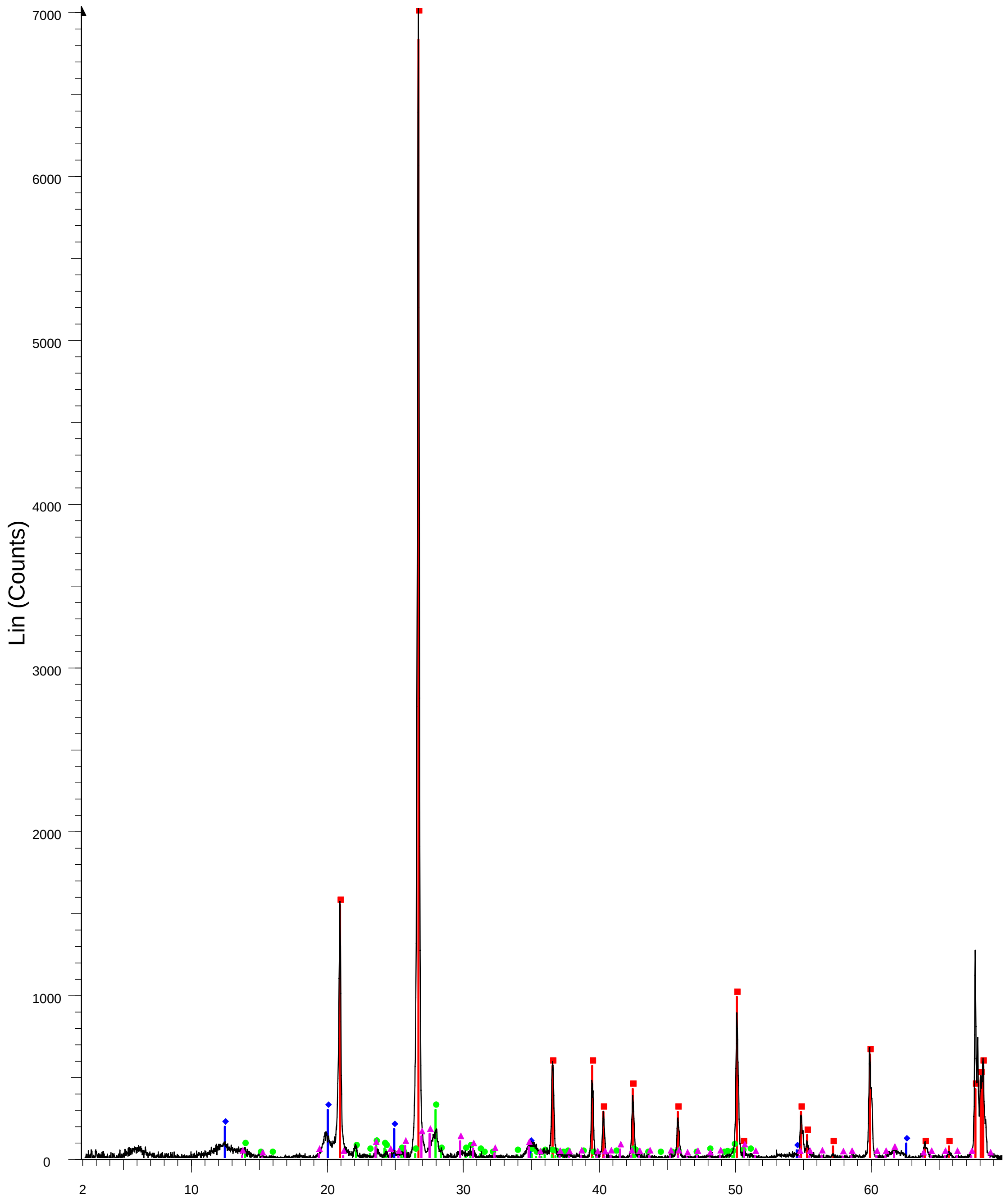
135001 - File: 135001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.017 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.41 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


2006861135002
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
135002 - File: 135002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | X Offset 0.000 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
01-085-0849 (A) - Calcite, syn - CaCO3 - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.
01-089-0950 (N) - Magnetite - Fe3O4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Cubic - a 8.39900 - b 8.39900 - c 8.39900 - alpha 90.000 - beta 90.

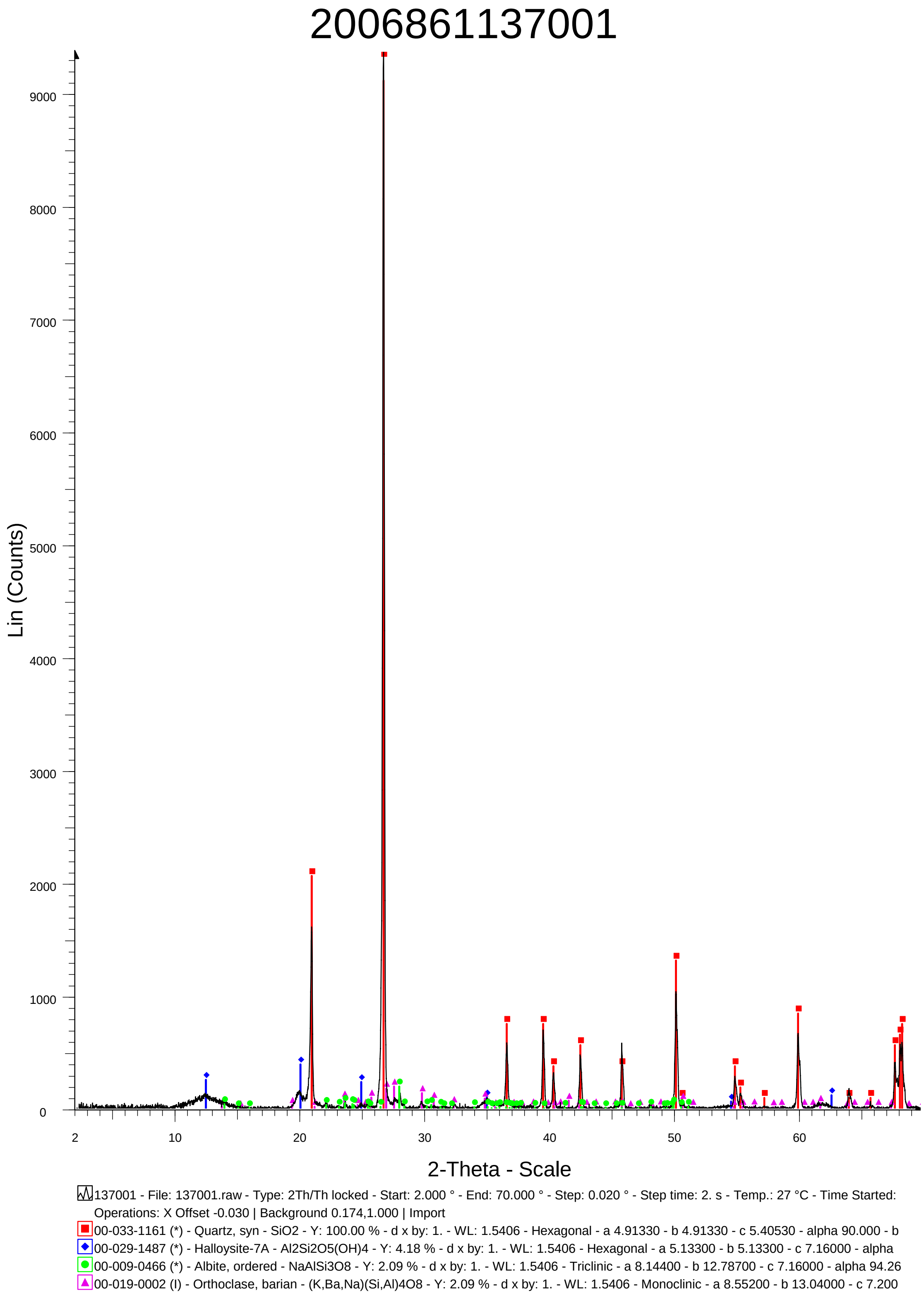
2006861136001



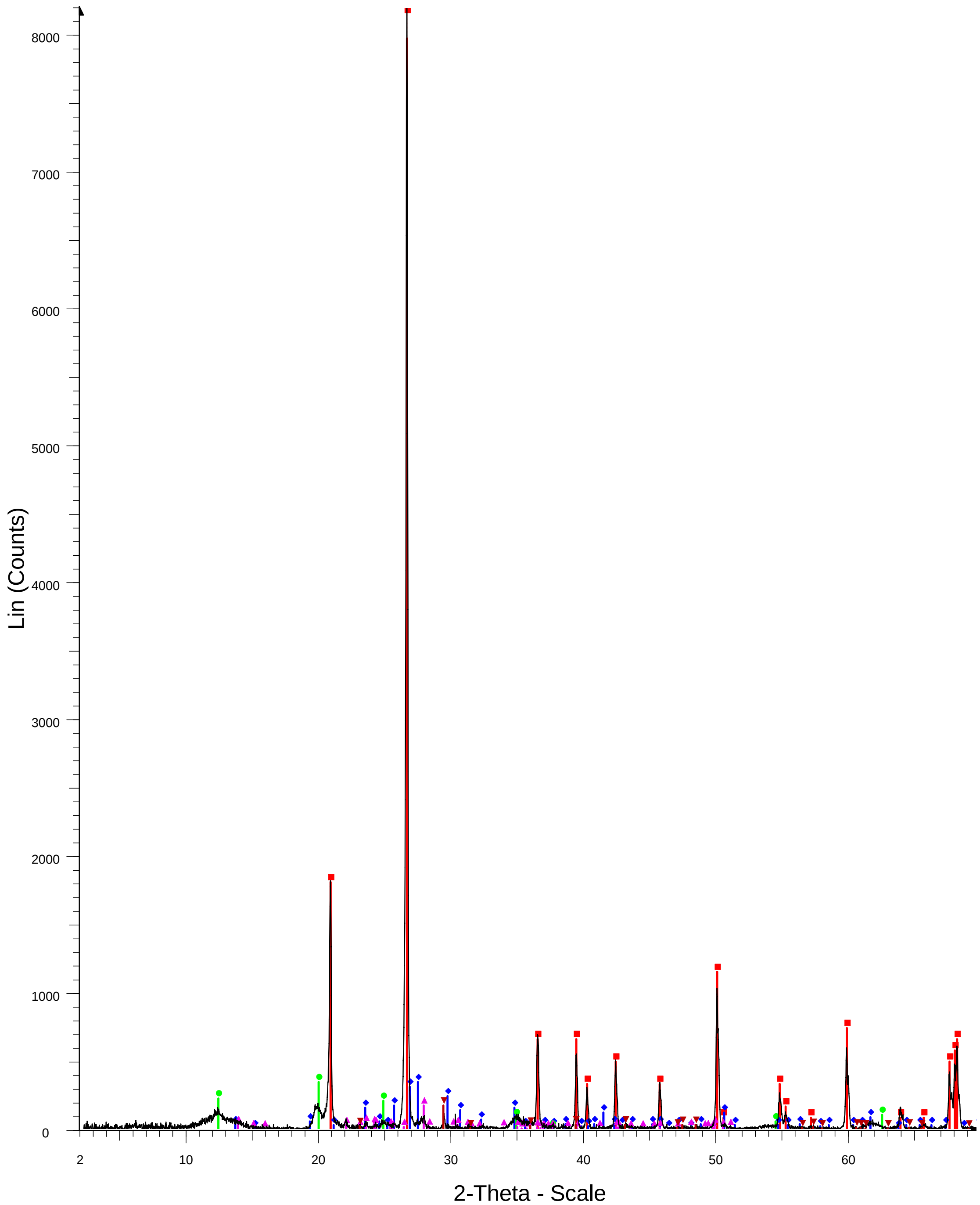
2006861136002



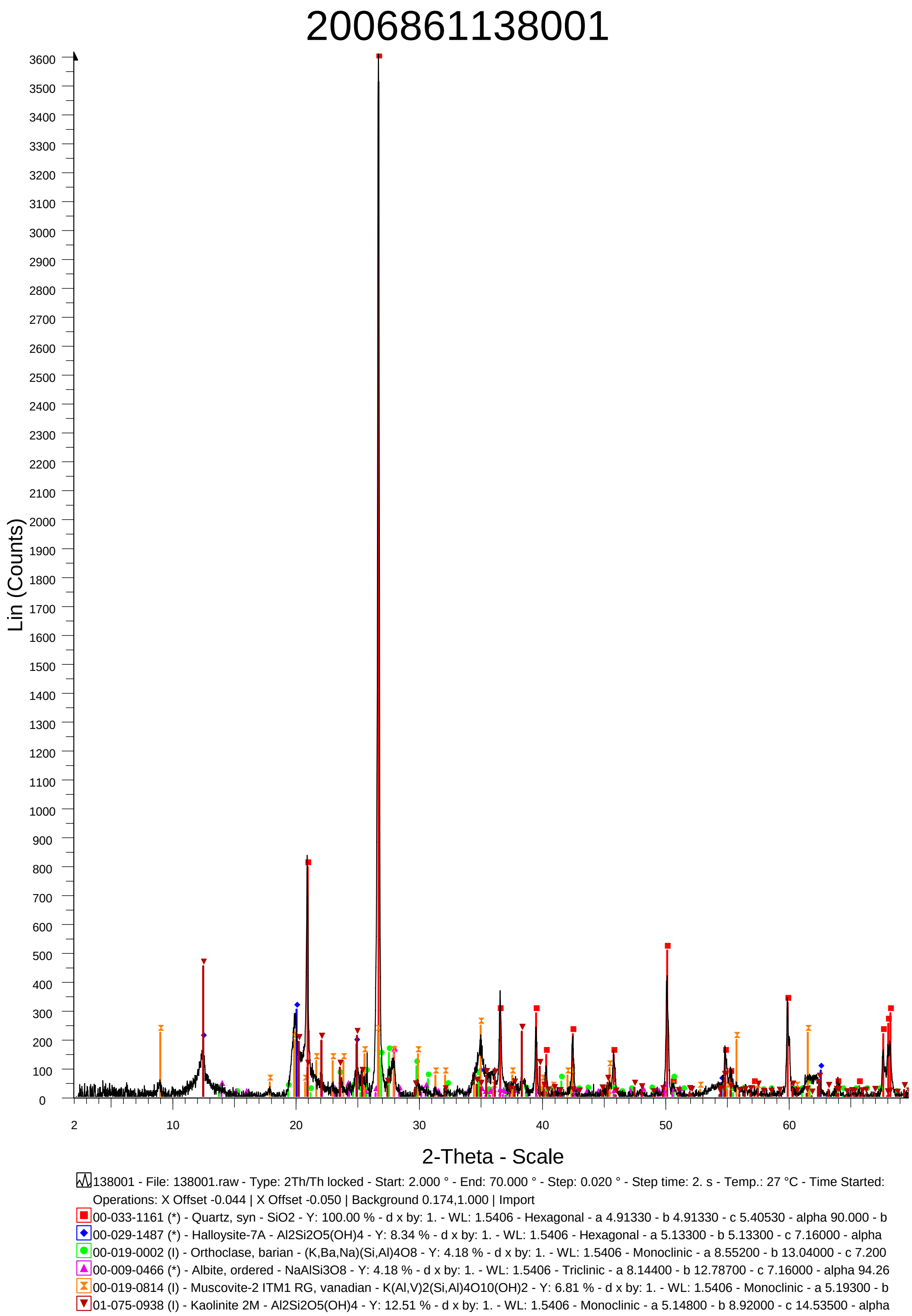
136002 - File: 136002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.100 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

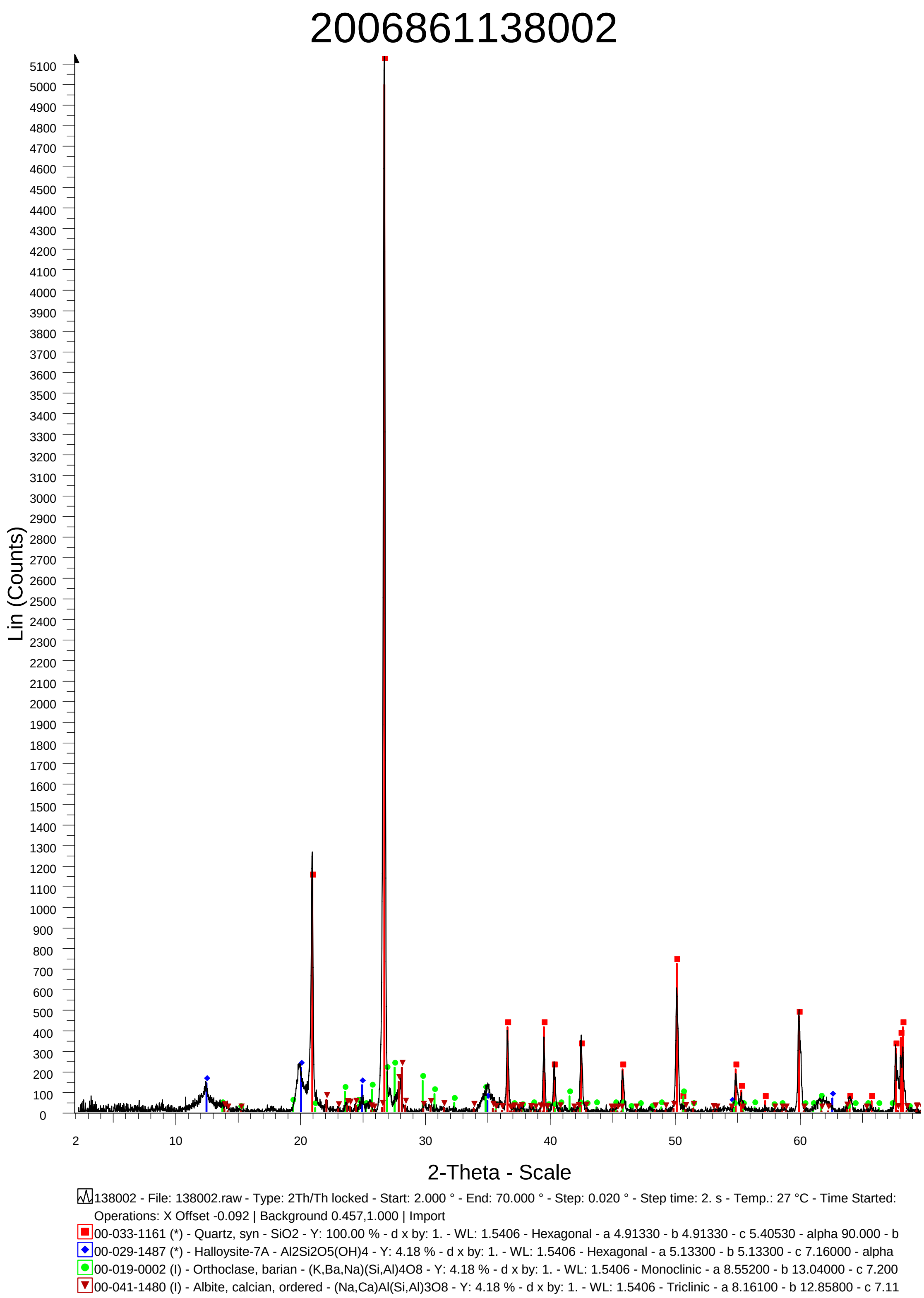

2006861137001
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
137001 - File: 137001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.030 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

2006861137002



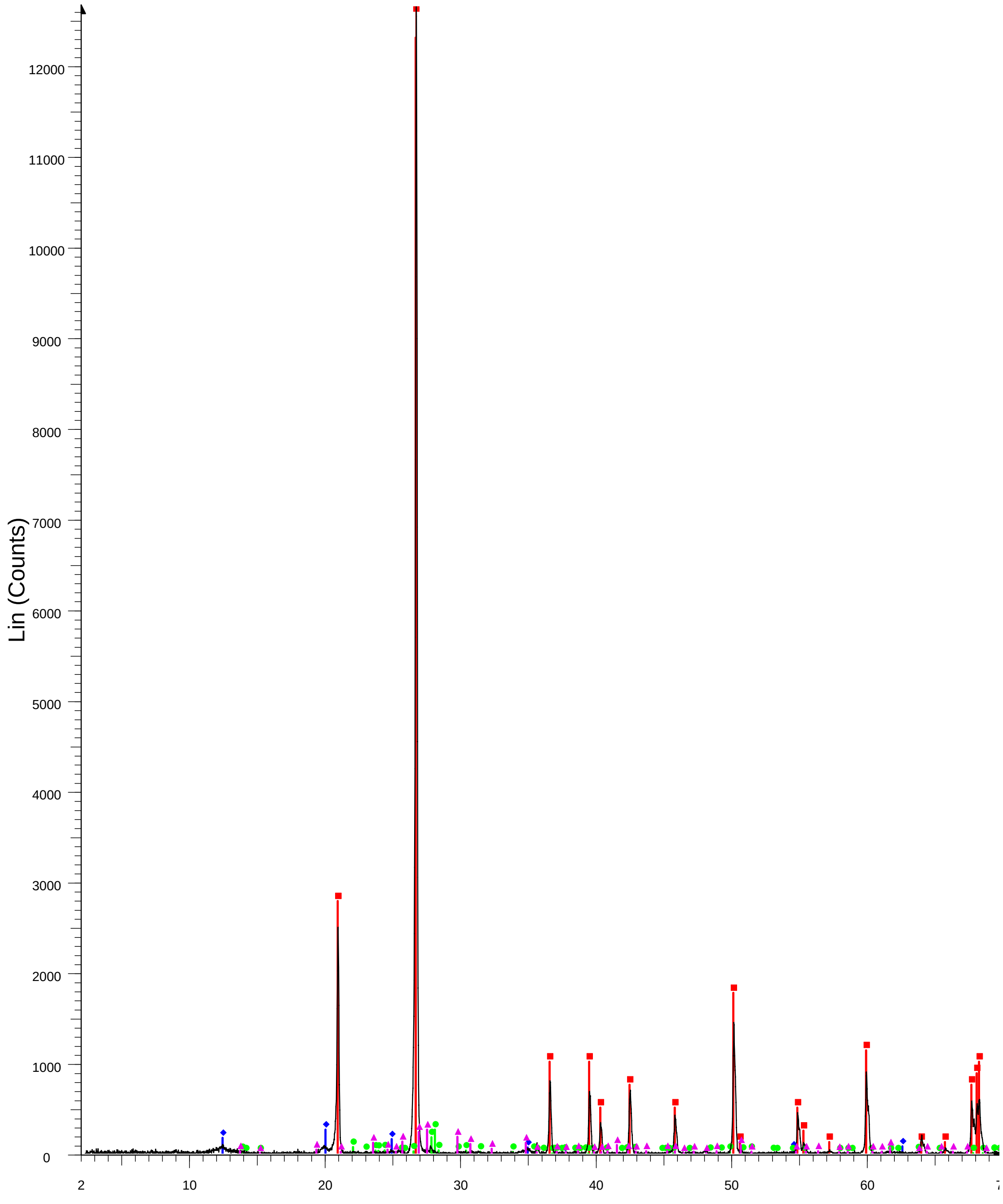
137002 - File: 137002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.061 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.


2006861138001
Lin (Counts)
2-Theta - Scale
138001 - File: 138001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.044 | X Offset -0.050 | Background 0.174,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 6.81 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
01-075-0938 (I) - Kaolinite 2M - Al2Si2O5(OH)4 - Y: 12.51 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.14800 - b 8.92000 - c 14.53500 - alpha

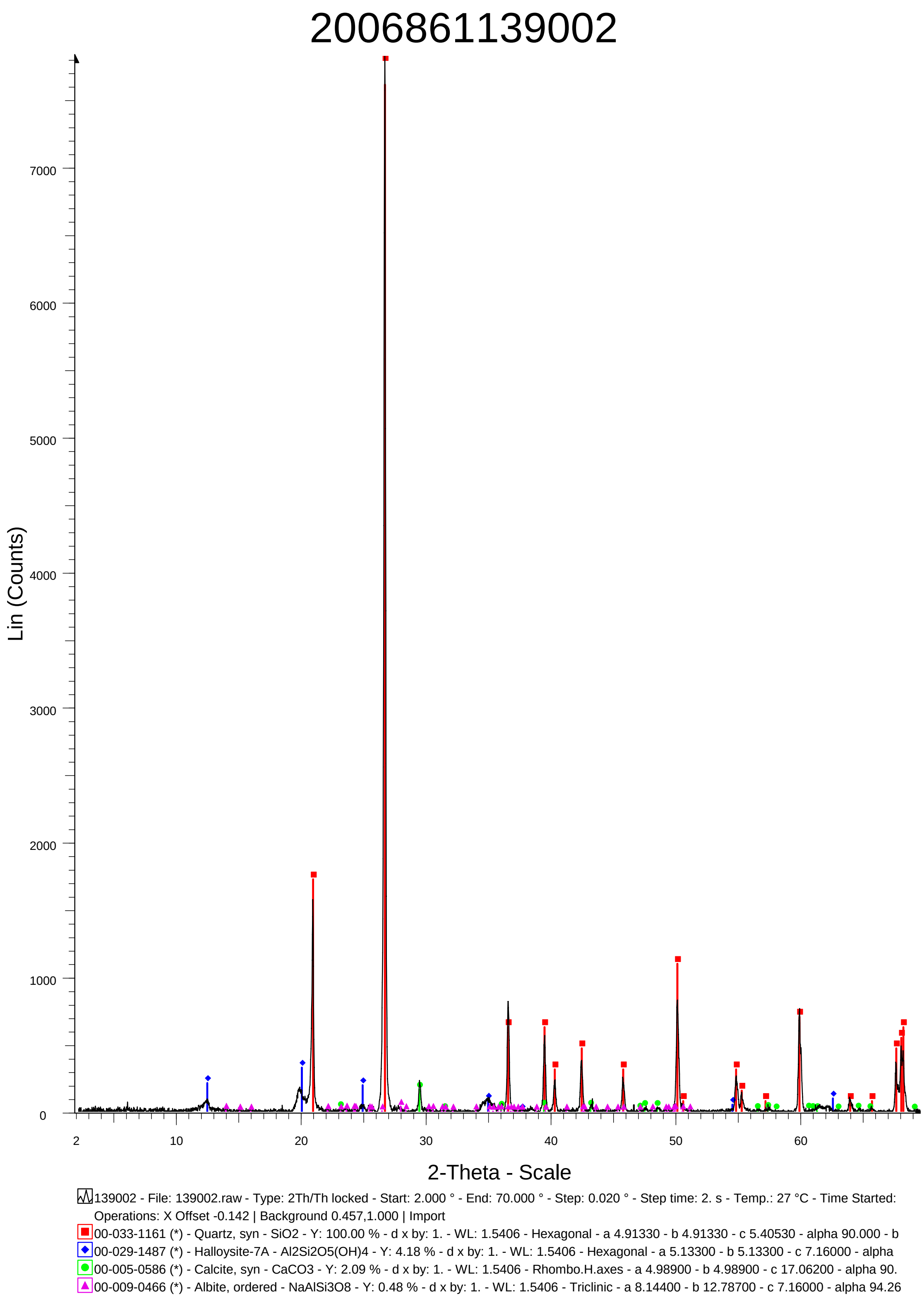


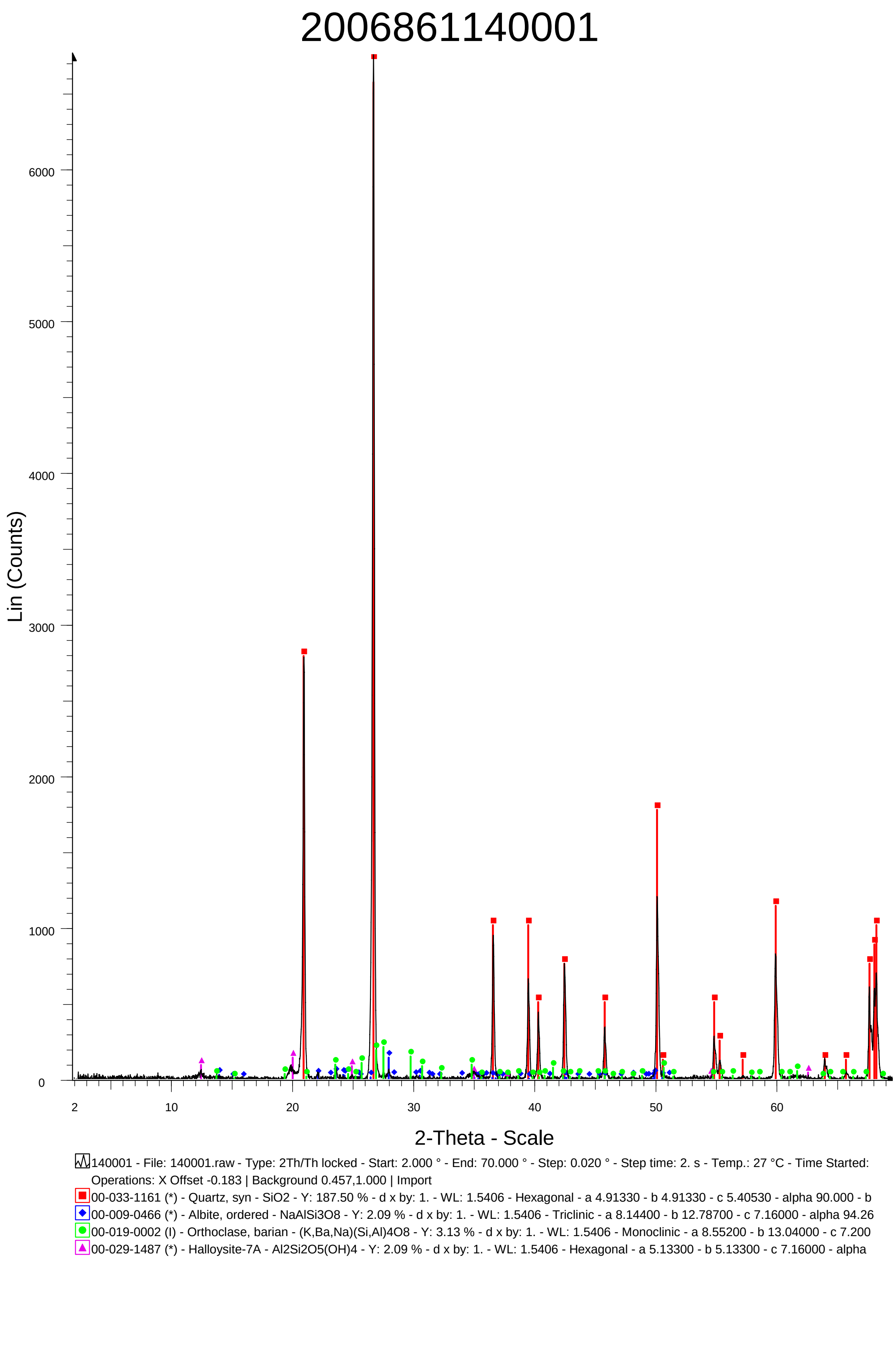
2006861138002
Lin (Counts)
2-Theta - Scale
138002 - File: 138002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11

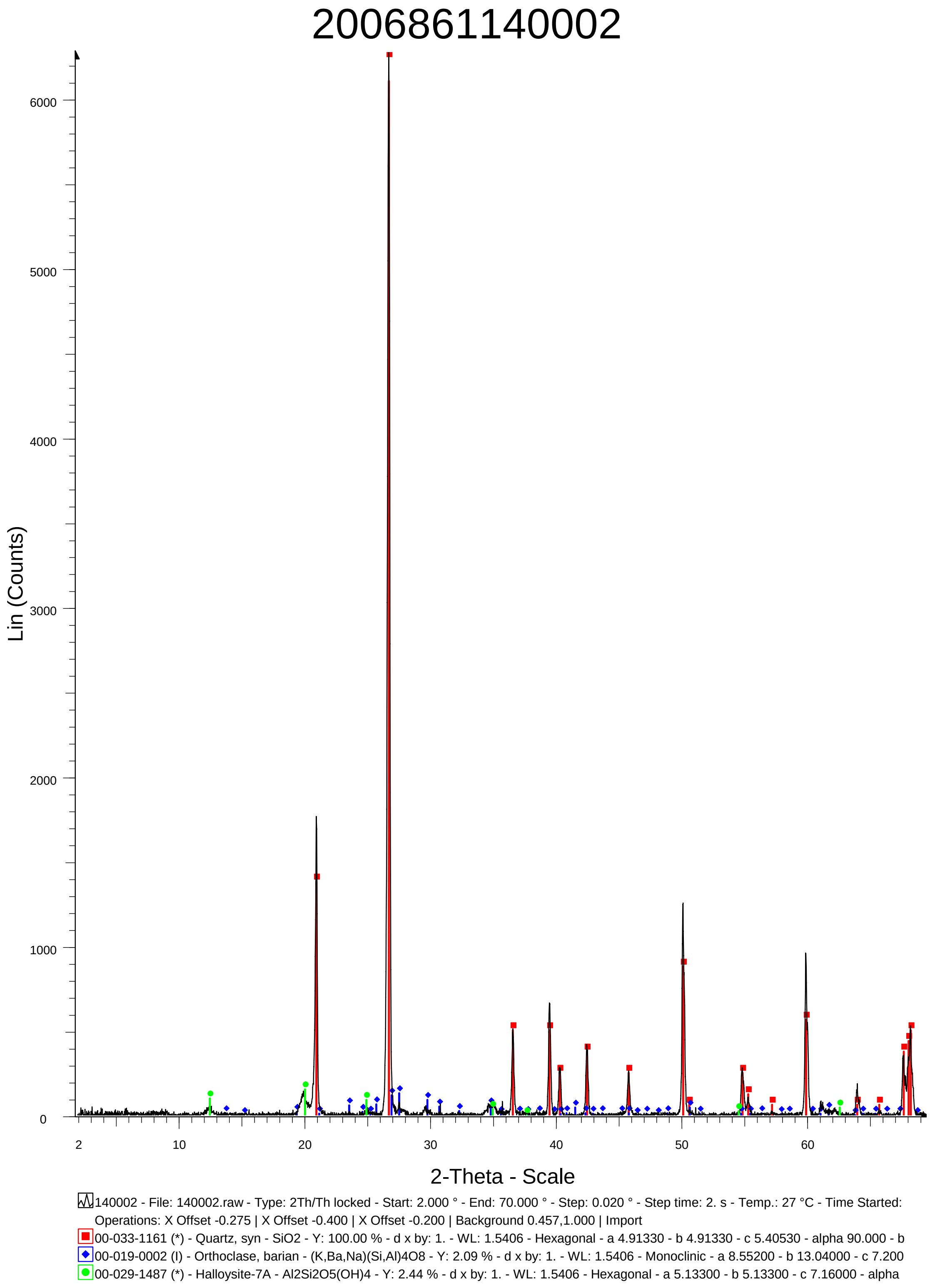
2006861139001



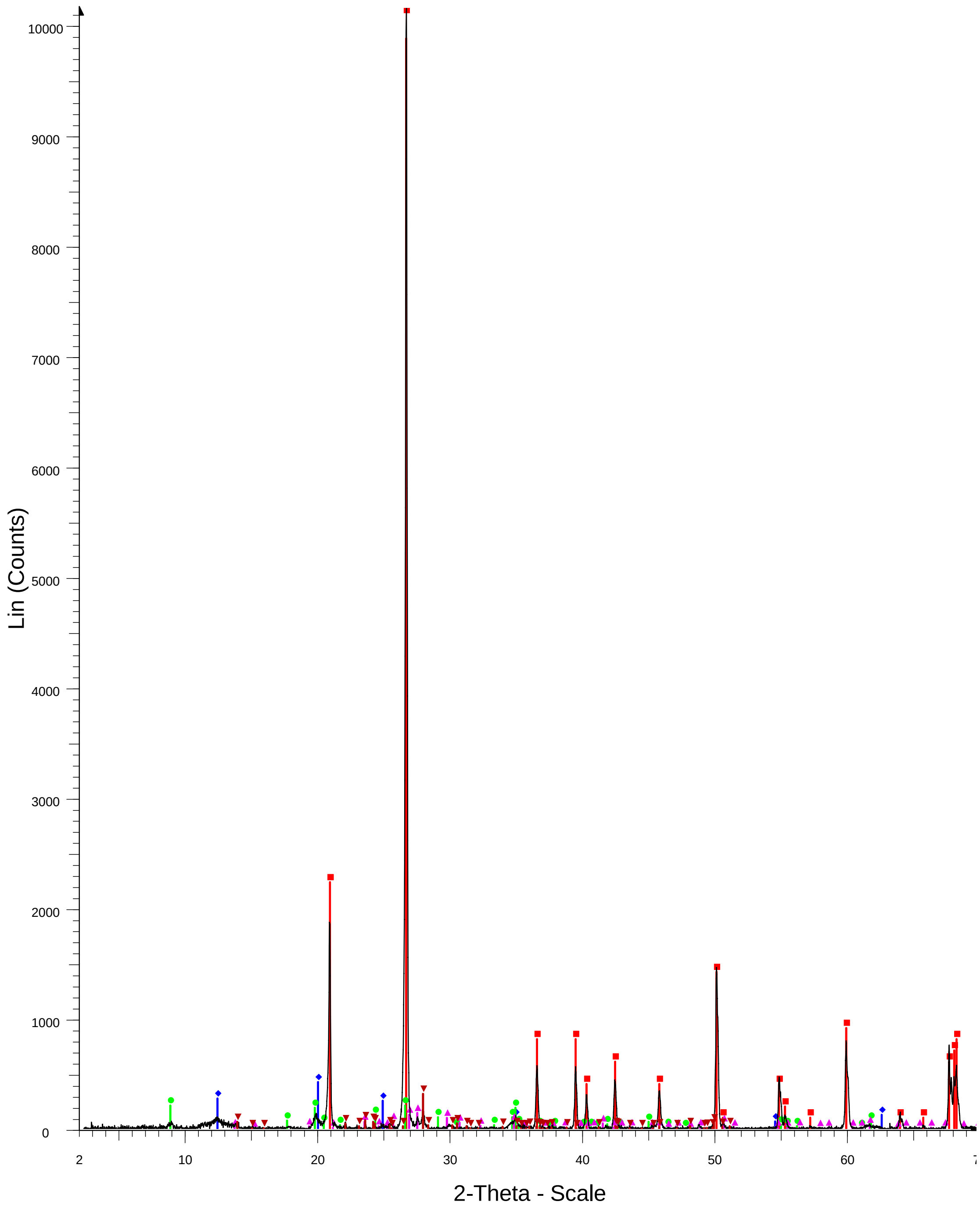
139001 - File: 139001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


2006861139002
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
139002 - File: 139002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.142 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.48 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

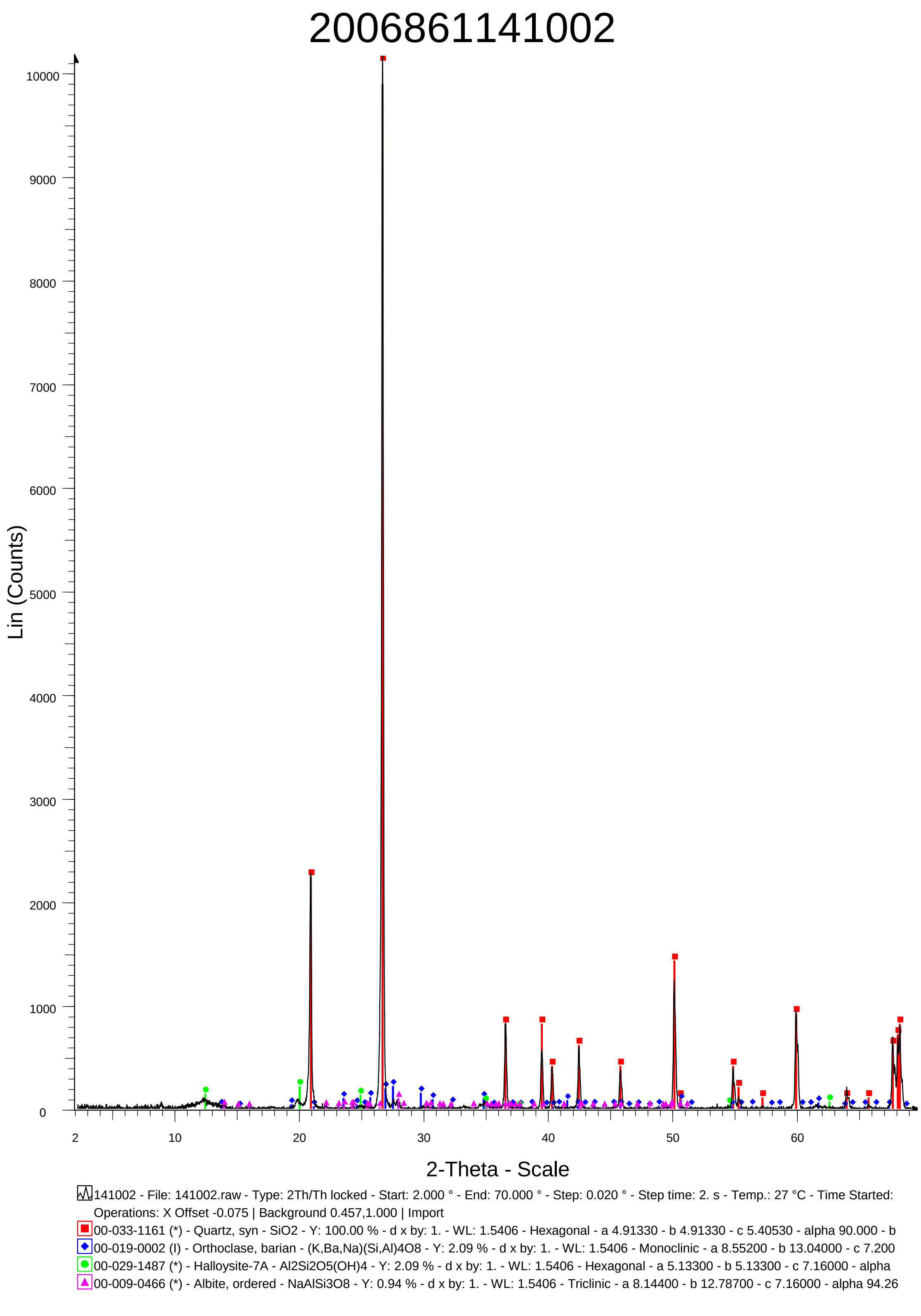

2006861140001
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
140001 - File: 140001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.183 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 187.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861140002
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
140002 - File: 140002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.275 | X Offset -0.400 | X Offset -0.200 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.44 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

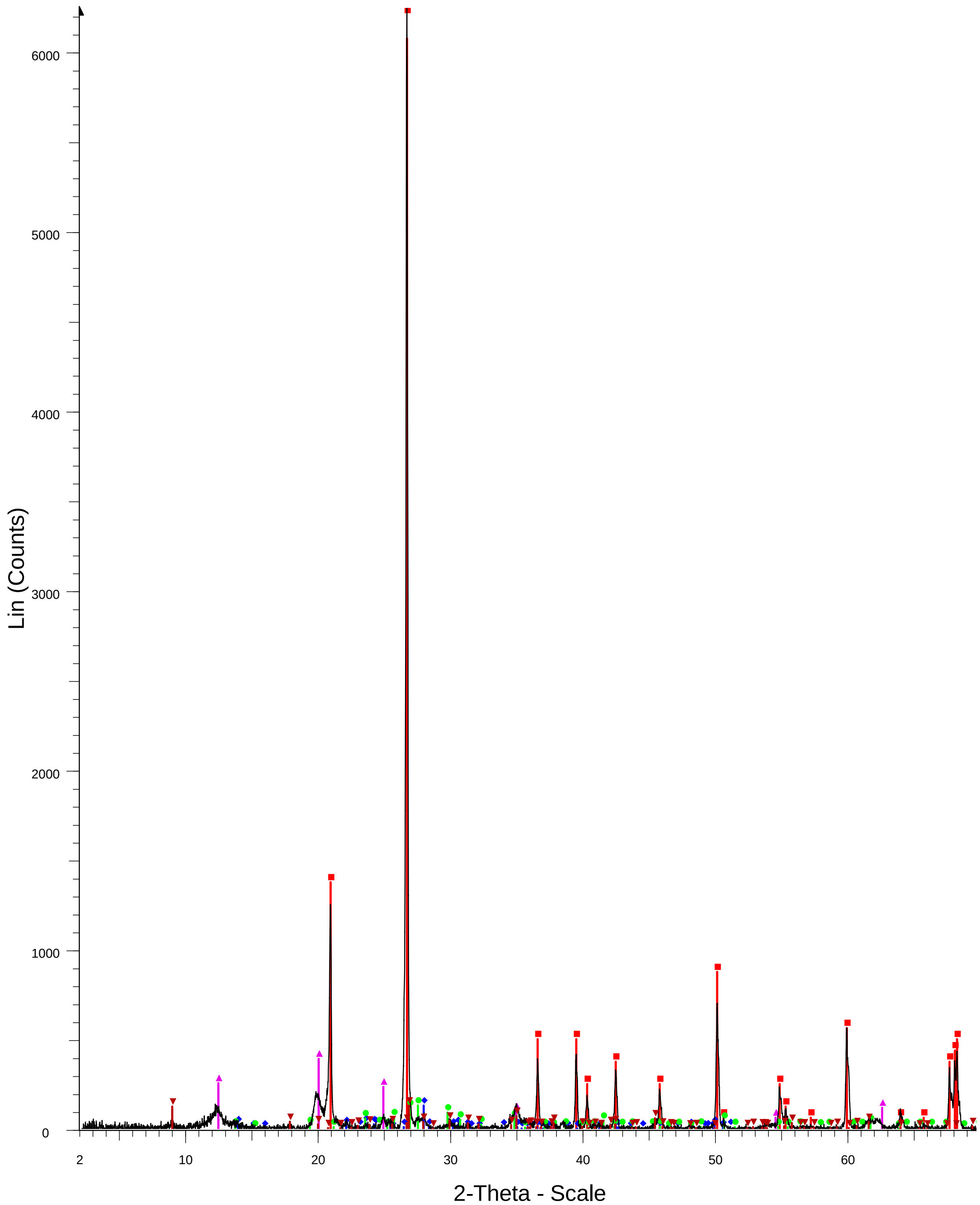
2006861141001



141001 - File: 141001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.676,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-007-0025 (I) - Muscovite-1 ITM RG, syn - KAl2Si3AlO10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.20800 - b 8.99500 - c
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.42 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

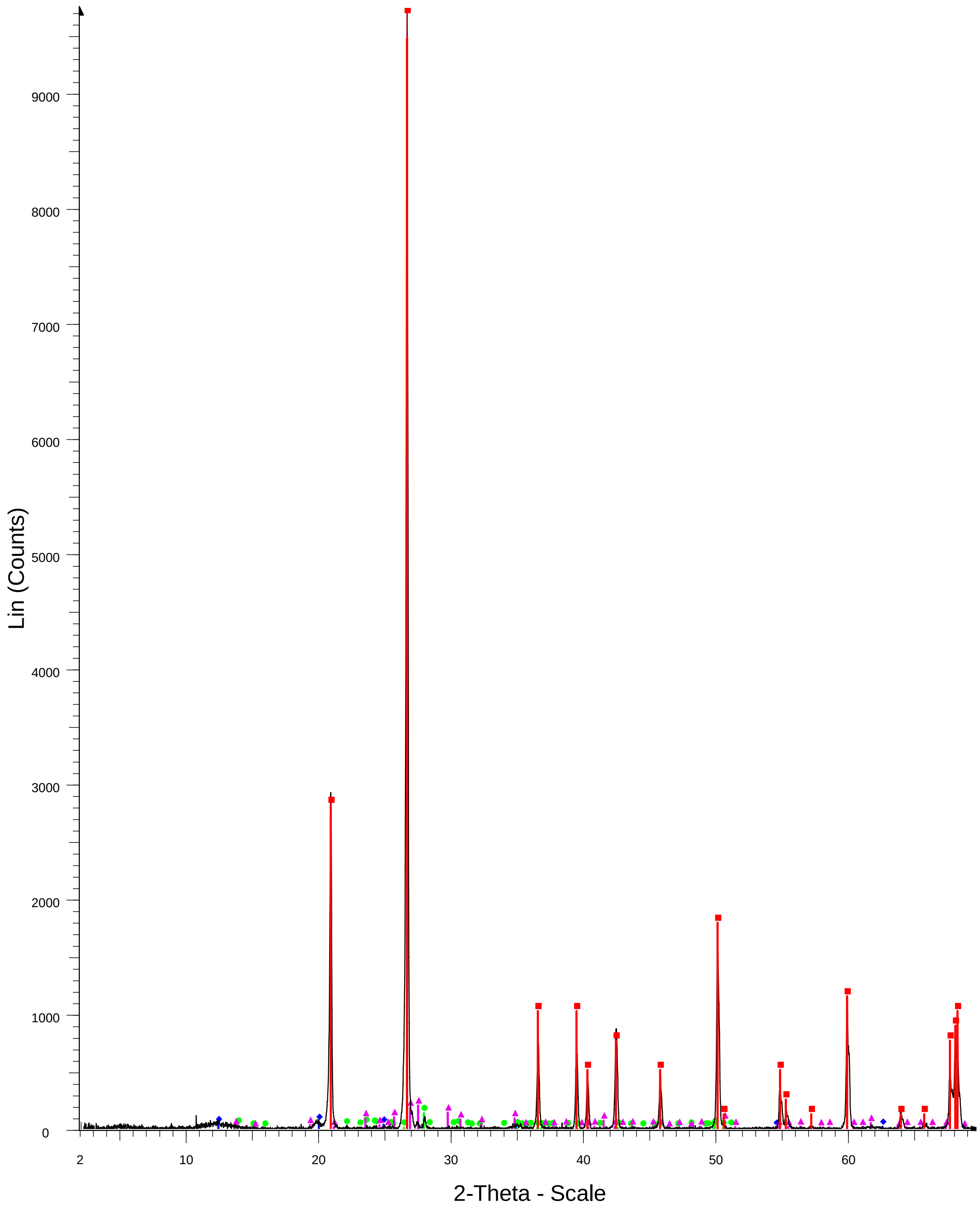

2006861141002
Lin (Counts)
2-Theta - Scale
141002 - File: 141002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.94 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

2006861142001



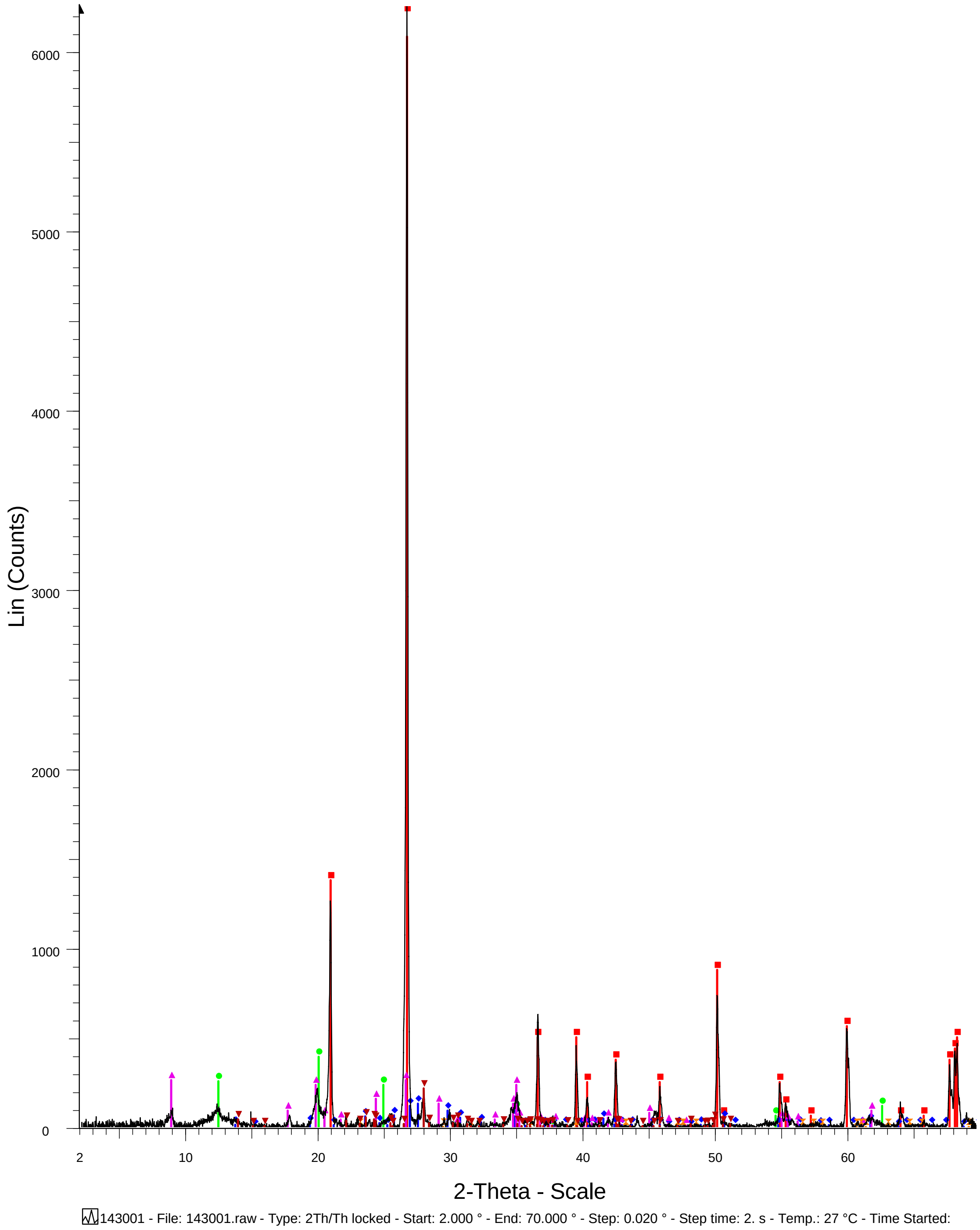
142001 - File: 142001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.039 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-006-0263 (I) - Muscovite-2 ITM1 RG - KAl2(Si3Al)O10(OH,F)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19000 - b 9.03000 - c

2006861142002

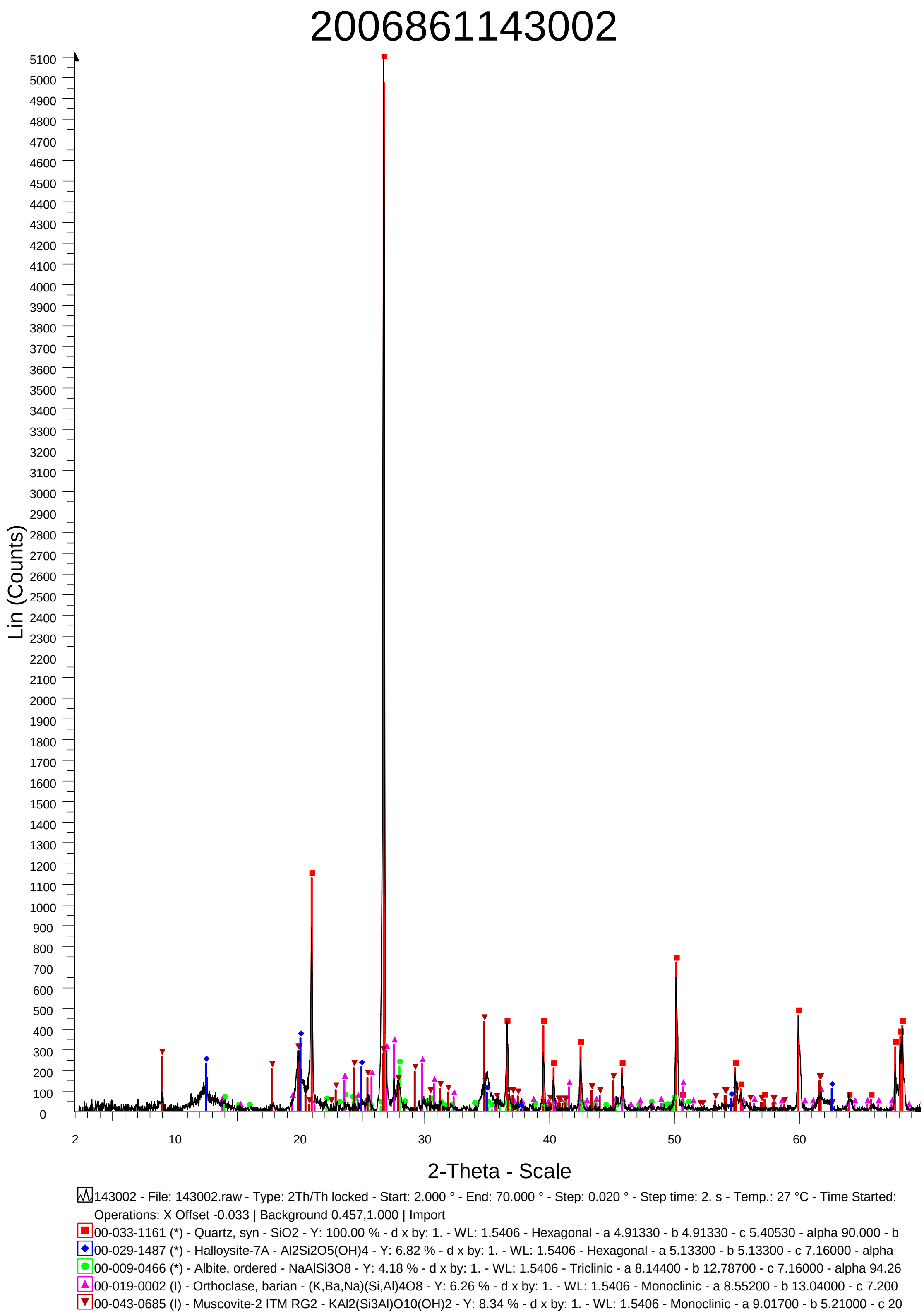


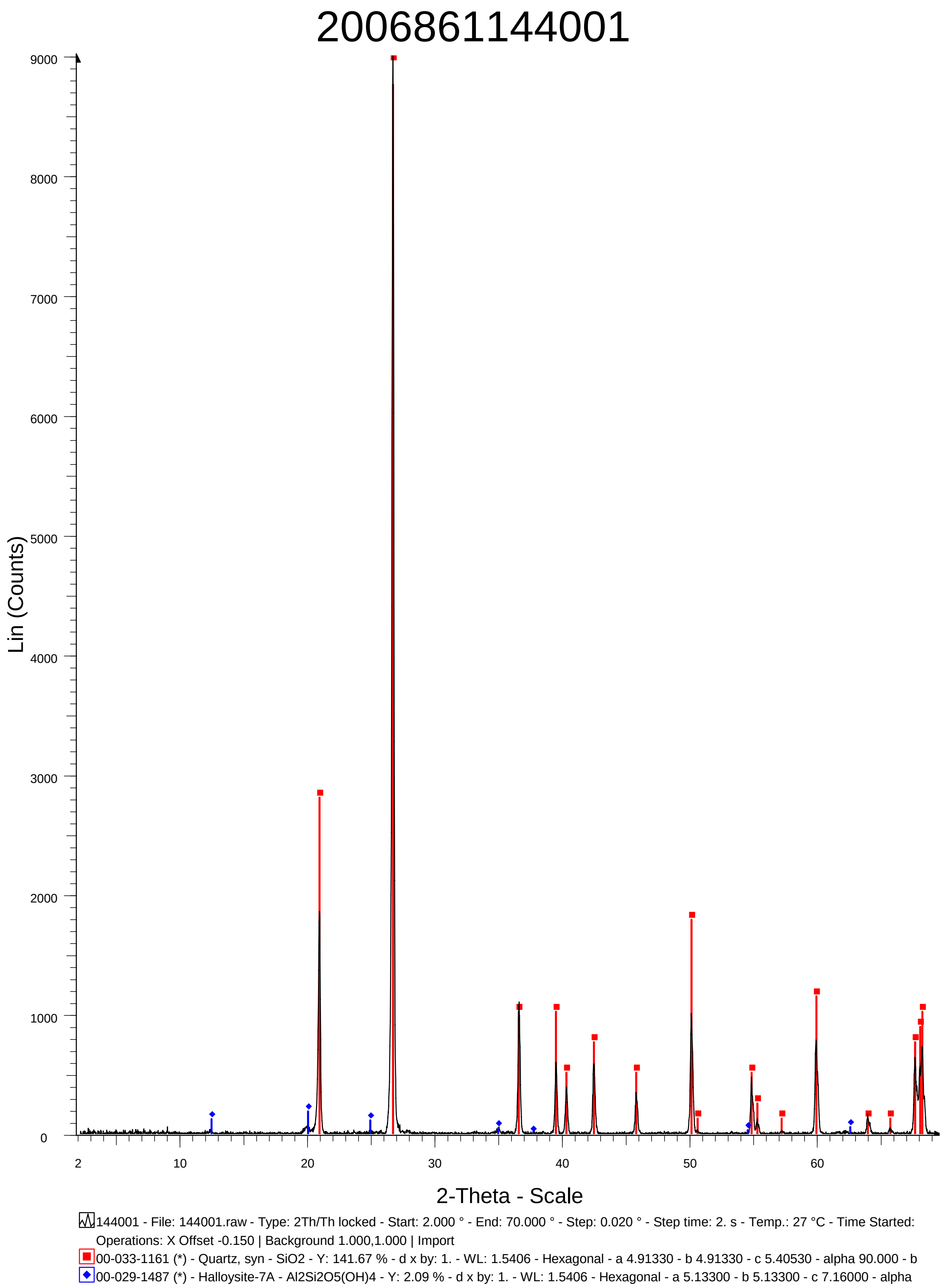
142002 - File: 142002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 131.31 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 0.63 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.41 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

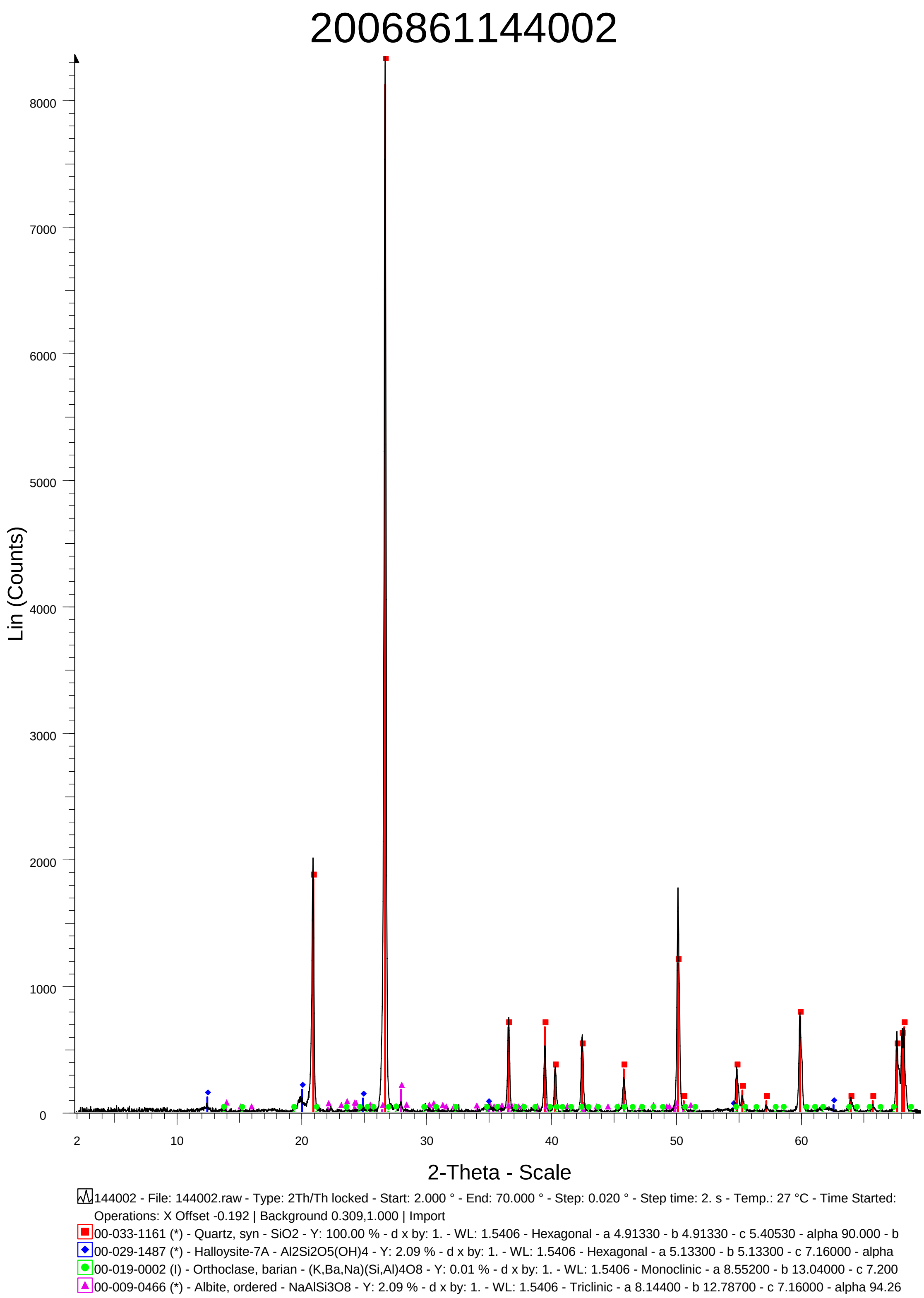
200686143001



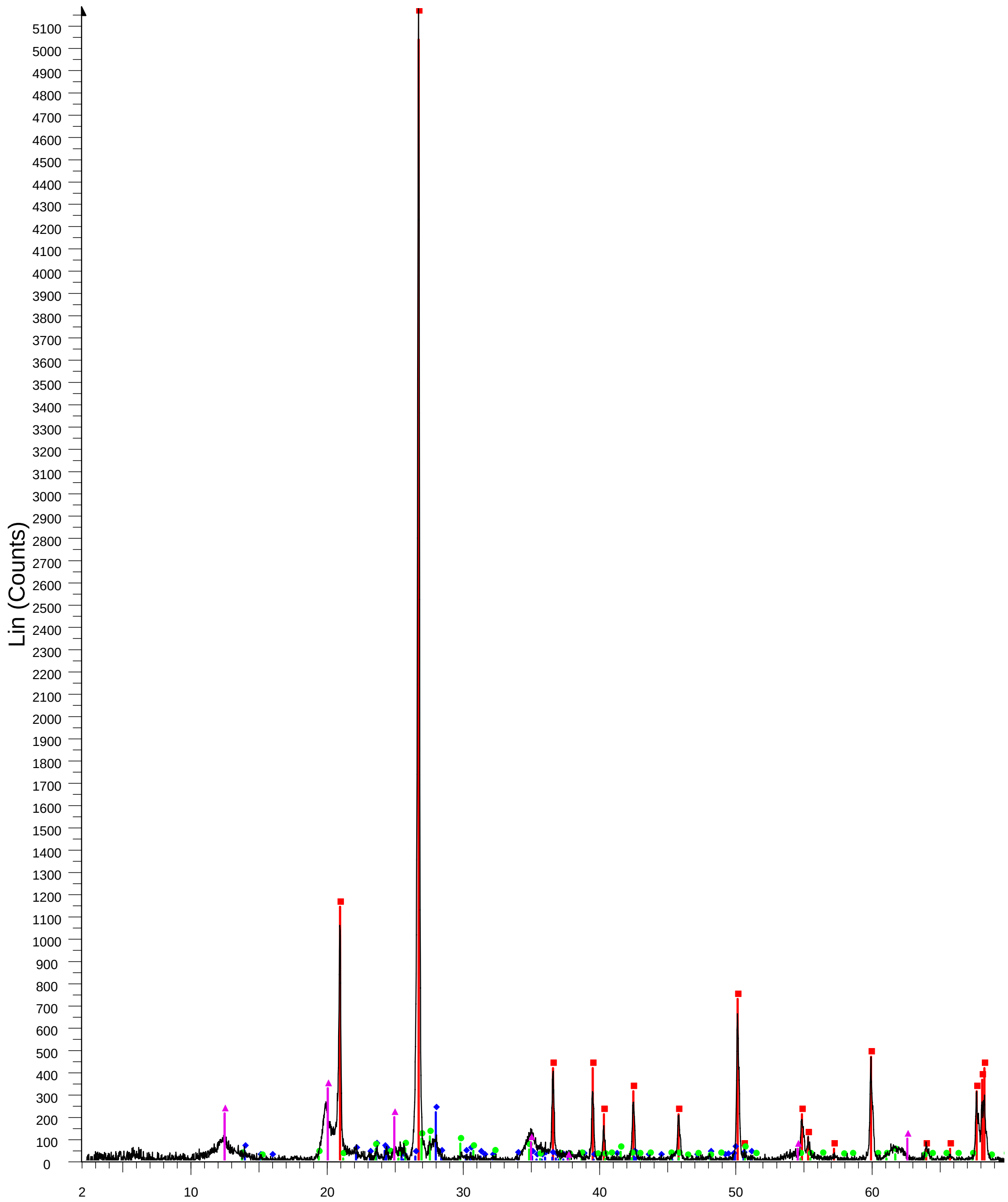
143001 - File: 143001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.033 | X Offset -0.033 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-007-0025 (I) - Muscovite-1 ITM RG, syn - KAl2Si3AlO10(OH)2 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.20800 - b 8.99500 - c
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.43 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.


2006861143002
Lin (Counts)
2-Theta - Scale
143002 - File: 143002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.033 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.82 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-043-0685 (I) - Muscovite-2 ITM RG2 - KAl2(Si3Al)O10(OH)2 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 9.01700 - b 5.21000 - c 20

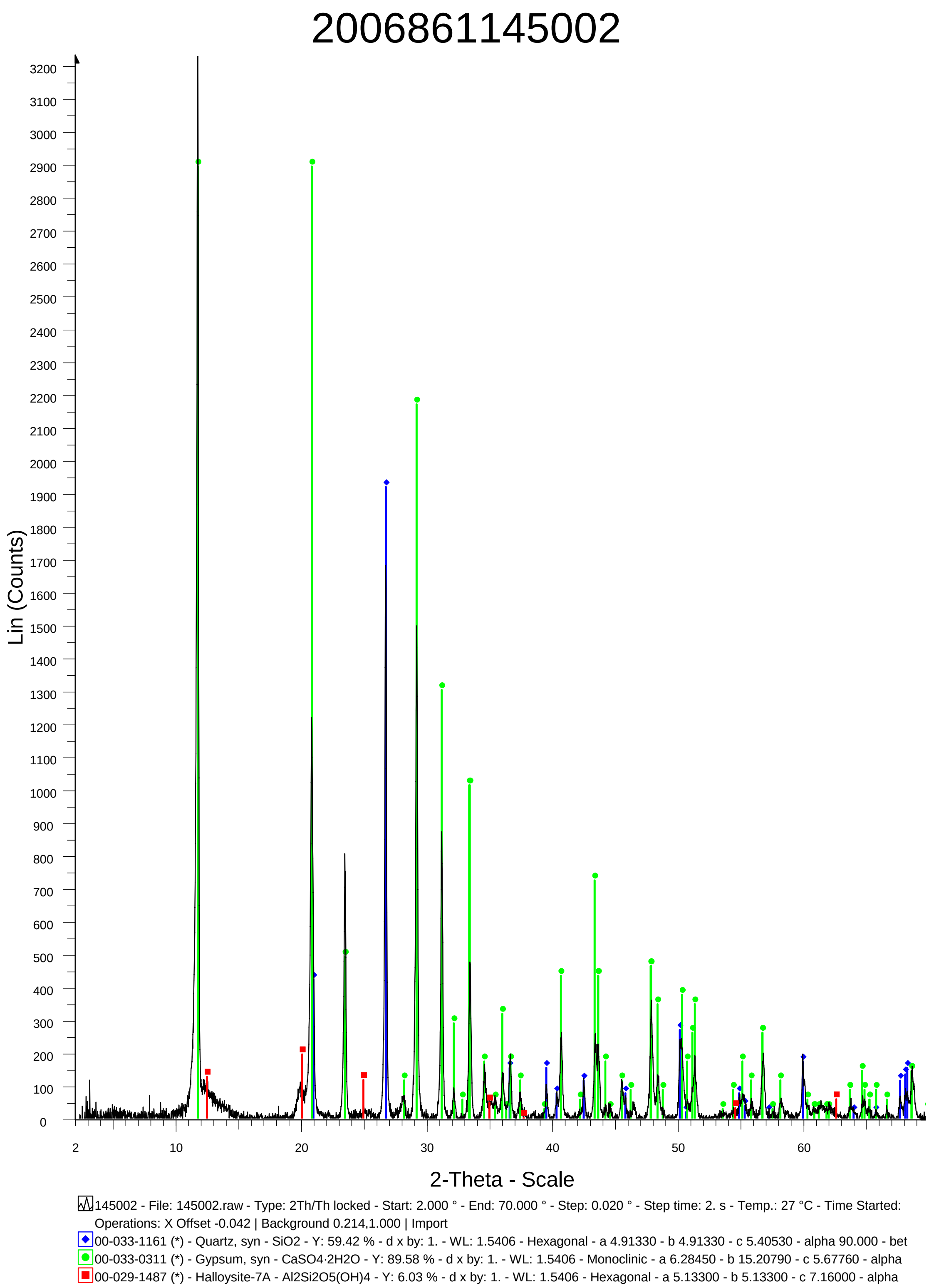

2006861144001
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
144001 - File: 144001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.150 | Background 1.000,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 141.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

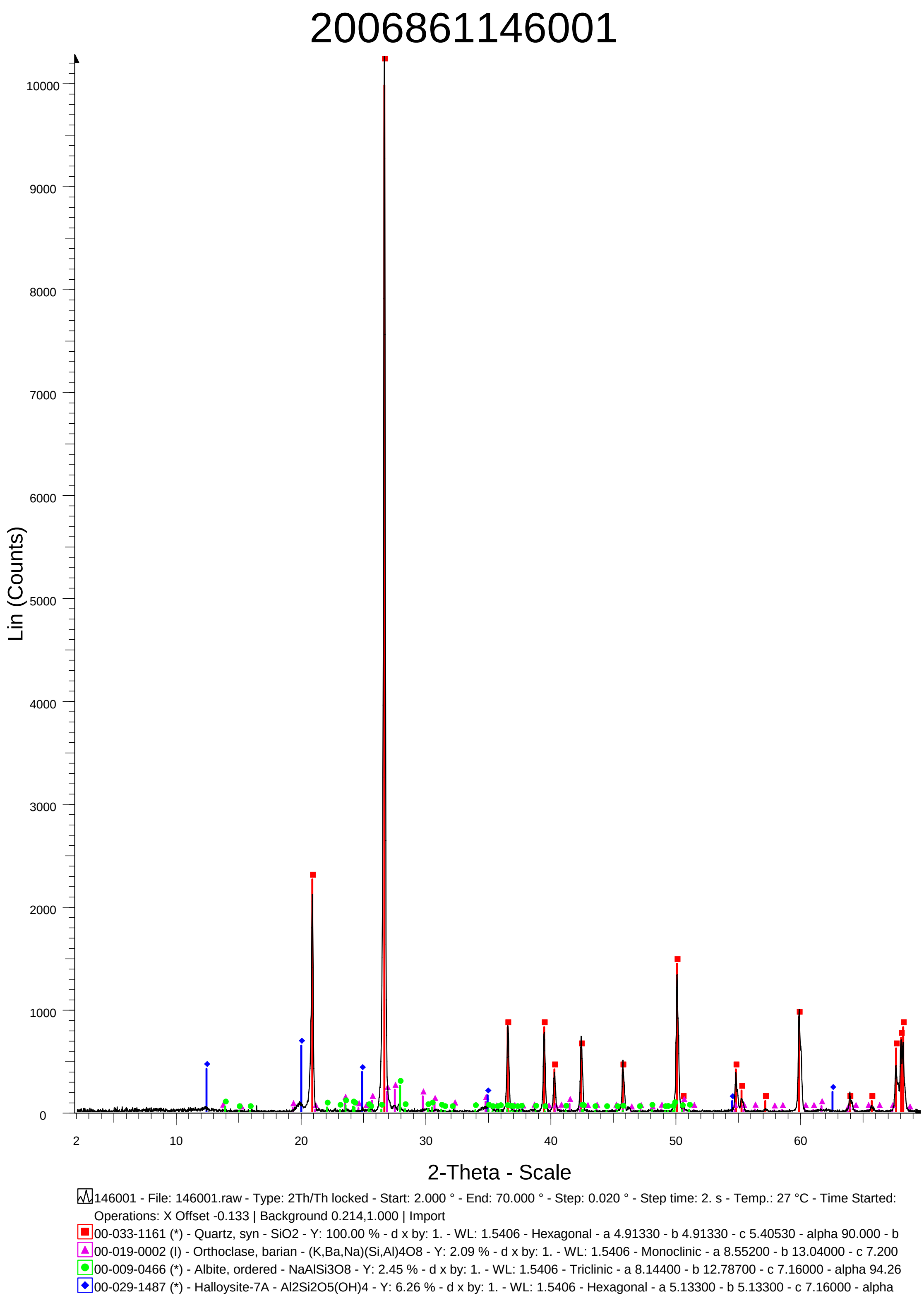

2006861144002
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
144002 - File: 144002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.192 | Background 0.309,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

2006861145001

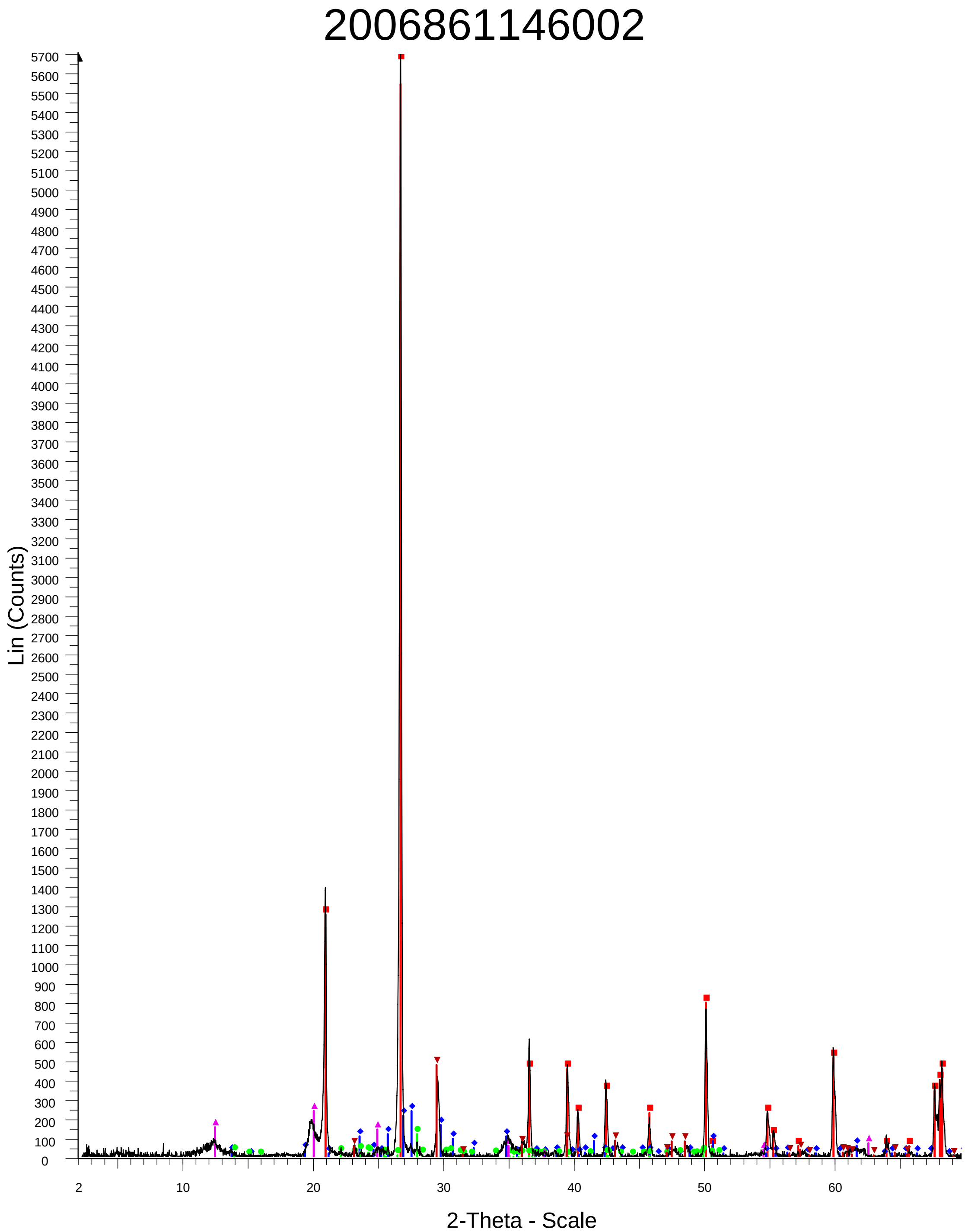


145001 - File: 145001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.033 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

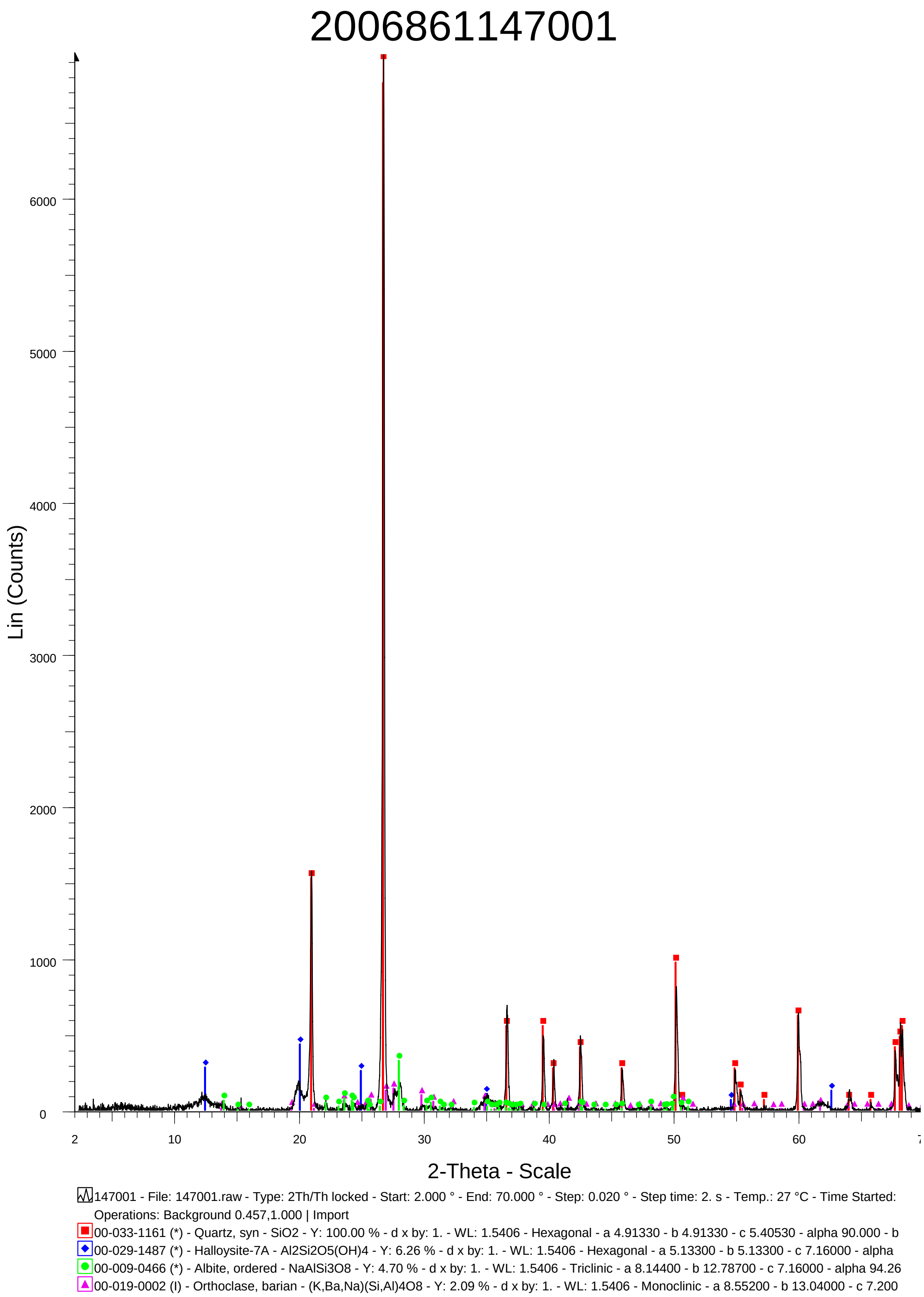

2006861145002
Lin (Counts)
2-Theta - Scale
145002 - File: 145002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.042 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 59.42 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-033-0311 (*) - Gypsum, syn - CaSO4·2H2O - Y: 89.58 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 6.28450 - b 15.20790 - c 5.67760 - alpha
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.03 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha



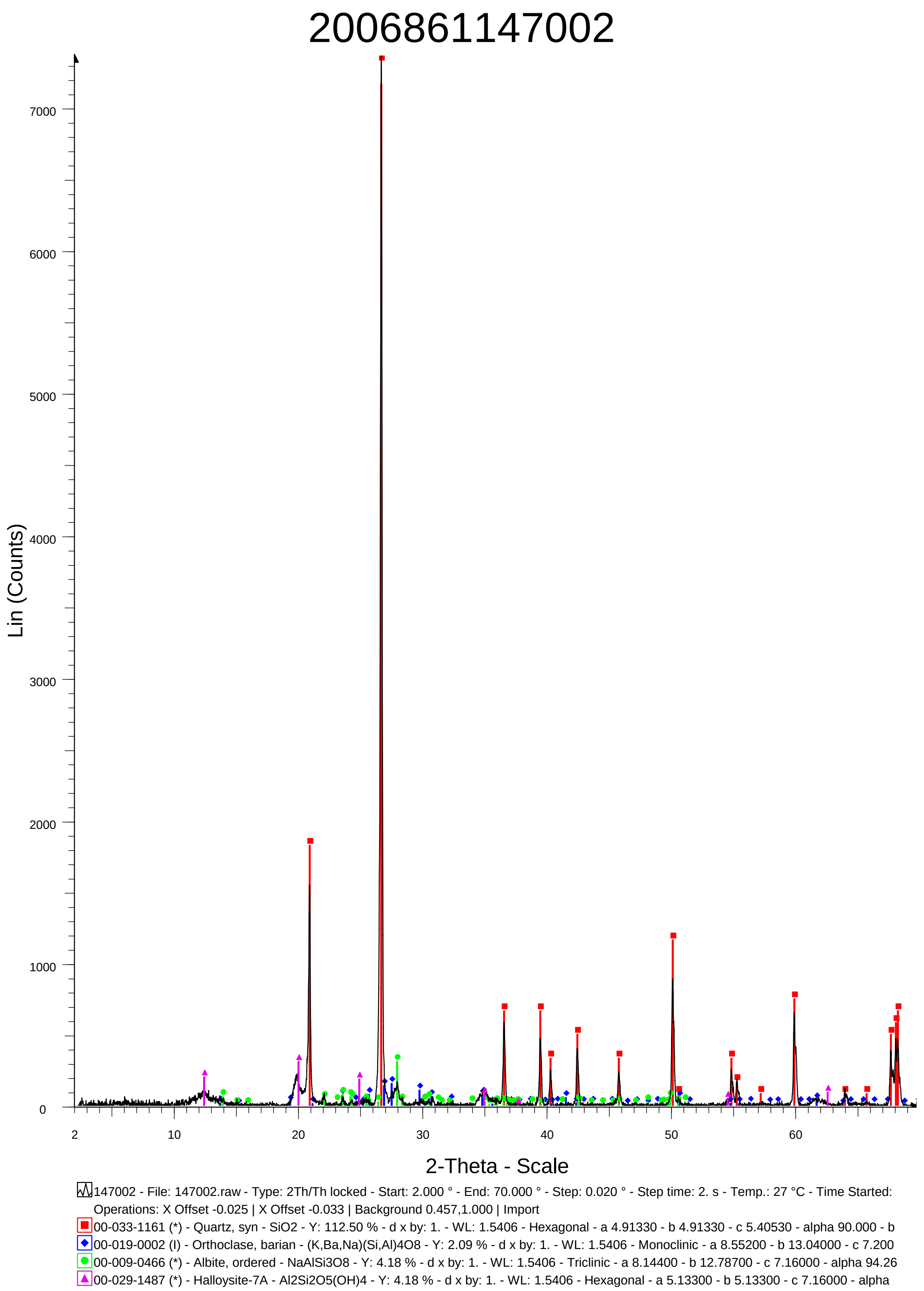
2006861146001
Lin (Counts)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
146001 - File: 146001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.133 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.45 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha



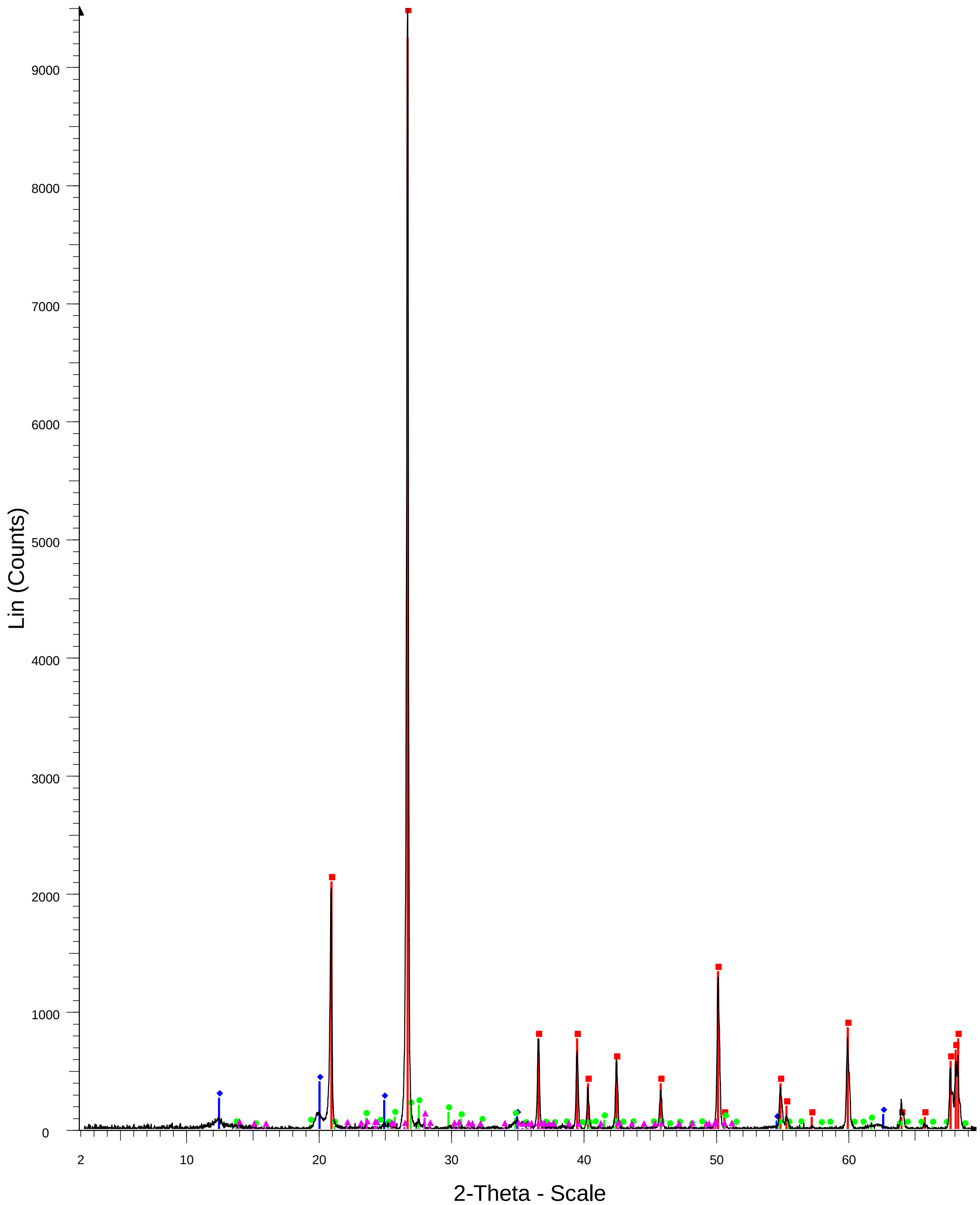
146002 - File: 146002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.050 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - $CaCO_3$ - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.



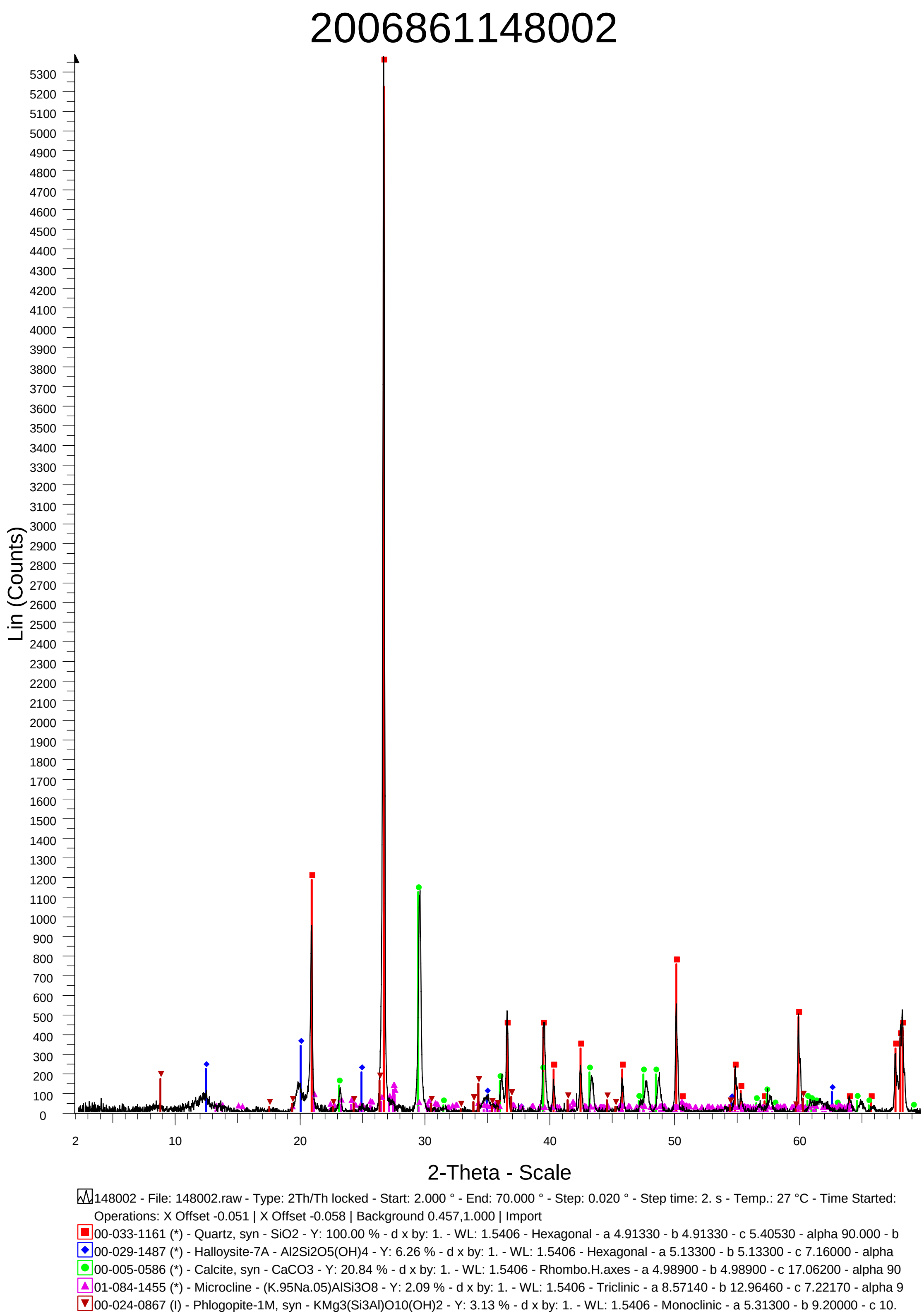
2006861147001
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
147001 - File: 147001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.70 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

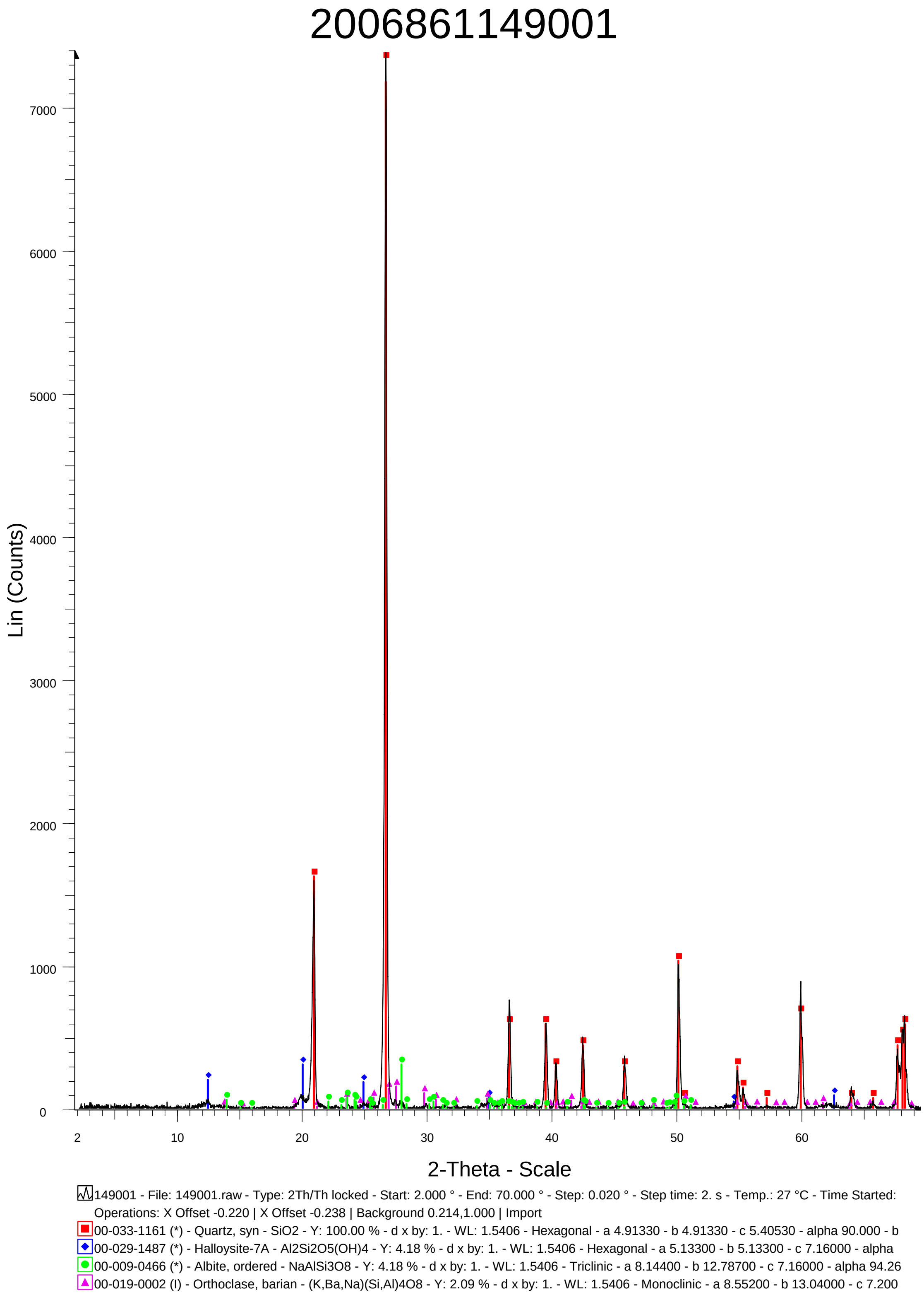

2006861147002
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
147002 - File: 147002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.025 | X Offset -0.033 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 112.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

200686148001



148001 - File: 148001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.117 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.93 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26


2006861148002
Lin (Counts)
2-Theta - Scale
148002 - File: 148002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.051 | X Offset -0.058 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 20.84 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90
01-084-1455 (*) - Microcline - (K.95Na.05)AlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.57140 - b 12.96460 - c 7.22170 - alpha 9
00-024-0867 (I) - Phlogopite-1M, syn - KMg3(Si3Al)O10(OH)2 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.31300 - b 9.20000 - c 10.


2006861149001
Lin (Counts)
0
1000
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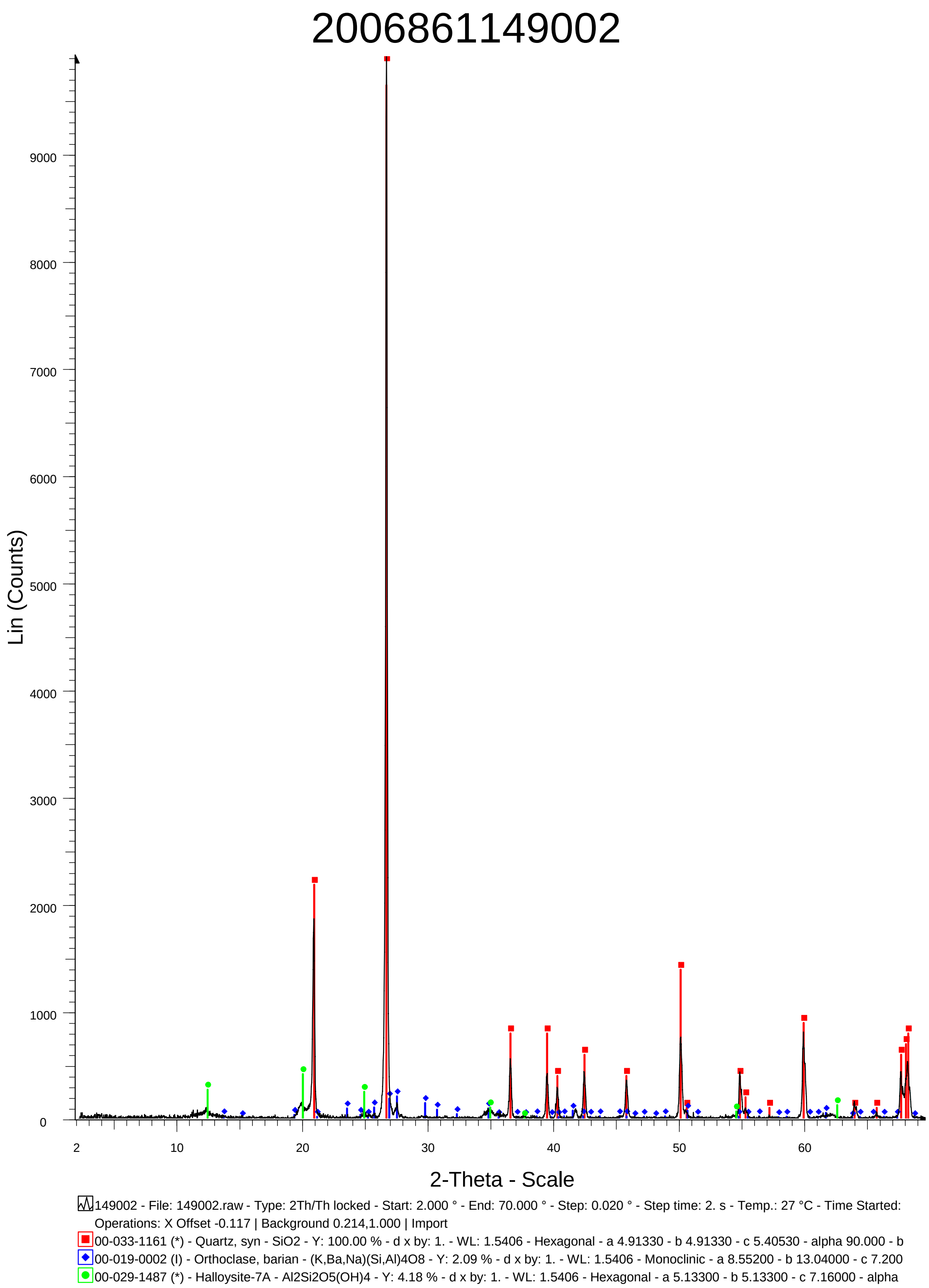
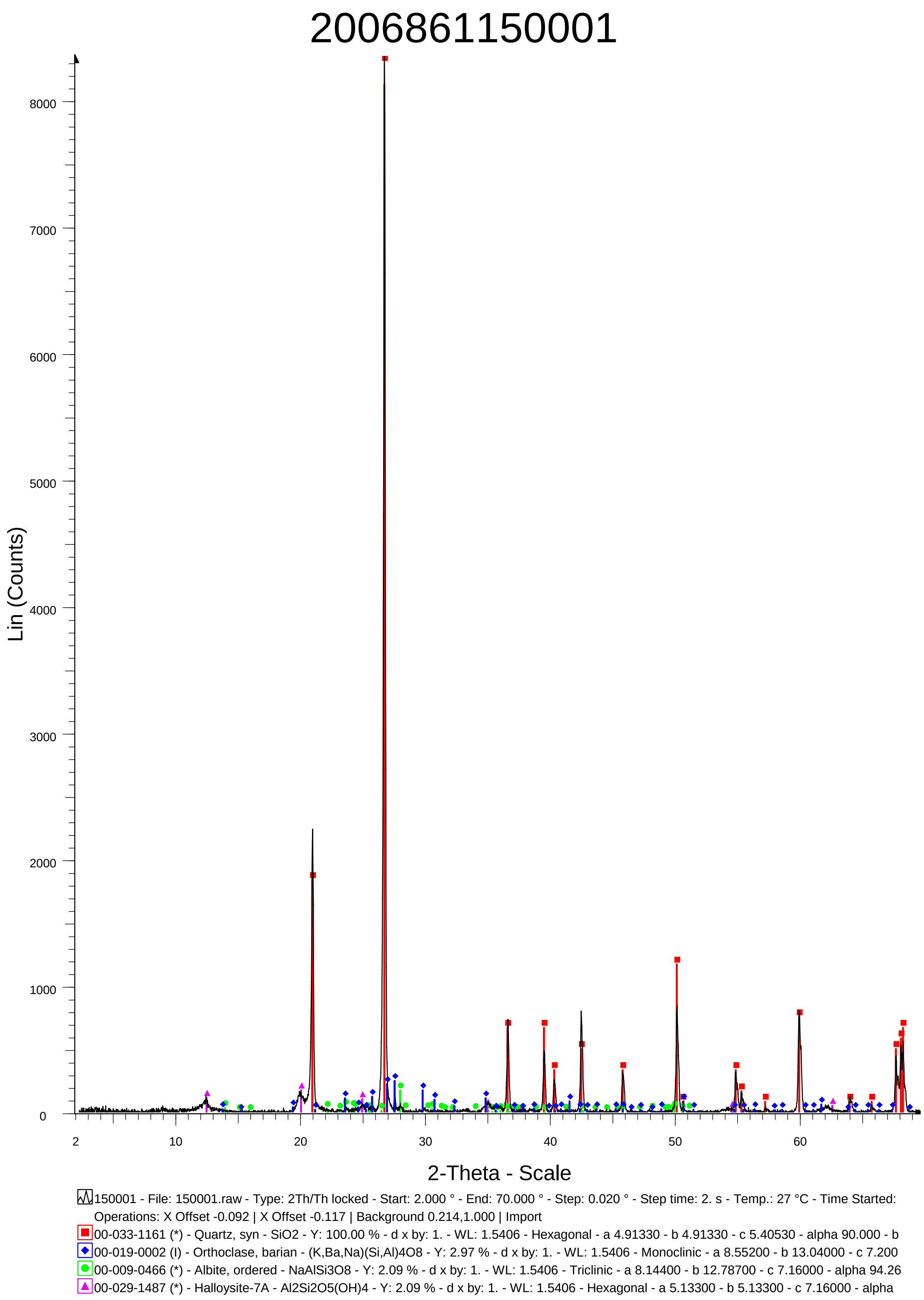
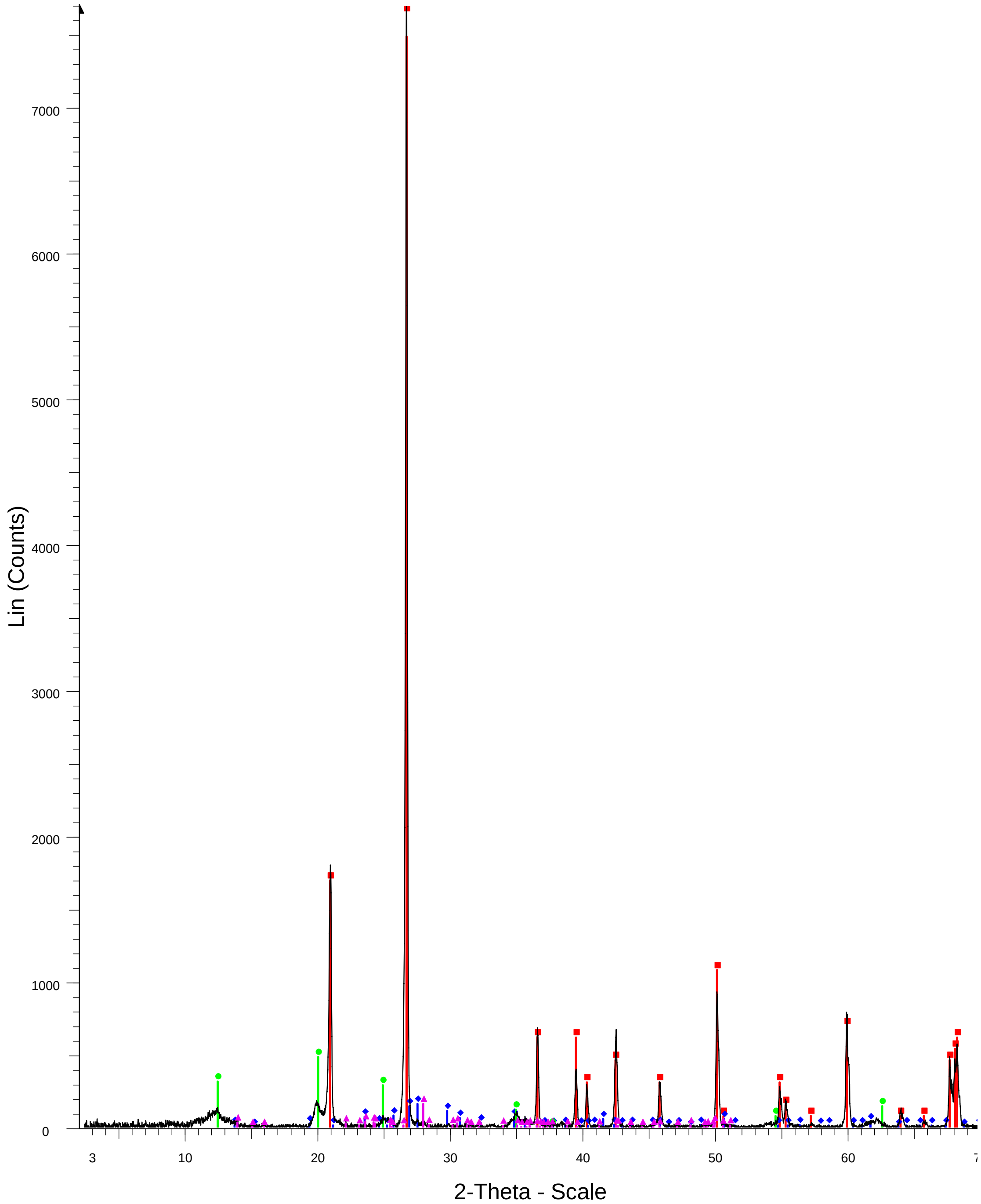
3000
4000
5000
6000
7000
2
10
20
30
40
50
60
2-Theta - Scale
149001 - File: 149001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.220 | X Offset -0.238 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

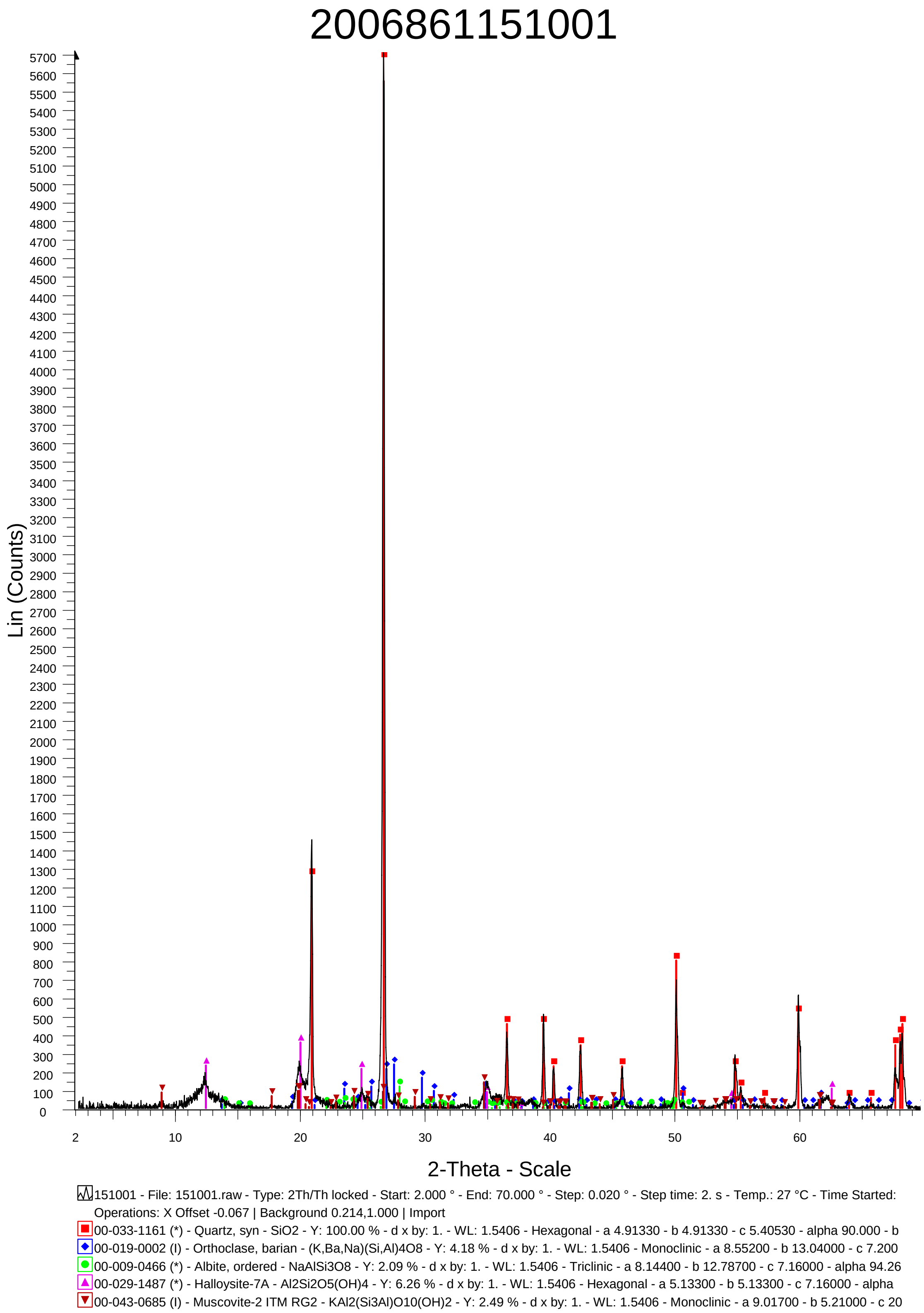

2006861149002
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
149002 - File: 149002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.117 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861150001
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
150001 - File: 150001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.092 | X Offset -0.117 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.97 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

2006861150002



150002 - File: 150002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset 0.017 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861151001
Lin (Counts)
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5400
5300
5200
5100
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4700
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1100
1000
900
800
700
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500
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300
200
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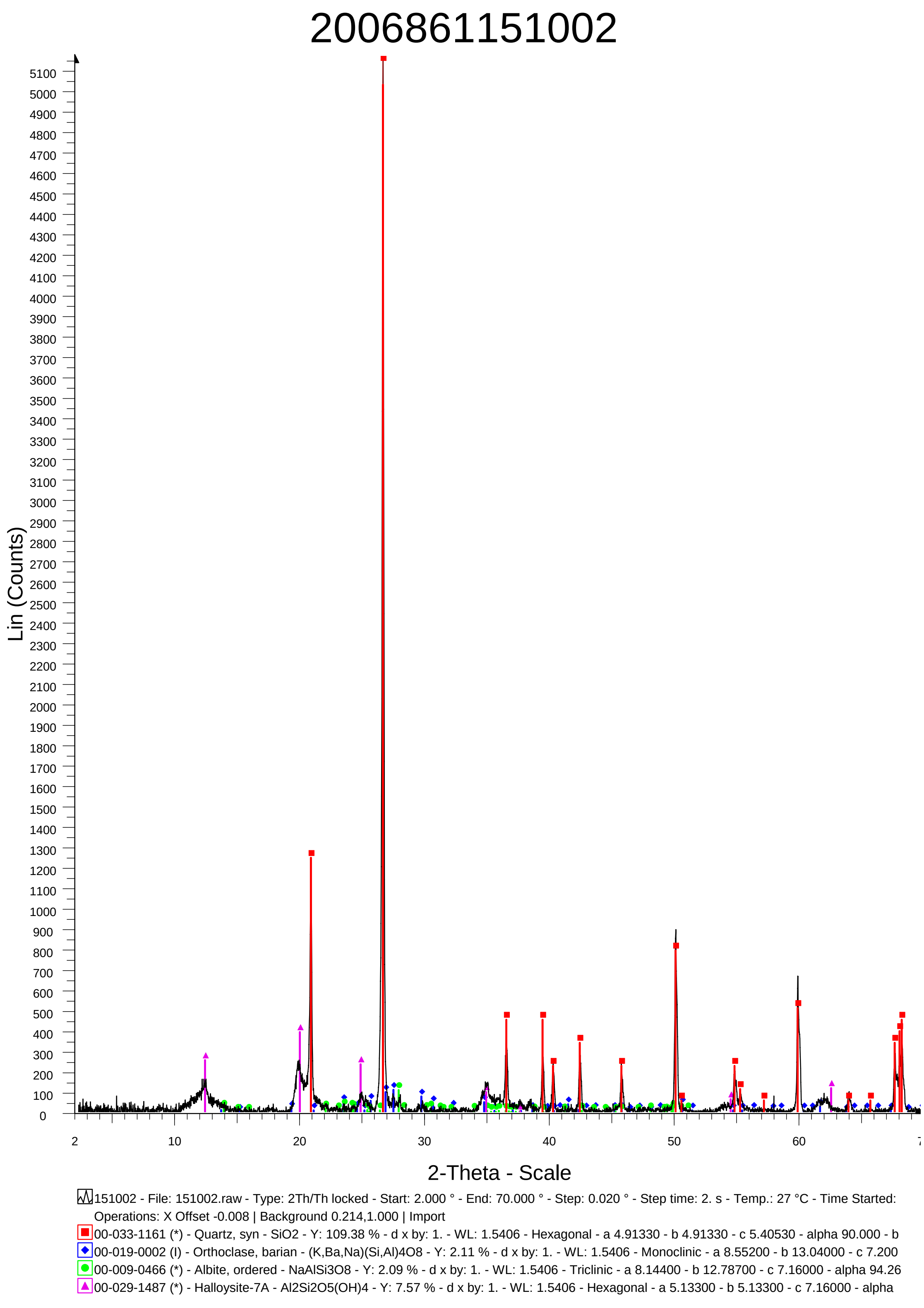
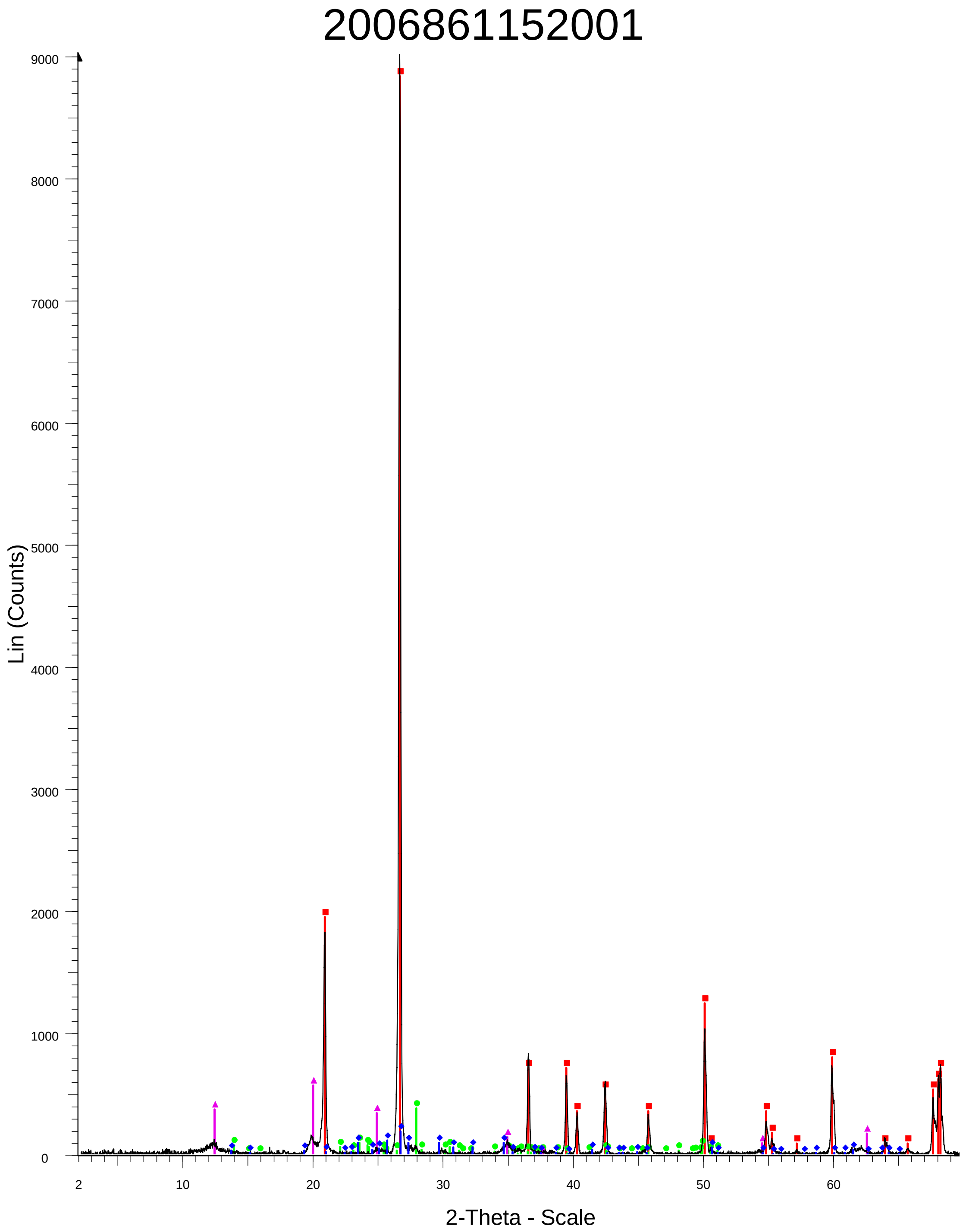
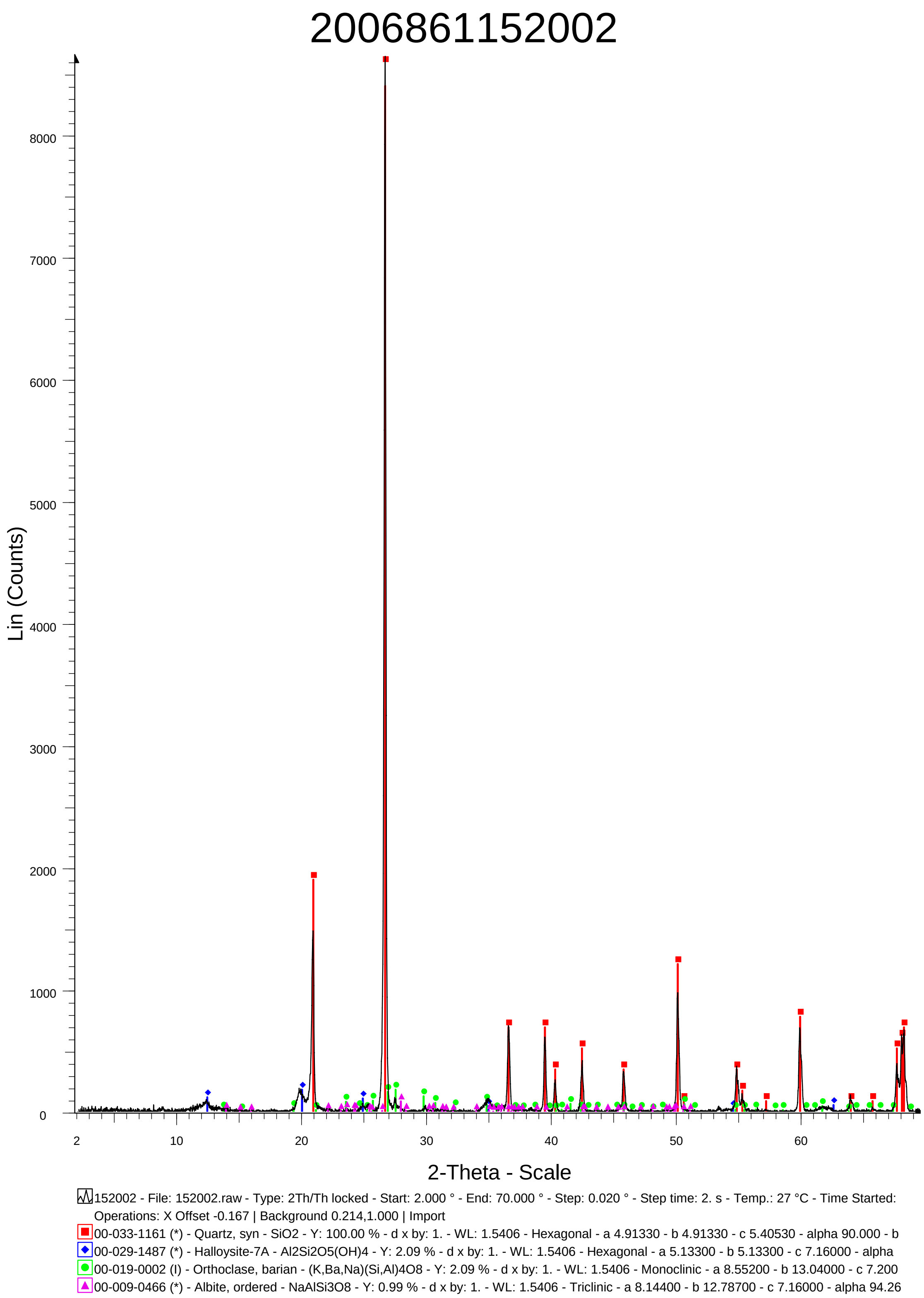
2
10
20
30
40
50
60
2-Theta - Scale
151001 - File: 151001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.067 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-043-0685 (I) - Muscovite-2 ITM RG2 - KAl2(Si3Al)O10(OH)2 - Y: 2.49 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 9.01700 - b 5.21000 - c 20


2006861151002
Lin (Counts)
2-Theta - Scale
151002 - File: 151002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.008 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 109.38 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.11 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 7.57 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha



152001 - File: 152001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.067 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 97.92 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - bet
00-019-0003 (N) - Orthoclase, barian - (K,Ba)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.61600 - b 13.05900 - c 7.19900
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


2006861152002
Lin (Counts)
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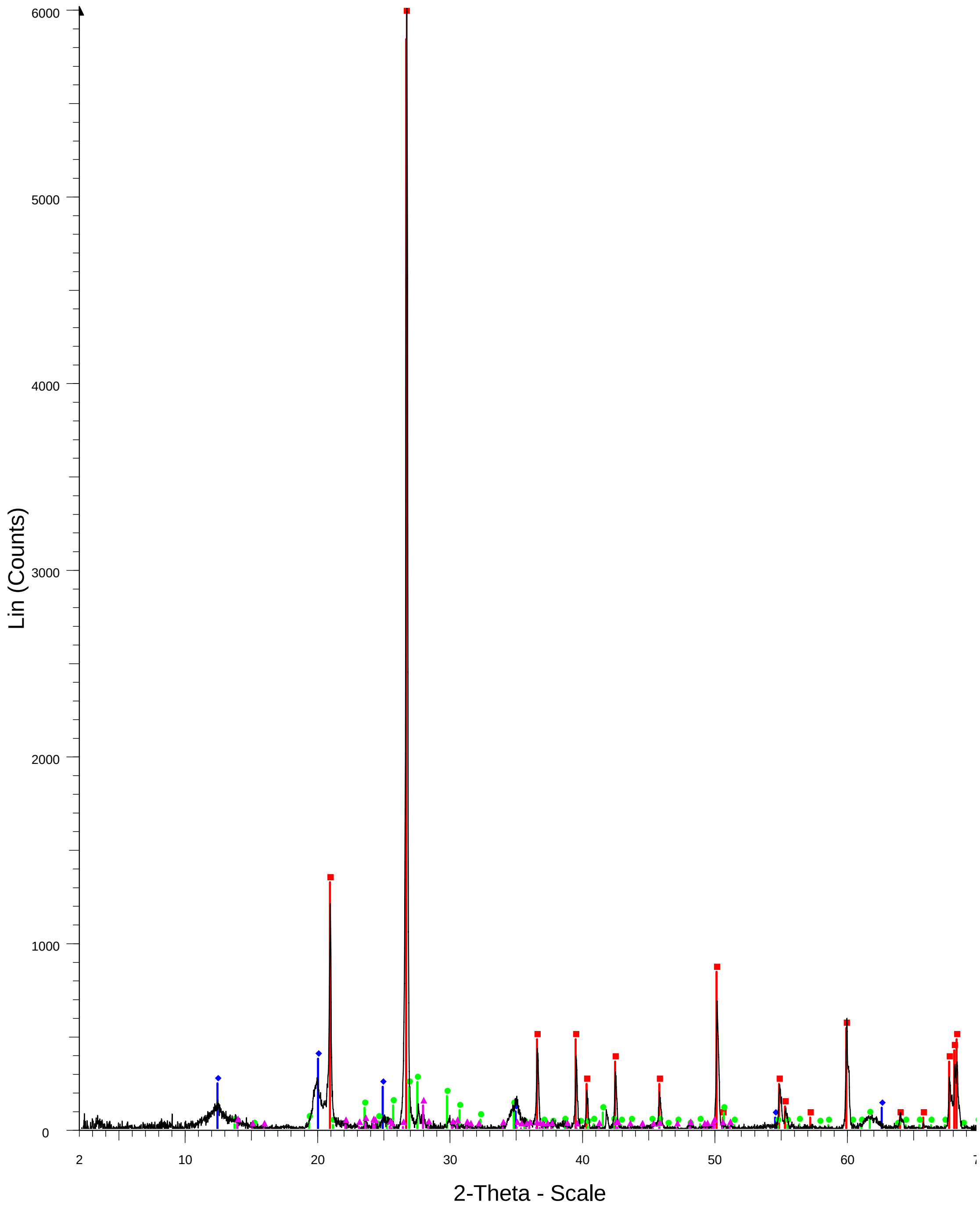
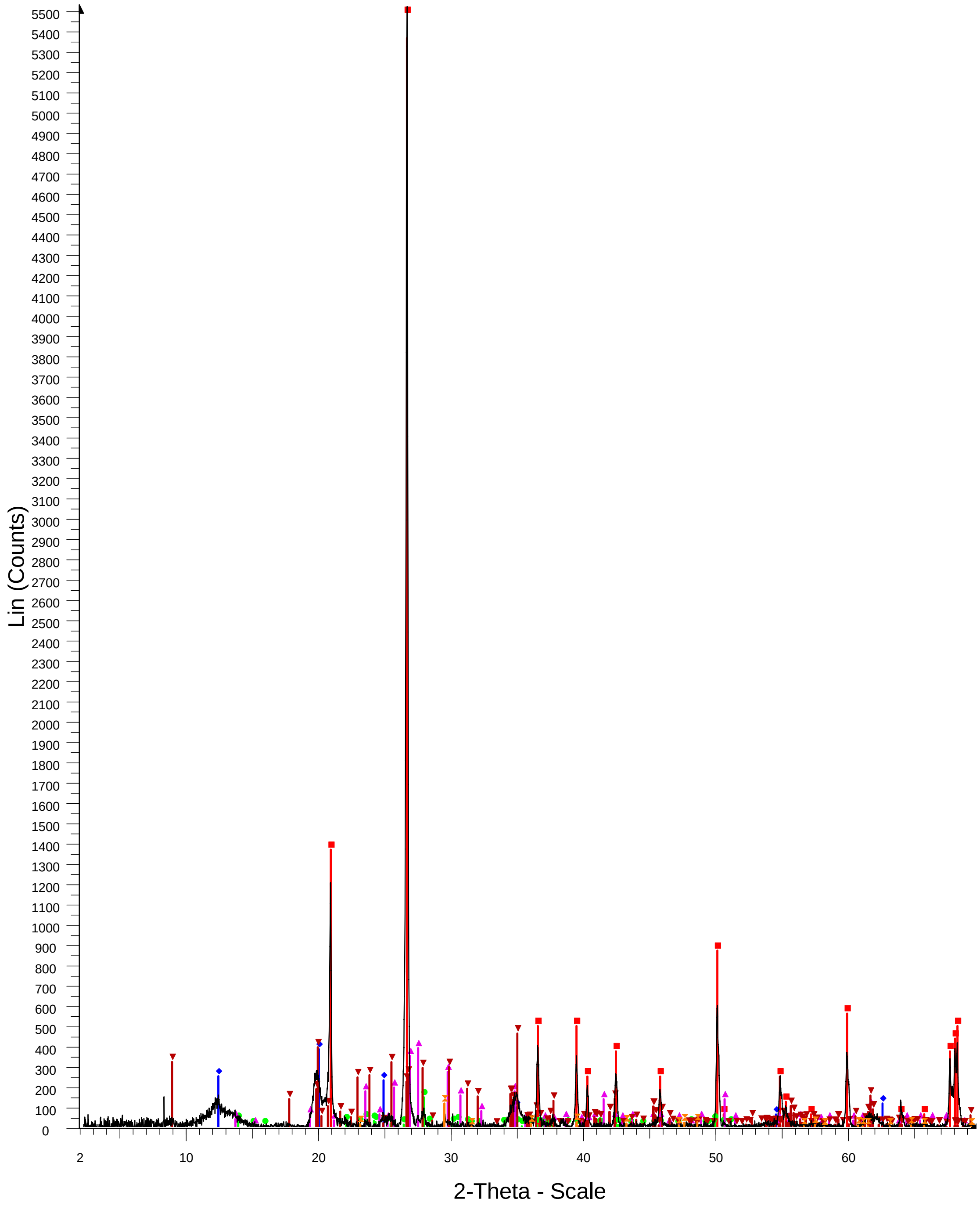
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
152002 - File: 152002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.167 | Background 0.214,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.99 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

2006861153001

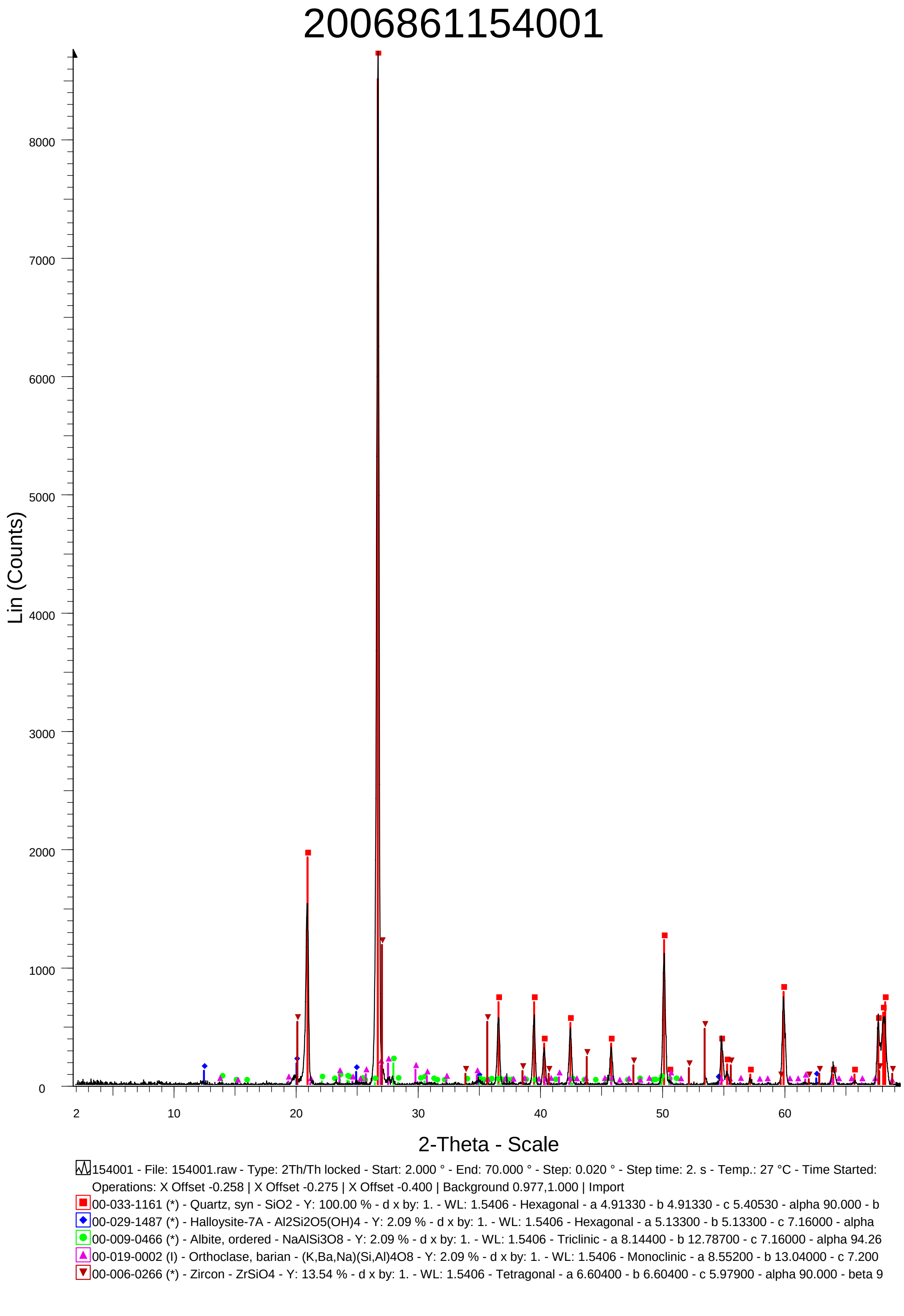


153001 - File: 153001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.17 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

2006861153002



153002 - File: 153002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.075 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 112.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.94 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.64 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 7.03 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
01-072-1503 (I) - Muscovite - KAl2(Si3Al)O10(OH)2 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19980 - b 9.02660 - c 20.10580 - alp
01-085-0849 (A) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98032 - b 4.98032 - c 17.01869 - alpha 90.


2006861154001
Lin (Counts)
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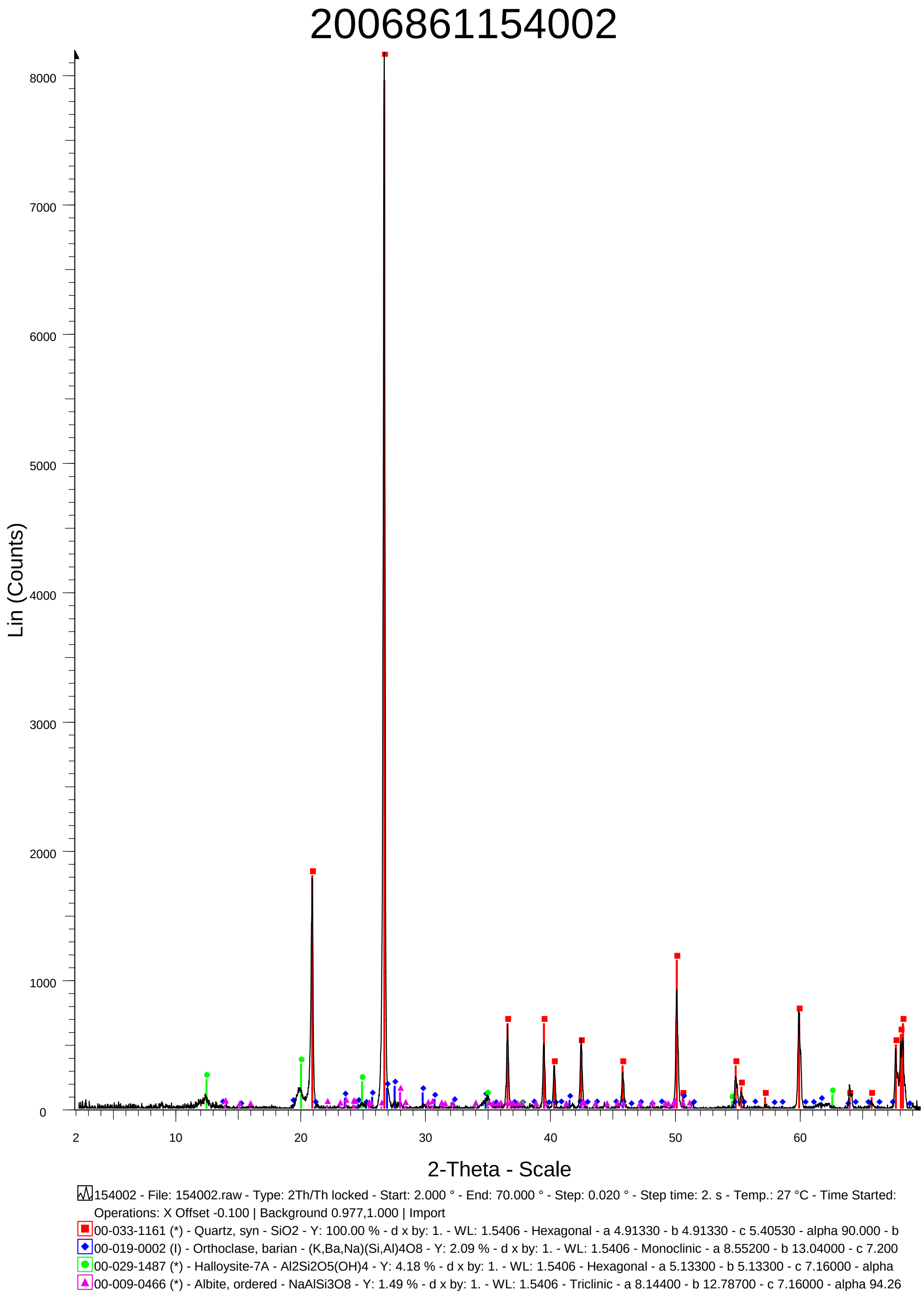
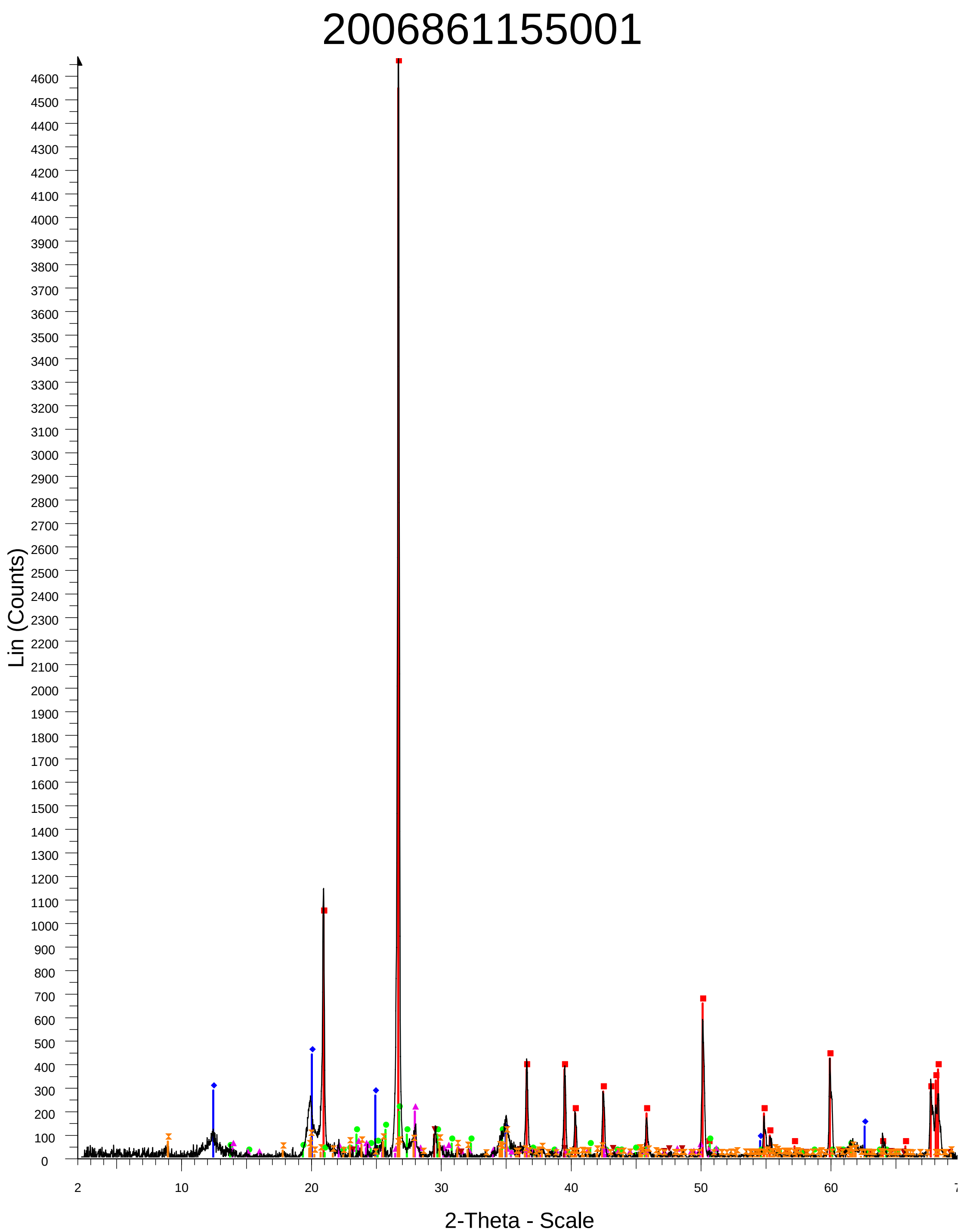
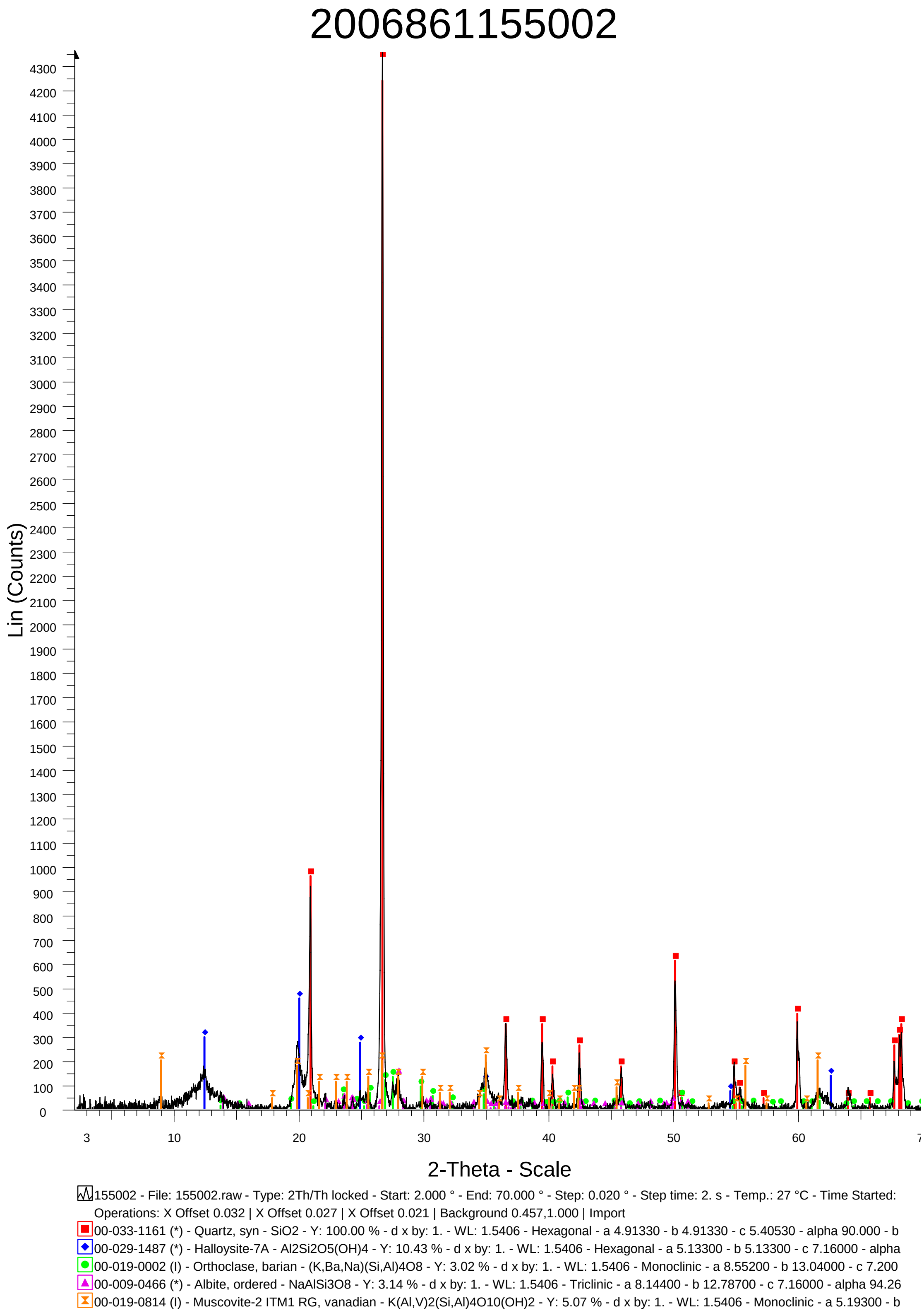
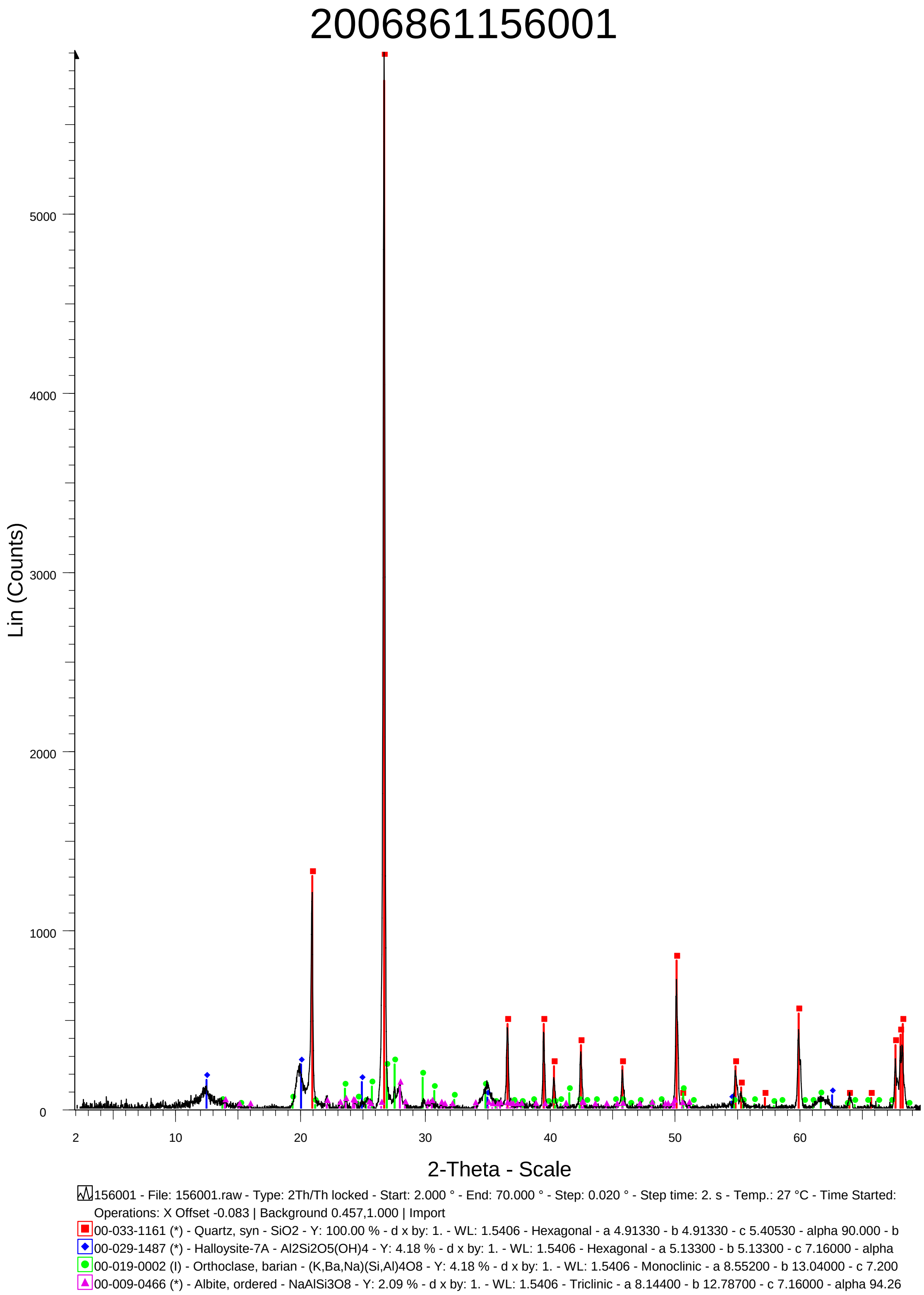
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
154001 - File: 154001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.258 | X Offset -0.275 | X Offset -0.400 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-006-0266 (*) - Zircon - ZrSiO4 - Y: 13.54 % - d x by: 1. - WL: 1.5406 - Tetragonal - a 6.60400 - b 6.60400 - c 5.97900 - alpha 90.000 - beta 9

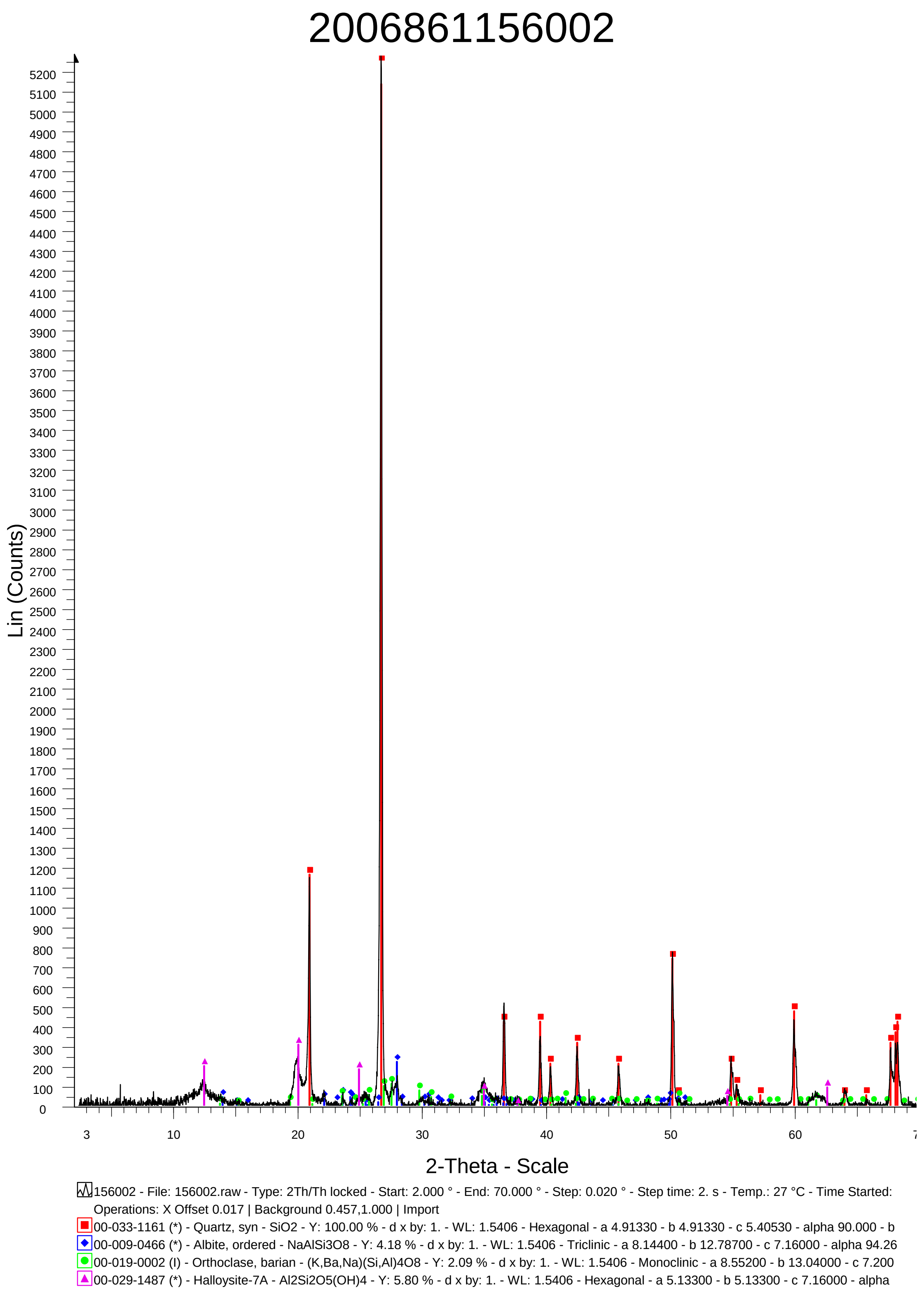

2006861154002
Lin (Counts)
0
1000
2000
3000
4000
5000
6000
7000
8000
2
10
20
30
40
50
60
2-Theta - Scale
154002 - File: 154002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.100 | Background 0.977,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.49 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26



155001 - File: 155001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 9.38 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0003 (N) - Orthoclase, barian - (K,Ba)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.61600 - b 13.05900 - c 7.19900
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
01-072-1503 (I) - Muscovite - KAl2(Si3Al)O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19980 - b 9.02660 - c 20.10580 - alp


2006861155002
Lin (Counts)
2-Theta - Scale
155002 - File: 155002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset 0.032 | X Offset 0.027 | X Offset 0.021 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.02 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.14 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 5.07 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b


2006861156001
Lin (Counts)
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
156001 - File: 156001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.083 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26


2006861156002
Lin (Counts)
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100
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300
400
500
600
700
800
900
1000
1100
1200
1300
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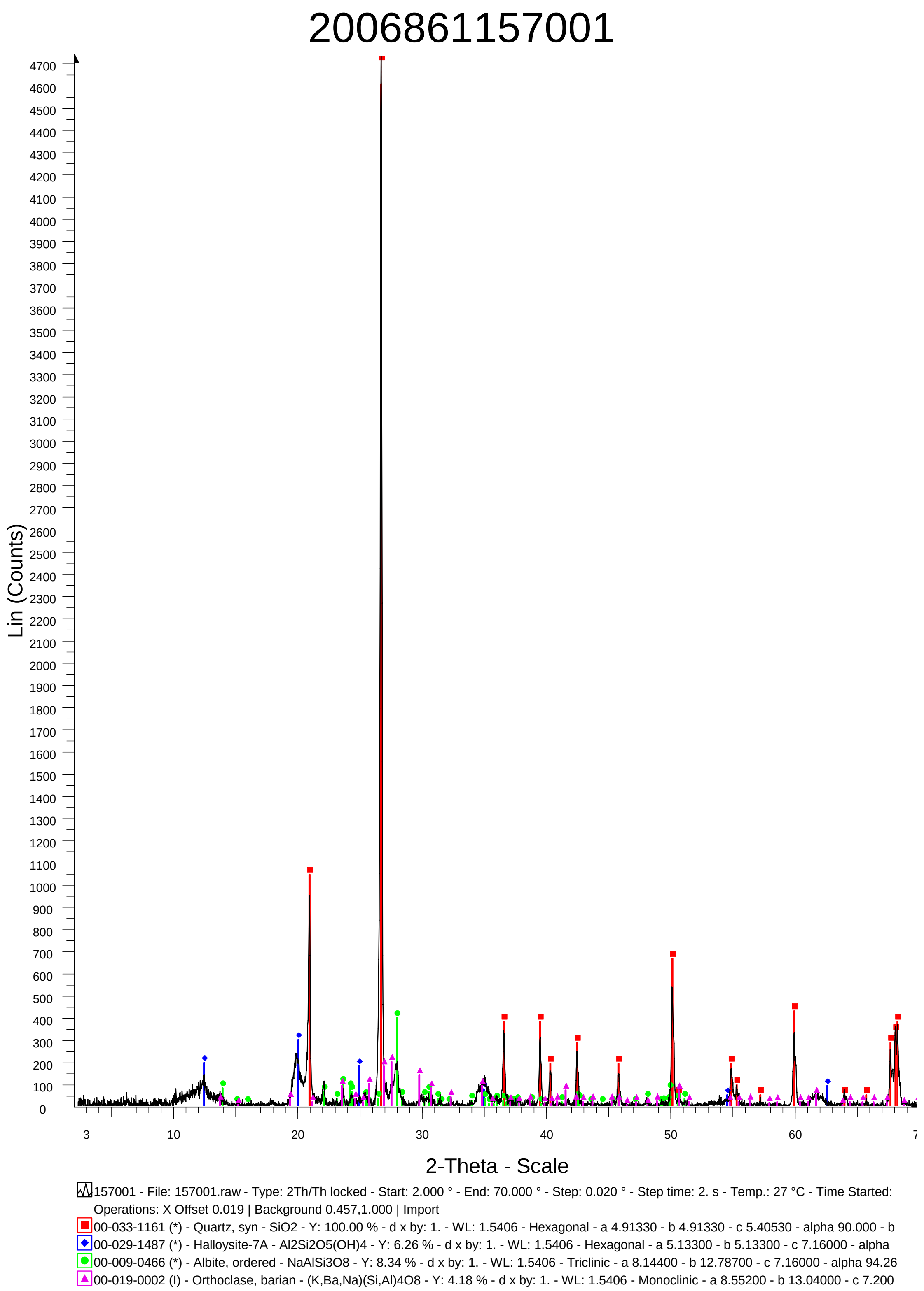
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
3
10
20
30
40
50
60
2-Theta - Scale
156002 - File: 156002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset 0.017 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 5.80 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha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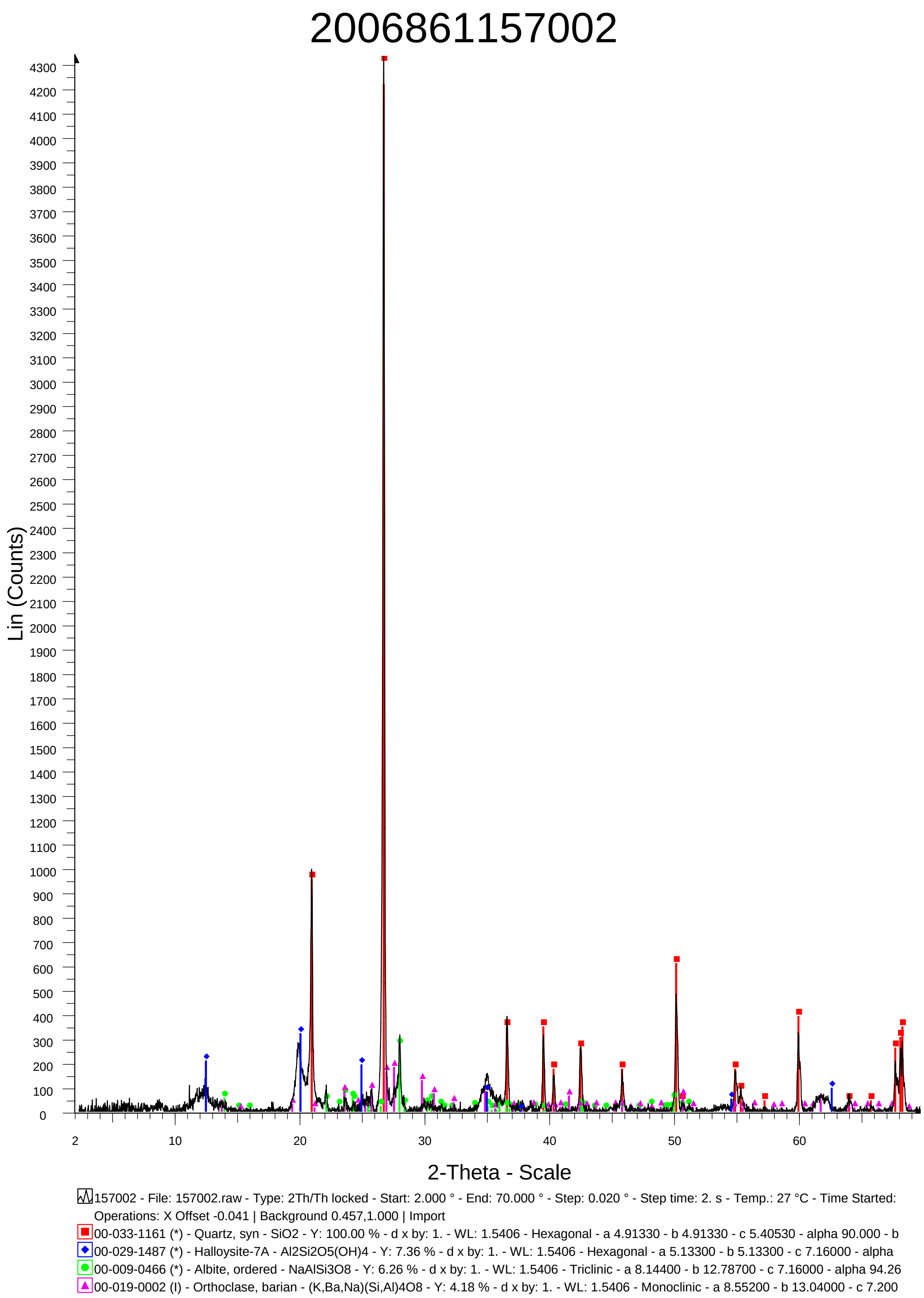
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
3
10
20
30
40
50
60
2-Theta - Scale
157001 - File: 157001.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset 0.019 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


2006861157002
Lin (Counts)
4300
4200
4100
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
2
10
20
30
40
50
60
2-Theta - Scale
157002 - File: 157002.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Started:
Operations: X Offset -0.041 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 7.36 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200

XRD Mineral Report for Megan Lech (Batch 11586) March 2007

46 samples were submitted for XRD analysis. Samples were scanned on a Siemens D500 Diffractometer from 2° to 70° 2θ in 0.02° increments at 40kV, 30mA. Mineral identification was carried out using the program Bruker Diffrac ^{Plus} Eva. Siroquant® was used to quantify minerals.

- The simple scans were very similar for most samples, showing dominant Quartz, some clay and small amounts of feldspar. However, in some samples, there was more clay than Quartz. Muscovite, Montmorillonite and Calcite were also identified in some samples. Gypsum was found in two samples, 1927478 and 1927480. Pyrophyllite was identified in 1927457. Halite was identified in 1927480.
- Specific clays have been identified by peak best-fit using Eva's search/match program. Further work would be required to definitively identify clays, but the presence of Kaolinite Group clays is most likely.
- Specific feldspars have been identified by peak best-fit using Eva's search/match program. Further petrological and mineralogical work would be required to definitively identify feldspars.
- Siroquant failed to quantify some minerals that clearly appeared to be present in small quantities in scans. This generally occurred when more than one feldspar was identified by Eva. In the quantification process, one of the feldspars tended to 'swallow' the other.

Liz Webber and Bill Pappas
20 March 2007

Sample #	Minerals Present	Corrected Weight %
1927420	Quartz	78.7
2006861201001	Halloysite	10.1
	Albite	5.7
	Muscovite	3.2
	Orthoclase	2.3
		100
1927422	Quartz	59.1
2006861201002	Halloysite	24.8
	Muscovite	7.8
	Albite	5.2
	Orthoclase	3.1
		100
1927423	Quartz	78.8
2006861202001	Halloysite	13.4
	Albite	4
	Orthoclase	3.9
		100.1
1927425	Quartz	60.7
2006861202002	Halloysite	29.4
	Orthoclase	4.2
	Albite	3.6
	Calcite	2.1
		100
1927426	Quartz	59
2006861203001	Halloysite	32.5
	Albite	4.8
	Orthoclase	3.7
		100
1927428	Quartz	53
2006861203002	Halloysite	29.5
	Muscovite	9.3
	Albite	4
	Orthoclase	3
	Calcite	1.3
		100.1
1927429	Quartz	73
2006861204001	Halloysite	22.7
	Orthoclase	2.6
	Albite	1.6
		99.9
1927431	Quartz	58.3
2006861204002	Halloysite	36.5
	Orthoclase	3.5
	Albite	1.7
		100

Sample #	Minerals Present	Corrected Weight %
1927433	Quartz	64.4
2006861205001	Halloysite	29
	Muscovite	3.2
	Orthoclase	1.9
	Albite	1.3
		99.8
1927435	Quartz	65.4
2006861205002	Halloysite	30
	Albite	2.5
	Orthoclase	2.1
		100
1927436	Quartz	74.4
2006861206001	Halloysite	13.3
	Orthoclase	6.4
	Albite	5.9
		100
1927438	Quartz	67.2
2006861206002	Halloysite	19.5
	Albite	8.1
	Orthoclase	4.1
	Montmorillonite	1
		99.9
1927439	Quartz	61.8
2006861207001	Halloysite	28.8
	Albite	5.1
	Orthoclase	3.5
	Montmorillonite	0.7
		99.9
1927441	Quartz	69.7
2006861207002	Halloysite	21.9
	Albite	8.4
		100
1927442	Quartz	72.9
2006861208001	Halloysite	20.6
	Albite	3.3
	Orthoclase	3.1
		99.9
1927444	Quartz	65.5
2006861208002	Halloysite	28.5
	Albite	5.9
	Montmorillonite	0.1
		100
1927445	Quartz	64.3
2006861209001	Halloysite	26.8
	Albite	5.1
	Orthoclase	3.8
		100

Sample #	Minerals Present	Corrected Weight %
1927447	Quartz	59.6
2006861209002	Halloysite	27.6
	Albite	5.8
	Orthoclase	4.6
	Calcite	2.4
		100
1927448	Quartz	66.2
2006861210001	Halloysite	22.3
	Albite	7.2
	Orthoclase	4.3
		100
1927450	Quartz	64.6
2006861210002	Halloysite	24.9
	Albite	6.1
	Orthoclase	4.5
		100.1
1927451	Quartz	72.1
2006861211001	Halloysite	19.7
	Calcite	3.1
	Orthoclase	2.6
	Albite	2.5
		100
1927453	Quartz	54
2006861211002	Calcite	23.8
	Halloysite	18.1
	Orthoclase	2.3
	Albite	1.7
		99.9
1927454	Quartz	66.1
2006861212001	Halloysite	25.5
	Muscovite	4.7
	Albite	2.4
	Orthoclase	1.3
		100
1927456	Quartz	71
2006861212002	Halloysite	26.7
	Orthoclase	2.3
		100
1927457	Quartz	45
2006861213001	Halloysite	34.3
	Muscovite	14.6
	Albite	2.9
	Orthoclase	2.2
	Pyrophyllite	0.9
		99.9

Sample #	Minerals Present	Corrected Weight %
1927459	Quartz	62.2
2006861213002	Halloysite	27.3
	Calcite	4.5
	Albite	3.6
	Orthoclase	2.3
		99.9
1927460	Quartz	58.7
2006861214001	Halloysite	24
	Calcite	12.7
	Albite	2.9
	Orthoclase	1.8
		100.1
1927462	Halloysite	46.8
2006861214002	Quartz	41.2
	Muscovite	7.8
	Calcite	2.6
	Albite	1.3
	Orthoclase	0.3
		100
1927463	Quartz	64.1
2006861215001	Halloysite	31
	Albite	3
	Orthoclase	1.9
		100
1927465	Quartz	60
2006861215002	Halloysite	33.9
	Albite	3.2
	Orthoclase	2.9
		100
1927466	Quartz	88.2
2006861216001	Halloysite	11.8
		100
1927468	Quartz	85.7
2006861216002	Halloysite	14.3
		100
1927469	Quartz	85.1
2006861217001	Halloysite	13.1
	Albite	1.7
		99.9
1927471	Halloysite	45.6
2006861217002	Quartz	38.3
	Muscovite	9
	Kaolin	7.1
		100

Sample #	Minerals Present	Corrected Weight %
1927472	Quartz	63.1
2006861218001	Halloysite	29.1
	Albite	3.9
	Orthoclase	3.9
		100
1927474	Quartz	56.1
2006861218002	Halloysite	35.3
	Albite	4.8
	Orthoclase	3.9
		100.1

1927475	Halloysite	50.6
2006861219001	Quartz	35.5
	Muscovite	10
	Orthoclase	2.3
	Albite	1.6
		100

1927477	Halloysite	51.1
2006861219002	Quartz	30.2
	Calcite	10.8
	Kaolin	5.1
	Orthoclase	1.8
	Albite	0.9
		99.9

1927478	Quartz	51.7
2006861220001	Halloysite	43.5
	Gypsum	2.9
	Albite	1.2
	Orthoclase	0.8
		100.1

1927480	Halloysite	49.5
2006861220002	Quartz	37.5
	Gypsum	4.9
	Muscovite	4.5
	Sodium Chloride	2.5
	Albite	1
		99.9

1927481	Quartz	56.1
2006861221001	Halloysite	32.4
	Albite	6.1
	Orthoclase	5.4
		100

1927483	Quartz	49.8
2006861221002	Halloysite	32.9
	Albite	8.4
	Muscovite	4.6
	Orthoclase	4.2
	Montmorillonite	0.1
		100

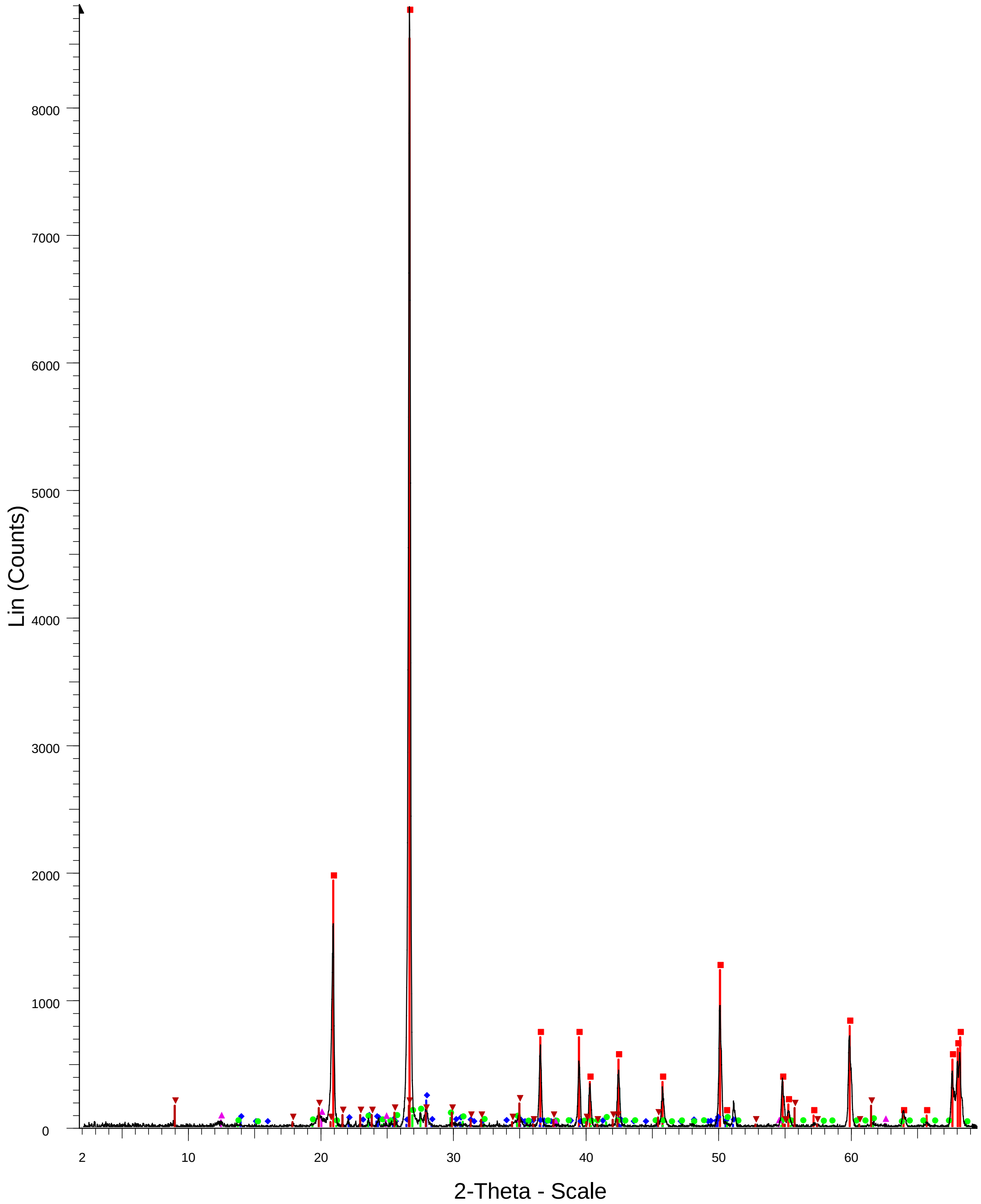
Sample #	Minerals Present	Corrected Weight %
1927484	Quartz	55
2006861222001	Halloysite	38.2
	Orthoclase	3.6
	Albite	3.2
		100

1927486	Quartz	63.3
2006861222002	Halloysite	28.8
	Orthoclase	3.2
	Albite	2.4
	Calcite	2.2
		99.9

1927487	Quartz	62.3
2006861223001	Halloysite	17.7
	Albite	13.3
	Orthoclase	6.7
		100

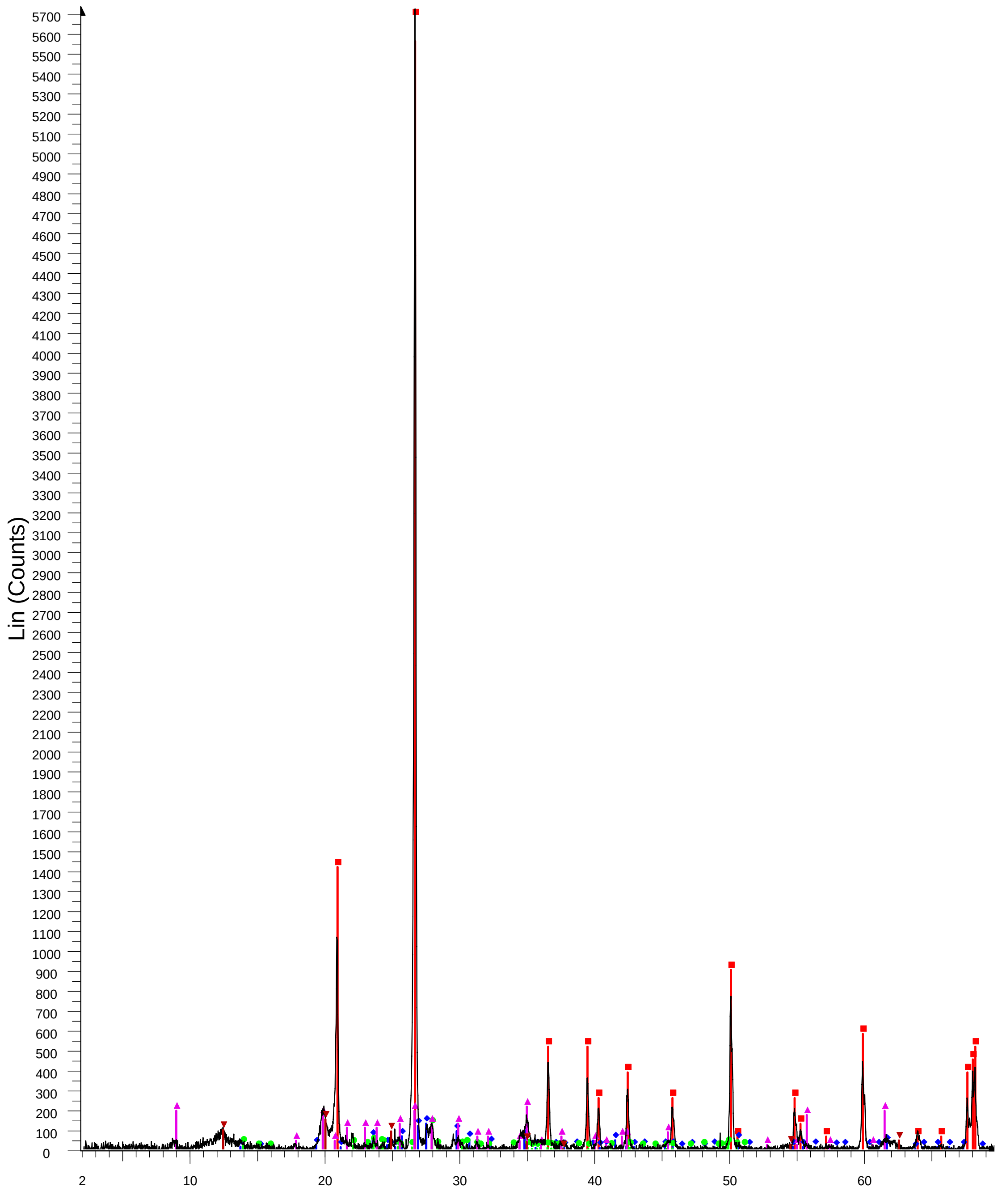
1927489	Quartz	67.7
2006861223002	Halloysite	19.5
	Albite	12
	Orthoclase	0.7
		99.9

1927420

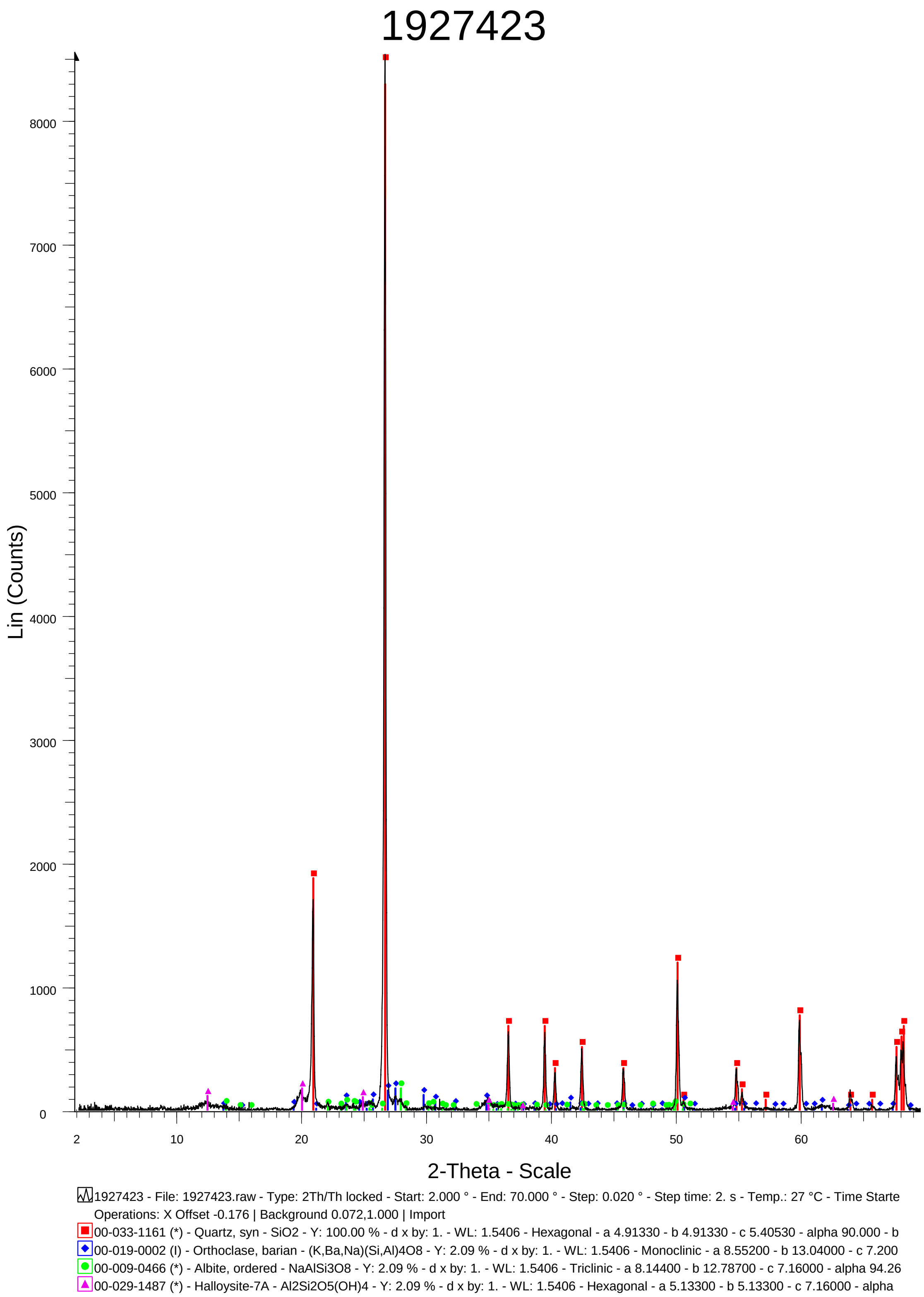


1927420 - File: 1927420.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.225 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.36 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.14 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 0.89 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b

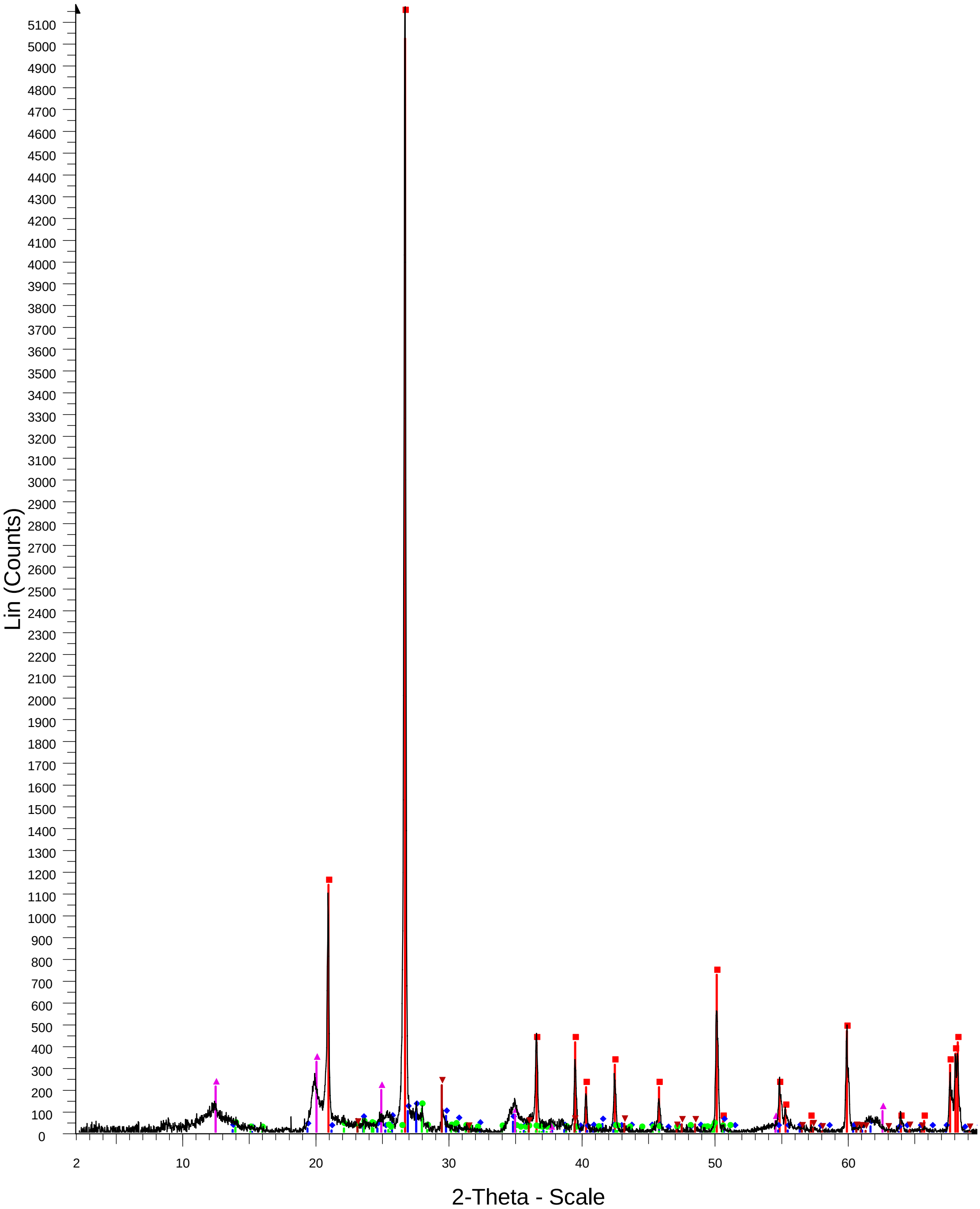
1927422



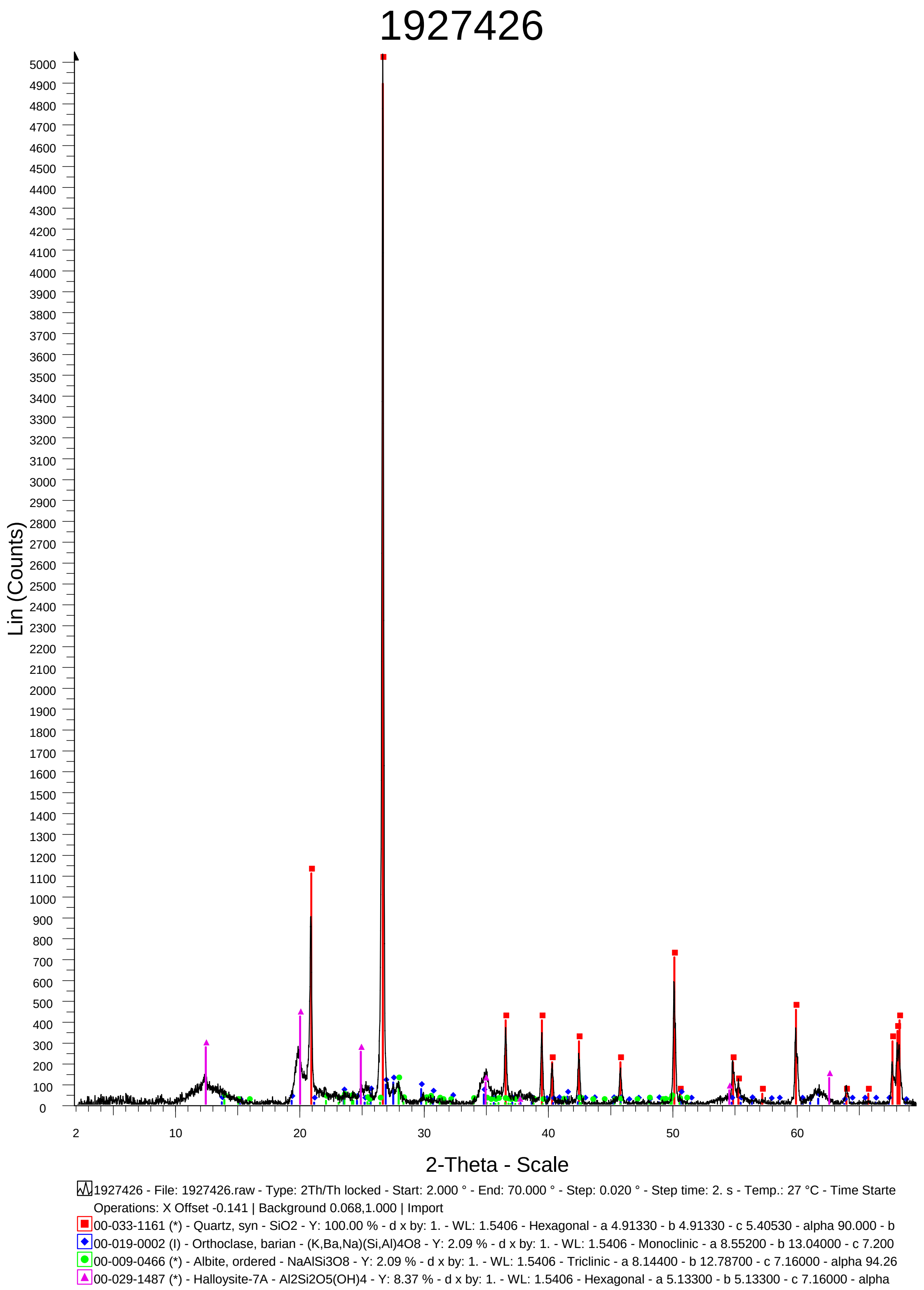
1927422 - File: 1927422.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.457,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 112.50 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.27 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 3.75 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.62 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


1927423
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927423 - File: 1927423.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.176 | Background 0.072,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

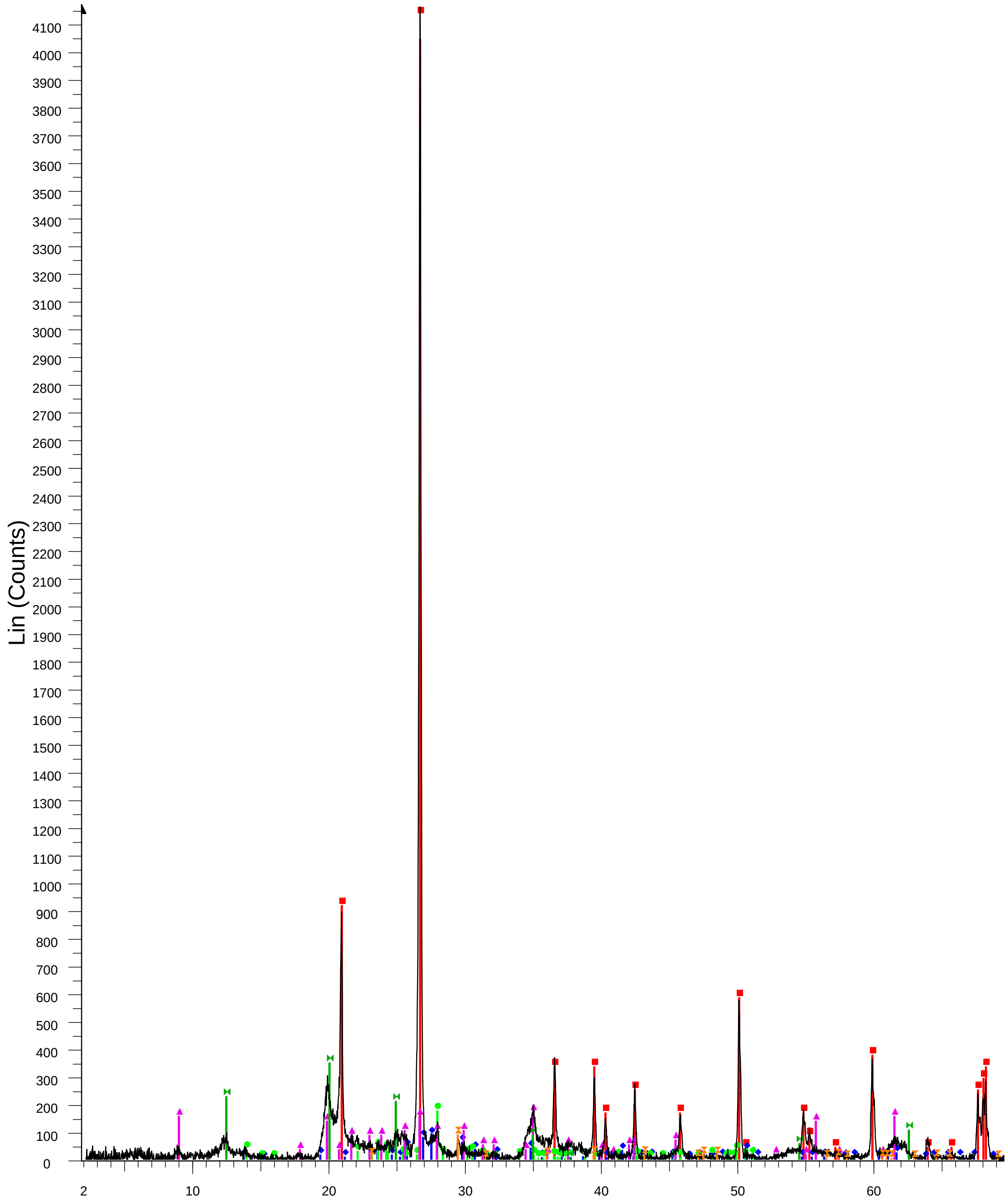
1927425



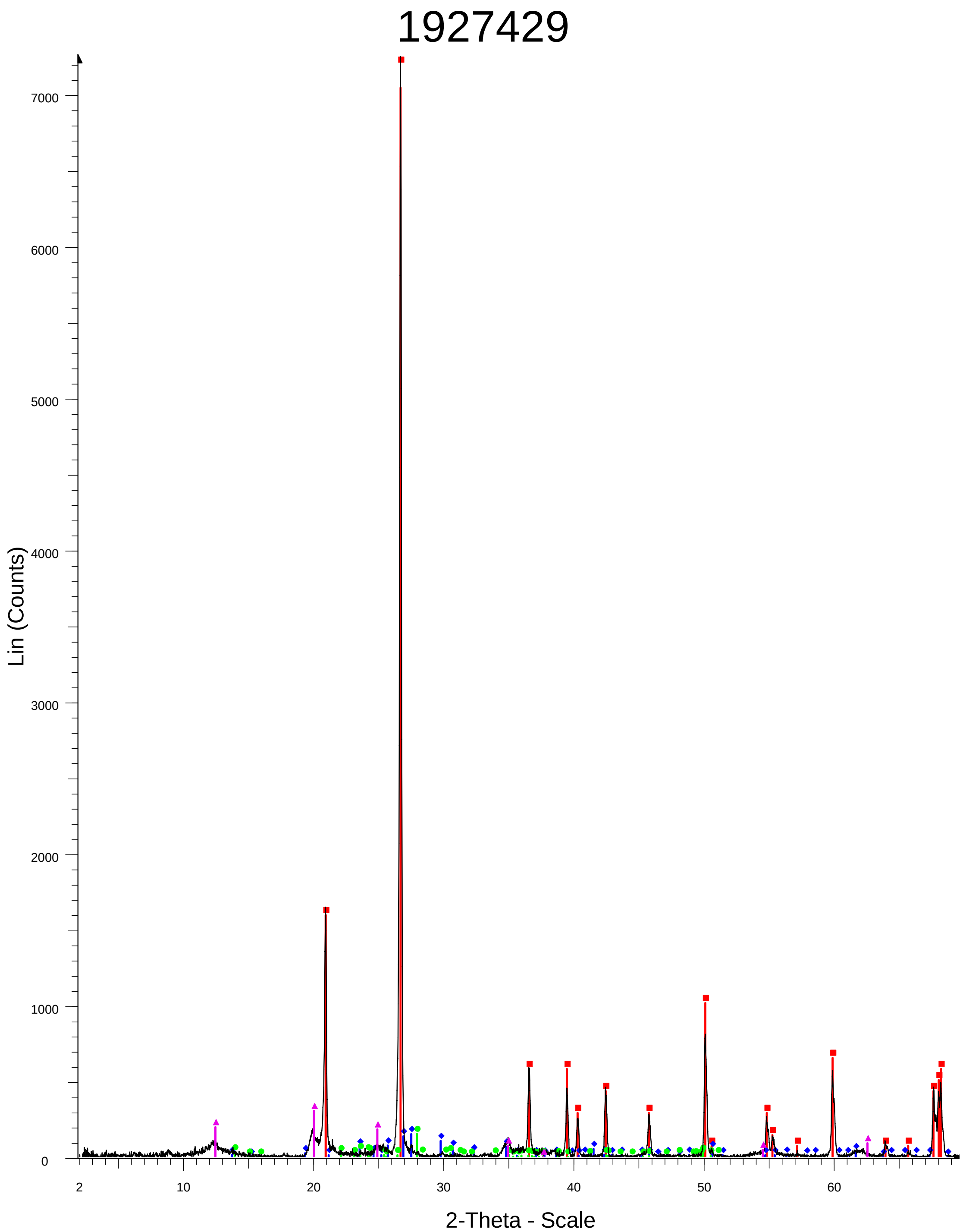
1927425 - File: 1927425.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.050 | Background 0.072,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.


1927426
Lin (Counts)
2-Theta - Scale
1927426 - File: 1927426.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.141 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.37 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927428

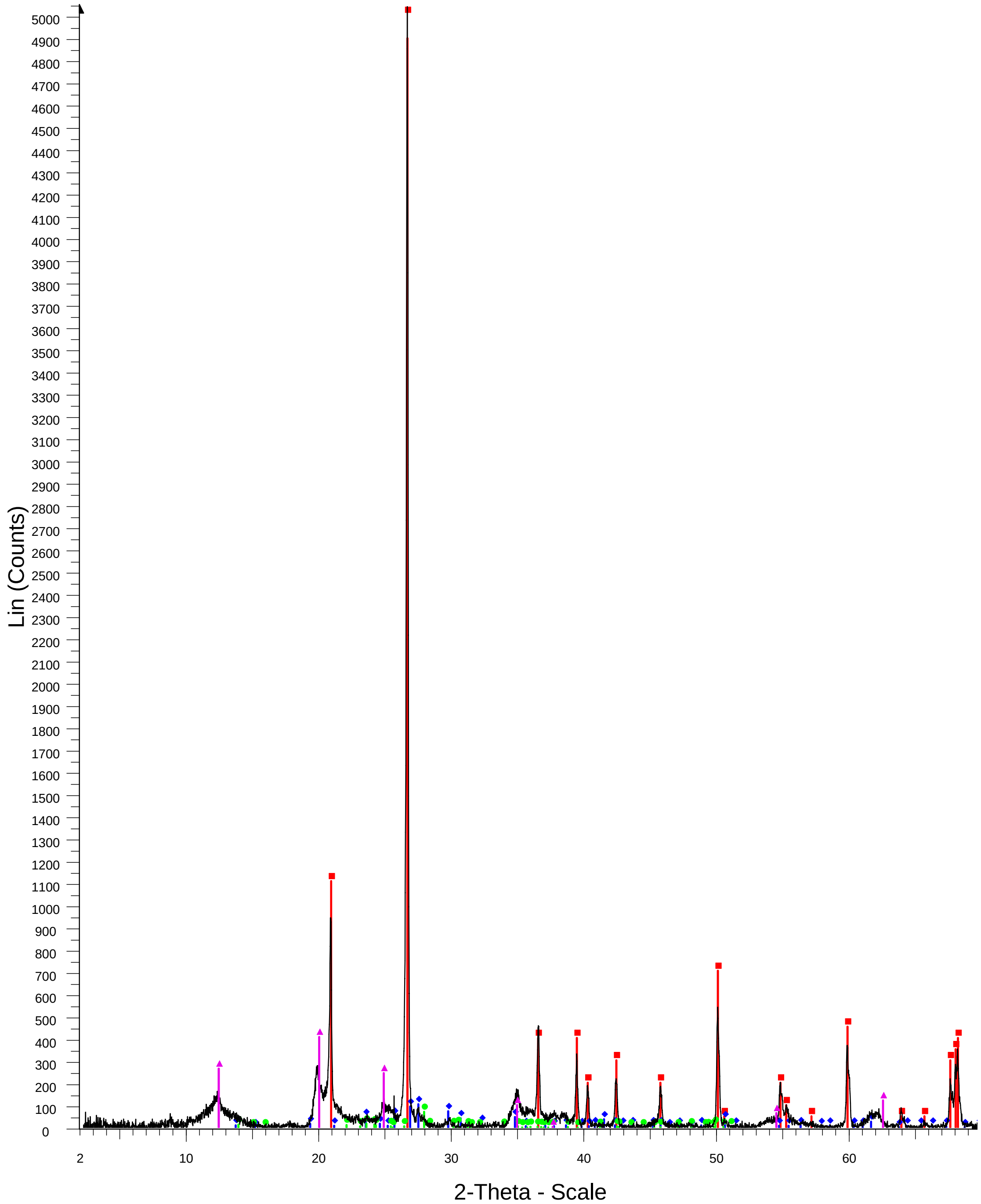


1927428 - File: 1927428.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.167 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 4.11 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

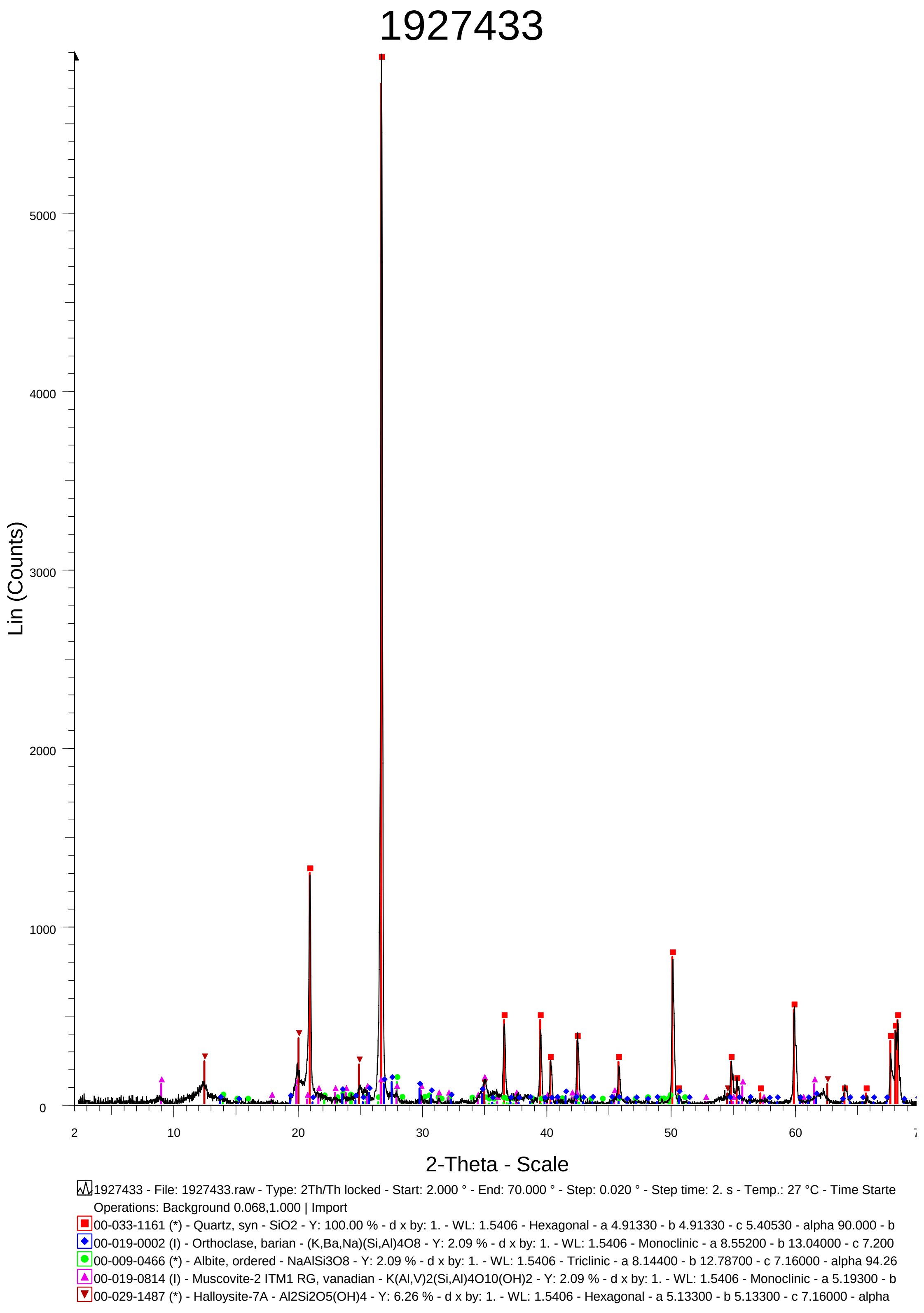


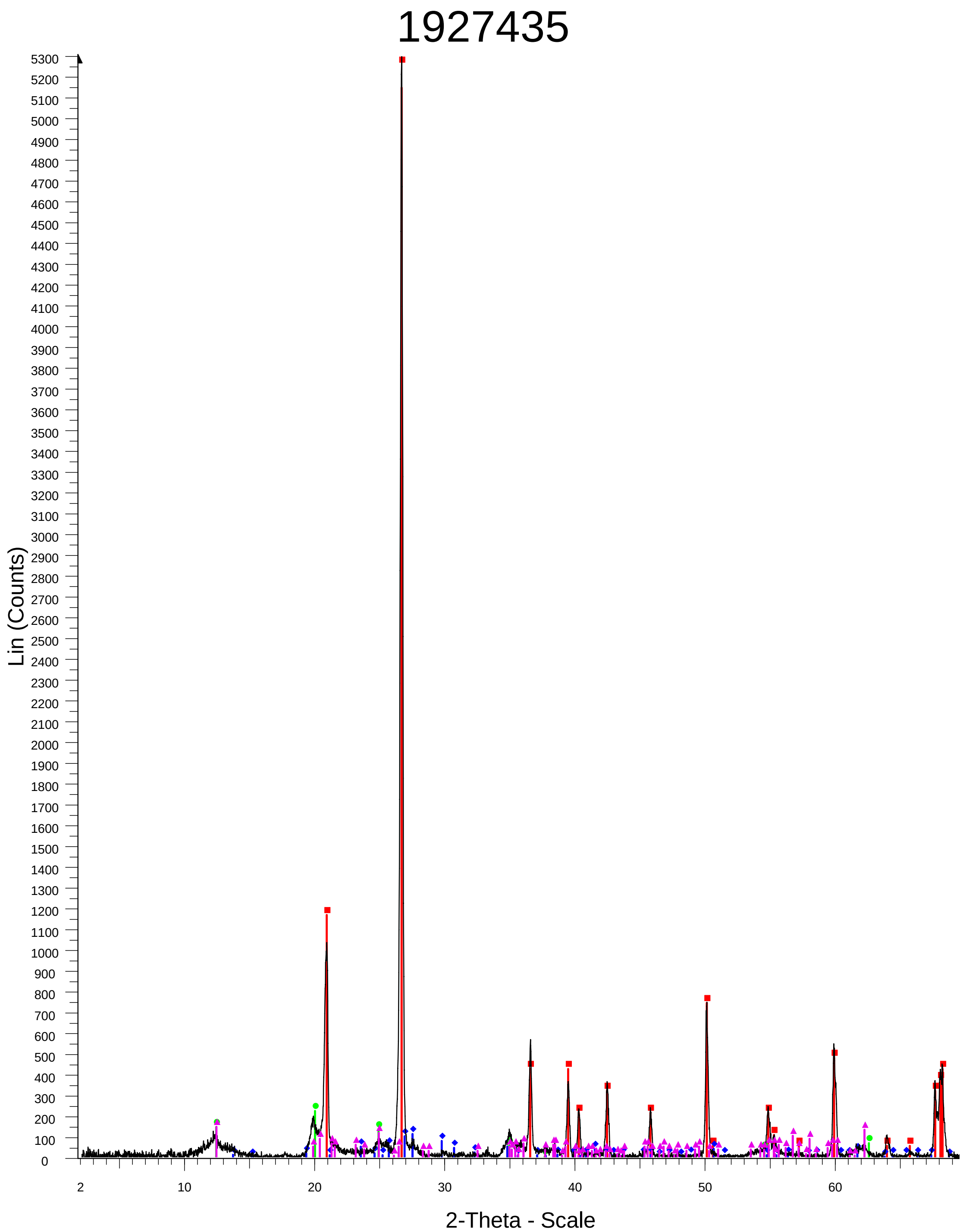
1927429 - File: 1927429.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927431

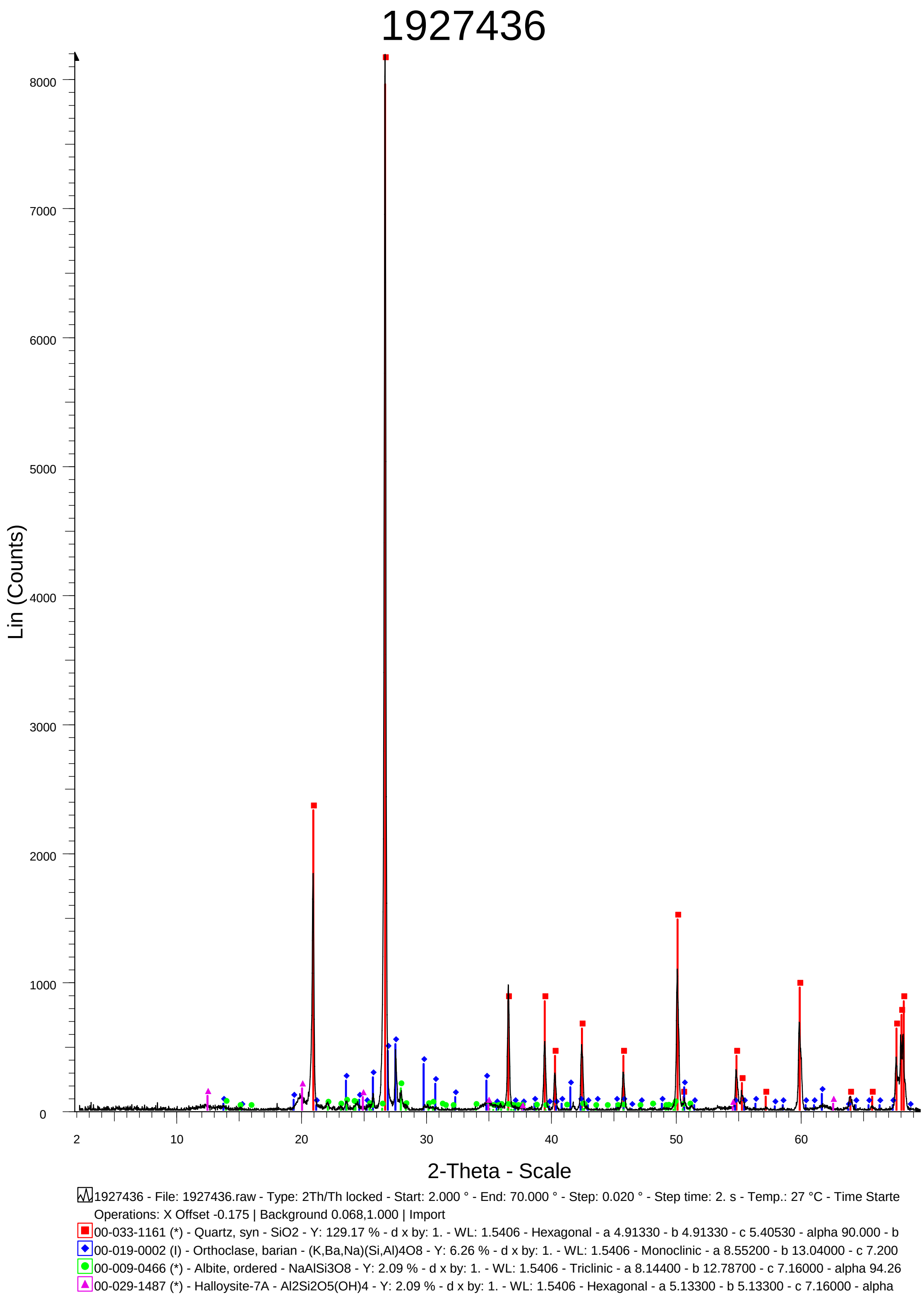


1927431 - File: 1927431.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.058 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.41 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

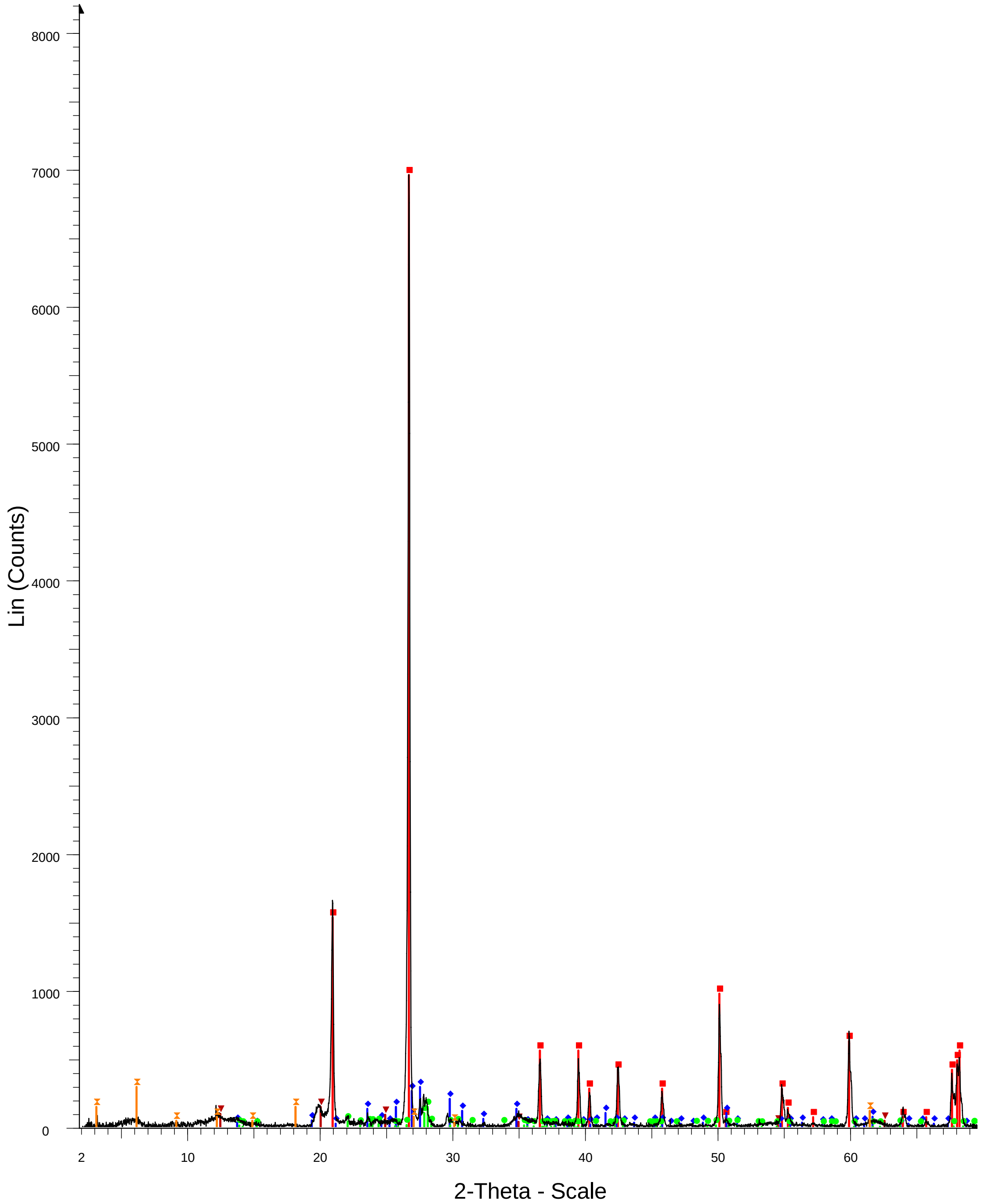

1927433
Lin (Counts)
0
1000
2000
3000
4000
5000
2
10
20
30
40
50
60
2-Theta - Scale
1927433 - File: 1927433.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha



1927435 - File: 1927435.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.195 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-014-0164 (I) - Kaolinite-1 ITA RG - Al2Si2O5(OH)4 - Y: 2.74 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15500 - b 8.95900 - c 7.40700 - alph

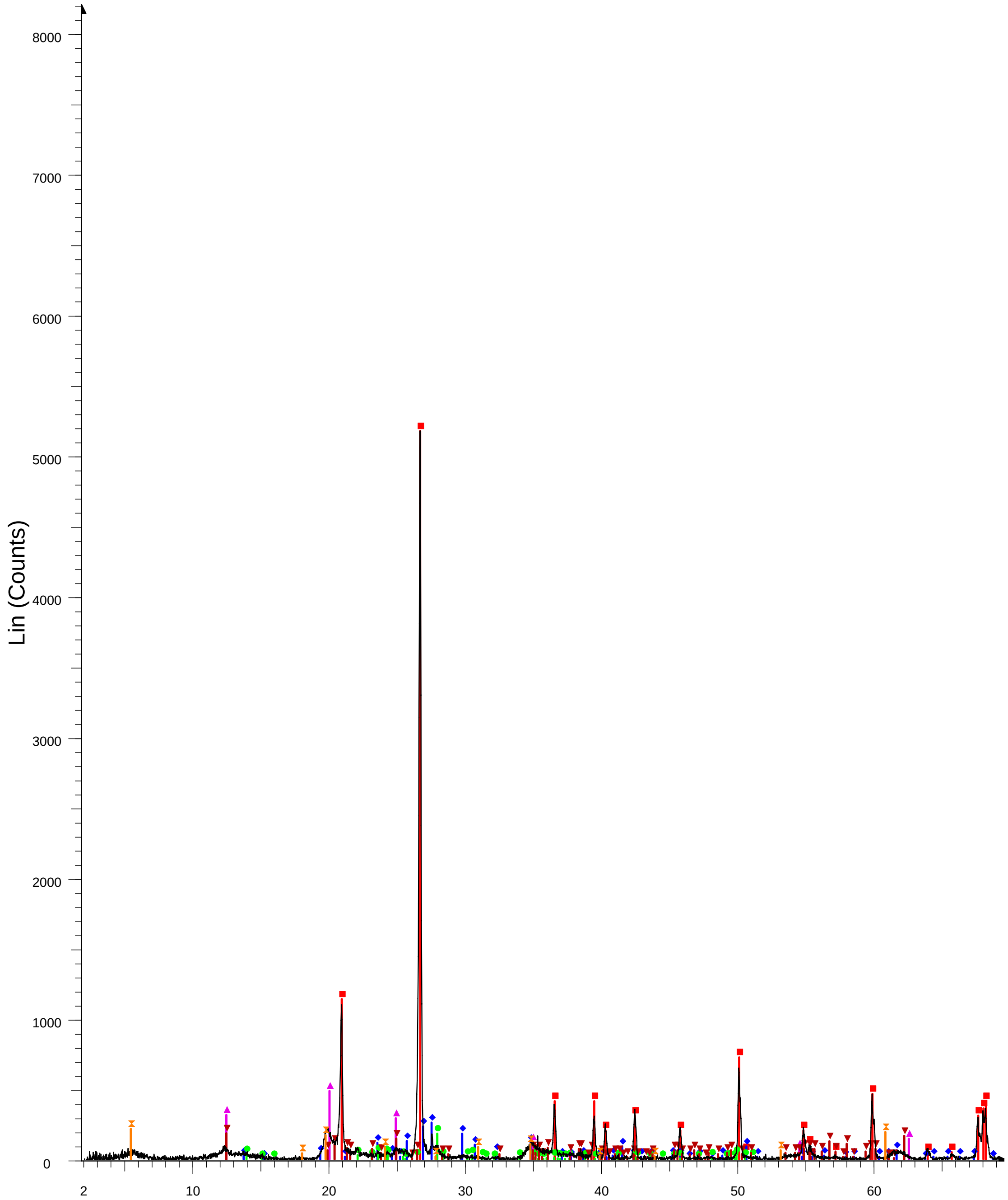

1927436
Lin (Counts)
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927436 - File: 1927436.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.175 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 129.17 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927438



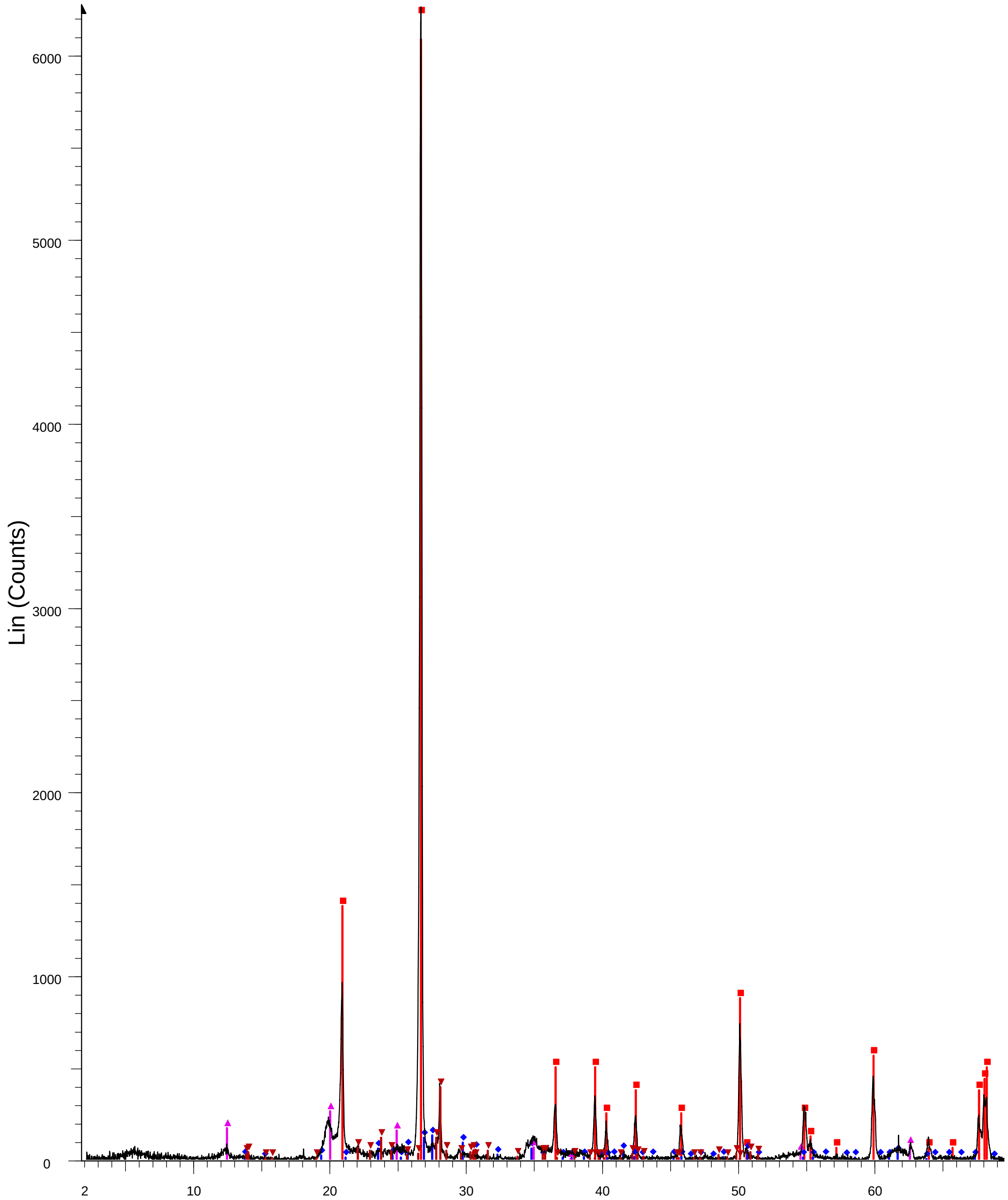
1927438 - File: 1927438.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-007-0051 (D) - Montmorillonite - (Na,Ca)0.3(Al,Mg)2Si2O10(OH)2·nH2O - Y: 4.18 % - d x by: 1. - WL: 1.5406 -

1927439

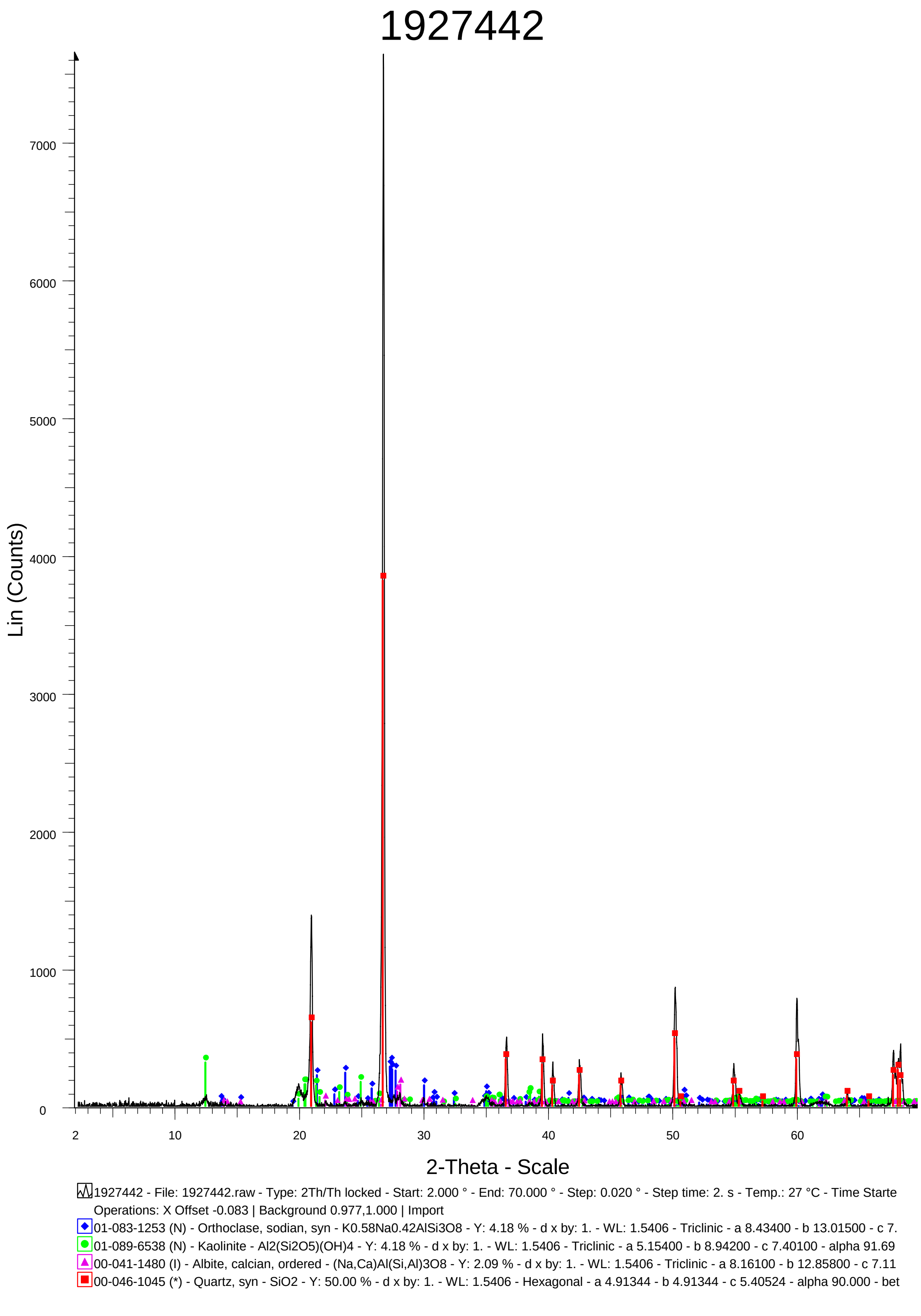


1927439 - File: 1927439.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 5.05 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 3.54 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 9.40 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-014-0164 (I) - Kaolinite-1 ITA RG - $Al_2Si_2O_5(OH)_4$ - Y: 3.57 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15500 - b 8.95900 - c 7.40700 - alph
00-011-0056 (D) - Saponite - $(Mg,Al,Fe)_3(Al,Si)_4O_{10}(OH)_2$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 -

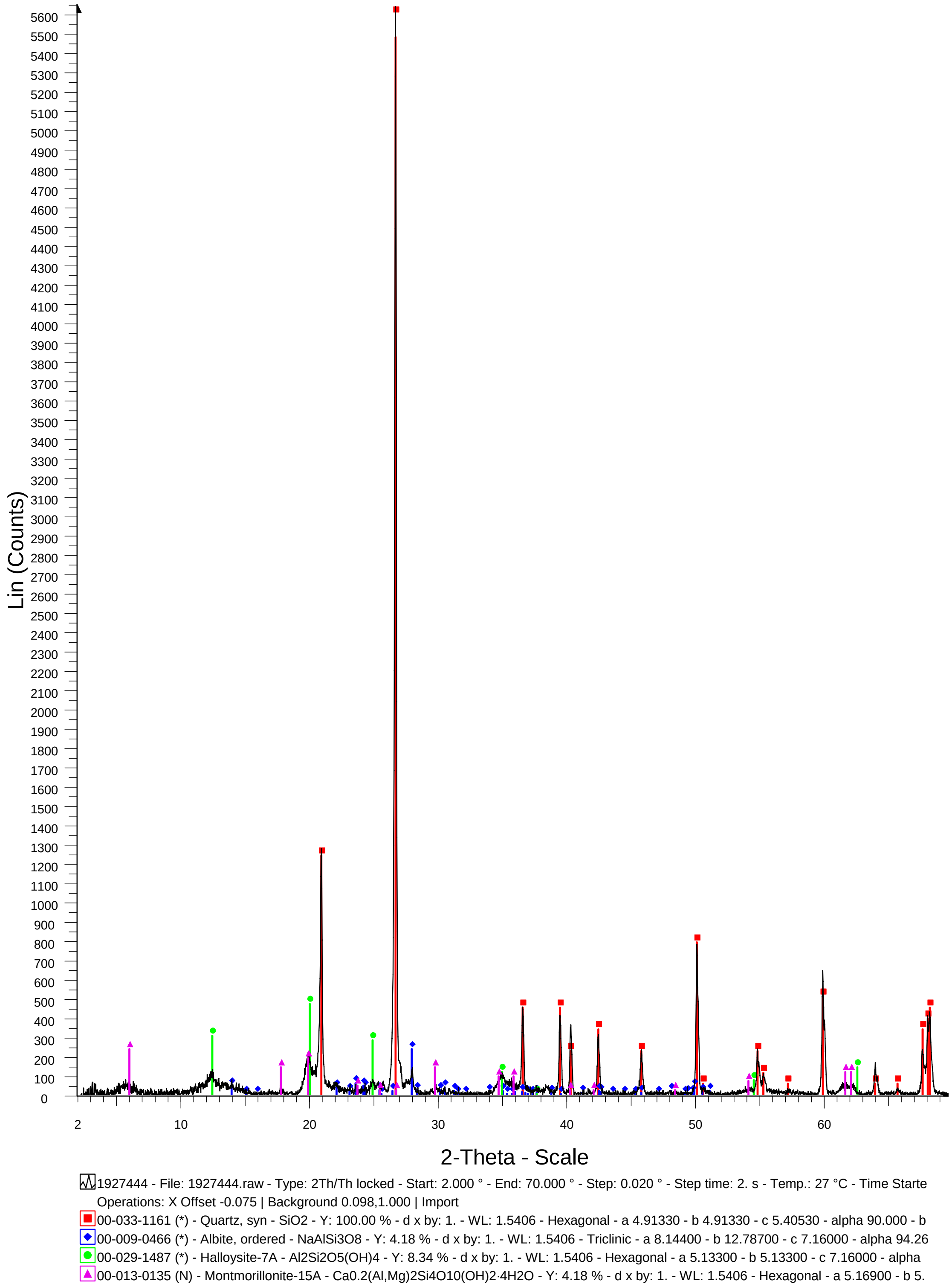
1927441



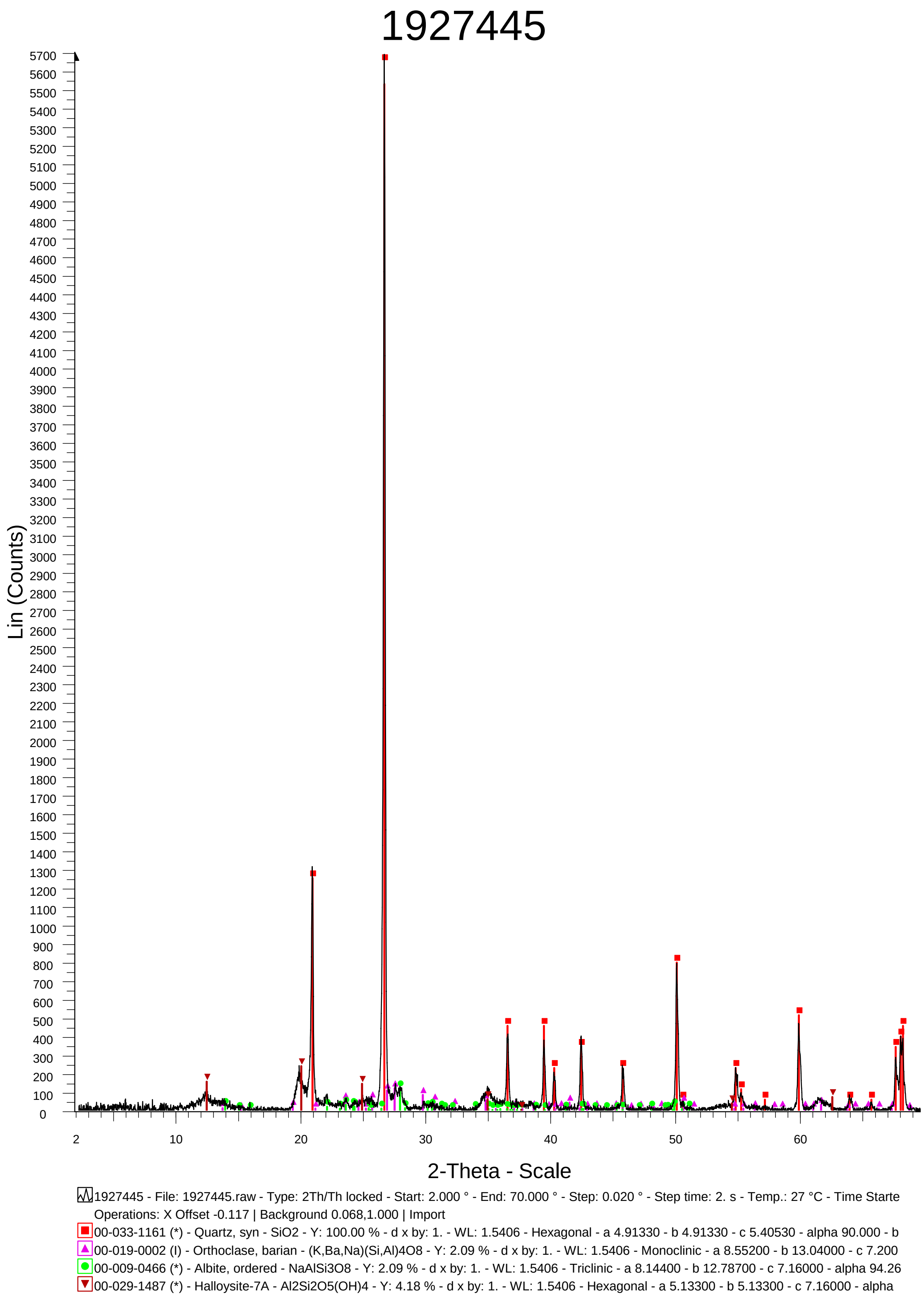
1927441 - File: 1927441.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.238 | X Offset -0.200 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-010-0393 (*) - Albite, disordered - Na(Si3Al)O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16500 - b 12.87200 - c 7.11100 - alpha 9

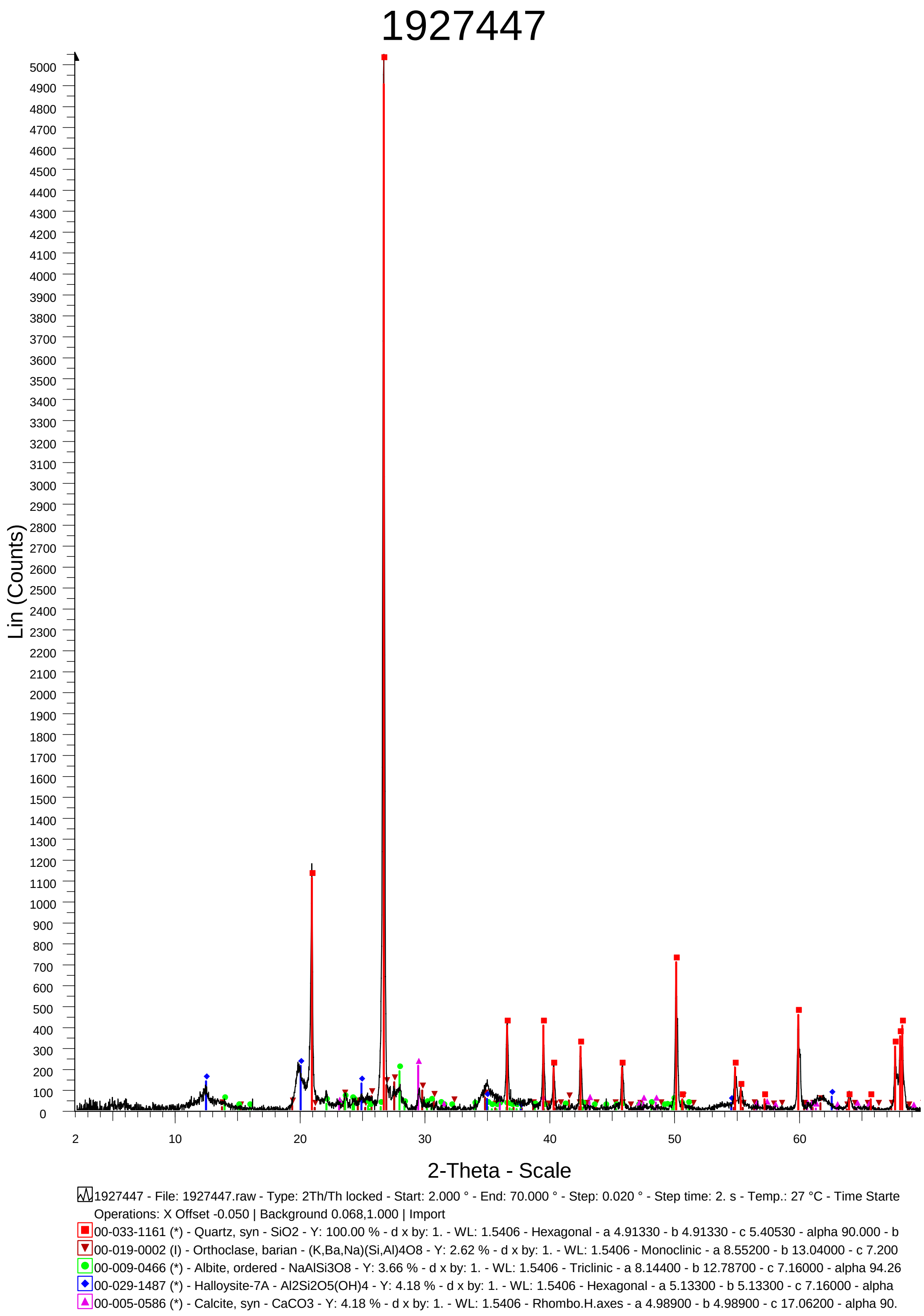

1927442
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927442 - File: 1927442.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.083 | Background 0.977,1.000 | Import
01-083-1253 (N) - Orthoclase, sodian, syn - K0.58Na0.42AlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.43400 - b 13.01500 - c 7.
01-089-6538 (N) - Kaolinite - Al2(Si2O5)(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15400 - b 8.94200 - c 7.40100 - alpha 91.69
00-041-1480 (I) - Albite, calcian, ordered - (Na,Ca)Al(Si,Al)3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.16100 - b 12.85800 - c 7.11
00-046-1045 (*) - Quartz, syn - SiO2 - Y: 50.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91344 - b 4.91344 - c 5.40524 - alpha 90.000 - bet

1927444

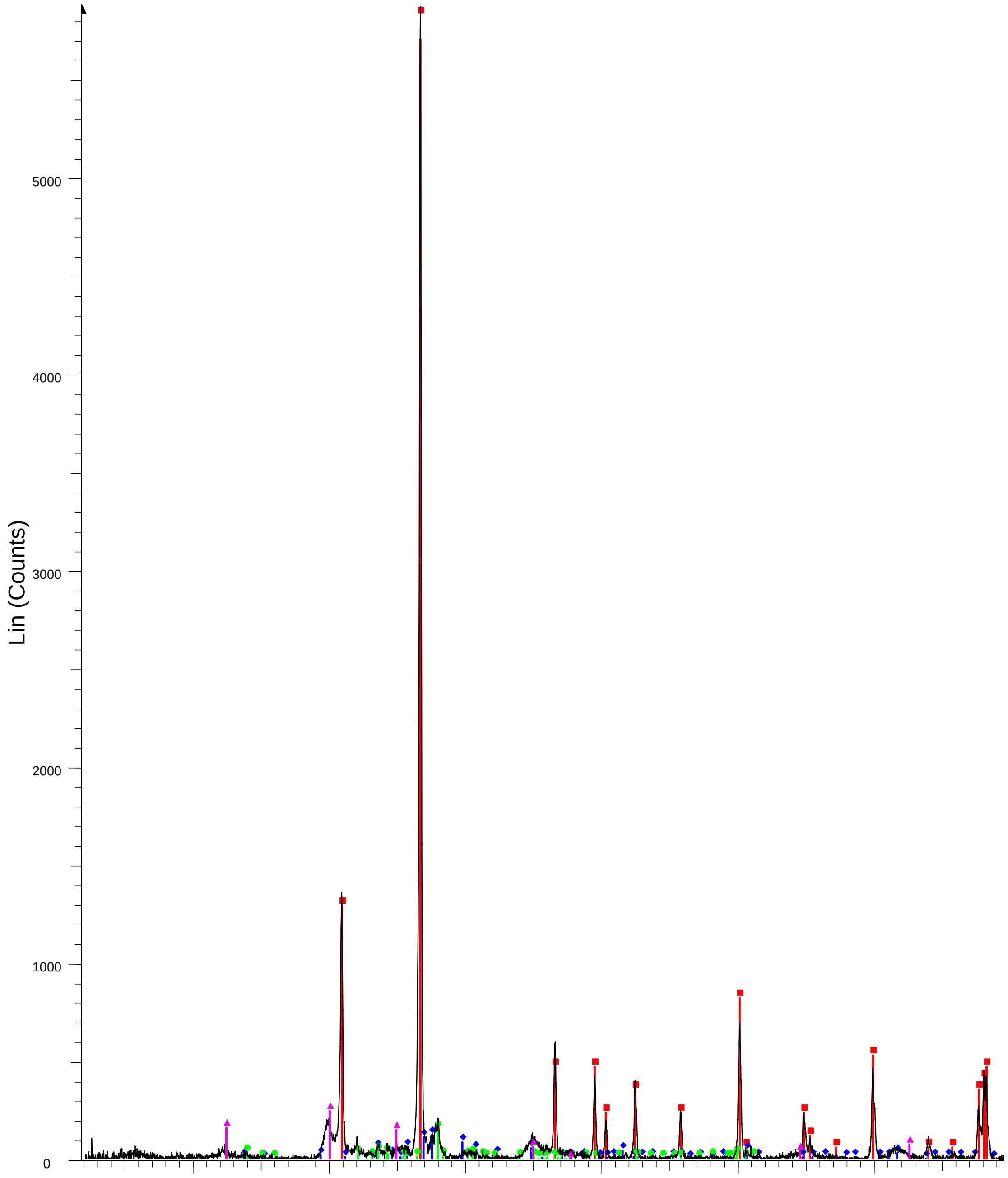


Lin (Counts)
5600
5500
5400
5300
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
4100
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
2
10
20
30
40
50
60
2-Theta - Scale
1927444 - File: 1927444.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.075 | Background 0.098,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-013-0135 (N) - Montmorillonite-15A - Ca0.2(Al,Mg)2Si4O10(OH)2·4H2O - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.16900 - b 5.

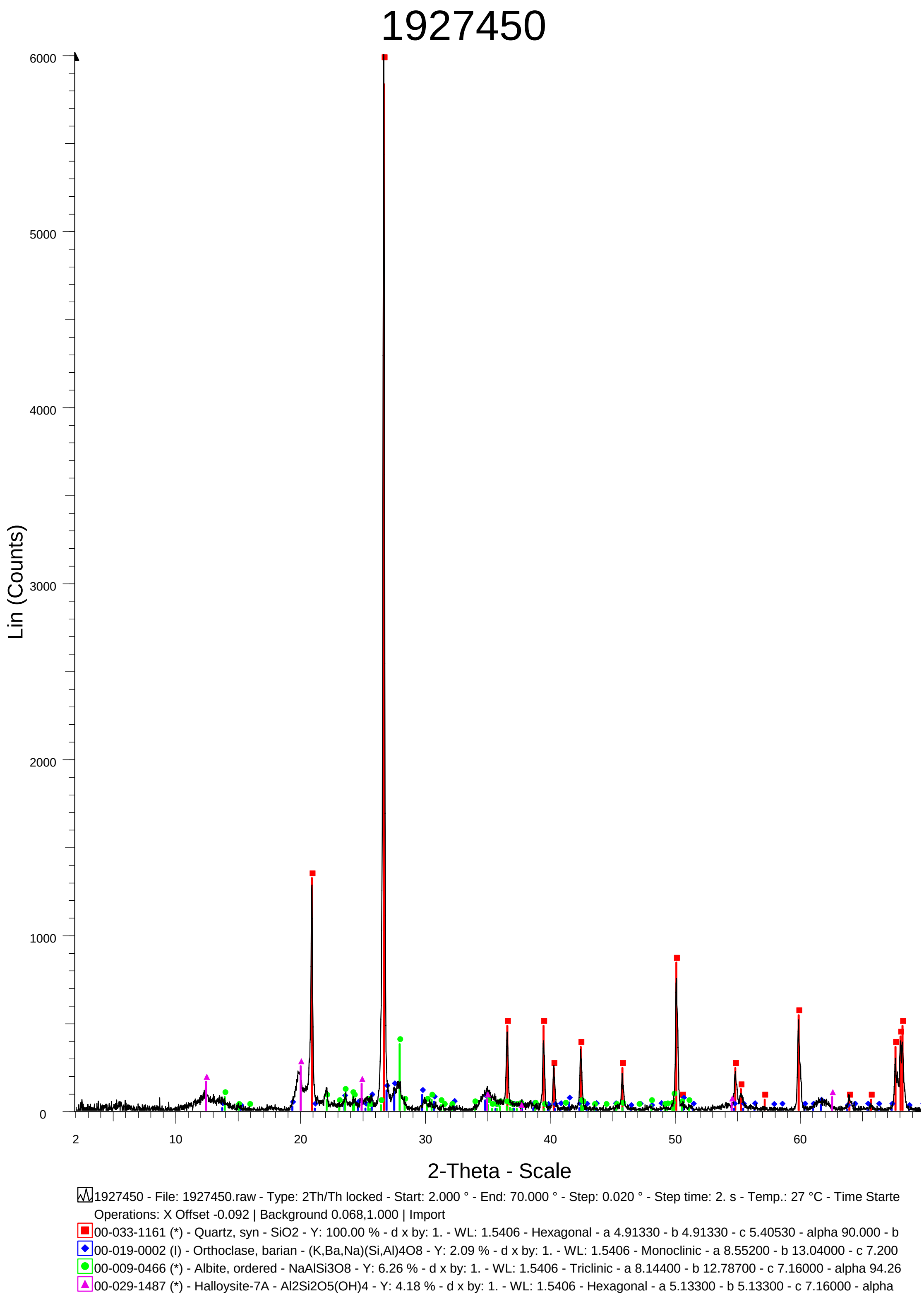

1927445
Lin (Counts)
5700
5600
5500
5400
5300
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
4100
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
2
10
20
30
40
50
60
2-Theta - Scale
1927445 - File: 1927445.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

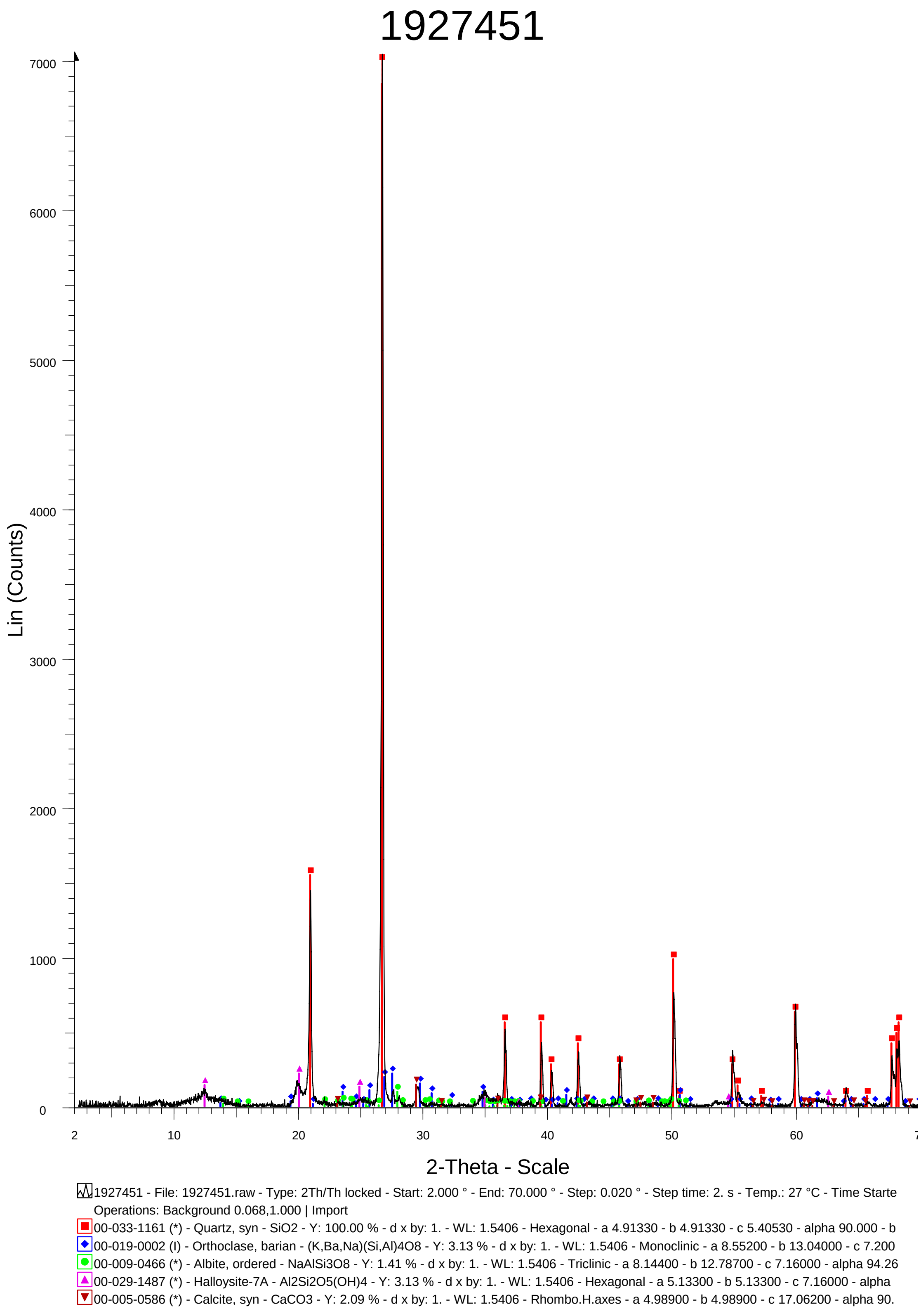

1927447
Lin (Counts)
2-Theta - Scale
1927447 - File: 1927447.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.050 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.62 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.66 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.

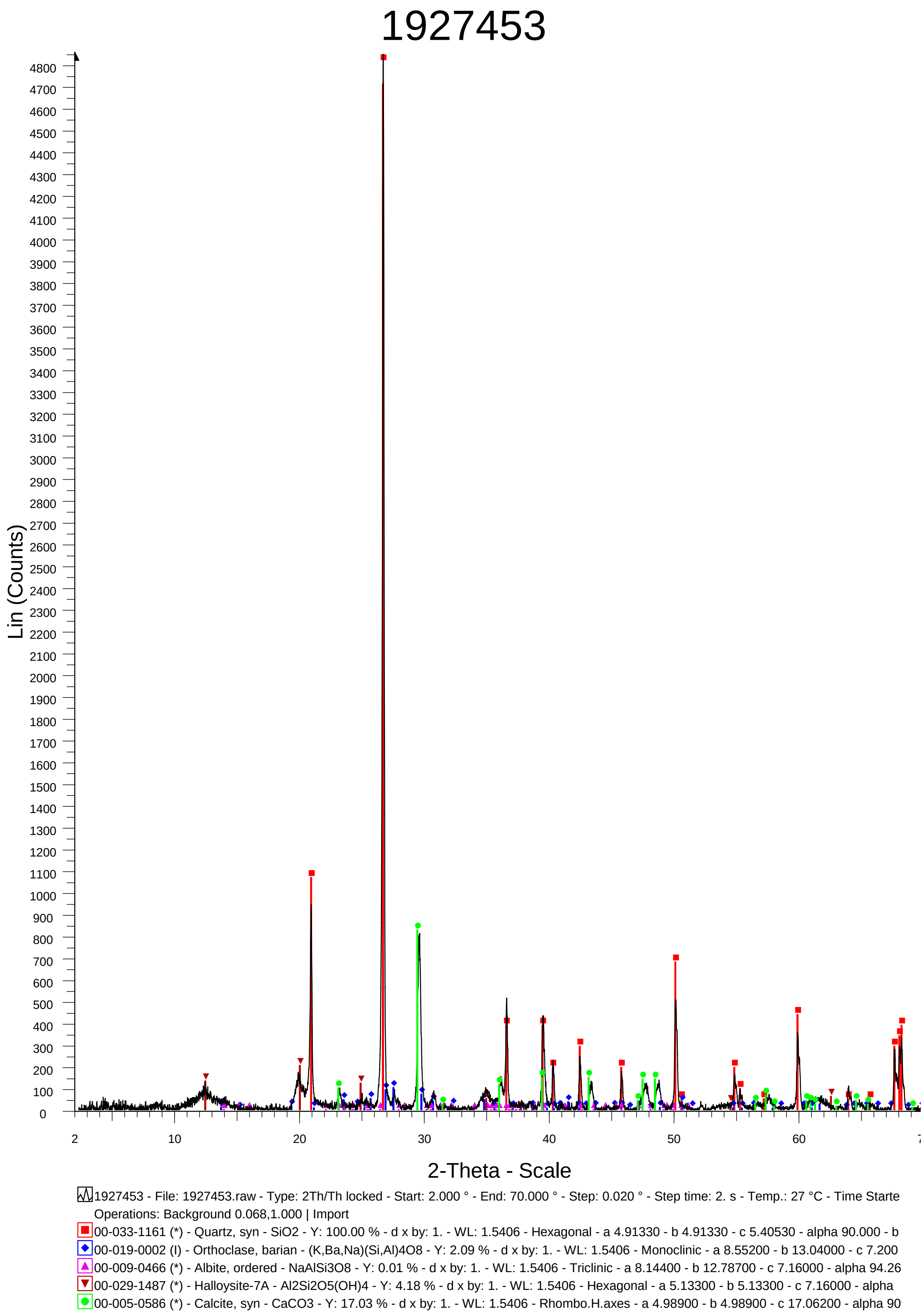
1927448

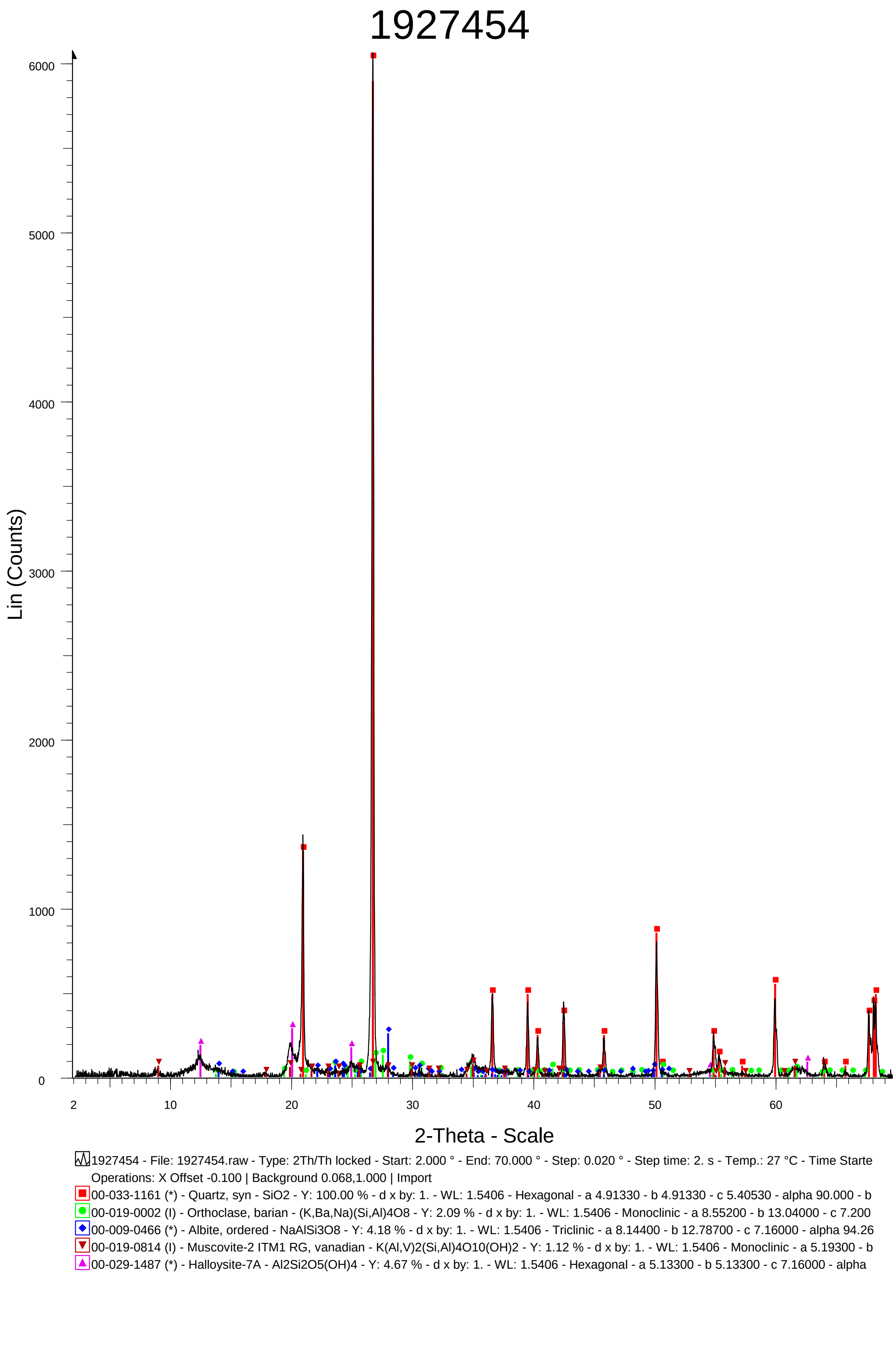


1927448 - File: 1927448.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.192 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 2.63 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

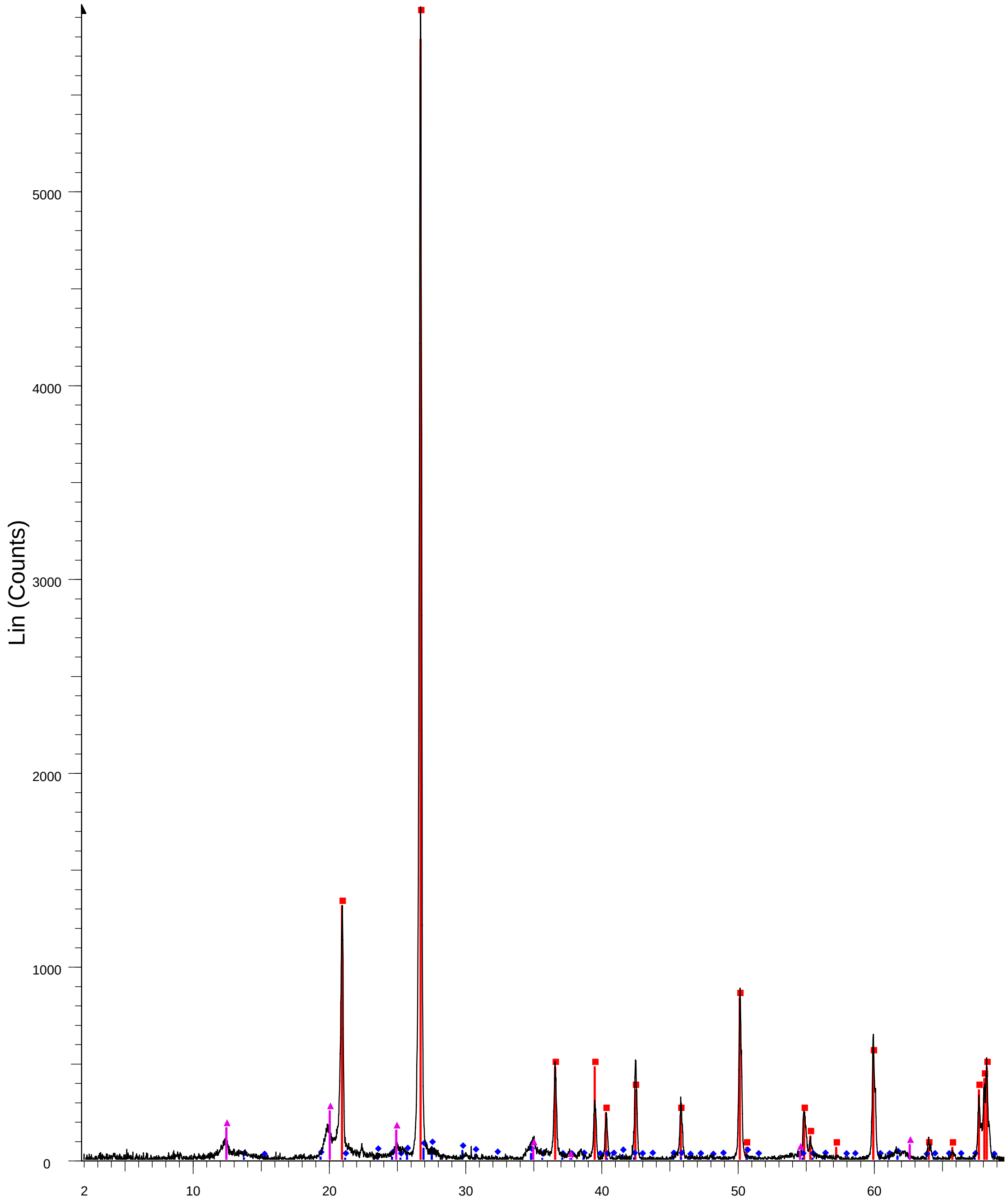

1927450
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927450 - File: 1927450.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.092 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


1927451
Lin (Counts)
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927451 - File: 1927451.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 1.41 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.

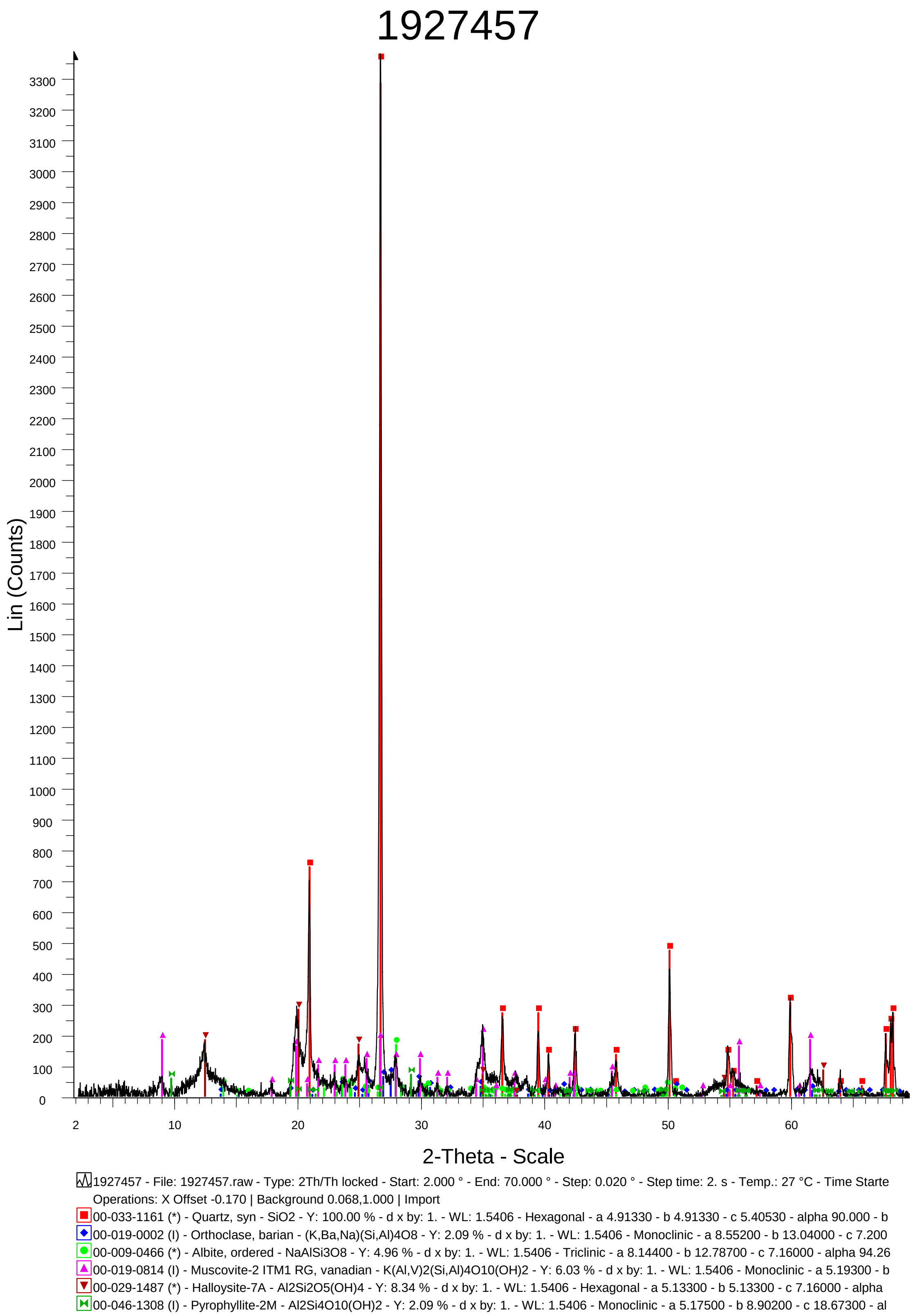

1927453
Lin (Counts)
2-Theta - Scale
1927453 - File: 1927453.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.01 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 17.03 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90

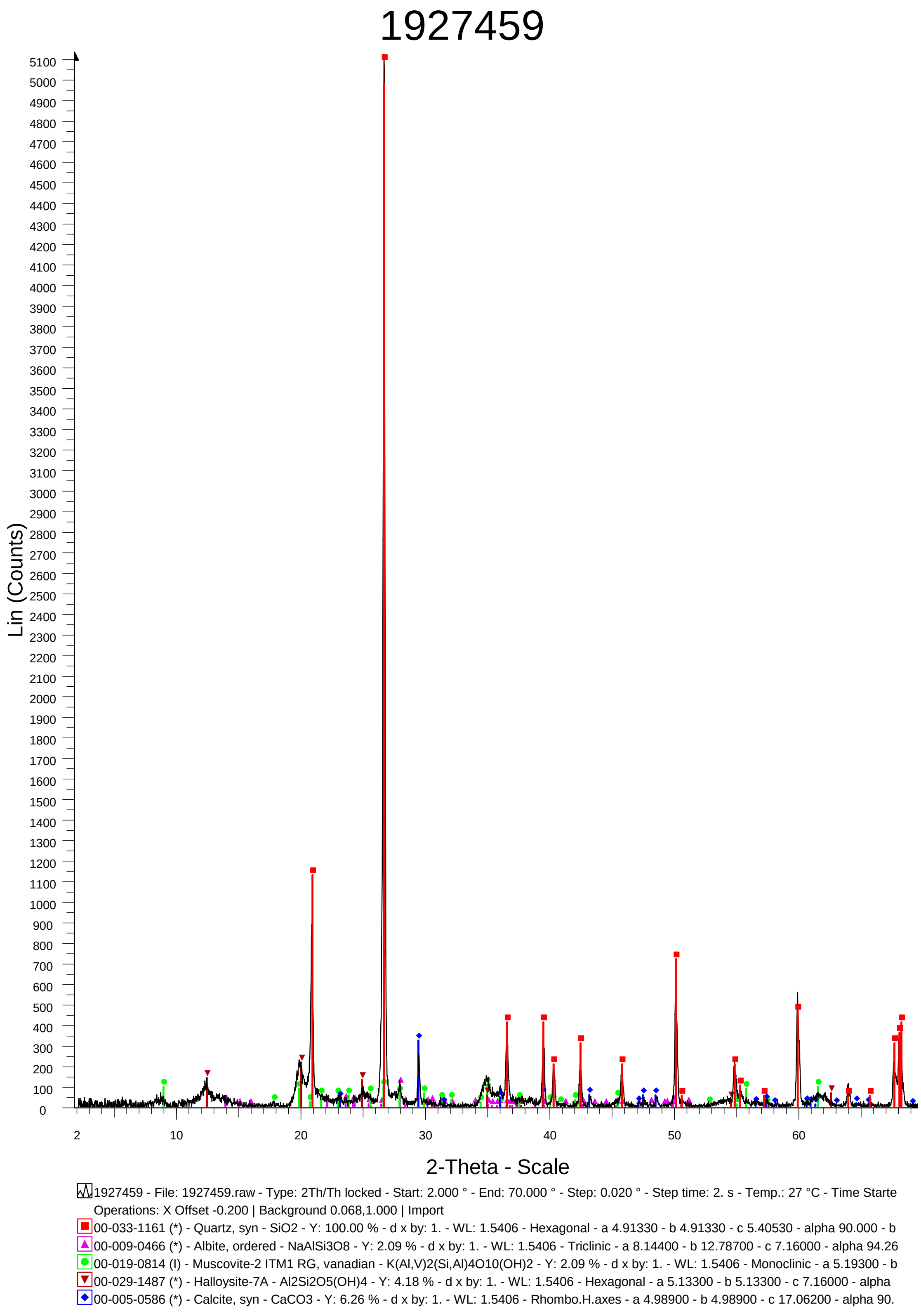

1927454
Lin (Counts)
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927454 - File: 1927454.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.100 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 1.12 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.67 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

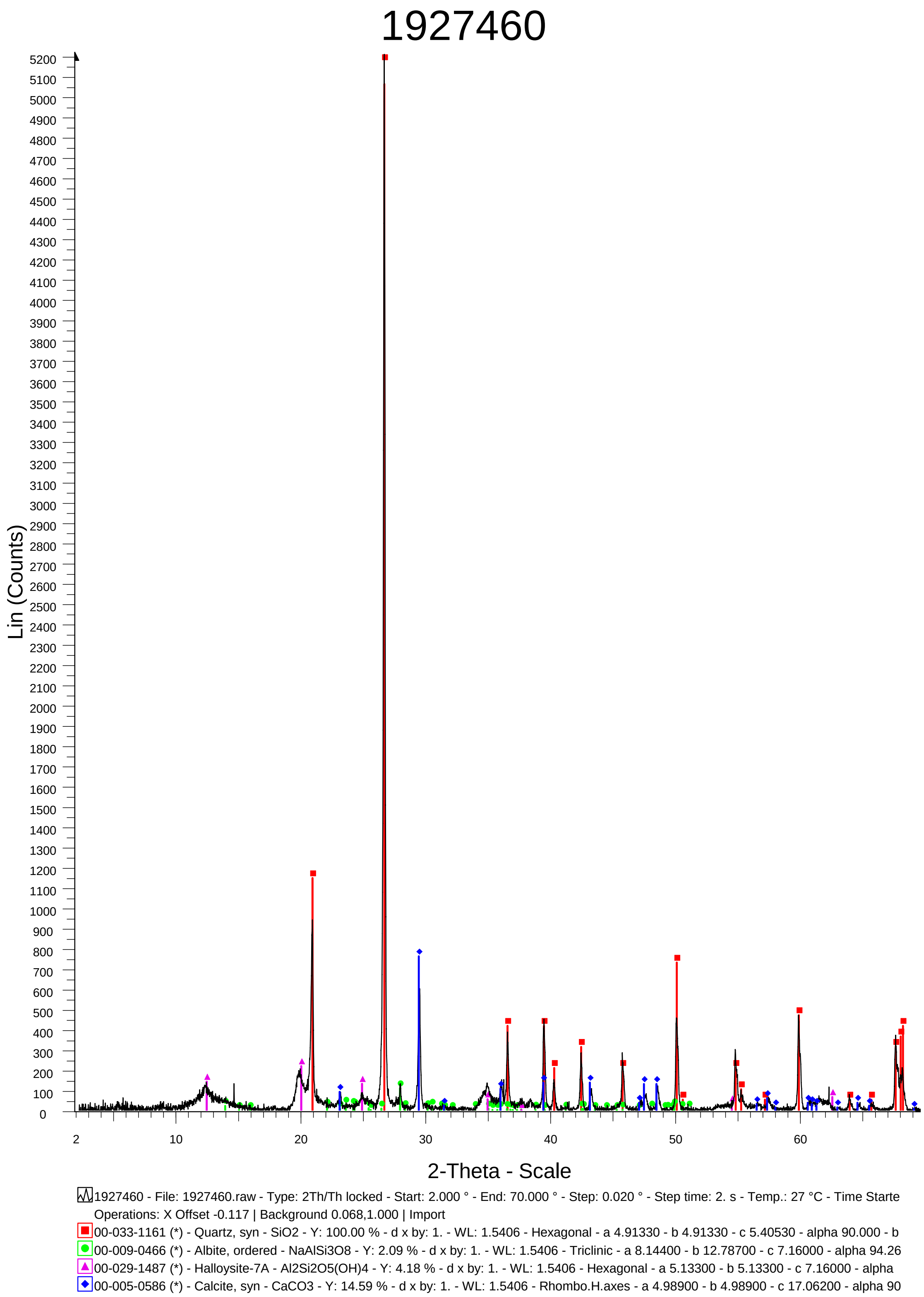
1927456



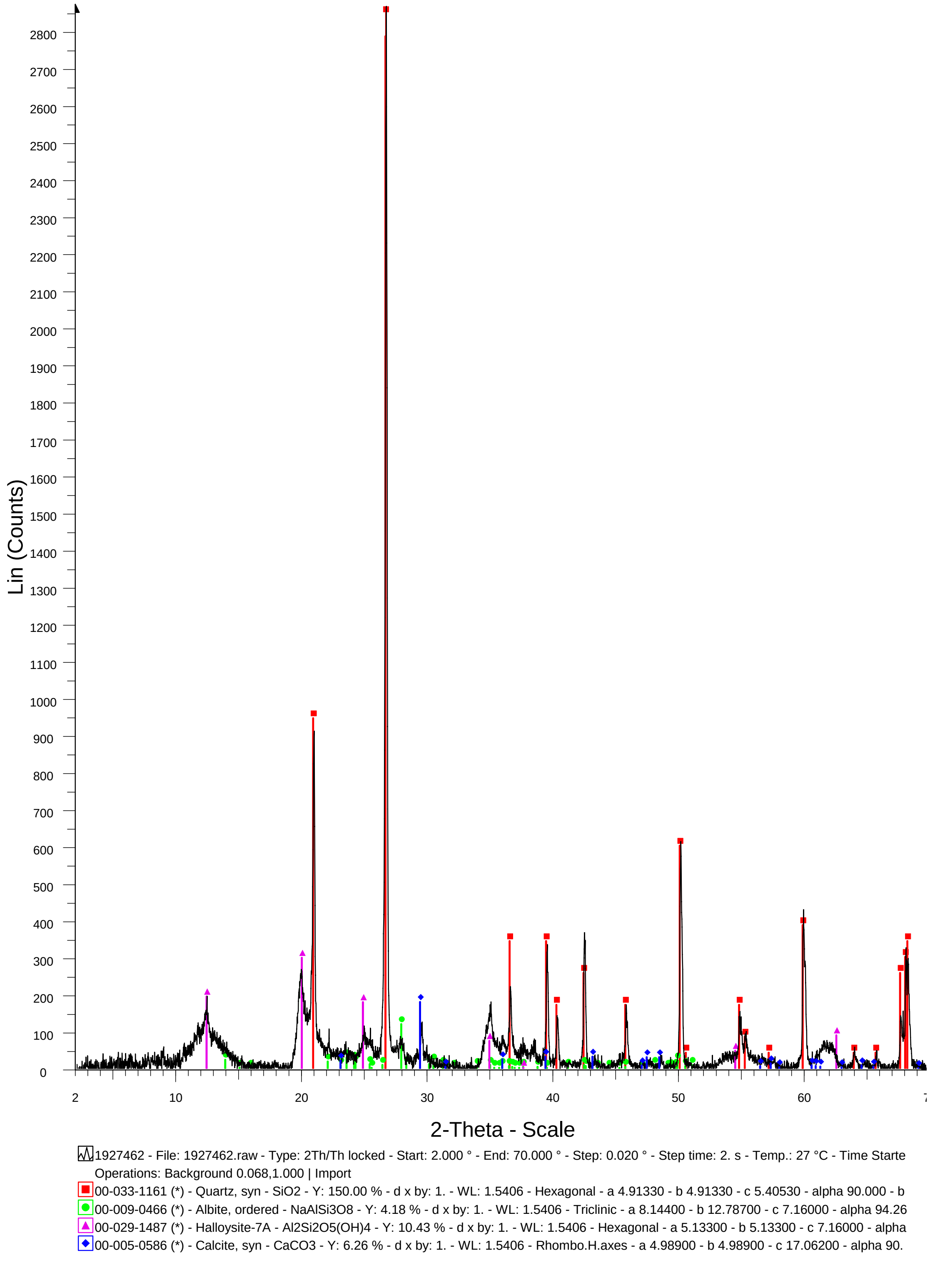
1927456 - File: 1927456.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.200 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.06 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

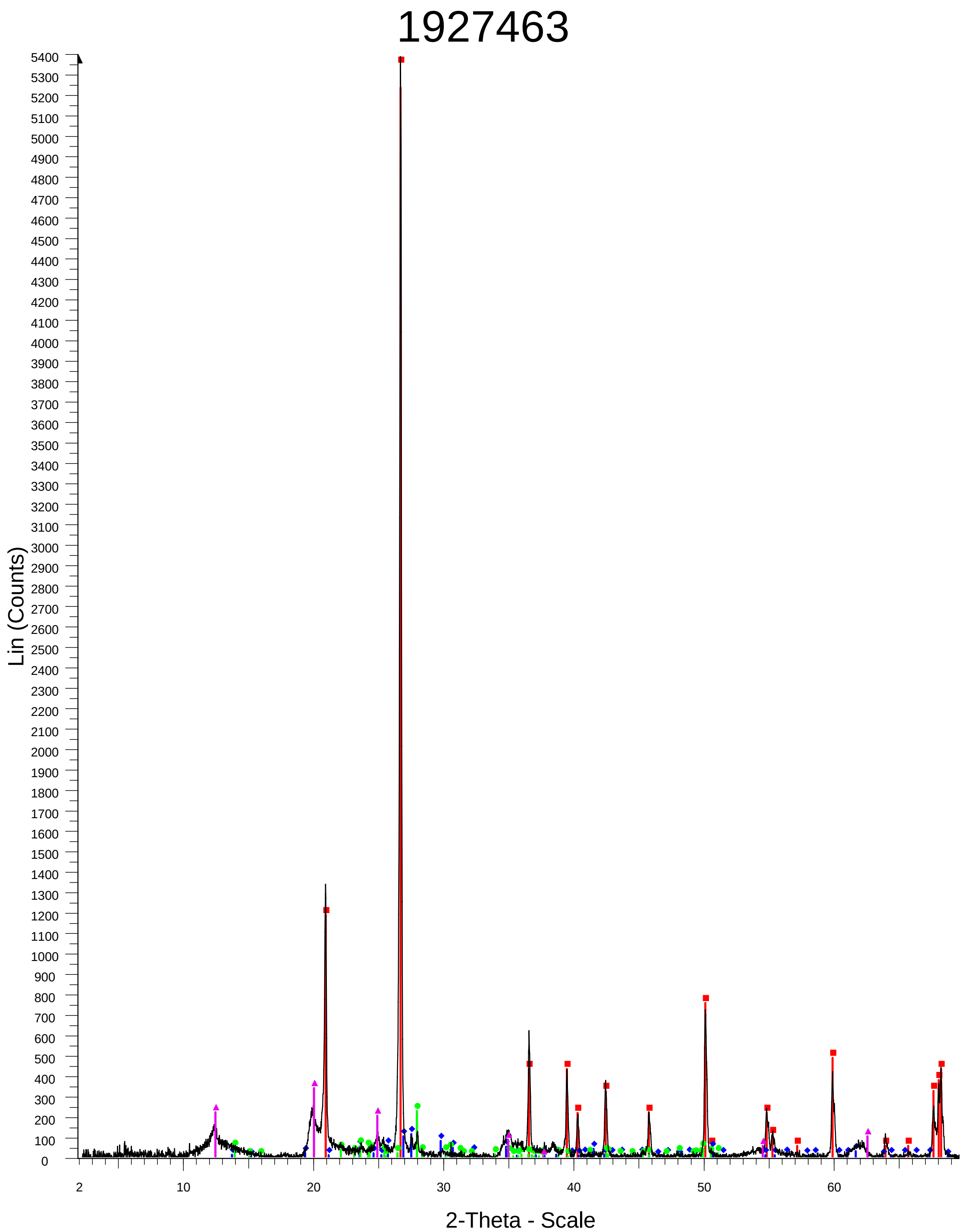

1927457
Lin (Counts)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
2
10
20
30
40
50
60
2-Theta - Scale
1927457 - File: 1927457.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.170 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.96 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 6.03 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-046-1308 (I) - Pyrophyllite-2M - Al2Si4O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.17500 - b 8.90200 - c 18.67300 - al


1927459
Lin (Counts)
2-Theta - Scale
1927459 - File: 1927459.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.200 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.


1927460
Lin (Counts)
2-Theta - Scale
1927460 - File: 1927460.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 14.59 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90

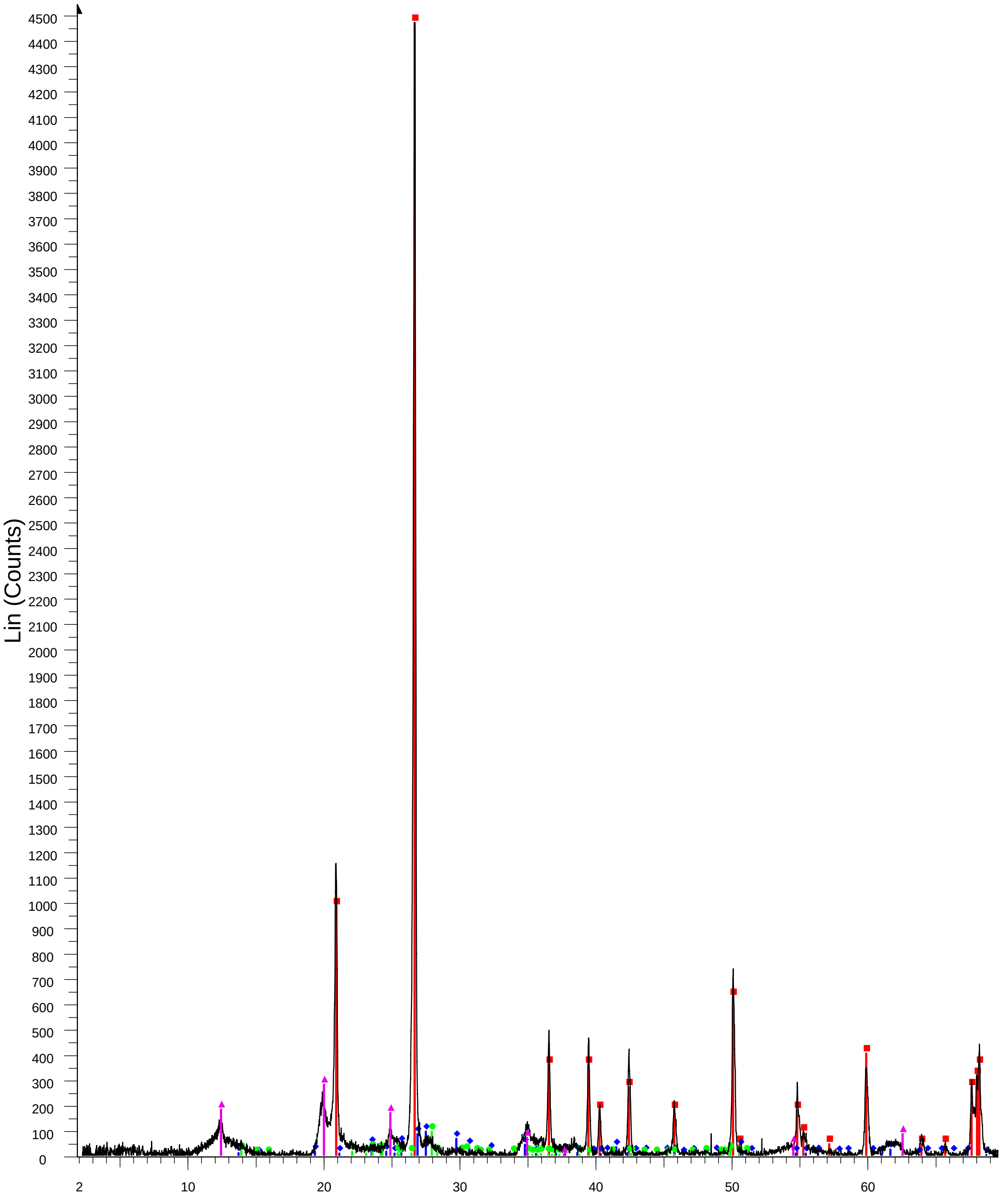
1927462


Lin (Counts)
2800
2700
2600
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
2
10
20
30
40
50
60
2-Theta - Scale
1927462 - File: 1927462.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 150.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.

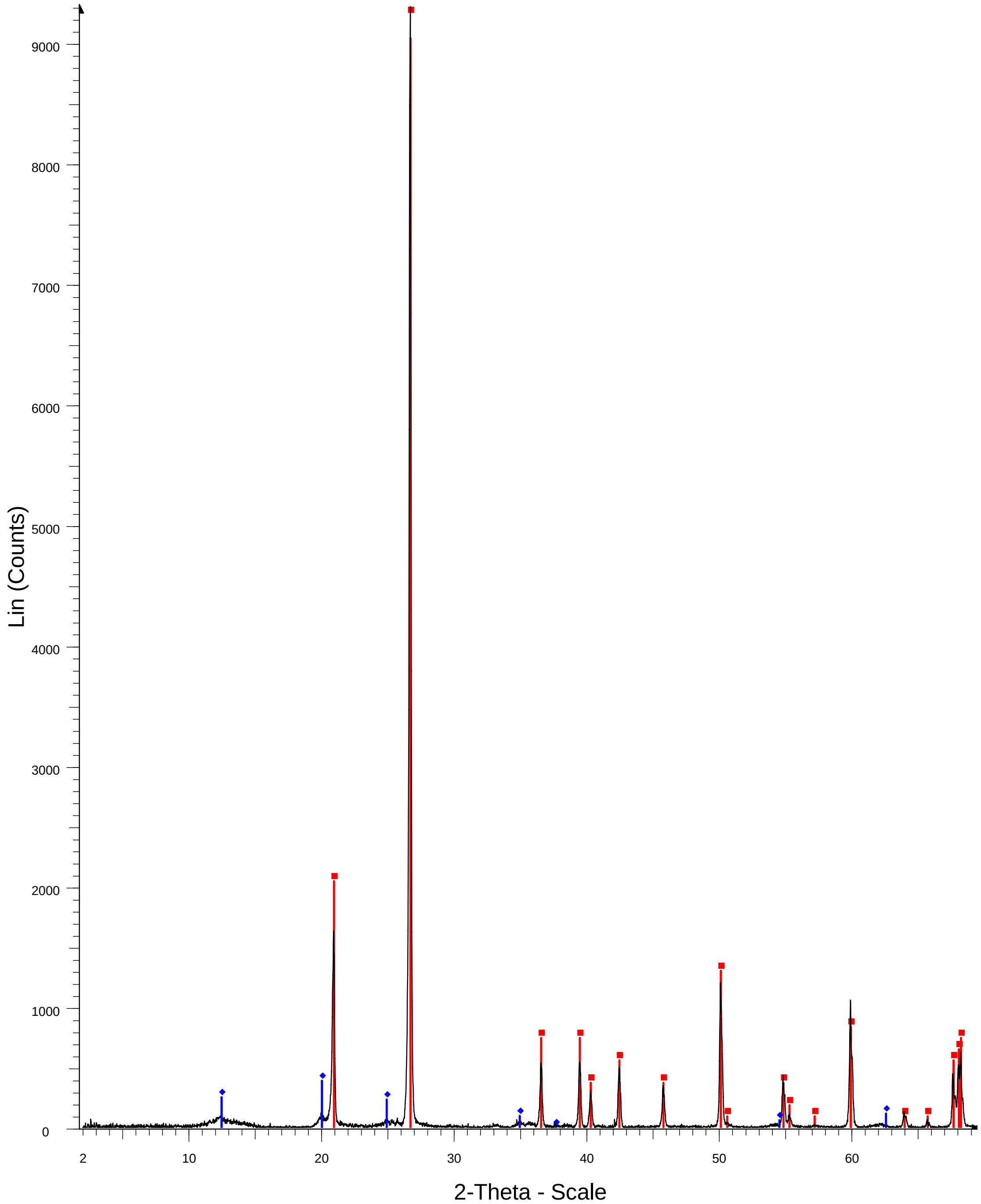


1927463 - File: 1927463.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.117 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO_2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - $(K,Ba,Na)(Si,Al)_4O_8$ - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - $NaAlSi_3O_8$ - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - $Al_2Si_2O_5(OH)_4$ - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

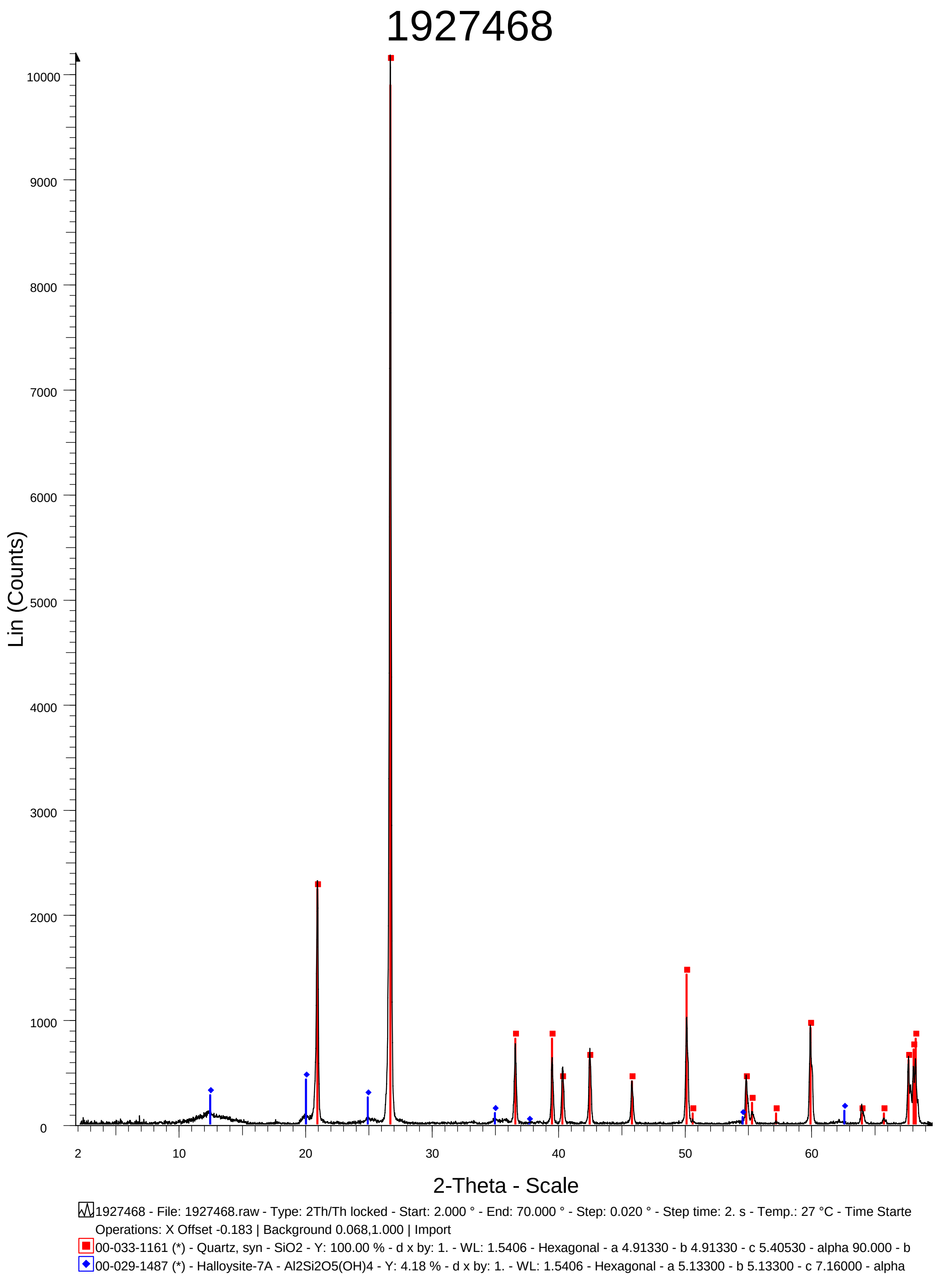
1927465

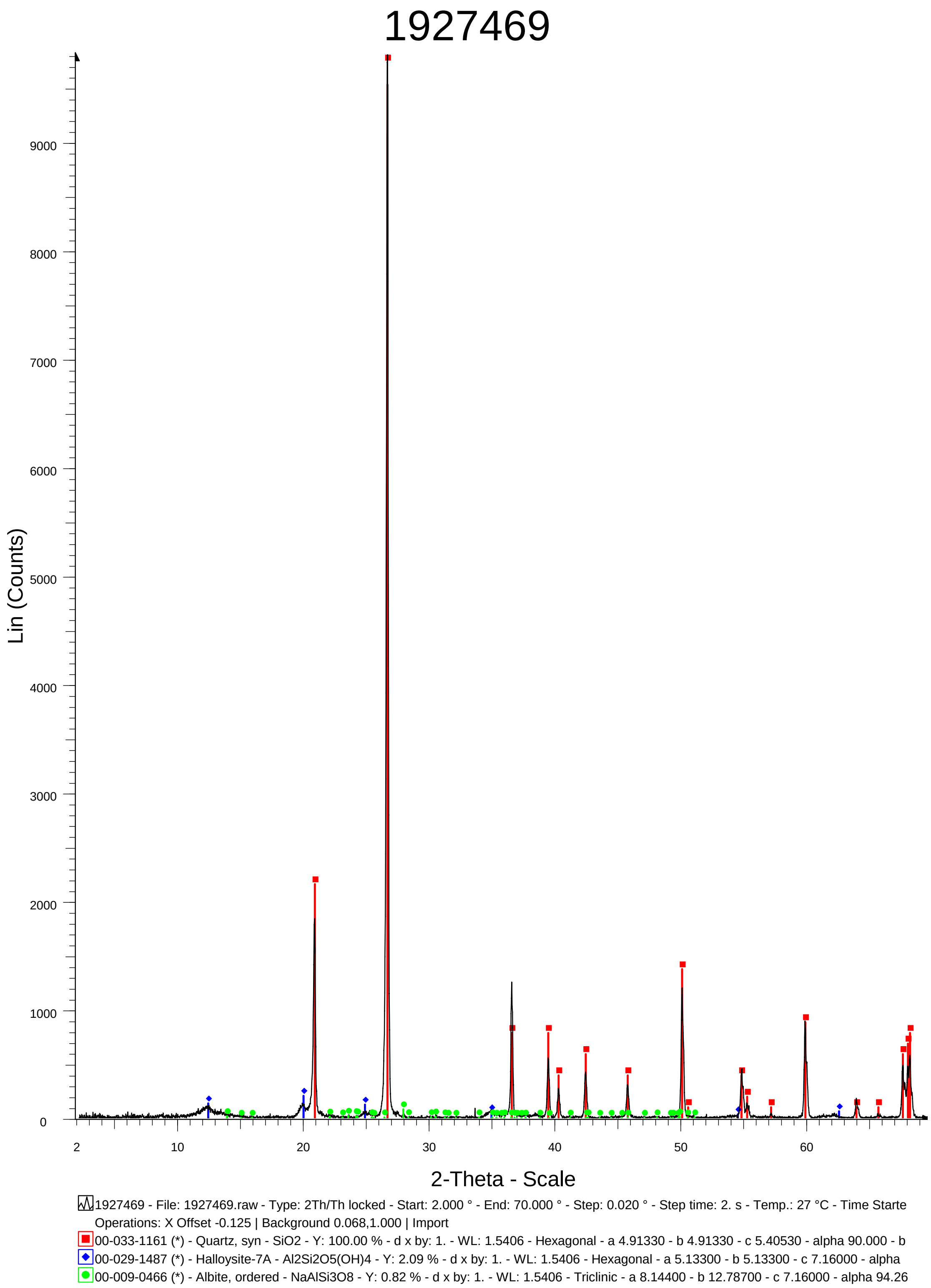

Lin (Counts)
2-Theta - Scale
1927465 - File: 1927465.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | X Offset -0.150 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

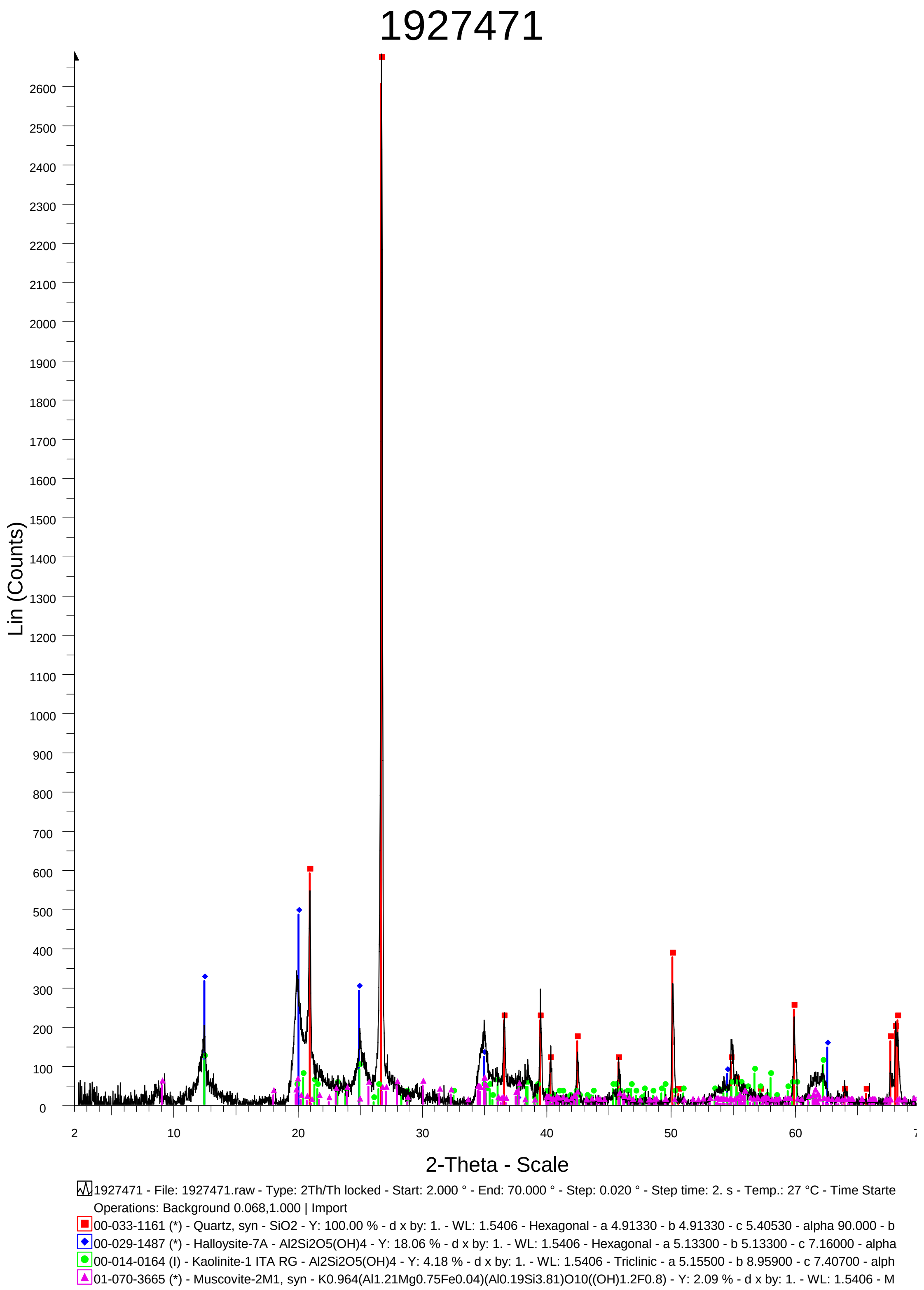
1927466

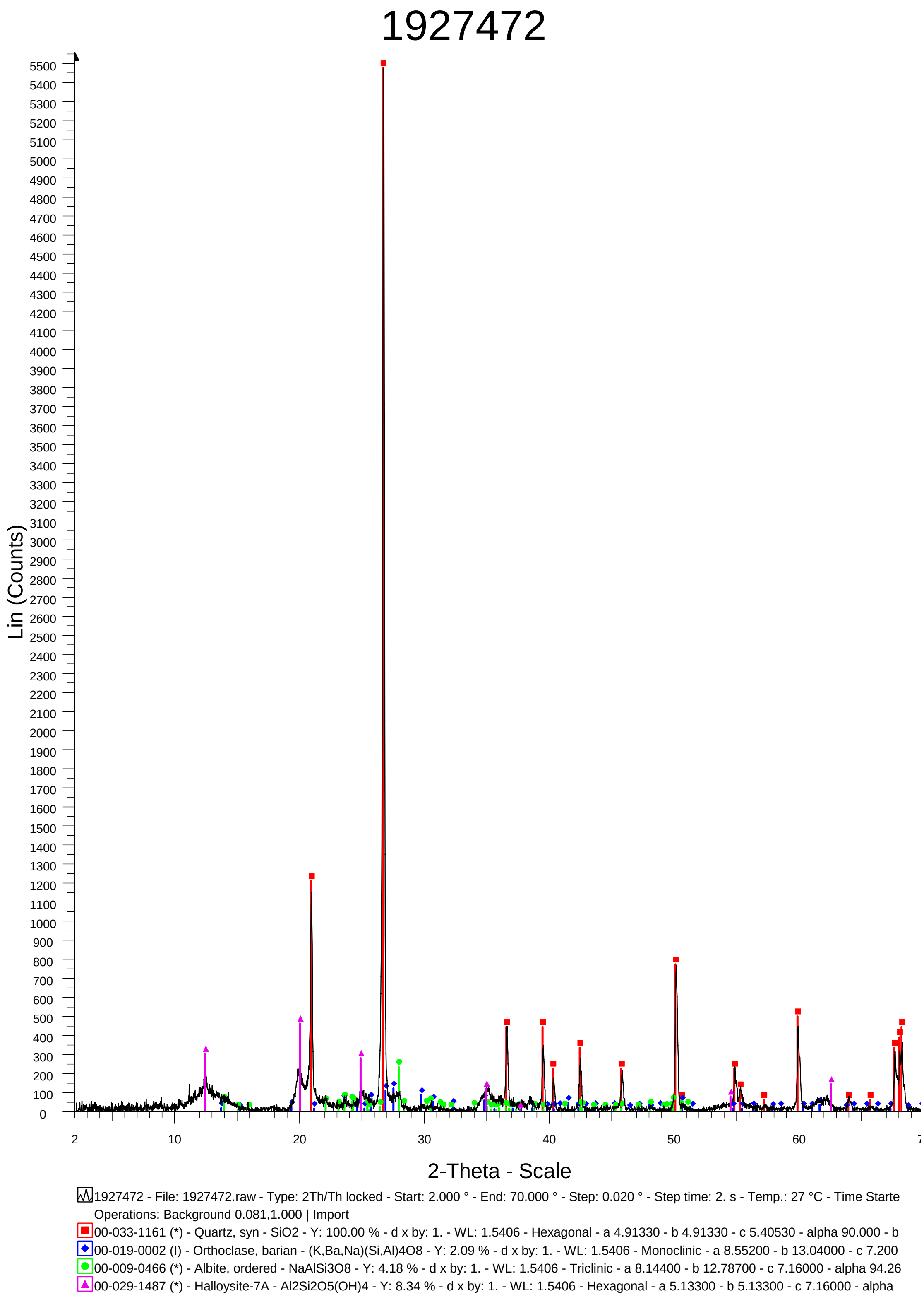


1927466 - File: 1927466.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.275 | X Offset -0.200 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

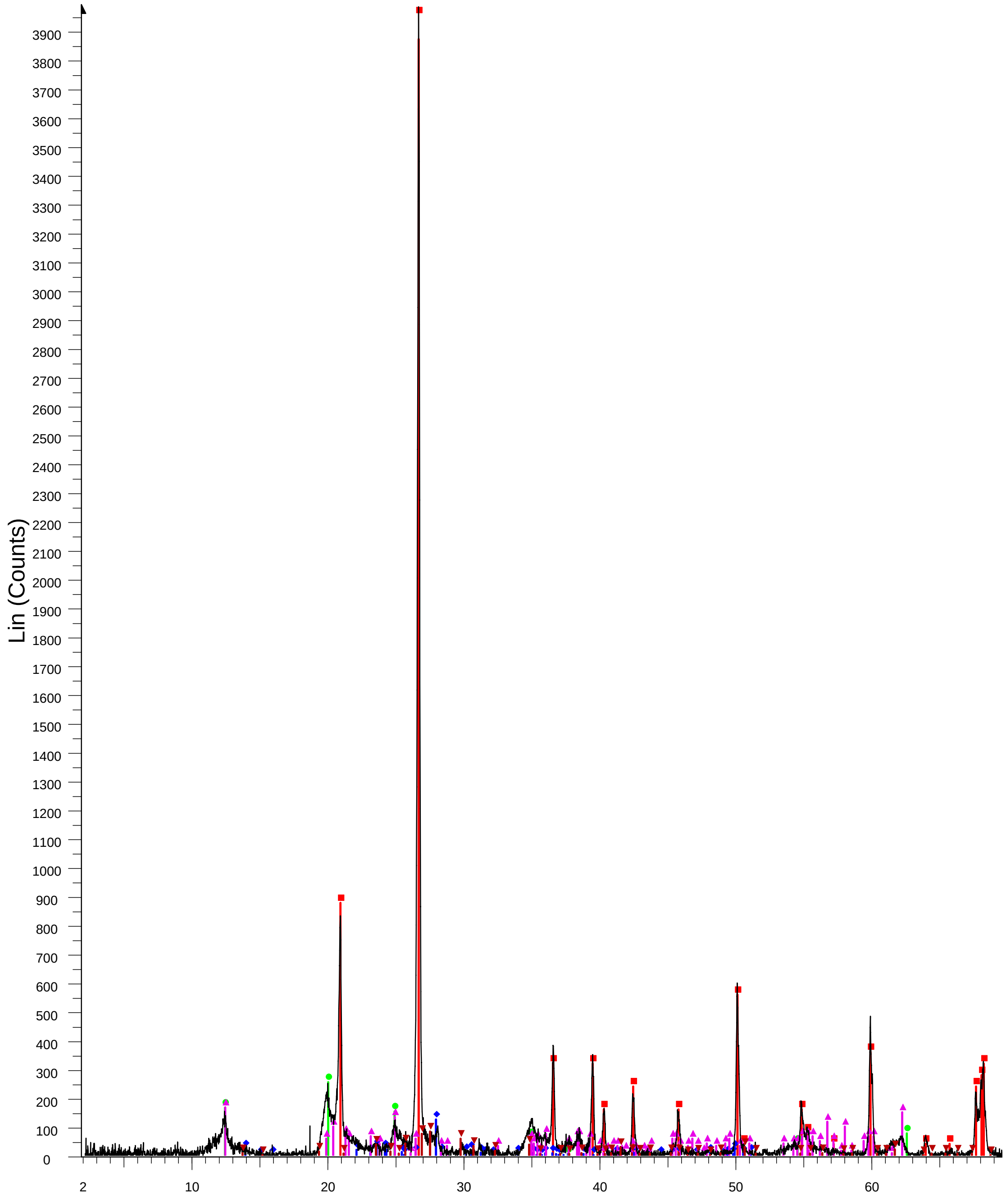

1927468
Lin (Counts)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927468 - File: 1927468.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.183 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


1927469
Lin (Counts)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2
10
20
30
40
50
60
2-Theta - Scale
1927469 - File: 1927469.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.125 | Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.82 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

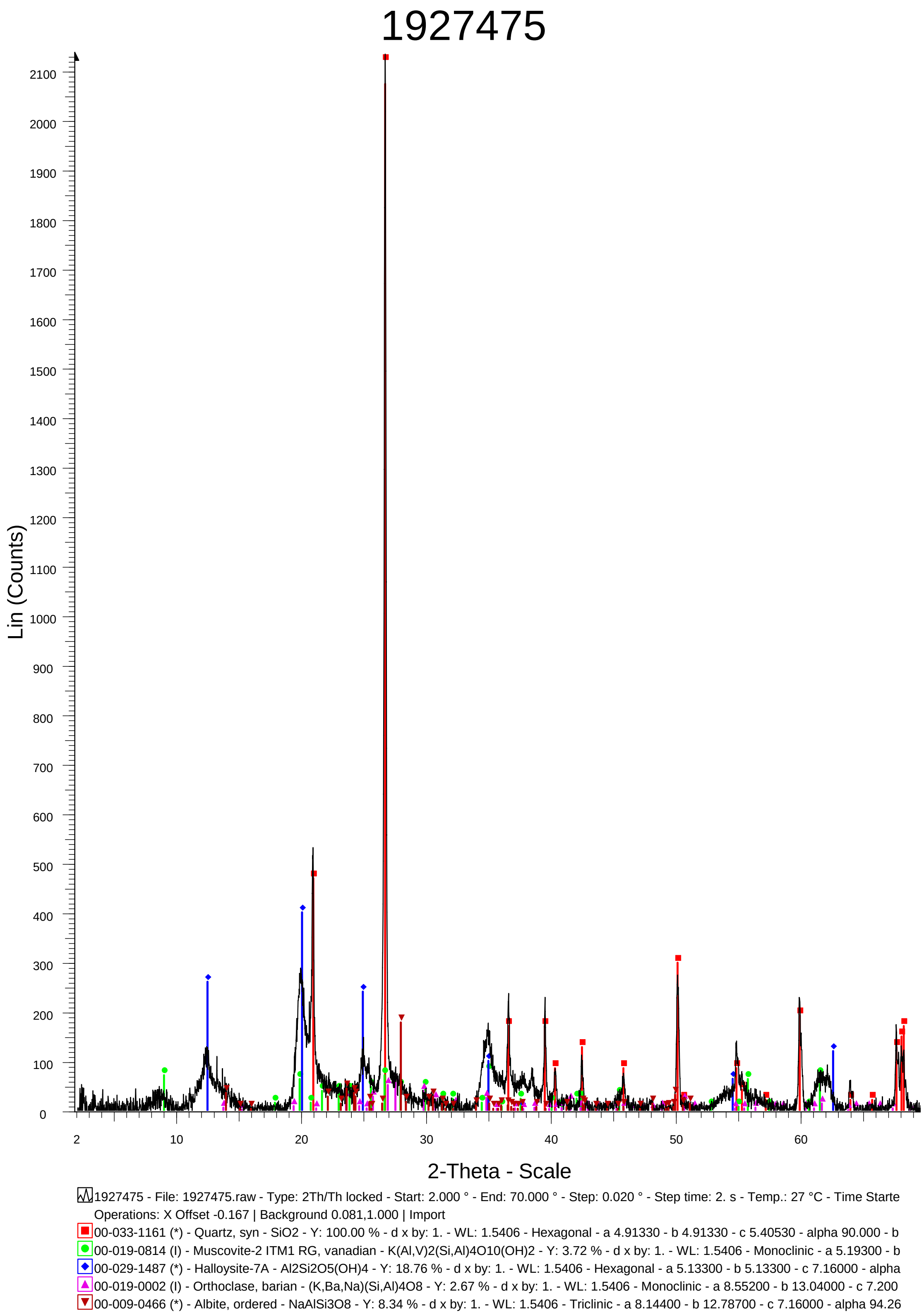

1927471
Lin (Counts)
2-Theta - Scale
1927471 - File: 1927471.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.068,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 18.06 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-014-0164 (I) - Kaolinite-1 ITA RG - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15500 - b 8.95900 - c 7.40700 - alph
01-070-3665 (*) - Muscovite-2M1, syn - K0.964(Al1.21Mg0.75Fe0.04)(Al0.19Si3.81)O10((OH)1.2F0.8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - M

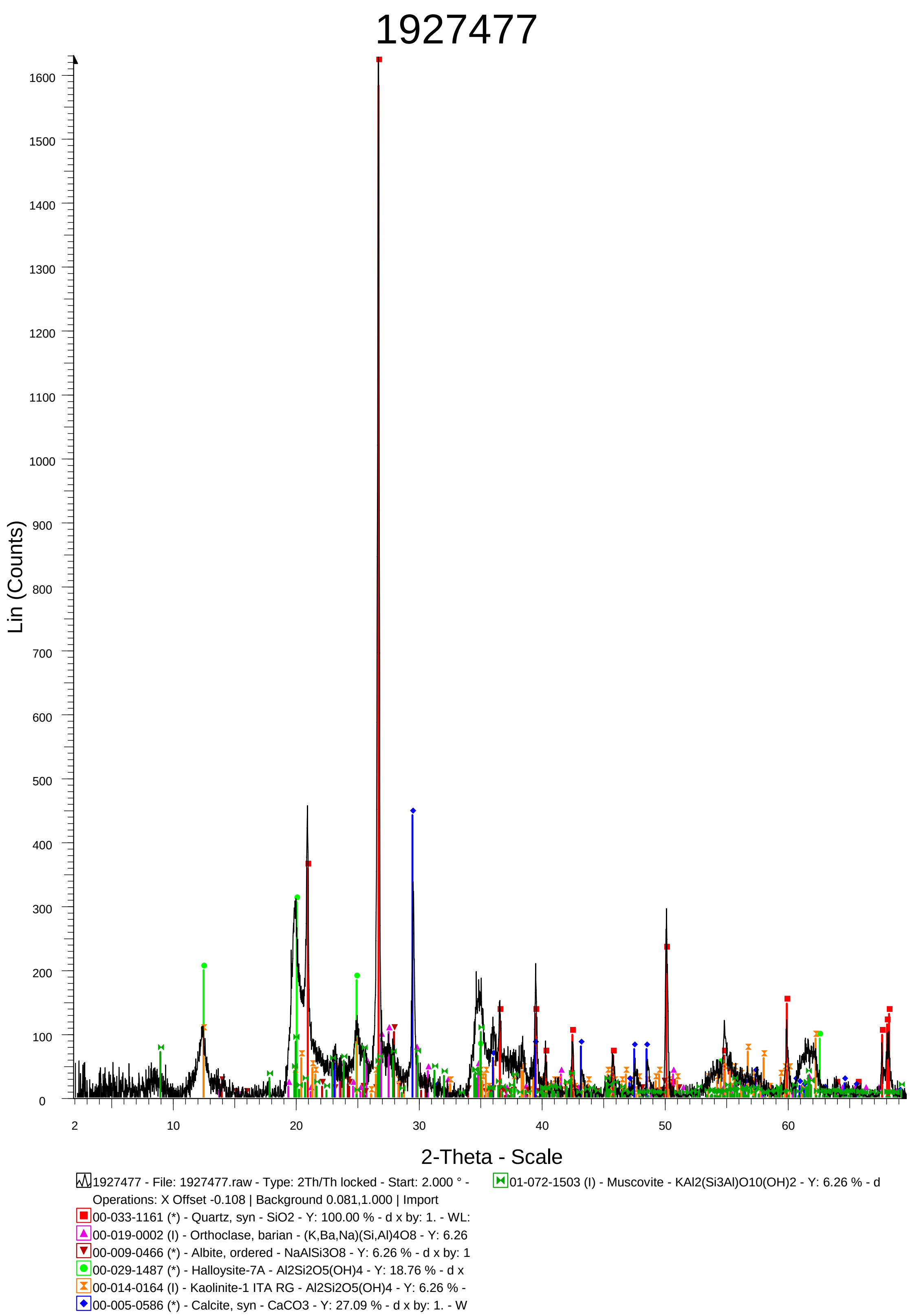

1927472
Lin (Counts)
2-Theta - Scale
1927472 - File: 1927472.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927474

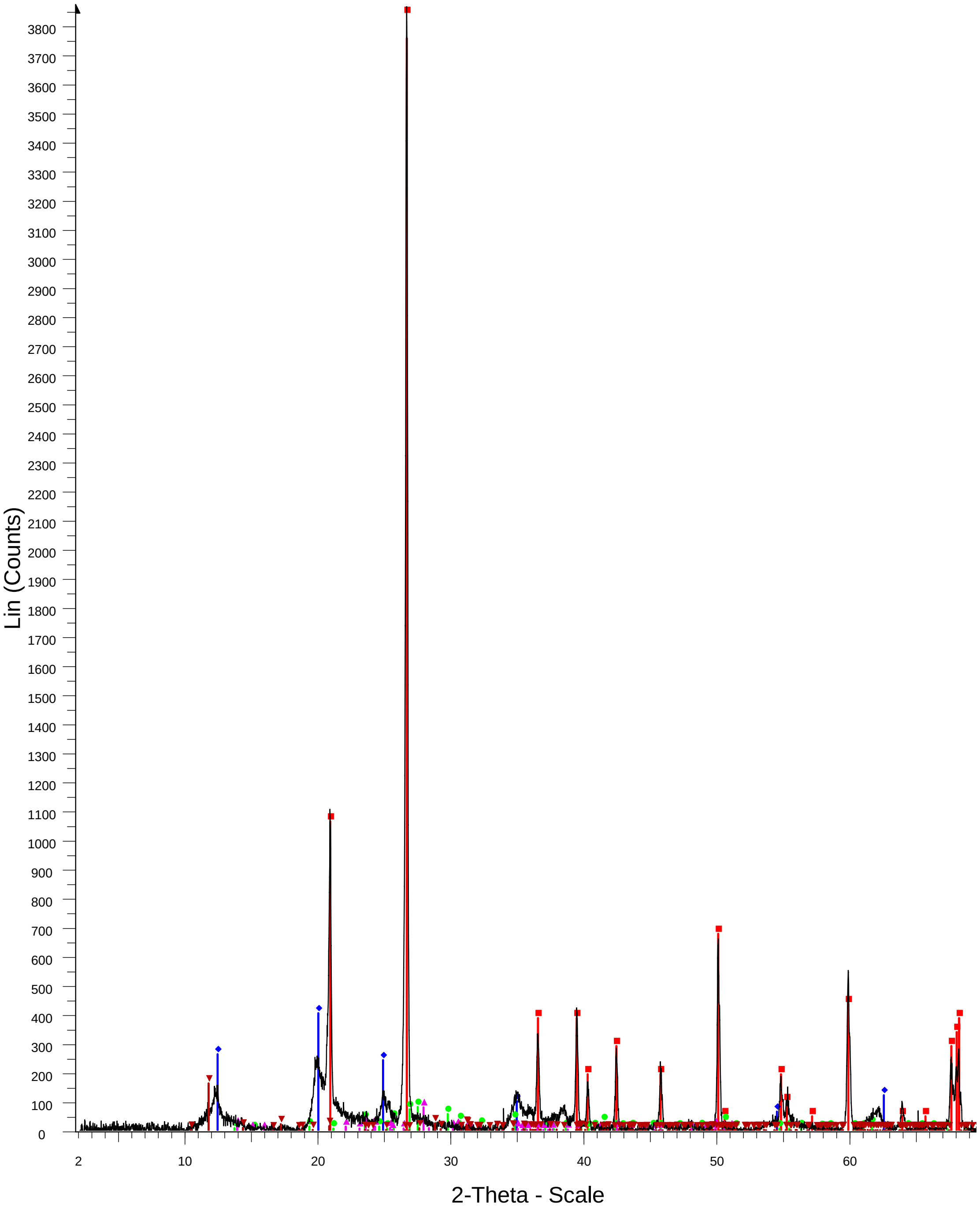


1927474 - File: 1927474.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.142 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.39 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-014-0164 (I) - Kaolinite-1 ITA RG - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Triclinic - a 5.15500 - b 8.95900 - c 7.40700 - alph


1927475
Lin (Counts)
2-Theta - Scale
1927475 - File: 1927475.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.167 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0814 (I) - Muscovite-2 ITM1 RG, vanadian - K(Al,V)2(Si,Al)4O10(OH)2 - Y: 3.72 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 5.19300 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 18.76 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.67 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26

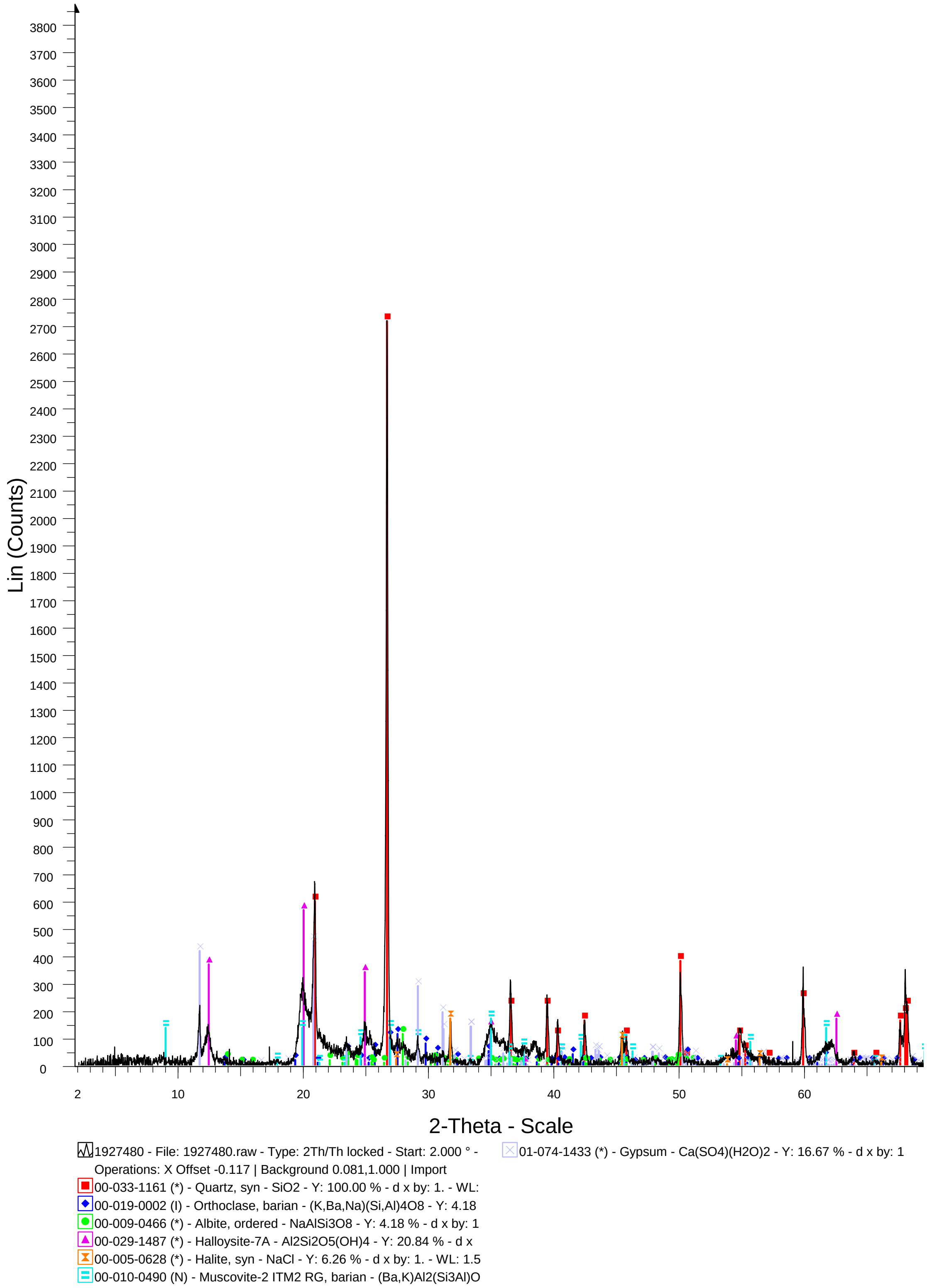

1927477
Lin (Counts)
2-Theta - Scale
1927477 - File: 1927477.raw - Type: 2Th/Th locked - Start: 2.000 ° -
Operations: X Offset -0.108 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL:
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 6.26
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 18.76 % - d x
00-014-0164 (I) - Kaolinite-1 ITA RG - Al2Si2O5(OH)4 - Y: 6.26 % -
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 27.09 % - d x by: 1. - W
01-072-1503 (I) - Muscovite - KAl2(Si3Al)O10(OH)2 - Y: 6.26 % - d

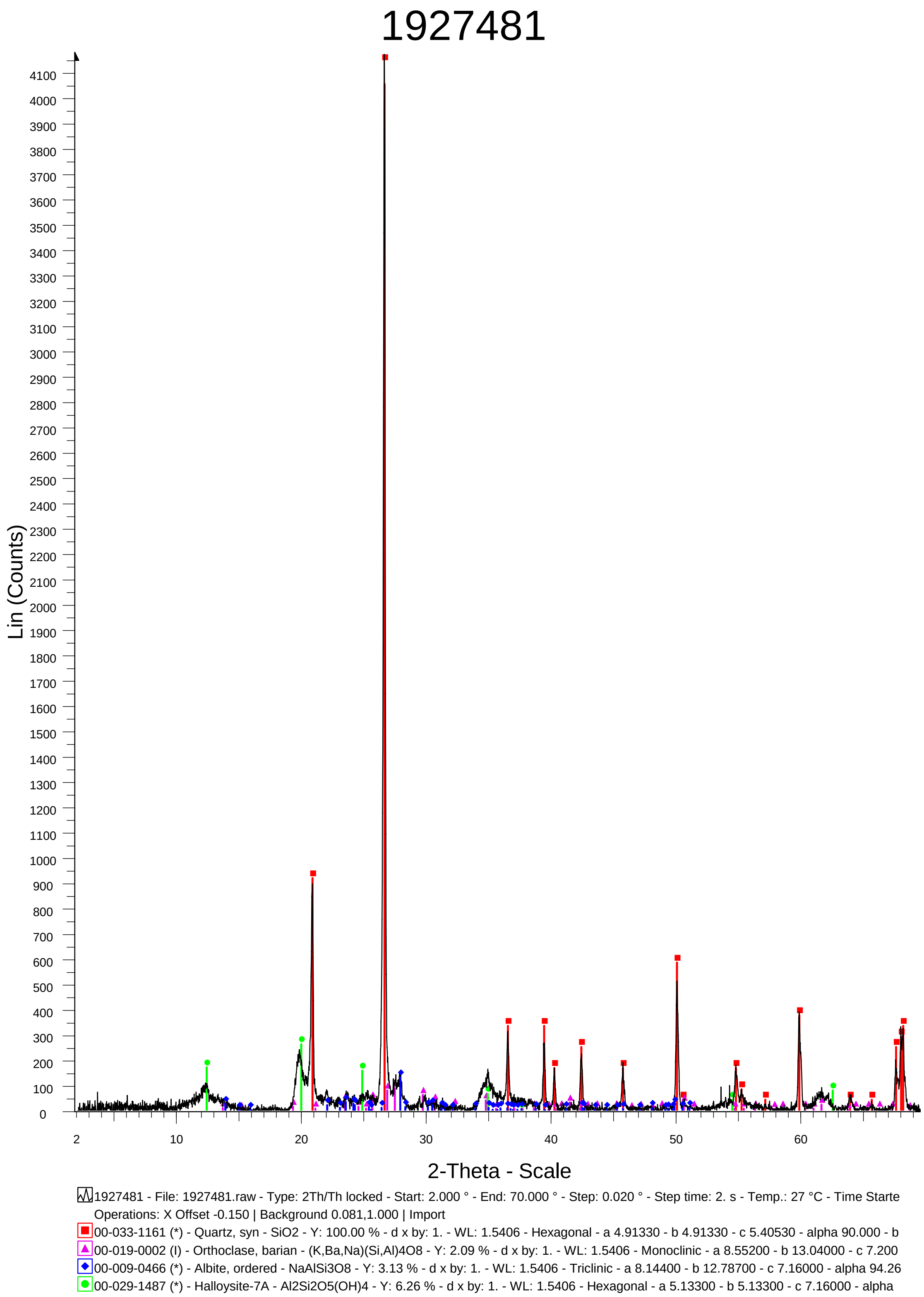
1927478



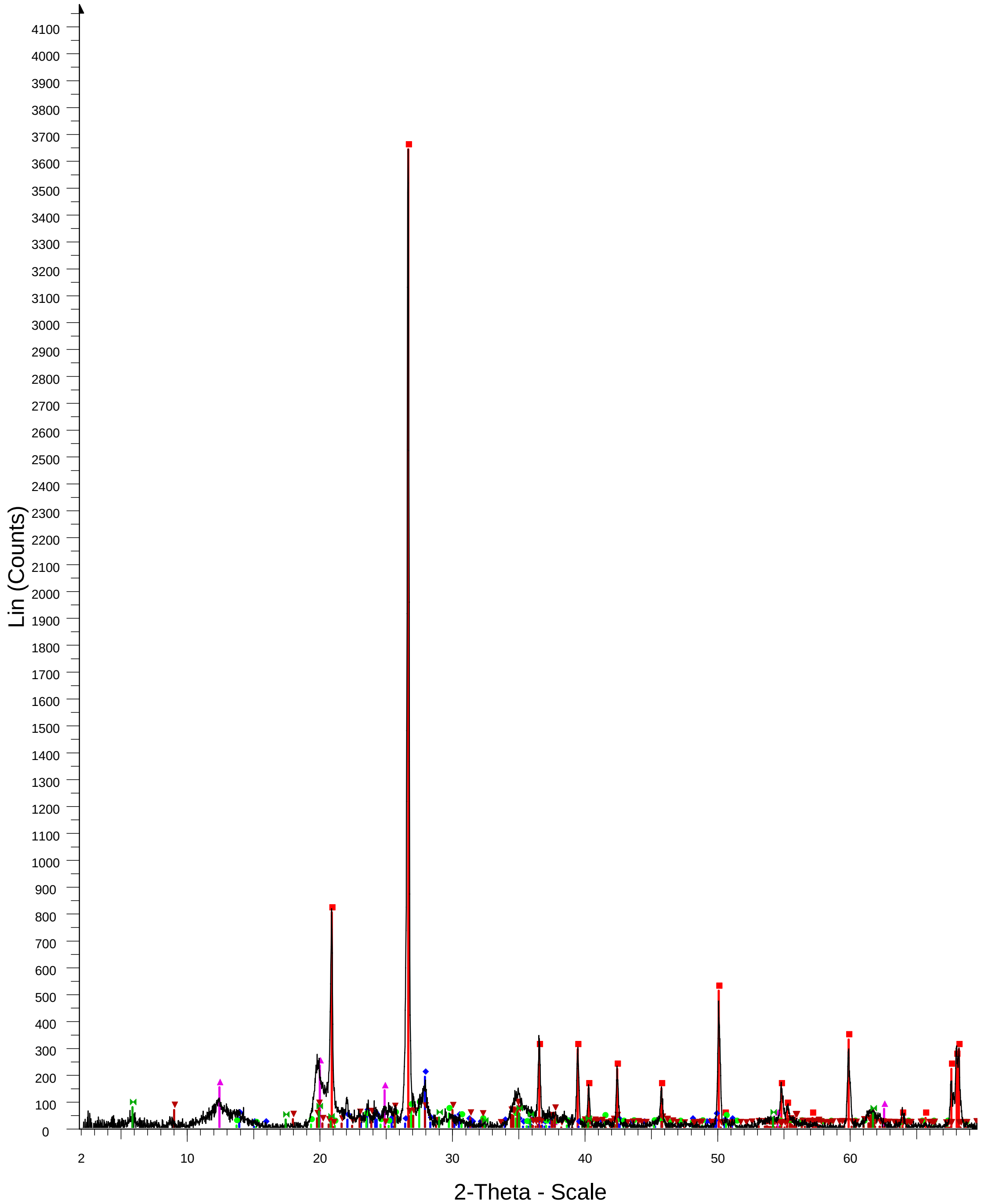
1927478 - File: 1927478.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.225 | X Offset -0.200 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 125.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 2.05 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
01-076-1746 (N) - Gypsum - CaSO4(H2O)2 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 10.47000 - b 15.15000 - c 6.28000 - alpha 90.

1927480


Lin (Counts)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
2
10
20
30
40
50
60
2-Theta - Scale
1927480 - File: 1927480.raw - Type: 2Th/Th locked - Start: 2.000 ° -
Operations: X Offset -0.117 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL:
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 4.18 % - d x by: 1
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 20.84 % - d x
00-005-0628 (*) - Halite, syn - NaCl - Y: 6.26 % - d x by: 1. - WL: 1.5
00-010-0490 (N) - Muscovite-2 ITM2 RG, barian - (Ba,K)Al2(Si3Al)O
01-074-1433 (*) - Gypsum - Ca(SO4)(H2O)2 - Y: 16.67 % - d x by: 1

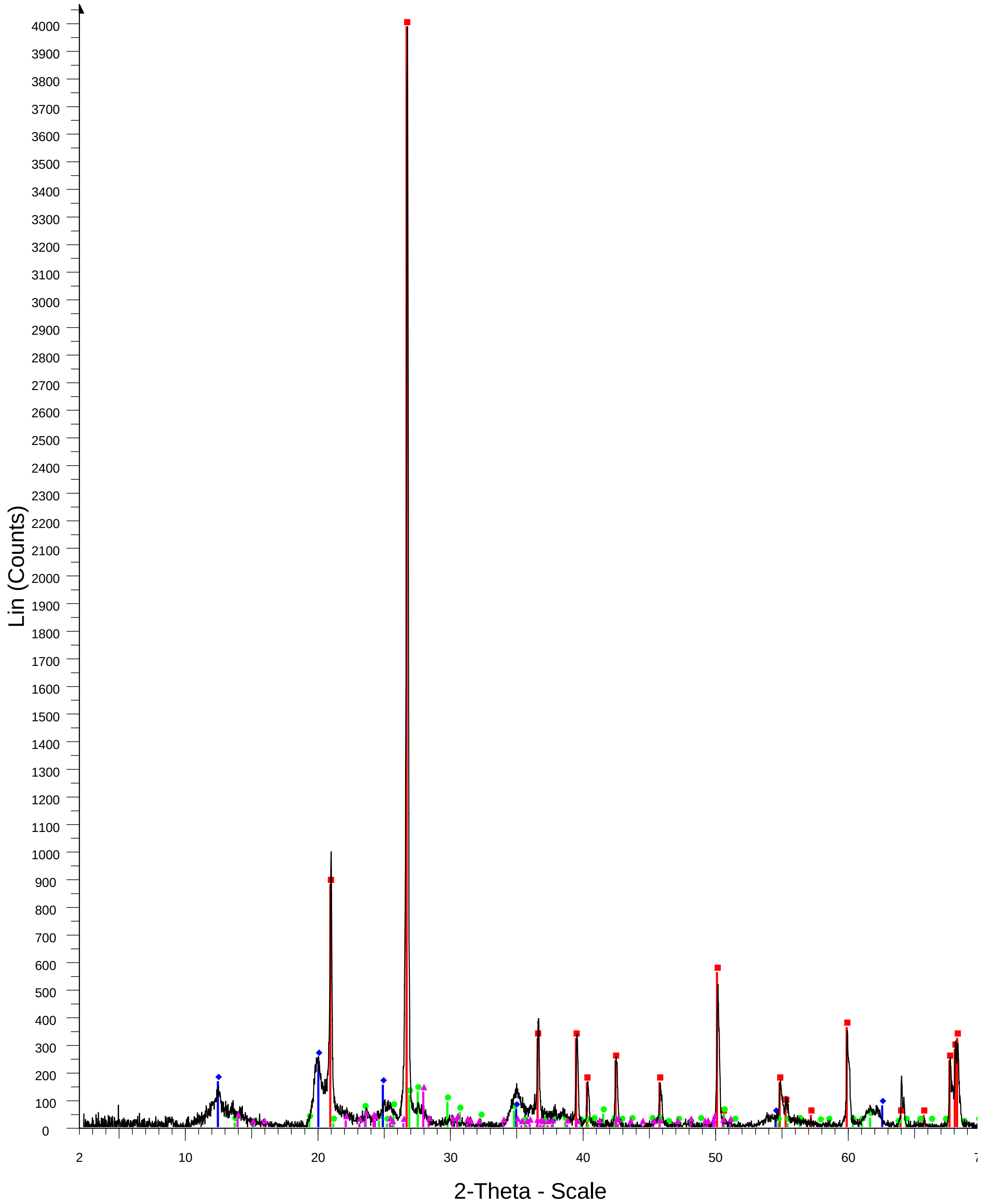

1927481
Lin (Counts)
2-Theta - Scale
1927481 - File: 1927481.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.150 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927483

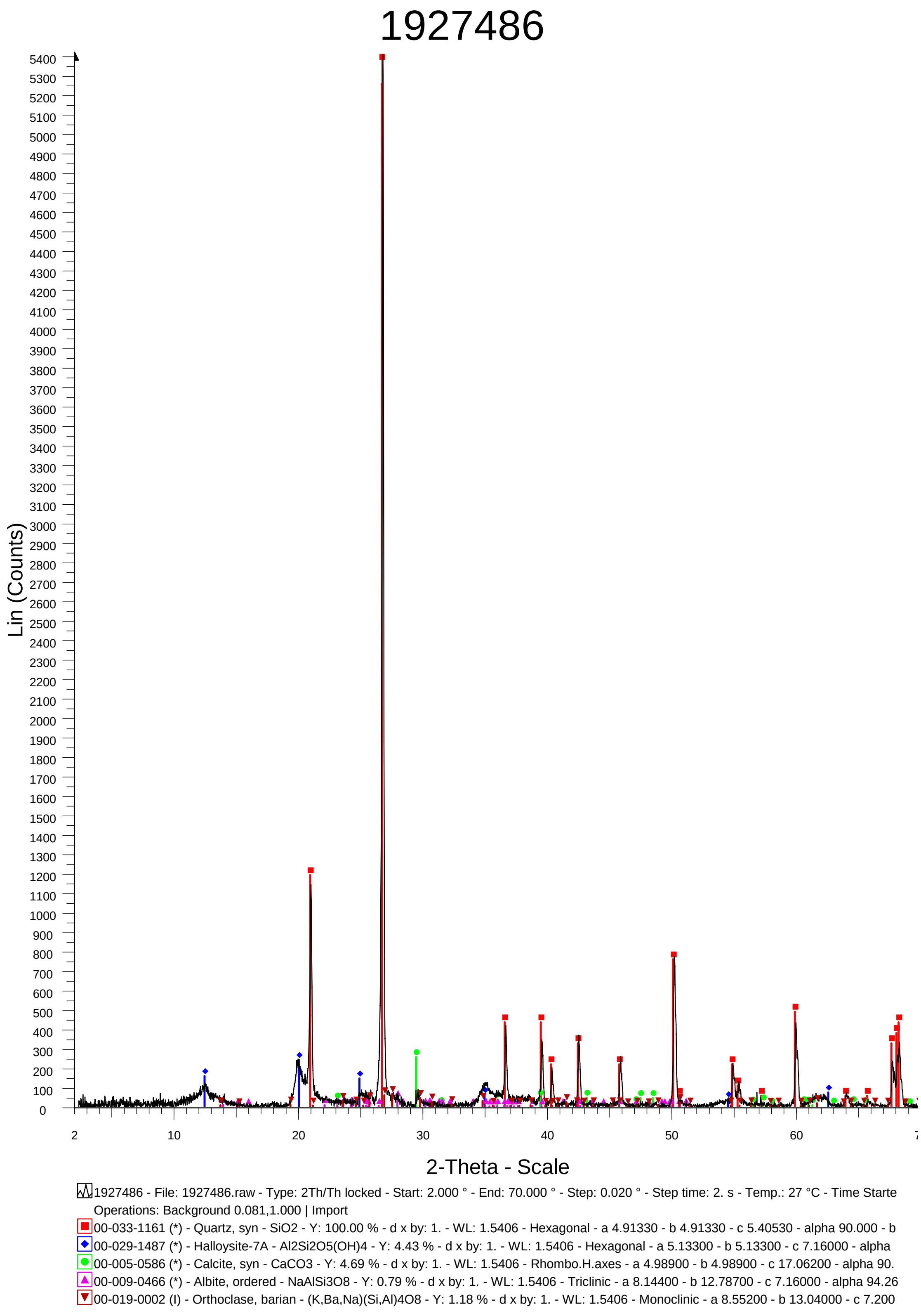


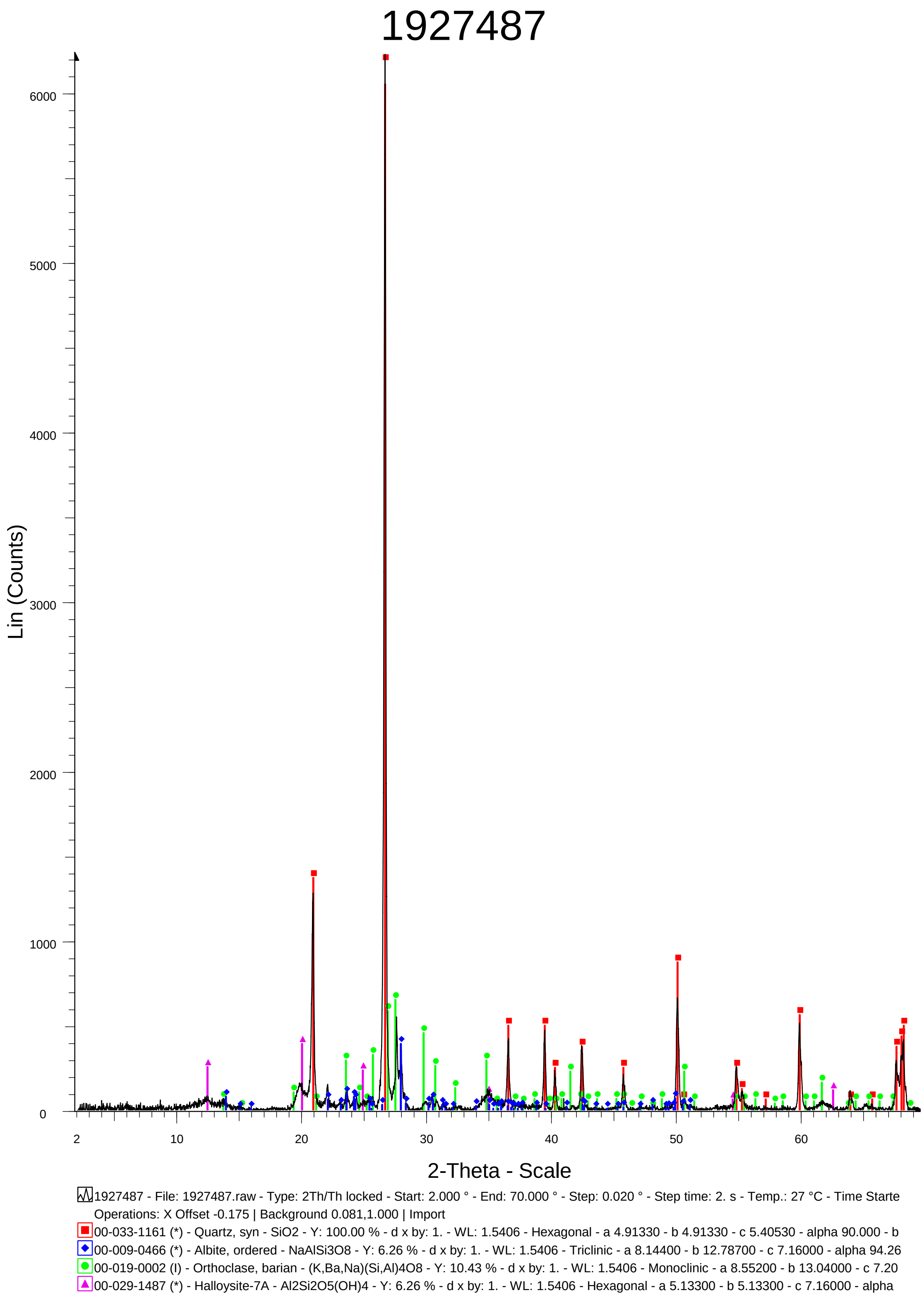
1927483 - File: 1927483.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.142 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 5.21 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.35 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 2.09 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
01-070-3665 (*) - Muscovite-2M1, syn - K0.964(Al1.21Mg0.75Fe0.04)(Al0.19Si3.81)O10((OH)1.2F0.8) - Y: 2.09 % - d x by: 1. - WL: 1.5406 - M
00-003-0010 (D) - Montmorillonite - (Na,Ca)0.3(Al,Mg)2Si4O10(OH)2·xH2O - Y: 2.09 % - d x by: 1. - WL: 1.5406 -

1927484

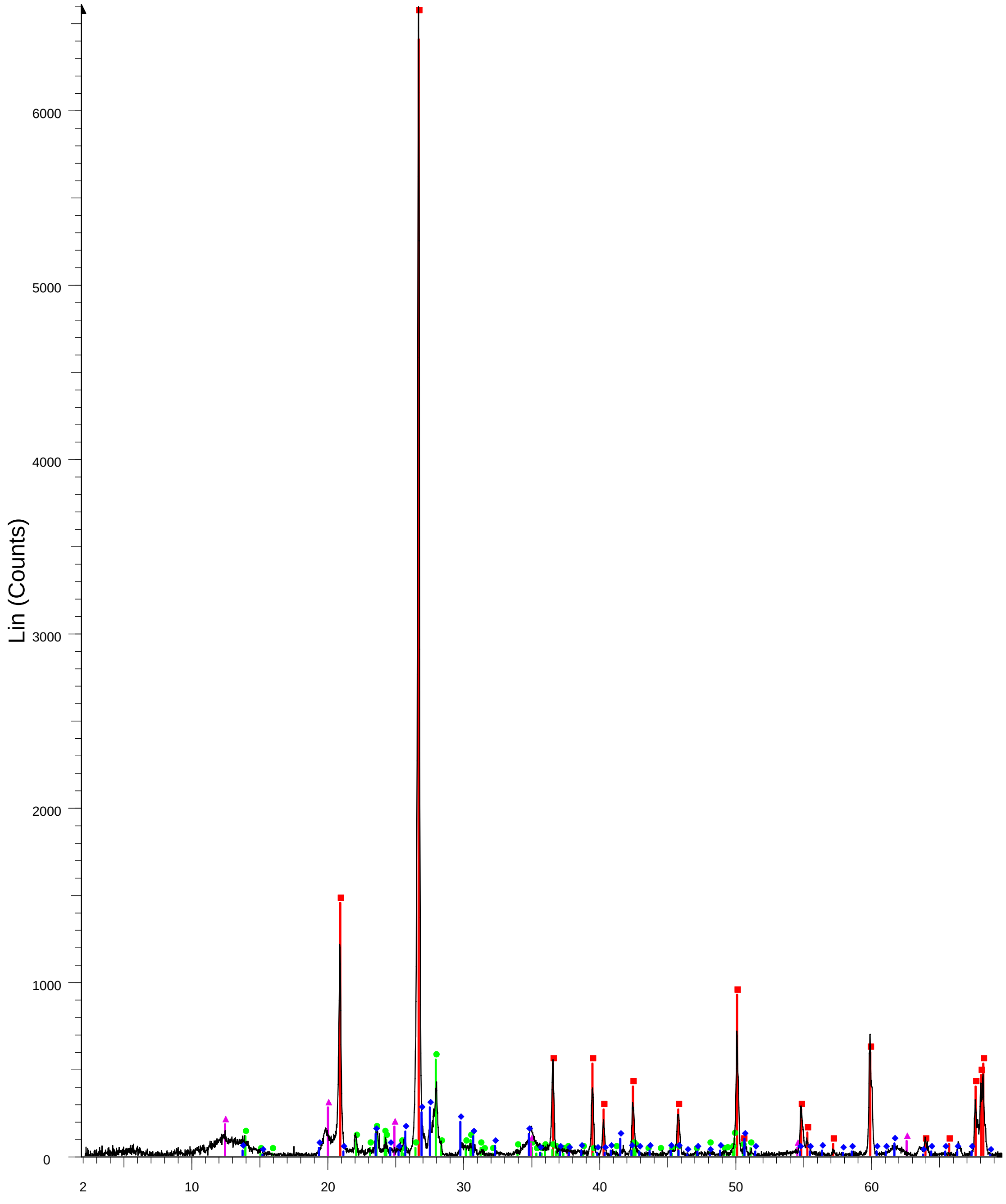


1927484 - File: 1927484.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 3.13 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha


1927486
Lin (Counts)
2-Theta - Scale
2
10
20
30
40
50
60
1927486 - File: 1927486.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.43 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha
00-005-0586 (*) - Calcite, syn - CaCO3 - Y: 4.69 % - d x by: 1. - WL: 1.5406 - Rhombo.H.axes - a 4.98900 - b 4.98900 - c 17.06200 - alpha 90.
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 0.79 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 1.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200


1927487
Lin (Counts)
0
1000
2000
3000
4000
5000
6000
2
10
20
30
40
50
60
2-Theta - Scale
1927487 - File: 1927487.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.175 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 10.43 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.20
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 6.26 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

1927489



1927489 - File: 1927489.raw - Type: 2Th/Th locked - Start: 2.000 ° - End: 70.000 ° - Step: 0.020 ° - Step time: 2. s - Temp.: 27 °C - Time Starte
Operations: X Offset -0.133 | Background 0.081,1.000 | Import
00-033-1161 (*) - Quartz, syn - SiO2 - Y: 100.00 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 4.91330 - b 4.91330 - c 5.40530 - alpha 90.000 - b
00-019-0002 (I) - Orthoclase, barian - (K,Ba,Na)(Si,Al)4O8 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Monoclinic - a 8.55200 - b 13.04000 - c 7.200
00-009-0466 (*) - Albite, ordered - NaAlSi3O8 - Y: 8.34 % - d x by: 1. - WL: 1.5406 - Triclinic - a 8.14400 - b 12.78700 - c 7.16000 - alpha 94.26
00-029-1487 (*) - Halloysite-7A - Al2Si2O5(OH)4 - Y: 4.18 % - d x by: 1. - WL: 1.5406 - Hexagonal - a 5.13300 - b 5.13300 - c 7.16000 - alpha

A5.8 Munsell colour and soil pH (Field)

SAMPLE_ID	Muns_dry	Muns_wet	Field pH	SAMPLE_ID	Muns_dry	Muns_wet	Field pH
2005861001001	5YR5/6	2.5YR3/6	7.0	2005861001002	7.5YR5/6	5YR4/6	7.5
2005861002001	5YR5/6	2.5YR3/4	6.5	2005861002002	2.5YR4/8	2.5YR4/6	6.5
2005861003001	2.5Y4/2	10YR4.5/1	7.5	2005861003002	5YR5/1	5Y5/1	8.0
2005861004001	10YR4/3	10YR4/2	9.0	2005861004002	10YR5/3	10YR4/2	8.0
2005861005001	2.5Y5/2	2.5Y5/2	8.5	2005861005002	10YR4/2	10YR4/1	7.5
2005861006001	2.5Y5/2	5Y4/1	8.5	2005861006002	5Y5/2	2.5Y5/2	8.5
2005861007001	2.5R5/6	2.5R4/6	6.0	2005861007002	10YR5/3	2.5Y5/2	8.5
2005861008001	7.5YR5/4	7.5YR5/4	7.0	2005861008002	10YR5/3	10YR5/3	8.0
2005861009001	5YR5/6	5YR4/4	7.0	2005861009002	10YR6/6	10YR5/4	7.5
2005861010001	2.5Y7/4	2.5Y5/3	6.5	2005861010002	10YR6/6	10YR5/4	7.5
2005861011001	7.5YR5/6	7.5YR5/6	6.5	2005861011002	7.5YR6/6	7.5YR5/6	7.5
2005861012001	7.5YR6/6	7.5YR5/4	7.5	2005861012002	7.5YR5/6	7.5YR5/6	7.0
2005861013001	10YR6/4	10YR5/4	7.0	2005861013002	10YR6/6	10YR6/4	8.5
2005861014001	5YR5/6	2.5YR4/6	7.0	2005861014002	5YR4/6	5YR4/6	7.5
2005861015001	5YR5/8	5YR4/6	7.5	2005861015002	7.5YR5/6		8.5
2005861016001	5YR5/6	5YR4/6	7.5	2005861016002	7.5YR6/6	7.5YR4/4	8.0
2005861017001	10YR5/3	10YR4/2	8.0	2005861017002	2.5YR5/2	2.5YR5/2	9.0
2005861018001	7.5YR5/8	7.5YR3/3	5.5	2005861018002	7.5YR6/8	7.5YR4/4	7.0
2005861019001	5YR5/8	5YR4/6	6.0	2005861019002	5YR4/6	5YR4/4	6.5
2006861101001	10YR5/2	10YR5/1	7.0	2006861101002	10YR5/1	10YR5/1	7.0
2006861102001	2YR5/2	10YR4/2	7.5	2006861102002	10YR4/2	10YR5/2	7.5
2006861103001	2.5Y5/3	10YR4/1	7.5	2006861103002			7.5
2006861104001		5Y4/1	8.5	2006861104002	10Y4/1	10YR4/1	8.0
2006861105001	2.5YR4/2	2.5Y4/2	6.5	2006861105002	10YR5/2	10YR5/2	8.0
2006861106001		2.5YR5/2	7.0	2006861106002	2.5YR5/2	2.5Y6/1	7.5
2006861107001	10YR7/1	10YR5/3	6.5	2006861107002	2.5YR6/3	2.5Y6/3	7.0
2006861108001	10YR6/3	10YR6/3	6.5	2006861108002	10YR4/3	10YR6/3	7.0
2006861109001	10YR6/3	10YR5/1	5.5	2006861109002	10YR5/2	10YR5/1	7.5
2006861110001	10YR6/3	10YR5/3	6.5	2006861110002	10YR6/4	10YR6/3	8.0
2006861111001	7.5YR5/2	10YR4/2	6.5	2006861111002	7.5YR5/2	10YR4/1	8.0
2006861112001	10YR5/2	10YR5/2	7.0	2006861112002	10YR4/1	10YR5/1	8.0
2006861113001	10YR7/2	10YR6/3	8.0	2006861113002	2.5YR5/8	2.5YR4/8	8.0
2006861114001	7.5YR6/4	5Y5/4	7.5	2006861114002	10YR4/1	10YR4/1	7.0
2006861115001	7.5YR6/4	7.5YR4/4	6.5	2006861115002	7.5YR6/8	10YR5/3	6.0
2006861116001	7.5YR5/4	7.5YR4/4	5.5	2006861116002	7.5YR5/6	5YR4/6	6.5
2006861117001	5YR4/6	2.5YR3/6	6.5	2006861117002	2.5YR5/6	5YR4/6	6.0
2006861118001	5YR5/6	5YR4/6	5.5	2006861118002	5YR5/6	5YR4/6	8.5
2006861119001	10YR6/4	10YR5/4	6.5	2006861119002	7.5YR6/6	5YR5/6	8.0
2006861120001	7.5YR6/4	7.5YR4/4	7.5	2006861120002	2.5YR7/4	2.5YR6/4	8.0
2006861121001	10YR6/3	2.5YR6/2	8.0	2006861121002	10YR7/3	10YR6/2	9.0
2006861122001	10YR6/2	10YR5/2	7.0	2006861122002	10YR6/3	2.5YR6/2	9.0
2006861123001	7.5YR5/4	7.5YR4/3	6.0	2006861123002	7.5YR6/4	10YR5/3	7.0
2006861124001	5YR5/6	5YR4/4	5.5	2006861124002	7.5YR5/6	7.5YR4/6	8.5
2006861125001	5YR5/8	2.5YR4/6	5.0	2006861125002	2.5YR4/6	2.5YR3/6	5.5
2006861126001	7.5YR5/4	7.5YR4/4	5.5	2006861126002	2.5YR4/8	10R4/8	8.0
2006861127001	5YR5/8	5YR5/6	7.5	2006861127002	7.5YR5/4	7.5YR5/4	7.5
2006861128001	10YR6/2	10YR5/3	5.5	2006861128002	2.5Y6/3	2.5Y6/3	8.5
2006861129001	5YR5/6	5YR4/6	7.5	2006861129002	7.5YR6/6	7.5YR4/6	8.0
2006861130001	5YR5/6	7.5YR5/6	7.0	2006861130002	5YR4/6	7.5YR5/6	8.0
2006861131001	2.5YR4/8	2.5YR3/6	7.5	2006861131002	5YR5/6	5YR4/6	7.5
2006861132001	5YR6/6	7.5YR5/6	7.5	2006861132002	5YR4/4	7.5YR5/6	8.5
2006861133001	5YR5/8	7.5YR6/6	8.5	2006861133002	7.5YR4/6	7.5YR5/6	8.5
2006861134001	7.5YR5/6	7.5YR4/6	7.0	2006861134002	7.5YR6/6	7.5YR4/6	8.5
2006861135001	5YR5/6	5YR5/6	7.0	2006861135002	7.5YR6/6	7.5YR6/6	8.0
2006861136001	7.5YR5/6	7.5YR5/6	8.0	2006861136002	5YR5/8	7.5YR5/6	8.0

SAMPLE_ID	Muns_dry	Muns_wet	Field pH	SAMPLE_ID	Muns_dry	Muns_wet	Field pH
2006861137001	7.5YR5/6	7.5YR4/6	7.5	2006861137002	7.5YR4/6	7.5YR4/6	7.5
2006861138001	7.5YR5/6	7.5YR4/6	7.5	2006861138002	7.5YR6/6	7.5YR4/4	7.5
2006861139001	10YR7/4	10YR5/4	6.5	2006861139002	7.5YR5/6	7.5YR5/6	8.0
2006861140001	7.5YR5/6	5YR4/6	8.5	2006861140002	7.5YR6/6	7.5YR5/6	8.5
2006861141001	7.5YR5/6	5YR4/6	7.0	2006861141002		2.5YR4/8	7.5
2006861142001	5YR4/6	2.5YR3/6	7.5	2006861142002	2.5YR4/8	2.5YR4/6	8.0
2006861143001	5YR5/8	5YR4/6	8.5	2006861143002	5YR4/6	5YR4/6	8.0
2006861144001	5YR4/6	5YR3/4	7.5	2006861144002	2.5YR4/8	2.5YR3/6	8.0
2006861145001	10YR6/2	10YR5/2	8.5	2006861145002	10YR5/3	10YR5/3	8.5
2006861146001	7.5YR6/3	7.5YR5/3	7.5	2006861146002	7.5YR6/4	7.5YR5/2	7.5
2006861147001	10YR6/2	10R5/2	8.0	2006861147002	10YR6/3	10R5/3	8.5
2006861148001	2.5YR4/8	2.5YR3/4	5.5	2006861148002	5YR5/6	5YR4/6	8.5
2006861149001	2.5YR5/4	2.5YR4/4	6.0	2006861149002	7.5YR5/4	7.5YR4/6	8.0
2006861150001	2.5YR4/6	2.5YR3/4	5.5	2006861150002	2.5YR4/8	2.5YR3/6	6.0
2006861151001	2.5YR4/6	2.5YR3/6	8.5	2006861151002	5YR4/6	2.5YR3/6	8.0
2006861152001	7.5YR5/6	7.5YR4/6	8.0	2006861152002	10YR5/4	10YR4/6	7.0
2006861153001	7.5YR4/1	7.5YR3/1	7.5	2006861153002	7.5YR4/2	7.5YR4/1	8.5
2006861154001	7.5YR5/4	7.5YR5/6	5.5	2006861154002	7.5YR4/4	5YR4/6	8.5
2006861155001	10YR5/4	10YR4/3	8.5	2006861155002	10YR4/3	10YR4/3	9.0
2006861156001	10YR5/1	2.5Y4/1	7.0	2006861156002	2.5Y5/1	2.5Y5/1	8.0
2006861157001	2.5Y5/2	2.5YR4/3	7.0	2006861157002	2.5Y4/2	2.5Y5/4	8.5
2006861201001	7.5YR5/6	5YR4/4	6.5	2006861201002	10YR5/4	10YR4/4	8.0
2006861202001	10YR6/3	7.5YR4/4	6.0	2006861202002	2.5Y6/3	2.5Y5/4	8.5
2006861203001	2.5Y5/2	10YR4/2	7.5	2006861203002	10YR4/2	10YR4/2	8.0
2006861204001	7.5YR5/4	5YR4/3	6.0	2006861204002	7.5YR6/6	7.5YR4/4	8.5
2006861205001	7.5YR5/6	7.5YR4/3	5.5	2006861205002	5YR5/8	5YR4/6	6.5
2006861206001	10YR6/3	10YR5/6	7.0	2006861206002	2.5Y5/1	2.5Y5/2	7.5
2006861207001	10YR6/3	10YR5/3	8.5	2006861207002	10YR6/3	10YR6/3	8.5
2006861208001	2.5Y6/2	2.5Y5.2	7.0	2006861208002	2.5Y5/3	2.5Y5/2	7.5
2006861209001	10YR6/2	2.5Y5/2	7.5	2006861209002	2.5Y5/2	2.5Y5/2	8.0
2006861210001	2.5Y6/1	2.5Y5/2	7.0	2006861210002	2.5Y4/2	2.5Y4/2	7.5
2006861211001	5YR5/6	5YR4/4	8.5	2006861211002	5YR5/6	5YR4/6	9.0
2006861212001	7.5YR5/6	5YR4/6	7.0	2006861212002	5YR5/8	7.5YR5/6	8.0
2006861213001	7.5YR6/6	7.5YR4/6	8.0	2006861213002	7.5YR5/8	5YR5/8	9.0
2006861214001	7.5YR6/4	7.5YR4/6	8.0	2006861214002	7.5YR5/4	7.5YR5/4	8.5
2006861215001	5YR5/6	5YR4/6	7.5	2006861215002	5YR5/8	5YR5/8	8.0
2006861216001	5YR4/6	5YR3/4	4.5	2006861216002	5YR4/6	2.5YR3/6	6.0
2006861217001	10YR6/4	10YR5/4		2006861217002	10YR6/3	2.5Y6/4	
2006861218001	7.5YR6/4	10YR5/4		2006861218002	10YR6/3	10YR7/2	
2006861219001	7.5YR7/2	10YR6/4	7.0	2006861219002	10YR6/3	10YR6/3	9.0
2006861220001	10YR6/3	10YR5/3	7.0	2006861220002		10YR6/2	5.5
2006861221001	2.5Y5/3	2.5Y5/2	8.5	2006861221002		2.5Y5/2	8.5
2006861222001	2.5Y5/2	2.5Y5/2	8.5	2006861222002	10YR5/3	10YR4/2	9.0
2006861223001	2.5Y5/2	10YR4/2	5.5	2006861223002	2.5Y5/2	2.5Y4/2	7.5

A5.9 EC and pH 1:5 (soil:water) (Geoscience Australia)

Appendix 5.9

SAMPLEID	pH15_P_p_Bk	EC15_E_u_Bk	SAMPLEID	pH15_P_p_Bk	EC15_E_u_Bk
2005861001001	6.8	28.3	2005861001002	8.3	275.0
2005861002001	6.2	13.8	2005861002002	7.1	20.8
2005861003001	7.5	65.8	2005861003002	9.0	165.9
2005861004001	8.9	130.1	2005861004002	8.7	525.0
2005861005001	8.3	74.4	2005861005002	8.8	419.0
2005861006001	9.1	100.9	2005861006002	9.0	955.0
2005861007001	7.4	258.0	2005861007002	8.4	2720.0
2005861008001	7.3	28.2	2005861008002	7.2	6.2
2005861009001	7.5	31.8	2005861009002	9.1	1033.0
2005861010001	7.4	2320.0	2005861010002	7.8	5890.0
2005861011001	8.3	38.6	2005861011002	8.7	305.0
2005861012001	8.0	148.4	2005861012002	9.3	41.9
2005861013001	8.4	98.6	2005861013002	9.3	400.0
2005861014001	8.0	37.2	2005861014002	7.9	483.0
2005861015001	8.2	44.9	2005861015002	8.5	780.0
2005861016001	9.1	50.7	2005861016002	8.7	83.7
2005861017001	8.2	68.4	2005861017002	9.3	557.0
2005861018001	6.4	40.6	2005861018002	7.3	19.3
2005861019001	6.6	12.7	2005861019002	7.0	12.7
2006861101001	7.5	113.8	2006861101002	8.6	446.0
2006861102001	8.4	148.6	2006861102002	8.6	1007.0
2006861103001	8.7	193.3	2006861103002	8.9	1171.0
2006861104001	8.9	208.0	2006861104002	8.9	1246.0
2006861105001	8.3	114.2	2006861105002	8.6	876.0
2006861106001	7.6	77.7	2006861106002	8.1	210.0
2006861107001	6.5	45.2	2006861107002	7.6	21.9
2006861108001	7.1	57.4	2006861108002	7.6	25.1
2006861109001	6.1	57.4	2006861109002	7.6	25.9
2006861110001	6.8	350.0	2006861110002	7.6	2840.0
2006861111001	7.7	57.1	2006861111002	7.7	384.0
2006861112001	7.2	128.5	2006861112002	8.7	135.7
2006861113001	8.4	216.0	2006861113002	8.1	269.0
2006861114001	8.5	145.6	2006861114002	8.0	203.5
2006861115001	7.2	49.7	2006861115002	7.4	24.1
2006861116001	5.5	79.1	2006861116002	6.5	16.2
2006861117001	6.4	34.9	2006861117002	6.9	15.9
2006861118001	6.3	17.6	2006861118002	8.2	95.5
2006861119001	7.4	27.7	2006861119002	8.4	122.8
2006861120001	7.4	47.7	2006861120002	8.1	82.6
2006861121001	7.9	140.1	2006861121002	8.4	983.0
2006861122001	7.4	75.8	2006861122002	8.9	212.3
2006861123001	6.6	44.5	2006861123002	7.5	33.9
2006861124001	6.5	47.0	2006861124002	9.0	302.0
2006861125001	6.1	14.3	2006861125002	5.6	11.4
2006861126001	5.1	64.1	2006861126002	9.3	242.4
2006861127001	8.4	38.5	2006861127002	8.4	46.9
2006861128001	7.5	120.1	2006861128002	8.5	2480.0
2006861129001	7.6	84.5	2006861129002	8.7	914.0
2006861130001	7.4	100.9	2006861130002	8.2	76.2
2006861131001	7.5	33.8	2006861131002	7.5	27.8
2006861132001	7.5	35.5	2006861132002	9.0	511.0
2006861133001	8.6	81.4	2006861133002	7.8	907.0
2006861134001	8.1	46.4	2006861134002	9.4	410.0
2006861135001	8.1	64.1	2006861135002	8.3	1501.0

Appendix 5.9

SAMPLEID	pH15_P_p_Bk	EC15_E_u_Bk	SAMPLEID	pH15_P_p_Bk	EC15_E_u_Bk
2006861136001	7.9	47.1	2006861136002	7.6	33.7
2006861137001	8.0	108.8	2006861137002	9.2	228.0
2006861138001	7.8	298.0	2006861138002	7.7	249.0
2006861139001	7.6	16.5	2006861139002	8.3	175.2
2006861140001	8.4	104.3	2006861140002	9.5	770.0
2006861141001	7.7	76.7	2006861141002	7.7	21.9
2006861142001	7.6	52.8	2006861142002	7.9	14.1
2006861143001	8.6	139.9	2006861143002	8.1	50.5
2006861144001	7.6	40.4	2006861144002	7.4	18.8
2006861145001	8.1	171.5	2006861145002	8.6	4100.0
2006861146001	7.7	24.5	2006861146002	8.7	86.3
2006861147001	9.0	71.7	2006861147002	9.0	614.0
2006861148001	7.6	20.3	2006861148002	9.0	147.2
2006861149001	7.2	49.1	2006861149002	8.8	136.3
2006861150001	6.8	47.4	2006861150002	6.9	35.3
2006861151001	8.1	172.9	2006861151002	8.3	825.0
2006861152001	6.9	75.1	2006861152002	7.1	26.4
2006861153001	7.7	45.8	2006861153002	8.5	757.0
2006861154001	6.9	21.4	2006861154002	8.3	65.0
2006861155001	8.7	149.6	2006861155002	8.3	1445.0
2006861156001	7.3	111.5	2006861156002	8.3	598.0
2006861157001	7.0	190.0	2006861157002	7.8	2430.0
2006861201001	7.1	42.8	2006861201002	8.4	1924.0
2006861202001	7.2	87.0	2006861202002	8.7	1216.0
2006861203001	7.7	48.1	2006861203002	8.4	770.0
2006861204001	6.5	26.2	2006861204002	8.5	411.0
2006861205001	5.3	29.8	2006861205002	6.5	12.1
2006861206001	6.4	62.2	2006861206002	8.3	69.3
2006861207001	8.2	156.8	2006861207002	8.7	305.0
2006861208001	7.0	74.4	2006861208002	8.1	80.8
2006861209001	7.5	115.4	2006861209002	8.5	162.5
2006861210001	7.4	52.3	2006861210002	7.3	52.5
2006861211001	8.1	93.1	2006861211002	8.7	136.3
2006861212001	7.2	27.8	2006861212002	7.7	850.0
2006861213001	7.8	133.1	2006861213002	8.9	1041.0
2006861214001	8.8	112.8	2006861214002	8.8	3530.0
2006861215001	7.5	72.6	2006861215002	8.1	265.0
2006861216001	5.1	13.9	2006861216002	5.9	31.6
2006861217001	5.6	11.6	2006861217002	8.0	84.6
2006861218001	7.1	1667.0	2006861218002	7.3	6500.0
2006861219001	7.1	5180.0	2006861219002	8.3	8170.0
2006861220001	5.5	2170.0	2006861220002	5.0	9090.0
2006861221001	8.2	139.2	2006861221002	8.5	1311.0
2006861222001	8.2	127.2	2006861222002	8.2	117.3
2006861223001	6.4	66.0	2006861223002	7.6	41.8

A5.10 Granulometry by Laser particle size analysis (Geoscience Australia)

SAMPLEID	% Clay <0.002mm	% Silt 0.002-0.02mm	% Sand 0.02-2.0mm		% Clay <0.002mm	% Silt 0.002-0.02mm	% Sand 0.02-2.0mm
2005861001001	7	23	70	2005861001002	4	21	75
2005861002001	4	20	76	2005861002002	4	20	76
2005861003001	18	42	41	2005861003002	26	54	19
2005861004001	10	31	59	2005861004002	15	47	38
2005861005001	15	40	45	2005861005002	27	52	20
2005861006001	15	34	51	2005861006002	32	51	17
2005861007001	4	24	72	2005861007002	14	55	31
2005861008001	4	17	79	2005861008002	8	40	51
2005861009001	13	30	58	2005861009002	12	32	55
2005861010001	31	33	36	2005861010002	35	36	28
2005861011001	7	15	78	2005861011002	14	39	46
2005861012001	16	41	43	2005861012002	12	25	63
2005861013001	15	28	57	2005861013002	8	18	74
2005861014001	11	28	60	2005861014002	17	40	44
2005861015001	14	31	54	2005861015002	18	38	44
2005861016001	4	24	72	2005861016002	3	25	72
2005861017001	9	31	59	2005861017002	15	55	30
2005861018001	4	18	79	2005861018002	11	47	42
2005861019001	3	15	81	2005861019002	6	26	68
2006861101001	31	41	28	2006861101002	37	30	33
2006861102001	28	49	23	2006861102002	34	43	22
2006861103001	25	54	20	2006861103002	35	47	17
2006861104001	26	49	25	2006861104002	29	31	40
2006861105001	31	53	16	2006861105002	36	39	25
2006861106001	29	55	16	2006861106002	30	46	24
2006861107001	13	42	45	2006861107002	11	47	42
2006861108001	13	43	43	2006861108002	14	46	41
2006861109001	20	34	46	2006861109002	21	38	41
2006861110001	23	42	35	2006861110002	27	39	34
2006861111001	36	42	21	2006861111002	38	44	18
2006861112001	28	33	40	2006861112002	31	26	43
2006861113001	26	36	39	2006861113002	14	32	54
2006861114001	21	44	35	2006861114002	19	45	36
2006861115001	16	35	49	2006861115002	17	28	56
2006861116001	12	30	58	2006861116002	10	24	66
2006861117001	6	10	84	2006861117002	4	7	90
2006861118001	10	22	68	2006861118002	7	25	68
2006861119001	16	31	53	2006861119002	20	36	43
2006861120001	7	19	74	2006861120002	14	43	43
2006861121001	14	45	40	2006861121002	16	36	48
2006861122001	12	41	47	2006861122002	16	30	55
2006861123001	9	19	71	2006861123002	17	24	59
2006861124001	12	44	44	2006861124002	20	40	39
2006861125001	10	17	73	2006861125002	7	15	78
2006861126001	9	31	60	2006861126002	11	20	70
2006861127001	14	40	47	2006861127002	4	17	79
2006861128001	9	41	50	2006861128002	29	42	29
2006861129001	22	55	22	2006861129002	13	31	56
2006861130001	10	28	61	2006861130002	16	43	41
2006861131001	11	27	62	2006861131002	7	40	53
2006861132001	14	54	32	2006861132002	6	42	51
2006861133001	5	42	53	2006861133002	7	45	47
2006861134001	13	54	34	2006861134002	14	50	36
2006861135001	6	43	51	2006861135002	4	42	54
2006861136001	8	45	47	2006861136002	4	29	66
2006861137001	8	48	44	2006861137002	8	45	48
2006861138001	17	73	10	2006861138002	13	64	23
2006861139001	6	21	74	2006861139002	5	43	53
2006861140001	3	20	77	2006861140002	6	34	60
2006861141001	6	35	59	2006861141002	3	23	74
2006861142001	11	58	31	2006861142002	2	23	75

Appendix 5.10

SAMPLEID	% Clay <0.002mm	% Silt 0.002-0.02mm	% Sand 0.02-2.0mm		% Clay <0.002mm	% Silt 0.002-0.02mm	% Sand 0.02-2.0mm
2006861143001	9	47	44	2006861143002	11	55	35
2006861144001	3	17	80	2006861144002	3	29	68
2006861145001	18	63	20	2006861145002	15	64	21
2006861146001	4	25	71	2006861146002	8	47	45
2006861147001	11	62	27	2006861147002	18	58	25
2006861148001	9	49	42	2006861148002	5	29	67
2006861149001	3	19	78	2006861149002	5	36	60
2006861150001	6	34	60	2006861150002	5	36	59
2006861151001	7	44	49	2006861151002	3	26	71
2006861152001	6	36	57	2006861152002	8	48	45
2006861153001	13	62	25	2006861153002	24	47	29
2006861154001	4	25	71	2006861154002	6	47	46
2006861155001	10	59	30	2006861155002	22	68	11
2006861156001	14	64	22	2006861156002	20	72	8
2006861157001	20	67	14	2006861157002	30	58	12
2006861201001	10	28	62	2006861201002	14	54	32
2006861202001	15	39	46	2006861202002	23	47	30
2006861203001	23	44	33	2006861203002	33	41	26
2006861204001	11	27	62	2006861204002	6	35	59
2006861205001	15	37	48	2006861205002	6	34	60
2006861206001	9	28	63	2006861206002	14	40	46
2006861207001	25	45	29	2006861207002	16	49	35
2006861208001	18	41	41	2006861208002	25	38	36
2006861209001	24	43	33	2006861209002	23	38	39
2006861210001	19	46	35	2006861210002	13	45	42
2006861211001	15	32	53	2006861211002	9	37	55
2006861212001	26	44	30	2006861212002	6	38	56
2006861213001	24	61	14	2006861213002	10	42	48
2006861214001	7	22	70	2006861214002	32	39	29
2006861215001	19	46	36	2006861215002	8	33	59
2006861216001	2	13	85	2006861216002	2	11	87
2006861217001	9	22	69	2006861217002	11	33	57
2006861218001	35	45	21	2006861218002	31	30	39
2006861219001	22	50	27	2006861219002	35	47	18
2006861220001	24	46	30	2006861220002	34	45	20
2006861221001	33	52	15	2006861221002	40	39	22
2006861222001	24	44	32	2006861222002	18	36	46
2006861223001	13	38	49	2006861223002	15	32	52