GEOLOGICAL SURVEY OF FINLAND

Bulletin 403

2009

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Geological Survey of Finland, Bulletin 403

ARCHAEAN EVOLUTION OF THE TIPASJÄRVI-KUHMO-SUOMUSSALMI GREENSTONE COMPLEX, FINLAND

by

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with 68 pages, 27 figures, 9 tables and 1 appendix CD

GEOLOGICAL SURVEY OF FINLAND
ESPOO 2009

Papunen, H., Halkoaho, T. & Luukkonen, E. 2009. Archaean evolution of the Tipasjärvi-Kuhmo-Suomussalmi Greenstone Complex, Finland. *Geological Survey of Finland, Bulletin 403,* 68 pages, 27 figures, 9 tables and data CD as an appendix.

The structure of the Archaean Kuhmo greenstone belt, which forms the central portion of the Tipasjärvi-Kuhmo-Suomussalmi (TKS) greenstone complex in eastern Finland, is essentially a regional scale, northerly trending synclinorium. It was deformed and metamorphosed during several phases of deformation, youngest of which was dated as Proterozoic. Migmatized banded amphibolites, originally Fe-tholeiitic in composition, and intermediate and felsic volcanic rocks are interpreted as the oldest preserved supracrustal rock units, and are between 3100-2900 Ma in age. They are transected by and occur as enclaves within felsic and intermediate tonalite-trondhjemite-granodiorite (TTG) intrusions, which were deformed and metamorphosed during the D_2/M_2 event at 2843±18 Ma, when the U-Pb isotope systematics of the TTG complex were homogenized. The lowermost stratigraphic unit of the TKS greenstone complex proper is composed of felsic to intermediate volcanic rocks, which have yielded zircon ages between 2810 and 2790 Ma. Tholeiitic basalts overlie this calc-alkalic felsic-mafic unit, and predate komatiitic lavas. Tholeiitic basalts commonly display pillow structures and thin interlayers of Algoma-type banded iron formations (BIF). Mafic cumulates related to the tholeiitic eruptive rocks occur as sills and interlayers, of which the Moisiovaara mafic sill has been dated to 2790±18 Ma. Komatiitic lavas are common in all greenstone belts, but the units are relatively thin. Lenses of olivine mesocumulates represent proximal komatiitic lava channels and display evidence of recurrent lava flow and thermal erosion. Large bodies of serpentinite in the Kellojärvi area of the Kuhmo greenstone belt and Saarikylä area in the northern part of the TKS complex were originally komatiitic layered olivine±augite cumulates that accumulated close to the volcanic centres. The uppermost komatiitic flows in the komatiitic sequence are interlayered with komatiitic basalts, which are characterized by pillowed and variolitic textures. Basalts with anomalously high Cr contents, alternating with thin komatiitic flows overlie the komatiitic basalts. In places the mafic and ultramafic rocks are overlain by a lahar-type volcanic conglomerate with fragments of the rocks of the komatiitic sequence and felsic to mafic calc-alkalic volcanic rocks. These are transitional upwards into pelitic and psammitic sedimentary rocks with intercalations of black schists, quartzites and felsic metamorphic rocks.

Although apparent evidences, such as depositional contacts are lacking, the general stratigraphic evolution and age relationships with surrounding TTG complex, as well as felsic enclaves in ultramafic volcanic rocks and contamination of the ultramafic rocks by siliceous material indicate that the greenstone belt deposited on a felsic substrate, and we argue that it formed in an intracontinental rift system.

Key words (GeoRef Thesaurus, AGI): greenstone belts, stratigraphy, metamorphic rocks, metavolcanic rocks, cumulates, geochemistry, deformation, igneous rocks, tectonics, Archean, Sotkamo, Kuhmo, Suomussalmi, Finland

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ISBN 978-952-217-074-3 (paperback)
ISBN 978-952-217-075-0 (PDF)
ISSN 0367-522X

Vammalan Kirjapaino Oy 2009, Sastamala

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INTRODUCTION

The Kuhmo greenstone belt (KGB) forms the central part of a 220 km long and up to 10 km wide N-S trending Archaean Tipasjärvi-Kuhmo-Suomussalmi greenstone complex in eastern Finland (Fig 1). The southern and northern parts of the complex are known as the Tipasjärvi and Suomussalmi greenstone belts, respectively. All these three belts display similar rock associations and general stratigraphical development. Therefore, it is likely that they are remnants of an originally more extensive volcanic complex, affected by subsequent erosion and tectonic disruption.

As a type section of Archaean supracrustal rock assemblage, the Kuhmo greenstone belt has been the target of regional geological mapping by the Geological Survey of Finland (Wilkman 1921, Hyppönen 1973, 1976, 1978, 1983, Luukkonen 1988, 1992, 2001, Luukkonen et al. 2002, Käpyaho et al. 2006, Matisto 1958) and research programs undertaken by the universities of Oulu (Piirainen 1988), Rennes (Martin et al. 1984) and Turku (Papunen et al. 1998). In high-strain areas, intense deformation has obliterated primary structures and textures in the supracrustal rocks, but some low-strain key areas display well-preserved structures and textures. These include the Siivikkovaara-Kellojärvi area in the Kuhmo greenstone belt, the Taivaljärvi area in the Tipasjärvi greenstone belt (Papunen et al. 1998), and the Saarikylä (Engel & Dietz 1989) and Kiannanniemi areas in the Suomussalmi greenstone belt, where detailed field studies were undertaken to revise and better define the stratigraphy and evolution. This revision was combined with regional nickel sulphide exploration, and hence special emphasis was placed on the recognition and classification of flow types and the mutual relationships between the cumulate and flow facies of komatiitic rocks. The study also revealed new insights into the overall evolution of the Kuhmo greenstone belt.

The Fennoscandian Archaean rocks in the eastern and northern parts of the shield have been divided into five provinces, the Karelian, Belomorian, Kola, Murmansk and Norrbotten (see Hölttä et al. 2008). Slabunov et al. (2006) subdivided the Karelian Province into Western Karelian, Vodlozero and Central Karelian Terranes. Both the TTG association and greenstones of the Central Karelian Terrane are mainly Neoarchaean, 2750–2700 Ma in age, whereas the Western Karelian and Vodlozero Terranes comprise Mesoarchaean, 3200–2800 Ma lithologies (Sorjonen-Ward & Luukkonen 2005, Slabunov et al. 2006). The Pudasjärvi block in the western part of the Western Karelian Terrane comprises the oldest rocks of Fennoscandia, the Siurua trondhjemitic orthogneiss, which yield ages of 3500 Ma (Mutanen & Huhma 2003). The Paleoproterozoic supracrustal Kainuu schist belt and related tectonic features divide the Western Karelia Terrane into eastern Kianta block and the western Pudasjärvi-Iisalmi blocks. The Tipasjärvi-Kuhmo-Suomussalmi greenstone complex locates in the Kianta block. Different authors have divergent views of the origin of the greenstone belts in the Karelian Province, for example, Puchtel et al. (1997) inferred oceanic plateau origin for the Kostomuksha, Puchtel et al. (1999) proposed island arc origin for the Sumozero-Kenozero belt and Luukkonen (1992) continental rift zone for the Tipasjärvi-Kuhmo-Suomussalmi belt. The division of the Archaean into different terranes and megablocks, as well as the diversity of the opinions on the origin of greenstone belts, reflect the complex and variable geotectonic and accretionary history of the Fennoscandian Archaean shield.

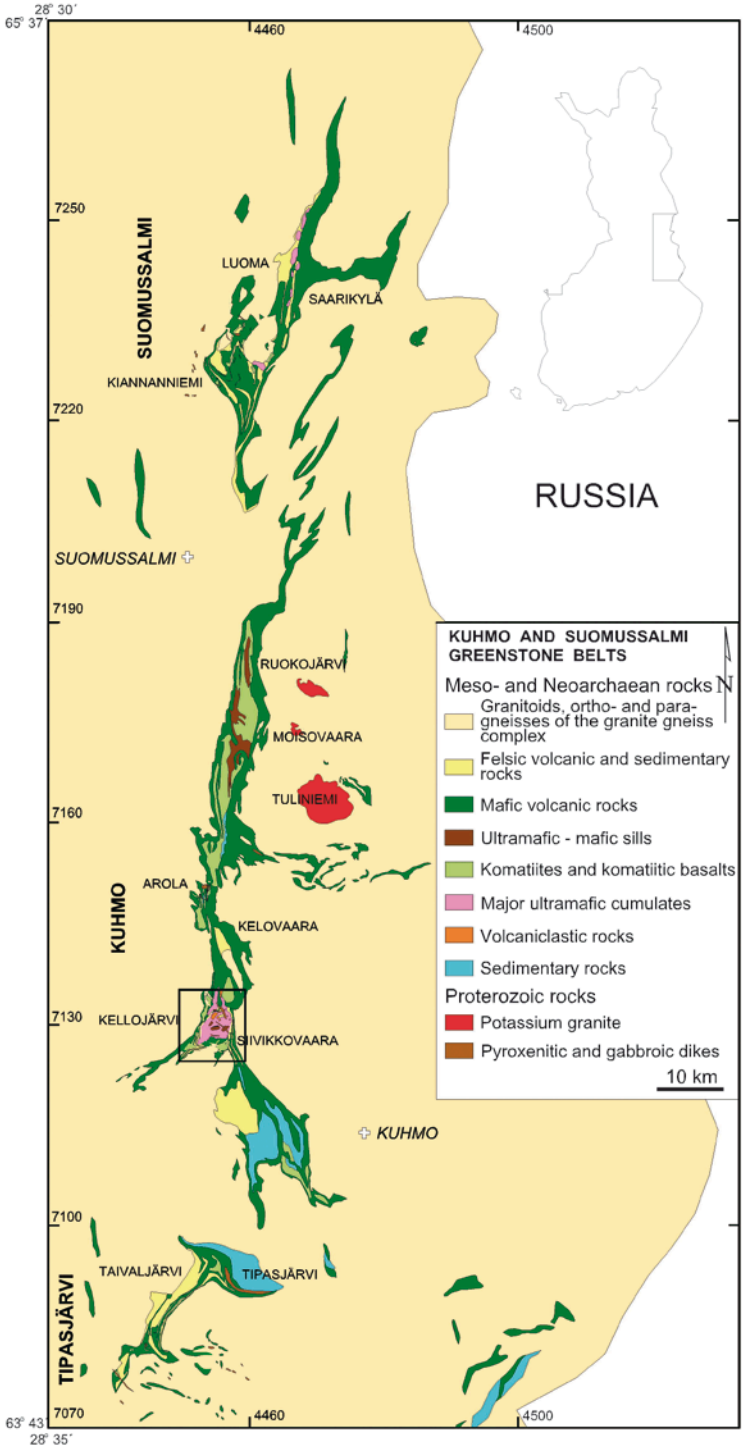


Figure 1. Tipasjärvi-Kuhmo-Suomussalmi greenstone complex in eastern Finland. Area of Kellojärvi-Siivikkovaara (Fig. 2) indicated with black line. Modified after Korsman et al. (1997).

In this study we summarise our detailed field and geochemical data on the Tipasjärvi-Kuhmo-Suomussalmi greenstone complex and discuss the origin and evolution of the greenstone belt and present a geotectonic model.

TIPASJÄRVI-KUHMO-SUOMUSSALMI GREENSTONE COMPLEX

Generalized lithostratigraphic sequences and chronostratigraphic interpretations of the TKS greenstone complex were published by Piirainen (1988), Luukkonen (1992), Papunen et al. (1998), Huhma et al. (1999) and Vaasjoki et al. (1999). The stratigraphic sequences vary slightly in different parts of the complex, as is typical for an area composed mainly of volcanic material. On the basis of detailed structural observations Luukkonen (1992) combined a polyphase deformation history with the evolution of the greenstone complex. The revised stratigraphic interpretation (Table 1) and the geotectonic evolutionary model presented here are derived from the studies by Luukkonen (1992) and Papunen et al. (1998). Although the rocks described below are metamorphosed, the prefix "meta" is omitted in the text for the sake of brevity.

Table 1. Comparison of stratigraphic formations of the greenstone belts.

	Tipasjärvi Group	**Kuhmo Group**	**Suomussalmi Group**
Kianta Supergroup	Kokkoniemi Formation	Ronkaperä Formation	Huutoniemi Formation
	Kallio Formation	Siivikko Formation	Saarikylä Formation
	Vuoriniemi Formation	Pahakangas Formation	Tervonen Formation
	Koivumäki Formation	Mäkisensuo Formation	Mesa-aho Formation
	Basement gneiss complex	Ruokojärvi Formation	Luoma Formation
		Basement gneiss complex	Basement gneiss complex

Pre-greenstone TTG complex and banded amphibolites

The heterogeneous tonalite-trondhjemite-granodiorite (TTG) complex is composed of banded and foliated grey gneisses, tonalites, trondhjemites and granodiorites, which were deformed during several events denoted $D_{1\text{-}6}$ by Luukkonen (1992). The banding is composed of interlayered mafic minerals, biotite and hornblende, alternating with plagioclase, quartz and minor potassic feldspar. The grey gneisses are abundant to the east of the Kuhmo greenstone belt, whereas the bedrock to the west consists mainly of granitoids, typically granodiorite to tonalite in composition, which were intruded during various tectonic events in pre- and syn- D_3 deformation as well as re-activated D_3 structures (late- and post-D_3) at the time interval from 2790 to 2680 Ma (Luukkonen 1992). The eastern terrane displays a higher metamorphic grade than the western one, and according to the deep crustal seismic reflection and refraction surveys the Archaean crust is 10 km thinner east of the KGB than to the west of it (Yliniemi 1986, Kukkonen et al. 2006), although this might to some extent be the result of Proterozoic modification of the lithospheric fabric (Kontinen & Paavola 2006). The TTG granitoids are peraluminous and display low initial Sr isotope ratios (0.7023), fractionated REE patterns with HREE depletion and low Yb values.

Close to the greenstone complex the banded, folded and migmatitic TTG changes frequently to leucocratic tonalite, which is medium-grained, massive to foliated, and in places cataclastic and nebulitic. All the observed contacts of the TTG complex against the greenstone belt rocks are abrupt and are interpreted to be tectonic in nature, resulting

from D_3 deformation (Luukkonen 1988, Vaasjoki et al. 1999).

The age of the TTG complex is not uniform everywhere; it was re-melted, deformed and metamorphosed under granulite/amphibolite facies condition during D_2/M_2 at 2843±18 Ma resulting in extensive formation of migmatites.

Banded and migmatized amphibolites occur as disrupted remnants within various parts of the granitoid complex. They record the first deformation phases (D_{1-2}) and on that basis Luukkonen (1992) regarded the banded amphibolites as the oldest unit of the Archaean sequence. Geochemical compositions of the amphibolites correspond to Fe-rich tholeiites and they probably represent an earlier extensive greenstone formation event. The age of banded amphibolites is unknown, but they are provisionally assigned an age of 3100–2900 Ma, because the rocks of the tonalite-trondhjemite-granodiorite suite (TTG) intrude them, and because they experienced the early D_{1-2} deformation. The observation is confirmed by the single crystal zircon U-Pb analyses with secondary ion mass spectrometer (SIMS) by Käpyaho et al. (2007) where the cores of zircons from mesosome of the Lylyvaara migmatite yield ages up to 2942±6 Ma. Detrital zircons of the Kelovaara quartzite (Fig. 1) have been dated by the U-Pb method to 3100–2996 Ma (diffusion model age; cf. Hyppönen 1983) indicating that an old felsic crust existed prior to the extensive igneous and metamorphic episode at 2830 Ma. Tentative Sm-Nd isotope determinations from the TTG mesosome gave model ages over 3000 Ma with some of them ranging between 3900 and 3700 Ma (Luukkonen et al. 2002), but the ages are not reliable since metamorphism can cause fractionation of Sm/Nd and increase the Sm/Nd ratio leading to old T_{DM} model ages (O'Brien et al. 1993, Käpyaho et al. 2006).

The age of the Luoma Formation at Saarikylä, Suomussalmi (Fig.1) is disputable, but the formation is here regarded as the older supracrustal unit than the Suomussalmi greenstone belt. Also the Ruokojärvi Formation (Fig.1) at the eastern margin of the Kuhmo greenstone belt yields an age of 3007±7 Ma, and represents distinctly older volcanic unit than the Kuhmo greenstone belt proper. The classification is discussed later on in connection with the stratigraphy of the Kuhmo and Suomussalmi greenstone belts.

Käpyaho et al. (2006) classified the tonalites in four age groups and considered that the age obtained from Haasiavaara tonalite, 2830±2 Ma represents the oldest, the Huuskovaara tonalite, 2814±3 Ma the second plutonic phase, the age of Viitavaara tonalite, 2785±7 Ma represents the third generation of tonalities and the Purnu tonalite, 2747±3 Ma the fourth age group in the sequential growth of the Archaean crust. Granodiorites and diorites with sanukitoid geochemical characteristics intruded after tonalites and form the age group of 2740–2700 Ma, and finally leucocratic granitoids intruded in the period of 2700–2680 Ma.

STRUCTURE AND STRATIGRAPHY OF THE TIPASJÄRVI-KUHMO-SUOMUSSALMI GREENSTONE COMPLEX

The TKS greenstone complex represents a symmetrical wide synclinorium with oldest units at the margins and the younging directions pointing to the centre of the greenstone belt complex. According to Luukkonen (1992) the greenstone belts were deformed by D_3, but the earliest regionally recognized phases of deformation, D_{1-2}, cannot be observed inside the greenstone belts. Lithostratigraphical rock units are described below, starting with the oldest units (Table 1), for different domains within the TKS greenstone complex, after which an attempt is made to correlate stratigraphical units along the entire complex.

Tipasjärvi greenstone belt

Felsic-dominated volcanic rocks are more abundant in the Tipasjärvi greenstone belt than elsewhere in the TKS greenstone complex, where they occur only as isolated occurrences at both the eastern and western margins of the complex. A disseminated Ag-Zn-Pb sulfide deposit is associated with felsic volcanic rocks in the Taivaljärvi area (Fig.1) and this area was studied in detail as the type sequence of felsic volcanic rocks (Taipale 1983, Papunen et al. 1989).

Koivumäki Formation

The felsic to intermediate calc-alkalic volcanic rocks form the lowermost unit of the Tipasjärvi greenstone sequence and are defined as the Koivumäki Formation (Table 2). Lithologically and stratigraphically this 2790±3 Ma old unit (Vaasjoki 1999) can be correlated in the Kuhmo greenstone belt with the 2798±15 Ma old Juurikkaniemi felsic-dominated unit of the Ontojärvi area, the Mäkisensuo Formation of the Siivikkovaara area and the 2810±48 Ma old felsic unit from the Vuosanka area. The ages are thermal ion multicollector mass spectrometer (TIMS) U-Pb ages from zircon fractions (Luukkonen 1992).

The rocks of the Koivumäki Formation are either massive quartz-porphyries or more commonly volcanic breccias, and layered tuffs and tuffites indicating shallow water or subaerial eruption (Taipale 1983). The Taivaljärvi Ag-Zn-Pb occurrence is located in the middle of the felsic succession where a number of quartz veins characterize the ore zone. The deposit was divided into four ore bodies with different base and precious metal ratios and the ore bodies are roughly parallel to primary stratigraphic layering. Geochemistry and mineralogy of the host rocks indicate potassic and magnesian hydrothermal alteration. An extensive quartz-kyanite rock layer is present some 100 meters stratigraphically above the mineralized zone. The felsic rocks between the deposit and the layer of quartz-kyanite rock are K-Mg altered, whereas no alteration has been found stratigraphically above the quartz-kyanite rock. The kyanite-quartz rock is interpreted as the metamorphic equivalent of an intensely leached cap-rock developed in an epithermal hydrothermal system (Papunen et al. 1989).

The basal contact of the Koivumäki Formation with the underlying TTG gneisses is not exposed in outcrop, but drilling reveals that the felsic succession is underlain by a homogeneous felsic porphyry which grades transitionally into TTG granitoid.

Higher up in the succession alternating layers of mafic and felsic tuffs (Taipale 1983) indicate that mafic eruptions occurred contemporaneously with felsic volcanism.

Vuoriniemi Formation

A sulfide- and graphite-bearing cherty layer and magnetite banded iron formations mark the upper

Table 2. Stratigraphy of the Tipasjärvi greenstone belt.

Formation	Lithology	Thickness (Age)
Kokkoniemi	Mica schists / pelites, felsic volcaniclastics	(2746±8; Kontinen 2007, pers. com.)
Kallio	MgO-rich lavas: Cr basalts, komatiitic basalts, komatiites	200 m
Vuoriniemi	Tholeiitic basalts, tuff, BIF, black schists, mafic-felsic mixed metatuff	250 m
Koivumäki	Felsic tuff and pyroclastic breccias, quartz-porphyry, Ag-Zn-Pb deposit, quartz-kyanite rock ("a cap rock" of volcanic hydrothermal alteration system)	500 m (2790±3 Ma; Vaasjoki 1999)
Basement	Tonalite-trondhjemite, granodiorite, gray gneisses	(2832±3 Ma; Hyvärinen 1989) (2814±3 Ma; Käpyaho et al. 2006)

contact of the Koivumäki Formation with the overlying Vuoriniemi Formation, indicating a break in the volcanic activity at the end of the Koivumäki succession. The next phase in the greenstone belt evolution consists of eruption of voluminous pillowed tholeiitic lavas of the Vuoriniemi Formation, with interlayers of tuffs, graphite schists and sulfide facies iron formations.

Kallio Formation

Komatiitic lavas with spinifex and pillow textures in the overlying Kallio Formation are abundant in the northern part of the Tipasjärvi greenstone belt, whereas in the south they occur only as thin horizons with local small cumulate serpentinite bodies. Komatiitic basalts of the Kallio Formation display pillow and variolitic textures and basaltic lavas with anomalously high concentrations of chromium (630–2420 ppm Cr), named Cr and high-Cr basalts by Halkoaho et al. (2000) are also present.

Kokkoniemi Formation

Mica schists and metapelites of the Kokkoniemi Formation overlie the ultramafic-mafic volcanic succession. Taipale (1983) interpreted the Kokkoniemi Formation as weathering products of the underlying volcanic rocks. The available age determination of the mica schist, (SIMS) 2746±8 Ma age (Kontinen 2007, pers. com.) supports the interpretation.

Kuhmo greenstone belt

Mafic volcanic rocks, the most voluminous rocks of the greenstone belts, occur along both the eastern and western margins of the Kuhmo greenstone belt (KGB) with the stratigraphical younging directions revealing that the belt represents a regional scale synclinorial structure. The well-preserved volcanic structures and textures within mafic rocks in the low-strain Siivikkovaara area (Figs 1, 2 and 3) enable establishment of a type section for the Kuhmo greenstone belt, which is described below in detail (e.g. Papunen 1960, Hanski 1980, Hyppönen 1983, Gruau et al. 1992). The volcanic succession defined in this low-strain area formed the basis for extrapolation into areas of high strain and polyphase deformation, and the results are compared below with the observations of the Siivikkovaara stratigraphical sequence.

Ruokojärvi Formation

A small isolated sequence composed of felsic volcanic rocks, volcanic conglomerates, tuffs and tuffites is exposed near Lake Ruokojärvi, at the eastern margin of the northern extension of the Kuhmo greenstone belt (Fig.1). TIMS U-Pb age determinations from four zircon fractions from a recrystallized homogeneous felsic tuff gave an age of 3007±7 Ma (Luukkonen et al. 2002). Although located at the margin of the KGB, the age of the Ruokojärvi felsic tuff permits correlation with the felsic volcanic rocks of the Luoma Formation in the Suomussalmi greenstone belt (Tables 3 and 5); the sequence is thus older than the TKS belt proper.

Mäkisensuo Formation

In the Siivikkovaara area a sequence of felsic to mafic volcanic rocks occur at Mäkisensuo (Fig. 3). It is, however, buried beneath surficial deposits and geochemical studies are based on samples obtained from drilling by Outokumpu Oy (Papunen et al. 1998). The rocks are intensely deformed and display low-grade Zn-Pb mineralization. The total thickness of the unit in the eastern part of Mäkinsensuo is 300 m and the sequence thins westwards to 100 m. Although the Mäkisensuo felsic to mafic unit is not directly dated, and the drilling profiles do not uncover the relationship with other formations it is here tentatively correlated stratigraphically with the Juurikkaniemi and Vuosanka felsic volcanic rocks in the Kuhmo greenstone belt, and the Koivumäki Formation in the Tipasjärvi greenstone belt.

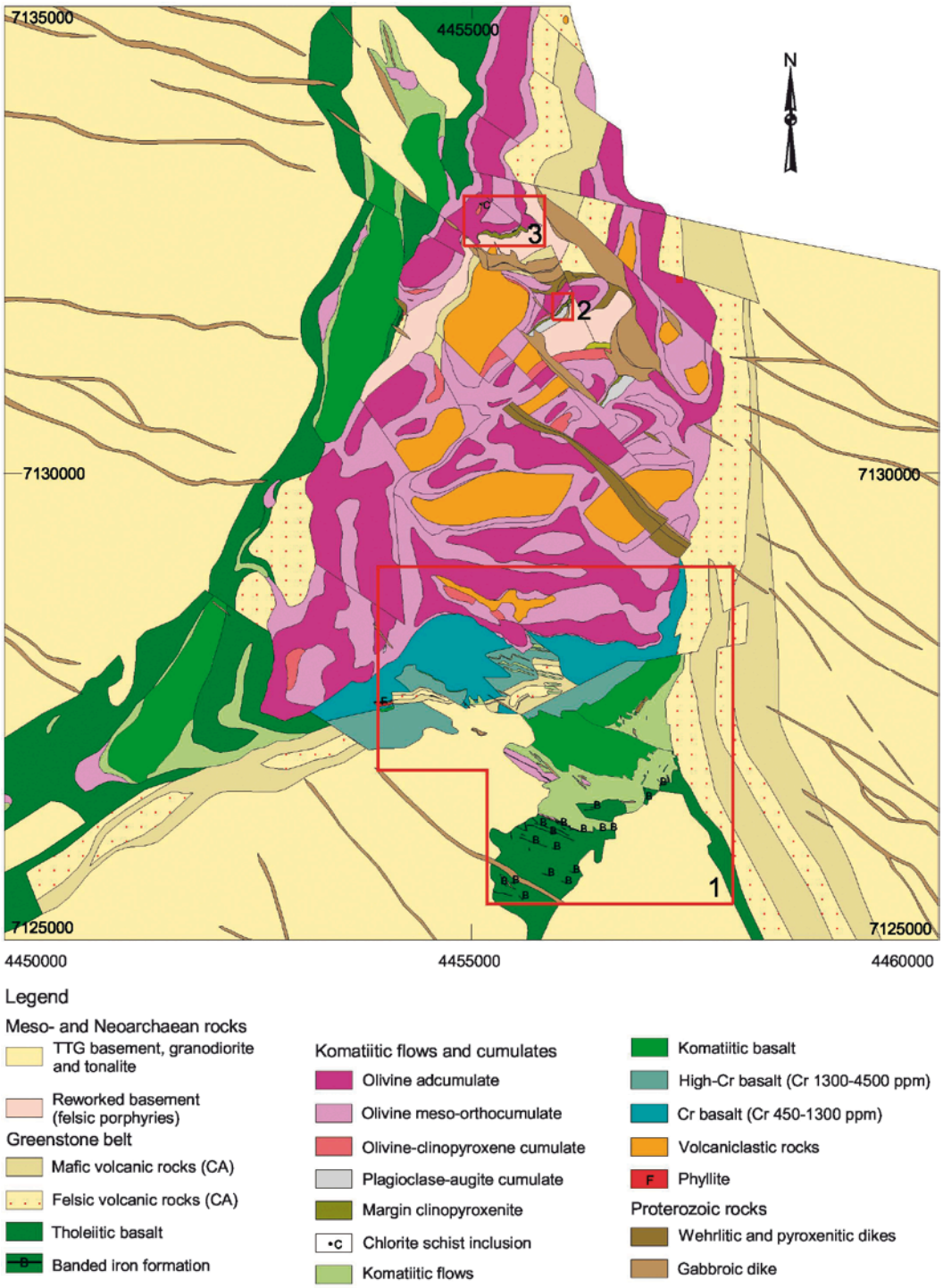


Figure 2. Geological outline of the Kellojärvi-Siivikkovaara area in the central part of the Kuhmo greenstone belt. Areas of detailed maps are indicated with red line: 1. Siivikkovaara-Pahakangas (Fig. 3); 2. NW of Hyttimäki at crossroads area (Fig. 11B); 3. west of Ensilä (Fig. 11A). CA = calc-alkalic (Tulenheimo 1999).

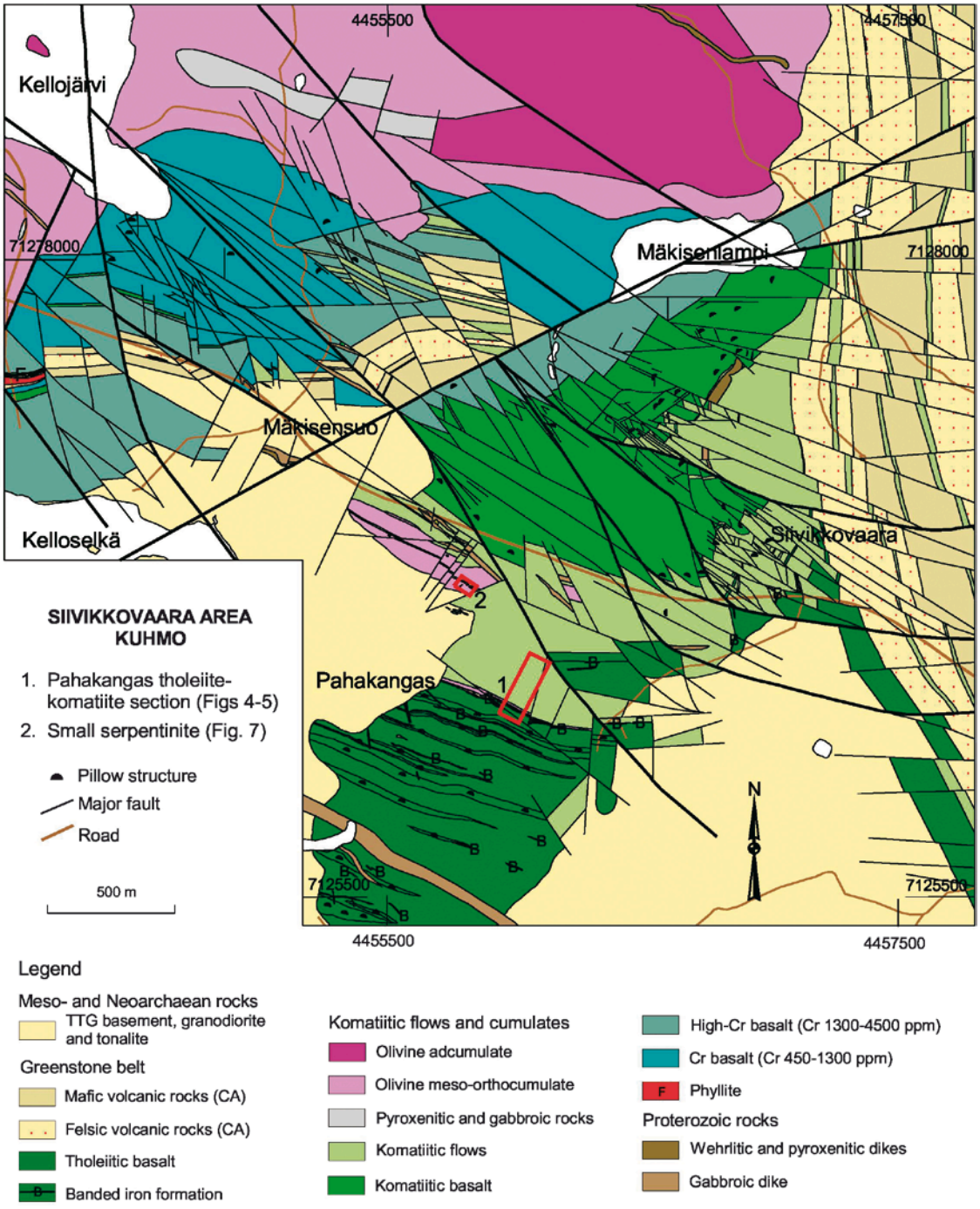


Figure 3. Geology of the Siivikkovaara-Pahakangas-Mäkisensuo volcanic succession of the Kuhmo greenstone belt. Red rectangles indicate areas of Fig. 4 (1) and Fig. 7 (2).

Table 3. Stratigraphy of the Kuhmo greenstone belt.

Formation / "Member"	Lithology	Thickness	Interpretation (Age)
Ronkaperä	Pelitic sediments and quartzites, pyroclastic intermediate-mafic volcanic rocks	300 m	Subaerial volcanism, lahar deposits (2744±34 Ma from a greywacke in Petäjäniemi; Peltonen 2007, pers. com.)
Unconformity? ----------			
Siivikko/"Suo"	Cr-rich basalts, komatiitic interlayers	500 m	
Siivikko / "Mäkinen"	Komatiitic basalts, Kellojärvi cumulates of komatiitic basalts	300 m 300 m	Upper part of the Kellojärvi cumulate complex
Siivikko/"Vaara"	Komatiitic non-fractionated flows, Komatiitic fractionated flows, Komatiitic cumulates of Kellojärvi	500 m 50 m 300 m	Lower part of the Kellojärvi cumulate complex (2771±8 Ma: rim of a zircon crystal from a felsic enclave in komatiitic cumulate; Peltonen 2007, pers. com., Peltonen et al., in prep.)
Pahakangas	Tholeiitic basalts, BIF interlayers	1000 m	(2790±18 Ma from the Moisiovaara sill, which is geochemically similar to the Pahakangas tholeiitic basalts; cf. Luukkonen 1992)
Start of rifting ……			
Mäkisensuo	Bimodal calc-alkalic mafic-felsic volcanic rocks and sedimentary interlayers	300 m in W 1000 m in E	(2798±15 Ma from Juurikkaniemi, Ontojärvi, felsic volcanic rocks; cf. Hyppönen 1983. 2810±48 Ma from Vuosanka felsic volcanic rocks/hypabyssal felsic rock; cf. Hyppönen 1983).
Ruokojärvi	Felsic tuff, pyroclastic breccias and volcanic conglomerates	200 m	(3007±7 Ma; Luukkonen et al. 2002).

Stratigraphic units of the Siivikkovaara area

The volcanic sequence in the Siivikkovaara area comprises tholeiitic basalts, thin komatiitic flows, and different types of komatiitic cumulates, komatiitic basalts and overlying Cr-rich basalts. The sequence will be described, from lowermost to uppermost, in the following paragraphs.

Pahakangas Formation

Papunen (1960) and Hanski (1980) described the tholeiitic basalts of the Pahakangas area (Fig. 3). This area experienced low-strain deformation and the lava flow layering is subvertical, trending roughly E-W, with a younging direction towards the north. Thus the Pahakangas-Siivikkovaara area reveals a valuable cross section through the greenstone belt, which forms a basis for stratigraphic interpretation. Layers of massive and pillow basalts occur alternately. The upper contacts of the pillow textured basalts are locally covered with a thin layer of chert or banded iron formation (BIF), but the lower contacts against the massive parts of the flows are abrupt and the pillows are brecciated by the underlying injected massive lava. These features indicate that massive lower parts of the flows extruded later and inflated the pillow-textured flow tops. The pillow layers range up to 10–20 m in thickness, but the massive parts may reach thicknesses of 70 m.

The pillows display loaf shapes with an average aspect ratio of two to three. Hyaloclastite layers between the pillows are hydrothermally altered to a white massive albite-clinozoisite-quartz rock,

which also locally extends to the interior of the pillow wherever high porosity facilitated hydrothermal fluid flow.

The basalt is fine-grained and aphyric, composed of hornblende, albite and clinozoisite with local hornblende pseudomorphs after primary clinopyroxene xenocrysts. Albitic plagioclase is fine-grained and commonly displays skeletal habit (Hanski 1980). The uppermost part of the Pahakangas Formation consists of glomeroporphyritic basalts with single crystals and groups of plagioclase phenocrysts up to 1–3 cm in diameter. The glomeroporphyritic flows are amygdaloidal with quartz, epidote, carbonate and albite filling the original vesicles. Pillow cores within these flows are altered to epidote-albite-quartz rock indicating former presence of hollow or porous spaces. Amygdules are absent from the flows underlying the glomeroporphyritic flows.

The substrate of the basalt flows is not preserved. Fine-grained granodioritic/tonalitic dikes and contact breccias are common at the margins of the Pahakangas basalt.

A porphyritic felsic sill was intruded within the upper contact zone of the basalts. It is subparallel with respect to lithologic layering, more foliated than the granodioritic dikes and composed of oligoclase and quartz phenocrysts in a fine-grained felsic matrix. Major element compositions and REE spectra resemble those of the granodiorite west of Pahakangas. Tourpin (1991) dated a quartz-oligoclase porphyry dike at the Siivikkovaara hill, in the same stratigraphic level as in Pahakangas, at 2770±30 Ma (U-Pb dating of zircon).

In addition to basalts the Pahakangas Formation includes Algoma-type banded iron formation (BIF) and associated hornblende-garnet-biotite rocks (Papunen 1960). The BIF is composed of alternating quartz, grünerite and magnetite (martite) bands. The BIF layers overlie the pillow basalts, and massive, non-pillow basalt overlies the BIF layers. Intense hydrothermal alteration characterizes the pillow basalt below BIF, and locally the pillows display zoned propylitic alteration. The BIF layer follows the surface topography of the pillow basalt and varies in thickness from a few cm to tens of metres. The BIF layers are at thickest in the central part of the Pahakangas basalt area and thins laterally towards the margins of the basalt area. Disseminated sulfides are common in the BIF, and sulfides are also found within the altered basalt below BIF.

Combined pillow and massive tholeiitic basalt flows range up to 90 metres in thickness. In the other parts of the greenstone belts, the tholeiitic basalt units are not as thick as at Pahakangas, and BIF interlayers are rare. The Pahakangas Formation is capped by a thick BIF, indicating a considerable hiatus in volcanic activity before eruption of the overlying Siivikko Formation (Table 3). The uppermost BIF layer is sulfide-rich and can be classified as an oxide-sulfide-facies iron formation.

At Moisiovaara, in the northern part of the Kuhmo greenstone belt, a pegmatoid-textured tholeiitic mafic sill, geochemically similar to the Pahakangas tholeiitic basalt, has been mapped. It is dated by the U-Pb zircon method to 2790±18 Ma, which is interpreted as the time of crystallization of the mafic sill (Luukkonen 1992), and hence coeval with the Pahakangas tholeiites.

Siivikko Formation

Komatiitic Vaara Member. A 1–2 m thick tremolite rock forms the lowermost layer of the komatiitic Vaara Member, which overlies the thick sulfidic BIF of the Pahakangas Formation. Figures 4 and 5 depict the stratigraphic column of the first sixteen komatiitic flows and Table 4 gives selected assays of their chemical compositions. Locally a 3–4 m thick dike of porphyritic felsic quartz-oligoclase rock, similar to the felsic sill mentioned above at the top of tholeiitic basalt sequence, is present between tremolite rock and the overlying 20 m thick olivine ortho-mesocumulate, which represents the B-layer of the first fractionated komatiite flow (the komatiite terminology applied here is from Hill et al. 1990). Upwards, a thin layer of aligned hopper olivines (B1-layer) follows the olivine ortho-mesocumulate (B2), then a 4 m thick (A-) layer of platy olivine spinifex (Fig. 6A) and 2 m thick layer of random spinifex. Locally a 3 m thick pyroxene spinifex layer with stringy beef and random pyroxene textures overlies the platy spinifex layer.

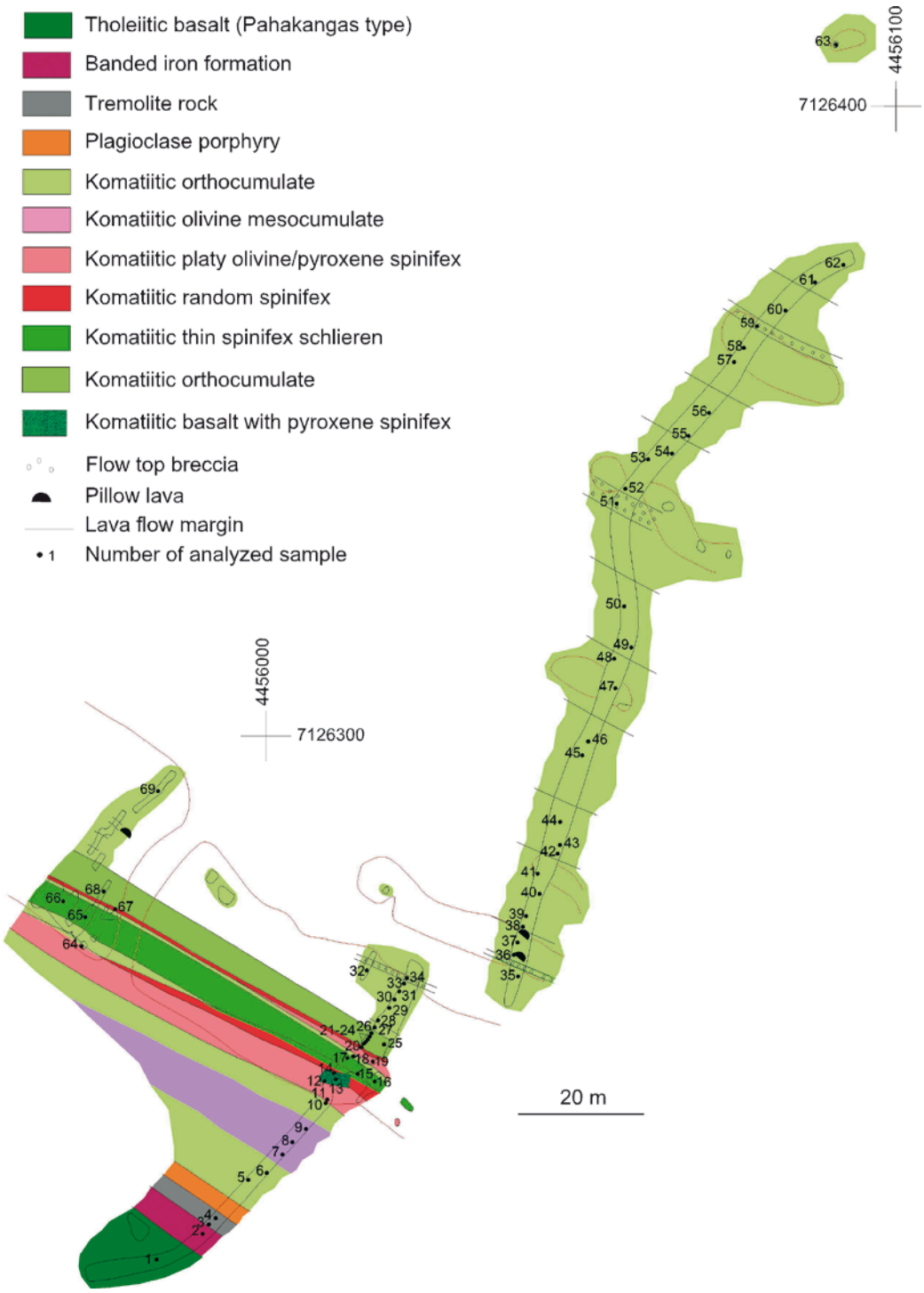


Figure 4. Detailed map of outcrops depicts the tholeiite-komatiite succession at Pahakangas area. The numbers refer to analyses presented in full in Papunen et al. (1998) and in the Appendix data-CD; selected analyses are presented in Table 4 to exemplify the chemical compositions.

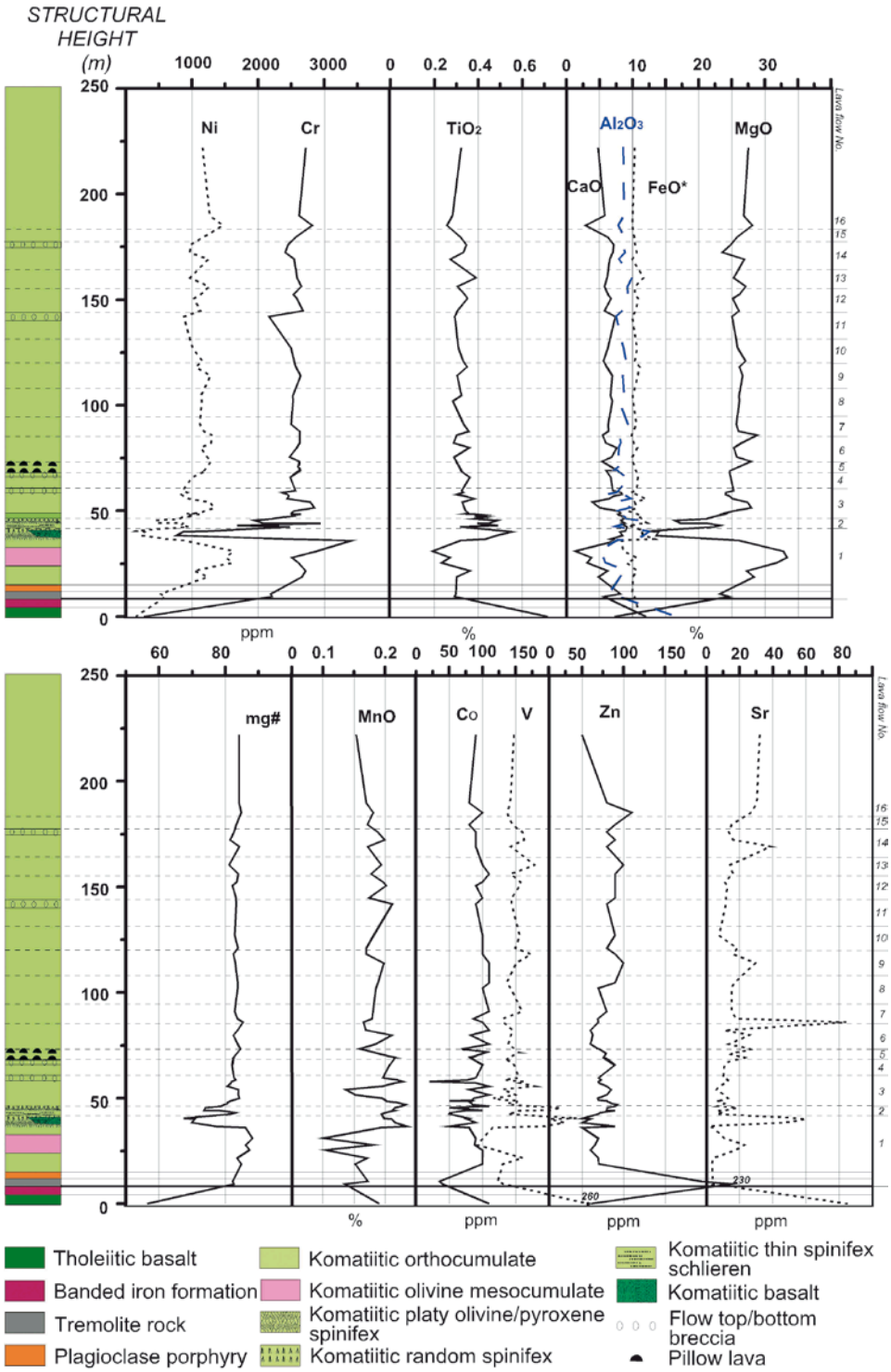


Figure 5. Geochemistry of the tholeiite-komatiite succession depicted in Fig. 4, Pahakangas area. The analyses are presented in Papunen et al. (1998) and in the Appendix data-CD.

Table 4. Selected analyses of the rock types described in Figures 4 and 5 of the Pahakangas area (normalized to volatile-free). The numbers refer to Figure 4 (n.d. = not determined; mg# = 100*(MgO/40.32)/[(MgO/40.32)+0,9*(FeO/71.85)]. FeO* = total Fe as FeO. Stratigraphic height was measured from tholeiitic basalt upwards).

Nr. in Fig 4		1	2*	3	4*	5*	9*	10	14
Sample ID		6TOH 93		8TOH 93				17TOH 93	21TOH 93
Rock		Thol	BIF	Contact	Contact	Olivine	Olivine	Komat.	Komat.
type		basalt	BIF	hybr. flow	hybr. flow	orthocum	mesocum.	flow	basalt
Stratigr. level m		0.0	7.8	9.4	10.7	18.8	31.0	36.0	40.5
SiO_2	%	50.22	n.d.	50.85	51.40	47.72	51.59	49.21	50.77
TiO_2	%	0.71	n.d.	0.29	0.30	0.30	0.19	0.32	0.53
Al_2O_3	%	16.50	n.d.	7.75	6.41	8.09	4.90	7.60	12.15
FeO*	%	11.14	n.d.	10.31	9.96	10.09	8.63	8.35	11.63
MnO	%	0.19	n.d.	0.14	0.17	0.15	0.10	0.19	0.20
MgO	%	7.29	n.d.	24.63	23.18	28.39	32.85	26.16	12.15
CaO	%	12.06	n.d.	5.67	8.17	4.83	1.30	7.61	8.93
Na_2O	%	1.56	n.d.	<0.01	0.06	<0.01	<0.01	0.02	3.33
K_2O	%	0.228	n.d.	0.015	0.011	0.007	0.008	0.008	0.114
Cr_2O_3	%	0.04	n.d.	0.32	0.32	0.39	0.42	0.50	0.18
P_2O_5	%	0.07	n.d.	0.03	0.01	0.03	0.01	0.02	0.03
mg#		56.45		82.55	82.17	84.78	88.29	86.11	67.41
Al_2O_3/TiO_2		23.09		26.56	21.37	26.97	25.79	23.87	23.08
Ni	ppm	150	n.d	600	522	1240	1620	890	150
Co	ppm	110	5	40	35	100	90	80	80
Cu	ppm	250	27	30	11	40	<10	10	80
Zn	ppm	60	n.d.	230	194	70	70	50	50
S	ppm	1080	70	0	150	280	600	0	70
V	ppm	260	n.d.	132	123	131	101	115	242
Sr	ppm	85	2	3	4	3	11	4	55
Cr	ppm	272	n.d.	2210	2191	2668	2887	3414	1245
As	ppm	50	58	320	440	104	1350	110	10
Ba	ppm	9	7	90	52	6	12	27	27
Rb	ppm	1.37	0.40	0.46	0.40	0.40	0.40	1.37	2.74
Y	ppm	18.0	5.0	8.6	12.5	7.4	1.5	6.0	13.0
Zr	ppm	30	6	23	37	11	6	7	22
Pb	ppm	<5	10	12	14	10	8	10	<5
Li	ppm	n.d	1	5	4	2	2	n.d.	n.d.
Sc	ppm	n.d	<2	20	20	18	14	n.d.	n.d.
Ga	ppm	n.d	1	9	8	8	6	n.d.	n.d.
Nb	ppm	6.0	0.5	1.0	1.0	1.0	1.0	8.0	5.0
W	ppm	10	1	17	<1	17	2	<1	<1
La	ppm	n.d.	1	0.9	0.7	0.7	0.8	n.d.	n.d.
Ce	ppm	n.d.	2.1	2.2	1.7	2.1	1.2	n.d.	n.d.
Pr	ppm	n.d.	0.4	0.4	0.4	0.4	0.2	n.d.	n.d.
Nd	ppm	n.d.	1.8	1.6	2.3	1.9	1.1	n.d.	n.d.
Sm	ppm	n.d.	0.5	0.7	1.1	0.7	0.3	n.d.	n.d.
Eu	ppm	n.d.	0.3	0.2	0.3	0.2	0.1	n.d.	n.d.
Gd	ppm	n.d.	0.8	1.3	1.9	1.2	0.5	n.d.	n.d.
Tb	ppm	n.d.	0.1	0.2	0.3	0.2	0.1	n.d.	n.d.
Dy	ppm	n.d.	0.9	1.5	2.1	1.4	0.3	n.d.	n.d.
Ho	ppm	n.d.	0.2	0.3	0.4	0.3	0.1	n.d.	n.d.
Er	ppm	n.d.	0.5	0.9	1.3	0.9	0.2	n.d.	n.d.
Tm	ppm	n.d.	0.1	0.1	0.2	0.1	<0.1	n.d.	n.d.
Yb	ppm	n.d.	0.5	0.9	1.2	0.9	0.2	n.d.	n.d.
Lu	ppm	n.d.	0.1	0.1	0.2	0.1	<0.1	n.d.	n.d.

* = analysis presented in Papunen et al. 1998

Continued next page

Table 4. Continued.

Nr. in Fig 4		16*	19*	24*	29	35	36*	47	48
Sample ID					38TOH 93	43TOH 93		62TOH 93	88TOH 93
Rock type		Komat. flow	Komat. spinifex	Komat. flow	Komat. flow	Komat. flow	Komat. flow	Komat. flow	Komat. flow
Stratigr. level m		43.1	45.5	48.5	54.1	65.8	69.2	114.0	118.2
SiO_2	%	49.31	49.71	47.83	49.83	46.68	48.64	45.98	47.84
TiO_2	%	0.49	0.49	0.39	0.33	0.36	0.32	0.30	0.32
Al_2O_3	%	7.96	10.90	8.47	7.50	9.51	7.18	8.53	8.76
FeO*	%	9.37	11.41	10.82	10.38	10.81	10.48	10.80	10.27
MnO	%	0.20	0.22	0.20	0.14	0.21	0.22	0.20	0.17
MgO	%	23.36	16.39	23.93	27.39	24.85	24.85	26.70	25.81
CaO	%	8.83	8.22	7.76	3.91	6.70	7.67	6.97	6.23
Na_2O	%	0.20	2.29	0.18	0.10	0.21	0.23	0.10	0.19
K_2O	%	0.011	0.060	0.011	0.000	0.285	0.011	0.005	0.015
Cr_2O_3	%	0.25	0.28	0.39	0.41	0.36	0.39	0.39	0.37
P_2O_5	%	0.02	0.02	0.02	0.02	0.03	0.01	0.03	0.02
mg#		83.15	73.99	81.40	83.93	81.99	82.43	83.04	83.27
Al_2O_3/TiO_2		16.27	22.24	21.72	22.90	26.27	22.44	28.06	27.49
Ni	ppm	836	450	1117	1273	1000	1188	1280	1170
Co	ppm	51	50	84	80	100	81	110	80
Cu	ppm	2	<10	83	17	10	19	70	50
Zn	ppm	72	80	80	85	90	76	100	90
S	ppm	50	1260	1510	280	0	420	390	0
V	ppm	147	218	152	131	148	136	151	145
Sr	ppm	9	19	10	6	11	24	30	15
Cr	ppm	1682	1943	2650	2787	2484	2641	2648	2573
As	ppm	68	n.d.	n.d.	n.d.	10	n.d.	10	10
Ba	ppm	1	n.d.	n.d.	3	45	n.d.	36	27
Rb	ppm	0.20	n.d.	n.d.	0.04	6.40	n.d.	1.37	2.29
Y	ppm	7.2	n.d.	n.d.	8.0	11.0	n.d.	7.0	6.0
Zr	ppm	25	n.d.	n.d.	15	7	n.d.	7	7
Pb	ppm	8	n.d.	n.d.	9	<5	n.d.	<5	10
Li	ppm	10	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Sc	ppm	24	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Ga	ppm	9	n.d.	n.d.	9	n.d.	n.d.	n.d.	n.d.
Nb	ppm	1.5	n.d.	n.d.	0.1	5.0	n.d.	7.0	3.0
W	ppm	<1	n.d.	n.d.	<1	<1	n.d.	<1	10
La	ppm	0.4	n.d.	n.d.	0.7	n.d.	n.d.	n.d.	n.d.
Ce	ppm	1.5	n.d.	n.d.	1.6	n.d.	n.d.	n.d.	n.d.
Pr	ppm	0.3	n.d.	n.d.	0.5	n.d.	n.d.	n.d.	n.d.
Nd	ppm	1.6	n.d.	n.d.	2.5	n.d.	n.d.	n.d.	n.d.
Sm	ppm	0.7	n.d.	n.d.	1.0	n.d.	n.d.	n.d.	n.d.
Eu	ppm	0.2	n.d.	n.d.	0.3	n.d.	n.d.	n.d.	n.d.
Gd	ppm	1	n.d.	n.d.	1.3	n.d.	n.d.	n.d.	n.d.
Tb	ppm	0.2	n.d.	n.d.	0.3	n.d.	n.d.	n.d.	n.d.
Dy	ppm	1.3	n.d.	n.d.	1.9	n.d.	n.d.	n.d.	n.d.
Ho	ppm	0.3	n.d.	n.d.	0.4	n.d.	n.d.	n.d.	n.d.
Er	ppm	0.9	n.d.	n.d.	1.1	n.d.	n.d.	n.d.	n.d.
Tm	ppm	0.1	n.d.	n.d.	0.2	n.d.	n.d.	n.d.	n.d.
Yb	ppm	0.9	n.d.	n.d.	1.3	n.d.	n.d.	n.d.	n.d.
Lu	ppm	0.1	n.d.	n.d.	0.2	n.d.	n.d.	n.d.	n.d.

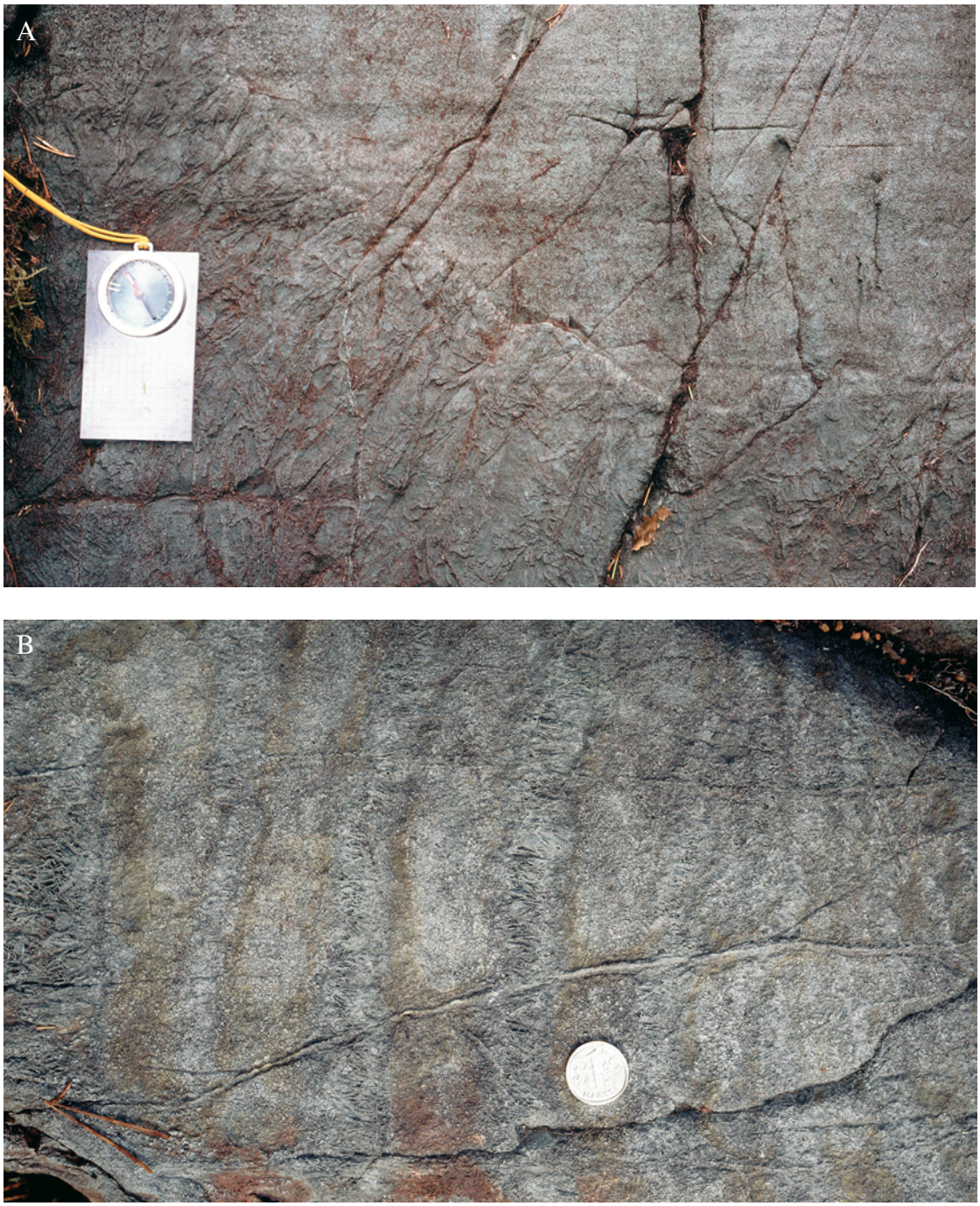


Figure 6. A. Ramdom spinifex flow-top zone of the underlying komatiitic flow was thermally eroded and left the long sheeted spinifex at the contact against overlying orthocumulate of the next flow, Pahakangas (4455970/7126265). The length of the compass is 12.5 centimetres. B. Thin spinifex "dikes" (vertical in photo) in komatiitic orthocumulate (4455970/7126270). The diameter of the coin is 2.5 centimetres. C. Komatiitic flow bottom/top breccia, Siivikkovaara (4456705/7126625). D. Foliated (D_3) komatiitic dike (left) cutting the banded amphibolite (D_{1-2}) in Vuosanka (4456920/7144730). The length of the scale is 15 centimetres. Figs A-C: photos T. Halkoaho, Fig. D: photo E. Luukkonen.

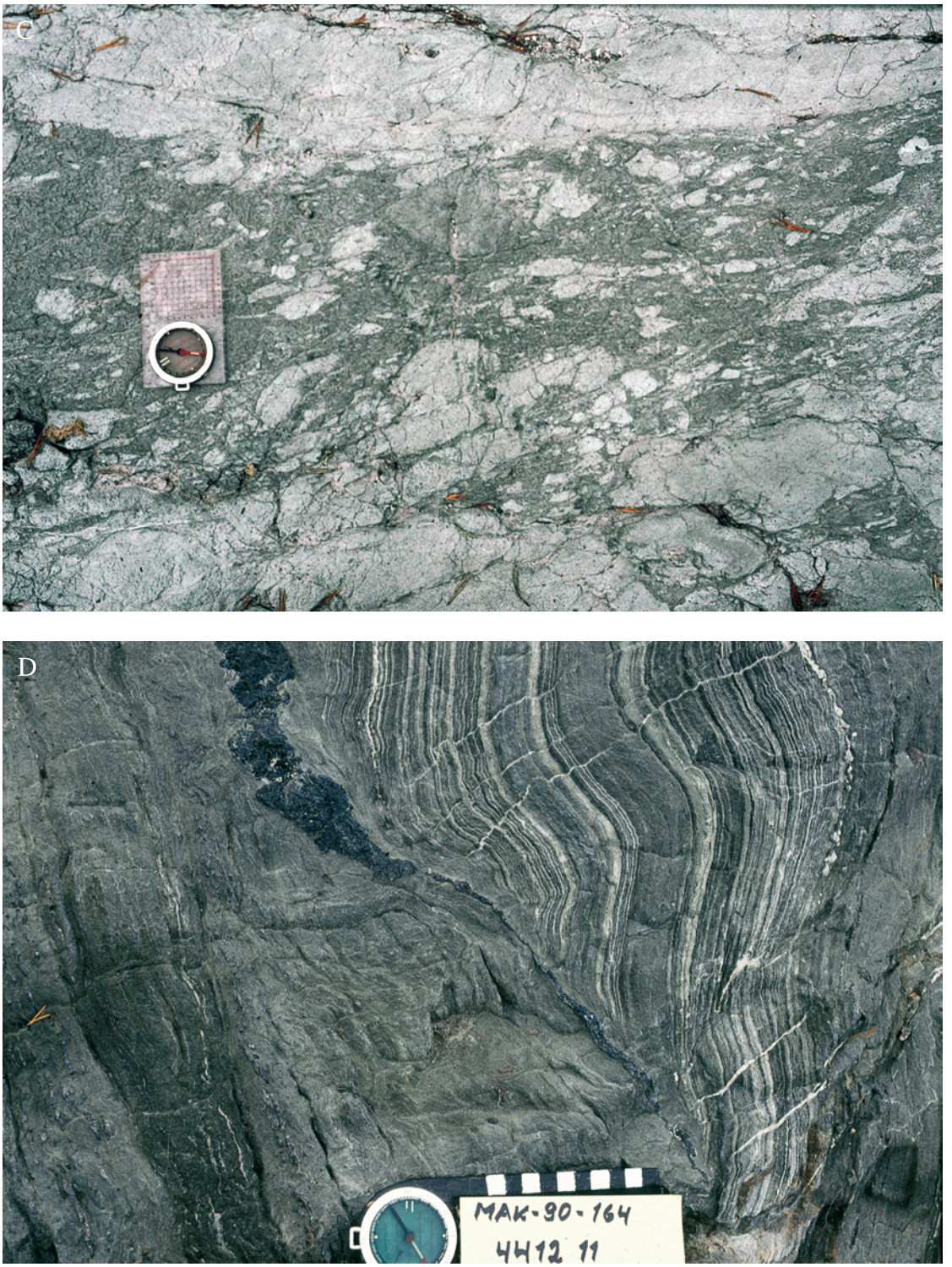


Figure 6. Continued.

The 2–3 m thick olivine orthocumulate (B) layer of the second flow contains up to 60 spinifex-textured dikes, 2–10 cm thick, subparallel to layering (Fig. 6B). The spinifex crystals are parallel to each other, extending across the dike, and a thin random spinifex seam borders both contacts. The second flow locally eroded the A zone of the underlying first flow, so that the flow top breccia and random spinifex layer are missing (Fig. 6A). The third flow is 2 m thick and contains a 0.5 m cumulate layer, a one metre thick platy spinifex layer and 0.5 m thick random spinifex at the flow top.

The next flows above the third fractionated flow are non-fractionated, locally pillow-structured and brecciated at the top (Fig. 6C), but without spinifex textures. The next flow (fourth in order) displays a massive orthocumulate layer 3 m thick, overlain by a 9 m thick orthocumulate with polyhedral jointing and a one metre thick flow top breccia. The 10 m thick fifth flow consists totally of polyhedral jointed orthocumulates and again a metre of flow top breccia. The sixth flow is 4 m thick and contains pillow-like structures at the basal and uppermost parts of the flow and the central part is polyhedrally jointed. Above it, there are at least 11 flows of polyhedral-jointed orthocumulates with local flow top breccias ranging in thickness from 11 to 15 metres.

Despite the well-preserved textures, the minerals of the flows are now entirely metamorphic. The main minerals are serpentine, talc and magnesite in the cumulate layers and tremolite, chlorite, albite and carbonate in the spinifex layers. The degree of talc-carbonate alteration varies and it can be followed by magnetic susceptibility surveys of the outcrops. Intensely altered samples are non-magnetic.

15–30 cm wide komatiitic dikes transects the D_{1-2} deformed banded amphibolite in the Vuosanka area (Fig. 6D). The dikes clearly indicate that the ultramafic volcanism extruded through pre-existing deformed supracrustal formations.

"Small serpentinite body" of the Pahakangas area. A lens-shaped ultramafic metacumulate (horizontal dimensions 650 m x 120 m) occurs 600 m northeast from the well-studied Pahakangas profile (Fig. 3). The lens is clearly discernible as a magnetic anomaly, divided into two equal parts by a 10 m wide zone of low magnetic intensity that runs parallel to the layering. This zone is a layer of chlorite-tremolite rock and differs in composition from the main mass of serpentinite and talc-carbonate rock. The zone includes felsic fragments of granodioritic composition and up to 1.5 metres in diameter (Fig. 7). The core of a single zircon crystal from the enclave yields an age of 2798±7 Ma and the rim 2771±8 Ma (Peltonen 2007, pers. com., Peltonen et al., in prep.). The age of the core correlates with the age of the Juurikkaniemi felsic volcanic rock (Table 3) and also with the age of the Viitavaara tonalite (2785±7 Ma, Käpyaho et al. 2006). We consider that the felsic enclaves were carried away from the felsic substrate of the komatiitic flow and were heated and recrystallized with the flowing lava. The age of the rim relates to the heating effect of the komatiitic eruption.

The serpentinite/talc-magnesite rock was originally an olivine mesocumulate. Primary minerals have been totally altered to antigorite, talc and magnesite, but the mesocumulate texture is still evident.

The overlying 130 m thick sequence of komatiitic flows is thinner than the 500 m thick flow sequence in the Pahakangas area. The serpentinite body could therefore be at a higher stratigraphic level than the fractionated flows and the associated B-zone serpentinites in Pahakangas. However, the exact stratigraphic position of the serpentinite body is not well established since the sequence is intensely faulted and the basal contact of serpentinite/komatiite is here intruded by a porphyritic granodiorite.

Komatiitic basalts of the Mäkinen Member. The bedrock at the Siivikkovaara hill, 800–1300 m northeast of the Pahakangas area (Fig. 3), is intensely faulted and composed of tens of small tectonic blocks, resulting in a complex chessboard-like map pattern. Besides massive non-fractionated komatiitic lava flows, fractionated flows with olivine ± pyroxene spinifex A-layers, flow-top breccias, pillow-structures and coarse-fragmented breccias have also been observed. Interlayers of komatiitic basalts with stringy beef pyroxene spinifex A-layers are common at the upper stratigraphic part of the komatiitic lava sequence indicating contemporane-

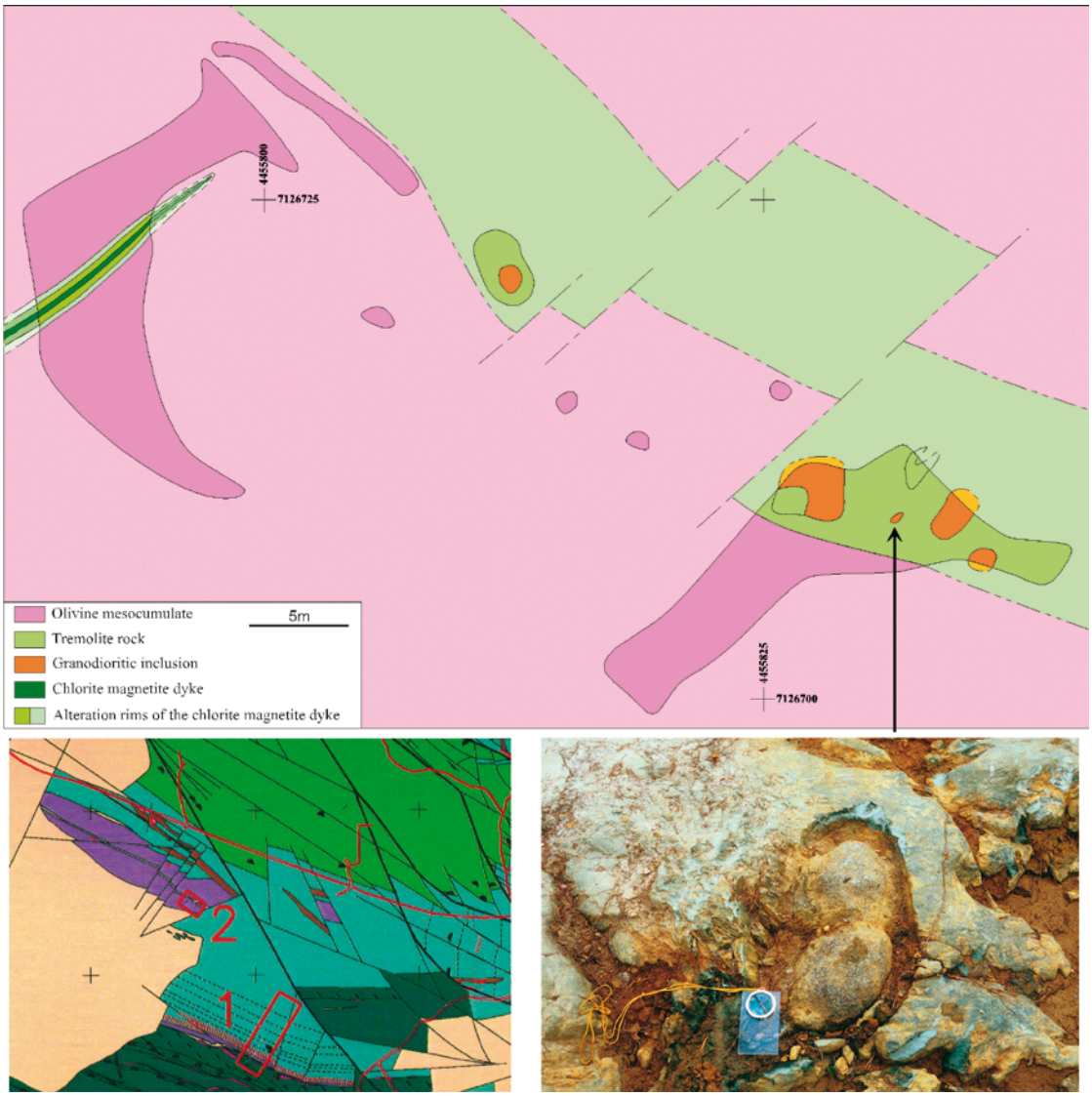


Figure 7. Detailed sketch of the small serpentinite body with felsic fragments. Darker colour indicates outcrop. The location map is a part of Fig. 3; the sketch area is marked with 2; the analysed section of Pahakangas komatiites with 1. The length of the compass in photo (4455832/7126709) is 12.5 centimetres. Photo T. Halkoaho.

ous eruptions of komatiitic basalt and komatiite lava flows. Upwards the volcanic stratigraphic succession passes into non-fractionated flows of komatiitic basalt that display well-preserved pillow structures with variolitic textures (Fig. 8A).

Cr basalts of the Suo Member. In the Mäkisensuo area the Suo Member of the Siivikko Formation overlies the stratigraphically lowermost calc-alkalic felsic to mafic Mäkisensuo Formation. The Suo Member starts with a 250 m thick layer of basalt that is anomalously Cr-rich (1300–2800 ppm Cr), which was designated as high-Cr basalt by Halkoaho et al. (2000). This high-Cr basalt unit also includes three 10–30 m thick komatiitic interlayers indicating

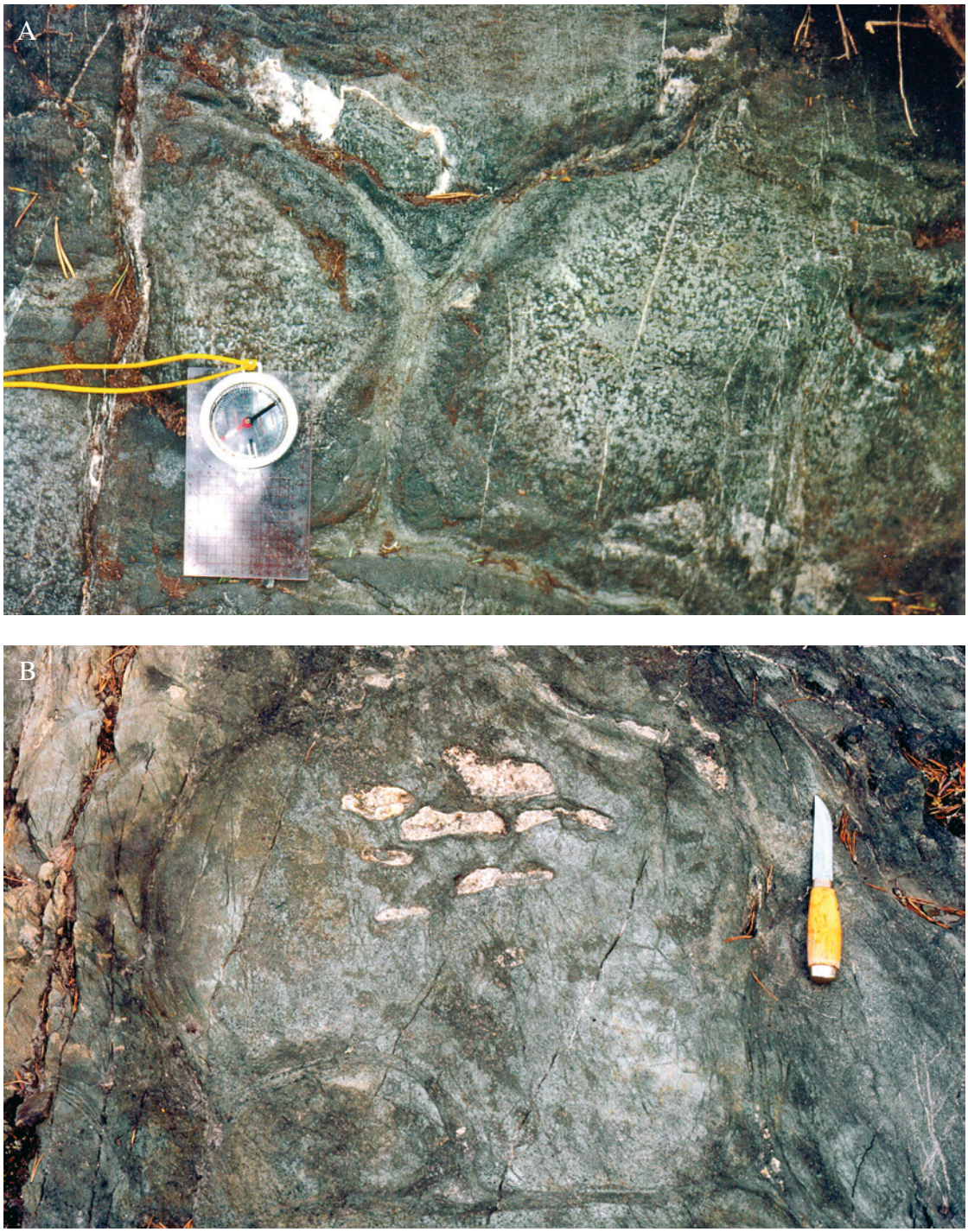


Figure 8. A. Variolitic pillow lava of komatiitic basalt, near the farmhouse of Viitaja (4455985/7126835). The length of the compass is 12.5 centimetres. B. Pillow lava structure in the high-Cr basalt, Mäkisensuo area (4455365/7128000). Some pillows contain drainage cavities (white inclusions) filled with quartz, and epidote±carbonate. The length of the knife is about 20 centimetres. Photos T. Halkoaho.

that the komatiitic volcanism was contemporaneous with the high-Cr basalt. The high-Cr basalt displays well preserved pillow structures with central cavities filled with quartz (Fig. 8B). Xenolithic inclusions of komatiitic basalt have also been observed within the high-Cr basalt.

Mafic lava known as "Cr basalt" occurs stratigraphically above the high-Cr basalt unit. The Cr basalt is distinguished from high-Cr basalts by lower Cr tenors (500–1300 ppm) and is separated from the underlying sequence by a 6 m thick layer of tremolite-biotite/chlorite rock (12.5 wt. % MgO, 3800 ppm Cr), which contains a weak sulfide dissemination. The sequence of pillow and massive Cr basalt lava flows attains a total thickness of 250 m.

Kellojärvi cumulate complex

The Kellojärvi ultramafic cumulate complex covers an area of 24 km^2. On the basis of interpretation of magnetic surveys, it is 3–5 km thick, layered, folded and faulted and the magnetic image conveys the impression of tectonic imbrication of several bodies with different orientations in a low-strain area. The maximum dimension in an E-W direction is up to 4 km and the western branch extends about 6 km northwards and southwest along the greenstone belt (Fig. 2).

The complex is composed of serpentinites and talc-magnesite rocks, although primary igneous textures are still preserved indicating that the rocks were originally ultramafic cumulates (Fig. 9). The rocks were olivine ad- and mesocumulates with minor olivine orthocumulate, olivine-clinopyroxene adcumulates and clinopyroxene adcumulates (clinopyroxenites). The classification of olivine cumulates as ad-, meso- and orthocumulates is based both textures and geochemical estimation of the olivine to intercumulus melt ratio.

Only a few grains of primary olivine have been detected; most of the preserved olivine is metamorphic. Based on the whole-rock geochemistry, the primary cumulus olivines ranged in composition from Fo_{89} to Fo_{83} (Tulenheimo 1999), indicating some variation in primary melt composition.

Anorthositic inclusions up to a few metres wide have been encountered in the area northwest of the farmhouse Ensilä (see Figs 11A and 25). The inclusions display sharp contacts, shearing and intense alteration.

A heterogeneous sequence composed of gabbro, pyroxenite and anorthosite with peridotite interlayers occurs at Niittyjoki in the central part of the ultramafic complex. During years 2002–2004 Geological Survey of Finland drilled some holes into a geophysical magnetic low in the central part of the ultramafic complex at Niittyjoki and intersected a non-outcropping heterogeneous layered gabbro-pyroxene-peridotite sequence (Halkoaho & Niskanen 2004). Due to tectonic disturbances, it was not possible to connect the different layers from one hole to another. These rocks are enriched in LREE compared to common ultramafic members of the Kellojärvi complex and they display microtextures, such as chromitite seams and intercumulus phlogopite/chlorite, which incidate that the sequence represents felsic contamination of the komatiitic melt.

Two single zircon crystals of the Niittyjoki intermediate "hybrid" rock were dated (SIMS) at 2798±8 and 2752±5 Ma (Peltonen 2007, pers. com.). A zircon fraction from the pyroxenite-gabbro-anorthosite body at Niittylahti was dated by the U-Pb (TIMS) method at 2757±6 Ma and a single zircon crystal with SIMS at 2798±4 Ma (Luukkonen et al. 2002, Peltonen 2007, pers. com.). The Niittylahti body contains enclaves of ultramafic olivine cumulates, which indicate that the gabbro sequence transects the Kellojärvi cumulate complex. We consider that the gabbros are younger than the komatiite cumulate, and represent about 2757–2752 Ma old mafic intrusive phase, which was contaminated during ascent by older felsic crustal and greenstone belt materials.

Structures and textures of cumulates

Layering is a characteristic feature of the cumulate complex. Visible rhythmic layering is common in olivine cumulates at the margins of the complex. It is due to the variation of the proportions of olivine

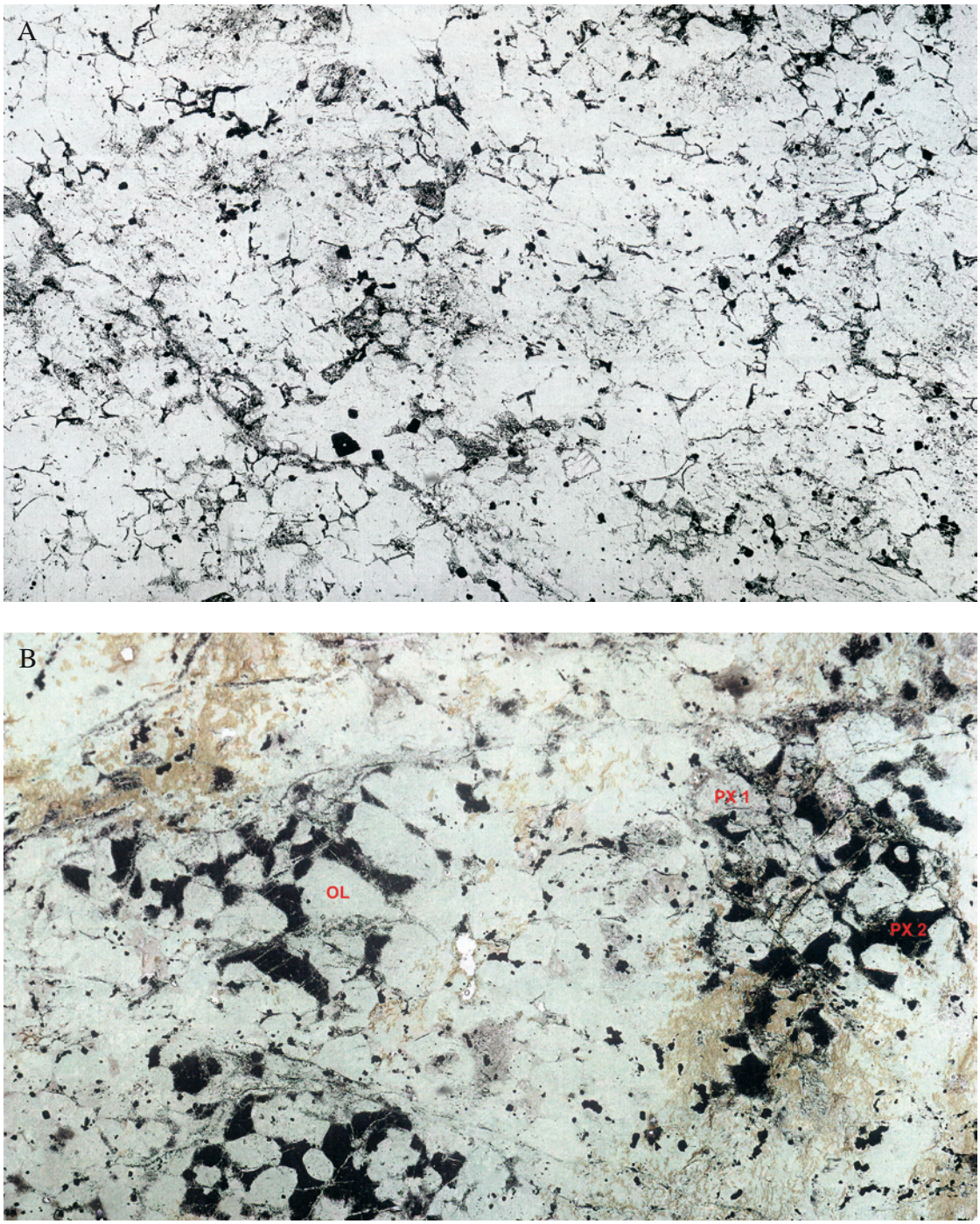


Figure 9. Thin section images (transparent light without polarizers) of the Kellojärvi serpentinite: A. olivine adcumulate (266-TOH-93, 4457265/7129720); B. olivine orthocumulate with pseudomorphs of olivine (OL), low-Fe pyroxene (PX 1) and black augite (PX 2) oikocrysts (258-TOH-93, 4454420/7129910) and the Proterozoic wehrlitic dike (see Fig. 25): C. poikilitic olivine orthocumulate with intercumulus augite oikocrysts; OL = pseudomorph of olivine, PX = pseudomorph of augite (272-TOH-93, 4455400/7130750). Field of view in all photos is 40 mm. Photos H. Papunen.

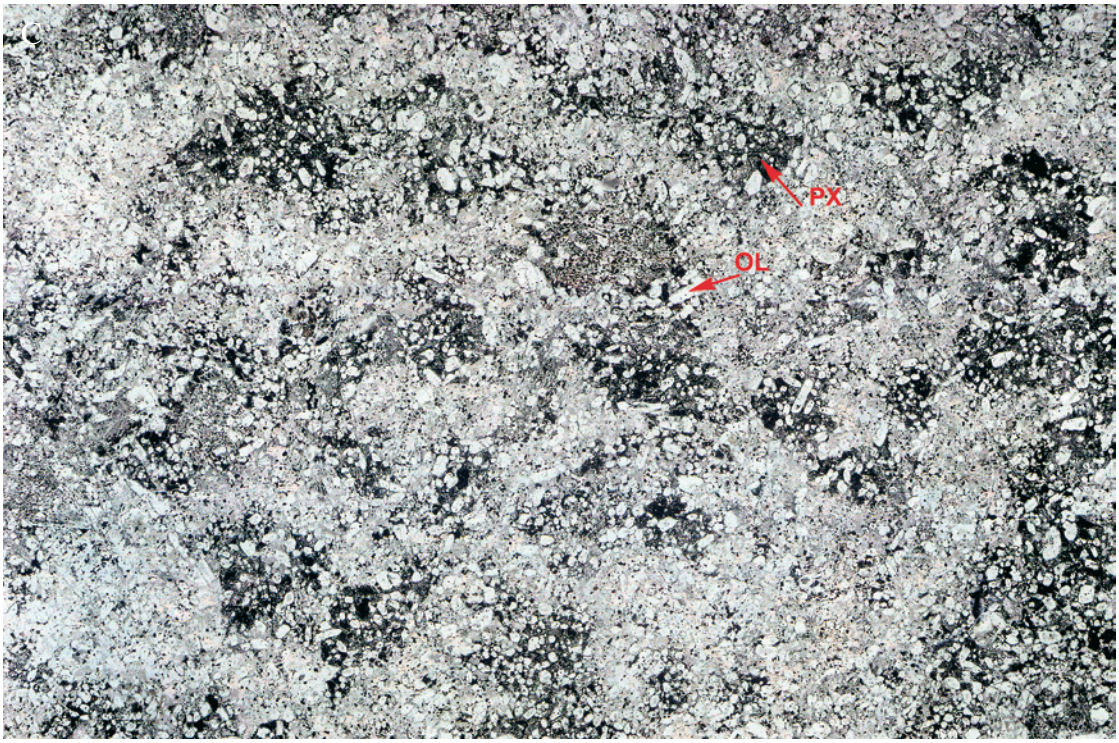


Figure 9. Continued.

and clinopyroxene cumulus crystals. In Näätäniemi, the layering consists of 2–5 cm thick pyroxenitic layers in olivine-clinopyroxene adcumulate. 10–20 cm fragments of clinopyroxenite disturb the planar layering, and the layers locally display slumping, erosional and cross bedding structures. The layering is also tectonically faulted and brecciated (Fig.10).

Fine-grained magnetite and ilmenite in chlorite-tremolite pseudomorphs of clinopyroxene reveals that the pyroxene precursor was iron-rich (Fig. 9B). Locally, colorless non-pigmented tremolite-actinolite grains form pseudomorphs after a Ca-bearing pyroxene, which originally contained less iron and more magnesium than the pigmented pyroxene. Black-pigmented pseudomorphs of large clinopyroxene oikocrysts characterize massive olivine meso- and orthocumulates. The oikocrysts have preserved the habits of enclosed former olivine cumulus crystals (Figs 9B and C).

Figure 10. Pyroxenite fragment in layered ultramafic cumulate, Näätäniemi (4453110/7128020). Length of the knife is 6 cm. Photo H. Papunen.

Marginal zones of the cumulate complex

Three well-outcropped localities at the marginal zone of the cumulate complex were mapped in detail (Tulenheimo 1999). The marginal zone against the felsic wall rock consists of green, massive amphibole rock, which represents former clinopyroxenite (Fig. 11B). It contains xenoliths of wall rock that are contorted due to partial melting. The width of the clinopyroxenite contact zone varies from 20 to 50 metres.

Upwards in the stratigraphy, the contact of metapyroxenite against massive to oikocrystic olivine ortho/mesocumulate is sharp, with embayments indicating thermal erosion.

A thin (<10 m) layer of orthopyroxenite, white on weathered surfaces, with dark clinopyroxene oikocrysts, occurs locally between the clinopyroxenite and olivine cumulate. It commonly displays sharp contacts against both clinopyroxenite and olivine cumulate, but in places the orthopyroxenite changes gradually to clinopyroxenite. In the area west of Ensilä, the contact pyroxenite is coarse-grained and pegmatoidal, with large crystals of pyroxene.

A raft (1.5 x 5 m) of chlorite-amphibole-magnetite rock occurs within olivine cumulate a few tens of metres from the marginal zone pyroxenite. Another similar, ten metres wide inclusion was found about 100 metres away from the contact zone. The inclusions contain crystals of diopside up to 3 cm in size (see Fig. 12). The geochemistry of the rafts indicates that they could be derived from of the Pahakangas-type volcanic complex.

West of Ensilä, the cumulate complex is in contact

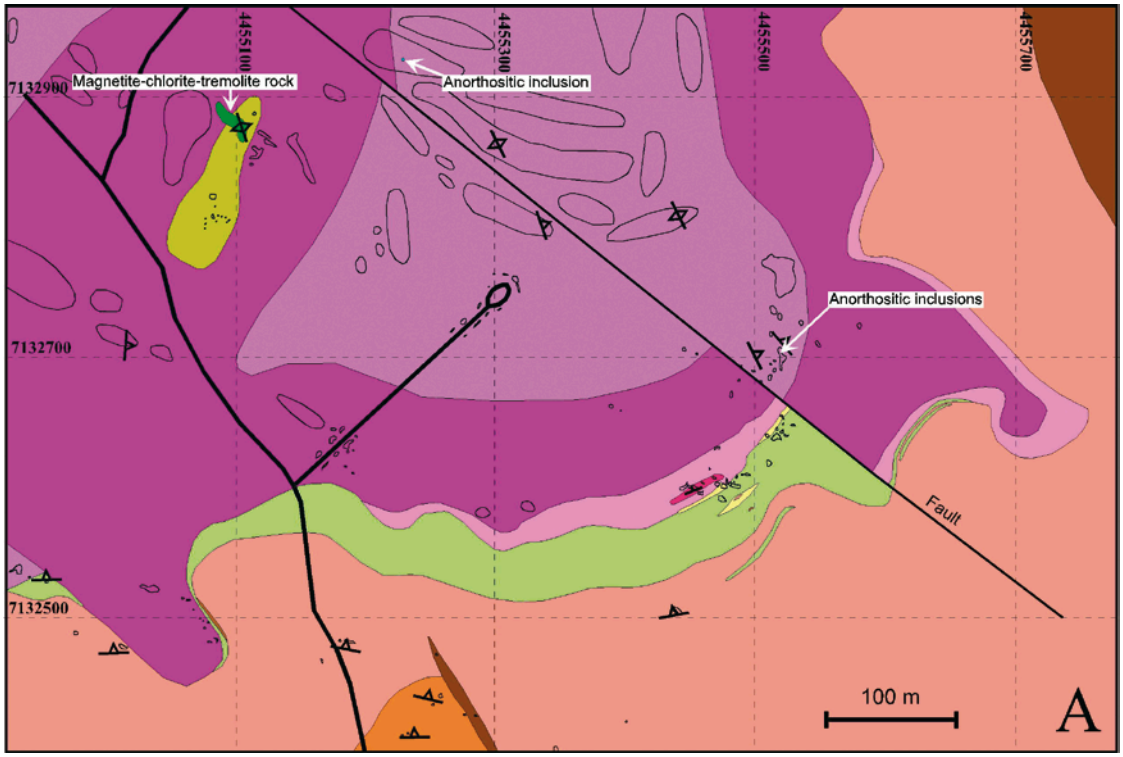


Figure 11. Detailed maps depict the contact zone of the cumulate complex west of Ensilä (A) and NW of Hyttimäki at the crossroads area (B) (Tulenheimo 1999). Legend see Fig. 11B.

with felsic oligoclase-quartz-phyric sheared and schistose rock that contains rare small fragments of biotite-rich gneiss (Fig. 11A). The age relations of the marginal clinopyroxenite and felsic rock were only observed in drill core, where the felsic rock intrudes the marginal pyroxenite as dikes. The felsic oligoclase-quartz porphyry is similar in composition and appearance to the felsic porphyry dikes that occur between the Pahakangas Formation tholeiites and komatiites in the Siivikkovaara area. According to Luukkonen et al. (2002) the minimum U/Pb age of zircon separated from the felsic rock is 2780 Ma.

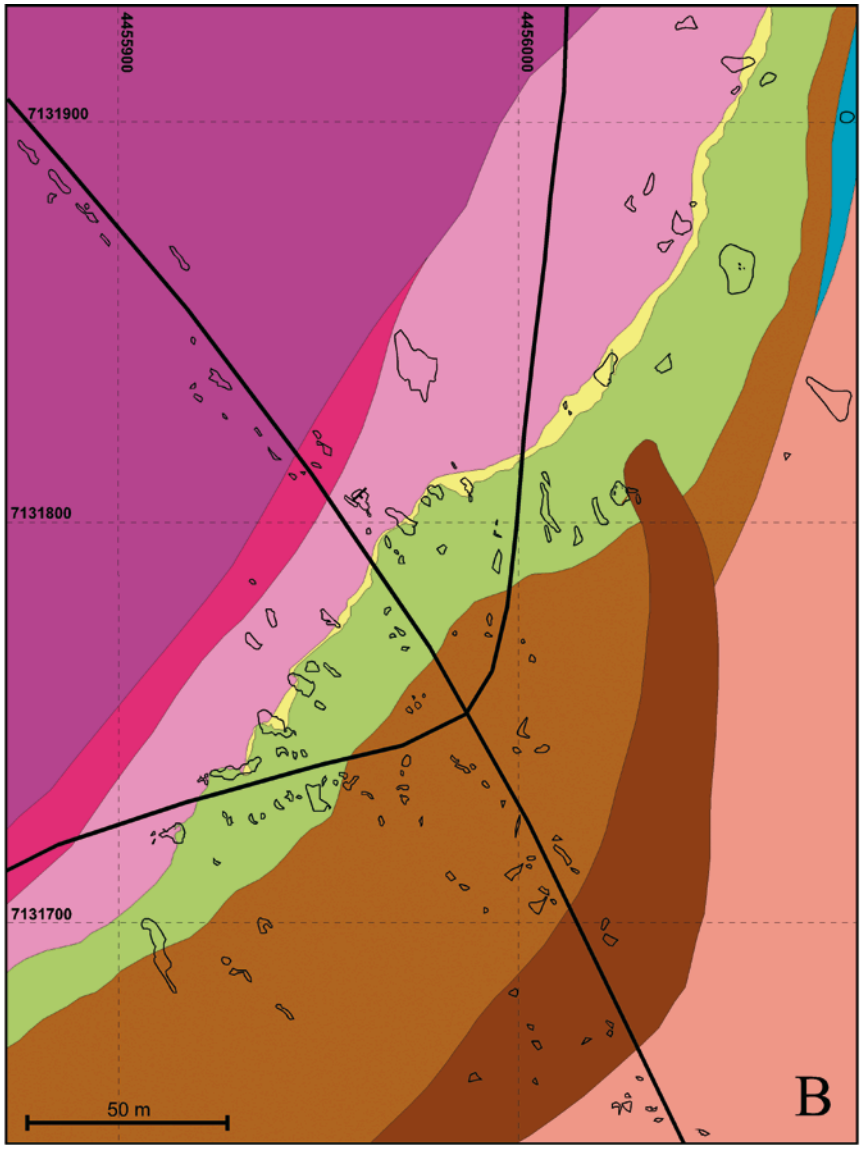


Figure 11. Continued.

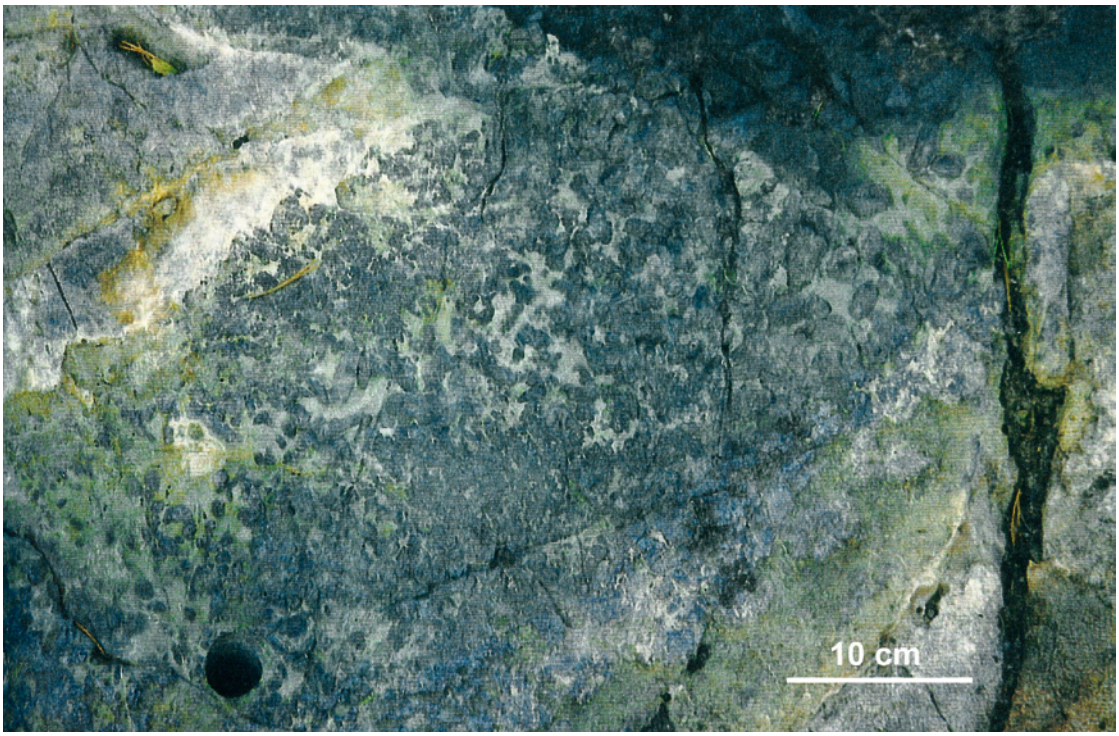


Figure 12. A raft of chlorite-amphibole rock containing large pseudomorphs of clinopyroxene crystals in the central part of the raft (4455795/7131925) at the crossroads area NW from the Hyttimäki farm (see Fig. 25). Photo H. Papunen.

Coarse-grained volcaniclastic deposits of the Ronkaperä Formation

Volcaniclastic rocks ranging from fine-grained tuffs to conglomerates occur in several localities around the Ronkaperä bay (see Fig. 25), and as small isolated occurrences within the central and northern part of the Kellojärvi ultramafic complex. Most of the outcrops are volcanic conglomerates with clasts and matrix consisting entirely of volcanic material (Fig. 13). Stratigraphic contact relationships with the other stratigraphic units are not seen in outcrop, but because there are a few clasts of high-Cr basalt and komatiitic basalt in the conglomerate, the unit is interpreted to occur stratigraphically at the top of mafic-ultramafic volcanic succession. Most of the fragments are either dacitic or andesitic calc-alkalic volcanic rocks, which are either massive or locally amygdaloidal and porphyritic in texture. TTG gneiss fragments have not been found. Mafic tuffaceous layers display well preserved graded and cross bedding. However, the conglomerates are mainly massive, without bedding, and are clast to matrix supported. Nieminen (1998) interpreted the sequence mostly as lahar type volcaniclastics.

At Hietaperä, to the south of the Siivikkovaara area, quartzites occur at the top of the entire volcanic-sedimentary succession. In some other areas, the upper sedimentary sequence is composed of sulfidic sediments, mica schists, greywackes (2744±34 Ma greywacke from Petäjäniemi, Kuhmo, Peltonen 2007, pers. com.), conglomerates and phyllites, which are derived from greenstone materials and TTG.

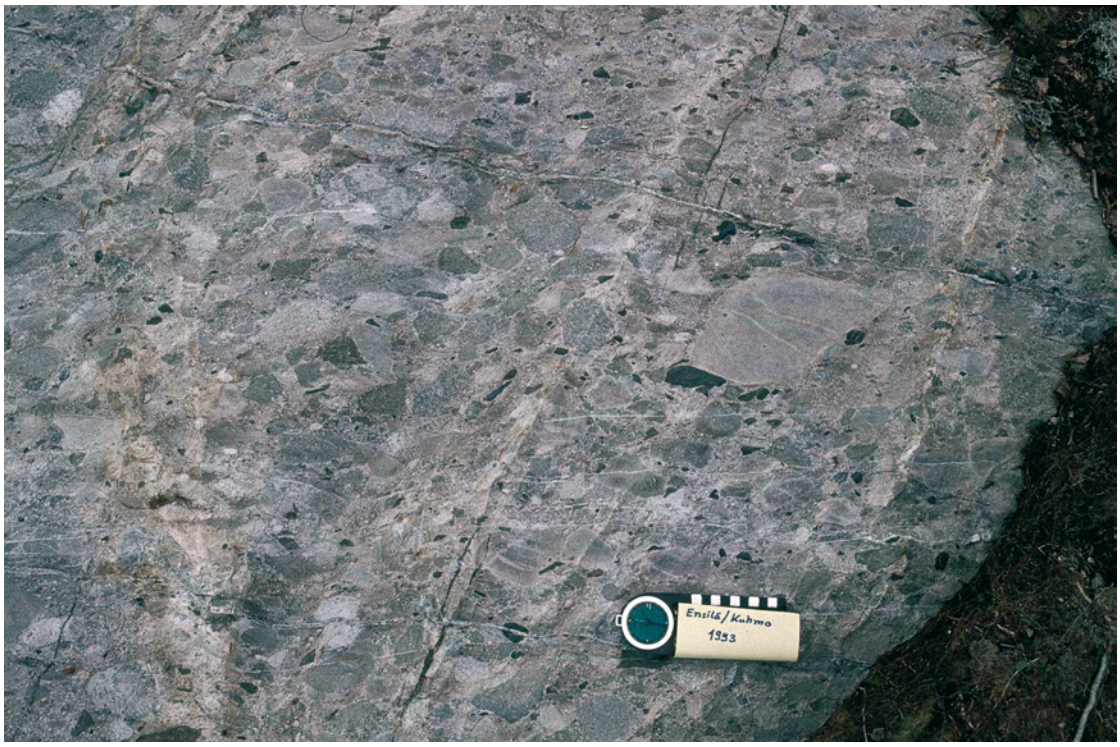


Figure 13. Poorly sorted volcanic conglomerate of the Ronkaperä Formation (4455390/7131990) NW from the Hyttimäki farm (see Fig. 25). The length of the scale is 15 centimetres. Photo E. Luukkonen.

Suomussalmi greenstone belt

The northern part of the TKS greenstone complex, the Suomussalmi greenstone belt (SGB), extends 60 km in a north-south direction from Kiannanniemi to Saarikylä, where it bifurgates into N-trending and E-trending branches (Fig. 1). The metamorphic grade of the eastern branch is upper amphibolite facies, which is higher than the middle to low-amphibolite facies assemblages of the greenstone belt proper. Structure of the greenstone belt is complicated due to polyphase folding and faulting, which make the stratigraphic study of the greenstone evolution more difficult than in Kuhmo and Tipasjärvi belts. The following interpretations (Table 5) are based on well-outcropped sections and related age determinations.

Luoma and Mesa-aho Formations

A sequence of bimodal, mainly pyroclastic calc-alkalic volcanic rocks of felsic to mafic composition occur at the western margin of the Suomussalmi greenstone belt at Saarikylä and Kiannanniemi (Fig. 1). Piirainen (1988) named this sequence in Saarikylä the Luoma Group (= Luoma Formation in this text), and considered it to be the oldest supracrustal unit of the TKS greenstone sequence. Vaasjoki et al. (1999) reported a U-Pb TIMS age of 2966±9 Ma from zircons from a felsic-intermediate tuffite, and proposed that the ages of the Luoma Formation differ considerably from the ages of the greenstone belt proper. New age determinations made on single

Table 5. Stratigraphy of the Suomussalmi greenstone belt.

Formation	Lithology	Thickness (Age)
Huutoniemi	Mica schists /pelites, felsic-intermediate tuffs, pyroclastic breccias, volcanic conglomerates, black schists	200 m (2774±8 Ma; Luukkonen et al. 2002)
Saarikylä	Komatiitic olivine ad-, meso- and orthocumulates, olivine-pyroxene cumulates of komatiitic basalts, Cr basalts, local felsic volcaniclastic units	500 m
Tervonen	Tholeiitic basalts with BIF interlayers, tuffs, mafic sill	400 m
Mesa-aho	Felsic-intermediate tuff/tuffite, hybabyssal dikes	100-200 m; (2818±15 Ma; Luukkonen et al. 2002)
Luoma	Felsic-intermediate-mafic tuff/tuffite, lava, with quartz porphyry dikes, banded amphibolites	500 m; (2943±20 Ma; Luukkonen et al. 2002)

zircon grains with SIMS method yield ages of 2959 ±12 Ma and 2825±27 Ma for the zircons of this Luoma felsic-intermediate tuffite. Additionally, zircons from the Luoma felsic volcanic rock gave the age of 2943±20 Ma, and the monazite of the Luoma quartz porhyry dike, the age 2942±3 Ma (Luukkonen et al. 2002). These ages clearly indicate that volcanic rocks of the Luoma Formation are older than the ordinary TKS greenstone complex and they probably belong to the same supracrustal formation and age group as the pre-greenstone banded tholeiitic amphibolites mentioned above (see also Table 9). Engel and Dietz (1989) documented an unconformity between the Luoma Formation and the other rocks of the greenstone belt proper. Furthermore, quartz porphyry dikes that cut the Luoma volcanic rocks at Mesa-aho, also dated by single zircon SIMS method, gave an age 2818 ±15 Ma. This age correlates well with initial phase observed elsewhere for the evolution of the TKS greenstone complex (Luukkonen et al. 2002). We here agree with the interpretation by Vaasjoki (1999) and consider that the Luoma Formation represents the older greenstone belt correlative with pre-greenstone banded amphibolites, and name the initial felsic formation of the Suomussalmi greenstone complex the Mesa-aho Formation (Table 5). The extent of the Mesa-aho Formation needs further consideration in the field surveys and datings since the lithologic differences between the Luoma and Mesa-aho rocks are not evident.

Tervonen Formation

Major part of the Kiannaniemi-Saarikylä sequence comprises tholeiitic basalts with locally well-preserved pillow textures. In Kiannanniemi the sequence overlying basalts was studied with diamond drillings due to nickel deposits of Hietaharju and Peura-aho. Here the basalts are overlain by felsic volcanic rocks and graphitic black schists and these, in turn, by cumulates of komatiites and komatiitic basalts. We name the basalt unit the Tervonen Formation and combine the sequence starting with felsic and ultramafic rocks to the Saarikylä Formation.

Saarikylä Formation

A layer of felsic porphyry with associated graphite schist occurs between the tholeiitic and komatiitic basalt units in the Kiannanniemi area. Disseminated and massive Ni-Cu sulfide deposits are located in the cumulates of the komatiitic basalts (Kurki & Papunen 1985, Luukkonen et al. 2002). Similarly, a felsic volcaniclastic unit is sporadically present at the Saarikylä area between komatiites and komatiitic basalts (Luukkonen et al. 2002).

Locally the rocks of Mesa-aho and Tervonen Formations may be absent, in which case komatiitic lavas and cumulates are the basal greenstone unit. At Saarikylä, for example, where the Luoma volcanic rocks are exposed on the western margin of

the greenstone belt, the SGB sequence begins with komatiitic lavas and cumulates, which directly overlie the Luoma Formation rocks. The 1–10 m thick units of komatiitic lavas are chlorite-amphibole schists with no preserved primary structures. The serpentinized cumulates are the metamorphic equivalents of olivine mesocumulates and adcumulates with minor amounts of orthocumulates. They form lenticular bodies up to 15 km long and 500 m wide and display weak compositional layering. Two of them, the Vaara and Kauniinlampi units, contain disseminated Ni sulfide mineralization (Luukkonen et al. 2002). Although the mineralogy is metamorphic, primary cumulus textures, including pseudomorphs of hopper olivines are locally preserved. The next stratigraphic unit above the komatiites comprises komatiitic pillow basalts and Cr basalts (Halkoaho et al. 2000).

The eastern, Tormua branch of greenstone is composed of banded amphibolites, uralite porphyries/gabbros and small isolated areas of felsic to intermediate volcanic rocks. Dating of single zircon crystals from the Tormua uralite gabbro gave an age of 2866±4 Ma (Peltonen 2007, pers. com.), which combines it to pre-greenstone plutonic succession, or the zircons were inherited from there.

Huutoniemi Formation

The uppermost stratigraphic unit of the Suomussalmi sequence consists of felsic to intermediate volcanic rocks, volcaniclastic sedimentary rocks, phyllites and graphite-sulfide-bearing black schists. This sequence was studied at Huutoniemi, east of Kiannanniemi, where the felsic rock sequence was intersected with diamond drillings. We also include the felsic to intermediate, recrystallized volcanic rocks at Kilpasuo, northeastern part of the Tormua branch, to this formation. SIMS dating of zircons yielded an age of 2774±8 Ma for the Kilpasuo felsic rocks (Luukkonen et al. 2002).

Geochemical evolution

Analytical data

A number of geochemical analyses have been published in earlier studies of the region (Taipale 1983, Martin et al. 1983, Luukkonen, 1988, 2001, Papunen et al. 1989, Engel & Dietz 1989), but a large volume of new analyses were made during the study of komatiite volcanology during the 1990's, since the classification of komatiites was not possible without geochemical information. Major elements were assayed from fused samples and trace elements from pressed powder samples by the XRF method at the CSIRO laboratories, Western Australia. Certain trace elements were assayed with ICP-MS and ICP-OES by Genalysis Laboratory Services Pty. Ltd., Western Australia. Additional XRF analyses were done from pressed powder samples at the Outokumpu Oyj Geoanalytical laboratory, Outokumpu. Analytical data are stored in a Microsoft Excel file together with corresponding field and petrographic data, and is included in the appendix of this paper as a CD-ROM. For the comparison of different rock types a number of elemental x-y and ternary diagrams were prepared, but due to large number of geochemical data the primary analyses were stored in the appendix and only the calculated averages, mean values and ranges of concentrations of elements in different rock types were presented in tables. The spider diagrams depicting the distribution of elements in the rocks and presented in the next pages were constructed with a Minpet 2.02 program (Minpet Geological Software Inc.) using the normalizing values for average chondrites and primitive mantle from Sun and McDonough (1989) and for continental crust from Taylor and McClennan (1985).

TTG complex

The geochemistry of the TTG complex is here briefly described for the purpose of comparison with the rocks of the greenstone belt. In this study a number of felsic intrusive rocks were analysed along the margins of the TKS greenstone belt and

more data was obtained from the works of Martin et al. (1983), Luukkonen (1988, 2001), Käpyaho (2006) and Käpyaho et al. (2006, 2007). The pre-greenstone grey gneisses are inhomogeneous due to migmatization, but mesosomes (Martin et al. 1983, Martin 1987, Luukkonen 2001, Käpyaho 2006, Käpyaho et al. 2006, 2007) display rather constant compositions, characterized by high Na/K values, negative Nb_N anomalies, low $[Nb/La]_N$ ratios and high $[Zr/Ti]_N$ values, while major element abundances are close to average tonalite in composition (Table 6 and Fig. 14). The V/(Ti/1000) ratio ranges from 20 to 50 and granodiorites yield the highest values round 50.

Felsic volcanic rocks

Taipale (1983) studied the felsic volcanic rocks of the Tipasjärvi area, and Papunen et al. (1989) presented representative analyses of volcanic rocks around the Taivaljärvi Ag-Zn-Pb occurrence (Table 6). The stratigraphically lowermost felsic volcanic rocks and massive felsic porphyries are rhyodacites and dacites, which higher up in the stratigraphy become more intermediate in composition. Figure 15 depicts the spider diagrams of felsic volcanic rocks.

The trace element distribution of the felsic volcanic rocks is very similar to that of tonalitic paleosomes, where the characteristic features are negative Nb_N anomalies and $[Nb/La]_N$ ratios are below mantle values, whereas the $[Zr/Ti]_N$ ratios are >1, ranging up to 10 in rhyolites (Table 6). The V/(Ti/1000) ratio is close to 50, clearly higher than in mafic and ultramafic volcanic rocks described below. The concentrations of compatible elements (Cr, Ni) are lower in felsic rocks than in average tonalite. Also the REE distribution patterns of intermediate volcanic rocks are similar to those of tonalitic grey gneisses, with a slightly U-shaped HREE distribution pattern (cf. Martin et al. 1983). The fractionation of REE indicated by $[La/Yb]_N$ ratio (20) is in intermediate volcanic rocks very close to that of granodiorite, whereas the grey gneisses display somewhat higher fractionation ($[La/Yb]_N$ =100). Characteristic of felsic volcanic rocks is a negative Eu_N anomaly, whereas the intermediate volcanic rocks display a slight positive Eu_N anomaly.

The Saarijärvi and Luoma felsic volcanic rocks of the Suomussalmi greenstone complex (Engel & Dietz 1989; Table 6) display the characteristic features mentioned above for Taivaljärvi, although the depletion of compatible elements is not as prominent as in the Taivaljärvi felsic rocks, and the values of the Suomussalmi felsic rocks correspond to those of average continental crust. The $[Cr/Ni]_N$ ratios of Suomussalmi volcanic rocks are >1, compared to values <1 for the Taivaljärvi rocks. The negative Nb_N anomaly is very prominent in the Saarijärvi felsic volcanic rocks and the Nb_N is about 0.1 * La_N, which has been used as reference material (Puchtel et al. 1997, 1999). The REE pattern of the Saarijärvi felsic rocks is almost identical with the Taivaljärvi felsic rocks although the Eu anomaly is absent at Saarijärvi (Figs 15 and 16).

Pahakangas type tholeiitic basalt

The geochemistry of the Pahakangas type mafic volcanic rocks (Table 4) indicates basaltic to basaltic-andesite compositions, and in the Jensen diagram (Fig. 20) the analyses plot in the high magnesium tholeiite (=HMT) and calc-alkalic (=CA) fields. In the trace element diagram the mantle normalized $[Nb/La]_N$ is slightly below 1, but the value is >1 if normalized with average continental crust. $[Zr/Ti]_N$ values are < 1 (0.4) and the V/(Ti/1000) ratios range from 15 to 20, on average 17 (Fig. 17). The high variance of LIL elements may partly derive from hydrothermal alteration, which cannot be avoided in the samples of pillow lavas. The chondrite normalized REE distribution pattern (Fig. 18B) does not indicate fractionation, but the concentrations are 5–6 times higher than the mantle values. A similar enrichment factor is observed for the average LIL and HFS elements, but the compatible elements, Cr and Ni, are clearly depleted. A slight positive Eu anomaly is evident in some samples and correlates with the presence of plagioclase phenocrysts. Compared to MORB the rocks display slight enrichment of LIL and depletion of HFS elements.

Table 6. Geochemistry of felsic volcanic rocks: selected assays of Pahakangas and Mäkisensuo felsic rocks (normalized to volatile-free) and average chemical compositions of Suomussalmi, Tipasjärvi and Ronkaperä felsic volcanic rocks (n.d. = not detected; - not determined). mg# see Table 4.

Rock type		**Mäkisensuo andesite**	**Mäkisensuo andesite**	**Mäkisensuo andesite**	**Pahakangas granodiorite**	**Pahak. felsic porphyry**	**Pahak. felsic porphyry**	**Luoma felsic volcanic rock**
Sample		**SII-17 190.3**	**SII-16 85.2**	**SII-16 101.75**	**166-TOH-93**	**5-1-JSK-93**	**4-HP-92**	**average**
SiO_2	wt.%	58.21	60.25	62.21	66.80	68.94	72.39	73.34
TiO_2	wt.%	0.69	0.58	0.69	0.53	0.48	0.44	0.56
Al_2O_3	wt.%	15.52	15.14	15.53	16.40	15.10	14.07	12.38
FeO	wt.%	7.86	6.32	5.80	4.20	4.23	3.87	3.27
MnO	wt.%	0.15	0.11	0.10	0.06	0.08	0.03	0.06
MgO	wt.%	5.11	6.25	4.82	2.71	1.73	1.84	1.56
CaO	wt.%	8.15	5.64	6.45	2.21	2.47	0.37	2.37
Na_2O	wt.%	3.52	4.47	3.89	5.98	6.45	6.89	2.41
K_2O	wt.%	0.70	1.12	0.41	0.98	0.41	0.03	2.21
P_2O_5	wt.%	0.08	0.12	0.11	0.14	0.12	0.08	0.07
Total		100.00	100.00	100.00	100.00	100.00	100.00	98.23
mg#		56.28	66.19	62.20	56.09	44.74	48.49	48.58
Cr	ppm	442	267	303	61	66	17	230
Ni	ppm	200	180	120	40	30	10	56
Co	ppm	40	20	110	10	–	93	20
V	ppm	238	123	190	84	50	39	74
Cu	ppm	60	60	40	10	–	17	26
Pb	ppm	150	20	10	10	10	14	26
Zn	ppm	250	60	40	40	30	36	52
Bi	ppm	10	10	10	–	–	–	3
S	ppm	20400	–	–	141	916	131	n.d.
Rb	ppm	26	29	18	34	20	–	52
Cs	ppm	30	10	10	20	10	–	–
Ba	ppm	206	251	134	288	144	41	772
Sr	ppm	123	139	87	116	193	66	146
Nb	ppm	16	19	20	8	10	2	17
Zr	ppm	44	89	67	112	216	144	122
Y	ppm	16	6	14	13	21	17	19
Nb/Y	ppm	1.00	3.17	1.43	0.62	0.48	0.12	0.89
Th	ppm	–	–	–	–	–	–	7
U	ppm	1	8	6	4	8	–	1
La	ppm	20	20	20	n.d.	n.d.	n.d.	32
Ce	ppm	20	40	30	n.d.	n.d.	n.d.	46
Cl	ppm	40	70	60	60	70	–	102
Nd	ppm	–	–	–	–	–	–	–
Sm	ppm	–	–	–	–	–	–	–
Eu	ppm	–	–	–	–	–	–	–
Tb	ppm	–	–	–	–	–	–	–
Yb	ppm	–	–	–	–	–	–	–
Lu		–	–	–	–	–	–	–

Table 6. Continued.

Rock type		Saarijärvi felsic volcanic rock	Taivaljärvi interm. volcanic rock	Taivaljärvi Na felsic volcanic rock	Taivaljärvi K felsic volcanic rock	Ronkaperä andesite	Ronkaperä dacite
Sample		**average**	**average**	**average**	**average**	**average**	**average**
SiO_2	wt.%	81.44	66.10	70.35	78.40	58.47	68.98
TiO_2	wt.%	0.14	0.43	0.55	0.14	0.91	0.45
Al_2O_3	wt.%	9.16	15.80	15.47	11.00	15.43	15.58
FeO	wt.%	1.50	3.91	2.93	0.77	8.00	3.61
MnO	wt.%	0.04	0.11	0.07	0.05	0.19	0.06
MgO	wt.%	1.22	1.50	0.91	0.57	4.22	1.49
CaO	wt.%	0.53	3.34	1.88	1.09	6.96	2.74
Na_2O	wt.%	1.33	3.30	3.38	0.06	3.76	5.05
K_2O	wt.%	2.51	2.48	2.21	4.11	1.05	1.54
P_2O_5	wt.%	0.03	0.12	0.12	0.12	0.10	0.08
Total		97.90	97.09	97.87	96.31	99.08	99.58
mg#		61.69	43.17	38.10	59.29	51.08	45.02
Cr	ppm	66	8	10	n.d.	295	15
Ni	ppm	29	9	13	5	106	15
Co	ppm	10	10	8	2	28	6
V	ppm	27	66	43	5	162	34
Cu	ppm	11	36	17	5	32	10
Pb	ppm	11	28	14	33	24	11
Zn	ppm	38	100	80	197	108	20
Bi	ppm	–	1.9	0.4	0.2	–	–
S	ppm	n.d.	n.d.	n.d.	n.d.	457	10
Rb	ppm	56	100	78	167	36	43
Cs	ppm	2	8	4.1	1.2	–	–
Ba	ppm	428	480	373	490	259	257
Sr	ppm	75	230	137	7	237	162
Nb	ppm	3	7	12	20	3	6
Zr	ppm	82	70	173	123	108	186
Y	ppm	7	10	30	33	24	20
Nb/Y	ppm	0.43	0.70	0.39	0.61	0.11	0.31
Th	ppm	11	2.1	6.7	13.0	–	–
U	ppm	3	0.5	1.8	3.6	–	–
La	ppm	28	14.0	30.4	31.9	11	24
Ce	ppm	48	27.0	52.8	65.0	25	44
Cl	ppm	80	–	8.3	0.0	29	25
Nd	ppm	–	10.0	22.0	26.0	–	–
Sm	ppm	–	2.2	4.4	5.8	–	–
Eu	ppm	–	0.8	0.6	0.5	–	–
Tb	ppm	–	0.3	0.7	0.8	–	–
Yb	ppm	–	0.6	2.0	2.9	–	–
Lu		–	0.1	0.4	0.5	–	–

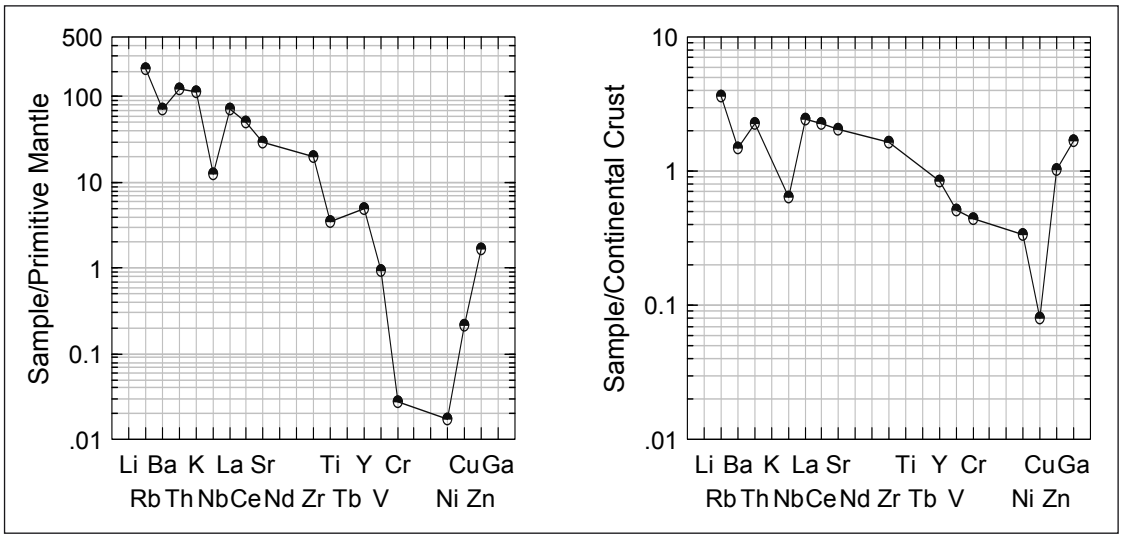


Figure 14. Average compositions of tonalitic mesosome (Luukkonen 2001) normalized with primitive mantle and continental crust.

Komatiites and komatiitic basalts

Komatiitic lavas, both A-layers of fractionated flows and non-fractionated flows contain on average 23 wt. % MgO, although random values up to 26 % MgO are seen in the diagrams (see Figs 5 and 20, Tables 5 and 7). The cumulus B-layers of fractionated flows are not included in these diagrams, but are presented separately with all the other cumulates. However, the accumulation of minor olivine may shift the value of MgO content upwards, and the existence of small amounts of olivine cannot be quantified in the metamorphic mineral assemblage. The komatiites are of Al non-depleted type with Al_2O_3/TiO_2 values commonly exceeding 20. The same value applies to the komatiitic basalts, as well as for basalts stratigraphically overlying the komatiitic basalts. Distribution of Cr and Ni correlates with MgO, but a few anomalously high Cr values also exist, some of which correspond to the anomalous Cr basalts (see Halkoaho et al. 2000). In addition the observed accumulation of chromite in some komatiitic flows may also increase the Cr content.

Mantle normalized trace element diagrams (Fig. 21) display $[Nb/La]_N$ values <1 for komatiitic basalts and >1 for komatiites. Another distinctive feature between the komatiitic basalts and komatiites is the negative Sr anomaly in komatiites and positive value in komatiitic basalts. A conspicuous feature is the very low Zr_N value, and the anomaly is more negative for komatiitic basalts than for komatiites. Ti concentrations are higher in komatiitic basalts than in komatiites, resulting in a higher $[Ti/Zr]_N$ value for komatiitic basalts than for komatiites. An interesting feature is the wide distribution of Cu tenors, which partly correlates with Ni values and may indicate that a random factor (reaction with substrate sulfides) depleted chalcophile elements in some lava flows. The REE distribution pattern indicates slight HREE enrichment in komatiitic lavas, whereas komatiitic basalts are non-fractionated.

A sequence of sheeted komatiite flows studied in the Pahakangas area display high variance of elemental concentrations in the lowermost fractionated flows, where the mesocumulate B-layers are the most magnesian rock types (Fig. 5, Table 4). Upwards the sequence turns to non-fractionated flows,

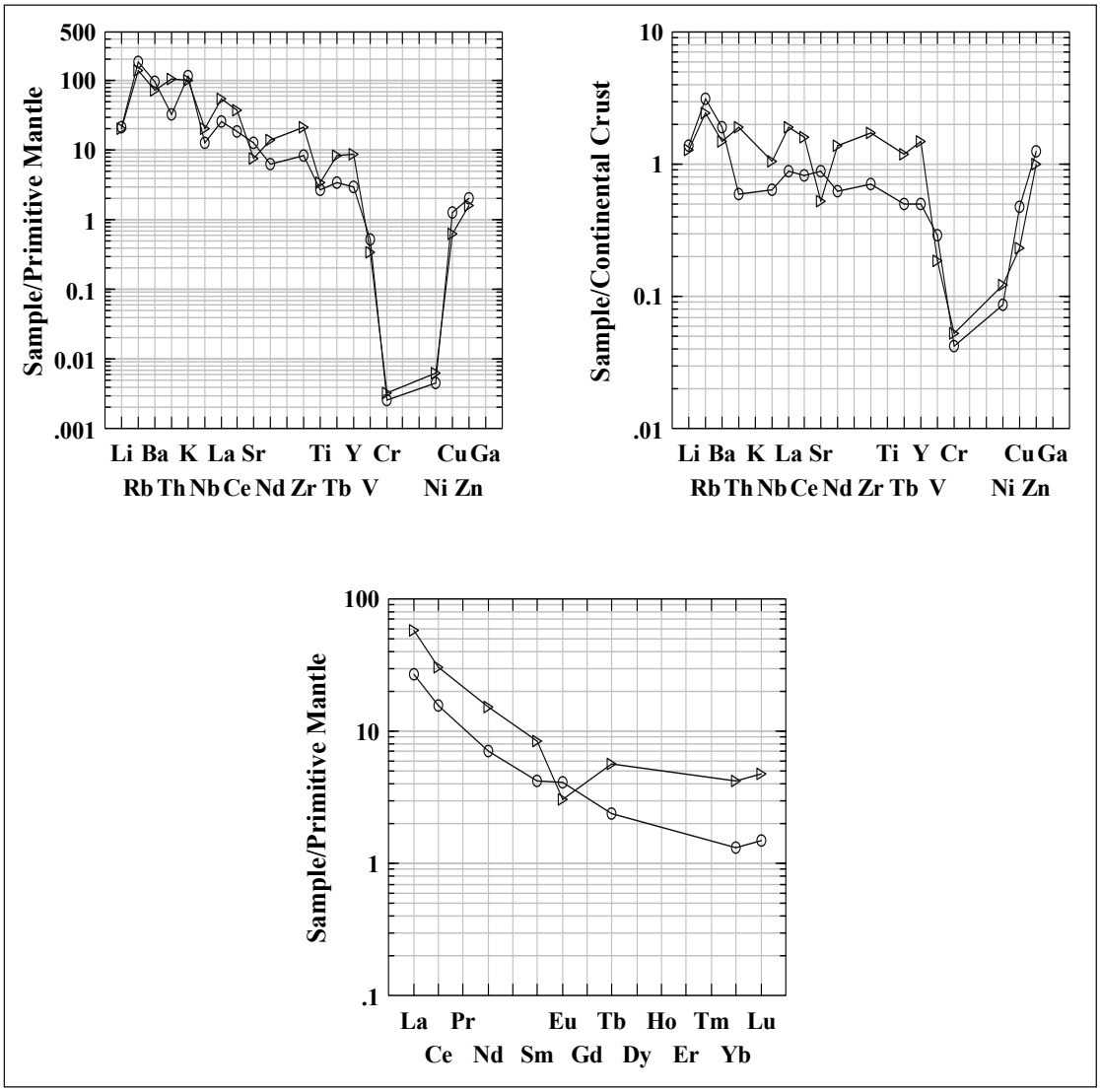


Figure 15. Spider diagrams of average felsic volcanic rocks (Δ) and the overlying intermediate volcanic rocks (O) of the Taivaljärvi area (data from Papunen et al. 1989).

where flow top breccias indicate flow boundaries. The compositions of the non-fractionated upper flows are very constant, except that the concentration of Cr increases slightly from 2500 ppm to 2700 ppm upwards in the sequence, and in flows 5–16 the average Sr content is slightly higher than in flows 1–4. The highest content of zinc in the flow sequence, 230 ppm, is in the metapyroxenite located at the contact against the underlying BIF just below the first fractionated flow (Fig. 5).

Compared to upper non-fractionated flows, the A-layer of the first komatiitic flow is depleted in

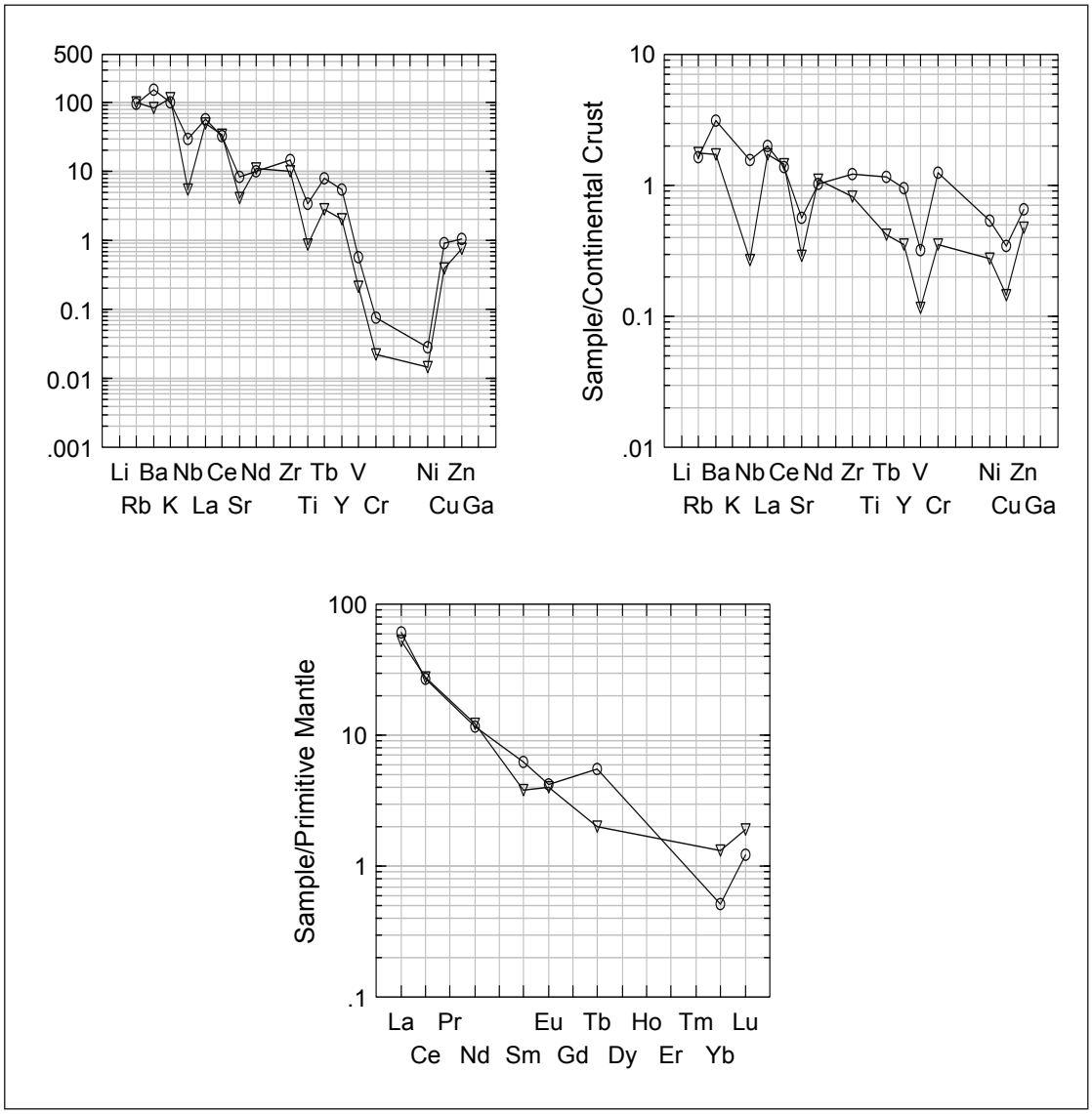


Figure 16. Comparison of trace element abundances between Luoma and Saarijärvi felsic volcanic rocks. Luoma Formation = O, Saarijärvi felsic volcanic rocks = ▽ (data from Engel & Dietz 1989).

Ni and Cr and slightly enriched in Zn and Sr. The cumulate B-layer of the same flow displays normal values of Ni and Cr. On the mantle-normalized spidergram the A-layer of the first flow also displays LREE enrichment whereas the higher flows are depleted in LREE, which is typical for komatiites (Fig. 18E).

Komatiitic cumulates

The Kellojärvi cumulate complex is composed of olivine ad-, meso- and orthocumulates. In practice, the cumulates were divided by Al_2O_3 content using the limits <1 wt.% Al_2O_3 for adcumulates and 5 wt.% Al_2O_3 between meso- and orthocumulates (Table 8).

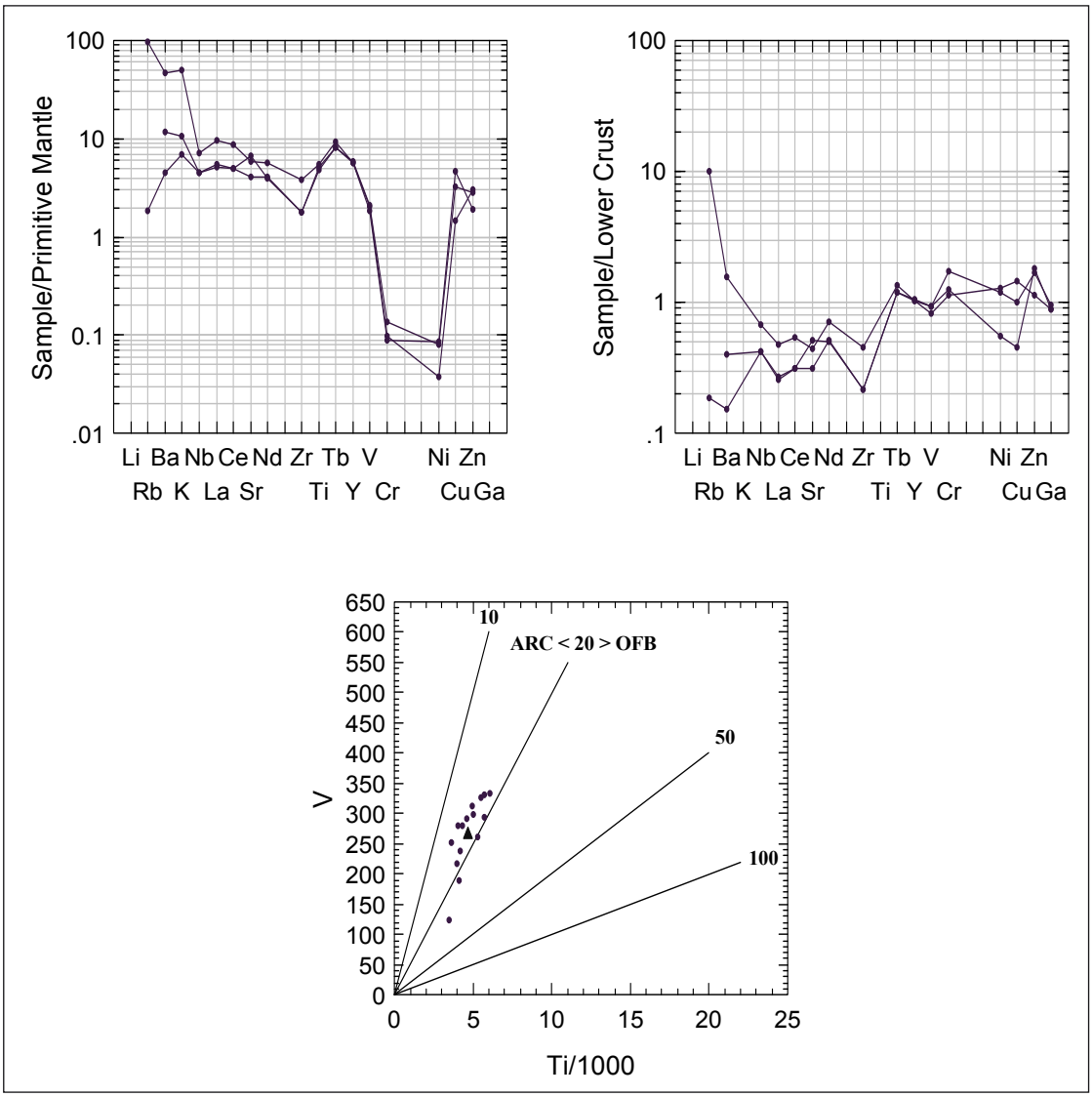


Figure 17. Trace element spidergrams and V *vs.* Ti/1000 plot of the Pahakangas type tholeiitic basalts. ARC = rocks of volcanic arc, OFB = ocean-floor basalts. Small triangle indicates calculated average V/Ti value of analysed samples.

Although the cumulates are totally serpentinized and locally carbonated to talc-magnesite/dolomite-magnetite rocks, primary textures are still in many cases preserved and the observed cumulus/intercumulus ratios prove the geochemical division to be correct. On the Jensen cation plot the Kellojärvi cumulates form a Mg-rich extension to the corresponding array of komatiitic lavas and komatiitic basalts (Figs 20 and 22). Volatile-free MgO contents range from 28 wt.% in orthocumulates to 52 wt.% in adcumulates. In orthocumulates, TiO_2 displays a dual division: the high Ti-group ranges from 0.2 to 0.35 wt.% TiO_2 and the low Ti-group from 0.08 to 0.18 wt.%, and the same difference can also be observed in

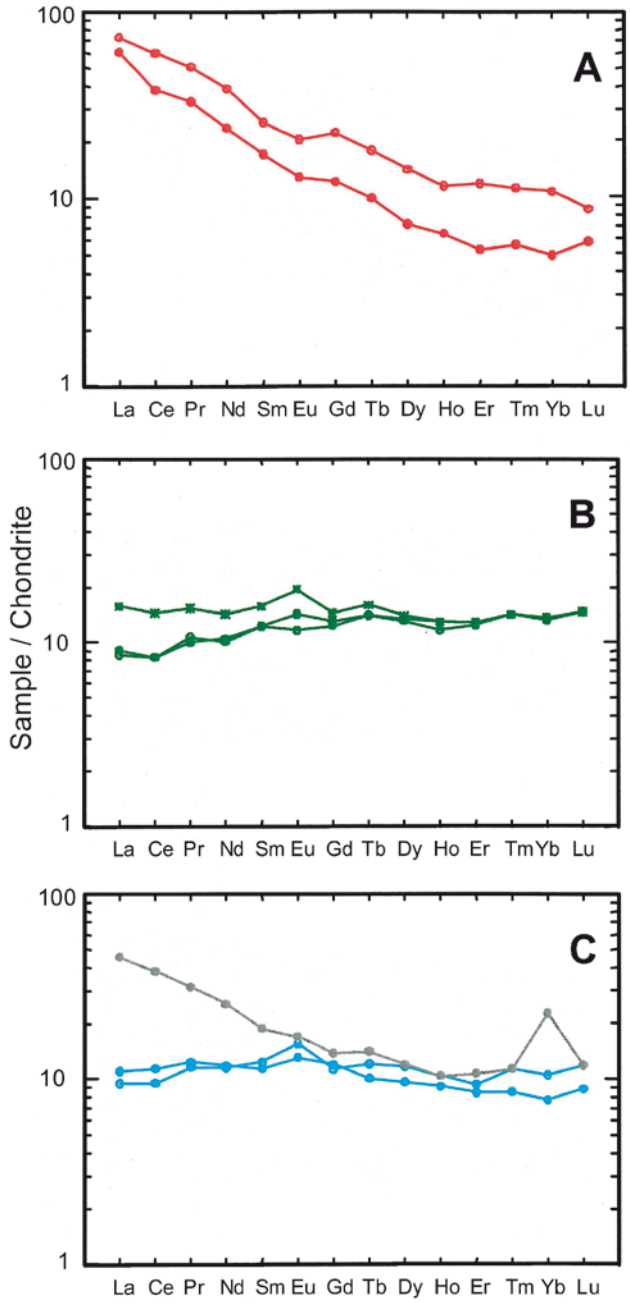


Figure 18. REE distribution diagrams of the Pahakangas-Kellojärvi rocks: A. granodiorite (o 167-TOH-93) and tonalite (169-TOH-93); B. Tholeiitic basalt (Pahakangas); C. Calc-alkalic mafic (blue: Sii-4/102.90, Sii-13/87.95) and felsic (grey: Sii-4/74.80) volcanic rocks; D. Uppermost BIF of the Pahakangas sequence (grey) and metapyroxenite (red) between komatiites and BIF; E. Fractionated komatiite lava flows: cumulate of lowermost fractionated flow (red o: Sii-8/98.05), mesocumulate (red dot: 16-TOH-93), orthocumulate (green: 12-TOH-93), random spinifex (green star: Sii-8/115.70); F. Komatiite lava flows 2-11of the Pahakangas sequence; G. Komatiitic basalts (o 174-TOH-93, 129-TOH-94); H. Cr basalt (green: Sii-15/130.0) and high-Cr basalts (red: o Sii-15/39.0, 57-TOH-94), blue is komatiitic basalt flow between Cr basalts (195-TOH-93); I. Ultramafic cumulates of the Kellojärvi complex: olivine adcumulate (red), olivine mesocumulate (green) and augite adcumulate (grey). Normalized average chondrite from Sun and McDonough (1989). Analyses presented in the Appendix data-CD.

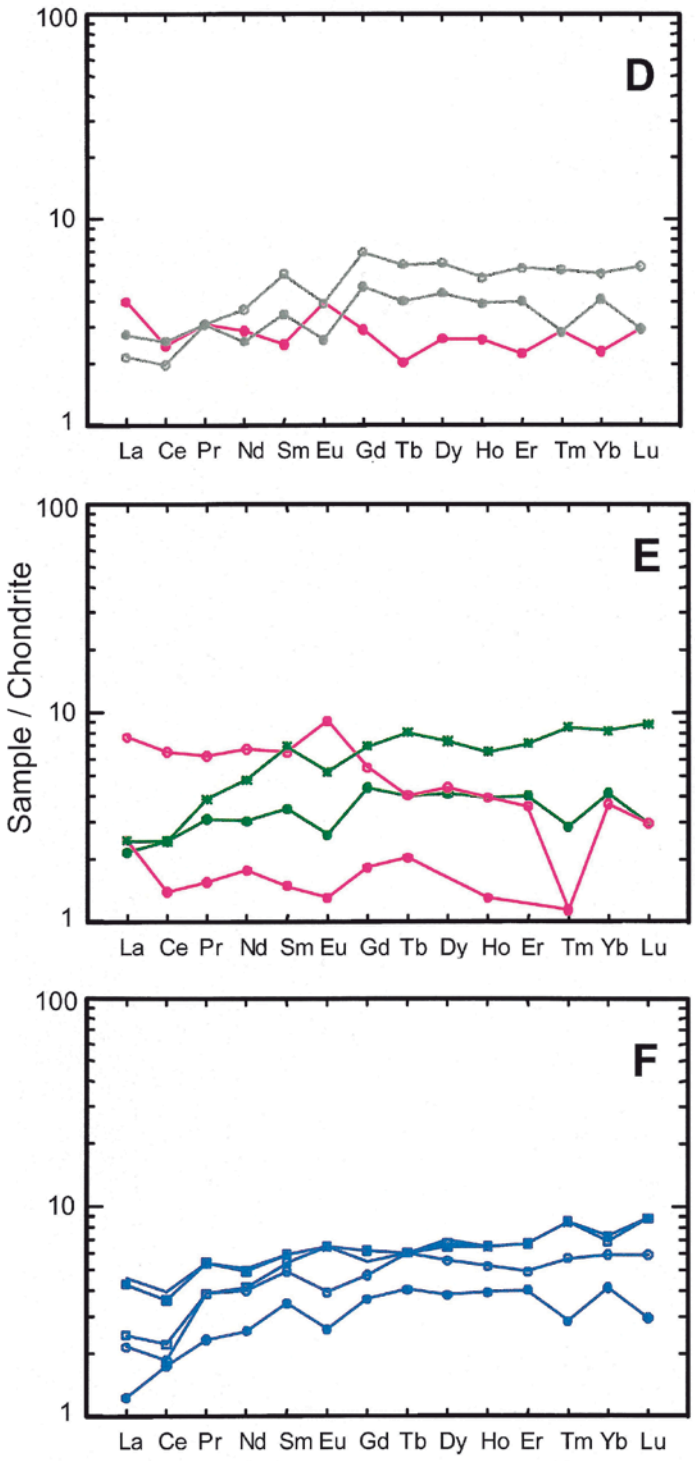


Figure 18. Continued.

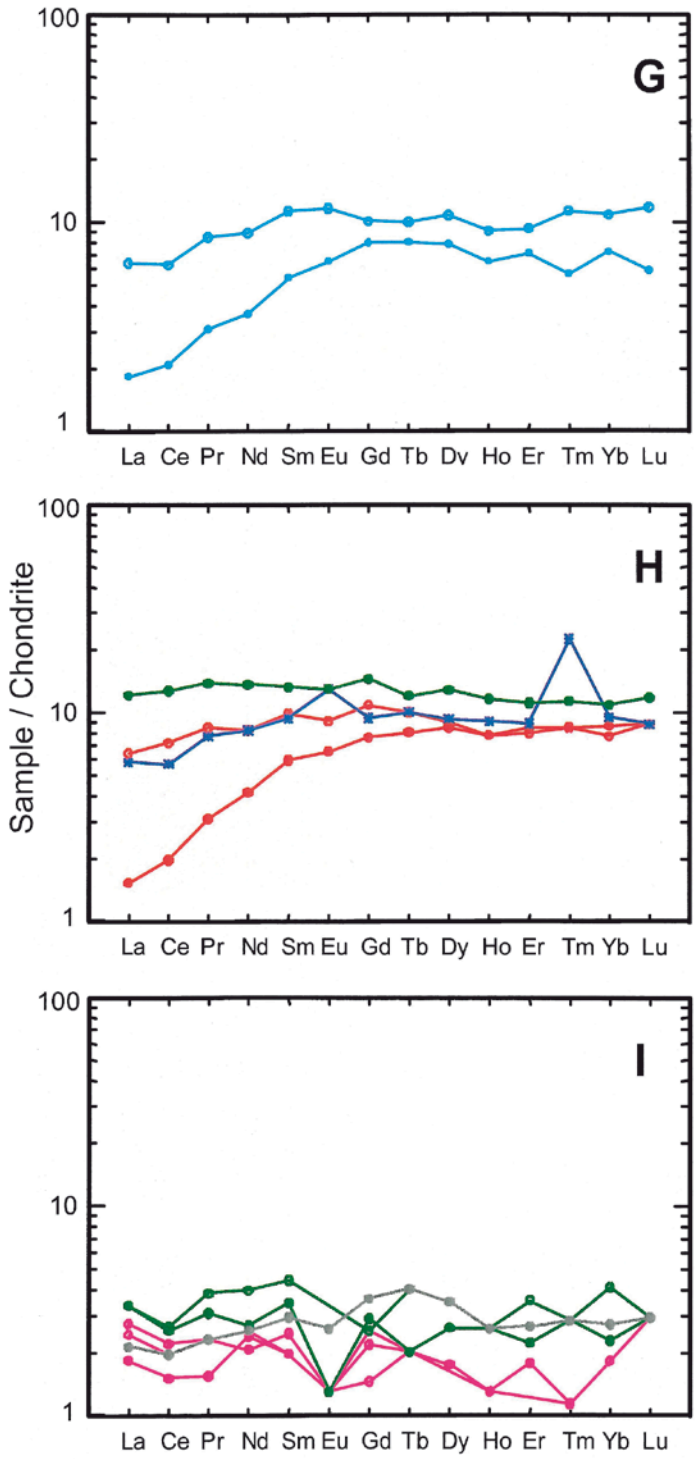


Figure 18. Continued.

Table 7. Average chemical compositions of mafic and ultramafic volcanic rocks of the Kuhmo greenstone belt. mg# see Table 4.

		tholeiitic basalt		**Cr basalt**		**high-Cr basalt**		**komatiitic basalt**		**komatiitic ultramafic flows**	
		average	median	**average**	median	**average**	median	**average**	median	**average**	median
number		**75**		114		**30**		**55**		**179**	
SiO_2	wt.%	**51.28**	51.22	**49.61**	51.23	**54.52**	54.47	**47.14**	47.85	**43.85**	44.00
TiO_2	wt.%	**0.84**	0.80	**0.58**	0.59	**0.58**	0.60	**0.55**	0.54	**0.35**	0.32
Al_2O_3	wt.%	**15.63**	15.53	**13.29**	13.75	**13.10**	13.36	**11.54**	11.85	**7.64**	7.71
FeO	wt.%	**11.30**	11.40	**16.01**	13.96	**10.92**	9.65	**11.15**	10.85	**10.18**	9.93
MnO	wt.%	**0.20**	0.20	**0.62**	0.47	**0.29**	0.24	**0.23**	0.21	**0.18**	0.18
MgO	wt.%	**7.61**	7.78	**6.74**	6.44	**7.31**	7.25	**12.42**	12.30	**22.51**	22.90
CaO	wt.%	**9.89**	10.06	**11.03**	10.68	**10.29**	9.68	**9.67**	9.61	**6.79**	6.90
Na_2O	wt.%	**2.83**	2.71	**1.60**	1.55	**2.37**	2.38	**1.83**	1.63	**0.23**	0.13
K_2O	wt.%	**0.29**	0.22	**0.31**	0.22	**0.22**	0.20	**0.15**	0.12	**0.03**	0.01
Cr_2O_3	wt.%	**0.04**	0.04	**0.13**	0.14	**0.34**	0.31	**0.19**	0.16	**0.36**	0.37
P_2O_5	wt.%	**0.07**	0.07	**0.05**	0.05	**0.06**	0.05	**0.05**	0.04	**0.03**	0.02
OxSum	wt.%	**98.80**	100.00	**99.67**	100.00	**99.22**	99.99	**94.91**	95.70	**92.16**	92.64
Ni	ppm	**135**	137	**1161**	590	**595**	535	**431**	345	**1077**	1050
Co	ppm	**80**	70	**63**	60	**109**	95	**98**	90	**110**	100
Cu	ppm	**80**	70	**94**	70	**67**	35	**64**	30	**157**	17
Zn	ppm	**109**	96	**156**	90	**96**	90	**128**	90	**89**	80
S	ppm	**836**	160	**10139**	3860	**1371**	160	**383**	0	**870**	10
Cr	ppm	**303**	303	**920**	972	**2334**	2114	**1319**	1074	**2462**	2508
As	ppm	**16**	10	**12**	10	**16**	10	**11**	10	**48**	10
Ba	ppm	**71**	54	**80**	54	**71**	63	**48**	45	**23**	18
Cl	ppm	**123**	120	**126**	80	**117**	90	**97**	80	**49**	40
Rb	ppm	**12**	9	**11**	8	**8**	6	**7**	6	**3**	2
Sr	ppm	**98**	95	**87**	79	**82**	84	**71**	68	**18**	13
V	ppm	**293**	285	**243**	241	**255**	258	**231**	231	**154**	150
Y	ppm	**15**	15	**15**	15	**12**	12	**10**	10	**7**	7
Zr	ppm	**35**	30	**22**	22	**17**	15	**18**	15	**11**	7
La	ppm	**11**	10	**12**	10	**10**	10	**12**	10	**9**	10
Ce	ppm	**20**	20	**16**	20	**16**	20	**16**	20	**14**	10
Pb	ppm	**16**	10	**9**	10	**15**	10	**13**	10	**8**	9
mg#		**56.77**	56.81	**47.62**	47.96	**57.44**	57.15	**68.72**	68.71	**81.10**	81.79

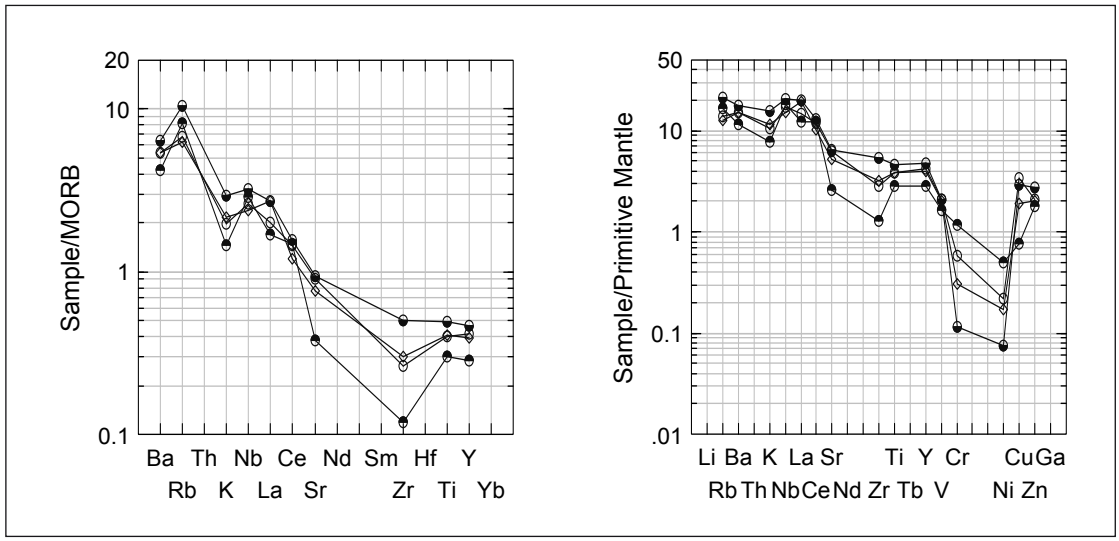


Figure 19. Comparison of trace elements of different basalt types in spider diagrams. Symbols: Cr basalt (O), high-Cr basalt (Θ upper part black); normal tholeiitic basalt (◊); tholeiitic basalts with low Cr contents (Θ lower part black). Analyses presented in the Appendix data-CD.

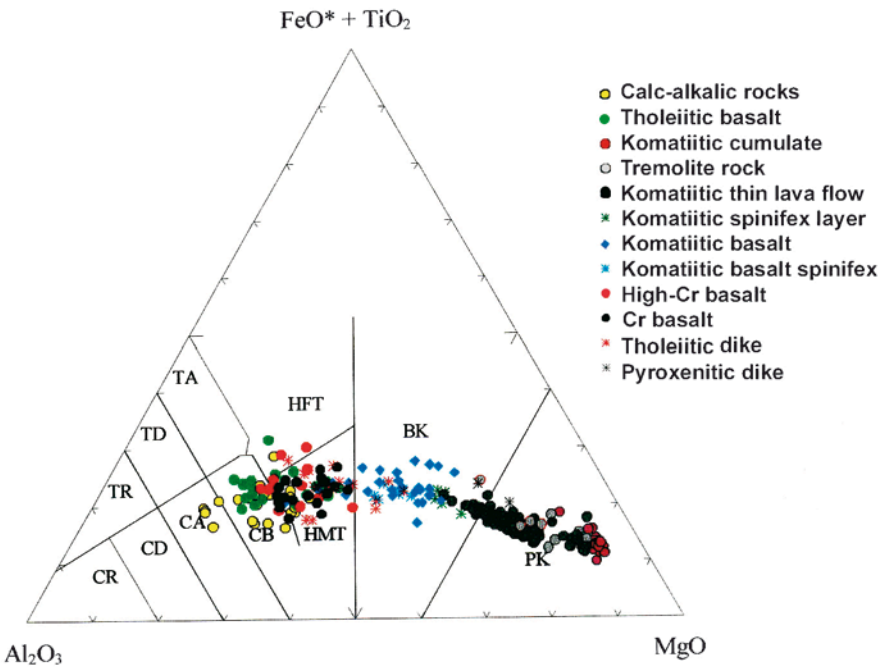


Figure 20. Volcanic rocks of the Kellojärvi area in Jensen cation diagram and x-y diagrams. Calc-alkalic rocks of the Mäkisensuo Formation and Proterozoic dike rocks are also included (Tulenheimo 1999). PK = peridotitic komatiite, BK = basaltic komatiite, HMT = high Mg tholeiite, HFT = high Fe tholeiite, CB = calc-alkalic basalt, CA = calc-alkalic andesite, CD = calc-alkalic dacite, CR = calc-alkalic rhyolite, TA = tholeiitic andesite, TD = tholeiitic dacite and TR = tholeiitic rhyolite.

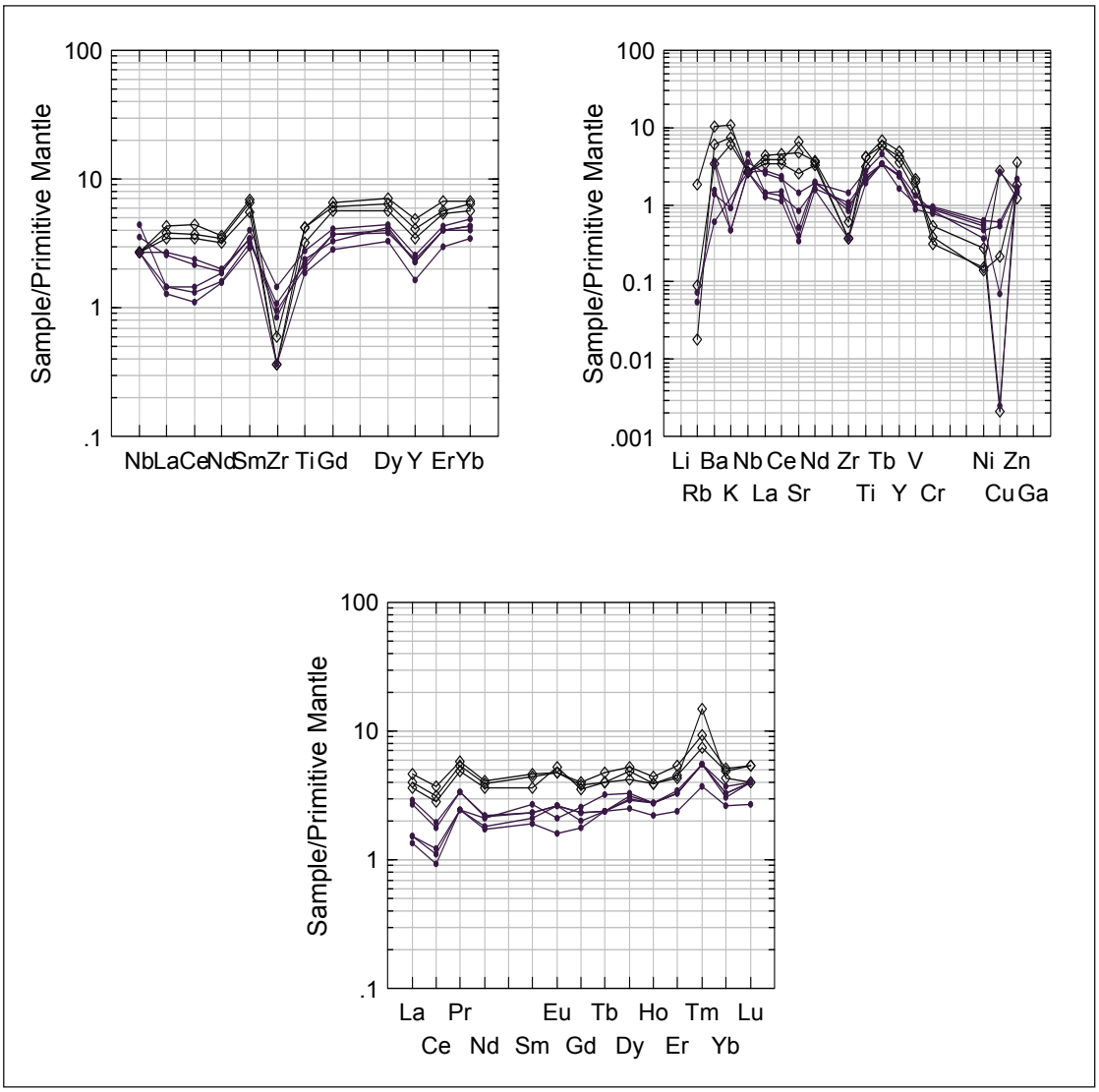


Figure 21. Trace element spidergrams of komatiitic (dot) and komatiitic basaltic lavas (diamond ◊).

the Al_2O_3 contents (Fig. 23). It is noteworthy that a similar variation in TiO_2 content can also be seen between komatiitic basalts and komatiitic lavas. Cumulates of the Proterozoic dike rocks deviate clearly from komatiites and komatiitic basalts in their TiO_2 contents and in Al_2O_3/ TiO_2 ratios. Flat chondrite normalized REE distributions characterize the komatiitic cumulates (Fig. 18I).

High-Cr basalt

MgO contents of this basalt type range from 4.29 to 10.13 wt. %, Cr_2O_3 from 0.20 to 0.66 wt.% and Ni content 170–1680 ppm (Table 7). It is noteworthy that Cr_2O_3 of high-Cr basalt is higher than in the komatiitic basalt, which contains 0.19 wt.% Cr_2O_3 on average. The komatiitic interflow within

Table 8. Average chemical compositions of cumulate rocks of the Kellojärvi area, Kuhmo. Paleoproterozoic dike rocks are also included for comparison. mg# see Table 4.

		adcmulate	meso-cumulate	ortho-cumulate	contact clino-pyroxenite	contact ortho-pyroxenite	komatiitic gabbro	Proteroz. pyroxenite dike	Proteroz. gabbro dike
number of samples		50	75	79	4	6	8	33	20
SiO_2	wt.%	43.04	44.28	47.31	52.12	51.63	51.08	46.73	48.97
TiO_2	wt.%	0.06	0.12	0.26	0.27	0.21	0.32	1.01	1.32
Al_2O_3	wt.%	1.41	2.60	4.62	4.64	4.99	14.92	7.25	14.50
FeO*	wt.%	10.29	10.92	9.75	8.51	7.68	7.68	14.05	12.75
MnO	wt.%	0.16	0.18	0.20	0.25	0.17	0.17	0.32	0.34
MgO	wt.%	44.05	40.10	29.78	20.72	24.64	11.14	17.69	6.53
CaO	wt.%	0.07	0.94	7.34	12.63	9.93	11.92	11.69	12.14
Na_2O	wt.%	0.01	n.d.	0.05	0.26	0.07	1.68	0.58	2.41
K_2O	wt.%	n.d.	n.d.	0.03	0.09	0.17	0.94	0.30	0.88
P_2O_5	wt.%	0.01	0.01	0.02	0.02	0.01	0.03	0.09	0.13
Cr_2O_3	wt.%	0.54	0.54	0.455	0.43	0.44	0.08	0.23	0.02
NiO	wt.%	0.36	0.31	0.185	0.05	0.06	0.03	0.07	0.01
Ox sum*	wt.%	85.46	87.66	91.57	96.50	95.61	97.45	96.32	96.84
mg#		88.4	86.7	84.2	82.7	86.2	73.7	70.5	50.7
Cr	ppm	3159	3222	2852	2877	2884	559	1538	132
Ni	ppm	2395	2117	1314	360	418	255	587	107
Co	ppm	124	96	74	125	132	37	96	59
Sc	ppm	–	9.53	18.5	n.d.	n.d.	47	n.d.	n.d.
V	ppm	33	54	107	150	100	144	204	318
Cu	ppm	6	19	36	16	365	29	84	89
Pb	ppm	8	14	14	28	10	47	145	63
Zn	ppm	75	97	93	178	72	158	274	211
S	ppm	115	174	300	21	729	40	242	446
Rb	ppm	0.4	0.9	2.0	3.7	9.6	40	12	32
Cs	ppm	1.0	0.8	3.0	-	6.7	8.9	5.6	14.1
Ba	ppm	6	10	18	25	106	209	93	408
Sr	ppm	0.6	2.7	7.7	11	10	259	47	167
Ga	ppm	2.3	3.7	5.2	2.8	3.8	7.4	5.2	2.8
Ta	ppm	0.5	0.8	1.4	5.0	3.3	3.3	3.8	5.9
Nb	ppm	1.6	1.6	3.1	7.7	6.6	5.5	9.0	18.0
Zr	ppm	3.1	6.8	14.5	6.0	7.8	20.9	62.7	88.9
Y	ppm	2.4	4.0	6.7	8.3	3.7	8.4	12.5	18.7
U	ppm	0.8	0.6	1.3	2.8	3.0	3.6	2.3	5.0
La	ppm	2.7	4.5	8.3	6.8	4.4	16.5	11.3	19.5
Ce	ppm	4.0	5.8	9.3	11.8	10.2	10.0	24.7	35.1
Cl	ppm	357	64	33	21	19	98	122	286

the high-Cr basalt contains 0.44 wt.% Cr_2O_3 and both rock types display Al_2O_3/TiO_2 values between 19 and 24. In order to study the correlation of Cr contents between other trace elements the analyses of basalts were classified into four groups on the basis of their Cr contents. The results are depicted as spidergrams in Figure 19. Basalts with average tholeiitic compositions and those with anomalously

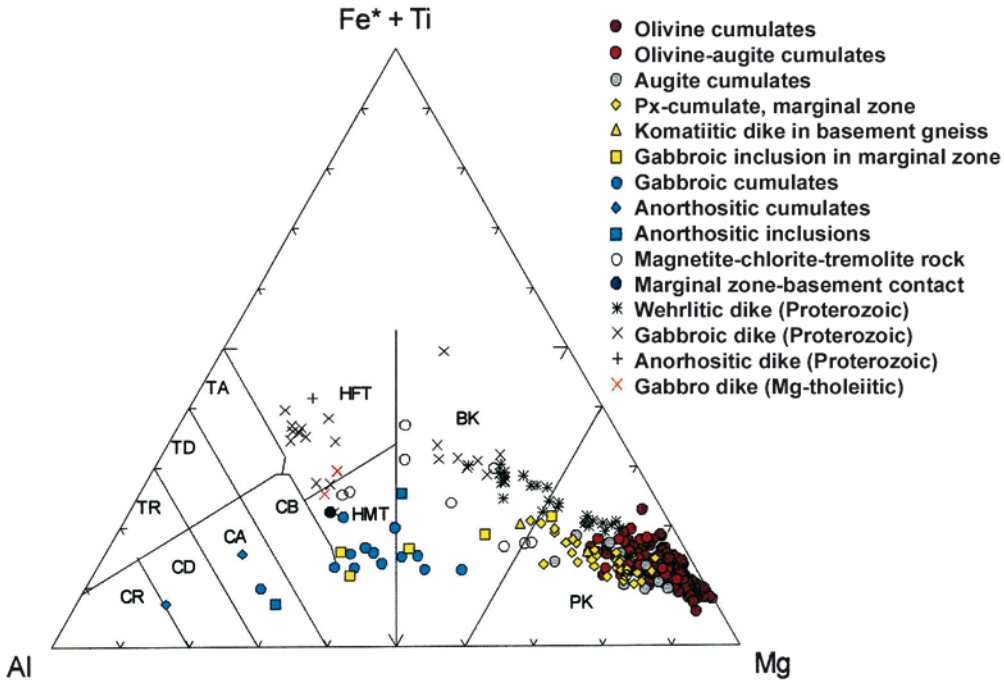


Figure 22. Kellojärvi ultramafic cumulates and fractionated mafic members in the Jensen cation diagram. The Proterozoic dikes are also included (Tulenheimo 1999). PK = peridotitic komatiite, BK = basaltic komatiite, HMT = high Mg tholeiite, HFT = high Fe tholeiite, CB = calc-alkalic basalt, CA = calc-alkalic andesite, CD = calc-alkalic dacite, CR = calc-alkalic rhyolite, TA = tholeiitic andesite, TD = tholeiitic dacite and TR = tholeiitic rhyolite.

low Cr contents display lower concentrations of Ni and higher concentrations of Ti, Y, Zr and Sr than the Cr-rich basalts. REE distribution patterns of high-Cr basalts are almost identical with those of komatiites (Fig. 18F and H), but a slightly negative Eu anomaly characterizes the high-Cr basalts.

Felsic volcanic rocks of the Ronkaperä Formation

The lahar type volcaniclastic deposits of the Ronkaperä Formation include a suite of volcanic rocks ranging in composition from rhyolites to dacites, andesites and basalts (Table 6). The trace element spidergrams (Nieminen 1998) indicate prominent negative Nb_N anomalies normalized both with the values of primitive mantle and average continental crust. The mantle normalized $[Zr/Ti]_N$ values are >1. The concentrations of compatible elements vary according to rock type, but are an order of magnitude higher than the corresponding values of the Taivaljärvi felsic rocks. Accordingly, the negative Nb_N anomaly is more prominent in Ronkaperä than in the Taivaljärvi rocks. Some fragments of the basaltic rocks display high concentrations of Cr, and they were interpreted as clasts of underlying high-Cr basalts (Fig. 24).

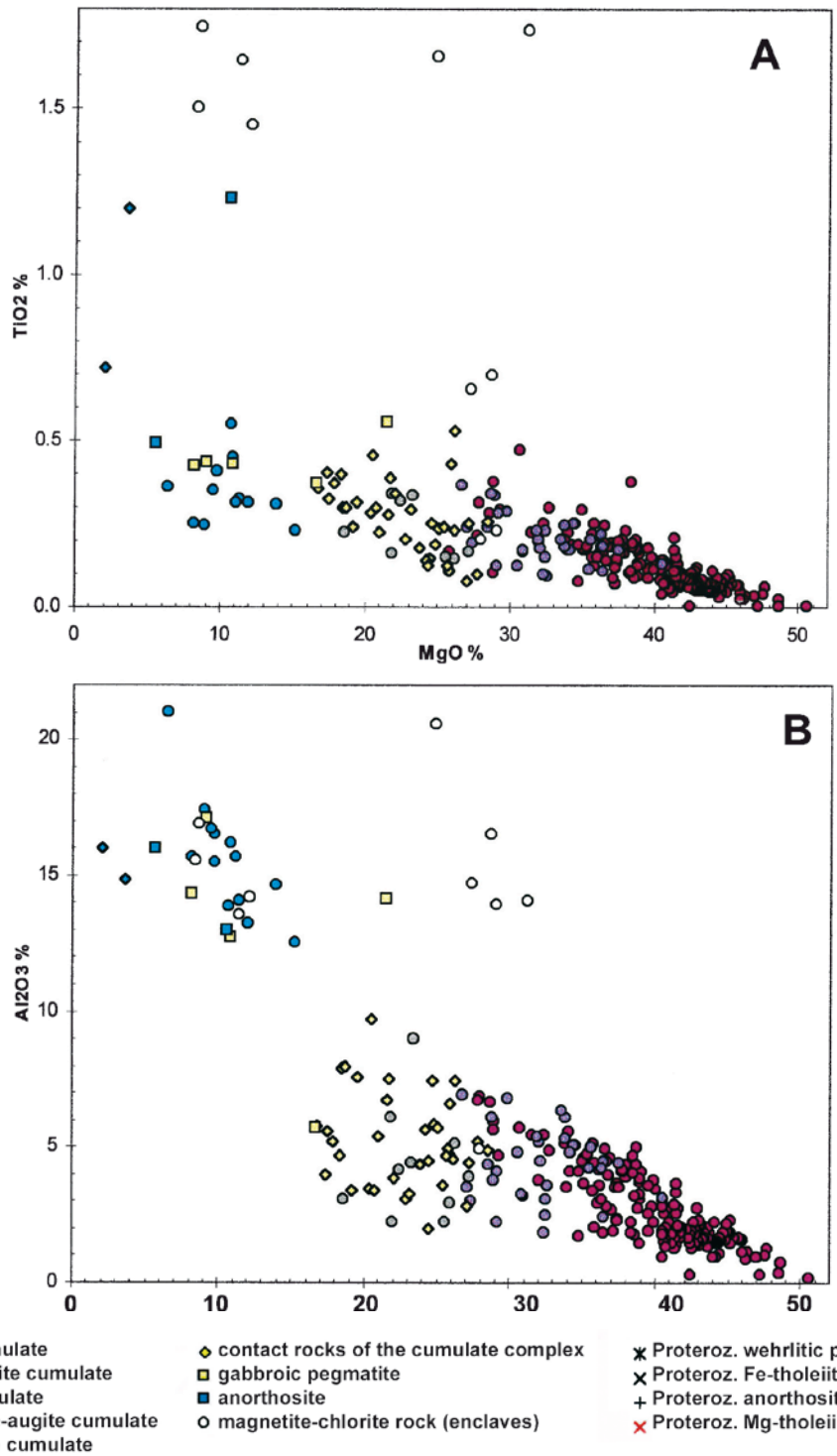
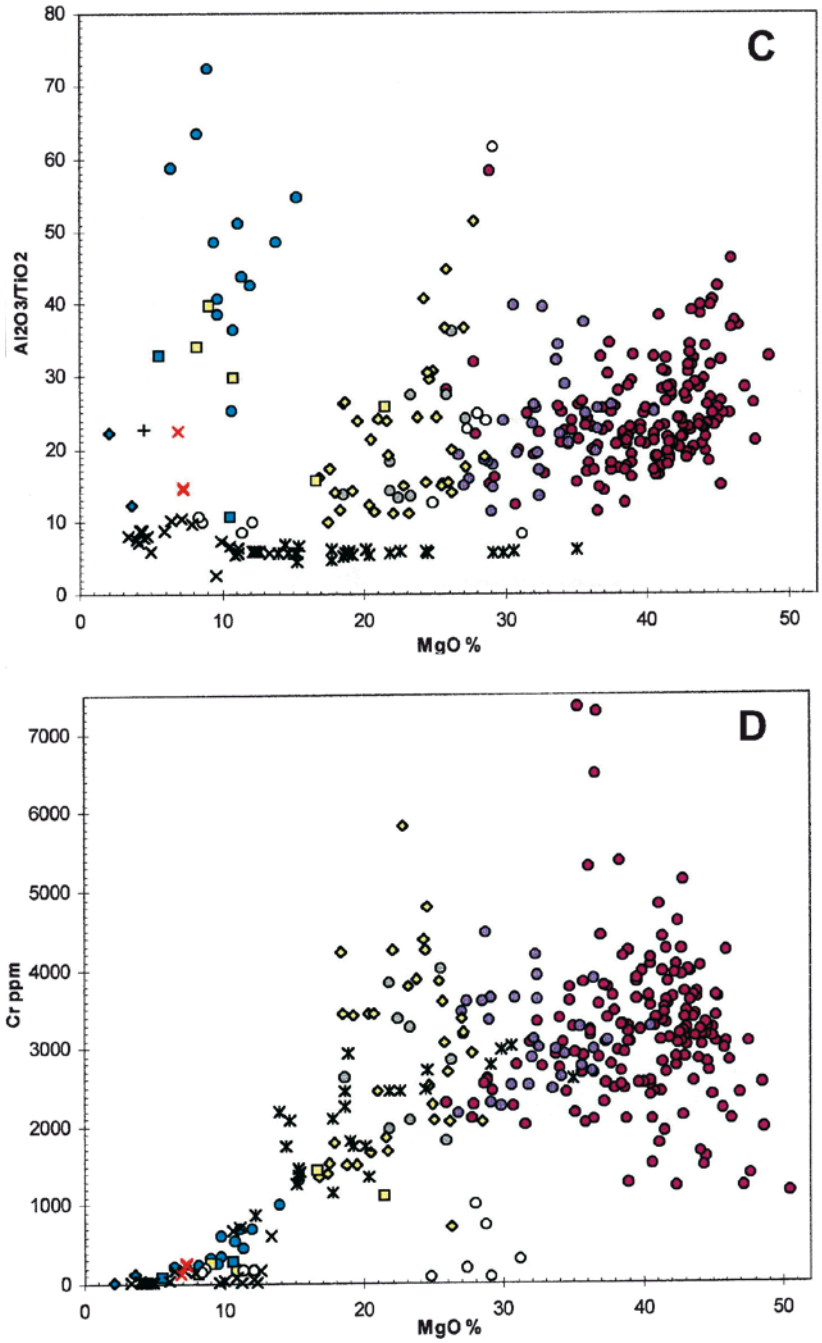


Figure 23. X-y diagrams depict MgO contents *versus* other elements of cumulates of the Kellojärvi komatiitic cumulate complex and Proterozoic dike rocks (Tulenheimo 1999).



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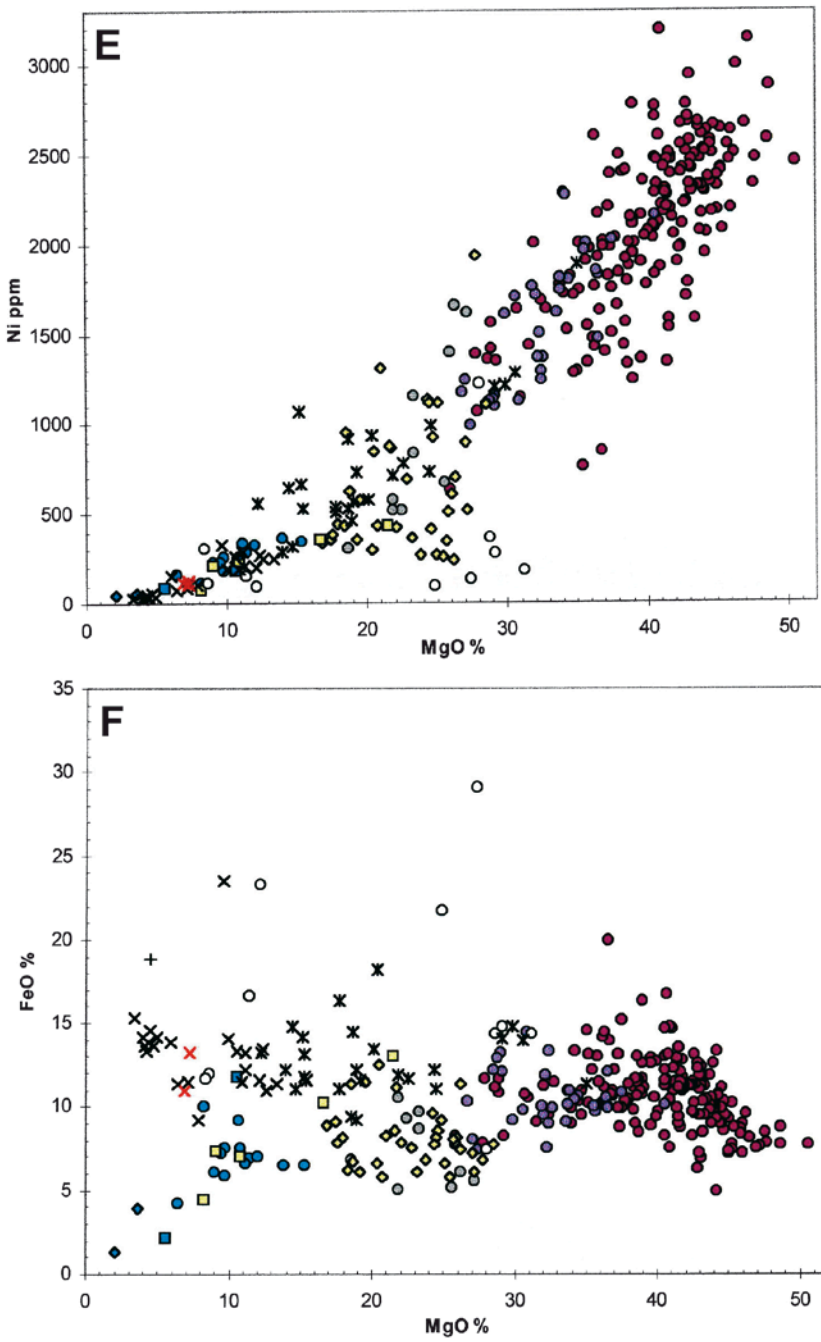

Figure 23. Continued.

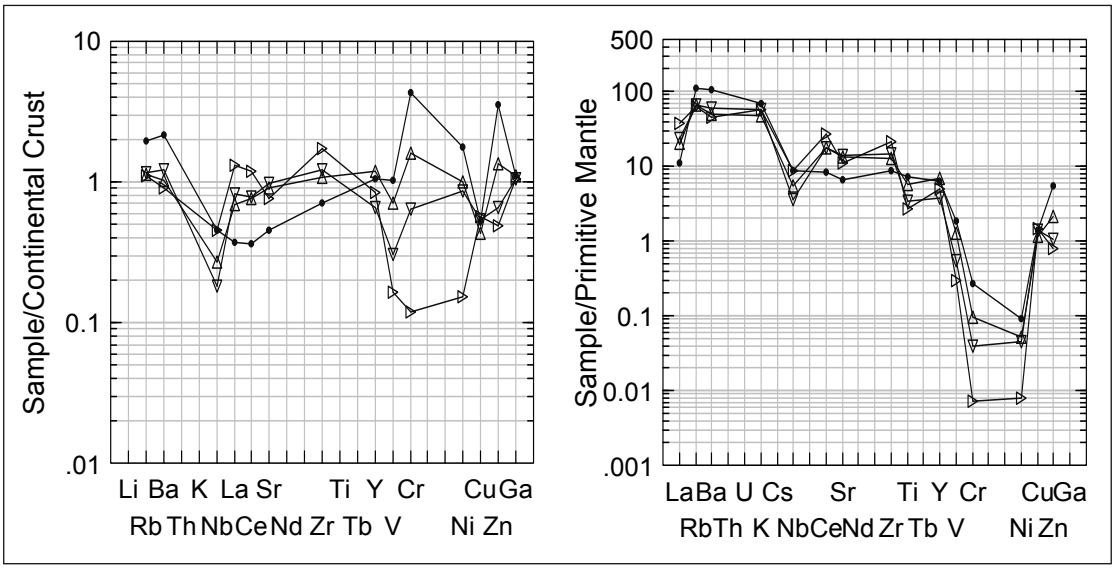

Figure 24. Average trace element compositions of the Ronkaperä Formation rhyolites (▷), dacites (▽), andesites (△) and mafic volcanic rocks (●).

Discussion on the geochemical evolution

The geochemistry of the TTG complex displays a signature similar to subduction- related magmas, although the Nb depletion is more prominent than the value for the average continental crust calculated by Taylor and McClennan (1985). The trace elements of the felsic and intermediate volcanic rocks of the Taivaljärvi area display arc magma signatures, and in this respect they are similar to the surrounding grey gneisses of the TTG complex. The distinctive geochemistry of the felsic volcanic rocks may be the result of partial melting of the TTG complex. Negative Eu_N anomalies in felsic rocks and positive anomalies in the overlying intermediate volcanic rocks prove that plagioclase was left as a residual phase in the initial batch melting of TTG, to form anorthositic cumulates. Based on the data presented by James and Hamilton (1969), low-pressure melting leaves An-rich plagioclase in residue. The process is related to that proposed for the genesis of Lofoten anorthosites by Green et al. (1972). The intermediate rocks of Taivaljärvi were derived via subaequent partial melting from this plagioclase-enriched residual material. $[Nb/La]_N$ values well below those of primitive mantle and $[Zr/Ti]_N$ ratios above the mantle value characterize both felsic volcanic rocks and the TTG rocks.

In case the greenstone belt volcanism is the result of thermal mantle plume, a zone refinement (Harris 1957, McBirney 1987) is the probable process that affects the composition of a melt formed at advanced heat front. In this process the melt migrates with the heat front and concentrates trace incompatible elements, also such as Zn, Pb and Ag, which are abundant in the Koivumäki and Mäkisensuo Formations. Incipient melting at the mantle-crust boundary and participation of mantle in the melt generation is reflected in the main element ratios, from which an example is the high Mg-number in the Tipasjärvi and Mäkisensuo felsic rocks. The compatible elements Cr and Ni retain in the mantle,

if olivine and spinel are present in the residual phases and will be depleted in the melt like in the Tipasjärvi felsic rocks. Instead, the compatible elements may partition in the melt (Mäkisensuo felsic rocks), which is generated with evolved mantle material (MORB), where olivine and spinel phases are missing. Zone refinement process explains the mentioned characteristic geochemical features of the TKS felsic rocks.

Banded chert layers above the initial felsic-intermediate volcanic phase in the stratigraphy of the Taivaljärvi area indicate a break in volcanism. The overlying Pahakangas-type basaltic-andesitic volcanism displays a primitive non-fractionated distribution of REE, although the concentrations are 4–6 times higher than those in the mantle. Distinct depletion of compatible elements, Cr and Ni, indicates that olivine-spinel residue was left in the mantle in the basaltic melt generation. High and variable concentrations of LIL elements may be the result of hydrothermal alteration of submarine pillow lavas, but they could also be concentrated in the basaltic melt fraction if the mantle was undepleted. The $[Nb/La]_N$ ratio is close to the mantle value and this indicates that crustal contamination is minimal.

Komatiites are the only volcanic rocks in the area that display $[Nb/La]_N$ ratios >1. Puchtel et al. (1997) observed the same feature in the komatiites of the Kostamuksha greenstone belt, NW Russia, and on the basis of extensive reference material, they suggested that it indicates an oceanic plateau origin for the lavas. However, in komatiitic basalt, the $[Nb/La]_N$ ratios are below the corresponding mantle values, and the distribution diagram resembles that of Vetreny belt basalts or Kambalda komatiites, which were formed during intra-cratonic rifting (Puchtel et al. 1999, Barnes et al. 2004).

Some authors (see Lesher & Keays 2001) consider that trace elements, such as REE and HFSE (Th, Zr, Nb), are immobile during hydrothermal metasomatic alteration in the ocean floor, but opposite views have also been presented concerning the effect of carbonate alteration (Tourpin 1991, Gruau et al. 1992, Lahaye et al. 1995), especially in cases where a significant glass phase was present in the primary lava. Another mechanism for changing lava composition is magmatic assimilation, which can take place along melt conduits during ascent or between lava and the substrate. Thermal erosion and assimilation of the substrate was demonstrated as a likely process in turbulently flowing hot komatiitic lavas (Huppert & Sparks 1985, Frost & Groves 1989).

If the deviating trace element ratios of komatiites and komatiitic basalts are the result of magmatic assimilation, the assimilated materials must have been quite different, having a high $[Nb/La]_N$ ratio in the case of komatiites and a low ratio for komatiitic basalt. Surrounding Archaean TTG gneisses display low $[Nb/La]_N$, and slightly enriched LREE ratios similar to the corresponding values of komatiitic basalt. These features of komatiitic basalt can reflect assimilation of felsic Archaean crustal material. However, the Zr concentrations of TTG gneisses are relatively high, and the low Zr_N values of komatiitic basalts are thus inconsistent with TTG assimilation. In komatiites, the values of $[Nb/La]_N$ ratios are >1 and in this respect they resemble the Kostamuksha komatiites (Puchtel et al. 1997). A negative Zr_N anomaly and $[Zr/Ti]_N<1$, as well as $[Nb/La]_N<1$, characterize the Pahakangas type basalt, and these values resemble komatiitic basalt. This may reflect a similar source, whereas komatiites originate from the LREE -depleted and Nb -enriched environment. However, more trace elements and isotope assays will be needed to solve this issue.

Depleted Ni and Cr values and slightly enriched Zn and Sr as well as enrichment of LREE in the mantle-normalized spidergram of the first komatiite flow could all be explained as a consequence of contamination as the komatiitic lava assimilated felsic to intermediate substrate material. The Pahakangas type basalt or BIF as a contaminant cannot explain the REE pattern, because both have flat chondrite-normalized REE patterns. Instead, contamination by granitoid material (Viitavaara tonalite) or Mäkisensuo Formation felsic volcanic rocks could explain the LREE enrichment and high Sr values, but only the Mäkisensuo calc-alkalic felsic volcanic rocks explain the Zn enrichment. The low Ni content in the first flow is either the result of low primary Ni

value of the magma, or it could be attributed to equilibration of the melt with sulfides. Combined with the REE patterns (Fig. 18), contamination by sulfide-bearing Mäkisensuo-type sequence seems more plausible. Accordingly, the two ages observed in the zircons of the felsic fragments of the "Small serpentinite" support the idea that the fragments were derived from Mäkisensuo-type felsic volcanic rocks. Being enclosed in hot komatiitic lava, the fragments remelted and crystallized as granodioritic inclusions. The dated zircon crystals were inherited from the original felsic volcanic rock and the cores indicate the age of felsic volcanism, but the rims got their age signature at the process of remelting, and thus indicate age of the komatiite eruption (Peltonen et al., in prep.). The amphibole rock, originally clinopyroxenite, located between the first fractionated komatiite flow and BIF/Pahakangas basalt substrate was probably crystallized from a hybrid melt that had both komatiitic and substrate materials (Fig. 18D).

The olivine composition of komatiitic cumulates can be used to calculate the MgO content of the host magma. Olivines, especially primary magmatic olivines are rare, and cumulates are commonly totally altered to serpentine-amphibole±diopside-chlorite rocks. According to Tulenheimo (1999), the rare primary olivines fall into two compositional groups representing the Fo_{83} as analysed by Eero Hanski from the cumulate sample of Aronniemi, Näätäniemi, and Fo_{89} from Laitala in the Ensilä area (see Fig. 25 for location). Most of the analysed olivines are of metamorphic origin and display high Fo-contents, $Fo_{94–95}$. Serpentinized komatiitic cumulates display typical trends along the olivine control line in the volatile-free normalized MgO versus incompatible element (Al, Ti) diagrams (Fig. 23). Approximation of the fractionated, most magnesian olivine from these diagrams could yield up to 52 wt.% MgO, but the validity of this approximation can be questioned since some iron may have been remobilised from the rock during carbonate alteration and serpentinization processes. Tulenheimo (1999) calculated that the melt corresponding to the primary olivine of Näätäniemi (Fo_{83}) contained 11 wt.% MgO, and that the olivines with $Fo_{89–92}$ crystallized from a melt with 18–23 wt.% MgO. Flow top breccias of komatiitic lavas at Pahakangas yield MgO-values between 21.7–23.3 wt.%, which is in accord to the primary olivine composition of komatiitic cumulate samples. The considerable range of primary olivine compositions could reflect variable compositions of the parental melt, and in this case the melt composition range between komatiites and komatiitic basalts.

The field relationships of clinopyroxenitic and orthopyroxenitic contact varieties of the Kellojärvi cumulate complex indicate that the clinopyroxenite was the first phase to be crystallized. The composition of clinopyroxenite resembles that of the pyroxenitic interlayer between the first komatiitic flow and the Pahakangas Formation basalts and BIF layers. The sequence from contact clinopyroxenite to orthopyroxenite and further to dunite (Fig. 11) indicates a sequential compositional change in $(FeO+MgO)/SiO_2$ atomic ratio of the characteristic main minerals from 1:2 in clinopyroxenite to 1:1 in orthopyroxenite and further to 2:1 in dunite. The pyroxenitic contact varieties probably represent the first magmatic pulse that was contaminated by crustal material. The sharp contact features between olivine orthocumulate and pyroxenite can be interpreted as the result of (thermal) erosion, which indicates a time gap between the first pulse of contaminated magma and the magma pulses that produced olivine cumulates. The existence of large partly assimilated rafts of mafic lava in the lowermost olivine orthocumulate provides evidence that cumulates formed at or near the earth surface.

At a late stage of the greenstone belt evolution mafic melt was intruded among the ultramafic cumulates and fractionated to form a layered sequence of pyroxenite, gabbro and anorthosite, for example in the Niittylahti area (see Fig. 25 for location).

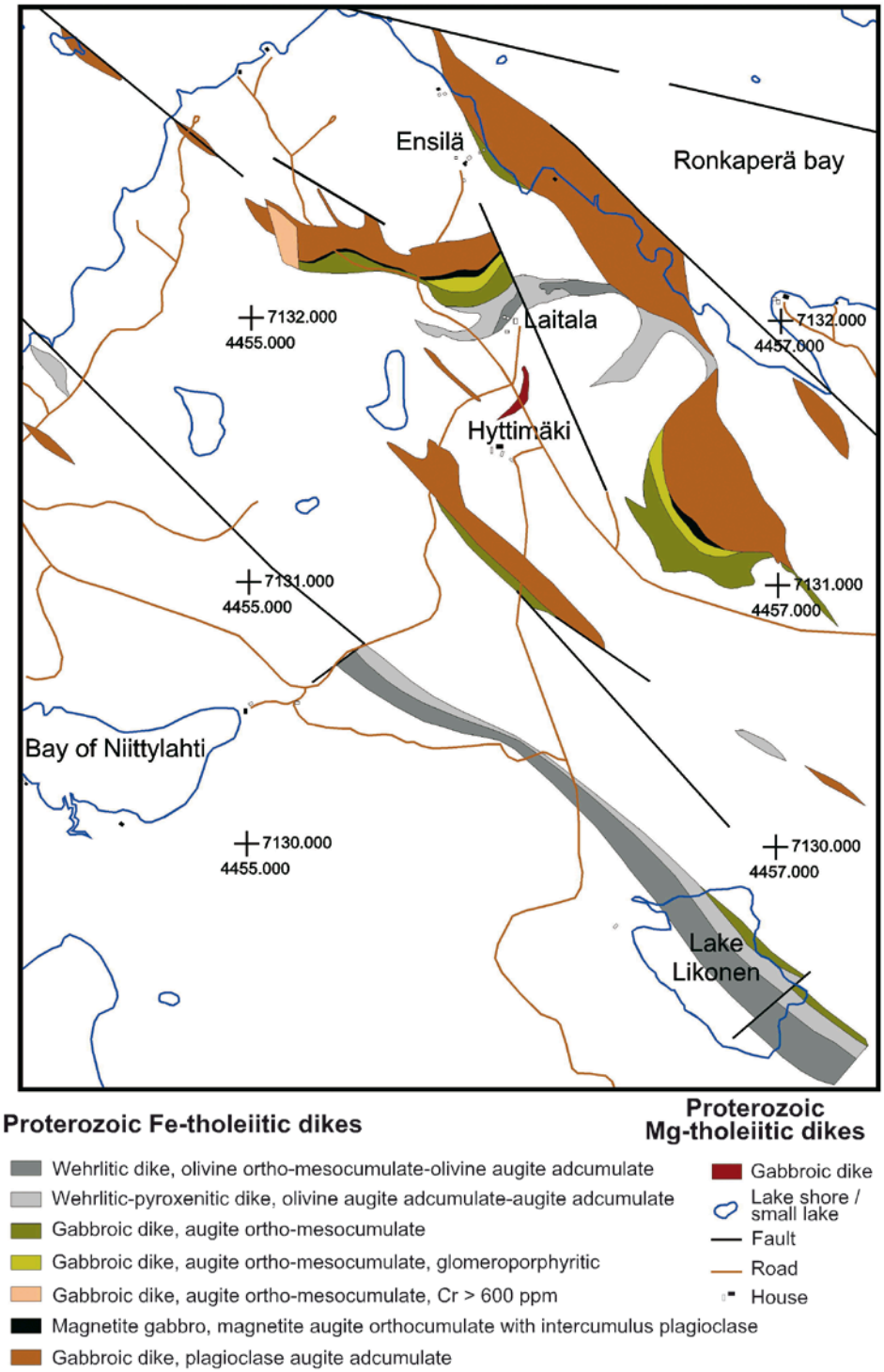

Figure 25. Distribution of Paleoproterozoic dike rocks and related layered mafic intrusions in the Kellojärvi area (Tulenheimo 1999). Only dike rocks are coloured in the map.

Post-greenstone mafic and felsic intrusive rocks

The greenstone belt is intruded by weakly foliated granodiorite and tonalite, frequently sanukitoid in composition (Käpyaho 2006, Heilimo et al. 2007), the sanukitoids are most prominent in the margins of the greenstone belts. Additionally to the west of the belt, the weakly foliated leucocratic intrusions, mainly granodiorite in composition are more prominent than to the east, probably reflecting that the leucocratic igneous rocks intruded high up in the crust since the crustal erosion level is deeper in the east (Yliniemi 1986). Luukkonen (1992) correlates the generation of these granitoids to the D_3 stage of regional deformation, and that D_3 faults and shear zones controlled their emplacement even a long time span after the D_3 deformation. The granitoids display a calc-alkaline fractionation trend with high K, Rb and LREE and initial Sr isotope ratios (0.7044–0.7049) suggesting deep crustal derivation by partial melting of tonalite or siliceous granulite, although the melt migrated far away to the upper crustal levels (Luukkonen 1992, Martin 1987, Horneman et al. 1988). The Moisiovaara mafic sill (Luukkonen 1988) yielded an age of 2790±18 Ma for the mafic tholeiitic volcanism, and we argue that the age 2771±8 Ma obtained from the zircon rims of granitoid enclaves of the "Small serpentinite" (Peltonen 2007, pers. com., Peltonen et al., in prep.) indicates the age of komatiitic volcanism. Hence there is an interval ranging from 20 to 30 Ma between the main volcanic phase of the greenstone belt (2770 Ma) and the felsic plutonism (2750 Ma). On the other hand, the age of felsic porphyry dike intruding the Siivikkovaara mafic volcanic rocks, 2770±30 Ma (Tourpin 1991), the 2774±8 Ma age of the Kilpasuo felsic volcanic rocks at SGB and the age of the Viitavaara tonalite, 2785±7 Ma (Käpyaho et al. 2006) prove that also a felsic intrusive/extrusive phase was coeval with mafic volcanism. The felsic (sub)volcanic phase with associated sediments is well documented between tholeiitic and komatiitic basalts in the Kiannanniemi area (Fig. 1) close to the Hietaharju and Peura-aho Ni-Cu deposits. Vaasjoki et al. (1999) and Käpyaho et al. (2006) concluded that, in addition to the 2750–2700 Ma pulse of felsic mainly sanukitoid igneous rocks, there was also a pulse of granitoid magmatism at 2700–2680 Ma (leucogranites and granodiorites), which caused regional metamorphism, fluid circulation and resetting of Rb-Sr and whole-rock Pb-Pb age data.

Tonalites, trondhjemites and granodiorites intersecting the greenstone belt display a calc-alkaline fractionation trend with somewhat higher K, Ba, Zr and Y concentrations and lower Sr and especially Cr and Ni concentrations than paleosomes of gray gneisses (Fig. 14). Tonalites display a more fractionated REE pattern than granodiorites, which, in turn, display higher values and more flat distributions of HREE. Tonalites also display slightly U-shaped HREE patterns.

Paleoproterozoic rapakivi-type granite batholiths (Tuliniemi granite) are present to the east of the KGB (Fig. 1). One of the putons yields an age of 2435±12 Ma, and Rämö and Luukkonen (2001) consider them coeval with the Paleoproterozoic layered mafic complexes of Koillismaa (Alapieti 1982).

Linear Paleoproterozoic mafic dikes and dike swarms trending E-W, NW-SE and NE-SW transect the Late Archaean TTG granitoids and the TKS greenstone complex (Vuollo and Huhma 2005, cf. Fig. 2). Commonly within the greenstone belts, the dikes contain xenoliths of Archaean mylonitic felsic volcanic rocks or other rock types with various Archaean structural features, which testify that the major phases of deformation of the TKS complex were late Archaean in age. Chemical compositions of the dikes range from boninitic to Fe-tholeiitic and further to low-Al-tholeiitic (Kilpelä 1991). In the granitoid areas, the dikes are linear, non-fractionated and of constant thickness, whereas locally in the greenstone belt they widen to form fractionated layered gabbro-wehrlite intrusions of considerable thickness (Fig. 25). The layered dike east of Ensilä has been studied in detail (cf. Hanski 1986). At Ensilä, the ultramafic cumulates are wehrlites (Cr 1800–3000 ppm) and they are overlain by gabbroic augite orthocumulate with intercumulus plagioclase (Cr<100 ppm), magnetite gabbro, and the uppermost plagioclase-augite cumulate. A wehrlitic-

pyroxenitic dike that extends northwestwards from the Lake Likonen (Fig. 25, see also Fig. 9C) was dated by the Sm-Nd method (isochron) at 2125 ±75 Ma (Tulenheimo1999). The Proterozoic mafic and ultramafic cumulates differ markedly from the Archaean komatiitic cumulates in their Al_2O_3/TiO_2 values, which are close to 6 (see Table 8).

Proterozoic overprinting

The rocks of the TKS complex were deformed and metamorphosed during successive events in Archaean time, as described by Luukkonen 1992. On the basis of trace element geochemistry and isotope systematics, Gruau et al. (1992) considered that the TKS belt experienced another phase of deformation and metamorphism in Paleoproterozoic time, during which intense fluid activity reset the whole trace element distribution. Our study proves that in terms of limited geochemical resetting and metamorphism this may be true, since the majority of the Paleoproterozoic mafic dikes intersecting the greenstones and granitoid areas are metamorphosed and deformed, and therefore these processes must have likewise affected the Archaean wall rocks, too (see also Kontinen et al. 1992). The overall geometry of the Paleoproterozoic intrusions including the development of thick fractionated layered complexes in the greenstone areas indicates that the greenstones and granitoid areas responded differently to the stress field accompanying dike emplacement. The greenstones thus allowed space for the preferential accumulation and fractionation of mafic melt by accommodating stress release coeval with the intrusion of dike swarms. The Paleoproterozoic tectonic reactivation of late Archaean zones of weakness is also consistent with localization of fluid flow in shear zones and at the contacts of Paleoproterozoic dikes, causing local alteration, recrystallization and small-scale migration of elements. This may be the case in the ultramafic-mafic rock suite analysed by Gruau et al. (1992) at the Siivikkovaara hill, where a Paleoproterozoic mafic dike intersected the komatiitic lava sequence, resulting in contact metasomatism and fluid-rock interaction that disturbed the local trace element spectra.

Metamorphic contact reactions, alteration and element transport across the contact can also be observed at the contacts of a mafic dike intersecting the Small Serpentinite (Fig. 7). The originally mafic dike was altered to chlorite-magnetite rock and the serpentinite wall rock experienced metamorphic increase of silica, Ca and fractionation of REE to form zones characterized by talc and amphiboles along both margins of the dike. Similar alteration, as seen in chlorite-magnetite rock, also characterizes mafic enclaves in ultramafic cumulates.

EVOLUTION OF THE GREENSTONE BELT

According to Martin et al. (1984), the tonalite-trondhjemite gneisses (TTG) of the granitoid area originated by partial melting of a primitive oceanic crust that was metamorphosed to garnet amphibolite during subduction. They considered that the greenstone belt volcanism was related to a rift zone and deposited on a continental crust, but due to the density imbalance the heavy mafic volcanic rocks subsided (“sagducted”) deep into the crust to a level of neutral buoyancy and formed a folded synclinorium.

Piirainen (1988) suggested that all the material of the greenstone belt fractionated from the late Archaean mantle and that the rocks had had a very short crustal residence time, and that they do not contain remelted Archaean crustal material. He also considered that the granitoids of the TTG series formed in a subduction zone related to Archaean plate tectonic processes, and that the bimodal volcanism of the greenstone belts formed within a volcanic island arc above a subduction zone. According to this model the continental crust

became thick and stable at 2700–2600 Ma, such that subduction ceased or was transferred elsewhere. The mobile felsic and mafic crustal materials were in density imbalance, so that gravitational equilibrium was restored by diapiric rise of the light felsic intrusions and subsidence of the mafic materials to synclinoriums to form the greenstone belts. The model thus follows that as proposed by Martin et al. (1984). Later on, based on mineralogical evidence, Liipo et al. (1994) suggested an ophiolite origin for the Kellojärvi ultramafic complex.

Luukkonen (1992) linked the magmatic activity of the TKS greenstone complex to a rifting caused by a mantle thermal plume (Campbell et al. 1989, Campbell & Griffiths 1990, White & McKenzie 1989). According to the structural model by Etheridge et al. (1988), incipient rifting thins cold continental crust and the first volcanoes are felsic fissure eruptions, or local single cones, but with time the eruptions develop basaltic and ultramafic in composition, and thinning of the crust results in the formation of a rift graben. Finally, the mantle plume and related igneous events increase the temperature of the crust and cause extensive melting of the crust.

Figures 26 and 27 depict the stratigraphic scheme and the evolution of the Kuhmo greenstone belt. An intracratonic rift model and the subsequent D_3 deformation are appropriate for the symmetrical synclinal structures of the greenstone belts, as well as for the evolution of depositional environment from subaerial volcanism to shallow water and

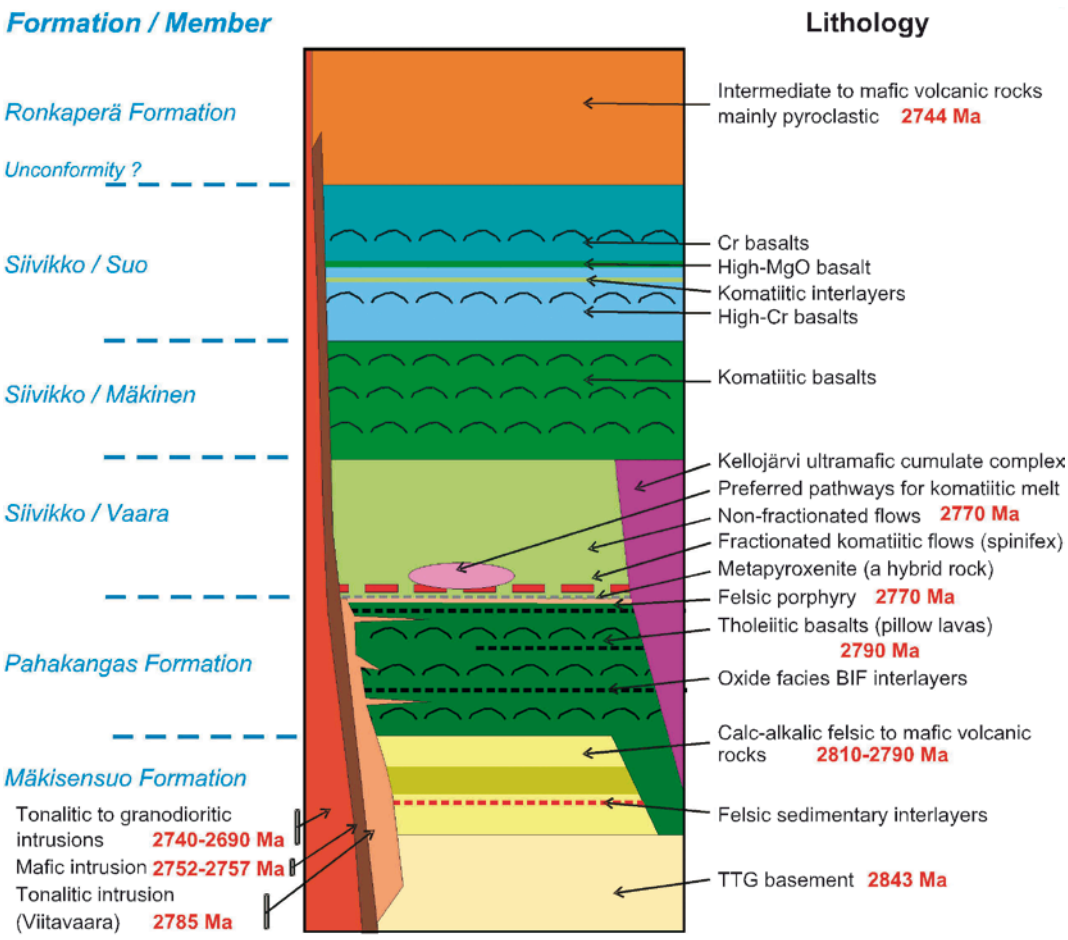

Figure 26. Stratigraphic scheme of the Kuhmo greenstone belt.

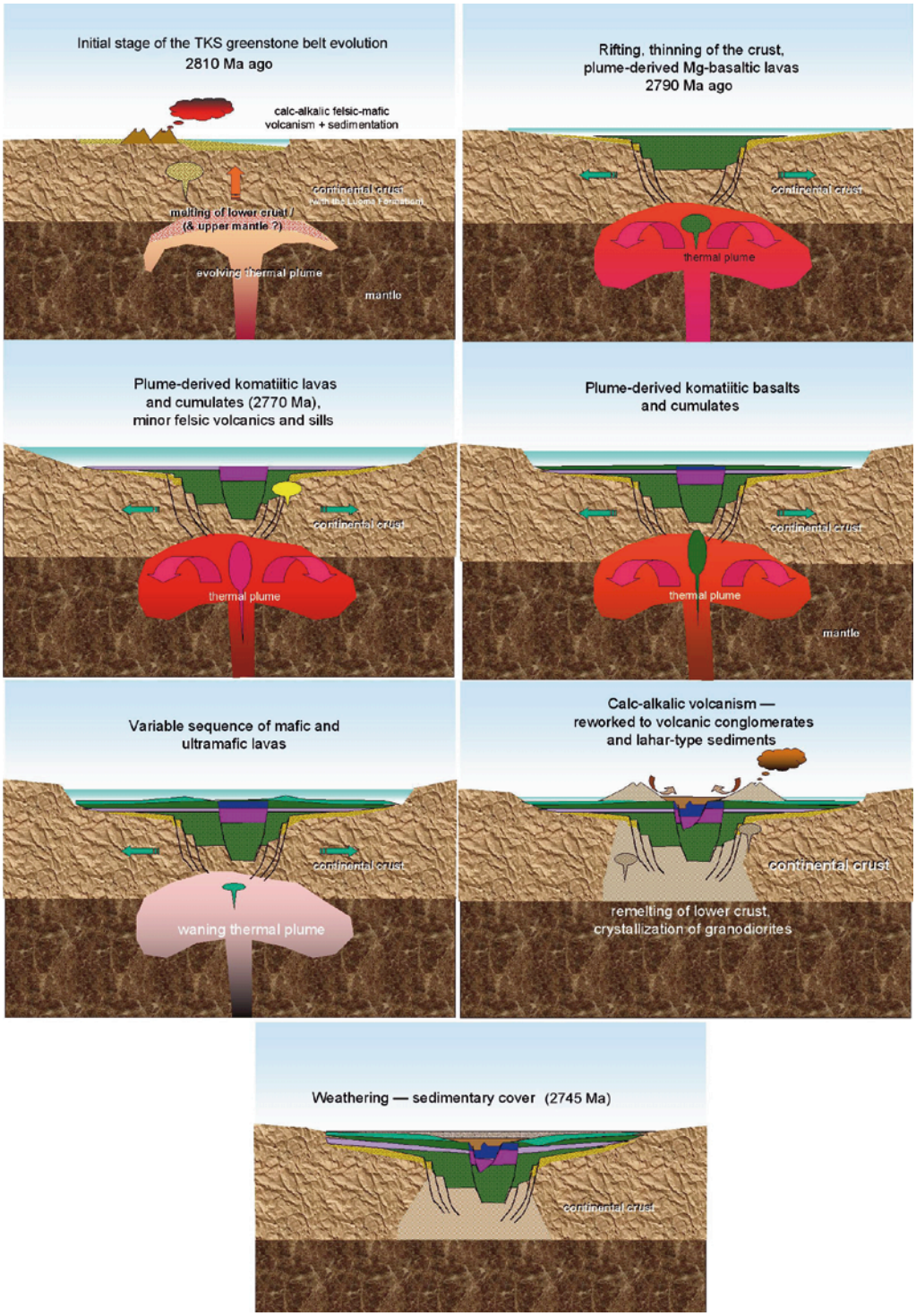

Figure 27. Schematic evolution of the TKS greenstone complex. The Luoma and Ruokojärvi Formations deposited and deformed prior to the TKS greenstone complex.

further to deep water and finally a reversion to shallow environment. The relief was probably not bold and the graben very deep since the hydrothermal activity related to the felsic volcanism evidence of boiling of fluids and the upper parts of the basaltic sequence display vesicular textures, which may reflect, although not reliable proof, of shallow water. The rafts and altered inclusions composed of intermediate to mafic volcanic rocks of the Mäkisensuo and Pahakangas Formations at the marginal parts of the Kellojärvi komatiitic olivine cumulates testify to the extrusion of komatiitic melt through the rocks of the Mäkisensuo and Pahakangas Formations. This indicates that cumulates deposited at or near the earth surface on top of the volcanic rocks or pre-greenstone granitoids. Early olivine crystals or seeds of crystals loaded the flows and then accumulated at the basal parts of the channels. Eruption through the continental crust accounts for the contamination of komatiites by felsic material, which is well documented at the margins of the Kellojärvi ultramafic complex. Felsic contamination of komatiitic volcanic rocks is also evident in the Pahakangas-Siivikkovaara stratigraphy by the pyroxenitic initial flow. The first komatiitic flows were ponded and fractionated and subsequent flows locally eroded the underlying flows indicating a time interval between the first flows. The upper flows are not fractionated since they erupted without major time intervals and did not pond or carry considerable amounts of crystallized olivine. The spinifex A-zone of the first fractionated flow is depleted in nickel, when compared to subsequent flows, indicating that the first flow interacted with sediments and became contaminated by sulfidic materials during their ascent to their present position. Felsic porphyry sills at the lower contact zone of thick komatiitic lava piles or close to cumulate contacts (Ensilä) could indicate local heating of the granitoid substrate caused by hot komatiitic eruptions.

Anorthosite is present as intensely altered xenolithic inclusions in the ultramafic cumulate northwest of the Ensilä area (Fig. 11A). The xenoliths could be rafts carried by the melt from a plagioclase cumulate at the basal part of the crust. Another possibility is that they represent the depleted crustal material from which the first phase of felsic volcanic rocks was segregated and left the plagioclase residue, as was suggested above for the early evolution of the Koivumäki Formation in the Tipasjärvi greenstone belt. Accordingly, the plagioclase megacrysts of glomeroporphyritic basalts at the upper levels of the Pahakangas sequence could also be xenocrysts derived from the anorthositic depleted crustal material that the basalt met during ascent.

The available isotope age data presented in this paper indicates that the minimum time span for the evolution of the greenstone belt volcanism was 40 Ma, from 2810 to 2770. The volcanic phase was followed at about 2755 Ma by the intrusions of mafic melt, which locally fractionated to form a layered sequences of pyroxenitic, gabbroic and anorthositic cumulates, such as those met with at Niittyjoki and Niittylahti. Mafic melt experienced felsic contamination during the ascent. Granitoids intruded in several phases between 2750 and 2690 Ma. The intrusion of granitoids was combined with the main contractional deformation phase of the greenstone belt, D_3, which accompanied partial remelting of the continental crust.

In contrast with the Kostamuksha greenstone belt and some other documented greenstones in the eastern part of the Fennoscandian shield in NW Russia, which were formed at a convergent ocean-continent boundary and accreted to older crust during later collision stages (Puchtel et al. 1999), the widespread indications of contamination by felsic crustal material in the Tipasjärvi-Kuhmo-Suomussalmi greenstone belt testify that the volcanism took place in a geodynamic setting involving eruption through continental crust.

CONCLUSIONS

The geochronological evidence indicates that the supracrustal evolution of the oldest identified greenstone belt succession started about 3007–2950 Ma ago, with the deposition of intermediate-felsic-mafic volcanic rocks and volcaniclastic sediments of the Ruokojärvi and Luoma Formations in the Suomussalmi area. Deformed primary volcanic textures prove that the rocks were deposited in shallow-water or subaerial conditions. Because of the subsequent intensive deformation and present deep erosion level, the rocks of the first greenstone belt succession occurs only sporadically as isolated remnants at the margins of the TKS greenstone complex and further away as banded amphibolites and deformed supracrustal gneisses. The deformation phase D_2 is observed in the Luoma Formation and it separates Luoma from TKS, where the oldest deformation phase is D_3. Metamorphic overgrowths of zircon and deformation sequences of the rocks define an age of 2840–2810 Ma for the prominent D_2 deformation event, which can be observed, in addition to the rocks of the Luoma Formation, in migmatitic gneisses outside the TKS complex (Käpyaho et al. 2007, Huhma 2007, pers. com.). In that way the evolution of the formations of the Luoma -type predates the initiation of the Tipasjärvi-Kuhmo-Suomussalmi greenstone belt volcanism.

Table 9 summarizes the stratigraphic data on the Tipasjärvi-Kuhmo-Suomussalmi greenstone complex and indicates that the greenstone belt evolution was essentially uniform throughout all parts of the greenstone complex.

In contrast to the plate tectonic accretion-collision models of the greenstones of the eastern part of the Fennoscandian Shield (Puchtel et al. 1999), the structures, stratigraphy and geochemical data support a thermal intracontinental plume model for the Kuhmo greenstone belt, as was presented earlier by Luukkonen (1992). The plume-derived volcanism started 2810–2790 Ma ago with initial felsic-intermediate volcanic rocks (Koivumäki, Mäkisensuo, Juurikkaniemi, Vuosanka and Mesaaho Formations). The most voluminous phase of volcanism consists of tholeiites, komatiites and komatiitic basalts (Vuoriniemi, Kallio, Pahakangas, Siivikko, Tervonen and Saarikylä Formations) and erupted in the deep to shallow water rift basin. The time interval for this stage is 2790–2770 Ma.

Formation of ultramafic melt, with up to 24 wt.% MgO, requires high temperatures and melting of olivine residue in the mantle. The conditions are anomalous for accretionary plate boundaries and can be attained with extra heat flow and thermal mantle plume. Besides mantle melting, the evolving thermal plume left its marks in the whole igneous sequence with incipient crustal melting in advanced heat front resulting in felsic volcanism, and later on melting of the upwelling mantle producing tholeiitic basalts and finally the melting of mantle residue bringing about extrusion of komatiites and komatiitic basalts. We consider that zone refining process (Harris 1957, McBirney 1987) was associated with the crustal melting, and the initial melt concentrated trace incompatible and chalcophile elements, such as Zn, Pb, Ag, which are abundant in Koivumäki and Mäkisensuo Formations. High Mg-number of the Mäkisensuo felsic rocks indicate that mantle rocks participated in the initial phase of felsic melt formation.

At the end or coeval with the main volcanic period, outside the TKS proper, tonalite intrusions, such as the Viitavaara tonalite (Käpyaho et al. 2006), were emplaced into the migmatitic Archaean crust. During late-stage vanishing plume activity, felsic-intermediate subaerial or shallow-water eruption centers formed at the rift margins. Rapid erosion and steep topographic relief favoured redeposition of the tuffs and tuffites to lahar type conglomerates and volcaniclastic sediments (Kokkoniemi, Ronkaperä and Huutoniemi Formations) into structurally controlled, fault-bounded synclinal basins (sag-ponds or pull-apart basins). This took place after the ultramafic and mafic volcanic eruptions at about 2745 Ma ago, but the relationship of the Ronkaperä Formation to felsic intrusive phases remain to be determined.

In the time span from 2750 Ma to 2690 Ma granodiorites, diorites and gabbros of the Archaean

Table 9. Summary of the stratigraphic data on the Tipasjärvi-Kuhmo-Suomussalmi greenstone complex.

Tipasjärvi Greenstone Belt				Kuhmo Greenstone Belt					Suomussalmi Greenstone Belt					
Stratigraphic Unit	Lithology	Thickness	Age	Stratigraphic Unit		Lithology	Thickness	Age	Stratigraphic Unit		Lithology	Thickness	Age	Relation to deformation
Formation				Formation	Member				Formation	Member				
Kokkoniemi	Mica schists /pelitic sediments; Nurmes paragneisses		2748±8 Ma (greywacke)	Ronkaperä		Pelitic sediments and quartzites, pyroclastic felsic-intermediate volcanic rocks and volcanic sediments	300 m	(2744±34 Ma (greywacke from Petäjäniemi)	Huutoniemi		Pelitic sediments, quartzites, black schists, conglomerates	5 - 40 m	2774±8 Ma (zircon from the Kilpasuo felsic rocks)	Deformed in D3, but not in D2
Kallio	MgO-rich metalavas: komatiites, komatiitic basalts, Cr basalts	200 m		Siivikko			1350 - 1950 m		Saarikylä					Deformed in D3 but not in D2
					Suo	Cr basalts, in Cr-rich part komatiitic interlayers	500 m			*Valkeainen*	Cr basalts			
					Mäkinen	Komatiitic basalts, Kellojärvi cumulates of komatiitic basalts	300 m 300 m			*Rytyskallio*	Komatiitic basalts	200 m		
					Vaara	Komatiitic non-frationated and fractionated flows, komatiitic cumulates	500 m 50 m 300 m	2771±8 Ma (U-Pb age of the rim of zircon crystal from felsic enclave in komatiite)		*Rytys*	Komatiitic olivine ad-meso-orthocumulates, olivine-pyroxene cumulates.	400 m		
						Felsic porphyry sills		2770±30 Ma (felsic sill at Siivikkovaara)			Felsic (sub)volcanic porphyries			
Vuoriniemi	Tholeiitic basalts, metatuff, BIF, black schists, mafic-felsic mixed metatuff	250 m		Pahakangas		Tholeiitic basalts and sills, BIF interlayers	1000 m	2790±18 Ma (zircon age of mafic sill)	Tervonen		Tholeiitic basalts and sills, BIF interlayers	500 m		Deformed in D3 but not in D2
Koivumäki	Felsic tuff and pyroclastic breccias, quartz-porphyry, Ag-Zn-Pb deposit, quartz-kyanite rock ("cap rock" of a volcanic hydrothermal alteration system)	500 m	2790±3 Ma (zircon age from felsic volcanic rock)	Mäkisensuo Juurikkaniemi Vuosanka		Bimodal calc-alkalic mafic-felsic volcanic rocks and sedimentary interlayers	300 m in W 1000 m in E	2798±15 Ma, 2810±48 Ma (zircon ages from Juurikkaniemi and Vuosanka felsic volcanic rocks)	Mesa-aho		Felsic dikes	10 - 40 m	2816±3 Ma (zircon age from felsic dike)	Deformed in D3 but not in D2
Basement gneiss complex	Tonalite-trondhjemite-granodiorite, gray gneisses, banded amphibolites		2832±3 Ma (zircon U-Pb age from Haasiavaara tonalite)	Basement gneiss complex		Banded tonalites-trondhjemites-granodiorites, banded amphibolites		2942±6 Ma (U-Pb age for zircons from D2 mesosome of Lylyvaara migmatite). 2843±18 Ma (U-Pb age of zircon from D2 metamorphic mesosome of tonalitic gneiss), > 3000 Ma (Sm-Nd model age from tonalitic palaeosome)	Basement gneiss complex		Banded tonalites-trondhjemites-granodiorites, and banded amphibolites			D2 deformation at 2843±18 Ma
				Ruokojärvi		Felsic volcanic rock	600 m	3007±7 Ma (U-Pb zircon age of felsic volcanic rock)	Luoma		Felsic, intermediate and mafic lavas, porhyritic dikes, tuffs and tuffites	50 - 1000 m	2942±3 Ma (monazite from quartz porphyry dike), 2943±20 Ma (single zircon U-Pb age from felsic volcanic rock)	Deformed in D3, but D2 not observed

sanukitoid suite intruded into the marginal zones of the TKS complex. According to Käpyaho et al. (2006) the tonalite suite that intruded between 2830 and 2750 Ma formed without marked input of very old crustal material (3500 Ma gneisses), but since the initial ε_{Nd} decreases with decreasing age of the intrusions, the crustal recycling became an important process in the sanukitoid suite of intrusions at 2700–2680 Ma, when large amounts of leucocratic granitoids were emplaced to the west of the TKS greenstone complex.

Rock ages and structural architecture indicates that a relatively uniform kinematic framework prevailed for a long period of time between 2750 Ma and 2680 Ma denoted as D_3 deformation by Luukkonen (1992). The structural framework reactivated several times and controlled different episodes of the igneous activity. The initial phase of the deformation caused high topographic relief, and was followed by rapid erosion resulting in ca. 2710–2690 Ma ago the deposition of greywackes, now known as the Nurmes-type paragneisses (Kontinen 1991). The late-stage D_3 deformation structures initially controlled the location of the Nurmes paragneisses and their migmatisation (Luukkonen 2005).

The last tectonothermal event, as seen in metamorphic growth of zircon in the plutonic rocks and paragneisses, took place at the interval 2 720–2 630 Ma, and initiated the cratonisation of the Archaean crust in eastern Finland (Käpyaho 2007).

ACKNOWLEDGEMENTS

This paper is based on long lasting fieldwork conducted jointly at the Geological Survey of Finland and at the Nickel Exploration Research Group of the Turku University. We acknowledge the fruitful co-operation with Outokumpu Mining Oy and grants from the Outokumpu Oyj:n Säätiö, Ministry of Trade and Industry and the Brite EuRam GeoNickel Programme, which supported the research at the Turku University. We are grateful to Robin Hill, Sarah Dowling and Stephen Barnes at the CSIRO Research Laboratories, Perth, for fruitful and instructive discussions on komatiite volcanology. A great number of geologists and geology students participated in the work, and we here express our thanks to all of them, especially Terhi Tulenheimo, Markku Kilpelä, Jukka Jokela, Jouko Nieminen, Jukka Välimaa, Jyrki Korteniemi and Jyrki Liimatainen deserve special thanks for meticulous work during the field mapping and resolution of specific questions in the Kellojärvi area. We thank Hannu Huhma from the Geological Survey of Finland and Petri Peltonen from the Northland Resources for the use of the isotopic age data, which is not yet published. Critical comments and suggestions by Stephen Foley, Peter Sorjonen-Ward and Kalle Taipale greatly improved the early version of the manuscript and Peter Sorjonen-Ward also corrected the English of the manuscript. We thank the editors Pasi Eilu and Pentti Hölttä for their constructive comments and criticism and also Anni Vuori and Raija Väänänen, who drew some of the figures.

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APPENDIX: DATA CD

Geochemical Analyses of the Archaean Tipasjärvi-Kuhmo-Suomussalmi Greenstone Belt.

Some notes of the analytical data

One of the main goals of this study was the classification and interpretation of volcanic rocks of the greenstone belts. For this purpose we collected a number of analyses of rock samples. The analyses were performed mainly with XRF method, but also a few trace element analyses with more specified methods were done. All the XRF analyses are here collected in the Exel spreadsheet entitled ''Kuhmo XRF'', which includes the sample identification data, indication of sampling target: outcrop/drilling/excavation ''P/K/M'', depth of the sample in drill hole, written description of sample location, field definitions of rock class and rock type, exact northing and easting data of the sampling site (see reference in Fig. 1), and the analytical result. Most of the XRF analyses were performed at the Geoanalytical Laboratory of VTT/Outokumpu Oy and then the samples were finely ground, ignited to volatile-free and pressed to pellets for the analyzing of all the elements. In the ignition some of the sulfide sulfur may be escaped and the indicated S percentages may hence be somewhat reduced. Another set of analyses were done at CSIRO Research laboratories at Perth,W.A., where the samples were fused with flux and the main elements were determined from fused glass discs and trace elements from pressed powder samples. In this method the S values are more realistic than in the VTT assays. The CSIRO analyses are indicated with x in specific column.

Total iron content was indicated in the analytical result either as Fe_2O_3 or FeO, but in the final table the total iron was calculated in all analyses to FeO. The abundance ''0'' means, that the element was analyzed, but the concentration was below the detection limit of the analytical method.

Another Table indicates all the analyzed REE and trace elements. The trace element analyses were performed at Genalysis Laboratories, Perth, W.A. with ICP-MS. Main elements included in this table were determined with XRF method.

The Table ''Ronkaperä'' includes analytical data of the Ronkaperä Formation and the analyses were performed in the Thesis work of Jouko Nieminen (1998). The analyses were done at CSIRO laboratories with XRF.

The collection of analyses also includes the table entitled ''Taivaljärvi''. It contains the analytical data of the volcanic sequence hosting the Taivaljärvi Zn-Ag-Pb deposit, and the data was first published in Papunen et al. (1989).

The terms used in the classification of rock types are included in the table entitled ''Dictionary''.

The Authors

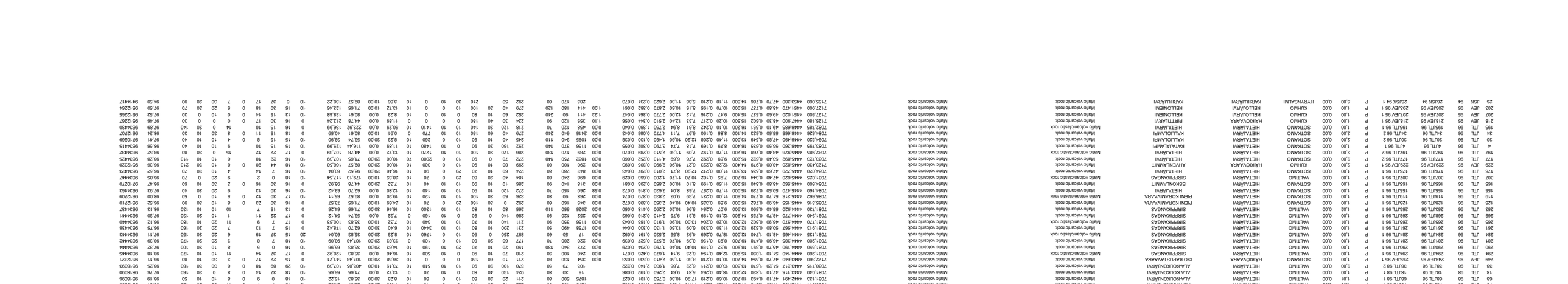
Obs Nr.	ID	Year	Sample id	Sample id 2	K/P/M/L*	Probe Nr.	Depth m	Commune	Locality	Target	Rock class	Rock type
161	TTT	96	161TTT 96	161TTT 96 3	P	3,01	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI E	Anorthositic dike	Anorthosite
145	EJL	93	145EJL 93	145EJL 93 5	P	16,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Gabbroic dike	Albite gabbro
20	SMS	60	20SMS 60	20SMS 60 5	K	0,00	153,95	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Amphibole-chlorite rock
20	SMS	60	20SMS 60	20SMS 60 5	K	0,00	175,25	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Amphibole-chlorite rock
23	TOH	95	23TOH 95	23TOH 95 1	P	1,00	0,00	KUHMO	VUOSANKA		Mafic volcanic rock	Amphibolite
14	SMS	70	14SMS 70	14SMS 70 5	K	0,00	90,25	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Mafic volcanic rock	Amphibolite
103	JTL	95	103JTL 95	103JTL 95 2	P	1,00	0,00	KUHMO	RONINKANGAS	RONINKANGAS	Mafic volcanic rock	Amphibolite
132	SPL	97	132SPL 97	132SPL 97 3	P	3,00	0,00	NURMES	JONKERI	MURTOVAARA	Metamorphic rock	Amphibolite
309	JTL	97	309JTL 97	309JTL 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	VALKEALAMPI	Mafic volcanic rock	Amphibolite
264	JTL	97	264JTL 97	264JTL 97 1	P	1,01	0,00	NURMES	KUOHATTI-JONKERI	PURTOVAARA	Mafic volcanic rock	Amphibolite
128	JTL	97	128JTL 97	128JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	MUSTIKKAMÄKI	Mafic volcanic rock	Amphibolite
248	JTL	97	248JTL 97	248JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	PAHANKALANLAMPI	Mafic volcanic rock	Amphibolite
144	JTL	97	144JTL 97	144JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	HILTUSPURO	Mafic volcanic rock	Amphibolite
168	TTT	97	168TTT 97	168TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	KARHIVAARA	Mafic volcanic rock	Amphibolite
20	SMS	60	20SMS 60	20SMS 60 9	K	0,00	193,40	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Amphibolite
233	JSN	95	233JSN 95	233JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HUUHTIKANGAS	Mafic volcanic rock	Amphibolite (tholeiitic)
16	TTT	96	16TTT 96	16TTT 96 3	P	3,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Inclusion / enclave	Anorthosite
25	TTT	96	25TTT 96	25TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Inclusion / enclave	Anorthosite
212	TTT	97	212TTT 97	212TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI N	Inclusion / enclave	Anorthosite
35	VIE	66	35VIE 66	35VIE 66 5	K	0,00	74,20	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Banded iron formation
35	VIE	66	35VIE 66	35VIE 66 5	K	0,00	78,10	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Banded iron formation
11	HP	92	11HP 92	11HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Sedimentary rock	Banded iron formation
8	JSK	93	8JSK 93	8JSK 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Sedimentary rock	Banded iron formation
8	HP	92	8HP 92	8HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Basalt
7	HP	92	7HP 92	7HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Basalt
6	HP	92	6HP 92	6HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Basalt
5	HP	92	5HP 92	5HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Basalt
23	TTT	96	23TTT 96	23TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	Black pyroxenite
181	VIE	65	181VIE 65	181VIE 65 5	K	0,00	319,25	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
35	VIE	66	35VIE 66	35VIE 66 6	K	0,00	107,90	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
34	R	65	34R 0	34R 0 2	K	0,00	73,54	KUHMO	AROLA	AROLA	Sedimentary rock	Black schist
52	VIE	67	52VIE 67	52VIE 67 5	K	0,00	58,60	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
52	VIE	67	52VIE 67	52VIE 67 5	K	0,00	63,55	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
52	VIE	67	52VIE 67	52VIE 67 5	K	0,00	73,90	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
52	VIE	67	52VIE 67	52VIE 67 5	K	0,00	79,50	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Black schist
46	TOH	96	46TOH 96	46TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	LEHTOVAARA	Boninitic dike	Boninitic dike rock
11	TOH	96	11TOH 96	11TOH 96 3	P	2,01	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONNIEMI	Boninitic dike	Boninitic dike rock
11	TOH	96	11TOH 96	11TOH 96 3	P	2,02	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONNIEMI	Boninitic dike	Boninitic dike rock
63	TTT	96	63TTT 96	63TTT 96 2	P	2,02	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Inclusion / enclave	Carbonate rock
8	JSK	93	8JSK 93	8JSK 93 2	P	2,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Sedimentary rock	Chert
20	SMS	60	20SMS 60	20SMS 60 2	K	0,00	40,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Sedimentary rock	Chert
103	TOH	95	103TOH 95	103TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Chlorite dike	Chlorite rock
15	TTT	97	15TTT 97	15TTT 97 4	P	4,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI S	Chlorite dike	Chlorite rock
52	TTT	97	52TTT 97	52TTT 97 3	P	3,01	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Chlorite dike	Chlorite rock
121	JSK	93	121JSK 93	121JSK 93 1	M	5,00	5,00	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Chlorite schist
40	TTT	96	40TTT 96	40TTT 96 3	P	3,02	0,00	KUHMO	KELLOJÄRVI	KIVIHIEKKA E	Komatiitic cumulate	Chlorite schist
1	SMS	60	1SMS 60	1SMS 60 1	K	0,00	76,25	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Metamorphic rock	Chlorite-hornblende rock
1	SMS	60	1SMS 60	1SMS 60 1	K	0,00	84,80	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Metamorphic rock	Chlorite-hornblende rock
1	SMS	60	1SMS 60	1SMS 60 1	K	0,00	92,75	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Metamorphic rock	Chlorite-hornblende rock
1	SMS	60	1SMS 60	1SMS 60 1	K	0,00	135,40	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Metamorphic rock	Chlorite-hornblende rock
119	TOH	95	119TOH 95	119TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Hybrid rock	Chlorite-magnetite rock
2	TOH	93	2TOH 93	2TOH 93 1	P	1,10	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock
2	TOH	93	2TOH 93	2TOH 93 1	P	1,20	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock
2	TOH	93	2TOH 93	2TOH 93 2	P	2,10	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock
2	TOH	93	2TOH 93	2TOH 93 2	P	2,20	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock
141	TOH	93	141TOH 93	141TOH 93 2	P	2,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock
186	JSN	95	186JSN 95	186JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Ultramafic volcanic rock	Chlorite-talc rock
20	SMS	60	20SMS 60	20SMS 60 6	K	0,00	180,60	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Chlorite-talc rock
172	TTT	97	172TTT 97	172TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	HIIDENPORTTI	Komatiitic cumulate	Chlorite-tremolite rock
10	TOH	94	10TOH 94	10TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	KORPISAARI	Mafic volcanic rock	Cr basalt
205	JSN	95	205JSN 95	205JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HUUHTILAHTI	Mafic volcanic rock	Cr basalt
173	JSN	95	173JSN 95	173JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVAL	Mafic volcanic rock	Cr basalt
196	TOH	93	196TOH 93	196TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	JUURIKKALAHTI	Mafic volcanic rock	Cr basalt
77	TOH	94	77TOH 94	77TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
83	TOH	95	83TOH 95	83TOH 95 2	P	2,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Cr basalt
83	TOH	95	83TOH 95	83TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Cr basalt
187	JSN	95	187JSN 95	187JSN 95 2	P	2,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Mafic volcanic rock	Cr basalt
128	TOH	94	128TOH 94	128TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
193	TOH	93	193TOH 93	193TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	JUURIKKALAHTI	Mafic volcanic rock	Cr basalt
45	TOH	94	45TOH 94	45TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
50	TOH	94	50TOH 94	50TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
52	TOH	94	52TOH 94	52TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
54	TOH	94	54TOH 94	54TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
189	TOH	93	189TOH 93	189TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
192	TOH	93	192TOH 93	192TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt
310	JSN	95	310JSN 95	310JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	RAATENIEMI	Mafic volcanic rock	Cr basalt
85	TOH	94	85TOH 94	85TOH 94 1	P	1,00	0,00	KUHMO	HIETAPERÄ	HIETAPERÄ	Mafic volcanic rock	Cr basalt
72	TOH	96	72TOH 96	72TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMPI	Mafic volcanic rock	Cr basalt
87	TOH	94	87TOH 94	87TOH 94 1	P	1,00	0,00	KUHMO	HIETAPERÄ	HIETAPERÄ	Mafic volcanic rock	Cr basalt
156	TOH	96	156TOH 96	156TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Mafic volcanic rock	Cr basalt
146	MAF	96	146MAF 96	146MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Cr basalt
157	TOH	96	157TOH 96	157TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Mafic volcanic rock	Cr basalt
297	JSN	95	297JSN 95	297JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	ISO RAATELAMPI	Mafic volcanic rock	Cr basalt
176	MAF	96	176MAF 96	176MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Cr basalt
192	TOH	96	192TOH 96	192TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	MIKONLEHTO	Mafic volcanic rock	Cr basalt
192	TOH	96	192TOH 96	192TOH 96 1	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	MIKONLEHTO	Mafic volcanic rock	Cr basalt
172	TOH	96	172TOH 96	172TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VÄLIAHONTAUSAHO	Mafic volcanic rock	Cr basalt
95	TOH	96	95TOH 96	95TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONKANGAS	Mafic volcanic rock	Cr basalt
168	TOH	96	168TOH 96	168TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VÄLIAHONTAUSAHO	Mafic volcanic rock	Cr basalt
142	TOH	96	142TOH 96	142TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Cr basalt
38	TOH	96	38TOH 96	38TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VARPASAARI	Mafic volcanic rock	Cr basalt
231	JTL	96	231JTL 96	231JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Diabase dike	Diabase
59	JTL	96	59JTL 96	59JTL 96 2	P	2,00	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Diabase dike	Diabase
189	JTL	96	189JTL 96	189JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Diabase dike	Diabase
134	JSK	93	134JSK 93	134JSK 93 1	P	1,00	0,00	KUHMO	AROLA	HAUTALEHTO	Diabase dike	Diabase
119	JSK	93	119JSK 93	119JSK 93 2	M	18,00	19,00	KUHMO	AROLA	KOIVULEHTO	Diabase dike	Diabase
52	VIE	67	52VIE 67	52VIE 67 3	K	0,00	28,05	KUHMO	AROLA	ORE DEPOSIT	Diabase dike	Diabase
14	SMS	70	14SMS 70	14SMS 70 1	K	0,00	16,45	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Diabase dike	Diabase
123	IJY	94	123IJY 94	123IJY 94 2	P	2,10	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Diabase dike	Diabase
56	KYK	94	56KYK 94	56KYK 94 2	P	2,00	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Diabase dike	Diabase
109	TOH	94	109TOH 94	109TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Diabase dike	Diabase (tholeiitic)
131	TOH	94	131TOH 94	131TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Diabase dike	Diabase (tholeiitic)
227	JTL	96	227JTL 96	227JTL 96 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Mafic dike / volcanic rock	Diabase?
148	TTT	97	148TTT 97	148TTT 97 1	L	1,01	0,00	KUHMO	JONKERI	KANGASVAARA	Ultramafic volcanic rock	Diopside-tremolite rock
207	TOH	93	207TOH 93	207TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Dunite
211	TOH	93	211TOH 93	211TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MÄYRÄNIEMI	Komatiitic cumulate	Dunite
23	TOH	94	23TOH 94	23TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIIKKULANSAARET	Komatiitic cumulate	Dunite
217	TOH	93	217TOH 93	217TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Dunite
24	TOH	94	24TOH 94	24TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIIKKULANSAARET	Komatiitic cumulate	Dunite
218	TOH	93	218TOH 93	218TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Dunite
224	TOH	93	224TOH 93	224TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Dunite
257	TOH	93	257TOH 93	257TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HUKANLAHTI	Komatiitic cumulate	Dunite
231	TOH	93	231TOH 93	231TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HIRSINIEMI	Komatiitic cumulate	Dunite
254	TOH	93	254TOH 93	254TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	JUURIKKANIEMI	Komatiitic cumulate	Dunite
234	TOH	93	234TOH 93	234TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HIRSINIEMI	Komatiitic cumulate	Dunite
262	TOH	93	262TOH 93	262TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Dunite
239	TOH	93	239TOH 93	239TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Dunite
241	TOH	93	241TOH 93	241TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Dunite
238	TOH	93	238TOH 93	238TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Dunite
270	TOH	93	270TOH 93	270TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HAVERISENSUO	Komatiitic cumulate	Dunite
267	TOH	93	267TOH 93	267TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Dunite
240	TOH	93	240TOH 93	240TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Dunite
263	TOH	93	263TOH 93	263TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Dunite
298	TOH	93	298TOH 93	298TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Komatiitic cumulate	Dunite
288	TOH	93	288TOH 93	288TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MATONEVANSUO	Komatiitic cumulate	Dunite
297	TOH	93	297TOH 93	297TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Komatiitic cumulate	Dunite
68	TOH	96	68TOH 96	68TOH 96 3	P	3,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMPI	Fe-gabbroic dike	Fe-gabbro
151	TOH	93	151TOH 93	151TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Felsic dike	Felsic dike rock
11	TOH	96	11TOH 96	11TOH 96 2	P	3,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONIEMI	Felsic fragmentary rock	Felsic fragment
9	HP	92	9HP 92	9HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Felsic inclusion	Felsic inclusion
14	JTL	98	14JTL 98	14JTL 98 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Felsic volcanic / sedimentary rock	Felsic volcanic rock
59	JTL	96	59JTL 96	59JTL 96 1	P	1,02	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Felsic volcanic / sedimentary rock	Felsic volcanic rock
308	JTL	96	308JTL 96	308JTL 96 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Felsic volcanic / sedimentary rock	Felsic volcanic rock
184	JTL	96	184JTL 96	184JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	ESKONLAMMIT	Felsic volcanic rock	Felsic volcanic rock
6	JTL	96	6JTL 96	6JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	KATAJALAMPI	Felsic volcanic rock	Felsic volcanic rock
193	JTL	96	193JTL 96	193JTL 96 1	P	1,02	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Felsic volcanic / sedimentary rock	Felsic volcanic rock
194	JTL	96	194JTL 96	194JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Felsic volcanic / sedimentary rock	Felsic volcanic rock
29	JTL	97	29JTL 97	29JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Felsic volcanic / sedimentary rock	Felsic volcanic rock
269	JEV	95	269JEV 95	269JEV 95 3	P	3,00	0,00	KUHMO	KELLOJÄRVI	LONTANKANGAS	Felsic volcanic rock	Felsic volcanic rock
176	TTT	96	176TTT 96	176TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Felsic volcanic rock	Felsic volcanic rock
18	VIE	64	18VIE 64	18VIE 64 3	K	0,00	404,79	KUHMO	AROLA	ORE DEPOSIT	Felsic volcanic rock	Felsic volcanic rock
4	SII	93	4SII 93	4SII 93 3	K	0,00	74,80	KUHMO	SIIVIKKO	MÄKISENSUO	Felsic volcanic rock	Felsic volcanic rock
16	TOH	96	16TOH 96	16TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HEPOVAARA	Felsic volcanic rock	Felsic volcanic rock

Obs Nr.	Northing	Easting	SiO2 %	TiO2 %	Al2O3 %	FeO* %	MnO %	MgO %	CaO %	Na2O %	K2O %	P2O5 %	CO2 %	LOI %	Cr ppm	Ni ppm	Co ppm	Sc ppm	V ppm	Cu ppm	Pb ppm	Zn ppm	Sn ppm	W ppm	S ppm	As ppm	Rb ppm	Cs ppm	Ba ppm	Sr ppm	Ga ppm	Ta ppm	Nb ppm	Zr ppm	Y ppm	Th ppm	U ppm	La ppm	Ce ppm	Cl ppm	C ppm	Total	Anal Nr.	CSIRO
161	7130,618	4455,556	38,10	0,570	12,900	17,80	1,200	4,23	18,40	0,520	0,274	0,208			18	50	0		143	0	20	70	0	150	100	0	5,49	30,00	26,87	31,29		0	22	400	41	2	7	70	100	190		94,20	9612718	
145	7130,416	4455,052	50,58	0,350	20,470	4,04	0,102	6,38	11,04	2,700	1,830	0,053			204	155		22	106	16	28	40	0		0	0	64,00		926,00	213,00	18		3	50	16	0	0	14	0	86	70	97,99	93005692	x
20	7228,050	4456,620	46,58	0,440	5,740	11,46	0,242	20,04	9,92	0,260	0,020	0,022	0,95	4,23	2479	517	88		181	4	4	102			40		0,01		13,00	8,00	7		0	22	13			0	10	20		95,98	971359	x
20	7228,050	4456,620	35,32	1,030	13,560	16,03	0,192	23,74	0,51	0,010	0,010	0,074	0,15	8,44	1792	576	83		331	0	6	141			40		0,02		20,00	4,00	16		0	49	21			0	11	60		92,24	971360	x
23	7144,660	4456,880	52,80	0,528	14,400	7,55	0,156	8,93	9,42	3,340	0,484	0,055		1,02	1184	410	210		231	330	10	60	0	10	0	30	26,52	20,00	197,05	148,82		0	16	22	15	0	4	10	0	40		97,66	9512263	
14	7230,250	4457,340	49,40	1,760	12,100	13,70	0,183	5,46	8,60	0,350	2,400	0,230			77	70	20		381	210	20	120	20	0	3980	0	106,99	10,00	555,31	303,57		0	26	133	36	0	13	30	50	260		94,18	9414750	
103	7109,510	4466,850	49,30	2,000	13,700	18,50	0,403	3,29	7,42	2,640	0,300	0,119		0,00	18	0	30		82	0	30	410	10	0	0	10	1,83	40,00	44,78	44,82		10	25	67	22	0	0	0	10	610		97,67	9512405	
132	7073,160	4478,820	41,60	2,340	16,300	23,10	0,319	3,64	6,04	3,640	0,330	0,123		0,00	35	20	70		74	0	0	120	0	0	90	10	19,20	0,00	71,65	154,74		0	12	0	1	0	6	10	20	250		97,43	9710783	
309	7151,555	4478,975	51,10	0,577	13,800	10,10	0,197	9,77	10,20	2,570	0,349	0,060			732	130	60		242	10	10	80	10	10	160	20	10,06	20,00	80,61	85,40		0	15	15	12	0	5	20	20	120		98,72	9818011	
264	7062,175	4483,360	50,20	0,820	16,200	10,90	0,235	7,59	10,60	1,230	0,267	0,067		0,00	335	140	90		290	140	20	380	10	0	8070	10	16,46	0,00	26,87	124,30		10	16	22	12	0	4	0	30	90		98,11	9710780	
128	7076,730	4484,050	47,80	2,300	13,500	15,60	0,230	5,23	8,89	2,980	0,902	0,416			62	40	110		472	80	10	100	0	10	1050	0	30,18	30,00	197,05	242,68		10	25	111	23	0	10	30	40	1400		97,85	9818002	
248	7069,510	4485,290	50,00	0,741	13,700	12,40	0,225	7,59	10,70	1,860	0,285	0,063		0,00	276	130	70		288	20	10	90	10	0	200	10	15,54	10,00	35,83	79,49		0	16	22	11	0	11	10	30	160		97,56	9710779	
144	7070,550	4485,820	49,80	0,520	15,500	9,66	0,185	9,49	10,60	1,530	1,280	0,011			564	150	90		251	170	0	80	10	0	1270	10	50,29	0,00	134,35	136,14		10	17	0	2	0	4	20	0	80		98,58	9818003	
168	7074,910	4489,870	49,90	0,834	12,900	11,20	0,189	8,75	11,00	2,630	0,292	0,085		0,72	614	190	100		281	70	10	70	10	10	50	10	14,63	0,00	89,57	129,38		0	14	30	11	0	6	0	10	60		97,78	9710727	
20	7228,050	4456,620	40,85	0,490	6,720	12,09	0,225	21,97	6,00	0,070	0,010	0,034	5,90	9,79	2535	734	106		150	10	9	108			510		0,03		0,01	115,00	8		0	28	9			1	13	20		89,79	971367	x
233	7096,220	4451,640	50,50	0,676	14,700	11,20	0,256	9,27	8,08	1,430	0,155	0,058		0,00	324	90	50		279	0	30	180	10	10	0	10	7,32	20,00	62,70	97,24		10	19	30	10	0	5	20	20	60		96,33	9512466	
16	7132,931	4455,209	35,00	1,150	12,100	11,00	0,254	10,00	24,00	0,000	0,019	0,079			256	170	50		197	0	10	60	0	10	30	10	7,32	0,00	35,83	0,85		10	18	37	9	0	12	0	30	60		93,60	9612620	
25	7132,702	4455,501	36,20	0,451	14,700	1,91	0,253	5,25	33,30	0,000	0,004	0,095			74	80	10		82	40	10	180	0	10	70	20	7,32	0,00	26,87	9,30		10	17	81	6	0	6	40	30	280		92,16	9612622	
212	7131,901	4456,081	60,70	1,180	14,600	3,90	0,070	3,56	13,90	0,040	0,067	0,099		1,25	133	60	30		207	0	10	10	10	0	70	10	6,40	0,00	8,96	323,86		20	17	111	19	0	6	0	40	10		98,12	9710712	
35	7150,310	4454,570	28,70	0,084	2,560	45,30	0,667	7,89	6,79	0,000	0,012	0,028	5,50		115	300	150		145	680	20	250	0	0	24300	0	8,23	50,00	26,87	41,43		0	3	7	13	0	6	20	20	130		92,03	9413283	
35	7150,310	4454,570	25,90	0,057	1,820	47,90	0,739	6,27	7,57	0,000	0,009	0,023	6,20		90	490	160		126	960	20	270	0	10	47000	10	4,57	20,00	44,78	65,96		20	11	7	12	0	6	30	20	130		90,29	9413285	
11	7126,145	4455,730	68,50	0,040	2,390	20,08	0,272	2,39	4,37	0,230	0,100	0,079			0	0	57		20	37	6	156			270		0,00		31,00	1,00	7		0	24	12			1	9	320		98,45	970196	
8	7126,178	4456,061	35,50	0,273	12,500	29,60	0,055	2,62	0,86	4,600	0,109	0,069			44	200	110		53	1630	30	40	10	0	164000	10	2,29	0,00	35,83	65,11		0	10	141	11	0	6	30	40	40		86,19	9315060	
8	7126,197	4455,736	48,05	1,040	18,250	10,86	0,206	5,95	12,02	2,470	0,500	0,055			350	199	85		301	10	20	96			210		26,00		85,00	119,00	20		0	59	25			3	5	200		99,40	970193	
7	7126,205	4455,740	53,71	0,860	17,100	8,24	0,165	4,44	11,38	2,530	0,240	0,054			297	157	78		263	117	23	134			2280		0,00		39,00	113,00	13		0	48	19			0	7	110		98,72	970192	
6	7126,215	4455,750	52,99	0,950	17,800	7,71	0,176	5,63	10,05	3,770	0,170	0,059			323	142	80		294	37	13	77			290		2,00		46,00	139,00	19		0	49	17			6	17	70		99,31	970191	
5	7126,204	4455,775	49,49	0,770	15,730	11,28	0,220	7,28	12,83	1,160	0,150	0,050			267	172	76		236	132	14	94			1380		1,00		23,00	73,00	16		0	42	21			0	11	120		98,96	970190	
23	7132,638	4455,477	46,27	0,240	4,550	7,20	0,148	26,54	7,80	0,050	0,020	0,015			2063	1107	75		106	35	123	168			2		0,07		1,00	3,00	5		1	14	6			6	7	40		93,62	960006	x
181	7150,060	4454,340	59,20	0,503	16,900	7,96	0,144	2,49	2,74	3,380	2,270	0,074	5,40		283	180	60		126	90	20	410	10	10	35900	0	94,18	20,00	295,57	108,24		10	11	104	19	0	6	40	50	80		95,66	9413319	
35	7150,310	4454,570	70,30	0,383	12,400	6,80	0,082	1,97	1,01	1,730	2,150	0,059	3,60		296	270	20		97	90	30	400	20	0	22400	20	67,67	0,00	501,57	51,58		0	9	96	10	0	8	20	40	50		96,88	9413289	
34	7150,090	4454,605	63,57	0,780	20,240	5,23	0,040	2,37	0,43	1,370	4,100			2,45	345	138				90		420														6	2					98,13	971265	
52	7150,310	4454,640	59,00	0,495	16,700	9,08	0,083	2,95	0,58	2,060	3,700	0,081	6,90		339	220	50		142	130	90	840	30	10	40200	0	109,73	40,00	671,75	43,97		10	8	96	16	2	7	10	40	80		94,73	9413262	
52	7150,310	4454,640	60,60	0,520	17,400	8,01	0,097	2,71	0,60	1,980	3,720	0,086	5,40		243	160	60		143	110	50	400	10	0	32900	20	109,73	20,00	689,66	56,65		0	9	104	15	0	8	20	60	70		95,73	9413263	
52	7150,310	4454,640	64,60	0,440	15,500	6,71	0,099	2,70	1,28	2,530	2,730	0,093	3,20		248	130	60		115	70	70	650	20	0	28900	0	90,53	0,00	519,48	98,93		10	13	111	14	0	9	30	60	70		96,68	9413264	
52	7150,310	4454,640	56,70	0,457	16,400	9,32	0,049	3,13	1,22	3,090	2,860	0,098	12,00		337	320	100		139	280	90	550	20	0	41100	0	90,53	10,00	644,88	78,64		0	11	104	17	0	9	10	40	90		93,32	9413265	
46	7231,970	4456,930	52,80	0,574	13,200	9,69	0,175	10,70	8,48	1,660	0,794	0,081		0,00	842	290	70		218	80	10	70	10	10	170	10	40,23	10,00	232,87	177,57		0	15	37	11		10	0	40	330		98,15	9634307	
11	7231,610	4458,935	52,50	0,687	11,500	9,36	0,175	10,10	7,74	3,470	0,176	0,095			855	230	80		231	40	20	70	10	10	410	10	11,89	0,00	89,57	55,81		20	16	59	6	0	5	20	30	180		95,80	9612638	
11	7231,610	4458,935	53,70	0,696	11,900	9,58	0,190	10,30	8,17	3,560	0,163	0,096		0,00	910	260	120		245	60	20	80	20	10	1080	10	10,06	10,00	62,70	60,04		0	16	52	14		6	0	40	170		98,36	9634304	
63	7132,882	4455,102	50,13	0,030	0,800	11,49	0,511	13,81	20,61	0,040	0,010	0,004			27	58	102		45	278	0	97			60		3,00		37,00	19,00	2		0	2	1			2	13	2		98,70	960019	x
8	7126,177	4456,060	38,40	0,012	0,190	52,00	0,285	3,06	0,18	0,000	0,003	0,075			31	30	0		23	10	10	50	0	400	1770	0	0,91	20,00	35,83	0,00		10	6	0	0	0	9	20	0	30		94,20	9315061	
20	7228,050	4456,620	58,95	0,490	15,400	8,25	0,017	1,45	1,31	7,210	0,170	0,089	0,11	2,52	101	119	101		88	202	10	23			31220		0,00		105,00	136,00	8		0	137	8			0	11	2240		94,25	971353	x
103	7148,815	4454,635	26,60	3,060	18,300	16,90	0,209	24,00	0,89	0,000	0,012	0,687		0,00	179	460	170		462	0	0	170	20	10	0	10	2,74	30,00	17,91	11,84		0	40	274	27	0	3	20	40	70		90,66	9513894	
15	7130,850	4455,990	34,70	0,204	12,500	13,20	0,118	26,20	2,86	0,000	0,004	0,033		8,57	74	270	220		24	0	10	90	0	10	20	20	6,40	10,00	0,00	0,00		10	20	118	5	0	5	50	110	30		89,82	9710693	
52	7132,062	4457,227	26,50	1,460	18,100	19,10	0,330	22,00	0,44	0,000	0,005	0,328		9,55	69	90	140		277	0	0	100	0	10	20	10	7,32	10,00	8,96	7,61		0	21	118	18	0	9	20	90	30		88,26	9710702	
121	7149,628	4454,420	48,30	0,510	12,400	10,20	0,387	5,69	8,86	2,080	0,338	0,051			1054	390	50		235	30	0	90	10	0	210	10	17,37	20,00	53,74	60,04		10	7	22	15	0	3	0	20	60		88,82	9313780	
40	7132,532	4454,952	48,51	0,120	1,840	7,30	0,394	22,86	11,92	0,040	0,010	0,009			4256	1121	71		120	24	18	189			2		0,07		59,00	15,00	4		1	3	7			2	4	2		93,80	960013	x
1	7233,520	4458,600	46,78	0,830	10,490	13,03	0,248	14,33	8,58	1,440	0,070	0,063	0,09	3,67	1165	385	70		225	0	5	131			20		0,02		25,00	34,00	16		0	50	17			0	6	170		97,29	971331	x
1	7233,520	4458,600	46,12	0,510	6,720	13,50	0,244	18,88	8,72	0,020	0,010	0,034	0,09	4,54	2288	748	92		160	5	7	105			10		0,02		5,00	14,00	10		0	29	21			0	10	0		96,25	971334	x
1	7233,520	4458,600	44,17	0,520	6,710	12,73	0,333	18,04	10,74	0,120	0,040	0,025	1,68	5,73	1867	1416	113		211	460	8	123			3270		1,00		4,00	28,00	13		0	25	12			0	7	0		94,83	971339	x
1	7233,520	4458,600	45,95	0,440	7,280	11,79	0,229	20,42	8,18	0,050	0,010	0,030	1,61	5,05	2591	1016	85		152	0	6	101			30		0,02		18,00	6,00	12		0	23	10			0	2	0		95,68	971350	x
119	7130,423	4455,035	26,30	0,634	14,200	28,10	0,112	26,60	0,90	0,000	0,001	0,075		0,00	179	130	140		272	30	0	80	10	10	0	20	6,40	30,00	26,87	0,00		0	21	52	0	0	0	20	20	30		96,93	9512492	
2	7126,723	4455,793	31,80	0,179	15,300	9,63	0,102	30,40	0,14	0,000	0,003	0,016			5303	1040	120		82	10	0	60	20	10	0	0	0,91	10,00	17,91	0,00		0	16	0	0	0	2	10	30	40		87,57	9313502	
2	7126,723	4455,793	43,60	0,115	8,590	7,79	0,148	27,10	4,53	0,000	0,006	0,018			4304	1620	100		74	10	0	60	10	0	0	10	1,37	20,00	53,74	3,38		30	9	0	2	0	5	0	10	50		91,90	9313503	
2	7126,723	4455,793	30,10	0,659	17,800	11,80	0,116	29,30	0,27	0,000	0,002	0,214			325	650	140		137	0	0	60	20	10	0	0	0,46	30,00	8,96	0,00		0	15	252	9	2	7	20	10	70		90,26	9313504	
2	7126,723	4455,793	30,70	0,471	17,500	10,60	0,113	29,00	0,23	0,000	0,002	0,170			917	820	140		126	0	0	80	20	10	0	10	1,37	10,00	17,91	0,00		10	10	59	7	0	8	20	30	60		88,78	9313505	
141	7126,722	4455,813	50,52	0,790	19,540	6,64	0,088	7,19	1,77	5,080	4,450	0,180			61	68	50		97	0	45	64			30		146,00		1640,00	672,00	18		3	158	16			20	25	160		96,98	971519	x
186	7094,260	4454,800	41,40	0,317	8,040	9,03	0,155	19,80	7,22	1,160	0,011	0,028		11,41	2244	790	80		150	0	0	60	20	0	0	80	6,40	0,00	17,91	71,03		10	15	0	5	0	9	0	0	30		87,16	9512439	
20	7228,050	4456,620	42,50	0,580	7,780	13,77	0,252	21,26	5,86	0,140	0,020	0,036	2,20	6,90	2435	690	94		156	6	7	123			110		0,01		3,00	34,00	12		0	33	11			2	8	20		93,72	971361	x
172	7076,190	4490,480	44,20	0,294	8,110	9,60	0,153	23,80	7,01	0,160	0,038	0,023		4,97	2456	830	160		141	0	10	60	10	0	220	170	4,57	10,00	35,83	20,29		10	12	0	1	0	6	0	20	70		93,39	9710728	
10	7127,880	4452,100	48,20	0,552	12,900	10,60	0,193	10,50	9,39	1,680	0,117	0,051			739	230	80		252	20	10	80	20	0	0	0	1,83	10,00	53,74	80,33		10	6	22	13	0	3	10	20	100		94,18	9414390	
205	7096,680	4452,200	51,00	0,665	14,500	12,00	0,343	7,03	8,89	2,870	0,155	0,056		0,80	931	260	220		279	30	10	80	0	10	0	10	3,66	0,00	98,52	93,01		0	15	22	11	0	6	10	30	120		97,51	9612512	
173	7093,910	4454,320	51,60	0,709	16,300	9,11	0,300	4,92	10,90	1,540	0,199	0,068		0,00	937	490	80		299	90	10	80	10	10	1720	70	7,32	20,00	62,70	93,86		10	18	22	11	0	6	0	20	150		95,65	9512413	
196	7127,925	4454,420	53,80	0,752	15,800	7,88	0,160	6,94	8,54	3,190	0,552	0,081			698	250	60		308	0	30	170	20	0	0	0	13,72	10,00	206,00	106,54		10	8	44	18	0	3	10	20	70		97,70	9314470	
77	7128,175	4454,525	55,20	0,794	11,700	9,64	0,219	6,96	8,51	2,390	0,143	0,077			889	300	80		313	10	0	70	20	10	0	10	5,49	30,00	44,78	55,81		10	5	52	16	0	10	20	10	60		95,63	9411015	
83	7150,710	4454,613	50,50	0,565	11,800	10,50	0,378	6,57	12,10	1,120	0,154	0,050		0,00	992	330	50		252	20	10	150	20	10	190	10	7,32	30,00	44,78	77,79		10	17	15	10	0	9	30	10	110		93,74	9512394	
83	7150,710	4454,620	49,90	0,628	12,800	13,50	0,322	7,54	8,86	1,040	0,178	0,050		0,00	1019	330	60		333	30	10	170	20	0	0	10	5,49	20,00	53,74	45,66		0	19	15	7	0	9	0	20	110		94,82	9512393	
187	7094,300	4454,700	49,40	0,539	12,100	10,90	0,275	8,77	11,30	1,470	0,106	0,045		0,00	821	300	60		265	0	0	80	10	10	0	20	4,57	10,00	44,78	62,57		10	17	15	11	0	6	10	20	160		94,91	9512415	
128	7127,739	4454,800	53,00	0,752	15,500	8,55	0,164	6,78	10,50	2,130	0,171	0,072			674	230	60		292	100	20	80	20	0	0	30	6,40	10,00	44,78	108,24		10	16	37	17	0	2	10	20	60		97,62	9411213	
193	7128,004	4454,888	48,50	0,723	14,100	10,70	0,228	8,74	9,94	2,500	0,217	0,060			821	230	100		287	20	40	360	20	0	0	0	3,66	10,00	53,74	92,17		10	3	37	19	0	4	10	10	40		95,71	9413822	
45	7127,523	4454,914	49,80	0,570	12,300	11,30	0,256	8,42	10,70	1,380	0,114	0,047			978	230	80		265	30	10	80	20	0	130	10	6,40	20,00	44,78	106,54		0	9	15	13	0	8	10	20	140		94,89	9414491	
50	7127,550	4455,037	53,60	0,580	13,600	9,42	0,148	6,70	9,29	2,460	0,118	0,050			924	750	170		245	560	10	40	20	10	9950	0	1,83	10,00	62,70	87,10		10	9	22	17	0	4	0	20	70		95,97	9414494	
52	7127,550	4455,040	50,80	0,607	13,400	10,50	0,211	8,05	10,40	1,790	0,161	0,051			965	350	110		272	70	10	50	10	0	660	0	4,57	0,00	26,87	60,04		10	5	30	14	0	4	0	10	100		95,97	9414495	
54	7127,574	4455,057	45,50	0,675	14,600	11,00	0,225	9,79	11,40	1,210	0,188	0,059			1054	320	110		286	50	10	60	10	0	0	0	4,57	10,00	26,87	63,42		0	8	37	20	0	3	10	10	80		94,65	9414497	
189	7127,868	4455,205	56,60	0,634	10,900	8,23	0,247	8,16	8,61	3,190	0,073	0,053			599	340	60		275	20	20	140	20	0	0	0	0,91	0,00	44,78	61,73		10	4	30	13	0	0	0	10	80		96,70	9314468	
192	7128,170	4455,304	52,50	0,715	15,000	8,44	0,158	6,77	9,17	3,900	0,141	0,075			581	200	70		279	0	10	70	20	10	0	0	1,83	0,00	62,70	128,53		10	4	37	19	0	10	0	0	100		96,87	9314469	
310	7092,940	4456,540	55,70	0,663	13,600	10,20	0,218	6,59	7,99	2,710	0,434	0,057		0,00	828	350	80		265	70	10	270	10	0	560	70	16,46	10,00	62,70	64,26		0	20	15	12	0	2	0	30	110		98,16	9512482	
85	7119,940	4456,630	55,00	0,617	13,200	9,32	0,207	6,84	9,27	1,700	0,180	0,045			910	370	60		258	0	10	110	30	10	0	10	4,57	10,00	26,87	99,78		10	6	22	9	0	4	0	20	190		96,38	9411159	
72	7228,640	4456,960	49,80	0,845	12,100	12,10	0,221	8,81	9,35	2,460	0,143	0,075			520	150	140		279	20	0	80	10	0	90	10	5,49	10,00	26,87	50,74		40	13	30	9	0	0	30	20	200		95,90	9612664	
87	7120,420	4456,980	52,00	0,628	13,600	9,88	0,207	8,27	8,91	2,680	0,130	0,044			883	220	60		292	40	10	80	30	10	0	0	0,00	20,00	26,87	102,32		0	8	22	13	0	6	40	20	250		96,35	9411181	
156	7233,300	4457,430	48,40	0,768	12,100	12,10	0,234	8,86	11,50	1,180	0,086	0,062		0,00	352	120	50		286	50	20	90	10	0	140	10	7,32	20,00	53,74	168,27		10	19	22	10		8	10	10	60		95,29	9634331	
146	7230,560	4457,470	50,00	0,881	13,500	11,60	0,194	9,16	8,46	2,730	0,207	0,082		0,00	534	110	40		286	30	20	150	20	10	210	10	14,63	0,00	98,52	59,19		0	18	37	10		6	0	20	210		96,81	9634363	
157	7233,352	4457,506	49,80	0,795	13,600	12,10	0,215	8,67	8,70	2,270	0,087	0,068		0,00	374	100	50		286	60	10	90	20	0	220	10	4,57	20,00	53,74	96,40		0	19	22	10		5	40	30	50		96,31	9634332	
297	7091,080	4457,660	54,00	0,692	16,000	7,16	0,175	6,03	9,86	3,370	0,144	0,065		0,00	896	590	90		272	100	10	110	20	10	670	10	6,40	10,00	44,78	104,85		0	18	15	13	0	2	20	30	50		97,50	9512481	
176	7230,590	4457,940	53,80	0,564	14,600	9,86	0,267	7,21	10,80	1,260	0,114	0,059		0,00	556	160	60		258	100	10	80	10	0	120	10	10,06	30,00	35,83	76,10		0	15	15	10		9	0	20	110		98,53	9634372	
192	7234,935	4457,955	54,00	0,784	14,500	9,33	0,188	7,93	7,36	2,540	0,740	0,243		0,00	463	140	40		177	20	10	90	20	0	10	10	24,69	0,00	322,44	225,77		0	19	81	15		10	20	60	100		97,62	9634351	
192	7234,970	4458,020	55,40	0,956	15,400	8,05	0,179	6,19	5,83	5,270	0,932	0,327		0,00	331	180	70		184	170	10	80	10	0	2450	10	21,03	0,00	295,57	118,38		0	18	133	17		15	10	50	80		98,53	9634352	
172	7234,025	4458,080	48,90	0,662	11,700	12,50	0,255	9,18	11,00	2,060	0,087	0,063		0,00	828	280	80		265	10	0	160	10	10	20	10	10,06	20,00	35,83	182,65		0	21	22	18		2	10	0	90		96,41	9634343	
95	7232,140	4458,390	48,70	0,717	12,600	12,00	0,244	9,37	11,80	2,260	0,149	0,063		0,00	821	280	90		265	100	0	100	20	10	80	10	5,49	10,00	107,48	93,86		10	17	22	12		6	0	10	120		97,90	9634311	
168	7233,925	4458,705	50,10	0,813	12,100	11,80	0,197	8,67	11,10	2,450	0,110	0,070		0,00	474	120	60		272	20	10	80	10	0	50	10	10,97	20,00	53,74	129,38		0	20	22	14		0	10	30	70		97,41	9634340	
142	7233,560	4459,860	54,30	0,787	18,200	10,80	0,103	3,49	2,47	5,260	1,020	0,066		0,00	766	90	30		238	80	10	150	10	10	4990	30	44,81	20,00	322,44	116,69		0	19	89	14		8	20	20	60		96,50	9634328	
38	7235,540	4461,500	47,30	0,356	19,500	5,92	0,134	8,72	10,60	0,570	3,380	0,022			646	130	10		156	0	0	60	10	10	40	10	116,13	10,00	707,57	69,34		20	13	0	9	0	5	30	10	80		96,50	9612651	
231	7082,040	4444,490	52,10	1,860	13,400	14,30	0,204	3,91	7,66	3,230	0,951	0,378		0,00	45	30	50		421	140	20	100	10	0	2520	10	28,35	10,00	358,26	265,52		0	34	163	26		8	30	90	420		97,99	9634435	
59	7084,375	4445,115	50,50	1,180	15,100	11,40	0,218	6,41	10,10	2,840	0,521	0,154		0,00	130	60	100		319	90	20	90	20	0	1590	10	16,46	0,00	80,61	160,66		10	21	74	16		7	10	30	120		98,42	9634419	
189	7082,845	4446,015	49,10	1,780	14,800	13,00	0,213	5,97	9,33	2,810	0,880	0,356		0,00	139	70	50		340	30	10	100	0	10	700	10	36,58	30,00	259,74	197,02		0	25	126	26		13	30	50	170		98,24	9634427	
134	7149,345	4454,105	50,30	0,945	15,000	11,40	0,191	6,76	7,42	4,140	0,838	0,085			67	80	70		276	110	10	90	20	0	0	10	22,86	10,00	295,57	180,96		10	5	52	17	0	5	20	20	120		97,08	9313787	
119	7150,353	4454,410	49,20	1,070	7,610	12,50	0,273	9,11	12,10	3,170	0,222	0,213			390	240	80		277	860	30	250	20	10	700	0	6,40	20,00	26,87	62,57		10	11	163	27	0	10	20	50	1120		95,47	9313779	
52	7150,310	4454,640	44,50	0,748	4,770	11,30	0,215	17,90	10,50	0,530	0,976	0,058	3,30		2107	620	120		181	120	40	80	20	10	500	0	39,32	10,00	107,48	45,66		0	4	44	12	0	0	20	20	260		91,50	9413259	
14	7230,250	4457,340	51,20	0,550	11,300	9,47	0,168	10,40	11,80	2,230	0,173	0,039			842	290	80		224	60	0	100	20	0	60	10	9,14	0,00	53,74	114,15		10	15	15	9	0	3	0	10	50		97,33	9414744	
123	7229,420	4457,350	48,90	0,772	14,600	11,30	0,183	7,95	10,10	2,540	0,120	0,071			264	130	60		306	110	20	70	0	0	0	10	10,97	20,00	44,78	74,41		0	14	30	16	0	2	10	0	170		96,54	9414615	
56	7118,600	4461,470	50,00	2,380	12,900	14,70	0,223	4,62	9,14	3,070	0,632	0,366		0,00	86	70	60		483	280	20	160	10	10	520	10	21,03	0,00	125,39	188,57		10	29	178	39		13	20	70	910		98,03	9634453	
109	7131,790	4455,995	47,30	0,986	14,300	12,70	0,209	6,95	10,00	2,250	0,796	0,092			255	130	60		326	160	10	110	20	10	480	0	38,41	20,00	170,18	98,93		10	7	52	21	0	5	10	40	140		95,58	9411193	
131	7127,371	4456,878	53,50	0,779	13,800	9,49	0,166	7,92	6,24	5,880	0,066	0,082			359	110	70		245	260	10	50	10	0	960	10	11,89	20,00	44,78	109,08		10	18	44	15	0	7	30	30	60		97,92	9411216	
227	7082,050	4444,040	57,30	1,830	13,500	7,03	0,192	4,55	9,64	4,860	0,153	0,008		0,00	16	30	80		374	10	10	30	10	10	60	10	7,32	0,00	44,78	54,12		10	18	52	18		8	0	30	100		99,06	9634434	
148	7079,270	4490,240	50,10	0,306	7,080	7,89	0,371	10,20	20,30	0,670	0,196	0,226		0,22	712	340	160		136	0	10	110	10	0	50	800	18,29	20,00	71,65	60,04		10	15	7	5	0	7	10	30	40		97,34	9710721	
207	7128,150	4453,510	34,08	0,002	0,270	7,09	0,135	39,82	0,01	0,000	0,000	0,001			2527	2579	116		10	1	4	60			150		0,07		4,90	1,00	3		1	0	0			2	0	1010		82,20	9505200422	x
211	7129,605	4453,895	37,62	0,036	1,310	6,05	0,122	38,97	0,02	0,007	0,000	0,005			3040	2193	89		23	1	7	45			80		0,07		4,90	0,14	2		1	1	2			2	4	450		84,80	9505192042	x
23	7129,095	4453,900	35,80	0,019	0,710	8,05	0,132	38,95	0,02	0,007	0,000	0,004			2812	2503	108		24	1	8	49			140		0,07		4,90	1,00	1		1	4	2			2	4	740		84,50	9505241523	x
217	7130,675	4453,945	38,96	0,089	1,890	8,35	0,110	37,35	0,21	0,010	0,000	0,007			3163	2217	96		41	1	6	84			270		0,07		4,90	3,00	3		1	9	6			2	6	10		87,90	9505200000	x
24	7129,060	4454,075	37,11	0,027	0,760	6,25	0,101	39,66	0,03	0,020	0,000	0,004			2388	2665	100		18	1	10	52			220		0,07		4,90	0,14	4		1	0	3			2	7	760		84,60	9505240553	x
218	7130,690	4454,175	36,00	0,022	0,870	8,19	0,196	37,08	0,47	0,030	0,000	0,002			1589	2549	115		17	2	7	105			120		0,07		4,90	0,00	0		1	1	3			3	2	20		83,80	9505232247	x
224	7131,050	4454,290	39,84	0,111	2,350	7,66	0,145	36,70	0,70	0,000	0,000	0,005			2651	2192	93		47	5	9	86			150		0,07		4,90	0,00	6		1	4	4			0	4	2		88,40	9505200137	x
257	7129,270	4454,435	34,02	0,017	0,550	6,17	0,151	39,26	0,05	0,007	0,000	0,000			1957	2874	107		18	1	4	48			70		0,07		4,90	0,14	0		1	3	2			2	4	2		80,90	9505201235	x
231	7132,140	4454,550	38,99	0,118	2,190	9,83	0,155	35,78	0,41	0,000	0,000	0,009			2053	2329	119		51	1	10	81			90		0,07		4,90	1,00	2		1	7	5			2	2	2		88,60	9505241015	x
254	7128,925	4454,675	36,56	0,056	1,260	8,57	0,186	37,52	0,56	0,007	0,000	0,008			2826	2298	122		31	1	4	69			230		0,07		4,90	0,00	0		1	0	4			2	4	660		85,60	9505240448	x
234	7132,500	4454,725	36,64	0,049	1,050	11,43	0,256	37,29	0,02	0,000	0,000	0,010			4592	2103	128		40	1	6	160			60		0,07		4,90	0,14	2		1	3	3			0	6	90		88,00	9505200315	x
262	7130,270	4454,935	37,84	0,060	1,380	8,39	0,163	37,48	0,02	0,010	0,000	0,005			2534	2669	103		29	1	7	56			180		0,07		4,90	2,00	3		1	3	2			2	2	580		86,30	9505222145	x
239	7133,020	4455,125	36,75	0,065	1,240	10,10	0,113	37,00	0,04	0,000	0,000	0,010			3364	2418	129		40	1	7	77			110		0,07		4,90	0,00	3		1	3	6			2	3	810		86,40	9505200210	x
241	7128,220	4455,460	37,58	0,097	1,620	11,37	0,160	35,57	0,67	0,000	0,010	0,011			3617	2029	118		57	18	6	65			150		0,07		4,90	1,00	3		1	6	4			2	4	2		88,30	9505221225	x
238	7132,775	4455,485	39,37	0,089	1,920	9,84	0,148	34,14	2,59	0,000	0,000	0,008			5342	1424	115		62	19	5	125			60		0,07		4,90	1,00	4		1	10	4			2	4	2		89,20	9505191902	x
270	7130,430	4456,150	36,81	0,025	0,920	6,76	0,156	39,10	0,02	0,007	0,000	0,003			2057	2987	118		19	1	10	49			250		0,07		4,90	0,14	3		1	3	5			2	0	640		84,50	9505230135	x
267	7129,935	4456,205	38,78	0,096	2,210	11,34	0,146	34,91	0,02	0,007	0,000	0,006			3806	2147	106		52	4	8	96			60		0,07		4,90	0,00	5		1	5	4			2	4	2		88,80	9505221830	x
240	7128,275	4456,370	29,99	0,002	0,100	5,60	0,104	36,96	0,03	0,000	0,000	0,001			1131	2454	94		7	1	6	46			60		0,07		4,90	0,14	2		1	0	2			0	4	40		73,40	9505200950	x
263	7129,200	4456,565	39,26	0,051	1,590	6,08	0,181	36,75	1,29	0,007	0,000	0,006			2106	2705	91		33	1	6	57			120		0,07		4,90	4,00	3		1	5	3			1	4	2		85,90	9505222325	x
298	7132,020	4456,990	35,79	0,052	1,280	7,14	0,159	38,20	0,04	0,000	0,000	0,005			2969	2465	112		28	18	5	72			110		0,07		1,00	0,14	4		1	4	3			2	8	2		83,50	9505180413	x
288	7130,900	4457,070	34,31	0,060	1,420	5,59	0,111	34,54	0,05	0,100	0,010	0,012			3113	2177	83		20	0	8	124			60		0,05		5,00	0,00	2		0	6	2			1	0	190		76,82	971666	x
297	7131,750	4457,330	37,03	0,044	1,250	8,79	0,149	37,52	0,06	0,010	0,000	0,004			3685	2610	122		25	1	7	79			100		0,07		4,90	0,00	3		1	3	3			3	2	630		85,80	9505222358	x
68	7229,300	4456,890	49,60	1,550	13,100	13,90	0,216	5,31	7,88	2,460	0,716	0,188			88	70	30		340	300	10	60	0	10	50	10	24,69	0,00	152,26	87,10		0	19	104	24	0	8	10	80	1230		94,92	9612663	
151	7126,870	4455,755	66,20	0,504	17,000	3,62	0,044	1,77	3,71	5,250	1,130	0,141			40	30	0		69	50	0	20	10	50	560	10	17,83	0,00	259,74	179,27		10	9	178	12	0	3	10	50	100		99,37	9314446	
11	7231,600	4458,925	72,70	0,198	16,000	0,64	0,021	0,63	1,38	7,780	0,386	0,063			32	20	0		27	10	50	10	0	190	0	0	12,80	0,00	179,13	62,57		0	14	74	2	0	0	0	10	150		99,80	9612637	
9	7126,184	4455,736	59,74	0,830	16,990	5,20	0,064	0,28	15,23	0,000	0,010	0,049			280	31	71		249	10	14	14			50		0,00		15,00	261,00	33		0	45	16			2	14	0		98,39	970194	
14	7081,050	4443,294	79,50	0,216	13,000	0,32	0,008	0,38	0,38	4,010	1,930	0,048			11	0	0		22	0	40	10	10	10	0	10	54,86	20,00	277,65	38,05		0	19	126	16	0	0	30	30	30		99,80	9818089	
59	7084,345	4445,155	78,00	0,140	12,900	1,28	0,050	1,72	1,34	1,960	2,210	0,009		0,00	18	10	0		7	0	80	90	10	140	20	0	70,41	10,00	268,70	46,51		10	18	148	19		0	40	80	50		99,61	9634418	
308	7081,016	4445,697	69,30	0,390	15,700	2,83	0,075	1,37	5,58	1,570	2,550	0,147		0,00	32	20	0		75	40	10	50	10	200	230	10	71,32	20,00	474,70	202,94		10	20	104	12		0	20	40	30		99,51	9634448	
184	7085,130	4446,100	68,30	0,449	16,700	3,26	0,055	1,15	3,39	4,550	1,500	0,135		0,00	28	20	10		74	0	0	50	10	10	40	10	41,15	20,00	340,35	159,82		0	16	96	5	0	0	20	30	100		99,49	9710273	
6	7083,690	4446,270	65,80	0,494	16,700	4,26	0,058	1,73	2,91	4,700	1,800	0,163		0,00	52	40	10		75	60	30	130	10	0	14600	10	57,61	0,00	492,61	139,52		10	18	155	11		7	50	40	40		98,62	9634416	
193	7082,685	4446,350	77,00	0,231	12,500	0,33	0,018	0,24	0,25	0,720	8,460	0,073		0,00	18	0	0		27	10	40	10	0	10	0	0	128,93	10,00	420,96	54,12		10	20	141	17		0	30	70	30		99,83	9634428	
194	7082,700	4446,540	68,00	0,464	15,600	3,92	0,071	2,15	3,27	4,160	1,500	0,165		0,00	35	20	0		95	30	20	50	10	160	750	10	37,49	0,00	259,74	285,81		0	17	111	9		14	20	30	90		99,30	9634429	
29	7088,640	4448,710	69,20	0,346	15,100	2,59	0,049	2,03	1,78	4,510	1,410	0,040		2,50	81	50	70		56	80	100	120	10	10	270	0	45,72	10,00	259,74	108,24		0	16	96	9	0	0	20	70	30		97,06	9710752	
269	7126,520	4449,980	50,40	0,926	21,600	6,35	0,067	7,21	3,37	4,340	4,400	0,015		0,00	60	80	30		102	0	40	70	20	10	0	10	672,09	870,00	1218,10	739,89		0	30	215	20	0	4	0	30	60		98,68	9512324	
176	7131,676	4454,252	54,50	0,862	17,000	6,04	0,142	2,40	16,80	0,050	0,039	0,084			369	160	0		306	190	30	40	10	160	1230	10	3,66	10,00	26,87	344,16		10	14	37	17	0	8	0	30	170		97,92	9612721	
18	7150,060	4454,340	62,30	0,440	12,400	12,10	0,401	2,95	2,06	1,720	1,970	0,081	1,60		355	1060	0		134	50	0	140	10	50	29000	0	70,41	10,00	385,13	58,35		0	12	118	11	0	6	20	30	80		96,42	9413347	
4	7127,500	4455,300	56,43	0,380	11,610	14,42	0,053	1,79	3,38	3,670	0,390	0,073			50	619	123		59	300	201	174			29400		12,00		121,00	72,00	13		0	119	16			12	36	0		93,79	971289	x
16	7229,350	4455,330	62,40	0,825	15,500	6,85	0,089	2,39	4,99	3,240	1,920	0,356			18	10	0		136	0	10	40	10	230	20	10	54,86	40,00	779,22	349,23		10	20	178	18	0	11	50	40	300		98,56	9612642	

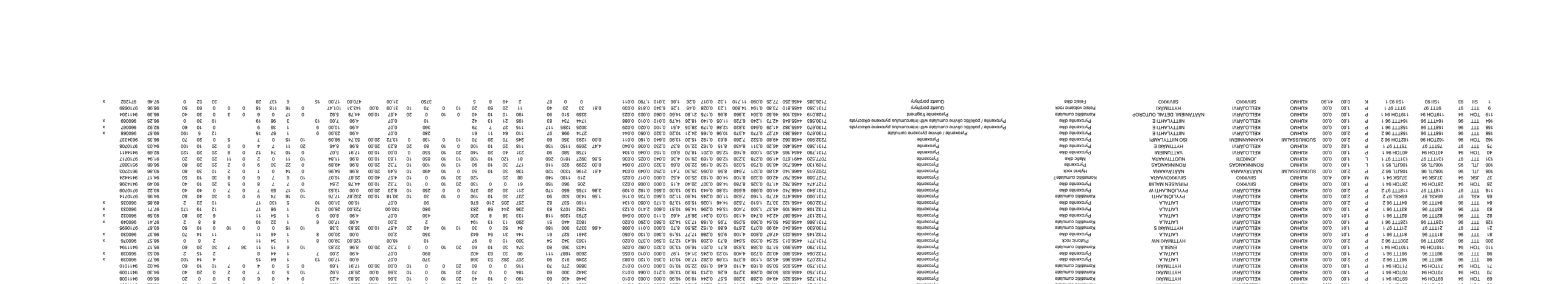
86	TTT	96	86TTT 96	86TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTILAHTI S	Felsic volcanic rock	Felsic volcanic rock	7132,295	4456,009	65,10	0,599	13,700	6,12	0,155	3,77	1,86	5,660	2,000	0,122			58	40	0	102	80	20	210	10	350	230	10	66,75	0,00	877,75	92,17		0	19	96	12	0	2	0	20	80	99,09	9612714	
91	TTT	96	91TTT 96	91TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTILAHTI	Felsic volcanic rock	Felsic volcanic rock	7132,416	4456,121	65,10	0,580	15,500	6,27	0,144	2,09	2,23	4,560	2,410	0,140			52	10	0	61	0	10	140	10	160	50	10	75,90	0,00	653,83	169,12		0	18	141	14	0	10	30	50	100	99,02	9612629	
82	JSK	93	82JSK 93	82JSK 93 1	P	1,01	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Felsic volcanic rock	Felsic volcanic rock	7127,250	4457,095	44,90	1,040	25,000	13,50	0,006	0,50	0,88	1,010	6,660	0,055			60	40	30	184	10	30	10	10	0	116000	80	45,26	0,00	618,00	142,91		0	15	237	14	0	9	0	20	10	93,55	9313519	
82	JSK	93	82JSK 93	82JSK 93 1	P	1,02	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Felsic volcanic rock	Felsic volcanic rock	7127,250	4457,095	54,60	0,603	14,200	14,40	0,050	2,44	3,49	2,370	0,223	0,125			40	40	10	111	20	10	60	20	10	117000	70	4,57	30,00	62,70	160,66		10	8	141	18	0	8	10	20	30	92,50	9313520	
20	SMS	60	20SMS 60	20SMS 6010	K	0,00	206,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Felsic volcanic rock	Felsic volcanic rock	7228,050	4456,620	73,52	0,260	14,890	1,88	0,026	1,02	0,89	1,560	3,810	0,086	0,22	1,04	0	3	57	15	14	11	26			430		93,00		1196,00	102,00	16		0	188	13			61	130	120	98,15	971372	x
166	TOH	94	166TOH 94	166TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Ultramafic volcanic rock	Fragmentary komatiitic rock	7127,140	4456,687	47,67	0,304	6,950	10,99	0,265	18,71	9,23	0,230	0,020	0,017			2792	1067	82	156	17	7	91			410		0,07		4,90	10,00	8		1	16	8			2	4	2	95,60	9505231242	x
177	JTL	96	177JTL 96	177JTL 96 1	P	1,01	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Gabbroic dike	Gabbro	7083,745	4445,860	47,60	0,515	12,500	10,50	0,196	12,00	10,70	1,710	0,158	0,049		0,00	937	300	90	218	0	10	80	10	0	70	10	5,49	20,00	35,83	120,92		0	15	15	13		6	20	20	140	95,93	9634424	
125	TOH	94	125TOH 94	125TOH 94 1	L	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Gabbroic dike	Gabbro	7127,825	4453,415	49,80	1,020	15,100	11,50	0,188	5,75	10,10	2,520	0,458	0,097			140	80	50	306	110	10	80	20	0	210	0	13,72	30,00	98,52	142,90		10	21	67	17	0	5	30	50	1220	96,53	9411210	
14	JSN	95	14JSN 95	14JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Gabbroic dike	Gabbro	7092,920	4453,920	49,10	0,770	18,400	10,10	0,151	6,18	9,28	3,640	0,119	0,073		0,79	232	80	110	272	0	0	80	0	10	0	10	8,23	30,00	53,74	114,15		10	16	30	14	0	0	20	30	60	97,81	9512269	
114	TTT	96	114TTT 96	114TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic gabbro	Gabbro	7128,119	4454,070	52,09	0,400	16,190	5,74	0,151	9,68	10,64	2,860	0,410	0,027			597	248	30	147	43	15	65			0		16,00		101,00	388,00	13		1	32	13			0	4	70	98,82	960044	x
127	TOH	94	127TOH 94	127TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, KORPIAHO	Komatiitic cumulate	Gabbro	7128,125	4454,075	51,00	0,292	14,100	6,23	0,146	13,50	7,65	2,690	0,685	0,024			985	360	50	136	0	10	70	20	10	0	10	30,18	30,00	197,05	235,07		0	15	7	7	0	4	20	0	80	96,32	9411212	
84	TOH	96	84TOH 96	84TOH 96 2	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	JOKINIEMI	Komatiitic cumulate	Gabbro	7225,490	4454,860	48,50	0,482	16,000	7,51	0,140	10,60	12,60	1,630	0,250	0,041		0,00	303	350	50	150	30	0	50	0	0	10	10	14,63	20,00	89,57	105,70		10	15	7	3		7	0	20	60	97,75	9634310	
267	JEV	95	267JEV 95	267JEV 95 2	P	3,00	0,00	KUHMO	KUIVAJÄRVI	TULISUO	Gabbro	Gabbro	7137,960	4454,940	44,60	0,497	10,300	11,70	0,209	16,60	8,76	0,750	0,077	0,044		0,00	1218	470	100	204	40	0	90	0	0	0	10	7,32	20,00	62,70	16,91		0	17	15	8	0	7	10	30	60	93,54	9512323	
63	TOH	96	63TOH 96	63TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	JOKINIEMI	Komatiitic cumulate	Gabbro	7225,470	4455,035	43,10	0,224	18,800	7,98	0,136	12,60	10,60	1,100	0,225	0,019		4,16	250	480	80	68	10	20	60	0	10	350	0	14,63	10,00	62,70	103,16		10	17	0	1	0	8	10	0	20	94,78	9612673	
309	JEV	95	309JEV 95	309JEV 95 2	P	2,00	0,00	KUHMO	KUIVAJÄRVI	KAIVOSLAMPI	Gabbro	Gabbro	7140,310	4455,200	40,40	2,250	6,290	12,50	0,405	16,30	12,30	0,280	0,070	0,406		5,95	631	820	260	258	270	0	80	10	0	0	10	6,40	30,00	26,87	16,91		10	47	207	15	0	1	50	60	30	91,20	9513868	
18	SII	94	18SII 94	18SII 94 2	K	0,00	78,35	KUHMO	SIIVIKKO	MÄKISENSUO	Gabbro	Gabbro	7127,480	4455,300	49,30	0,936	15,600	12,50	0,208	6,92	7,88	2,790	0,435	0,054			206	130	70	204	70	20	100	20	0	1580	10	22,86	30,00	116,44	109,93		10	17	22	15	0	6	0	20	140	96,62	9414727	
113	TTT	96	113TTT 96	113TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYJOKI	Komatiitic gabbro	Gabbro	7130,013	4455,308	50,23	0,430	15,550	7,22	0,178	10,54	8,35	2,350	1,490	0,058			181	247	41	153	37	82	329			0		62,00		252,00	188,00	13		1	49	11			2	16	180	97,19	960043	x
22	TOH	95	22TOH 95	22TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYJOKI	Komatiitic cumulate	Gabbro	7130,035	4455,340	52,20	0,233	16,800	5,82	0,139	8,76	7,43	3,110	2,130	0,023		2,56	307	220	100	109	30	40	190	10	10	0	10	81,38	10,00	429,92	175,88		10	13	7	3	0	3	0	0	90	96,65	9512262	
24	HP	93	24HP 93	24HP 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	HERRANLAMPI	Mafic dike	Gabbro	7125,665	4455,415	50,80	0,784	13,800	10,90	0,175	7,45	10,50	2,060	0,353	0,066			506	110	60	290	60	10	70	10	10	0	10	11,89	10,00	44,78	86,25		10	6	30	20	0	10	10	20	330	96,89	9413788	
5	TOH	95	5TOH 95	5TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Gabbroic dike	Gabbro	7132,179	4455,810	50,30	1,450	12,700	13,50	0,279	5,82	8,59	3,680	0,757	0,078		1,00	38	150	120	455	100	120	240	0	10	0	10	24,69	30,00	259,74	189,41		10	18	59	9	0	7	20	40	90	97,15	9512253	
111	TOH	94	111TOH 94	111TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Komatiitic cumulate	Gabbro	7131,740	4455,950	50,00	0,222	12,100	6,19	0,168	14,90	10,70	0,870	1,730	0,014			1300	340	50	150	0	20	80	20	10	0	10	85,95	20,00	259,74	104,01		10	6	0	5	1	0	10	0	80	96,89	9411195	
3	TTT	97	3TTT 97	3TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Mafic dike	Gabbro	7131,675	4456,023	51,50	0,669	15,000	10,80	0,171	6,73	9,39	3,330	0,315	0,059		0,65	126	120	200	267	30	40	190	10	0	20	10	11,89	20,00	62,70	113,31		0	16	30	9	0	7	20	20	20	97,96	9710785	
94	TTT	96	94TTT 96	94TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA S	Gabbroic dike	Gabbro	7131,801	4456,116	63,33	0,990	14,170	7,55	0,135	2,72	3,49	3,530	2,220	0,122			31	36	17	118	11	18	100			0		76,00		500,00	193,00	20		3	198	30			13	38	110	99,09	960037	x
277	TOH	93	277TOH 93	277TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HAVERISENSUO	Komatiitic cumulate	Gabbro	7130,850	4456,470	45,20	0,234	14,800	9,47	0,241	7,89	16,80	0,060	0,114	0,030			229	110	30	117	10	20	70	20	0	0	0	5,49	10,00	80,61	447,32		0	3	15	8	0	16	80	70	100	94,84	9413829	
63	TTT	97	63TTT 97	63TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI SE	Gabbroic dike	Gabbro	7131,035	4456,633	50,90	0,337	16,300	7,01	0,190	9,39	9,65	1,940	1,910	0,029		1,27	239	220	200	169	10	20	150	10	10	40	10	65,84	10,00	886,70	128,53		10	13	7	8	0	5	10	10	30	97,66	9710705	
45	TOH	95	45TOH 95	45TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Gabbroic dike	Gabbro	7129,460	4457,090	49,40	1,330	7,140	11,00	0,398	10,40	13,50	1,810	0,404	0,112		0,00	99	190	110	292	170	10	150	10	10	160	10	9,14	10,00	116,44	194,49		10	22	89	14	0	5	0	20	170	95,49	9512314	
45	TOH	95	45TOH 95	45TOH 95 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Gabbroic dike	Gabbro	7129,460	4457,090	48,60	1,140	8,260	13,40	0,496	9,42	10,70	1,850	0,883	0,140		0,00	38	190	100	272	40	10	290	10	0	0	10	16,46	30,00	537,40	182,65		10	22	96	19	0	8	40	20	160	94,89	9512315	
72	JTL	95	72JTL 95	72JTL 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	VÄLITIE	Gabbro	Gabbro	7165,600	4458,010	48,30	0,643	14,700	10,80	0,181	9,19	8,99	2,240	0,049	0,056		0,00	385	140	60	238	30	20	100	20	0	0	10	6,40	10,00	62,70	104,85		10	15	15	14	0	4	30	10	50	95,15	9512402	
12	TOH	96	12TOH 96	12TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Plutonic rock	Gabbro	7232,670	4458,310	51,20	0,662	15,900	8,26	0,158	8,14	9,33	2,850	0,516	0,029			159	130	50	184	30	10	80	20	0	190	10	21,95	10,00	179,13	323,86		0	28	15	5	0	3	10	20	100	97,05	9612639	
55	KYK	94	55KYK 94	55KYK 94 1	P	1,00	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Gabbroic dike	Gabbro	7117,780	4462,090	48,40	3,100	11,200	18,30	0,362	4,69	8,32	2,020	0,758	0,396		0,00	74	70	60	530	490	0	120	0	10	810	10	38,41	30,00	214,96	105,70		10	34	178	43		9	30	40	1220	97,55	9634452	
64	KYK	94	64KYK 94	64KYK 94 1	P	1,00	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Gabbroic dike	Gabbro	7118,705	4463,600	46,60	0,567	3,750	11,70	0,194	24,10	9,82	0,250	0,045	0,049		0,00	2443	910	120	150	60	0	70	10	0	660	10	9,14	20,00	17,91	34,67		10	17	15	5		2	20	40	370	97,08	9634455	
306	JTL	97	306JTL 97	306JTL 97 1	P	1,01	0,00	KUHMO	YPYKKÄ	VALKEALAMPI	Gabbroic dike	Gabbro	7151,275	4478,790	49,70	1,230	15,900	12,50	0,203	5,90	9,94	2,290	0,486	0,138			140	80	70	330	110	10	90	0	0	620	10	17,37	30,00	134,35	139,52		10	30	81	23	0	6	10	20	1970	98,29	9818009	
125	JTL	97	125JTL 97	125JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	MUSTIKKAMÄKI	Gabbroic dike	Gabbro	7077,110	4484,010	51,80	2,000	16,700	11,80	0,181	2,69	7,64	3,770	1,130	0,607			23	10	180	266	10	10	90	10	0	380	10	34,75	10,00	429,92	323,86		0	29	170	25	0	10	0	50	1620	98,32	9818001	
63	SMS	63	63SMS 63	63SMS 63 3	K	0,00	160,05	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Gabbro	Gabbro	7233,660	4458,750	50,60	0,973	13,200	13,30	0,235	6,60	6,88	4,070	0,243	0,098			32	70	0	299	130	20	70	10	2200	1340	10	12,80	20,00	62,70	120,07		10	19	52	22	0	3	10	10	130	96,20	9414793	
66	KYK	94	66KYK 94	66KYK 94 1	P	1,02	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Gabbroic dike	Gabbro - pyroxenite	7116,850	4462,905	43,10	0,492	3,440	12,30	0,195	27,90	6,28	0,210	0,053	0,044		0,00	2839	1170	180	129	50	10	80	10	0	590	10	4,57	40,00	26,87	19,45		10	15	7	2		6	30	30	510	94,01	9634456	
62	TOH	95	62TOH 95	62TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Gabbroic dike	Gabbro / augite cumulate with intercumulus plagioclase	7132,135	4455,670	47,90	1,150	6,680	11,00	0,259	11,50	16,30	0,230	0,111	0,089		0,00	60	200	80	279	100	20	150	10	10	0	10	10,06	20,00	8,96	152,21		0	21	44	12	0	4	20	20	200	95,22	9512382	
64	TOH	95	64TOH 95	64TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Gabbroic dike	Gabbro / augite magnetite cumulate with intercumulus plagioclase	7132,155	4455,740	41,00	2,590	6,480	22,40	0,533	9,09	11,00	1,400	0,601	0,061		0,00	21	330	100	795	270	270	680	0	0	340	0	17,37	30,00	456,79	86,25		0	24	52	10	0	1	30	40	630	95,16	9512384	
63	TOH	95	63TOH 95	63TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Gabbroic dike	Gabbro / mottled augite cumulate with intercumulus plagioclase	7132,145	4455,690	49,10	1,170	6,590	11,70	0,287	10,70	13,30	2,060	0,702	0,075		0,00	30	210	90	286	100	120	210	10	10	0	10	20,12	20,00	537,40	104,01		0	23	52	14	0	2	10	20	380	95,68	9512383	
65	TOH	95	65TOH 95	65TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Gabbroic dike	Gabbro / plagioclase augite cumulate	7132,228	4455,773	49,60	1,690	13,500	13,20	0,332	4,56	7,75	4,620	0,986	0,107		0,00	15	60	50	374	170	100	260	20	0	0	10	31,09	20,00	277,65	199,56		10	23	74	14	0	5	10	30	360	96,35	9512385	
155	TTT	96	155TTT 96	155TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI E	Pyroxenite dike	Gabbro / pyroxenite	7130,734	4455,408	46,47	0,800	4,480	11,44	0,191	20,94	10,96	0,290	0,050	0,039			2454	714	87	145	54	7	68			210		0,07		4,90	31,00	7		1	48	11			1	11	170	96,92	960066	x
68	JTL	98	68JTL 98	68JTL 98 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Mafic volcanic rock	Gabbroic amphibolite	7081,096	4442,460	51,20	2,320	15,100	13,20	0,268	3,95	7,01	3,990	0,800	0,473			42	20	10	357	0	20	70	10	0	760	10	26,52	10,00	206,00	196,18		0	32	170	30	0	7	30	40	220	98,31	9818097	
139	JTL	96	139JTL 96	139JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	PIENI KORAMIVAARA	Metamorphic plutonic rock	Gabbroic amphibolite	7085,300	4445,055	50,10	0,993	15,600	10,70	0,234	6,72	10,20	2,850	0,464	0,124		0,00	132	60	60	286	20	20	80	10	0	160	10	12,80	0,00	89,57	206,32		0	20	52	13	0	4	20	20	80	97,99	9612711	
206	JSN	95	206JSN 95	206JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	NAURISLAHTI	Mafic volcanic rock	Gabbroic amphibolite	7096,000	4452,860	48,30	0,816	15,700	11,00	0,250	6,94	10,60	1,780	0,209	0,083		2,20	303	130	190	401	150	10	150	10	10	2630	30	6,40	0,00	89,57	54,96		0	16	44	17	0	3	20	10	290	95,68	9612513	
204	JSN	95	204JSN 95	204JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	JUSSINKIVI	Mafic volcanic rock	Gabbroic amphibolite	7094,640	4453,840	45,50	0,566	14,700	11,20	0,283	8,53	11,30	1,300	0,146	0,069		3,75	379	140	180	265	40	0	160	10	0	490	10	5,49	10,00	62,70	30,44		10	16	15	23	0	1	10	50	280	93,59	9612511	
188	JSN	95	188JSN 95	188JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOPURO	Mafic volcanic rock	Gabbroic amphibolite	7094,440	4454,560	52,00	0,739	17,100	8,63	0,177	6,73	10,30	1,020	0,587	0,061		1,45	377	170	230	313	70	10	110	0	0	600	10	19,20	0,00	98,52	84,56		10	11	30	14	0	6	10	20	80	97,34	9612508	
253	JSN	95	253JSN 95	253JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Gabbroic amphibolite dike	Gabbroic amphibolite	7095,740	4454,940	49,60	1,730	13,000	14,60	0,224	5,03	8,63	2,760	0,636	0,285		0,00	58	50	60	415	50	20	130	10	10	490	10	21,03	20,00	259,74	197,87		10	29	118	25	0	4	30	30	970	96,50	9512472	
244	JSN	95	244JSN 95	244JSN 95 1	P	1,01	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Gabbroic amphibolite dike	Gabbroic amphibolite	7095,040	4455,100	48,20	2,240	13,500	14,70	0,224	6,01	7,91	3,950	0,406	0,338		0,00	173	60	60	408	20	10	150	10	0	200	10	22,86	20,00	188,09	113,31		10	30	170	26	0	4	40	50	250	97,48	9512470	
288	JSN	95	288JSN 95	288JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORINIEMI	Mafic volcanic rock	Gabbroic amphibolite	7094,300	4455,520	49,50	0,620	14,000	10,70	0,186	8,60	10,00	2,390	0,051	0,055		0,00	156	100	50	265	0	0	70	20	0	0	10	7,32	20,00	17,91	64,26		10	19	15	13	0	4	20	20	140	96,10	9512479	
164	JSN	95	164JSN 95	164JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MYLLYJOKI	Gabbroic amphibolite dike	Gabbroic amphibolite	7090,130	4458,900	51,60	1,860	14,100	13,50	0,212	3,86	7,44	3,370	0,775	0,182		0,00	56	40	40	428	70	10	90	10	10	0	10	22,86	10,00	241,83	118,38		0	23	111	31	0	2	10	20	130	96,90	9512411	
146	TTT	96	146TTT 96	146TTT 96 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Gabbroic dike / pikilitic plagioclase cumulate with intercumulus pyroxene oikocrysts	7131,702	4455,840	44,37	1,600	15,670	8,99	0,204	7,75	18,67	0,300	0,120	0,173			163	105	38	310	13	21	64			2		1,00		4,00	374,00	21		9	114	25			8	29	2	98,84	960062	x
150	TTT	96	150TTT 96	150TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic gabbro	Gabbroic dike / plagioclase cumulate with intercumulus pyroxene	7131,544	4455,711	51,90	0,395	15,100	7,31	0,184	9,64	9,16	2,550	1,560	0,027			323	170	30	184	130	190	500	20	0	360	0	64,92	10,00	501,57	111,62		10	10	7	7	0	9	20	0	110	97,83	9612716	
89	TTT	96	89TTT 96	89TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTILAHTI	Gabbroic dike	Gabbroic dike / plagioclase cumulate with intercumulus pyroxene	7132,536	4456,164	50,20	1,620	14,300	13,00	0,396	4,13	7,59	4,100	1,640	0,116			26	50	60	394	160	70	290	10	10	360	0	70,41	30,00	1101,66	251,14		0	23	74	8	0	3	10	20	540	97,09	9612628	
153	TTT	96	153TTT 96	153TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Gabbroic dike / poikilitic plagioclase cumulate with intercumulus pyroxene oikocrysts	7131,863	4455,684	50,30	1,500	15,400	11,10	0,212	6,29	9,04	2,440	1,340	0,202			167	80	40	347	20	10	130	10	10	270	20	63,09	0,00	501,57	173,35		10	23	81	22	0	3	20	50	140	97,82	9612717	
100	TTT	96	100TTT 96	100TTT 96 3	P	3,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbroic dike / pyroxene cumulate with intercumulus plagioclase	7132,162	4455,785	49,39	0,990	5,830	13,16	0,372	12,10	14,27	1,150	0,610	0,020			26	272	59	232	43	220	211			50		10,00		225,00	113,00	12		1	53	20			0	10	640	99,34	960040	x
96	TTT	96	96TTT 96	96TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA NW	Gabbroic dike	Gabbroic dike / pyroxene cumulate with intercumulus plagioclase	7132,147	4455,864	49,80	0,991	5,980	10,60	0,263	12,10	14,10	1,610	0,675	0,081			170	250	50	238	60	30	250	0	0	1010	10	25,60	0,00	259,74	61,73		10	16	37	8	0	5	10	40	350	96,20	9612715	
95	TTT	96	95TTT 96	95TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA NW	Gabbroic dike	Gabbroic dike / pyroxene cumulate with intercumulus plagioclase	7132,094	4455,990	48,80	0,778	4,430	10,50	0,247	13,90	14,40	0,710	0,301	0,062			2094	320	110	197	140	60	320	0	10	150	10	12,80	0,00	89,57	22,83		20	18	22	11	0	3	20	10	140	94,13	9612630	
87	TOH	95	87TOH 95	87TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Gabbroic dike	Gabbroic dike rock	7150,360	4453,560	46,00	2,270	13,300	14,90	0,233	6,21	8,87	2,240	1,120	0,365		0,00	156	70	40	449	10	20	190	20	10	370	10	46,63	0,00	412,00	124,30		10	33	178	35	0	7	30	50	610	95,51	9512395	
100	TOH	95	100TOH 95	100TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Gabbroic dike	Gabbroic dike rock	7149,591	4454,095	49,80	1,560	13,800	11,90	0,208	7,12	5,83	4,450	1,780	0,173		0,00	236	80	60	428	90	10	100	20	10	510	10	69,50	30,00	618,01	108,24		10	30	96	27	0	0	20	20	220	96,62	9513891	
185	TTT	96	185TTT 96	185TTT 96 2	P	2,01	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Gabbroic dike	Gabbroic dike rock	7131,786	4454,260	51,40	1,710	13,700	15,00	0,231	3,30	6,81	5,130	0,626	0,243			21	30	30	286	10	0	70	20	10	50	10	21,95	0,00	89,57	88,79		10	24	170	23	0	5	0	40	710	98,15	9612727	
72	TTT	96	72TTT 96	72TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KIVIHIEKKA NE	Gabbroic dike	Gabbroic dike rock	7132,694	4454,769	48,20	1,950	11,600	13,60	0,223	4,77	14,90	0,280	0,133	0,256			33	40	0	408	260	30	270	10	20	5370	0	7,32	10,00	44,78	233,38		10	25	155	32	0	0	30	50	270	95,91	9612713	
206	TTT	96	206TTT 96	206TTT 96 3	P	3,00	0,00	KUHMO	KELLOJÄRVI	AHKIOLAMPI	Gabbroic dike	Gabbroic dike rock	7131,404	4455,030	48,90	1,330	8,820	12,70	0,327	10,10	11,90	0,780	0,212	0,122			684	260	50	292	160	0	140	10	0	390	10	8,23	0,00	71,65	76,95		20	20	74	13	0	5	10	20	110	95,19	9612733	
38	TTT	96	38TTT 96	38TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PALOLAMMINSUO N	Gabbroic dike	Gabbroic dike rock	7132,379	4455,035	50,60	1,790	14,000	14,30	0,397	4,39	6,40	5,180	0,839	0,159			26	40	60	381	150	80	190	10	10	550	0	27,43	20,00	259,74	213,93		0	20	104	19	0	13	30	50	250	98,06	9612623	
53	TOH	94	53TOH 94	53TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Gabbroic dike	Gabbroic dike rock	7127,564	4455,040	50,10	0,775	12,800	11,60	0,206	8,48	9,74	1,600	0,163	0,073			166	80	70	306	30	0	70	20	10	0	0	3,66	10,00	62,70	56,65		0	10	30	14	0	4	0	10	90	95,54	9414496	
36	TTT	96	36TTT 96	36TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PALOLAMMINSUO N	Gabbroic dike	Gabbroic dike rock	7132,376	4455,087	51,01	1,150	6,460	11,17	0,375	13,01	12,57	1,480	0,270	0,053			616	254	63	208	13	2018	2593			470		2,00		13,00	52,00	0		1	71	4			10	46	180	98,78	960012	x
37	TTT	96	37TTT 96	37TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PALOLAMMINSUO N	Gabbroic dike	Gabbroic dike rock	7132,304	4455,193	51,90	1,960	14,000	13,40	0,373	4,02	6,58	5,350	0,435	0,203			20	30	50	319	140	110	590	0	0	1000	0	14,63	10,00	125,39	227,46		10	21	126	18	8	3	10	30	400	98,22	9612712	
50	TTT	96	50TTT 96	50TTT 96 2	P	2,01	0,00	KUHMO	KELLOJÄRVI	PALOLAMMINSUO	Gabbroic dike	Gabbroic dike rock	7131,978	4455,297	48,30	1,410	14,800	11,10	0,312	6,87	8,98	2,730	1,570	0,179			175	90	70	347	30	210	360	10	10	470	0	62,18	30,00	850,88	222,39		0	30	74	21	0	9	30	20	180	96,25	9612625	
11	SII	94	11SII 94	11SII 94 2	K	0,00	62,20	KUHMO	SIIVIKKO	MÄKISENSUO	Gabbroic dike	Gabbroic dike rock	7127,673	4455,312	51,90	0,749	15,300	7,13	0,144	8,42	10,30	3,110	0,362	0,074			330	350	80	339	150	20	90	20	0	2120	0	17,37	0,00	134,35	115,85		10	7	44	12	0	8	0	20	50	97,49	9413444	
11	SII	94	11SII 94	11SII 94 2	K	0,00	123,70	KUHMO	SIIVIKKO	MÄKISENSUO	Gabbroic dike	Gabbroic dike rock	7127,673	4455,312	53,80	0,755	15,000	7,04	0,166	8,64	8,85	3,460	0,299	0,084			387	110	70	289	140	40	190	20	10	2880	0	13,72	0,00	89,57	85,41		0	8	52	15	0	6	0	20	50	98,09	9413447	
5	TTT	96	5TTT 96	5TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ SW	Gabbroic dike	Gabbroic dike rock	7132,371	4455,445	51,00	1,840	13,800	13,80	0,401	3,86	6,21	4,880	1,500	0,128			40	30	100	367	80	210	440	10	0	420	0	56,69	20,00	788,18	188,57		10	23	96	14	0	10	0	50	530	97,42	9612617	
12	TTT	96	12TTT 96	12TTT 96 1	P	1,02	0,00	KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbroic dike rock	7132,248	4455,628	47,80	0,913	13,400	12,80	0,477	7,46	8,56	0,650	3,100	0,089			259	90	20	319	60	130	360	10	10	340	10	122,53	0,00	1683,84	153,90		10	20	30	18	0	6	0	40	330	95,25	9612619	
12	TTT	96	12TTT 96	12TTT 96 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbroic dike rock	7132,261	4455,628	52,10	1,580	13,700	13,60	0,567	4,23	5,47	4,170	2,110	0,144			33	50	50	353	260	180	320	10	0	550	0	67,67	20,00	1746,54	134,45		10	28	89	14	0	5	20	60	530	97,67	9612618	
165	TOH	93	165TOH 93	165TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Gabbroic dike	Gabbroic dike rock	7127,005	4455,640	51,05	0,800	10,770	10,47	0,233	11,20	9,00	2,740	0,230	0,064			942	272	89	255	79	6	115			750		2,00		48,00	109,00	15		1	59	14			7	11	60	97,71	971544	x
161	TOH	93	161TOH 93	161TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Gabbroic dike	Gabbroic dike rock	7126,940	4455,715	50,10	0,645	10,500	10,00	0,228	12,30	9,05	2,380	0,478	0,068			1095	300	80	268	80	10	70	20	0	180	0	7,77	30,00	80,61	73,57		10	7	44	11	0	10	30	30	100	95,75	9314451	
3	TOH	93	3TOH 93	3TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Gabbroic dike	Gabbroic dike rock	7126,875	4455,750	51,60	0,671	14,000	9,92	0,135	8,28	7,96	3,780	0,230	0,073			227	90	60	254	300	10	40	20	0	7330	0	4,11	20,00	71,65	150,52		0	9	37	17	0	6	0	30	200	96,65	9313506	
152	TOH	93	152TOH 93	152TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Gabbroic dike	Gabbroic dike rock	7126,870	4455,755	50,90	0,581	14,500	9,75	0,178	8,82	7,43	4,210	0,115	0,059			447	80	80	252	230	20	70	20	0	5810	10	3,66	40,00	53,74	164,05		20	5	22	14	0	7	20	10	80	96,54	9314447	
156	TOH	93	156TOH 93	156TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Gabbroic dike	Gabbroic dike rock	7126,905	4455,775	52,60	0,554	11,500	8,73	0,184	10,70	8,33	3,170	0,193	0,062			801	230	60	232	80	10	90	20	10	850	20	3,20	0,00	71,65	110,77		0	6	37	10	0	1	10	20	90	96,02	9314449	
108	TTT	96	108TTT 96	108TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	SALMENTAUS S	Gabbroic dike	Gabbroic dike rock	7133,641	4455,922	63,80	1,180	13,700	8,31	0,221	1,54	2,58	4,760	2,400	0,319			68	10	0	109	0	10	70	10	140	70	10	48,46	10,00	510,53	89,63		0	24	185	28	0	7	40	80	510	98,81	9612632	
200	TTT	96	200TTT 96	200TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Gabbroic dike rock	7131,773	4456,016	48,00	0,989	14,600	12,90	0,204	7,10	10,20	2,500	0,709	0,102			235	110	50	333	200	20	120	10	10	1360	10	32,92	10,00	170,18	89,63		0	19	44	17	0	5	10	40	120	97,30	9612731	
65	TTT	97	65TTT 97	65TTT 97 2	P	2,01	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI SE	Gabbroic dike	Gabbroic dike rock	7131,069	4456,560	44,50	1,230	7,970	12,90	1,150	10,80	17,20	0,710	0,595	0,124		0,74	718	290	110	283	450	2260	670	10	10	120	0	8,23	0,00	44,78	24,52		0	18	81	15	0	7	10	30	50	97,18	9710706	
4	TOH	95	4TOH 95	4TOH 95 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Gabbroic dike	Gabbroic dike rock	7127,225	4456,740	43,40	0,622	15,300	10,70	0,179	14,20	7,12	2,560	0,096	0,062		4,45	144	480	170	129	30	10	90	0	0	0	10	2,74	0,00	80,61	153,90		10	16	15	9	0	3	0	0	50	94,24	9512252	
180	TOH	93	180TOH 93	180TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Gabbroic dike	Gabbroic dike rock	7126,745	4456,800	51,30	0,714	12,800	10,20	0,171	8,94	8,15	3,920	0,137	0,066			212	100	80	274	60	10	50	20	0	0	10	0,46	10,00	44,78	103,16		0	8	30	16	0	6	10	30	190	96,40	9314462	
174	MAF	96	174MAF 96	174MAF 96 2	P	2,03	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Gabbroic dike	Gabbroic dike rock	7230,900	4456,865	48,40	2,720	12,500	16,50	0,257	4,39	8,15	2,980	0,946	0,725		0,00	38	30	60	503	100	10	130	10	10	2700	10	33,83	20,00	358,26	136,99		0	38	252	49		6	40	90	1920	97,57	9634371	
14	SMS	70	14SMS 70	14SMS 70 6	K	0,00	108,60	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Gabbroic dike	Gabbroic dike rock	7230,250	4457,340	52,50	1,050	13,000	13,90	0,229	5,97	6,39	3,770	0,686	0,096			36	50	100	333	20	0	70	0	0	0	10	32,92	30,00	188,09	60,88		0	21	52	15	0	3	30	20	180	97,59	9413993	
70	TOH	95	70TOH 95	70TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI EAST MARGIN	KATISKALAMPI	Gabbroic dike	Gabbroic dike rock	7126,330	4458,660	47,10	0,902	14,300	12,90	0,219	7,71	10,10	1,930	0,410	0,068		0,00	209	100	60	326	70	10	90	20	0	0	10	11,89	10,00	125,39	114,15		20	17	30	19	0	10	10	0	200	95,64	9512386	
273	JTL	97	273JTL 97	273JTL 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Gabbroic dike	Gabbroic dike rock	7153,720	4472,695	50,40	0,915	14,800	12,90	0,217	5,95	10,30	2,360	0,399	0,096			66	60	90	315	140	0	100	10	10	240	10	13,72	20,00	71,65	121,76		10	17	37	15	0	2	10	30	980	98,34	9818006	
200	TTT	96	200TTT 96	200TTT 96 4	P	4,01	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Inclusion / enclave	Gabbroic pegmatite	7131,772	4456,010	53,69	0,420	12,420	6,85	0,161	10,73	10,52	2,450	0,700	0,085			156	215	39	169	10	27	79			2		37,00		330,00	203,00	13		2	45	14			11	26	110	98,78	960077	x
12	TOH	96	12TOH 96	12TOH 96 3	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Plutonic rock	Gabbronorite	7232,690	4458,040	50,90	0,341	9,700	9,15	0,170	15,50	7,94	1,050	0,436	0,026			1006	480	60	143	120	10	70	10	0	820	10	30,18	30,00	143,31	140,37		10	13	7	1	3	8	0	20	480	95,21	9612640	
161	TOH	96	161TOH 96	161TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	ISO NIITTYLAMPI	Gabbroic dike	Gabbronoritic dike	7232,830	4457,825	50,90	0,680	8,980	9,51	0,179	14,00	11,40	1,530	0,283	0,063		0,00	393	300	70	204	30	0	80	10	0	30	20	11,89	30,00	116,44	175,04		0	17	22	10		9	20	50	90	97,53	9634335	
162	TOH	96	162TOH 96	162TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	ISO NIITTYLAMPI	Gabbroic dike	Gabbronoritic dike	7232,798	4457,980	48,60	0,981	10,400	9,70	0,194	12,90	12,40	1,460	0,455	0,032		0,00	958	300	60	286	130	10	80	10	0	1030	10	12,80	20,00	241,83	251,99		0	19	15	14		8	20	30	80	97,12	9634336	
36	KYK	94	36KYK 94	36KYK 94 2	P	2,00	0,00	KUHMO	KELLONIEMI	KORPISUO	Granite dike	Granite dike	7128,000	4451,200	45,80	0,232	6,060	14,80	0,511	6,44	18,20	0,260	0,048	0,151			53	60	60	265	560	20	100	0	0	22600	10	5,49	10,00	17,91	149,67		10	19	0	17	0	17	10	30	70	92,50	9411269	
169	TOH	94	169TOH 94	169TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI EAST MARGIN	NÄÄTÄNIEMI TH	Plutonic rock	Granite gneiss	7125,770	4459,410	70,90	0,342	14,900	2,82	0,047	1,49	2,43	5,010	1,410	0,120			39	30	0	48	0	10	30	20	30	0	10	44,81	20,00	600,09	208,02		0	19	148	8	0	6	40	50	90	99,47	9411254	
168	TOH	94	168TOH 94	168TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Plutonic rock	Granodiorite	7127,048	4455,290	60,90	0,688	16,600	5,98	0,106	3,84	5,34	4,130	1,380	0,148			126	80	20	129	10	20	70	20	10	0	0	44,81	30,00	277,65	255,37		0	20	118	14	0	8	20	40	120	99,11	9411253	
167	TOH	93	167TOH 93	167TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Plutonic rock	Granodiorite	7127,135	4455,540	66,10	0,656	15,800	4,68	0,080	2,01	2,78	4,830	2,120	0,186			29	20	0	78	0	0	60	10	40	0	10	32,46	0,00	367,22	162,35		10	12	185	24	1	6	20	70	120	99,24	9314454	
149	TOH	93	149TOH 93	149TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Plutonic rock	Granodiorite	7126,820	4455,734	49,40	0,696	20,400	6,71	0,114	8,05	2,97	4,420	4,510	0,334			181	120	40	124	0	200	50	20	10	0	0	71,32	30,00	1083,74	607,98		0	10	185	19	0	6	0	70	140	97,60	9314445	
110	TOH	93	110TOH 93	110TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Plutonic rock	Granodiorite	7126,625	4455,794	61,20	0,618	16,200	5,89	0,097	3,88	4,56	4,810	1,410	0,181			90	80	0	126	320	10	40	30	0	0	10	26,52	10,00	438,87	355,15		0	8	96	8	0	4	10	50	140	98,85	9314433	
44	TOH	94	44TOH 94	44TOH 94 1	P	1,00	0,00	KUHMO	PAHAKANGAS	KESÄKANKAANSUO	Plutonic rock	Granodiorite	7126,180	4457,485	77,10	0,204	13,600	1,55	0,014	0,43	0,75	2,960	3,000	0,037			31	20	0	27	0	30	10	10	190	0	10	74,07	30,00	438,87	49,89		0	18	126	20	0	0	50	30	90	99,65	9411274	
43	TOH	94	43TOH 94	43TOH 94 1	P	1,00	0,00	KUHMO	PAHAKANGAS	KESÄKANKAANSUO	Plutonic rock	Granodiorite	7126,120	4457,515	74,60	0,224	13,600	1,99	0,041	0,75	1,57	4,750	2,000	0,054			29	30	0	20	0	30	20	10	140	0	10	64,01	10,00	358,26	62,57		10	19	155	22	0	0	10	70	140	99,58	9411273	
190	MAF	96	190MAF 96	190MAF 96 1	P	2,01	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Plutonic rock	Granodiorite	7236,940	4459,450	44,40	1,840	6,830	13,60	0,226	16,00	9,75	0,060	0,113	0,283		0,00	780	660	80	367	150	10	130	10	10	600	10	11,89	0,00	80,61	20,29		10	31	44	4		4	0	10	60	93,10	9634376	
5	SII	93	5SII 93	5SII 93 3	K	0,00	108,70	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Inclusion / enclave	Granodiorite inclusion / enclave	7126,850	4455,450	35,30	0,752	17,900	13,80	0,143	15,70	1,22	0,080	8,130	0,202			213	100	90	215	0	10	230	30	10	0	10	261,52	40,00	1827,15	226,62		10	10	178	34	0	11	0	50	140	93,23	9413809	
126	TOH	93	126TOH 93	126TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Plutonic rock	Granodiorite inclusion / enclave	7126,711	4455,829	61,80	0,575	16,200	4,94	0,057	5,43	0,89	7,480	1,710	0,166			138	120	30	120	0	0	40	10	10	0	10	29,26	20,00	429,91	144,60		10	7	104	12	0	6	0	30	110	99,25	9314437	
129	TOH	93	129TOH 93	129TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Plutonic rock	Granodiorite inclusion / enclave	7126,709	4455,835	59,80	0,563	16,300	5,45	0,048	6,90	0,46	6,110	3,270	0,171			114	90	20	115	0	0	40	10	10	0	10	53,49	10,00	537,39	69,34		10	8	89	13	0	4	0	60	150	99,08	9314439	
201	TTT	96	201TTT 96	201TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Green pyroxenite	7131,808	4456,013	51,19	0,330	3,710	7,60	0,228	21,18	10,93	0,100	0,020	0,013			4264	425	48	163	5	11	85			2		0,07		4,90	2,00	6		2	15	9			7	4	2	96,14	960080	x
66	TTT	97	66TTT 97	66TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI SE	Komatiitic cumulate?	Green pyroxenite	7131,040	4456,597	51,50	0,315	5,410	7,66	0,253	17,00	13,80	0,620	0,250	0,024		1,77	1539	390	220	201	40	80	520	10	10	80	10	9,14	0,00	71,65	27,90		10	14	0	11	0	4	10	20	60	96,83	9710707	
52	TTT	97	52TTT 97	52TTT 97 4	P	4,00	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Komatiitic cumulate	Green pyroxenite	7132,060	4457,242	48,10	0,179	5,500	8,64	0,173	23,40	7,88	0,000	0,014	0,024		4,69	2278	270	190	86	0	10	40	10	10	0	10	5,49	0,00	17,91	10,15		10	14	0	4	0	7	10	20	20	93,91	9710703	
144	TTT	96	144TTT 96	144TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Green pyroxenite.	7131,798	4455,963	50,41	0,230	3,250	5,82	0,320	18,31	16,26	0,300	0,060	0,008			3428	354	42	150	18	11	67			2		0,07		4,90	4,00	5		1	9	9			0	4	2	95,61	960060	x
121	JSK	93	121JSK 93	121JSK 93 2	M	35,50	35,50	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Greywacke	7149,612	4454,451	79,30	0,361	11,600	2,20	0,057	0,58	1,30	2,090	1,840	0,036			375	80	0	65	30	0	30	20	270	4120	20	54,86	10,00	295,57	68,49		0	8	96	5	0	7	0	10	40	99,36	9313781	
10	SPL	97	10SPL 97	10SPL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	KOLKONJOKI	Mafic volcanic rock	High-Cr basalt	7080,030	4441,420	57,70	0,601	13,700	8,87	0,276	6,07	7,46	3,440	0,438	0,066		0,00	1464	360	70	249	170	0	80	0	0	120	10	12,80	10,00	62,70	122,61		0	15	15	13	0	3	0	20	100	98,62	9710782	
17	TOH	95	17TOH 95	17TOH 95 1	P	1,00	0,00	KUHMO	KIVISUO	KIVISUO	Mafic volcanic rock	High-Cr basalt	7088,500	4449,190	56,80	0,611	14,600	8,93	0,310	5,29	9,85	1,030	0,293	0,052		0,00	1355	580	280	265	80	0	70	10	0	3500	110	13,72	10,00	62,70	91,32		0	15	22	13	0	9	0	20	110	97,77	9512312	
32	JTL	97	32JTL 97	32JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Mafic volcanic rock	High-Cr basalt	7089,015	4449,290	46,80	0,656	15,500	13,10	0,398	8,71	10,80	1,450	0,266	0,055		0,00	1211	360	130	283	0	10	110	0	10	20	10	10,06	10,00	44,78	30,44		10	15	15	14	0	2	10	20	220	97,74	9710770	
161	JSN	95	161JSN 95	161JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVLAJÄRVI	Mafic volcanic rock	High-Cr basalt	7093,420	4452,970	63,80	0,472	10,900	7,23	0,232	5,23	8,14	0,710	0,252	0,037		0,00	1895	290	0	211	40	10	90	10	70	850	20	13,72	10,00	53,74	43,97		10	18	15	8	0	5	0	10	240	97,00	9512410	
142	JSK	93	142JSK 93	142JSK 93 1	P	1,00	0,00	KUHMO	AROLA	MATARASUO	Mafic volcanic rock	High-Cr basalt	7149,725	4454,165	51,00	0,501	11,500	9,13	0,208	9,15	8,94	4,550	0,085	0,040			3106	980	120	241	0	0	70	10	10	0	0	6,40	20,00	26,87	54,96		10	6	15	12	0	7	20	20	120	95,10	9313791	
110	TOH	95	110TOH 95	110TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	High-Cr basalt	7149,100	4454,270	47,20	0,444	10,800	9,22	0,309	7,36	11,40	3,520	0,051	0,034		0,00	3873	1140	100	204	10	10	90	20	10	100	50	7,32	20,00	35,83	48,20		10	19	0	9	0	4	0	10	160	90,34	9512486	
143	JSK	93	143JSK 93	143JSK 93 1	P	1,00	0,00	KUHMO	AROLA	MATARASUO	Mafic volcanic rock	High-Cr basalt	7149,670	4454,275	52,10	0,398	9,630	15,40	0,596	6,98	8,70	0,930	0,206	0,036			3530	710	60	192	30	0	80	20	0	0	0	5,49	20,00	44,78	10,15		10	5	7	9	0	5	0	0	310	94,98	9313792	
108	TOH	95	108TOH 95	108TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	High-Cr basalt	7149,085	4454,315	47,80	0,410	9,460	19,60	0,677	8,93	6,87	0,650	0,147	0,028		0,00	3168	850	80	204	0	10	60	20	10	0	20	8,23	10,00	44,78	5,07		0	19	0	5	0	13	20	20	420	94,57	9512484	
240	JSN	95	240JSN 95	240JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KIISULA	Mafic volcanic rock	High-Cr basalt	7095,330	4454,340	49,40	0,552	11,600	11,20	0,241	11,30	9,26	0,790	0,129	0,045		0,00	2094	500	80	265	0	10	120	0	0	0	70	8,23	20,00	44,78	26,21		10	18	15	4	0	1	10	0	170	94,52	9512468	
105	TOH	95	105TOH 95	105TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	High-Cr basalt	7148,715	4454,395	44,50	0,363	8,400	10,50	0,342	7,43	12,40	0,000	0,004	0,020		0,00	4516	1680	70	177	0	10	90	10	0	0	10	8,23	20,00	17,91	52,43		0	18	7	7	0	10	0	20	50	83,96	9513895	
23	JSN	95	23JSN 95	23JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	PERÄVAARA	Mafic volcanic rock	High-Cr basalt	7093,020	4454,680	55,10	0,663	16,400	9,03	0,180	4,19	7,80	3,870	0,185	0,073		0,91	1847	910	300	326	160	10	100	10	0	1350	10	5,49	30,00	116,44	63,42		0	14	22	9	0	13	0	20	80	97,49	9612501	
187	JSN	95	187JSN 95	187JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Mafic volcanic rock	High-Cr basalt	7094,300	4454,700	52,00	0,574	13,300	10,10	0,270	5,95	11,10	0,790	0,086	0,051		0,00	1129	260	40	272	10	10	80	10	0	0	10	9,14	0,00	35,83	50,74		10	16	15	12	0	2	0	0	90	94,22	9512414	
221	JSN	95	221JSN 95	221JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MYLLYKANGAS	Mafic volcanic rock	High-Cr basalt	7093,800	4454,960	55,30	0,571	12,200	10,60	0,298	6,04	9,29	2,030	0,108	0,049		1,65	2128	400	280	245	30	10	60	0	0	400	10	0,91	10,00	35,83	65,11		10	15	22	12	0	8	20	10	80	96,49	9612516	
276	JSN	95	276JSN 95	276JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Mafic volcanic rock	High-Cr basalt	7094,480	4455,220	54,20	0,593	12,200	9,75	0,255	7,57	8,83	2,400	0,070	0,041		0,00	2224	480	70	258	10	10	70	20	0	0	10	3,66	0,00	44,78	85,40		0	19	15	15	0	0	0	10	100	95,91	9512474	
57	TOH	94	57TOH 94	57TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7128,018	4455,220	48,80	0,570	12,100	11,70	0,245	6,25	11,10	2,180	0,233	0,046			2162	310	110	258	0	10	60	20	0	0	10	1,83	0,00	80,61	94,71		0	6	30	16	0	3	0	0	220	93,22	9414499	
59	TOH	94	59TOH 94	59TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7128,058	4455,248	52,30	0,622	13,900	11,60	0,238	5,73	9,40	1,630	0,415	0,052			1396	170	120	279	250	50	150	30	10	4480	10	17,37	30,00	152,26	90,48		0	4	30	15	0	7	0	20	150	95,89	9411001	
277	JSN	95	277JSN 95	277JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Mafic volcanic rock	High-Cr basalt	7094,420	4455,360	47,90	0,528	12,300	8,74	0,233	8,40	12,90	1,680	0,126	0,039		0,00	1998	410	60	224	100	0	60	10	0	300	40	11,89	20,00	71,65	161,51		10	16	15	11	0	3	40	0	70	92,85	9512475	
61	TOH	94	61TOH 94	61TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7128,114	4455,383	50,80	0,501	11,500	7,42	0,192	8,94	12,50	2,510	0,089	0,170			1676	400	80	231	0	10	80	20	0	0	20	5,49	0,00	62,70	131,91		10	5	15	19	0	10	0	20	80	94,62	9411002	
188	TOH	93	188TOH 93	188TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7127,503	4455,755	53,60	0,597	13,800	9,37	0,176	7,09	9,21	1,850	0,155	0,050			1498	290	60	293	10	10	100	30	0	0	0	0,91	10,00	44,78	82,02		0	7	22	13	0	5	10	20	130	95,90	9314467	
63	TOH	94	63TOH 94	63TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7127,730	4456,245	56,80	0,636	14,100	8,14	0,180	5,08	9,10	2,630	0,134	0,053			1608	340	90	279	40	10	140	10	10	0	10	2,74	0,00	53,74	115,85		10	7	30	18	0	6	0	10	60	96,85	9411004	
100	JSN	95	100JSN 95	100JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	REKILAMPI	Mafic volcanic rock	High-Cr basalt	7090,680	4457,040	60,00	0,585	13,500	7,03	0,140	6,15	8,33	2,210	0,194	0,065		0,00	1841	290	60	258	40	10	100	20	0	600	50	3,66	30,00	62,70	109,93		10	18	15	14	0	4	20	20	90	98,20	9512463	
62	JTL	96	62JTL 96	62JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Mafic volcaniclastic rock	Hornblende gneiss	7084,566	4444,929	54,00	1,260	14,500	12,10	0,227	4,54	8,15	2,770	0,275	0,118		0,00	47	70	50	469	250	70	220	10	10	9400	0	8,23	20,00	98,52	93,01		0	17	52	21		4	0	20	150	97,94	9634421	
60	JTL	96	60JTL 96	60JTL 96 2	P	2,03	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Mafic volcaniclastic rock	Hornblende gneiss	7084,510	4444,990	51,30	0,692	14,500	10,80	0,210	7,87	9,35	3,100	0,400	0,064		0,00	226	70	70	286	140	10	120	0	0	4020	10	24,69	0,00	125,39	152,21		10	16	22	12		4	0	0	200	98,29	9634420	
163	JTL	97	163JTL 97	163JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Mafic volcaniclastic rock	Hornblende gneiss	7061,325	4475,010	48,80	0,557	22,600	6,88	0,118	4,99	12,20	2,680	0,285	0,019			166	70	70	275	70	10	40	10	0	910	10	11,89	10,00	53,74	130,22		10	14	0	0	0	10	10	30	90	99,13	9818004	
178	JTL	97	178JTL 97	178JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Mafic volcaniclastic rock	Hornblende gneiss	7061,805	4475,725	46,60	0,527	25,100	6,48	0,113	5,07	13,20	1,920	0,152	0,056		0,00	23	130	100	131	60	10	50	0	10	560	10	8,23	20,00	53,74	134,45		10	17	0	0	0	4	10	0	90	99,22	9710775	
243	JTL	97	243JTL 97	243JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	PAHANKALANLAMPI	Mafic volcaniclastic rock	Hornblende gneiss	7068,685	4485,295	44,10	1,850	16,000	18,80	0,270	2,98	8,12	3,880	0,480	1,280		0,00	21	0	40	61	10	10	170	0	10	170	0	21,95	20,00	89,57	222,39		0	14	22	52	0	0	20	30	800	97,76	9710778	
165	TTT	97	165TTT 97	165TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	KARHIVAARA	Mafic volcaniclastic rock	Hornblende gneiss	7075,360	4489,990	50,80	0,746	16,100	9,72	0,260	4,32	14,60	0,490	0,194	0,098		1,33	252	130	160	245	100	20	100	0	0	250	10	18,29	20,00	80,61	218,16		20	16	30	20	0	4	10	0	30	97,33	9710726	
150	TTT	97	150TTT 97	150TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	KANGASVAARA	Sedimentary rock	Hornblende gneiss	7079,350	4490,170	49,10	0,701	16,900	11,10	0,210	6,21	10,30	3,150	0,269	0,083		0,48	214	90	150	246	50	10	90	10	10	70	60	18,29	20,00	71,65	110,77		10	15	22	12	0	4	40	10	70	98,02	9710722	
176	TTT	97	176TTT 97	176TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	HIIDENPORTTI	Mafic volcaniclastic rock	Hornblende gneiss	7076,080	4490,730	52,80	0,836	14,200	11,10	0,301	6,27	9,22	2,680	0,482	0,144		0,62	158	110	80	277	60	0	90	10	0	50	20	15,54	10,00	107,48	98,93		10	14	37	15	0	7	0	30	70	98,03	9710729	
155	TTT	97	155TTT 97	155TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	HIIDENPORTTI N	Mafic volcaniclastic rock	Hornblende gneiss	7077,060	4490,770	50,00	1,360	15,800	12,40	0,198	7,25	6,64	3,710	0,286	0,141		0,68	125	60	180	360	0	0	70	10	10	20	20	12,80	10,00	71,65	107,39		0	15	59	20	0	12	10	40	50	97,79	9710723	
128	TTT	97	128TTT 97	128TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	NUOTTIVAARA	Sedimentary rock	Hornblende gneiss	7077,690	4491,980	49,60	0,499	15,600	10,20	0,340	7,53	12,10	1,770	0,341	0,065		0,62	343	120	180	239	20	10	70	0	10	300	20	19,20	0,00	98,52	63,42		10	11	7	10	0	12	10	10	180	98,05	9710716	
141	TTT	97	141TTT 97	141TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	PÄÄLAMPI	Sedimentary rock	Hornblende gneiss	7078,300	4494,070	52,40	0,610	13,800	11,60	0,225	6,83	11,10	1,110	0,346	0,069		0,44	301	150	100	276	60	10	130	0	0	60	10	16,46	30,00	26,87	54,12		10	14	15	13	0	9	10	40	60	98,09	9710720	
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	90,70	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Hornblende-chlorite rock	7233,520	4458,600	46,94	0,460	6,010	11,29	0,257	19,33	9,48	0,030	0,010	0,024			2263	620	79	179	113	7	111			170		0,02		0,07	12,00	13		0	21	11			0	12	0	95,07	971337	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	91,50	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Hornblende-chlorite rock	7233,520	4458,600	44,31	0,470	6,040	12,20	0,345	16,02	12,54	0,190	0,060	0,023			1857	1518	102	206	745	91	140			1670		0,06		2,00	58,00	9		0	21	9			0	4	10	93,54	971338	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	93,25	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Hornblende-chlorite rock	7233,520	4458,600	45,62	0,520	7,030	10,75	0,240	20,30	8,78	0,170	0,030	0,029			1547	348	73	227	16	5	82			500		0,05		0,09	13,00	10		0	24	10			0	8	0	94,65	971340	x
20	SMS	60	20SMS 60	20SMS 60 8	K	0,00	195,50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Hornblende-chlorite rock	7228,050	4456,620	42,00	0,520	7,070	11,23	0,225	19,19	9,98	0,160	0,020	0,041			2187	591	97	157	7	8	100			330		0,02		0,09	59,00	10		0	36	13			0	26	70	91,68	971368	x
20	SMS	60	20SMS 60	20SMS 60 8	K	0,00	197,70	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Hornblende-chlorite rock	7228,050	4456,620	44,93	0,670	8,960	12,72	0,209	16,64	7,54	0,270	1,260	0,042			1897	513	78	186	72	8	145			2140		58,00		154,00	55,00	13		0	38	14			4	13	400	94,64	971369	x
20	SMS	60	20SMS 60	20SMS 60 8	K	0,00	198,30	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Hornblende-chlorite rock	7228,050	4456,620	46,98	0,690	9,360	12,40	0,207	16,09	6,96	0,270	1,280	0,045			1640	489	78	192	484	8	154			1930		58,00		158,00	54,00	12		0	39	13			4	4	320	95,64	971370	x
13	TOH	96	13TOH 96	13TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HEPOVAARA	Intermediate volcanic rock	Intermediate lapilli tuff	7229,550	4455,180	58,00	0,860	15,200	8,01	0,151	4,86	5,98	3,080	1,570	0,310			216	80	0	156	10	20	60	10	20	50	10	43,89	20,00	537,40	336,54		0	27	185	22	0	9	20	60	140	98,02	9612641	

22	TOH	96	22TOH 96	22TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HEPOVAARA	Intermediate volcanic rock	Intermediate lapilli tuff	7229,370	4455,624	59,80	0,706	15,800	6,83	0,140	4,20	7,24	3,010	0,721	0,104		107	60	0	136	0	40	70	10	60	20	10	21,03	10,00	277,65	243,53		0	18	148	16	0	9	20	50	160	98,55	9612643	
14	SII	94	14SII 94	14SII 94 3	K	0,00	92,10	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,460	4454,100	53,40	0,916	18,100	6,83	0,142	4,00	9,14	4,480	0,434	0,079		408	210	210	326	70	90	170	20	0	3180	30	15,54	0,00	143,31	208,02		0	16	44	17	0	9	0	20	60	97,52	9414667	
14	SII	94	14SII 94	14SII 94 3	K	0,00	101,95	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,460	4454,100	54,00	0,999	18,700	5,96	0,155	4,71	8,45	5,040	0,459	0,093		424	210	120	333	30	130	180	10	10	420	30	20,12	20,00	206,00	153,05		10	17	44	17	0	5	0	30	60	98,57	9414668	
13	SII	94	13SII 94	13SII 94 2	K	0,00	123,50	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,519	4454,600	53,30	0,894	17,600	6,95	0,174	3,76	11,10	3,580	0,253	0,079		388	210	70	326	50	60	110	10	10	6140	0	7,32	20,00	71,65	152,21		0	15	44	18	0	9	10	20	30	97,69	9414647	
13	SII	94	13SII 94	13SII 94 2	K	0,00	131,75	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,519	4454,600	55,50	0,867	16,900	7,52	0,103	4,17	7,35	4,160	0,886	0,076		342	140	40	292	110	20	1150	20	10	26000	10	30,18	0,00	223,92	109,93		10	19	44	18	0	5	10	20	30	97,53	9414648	
13	SII	94	13SII 94	13SII 94 2	K	0,00	138,55	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,519	4454,600	55,10	0,912	17,600	6,76	0,151	3,86	8,24	4,460	0,923	0,067		385	210	110	319	60	20	140	20	10	9360	10	29,26	10,00	268,70	139,52		10	17	44	16	0	3	40	20	130	98,07	9414653	
18	TOH	95	18TOH 95	18TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYJOKI	Graben (lahar) volcaniclastic rock	Intermediate volcanic rock	7129,810	4454,890	62,50	0,627	15,000	5,77	0,111	3,91	4,75	4,500	0,934	0,128	1,06	81	70	160	109	0	10	50	10	0	0	10	28,35	10,00	232,87	151,36		10	19	104	13	0	0	10	10	30	98,23	9512260	
4	SII	93	4SII 93	4SII 93 2	K	0,00	102,90	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,500	4455,300	55,37	0,870	15,610	6,03	0,165	7,36	8,62	3,990	0,210	0,073		428	113	89	261	0	27	81			40		3,00		94,00	138,00	16		0	60	18			0	19	0	98,96	971288	x
11	SII	94	11SII 94	11SII 94 1	K	0,00	24,30	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,673	4455,312	52,60	0,482	11,300	7,94	0,185	14,20	7,10	1,460	0,258	0,050		1642	310	60	237	0	10	100	20	10	0	10	15,54	10,00	170,17	39,74		0	5	22	10	0	4	0	20	60	95,58	9413443	
21	TOH	95	21TOH 95	21TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYJOKI	Graben (lahar) volcaniclastic rock	Intermediate volcanic rock	7130,000	4455,315	65,00	0,487	16,800	3,94	0,078	1,86	5,05	5,030	0,509	0,114	0,62	25	30	50	75	0	10	50	10	10	0	10	14,63	0,00	161,22	176,73		0	17	96	7	0	4	10	50	50	98,87	9512261	
17	SII	94	17SII 94	17SII 94 1	K	0,00	28,55	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,650	4455,460	56,90	0,707	14,500	7,12	0,109	7,26	8,71	2,530	0,299	0,075		361	200	60	279	110	10	60	10	10	5920	10	13,72	10,00	89,57	98,09		0	16	37	12	0	10	0	20	30	98,21	9414693	
17	SII	94	17SII 94	17SII 94 1	K	0,00	37,85	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,650	4455,460	55,10	0,829	16,800	6,31	0,132	6,14	9,27	3,650	0,259	0,083		411	120	70	299	60	30	100	20	0	6290	0	10,06	40,00	107,48	119,23		0	17	37	13	0	7	0	40	30	98,57	9414694	
17	SII	94	17SII 94	17SII 94 3	K	0,00	190,30	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127,650	4455,460	57,00	0,681	15,200	7,70	0,143	5,00	7,98	3,450	0,689	0,076		442	200	40	238	60	150	250	10	0	20400	0	25,60	30,00	206,00	122,61		10	16	44	16	0	1	20	20	40	97,92	9414723	
43	JSK	93	43JSK 93	43JSK 93 2	P	3,01	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Intermediate volcanic rock	Intermediate volcanic rock	7126,595	4456,630	56,70	1,340	15,300	6,36	0,165	6,56	6,30	5,940	0,139	0,199		680	300	70	179	120	20	40	10	10	210	0	2,74	0,00	134,35	217,32		10	15	118	21	0	6	20	40	40	99,00	9313515	
109	TTT	96	109TTT 96	109TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MERJANNIEMI S SAARI	Intermediate volcanic rock	Intermediate volcanic rock	7132,217	4457,859	49,40	0,858	13,100	8,23	0,187	10,40	11,30	1,800	1,030	0,774		638	240	140	211	0	0	100	10	0	40	40	34,75	10,00	474,70	321,32		0	20	96	5	0	11	80	190	50	97,08	9612633	
35	JTL	97	35JTL 97	35JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7080,995	4442,105	47,80	0,515	12,400	10,80	0,204	13,60	10,20	1,840	0,111	0,032	0,00	1252	370	80	215	0	10	70	10	10	40	10	7,32	30,00	35,83	54,12		10	13	7	8	0	0	30	20	70	97,50	9710772	
6	JTL	97	6JTL 97	6JTL 97 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7081,865	4442,415	47,90	0,657	13,800	13,30	0,223	10,10	8,36	2,580	0,207	0,073	0,00	1738	370	80	328	260	0	80	10	10	6130	20	8,23	0,00	35,83	71,88		10	19	15	18	0	7	0	20	130	97,20	9710765	
210	JEV	95	210JEV 95	210JEV 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LONTANKANGAS	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,400	4449,960	48,00	0,583	13,200	11,20	0,228	10,50	11,80	1,490	0,208	0,055	0,73	828	270	140	258	0	10	80	0	0	0	10	8,23	10,00	44,78	76,10		10	16	15	8	0	11	10	20	70	97,26	9512266	
92	TOH	96	92TOH 96	92TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HAUKIVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,660	4453,280	46,90	0,293	10,600	8,88	0,189	15,10	11,60	0,640	0,100	0,014		1786	320	80	177	10	0	80	10	10	10	10	9,14	20,00	35,83	91,32		0	12	0	3	0	8	0	0	90	94,32	9612670	
17	TOH	94	17TOH 94	17TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	PAPINKARI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7130,980	4453,595	47,20	0,531	12,300	10,50	0,210	10,60	10,40	1,630	0,143	0,050		828	280	120	224	30	0	80	10	10	40	10	0,91	30,00	62,70	87,94		0	5	22	11	0	5	10	0	140	93,56	9414392	
191	TTT	96	191TTT 96	191TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KAUPPISENNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7131,212	4453,709	48,40	0,547	13,000	10,80	0,179	12,00	8,84	2,360	0,096	0,046		828	290	50	238	10	10	70	10	10	50	10	5,49	20,00	35,83	70,18		10	16	15	8	0	7	20	0	120	96,27	9612728	
16	TOH	94	16TOH 94	16TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	TIIRANKIVI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7130,785	4453,720	47,00	0,567	12,600	11,60	0,242	11,00	11,40	1,310	0,212	0,050		1102	340	120	245	0	20	120	10	10	0	10	4,57	0,00	71,65	69,34		0	16	15	11	0	10	20	30	150	95,98	9411255	
195	TTT	96	195TTT 96	195TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7131,654	4453,881	48,80	0,535	12,900	10,80	0,204	11,90	9,23	2,150	0,097	0,053		807	270	70	231	40	10	100	10	0	600	10	3,66	10,00	35,83	82,02		0	14	7	7	0	6	0	10	120	96,67	9612729	
116	TOH	95	116TOH 95	116TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7149,590	4453,885	50,70	0,840	10,200	11,80	0,285	10,60	8,59	2,960	0,118	0,068	0,00	1977	120	50	245	60	30	370	10	10	290	60	9,14	10,00	62,70	84,56		10	19	37	12	0	1	10	20	120	96,16	9512489	
80	TOH	95	80TOH 95	80TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,610	4453,945	48,40	0,620	10,800	11,00	0,221	11,50	11,00	1,720	0,294	0,043	0,00	1081	320	100	238	270	30	200	10	0	740	10	10,97	20,00	116,44	180,96		0	20	15	7	0	0	20	20	80	95,60	9512390	
14	SII	94	14SII 94	14SII 94 1	K	0,00	28,80	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,460	4454,100	49,50	0,439	10,500	9,56	0,224	13,60	10,60	1,440	0,128	0,042		1615	570	100	197	0	10	140	20	10	0	10	4,57	20,00	35,83	56,65		10	12	7	6	0	2	10	20	90	96,03	9414655	
14	SII	94	14SII 94	14SII 94 1	K	0,00	37,80	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,460	4454,100	47,70	0,609	12,600	11,00	0,168	13,40	7,64	0,630	0,214	0,113		876	390	60	163	0	10	140	20	0	0	10	11,89	30,00	44,78	14,38		0	23	74	11	0	3	20	20	90	94,07	9414657	
14	SII	94	14SII 94	14SII 94 1	K	0,00	114,00	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,460	4454,100	43,70	0,445	10,200	10,80	0,238	14,60	11,70	0,770	0,214	0,042		1539	520	110	211	0	20	160	20	0	0	30	8,23	10,00	35,83	33,82		0	14	7	5	0	6	0	20	90	92,71	9414670	
20	TOH	94	20TOH 94	20TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	KUKKOSAARI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7133,075	4454,110	48,50	0,514	12,200	11,20	0,227	8,88	10,40	1,160	0,172	0,053		862	280	70	231	30	10	110	20	10	0	10	7,32	20,00	71,65	60,88		10	7	22	13	0	0	10	10	140	93,31	9414394	
180	TTT	96	180TTT 96	180TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7131,675	4454,113	50,20	0,586	13,400	10,60	0,183	10,80	9,10	2,740	0,102	0,057		931	200	60	245	100	10	70	0	0	1570	10	6,40	10,00	26,87	97,24		10	12	15	10	0	2	10	30	180	97,77	9612723	
182	TTT	96	182TTT 96	182TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7131,744	4454,151	45,20	0,462	10,700	11,00	0,206	16,70	8,87	0,690	0,054	0,036		1827	590	70	197	30	10	80	10	0	140	10	6,40	20,00	17,91	27,06		0	14	7	6	0	8	10	20	100	93,92	9612724	
178	TTT	96	178TTT 96	178TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7131,729	4454,192	49,10	0,569	12,600	10,40	0,204	12,20	8,47	1,900	0,291	0,055		883	250	80	238	110	10	90	10	10	1050	10	12,80	20,00	53,74	65,96		10	17	15	10	0	13	20	20	60	95,79	9612722	
36	R	66	36R 0	36R 0 3	K	0,00	101,40	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,090	4454,205	30,38	0,390	4,580	13,91	0,490	11,61	9,99	1,630	0,170		0,64	1835	795					100																			73,15	971269	
182	JSN	95	182JSN 95	182JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	OLKILAHTI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,280	4454,240	33,40	0,447	16,900	10,70	0,158	14,50	6,65	1,820	0,020	0,034	13,23	1266	320	130	218	0	10	90	0	10	0	10	1,83	30,00	17,91	79,49		0	16	7	8	0	7	20	20	50	84,63	9512438	
2	ARO	93	2ARO 93	2ARO 93 1	K	0,00	14,90	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	51,90	0,443	9,150	14,40	0,512	8,95	9,42	0,700	0,247	0,036		2614	760	120	196	10	0	130	10	10	0	10	7,32	20,00	71,65	12,68		0	7	15	9	0	3	0	20	180	95,76	9413831	
2	ARO	93	2ARO 93	2ARO 93 1	K	0,00	40,20	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	46,80	0,422	9,570	18,30	0,815	7,76	9,66	0,830	0,200	0,031		3654	910	130	201	90	10	130	10	10	1990	0	3,66	20,00	26,87	6,76		0	8	15	15	0	8	0	20	230	94,39	9413832	
2	ARO	93	2ARO 93	2ARO 93 1	K	0,00	93,40	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	52,80	0,620	14,400	11,60	0,442	5,64	7,88	2,900	0,206	0,053		1211	460	70	261	30	0	80	10	10	110	0	2,74	20,00	44,78	213,93		10	8	30	13	0	8	20	10	150	96,54	9413833	
2	ARO	93	2ARO 93	2ARO 93 1	K	0,00	174,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	42,10	0,700	15,900	16,20	0,457	9,48	7,17	1,230	0,161	0,057		1348	490	80	271	90	10	120	10	0	3450	0	4,57	0,00	44,78	72,72		0	5	30	17	0	7	0	20	120	93,46	9413834	
2	ARO	93	2ARO 93	2ARO 93 1	K	0,00	214,80	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	50,70	0,611	13,800	13,70	0,393	7,06	5,56	1,220	0,182	0,056		1115	410	20	258	60	10	110	20	10	1930	0	8,23	20,00	44,78	62,57		0	5	30	10	0	4	10	10	70	93,28	9413835	
2	ARO	93	2ARO 93	2ARO 93 2	K	0,00	225,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,102	4454,255	49,39	0,680	14,130	12,27	0,334	6,08	8,29	1,940	0,160	0,038		1125	289	73	278	6	10	90			460		0,01		31,00	83,00	15		0	31	18			0	2	40	94,66	970059	x
103	TOH	94	103TOH 94	103TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7133,455	4454,295	48,70	0,566	13,300	10,50	0,214	11,40	10,10	1,700	0,121	0,042		855	290	140	245	0	20	130	0	10	0	10	6,40	0,00	26,87	79,49		10	14	15	13	0	2	10	0	70	96,64	9411198	
104	TOH	94	104TOH 94	104TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7133,560	4454,375	48,80	0,583	13,400	10,50	0,176	11,00	9,64	2,210	0,116	0,048		666	200	100	252	20	10	70	20	0	0	10	3,66	20,00	62,70	93,86		0	15	15	5	0	12	30	20	100	96,47	9411199	
212	JSN	95	212JSN 95	212JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOPURO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,600	4454,440	43,20	0,521	17,800	10,80	0,183	11,00	10,30	1,010	0,054	0,037	2,91	876	280	230	245	250	0	110	10	10	630	20	7,32	20,00	44,78	54,12		0	13	15	9	0	11	20	0	70	94,91	9612514	
235	JSN	95	235JSN 95	235JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KIISULA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,920	4454,480	48,60	0,558	11,500	11,70	0,260	12,30	9,14	1,140	0,091	0,052	0,00	1642	520	100	279	0	10	90	10	0	0	40	6,40	20,00	44,78	59,19		0	19	15	13	0	3	20	0	160	95,34	9512467	
3	ARO	93	3ARO 93	3ARO 93 2	K	0,00	135,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,420	4454,496	44,90	0,300	7,460	9,79	0,226	21,20	7,84	0,130	0,023	0,025		2059	730	90	150	10	10	160	10	10	0	60	4,57	20,00	8,96	14,38		10	5	7	9	0	1	0	10	190	91,89	9413840	
3	ARO	93	3ARO 93	3ARO 93 2	K	0,00	152,40	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,420	4454,496	43,50	0,462	10,400	13,30	0,477	8,82	12,80	0,550	0,897	0,034		937	350	70	201	0	10	160	10	10	220	0	25,60	0,00	98,52	38,90		10	6	15	10	0	7	10	30	450	91,24	9413841	
3	ARO	93	3ARO 93	3ARO 93 2	K	0,00	174,10	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150,420	4454,496	14,00	0,093	2,620	21,80	2,660	9,90	19,40	0,000	0,009	0,014		66	120	40	27	10	0	220	10	10	3390	0	3,66	30,00	0,00	51,58		0	6	22	5	0	10	20	0	70	70,50	9413842	
195	TOH	93	195TOH 93	195TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	JUURIKKALAHTI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,800	4454,597	47,80	0,510	10,230	11,09	0,245	13,59	11,64	0,960	0,130	0,032		1567	544	88	192	0	15	176			20		0,05		17,00	45,00	12		0	26	16			0	3	0	97,45	971574	x
200	JSN	95	200JSN 95	200JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SALMELA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,890	4454,660	46,60	0,555	12,600	11,70	0,223	11,90	10,60	0,640	0,098	0,048	2,62	1061	350	240	231	0	10	90	0	0	220	20	6,40	30,00	17,91	27,90		10	12	15	11	0	4	30	20	70	94,96	9612510	
192	JSN	95	192JSN 95	192JSN 95 1	P	1,01	0,00	SOTKAMO	TIPASJÄRVI	MIILUKANGAS	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,580	4454,720	48,90	0,317	8,340	10,50	0,255	16,30	9,45	0,460	0,053	0,022	0,00	1943	670	70	170	0	0	130	10	0	0	210	5,49	20,00	35,83	2,54		0	18	0	7	0	4	30	20	110	94,60	9512416	
113	TOH	95	113TOH 95	113TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7149,960	4454,760	48,20	0,385	8,540	10,70	0,406	13,50	12,90	0,470	0,204	0,028	0,00	2463	570	70	177	10	90	370	20	0	0	20	4,57	10,00	44,78	120,92		10	14	7	8	0	6	20	30	200	95,33	9512488	
15	SII	94	15SII 94	15SII 94 2	K	0,00	76,75	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,592	4454,800	45,00	0,772	12,200	12,90	0,287	11,90	9,57	1,420	0,570	0,018		3790	1030	180	353	100	10	180	20	0	2010	10	18,29	0,00	116,44	16,91		10	20	30	15	0	8	0	30	60	94,64	9414676	
15	SII	94	15SII 94	15SII 94 2	K	0,00	82,45	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,592	4454,800	32,70	0,860	19,600	16,50	0,256	14,60	2,54	1,170	0,360	0,086		2415	660	160	353	60	30	540	10	0	610	10	15,54	20,00	89,57	12,68		10	19	37	12	0	2	20	30	60	88,67	9414678	
267	JEV	95	267JEV 95	267JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	TULISUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7137,960	4454,940	47,70	0,605	12,200	11,20	0,187	12,40	8,99	2,060	0,083	0,044	0,00	645	230	100	252	40	0	80	10	0	230	20	9,14	10,00	62,70	68,49		10	15	15	11	0	5	20	10	70	95,47	9512322	
267	JEV	95	267JEV 95	267JEV 95 1	P	2,00	0,00	KUHMO	KUIVAJÄRVI	TULISUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7137,960	4454,940	46,40	0,578	11,500	10,90	0,188	13,00	7,27	2,720	0,059	0,043	0,00	937	290	80	238	10	20	70	20	0	0	0	6,40	10,00	17,91	49,89		10	14	22	12	0	1	0	10	50	92,66	9512496	
222	JSN	95	222JSN 95	222JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7093,840	4455,080	47,40	0,424	10,600	10,10	0,188	15,20	9,71	1,250	0,072	0,041	0,00	1587	500	110	211	30	10	80	20	0	0	10	4,57	20,00	116,44	43,13		0	13	7	8	0	3	20	10	80	94,99	9512464	
46	JSN	95	46JSN 95	46JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HUKKALAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7093,180	4455,100	45,70	0,430	10,300	10,60	0,192	16,80	9,10	0,780	0,062	0,029	0,00	1752	590	110	197	0	10	70	10	0	0	10	8,23	20,00	53,74	30,44		10	17	7	5	0	11	10	10	60	93,99	9512318	
271	JSN	95	271JSN 95	271JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,020	4455,100	47,30	0,419	10,900	9,97	0,154	15,00	9,27	1,450	0,079	0,046	1,88	1560	500	220	197	20	0	70	10	10	0	10	6,40	0,00	53,74	57,50		10	12	15	5	0	7	0	0	40	94,59	9512451	
251	JSN	95	251JSN 95	251JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7095,370	4455,200	45,90	0,534	11,300	11,60	0,242	15,10	9,48	0,960	0,107	0,051	2,31	1033	410	240	245	0	10	120	0	10	0	10	6,40	10,00	107,48	23,68		10	15	15	7	0	1	20	20	40	95,27	9512449	
121	TOH	95	121TOH 95	121TOH 95 2	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7128,019	4455,223	47,90	0,431	9,780	10,50	0,240	14,20	11,10	1,110	0,243	0,036	0,00	1567	540	90	197	0	10	130	10	0	0	10	13,72	20,00	80,61	37,21		0	18	0	8	0	0	20	20	80	95,54	9512493	
282	JSN	95	282JSN 95	282JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SALMELA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,600	4455,240	47,80	0,481	11,300	10,50	0,182	15,30	9,30	1,420	0,049	0,042	0,00	1683	510	30	204	30	10	70	20	0	20	20	8,23	10,00	53,74	67,65		10	19	0	6	0	4	0	20	50	96,37	9512477	
274	JSN	95	274JSN 95	274JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,240	4455,260	47,10	0,460	10,900	10,40	0,195	15,80	9,64	1,110	0,083	0,027	2,53	1615	530	230	211	0	10	80	0	0	0	10	0,91	20,00	35,83	50,74		10	13	7	10	0	2	20	10	20	95,72	9512453	
280	JSN	95	280JSN 95	280JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SALMELA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,520	4455,300	48,80	0,398	9,580	10,20	0,199	15,20	10,20	1,180	0,058	0,029	0,00	1355	470	90	204	40	0	70	10	10	0	10	8,23	10,00	26,87	49,89		0	18	7	11	0	6	20	10	30	95,84	9512476	
4	SII	93	4SII 93	4SII 93 1	K	0,00	60,40	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,500	4455,300	45,00	0,739	13,100	13,00	0,220	12,50	7,56	1,890	0,143	0,046		223	1320	110	156	790	30	460	20	10	4310	0	3,66	30,00	62,70	41,43		0	3	22	13	0	5	0	20	60	94,20	9413819	
11	SII	94	11SII 94	11SII 94 3	K	0,00	88,10	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,673	4455,312	55,10	0,573	13,200	8,33	0,186	7,85	8,93	2,330	0,486	0,052		3318	1070	120	273	0	0	100	20	0	20	10	32,92	10,00	179,13	76,95		0	4	22	15	0	3	10	40	60	97,04	9413445	
11	SII	94	11SII 94	11SII 94 3	K	0,00	99,80	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,673	4455,312	52,80	0,629	14,800	9,04	0,183	5,90	10,20	2,370	0,302	0,052		2094	200	70	281	0	10	100	10	10	0	0	8,23	0,00	98,52	105,70		0	10	30	16	0	7	10	10	90	96,28	9413446	
52	JSN	95	52JSN 95	52JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7093,320	4455,380	45,50	0,556	10,800	11,80	0,184	15,50	8,41	1,060	0,050	0,047	0,00	1375	420	110	218	10	10	80	20	0	0	10	3,66	20,00	53,74	32,98		20	17	22	13	0	5	20	10	70	93,91	9512319	
284	JSN	95	284JSN 95	284JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SALMELA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,660	4455,380	47,20	0,435	11,400	10,40	0,168	15,30	8,59	1,570	0,034	0,046	2,71	1676	580	230	211	40	0	70	10	10	0	10	3,66	10,00	44,78	54,96		10	14	15	7	0	3	10	10	50	95,14	9512455	
12	SII	93	12SII 93	12SII 93 1	K	0,00	35,10	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,740	4455,750	55,60	0,723	15,600	7,55	0,176	5,62	7,93	4,330	0,132	0,076		364	140	70	275	30	70	430	10	10	2110	0	4,57	20,00	44,78	82,02		0	7	44	19	0	7	10	30	40	97,74	9413820	
12	SII	93	12SII 93	12SII 93 1	K	0,00	169,10	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,740	4455,750	54,10	0,836	14,800	8,49	0,247	7,01	7,80	3,430	0,257	0,086		417	120	70	300	0	10	150	20	10	0	10	6,40	0,00	26,87	113,31		0	7	52	19	0	10	20	20	80	97,06	9413821	
176	TOH	93	176TOH 93	176TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,025	4455,808	48,50	0,552	13,200	9,57	0,213	9,75	11,60	1,920	0,176	0,054		842	250	80	241	70	10	100	10	0	360	10	1,37	30,00	44,78	114,16		0	6	22	12	0	4	10	20	280	95,54	9314459	
186	TOH	93	186TOH 93	186TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,309	4455,816	45,40	0,479	10,500	10,60	0,205	13,40	12,10	1,080	0,244	0,045		1957	520	80	213	80	0	80	20	10	30	10	3,20	20,00	35,83	55,81		10	5	15	13	0	9	0	10	320	94,05	9314466	
173	TOH	93	173TOH 93	173TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,925	4455,865	46,70	0,694	15,200	11,60	0,296	9,33	7,92	2,960	0,142	0,046		1067	300	80	281	0	10	120	20	0	0	0	2,29	40,00	35,83	66,80		0	8	30	17	0	4	20	10	170	94,89	9314458	
174	TOH	93	174TOH 93	174TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,930	4455,870	51,10	0,680	14,500	9,97	0,231	8,60	11,77	2,230	0,230	0,044		949	313	102	258	76	12	61			130		1,00		53,00	119,00	15		0	38	14			2	4	390	100,46	971553	x
70	JSN	95	70JSN 95	70JSN 95 1	P	1,01	0,00	SOTKAMO	TIPASJÄRVI	PITKÄLAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7092,080	4455,880	47,80	0,554	11,500	10,80	0,202	14,00	9,25	1,220	0,104	0,050	2,47	1170	360	270	238	30	10	90	0	10	70	0	4,57	10,00	152,26	73,57		0	12	22	13	0	10	10	10	40	95,48	9612503	
171	TOH	93	171TOH 93	171TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,835	4455,985	50,20	0,603	13,700	10,60	0,227	9,06	8,59	3,000	0,277	0,051		931	270	80	269	0	10	60	20	0	0	0	6,40	20,00	53,74	93,02		20	6	22	12	0	7	0	0	260	96,31	9314456	
19	TOH	93	19TOH 93	19TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,245	4456,009	48,60	0,461	11,200	11,10	0,207	13,00	8,09	2,800	0,090	0,024		766	230	90	223	100	10	50	10	10	0	10	2,74	0,00	53,74	47,35		0	6	15	10	0	4	10	10	190	95,57	9314401	
21	TOH	93	21TOH 93	21TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,247	4456,011	48,90	0,507	11,700	11,20	0,191	11,70	8,60	3,210	0,110	0,033		1245	150	80	242	80	0	50	30	0	70	10	2,74	10,00	26,87	54,96		0	5	22	13	0	4	20	10	220	96,15	9314402	
172	TOH	93	172TOH 93	172TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,820	4456,035	53,30	0,619	15,300	8,22	0,171	6,97	8,36	4,120	0,149	0,067		951	450	100	275	70	0	50	20	0	770	50	3,20	20,00	89,57	125,99		0	5	22	16	0	9	0	10	140	97,28	9314457	
265	JSN	95	265JSN 95	265JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SAUNASAARI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7094,080	4456,120	41,30	0,519	7,510	17,90	0,184	9,31	13,40	0,840	0,447	0,166	0,00	2100	520	90	408	170	0	50	10	0	6340	10	8,23	30,00	134,35	48,20		10	19	7	18	0	9	30	40	250	91,58	9512473	
65	TOH	94	65TOH 94	65TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,360	4456,155	44,50	0,451	11,400	10,90	0,218	11,00	12,40	1,260	0,258	0,042		1560	480	90	204	30	20	80	20	0	0	0	9,14	20,00	89,57	59,19		10	7	15	11	0	8	40	30	70	92,43	9411005	
129	TOH	94	129TOH 94	129TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,986	4456,203	48,40	0,511	10,600	11,20	0,217	12,00	11,00	1,530	0,183	0,032		978	290	80	218	0	20	100	10	0	0	20	6,40	10,00	26,87	45,66		0	15	7	8	0	1	10	10	180	95,67	9411214	
261	JEV	95	261JEV 95	261JEV 95 1	P	1,00	0,00	KUHMO	KOSKENMÄKI	KOSKENMÄKI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7136,010	4456,350	47,50	0,509	11,800	10,20	0,213	13,40	11,30	0,560	0,167	0,056	1,73	1533	530	90	211	90	10	90	0	0	1140	20	11,89	10,00	44,78	133,60		10	14	15	11	0	5	10	10	100	95,71	9512341	
163	JSK	93	163JSK 93	163JSK 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,640	4456,400	44,80	0,576	14,900	7,24	0,207	6,52	14,70	2,390	0,096	0,054		2135	440	90	229	390	20	70	20	0	0	0	3,66	20,00	53,74	180,96		10	6	22	15	0	9	20	20	30	91,48	9314472	
36	TOH	96	36TOH 96	36TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,580	4456,420	48,80	0,549	13,700	10,10	0,220	9,83	10,30	2,120	0,135	0,047		603	230	70	224	70	10	70	10	10	40	10	8,23	10,00	62,70	74,41		10	13	15	26	0	8	20	0	130	95,80	9612650	
130	TOH	94	130TOH 94	130TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,711	4456,561	46,20	0,484	10,400	11,10	0,211	13,90	11,00	1,190	0,108	0,045		1587	510	100	231	100	10	140	10	10	0	10	8,23	0,00	26,87	39,74		0	14	7	9	0	7	0	30	50	94,64	9411215	
95	JSN	95	95JSN 95	95JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KAIHLALAMPI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7091,100	4456,600	46,30	0,469	9,990	10,50	0,223	15,10	11,00	0,890	0,138	0,030	0,00	1321	450	170	204	10	0	80	20	0	0	10	7,32	20,00	8,96	7,61		0	15	15	10	0	6	0	0	70	94,64	9512462	
182	TOH	93	182TOH 93	182TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,750	4456,694	50,60	0,607	15,000	8,56	0,197	6,37	10,90	2,790	0,213	0,060		924	360	70	256	70	0	60	10	10	930	40	1,83	20,00	62,70	101,47		10	6	22	11	0	7	20	20	80	95,30	9314463	
123	TOH	95	123TOH 95	123TOH 95 4	P	4,02	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,624	4456,703	42,70	0,673	12,100	13,70	0,210	13,60	8,77	1,120	0,093	0,043	0,00	1067	350	100	265	60	10	100	10	0	760	10	10,06	10,00	35,83	18,60		20	24	22	13	0	3	20	20	70	93,01	9512495	
123	TOH	95	123TOH 95	123TOH 95 4	P	4,01	0,00	KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,623	4456,706	48,20	0,541	11,100	10,30	0,185	14,90	7,15	2,520	0,045	0,042	0,00	1389	460	80	211	0	0	70	10	10	0	20	5,49	20,00	17,91	40,59		10	17	22	10	0	7	30	20	50	94,98	9512494	
184	TOH	93	184TOH 93	184TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,625	4456,706	49,10	0,538	11,100	10,50	0,184	13,70	6,96	2,820	0,070	0,047		903	320	80	233	10	10	60	20	10	0	0	2,74	30,00	26,87	32,13		10	6	22	12	0	5	0	30	60	95,02	9314465	
74	TOH	94	74TOH 94	74TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	DEPOSIT OF PIIRAINEN	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,389	4456,713	47,50	0,343	7,780	12,50	0,206	14,70	10,50	0,840	0,065	0,025		3681	1070	120	184	40	0	80	10	0	0	10	0,00	40,00	71,65	6,76		10	8	7	6	0	3	0	10	110	94,46	9411012	
36	JSK	94	36JSK 94	36JSK 94 1	M	12,30	12,30	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,495	4456,753	42,80	0,424	9,850	13,90	0,248	13,10	9,48	0,950	0,101	0,037		1724	890	130	211	280		270	20	0	720	10	5,49	10,00	62,70	3,38		0	6	15	9	0	5	0	10	100	90,89	9414422	
39	TOH	94	39TOH 94	39TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,972	4456,767	46,90	0,384	7,940	12,20	0,308	13,00	10,60	0,540	0,078	0,027		1936	680	100	177	0	0	110	10	0	0	10	4,57	0,00	26,87	3,38		0	7	15	8	0	3	0	10	70	91,98	9414409	
38	TOH	94	38TOH 94	38TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,968	4456,797	46,80	0,485	10,800	10,80	0,193	12,50	8,59	1,760	0,057	0,047		1293	450	80	211	80	10	90	30	10	10	0	1,83	10,00	44,78	62,57		0	4	22	9	0	6	20	0	60	92,03	9414408	
83	TOH	94	83TOH 94	83TOH 94 1	P	1,00	0,00	KUHMO	HIETAPERÄ	HIETAPERÄ	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7119,650	4456,810	48,10	0,574	13,600	10,50	0,235	10,10	9,57	2,180	0,160	0,044		862	300	90	238	20	10	90	20	0	0	10	1,83	0,00	44,78	84,56		0	5	22	14	0	0	10	20	100	95,06	9411158	
36	TOH	94	36TOH 94	36TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,957	4456,813	51,30	0,494	10,900	11,10	0,208	9,22	8,00	3,080	0,119	0,038		2244	780	110	238	250	0	100	20	10	3340	10	7,32	20,00	116,44	57,50		10	5	22	10	0	2	10	20	60	94,46	9414406	
157	TOH	94	157TOH 94	157TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,693	4456,824	49,40	0,590	12,700	10,00	0,163	12,10	6,26	4,000	0,037	0,056		1047	250	90	231	150	10	60	20	10	1220	10	4,57	30,00	26,87	90,48		10	12	22	13	0	3	20	10	40	95,31	9411244	
156	TOH	94	156TOH 94	156TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,690	4456,826	46,90	0,495	11,600	9,35	0,217	10,70	9,97	3,860	0,058	0,044		506	180	70	231	50	20	50	20	10	840	10	6,40	0,00	44,78	143,75		0	16	7	16	0	2	0	20	70	93,19	9411243	
154	TOH	94	154TOH 94	154TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,689	4456,831	50,00	0,606	13,000	10,60	0,175	11,40	6,84	3,800	0,055	0,056		773	240	100	258	180	10	70	20	10	0	0	4,57	40,00	26,87	77,79		10	20	22	11	0	1	30	20	50	96,53	9411241	
153	TOH	94	153TOH 94	153TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,691	4456,836	49,60	0,605	12,900	10,70	0,165	10,10	7,80	4,100	0,087	0,058		382	160	110	252	250	10	60	20	10	3080	10	8,23	10,00	35,83	98,93		0	19	22	9	0	3	10	20	70	96,12	9411240	
150	TOH	94	150TOH 94	150TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,741	4456,860	46,71	0,516	10,340	10,94	0,235	16,26	8,55	1,680	0,100	0,034		1805	636	73	193	1	7	88			50		0,07		4,90	30,00	12		1	26	15			3	6	2	96,60	9505230420	x
149	TOH	94	149TOH 94	149TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,739	4456,862	49,80	0,620	13,300	11,00	0,192	10,00	8,23	4,050	0,166	0,052		633	150	70	279	30	20	70	10	0	0	0	7,32	10,00	35,83	124,30		10	19	22	10	0	0	20	0	70	97,41	9411236	
75	TOH	94	75TOH 94	75TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,086	4456,868	46,20	0,509	12,200	11,40	0,195	13,00	8,72	1,300	0,063	0,034		1006	340	90	272	10	0	90	30	0	0	0	7,32	10,00	44,78	42,28		0	7	22	11	0	1	0	20	70	93,62	9411013	
165	JSK	93	165JSK 93	165JSK 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	DEPOSIT OF PIIRAINEN, NORTH PART	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127,640	4456,870	54,30	0,583	14,100	9,52	0,209	6,32	7,09	5,460	0,098	0,046		937	260	70	246	0	20	140	20	10	0	60	2,29	10,00	44,78	49,04		0	5	22	12	0	4	10	0	170	97,73	9314473	
45	TOH	96	45TOH 96	45TOH 96 3	P	2,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KEKRINIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,180	4456,870	50,40	0,518	13,700	9,46	0,177	11,50	9,79	2,410	0,213	0,039	0,00	508	230	60	204	30	0	90	10	10	40	20	12,80	40,00	89,57	98,93		10	16	7	7		3	20	20	100	98,21	9634306	
35	TOH	94	35TOH 94	35TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,927	4456,883	45,70	0,476	10,400	11,90	0,225	15,10	8,07	1,220	0,048	0,040		1738	560	90	211	0	0	100	20	0	0	10	2,74	10,00	35,83	33,82		0	5	15	13	0	6	10	10	50	93,18	9414405	
74	TOH	96	74TOH 96	74TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,420	4456,945	53,60	0,741	10,400	9,98	0,179	10,60	10,80	1,370	0,074	0,119	0,00	1013	130	50	245	80	10	110	10	0	100	10	5,49	10,00	44,78	94,71		0	15	44	19		9	0	30	140	97,86	9634309	
1	TOH	95	1TOH 95	1TOH 95 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126,867	4457,009	52,70	0,513	10,800	9,41	0,195	11,50	8,95	3,370	0,109	0,037	1,05	869	270	240	238	30	10	60	0	10	0	10	6,40	0,00	53,74	88,79		0	16	15	13	0	4	10	0	50	97,58	9512251	
65	TOH	96	65TOH 96	65TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7226,180	4457,310	45,30	0,617	10,400	12,40	0,217	15,10	9,06	0,570	0,045	0,033		1225	400	80	231	10	10	90	10	10	40	10	0,00	10,00	53,74	7,61		0	17	15	9	0	2	10	10	110	93,74	9612660	
14	SMS	70	14SMS 70	14SMS 70 3	K	0,00	60,45	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7230,250	4457,340	48,20	0,545	10,300	11,40	0,193	14,70	7,13	1,290	0,045	0,055		1067	420	80	218	50	10	150	10	10	1450	20	7,32	0,00	17,91	8,46		10	14	7	10	0	8	20	20	40	93,86	9414747	
14	SMS	70	14SMS 70	14SMS 70 3	K	0,00	69,30	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7230,250	4457,340	52,80	0,800	15,300	7,17	0,148	12,10	4,25	3,990	1,070	0,077		814	90	50	272	80	10	210	10	10	24000	10	27,43	20,00	582,18	48,20		0	18	44	17	0	0	10	0	30	97,71	9414748	
14	SMS	70	14SMS 70	14SMS 70 3	K	0,00	98,85	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7230,250	4457,340	51,00	0,685	12,200	11,10	0,227	10,40	7,05	3,630	0,081	0,054		855	260	120	258	90	10	150	10	0	1950	10	4,57	10,00	44,78	56,65		0	19	30	14	0	3	20	30	60	96,43	9413992	
153	TOH	96	153TOH 96	153TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7233,470	4457,780	50,20	0,610	8,410	10,20	0,179	13,30	13,20	0,860	0,067	0,049	0,00	1786	220	60	265	20	0	80	20	10	20	10	3,66	20,00	8,96	54,96		0	16	15	7		10	20	30	40	97,08	9634330	
11	TOH	95	11TOH 95	11TOH 95 1	P	1,00	0,00	KUHMO	MURTOJÄRVI	PITKÄKANGAS	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7122,750	4458,080	47,30	0,571	11,400	11,50	0,290	13,50	10,60	0,880	0,174	0,042	1,53	951	350	210	286	10	20	140	0	10	0	10	8,23	0,00	62,70	43,13		0	17	15	14	0	3	0	10	130	96,26	9512254	
31	MKT	94	31MKT 94	31MKT 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7225,770	4458,120	48,80	0,518	15,600	9,64	0,176	9,28	11,00	2,070	0,110	0,044		391	170	100	218	80	10	60	10	10	660	10	7,32	20,00	26,87	84,56		0	13	15	9	0	4	20	20	170	97,24	9414620	
165	TOH	96	165TOH 96	165TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Mafic volcanic rock	Komatiitic basalt	7233,635	4458,125	49,10	0,949	11,600	11,90	0,183	10,90	9,14	2,260	0,986	0,095	0,00	650	220	60	286	30	10	100	10	0	120	10	32,92	10,00	600,09	394,04		0	18	44	13		2	20	50	70	97,11	9634338	
170	TOH	96	170TOH 96	170TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VÄLIAHONTAUSAHO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7234,070	4458,330	45,70	0,614	10,900	13,40	0,286	14,00	8,25	1,220	0,068	0,052	0,00	1061	380	110	238	10	20	120	10	0	20	10	6,40	0,00	26,87	16,91		0	16	15	12		0	30	20	50	94,49	9634341	
170	TOH	96	170TOH 96	170TOH 96 2	P	2,02	0,00	SUOMUSSALMI	KIANNANNIEMI	VÄLIAHONTAUSAHO	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7234,235	4458,340	50,70	0,670	11,900	11,00	0,213	10,40	9,05	2,510	0,148	0,054	0,00	807	260	100	238	130	10	80	10	0	20	10	8,23	20,00	53,74	66,80		0	19	15	9		6	10	0	80	96,65	9634342	
78	JTL	95	78JTL 95	78JTL 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	KAUPPA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7167,220	4458,470	50,40	0,550	13,200	9,44	0,162	10,90	6,41	3,760	0,045	0,059	3,77	705	210	120	218	50	0	70	10	0	0	10	6,40	10,00	35,83	148,82		10	16	30	11	0	4	20	30	30	94,93	9512431	
187	MAF	96	187MAF 96	187MAF 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7231,420	4458,800	46,60	0,717	12,000	12,50	0,262	11,70	10,30	1,420	0,420	0,056	0,00	869	290	70	272	60	10	100	10	10	30	10	20,12	10,00	134,35	59,19		0	17	22	11		5	10	20	90	95,98	9634375	
11	TOH	96	11TOH 96	11TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7231,600	4458,930	50,30	0,650	11,400	10,00	0,186	10,80	10,10	2,140	0,313	0,053		1033	310	80	245	30	10	80	0	10	20	10	11,89	20,00	107,48	99,78		10	16	15	17	0	5	20	20	60	95,94	9612636	
145	TOH	96	145TOH 96	145TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7233,640	4460,020	48,00	0,711	13,500	11,00	0,237	10,70	10,40	1,950	0,389	0,058	0,00	1074	370	70	265	50	10	130	10	10	80	0	23,77	10,00	116,44	138,68		0	17	22	12		0	0	30	60	96,95	9634329	
113	MAF	96	113MAF 96	113MAF 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,840	4462,500	49,40	0,677	12,400	10,60	0,229	11,50	9,73	2,060	0,116	0,060	0,00	842	290	80	245	80	20	90	0	10	80	10	8,23	20,00	89,57	48,20		10	15	22	14		5	20	20	100	96,77	9634358	
28	SMS	62	28SMS 62	28SMS 62 2	K	0,00	66,65	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228,100	4456,810	49,50	0,601	9,560	11,10	0,241	14,20	8,67	1,470	0,923	0,053		1115	350	90	231	10	10	110	10	0	300	20	40,23	20,00	286,61	65,96		10	18	22	7	0	1	10	10	280	96,32	9414768	
180	JSN	95	180JSN 95	180JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MYLLYKANGAS	High-magnesium basalt / komatiitic basalt?	Komatiitic basalt?	7094,040	4454,640	49,40	0,590	14,200	10,40	0,237	9,54	10,30	1,400	0,082	0,051	2,27	814	250	230	177	10	0	100	10	0	130	20	6,40	10,00	53,74	59,19		10	14	15	1	0	13	10	10	50	96,20	9612506	
165	TOH	94	165TOH 94	165TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basaltic matrix	7126,882	4456,864	49,70	0,399	10,100	11,40	0,247	13,80	8,74	1,320	0,066	0,030		3031	960	80	197	60	20	70	20	0	1340	40	9,14	0,00	53,74	85,40		20	17	7	8	0	3	10	10	70	95,80	9411222	
5	SPL	97	5SPL 97	5SPL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	KOLKONJOKI	Ultramafic volcanic rock	Komatiitic lava rock	7080,070	4441,490	39,80	0,219	5,150	8,02	0,231	23,20	9,82	0,000	0,006	0,019	11,38	1635	1170	180	105	20	10	80	0	10	190	460	6,40	20,00	26,87	90,48		0	12	0	1	0	6	0	20	30	86,47	9710764	
2	SPL	97	2SPL 97	2SPL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7080,890	4442,085	45,20	0,305	7,510	8,72	0,165	24,60	5,88	0,000	0,012	0,051	5,88	2709	1170	190	124	10	0	70	10	0	910	10	6,40	20,00	53,74	35,51		10	15	0	3	0	10	20	10	30	92,44	9710763	
20	JTL	98	20JTL 98	20JTL 98 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7081,054	4443,067	41,80	0,323	8,380	9,22	0,133	23,70	6,56	0,130	0,023	0,018	8,08	2484	820	140	147	120	10	50	0	10	700	10	5,49	10,00	26,87	16,91		10	13	0	3	0	7	20	10	20	90,29	9818101	
224	JEV	95	224JEV 95	224JEV 95 2	P	2,02	0,00	SOTKAMO	HÄIKIÖVAARA	VIITAJOKI	Ultramafic volcanic rock	Komatiitic lava rock	7120,770	4443,550	48,60	0,373	7,890	9,25	0,207	18,20	10,80	0,810	0,093	0,028	2,19	1704	680	240	156	0	0	90	10	0	0	10	6,40	40,00	17,91	7,61		10	16	7	5	0	8	20	20	40	96,25	9512268	
230	JTL	96	230JTL 96	230JTL 96 2	P	2,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7082,215	4444,380	42,20	0,290	8,260	9,76	0,165	25,80	5,32	0,080	0,018	0,034	6,40	2552	1210	150	156	30	0	60	10	10	740	10	5,49	0,00	26,87	24,52		10	11	0	4		3	0	0	30	91,93	9634469	
254	JTL	96	254JTL 96	254JTL 96 2	P	2,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,529	4444,824	42,70	0,247	6,340	9,51	0,198	25,10	6,52	0,220	0,017	0,014	7,32	2497	1340	100	129	60	0	60	10	10	1770	10	6,40	0,00	26,87	34,67		0	14	0	3		4	0	20	20	90,87	9634481	
254	JTL	96	254JTL 96	254JTL 96 2	P	3,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,526	4444,826	40,20	0,356	10,300	10,10	0,129	25,30	5,03	0,210	0,018	0,065	6,50	2833	1100	140	197	120	0	70	0	10	430	10	5,49	10,00	0,00	10,15		0	15	0	8		9	0	10	40	91,71	9634483	
254	JTL	96	254JTL 96	254JTL 96 2	P	2,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,523	4444,836	44,90	0,276	7,970	9,33	0,162	24,80	5,52	0,330	0,027	0,021	4,91	2552	1200	150	136	190	10	50	10	10	1540	10	9,14	20,00	8,96	9,30		10	12	0	5		6	10	20	40	93,34	9634482	
234	JTL	96	234JTL 96	234JTL 96 2	P	2,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,940	4444,990	42,00	0,305	8,110	10,20	0,134	26,40	5,28	0,100	0,023	0,027	5,71	2703	1050	110	170	30	0	60	10	0	340	10	5,49	20,00	8,96	21,14		0	15	0	1		12	0	0	20	92,58	9634472	
236	JTL	96	236JTL 96	236JTL 96 1	L	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,865	4445,125	44,90	0,258	7,270	8,49	0,163	23,90	6,93	0,070	0,028	0,029	4,68	2217	1070	120	120	220	0	60	10	0	2390	10	3,66	10,00	8,96	14,38		0	14	0	3	0	4	30	10	10	92,04	9615278	
128	JTL	96	128JTL 96	128JTL 96 2	P	2,03	0,00	SOTKAMO	HIETAJÄRVI	PIENI KORAMIVAARA	Ultramafic volcanic rock	Komatiitic lava rock	7085,325	4445,141	45,80	0,261	7,180	9,65	0,226	23,40	6,56	0,000	0,009	0,029	4,98	3257	860	100	122	60	10	90	10	0	290	0	2,74	20,00	17,91	9,30		0	12	0	2	0	6	20	10	20	93,12	9612706	
235	JTL	96	235JTL 96	235JTL 96 2	P	2,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7082,045	4445,152	42,90	0,140	3,940	8,43	0,169	32,10	1,29	0,000	0,005	0,017	9,14	3099	1860	110	75	60	10	80	10	0	3670	10	6,40	10,00	26,87	5,07		0	12	0	0		7	20	20	30	88,99	9634474	
128	JTL	96	128JTL 96	128JTL 96 2	P	2,01	0,00	SOTKAMO	HIETAJÄRVI	PIENI KORAMIVAARA	Ultramafic volcanic rock	Komatiitic lava rock	7085,317	4445,152	50,80	0,530	4,010	8,96	0,169	26,40	2,64	0,000	0,004	0,107	4,95	2388	750	80	95	50	0	170	0	0	420	10	7,32	0,00	17,91	9,30		10	17	15	4	0	11	0	10	20	93,62	9612705	
241	JTL	96	241JTL 96	241JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7081,955	4445,155	42,20	0,307	8,570	9,28	0,133	25,70	6,18	0,160	0,021	0,027	5,80	2593	1170	110	150	40	10	60	0	0	370	10	5,49	10,00	0,00	25,37		0	13	0	3		7	0	10	40	92,58	9634476	
121	JTL	96	121JTL 96	121JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	PIENI KORAMIVAARA	Ultramafic volcanic rock	Komatiitic lava rock	7085,630	4445,283	38,90	0,251	6,710	11,40	0,154	25,30	4,92	0,000	0,006	0,028	8,58	2682	1330	130	122	100	10	90	0	10	7450	10	7,32	10,00	17,91	24,52		0	13	0	2	0	3	0	0	10	87,67	9612704	
158	JTL	96	158JTL 96	158JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7084,035	4445,540	43,90	0,316	8,580	10,00	0,152	23,00	6,56	0,100	0,011	0,030	0,00	2607	1060	150	150	100	10	60	10	10	560	10	3,66	0,00	35,83	10,15		0	14	0	3		11	20	30	30	92,65	9634422	
197	JTL	96	197JTL 96	197JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7082,984	4445,953	44,90	0,350	8,930	9,42	0,161	22,70	6,86	0,040	0,012	0,025	4,94	2429	1120	150	143	40	10	80	10	0	110	10	5,49	10,00	8,96	6,76		0	10	7	0		6	0	20	30	93,40	9634464	
4	JTL	96	4JTL 96	4JTL 96 2	P	2,01	0,00	SOTKAMO	HIETAJÄRVI	KATAJALAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7083,812	4446,254	41,20	0,305	8,120	9,55	0,149	24,10	6,77	0,000	0,007	0,038	7,95	2443	1210	140	150	60	10	60	0	10	1360	10	2,74	10,00	8,96	38,90		10	12	0	2		6	0	10	20	90,24	9634458	

4	JTL	96	4JTL 96	4JTL 96 2	P	2,02	0,00	SOTKAMO	HIETAJÄRVI	KATAJALAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7083,810	4446,260	46,30	0,272	8,540	8,99	0,180	21,20	8,58	0,160	0,019	0,026	4,14	2388	1170	140	143	0	0	70	10	0	90	50	0,91	10,00	8,96	5,92		10	13	0	3		7	10	20	20	94,27	9634459	
34	JTL	96	34JTL 96	34JTL 96 3	P	3,00	0,00	SOTKAMO	HIETAJÄRVI	KALLIOLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7084,525	4446,666	47,70	0,216	5,990	9,26	0,169	20,40	8,98	0,090	0,012	0,021	3,76	1950	1020	140	116	0	0	70	0	10	80	10	3,66	20,00	0,00	5,07		10	16	0	9	0	7	20	0	20	92,84	9612696	
34	JTL	96	34JTL 96	34JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	KALLIOLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7084,524	4446,667	43,40	0,348	9,000	9,90	0,146	22,50	6,46	0,000	0,005	0,008	5,62	2956	1210	230	150	10	10	80	0	0	260	20	3,66	0,00	26,87	1,69		0	16	0	7	0	10	20	0	30	91,77	9612695	
48	JTL	96	48JTL 96	48JTL 96 1	P	6,05	4,90	SOTKAMO	HIETAJÄRVI	LAPASUO SOUTH PART	Ultramafic volcanic rock	Komatiitic lava rock	7085,539	4447,032	41,70	0,281	8,090	9,33	0,167	23,70	7,03	0,000	0,008	0,042	7,06	2518	1130	100	150	80	0	70	0	0	3100	10	2,74	10,00	0,00	17,76		10	10	0	6		5	10	20	40	90,35	9634462	
48	JTL	96	48JTL 96	48JTL 96 1	P	0,11	12,00	SOTKAMO	HIETAJÄRVI	LAPASUO SOUTH PART	Ultramafic volcanic rock	Komatiitic lava rock	7085,519	4447,034	44,20	0,251	7,340	9,35	0,185	24,80	5,47	0,000	0,008	0,014	6,61	2429	1300	120	122	50	0	110	10	0	2200	10	3,66	10,00	17,91	10,99		0	15	0	0		8	10	0	20	91,62	9634461	
48	JTL	96	48JTL 96	48JTL 96 1	P	0,07	7,60	SOTKAMO	HIETAJÄRVI	LAPASUO SOUTH PART	Ultramafic volcanic rock	Komatiitic lava rock	7085,521	4447,037	44,60	0,352	9,240	10,70	0,185	21,80	5,65	0,160	0,014	0,013	4,95	2846	1230	150	150	0	0	130	10	0	0	10	6,40	20,00	0,00	5,07		10	14	0	4		8	20	30	40	92,71	9634460	
48	JTL	96	48JTL 96	48JTL 96 1	P	1,01	0,00	SOTKAMO	HIETAJÄRVI	LAPASUO SOUTH PART	Ultramafic volcanic rock	Komatiitic lava rock	7085,587	4447,037	43,50	0,308	8,060	9,86	0,163	22,60	6,70	0,060	0,010	0,034	5,85	2340	980	110	150	50	20	60	0	10	830	0	2,74	20,00	17,91	15,22		10	13	0	5	0	9	20	20	20	91,30	9612697	
28	JTL	97	28JTL 97	28JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Ultramafic volcanic rock	Komatiitic lava rock	7088,525	4448,740	44,90	0,240	6,820	9,71	0,188	22,00	7,57	0,120	0,015	0,025	5,47	2196	980	130	126	70	10	70	10	0	2260	10	5,49	30,00	8,96	16,07		10	11	0	3	0	9	20	10	10	91,59	9710751	
17	JSN	95	17JSN 95	17JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7093,060	4453,800	46,30	0,289	7,300	9,46	0,140	24,90	3,56	0,100	0,008	0,025	6,22	2463	1180	110	136	30	10	80	10	0	30	20	6,40	0,00	35,83	14,38		0	12	7	4	0	7	20	10	30	92,08	9512335	
304	TOH	93	304TOH 93	304TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI	Ultramafic volcanic rock	Komatiitic lava rock	7131,130	4453,800	46,50	0,473	11,100	10,30	0,191	15,80	8,80	1,170	0,061	0,045		1628	530	90	209	20	20	70	20	0	0	0	2,29	20,00	35,83	72,72		0	7	15	12	0	6	20	10	140	94,44	9313759	
99	TOH	95	99TOH 95	99TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,600	4453,875	42,30	0,424	5,510	13,20	0,096	26,30	3,85	0,010	0,016	0,042	5,87	4495	960	200	156	0	10	140	10	10	0	450	3,66	10,00	35,83	6,76		10	15	15	3	0	7	20	0	50	91,75	9513885	
44	R	67	44R 0	44R 0 1	K	0,00	121,11	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,835	4453,985	43,58	0,510	6,430	11,60	0,190	24,90	6,27	0,430	0,040		5,50	2200	1135			30		90																			93,95	971279	
92	TOH	94	92TOH 94	92TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Ultramafic volcanic rock	Komatiitic lava rock	7134,395	4453,990	44,95	0,474	10,750	10,53	0,208	17,39	9,76	0,580	0,120	0,020		1402	459	85	190	1	14	77			50		0,07		10,00	11,00	11		1	22	12			2	4	80	95,90	9505201055	x
95	JSK	93	95JSK 93	95JSK 93 1	M	0,41	0,40	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,820	4454,000	43,85	0,288	6,140	12,00	0,209	23,87	6,52	0,070	0,020	0,013		2519	1049	65	111	37	5	130			700		0,00		4,90	5,00	5		1	13	9			4	11	10	94,30	9505200527	x
95	JSK	93	95JSK 93	95JSK 93 1	M	14,00	14,00	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,816	4454,012	43,70	0,298	6,850	10,90	0,169	22,80	8,09	0,110	0,013	0,022		2422	1170	110	142	50	0	70	30	0	0	10	0,00	10,00	35,83	14,38		0	5	7	5	0	6	0	30	80	92,95	9313761	
135	JSK	93	135JSK 93	135JSK 93 1	P	1,00	0,00	KUHMO	AROLA	HAUTALEHTO	Ultramafic volcanic rock	Komatiitic lava rock	7149,350	4454,015	52,70	1,030	14,100	10,60	0,168	6,04	7,74	4,750	0,198	0,108		283	60	70	270	30	220	570	20	0	0	0	6,40	50,00	80,61	152,21		0	11	74	22	0	5	30	20	120	97,43	9313788	
95	JSK	93	95JSK 93	95JSK 93 1	M	29,50	29,50	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,812	4454,025	42,10	0,369	9,250	10,80	0,154	23,30	6,01	0,080	0,015	0,037		2812	950	110	185	30	0	70	20	0	0	0	2,74	30,00	8,96	5,92		0	4	7	8	0	0	10	20	80	92,12	9313762	
95	JSK	93	95JSK 93	95JSK 93 1	M	54,01	54,00	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,805	4454,045	46,38	0,287	6,100	8,58	0,115	24,74	3,38	0,140	0,010	0,011		2494	1481	82	122	1	10	76			40		0,07		13,00	17,00	6		1	14	2			2	0	2	90,70	9505180341	x
30	JSK	94	30JSK 94	30JSK 94 2	P	12,00	0,00	KUHMO			Ultramafic volcanic rock	Komatiitic lava rock	7149,580	4454,080	43,10	0,624	9,590	12,30	0,191	18,00	7,40	0,310	0,023	0,063		1690	640	100	224	0		230	20	0	0	10	5,49	0,00	44,78	10,99		0	4	30	11	0	9	20	10	60	91,60	9414421	
96	JSK	93	96JSK 93	96JSK 93 1	M	12,70	12,70	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,744	4454,083	41,00	0,258	6,710	9,00	0,180	23,10	8,27	0,180	0,011	0,023		2326	1190	90	120	10	10	60	10	10	60	0	1,83	0,00	17,91	58,35		10	4	0	6	0	10	20	10	70	88,73	9313764	
97	JSK	93	97JSK 93	97JSK 93 1	M	30,00	30,00	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,583	4454,093	46,80	0,872	12,100	12,10	0,168	8,30	11,10	2,270	0,153	0,086		465	160	60	239	50	30	190	20	0	1850	0	8,23	0,00	44,78	99,78		0	8	59	18	0	5	10	40	100	93,95	9313766	
96	JSK	93	96JSK 93	96JSK 93 1	M	28,00	28,00	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,737	4454,100	43,60	0,325	8,060	9,68	0,124	23,30	6,19	0,240	0,021	0,030		2484	1040	100	163	0	0	50	10	10	0	10	1,83	40,00	35,83	10,99		0	6	7	5	0	3	20	10	30	91,57	9313765	
97	JSK	93	97JSK 93	97JSK 93 1	M	42,50	42,50	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149,575	4454,105	49,50	0,856	11,900	12,10	0,181	9,93	8,32	3,030	0,127	0,079		541	170	90	262	120	10	100	20	10	0	10	4,57	0,00	35,83	53,27		10	7	52	16	0	9	0	30	60	96,02	9313767	
32	JSN	95	32JSN 95	32JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7093,480	4454,120	43,60	0,323	7,530	9,70	0,170	24,40	6,21	0,130	0,019	0,028	6,23	2374	1160	160	143	40	0	90	10	10	490	10	6,40	20,00	62,70	22,83		0	14	0	6	0	6	20	20	40	92,11	9512440	
95	TOH	94	95TOH 94	95TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Ultramafic volcanic rock	Komatiitic lava rock	7134,185	4454,130	47,10	0,461	8,650	10,90	0,195	15,50	9,99	0,830	0,091	0,028		1936	510	90	231	0	0	80	20	0	0	10	4,57	10,00	53,74	33,82		0	7	15	13	0	6	10	10	100	93,75	9411185	
234	JSN	95	234JSN 95	234JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7093,600	4454,140	41,40	0,360	9,100	12,40	0,145	24,40	3,86	0,160	0,035	0,023	6,13	2928	960	240	184	160	0	70	10	0	610	10	7,32	10,00	26,87	13,53		0	14	0	4	0	3	0	10	10	91,88	9512445	
48	JSN	94	48JSN 94	48JSN 94 1	L	5,00	0,00	KUHMO	SIIVIKKO	NÄÄTÄNIEMENTIE	Ultramafic volcanic rock	Komatiitic lava rock	7127,780	4454,170	43,50	0,227	5,980	16,70	0,205	17,40	8,72	0,410	0,037	0,327		1143	4690	520	170	8780		270	20	10	33700	270	2,74	60,00	26,87	15,22		30	7	0	11	2	10	40	30	260	93,51	9414484	
48	JSN	94	48JSN 94	48JSN 94 1	L	6,00	0,00	KUHMO	SIIVIKKO	NÄÄTÄNIEMENTIE	Ultramafic volcanic rock	Komatiitic lava rock	7127,780	4454,170	45,60	0,146	4,710	17,50	0,236	17,80	8,93	0,330	0,038	0,038		1143	4130	450	150	4970		90	20	0	25900	60	1,83	0,00	62,70	8,46		20	10	0	5	0	1	10	20	170	95,33	9414485	
48	JSN	94	48JSN 94	48JSN 94 1	L	7,00	0,00	KUHMO	SIIVIKKO	NÄÄTÄNIEMENTIE	Ultramafic volcanic rock	Komatiitic lava rock	7127,780	4454,170	47,20	0,117	4,510	13,40	0,225	17,70	10,20	0,430	0,038	0,403		450	2660	270	116	8310		270	20	0	16300	190	3,66	0,00	44,78	16,07		100	9	7	10	0	3	20	0	250	94,22	9414486	
118	TOH	95	118TOH 95	118TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,718	4454,172	44,00	0,310	7,520	10,20	0,191	21,50	7,31	0,070	0,006	0,016	0,00	2456	1060	100	150	0	10	80	10	0	0	10	5,49	20,00	17,91	2,54		10	15	0	4	0	4	40	20	20	91,12	9512491	
98	TOH	94	98TOH 94	98TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Ultramafic volcanic rock	Komatiitic lava rock	7134,110	4454,185	44,70	0,327	7,490	9,87	0,174	22,20	7,12	0,150	0,013	0,022		2600	920	90	156	0	0	70	20	10	0	10	2,74	10,00	26,87	16,91		10	9	7	7	0	7	10	20	70	92,07	9411188	
70	KYK	94	70KYK 94	70KYK 94 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Ultramafic volcanic rock	Komatiitic lava rock	7093,510	4454,190	41,30	0,381	9,410	12,60	0,141	23,90	3,93	0,130	0,030	0,042		3113	600	100	204	140	10	70	20	10	480	20	7,32	10,00	71,65	11,84		10	17	0	8	0	4	10	10	60	91,86	9411270	
131	JSK	93	131JSK 93	131JSK 93 1	P	1,00	0,00	KUHMO	AROLA	HAUTALEHTO	Ultramafic volcanic rock	Komatiitic lava rock	7149,325	4454,190	42,90	0,260	7,110	9,48	0,160	24,90	5,99	0,120	0,013	0,020		2449	1280	90	140	10	0	70	20	0	0	30	2,74	10,00	8,96	32,98		0	4	0	6	0	3	0	20	40	90,95	9313786	
36	R	66	36R 0	36R 0 1	K	0,00	173,28	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7150,090	4454,205	47,16	0,300	1,830	9,50	0,300	20,97	12,87	0,090	0,030		4,29	1040	965			10		120											30						93,05	971267	
96	TOH	94	96TOH 94	96TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Ultramafic volcanic rock	Komatiitic lava rock	7133,975	4454,220	46,70	0,453	11,000	11,30	0,190	12,00	10,40	2,460	0,154	0,022		1170	330	90	211	0	0	60	10	10	0	10	4,57	20,00	35,83	47,35		10	7	15	8	0	2	0	0	140	94,68	9411186	
130	JSK	93	130JSK 93	130JSK 93 1	P	1,00	0,00	KUHMO	AROLA	HAUTALEHTO	Ultramafic volcanic rock	Komatiitic lava rock	7149,280	4454,220	41,90	0,306	7,400	9,21	0,196	24,10	7,16	0,260	0,024	0,029		2429	1130	100	145	60	30	80	20	0	0	40	3,66	10,00	53,74	51,58		0	6	7	6	0	6	10	0	100	90,59	9313785	
19	TOH	94	19TOH 94	19TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	KUKKOSAARI	Ultramafic volcanic rock	Komatiitic lava rock	7133,025	4454,225	41,40	0,297	7,410	9,28	0,168	22,90	7,61	0,000	0,004	0,034		2819	980	100	143	60	0	50	20	10	1080	0	1,83	0,00	26,87	9,30		0	7	7	7	0	6	10	0	70	89,10	9414393	
117	TOH	95	117TOH 95	117TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,471	4454,230	48,20	0,236	5,890	10,50	0,283	18,00	9,96	0,380	0,020	0,019	0,00	2217	1170	110	116	0	10	60	10	10	0	10	5,49	10,00	17,91	6,76		10	17	0	6	0	4	20	0	100	93,49	9512490	
97	TOH	94	97TOH 94	97TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Ultramafic volcanic rock	Komatiitic lava rock	7133,995	4454,235	44,60	0,305	7,610	9,58	0,168	22,60	7,02	0,090	0,008	0,018		2586	760	80	150	10	0	60	30	0	0	0	4,57	0,00	53,74	9,30		10	6	7	3	0	8	20	40	50	92,00	9411187	
109	TOH	95	109TOH 95	109TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,115	4454,240	43,00	0,281	6,800	8,82	0,212	19,30	11,00	0,380	0,031	0,018	0,00	2169	1270	100	136	10	10	50	10	0	0	20	6,40	30,00	26,87	54,96		0	13	0	4	0	4	0	0	70	89,84	9512485	
107	TOH	95	107TOH 95	107TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,085	4454,295	46,60	0,295	8,570	10,90	0,221	18,90	8,19	0,300	0,020	0,021	4,13	2374	970	230	163	0	10	80	0	0	0	10	8,23	10,00	35,83	2,54		10	15	0	4	0	2	10	10	30	94,02	9512457	
240	JSN	95	240JSN 95	240JSN 95 2	P	2,00	0,00	SOTKAMO	TIPASJÄRVI	KIISULA	Ultramafic volcanic rock	Komatiitic lava rock	7095,330	4454,340	45,40	0,353	8,180	11,00	0,178	20,50	7,96	0,070	0,016	0,021	4,46	2210	750	190	170	0	10	100	0	0	0	20	6,40	0,00	17,91	0,00		10	14	7	8	0	6	20	30	30	93,68	9512447	
37	R	66	37R 0	37R 0 1	K	0,00	209,05	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7150,090	4454,505	44,04	0,400	6,380	10,58	0,130	20,89	6,49	0,010	0,020		6,96	2110	1115			50		190																			88,94	971273	
114	TOH	95	114TOH 95	114TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,563	4454,513	43,80	0,270	7,470	9,77	0,208	20,80	9,58	0,030	0,012	0,025	6,28	2326	1150	210	143	0	0	90	0	0	0	50	4,57	10,00	26,87	27,06		10	16	0	7	0	4	10	10	30	91,97	9512458	
229	JSN	95	229JSN 95	229JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Ultramafic volcanic rock	Komatiitic lava rock	7095,580	4454,580	45,70	0,308	7,500	10,30	0,299	21,50	7,65	0,090	0,009	0,034	4,63	2100	910	180	143	20	10	130	10	10	0	10	3,66	10,00	71,65	3,38		20	16	0	7	0	2	10	0	40	93,39	9512444	
28	JSK	94	28JSK 94	28JSK 94 1	P	1,00	0,00	HYRYNSALMI	KELOSUO	KELOSUO	Ultramafic volcanic rock	Komatiitic lava rock	7154,830	4454,580	48,20	0,865	6,730	9,76	0,270	12,80	13,90	0,570	0,199	0,043		684	280	60	224	0		260	10	0	0	10	7,32	0,00	62,70	273,97		0	6	52	13	0	7	0	30	400	93,34	9414418	
34	R	65	34R 0	34R 0 1	K	0,00	147,43	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7150,090	4454,605	44,19	0,370	3,730	10,90	0,220	24,50	9,76	0,030	0,010		5,58	2000	1090			60		120											20						93,71	971264	
37	JSN	95	37JSN 95	37JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	LIKOLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7093,260	4454,620	44,10	0,272	7,700	9,69	0,128	23,80	6,43	0,100	0,009	0,027	5,31	2367	1140	120	129	130	0	80	10	10	250	10	3,66	10,00	17,91	14,38		10	14	0	4	0	7	10	20	30	92,26	9512336	
196	JSN	95	196JSN 95	196JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVAL	Ultramafic volcanic rock	Komatiitic lava rock	7093,620	4454,640	38,70	0,236	6,430	8,25	0,241	21,60	10,40	0,140	0,013	0,010	11,28	2333	1050	210	109	0	0	50	0	10	320	90	4,57	10,00	26,87	70,18		10	11	0	2	0	3	10	20	20	86,02	9612509	
227	JSN	95	227JSN 95	227JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Ultramafic volcanic rock	Komatiitic lava rock	7095,740	4454,640	45,90	0,273	6,880	9,34	0,178	22,60	7,40	0,110	0,005	0,010	5,21	1820	880	190	143	10	10	90	10	10	150	110	5,49	30,00	17,91	10,99		0	14	0	6	0	9	0	10	30	92,70	9512443	
3	R	63	3R 0	3R 0 1	K	0,00	138,73	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7149,440	4454,740	37,72	0,220	0,000	12,07	0,140	38,50	0,48	0,110	0,050		11,16	3490	1170			120		140																			89,29	971260	
194	JSN	95	194JSN 95	194JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MIILUKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7094,660	4454,820	46,20	0,430	9,400	10,20	0,105	22,40	1,75	1,010	0,010	0,029	6,85	2217	940	170	184	0	20	80	0	10	0	0	3,66	0,00	35,83	37,21		10	11	15	6	0	4	0	0	40	91,53	9512442	
241	JSN	95	241JSN 95	241JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Ultramafic volcanic rock	Komatiitic lava rock	7095,060	4454,940	37,20	0,323	7,820	9,69	0,162	25,00	5,31	0,020	0,004	0,046	12,73	2819	1020	190	163	170	10	50	0	10	0	10	2,74	0,00	26,87	62,57		10	14	7	4	0	6	20	20	20	85,58	9512448	
85	TOH	95	85TOH 95	85TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Ultramafic volcanic rock	Komatiitic lava rock	7150,460	4454,970	42,20	2,720	7,620	13,80	0,251	17,10	8,80	0,100	0,081	0,466	4,55	759	780	140	306	20	10	200	10	10	0	10	8,23	10,00	8,96	41,43		10	56	237	16	0	0	50	90	40	93,14	9512419	
47	JSN	95	47JSN 95	47JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HUKKALAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7093,230	4455,000	42,80	0,338	9,070	10,20	0,180	22,00	7,55	0,290	0,022	0,026	5,48	2798	1030	140	170	20	10	80	20	0	50	10	6,40	30,00	26,87	21,14		0	14	0	4	0	2	30	0	60	92,48	9512441	
47	TOH	94	47TOH 94	47TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7127,524	4455,005	42,60	0,269	6,990	9,51	0,180	20,50	10,10	0,060	0,012	0,023		2319	870	100	143	40	10	50	20	0	480	0	2,74	30,00	35,83	14,38		0	6	0	8	0	0	20	0	80	90,24	9414492	
220	JSN	95	220JSN 95	220JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MYLLYKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7093,660	4455,020	42,00	0,201	5,140	9,01	0,168	27,00	3,78	0,000	0,005	0,004	10,94	2114	1530	220	122	30	0	60	0	0	690	10	1,83	20,00	8,96	73,57		10	14	0	2	0	5	0	20	20	87,31	9612515	
48	TOH	94	48TOH 94	48TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7127,548	4455,037	46,70	0,431	9,760	11,00	0,190	16,90	7,88	0,260	0,048	0,035		1683	600	110	197	50	0	80	20	10	0	10	4,57	10,00	26,87	2,54		10	7	15	9	0	1	10	20	40	93,20	9414493	
272	JSN	95	272JSN 95	272JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7094,050	4455,060	46,80	0,263	7,030	8,32	0,118	24,10	6,58	0,020	0,008	0,000	5,17	2703	1150	200	129	0	10	50	10	10	0	10	4,57	10,00	0,00	6,76		0	14	0	5	0	8	10	30	20	93,24	9512452	
56	TOH	94	56TOH 94	56TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7127,597	4455,093	42,30	0,309	7,020	10,40	0,189	22,50	6,88	0,000	0,007	0,027		3079	1010	130	150	0	10	90	20	0	0	10	1,83	20,00	53,74	8,46		0	5	7	5	0	7	10	0	30	89,63	9414498	
275	JSN	95	275JSN 95	275JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7094,360	4455,120	41,00	0,331	9,430	10,10	0,177	21,00	7,52	0,770	0,032	0,018	7,40	2579	1010	210	163	0	0	70	10	0	0	10	3,66	20,00	35,83	68,49		10	13	0	6	0	7	0	30	30	90,38	9512454	
58	TOH	94	58TOH 94	58TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7128,025	4455,217	44,30	0,309	7,410	9,48	0,162	21,40	8,08	0,000	0,007	0,028		3038	810	110	143	160	0	100	30	10	970	10	3,66	20,00	17,91	3,38		0	6	7	9	0	4	20	20	40	91,18	9414500	
305	JEV	95	305JEV 95	305JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	KOHISEVANLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7139,330	4455,260	44,90	0,428	9,380	10,80	0,172	18,90	8,75	0,550	0,074	0,028	3,15	2107	790	120	184	90	10	120	10	10	0	10	6,40	20,00	71,65	16,91		0	17	7	11	0	5	10	0	40	93,98	9512327	
120	TOH	95	120TOH 95	120TOH 95 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7128,048	4455,336	41,40	0,256	6,490	10,00	0,169	23,70	7,26	0,000	0,006	0,031	8,53	3756	1210	220	122	70	10	80	0	0	3290	10	5,49	10,00	44,78	15,22		0	14	0	3	0	7	10	10	50	89,31	9512459	
16	SII	94	16SII 94	16SII 94 3	K	0,00	77,30	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7128,293	4455,380	45,90	0,362	6,970	10,40	0,221	20,10	8,46	0,100	0,018	0,024		1697	870	100	143	0	10	140	10	10	0	30	4,57	0,00	26,87	7,61		0	16	15	5	0	2	0	20	40	92,56	9414691	
285	JSN	95	285JSN 95	285JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SALMELA	Ultramafic volcanic rock	Komatiitic lava rock	7094,710	4455,440	45,50	0,323	7,810	9,65	0,164	22,30	7,53	0,230	0,012	0,031	4,80	2347	880	210	136	100	0	60	10	10	0	10	8,23	20,00	80,61	23,68		10	17	7	4	0	2	10	10	20	93,55	9512456	
160	TOH	93	160TOH 93	160TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7127,050	4455,660	46,53	0,320	7,270	11,38	0,283	18,05	10,05	0,440	0,040	0,020		2379	1062	72	155	1	6	110			60		0,07		4,90	9,00	12		1	14	10			2	3	2	95,60	9505192147	x
1	TOH	94	1TOH 94	1TOH 94 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,614	4455,768	47,10	0,320	7,070	8,86	0,175	20,80	8,63	0,140	0,023	0,034		2408	1070	80	143	0	0	70	20	0	0	0	5,49	0,00	35,83	15,22		10	9	15	8	0	0	0	10	70	93,15	9414387	
155	TOH	93	155TOH 93	155TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,905	4455,775	44,40	0,374	7,630	8,85	0,230	15,63	14,36	0,770	0,070	0,012		2500	800	57	142	1	11	107			60		0,07		4,90	68,00	12		1	21	10			0	2	10	93,30	9505192220	x
111	TOH	93	111TOH 93	111TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,628	4455,796	48,50	0,257	6,410	7,47	0,153	22,70	7,77	0,140	0,027	0,020		2326	1260	110	128	10	0	60	20	0	0	0	1,83	10,00	8,96	6,76		0	4	0	4	0	7	0	20	70	93,45	9314434	
66	JSN	95	66JSN 95	66JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	PITKÄLAMPI	Ultramafic volcanic rock	Komatiitic lava rock	7092,500	4455,800	45,20	0,275	7,270	8,60	0,196	25,40	4,49	0,140	0,009	0,010	6,91	2449	1300	100	129	20	10	110	0	0	0	10	5,49	10,00	107,48	25,37		0	12	0	4	0	5	20	0	20	91,59	9512338	
117	TOH	93	117TOH 93	117TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,650	4455,805	48,60	0,284	6,560	8,52	0,117	24,50	5,64	0,150	0,031	0,028		2408	1190	90	126	30	0	60	20	0	70	10	1,83	10,00	17,91	8,46		10	4	7	7	0	6	10	10	80	94,43	9314435	
119	TOH	93	119TOH 93	119TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,668	4455,806	42,16	0,159	4,250	9,49	0,121	28,56	1,19	0,000	0,000	0,009		4157	1615	90	90	27	7	100			1090		0,07		4,90	18,00	4		1	6	6			0	5	2	87,00	9505191334	x
99	TOH	93	99TOH 93	99TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,555	4455,860	42,50	0,345	8,810	9,87	0,171	24,10	5,85	0,230	0,028	0,030		2798	850	90	171	140	10	80	20	10	0	20	2,29	10,00	17,91	10,15		10	6	7	8	0	6	20	10	60	91,93	9314429	
102	TOH	93	102TOH 93	102TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,590	4455,875	44,20	0,323	8,200	10,10	0,186	22,70	6,32	0,280	0,829	0,032		2641	1070	110	149	20	0	80	20	10	0	230	15,55	20,00	107,48	8,46		10	7	7	8	0	2	0	10	70	93,17	9314430	
1	HP	92	1HP 92	1HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,355	4455,895	44,51	0,330	7,560	9,74	0,169	23,02	7,46	0,270	0,020	0,023		2745	1132	85	134	74	10	73			340		0,00		19,00	25,00	8		0	17	8			1	0	30	93,10	970186	
104	TOH	93	104TOH 93	104TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Ultramafic volcanic rock	Komatiitic lava rock	7126,600	4455,895	42,70	0,367	8,770	10,30	0,173	24,50	5,87	0,280	0,188	0,026		2655	950	80	177	20	0	70	20	0	0	290	3,20	20,00	62,70	5,92		10	2	7	8	0	6	30	0	110	93,17	9314431	
3	HP	92	3HP 92	3HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,275	4455,900	43,67	0,380	8,520	9,76	0,179	24,09	5,70	0,380	0,010	0,016		2623	1073	82	133	2	6	72			20		0,00		17,00	9,00	9		0	16	10			0	5	0	92,71	970188	
2	HP	92	2HP 92	2HP 92 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,320	4455,900	46,70	0,350	7,100	8,38	0,177	23,27	7,31	0,320	0,010	0,009		2330	951	83	112	15	12	81			870		0,00		8,00	15,00	8		0	17	9			0	0	0	93,63	970187	
1	TOH	93	1TOH 93	1TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,290	4455,920	36,50	0,458	12,500	14,20	0,150	21,40	4,60	0,120	0,015	0,047		2477	530	140	242	830	10	80	10	0	11100	0	1,37	40,00	26,87	5,92		40	67	22	12	5	6	20	20	90	89,99	9313501	
12	TOH	93	12TOH 93	12TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,229	4455,997	44,63	0,316	7,030	9,63	0,154	25,57	4,78	0,020	0,010	0,021		2696	1170	65	117	44	8	67			270		1,00		4,90	2,00	8		1	18	10			2	9	30	93,20	9505180551	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	84,30	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	17,90	0,191	8,480	47,00	0,086	11,10	0,91	0,020	0,008	0,059		198	280	250	53	270	50	60	10	10	177000	0	7,32	10,00	26,87	0,00		0	12	59	5	8	6	0	20	100	85,75	9413790	
8	SII	93	8SII 93	8SII 93 2	K	0,00	85,30	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	47,74	0,267	5,250	9,32	0,170	22,53	7,94	0,030	0,010	0,005		2245	922	68	127	11	8	68			2630		0,07		4,90	9,00	7		1	14	11			2	16	2	94,30	9505230526	x
8	SII	93	8SII 93	8SII 93 3	K	0,00	86,10	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	46,15	0,293	5,920	8,80	0,172	23,45	7,42	0,060	0,010	0,014		2418	1139	76	116	7	8	69			1700		0,07		4,90	7,00	6		1	17	11			0	11	0	93,20	9505231455	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	89,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	40,83	0,321	6,750	9,36	0,190	24,11	7,24	0,040	0,010	0,021		2552	1272	88	132	1	12	87			530		0,07		4,90	22,00	7		1	17	12			1	4	0	89,90	9505230030	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	92,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	44,84	0,291	6,190	9,28	0,155	24,37	5,91	0,020	0,000	0,012		2533	1266	81	107	0	8	77			970		0,07		4,90	10,00	6		1	16	9			4	1	2	92,10	9505222253	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	95,40	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	37,41	0,255	5,440	8,53	0,170	25,93	5,84	0,010	0,000	0,014		2546	1375	90	100	1	14	90			280		0,07		4,90	46,00	6		1	15	8			1	11	0	84,50	9505250222	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	101,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	39,64	0,237	4,860	8,88	0,134	27,28	4,23	0,000	0,000	0,014		2664	1658	87	96	2	9	97			790		0,07		4,90	39,00	4		1	13	4			3	4	2	86,30	9505240310	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	104,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	43,31	0,222	4,920	9,00	0,103	28,40	1,39	0,010	0,000	0,016		2625	1708	92	99	1	7	123			690		0,07		4,90	11,00	6		1	10	7			2	7	2	88,40	9505240130	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	107,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	30,31	0,221	4,260	9,48	0,292	27,57	5,70	0,000	0,000	0,015		2723	1508	85	95	10	11	107			980		0,07		4,90	47,00	5		1	12	8			2	9	2	78,90	9505241155	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	110,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	39,59	0,251	4,720	8,16	0,166	28,21	3,53	0,010	0,000	0,016		3031	1525	81	81	16	4	109			1150		0,07		4,90	39,00	5		1	13	5			3	3	2	85,50	9505241048	x
8	SII	93	8SII 93	8SII 93 1	K	0,00	112,50	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	47,22	0,297	6,320	8,64	0,208	22,77	7,91	0,120	0,010	0,019		2228	1162	84	111	61	14	103			1730		0,07		4,90	7,00	7		1	16	9			2	2	2	94,40	9505240910	x
8	SII	93	8SII 93	8SII 93 4	K	0,00	114,50	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	41,20	0,616	10,900	13,10	0,239	18,10	7,30	0,740	0,060	0,049		999	420	100	293	30	310	130	10	0	0	0	4,57	10,00	8,96	8,46		0	5	22	16	1	1	0	10	140	92,30	9413801	
8	SII	93	8SII 93	8SII 93 5	K	0,00	115,70	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126,160	4456,000	42,83	0,440	9,890	11,13	0,205	20,96	6,84	0,280	0,020	0,022		2531	728	87	171	0	10	108			30		0,03		7,00	7,00	12		0	23	9			0	2	90	93,84	971315	x
13	TOH	93	13TOH 93	13TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,231	4456,000	42,51	0,390	7,990	9,96	0,170	24,49	6,11	0,020	0,000	0,016		2774	1006	75	148	1	5	67			50		0,07		4,90	4,00	9		1	16	7			2	6	2	92,80	9505232002	x
14	TOH	93	14TOH 93	14TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,233	4456,002	41,95	0,253	5,490	8,90	0,104	27,51	3,00	0,010	0,000	0,017		2572	1542	86	100	1	5	66			550		0,07		4,90	22,00	6		1	14	9			2	33	2	88,20	9505231857	x
16	TOH	93	16TOH 93	16TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,238	4456,006	43,37	0,197	4,690	8,59	0,096	28,97	1,24	0,000	0,010	0,013		2874	1599	91	90	1	5	68			610		0,07		4,90	12,00	4		1	13	5			4	99	2	88,10	9505240838	x
17	TOH	93	17TOH 93	17TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,242	4456,009	45,90	0,297	7,090	7,79	0,180	24,40	7,10	0,020	0,007	0,022		3414	890	80	115	10	10	50	10	0	0	110	1,37	0,00	26,87	4,23		10	8	7	6	0	1	10	0	90	92,81	9314399	
18	TOH	93	18TOH 93	18TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,243	4456,010	41,96	0,447	9,870	12,43	0,237	20,97	6,49	0,160	0,010	0,027		2641	624	80	184	6	7	91			60		0,07		4,90	5,00	9		1	23	12			6	9	50	94,00	9505191724	x
26	TOH	93	26TOH 93	26TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,249	4456,014	45,80	0,425	10,000	11,60	0,200	16,30	8,35	1,490	0,060	0,033		2073	480	100	200	20	10	80	10	10	0	10	2,29	30,00	8,96	10,99		0	8	15	12	0	6	20	30	160	94,26	9314403	
30	TOH	93	30TOH 93	30TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,251	4456,015	45,10	0,353	8,350	10,60	0,211	19,80	8,10	0,460	0,028	0,028		2217	810	110	169	10	10	90	20	10	0	0	2,29	30,00	35,83	6,76		0	7	15	8	0	8	30	10	80	93,03	9314404	
37	TOH	93	37TOH 93	37TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,255	4456,018	42,25	0,362	8,250	9,84	0,152	24,84	4,89	0,090	0,010	0,029		2867	1358	89	128	47	10	77			1290		0,07		4,90	16,00	8		1	20	11			2	2	2	91,80	9505191511	x
38	TOH	93	38TOH 93	38TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,257	4456,020	45,63	0,300	6,870	9,50	0,125	25,08	3,58	0,090	0,000	0,020		2787	1273	80	131	17	9	85			280		0,04		3,00	6,00	9		0	15	8			1	1	30	92,25	971413	x
39	TOH	93	39TOH 93	39TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,258	4456,021	42,40	0,355	9,100	11,20	0,182	23,40	5,97	0,090	0,008	0,029		2443	960	110	179	30	0	80	20	0	0	40	3,20	0,00	35,83	7,61		10	3	7	7	0	5	20	10	60	92,73	9314406	
40	TOH	93	40TOH 93	40TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,260	4456,021	43,60	0,309	8,170	10,10	0,200	22,70	6,72	0,160	0,011	0,033		2463	870	90	156	0	0	70	10	10	0	40	6,40	20,00	17,91	11,84		10	14	0	6	0	3	10	30	60	92,00	9411256	
42	TOH	93	42TOH 93	42TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,262	4456,022	45,43	0,333	6,990	10,01	0,201	23,08	6,96	0,140	0,010	0,013		2673	850	62	147	37	10	75			270		0,07		4,90	12,00	10		1	17	11			2	5	2	94,30	9505191156	x
43	TOH	93	43TOH 93	43TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,262	4456,040	43,20	0,335	8,800	10,00	0,192	23,00	6,20	0,190	0,264	0,028		2484	1000	100	148	10	0	90	20	0	0	10	6,40	0,00	44,78	10,99		10	5	7	11	0	5	10	30	70	92,21	9314408	
46	TOH	93	46TOH 93	46TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,268	4456,040	44,40	0,299	8,040	9,93	0,169	24,90	5,63	0,140	0,012	0,026		2600	1220	110	158	50	10	80	20	10	600	20	1,37	0,00	17,91	14,38		10	6	7	7	0	6	0	10	80	93,55	9314409	
168	TOH	93	168TOH 93	168TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,640	4456,040	41,40	0,409	8,950	10,70	0,163	22,90	5,48	0,040	0,019	0,034		2682	860	120	184	20	10	70	20	10	0	10	2,29	20,00	17,91	16,91		10	6	15	11	0	3	10	10	30	90,10	9314455	
48	TOH	93	48TOH 93	48TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,270	4456,041	43,73	0,323	7,430	9,57	0,163	24,61	5,44	0,210	0,010	0,020		2673	1266	85	129	17	9	75			160		0,07		4,90	32,00	8		1	17	8			2	3	40	92,50	9505200032	x
52	TOH	93	52TOH 93	52TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,278	4456,043	45,30	0,271	7,710	9,59	0,159	24,90	5,57	0,150	0,007	0,022		2634	1290	110	146	30	0	60	10	0	130	20	0,91	20,00	26,87	10,99		0	7	7	5	0	6	20	10	80	93,68	9314412	
54	TOH	93	54TOH 93	54TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,282	4456,046	42,21	0,312	6,870	9,06	0,165	25,02	5,28	0,150	0,010	0,022		2631	1229	79	125	42	8	67			80		0,07		4,90	89,00	7		1	14	9			3	5	0	90,10	9505191229	x
56	TOH	93	56TOH 93	56TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,287	4456,047	43,70	0,310	8,580	9,84	0,168	23,90	5,84	0,190	0,061	0,036		2497	1120	110	160	70	0	80	10	10	0	10	3,66	20,00	26,87	15,22		0	6	7	6	0	5	10	0	80	92,63	9314414	
58	TOH	93	58TOH 93	58TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,297	4456,050	44,50	0,264	7,420	9,40	0,173	24,40	6,48	0,150	0,007	0,024		2532	1150	100	143	30	10	70	10	10	450	20	6,40	20,00	0,00	15,22		10	16	0	6	0	0	20	30	60	92,82	9411257	
59	TOH	93	59TOH 93	59TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,300	4456,051	43,80	0,298	8,000	9,27	0,174	24,10	6,14	0,150	0,010	0,021		2525	1140	110	137	50	10	90	20	0	240	20	3,66	0,00	0,00	16,91		10	7	7	4	0	4	10	20	70	91,96	9314415	
62	TOH	93	62TOH 93	62TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,308	4456,056	42,20	0,279	7,830	9,91	0,182	24,50	6,40	0,090	0,005	0,027		2648	1280	110	151	70	0	100	20	0	390	10	1,37	10,00	35,83	29,60		0	7	7	7	0	7	30	30	40	91,42	9314416	
65	TOH	93	65TOH 93	65TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,313	4456,056	43,32	0,362	8,290	10,39	0,170	23,61	5,98	0,200	0,010	0,020		2651	1074	81	167	34	10	92			200		0,07		4,90	20,00	11		1	21	13			5	14	2	93,50	9505191301	x
71	TOH	93	71TOH 93	71TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,338	4456,056	45,70	0,272	6,980	9,26	0,197	23,30	6,92	0,120	0,006	0,024		2169	880	90	144	0	10	80	10	0	800	10	2,74	10,00	8,96	11,84		10	5	0	6	0	5	0	20	50	92,78	9314419	
69	TOH	93	69TOH 93	69TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,321	4456,057	44,20	0,288	7,980	9,93	0,169	24,10	5,82	0,110	0,006	0,027		2497	1010	100	156	50	10	90	20	0	30	10	2,74	10,00	26,87	7,61		0	4	7	7	0	7	0	20	40	92,63	9314418	
72	TOH	93	72TOH 93	72TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,340	4456,057	44,80	0,284	7,870	9,75	0,162	24,30	5,37	0,120	0,006	0,020		2682	1130	100	144	50	0	90	20	10	0	10	1,37	20,00	35,83	11,84		0	6	7	6	0	7	30	10	50	92,68	9314420	
66	TOH	93	66TOH 93	66TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,314	4456,058	43,66	0,343	7,730	9,54	0,166	23,98	5,46	0,150	0,010	0,035		2599	1131	76	131	18	8	90			190		0,07		4,90	19,00	7		1	16	10			2	5	2	92,10	9505231210	x
74	TOH	93	74TOH 93	74TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,344	4456,061	43,70	0,326	8,370	10,10	0,188	23,40	6,31	0,210	0,011	0,019		2586	1030	90	156	20	10	90	10	10	0	20	4,57	0,00	26,87	12,68		10	19	0	8	0	6	10	0	50	92,63	9411259	
75	TOH	93	75TOH 93	75TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,345	4456,065	43,10	0,312	8,520	9,53	0,181	24,10	5,82	0,130	0,007	0,024		2538	1130	100	158	110	10	90	20	10	0	20	0,46	30,00	26,87	10,99		0	7	7	8	0	5	10	10	50	91,72	9314421	
77	TOH	93	77TOH 93	77TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,348	4456,067	43,50	0,323	7,780	9,53	0,175	24,09	5,60	0,150	0,020	0,025		2695	1212	78	129	43	6	96			950		0,07		4,90	24,00	7		1	18	8			2	11	2	92,20	9505230348	x
80	TOH	93	80TOH 93	80TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,351	4456,071	42,60	0,363	9,270	10,90	0,181	23,60	5,73	0,190	0,020	0,031		2593	970	100	179	10	0	100	10	10	0	10	1,37	30,00	17,91	14,38		10	5	7	7	0	8	20	30	40	92,89	9314422	
82	TOH	93	82TOH 93	82TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,359	4456,075	43,62	0,283	6,560	9,23	0,172	23,51	6,38	0,200	0,010	0,016		2582	1202	84	134	33	11	79			950		0,07		4,90	42,00	8		1	15	10			4	4	2	91,00	9505200705	x
84	TOH	93	84TOH 93	84TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,362	4456,076	45,49	0,344	8,070	10,05	0,205	21,48	7,06	0,410	0,780	0,020		2489	967	79	155	1	4	95			60		37,00		72,00	17,00	7		1	18	12			3	6	2	95,00	9505230453	x
86	TOH	93	86TOH 93	86TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,365	4456,078	44,50	0,322	7,930	9,66	0,175	23,10	6,67	0,220	0,011	0,032		2456	980	90	160	70	0	80	20	0	0	10	2,29	20,00	0,00	13,53		10	7	7	8	0	4	30	20	70	92,62	9314424	
88	TOH	93	88TOH 93	88TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,367	4456,083	44,30	0,295	8,110	9,51	0,159	23,90	5,77	0,180	0,014	0,019		2573	1170	80	145	50	10	90	20	10	0	10	2,29	10,00	26,87	15,22		10	3	7	6	0	5	0	10	40	92,26	9314425	
91	TOH	93	91TOH 93	91TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,372	4456,088	46,03	0,292	6,950	9,33	0,186	24,99	2,89	0,170	0,020	0,017		2847	1416	73	119	36	11	121			110		0,07		4,90	31,00	8		1	18	8			5	3	2	91,90	9505191406	x
94	TOH	93	94TOH 93	94TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,410	4456,090	43,20	0,358	7,640	9,36	0,154	24,33	4,66	0,150	0,010	0,033		2748	1154	77	136	12	8	85			80		0,07		4,90	36,00	7		1	17	8			3	4	2	90,90	9505200455	x
93	TOH	93	93TOH 93	93TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126,374	4456,092	44,10	0,262	8,020	9,26	0,157	24,80	5,36	0,140	0,029	0,018		2620	1270	80	142	30	0	80	10	0	0	10	5,03	0,00	17,91	30,44		0	4	7	5	0	7	0	0	30	92,15	9314427	
8	TOH	94	8TOH 94	8TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,717	4456,100	45,00	0,409	8,910	9,83	0,195	18,60	9,29	0,770	0,076	0,038		1882	610	90	197	0	10	50	20	10	0	10	2,74	0,00	44,78	15,22		0	6	15	8	0	5	0	10	120	93,12	9414388	
9	TOH	94	9TOH 94	9TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,646	4456,142	43,90	0,347	8,590	9,41	0,190	20,90	7,67	0,470	0,068	0,023		2443	1010	100	177	20	0	70	30	0	0	10	2,74	10,00	62,70	16,91		10	5	7	10	0	6	20	10	60	91,57	9414389	
179	TOH	93	179TOH 93	179TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,808	4456,166	45,20	0,345	7,830	9,79	0,177	22,20	7,76	0,340	0,026	0,028		2586	940	80	175	20	0	70	10	10	0	10	3,20	10,00	17,91	13,53		10	2	7	6	0	4	20	20	70	93,70	9314461	
86	TOH	94	86TOH 94	86TOH 94 1	P	1,00	0,00	KUHMO	HIETAPERÄ	HIETAPERÄ	Ultramafic volcanic rock	Komatiitic lava rock	7120,200	4456,230	42,25	0,440	9,070	12,05	0,173	21,42	6,97	0,310	0,030	0,017		2557	872	81	209	22	9	85			80		0,07		4,90	14,00	12		1	20	11			0	4	40	94,00	9505221258	x
1	SII	93	1SII 93	1SII 93 3	K	0,00	102,00	KUHMO	SIIVIKKO	SIIVIKKO	Ultramafic volcanic rock	Komatiitic lava rock	7126,385	4456,250	40,40	0,277	7,070	9,58	0,228	21,70	8,42	0,080	0,011	0,026		2340	1100	120	139	10	10	130	20	0	270	390	1,00	0,00	9,00	24,00	0	10	7	0	5	0	5	30	20	60	87,79	9313956	
178	TOH	93	178TOH 93	178TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,680	4456,270	43,10	0,327	7,400	9,51	0,165	23,90	6,18	0,010	0,008	0,028		2634	1210	110	171	80	10	70	10	0	0	10	0,91	20,00	8,96	19,45		0	6	7	7	0	6	30	0	40	90,63	9314460	
124	JSN	95	124JSN 95	124JSN 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	HYYRYLÄINEN	Ultramafic volcanic rock	Komatiitic lava rock	7160,710	4456,570	40,00	0,305	4,220	12,90	0,176	27,40	2,50	0,000	0,004	0,032	10,34	2785	1070	180	116	40	0	90	10	0	380	70	5,49	0,00	44,78	17,76		10	18	0	2	0	9	10	10	0	87,54	9512435	
43	JSK	93	43JSK 93	43JSK 93 1	P	2,00	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Ultramafic volcanic rock	Komatiitic lava rock	7126,595	4456,630	56,30	0,524	13,700	7,16	0,155	8,47	6,16	5,040	0,080	0,042		3619	920	110	183	50	70	60	20	0	1190	0	2,74	0,00	89,57	149,67		0	7	15	6	0	8	10	10	70	97,63	9313514	
43	JSK	93	43JSK 93	43JSK 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Ultramafic volcanic rock	Komatiitic lava rock	7126,590	4456,635	51,90	0,317	9,300	11,20	0,213	10,80	8,37	3,170	0,102	0,040		2443	410	20	223	510	10	40	20	10	3080	10	0,00	0,00	53,74	7,61		0	5	7	17	0	6	20	10	100	95,41	9313513	
39	JSK	93	39JSK 93	39JSK 93 1	P	1,01	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Ultramafic volcanic rock	Komatiitic lava rock	7126,490	4456,675	47,80	0,546	12,200	11,30	0,176	13,30	7,05	2,600	0,073	0,052		1026	300	80	252	90	10	90	20	10	1400	10	2,74	20,00	8,96	57,50		10	8	30	16	0	10	10	30	20	95,10	9313511	
39	JSK	93	39JSK 93	39JSK 93 1	P	1,02	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Ultramafic volcanic rock	Komatiitic lava rock	7126,490	4456,675	44,80	0,431	9,060	11,20	0,224	18,90	8,17	0,300	0,038	0,024		1991	740	90	179	0	0	100	20	0	0	10	2,29	10,00	17,91	4,23		10	6	15	11	0	6	20	0	60	93,15	9313512	
167	TOH	94	167TOH 94	167TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Ultramafic volcanic rock	Komatiitic lava rock	7127,140	4456,687	44,00	0,410	9,150	11,40	0,227	20,40	7,49	0,080	0,020	0,013		1765	640	110	184	0	10	90	20	0	0	10	5,49	20,00	17,91	5,07		10	16	7	7	0	3	0	30	40	93,19	9411252	
123	TOH	95	123TOH 95	123TOH 95 2	P	2,00	0,00	KUHMO	SIIVIKKO	VIITALA	Ultramafic volcanic rock	Komatiitic lava rock	7126,625	4456,705	44,80	0,502	8,960	10,60	0,207	20,40	8,01	0,260	0,028	0,024	4,39	2381	860	230	177	0	10	90	10	10	0	10	4,57	20,00	26,87	9,30		10	16	7	7	0	8	0	20	40	93,79	9512460	



126	JSK	93	126JSK 93	126JSK 93 1	P	1,00	0,00	KUHMO	AROLA	KOIVULEHTO	Mafic volcanic rock	Mafic volcanic rock	7150,090	4453,535	45,20	1,740	6,770	13,20	0,230	16,70	9,61	0,290	0,059	0,273			691	650	90		246	220	10	180	10	0	1870	0	6,40	0,00	8,96	6,76		10	25	126	14	1	0	10	50	40		94,07	9313783	
14	SII	94	14SII 94	14SII 94 2	K	0,00	50,50	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,460	4454,100	52,40	0,587	13,700	8,15	0,205	8,10	11,50	1,750	0,355	0,054			862	300	50		245	80	10	100	10	0	690	20	13,72	20,00	107,48	70,18		10	15	15	11	0	3	0	10	90		96,80	9414658	
14	SII	94	14SII 94	14SII 94 2	K	0,00	106,40	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,460	4454,100	53,00	0,771	14,900	9,04	0,279	8,22	7,71	3,440	0,184	0,076			377	140	90		319	10	150	580	10	0	0	0	8,23	10,00	62,70	73,57		10	18	37	26	0	0	20	20	50		97,62	9414669	
14	SII	94	14SII 94	14SII 94 2	K	0,00	121,35	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,460	4454,100	56,20	0,612	14,100	9,32	0,164	5,63	8,42	3,020	0,260	0,055			2053	580	180		258	170	80	210	10	10	10200	70	9,14	20,00	62,70	109,93		0	16	22	13	0	1	30	20	80		97,78	9414672	
14	SII	94	14SII 94	14SII 94 2	K	0,00	130,25	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,460	4454,100	53,90	0,667	15,600	9,16	0,156	6,05	8,19	3,630	0,195	0,057			2272	740	130		292	100	50	130	10	0	6840	10	5,49	20,00	53,74	112,46		0	16	22	13	0	8	10	20	120		97,61	9414673	
183	TTT	96	183TTT 96	183TTT 96 3	P	3,01	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Mafic volcanic rock	Mafic volcanic rock	7131,766	4454,219	49,30	0,846	6,040	12,20	0,316	13,50	12,20	0,760	0,165	0,075			2142	350	40		231	10	10	260	10	10	20	10	7,32	30,00	44,78	32,98		0	17	37	7	1	6	20	20	130		95,40	9612725	
296	JEV	95	296JEV 95	296JEV 95 1	P	1,00	0,00	KUHMO	TAPANIVAARA	POIKAINAHO	Mafic volcanic rock	Mafic volcanic rock	7153,640	4454,220	48,10	0,642	11,400	11,20	0,194	12,10	9,35	1,800	0,293	0,051		0,00	842	310	100		252	20	0	90	10	0	0	10	17,37	0,00	80,61	96,40		0	17	22	9	0	7	10	10	50		95,13	9512325	
176	TTT	96	176TTT 96	176TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Mafic volcanic rock	Mafic volcanic rock	7131,676	4454,251	53,50	1,030	19,900	6,48	0,137	3,70	8,27	4,750	1,140	0,100			445	210	40		347	0	20	100	10	0	20	10	43,89	10,00	349,31	168,27		0	15	37	18	0	7	0	30	200		99,01	9612720	
185	TTT	96	185TTT 96	185TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Mafic volcanic rock	Mafic volcanic rock	7131,785	4454,257	48,50	0,864	14,800	11,90	0,223	7,55	9,58	2,640	0,806	0,084			292	120	40		299	120	30	110	10	10	540	0	30,18	50,00	232,87	145,44		0	14	37	16	0	12	20	20	290		96,95	9612726	
105	TTT	96	105TTT 96	105TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LEVÄNIEMI	Mafic volcanic rock	Mafic volcanic rock	7133,241	4454,434	48,70	0,542	12,300	10,90	0,224	11,30	10,40	1,560	0,120	0,054			1047	310	80		231	10	30	280	10	10	110	0	3,66	20,00	44,78	79,49		20	12	15	12	0	2	20	10	50		96,10	9612631	
128	JSK	93	128JSK 93	128JSK 93 1	P	1,00	0,00	KUHMO	AROLA	PYKÄLÄPURO	Mafic volcanic rock	Mafic volcanic rock	7150,545	4454,495	60,10	0,579	12,900	7,13	0,224	4,33	8,99	1,980	0,887	0,040			1163	530	100		239	80	10	80	20	10	1530	150	24,69	0,00	206,00	165,74		10	5	22	18	0	7	20	10	200		97,16	9313784	
13	SII	94	13SII 94	13SII 94 1	K	0,00	60,70	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,519	4454,600	55,60	0,722	15,600	8,66	0,127	5,85	7,49	3,260	0,137	0,078			341	150	60		245	40	60	200	10	0	27300	10	7,32	0,00	44,78	142,90		0	18	44	9	0	5	0	30	20		97,52	9414624	
13	SII	94	13SII 94	13SII 94 1	K	0,00	67,20	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,519	4454,600	54,70	0,666	13,100	10,50	0,164	5,06	8,76	2,640	0,131	0,079			304	160	80		245	80	40	140	10	0	46600	0	5,49	10,00	44,78	142,06		0	21	44	14	0	3	10	20	30		95,80	9414627	
13	SII	94	13SII 94	13SII 94 1	K	0,00	87,95	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,519	4454,600	54,70	0,740	15,400	8,56	0,119	6,14	7,62	3,550	0,741	0,091			377	190	50		272	80	30	50	20	10	21300	10	27,43	10,00	152,26	109,93		0	18	37	16	0	7	30	20	20		97,66	9414635	
13	SII	94	13SII 94	13SII 94 1	K	0,00	105,70	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,519	4454,600	50,40	0,696	17,600	8,64	0,148	5,25	9,42	4,640	0,527	0,250			321	180	120		245	100	120	320	20	10	23800	10	21,03	0,00	89,57	128,53		10	18	81	16	0	16	0	40	40		97,57	9414640	
15	SII	94	15SII 94	15SII 94 1	K	0,00	39,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,592	4454,800	52,00	0,662	14,800	8,00	0,143	7,65	9,46	3,310	0,575	0,055			1676	550	110		286	0	10	70	10	0	160	10	23,77	10,00	179,13	105,70		0	17	15	11	0	11	0	30	70		96,66	9414674	
15	SII	94	15SII 94	15SII 94 1	K	0,00	65,25	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,592	4454,800	57,10	0,614	14,400	7,30	0,147	6,32	8,70	3,010	0,147	0,056			1464	320	90		265	0	30	90	10	0	0	0	6,40	0,00	53,74	87,94		10	15	15	13	0	1	10	20	60		97,79	9414675	
15	SII	94	15SII 94	15SII 94 1	K	0,00	88,45	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,592	4454,800	55,60	0,639	14,000	7,41	0,165	8,63	6,49	2,660	1,520	0,078			460	310	120		218	0	50	320	20	10	800	0	51,21	0,00	394,09	65,96		10	19	52	15	0	10	0	10	100		97,19	9414679	
15	SII	94	15SII 94	15SII 94 1	K	0,00	110,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,592	4454,800	54,00	0,764	15,400	6,89	0,179	7,42	9,37	3,410	0,246	0,084			521	170	100		292	30	20	90	10	0	0	10	11,89	20,00	116,44	87,10		0	19	37	14	0	8	0	0	40		97,76	9414681	
15	SII	94	15SII 94	15SII 94 1	K	0,00	130,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,592	4454,800	51,30	0,750	15,100	8,27	0,228	6,50	10,30	3,110	0,253	0,080			608	200	90		286	30	20	80	10	10	200	0	10,97	20,00	98,52	105,70		0	19	30	18	0	7	0	30	60		95,89	9414683	
297	JEV	95	297JEV 95	297JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	KOTANIEMI	Mafic volcanic rock	Mafic volcanic rock	7138,520	4455,120	46,70	0,498	12,600	10,50	0,204	12,70	11,10	1,290	0,122	0,046		0,00	1108	390	100		224	20	10	90	0	10	0	10	9,14	10,00	53,74	55,81		0	14	15	11	0	3	20	10	110		95,76	9512326	
245	JSN	95	245JSN 95	245JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Mafic volcanic rock	Mafic volcanic rock	7095,000	4455,220	50,70	0,701	14,100	10,80	0,198	8,47	8,31	3,940	0,104	0,069		0,00	362	90	80		265	10	10	90	10	0	0	10	7,32	0,00	62,70	101,47		10	17	30	14	0	1	10	20	90		97,39	9512471	
285	JEV	95	285JEV 95	285JEV 95 2	P	4,00	0,00	KUHMO	KUIVAJÄRVI	LÖYTÖLÄ	Mafic volcanic rock	Mafic volcanic rock	7139,440	4455,240	46,90	0,497	11,000	11,20	0,210	16,70	6,72	1,300	0,047	0,049		3,43	1348	530	180		218	0	0	80	0	10	0	10	4,57	0,00	44,78	65,96		10	14	15	12	0	3	0	10	30		94,62	9512421	
18	SII	94	18SII 94	18SII 94 1	K	0,00	13,10	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,480	4455,300	51,80	0,588	14,900	8,53	0,188	7,23	10,40	3,020	0,205	0,073			978	730	120		231	150	30	80	0	0	3270	0	7,32	20,00	89,57	112,46		10	17	15	11	0	0	10	20	110		96,93	9414724	
18	SII	94	18SII 94	18SII 94 1	K	0,00	57,75	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,480	4455,300	48,50	0,574	13,700	9,42	0,223	8,74	12,70	1,220	0,152	0,050			814	270	80		252	20	20	90	10	10	890	10	6,40	0,00	35,83	131,07		0	13	15	10	0	10	20	10	70		95,28	9414725	
18	SII	94	18SII 94	18SII 94 1	K	0,00	110,60	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,480	4455,300	54,80	0,750	15,500	7,54	0,135	7,51	8,12	3,170	0,355	0,085			371	120	70		272	120	160	350	10	0	4600	0	17,37	30,00	116,44	119,23		0	15	30	14	0	4	10	20	30		97,97	9414742	
18	SII	94	18SII 94	18SII 94 1	K	0,00	144,70	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127,480	4455,300	53,30	0,653	14,200	8,87	0,176	7,79	8,93	2,850	0,167	0,077			855	430	70		258	0	20	80	10	10	0	10	5,49	20,00	62,70	101,47		10	20	22	11	0	7	0	10	80		97,01	9414743	
16	SII	94	16SII 94	16SII 94 4	K	0,00	105,95	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7128,293	4455,380	53,70	0,703	15,500	8,24	0,151	6,69	8,38	4,190	0,205	0,096			434	150	70		258	0	10	60	0	0	0	10	10,06	20,00	53,74	88,79		0	14	44	15	0	5	20	10	90		97,86	9414692	
109	JSN	95	109JSN 95	109JSN 95 1	P	2,00	0,00	HYRYNSALMI	MOISIOVAARA	KUMPUSENKANGAS	Mafic volcanic rock	Mafic volcanic rock	7162,260	4455,880	48,50	0,896	15,200	10,90	0,213	4,61	12,90	2,050	0,185	0,082		0,00	218	130	30		292	40	10	80	20	0	270	10	9,14	20,00	53,74	190,26		10	18	30	17	0	2	0	0	140		95,54	9512408	
87	JTL	95	87JTL 95	87JTL 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	HATTARA	Mafic volcanic rock	Mafic volcanic rock	7167,390	4456,240	50,80	0,976	11,700	12,00	0,216	8,21	9,12	3,230	0,177	0,090		0,00	459	140	70		258	40	10	120	10	10	0	10	6,40	10,00	35,83	100,63		10	20	59	16	0	4	10	40	100		96,52	9512403	
123	JSN	95	123JSN 95	123JSN 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	HYYRYLÄINEN	Mafic volcanic rock	Mafic volcanic rock	7161,200	4456,680	48,60	0,842	10,600	12,20	0,199	10,50	10,10	2,120	0,157	0,062		0,00	598	220	80		258	30	10	90	10	0	0	10	9,14	20,00	26,87	164,04		10	20	44	12	0	6	30	40	40		95,38	9512409	
315	JEV	95	315JEV 95	315JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Mafic volcanic rock	Mafic volcanic rock	7138,310	4456,970	46,00	0,530	12,300	10,10	0,280	11,30	13,40	1,050	0,205	0,045		0,00	1567	550	90		218	40	10	90	10	10	0	10	17,37	0,00	44,78	111,62		0	24	15	9	0	7	10	10	130		95,21	9512398	
327	JEV	95	327JEV 95	327JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	KORKEALEHTO	Mafic volcanic rock	Mafic volcanic rock	7137,340	4457,090	47,10	0,514	11,900	10,40	0,233	12,00	13,10	0,890	0,111	0,042		0,00	1512	540	90		204	10	10	80	10	10	0	20	10,97	10,00	26,87	88,79		10	14	15	10	0	5	0	20	150		96,29	9512399	
57	TOH	95	57TOH 95	57TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI EAST MARGIN	PÖKKELIKKÖ	Mafic volcanic rock	Mafic volcanic rock	7128,880	4457,970	53,30	1,040	15,900	9,17	0,191	5,67	7,71	4,350	0,452	0,267		0,00	321	160	90		184	20	20	110	20	0	0	10	10,97	20,00	161,22	186,88		10	23	81	12	0	8	20	30	130		98,05	9512316	
22	JSK	94	22JSK 94	22JSK 94 1	P	1,00	0,00	KUHMO	KOTANEN	SARANEN	Mafic volcanic rock	Mafic volcanic rock	7127,600	4458,140	52,00	0,482	13,600	7,53	0,196	6,10	11,30	3,550	0,275	0,170			794	250	50		136	0		80	20	0	0	0	7,32	40,00	116,44	294,27		0	8	74	11	0	6	40	50	70		95,20	9414415	
71	TOH	95	71TOH 95	71TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI EAST MARGIN	KATISKALAMPI	Mafic volcanic rock	Mafic volcanic rock	7126,215	4458,770	62,00	0,580	14,300	5,66	0,142	5,10	7,41	3,390	0,291	0,174		0,00	287	140	10		116	10	10	70	10	10	0	20	10,06	20,00	107,48	314,56		0	18	74	5	0	3	30	30	60		99,05	9512387	
353	JEV	95	353JEV 95	353JEV 95 1	P	1,00	0,00	KUHMO	NISKAJÄRVI	HETTEILÄ	Mafic volcanic rock	Mafic volcanic rock	7139,680	4458,900	47,60	0,560	12,800	9,78	0,234	9,24	14,20	1,480	0,107	0,062		0,00	889	300	60		218	100	10	110	10	10	600	10	6,40	10,00	53,74	109,93		10	15	15	10	0	2	0	30	1280		96,06	9512400	
62	KYK	94	62KYK 94	62KYK 94 1	P	1,02	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Mafic volcanic rock	Mafic volcanic rock	7117,710	4461,605	48,80	0,545	12,800	10,10	0,350	7,47	13,80	0,450	1,820	0,062		0,00	753	280	70		231	60	60	2320	0	10	1520	10	29,26	10,00	841,92	303,57		0	15	15	9		6	10	10	260		96,20	9634454	
49	KYK	94	49KYK 94	49KYK 94 1	P	1,02	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Mafic volcanic rock	Mafic volcanic rock	7117,890	4462,140	49,40	0,746	14,500	11,00	0,248	8,46	9,82	2,720	0,824	0,070		0,00	276	140	110		265	10	0	60	10	0	80	70	34,75	30,00	313,48	141,21		10	14	22	15		3	20	10	480		97,79	9634451	
45	KYK	94	45KYK 94	45KYK 94 1	P	1,02	0,00	KUHMO	ONTOJÄRVI	PASKOKANGAS	Mafic volcanic rock	Mafic volcanic rock	7118,635	4465,045	51,50	0,927	14,900	12,40	0,204	6,58	8,94	2,260	0,271	0,088		0,00	136	100	80		326	90	10	120	10	0	110	10	7,32	0,00	44,78	126,84		0	16	37	15		4	0	10	250		98,07	9634449	
537	MAF	95	537MAF 95	537MAF 95 1	P	1,00	0,00	KUHMO	RUUNAKANGAS	KALLIOAHO	Mafic volcanic rock	Mafic volcanic rock	7111,140	4465,970	49,90	0,612	14,300	11,80	0,214	7,82	9,20	2,420	0,144	0,050		0,00	219	120	60		299	60	0	90	10	10	0	20	6,40	20,00	53,74	131,07		0	16	22	16	0	5	0	20	70		96,46	9513886	
95	JTL	96	95JTL 96	95JTL 96 1	P	1,00	0,00	SUOMUSSALMI	KOTVAVAARA	KOTVALAMPI	Mafic volcaniclastic rock	Mafic volcanic rock	7198,940	4466,420	48,90	0,711	13,900	11,70	0,207	7,35	11,20	1,390	0,609	0,058		0,00	311	140	90		306	80	20	100	10	10	960	10	21,95	10,00	161,22	74,41		10	16	22	19	0	8	20	10	160		96,03	9612708	
104	JTL	95	104JTL 95	104JTL 95 1	P	1,00	0,00	KUHMO	RONINKANGAS	RONINKANGAS	Mafic volcanic rock	Mafic volcanic rock	7109,400	4467,020	51,10	0,773	12,900	15,60	0,345	5,60	9,00	0,740	0,519	0,057		0,00	53	50	40		299	0	20	250	0	10	0	10	17,37	10,00	53,74	32,98		0	19	37	20	0	9	20	10	360		96,63	9512406	
289	JTL	97	289JTL 97	289JTL 97 1	P	1,02	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Mafic volcanic rock	Mafic volcanic rock	7154,050	4473,720	51,50	0,492	11,900	15,60	0,584	8,31	7,12	1,110	0,718	0,033			3879	970	80		242	30	20	140	10	10	2640	70	28,35	20,00	143,31	29,60		10	16	0	12	0	1	20	10	160		97,37	9818008	
289	JTL	97	289JTL 97	289JTL 97 1	P	1,01	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Mafic volcanic rock	Mafic volcanic rock	7154,040	4473,735	49,50	0,474	14,900	8,58	0,200	9,00	14,50	1,140	0,459	0,050			634	140	50		203	0	40	100	20	10	70	10	26,52	10,00	125,39	120,92		0	16	15	10	0	10	0	30	150		98,80	9818007	
198	TTT	97	198TTT 97	198TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Mafic volcanic rock	Mafic volcanic rock	7154,090	4473,820	50,30	0,766	15,500	10,40	0,235	6,49	11,20	2,560	0,356	0,077		0,75	133	60	110		312	50	20	110	0	0	280	10	10,97	10,00	107,48	101,47		10	16	30	13	0	4	20	10	60		97,88	9710738	
185	JTL	97	185JTL 97	185JTL 97 1	P	1,02	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Mafic volcanic rock	Mafic volcanic rock	7061,810	4475,870	47,60	0,217	30,400	2,81	0,054	2,00	13,90	2,580	0,098	0,008		0,00	39	40	80		64	0	20	10	10	0	30	10	10,97	0,00	0,00	178,42		10	14	0	0	0	2	10	30	60		99,67	9710776	
309	JTL	97	309JTL 97	309JTL 97 2	P	2,00	0,00	KUHMO	YPYKKÄ	VALKEALAMPI	Mafic volcanic rock	Mafic volcanic rock	7151,580	4478,975	47,70	0,499	12,000	10,30	0,207	14,80	10,20	1,950	0,119	0,043			1498	510	90		212	0	0	70	0	0	90	20	4,57	10,00	26,87	185,18		0	17	15	5	0	3	20	20	100		97,82	9818012	
55	KSL	97	55KSL 97	55KSL 97 2	P	2,00	0,00	NURMES	KUOHATTI-JONKERI	NÄÄTÄVAARA	Mafic volcanic rock	Mafic volcanic rock	7070,330	4485,770	52,50	0,208	4,210	10,30	0,247	20,50	7,61	0,520	0,053	0,014		2,17	2662	710	190		122	10	0	90	10	0	30	10	10,06	10,00	8,96	2,54		0	21	0	1	0	9	0	10	20		96,16	9818014	
20	SMS	60	20SMS 60	20SMS 60 1	K	0,00	28,50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Mafic volcanic rock	7228,050	4456,620	51,06	0,530	6,710	10,16	0,191	16,79	10,90	0,470	0,050	0,013	0,33	2,69	2360	380	71		223	82	8	99			520		0,04		16,00	7,00	8		0	27	14			2	8	10		97,99	971352	x
20	SMS	60	20SMS 60	20SMS 60 4	K	0,00	141,40	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Mafic volcanic rock	7228,050	4456,620	38,06	0,350	5,260	14,52	0,153	25,20	3,36	0,000	0,000	0,023	5,20	9,99	5105	2070	157		126	498	2	82			5590		0,05		27,00	13,00	7		0	16	7			1	2	0		88,53	971358	x
47	TOH	96	47TOH 96	47TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	LEHTOVAARA	Mg-gabbroic dike	Mg-gabbro	7231,120	4456,165	54,40	0,706	14,400	10,10	0,186	5,71	8,87	2,310	1,460	0,194		0,00	181	60	40		224	120	10	80	10	10	190	10	55,78	30,00	528,44	348,38		0	18	74	15		11	20	30	260		98,34	9634308	
45	TOH	96	45TOH 96	45TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KEKRINIEMI	Mg-gabbroic dike	Mg-gabbro	7228,220	4456,830	50,90	0,885	12,800	11,10	0,206	6,95	13,40	1,480	0,084	0,074		0,00	31	90	60		292	90	0	60	10	0	90	20	7,32	20,00	44,78	162,35		0	19	30	13		2	10	30	200		97,88	9634305	
53	TOH	96	53TOH 96	53TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	AHONNIEMI	Plutonic rock	Mg-gabbro	7229,600	4458,700	47,10	0,629	15,900	10,60	0,168	8,22	11,20	1,340	0,166	0,047			167	210	40		231	120	10	80	10	0	1130	10	6,40	10,00	53,74	100,63		0	17	22	12	0	11	10	20	150		95,37	9612655	
167	TOH	96	167TOH 96	167TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Mg-gabbroic dike	Mg-gabbro	7233,630	4458,800	50,30	0,869	14,100	12,20	0,229	8,39	7,05	3,910	0,170	0,087		0,00	61	70	60		299	70	20	100	30	10	110	10	8,23	20,00	71,65	123,46		0	17	37	6		7	0	20	80		97,31	9634339	
140	TOH	96	140TOH 96	140TOH 96 2	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mg-gabbroic dike	Mg-gabbro	7232,870	4459,730	50,50	0,793	13,000	12,00	0,224	8,98	7,83	2,690	0,942	0,064		0,00	317	150	60		313	130	10	90	10	0	940	10	36,58	0,00	188,09	90,48		0	16	15	18		0	10	0	160		97,02	9634326	
68	KYK	94	68KYK 94	68KYK 94 1	P	1,00	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Sedimentary rock	Mica gneiss	7116,565	4462,775	65,80	0,606	15,600	5,56	0,062	2,77	2,91	3,530	1,960	0,132		0,00	227	80	40		122	60	10	90	10	0	5000	10	59,44	10,00	394,09	246,91		0	18	111	7		6	20	50	110		98,93	9634457	
46	KYK	94	46KYK 94	46KYK 94 1	P	1,00	0,00	KUHMO	ONTOJÄRVI	PETÄJÄNIEMI	Metamorphic sedimentary rock	Mica gneiss	7117,855	4463,235	66,80	0,622	15,200	6,28	0,085	3,49	1,69	3,220	1,360	0,125		0,00	269	140	0		150	50	10	90	10	170	3570	70	58,52	10,00	197,05	104,01		0	18	96	14		9	30	50	90		98,87	9634450	
191	TTT	97	191TTT 97	191TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	LAMMINAHO	Sedimentary rock	Mica gneiss	7154,020	4474,500	54,20	0,858	20,600	8,24	0,115	4,68	0,53	0,610	4,100	0,054		4,81	486	60	120		292	310	0	260	0	10	490	10	132,59	20,00	707,57	21,14		10	14	52	7	0	7	10	10	10		93,98	9710733	
199	TTT	97	199TTT 97	199TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Sedimentary rock	Mica gneiss (felsic volcanic rock)	7154,120	4473,870	61,20	0,723	15,900	7,34	0,167	3,14	2,68	3,310	1,620	0,067		2,71	404	60	60		236	30	110	240	10	10	590	0	64,01	0,00	268,70	151,36		10	16	44	10	0	4	10	30	50		96,15	9710739	
174	JTL	96	174JTL 96	174JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	ESKONLAMMIT	Sedimentary rock	Mica schist	7084,910	4445,269	68,30	0,437	16,000	3,96	0,099	1,91	4,88	1,860	1,790	0,184		0,00	52	30	50		82	0	10	50	10	10	30	10	59,44	20,00	250,78	109,08		0	16	89	8	0	9	50	50	60		99,42	9710271	
48	JTL	96	48JTL 96	48JTL 96 2	P	0,02	2,40	SOTKAMO	HIETAJÄRVI	LAPASUO SOUTH PART	Sedimentary rock	Mica schist	7085,525	4447,041	61,60	0,706	19,600	4,43	0,056	3,28	0,69	4,100	3,590	0,054		0,00	746	270	30		218	60	20	170	10	10	19900	10	74,98	0,00	1128,53	71,03		0	18	67	6		0	10	50	40		98,11	9634417	
112	TOH	95	112TOH 95	112TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Sedimentary rock	Mica schist	7149,065	4454,175	62,20	0,877	13,700	8,39	0,127	2,81	3,72	3,040	1,570	0,192		0,00	78	40	0		102	60	10	100	10	160	0	20	50,29	0,00	358,26	72,72		0	19	178	27	0	5	20	40	190		96,63	9512487	
4	TOH	93	4TOH 93	4TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Sedimentary rock	Mica schist	7127,080	4455,500	47,90	2,220	12,400	14,30	0,195	4,79	5,42	2,570	3,860	0,388			46	50	30		483	280	30	250	10	10	3750	0	83,67	50,00	824,00	109,93		20	21	192	44	0	0	10	50	320		94,04	9313507	
41	TTT	96	41TTT 96	41TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KIVIHIEKKA	Komatiitic cumulate	Olivine adcumulate	7132,622	4454,694	35,84	0,040	0,780	11,70	0,207	39,10	0,03	0,000	0,000	0,003			4019	1935	139		38	4	8	121			120		0,07		4,90	0,00	3		1	0	5			2	4	540		88,99	960014	x
145	EJL	93	145EJL 93	145EJL 93 3	P	4,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,437	4455,023	40,42	0,120	3,010	8,46	0,149	35,39	0,16	0,000	0,000	0,012			2524	2067		5	52	0	20	87	0		0	1	1,00		16,00	0,00	5		0	11	6	0	0	8	13	22	70	88,65	93005680	x
145	EJL	93	145EJL 93	145EJL 93 3	P	6,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,431	4455,026	40,65	0,160	3,520	8,68	0,154	34,11	1,16	0,000	0,000	0,019			2946	2391		9	58	18	16	102	0		460	7	5,00		16,00	0,00	3		0	18	7	0	0	12	13	25	1100	89,40	93005682	x
145	EJL	93	145EJL 93	145EJL 93 3	P	5,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,438	4455,027	40,49	0,150	2,900	7,97	0,125	37,09	0,03	0,000	0,000	0,012			3301	2461		9	59	0	18	88	0		0	34	0,00		21,00	0,00	8		0	13	7	0	0	15	7	31	70	89,65	93005681	x
145	EJL	93	145EJL 93	145EJL 93 3	P	9,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,428	4455,030	40,25	0,200	3,420	9,12	0,168	33,68	1,15	0,000	0,000	0,022			2448	2485		9	58	38	48	108	0		690	0	2,00		18,00	0,00	9		0	19	5	0	0	10	20	25	1000	89,01	93005685	x
145	EJL	93	145EJL 93	145EJL 93 3	P	10,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,427	4455,032	41,96	0,180	5,750	8,17	0,135	30,54	3,65	0,000	0,010	0,027			2446	1611		11	73	0	16	90	0		60	5	2,00		20,00	0,00	9		0	20	6	0	0	13	7	51	300	91,32	93005686	x
145	EJL	93	145EJL 93	145EJL 93 3	P	11,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine adcumulate	7130,426	4455,033	43,15	0,210	4,880	9,13	0,141	29,34	4,60	0,000	0,000	0,024			2495	1757		13	83	21	18	83	0		110	0	4,00		13,00	0,00	10		1	28	8	0	0	16	17	46	100	92,48	93005687	x
35	TTT	96	35TTT 96	35TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PALOLAMMINSUO N	Komatiitic cumulate	Olivine adcumulate	7132,505	4455,076	36,71	0,080	1,270	14,33	0,079	34,24	0,91	0,000	0,000	0,002			1248	2772	115		43	12	15	83			210		0,07		4,90	8,00	3		1	3	2			2	6	2		89,20	960011	x
102	TTT	96	102TTT 96	102TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENSAARI	Komatiitic cumulate	Olivine adcumulate	7133,307	4455,102	37,35	0,060	1,360	8,77	0,154	37,96	0,06	0,007	0,000	0,001			3608	2159	113		34	1	9	81			110		0,07		4,90	0,14	3		1	8	1			20	3	2		86,68	960041	x
211	TTT	97	211TTT 97	211TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine adcumulate	7132,889	4455,115	50,20	0,152	2,140	4,79	0,161	21,40	17,80	0,120	0,005	0,005		2,04	3825	510	70		156	0	10	30	0	10	70	10	8,23	10,00	17,91	3,38		0	10	0	0	0	11	20	0	30		96,77	9710711	
106	TTT	96	106TTT 96	106TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	SAVIKALLIO	Komatiitic cumulate	Olivine adcumulate	7133,875	4455,337	37,70	0,070	1,490	9,96	0,128	37,24	0,37	0,000	0,000	0,004			4033	1975	120		39	6	8	68			170		0,07		4,90	2,00	4		1	1	5			3	4	200		88,06	960042	x
27	TTT	96	27TTT 96	27TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	Olivine adcumulate	7132,701	4455,598	36,26	0,110	1,900	12,82	0,141	36,04	0,02	0,007	0,000	0,004			3355	3188	110		52	70	7	81			20		0,07		4,90	0,00	1		1	5	4			2	13	240		88,71	960008	x
133	TTT	96	133TTT 96	133TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Olivine adcumulate	7131,973	4455,747	35,29	0,140	1,570	17,52	0,184	32,24	0,94	0,007	0,000	0,012			2067	2164	92		105	9	4	135			60		0,07		4,90	3,00	1		1	13	6			2	2	2		89,83	960055	x
126	TTT	97	126TTT 97	126TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNLAHTI W	Komatiitic cumulate	Olivine adcumulate	7132,040	4456,730	38,70	0,076	1,990	6,76	0,197	40,10	0,11	0,000	0,004	0,011		10,43	3380	2410	150		30	0	10	180	10	10	80	30	7,32	10,00	26,87	0,00		10	11	0	0	0	7	20	10	40		87,95	9710710	
46	TTT	97	46TTT 97	46TTT 97 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	MATONEVANSUO W	Komatiitic cumulate	Olivine adcumulate	7131,060	4456,920	37,80	0,077	2,170	9,55	0,191	36,00	0,22	0,000	0,004	0,013		12,28	3421	1520	140		48	0	40	210	0	0	220	30	5,49	20,00	8,96	1,69		10	12	0	3	0	8	10	20	20		86,02	9710699	
53	TTT	97	53TTT 97	53TTT 97 1	P	1,02	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Komatiitic cumulate	Olivine adcumulate	7132,020	4457,390	37,40	0,057	1,400	7,48	0,127	39,30	0,04	0,000	0,006	0,009		12,68	3626	2070	230		37	0	10	60	10	10	30	30	5,49	10,00	17,91	0,00		10	10	0	0	0	34	10	0	70		85,82	9710704	
65	TTT	96	65TTT 96	65TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine adcumulate with intercumulus augite	7132,706	4455,042	38,11	0,070	1,260	7,67	0,125	38,06	0,04	0,007	0,000	0,001			1467	2365	91		25	5	5	52			2		0,07		4,90	0,14	2		1	4	3			5	1	2		86,18	960025	x
133	TTT	96	133TTT 96	133TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Olivine augite orthocumulate	7131,983	4455,771	44,02	0,180	4,420	6,62	0,225	25,28	9,00	0,080	0,010	0,006			994	1217	73		123	1	11	103			2		0,07		4,90	26,00	5		1	15	9			0	3	2		90,57	960056	x
184	TTT	96	184TTT 96	184TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Komatiitic cumulate	Olivine meso-adcumulate	7131,754	4454,277	39,03	0,120	2,020	13,50	0,170	33,57	0,49	0,000	0,000	0,007			3746	1748	118		79	13	13	143			270		0,07		4,90	0,14	4		1	9	3			2	7	2		90,39	960075	x
115	TTT	96	115TTT 96	115TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HIRSINIEMI S	Komatiitic cumulate	Olivine meso-adcumulate	7131,960	4454,316	39,90	0,170	2,380	10,86	0,196	33,31	2,22	0,010	0,000	0,012			4406	1386	116		72	7	11	198			100		0,07		4,90	5,00	5		1	15	5			2	4	2		90,26	960045	x
117	TTT	96	117TTT 96	117TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HIRSINIEMI	Komatiitic cumulate	Olivine meso-adcumulate	7132,173	4454,376	38,73	0,080	1,640	9,68	0,135	36,89	0,31	0,010	0,000	0,003			3527	2145	124		45	2	9	92			2		0,07		4,90	1,00	2		0	7	2			7	11	2		88,55	960046	x
123	TTT	96	123TTT 96	123TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HIRSIKAARRE	Komatiitic cumulate	Olivine meso-adcumulate	7132,355	4454,555	36,32	0,040	0,810	10,90	0,186	38,42	0,03	0,000	0,000	0,000			3618	2312	114		31	28	6	74			80		0,07		4,90	1,00	1		1	0	1			2	4	660		87,91	960047	x
7	TTT	96	7TTT 96	7TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ W	Komatiitic cumulate	Olivine meso-adcumulate	7132,644	4455,151	40,86	0,090	1,910	4,26	0,115	38,47	1,07	0,007	0,000	0,001			1639	2508	82		33	10	10	43			2		0,07		4,90	4,00	2		1	5	3			2	3	2		87,25	960001	x
16	TTT	96	16TTT 96	16TTT 96 1	P	1,02	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine meso-adcumulate	7132,931	4455,209	37,39	0,070	1,530	13,02	0,141	36,03	0,06	0,007	0,000	0,009			3651	2092	157		43	6	8	98			2		0,07		4,90	0,14	5		1	1	3			0	4	2		89,69	960002	x
25	TTT	96	25TTT 96	25TTT 96 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	Olivine meso-adcumulate	7132,670	4455,478	30,67	1,550	12,550	12,77	0,137	27,96	3,58	0,010	0,000	0,123			286	177	110		161	12	10	76			2		0,07		4,90	3,00	7		8	75	26			20	24	2		90,76	960007	x
136	TTT	96	136TTT 96	136TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Olivine meso-adcumulate	7131,831	4455,792	37,84	0,130	2,380	10,64	0,176	36,85	0,12	0,010	0,000	0,009			1900	2503	114		55	3	9	70			130		0,07		4,90	0,14	4		1	7	4			0	1	150		89,33	960058	x
129	TTT	96	129TTT 96	129TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA	Komatiitic cumulate	Olivine meso-adcumulate	7131,787	4456,214	39,38	0,160	2,770	10,05	0,194	34,12	1,14	0,007	0,010	0,003			3265	1320	119		60	0	13	99			2		0,07		4,90	0,00	2		1	4	4			2	5	2		88,94	960050	x
145	EJL	93	145EJL 93	145EJL 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,440	4455,017	41,80	0,140	3,170	9,00	0,203	32,30	1,90	0,000	0,000	0,015			3199	2597		8	68	27	18	87	0		400	43	3,00		22,00	0,00	8		1	11	8	0	0	15	8	37	300	89,52	93005677	x
145	EJL	93	145EJL 93	145EJL 93 1	P	3,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,438	4455,021	40,11	0,330	6,220	9,32	0,132	24,25	9,70	0,000	0,000	0,026			2151	1166		25	116	0	18	63	0		10	0	4,00		18,00	8,00	10		0	27	11	0	0	11	10	30	8200	91,12	93005679	x
145	EJL	93	145EJL 93	145EJL 93 1	P	8,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,429	4455,028	42,63	0,180	3,410	10,26	0,158	29,37	5,14	0,000	0,000	0,015			3047	1999		10	78	44	22	89	0		480	5	0,00		17,00	3,00	8		2	22	8	0	0	16	4	17	2500	92,29	93005684	x
145	EJL	93	145EJL 93	145EJL 93 1	P	7,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,430	4455,028	40,29	0,200	4,980	8,80	0,159	30,59	4,26	0,000	0,000	0,021			2727	1719		14	73	6	16	104	0		10	3	0,00		19,00	3,00	9		0	23	11	0	0	13	11	20	3900	90,27	93005683	x
145	EJL	93	145EJL 93	145EJL 93 1	P	14,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,420	4455,040	40,13	0,160	4,040	9,65	0,141	32,67	1,06	0,000	0,010	0,012			2851	2006		11	80	19	19	87	0		540	3	0,00		20,00	0,00	7		0	11	7	0	0	9	8	23	70	88,93	93005690	x
145	EJL	93	145EJL 93	145EJL 93 1	P	17,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,428	4455,055	40,13	0,140	3,890	10,20	0,184	34,29	0,77	0,000	0,000	0,010			3433	1832		13	76	81	14	111	0		130	3	0,00		19,00	0,00	4		0	7	9	0	0	8	10	33	300	90,73	93005693	x
145	EJL	93	145EJL 93	145EJL 93 1	P	18,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,428	4455,056	39,36	0,180	3,840	10,23	0,169	34,57	0,29	0,000	0,000	0,015			2920	1998		13	83	30	16	114	0		270	0	3,00		20,00	0,00	10		0	14	6	0	0	13	8	41	70	89,78	93005694	x
145	EJL	93	145EJL 93	145EJL 93 1	P	30,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,413	4455,074	40,61	0,100	2,460	9,23	0,128	35,10	0,07	0,000	0,000	0,010			2523	2344		9	57	35	23	84	0		350	0	1,00		23,00	1,00	7		0	5	8	0	0	10	8	38	70	88,73	93005706	x
145	EJL	93	145EJL 93	145EJL 93 1	P	31,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,412	4455,077	39,73	0,110	3,200	9,45	0,142	34,16	0,27	0,000	0,000	0,011			3236	1935		12	60	13	15	107	0		10	0	1,00		28,00	0,00	7		0	9	5	0	0	14	9	26	70	88,11	93005707	x
145	EJL	93	145EJL 93	145EJL 93 1	P	32,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,412	4455,078	41,75	0,100	3,720	8,92	0,152	31,77	2,31	0,000	0,000	0,010			3249	1957		13	60	50	16	87	0		30	0	0,00		32,00	0,00	9		0	7	5	0	0	3	6	15	100	89,71	93005708	x
145	EJL	93	145EJL 93	145EJL 93 1	P	33,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,411	4455,081	39,43	0,110	3,580	9,81	0,136	34,50	0,07	0,000	0,000	0,008			3053	2001		7	59	91	18	91	0		240	6	4,00		27,00	0,00	6		0	5	6	0	0	9	8	35	100	88,72	93005709	x
145	EJL	93	145EJL 93	145EJL 93 1	P	34,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,410	4455,084	39,89	0,150	3,350	9,42	0,137	34,39	0,36	0,000	0,000	0,010			3054	2136		12	68	11	18	106	0		360	1	2,00		19,00	1,00	4		0	11	6	0	0	11	8	21	200	88,75	93005710	x
145	EJL	93	145EJL 93	145EJL 93 1	P	35,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine mesocumulate	7130,410	4455,087	40,43	0,170	3,530	9,38	0,125	34,21	0,37	0,000	0,000	0,015			2683	2406		11	75	36	17	79	0		390	1	1,00		15,00	2,00	8		0	16	8	0	0	12	4	43	70	89,26	93005711	x
67	TTT	96	67TTT 96	67TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PUUKARINNIEMI	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7132,853	4454,704	38,09	0,160	2,850	11,09	0,230	34,49	1,03	0,010	0,000	0,010			3171	2099	114		67	14	9	133			50		0,07		4,90	0,14	5		1	10	7			3	4	2		89,18	960027	x
49	TTT	96	49TTT 96	49TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KIVIHIEKKA	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7132,399	4454,848	36,76	0,050	1,040	6,73	0,185	41,21	0,04	0,010	0,000	0,003			1363	2474	106		19	4	6	106			70		0,07		4,90	0,00	2		1	6	5			2	4	940		86,77	960015	x
62	TTT	96	62TTT 96	62TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7132,904	4455,179	39,41	0,070	1,400	8,34	0,136	38,38	0,03	0,000	0,000	0,000			3957	1569	115		43	6	13	101			10		0,07		4,90	2,00	2		1	1	1			2	4	40		88,69	960018	x
58	TTT	96	58TTT 96	58TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7133,130	4455,393	38,73	0,070	1,400	9,94	0,102	37,49	0,06	0,007	0,000	0,003			3936	1966	97		40	11	13	72			2		0,07		2,00	0,14	3		1	6	1			2	4	2		88,89	960016	x
29	TTT	96	29TTT 96	29TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7132,810	4455,444	38,47	0,090	1,850	10,11	0,131	36,89	0,45	0,010	0,000	0,004			3481	1572	112		47	25	1	85			2		0,07		4,90	0,00	4		1	5	2			0	4	2		89,12	960009	x
59	TTT	96	59TTT 96	59TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7133,045	4455,475	38,35	0,180	3,140	8,19	0,168	36,40	0,54	0,007	0,000	0,005			4395	1328	101		82	23	9	83			40		0,07		4,90	0,00	4		1	3	4			1	4	2		87,88	960017	x
23	TTT	97	23TTT 97	23TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI E	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7130,390	4455,640	35,60	0,031	0,810	7,10	0,162	40,30	0,05	0,000	0,002	0,003		14,37	3038	2330	170		22	0	0	70	10	10	140	10	4,57	10,00	17,91	0,85		10	13	0	0	0	6	0	0	120		84,05	9710696	
127	TTT	96	127TTT 96	127TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7131,885	4456,018	38,97	0,160	2,690	12,90	0,218	32,47	1,31	0,030	0,000	0,010			3171	1417	113		100	7	18	113			30		0,07		4,90	3,00	4		1	7	4			1	0	2		90,18	960048	x
35	TTT	97	35TTT 97	35TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI SE	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7130,870	4456,280	38,50	0,093	2,440	8,52	0,120	36,00	0,67	0,000	0,042	0,009		11,97	2778	2200	130		56	0	0	100	20	0	430	20	8,23	0,00	35,83	0,85		0	11	0	0	0	4	10	10	20		86,39	9710697	
42	TTT	97	42TTT 97	42TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI SE	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7131,140	4456,500	40,20	0,128	3,190	8,78	0,197	33,50	2,91	0,000	0,005	0,008		9,46	2525	1980	180		75	0	10	140	10	0	140	20	3,66	20,00	35,83	2,54		10	10	0	3	0	10	10	0	20		88,92	9710698	
145	EJL	93	145EJL 93	145EJL 93 4	P	12,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,425	4455,034	41,47	0,160	5,470	9,10	0,135	30,72	3,22	0,000	0,000	0,019			2959	1735		21	91	15	16	96	0		190	2	2,00		15,00	1,00	7		2	24	7	0	0	11	8	24	100	91,29	93005688	x
145	EJL	93	145EJL 93	145EJL 93 4	P	13,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,423	4455,039	41,94	0,150	4,280	9,35	0,164	30,85	2,95	0,000	0,000	0,021			2609	2265		14	70	64	21	93	0		630	0	3,00		21,00	2,00	9		0	12	6	0	0	16	1	37	70	90,74	93005689	x
145	EJL	93	145EJL 93	145EJL 93 4	P	19,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,427	4455,057	40,33	0,160	4,050	10,90	0,185	33,14	1,44	0,000	0,000	0,012			2959	1828		11	78	142	18	112	0		160	2	3,00		23,00	2,00	11		0	11	7	0	0	6	13	24	600	91,42	93005695	x
145	EJL	93	145EJL 93	145EJL 93 4	P	20,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,424	4455,058	40,98	0,220	4,510	9,50	0,168	31,00	2,95	0,000	0,010	0,019			2884	1798		15	82	22	17	104	0		330	2	2,00		16,00	0,00	11		0	19	7	0	0	17	10	26	500	90,41	93005696	x
145	EJL	93	145EJL 93	145EJL 93 4	P	21,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,423	4455,060	43,47	0,110	4,360	8,90	0,163	28,11	6,26	0,000	0,000	0,008			2505	1702		20	68	25	14	91	0		240	3	1,00		18,00	1,00	9		0	6	6	0	0	12	0	23	2100	92,36	93005697	x
145	EJL	93	145EJL 93	145EJL 93 4	P	22,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,421	4455,062	40,20	0,150	3,870	9,61	0,169	33,44	1,06	0,000	0,000	0,014			3077	2018		12	79	10	15	115	0		310	5	4,00		21,00	0,00	5		1	11	6	0	0	8	10	17	200	89,57	93005698	x
145	EJL	93	145EJL 93	145EJL 93 4	P	23,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,421	4455,066	41,72	0,220	4,790	9,95	0,161	30,90	3,02	0,000	0,000	0,020			2966	1802		16	85	20	18	105	0		270	1	2,00		18,00	0,00	6		0	18	8	0	0	11	12	38	70	91,87	93005699	x
145	EJL	93	145EJL 93	145EJL 93 4	P	25,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,417	4455,071	43,86	0,150	3,100	7,98	0,128	30,67	3,59	0,000	0,010	0,012			3354	2280		18	67	39	16	74	0		860	18	1,00		20,00	3,00	8		0	18	6	0	0	8	6	40	70	90,38	93005701	x
145	EJL	93	145EJL 93	145EJL 93 4	P	24,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,420	4455,071	41,43	0,220	4,490	9,21	0,147	30,88	2,58	0,000	0,010	0,017			2422	1810		15	76	41	24	91	0		320	0	4,00		20,00	2,00	13		1	22	9	0	0	7	12	70	100	89,99	93005700	x
145	EJL	93	145EJL 93	145EJL 93 4	P	37,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Olivine orthocumulate	7130,396	4455,103	41,07	0,180	4,420	8,59	0,135	31,99	2,70	0,000	0,000	0,018			2746	1999		17	85	14	16	83	0		290	3	4,00		19,00	1,00	6		0	13	7	0	0	7	11	38	1000	90,05	93005713	x
66	TTT	96	66TTT 96	66TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PUUKARINNIEMI E	Komatiitic cumulate	Olivine orthocumulate with intercumulus augite	7132,867	4454,791	42,41	0,340	5,110	10,64	0,180	26,44	5,70	0,090	0,040	0,020			2564	1558	87		109	44	13	59			10		0,07		4,90	6,00	8		1	21	8			2	4	110		92,14	960026	x
93	TTT	96	93TTT 96	93TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LAITALA SE	Komatiitic cumulate	Olivine orthocumulate with intercumulus augite	7131,966	4456,325	36,19	0,070	1,770	7,76	0,183	38,07	0,14	0,007	0,000	0,005			2373	2372	115		30	1	9	82			70		0,07		4,90	0,00	2		1	5	4			2	8	1510		85,05	960036	x
36	R	66	36R 0	36R 0 5	K	0,00	181,52	KUHMO	AROLA	AROLA	Ore deposit	Ore	7150,090	4454,205	40,09	0,630	7,620	17,59	0,490	6,71	8,13	0,930	1,940			5,22	2385	740				130		130												40								84,13	971272	
39	R	66	39R 0	39R 0 2	K	0,00	99,80	KUHMO	AROLA	AROLA	Ore deposit	Ore	7149,540	4454,305	45,95	0,700	11,200	17,73	0,540	6,22	8,57	1,170	0,270			8,07	935	375				110		150												75								92,35	971278	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	216,07	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	32,80	0,323	7,950	27,90	1,430	5,50	10,80	0,000	0,003	0,041	11,20		684	4370	50		213	90	20	140	10	0	47500	0	6,40	30,00	17,91	98,09		10	6	15	16	0	2	10	0	60		86,75	9413364	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	218,48	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	35,30	0,371	8,910	27,20	1,370	5,35	9,27	0,080	0,044	0,038	8,40		732	6040	40		200	80	0	270	10	0	50000	0	12,80	10,00	26,87	107,39		0	12	15	19	0	2	30	20	60		87,93	9413365	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	223,26	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	43,50	0,351	8,310	24,50	0,896	4,23	6,96	0,110	0,076	0,037	6,60		601	2410	20		184	80	0	350	20	10	55100	30	7,32	20,00	17,91	58,35		10	11	22	15	0	2	30	20	80		88,97	9413367	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	6,50	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	49,50	0,571	13,400	12,90	0,548	6,03	10,00	1,630	0,227	0,051	2,30		1061	470	100		245	50	10	90	10	0	2590	0	7,32	10,00	44,78	77,79		0	7	30	13	0	10	10	0	190		94,86	9413320	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	11,42	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	37,40	0,471	9,650	20,10	0,791	6,25	13,60	0,620	0,208	0,044	5,80		828	770	130		228	390	0	90	0	10	28300	10	6,40	0,00	17,91	19,45		0	7	15	15	0	4	10	30	210		89,13	9413321	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	12,68	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	48,80	0,549	12,400	14,40	0,624	5,78	10,30	1,320	0,229	0,050	2,60		1040	490	90		254	90	0	80	10	0	4210	10	3,66	30,00	35,83	72,72		10	7	22	17	0	7	20	10	250		94,45	9413322	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	16,00	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	49,30	0,571	13,000	14,70	0,693	6,01	8,44	1,170	0,177	0,051	2,50		1081	490	50		273	20	10	90	20	0	1040	0	7,32	50,00	35,83	63,42		0	8	22	15	0	4	20	20	230		94,11	9413323	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	20,20	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	30,90	0,390	8,780	22,00	1,210	5,56	14,70	0,270	0,212	0,036	10,70		759	400	70		234	130	0	70	10	10	14100	0	8,23	20,00	116,44	39,74		0	6	22	18	0	7	10	10	260		84,06	9413324	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	22,10	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	38,90	0,471	10,900	23,00	0,983	6,92	9,77	0,650	0,223	0,042	2,80		869	340	70		266	20	10	90	20	0	2320	10	5,49	0,00	35,83	9,30		10	9	22	23	0	7	0	30	300		91,86	9413325	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	24,52	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	27,20	0,347	7,530	24,20	1,250	6,46	15,00	0,320	0,110	0,031	11,00		691	670	120		219	300	10	80	10	10	32000	10	6,40	0,00	26,87	38,05		10	10	15	18	0	13	0	0	210		82,45	9413326	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	25,80	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	42,10	0,521	11,900	18,70	0,857	6,62	10,40	0,850	0,218	0,046	3,10		999	540	80		248	120	0	90	20	0	8730	0	1,83	30,00	26,87	27,90		0	8	30	20	3	6	20	10	280		92,21	9413327	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	60,42	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	39,00	0,395	9,110	11,90	0,472	5,14	16,20	0,620	0,288	0,039	12,90		759	510	40		196	540	0	60	20	10	12600	10	21,95	0,00	98,52	61,73		10	7	7	18	0	4	10	10	100		83,16	9413328	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	71,82	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	47,40	0,538	12,600	14,60	0,446	6,60	9,10	0,870	0,170	0,048	3,80		1019	410	10		281	50	0	90	30	0	2750	0	3,66	20,00	17,91	42,28		0	9	22	13	0	8	20	30	100		92,37	9413329	
18	VIE	64	18VIE 64	18VIE 64 2	K	0,00	74,35	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	35,20	0,535	12,100	17,20	0,533	7,72	11,80	0,280	0,210	0,042	8,20		1026	870	60		241	330	10	110	30	0	13600	0	16,46	20,00	80,61	42,28		10	9	22	16	0	3	0	20	60		85,62	9413330	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	177,90	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	31,40	0,342	8,120	13,30	0,453	3,87	20,30	0,660	0,151	0,032	16,40		562	6010	100		182	450	0	60	20	10	28800	0	7,32	20,00	62,70	125,15		10	4	22	15	0	4	0	0	90		78,63	9413331	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	179,13	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	46,40	0,549	12,300	9,92	0,307	5,05	11,20	1,680	0,170	0,042	8,50		999	410	30		224	20	0	80	20	0	330	0	8,23	10,00	53,74	131,91		10	7	22	14	0	9	10	0	60		87,62	9413332	
18	VIE	64	18VIE 64	18VIE 64 1	K	0,00	195,00	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Ore	7150,060	4454,340	45,20	0,542	12,700	10,80	0,376	5,43	10,50	1,640	0,380	0,048	8,40		1074	890	30		229	40	0	80	20	0	3860	0	19,20	20,00	62,70	76,95		0	5	30	14	0	10	10	20	60		87,62	9413333	



181	VIE	65	181VIE 65	181VIE 65 4	K	0,00	312,20	KUHMO	AROLA	ORE DEPOSIT	Quartz dike	Quartz rock	7150,060	4454,340	97,60	0,009	0,290	1,23	0,013	0,00	0,09	0,000	0,036	0,001	0,22		31	70	0	7	20	0	0	20	190	6760	0	3,66	20,00	26,87	0,85		10	4	0	0	0	2	0	20	50	99,27	9413316	
35	VIE	66	35VIE 66	35VIE 66 7	K	0,00	112,00	KUHMO	AROLA	ORE DEPOSIT	Quartz dike	Quartz rock	7150,310	4454,570	42,40	0,109	3,640	35,50	0,110	3,08	0,81	0,000	0,561	0,044	0,84		66	8690	110	75	210	30	90	10	0	167000	0	35,66	20,00	62,70	0,00		10	11	30	7	0	13	10	50	90	86,26	9413290	
73	TOH	95	73TOH 95	73TOH 95 2	P	2,00	0,00	KUHMO	KELLOJÄRVI EAST MARGIN	KATISKALAMPI	Quartz dike	Quartz rock	7126,280	4458,665	48,70	0,892	14,100	12,00	0,202	7,49	10,40	1,790	0,279	0,073		0,00	192	120	70	306	120	10	70	20	10	620	10	15,54	10,00	62,70	140,37		10	19	37	16	0	5	20	20	180	95,93	9512388	
245	JTL	96	245JTL 96	245JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	SIRPPIKANGAS	Felsic sedimetary/volcanic rock	Quartz-biotite gneiss	7082,275	4445,300	62,30	0,628	17,900	5,40	0,079	3,23	2,95	3,840	2,600	0,095		0,00	411	80	0	156	40	20	100	10	80	1770	10	81,38	40,00	564,27	334,85		0	19	89	9		5	30	40	70	99,02	9634436	
39	TTT	96	39TTT 96	39TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	KIVIHIEKKA E	Quartzdiorite dike	Quartzdiorite	7132,473	4455,018	65,80	0,874	14,200	6,10	0,132	1,38	2,38	5,780	2,160	0,177			47	10	10	129	20	300	440	10	10	140	0	43,89	10,00	429,92	87,94		0	23	170	22	0	6	30	50	410	98,98	9612624	
3	TTT	96	3TTT 96	3TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ SW	Quartzdiorite dike	Quartzdiorite	7132,490	4455,203	68,50	0,504	15,600	4,07	0,080	1,44	2,59	4,900	1,520	0,138			92	20	0	61	0	20	50	10	40	50	10	46,63	30,00	376,18	195,33		0	17	126	16	0	4	10	30	80	99,34	9612616	
8	JTL	98	8JTL 98	8JTL 98 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Felsic volcanic / sedimentary rock	Quartz-feldspar gneiss	7081,016	4443,463	69,20	0,336	16,400	2,88	0,059	1,84	2,69	4,150	1,920	0,083			15	10	60	50	0	20	30	10	10	10	10	57,61	10,00	376,18	147,98		10	17	96	6	0	0	10	0	60	99,56	9818088	
202	JTL	96	202JTL 96	202JTL 96 1	P	1,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Sedimentary rock	Quartz-feldspar gneiss	7082,895	4445,985	64,30	0,561	16,300	5,73	0,084	2,83	1,98	4,430	2,670	0,114		0,00	261	110	0	143	60	10	70	10	0	3230	10	95,10	10,00	456,79	261,29		10	21	81	8		10	30	50	90	99,00	9634433	
261	JTL	96	261JTL 96	261JTL 96 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Felsic dike	Quartz-feldspar porphyry	7081,910	4444,560	68,90	0,315	16,000	2,41	0,044	1,42	2,92	5,350	1,900	0,130		0,00	59	30	0	48	50	60	120	10	90	2560	10	41,15	20,00	1155,40	443,93		0	15	81	4		0	30	60	120	99,39	9634439	
295	JTL	96	295JTL 96	295JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Felsic sedimetary/volcanic rock	Quartz-feldspar schist	7081,290	4444,120	66,90	0,616	15,400	5,73	0,145	2,00	2,63	3,910	1,690	0,165		0,00	28	20	0	61	80	20	50	0	200	220	10	53,04	0,00	206,00	111,62		0	21	148	16		6	0	50	60	99,19	9634446	
14	SMS	70	14SMS 70	14SMS 70 8	K	0,00	147,20	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Felsic sedimetary/volcanic rock	Quartz-feldspar schist	7230,250	4457,340	59,30	0,632	18,000	8,37	0,107	2,83	0,66	7,090	1,740	0,098			245	110	70	184	20	10	60	20	10	740	10	74,07	20,00	635,92	120,07		10	17	67	7	0	3	20	10	150	98,82	9413999	
181	VIE	65	181VIE 65	181VIE 65 3	K	0,00	310,32	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,060	4454,340	70,10	0,488	13,200	6,22	0,094	1,95	1,45	2,150	1,890	0,057	0,48		434	280	0	109	50	10	90	20	240	23800	120	64,01	10,00	358,26	54,96		10	11	126	14	3	8	10	70	50	97,60	9413315	
181	VIE	65	181VIE 65	181VIE 65 3	K	0,00	313,85	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,060	4454,340	74,90	0,459	12,300	4,16	0,057	1,49	1,13	2,080	1,880	0,045	0,22		439	130	0	93	50	0	70	20	40	14400	10	64,01	10,00	322,44	58,35		10	9	118	8	0	5	20	40	40	98,50	9413317	
181	VIE	65	181VIE 65	181VIE 65 3	K	0,00	316,50	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,060	4454,340	63,10	0,618	19,000	4,62	0,094	2,25	2,24	3,350	3,020	0,072	0,33		405	180	40	148	40	10	100	20	0	15900	10	108,81	30,00	420,96	111,62		0	11	141	15	0	6	50	50	70	98,36	9413318	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	49,89	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	46,10	0,490	12,000	13,50	0,583	7,78	11,70	1,350	0,881	0,022	0,51		937	300	80	278	0	20	340	10	10	0	60	32,92	10,00	223,92	235,92		10	3	22	22	0	5	20	10	550	94,41	9413278	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	64,13	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	48,20	0,544	13,000	15,00	0,533	6,10	8,27	1,650	1,640	0,044	0,40		1054	310	70	227	10	20	290	20	0	0	10	49,38	20,00	591,14	204,63		0	3	22	17	0	10	20	0	690	94,98	9413280	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	78,97	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	46,10	0,556	13,300	16,90	0,574	7,53	6,65	0,970	2,400	0,051	0,15		476	300	60	257	30	10	330	20	0	880	10	67,67	20,00	644,88	104,01		0	8	22	18	0	9	20	30	600	95,03	9413286	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	102,75	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	55,10	0,456	10,700	17,90	0,986	3,05	3,49	0,760	1,760	0,060	1,80		318	520	0	96	40	10	170	20	110	34100	30	77,72	10,00	340,35	54,12		10	13	111	14	0	9	20	30	210	94,26	9413287	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	103,45	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	63,10	0,404	12,000	9,90	0,369	3,42	3,26	1,440	1,740	0,066	2,70		274	180	10	97	40	10	310	20	10	12100	160	69,50	10,00	483,66	101,47		0	9	96	14	0	2	30	70	130	95,70	9413288	
35	VIE	66	35VIE 66	35VIE 66 4	K	0,00	112,23	KUHMO	AROLA	ORE DEPOSIT	Sedimentary rock	Sedimentary rock	7150,310	4454,570	26,80	0,228	6,050	31,60	0,823	5,49	10,30	0,000	0,589	0,037	9,00		320	5260	170	114	160	30	220	20	10	92200	0	39,32	50,00	98,52	30,44		10	13	37	19	0	6	30	30	220	81,92	9413291	
83	JSK	93	83JSK 93	83JSK 93 1	L	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Sedimentary rock	Sericite quartzite	7127,215	4457,135	65,20	0,570	16,100	5,60	0,159	6,09	0,53	0,670	2,660	0,150			65	30	0	65	20	20	130	30	120	23000	40	26,06	20,00	349,30	15,22		0	13	230	34	0	7	30	40	50	97,73	9313521	
20	SMS	60	20SMS 60	20SMS 60 8	K	0,00	199,80	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Felsic volcanic rock	Sericite-biotite schist	7228,050	4456,620	73,05	0,250	14,200	1,99	0,025	1,22	1,11	2,400	3,060	0,075			0	0	63	21	29	10	30			1150		83,00		1567,00	184,00	15		6	179	18			75	124	220	97,60	971371	x
340	JEV	95	340JEV 95	340JEV 95 1	P	1,01	0,00	KUHMO	NISKAJÄRVI	RUONANLAMPI	Komatiitic cumulate	Serpentine-tremolite rock	7138,850	4458,740	43,40	0,299	5,440	10,00	0,112	27,70	4,33	0,240	0,030	0,012		6,61	2511	1340	230	143	0	0	100	10	10	0	620	8,23	10,00	26,87	25,37		10	16	0	2	0	5	20	10	20	91,56	9513867	
332	JEV	95	332JEV 95	332JEV 95 1	P	1,00	0,00	KUHMO	NISKAJÄRVI	NISKAJÄRVI	Komatiitic cumulate	Serpentine-tremolite rock	7137,520	4459,570	38,80	0,226	4,470	9,88	0,185	31,70	2,87	0,040	0,008	0,020		10,08	1964	1900	220	95	0	0	90	10	10	0	130	5,49	20,00	17,91	26,21		10	13	0	4	0	10	20	20	60	88,20	9512427	
124	TTT	97	124TTT 97	124TTT 97 1	L	1,00	0,00	KUHMO	JONKERI	RAATTEENKANGAS	Komatiitic cumulate	Serpentine-tremolite rock	7074,210	4493,970	45,00	0,266	6,730	9,85	0,182	24,30	6,77	0,550	0,138	0,037		4,11	2128	1000	170	135	0	10	70	0	0	80	20	7,32	30,00	35,83	38,90		0	12	0	4	0	8	0	40	140	93,82	9710715	
71	JTL	97	71JTL 97	71JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	MYHKYRI	Komatiitic cumulate	Serpentinite	7078,305	4440,595	44,80	0,198	5,070	9,17	0,183	27,50	5,36	0,000	0,009	0,009		5,94	3524	940	110	106	10	0	90	10	10	860	10	3,66	20,00	17,91	2,54		10	14	0	4	0	5	10	10	10	92,30	9710756	
45	JTL	97	45JTL 97	45JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	UKONKUIVUUVAARA	Komatiitic cumulate	Serpentinite	7081,620	4441,230	41,00	0,036	2,430	7,06	0,122	34,50	1,10	0,000	0,007	0,007		10,73	5296	1980	200	41	50	10	100	10	0	6070	10	4,57	0,00	8,96	5,07		0	12	0	1	0	4	0	10	30	86,26	9710753	
48	JTL	98	48JTL 98	48JTL 98 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Serpentinite	7081,140	4442,705	39,80	0,160	3,690	9,31	0,144	30,10	5,42	0,000	0,009	0,011		9,57	1409	1940	220	80	60	50	70	10	10	4870	10	7,32	20,00	26,87	32,13		0	13	0	1	0	5	30	20	40	88,64	9818104	
56	JTL	98	56JTL 98	56JTL 98 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Serpentinite	7080,905	4442,800	49,90	0,141	3,270	7,75	0,140	29,40	2,60	0,000	0,023	0,015		5,20	3702	1630	220	76	10	10	70	0	0	960	10	6,40	10,00	0,00	0,00		0	14	0	1	0	0	0	10	20	93,24	9818105	
37	JTL	98	37JTL 98	37JTL 98 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Serpentinite	7080,825	4443,280	39,10	0,107	4,050	9,36	0,087	35,30	0,10	0,000	0,004	0,004		10,03	4680	1570	190	89	20	10	70	10	0	430	10	4,57	20,00	8,96	0,00		0	13	0	0	0	13	0	10	30	88,11	9818103	
8	JTL	98	8JTL 98	8JTL 98 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Serpentinite	7081,017	4443,459	45,30	0,074	2,740	5,85	0,091	34,80	0,06	0,000	0,007	0,012		9,41	4906	1960	260	48	160	20	60	10	10	290	10	7,32	10,00	107,48	3,38		10	10	0	0	0	8	10	0	20	88,94	9818100	
226	JEV	95	226JEV 95	226JEV 95 2	P	2,00	0,00	SOTKAMO	HÄIKIÖVAARA	VIITAJOKI	Komatiitic cumulate	Serpentinite	7120,700	4443,670	41,60	0,041	1,030	6,96	0,108	35,90	0,29	0,000	0,004	0,004		12,81	1143	1830	120	20	20	0	80	10	10	510	30	2,74	10,00	44,78	0,85		0	11	0	0	0	0	0	0	30	85,93	9512340	
228	JTL	96	228JTL 96	228JTL 96 1	P	1,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7082,046	4444,060	38,70	0,221	6,250	11,60	0,204	26,70	5,01	0,040	0,011	0,017		9,40	2374	1320	160	129	60	10	70	10	0	680	10	4,57	20,00	17,91	41,43		10	14	0	3		6	30	10	20	88,75	9634465	
238	JTL	96	238JTL 96	238JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7082,080	4444,810	41,80	0,322	8,970	9,61	0,150	25,70	5,85	0,050	0,042	0,027		5,77	2716	1140	130	163	50	0	60	0	0	1150	10	7,32	0,00	0,00	16,07		0	12	0	3		8	20	20	20	92,52	9634475	
254	JTL	96	254JTL 96	254JTL 96 1	P	1,06	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7081,538	4444,811	43,40	0,326	7,710	6,46	0,139	27,40	6,02	0,210	0,020	0,060		7,02	2237	980	90	129	20	0	40	10	10	540	10	5,49	20,00	17,91	16,91		10	14	0	4		7	10	10	40	91,75	9634480	
254	JTL	96	254JTL 96	254JTL 96 1	P	1,03	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7081,560	4444,811	39,20	0,170	4,970	8,41	0,128	32,90	2,47	0,040	0,008	0,013		10,05	2313	1840	150	88	20	0	50	0	10	250	10	5,49	10,00	17,91	10,15		10	12	0	3		12	0	10	100	88,31	9634478	
254	JTL	96	254JTL 96	254JTL 96 1	P	1,04	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7081,552	4444,817	38,90	0,186	5,520	8,98	0,120	31,20	3,37	0,060	0,013	0,028		9,87	2121	1860	130	109	40	0	60	10	10	900	10	5,49	30,00	26,87	21,14		0	13	0	0		7	20	20	70	88,38	9634479	
234	JTL	96	234JTL 96	234JTL 96 1	P	1,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7081,970	4444,980	41,90	0,296	8,260	8,88	0,155	27,30	4,74	0,130	0,024	0,035		6,70	2566	1210	120	122	30	10	60	10	10	1300	0	4,57	0,00	26,87	43,13		10	11	0	5		5	0	30	20	91,72	9634471	
234	JTL	96	234JTL 96	234JTL 96 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7081,975	4444,990	41,70	0,262	7,250	9,33	0,177	26,40	5,84	0,170	0,026	0,026		7,14	2470	1300	130	136	50	0	60	10	10	1580	10	6,40	20,00	17,91	81,18		10	13	0	3		0	10	30	40	91,18	9634470	
235	JTL	96	235JTL 96	235JTL 96 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7082,035	4445,150	37,70	0,155	4,090	8,53	0,133	33,80	2,02	0,000	0,009	0,016		11,83	2538	1900	140	89	50	20	80	0	10	2750	10	6,40	0,00	26,87	17,76		0	10	0	1	0	5	20	20	20	86,45	9615279	
235	JTL	96	235JTL 96	235JTL 96 1	P	1,03	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Serpentinite	7082,036	4445,157	40,30	0,183	4,740	7,73	0,134	32,20	3,43	0,000	0,010	0,015		9,77	2559	1770	120	88	30	10	60	10	0	1930	10	8,23	10,00	35,83	18,60		0	13	0	0		5	10	20	30	88,74	9634473	
269	JEV	95	269JEV 95	269JEV 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LONTANKANGAS	Komatiitic cumulate	Serpentinite	7126,520	4449,980	38,90	0,157	2,970	9,38	0,143	33,00	2,03	0,000	0,007	0,017		11,64	1957	2030	160	68	40	10	60	10	0	2490	10	3,66	20,00	17,91	18,60		10	13	0	1	0	4	20	0	20	86,60	9512342	
25	JSK	94	25JSK 94	25JSK 94 1	P	1,01	0,00	HYRYNSALMI	KARHUJÄRVI	KARHUJÄRVI	Komatiitic cumulate	Serpentinite	7157,920	4452,940	41,00	0,356	3,940	13,14	0,151	28,16	2,55	0,000	0,010	0,025			4269	1576	117	107	61	19	156			1670		0,07		4,90	6,00	6		1	21	5			2	4	2	90,80	9505240057	x
18	HP	92	18HP 92	18HP 92 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Serpentinite	7128,375	4454,015	40,96	0,060	1,970	6,04	0,097	37,90	0,41	0,000	0,000	0,001			2844	2571	121	32	0	3	61			100		0,00		5,00	0,00	3		0	7	2			0	6	0	87,44	970203	
157	JSK	93	157JSK 93	157JSK 93 1	P	1,01	0,00	KUHMO	AROLA	HÄRMÄNKYLÄN KOULU	Komatiitic cumulate	Serpentinite	7148,595	4454,250	41,32	0,167	3,640	9,80	0,155	31,29	1,48	0,000	0,010	0,015			2335	1967	95	71	3	6	88			200		0,07		4,90	4,00	7		1	10	5			2	6	60	89,00	9505180623	x
3	ARO	93	3ARO 93	3ARO 93 3	K	0,00	278,00	KUHMO	AROLA	AROLA	Komatiitic cumulate	Serpentinite	7150,420	4454,496	41,28	0,310	6,640	9,41	0,230	20,35	10,54	0,050	0,020	0,020			2474	985	84	138	31	10	70			790		0,05		0,06	43,00	7		0	14	5			5	7	0	89,88	970067	x
28	JSK	94	28JSK 94	28JSK 94 2	P	3,01	0,00	HYRYNSALMI	KELOSUO	KELOSUO	Komatiitic cumulate	Serpentinite	7154,830	4454,580	41,95	0,380	4,010	10,48	0,193	28,33	3,94	0,040	0,020	0,010			4372	1202	81	108	2	7	87			80		0,00		4,90	10,00	7		1	18	10			2	4	2	90,50	9505241418	x
152	JSK	93	152JSK 93	152JSK 93 1	P	1,00	0,00	KUHMO	AROLA	HYYRYLÄ	Komatiitic cumulate	Serpentinite	7149,465	4454,585	40,00	0,084	1,860	8,26	0,103	38,90	1,25	0,000	0,012	0,009			3613	2140	140	50	60	0	50	20	0	200	10	3,66	20,00	35,83	14,38		10	3	0	2	0	7	20	0	30	90,48	9313796	
151	JSK	93	151JSK 93	151JSK 93 1	P	1,01	0,00	KUHMO	AROLA	HYYRYLÄ	Komatiitic cumulate	Serpentinite	7149,380	4454,645	39,59	0,182	3,560	9,53	0,179	32,48	2,33	0,000	0,010	0,016			2590	1870	94	64	14	6	95			80		0,07		4,90	1,00	5		1	13	7			2	0	2	88,90	9505180446	x
150	JSK	93	150JSK 93	150JSK 93 1	P	1,01	0,00	KUHMO	AROLA	HYYRYLÄ	Komatiitic cumulate	Serpentinite	7149,305	4454,660	40,07	0,239	4,090	9,83	0,198	28,73	4,73	0,050	0,020	0,016			2704	1828	96	89	17	9	96			220		0,07		49,00	17,00	5		1	13	7			3	3	50	89,10	9505180518	x
149	JSK	93	149JSK 93	149JSK 93 1	P	1,01	0,00	KUHMO	AROLA	HYYRYLÄ	Komatiitic cumulate	Serpentinite	7149,150	4454,665	32,18	0,109	1,970	11,59	0,227	28,31	6,16	0,010	0,000	0,009			2999	1161	103	46	32	12	78			130		1,00		4,90	122,00	6		1	7	3			2	4	2	81,80	9505192115	x
23	MJL	80	23MJL 80	23MJL 80 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Komatiitic cumulate	Serpentinite	7149,780	4454,780	36,86	0,250	0,860	9,70	0,140	41,66	0,53	0,130	0,030			10,64	2455	1920					20																			90,16	971213	
45	JSN	95	45JSN 95	45JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HUKKALAMPI	Komatiitic cumulate	Serpentinite	7093,080	4455,020	42,30	0,109	2,860	5,85	0,059	33,00	0,18	0,640	0,087	0,027		13,75	1628	2140	200	34	0	10	60	10	10	380	10	5,49	20,00	89,57	50,74		10	8	7	1	0	4	20	10	0	85,11	9612502	
63	TTT	96	63TTT 96	63TTT 9612	P	12,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Serpentinite	7132,889	4455,094	41,81	0,090	1,720	5,42	0,146	37,63	0,22	0,010	0,000	0,007			4239	1698	209	54	42	216	291			800		0,07		4,90	0,00	2		1	7	2			2	4	2	87,65	960024	x
63	TTT	96	63TTT 96	63TTT 96 9	P	9,00	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Serpentinite	7132,873	4455,099	45,68	0,130	5,280	9,00	0,242	22,56	9,55	0,030	0,010	0,013			4391	1136	119	82	43	13	76			20		0,07		4,90	7,00	6		1	9	5			2	3	2	93,49	960022	x
13	HP	92	13HP 92	13HP 92 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PÄRSÄMÄNSUO	Komatiitic cumulate	Serpentinite	7128,565	4455,134	40,07	0,150	3,150	11,52	0,162	31,01	1,47	0,000	0,000	0,014			2915	1737	109	78	47	3	108			290		0,00		3,00	8,00	4		0	6	5			0	7	0	87,55	970198	
14	HP	92	14HP 92	14HP 92 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PÄRSÄMÄNSUO	Komatiitic cumulate	Serpentinite	7128,565	4455,134	38,41	0,160	3,560	11,55	0,198	29,96	2,99	0,000	0,000	0,009			3044	1519	111	82	205	24	215			70		0,00		33,00	10,00	6		0	7	6			4	3	0	86,84	970199	
84	JTL	95	84JTL 95	84JTL 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	PIHLAJANMURTO	Komatiitic cumulate	Serpentinite	7166,750	4455,230	40,30	0,311	3,960	11,50	0,146	29,70	1,74	0,000	0,002	0,026		10,21	3558	1510	190	116	60	0	120	10	10	1610	10	4,57	0,00	26,87	5,07		10	13	7	2	0	8	0	20	20	87,69	9512432	
307	JEV	95	307JEV 95	307JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	KOSKIPURONKANGAS	Komatiitic cumulate	Serpentinite	7139,810	4455,260	35,10	0,055	1,070	12,30	0,088	35,20	1,62	0,000	0,008	0,006		12,56	2518	2200	150	48	20	0	40	10	0	300	10	5,49	20,00	8,96	9,30		10	13	0	0	0	4	10	20	10	85,45	9512346	
54	JSN	95	54JSN 95	54JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIO	Komatiitic cumulate	Serpentinite	7093,520	4455,280	35,90	0,019	0,580	6,44	0,099	41,90	0,04	0,000	0,002	0,002		13,61	1553	3450	150	20	50	10	30	10	0	1000	30	2,74	10,00	8,96	0,85		0	11	0	1	0	4	10	0	130	84,98	9512337	
280	JEV	95	280JEV 95	280JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	TULISAARI	Komatiitic cumulate	Serpentinite	7138,020	4455,360	37,80	0,182	3,610	11,40	0,148	33,90	1,27	0,000	0,005	0,034		9,77	2607	1800	140	82	0	0	60	10	10	0	20	4,57	20,00	35,83	0,00		10	11	0	4	0	6	20	10	10	88,35	9512345	
16	SII	94	16SII 94	16SII 94 1	K	0,00	2,70	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	42,60	0,097	1,980	11,00	0,169	41,30	0,77	0,030	0,008	0,005			3086	2050	140	54	0	10	60	10	0	0	30	8,23	20,00	26,87	5,07		10	16	0	0	0	6	20	0	40	97,96	9414684	
16	SII	94	16SII 94	16SII 94 1	K	0,00	16,00	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	35,22	0,079	1,280	14,69	0,245	35,83	0,15	0,007	0,000	0,009			3509	2280	147	48	1	6	82			240		0,07		4,00	0,14	5		1	7	3			2	4	210	89,10	9505242200	x
16	SII	94	16SII 94	16SII 94 1	K	0,00	30,20	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	41,20	0,079	1,880	10,70	0,161	40,50	0,76	0,000	0,001	0,014			3619	1890	140	48	0	10	70	20	0	0	20	7,32	0,00	17,91	0,00		0	15	0	0	0	8	0	20	50	95,29	9414686	
16	SII	94	16SII 94	16SII 94 1	K	0,00	42,75	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	38,50	0,075	1,610	10,01	0,123	35,42	0,83	0,010	0,000	0,004			4037	2087	140	42	46	9	77			280		0,07		4,90	5,00	4		1	3	3			2	4	2	87,70	9505241810	x
16	SII	94	16SII 94	16SII 94 1	K	0,00	78,30	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	55,10	1,690	16,800	6,15	0,140	3,98	9,24	5,150	0,176				55	60	80	312	20	50	50	20	10	0	10	8,23	20,00	80,61	337,39		0	24	281	27	0	5	10	50	180	98,43	9414806	
16	SII	94	16SII 94	16SII 94 1	K	0,00	85,20	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	59,70	0,577	15,000	6,26	0,108	6,19	5,59	4,430	1,110	0,120			267	180	20	123	60	20	60	10	0	0	10	29,26	10,00	250,78	138,68		0	19	89	6	0	8	20	40	70	99,09	9414807	
16	SII	94	16SII 94	16SII 94 1	K	0,00	98,20	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	46,90	0,283	7,420	10,70	0,238	17,30	9,36	0,350	0,486	0,038			3448	960	140	126	0	10	170	10	0	0	10	18,29	10,00	125,39	4,23		10	17	0	7	0	11	20	30	100	93,08	9414808	
16	SII	94	16SII 94	16SII 94 1	K	0,00	101,75	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Serpentinite	7128,293	4455,380	61,70	0,679	15,400	5,75	0,094	4,78	6,40	3,860	0,409	0,106			303	120	110	190	40	10	40	20	0	0	10	18,29	10,00	134,35	87,10		10	20	67	14	0	6	20	30	60	99,18	9414809	
5	SII	93	5SII 93	5SII 93 1	K	0,00	72,35	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,850	4455,450	51,20	0,122	3,900	8,87	0,219	19,70	9,91	0,190	0,028	0,011			3113	1390	90	77	0	0	60	20	10	0	120	6,40	20,00	26,87	5,92		10	8	0	5	0	8	0	0	40	94,15	9413805	
5	SII	93	5SII 93	5SII 93 1	K	0,00	83,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,850	4455,450	41,74	0,170	2,610	9,20	0,124	26,45	4,40	0,007	0,000	0,006			4629	1644	95	66	17	7	88			560		0,07		4,90	36,00	5		1	12	7			5	4	2	85,70	9505232035	x
5	SII	93	5SII 93	5SII 93 1	K	0,00	93,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,850	4455,450	35,32	0,148	4,410	11,86	0,112	26,14	5,65	0,007	0,000	0,010			4122	1251	80	87	1	4	78			80		0,07		4,90	61,00	4		1	10	3			2	2	2	84,90	9505231825	x
276	JEV	95	276JEV 95	276JEV 95 1	P	1,03	0,00	KUHMO	KUIVAJÄRVI	TULISAARI	Komatiitic cumulate	Serpentinite	7138,350	4455,490	39,20	0,286	3,820	9,86	0,178	32,20	2,92	0,000	0,009	0,031		9,80	2053	1690	140	75	20	10	60	10	0	350	20	8,23	20,00	17,91	1,69		10	14	7	3	0	8	10	10	30	88,50	9512344	
6	SII	93	6SII 93	6SII 93 2	K	0,00	41,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,908	4455,499	40,32	0,120	3,120	8,45	0,129	29,49	1,93	0,020	0,000	0,008			4241	1885	105	74	21	6	61			970		0,05		0,01	20,00	4		0	7	4			2	7	70	84,52	971301	x
6	SII	93	6SII 93	6SII 93 2	K	0,00	58,60	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,908	4455,499	52,88	0,142	3,170	7,30	0,053	28,26	0,10	0,000	0,000	0,011			4417	2104	82	65	1	3	67			50		0,07		4,90	0,14	3		1	9	4			2	3	2	92,70	9505240520	x
6	SII	93	6SII 93	6SII 93 2	K	0,00	76,30	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,908	4455,499	44,40	0,159	3,340	7,05	0,126	27,16	4,24	0,010	0,000	0,012			4115	1879	91	72	11	7	78			650		0,07		4,90	52,00	4		1	6	7			2	4	2	87,30	9505231930	x
6	SII	93	6SII 93	6SII 93 2	K	0,00	91,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126,908	4455,499	51,94	0,161	3,550	5,96	0,064	28,04	0,82	0,007	0,000	0,017			5484	1933	75	73	1	6	89			50		0,07		4,90	6,00	4		1	7	4			0	4	2	91,20	9505240343	x
17	HP	92	17HP 92	17HP 92 1	P	1,00	0,00	KUHMO	SIIVIKKOPS	PAHAKANGAS	Komatiitic cumulate	Serpentinite	7126,785	4455,650	40,68	0,130	3,070	8,61	0,104	32,43	1,72	0,000	0,000	0,013			4364	2007	103	64	44	7	84			1230		0,00		9,00	20,00	6		0	10	4			1	2	0	86,76	970202	
14	JSK	93	14JSK 93	14JSK 93 1	P	1,10	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Komatiitic cumulate	Serpentinite	7126,815	4455,670	42,20	0,133	3,440	8,86	0,126	31,64	0,69	0,007	0,000	0,013			5442	1814	98	67	5	12	92			450		0,07		4,90	10,00	6		1	4	4			1	4	2	88,10	9505200845	x
14	JSK	93	14JSK 93	14JSK 93 1	P	1,02	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Komatiitic cumulate	Serpentinite	7126,820	4455,670	43,80	0,131	3,760	8,53	0,086	34,30	0,63	0,000	0,004	0,015			5029	1900	120	72	10	0	80	30	10	430	40	1,37	30,00	26,87	5,07		10	6	0	2	0	9	30	10	60	91,26	9315064	
14	JSK	93	14JSK 93	14JSK 93 1	P	1,03	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Komatiitic cumulate	Serpentinite	7126,820	4455,675	45,50	0,139	3,610	9,23	0,142	34,30	0,19	0,000	0,003	0,011			4495	1660	110	85	0	0	100	30	0	100	30	1,83	10,00	17,91	2,54		0	5	0	0	0	8	20	10	50	93,13	9315065	
272	JEV	95	272JEV 95	272JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	NISKASAARI	Komatiitic cumulate	Serpentinite	7137,540	4455,850	39,10	0,065	1,460	5,97	0,108	39,90	0,07	0,000	0,005	0,008		11,69	4824	1720	230	34	0	0	90	10	0	0	30	4,57	0,00	17,91	5,07		10	10	0	1	0	1	0	20	20	86,69	9512343	
78	JSK	93	78JSK 93	78JSK 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	Serpentinite	7131,730	4455,920	41,80	0,128	4,160	10,10	0,223	34,70	2,04	0,000	0,017	0,011			7253	840	150	101	80	10	190	20	10	0	10	1,37	0,00	44,78	0,00		0	6	0	4	2	1	20	0	20	93,18	9313508	
78	JSK	93	78JSK 93	78JSK 93 1	P	2,01	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	Serpentinite	7131,730	4455,920	39,31	0,159	4,160	10,78	0,229	31,62	1,71	0,020	0,000	0,012			7327	753	116	86	1	10	181			70		0,07		8,00	2,00	6		1	6	5			2	4	2	89,20	9505191757	x
8	SII	93	8SII 93	8SII 93 6	K	0,00	98,05	KUHMO	PAHAKANGAS	PAHAKANGAS	Komatiitic cumulate	Serpentinite	7126,160	4456,000	41,31	0,300	6,740	8,36	0,116	24,44	3,78	0,600	0,490	0,031			2268	1327	79	101	0	14	91			490		13,00		191,00	107,00	9		0	31	5			0	1	0	87,09	971316	x
307	R	94	307R 94	307R 94 1	K	0,00	14,60	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,42	0,035	1,340	7,69	0,182	37,74	0,10	0,000	0,000	0,010			3121	2468	129	29	1	7	94			90		0,07		4,90	2,00	4		1	4	3			2	4	520	86,40	9505250822	x
307	R	94	307R 94	307R 94 1	K	0,00	18,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,72	0,038	1,530	7,28	0,093	38,25	0,01	0,007	0,000	0,006			3256	2499	98	40	8	13	78			120		0,07		4,90	0,00	2		1	4	5			2	4	370	85,70	9505250718	x
307	R	94	307R 94	307R 94 1	K	0,00	24,40	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	35,14	0,042	1,310	9,29	0,118	37,44	0,01	0,010	0,000	0,003			3282	2569	117	40	5	14	110			160		0,07		4,90	1,00	3		1	5	2			2	4	410	84,40	9505251035	x
307	R	94	307R 94	307R 94 1	K	0,00	30,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,76	0,045	1,230	9,75	0,112	37,00	0,02	0,000	0,000	0,010			3046	2766	124	38	1	17	98			100		0,07		4,90	2,00	4		1	2	2			2	10	530	87,00	9505251846	x
307	R	94	307R 94	307R 94 1	K	0,00	37,10	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,00	0,047	1,210	9,03	0,118	37,46	0,01	0,000	0,000	0,006			3139	2626	117	38	2	13	95			110		0,07		4,90	0,14	3		1	4	2			0	4	610	84,90	9505251108	x
307	R	94	307R 94	307R 94 1	K	0,00	49,10	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,22	0,049	1,560	6,30	0,092	38,65	0,01	0,007	0,000	0,003			3057	2400	91	36	1	21	69			170		1,00		4,90	0,00	3		1	4	2			2	4	160	85,60	9505251458	x
307	R	94	307R 94	307R 94 1	K	0,00	50,60	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,87	0,056	1,280	7,94	0,102	37,97	0,01	0,007	0,000	0,006			2668	2651	120	38	28	10	92			170		0,07		4,90	0,00	3		1	7	3			2	13	830	85,10	9505251814	x
307	R	94	307R 94	307R 94 1	K	0,00	61,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,30	0,053	1,180	10,57	0,114	36,95	0,11	0,007	0,000	0,008			3125	2933	136	41	98	8	76			180		0,07		4,90	0,00	1		1	3	3			0	2	840	86,40	9505260049	x
307	R	94	307R 94	307R 94 1	K	0,00	65,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,94	0,056	1,540	9,44	0,097	36,32	1,03	0,000	0,000	0,003			3289	2464	95	44	1	7	54			50		0,07		4,90	7,00	5		1	5	2			2	4	2	87,50	9505260121	x
307	R	94	307R 94	307R 94 1	K	0,00	74,40	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,90	0,036	1,520	6,11	0,084	38,78	0,01	0,007	0,000	0,004			3225	2312	94	30	4	10	78			120		0,07		4,90	0,14	3		1	3	2			3	0	240	86,10	9505250930	x
307	R	94	307R 94	307R 94 1	K	0,00	85,10	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,67	0,046	1,300	10,10	0,116	36,88	0,21	0,007	0,000	0,008			3181	2669	394	46	1	33	62			430		0,07		4,90	3,00	1		1	8	3			2	4	870	86,40	9505260331	x
307	R	94	307R 94	307R 94 1	K	0,00	94,90	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,28	0,064	1,530	8,33	0,115	36,81	1,01	0,007	0,000	0,002			2738	2393	105	43	1	10	53			80		0,07		4,90	10,00	3		1	2	3			1	3	2	87,10	9505252309	x
307	R	94	307R 94	307R 94 1	K	0,00	99,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	35,49	0,058	1,320	8,70	0,464	34,51	3,45	0,000	0,000	0,003			2418	2591	127	40	9	6	56			70		0,07		4,90	16,00	3		1	4	3			2	4	2	85,00	9505251425	x
307	R	94	307R 94	307R 94 1	K	0,00	102,80	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,17	0,083	1,550	9,83	0,253	34,76	2,40	0,010	0,000	0,005			2508	2700	115	46	126	4	54			70		0,07		4,90	17,00	3		1	15	2			2	4	2	86,10	9505250750	x
307	R	94	307R 94	307R 94 1	K	0,00	114,80	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	44,10	0,060	2,060	7,73	0,070	33,24	1,03	0,007	0,010	0,000			3042	2387	105	43	1	3	56			60		0,07		4,90	10,00	5		1	5	1			0	1	2	89,10	9505261004	x
307	R	94	307R 94	307R 94 1	K	0,00	125,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,33	0,081	2,620	9,76	0,089	35,43	0,50	0,000	0,000	0,006			2545	2474	108	55	1	9	52			90		0,07		4,90	1,00	4		1	12	4			0	1	2	87,90	9505251320	x
307	R	94	307R 94	307R 94 1	K	0,00	132,60	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	39,79	0,057	1,780	7,34	0,092	37,84	0,21	0,000	0,000	0,002			3014	2413	88	34	1	11	37			110		0,07		4,90	1,00	2		1	4	1			2	4	2	87,90	9505251603	x
307	R	94	307R 94	307R 94 1	K	0,00	140,60	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,25	0,038	1,290	7,94	0,123	38,14	0,01	0,000	0,000	0,002			3199	2285	107	27	1	4	48			150		0,07		4,90	0,00	3		1	3	3			2	5	240	86,70	9505261141	x
307	R	94	307R 94	307R 94 1	K	0,00	160,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,69	0,041	1,200	8,43	0,121	37,79	0,01	0,007	0,000	0,002			2819	2514	104	31	2	7	50			230		0,07		4,90	0,00	4		1	3	0			2	4	180	86,20	9505261742	x
307	R	94	307R 94	307R 94 1	K	0,00	167,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,66	0,072	1,650	8,85	0,140	37,15	0,06	0,007	0,000	0,010			3031	2417	100	45	19	8	41			120		0,07		4,90	0,14	1		1	6	1			2	0	100	87,50	9505251140	x
307	R	94	307R 94	307R 94 1	K	0,00	174,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,75	0,094	1,750	9,65	0,116	36,64	0,24	0,000	0,000	0,010			3578	2382	113	45	11	10	66			70		0,07		4,90	1,00	4		1	5	1			2	4	2	88,30	9505251003	x
307	R	94	307R 94	307R 94 1	K	0,00	186,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,71	0,049	1,390	10,32	0,135	36,83	0,02	0,007	0,000	0,001			4237	2484	114	44	1	6	60			70		0,07		4,90	0,14	4		1	2	3			2	4	2	88,60	9505260541	x
307	R	94	307R 94	307R 94 1	K	0,00	190,90	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	38,22	0,044	1,420	11,20	0,116	36,43	0,04	0,000	0,000	0,001			3062	2296	113	37	15	9	51			80		0,07		4,90	0,14	3		1	2	2			2	8	0	88,70	9505261847	x
307	R	94	307R 94	307R 94 1	K	0,00	192,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	42,70	0,085	1,630	6,75	0,182	29,52	9,58	0,010	0,010	0,004			4163	1498	98	47	4	4	77			180		0,07		4,90	4,00	2		1	7	4			0	2	150	91,20	9505260509	x
307	R	94	307R 94	307R 94 1	K	0,00	205,00	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,94	0,050	1,530	10,64	0,133	36,02	0,33	0,010	0,000	0,001			4799	2425	120	49	12	1	75			110		0,00		4,90	0,00	4		1	4	0			2	1	2	87,80	9505252236	x
307	R	94	307R 94	307R 94 1	K	0,00	215,20	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	39,03	0,036	1,090	11,41	0,105	36,86	0,07	0,000	0,000	0,003			2415	2276	111	32	2	5	46			70		0,07		4,90	1,00	3		1	2	2			2	2	2	89,90	9505261037	x
307	R	94	307R 94	307R 94 1	K	0,00	226,60	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,47	0,056	1,190	11,80	0,127	36,43	0,01	0,007	0,000	0,005			3940	2263	128	52	1	4	60			180		0,07		4,90	0,14	3		1	2	2			8	4	290	88,40	9505260931	x
307	R	94	307R 94	307R 94 1	K	0,00	235,20	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,11	0,057	1,540	11,08	0,122	36,43	0,17	0,000	0,000	0,004			3821	2146	106	48	1	4	52			210		0,07		4,90	2,00	3		1	1	5			2	3	360	87,70	9505261952	x
307	R	94	307R 94	307R 94 1	K	0,00	244,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,88	0,044	1,170	10,52	0,133	36,99	0,01	0,007	0,000	0,005			3908	2228	130	37	1	9	61			140		0,07		4,90	0,00	3		1	0	2			5	4	500	86,90	9505260859	x
307	R	94	307R 94	307R 94 1	K	0,00	250,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,93	0,042	1,350	9,66	0,125	37,31	0,01	0,007	0,000	0,002			3962	2309	119	36	1	8	55			190		0,00		4,90	1,00	2		1	2	0			3	3	370	86,50	9505261246	x
307	R	94	307R 94	307R 94 1	K	0,00	258,70	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,06	0,044	1,230	9,25	0,204	35,18	1,94	0,010	0,000	0,001			3363	2213	117	42	1	5	61			70		0,07		4,90	11,00	3		1	1	3			2	3	2	85,90	9505262342	x
307	R	94	307R 94	307R 94 1	K	0,00	269,20	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,31	0,043	1,300	9,41	0,129	37,07	0,24	0,007	0,000	0,009			3689	2325	112	38	1	0	51			270		0,07		8,00	0,00	1		1	3	2			2	4	900	86,50	9505261814	x
307	R	94	307R 94	307R 94 1	K	0,00	275,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	32,60	0,035	1,380	8,08	0,205	33,94	0,58	0,000	0,000	0,005			3399	2068	107	33	1	4	54			50		0,07		4,90	3,00	2		1	2	2			5	4	2	77,70	9505262309	x
307	R	94	307R 94	307R 94 1	K	0,00	283,40	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	32,76	0,050	1,160	8,21	0,204	34,30	0,24	0,010	0,000	0,002			3011	2051	106	40	1	3	46			40		0,07		4,90	2,00	2		1	1	3			2	5	2	77,80	9505261637	x
307	R	94	307R 94	307R 94 1	K	0,00	293,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,73	0,062	1,740	8,80	0,143	38,20	0,04	0,010	0,000	0,007			3635	2317	110	46	1	3	58			150		0,07		4,90	0,14	2		1	5	3			3	5	240	87,70	9505262132	x
307	R	94	307R 94	307R 94 1	K	0,00	304,50	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	35,88	0,045	1,070	10,05	0,187	37,17	0,01	0,007	0,000	0,007			3353	2644	139	38	1	3	77			200		0,07		4,90	0,14	2		1	4	7			2	8	1010	85,50	9505241947	x
307	R	94	307R 94	307R 94 1	K	0,00	315,10	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,54	0,053	1,530	8,94	0,135	37,50	0,02	0,007	0,000	0,011			3569	2488	114	25	1	9	71			150		0,07		4,90	0,00	1		1	12	4			3	7	400	86,70	9505260827	x
307	R	94	307R 94	307R 94 1	K	0,00	318,10	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	36,45	0,050	1,700	9,59	0,139	37,00	0,24	0,000	0,000	0,006			3443	2462	115	25	1	8	64			210		0,07		4,90	0,14	3		1	8	5			1	2	430	86,20	9505252204	x
307	R	94	307R 94	307R 94 1	K	0,00	324,30	KUHMO	KELLOJÄRVI	KELLOJÄRVI	Komatiitic cumulate	Serpentinite	7129,600	4456,000	37,32	0,047	1,820	8,80	0,109	37,31	0,26	0,007	0,000	0,005			3226	2291	110	22	1	6	52			140		0,07		4,90	0,14	5		1	6	3			2	4	360	86,60	9505261919	x
15	HP	92	15HP 92	15HP 92 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HUKANKANGAS	Komatiitic cumulate	Serpentinite	7129,340	4456,110	36,40	0,020	0,920	7,58	0,128	39,02	0,01	0,000	0,000	0,005			4201	2627	113	20	9	6	70			130		0,00		8,00	0,00	2		0	3	4			1	0	510	84,08	970200	
6	JSN	94	6JSN 94	6JSN 94 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Serpentinite	7128,960	4456,155	37,74	0,051	1,360	7,66	0,153	38,17	0,01	0,007	0,000	0,006			3138	2336	108	27	1	6	60			100		0,07		4,90	0,14	2		1	3	3			1	4	410	86,00	9505240625	x
22	JSN	94	22JSN 94	22JSN 94 1	M	1,01	33,30	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Serpentinite	7128,715	4456,313	36,97	0,000	0,200	6,27	0,051	39,25	0,03	0,007	0,000	0,005			1211	3140	114	13	1	7	39			90		0,07		4,90	1,00	2		1	2	2			2	0	1110	83,50	9505242232	x
16	JSK	94	16JSK 94	16JSK 94 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Serpentinite	7128,300	4456,385	36,11	0,030	0,750	10,34	0,213	34,61	2,73	0,000	0,000	0,004			2363	2764	127	22	1	8	70			70		0,07		3,00	38,00	0		1	1	3			0	12	2	85,90	9505241843	x
5	JSK	94	5JSK 94	5JSK 94 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Serpentinite	7128,830	4456,410	35,61	0,081	1,490	10,69	0,155	36,52	0,20	0,007	0,000	0,008			3039	2505	134	45	1	18	109			70		0,07		4,90	2,00	1		1	7	4			2	1	880	85,90	9505240202	x
11	JSK	94	11JSK 94	11JSK 94 1	P	1,01	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Serpentinite	7128,552	4456,430	33,07	0,002	0,200	6,55	0,321	34,16	5,82	0,007	0,010	0,002			1210	2667	98	7	1	8	47			60		0,07		4,90	86,00	2		1	0	2			2	2	2	80,80	9505231632	x
16	HP	92	16HP 92	16HP 92 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Serpentinite	7129,210	4456,565	39,62	0,100	3,000	8,59	0,126	32,57	2,59	0,000	0,000	0,009			3774	1816	97	63	7	9	71			10		0,00		22,00	9,00	4		0	4	3			0	6	0	86,61	970201	
124	JSN	95	124JSN 95	124JSN 95 2	P	2,00	0,00	HYRYNSALMI	MOISIOVAARA	HYYRYLÄINEN	Komatiitic cumulate	Serpentinite	7160,710	4456,570	43,20	0,343	4,640	12,00	0,176	26,80	2,95	0,000	0,007	0,033		7,90	2867	1150	160	122	30	0	90	10	10	150	40	8,23	20,00	44,78	16,07		0	15	7	6	0	4	20	20	20	90,15	9512436	
312	JEV	95	312JEV 95	312JEV 95 2	P	2,00	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Komatiitic cumulate	Serpentinite	7138,120	4456,720	38,70	0,189	4,430	9,19	0,140	32,90	2,41	0,000	0,003	0,018		10,52	1745	1940	150	88	0	10	60	10	0	0	10	5,49	0,00	17,91	5,92		10	12	0	1	0	5	10	10	50	87,98	9512423	
313	JEV	95	313JEV 95	313JEV 95 1	P	1,02	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Komatiitic cumulate	Serpentinite	7138,300	4456,800	41,20	0,399	8,500	8,51	0,164	28,50	3,29	0,000	0,004	0,023		7,85	2313	1200	260	163	0	10	60	0	0	340	10	3,66	20,00	17,91	8,46		10	18	7	6	0	2	0	10	30	90,59	9513863	
98	JSN	95	98JSN 95	98JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KAIHLALAMPI	Komatiitic cumulate	Serpentinite	7090,860	4456,820	33,90	0,020	0,600	6,95	0,133	36,60	0,28	0,000	0,002	0,000		19,78	2915	2260	170	27	0	10	50	10	10	60	1640	4,57	0,00	26,87	0,00		10	12	0	0	0	5	0	10	10	78,49	9512339	
319	JEV	95	319JEV 95	319JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Komatiitic cumulate	Serpentinite	7138,050	4457,100	40,70	0,302	6,350	10,10	0,173	27,70	4,84	0,210	0,016	0,029		7,87	2299	1490	180	129	0	10	70	10	10	0	10	9,14	20,00	35,83	25,37		10	14	0	3	0	5	0	10	40	90,42	9512426	
316	JEV	95	316JEV 95	316JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Komatiitic cumulate	Serpentinite	7138,230	4457,130	43,30	0,225	5,540	9,42	0,168	28,20	5,20	0,110	0,022	0,014		6,19	2080	1340	190	116	20	0	60	10	10	140	10	7,32	20,00	8,96	23,68		0	16	0	3	0	8	0	20	20	92,20	9513864	
14	SMS	70	14SMS 70	14SMS 70 7	K	0,00	129,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7230,250	4457,340	39,09	0,314	4,710	11,27	0,138	25,72	3,94	0,007	0,000	0,019			3690	1196	118	105	70	9	90			5750		0,07		4,90	15,00	8		1	22	6			2	11	2	86,40	9505241228	x
14	SMS	70	14SMS 70	14SMS 70 7	K	0,00	135,70	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7230,250	4457,340	38,42	0,263	3,610	11,43	0,185	26,90	3,95	0,007	0,000	0,018			3269	1549	133	75	175	9	93			9400		0,07		4,90	14,00	6		1	12	5			4	0	2	86,00	9505232320	x
14	SMS	70	14SMS 70	14SMS 70 7	K	0,00	144,60	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7230,250	4457,340	38,10	0,182	3,130	20,70	0,136	28,80	2,68	0,000	0,004	0,022			5015	6300	340	95	2000	20	90	0	0	41700	10	6,40	10,00	17,91	12,68		10	12	0	3	1	0	0	20	60	93,75	9413998	
154	JSN	95	154JSN 95	154JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	SAARILAMPI	Komatiitic cumulate	Serpentinite	7090,200	4458,080	39,00	0,055	0,950	9,25	0,129	33,30	2,67	0,000	0,002	0,001		12,43	4735	2100	140	41	20	0	100	10	0	2840	20	6,40	30,00	35,83	12,68		0	13	0	0	0	5	20	0	10	85,36	9512437	
527	MAF	95	527MAF 95	527MAF 95 1	P	1,00	0,00	KUHMO	VUOSANGANJÄRVI	HÄRMÄKANGAS	Komatiitic cumulate	Serpentinite	7141,240	4458,080	41,20	0,373	5,980	11,50	0,137	27,00	5,61	0,370	0,036	0,022		5,93	2826	1180	130	170	0	0	70	0	0	0	10	10,06	30,00	17,91	27,06		10	14	7	2	0	1	10	30	20	92,23	9513882	
1	SMS	60	1SMS 60	1SMS 60 3	K	0,00	96,35	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233,520	4458,600	40,20	0,330	5,350	13,22	0,192	26,38	4,92	0,000	0,010	0,021	1,10	8,35	5650	914	81	133	51	7	112			2330		0,00		9,00	8,00	10		0	17	5			1	0	0	92,07	971342	x
1	SMS	60	1SMS 60	1SMS 60 3	K	0,00	102,50	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233,520	4458,600	40,29	0,310	4,750	13,58	0,162	27,99	3,01	0,000	0,010	0,026	0,24	8,31	5140	1215	107	104	161	4	116			2530		0,04		29,00	5,00	6		0	14	7			0	0	0	91,62	971344	x
1	SMS	60	1SMS 60	1SMS 60 3	K	0,00	109,45	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233,520	4458,600	39,41	0,300	4,240	14,00	0,177	28,43	2,86	0,000	0,010	0,023	0,65	8,71	5941	1297	131	119	130	0	151			800		0,01		18,00	8,00	8		0	17	7			0	0	0	90,99	971345	x

1	SMS	60	1SMS 60	1SMS 60 3	K	0,00	118,65	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233,520	4458,600	37,67	0,380	4,450	13,80	0,196	29,02	2,34	0,010	0,000	0,032	2,01	10,31	5972	1299	129	115	78	4	154			560		0,03		7,00	15,00	5		0	24	5			6	0	0	89,42	971346	x
1	SMS	60	1SMS 60	1SMS 60 3	K	0,00	130,95	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233,520	4458,600	39,83	0,360	5,260	12,32	0,190	27,48	3,98	0,000	0,010	0,029	2,20	9,56	3337	1109	104	115	10	8	98			610		0,01		5,00	21,00	9		0	22	5			0	2	0	90,82	971347	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	95,70	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Serpentinite	7233,520	4458,600	39,75	0,380	5,620	13,73	0,177	25,46	4,72	0,000	0,010	0,024			5150	1002	94	135	30	10	89			2980		0,02		0,08	5,00	12		0	18	6			1	0	0	91,38	971341	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	132,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Serpentinite	7233,520	4458,600	39,03	0,320	4,250	12,27	0,208	27,78	3,39	0,010	0,010	0,026			3594	1216	113	115	14	8	106			840		0,04		0,01	22,00	7		0	21	8			0	4	30	88,64	971348	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	134,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Serpentinite	7233,520	4458,600	46,70	0,340	4,870	10,14	0,151	24,53	4,94	0,000	0,020	0,027			3264	1119	130	119	100	4	94			3170		0,06		18,00	7,00	9		0	21	7			1	0	0	92,84	971349	x
349	JEV	95	349JEV 95	349JEV 95 1	P	2,00	0,00	KUHMO	NISKAJÄRVI	PIENI NISKAJÄRVI	Komatiitic cumulate	Serpentinite	7139,240	4459,000	41,60	0,299	5,940	9,78	0,147	29,10	4,39	0,090	0,013	0,014		6,86	2662	1540	240	129	10	10	70	10	10	60	10	6,40	30,00	17,91	6,76		10	12	0	0	0	3	20	0	40	91,37	9512461	
115	JSN	95	115JSN 95	115JSN 95 1	P	1,00	0,00	HYRYNSALMI	MOISIOVAARA	HÄMEENNIEMI	Komatiitic cumulate	Serpentinite	7162,240	4459,240	42,90	0,309	7,050	9,63	0,139	27,00	5,42	0,180	0,033	0,031		5,77	2306	730	180	136	20	10	60	0	0	0	10	8,23	0,00	17,91	16,91		10	14	0	5	0	3	0	0	20	92,69	9512434	
77	JTL	95	77JTL 95	77JTL 95 1	P	1,02	0,00	HYRYNSALMI	MOISIOVAARA	KAARTILANVAARA	Komatiitic cumulate	Serpentinite	7167,090	4459,355	40,20	0,170	3,280	6,50	0,122	35,60	3,00	0,000	0,003	0,015		9,99	1574	1950	190	82	0	10	40	0	0	0	10	5,49	10,00	26,87	0,00		0	11	0	2	0	6	10	0	10	88,89	9512430	
108	JTL	96	108JTL 96	108JTL 96 1	P	1,01	0,00	SUOMUSSALMI	NÄÄTÄVAARA	NÄÄTÄVAARA	Komatiitic cumulate	Serpentinite	7202,595	4466,090	40,40	0,192	4,440	8,67	0,167	33,10	2,20	0,000	0,015	0,017		9,14	2285	1900	120	95	0	0	50	0	0	310	10	4,57	10,00	17,91	6,76		10	11	0	0	0	4	20	30	60	89,20	9612702	
298	JTL	97	298JTL 97	298JTL 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Komatiitic cumulate	Serpentinite	7153,870	4473,400	41,00	0,273	8,380	11,70	0,214	21,60	8,81	0,180	0,093	0,024		5,43	3674	1910	210	136	20	0	120	10	0	3980	20	4,57	20,00	62,70	27,06		10	12	0	1	0	4	0	20	60	92,27	9818017	
189	TTT	97	189TTT 97	189TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	LAMMINAHO	Komatiitic cumulate	Serpentinite	7153,990	4474,560	39,00	0,231	4,030	11,30	0,165	30,90	2,54	0,010	0,016	0,025		9,66	4098	1130	220	99	0	10	100	0	0	4240	70	5,49	0,00	35,83	12,68		10	13	0	2	0	1	10	10	20	88,22	9710732	
168	JTL	97	168JTL 97	168JTL 97 1	P	1,02	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Komatiitic cumulate	Serpentinite	7060,909	4474,763	37,90	0,097	3,730	10,70	0,170	32,80	1,57	0,000	0,044	0,011		11,31	773	1640	130	59	0	0	60	10	10	680	20	11,89	30,00	17,91	5,07		10	13	0	2	0	7	20	10	90	87,02	9710757	
143	JTL	97	143JTL 97	143JTL 97 2	P	2,03	0,00	NURMES	KUOHATTI-JONKERI	HILTUSPURO	Komatiitic cumulate	Serpentinite	7070,505	4485,735	38,90	0,031	0,350	10,30	0,205	36,90	0,05	0,000	0,004	0,007		11,56	2155	2260	190	29	10	10	40	10	0	420	10	5,49	0,00	26,87	0,85		0	11	0	0	0	1	20	10	60	86,75	9818015	
55	KSL	97	55KSL 97	55KSL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	NÄÄTÄVAARA	Komatiitic cumulate	Serpentinite	7070,350	4485,770	39,20	0,034	0,140	12,70	0,132	35,00	0,98	0,000	0,004	0,012		9,43	4906	1400	230	44	20	20	110	0	0	2040	10	4,57	20,00	26,87	0,00		10	10	0	0	0	6	10	0	40	88,20	9818013	
223	JTL	97	223JTL 97	223JTL 97 1	P	1,01	0,00	NURMES	KUOHATTI-JONKERI	KOIVUJOKI	Komatiitic cumulate	Serpentinite	7069,140	4488,860	39,30	0,166	3,260	13,10	0,203	31,00	2,66	0,030	0,014	0,012		8,08	3524	1140	150	88	0	10	80	0	0	420	10	7,32	20,00	17,91	10,99		10	11	0	2	0	2	20	0	50	89,75	9710761	
227	JTL	97	227JTL 97	227JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	KOIVUJOKI	Komatiitic cumulate	Serpentinite	7069,695	4489,090	39,10	0,212	2,090	14,70	0,086	32,60	0,77	0,000	0,003	0,034		8,15	3626	1250	230	103	10	10	70	10	0	790	10	5,49	10,00	8,96	2,54		10	16	7	0	0	8	0	10	80	89,60	9710762	
208	TTT	97	208TTT 97	208TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	HIIDENPORTTI	Komatiitic cumulate	Serpentinite	7076,300	4490,540	38,20	0,088	3,330	7,56	0,129	36,70	0,09	0,000	0,004	0,007		12,50	1738	2200	170	41	0	0	70	0	0	230	20	4,57	0,00	8,96	0,00		10	11	0	0	0	6	10	20	50	86,10	9710731	
61	JTL	96	61JTL 96	61JTL 96 1	P	1,03	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7084,542	4444,953	40,30	0,163	4,000	10,40	0,148	29,30	2,78	0,000	0,003	0,015		11,01	3277	1060	130	88	40	10	70	10	0	1450	10	2,74	20,00	8,96	5,92		10	12	0	3	0	5	10	10	20	87,11	9612698	
61	JTL	96	61JTL 96	61JTL 96 1	P	1,04	0,00	SOTKAMO	HIETAJÄRVI	SAMMAKKOLAMPI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7084,522	4444,974	48,10	0,162	4,310	8,14	0,193	26,40	6,73	0,000	0,007	0,029		4,50	2490	650	70	88	80	0	50	10	0	1020	10	6,40	10,00	26,87	19,45		0	13	0	2	0	2	10	0	20	94,07	9612699	
87	TOH	96	87TOH 96	87TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SYRJÄJOKI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7227,360	4455,045	40,20	0,087	3,570	7,49	0,145	33,70	2,47	0,000	0,010	0,013		11,01	1498	1680	80	75	0	0	100	10	0	460	10	8,23	0,00	44,78	2,54		10	10	0	1	0	12	0	10	20	87,69	9612675	
30	TOH	95	30TOH 95	30TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HUKANKANGAS	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7128,960	4455,610	37,20	0,056	1,380	7,11	0,172	39,30	0,09	0,000	0,003	0,010		13,24	2203	2550	150	27	0	0	70	20	10	0	10	3,66	10,00	35,83	2,54		0	13	0	0	0	3	10	10	80	85,32	9512328	
35	TOH	95	35TOH 95	35TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HUKANKANGAS	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7128,435	4455,780	36,10	0,062	1,520	8,82	0,107	38,40	0,32	0,000	0,003	0,006		13,00	2792	2170	130	34	0	10	60	10	0	0	20	1,83	0,00	8,96	1,69		10	11	0	2	0	3	0	20	40	85,34	9512329	
66	TOH	95	66TOH 95	66TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7131,993	4455,825	37,30	0,103	2,330	9,30	0,187	33,40	2,84	0,000	0,003	0,019		12,80	2066	2140	170	68	30	10	250	0	10	1760	10	2,74	10,00	17,91	9,30		10	15	0	0	0	4	0	10	0	85,48	9512418	
40	TOH	95	40TOH 95	40TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HUKANKANGAS	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7129,346	4456,300	35,70	0,082	1,210	8,54	0,136	38,30	0,05	0,000	0,002	0,014		14,19	3647	2630	150	41	0	0	80	10	0	0	10	3,66	10,00	17,91	1,69		10	14	0	0	0	7	0	20	120	84,03	9512330	
111	TOH	96	111TOH 96	111TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HUUTONIEMI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7228,560	4460,770	37,90	0,261	4,750	13,50	0,217	29,50	2,73	0,000	0,016	0,025		8,69	4694	1230	220	116	50	0	100	10	0	450	20	2,74	30,00	17,91	7,61		10	13	0	4		6	20	20	60	88,90	9634252	
111	TOH	96	111TOH 96	111TOH 96 2	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HUUTONIEMI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7228,590	4460,770	39,00	0,226	4,330	11,90	0,213	30,70	2,72	0,010	0,011	0,009		8,55	5022	1400	170	95	0	10	90	0	0	100	10	2,74	20,00	8,96	4,23		10	13	0	3		8	0	20	40	89,12	9634253	
53	TOH	95	53TOH 95	53TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Serpentinite / olivine orthocumulate	7129,200	4456,610	39,10	0,130	3,290	8,20	0,121	35,10	1,30	0,000	0,113	0,017		11,01	3195	2040	140	61	130	10	80	10	10	130	10	8,23	10,00	17,91	3,38		10	15	0	0	0	5	0	0	20	87,37	9512334	
202	JTL	97	202JTL 97	202JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	LÖYTÖLAMPI	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7075,810	4440,300	43,00	0,085	3,520	7,11	0,113	33,60	0,03	0,000	0,006	0,003		10,48	5829	2400	130	60	80	10	100	10	0	860	10	2,74	20,00	17,91	1,69		10	13	0	0	0	6	10	10	60	87,46	9710760	
46	JTL	97	46JTL 97	46JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	UKONKUIVUUVAARA	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7081,540	4441,080	41,60	0,079	2,920	8,50	0,145	37,20	0,06	0,000	0,002	0,007		7,58	4947	2070	130	56	0	10	90	10	0	670	10	4,57	20,00	17,91	1,69		10	12	0	0	0	10	0	0	60	90,51	9710754	
68	TTT	96	68TTT 96	68TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	PUUKARINNIEMI S	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7132,753	4454,702	36,74	0,070	1,550	10,23	0,185	32,48	0,09	0,010	0,000	0,001			3865	1887	97	44	12	6	109			2		0,07		9,00	0,14	4		1	7	0			2	7	2	82,49	960028	x
16	SII	94	16SII 94	16SII 94 2	K	0,00	55,75	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7128,293	4455,380	44,00	0,133	3,040	9,00	0,154	32,80	2,16	0,000	0,002	0,010			2662	1900	120	61	40	10	70	10	0	1550	10	3,66	0,00	26,87	4,23		0	12	0	3	0	7	0	0	30	91,30	9414688	
16	SII	94	16SII 94	16SII 94 2	K	0,00	70,30	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7128,293	4455,380	39,44	0,397	4,800	9,09	0,167	26,19	4,65	0,007	0,000	0,038			2231	1633	93	103	154	8	115			640		0,07		4,90	13,00	8		1	33	12			0	11	2	85,80	9505240025	x
16	SII	94	16SII 94	16SII 94 2	K	0,00	74,45	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7128,293	4455,380	39,60	0,274	5,990	10,20	0,195	24,70	6,86	0,000	0,002	0,030			2265	1060	110	129	30	10	160	10	0	180	20	4,57	20,00	8,96	15,22		10	17	0	3	0	4	10	20	50	87,85	9414690	
310	JTL	97	310JTL 97	310JTL 97 1	P	1,02	0,00	KUHMO	YPYKKÄ	VALKEALAMPI	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7151,580	4479,115	44,70	0,288	7,510	8,83	0,178	23,20	9,31	0,600	0,142	0,020		3,75	2511	1030	120	141	70	0	40	10	0	1100	10	3,66	10,00	26,87	56,65		10	15	0	1	0	3	0	20	10	94,78	9818018	
23	SMS	62	23SMS 62	23SMS 62 2	K	0,00	72,15	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,050	4456,800	36,73	0,339	4,510	12,62	0,154	23,55	5,56	0,000	0,000	0,011			3143	1066	97	101	69	12	78			2780		0,07		4,90	64,00	6		1	19	8			0	7	10	84,90	9505241555	x
23	SMS	62	23SMS 62	23SMS 62 2	K	0,00	92,05	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,050	4456,800	42,68	0,368	5,290	12,76	0,224	24,86	2,79	0,010	0,000	0,027			2896	995	108	129	133	7	101			1860		0,07		4,90	12,00	9		1	20	10			5	9	20	90,40	9505242337	x
23	SMS	62	23SMS 62	23SMS 62 2	K	0,00	112,40	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,050	4456,800	38,53	0,261	3,830	10,31	0,134	26,16	5,30	0,010	0,000	0,020			2723	1213	99	84	13	4	59			790		0,07		4,90	26,00	6		1	14	8			2	4	40	85,70	9505250540	x
23	SMS	62	23SMS 62	23SMS 62 2	K	0,00	133,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,050	4456,800	38,99	0,327	4,420	18,44	0,074	24,15	1,42	0,007	0,000	0,000			6085	2102	202	129	200	10	67			8140		0,07		4,90	7,00	11		1	18	4			2	4	2	89,80	9505241450	x
23	SMS	62	23SMS 62	23SMS 62 2	K	0,00	147,60	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,050	4456,800	39,02	0,375	5,130	10,64	0,188	24,81	4,94	0,010	0,010	0,023			2608	1074	117	113	121	5	102			4600		0,07		4,90	31,00	9		1	20	9			2	4	2	86,30	9505250400	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	143,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	31,79	0,259	4,210	10,79	0,167	24,11	8,91	0,007	0,000	0,012			3049	1073	61	89	89	4	60			3870		0,07		4,90	104,00	6		1	15	9			0	3	2	81,40	9505261459	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	151,90	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	36,18	0,262	3,950	12,37	0,181	27,20	2,63	0,000	0,000	0,017			3376	1474	104	96	197	6	63			7660		0,07		4,90	18,00	7		1	15	8			2	8	2	84,10	9505261709	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	163,10	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	36,91	0,208	3,310	12,64	0,148	27,32	2,39	0,007	0,000	0,012			3554	1638	134	78	227	2	57			7340		0,07		4,90	14,00	2		1	13	6			2	1	20	84,30	9505250042	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	176,55	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	40,30	0,396	6,090	13,45	0,217	24,40	4,13	0,020	0,000	0,022			5336	1063	121	135	20	6	102			770		0,07		4,90	10,00	8		1	21	8			0	4	20	90,50	9505260016	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	187,42	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	35,96	0,309	4,710	15,14	0,133	24,13	3,93	0,007	0,000	0,022			4938	2182	193	117	691	5	80			10690		0,07		4,90	16,00	6		1	17	7			0	4	2	86,00	9505250255	x
28	SMS	62	28SMS 62	28SMS 62 3	K	0,00	207,30	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7228,100	4456,810	36,28	0,238	3,650	8,26	0,165	25,02	8,04	0,007	0,000	0,015			3102	1270	114	84	60	5	66			2210		0,07		4,90	56,00	5		1	14	6			2	6	2	82,60	9505250010	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	35,90	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	41,59	0,340	5,260	12,40	0,109	26,64	1,70	0,007	0,000	0,024			3700	1515	151	106	35	9	105			2650		0,07		4,90	12,00	7		1	23	5			2	9	2	89,40	9505252059	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	48,00	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	35,36	0,253	3,810	12,39	0,227	24,09	6,68	0,000	0,000	0,017			5349	1059	89	94	30	4	122			1390		0,07		4,90	52,00	6		1	12	10			2	5	2	84,20	9505270122	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	79,75	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	34,80	0,250	3,140	14,22	0,279	24,48	5,98	0,007	0,000	0,019			4313	2437	191	91	325	12	93			9850		0,07		9,00	26,00	5		1	12	6			2	3	2	84,70	9505251636	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	93,80	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	39,03	0,225	3,460	14,13	0,169	29,21	1,16	0,010	0,000	0,016			5659	1612	127	95	323	9	172			4010		0,07		2,00	3,00	5		1	9	6			2	5	2	89,00	9505251709	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	111,60	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	32,46	0,244	3,670	16,52	0,259	24,43	5,12	0,000	0,010	0,020			5404	2421	180	97	882	9	132			13180		0,07		8,00	23,00	4		1	14	5			2	4	2	84,60	9505261532	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	130,90	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	36,76	0,278	3,990	15,14	0,174	27,46	2,68	0,000	0,000	0,020			4817	1703	125	98	530	10	116			7380		0,07		4,90	7,00	7		1	15	6			2	9	2	88,20	9505251213	x
63	SMS	63	63SMS 63	63SMS 63 1	K	0,00	137,05	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock)	7233,660	4458,750	37,51	0,279	3,990	14,21	0,170	26,95	2,86	0,030	0,000	0,025			5141	1660	132	103	315	9	112			6220		0,07		4,90	14,00	6		1	14	7			1	4	2	87,60	9505251353	x
92	TOH	95	92TOH 95	92TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Komatiitic cumulate	Soapstone (talc-carbonate rock) / olivine mesocumulate	7148,595	4454,600	44,00	0,105	2,020	8,15	0,071	30,50	1,12	0,000	0,002	0,013		12,41	2490	2280	210	48	10	10	90	10	0	120	60	1,83	0,00	26,87	15,22		10	11	0	1	0	3	10	20	20	85,98	9512420	
85	TOH	96	85TOH 96	85TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SAUNA-AHO	Komatiitic cumulate	Soapstone (talc-carbonate rock) / olivine mesocumulate	7226,200	4455,170	35,90	0,092	2,340	4,57	0,193	26,40	9,88	0,000	0,002	0,012		19,56	1478	1540	120	61	60	0	20	10	0	360	10	3,66	10,00	17,91	65,96		10	11	0	5		8	30	0	20	79,39	9634251	
17	VIE	64	17VIE 64	17VIE 64 1	K	0,00	51,65	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	48,40	0,559	12,900	11,80	0,360	5,80	8,98	1,560	0,412	0,049	5,40		1081	740	60	228	90	10	140	30	0	6490	10	27,43	30,00	89,57	71,03		10	10	22	14	0	8	30	10	100	90,82	9413348	
17	VIE	64	17VIE 64	17VIE 64 1	K	0,00	62,40	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	46,20	0,526	12,000	12,70	0,415	5,37	12,10	1,350	0,151	0,042	5,40		978	820	90	240	190	10	80	20	0	10700	0	0,91	0,00	35,83	114,15		10	6	22	16	0	9	0	20	110	90,85	9413349	
17	VIE	64	17VIE 64	17VIE 64 1	K	0,00	73,24	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	44,00	0,517	11,700	16,50	0,571	5,63	11,10	0,640	0,205	0,045	4,40		978	520	70	252	100	0	90	20	0	6500	10	4,57	10,00	26,87	35,51		10	6	30	15	0	3	10	30	160	90,91	9413350	
17	VIE	64	17VIE 64	17VIE 64 3	K	0,00	157,25	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	47,70	0,505	12,600	10,60	0,349	4,99	9,48	2,020	0,309	0,045	7,50		1040	760	60	216	90	0	80	20	0	7370	0	15,54	20,00	26,87	76,10		10	8	22	13	0	6	10	10	70	88,60	9413357	
17	VIE	64	17VIE 64	17VIE 64 3	K	0,00	163,90	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	48,70	0,519	12,700	9,91	0,270	5,51	9,85	1,940	0,245	0,048	7,10		1033	670	50	223	70	0	90	20	0	5320	10	10,06	10,00	44,78	95,55		10	6	22	11	0	7	0	20	60	89,69	9413358	
17	VIE	64	17VIE 64	17VIE 64 3	K	0,00	170,40	KUHMO	AROLA	ORE DEPOSIT	Mafic volcanic rock	Sulfidic Cr basalt	7150,060	4454,340	48,20	0,582	14,000	9,28	0,221	5,45	9,70	2,550	0,189	0,049	6,50		1149	790	60	235	80	0	80	20	10	5830	10	10,97	40,00	44,78	131,07		10	7	22	15	0	6	20	20	40	90,22	9413359	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	96,90	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	46,50	0,531	12,700	9,63	0,371	5,23	10,60	2,050	0,317	0,047	8,50		1061	1250	40	233	10	0	80	30	0	3060	10	14,63	20,00	62,70	80,33		10	5	22	14	0	7	0	0	50	87,98	9413351	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	101,47	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	47,70	0,528	12,500	10,30	0,357	5,34	9,34	1,980	0,338	0,047	7,60		1061	1180	30	229	20	0	80	20	0	3450	10	14,63	0,00	71,65	74,41		0	4	22	13	0	6	0	20	70	88,43	9413352	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	109,60	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	42,40	0,495	11,500	13,10	0,468	5,33	11,60	1,440	0,254	0,047	10,00		992	1780	70	241	110	0	80	20	0	12700	10	9,14	20,00	44,78	77,79		0	5	22	16	0	5	0	30	70	86,63	9413353	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	114,79	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	43,80	0,507	12,200	12,10	0,409	6,28	9,60	1,540	0,232	0,044	7,80		1019	720	40	238	50	10	90	20	10	4110	0	10,06	20,00	71,65	62,57		10	7	22	14	0	9	10	10	50	86,71	9413354	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	119,50	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	47,10	0,528	12,600	10,80	0,397	5,34	9,44	1,820	0,324	0,045	7,70		1019	460	50	221	110	0	90	20	0	4060	0	16,46	30,00	53,74	76,10		0	6	22	11	0	5	20	30	60	88,39	9413355	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	125,50	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	45,50	0,497	11,800	10,60	0,424	4,93	11,40	1,550	0,336	0,046	8,60		985	680	50	222	90	10	80	30	0	6570	0	14,63	20,00	62,70	61,73		10	5	22	14	0	2	0	20	60	87,08	9413356	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	186,56	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	42,00	0,487	12,000	14,00	0,444	5,73	10,90	1,330	0,158	0,047	8,20		1006	3110	90	241	110	10	110	20	10	17100	10	11,89	30,00	44,78	76,10		10	5	22	10	2	3	20	0	50	87,10	9413360	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	189,20	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	45,60	0,537	13,000	16,50	0,480	6,03	7,71	1,510	0,049	0,046	5,50		1102	5700	40	249	80	0	170	30	10	17900	0	7,32	40,00	26,87	113,31		0	10	22	16	0	6	20	20	70	91,46	9413361	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	192,29	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	45,10	0,501	12,400	14,40	0,408	5,53	9,17	1,940	0,349	0,047	6,80		1019	4710	80	257	120	10	170	30	0	23800	0	14,63	0,00	53,74	98,93		0	6	15	15	0	6	0	30	50	89,85	9413362	
17	VIE	64	17VIE 64	17VIE 64 2	K	0,00	198,28	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic Cr basalt	7150,060	4454,340	46,40	0,511	12,400	14,90	0,485	5,17	8,93	1,650	0,295	0,049	6,40		1026	2090	80	264	90	0	180	20	10	19400	10	11,89	30,00	53,74	93,86		10	7	22	17	0	7	10	20	60	90,79	9413363	
181	VIE	65	181VIE 65	181VIE 65 2	K	0,00	309,05	KUHMO	AROLA	ORE DEPOSIT	Ore deposit	Sulfidic schist	7150,060	4454,340	35,80	0,181	5,390	39,30	0,057	1,53	0,67	0,910	0,454	0,020	0,26		244	8610	130	54	100	0	40	10	0	203000	10	22,86	0,00	80,61	22,83		0	8	52	0	0	8	0	30	50	84,31	9413314	
20	SMS	60	20SMS 60	20SMS 60 3	K	0,00	76,50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Talc-carbonate rock	7228,050	4456,620	45,59	0,360	5,520	13,73	0,072	26,24	0,44	0,010	0,000	0,014	0,55	6,80	3285	1064	107	116	157	9	105			1440		1,00		11,00	1,00	7		0	17	5			3	10	0	93,49	971354	x
20	SMS	60	20SMS 60	20SMS 60 3	K	0,00	82,87	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Talc-carbonate rock	7228,050	4456,620	38,56	0,280	4,190	11,07	0,122	26,37	5,06	0,000	0,000	0,017	8,14	12,75	2866	1071	106	101	129	11	84			1840		0,03		0,01	26,00	5		0	16	6			1	12	20	86,89	971355	x
20	SMS	60	20SMS 60	20SMS 60 3	K	0,00	107,30	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Talc-carbonate rock	7228,050	4456,620	39,92	0,290	4,610	11,95	0,105	26,42	3,66	0,000	0,000	0,019	5,68	10,96	2917	1287	119	103	140	8	72			2350		0,02		15,00	22,00	8		0	12	5			1	5	20	88,29	971356	x
20	SMS	60	20SMS 60	20SMS 60 3	K	0,00	132,30	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Talc-carbonate rock	7228,050	4456,620	40,95	0,320	5,120	12,07	0,157	25,99	3,34	0,000	0,000	0,023	5,17	10,16	3003	1423	117	117	33	5	87			1290		0,04		0,07	13,00	7		0	18	7			0	16	0	89,30	971357	x
543	MAF	95	543MAF 95	543MAF 95 1	P	3,00	0,00	KUHMO	VUOSANGANJÄRVI	RUUTANALAMPI	Ultramafic volcanic rock	Talc-chlorite rock	7144,320	4457,140	39,20	0,246	5,240	10,30	0,197	30,60	3,20	0,070	0,008	0,014		9,19	2121	1820	160	102	10	0	120	10	0	0	20	5,49	0,00	44,78	10,99		10	16	0	3	0	1	10	0	50	89,08	9513884	
288	JTL	96	288JTL 96	288JTL 96 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Talc-tremolite rock	7081,498	4444,338	43,40	0,171	3,380	7,96	0,168	31,90	2,33	0,000	0,010	0,004		9,09	2025	1880	110	95	50	10	70	10	10	880	10	9,14	10,00	17,91	17,76		10	16	0	0		1	10	10	40	89,32	9634488	
287	JTL	96	287JTL 96	287JTL 96 2	P	2,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Komatiitic cumulate	Talc-tremolite rock	7081,550	4444,390	40,10	0,137	3,650	7,98	0,136	32,90	2,19	0,000	0,003	0,007		11,33	2114	1980	120	68	30	0	80	10	0	720	10	4,57	20,00	17,91	13,53		0	12	0	2		9	10	10	50	87,10	9634487	
197	TTT	97	197TTT 97	197TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Ultramafic volcanic rock	Talc-tremolite rock	7154,080	4473,790	48,90	0,264	6,910	7,01	0,162	21,20	9,28	0,410	0,037	0,020		3,58	2326	750	170	133	0	10	50	10	0	210	10	3,66	0,00	44,78	38,05		10	12	0	3	0	6	0	0	20	94,19	9710737	
202	TTT	97	202TTT 97	202TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	ISO SIIKAVAARA	Ultramafic volcanic rock	Talc-tremolite rock	7154,150	4473,950	47,50	0,280	7,780	7,84	0,190	20,70	9,08	0,390	0,093	0,018		3,66	2655	810	80	138	0	0	70	10	10	280	150	3,66	20,00	26,87	24,52		10	13	0	4	0	4	40	0	50	93,87	9710740	
163	TTT	97	163TTT 97	163TTT 97 1	P	1,01	0,00	KUHMO	JONKERI	KARHIVAARA	Ultramafic volcanic rock	Talc-tremolite rock	7075,430	4489,890	45,80	0,283	7,300	10,20	0,186	22,70	7,38	0,080	0,025	0,011		4,34	2490	610	190	150	40	10	60	10	0	200	30	8,23	10,00	26,87	18,60		10	15	0	1	0	11	20	10	10	93,97	9710725	
135	TTT	97	135TTT 97	135TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	TERVASVAARA W	Komatiitic cumulate	Talc-tremolite rock	7073,880	4490,180	52,00	0,120	2,310	10,80	0,210	28,10	0,88	0,000	0,014	0,009		3,67	3113	1040	210	65	90	10	90	0	10	180	10	10,06	20,00	35,83	2,54		10	15	0	0	0	2	20	20	40	94,44	9710719	
157	TTT	97	157TTT 97	157TTT 97 2	P	2,00	0,00	KUHMO	JONKERI	HIIDENPORTTI N	Ultramafic volcanic rock	Talc-tremolite rock	7077,010	4490,780	47,70	0,189	5,370	10,30	0,248	25,30	4,18	0,000	0,009	0,023		4,12	4851	910	210	107	80	10	90	10	10	1350	280	6,40	10,00	8,96	1,69		0	11	0	1	0	9	20	0	30	93,32	9710724	
71	JTL	97	71JTL 97	71JTL 97 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	MYHKYRI	Mafic volcanic rock	Tholeiitic amphibolite	7078,295	4440,600	53,10	0,757	14,900	11,10	0,189	5,82	11,20	0,870	0,353	0,082		0,00	35	70	50	314	10	10	70	0	10	180	10	23,77	0,00	89,57	65,11		10	19	30	9	0	9	0	50	140	98,37	9710774	
207	JTL	97	207JTL 97	207JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	MUSTALAMMIT	Mafic volcanic rock	Tholeiitic basalt	7077,530	4440,240	53,90	0,726	14,400	9,37	0,205	5,71	13,10	0,800	0,282	0,068		0,00	334	180	80	284	110	20	70	10	0	2180	10	17,37	0,00	17,91	80,33		0	15	22	12	0	13	20	30	110	98,56	9710777	
8	SPL	97	8SPL 97	8SPL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	UKONKUIVUUVAARA	Mafic volcanic rock	Tholeiitic basalt	7081,580	4441,320	48,60	0,759	15,600	9,34	0,211	7,96	14,20	1,100	0,293	0,070		0,00	233	100	90	305	0	10	80	0	0	40	10	15,54	10,00	80,61	132,76		10	14	30	12	0	3	10	10	60	98,13	9710781	
39	JTL	97	39JTL 97	39JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Mafic volcanic rock	Tholeiitic basalt	7081,205	4441,920	48,70	0,759	16,300	11,40	0,193	7,24	11,20	2,050	0,238	0,080		0,00	297	150	80	274	90	10	80	10	10	610	10	9,14	10,00	62,70	103,16		10	14	15	14	0	0	10	20	60	98,16	9710773	
15	JTL	97	15JTL 97	15JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Mafic volcanic rock	Tholeiitic basalt	7081,790	4442,215	56,90	0,564	13,100	8,81	0,170	8,46	6,77	3,740	0,208	0,057		0,00	345	110	80	225	340	10	50	10	0	460	10	10,06	10,00	62,70	197,87		10	16	22	10	0	9	10	10	40	98,78	9710766	
28	JTL	97	28JTL 97	28JTL 97 2	P	2,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Mafic volcanic rock	Tholeiitic basalt	7088,510	4448,725	44,20	0,931	14,900	20,10	0,187	5,39	9,14	1,870	0,152	0,077		0,00	285	110	60	319	0	20	120	0	10	100	0	4,57	20,00	53,74	19,45		20	17	37	21	0	3	10	20	430	96,95	9710769	
27	JTL	97	27JTL 97	27JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Mafic volcanic rock	Tholeiitic basalt	7088,475	4448,920	48,60	0,879	15,100	13,20	0,220	7,65	10,30	1,940	0,120	0,080		0,00	292	130	70	313	0	0	70	10	0	30	10	10,06	10,00	35,83	82,02		10	15	30	13	0	13	0	30	140	98,09	9710768	
26	JTL	97	26JTL 97	26JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Mafic volcaniclastic rock	Tholeiitic basalt	7088,355	4448,980	49,40	0,795	15,700	12,20	0,196	7,11	10,90	1,890	0,136	0,085		0,00	255	110	50	295	10	20	80	0	10	160	0	8,23	20,00	35,83	85,40		0	15	30	16	0	2	0	20	210	98,41	9710767	
16	TOH	95	16TOH 95	16TOH 95 1	P	1,00	0,00	KUHMO	KIVISUO	KIVISUO	Mafic volcanic rock	Tholeiitic basalt	7088,615	4449,060	50,50	0,796	14,300	11,90	0,194	8,19	9,52	2,290	0,116	0,068		0,68	280	90	70	292	20	0	80	10	10	0	10	4,57	30,00	44,78	72,72		0	16	30	15	0	6	10	10	140	97,87	9512259	
33	JTL	97	33JTL 97	33JTL 97 1	P	1,00	0,00	SOTKAMO	KIVISUO	KIVISUO	Mafic volcanic rock	Tholeiitic basalt	7089,120	4449,710	51,60	0,921	14,900	10,90	0,194	7,59	9,67	2,590	0,121	0,081		0,00	207	100	100	313	10	0	90	10	10	70	10	13,72	10,00	53,74	61,73		10	15	30	15	0	6	0	30	130	98,57	9710771	
12	TOH	94	12TOH 94	12TOH 94 1	P	1,00	0,00	KUHMO	KELLOSELKÄ	KORPISAARI	Mafic volcanic rock	Tholeiitic basalt	7128,220	4452,415	50,40	0,690	14,200	10,60	0,198	8,41	8,03	2,400	0,135	0,077			388	110	60	272	10	10	90	20	0	0	10	3,66	20,00	53,74	96,40		0	8	44	18	0	9	10	0	50	95,14	9414391	
81	TOH	95	81TOH 95	81TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,195	4453,325	48,00	0,798	14,600	11,40	0,216	7,91	10,30	2,610	0,208	0,065		0,00	272	160	60	286	150	50	220	10	0	0	0	12,80	20,00	53,74	96,40		10	16	30	13	0	5	10	20	160	96,11	9512391	
169	JSN	95	169JSN 95	169JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	HANHISUO	Mafic volcanic rock	Tholeiitic basalt	7092,360	4453,380	53,10	1,100	17,600	8,51	0,140	4,03	10,10	2,960	0,127	0,094		0,00	321	160	70	353	90	0	90	0	10	0	30	5,49	30,00	80,61	98,09		0	18	44	20	0	5	0	20	100	97,76	9512412	
82	TOH	95	82TOH 95	82TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,095	4453,525	49,30	0,725	14,600	11,00	0,204	7,26	10,70	2,390	0,186	0,062		0,00	243	140	50	272	160	10	110	20	10	150	10	7,32	20,00	71,65	92,17		10	18	22	19	0	3	10	20	100	96,43	9512392	
90	TOH	94	90TOH 94	90TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Mafic volcanic rock	Tholeiitic basalt	7133,825	4453,660	47,70	0,780	14,900	11,80	0,219	7,64	9,77	2,620	0,440	0,063			259	160	70	313	200	30	110	20	10	7860	0	18,29	10,00	80,61	144,60		10	6	30	19	0	6	30	20	170	95,93	9411183	
101	TOH	95	101TOH 95	101TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7149,565	4453,710	50,00	0,775	13,800	10,80	0,201	8,44	8,71	3,360	0,195	0,063		0,00	167	110	60	292	70	10	90	10	10	0	10	10,06	10,00	53,74	183,49		10	15	22	13	0	8	20	20	140	96,34	9513892	
89	TOH	94	89TOH 94	89TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Mafic volcanic rock	Tholeiitic basalt	7133,450	4453,745	46,20	0,808	14,600	12,00	0,197	7,11	11,50	1,910	0,297	0,074			273	120	60	340	40	10	100	20	0	180	10	4,57	10,00	53,74	107,39		10	7	37	21	0	2	0	0	120	94,70	9411182	
18	JSN	95	18JSN 95	18JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	TAIVALJÄRVI	Mafic volcanic rock	Tholeiitic basalt	7093,080	4453,920	44,30	0,983	16,200	12,50	0,188	11,10	7,91	2,180	0,087	0,053		2,83	382	190	90	333	20	0	90	0	0	0	20	3,66	10,00	44,78	54,96		0	19	44	18	0	0	10	20	150	95,50	9512271	
300	TOH	93	300TOH 93	300TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI	Mafic volcanic rock	Tholeiitic basalt	7131,735	4454,105	48,80	0,849	15,400	10,40	0,225	7,70	10,10	2,630	0,595	0,085			285	140	50	302	30	20	100	20	0	0	0	10,97	0,00	143,30	135,30		40	9	52	19	0	4	0	40	350	96,78	9313758	
36	R	66	36R 0	36R 0 4	K	0,00	31,80	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,090	4454,205	56,10	0,690	11,650	8,72	0,130	5,64	1,36	2,800	3,860			0,57	3945	1945			10		60												105							90,95	971271	
36	R	66	36R 0	36R 0 4	K	0,00	22,50	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,090	4454,205	56,40	0,660	10,720	15,83	0,580	5,55	5,09	4,930	0,120			0,18	3065	849			40		330												40							99,88	971270	
39	R	66	39R 0	39R 0 1	K	0,00	21,80	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7149,540	4454,305	51,41	0,560	8,960	15,92	0,350	8,95	9,06	3,420	0,090			0,87	1025	360			60		100																			98,72	971277	
17	R	64	17R 0	17R 0 1	K	0,00	5,03	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7149,940	4454,345	50,53	0,820	13,040	14,95	0,530	7,30	8,47	1,750	0,180			1,26	1060	290			50	40	160												40							97,57	971261	
20	R	65	20R 0	20R 0 1	K	0,00	13,04	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,040	4454,345	50,51	0,560	13,390	14,13	0,450	8,95	9,12	0,940	1,450			0,33	1090	210			50		230																			99,50	971262	
35	R	66	35R 0	35R 0 1	K	0,00	50,20	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,190	4454,575	45,08	0,710	11,370	20,20	0,560	7,13	9,94	1,850	1,120			0,89	915	300					510																			97,96	971266	
90	TOH	95	90TOH 95	90TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7148,350	4454,620	49,20	0,853	13,800	12,20	0,229	7,77	8,42	2,650	0,227	0,076		0,00	246	130	50	319	80	10	110	20	0	0	20	12,80	20,00	89,57	69,34		0	21	37	18	0	3	10	20	100	95,43	9512396	
102	TOH	95	102TOH 95	102TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7148,650	4454,635	48,70	0,900	15,700	11,40	0,154	7,93	7,11	3,470	1,120	0,080		0,00	274	130	50	299	10	10	50	10	10	170	10	27,43	20,00	420,96	120,92		10	17	37	14	0	8	10	30	360	96,56	9513893	
183	JSN	95	183JSN 95	183JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KALLIOLAMPI	Mafic volcanic rock	Tholeiitic basalt	7094,240	4454,640	51,50	0,654	15,200	10,30	0,185	7,34	10,00	1,720	0,132	0,057		1,36	425	140	190	279	0	10	70	10	0	100	10	7,32	10,00	17,91	73,57		0	14	22	8	0	9	0	30	20	97,09	9612507	
179	JSN	95	179JSN 95	179JSN 95 2	P	2,00	0,00	SOTKAMO	TIPASJÄRVI	MYLLYKANGAS	Mafic volcanic rock	Tholeiitic basalt	7093,960	4454,700	49,20	0,894	15,200	12,20	0,178	7,62	9,82	2,320	0,089	0,078		0,75	292	130	130	313	50	10	80	0	10	120	10	3,66	30,00	35,83	81,18		0	15	30	14	0	6	10	30	90	97,60	9612505	
209	JSN	95	209JSN 95	209JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KUIKKASAARI	Mafic volcanic rock	Tholeiitic basalt	7095,880	4454,720	52,40	0,931	15,800	8,58	0,172	4,50	10,80	3,010	0,146	0,085		0,00	311	160	50	292	80	10	90	10	0	120	10	5,49	0,00	71,65	120,07		0	17	37	16	0	7	10	10	40	96,42	9512417	
154	JSK	93	154JSK 93	154JSK 93 1	P	1,00	0,00	KUHMO	AROLA	TIMOLA	Mafic volcanic rock	Tholeiitic basalt	7148,580	4454,740	50,20	0,835	13,400	11,60	0,239	7,46	8,98	2,820	0,299	0,072			259	120	70	307	80	10	110	10	10	0	30	10,97	20,00	53,74	87,10		10	9	44	21	0	6	10	0	100	95,91	9313798	
33	JSN	95	33JSN 95	33JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	LEHMILAMPI	Mafic volcanic rock	Tholeiitic basalt	7092,060	4454,750	49,40	0,817	14,800	11,10	0,243	6,66	11,10	2,540	0,336	0,073		0,00	237	110	90	286	50	10	150	10	0	230	10	10,97	20,00	53,74	115,85		0	18	30	13	0	5	30	0	30	97,07	9512317	
226	JSN	95	226JSN 95	226JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Mafic volcanic rock	Tholeiitic basalt	7095,800	4454,760	45,70	1,000	16,000	12,60	0,212	5,92	10,90	2,260	0,190	0,085		0,00	334	100	80	326	120	0	110	20	0	20	10	8,23	30,00	44,78	90,48		0	22	44	24	0	6	30	20	130	94,87	9512465	
91	TOH	95	91TOH 95	91TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7148,625	4454,845	49,70	0,889	13,700	11,80	0,228	6,17	10,30	2,590	0,253	0,081		0,00	144	100	40	326	110	20	100	20	10	0	10	10,97	0,00	44,78	90,48		10	17	37	15	0	0	20	30	140	95,71	9512397	
88	TOH	96	88TOH 96	88TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SYRJÄJOKI	Mafic volcanic rock	Tholeiitic basalt	7227,320	4454,860	51,20	0,999	14,900	10,30	0,194	6,48	8,94	4,030	0,154	0,091			306	120	40	279	50	20	180	10	0	40	10	8,23	10,00	62,70	50,74		10	17	37	18	0	8	10	30	280	97,29	9612669	
243	JSN	95	243JSN 95	243JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORISAARI	Mafic volcanic rock	Tholeiitic basalt	7095,120	4454,880	49,30	0,690	13,800	10,70	0,179	8,21	10,30	2,860	0,092	0,068		0,00	406	100	80	252	10	10	80	10	0	0	10	9,14	10,00	26,87	67,65		0	17	22	12	0	6	10	20	100	96,20	9512469	
84	TOH	96	84TOH 96	84TOH 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	JOKINIEMI	Mafic volcanic rock	Tholeiitic basalt	7225,440	4454,890	47,80	0,665	16,800	9,35	0,143	9,57	9,31	2,480	0,188	0,055			299	240	30	218	110	10	90	10	10	1900	20	12,80	10,00	53,74	102,32		10	17	15	8	0	0	10	10	60	96,36	9612668	
79	TOH	95	79TOH 95	79TOH 95 1	P	1,00	0,00	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic basalt	7150,895	4454,925	50,20	0,740	13,900	11,60	0,191	7,66	9,14	2,220	0,200	0,065		0,00	241	160	70	292	90	20	90	0	0	1030	10	8,23	10,00	44,78	125,99		10	16	22	13	0	1	10	30	170	95,92	9512389	
117	TOH	96	117TOH 96	117TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	ISONKIVENAHO	Mafic volcanic rock	Tholeiitic basalt	7231,980	4455,010	51,40	0,660	15,500	9,31	0,161	7,60	8,97	3,780	0,437	0,051		0,00	299	160	60	224	40	20	70	10	10	80	10	21,95	30,00	125,39	162,35		0	14	15	11		8	20	10	80	97,87	9634319	
11	SII	94	11SII 94	11SII 94 4	K	0,00	186,15	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Tholeiitic basalt	7127,673	4455,312	54,90	0,740	14,900	7,81	0,130	7,39	7,91	3,070	0,459	0,084			361	100	50	266	70	30	110	20	0	1290	0	20,12	10,00	125,39	97,24		0	6	44	20	0	2	10	10	50	97,39	9413448	
11	SII	94	11SII 94	11SII 94 4	K	0,00	294,40	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Tholeiitic basalt	7127,673	4455,312	54,00	0,816	14,700	9,01	0,185	6,93	8,81	2,910	0,240	0,092			379	150	50	305	0	20	100	10	10	0	0	4,57	20,00	44,78	125,15		0	6	52	18	0	2	20	10	70	97,69	9413449	
13	TOH	95	13TOH 95	13TOH 95 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PÄREKANGAS	Mafic volcanic rock	Tholeiitic basalt	7125,540	4455,340	50,70	0,934	15,800	10,70	0,163	6,37	9,66	3,090	0,407	0,090		0,66	99	80	90	319	0	10	40	0	10	0	10	18,29	0,00	98,52	86,25		0	16	44	25	0	1	10	10	140	97,91	9512256	
14	TOH	95	14TOH 95	14TOH 95 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PÄREKANGAS	Mafic volcanic rock	Tholeiitic basalt	7125,615	4455,355	51,30	0,636	17,000	8,97	0,147	6,35	10,60	2,800	0,218	0,048		0,70	431	170	220	272	30	10	50	10	10	0	20	6,40	10,00	53,74	87,94		10	13	22	10	0	6	10	0	70	98,07	9512257	
3	SII	93	3SII 93	3SII 93 1	K	0,00	50,00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Tholeiitic basalt	7127,615	4455,369	55,30	0,823	16,100	6,31	0,142	6,58	9,27	3,350	0,556	0,084			476	150	90	328	100	20	90	20	0	2880	20	21,00	0,00	161,00	126,00	0	10	6	44	17	0	0	10	10	70	98,52	9313957	
12	TOH	95	12TOH 95	12TOH 95 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PÄREKANGAS	Mafic volcanic rock	Tholeiitic basalt	7125,450	4455,380	48,80	0,706	15,000	13,50	0,223	5,29	11,30	2,310	0,305	0,083		0,70	346	180	110	265	0	0	60	0	0	0	10	9,14	30,00	44,78	82,87		10	17	30	13	0	6	10	10	460	97,52	9512255	
116	TOH	96	116TOH 96	116TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	ISONKIVENAHO	Mafic volcanic rock	Tholeiitic basalt	7232,350	4455,580	49,20	0,943	15,400	10,60	0,225	6,73	11,50	2,880	0,491	0,102		0,00	285	140	70	286	110	20	100	0	10	560	10	22,86	30,00	143,31	183,49		0	17	44	19		0	10	20	130	98,07	9634318	
287	JSN	95	287JSN 95	287JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORINIEMI	Mafic volcanic rock	Tholeiitic basalt	7094,480	4455,600	46,50	0,927	15,700	12,40	0,208	7,50	10,20	2,540	0,144	0,076		0,00	305	140	70	292	0	10	100	10	0	0	10	11,89	30,00	53,74	98,09		10	15	37	17	0	4	10	20	70	96,20	9512478	
10	SII	93	10SII 93	10SII 93 1	K	0,00	7,00	KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7126,045	4455,600	52,50	0,930	16,800	9,65	0,175	4,58	8,88	3,940	0,602	0,087			337	130	80	331	0	10	60	20	0	240	20	55,78	10,00	107,48	103,16		0	8	52	19	0	2	0	10	270	98,14	9413789	
15	TOH	95	15TOH 95	15TOH 95 1	P	1,00	0,00	KUHMO	PAHAKANGAS	PÄREKANGAS	Mafic volcanic rock	Tholeiitic basalt	7125,740	4455,700	52,90	0,708	16,000	9,17	0,117	4,86	10,20	3,030	0,259	0,073		1,46	380	170	100	279	230	20	60	10	0	0	20	5,49	20,00	35,83	112,46		10	15	22	17	0	10	30	0	120	97,32	9512258	
24	TOH	96	24TOH 96	24TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KUIKKAVAARA	Mafic volcanic rock	Tholeiitic basalt	7229,150	4455,775	48,00	0,943	14,600	13,20	0,231	7,50	9,15	1,800	0,147	0,072			303	130	60	347	100	10	100	10	0	1550	10	8,23	0,00	35,83	93,01		10	17	37	18	0	11	0	20	170	95,64	9612645	
22	TOH	96	22TOH 96	22TOH 96 5	P	5,01	0,00	SUOMUSSALMI	KIANNANNIEMI	HEPOVAARA	Mafic volcanic rock	Tholeiitic basalt	7229,380	4455,780	51,00	0,759	13,600	10,60	0,180	7,47	10,20	1,760	0,112	0,061			246	140	80	265	60	10	60	10	10	230	0	1,83	10,00	44,78	221,54		10	17	30	16	0	8	0	50	140	95,74	9612644	
15	JSK	93	15JSK 93	15JSK 93 1	P	1,01	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Mafic volcanic rock	Tholeiitic basalt	7126,250	4455,830	51,40	0,812	17,400	8,31	0,183	6,14	9,94	3,640	0,193	0,069			361	180	40	299	50	10	70	20	0	1380	40	3,66	20,00	17,91	109,93		10	6	44	13	0	11	0	40	130	98,09	9315066	
292	JSN	95	292JSN 95	292JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	MUUTTOLA	Mafic volcanic rock	Tholeiitic basalt	7093,700	4455,840	51,80	0,667	13,600	9,92	0,175	8,60	11,30	1,130	0,103	0,068		0,00	476	150	50	252	90	0	70	20	10	470	20	10,06	0,00	44,78	76,95		10	21	22	14	0	8	10	10	110	97,36	9512480	
15	JSK	93	15JSK 93	15JSK 93 1	P	1,02	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Mafic volcanic rock	Tholeiitic basalt	7126,240	4455,850	51,10	0,775	16,600	8,85	0,202	5,65	11,80	2,400	0,228	0,058			318	140	10	285	50	20	100	20	10	770	30	2,74	10,00	53,74	94,71		0	7	37	17	0	6	20	20	120	97,66	9315067	
64	TOH	96	64TOH 96	64TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	NUOTTIAHO	Mafic volcanic rock	Tholeiitic basalt	7226,770	4455,935	48,40	0,774	14,500	11,20	0,230	5,96	11,90	1,910	0,223	0,066			267	140	50	306	140	10	100	10	10	110	10	10,97	0,00	62,70	87,10		10	17	22	15	0	26	10	30	390	95,16	9612659	
6	TOH	93	6TOH 93	6TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Mafic volcanic rock	Tholeiitic basalt	7126,217	4455,982	48,70	0,693	16,000	10,80	0,185	7,07	11,70	1,510	0,221	0,065			272	150	110	260	250	0	60	10	10	1080	50	1,37	0,00	8,96	85,41		0	6	30	18	0	8	0	30	170	96,94	9314396	
86	JSK	93	86JSK 93	86JSK 93 4	M	4,01	15,30	KUHMO	PAHAKANGAS	KIISUMONTTU	Mafic volcanic rock	Tholeiitic basalt	7126,198	4456,066	46,50	0,590	15,500	12,00	0,199	9,79	8,15	1,770	0,504	0,052			246	190	60	215	0	10	90	20	10	0	100	9,60	10,00	71,65	65,11		10	10	22	15	0	7	10	20	160	95,06	9314474	
25	TOH	96	25TOH 96	25TOH 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KUIKKAVAARA	Mafic volcanic rock	Tholeiitic basalt	7229,205	4456,090	48,60	1,040	14,500	12,90	0,201	6,75	9,72	2,110	0,189	0,091			175	100	40	360	140	0	100	10	10	560	10	9,14	10,00	35,83	87,10		10	17	52	22	0	3	10	20	230	96,10	9612646	
27	TOH	96	27TOH 96	27TOH 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KUIKKAVAARA	Mafic volcanic rock	Tholeiitic basalt	7229,110	4456,113	49,80	0,880	13,700	12,80	0,221	7,31	9,57	2,160	0,131	0,070			131	90	50	306	40	0	100	10	0	60	10	9,14	20,00	80,61	70,18		10	18	37	16	0	4	0	10	180	96,64	9612647	
42	TOH	96	42TOH 96	42TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONPERÄ	Mafic volcanic rock	Tholeiitic basalt	7228,240	4456,170	47,50	0,820	14,800	12,20	0,216	8,02	9,97	2,270	0,139	0,068			269	150	50	313	70	20	100	10	0	20	10	10,97	20,00	53,74	82,87		10	19	30	16	0	3	20	10	150	96,00	9612653	
29	TOH	96	29TOH 96	29TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KUIKKAVAARA	Mafic volcanic rock	Tholeiitic basalt	7228,993	4456,215	49,70	0,712	14,600	11,60	0,206	7,53	10,50	2,140	0,133	0,059			233	120	60	286	30	10	80	10	10	100	10	4,57	20,00	98,52	67,65		10	22	22	12	11	3	20	10	180	97,18	9612648	
67	TOH	96	67TOH 96	67TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7226,290	4456,350	52,20	0,607	14,000	10,20	0,211	6,99	11,40	1,020	0,156	0,059			278	70	40	272	90	10	70	10	10	630	10	11,89	0,00	53,74	69,34		0	14	15	12	0	5	10	20	300	96,84	9612662	

4	TOH	96	4TOH 96	4TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMPI	Mafic volcanic rock	Tholeiitic basalt	7228,420	4456,380	51,30	0,619	14,100	10,40	0,204	8,55	9,37	2,150	0,124	0,056		301	70	60	292	30	0	70	10	10	30	10	0,00	0,00	35,83	76,10		10	15	22	12	0	7	10	20	150	96,87	9612634	
31	TOH	96	31TOH 96	31TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMPI	Mafic volcanic rock	Tholeiitic basalt	7228,950	4456,470	48,40	0,716	14,600	11,60	0,185	7,82	9,81	2,020	0,080	0,058		238	130	40	286	40	10	90	10	0	30	10	6,40	0,00	80,61	111,62		0	17	22	0	0	9	20	20	320	95,29	9612649	
315	JSN	95	315JSN 95	315JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	RAATENIEMI	Mafic volcanic rock	Tholeiitic basalt	7093,580	4456,710	51,60	0,674	13,000	9,95	0,307	8,94	10,30	1,950	0,178	0,053	0,00	634	270	70	272	30	10	160	20	10	0	20	5,49	10,00	89,57	68,49		10	21	22	15	0	0	20	10	70	96,95	9512483	
67	IJY	94	67IJY 94	67IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,320	4456,810	52,40	0,632	14,100	10,30	0,184	8,24	9,32	2,580	0,142	0,056		281	60	90	279	40	10	80	20	0	0	0	8,23	30,00	44,78	79,49		10	16	22	14	0	4	20	20	80	97,95	9414591	
53	JSK	93	53JSK 93	53JSK 93 2	M	1,01	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Mafic volcanic rock	Tholeiitic basalt	7126,600	4456,845	52,10	0,659	14,100	9,85	0,154	8,64	7,46	3,960	0,145	0,066		472	10	60	273	220	20	100	20	0	8860	10	2,74	10,00	53,74	179,27		10	3	37	15	0	3	20	10	80	97,13	9313516	
53	JSK	93	53JSK 93	53JSK 93 2	M	1,02	0,00	KUHMO	SIIVIKKO	SIIVIKKO	Mafic volcanic rock	Tholeiitic basalt	7126,600	4456,845	50,70	0,648	13,500	10,20	0,173	9,35	7,68	3,500	0,100	0,065		545	180	50	268	270	20	120	10	10	9390	0	2,74	10,00	44,78	161,51		0	6	30	19	0	3	0	10	70	95,92	9313517	
69	IJY	94	69IJY 94	69IJY 94 2	P	4,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,315	4456,855	45,70	0,445	15,300	9,97	0,207	8,39	15,10	0,970	0,121	0,108		460	200	70	190	10	10	80	10	10	0	10	8,23	20,00	80,61	116,69		10	14	15	5	0	5	20	30	160	96,31	9414595	
69	IJY	94	69IJY 94	69IJY 94 2	P	3,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,320	4456,860	70,20	0,429	15,400	3,20	0,042	1,30	2,75	5,130	0,807	0,144		18	10	10	41	0	10	20	10	0	0	10	26,52	20,00	331,39	101,47		0	25	244	23	2	0	60	130	200	99,40	9414594	
69	IJY	94	69IJY 94	69IJY 94 1	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,325	4456,860	51,50	0,590	14,000	10,20	0,186	8,62	9,26	2,350	0,187	0,053		307	70	80	258	70	10	80	10	10	0	0	9,14	30,00	62,70	83,71		10	15	22	13	0	3	20	10	80	96,95	9414593	
69	IJY	94	69IJY 94	69IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,330	4456,860	50,70	0,613	14,200	10,50	0,207	7,77	10,20	2,810	0,188	0,059		284	60	90	286	30	0	70	10	10	0	10	10,97	20,00	53,74	109,93		10	13	22	13	0	2	10	30	130	97,25	9414592	
71	IJY	94	71IJY 94	71IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,320	4456,890	46,90	0,656	11,600	11,30	0,210	12,70	10,10	1,760	0,114	0,061		985	340	90	238	10	10	80	0	0	0	0	3,66	20,00	62,70	53,27		0	16	22	15	0	10	10	30	100	95,40	9414597	
71	IJY	94	71IJY 94	71IJY 94 1	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,320	4456,890	49,10	1,310	14,000	12,80	0,203	6,33	9,41	2,360	0,653	0,159		138	120	70	306	220	10	60	20	10	70	10	32,00	20,00	223,92	166,58		10	23	81	23	0	4	0	10	470	96,33	9414598	
71	IJY	94	71IJY 94	71IJY 94 1	P	3,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,320	4456,900	48,60	0,706	12,300	10,20	0,203	9,24	12,40	2,000	0,139	0,053		766	210	80	245	20	20	80	10	10	0	0	6,40	10,00	53,74	110,77		10	16	30	16	0	4	0	20	160	95,84	9414599	
74	IJY	94	74IJY 94	74IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,300	4457,030	48,70	0,712	11,000	10,70	0,220	10,40	13,50	1,270	0,133	0,003		835	130	70	177	0	0	70	10	10	0	10	6,40	10,00	26,87	133,60		10	16	37	15	0	6	0	20	220	96,64	9414601	
66	TOH	96	66TOH 96	66TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7226,490	4457,060	45,50	0,689	15,200	12,10	0,204	9,05	11,00	1,430	0,122	0,062		309	70	50	326	230	10	80	10	10	400	10	5,49	30,00	44,78	51,58		0	15	22	13	0	1	30	10	200	95,36	9612661	
76	TOH	94	76TOH 94	76TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126,822	4457,072	53,50	0,612	14,000	8,78	0,145	7,59	8,22	4,230	0,097	0,050		337	120	70	238	10	10	30	20	10	0	10	5,49	20,00	89,57	131,07		0	8	44	15	0	3	10	30	70	97,22	9411014	
50	TOH	95	50TOH 95	50TOH 95 2	P	2,01	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126,820	4457,075	53,20	0,583	15,200	8,35	0,144	7,64	7,05	5,340	0,108	0,081	1,19	340	130	70	231	0	10	40	0	0	0	10	3,66	10,00	35,83	89,63		10	15	37	13	0	6	0	20	30	97,70	9512333	
138	TOH	94	138TOH 94	138TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126,866	4457,105	52,20	0,641	13,600	10,10	0,198	9,27	7,33	4,660	0,084	0,057		362	140	90	265	90	20	90	20	10	0	10	5,49	10,00	44,78	96,40		0	17	22	17	0	1	0	20	40	98,14	9411225	
75	IJY	94	75IJY 94	75IJY 94 2	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,200	4457,130	49,80	1,490	13,200	14,20	0,210	5,12	8,86	2,570	0,919	0,199		92	80	80	333	230	10	100	20	10	250	10	35,66	40,00	250,78	194,49		0	21	111	25	0	1	20	60	2630	96,57	9414603	
177	TOH	96	177TOH 96	177TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	HAARAJOENAHO	Mafic volcanic rock	Tholeiitic basalt	7234,085	4457,145	50,60	0,751	13,800	10,90	0,211	7,17	10,90	2,330	0,221	0,068	0,00	251	130	60	286	80	20	120	20	0	20	0	10,06	20,00	89,57	152,21		0	16	22	11		6	20	20	90	96,95	9634344	
140	TOH	94	140TOH 94	140TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126,806	4457,167	52,90	0,590	14,400	9,66	0,186	9,22	6,47	4,480	0,074	0,070		401	160	80	252	30	10	150	20	0	0	10	4,57	40,00	17,91	66,80		10	17	37	12	0	0	30	10	40	98,05	9411227	
30	TOH	94	30TOH 94	30TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126,891	4457,197	53,30	0,615	13,800	13,00	0,227	8,49	1,09	0,540	0,368	0,032		958	250	0	279	50	0	60	30	10	0	10	16,46	30,00	349,31	12,68		0	7	30	14	0	9	10	10	170	91,46	9414400	
77	TOH	96	77TOH 96	77TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Tholeiitic basalt	7228,230	4457,255	50,70	0,958	14,900	10,40	0,198	7,31	9,48	2,470	0,139	0,087		279	150	30	306	80	10	100	20	0	240	10	4,57	30,00	107,48	111,62		10	18	37	14	0	7	30	30	260	96,64	9612665	
438	EJL	94	438EJL 94	438EJL 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONIEMI	Mafic volcanic rock	Tholeiitic basalt	7226,520	4457,340	49,10	0,681	15,000	12,10	0,189	7,97	9,54	2,550	0,069	0,063		237	100	150	272	100	10	90	10	0	0	0	8,23	10,00	62,70	95,55		10	14	22	16	0	4	0	0	200	97,26	9414622	
14	SMS	70	14SMS 70	14SMS 70 4	K	0,00	85,95	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Mafic volcanic rock	Tholeiitic basalt	7230,250	4457,340	50,10	0,774	14,200	12,10	0,236	8,84	6,21	3,580	0,389	0,059		1081	180	70	258	30	0	160	30	10	2070	10	26,52	0,00	116,44	105,70		0	17	44	10	0	0	10	0	80	96,49	9414749	
80	TOH	96	80TOH 96	80TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Tholeiitic basalt	7228,250	4457,430	50,00	0,805	14,700	11,50	0,192	6,69	10,40	1,910	0,113	0,066		225	120	50	292	70	10	90	10	0	480	10	6,40	0,00	62,70	109,93		10	16	22	22	0	9	20	20	390	96,38	9612666	
125	TOH	96	125TOH 96	125TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KOMERONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7227,760	4457,440	48,50	0,825	14,900	12,40	0,232	7,82	10,20	2,140	0,125	0,074	0,00	230	130	50	299	180	0	80	10	10	330	10	8,23	10,00	44,78	91,32		0	15	30	13		5	10	20	290	97,22	9634320	
21	MKT	94	21MKT 94	21MKT 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONIEMI	Mafic volcanic rock	Tholeiitic basalt	7225,980	4457,500	52,40	0,556	13,900	9,79	0,165	8,35	10,60	1,560	0,067	0,047		205	100	100	258	110	10	40	10	0	350	0	6,40	0,00	44,78	60,04		10	16	15	9	0	4	10	10	330	97,44	9414619	
97	IJY	94	97IJY 94	97IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,290	4457,510	47,90	0,788	14,700	12,10	0,200	7,97	10,60	2,080	0,120	0,067		220	140	90	306	150	10	80	20	0	710	10	9,14	0,00	71,65	94,71		0	18	30	16	0	5	10	40	350	96,53	9414606	
179	TOH	96	179TOH 96	179TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KORKEA-AHO	Mafic volcanic rock	Tholeiitic basalt	7234,315	4457,570	48,70	0,849	14,400	12,30	0,242	7,67	9,37	2,860	0,247	0,069	0,00	271	120	70	319	60	0	100	10	0	30	10	14,63	20,00	98,52	125,15		10	18	30	16		10	30	0	60	96,71	9634345	
128	TOH	96	128TOH 96	128TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KOMERONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7227,600	4457,650	51,00	0,882	15,700	11,90	0,303	4,46	10,00	2,300	0,199	0,078	0,00	328	160	50	313	60	10	100	10	10	210	10	9,14	0,00	89,57	86,25		0	17	30	19		10	0	30	730	96,82	9634321	
121	IJY	94	121IJY 94	121IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,360	4457,650	49,30	0,693	13,600	11,70	0,227	7,23	11,00	2,600	0,121	0,058		232	140	80	279	50	10	80	10	0	0	0	5,49	40,00	17,91	81,18		10	16	22	16	0	3	40	10	220	96,53	9414610	
42	TOH	94	42TOH 94	42TOH 94 1	P	1,00	0,00	KUHMO	PAHAKANGAS	KESÄKANKAANSUO	Mafic volcanic rock	Tholeiitic basalt	7126,115	4457,655	51,00	0,698	14,300	10,10	0,155	8,30	7,14	3,590	0,095	0,052		395	90	100	279	10	0	80	20	10	0	10	3,66	0,00	80,61	186,88		0	5	37	18	0	6	0	30	160	95,43	9414490	
160	TOH	96	160TOH 96	160TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	ISO NIITTYLAMPI	Mafic volcanic rock	Tholeiitic basalt	7232,768	4457,655	50,50	0,902	16,100	11,30	0,258	5,61	9,50	4,030	0,293	0,072	0,00	309	150	50	333	50	40	170	10	0	50	10	12,80	10,00	116,44	120,92		0	18	30	19		7	0	0	120	98,57	9634334	
121	IJY	94	121IJY 94	121IJY 94 1	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,365	4457,660	49,30	1,480	13,300	13,30	0,210	5,60	9,26	2,960	0,338	0,200		93	80	70	326	250	10	50	10	0	90	0	11,89	0,00	80,61	169,12		0	17	111	26	0	5	20	30	1090	95,95	9414611	
120	IJY	94	120IJY 94	120IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Tholeiitic basalt	7229,350	4457,700	51,00	0,765	14,900	10,50	0,171	5,76	10,70	3,360	0,138	0,068		256	110	50	313	30	10	60	20	10	0	10	6,40	40,00	44,78	168,27		0	18	30	15	0	5	30	10	220	97,36	9414609	
96	IJY	94	96IJY 94	96IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,390	4457,740	49,40	0,439	12,000	10,10	0,213	11,40	8,78	2,210	0,094	0,033		821	220	60	224	20	10	70	10	0	360	10	10,06	20,00	44,78	59,19		0	15	7	5	0	1	30	20	240	94,67	9414605	
180	TOH	96	180TOH 96	180TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	KORKEA-AHO	Mafic volcanic rock	Tholeiitic basalt	7234,510	4457,740	48,80	0,753	14,600	10,70	0,198	7,23	11,80	1,800	0,077	0,066	0,00	246	140	50	286	80	10	70	10	10	490	10	9,14	20,00	44,78	117,54		0	19	22	14		8	10	40	70	96,02	9634346	
100	IJY	94	100IJY 94	100IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,480	4457,750	51,10	0,715	14,000	10,20	0,179	6,88	9,91	3,800	0,127	0,070		196	130	70	272	30	10	60	10	10	10	10	6,40	20,00	35,83	95,55		0	14	22	13	0	5	0	20	970	96,98	9414607	
100	IJY	94	100IJY 94	100IJY 94 2	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,480	4457,750	48,60	0,721	15,200	11,30	0,200	8,00	10,70	1,800	0,115	0,065		345	130	60	272	130	0	80	0	0	850	10	7,32	20,00	44,78	82,87		0	18	30	16	0	2	0	20	330	96,70	9414608	
182	TOH	96	182TOH 96	182TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	KORKEA-AHO	Mafic volcanic rock	Tholeiitic basalt	7234,220	4457,780	48,40	0,829	14,100	12,30	0,212	7,22	11,70	1,980	0,093	0,064	0,00	282	140	60	333	20	0	60	10	0	30	10	7,32	10,00	17,91	175,88		0	16	30	15		6	20	20	100	96,90	9634347	
182	TOH	96	182TOH 96	182TOH 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KORKEA-AHO	Mafic volcanic rock	Tholeiitic basalt	7234,220	4457,790	49,90	0,883	15,400	11,60	0,190	5,62	10,30	3,560	0,146	0,073	0,00	305	140	50	347	50	10	70	20	0	70	10	11,89	0,00	26,87	226,62		0	16	30	19		3	20	30	150	97,67	9634348	
62	TOH	96	62TOH 96	62TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,940	4457,920	51,10	0,807	15,700	11,40	0,269	5,32	9,03	3,050	0,111	0,065		222	140	50	292	110	10	100	10	0	680	0	7,32	10,00	80,61	60,04		10	15	22	14	0	6	20	0	310	96,85	9612658	
99	TOH	96	99TOH 96	99TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONKANGAS	Mafic volcanic rock	Tholeiitic basalt	7232,470	4457,940	50,30	0,829	14,700	11,00	0,205	6,37	12,00	1,640	0,421	0,071	0,00	296	160	90	319	130	70	110	10	10	990	10	21,95	0,00	161,22	107,39		0	14	30	15		3	10	20	220	97,54	9634313	
97	TOH	96	97TOH 96	97TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONKANGAS	Mafic volcanic rock	Tholeiitic basalt	7232,300	4458,040	52,80	0,579	15,200	9,26	0,204	7,74	10,90	1,700	0,288	0,049	0,00	402	110	100	272	60	10	90	10	0	290	10	16,46	10,00	125,39	76,95		10	15	15	13		1	10	20	140	98,72	9634312	
195	TOH	96	195TOH 96	195TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	MIKONLEHTO	Mafic volcanic rock	Tholeiitic basalt	7234,795	4458,040	49,50	0,787	14,200	11,50	0,190	7,66	10,90	1,740	0,095	0,076	0,00	268	140	50	306	90	10	90	20	10	340	10	7,32	10,00	62,70	100,63		10	16	22	11		3	20	30	100	96,65	9634353	
5	TOH	96	5TOH 96	5TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	RAISKIONAHO	Mafic volcanic rock	Tholeiitic basalt	7229,860	4458,180	49,40	0,850	15,500	11,70	0,294	4,86	11,60	1,890	0,171	0,077		330	140	60	299	70	10	130	10	0	240	10	10,97	20,00	98,52	71,88		10	15	37	14	0	10	10	40	550	96,34	9612635	
198	TOH	96	198TOH 96	198TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	MIKONLEHTO	Mafic volcanic rock	Tholeiitic basalt	7235,050	4458,230	54,30	0,704	15,500	8,26	0,170	7,01	8,14	2,900	0,731	0,210	0,00	350	120	30	156	50	20	80	10	0	20	10	27,43	0,00	295,57	285,81		0	17	81	9		3	10	50	100	97,93	9634354	
191	TOH	96	191TOH 96	191TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	MIKONLEHTO	Mafic volcanic rock	Tholeiitic basalt	7234,880	4458,255	48,90	0,734	14,100	10,90	0,193	7,69	11,20	2,480	0,078	0,056	0,00	239	100	40	286	30	0	80	20	10	50	10	4,57	0,00	26,87	112,46		0	18	22	14		9	10	40	80	96,33	9634350	
94	TOH	96	94TOH 96	94TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONKANGAS	Mafic volcanic rock	Tholeiitic basalt	7231,900	4458,380	50,60	0,850	13,000	11,50	0,192	7,57	10,90	1,660	0,434	0,072		326	90	40	286	110	10	100	10	0	780	10	15,54	0,00	161,22	189,41		0	15	37	10	0	8	10	20	190	96,78	9612671	
58	TOH	96	58TOH 96	58TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	AHONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7229,920	4458,400	49,60	0,801	14,000	11,80	0,202	8,07	9,94	2,150	0,116	0,066		311	130	50	299	120	20	100	20	0	260	10	3,66	0,00	62,70	101,47		0	14	30	11	0	10	10	10	730	96,75	9612657	
103	TOH	96	103TOH 96	103TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7232,750	4458,480	47,70	0,522	14,100	12,00	0,239	8,44	12,90	1,290	0,199	0,008	0,00	335	160	80	313	40	0	100	10	0	160	20	12,80	0,00	62,70	82,02		0	13	0	6		5	0	10	390	97,40	9634315	
109	TOH	96	109TOH 96	109TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7233,220	4458,510	49,90	0,632	13,800	12,20	0,235	9,32	7,65	2,480	0,342	0,056	0,00	310	70	70	292	30	10	250	10	10	30	10	15,54	0,00	170,18	99,78		0	15	15	11		6	20	0	50	96,62	9634316	
83	TOH	96	83TOH 96	83TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KÄRKKÄISENSUO	Mafic volcanic rock	Tholeiitic basalt	7232,540	4458,535	53,50	0,632	14,600	8,90	0,202	6,84	11,20	1,470	0,108	0,056		274	70	40	279	90	10	70	10	10	160	10	10,06	20,00	89,57	53,27		0	14	22	13	0	7	20	30	70	97,51	9612667	
55	TOH	96	55TOH 96	55TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	AHONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7229,740	4458,565	50,90	0,887	15,100	11,70	0,189	7,18	8,53	2,830	0,131	0,078		220	80	30	306	50	10	60	10	10	60	10	2,74	0,00	80,61	75,26		10	14	37	16	0	1	0	20	90	97,53	9612656	
5	MKT	94	5MKT 94	5MKT 94 1	P	2,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONIEMI	Mafic volcanic rock	Tholeiitic basalt	7225,760	4458,700	43,10	0,321	8,830	11,00	0,167	22,70	6,16	0,000	0,006	0,031		2135	780	130	156	0	10	60	20	10	0	10	6,40	0,00	26,87	4,23		10	16	0	5	0	5	20	0	80	92,32	9414618	
102	TOH	96	102TOH 96	102TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	TARRONKANGAS	Mafic volcanic rock	Tholeiitic basalt	7232,010	4458,750	52,20	0,650	14,300	10,70	0,212	8,27	9,88	1,690	0,295	0,054	0,00	262	60	60	292	90	20	70	0	0	100	10	17,37	10,00	98,52	82,87		10	15	22	17		15	0	20	90	98,25	9634314	
188	TOH	96	188TOH 96	188TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VEHKA-AHO	Mafic volcanic rock	Tholeiitic basalt	7235,130	4458,750	43,10	0,869	16,000	12,60	0,231	8,55	11,40	1,430	0,126	0,069	0,00	307	170	60	347	90	10	150	0	10	50	10	8,23	20,00	98,52	154,74		10	18	22	19		8	10	10	60	94,38	9634349	
49	TOH	96	49TOH 96	49TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	AHONNIEMI	Mafic volcanic rock	Tholeiitic basalt	7229,445	4458,770	47,80	0,814	15,100	12,10	0,224	7,72	9,97	2,240	0,188	0,055		227	120	110	299	40	10	140	10	0	270	10	10,06	0,00	98,52	100,63		0	27	30	13	0	9	30	30	190	96,21	9612654	
114	TOH	96	114TOH 96	114TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7232,375	4458,915	52,10	0,546	14,600	10,30	0,190	8,56	9,93	2,140	0,223	0,051	0,00	357	70	60	258	80	20	90	10	10	50	10	8,23	10,00	80,61	93,86		0	16	15	13		4	0	10	110	98,64	9634317	
131	TOH	96	131TOH 96	131TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Tholeiitic basalt	7232,880	4459,415	47,80	0,895	13,800	13,10	0,272	7,07	9,96	2,270	0,582	0,089	0,00	274	120	60	347	80	10	140	10	10	610	10	26,52	10,00	179,13	130,22		0	18	15	21		7	10	40	180	95,84	9634322	
136	TOH	96	136TOH 96	136TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Tholeiitic basalt	7232,410	4459,430	51,10	0,647	14,500	11,00	0,234	7,60	9,25	3,290	0,437	0,063	0,00	296	60	50	286	90	30	470	0	10	60	10	24,69	30,00	134,35	83,71		10	18	15	12		5	30	20	120	98,12	9634323	
140	TOH	96	140TOH 96	140TOH 96 1	P	1,01	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Tholeiitic basalt	7232,880	4459,682	50,30	0,788	14,200	11,50	0,258	6,94	11,10	2,360	0,496	0,069	0,00	254	150	60	306	180	20	190	20	0	820	10	24,69	10,00	152,26	160,66		0	17	22	15		8	10	40	150	98,01	9634324	
140	TOH	96	140TOH 96	140TOH 96 1	P	1,03	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Tholeiitic basalt	7232,908	4459,769	49,60	1,120	14,800	10,20	0,207	6,98	10,50	2,670	0,789	0,112	0,00	129	60	50	299	60	20	90	10	0	570	10	37,49	40,00	179,13	200,40		0	20	59	14		1	30	50	300	96,98	9634325	
141	TOH	96	141TOH 96	141TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PITKÄNSAARI	Mafic volcanic rock	Tholeiitic basalt	7233,228	4459,970	50,30	0,746	13,500	11,70	0,213	8,64	7,83	3,590	0,146	0,068	0,00	269	100	60	286	60	10	180	10	0	50	10	14,63	30,00	62,70	76,95		10	17	22	11		11	0	10	60	96,73	9634327	
39	TOH	96	39TOH 96	39TOH 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	HAUKISAARI	Mafic volcanic rock	Tholeiitic basalt	7234,230	4460,950	48,70	0,779	14,100	11,70	0,215	7,59	10,10	2,260	0,345	0,064		259	140	50	299	90	20	120	10	10	50	0	36,58	0,00	152,26	100,63		10	18	22	14	0	10	0	0	100	95,85	9612652	
192	TTT	97	192TTT 97	192TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	LAMMINAHO	Mafic volcanic rock	Tholeiitic basalt	7154,030	4474,580	48,80	0,606	16,200	10,30	0,183	8,34	10,50	2,320	0,367	0,060	0,95	390	190	110	244	30	10	80	10	0	70	10	16,46	10,00	98,52	85,40		10	15	15	11	0	4	0	20	10	97,68	9710734	
23	SMS	62	23SMS 62	23SMS 62 4	K	0,00	154,70	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Tholeiitic basalt	7228,050	4456,800	47,60	0,520	14,700	7,67	0,126	9,88	9,72	3,930	0,213	0,037		345	140	70	224	130	10	60	20	10	3330	10	14,63	20,00	98,52	119,23		0	15	7	10	0	1	0	20	810	94,40	9414764	
23	SMS	62	23SMS 62	23SMS 62 4	K	0,00	160,25	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Tholeiitic basalt	7228,050	4456,800	48,80	1,030	13,400	12,60	0,206	6,39	9,14	3,520	0,154	0,086		36	60	60	319	60	10	70	20	10	2460	0	7,32	0,00	26,87	83,71		10	16	52	21	0	1	0	10	430	95,33	9414765	
70	IJY	94	70IJY 94	70IJY 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Gabbroic dike	Tholeiitic sill rock	7229,320	4456,890	49,50	1,360	14,000	12,80	0,206	5,24	9,09	3,230	0,283	0,178		92	80	80	313	290	0	50	10	10	120	10	9,14	10,00	98,52	283,27		0	23	96	23	0	8	20	40	580	95,89	9414596	
172	TTT	96	172TTT 96	172TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI N	Mafic volcanic rock	Tholeiitic volcanic rock	7131,715	4454,217	47,90	0,754	14,900	10,60	0,243	8,70	11,80	1,860	0,335	0,079		434	110	40	279	0	20	190	0	10	70	10	12,80	20,00	62,70	110,77		0	12	37	15	0	0	40	20	130	97,17	9612719	
58	R	72	58R 0	58R 0 1	K	0,00	17,71	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic volcanic rock	7150,090	4454,455	57,04	0,650	11,890	12,58	0,450	6,22	2,34	0,310	4,550		1,74	2145	620			20		360												60							96,03	971281	
58	R	72	58R 0	58R 0 1	K	0,00	40,63	KUHMO	AROLA	AROLA	Mafic volcanic rock	Tholeiitic volcanic rock	7150,090	4454,455	53,10	0,600	13,300	13,04	0,340	4,51	14,14	0,420	0,210		1,10	275	567			580	35	180																			99,66	971280	
163	MAF	96	163MAF 96	163MAF 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7230,060	4455,490	56,30	0,929	15,600	8,27	0,144	5,62	6,88	2,970	1,510	0,331	0,00	167	80	10	170	20	20	70	0	10	50	10	40,23	0,00	841,92	438,02		0	21	133	20		8	20	40	110	98,55	9634366	
1	SII	93	1SII 93	1SII 93 2	K	0,00	50,00	KUHMO	SIIVIKKO	SIIVIKKO	Mafic volcanic rock	Tholeiitic volcanic rock	7126,385	4456,250	50,20	0,826	17,500	8,76	0,147	5,60	9,99	3,550	0,267	0,085		312	150	140	309	0	10	60	20	0	0	50	8,00	10,00	36,00	92,00	0	10	6	37	10	0	6	20	40	180	96,93	9313954	
1	SII	93	1SII 93	1SII 93 2	K	0,00	62,00	KUHMO	SIIVIKKO	SIIVIKKO	Mafic volcanic rock	Tholeiitic volcanic rock	7126,385	4456,250	48,80	0,760	15,500	11,60	0,226	7,34	9,28	1,850	0,317	0,071		304	150	80	271	0	10	230	20	10	0	80	13,00	0,00	54,00	63,00	0	0	5	30	17	0	3	0	20	190	95,74	9313955	
124	MAF	96	124MAF 96	124MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7229,630	4456,290	47,90	0,835	14,600	11,90	0,224	7,76	9,98	2,150	0,134	0,060	0,00	269	150	50	313	10	20	110	10	0	20	10	7,32	0,00	44,78	86,25		0	15	30	18		4	0	10	170	95,54	9634361	
126	MAF	96	126MAF 96	126MAF 96 1	P	1,02	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7229,820	4456,340	49,00	0,768	14,300	11,50	0,237	6,27	12,50	1,430	0,226	0,073	0,00	252	150	40	286	110	10	90	10	0	490	10	6,40	10,00	62,70	115,00		0	14	30	13		10	20	20	340	96,30	9634362	
121	MAF	96	121MAF 96	121MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7229,420	4456,350	51,50	0,738	13,900	10,90	0,215	6,80	10,90	1,680	0,179	0,065	0,00	244	140	50	245	90	10	90	10	0	20	10	5,49	20,00	44,78	76,10		10	16	30	14		6	20	30	230	96,88	9634360	
120	MAF	96	120MAF 96	120MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7229,280	4456,380	49,30	0,819	17,200	11,40	0,159	6,22	8,36	4,090	0,160	0,074	0,00	125	80	40	292	40	0	70	10	0	40	10	11,89	20,00	62,70	128,53		0	18	30	16		10	40	20	360	97,78	9634359	
171	MAF	96	171MAF 96	171MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7229,820	4457,080	54,00	0,790	18,600	9,68	0,214	5,24	6,08	3,490	0,312	0,084	0,00	330	80	20	272	80	10	150	20	0	4840	10	13,72	20,00	143,31	180,96		0	17	52	10		3	10	30	270	98,49	9634370	
153	MAF	96	153MAF 96	153MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7231,025	4457,230	50,50	0,788	14,500	11,10	0,227	7,40	9,34	3,510	0,351	0,071	0,00	268	100	50	313	30	20	100	10	10	260	10	21,95	10,00	116,44	73,57		0	16	30	17		7	0	20	260	97,79	9634365	
148	MAF	96	148MAF 96	148MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7230,550	4457,300	49,50	0,653	14,700	11,40	0,232	8,59	9,43	2,530	0,180	0,060	0,00	304	60	50	292	50	10	160	10	0	90	10	8,23	20,00	71,65	54,96		0	17	22	17		11	10	30	200	97,28	9634364	
178	MAF	96	178MAF 96	178MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7230,610	4458,070	51,50	0,653	13,800	11,80	0,211	8,10	9,40	1,870	0,176	0,056	0,00	85	90	40	299	60	0	100	20	0	60	10	13,72	10,00	80,61	57,50		10	15	15	14		8	0	0	160	97,57	9634373	
184	MAF	96	184MAF 96	184MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7231,510	4458,690	50,30	0,506	15,200	9,58	0,191	6,93	13,70	0,220	0,074	0,046	0,00	140	50	10	265	20	20	60	10	0	30	10	8,23	20,00	35,83	45,66		10	15	15	10		11	0	10	120	96,75	9634374	
167	MAF	96	167MAF 96	167MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7235,570	4460,140	55,80	0,909	15,500	8,05	0,142	6,04	7,49	2,830	1,400	0,521	0,00	317	160	20	170	50	20	90	20	0	10	10	40,23	20,00	653,83	395,74		0	23	133	14		3	40	120	160	98,68	9634367	
169	MAF	96	169MAF 96	169MAF 96 1	P	1,04	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7234,380	4460,660	48,70	0,771	14,600	12,40	0,212	8,07	10,50	1,920	0,310	0,066	0,00	249	180	70	313	190	20	100	10	0	1610	10	17,37	10,00	71,65	75,26		10	14	30	15		5	10	10	70	97,55	9634369	
168	MAF	96	168MAF 96	168MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7235,000	4460,660	51,60	0,577	15,300	9,42	0,257	6,97	10,60	2,940	0,526	0,060	0,00	393	120	60	265	40	0	90	10	10	30	20	23,77	30,00	107,48	180,11		0	17	15	11		5	0	0	40	98,25	9634368	
111	MAF	96	111MAF 96	111MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7228,020	4460,770	48,70	0,938	15,000	12,30	0,269	8,11	9,48	2,410	0,077	0,081	0,00	304	120	70	326	70	20	100	20	10	270	10	6,40	20,00	35,83	52,43		0	14	37	16		5	20	20	200	97,37	9634357	
109	MAF	96	109MAF 96	109MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7227,820	4460,850	49,50	0,820	15,000	11,20	0,215	8,84	9,87	1,960	0,126	0,069	0,00	302	130	60	292	80	0	60	10	10	50	10	9,14	20,00	71,65	107,39		0	16	30	12		9	40	20	190	97,60	9634356	
108	MAF	96	108MAF 96	108MAF 96 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KIANNANNIEMI	Mafic volcanic rock	Tholeiitic volcanic rock	7226,660	4462,460	46,50	0,817	14,600	12,40	0,209	7,94	9,90	2,270	0,185	0,067	0,00	269	130	60	286	80	10	100	10	10	210	10	9,14	20,00	53,74	104,01		10	17	22	13		11	20	40	270	94,89	9634355	
166	TOH	93	166TOH 93	166TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Plutonic rock	Tonalite	7127,090	4455,495	66,40	0,527	16,300	4,18	0,058	2,69	2,20	5,940	0,974	0,137		61	40	10	84	10	10	40	10	0	140	10	16,46	20,00	286,61	115,00		0	8	111	13	0	4	30	50	60	99,41	9314453	
6	SII	93	6SII 93	6SII 93 4	K	0,00	103,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Plutonic rock	Tonalite	7126,908	4455,499	70,20	0,392	13,800	3,63	0,036	2,98	2,29	4,310	1,600	0,104		105	70	0	57	20	10	30	20	120	0	10	59,44	10,00	429,92	92,17		10	7	141	10	0	4	20	60	60	99,34	9413815	
163	TOH	93	163TOH 93	163TOH 93 1	P	1,00	0,00	KUHMO	SIIVIKKO	VIITALA	Plutonic rock	Tonalite	7126,970	4455,695	71,80	0,318	14,700	1,66	0,028	3,03	0,85	7,150	0,065	0,099		53	50	0	47	10	10	20	0	90	0	0	3,20	10,00	17,91	54,96		0	7	163	7	0	5	20	30	60	99,70	9314452	
108	TOH	93	108TOH 93	108TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	VIITAJANSUO	Plutonic rock	Tonalite	7126,540	4455,825	53,80	0,579	17,500	4,44	0,101	2,66	8,09	7,510	0,226	0,158		97	60	30	80	0	10	20	20	10	0	20	5,03	10,00	80,61	84,56		0	11	200	18	1	11	20	50	90	95,06	9314432	
5	TTT	97	5TTT 97	5TTT 97 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Plutonic / volcanic rock	Tonalite	7131,550	4456,084	61,60	0,482	20,600	3,20	0,036	1,27	5,87	4,190	1,320	0,139	0,64	40	30	70	45	1130	30	30	10	0	150	10	47,55	20,00	277,65	117,54		0	20	200	15	0	3	60	90	50	98,71	9710688	
195	JTL	96	195JTL 96	195JTL 96 3	P	3,00	0,00	SOTKAMO	HIETAJÄRVI	HIETAJÄRVI	Metamorphic rock	Tonalitic gneiss	7082,785	4446,687	73,20	0,166	15,100	1,79	0,040	0,85	0,88	5,400	2,110	0,072	0,00	21	10	60	27	10	30	20	0	0	180	10	62,18	0,00	367,22	158,97		0	13	59	4		0	10	30	70	99,61	9634431	
57	JTL	97	57JTL 97	57JTL 97 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	MYHKYRI	Komatiitic cumulate	Tremolite rock	7078,640	4440,860	39,60	0,219	6,460	11,40	0,132	30,80	2,04	0,000	0,005	0,007	7,08	4468	1440	150	120	70	0	70	10	0	1280	10	4,57	30,00	17,91	1,69		0	15	0	0	0	1	0	10	40	90,66	9710755	
56	JTL	98	56JTL 98	56JTL 98 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Ultramafic volcanic rock	Tremolite rock	7080,910	4442,812	38,20	0,120	3,060	7,99	0,118	34,00	2,43	0,000	0,005	0,008	11,92	4338	2040	230	75	10	10	60	10	10	7980	10	6,40	0,00	26,87	8,46		0	11	0	0	0	6	10	10	30	85,93	9818106	
31	JTL	98	31JTL 98	31JTL 98 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Ultramafic volcanic rock	Tremolite rock	7081,318	4442,928	43,40	0,174	3,780	7,27	0,196	28,90	5,67	0,000	0,007	0,016	9,05	2395	1580	190	66	60	10	70	10	10	3440	10	4,57	10,00	8,96	11,84		0	15	0	2	0	9	0	20	20	89,41	9818102	
292	JTL	96	292JTL 96	292JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,530	4444,245	40,60	0,242	6,580	10,00	0,175	27,90	4,83	0,370	0,028	0,023	7,51	2586	1460	130	122	20	0	60	10	0	140	20	4,57	20,00	8,96	31,29		0	14	0	5		5	10	10	60	90,75	9634490	
288	JTL	96	288JTL 96	288JTL 96 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,481	4444,360	42,00	0,296	8,360	9,10	0,160	25,80	5,50	0,160	0,030	0,034	6,84	2655	1260	190	163	30	10	60	10	0	960	10	6,40	10,00	17,91	33,82		10	14	0	5		5	20	20	10	91,44	9634489	
287	JTL	96	287JTL 96	287JTL 96 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,543	4444,368	41,70	0,222	6,160	7,52	0,132	28,90	5,10	0,200	0,028	0,018	8,52	2148	1560	130	116	30	10	60	0	0	870	10	1,83	0,00	8,96	53,27		0	10	0	2		7	10	0	60	89,98	9634486	
272	JTL	96	272JTL 96	272JTL 96 1	P	1,02	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,265	4444,520	43,10	0,323	7,960	9,92	0,147	24,00	6,82	0,820	0,054	0,028	5,02	2737	1220	120	156	130	0	50	10	0	680	10	1,83	10,00	35,83	29,60		0	14	0	6		1	20	10	40	93,17	9634485	
272	JTL	96	272JTL 96	272JTL 96 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,250	4444,533	41,20	0,237	6,330	9,09	0,175	27,30	5,74	0,420	0,033	0,028	7,78	2600	1430	130	122	20	10	50	10	0	220	10	3,66	0,00	8,96	27,90		10	14	0	4		7	20	10	50	90,55	9634484	
251	JTL	96	251JTL 96	251JTL 96 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	SIRPPIKANGAS	Ultramafic volcanic rock	Tremolite rock	7081,675	4445,010	41,90	0,312	8,660	9,66	0,181	24,40	6,09	0,090	0,024	0,017	6,92	2764	1170	100	156	60	10	70	0	0	2160	10	6,40	20,00	8,96	12,68		0	13	0	4		9	20	20	30	91,33	9634477	
17	SII	94	17SII 94	17SII 94 2	K	0,00	138,40	KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Tremolite rock	7127,650	4455,460	40,00	0,228	5,130	6,74	0,187	17,60	16,70	0,180	0,019	0,022		3223	1110	120	116	10	6960	13200	10	0	11200	0	6,40	30,00	26,87	6,76		10	16	0	0	15	8	20	10	0	86,81	9414716	
147	TOH	93	147TOH 93	147TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Tremolite rock	7126,803	4455,721	50,20	0,117	3,830	7,35	0,164	23,00	8,76	0,000	0,008	0,004		3455	930	50	67	0	0	70	10	10	0	30	1,37	20,00	8,96	5,92		0	4	0	13	0	7	20	20	40	93,43	9314443	
149	TTT	96	149TTT 96	149TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Plutonic rock	Tremolite rock	7131,630	4455,764	51,29	0,390	4,550		0,202	17,79	15,59	0,400	0,170	0,011		4237	430	41	187	50	16	102			20		3,00		5,00	46,00	10		1	17	9			2	11	20	97,12	960064	x
128	TOH	93	128TOH 93	128TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Tremolite rock	7126,708	4455,833	47,50	0,319	7,050	8,40	0,207	20,60	8,61	0,310	0,143	0,035		2258	1070	90	135	0	10	60	10	10	0	0	4,57	20,00	53,74	10,15		10	5	7	8	0	4	20	10	80	93,17	9314438	
130	TOH	93	130TOH 93	130TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Tremolite rock	7126,711	4455,833	48,80	0,123	5,010	7,47	0,208	22,90	8,08	0,040	0,026	0,009		3729	1080	80	61	0	0	60	30	0	0	10	2,29	10,00	26,87	3,38		0	5	0	2	0	1	0	10	50	92,67	9314440	
15	TTT	97	15TTT 97	15TTT 97 3	P	3,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI S	Komatiitic cumulate	Tremolite rock	7130,850	4455,990	46,10	0,093	4,780	6,33	0,123	25,60	8,67	0,000	0,011	0,015	6,81	2935	1940	190	26	0	10	70	10	10	860	60	7,32	30,00	35,83	8,46		10	17	22	6	0	8	30	20	30	91,72	9710692	
8	TOH	93	8TOH 93	8TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Hybrid rock	Tremolite rock	7126,222	4455,991	48,10	0,276	7,330	9,75	0,128	23,30	5,36	0,000	0,014	0,024		2210	600	40	132	30	0	230	10	0	0	320	0,46	10,00	89,57	3,38		0	5	7	6	0	7	0	10	60	94,28	9314397	
8	JSK	93	8JSK 93	8JSK 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Tremolite rock	7126,178	4456,061	35,50	0,273	12,500	29,60	0,055	2,62	0,86	4,600	0,109	0,069		44	200	110	53	1630	30	40	10	0	164000	10	2,29	0,00	35,83	65,11		0	10	141	11	0	6	30	40	40	86,19	9315060	
45	TOH	96	45TOH 96	45TOH 96 2	P	3,00	0,00	SUOMUSSALMI	KIANNANNIEMI	KEKRINIEMI	Ultramafic volcanic rock	Tremolite rock	7228,170	4456,885	49,60	0,453	7,000	9,50	0,211	15,00	11,90	0,850	0,077	0,027	2,28	2128	320	80	224	0	20	120	0	10	420	0	6,40	20,00	71,65	10,15		10	13	7	5	0	2	10	10	40	94,62	9612672	
194	TTT	97	194TTT 97	194TTT 97 1	P	1,00	0,00	KUHMO	YPYKKÄ	LAMMINAHO	Ultramafic volcanic rock	Tremolite rock	7154,100	4474,500	43,70	0,282	8,750	11,80	0,122	20,70	7,32	0,120	0,025	0,020	4,62	3695	2080	120	131	10	10	90	10	10	220	10	7,32	10,00	35,83	9,30		0	10	7	3	0	5	20	10	70	92,84	9710736	
193	TTT	97	193TTT 97	193TTT 97 2	P	2,00	0,00	KUHMO	YPYKKÄ	LAMMINAHO	Ultramafic volcanic rock	Tremolite rock	7154,080	4474,510	75,70	0,114	5,800	5,96	0,036	7,48	0,32	0,000	0,059	0,016	3,29	2121	1160	20	49	0	0	50	10	10	310	20	10,06	0,00	17,91	4,23		10	13	0	0	0	6	0	10	40	95,49	9710735	
179	JTL	97	179JTL 97	179JTL 97 1	P	1,00	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Ultramafic volcanic rock	Tremolite rock	7061,825	4475,540	46,60	0,232	4,400	14,60	0,161	21,70	7,21	0,010	0,013	0,008	2,90	2463	690	120	163	50	0	70	10	10	380	10	7,32	20,00	17,91	4,23		10	14	0	4	0	12	0	10	30	94,93	9710758	
236	JSN	95	236JSN 95	236JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	KIISULA	Ultramafic volcanic rock	Tremolite-chlorite rock	7095,000	4454,500	47,50	0,249	6,470	9,25	0,185	22,10	7,56	0,090	0,014	0,017	4,91	2224	870	180	136	0	0	90	0	10	0	310	5,49	10,00	44,78	10,15		10	17	0	1	0	6	0	0	30	93,44	9512446	
321	JEV	95	321JEV 95	321JEV 95 1	P	1,00	0,00	KUHMO	KUIVAJÄRVI	LOUHINIEMI	Ultramafic volcanic rock	Tremolite-chlorite rock	7137,820	4456,850	41,70	0,425	3,920	8,80	0,148	28,30	4,66	0,000	0,005	0,039	10,37	2121	1520	180	116	20	0	90	10	0	990	540	0,91	10,00	0,00	29,60		10	15	15	9	0	1	30	20	30	88,00	9513866	
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	81,95	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chlorite rock	7233,520	4458,600	43,73	0,600	8,180	13,82	0,221	18,51	7,98	0,070	0,030	0,039		2124	771	96	182	84	9	101			170		0,02		4,00	11,00	12		0	35	14			0	0	0	94,70	971332	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	83,85	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chlorite rock	7233,520	4458,600	44,91	0,520	6,960	12,35	0,233	19,89	7,99	0,050	0,010	0,040		2175	1016	104	145	423	10	97			1240		0,03		2,00	10,00	9		0	36	8			0	4	0	94,31	971333	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	86,80	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chlorite rock	7233,520	4458,600	47,07	0,390	5,660	11,09	0,232	20,41	8,79	0,010	0,010	0,027		2210	750	91	109	0	7	82			30		0,01		14,00	14,00	11		0	24	7			0	0	110	94,91	971335	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	88,15	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chlorite rock	7233,520	4458,600	45,71	0,420	5,530	11,50	0,204	20,98	8,28	0,000	0,010	0,029		2027	794	115	141	133	10	84			3560		0,03		26,00	10,00	11		0	23	5			0	0	0	93,93	971336	x
1	SMS	60	1SMS 60	1SMS 60 2	K	0,00	136,90	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chlorite rock	7233,520	4458,600	38,69	0,880	11,580	15,14	0,269	18,89	5,82	0,080	0,020	0,056		436	120	75	247	0	5	154			30		0,04		0,06	4,00	13		0	48	21			2	5	0	93,10	971351	x
508	MAF	95	508MAF 95	508MAF 95 2	P	2,00	0,00	KUHMO	RUUNAKANGAS	PAJULA	Mafic volcanic rock	Tremolite-chlorite rock	7111,900	4467,630	47,90	1,550	15,000	16,10	0,232	7,55	4,49	2,700	0,136	0,190	2,13	181	90	220	387	120	10	170	0	0	200	10	9,14	30,00	35,83	49,89		10	20	81	23	0	4	0	40	30	95,85	9512429	
171	JSN	95	171JSN 95	171JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	JÄKÄLÄSUO	Metamorphic rock	Tremolite-quartz rock	7093,920	4452,820	93,20	0,007	0,250	1,53	0,105	2,19	1,62	0,000	0,016	0,003	0,68	18	10	70	7	0	0	10	10	10	180	10	4,57	0,00	8,96	1,69		10	14	0	0	0	2	10	20	20	98,92	9612504	
69	JTL	98	69JTL 98	69JTL 98 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Tremolite-serpentine rock	7081,025	4442,427	39,80	0,155	3,190	7,93	0,138	32,30	2,68	0,000	0,007	0,011	12,34	1307	2240	240	79	70	10	110	10	10	3340	10	5,49	10,00	17,91	18,60		10	11	0	3	0	6	10	0	20	86,21	9818109	
65	JTL	98	65JTL 98	65JTL 98 1	P	1,01	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Tremolite-serpentine rock	7081,035	4442,590	35,50	0,125	2,720	7,93	0,139	35,90	2,39	0,000	0,004	0,006	13,73	1649	2380	230	59	20	10	100	0	0	2070	10	6,40	10,00	17,91	5,92		10	9	0	0	0	6	20	0	50	84,71	9818108	
63	JTL	98	63JTL 98	63JTL 98 1	P	1,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Komatiitic cumulate	Tremolite-serpentine rock	7081,280	4442,610	44,60	0,140	3,990	8,20	0,226	27,60	5,58	0,000	0,006	0,005	7,86	4160	1490	220	89	20	10	100	0	0	1830	10	2,74	20,00	26,87	10,99		10	16	0	0	0	7	10	10	30	90,35	9818107	
186	JTL	97	186JTL 97	186JTL 97 3	P	3,01	0,00	NURMES	KUOHATTI-JONKERI	HOUSULAMPI-LUSIKKAK.	Komatiitic cumulate	Tremolite-serpentine rock	7061,775	4476,016	33,00	0,243	6,090	19,50	0,189	28,80	0,65	0,000	0,012	0,012	8,59	4222	1480	220	141	60	0	100	0	10	130	20	10,06	0,00	35,83	1,69		20	13	0	0	0	0	0	10	50	88,50	9710759	
317	JTL	97	317JTL 97	317JTL 97 1	P	1,01	0,00	KUHMO	YPYKKÄ	VALKEALAMPI	Komatiitic cumulate	Tremolite-serpentine rock	7151,820	4479,250	40,90	0,328	8,740	10,90	0,222	21,90	10,40	0,110	0,029	0,034	4,61	2709	1090	140	159	60	0	70	0	10	1120	10	1,83	0,00	17,91	30,44		10	12	0	2	0	9	10	10	50	93,56	9818019	
134	TTT	97	134TTT 97	134TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	TERVASVAARA W	Komatiitic cumulate	Tremolite-serpentine rock	7073,920	4490,170	38,10	0,131	2,270	12,50	0,200	33,50	1,63	0,000	0,013	0,009	9,43	3907	1340	180	69	10	10	90	0	0	180	10	7,32	20,00	0,00	0,85		0	12	0	0	0	6	10	10	60	88,35	9710718	
177	TTT	97	177TTT 97	177TTT 97 1	P	1,00	0,00	KUHMO	JONKERI	HIIDENPORTTI	Komatiitic cumulate	Tremolite-serpentine rock	7076,270	4490,590	44,50	0,262	7,200	10,30	0,173	23,80	7,04	0,670	0,097	0,027	4,19	2326	1040	200	135	30	10	70	0	0	190	10	5,49	20,00	8,96	30,44		0	13	0	1	0	3	20	10	140	94,07	9710730	
6	JTL	98	6JTL 98	6JTL 98 2	P	2,00	0,00	VALTIMO	HIETAJÄRVI	ALA-KOLKONJÄRVI	Ultramafic volcanic rock	Tremolite-talc schist	7081,240	4443,355	46,10	0,262	6,790	9,84	0,199	25,50	4,82	0,130	0,024	0,031	4,67	2408	1080	260	133	80	10	50	10	0	540	10	10,06	0,00	17,91	16,91		10	18	0	1	0	12	20	0	40	93,70	9818099	
259	JSN	95	259JSN 95	259JSN 95 1	P	1,00	0,00	SOTKAMO	TIPASJÄRVI	VUORINIEMI	Ultramafic volcanic rock	Tremolite-talc schist	7095,040	4454,760	43,10	0,366	8,850	11,00	0,170	22,20	5,47	0,090	0,011	0,031	5,40	2634	870	220	156	10	10	80	10	0	0	90	1,83	10,00	8,96	5,07		10	14	7	8	0	9	20	20	10	91,29	9512450	
43	MKT	94	43MKT 94	43MKT 94 1	P	1,00	0,00	SUOMUSSALMI	KIANNANNIEMI	VASONIEMI	Ultramafic cumulate	Ultramafic cumulate rock	7225,690	4458,210	45,70	0,251	7,110	9,46	0,162	22,80	7,33	0,000	0,004	0,024		1998	870	120	122	70	10	70	10	0	0	10	4,57	20,00	26,87	6,76		0	16	0	6	0	4	20	10	50	92,84	9414621	
2	JSK	93	2JSK 93	2JSK 93 2	P	2,03	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,274	4455,968	45,20	0,305	7,300	9,99	0,167	24,00	7,01	0,000	0,007	0,024		2586	990	90	158	100	0	70	20	10	3260	40	0,91	10,00	26,87	4,23		10	4	7	10	5	5	20	20	60	94,00	9315055	
2	JSK	93	2JSK 93	2JSK 93 2	P	2,04	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,267	4455,971	38,60	0,502	12,200	12,40	0,196	22,40	4,91	0,050	0,011	0,036		1437	390	90	224	0	0	90	20	0	1950	10	0,91	10,00	17,91	3,38		10	7	22	7	0	7	0	20	70	91,31	9315056	
2	JSK	93	2JSK 93	2JSK 93 2	P	2,02	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,271	4455,972	44,50	0,327	7,700	9,66	0,185	23,30	6,95	0,000	0,013	0,025		2566	930	90	150	150	0	60	20	0	4470	10	2,29	20,00	35,83	5,92		10	5	7	4	0	8	10	20	70	92,66	9315054	
2	JSK	93	2JSK 93	2JSK 93 2	P	2,01	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,273	4455,976	43,30	0,485	10,800	12,70	0,229	16,80	7,61	1,370	0,127	0,022		2094	430	80	215	0	0	90	30	0	1620	10	2,74	10,00	26,87	9,30		10	6	22	12	0	8	0	20	170	93,44	9315053	
2	JSK	93	2JSK 93	2JSK 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,291	4455,983	44,00	0,308	8,160	10,50	0,180	25,20	5,51	0,020	0,008	0,018		2757	1060	80	161	10	0	90	30	10	2830	30	0,00	0,00	26,87	11,84		10	3	7	7	0	8	10	20	60	93,90	9315052	
1	JSK	93	1JSK 93	1JSK 93 2	P	2,02	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,246	4456,014	47,10	0,298	6,900	9,43	0,183	21,20	8,68	0,140	0,014	0,018		2484	950	50	139	0	10	70	20	10	1570	220	0,00	0,00	44,78	6,76		0	5	7	4	0	9	0	10	70	93,96	9315050	
1	JSK	93	1JSK 93	1JSK 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,263	4456,016	47,80	0,287	5,980	10,20	0,220	23,10	8,12	0,070	0,009	0,007		2449	840	20	163	1	0	70	20	10	1690	20	0,91	30,00	17,91	12,68		10	4	7	6	0	2	20	30	70	95,79	9315048	
1	JSK	93	1JSK 93	1JSK 93 2	P	2,01	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,248	4456,017	47,90	0,469	10,500	11,00	0,208	15,80	7,92	2,210	0,058	0,023		1943	450	50	218	0	0	80	30	0	1260	10	1,83	10,00	0,00	18,60		0	4	22	7	0	7	0	10	130	96,09	9315049	

3	JSK	93	3JSK 93	3JSK 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava	7126,190	4456,110	44,20	0,332	8,210	10,20	0,165	24,00	5,80	0,060	0,024	0,021			2586	1060	90	169	20	10	80	20	0	2050	10	2,29	30,00	26,87	10,99		0	4	7	5	0	13	0	30	60	93,01	9315058	
2	JSK	93	2JSK 93	2JSK 93 3	P	3,02	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava rock	7126,276	4455,975	45,67	0,404	8,460	10,64	0,229	20,13	8,20	0,510	0,040	0,013			2459	800	74	171	1	7	95			70		0,07		4,90	11,00	10		1	25	11			5	3	10	95,50	9505201518	x
1	JSK	93	1JSK 93	1JSK 93 3	P	3,00	0,00	KUHMO	PAHAKANGAS	SAMMAKKOSUO	Ultramafic volcanic rock	Ultramafic lava rock	7126,251	4456,019	45,50	0,318	7,590	9,94	0,190	22,20	7,59	0,090	0,010	0,020			2504	920	50	155	10	0	80	20	10	1910	70	2,74	10,00	26,87	5,92		0	4	7	6	0	8	0	20	40	93,45	9315051	
151	JTL	95	151JTL 95	151JTL 95 1	P	1,01	0,00	KUHMO	NURMESJÄRVI	HOMASENVAARA	Ultramafic volcanic rock	Ultramafic lava rock	7104,550	4460,350	43,60	0,317	7,690	9,89	0,203	25,00	6,71	0,120	0,017	0,029		4,62	2627	1330	140	150	20	10	70	10	0	0	10	4,57	20,00	17,91	18,60		10	15	7	5	0	2	10	30	80	93,58	9513880	
153	JTL	95	153JTL 95	153JTL 95 1	P	1,02	0,00	KUHMO	NURMESJÄRVI	AHOKAISENPURO	Ultramafic volcanic rock	Ultramafic lava rock	7103,280	4460,640	41,60	0,300	8,640	10,20	0,177	25,80	5,50	0,200	0,032	0,027		5,63	2887	1520	290	150	80	10	60	0	0	440	10	9,14	20,00	26,87	14,38		10	18	7	5	0	4	0	0	40	92,48	9513862	
52	VIE	67	52VIE 67	52VIE 67 1	K	0,00	2,95	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	48,50	0,706	4,390	10,20	0,193	18,20	12,70	0,610	0,244	0,062	0,55		2292	560	170	182	70	150	280	20	0	570	0	10,06	20,00	44,78	54,96		0	10	37	8	0	7	50	20	480	95,81	9413251	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	7,40	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	47,80	0,707	4,330	10,40	0,184	18,10	11,60	0,490	0,477	0,053	1,50		2306	570	130	169	40	90	270	20	0	390	10	24,69	0,00	80,61	49,89		0	8	37	10	0	5	0	30	410	94,14	9413252	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	10,51	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	48,20	0,718	4,470	10,80	0,183	18,70	11,10	0,490	0,523	0,061	0,88		2443	630	130	192	40	90	250	20	10	220	10	22,86	10,00	89,57	60,04		10	10	37	12	0	5	20	20	340	95,25	9413253	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	14,00	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	48,00	0,756	4,770	11,10	0,195	19,30	11,50	0,470	0,121	0,056	0,37		2402	640	120	191	50	80	210	10	10	280	10	7,32	0,00	71,65	60,88		10	9	37	11	0	0	20	30	380	96,27	9413254	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	16,65	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	48,30	0,730	4,620	10,80	0,189	19,90	11,30	0,450	0,124	0,059	0,22		2477	660	120	186	50	60	180	20	0	410	0	8,23	10,00	17,91	56,65		10	7	37	13	0	7	0	20	350	96,47	9413255	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	19,35	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	47,90	0,704	4,370	11,00	0,188	20,20	11,20	0,400	0,081	0,056	0,55		2395	680	130	171	60	50	100	20	10	450	10	6,40	0,00	0,00	56,65		0	7	37	9	0	3	0	40	280	96,10	9413256	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	22,15	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	46,60	0,663	4,160	11,90	0,184	21,00	10,10	0,330	0,115	0,054	1,50		2340	750	110	166	40	50	70	10	0	320	0	5,49	0,00	26,87	41,43		10	7	30	10	0	7	0	30	210	95,11	9413257	
52	VIE	67	52VIE 67	52VIE 67 2	K	0,00	25,15	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	44,70	0,604	3,720	11,80	0,176	20,80	9,72	0,180	0,744	0,047	3,90		2265	770	110	156	40	30	70	10	10	500	10	29,26	20,00	62,70	45,66		10	7	30	8	0	8	10	30	150	92,49	9413258	
52	VIE	67	52VIE 67	52VIE 67 1	K	0,00	29,20	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	41,70	0,593	4,000	11,40	0,177	21,50	8,63	0,020	0,526	0,051	7,00		2121	830	120	141	20	20	70	10	10	520	10	23,77	0,00	53,74	62,57		10	4	30	10	0	2	10	10	110	88,60	9413260	
52	VIE	67	52VIE 67	52VIE 67 1	K	0,00	81,66	KUHMO	AROLA	ORE DEPOSIT	Komatiitic cumulate	Ultramafic rock	7150,310	4454,640	45,90	0,247	7,060	8,88	0,177	19,90	7,36	0,000	0,038	0,022	4,30		2189	930	100	135	80	40	160	10	10	9270	230	3,66	10,00	17,91	17,76		10	6	7	6	0	5	0	20	100	89,58	9413266	
20	SMS	60	20SMS 60	20SMS 60 7	K	0,00	184,50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Ultramafic rock	7228,050	4456,620	41,17	0,680	7,840	16,01	0,291	18,91	6,71	0,260	0,030	0,019	3,19	6,93	2104	634	155	174	0	7	113			330		1,00		2,00	135,00	12		0	39	16			0	32	20	93,68	971362	x
76	TTT	96	76TTT 96	76TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ S	Mafic dike / volcanic rock	Uralite porfyrite	7132,118	4455,658	44,40	1,080	14,300	10,20	0,217	7,08	17,40	0,140	0,120	0,048			223	120	30	347	10	60	160	0	0	30	0	10,06	20,00	0,00	328,09		0	24	52	13	0	5	30	50	80	94,99	9612627	
132	TOH	94	132TOH 94	132TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	SIIVIKKOVAARA	Uralite porphyrite dike	Uralite porfyrite	7127,234	4457,129	47,00	0,864	20,400	11,20	0,166	7,96	4,71	4,210	0,056	0,071			304	180	70	299	20	20	150	20	10	0	10	4,57	30,00	44,78	108,24		0	15	37	4	0	7	10	20	100	96,64	9411217	
123	IJY	94	123IJY 94	123IJY 94 1	P	1,10	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Uralite porfyrite	7229,400	4457,500	49,30	0,769	14,400	11,90	0,195	7,87	8,36	3,290	0,231	0,084			238	110	60	286	40	10	110	10	10	0	10	12,80	20,00	89,57	92,17		0	15	37	16	0	10	10	10	150	96,40	9414613	
123	IJY	94	123IJY 94	123IJY 94 1	P	1,20	0,00	SUOMUSSALMI	KIANNANNIEMI	PAHALAMMIN VAARA NE	Mafic volcanic rock	Uralite porfyrite	7229,400	4457,500	48,60	0,741	14,200	11,50	0,198	7,93	9,94	2,620	0,156	0,065			235	150	60	292	180	0	80	10	0	0	10	10,06	20,00	80,61	97,24		10	17	22	17	0	1	0	30	100	95,95	9414614	
200	TOH	93	200TOH 93	200TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7127,690	4452,845	38,95	0,060	2,280	6,25	0,085	34,29	1,18	0,000	0,000	0,005			3345	1858	99	43	0	8	65			170		0,03		7,00	2,00	3		0	5	2			3	0	0	83,79	971579	x
199	TOH	93	199TOH 93	199TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7127,470	4452,860	35,30	0,104	1,680	12,59	0,167	34,90	0,08	0,000	0,010	0,006			3238	2110	124	49	29	12	76			90		0,07		4,90	1,00	4		1	6	3			1	4	2	86,20	9505200105	x
201	TOH	93	201TOH 93	201TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7127,860	4453,075	40,77	0,206	2,720	12,00	0,191	29,47	4,64	0,000	0,010	0,013			3893	1237	105	100	26	11	75			180		0,07		7,00	4,00	5		1	11	4			2	4	2	91,30	9505192252	x
115	TOH	94	115TOH 94	115TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,059	4453,078	40,74	0,093	2,100	8,62	0,154	32,15	3,44	0,000	0,000	0,010			3861	1466	97	63	2	7	80			220		0,07		4,90	7,00	3		1	4	5			2	4	2	88,30	9505222040	x
116	TOH	94	116TOH 94	116TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,057	4453,079	41,92	0,129	2,170	7,95	0,162	28,91	7,07	0,020	0,010	0,007			3593	1285	84	86	1	6	59			170		0,07		4,90	5,00	3		1	6	7			2	4	2	89,20	9505221618	x
117	TOH	94	117TOH 94	117TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,049	4453,091	41,56	0,144	2,840	9,35	0,219	27,77	7,22	0,030	0,010	0,011			2770	1141	128	91	0	12	61			210		0,07		4,90	2,00	4		1	10	4			0	1	30	90,20	9505221545	x
118	TOH	94	118TOH 94	118TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,033	4453,098	45,37	0,178	2,760	6,88	0,179	25,54	11,42	0,070	0,000	0,009			3578	984	86	108	0	8	48			210		0,07		4,90	0,14	5		1	9	6			2	0	2	93,20	9505221513	x
206	TOH	93	206TOH 93	206TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7128,070	4453,110	40,83	0,153	2,930	13,11	0,200	28,25	5,22	0,030	0,000	0,012			3611	1123	100	93	0	8	93			200		0,07		4,90	2,00	4		1	8	7			2	13	2	92,20	9505241627	x
120	TOH	94	120TOH 94	120TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,017	4453,136	40,60	0,155	3,940	10,57	0,194	28,80	4,55	0,000	0,000	0,008			3097	1363	114	91	48	3	69			120		0,07		4,90	2,00	4		1	6	5			2	27	2	90,00	9505221440	x
122	TOH	94	122TOH 94	122TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7127,992	4453,144	42,56	0,216	3,950	11,14	0,199	26,21	6,74	0,010	0,010	0,016			3570	1097	99	119	5	9	69			230		0,07		4,90	5,00	8		1	10	7			1	1	2	92,30	9505230558	x
121	TOH	94	121TOH 94	121TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7128,002	4453,146	42,70	0,253	3,680	10,95	0,209	26,66	6,09	0,030	0,010	0,016			3609	1093	99	130	7	1	71			210		0,07		4,90	5,00	6		1	13	7			2	4	2	91,80	9505221723	x
123	TOH	94	123TOH 94	123TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Wehrlite	7127,989	4453,149	42,63	0,305	3,410	12,03	0,214	26,60	5,89	0,020	0,010	0,019			3328	1130	101	126	7	7	67			210		0,07		4,90	6,00	6		1	20	9			1	4	0	92,50	9505230208	x
204	TOH	93	204TOH 93	204TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7127,830	4453,655	37,59	0,052	1,230	9,67	0,154	36,69	0,53	0,007	0,000	0,011			2841	2544	128	28	1	6	109			70		0,07		4,90	3,00	4		1	3	3			2	8	300	87,00	9505200242	x
126	TOH	94	126TOH 94	126TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, KORPIAHO	Komatiitic cumulate	Wehrlite	7127,945	4454,035	40,28	0,213	4,280	8,73	0,133	32,26	1,73	0,010	0,010	0,017			2663	1925	91	74	6	12	72			430		0,07		4,90	3,00	5		1	18	6			2	10	2	88,60	9505230316	x
99	TOH	94	99TOH 94	99TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Komatiitic cumulate	Wehrlite	7134,310	4454,175	39,15	0,175	3,180	9,77	0,115	33,02	0,98	0,007	0,000	0,009			5202	2136	110	72	8	5	72			150		0,07		4,90	13,00	3		1	9	2			2	0	2	87,50	9505222008	x
100	TOH	94	100TOH 94	100TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Komatiitic cumulate	Wehrlite	7134,285	4454,210	34,44	0,146	3,410	8,89	0,193	30,44	4,84	0,007	0,000	0,015			4181	1801	109	68	52	5	65			760		0,00		4,90	79,00	3		1	3	7			2	2	2	83,30	9505221935	x
208	TOH	93	208TOH 93	208TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7128,260	4454,215	40,56	0,155	3,450	9,24	0,118	32,24	0,99	0,000	0,010	0,015			3530	1978	112	66	27	15	81			550		0,07		4,90	7,00	4		1	12	7			0	10	2	87,80	9505240943	x
101	TOH	94	101TOH 94	101TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Komatiitic cumulate	Wehrlite	7134,210	4454,335	38,92	0,180	3,820	9,92	0,115	32,77	1,07	0,007	0,000	0,016			4331	1869	117	85	1	12	64			50		0,07		4,90	9,00	6		1	8	7			0	4	2	87,90	9505222113	x
229	TOH	93	229TOH 93	229TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VATTUNIEMI	Komatiitic cumulate	Wehrlite	7131,810	4454,370	43,29	0,255	6,050	10,15	0,178	26,31	4,92	0,090	0,020	0,018			2530	1348	89	94	7	7	104			70		0,07		36,00	9,00	8		1	20	6			7	4	100	92,40	9505200632	x
102	TOH	94	102TOH 94	102TOH 94 1	P	1,00	0,00	KUHMO	HUUHILONKYLÄ	HUUHILONKYLÄ	Komatiitic cumulate	Wehrlite	7134,190	4454,400	40,69	0,138	3,390	8,22	0,121	34,20	0,63	0,000	0,010	0,007			4916	2090	106	73	14	9	76			60		0,07		4,90	3,00	5		1	7	6			2	2	2	88,30	9505221650	x
258	TOH	93	258TOH 93	258TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MÄYRÄNIEMI	Komatiitic cumulate	Wehrlite	7129,910	4454,420	39,47	0,076	1,550	11,40	0,195	34,00	0,52	0,007	0,000	0,010			4154	1781	121	57	4	8	147			60		0,07		9,00	0,00	4		1	8	3			5	4	2	88,50	9505221403	x
247	TOH	93	247TOH 93	247TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	JUURIKKANIEMI	Komatiitic cumulate	Wehrlite	7128,540	4454,430	41,03	0,108	1,790	8,84	0,166	31,80	4,30	0,007	0,000	0,004			3816	1532	103	76	1	7	97			60		0,07		4,90	2,00	3		1	4	4			2	2	2	89,00	9505201413	x
227	TOH	93	227TOH 93	227TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Wehrlite	7131,230	4454,565	39,83	0,192	3,720	9,31	0,168	32,49	2,93	0,010	0,010	0,016			2676	1842	93	81	4	2	123			250		0,07		4,90	0,14	7		1	10	7			4	4	2	89,70	9505231705	x
219	TOH	93	219TOH 93	219TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Wehrlite	7130,650	4454,585	42,06	0,157	4,060	9,05	0,154	31,52	2,14	0,007	0,010	0,015			2151	1998	98	54	7	8	110			70		0,07		4,90	2,00	7		1	20	6			2	12	2	90,20	9505201023	x
223	TOH	93	223TOH 93	223TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	VERIKALLIO	Komatiitic cumulate	Wehrlite	7130,970	4454,680	44,45	0,082	3,220	8,87	0,167	29,52	3,57	0,010	0,010	0,007			2988	1358	86	62	5	10	208			70		0,07		4,90	1,00	3		1	8	5			5	0	2	90,90	9505192010	x
251	TOH	93	251TOH 93	251TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	JUURIKKANIEMI	Komatiitic cumulate	Wehrlite	7128,700	4454,810	42,32	0,112	1,970	10,91	0,162	26,49	8,31	0,000	0,010	0,005			2289	1152	100	79	3	6	41			240		0,07		4,90	0,00	3		1	6	6			3	5	2	91,50	9505201340	x
113	TOH	94	113TOH 94	113TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Komatiitic cumulate	Wehrlite	7131,000	4455,000	43,17	0,093	5,390	9,87	0,172	26,45	5,67	0,010	0,010	0,004			2582	1408	90	65	19	5	86			240		0,07		4,90	4,00	5		1	4	5			1	4	2	91,90	9505240415	x
268	TOH	93	268TOH 93	268TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Wehrlite	7130,450	4455,155	40,75	0,140	3,590	9,04	0,129	33,13	0,46	0,000	0,000	0,011			2758	2026	111	62	92	8	72			390		0,02		36,00	0,00	6		0	14	5			3	0	0	88,24	971646	x
280	TOH	93	280TOH 93	280TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	AHKIOLAMPI	Komatiitic cumulate	Wehrlite	7131,110	4455,270	38,23	0,132	2,590	12,55	0,227	32,24	2,20	0,000	0,000	0,012			5284	1468	125	81	6	7	128			220		0,07		4,90	1,00	3		1	5	4			4	4	2	89,60	9505221903	x
283	TOH	93	283TOH 93	283TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	AHKIOLAMPI	Komatiitic cumulate	Wehrlite	7131,300	4455,425	38,88	0,169	2,450	12,26	0,189	32,52	1,12	0,000	0,000	0,011			6474	1624	147	91	1	7	136			220		0,07		4,90	0,00	4		1	13	7			2	4	2	89,00	9505230103	x
62	TOH	94	62TOH 94	62TOH 94 1	P	1,00	0,00	KUHMO	SIIVIKKO	MÄKISENSUO	Komatiitic cumulate	Wehrlite	7128,119	4455,602	41,52	0,265	4,300	10,23	0,200	29,38	3,06	0,040	0,020	0,027			2745	1628	106	83	16	4	101			170		0,07		4,00	0,14	7		1	29	9			2	5	20	90,20	9505221330	x
148	TOH	93	148TOH 93	148TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Wehrlite	7126,805	4455,728	32,33	0,131	3,110	7,71	0,171	31,83	3,88	0,007	0,000	0,013			3604	1816	96	61	18	6	52			530		0,07		4,90	46,00	3		1	7	6			0	8	2	80,00	9505191439	x
287	TOH	93	287TOH 93	287TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	Wehrlite	7131,980	4455,775	36,66	0,067	1,520	10,65	0,271	30,35	1,52	0,010	0,000	0,008			2289	2204	96	82	7	4	181			490		0,07		47,00	13,00	4		1	4	3			1	0	0	82,20	9505200737	x
132	TOH	93	132TOH 93	132TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Wehrlite	7126,715	4455,791	36,72	0,115	3,120	9,40	0,118	32,30	0,81	0,000	0,000	0,007			4644	1786	116	70	15	3	75			560		0,07		4,90	12,00	4		1	6	6			5	11	10	83,60	9505191544	x
138	TOH	93	138TOH 93	138TOH 93 1	P	1,00	0,00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Wehrlite	7126,731	4455,798	40,00	0,135	3,100	9,35	0,168	32,60	2,52	0,000	0,002	0,007			4707	1190	120	71	0	0	70	10	10	0	160	0,91	10,00	35,83	32,98		0	3	0	6	0	4	10	10	70	87,88	9314442	
29	TOH	94	29TOH 94	29TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	Wehrlite	7131,760	4455,935	46,20	0,152	4,240	7,52	0,153	23,90	9,53	0,000	0,008	0,016			2285	630	130	82	670	10	50	10	10	8900	0	3,66	0,00	26,87	0,85		10	5	0	9	0	5	20	10	30	91,72	9414399	
271	TOH	93	271TOH 93	271TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HAVERISENSUO	Komatiitic cumulate	Wehrlite	7130,670	4456,100	43,45	0,064	1,510	9,78	0,179	31,25	2,90	0,020	0,010	0,006			3564	1707	105	53	106	8	88			580		0,07		4,00	0,00	3		1	4	5			2	4	30	90,30	9505201445	x
285	TOH	93	285TOH 93	285TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	Wehrlite	7131,240	4456,235	43,27	0,181	4,650	8,50	0,139	29,03	4,22	0,000	0,010	0,017			2846	1710	104	78	122	11	59			100		0,07		6,00	3,00	7		1	18	5			2	1	2	91,00	9505200600	x
66	TOH	94	66TOH 94	66TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MÄKISENKANGAS	Komatiitic cumulate	Wehrlite	7128,164	4456,934	41,06	0,179	4,570	9,72	0,172	30,30	3,02	0,010	0,010	0,010			2897	1764	107	71	28	5	90			180		0,00		4,90	7,00	4		1	7	4			1	8	2	90,10	9505221117	x
294	TOH	93	294TOH 93	294TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MATONEVANSUO	Komatiitic cumulate	Wehrlite	7131,200	4457,125	40,43	0,188	3,670	9,86	0,206	32,18	1,60	0,010	0,000	0,019			3143	1757	102	63	59	13	253			80		0,07		3,00	1,00	4		1	17	7			2	5	2	89,30	9505191829	x
266	TOH	93	266TOH 93	266TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Wehrlite	7129,720	4457,265	38,54	0,095	1,930	11,05	0,108	35,06	0,23	0,007	0,000	0,009			3955	1766	88	43	0	12	81			80		0,07		4,90	2,00	5		1	7	6			2	5	2	88,20	9505200917	x
295	TOH	93	295TOH 93	295TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	MATONEVANSUO	Komatiitic cumulate	Wehrlite	7131,425	4457,425	41,53	0,224	4,910	8,50	0,165	29,40	5,23	0,020	0,010	0,022			3314	1680	95	69	1	8	66			80		0,07		0,00	13,00	9		1	25	6			4	7	2	90,90	9505232140	x
272	TOH	93	272TOH 93	272TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	NIITTYLAHTI	Wehrlite dike	Wehrlitic dike	7130,750	4455,400	41,39	0,662	3,690	13,61	0,185	27,46	4,42	0,120	0,030	0,054			2988	1212	116	124	16	6	81			480		0,07		4,90	11,00	10		1	43	9			0	17	90	93,10	9505201308	x
114	TOH	94	114TOH 94	114TOH 94 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Wehrlite dike	Wehrlitic dike	7130,710	4455,410	46,50	0,748	4,390	11,20	0,164	21,60	10,80	0,120	0,036	0,062			2456	780	100	170	70	10	60	20	0	550	0	4,57	30,00	8,96	21,14		10	8	37	10	0	6	30	30	100	95,62	9411197	
61	TOH	95	61TOH 95	61TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	ENSILÄ	Wehrlite dike	Wehrlitic dike	7132,036	4455,818	47,30	0,894	5,280	11,50	0,205	17,90	10,40	0,370	0,214	0,066		0,00	1820	570	160	197	50	20	160	20	10	0	10	13,72	10,00	80,61	18,60		10	23	44	6	0	8	10	30	140	94,13	9512381	
44	TOH	95	44TOH 95	44TOH 95 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HAVERISENSUO	Wehrlite dike	Wehrlitic dike	7130,390	4456,965	48,90	0,836	5,160	10,60	0,196	17,00	11,90	0,700	0,403	0,070		0,00	2107	510	160	190	50	10	90	10	10	250	10	24,69	10,00	107,48	27,06		0	19	52	8	0	6	20	30	210	95,77	9512313	
264	TOH	93	264TOH 93	264TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Wehrlite dike	Wehrlitic dike	7129,260	4457,035	46,70	0,691	4,160	11,80	0,189	23,60	9,23	0,000	0,019	0,052			2484	730	100	173	0	10	180	10	0	0	0	0,00	0,00	26,87	7,61		0	5	30	10	0	4	0	20	60	96,44	9314494	
265	TOH	93	265TOH 93	265TOH 93 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	LIKONEN	Wehrlite dike	Wehrlitic dike	7129,500	4457,050	47,70	0,692	3,980	8,76	0,215	17,90	14,70	0,200	0,089	0,042			2928	460	60	169	30	110	530	10	10	0	0	6,40	10,00	53,74	20,29		0	7	30	11	0	1	0	10	130	94,28	9413828	
214	TTT	97	214TTT 97	214TTT 97 2	P	2,03	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	White pyroxenite	7131,738	4455,931	48,10	0,120	4,410	7,64	0,161	24,20	9,12	0,000	0,006	0,006		4,49	3599	350	170	82	930	10	110	0	10	1900	0	3,66	20,00	17,91	0,00		10	13	0	0	0	4	0	20	30	93,76	9714611	
214	TTT	97	214TTT 97	214TTT 97 2	P	2,01	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI	Komatiitic cumulate	White pyroxenite	7131,739	4455,932	48,20	0,105	4,690	7,45	0,159	24,40	9,06	0,000	0,008	0,005		4,34	3073	510	230	79	780	10	100	10	10	2340	10	3,66	20,00	8,95	0,85		10	13	0	0	0	8	10	20	20	94,08	9714610	
201	TTT	96	201TTT 96	201TTT 96 1	P	1,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	White pyroxenite	7131,810	4456,010	49,29	0,140	4,280	7,74	0,214	23,23	9,21	0,010	0,010	0,002			4798	415	58	96	151	11	91			1340		0,07		4,90	1,00	9		1	4	8			7	3	2	94,98	960079	x
52	TTT	97	52TTT 97	52TTT 97 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	PYYLIÖNNIEMI	Komatiitic cumulate	White pyroxenite	7132,059	4457,235	49,50	0,216	4,290	7,02	0,159	24,60	7,88	0,000	0,012	0,022		5,05	2053	240	190	94	0	10	30	0	10	10	10	7,32	0,00	0,00	12,68		0	11	0	2	0	6	10	0	20	93,70	9710701	
22	TTT	96	22TTT 96	22TTT 96 1	P	1,02	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	White pyroxenite.	7132,607	4455,467	49,09	0,240	4,190	5,76	0,135	25,66	8,91	0,030	0,010	0,015			3207	521	61	103	10	11	38			2		0,00		4,90	4,00	8		1	17	6			0	9	30	94,67	960004	x
22	TTT	96	22TTT 96	22TTT 96 1	P	2,01	0,00	KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	White pyroxenite.	7132,615	4455,477	50,62	0,290	7,720	6,59	0,181	18,12	11,90	0,380	0,960	0,010			1513	627	61	151	345	8	82			90		43,00		600,00	42,00	8		1	13	9			2	9	10	97,49	960005	x
144	TTT	96	144TTT 96	144TTT 96 2	P	2,00	0,00	KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	White pyroxenite.	7131,801	4455,960	50,65	0,230	3,420	5,49	0,192	24,13	10,17	0,007	0,010	0,015			3861	260	77	91	125	10	72			30		0,07		5,00	2,00	7		1	17	5			4	3	2	94,91	960061	x

*K = drill hole, P = outcrop, M = trench/excavation and L = boulder

Sample Nr.	Drill hole Nr.	Depth m.	Straig level m	Rock type	SiO2 %	Al2O3 %	CaO %	MgO %	Na2O %	K2O %	Fe2O3 %	MnO %	TiO2 %	P2O5 %	LOI %	SUM %	CO2 %	Li ppm	Rb ppm	Cs ppm	Be ppm	Sr ppm	Ba ppm	Sc ppm	Y ppm	Zr ppm	Hf ppm	V ppm	Nb ppm	Ta ppm	Cr ppm	Mo ppm	W ppm	Co ppm	Ni ppm	Cu ppm	Ag ppm	Au ppb	Zn ppm	Cd ppm	B ppm	Ge ppm	Pb ppm	As ppm	Sb ppm	Bi ppm	Se ppm	Cl ppm	Br ppm	Th ppm	U ppm	La ppm	Ce ppm	Nd ppm	Sm ppm	Eu ppm	Tb ppm	Yb ppm	Lu ppm
1	63	121.3	-244	Intermediate volcanic rock	66.1	15.8	3.34	1.5	3.3	2.48	4.34	0.11	0.43	0.12	1.6	99.2	0.87	18	100	8	2	230	480	6.94	10	70	3.2	66	<10	<0.5	7.8	<2	3	10	9	36	1.5	15	100	<0.2	20	<10	28	<1	0.6	1.9	<0.7	<50	2.3	2.1	0.5	14	27	10	2.2	0.77	0.3	0.64	0.11
3	63	128.5	-239	Chert	84.9	9.69	0.05	0.11	0.2	2.51	0.83	<0.02	0.65	0.14	1.1	100.2	0.02	6	60	1.8	2	50	200	3.42	20	210	7	4	10	0.8	0.8	6	<1	6	34	4.5	<0.5	<5	11	<0.2	20	<10	12	26	0.3	<0.1	<0.7	50	<0.5	7.9	2.2	25.5	46	20	4.52	0.58	0.7	2.06	0.33
2	63	139.1	-233	Felsic volcanic rock	73	15.3	1.31	0.4	5.44	2	0.72	<0.02	0.65	0.14	1.1	100.2	0.2	14	90	2.6	2	130	420	8.32	30	200	5.6	36	10	1.4	4.5	2	<1	4.5	6	7	<0.5	<5	34	<0.2	40	<10	20	4	1.8	<0.1	<1.4	50	0.5	6.8	2.1	33.9	58	26	5.07	0.68	1	1.99	0.33
4	63	172.8	-203	Felsic volcanic rock	65.4	15.6	0.63	0.77	0.92	4.55	6.05	<0.02	0.73	0.16	5	99.9	0.02	26	150	8.4	3	40	490	9.97	40	240	7.3	44	10	<0.5	8.4	5	2	17	16	8.5	<0.5	<5	57	<0.2	30	<10	8	17	1.4	<0.1	2.6	<50	<0.5	6.9	1.9	33.5	60	26	5.09	0.52	0.9	2.88	0.48
5	63	200.5	-178	Felsic volcanic rock	71	16.2	1.37	0.61	5.65	2.19	1.13	0.02	0.75	0.14	1.1	100.3	0.12	17	70	2.9	2	130	400	8.69	30	210	6.6	40	10	<0.5	6.7	3	1	9.7	6	11	<0.5	<5	55	<0.2	20	<10	8	2	2	0.3	<1.2	<50	<0.5	7.3	2	31.5	52	25	4.63	0.68	0.6	2.08	0.34
6	63	242.2	-140	Felsic volcanic rock	62.5	15.7	0.97	0.49	1.84	4.72	7.87	0.07	0.71	0.16	4.4	99.6	0.15	22	130	2.3	4	120	500	8.45	30	230	6.6	42	20	<0.5	6.2	5	1	27	25	12	<0.5	<5	37	<0.2	20	<10	3	16	0.3	<0.1	<1.3	150	0.6	6.9	2.2	35.7	62	27	5.18	0.68	0.9	2.26	0.4
7	63	275.5	-107	Intermediate volcanic rock	65.4	15.8	1.86	0.72	3.34	3.32	7.64	0.11	0.74	0.17	1.1	100.4	0.12	18	120	7.3	3	160	540	9.33	30	200	6.3	42	30	0.6	7	2	1	7.1	6	14	<0.5	<5	64	<0.2	20	<10	4	2	0.5	0.4	3.8	<50	1.4	7.7	0.8	37.6	65	27	5.02	0.13	0.8	2.41	0.42
8	63	291.7	-91.5	Felsic volcanic rock	70	14.7	2.04	1.26	1.14	2.65	3.78	0.14	0.43	0.1	3.1	99.4	0.09	14	70	2.8	2	60	300	7.77	30	190	6.6	46	<10	0.7	23	3	1	11	35	17	<0.5	<5	55	<0.2	30	<10	12	21	0.8	<0.1	<0.7	<50	<0.5	6.5	1.8	28.1	48	19	3.67	0.74	0.5	1.95	0.34
9	63	304.5	-79	Kyanite quartzite	76.6	15	1.35	0.97	1.43	0.61	1.88	0.02	0.31	0.03	2	100.3	0.07	20	20	1	2	110	100	5.55	50	170	7.3	28	20	0.9	10	8	1	4.9	15	19	<0.5	<5	170	<0.2	170	<10	12	120	1.3	<0.1	<0.7	<50	<0.5	10	3.5	37.2	67	25	5.92	0.48	1.1	3.19	0.57
10	63	333.2	-51.5	Felsic volcanic rock	72.7	14.2	2.4	2.08	0.51	1.55	3.15	0.06	0.36	0.07	2.6	99.8	0.04	30	60	1.8	2	60	160	7.41	40	170	5.6	40	10	0.6	9.2	3	1	5.7	16	43	<0.5	<5	120	<0.2	20	<10	8	10	1.2	1.8	1.1	<50	<0.5	8.7	2	30.6	53	19	4.5	0.33	0.7	2.12	0.36
11	63	348.2	-36	Felsic volcanic rock with sulfides	49.8	23.2	3.84	1.46	1.2	4.62	8.1	0.06	0.56	0.08	7.2	100.3	0.38	12	200	6.3	4	50	560	12.3	50	470	14	38	30	1.3	7.1	8	1	7.8	13	220	4	45	86	<0.2	460	<10	36	120	1.8	0.4	3.3	50	<0.5	13	4.1	24.3	44	17	3.87	1.01	1.1	6.39	1.12
12	63	364	-20.5	Felsic volcanic rock with pinite alteration	72	11.1	4.12	2.17	0.19	3.05	2.5	0.21	0.17	0.03	2.5	98.2	2.7	14	140	3.5	3	<10	410	3.87	20	140	5.5	12	20	0.8	<0.5	6	1	2.1	6	20	<0.5	<5	71	<0.2	30	<10	16	18	0.4	<0.1	2.9	50	0.5	11	3.5	37.6	66	26	5.55	0.71	1.2	2.93	0.52
13	63	376.9	-8	Felsic volcanic rock	73.3	12.1	0.35	0.77	0.07	3.93	4.72	0.06	0.25	0.06	3.8	99.5	0.23	10	140	2.7	3	<10	760	6.57	50	260	8.4	10	10	0.8	1.2	6	3	3.5	9	6.5	<0.5	5	46	<0.2	20	<10	16	77	0.7	<0.1	<1.7	50	0.5	9.3	2.9	42.8	72	31	6.1	0.88	1.1	2.79	0.48
14	63	381.8	-3	Felsic volcanic rock with pinite alteration	64.7	12.4	3.82	2.65	0.12	4.31	5.61	0.44	0.56	0.11	3.3	98.2	3.1	14	160	5.3	3	40	630	7.1	50	170	5.9	32	<10	0.8	4	4	2	10	13	38	1.5	15	530	1.2	40	<10	32	74	1.7	<0.1	3.5	200	1.2	7	1.9	27.2	48	22	4.28	0.57	0.6	2.46	0.41
15	63	389.9	2	A ORE	50	5.79	12.5	6.84	0.17	2.48	8.35	0.8	0.13	0.07	5.3	92.5	9.6	16	120	6.5	2	60	240	3.69	<10	90	3.8	14	20	<0.5	<0.5	18	3	15	85	190	10	33	7400	34	<10	<10	480	30	8.7	<0.1	2.9	50	0.6	4.4	2.4	25	39	17	3.98	0.78	0.9	2.82	0.49
16	63	399	14	Felsic volcanic rock	72.7	12.8	1.56	1.38	0.1	4.21	3.1	0.36	0.27	0.05	2.4	99.1	1.2	12	140	2.5	1	20	830	6.72	<10	270	8.6	6	10	0.7	<0.5	7	3	1.9	9	110	1.5	<5	220	<0.2	20	<10	40	9	0.8	<0.1	<1.0	50	<0.5	10	3.3	42.2	76	28	6.41	0.66	1.1	3.42	0.58
17	63	404	19.5	B ORE	57.1	4.37	8.78	3.73	<0.01	1.52	7.09	1.48	0.1	0.03	4.5	88.8	7.4	16	10	3.2	2	30	200	3.56	<10	70	3.4	8	30	<0.5	7.5	6	<1	3.6	14	700	2700	16000	5900	32	<10	<10	8600	950	390	1.7	21	50	<0.5	3.5	1.4	24	25	10	2.32	1.29	0.5	1.87	0.26
18	63	412.7	28	Felsic volcanic rock	65.2	12	1.44	3.6	0.15	4.37	<0.01	0.49	0.25	0.06	2.7	98.9	1.1	18	160	6.1	3	10	500	6.11	10	270	6.5	8	20	0.6	2.8	5	4	5.8	5	180	19	220	2000	8.8	30	<10	180	13	7.4	<0.1	2.3	<50	<0.5	9.7	2.6	39.1	78	30	6.22	1.31	0.9	3.51	0.57
19	63	422.8	38	C ORE	56.5	8.64	0.84	1.28	<0.01	2.63	11.4	0.56	0.19	0.06	6.3	88.5	0.56	13	120	2.9	4	<10	630	4.83	<10	160	4.9	6	50	<0.5	3.1	19	<1	8.4	14	370	220	530	46000	240	90	<10	9300	88	230	2.1	12	<50	0.5	7.6	3.2	29.2	61	23	4.96	1.22	1.1	6.51	1
20	63	444.15	59.5	D ORE	75.9	8.81	1.31	1.15	<0.01	2.88	2.93	0.14	0.2	0.06	2.7	96.2	1	14	100	1.1	1	10	580	3.22	<10	200	4.8	8	20	0.7	2.3	5	4	2.5	8	46	33	500	13000	68	90	<10	520	23	15	<0.1	<0.6	50	<0.5	7.1	2.5	24.8	47	20	3.95	0.73	0.5	1.39	0.22
21	63	458.5	74	Felsic volcanic rock	76.2	11.4	0.35	1.42	0.06	3.95	3.2	0.28	0.25	0.06	2.2	99.6	0.19	12	140	1.9	3	<10	1100	6.1	40	270	6.5	6	20	0.6	<0.5	7	2	2.1	4	6.5	5	18	400	1.2	20	<10	96	16	2.9	0.2	1	50	0.5	11	3.1	33.5	70	27	5.64	0.85	0.9	4.43	0.74
22	63	489.7	105	Intermediate volcanic rock	72.9	10.6	1.29	2.3	0.06	3.92	4.64	0.31	0.24	0.06	2	98.5	1	14	150	2.8	2	20	920	5.58	<10	240	5.9	6	20	0.7	2	6	1	3	7	27	10	57	570	2	20	<10	470	6	9.6	0.4	<0.5	<50	0.6	9.5	2.8	29	59	25	4.93	0.83	0.7	2.05	0.36
23	66	15.85	-105	Intermediate volcanic rock	68.3	12.8	0.99	3.01	0.11	1.55	8.6	0.15	0.63	0.17	3	99.4	0.02	26	50	1.2	6	10	170	8.25	20	170	3.9	40	20	<0.5	4.3	4	2	22	23	32	<0.5	<5	270	<0.2	<10	<10	12	3	0.7	0.4	<0.5	<50	1.1	6	1.8	16.1	37	15	3.14	0.75	0.4	1.81	0.28
24	66	34.2	-91	Kyanite quartzite	79.7	12.4	0.35	0.18	0.3	1.58	2.18	<0.02	0.36	0.08	2.4	99.6	0.02	14	60	1	2	20	180	2.62	10	160	4.3	28	30	<0.5	22	5	5	20	67	8	<0.5	13	29	<0.2	50	<10	20	35	1.7	0.2	<0.5	500	<0.5	5.3	2.3	8.5	20	8	1.97	0.44	0.3	1.76	0.29
25	66	48.4	-80	Felsic volcanic rock	81.8	9.81	0.67	0.37	0.32	1.67	2.01	<0.02	0.21	0.04	2.3	99.3	<0.01	22	60	1	3	<10	150	3.5	20	120	3.7	18	20	0.5	6.1	6	3	6.9	13	6	<0.5	8	52	<0.2	650	<10	20	34	0.8	0.4	<0.5	<50	0.6	7.5	2.8	8.7	20	8	2.27	0.46	0.5	2.04	0.34
26	66	82.3	-54	Felsic volcanic rock	72	13.6	1.31	1.38	0.68	2.9	3.36	0.06	0.32	0.07	3.8	99.6	0.05	14	130	2.4	3	140	350	6.8	30	170	4.9	30	20	0.6	6.8	5	1	6.8	12	16	<0.5	5	69	<0.2	20	<10	16	23	0.7	0.4	<0.6	<50	<0.5	11	3.1	33.7	68	27	5.37	0.78	0.8	2.98	0.49
27	80	14.55	-21	Felsic volcanic rock with pinite alteration	73	13.9	1.26	1.95	0.34	3.56	2.83	0.09	0.27	0.06	3.1	100.5	0.14	14	180	3.1	3	10	650	5.61	50	180	5.7	14	20	1	<0.5	9	1	4	5	6	3.5	8	120	<0.2	10	<10	28	34	2.3	0.4	<0.7	<50	<0.5	15	4.5	39.5	83	32	7.29	0.79	0.8	3.6	0.59
28	80	31.4	-4	Felsic volcanic rock	73.8	12.1	0.14	1.01	0.08	3.71	4.62	0.18	0.26	0.07	3.9	100	0.39	10	150	1.6	4	<10	320	7.28	30	280	7.1	8	20	0.6	2.5	6	1	3.8	7	6.5	5	<5	250	<0.2	80	<10	24	140	2.5	0.3	<0.6	<50	0.5	11	3	40.2	77	32	6.4	1.12	1	3.54	0.54
29	80	45.3	10	A ORE	75.2	9.66	0.04	1.57	0.05	3	6.08	0.06	0.2	0.05	3.9	99.9	<0.01	10	120	2.1	3	<10	500	5.02	<10	220	5.4	<2	20	<0.5	<0.5	6	2	4.2	9	22	13	73	670	2.8	40	<10	1000	64	2.8	0.2	2	<50	<0.5	8.7	3.1	24.2	43	17	3.76	0.9	0.6	2.63	0.43
30	80	57	21.51	A ORE	73.8	9.42	2.01	1.45	0.11	3.15	4.65	0.43	0.22	0.05	2.9	98.4	1.7	12	130	2	3	20	800	5.53	10	210	5.6	2	20	0.6	2.6	8	4	4.9	8	23	15	45	1200	7.2	10	<10	660	54	34	<0.1	4.4	<50	<0.5	8.4	2.7	29.6	61	24	4.86	0.91	0.9	3.45	0.54
31	80	65	38.5	B ORE	72.8	10.8	0.09	2.6	0.2	3.7	4.69	0.22	0.15	0.03	2.7	98.1	0.38	14	160	4.5	3	<10	470	5.57	<10	220	6.6	<2	50	0.8	<5.4	7	2	1.1	5	62	110	300	4700	26	70	<10	7300	11	81	0.4	37	<50	<0.5	11	3.3	51.4	104	44	8.31	1.59	1	1.99	0.39
32	80	109.8	74	Felsic volcanic rock	78.8	9.63	0.25	1.06	0.26	2.98	2.51	0.14	0.13	0.02	2.3	98.2	0.15	12	110	1.3	<1	<10	440	4.77	<10	230	6.2	<2	20	0.8	<1	7	3	0.9	3	130	14	130	9100	42	30	<10	1200	89	24	0.4	<0.7	100	<0.5	10	3.1	35.3	70	29	5.63	0.9	0.8	1.69	0.3
33	80	122.7	87	D ORE	50.4	7.64	0.56	4.1	<0.01	2	11.7	1.18	0.1	0.02	6.4	84.2	0.56	16	160	3.3	3	<10	210	3.84	<10	90	4	4	30	<0.5	5.2	7	<1	7	11	850	21	450	80000	320	30	<10	3500	4300	53	4.4	41	<50	<0.8	5.8	1.8	34.4	57	18	3.74	0.7	0.8	5.08	0.78
34	80	155.5	119	Felsic volcanic rock	75.9	11.9	0.18	2.02	0.23	3.57	2.62	0.12	0.22	0.04	1.9	98.8	0.03	16	140	2.5	1	<10	550	6.16	30	230	6.7	12	20	0.8	14	5	1	2.1	11	13	7	84	1600	8	20	<10	460	52	3.4	3.2	7.1	<50	1.6	9.7	2.4	32.2	64	26	4.92	0.58	0.7	1.64	0.27
35	15	235.8	176	Felsic volcanic rock	77.9	11.4	0.5	0.56	0.12	5.42	<0.01	0.03	0.17	0.06	2.1	99.7	0.37	10	210	1.4	<1	20	750	4.13	20	120	4.4	8	10	0.7	<0.5	7	2	2.3	5	6	<0.5	<5	420	2	30	<10	66	47	2.6	0.4	<0.5	<50	2	13	3.6	31.4	66	26	5.98	0.53	0.8	3.22	0.53
36	15	249.9	190	Felsic volcanic rock	77.9	10.1	1.95	0.62	0.02	3.27	1.64	0.09	0.13	0.26	2.4	98.5	1.3	10	150	1.1	1	<10	330	3.15	40	110	4.4	2	20	0.7	<0.5	8	3	2.1	3	6	<0.5	7	110	<0.2	50	<10	24	27	3.9	0.2	<0.6	<50	4	13	3.4	31.8	64	27	5.91	0.56	0.7	2.55	0.43
37	15	272.3	212	Felsic volcanic rock	79.4	11.5	0.83	0.54	0.03	3.63	0.94	0.03	0.13	0.04	2.1	99.3	0.62	10	140	1.1	<1	<10	390	2.85	40	140	4.4	4	30	0.8	1.1	7	1	1.3	6	2	<0.5	<5	61	<0.2	40	<10	8	13	1.4	<0.1	<0.6	<50	8	13	3.7	32.6	66	26	5.61	0.46	0.8	2.99	0.51
38	OKS-70		250	Kyanite quartzite	38.7	49.5	0.17	1.18	0.68	2.13	3.9	0.07	0.89	0.1	2.5	100	0.02	14	110	1.8	<1	130	290	18	90	760	20	40	50	3.1	5.2	51	3	2.8	9	3.5	<0.5	<5	35	<0.2	1400	<10	16	1	0.1	0.4	<1.2	<50	4.6	30	11	57	179	54	11.6	1.4	2.1	9.02	1.51
39	313		275	Kyanite quartzite	82.5	13.5	0.27	0.27	0.56	0.26	0.63	<0.02	0.24	0.05	1.5	99.9	0.01	10	10	0.3	3	60	150	2.72	40	200	5.3	8	20	0.9	1.8	7	1	1.2	8	2.5	<0.5	<5	41	<0.2	600	<10	8	1	0.1	<0.1	0.7	<50	<0.5	11	3.1	27.7	55	21	4.33	0.55	0.7	2.82	0.47
40	OKS-46		300	Kyanite quartzite	76	17.5	0.13	0.16	0.17	0.34	2.2	0.03	0.4	0.09	1.9	99	<0.01	6	10	0.3	2	<10	90	2.95	10	160	3.5	48	20	<0.5	22	<2	8	12	33	6.5	<0.5	<5	120	<0.2	30	<10	8	16	0.3	0.4	<0.5	200	4.1	1.4	0.6	9.6	18	7	1.51	0.35	0.2	0.46	0.08

For the location of drill holes see Papunen et al. 1989

Note: in stratigraphy the A ore is calculated as zero level

Id	Sample Nr.	northing	easting	rock type	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Mg#	Ba	Ce	Cl	Cr	Co	Cu	Ga	La	Ni	Nb	Pb	Rb	S	Sr	V	Y	Zn	Zr	OXIDES	TotalTr
					norm %	norm %	norm %	norm %	norm %	norm %	norm %	norm %	norm %	norm %		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
3JUN 97	3.1	7131.325	4455.071		64.80	14.80	5.66	0.10	4.44	4.92	3.52	1.19	0.5	0.08		308	19	<20	144	21	150	17	10	116	1	10	31	<10	244	72	10	54	105	98.3	1271
3JUN 97	3.5	7131.325	4455.071		65.40	14.90	5.27	0.10	4.13	4.65	3.79	1.23	0.5	0.09		272	18	<20	132	17	35	21	12	110	0	12	33	<10	235	63	11	54	116	98.9	1089
4JUN 97	4.1	7131.334	4455.070		63.40	15.40	5.78	0.11	3.85	6.09	3.98	0.69	0.53	0.11		157	18	<20	131	18	6	17	4	80	2	9	18	<10	278	72	13	54	116	99.3	936
4JUN 97	4.2	7131.334	4455.070		73.00	14.00	3.28	0.05	0.48	4.80	3.81	0.08	0.41	0.07		7	28	<20	84	2	214	19	13	20	0	12	<3	150	356	54	10	11	115	99.6	1030
5JUN 97	5.2	7131.350	4455.060		65.90	15.40	4.73	0.09	3.19	4.79	4.34	1.00	0.45	0.09		220	22	<20	108	13	32	20	11	77	0	12	30	<10	276	72	12	36	122	99.4	1010
8JUN 97	8.1	7131.348	4455.041		54.30	16.90	9.70	0.25	4.70	9.32	3.70	0.37	0.65	0.12		105	33	60	84	18	6	19	14	73	4	11	7	<10	360	86	18	82	128	99.3	1090
8JUN 97	8.2	7131.348	4455.041	Cr basalt	50.20	9.58	13.20	0.41	11.20	11.90	1.47	0.16	1.56	0.12	65.1	<10	15	70	690	49	23	22	9	253	12	5	<3	0	76	250	22	137	113	98.4	1731
9JUN 97	9.1	7131.360	4455.040	Andesite	55.60	14.90	10.90	0.27	5.27	8.42	3.09	0.61	0.78	0.07	51.5	106	1	20	367	28	9	20	4	86	4	13	10	<10	190	227	28	86	54	99.1	1231
11JUN 97	11.2	7131.323	4455.000	Andesite	56.50	15.40	8.03	0.20	5.65	8.95	4.05	0.18	0.87	0.07	60.7	8	21	<20	394	25	25	17	1	121	0	11	2	<10	259	266	21	72	53	99.4	1269
15JUN 97	15.1	7131.512	4455.061	Andesite	61.70	16.00	7.78	0.17	2.45	5.60	4.00	1.24	0.94	0.11	40.9	337	38	20	8	15	6	24	25	22	4	19	41	<10	269	100	25	73	135	99.3	1155
16JUN 97	16.1	7131.511	4455.075	Andesite	60.40	16.70	8.39	0.18	2.41	6.00	3.69	1.23	0.9	0.12	38.7	277	45	0	12	17	76	23	18	15	3	16	37	130	304	107	24	74	132	99.3	1315
19JUN 97	19.2	7131.502	4455.110	Cr basalt	50.70	10.60	13.60	0.48	11.00	9.84	1.77	1.13	0.63	0.05	64.0	216	3	<20	769	46	13	13	<10	265	<4	16	34	<10	73	210	17	228	45	98.1	1895
19JUN 97	19.3	7131.502	4455.110	Ryolite	69.10	15.00	4.20	0.10	1.12	4.78	4.35	0.68	0.53	0.11	37.0	174	28	<20	18	6	23	21	7	15	4	22	16	30	284	41	19	35	172	99.4	890
19JUN 97	19.4	7131.502	4455.110	Cr basalt	47.00	11.60	16.90	0.48	11.20	8.74	1.05	2.07	0.71	0.03	59.3	380	16	<20	853	50	21	19	10	273	<4	7	69	<10	37	214	15	232	47	97.7	2220
20JUN 97	20.1	7131.469	4455.169	Andesite	60.10	14.40	10.20	0.24	4.08	6.12	3.00	1.10	0.61	0.11	46.8	205	43	30	81	22	10	21	15	61	4	22	34	<10	250	88	18	103	129	99.3	1118
21JUN 97	21.1	7131.441	4455.149	Ryolite	77.80	13.00	1.25	0.04	0.15	3.22	4.15	0.11	0.24	0.05	20.9	41	39	<20	8	2	56	19	20	7	2	13	0	10	256	26	12	0	169	99.6	608
22JUN 97	22.1	7131.432	4455.165	Andesite	64.10	14.80	6.01	0.11	4.54	4.64	3.66	1.53	0.51	0.08	62.4	357	37	<20	159	17	5	19	23	120	0	8	46	<10	217	66	11	56	112	98.9	1207
29JUN 97	29, 1-2	7131.248	4454.618	Dacite	69.30	16.10	3.30	0.04	1.26	2.55	4.75	2.34	0.36	0.07	45.6	543	54	<20	24	6	10	18	30	16	9	8	70	<10	140	27	21	9	171	98.1	1089
31JUN 97	31.2	7131.212	4454.590	Dacite	68.70	15.80	4.09	0.05	1.77	2.04	5.37	1.69	0.36	0.07	48.7	184	47	<20	13	5	12	22	28	17	5	8	46	<10	163	35	18	12	179	98.9	781
31JUN 97	31.3	7131.212	4454.590	Dacite	68.80	16.00	3.31	0.05	1.45	2.94	5.60	1.42	0.34	0.06	49.1	160	49	0	13	5	6	20	31	14	6	9	35	<10	114	24	19	8	176	98.7	676
31JUN 97	31.4	7131.212	4454.590	Dacite	69.50	15.30	4.04	0.05	1.70	2.14	5.00	1.64	0.5	0.07	48.0	216	73	<20	14	8	7	19	40	13	9	7	44	0	136	29	24	14	230	99.3	851
38JUN 97	38.1	7132.445	4454.150	Andesite	60.40	16.60	8.65	0.13	2.70	3.95	4.21	2.25	1.06	0.12	40.7	665	14	40	10	22	18	19	8	15	3	76	95	100	252	110	21	301	144	98.8	1913
43JUN 97	43.1	7131.965	4455.323	Dacite	68.50	15.30	5.11	0.05	1.66	1.98	5.20	1.49	0.6	0.11	41.7	266	15	50	10	8	3	19	8	12	4	12	45	0	132	45	19	43	186	98.6	880
44JUN 97	44.1	7131.919	4455.392	Komatiitic basalt	47.70	9.30	18.70	0.33	11.10	9.80	0.88	1.44	0.51	0.03	56.6	244	6	110	1278	41	6	23	1	328	0	12	55	<10	26	184	13	99	21	97.6	2440
44JUN 97	44.2	7131.919	4455.392	Andesite	58.30	15.80	8.85	0.13	4.19	5.78	4.33	1.45	1.11	0.12	51.0	351	34	70	109	24	6	21	10	56	2	18	61	<10	218	153	24	47	134	99.2	1331
46JUN 97	46.1	7131.903	4455.418	Basalt	49.80	14.80	13.30	0.30	6.60	9.72	2.49	1.06	1.7	0.16	52.2	258	26	150	151	35	39	20	8	52	9	24	51	10	215	307	31	119	109	98.9	1619
49JUN 97	49.1	7132.432	4454.087	Uralite porphyrite	48.90	15.00	13.00	0.35	7.20	9.04	2.76	1.92	1.63	0.16	54.9	1177	14	210	162	43	29	19	19	87	9	150	82	100	226	310	25	583	99	98.2	3342
50JUN 97	50.1	7134.866	4455.938	High-Cr basalt	46.80	11.70	19.50	0.54	8.65	8.21	1.39	2.00	0.72	0.02	49.4	481	<10	230	3138	33	49	31	7	133	4	41	59	320	38	230	27	610	25	97.8	5453
50JUN 97	50.3	7134.866	4455.938	Dacite	67.10	15.40	5.27	0.11	2.19	2.35	5.09	1.76	0.66	0.12	47.7	447	20	100	13	19	50	18	8	26	5	62	57	50	197	59	13	221	168	99	1532
51JUN 97	51.2	7134.878	4455.935	Dacite	64.20	16.90	5.80	0.09	2.32	2.57	5.32	1.96	0.74	0.11	46.8	527	43	140	45	15	9	21	19	34	6	31	63	0	271	76	21	64	167	98.8	1548
52JUN 97	52.2	7134.670	4455.976	Cr basalt	50.20	9.60	16.70	0.42	10.10	9.07	1.20	0.87	1.57	0.12	57.1	183	8	20	666	33	40	19	6	220	11	17	23	0	39	254	21	132	112	98	1809
53JUN 97	53.2	7134.669	4455.995	Basalt	49.00	14.70	14.30	0.44	7.28	8.71	0.54	3.80	1.13	0.08	52.8	2425	10	190	195	43	120	17	1	103	2	114	183	230	187	293	20	500	60	96.9	4698
54JUN 97	54.1	7134.770	4455.957	Andesite	53.70	16.40	11.30	0.30	5.68	6.04	3.53	1.97	0.95	0.06	52.5	462	20	60	161	26	14	18	15	59	5	95	84	20	228	172	24	546	72	98.6	2075
57JUN 97	57.1	7134.656	4456.228	Basalt	51.70	14.40	13.49	0.21	7.34	9.26	1.86	0.22	1.38	0.13	54.5	2	21	40	96	40	52	19	<10	137	5	26	0	700	254	129	22	153	77	98.8	1766
60JUN 97	60.1	7134.691	4457.651	Cr basalt	56.40	12.60	9.57	0.23	6.87	10.00	2.92	0.37	0.72	0.07	61.2	68	23	50	1162	65	86	15	12	424	2	15	5	2970	170	172	23	102	102	98.4	5471

XRF analyses: CSIRO, Perth - main elements: fused sample, traces: pressed pellet

Sample id 2	K/P/M	Depth m	Commune	Locality	Target	Rock class	Rock type	Northing	Easting
2ARO 93 2	K	225.00	KUHMO	AROLA	AROLA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7150.102	4454.255
3ARO 93 3	K	278.00	KUHMO	AROLA	AROLA	Komatiitic cumulate	Serpentinite	7150.420	4454.496
111-JSK-93 1	M	37.00	KUHMO	AROLA	KOIVULEHTO	Pyroxenite dike	Pyroxenite	7150.290	4454.700
125-JSK-93 1	M		KUHMO	AROLA	KOIVULEHTO	Mafic volcanic rock	Tholeiitic basalt	7150.400	4453.460
95JSK 93 1	M	7.00	KUHMO	AROLA	MATARASUO	Ultramafic volcanic rock	Komatiitic lava rock	7149.820	4454.000
81TOH 94 2	P		KUHMO	HIETAPERÄ	HIETAPERÄ	Ultramafic volcanic rock	Komatiitic lava rock	7120.000	4456.880
112TOH 94 1	P		KUHMO	KELLOJÄRVI	ENSILÄ	Komatiitic cumulate	Pyroxenite	7131.250	4455.350
114TOH 94 1	P		KUHMO	KELLOJÄRVI	ENSILÄ	Wehrlite dike	Wehrlitic dike	7130.710	4455.410
100TTT 96 3	P		KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbro / pyroxene cumulate with intercumulus plagioclase	7132.162	4455.785
12TTT 96 1	P		KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbro	7132.261	4455.628
12TTT 96 1	P		KUHMO	KELLOJÄRVI	ENSILÄ S	Gabbroic dike	Gabbro	7132.248	4455.628
3TTT 96 1	P		KUHMO	KELLOJÄRVI	ENSILÄ SW	Felsic dike	Quartzdiorite	7132.490	4455.203
117TTT 96 1	P		KUHMO	KELLOJÄRVI	HIRSINIEMI	Komatiitic cumulate	Olivine meso-adcumulate	7132.173	4454.376
15HP 92 1	P		KUHMO	KELLOJÄRVI	HUKANKANGAS	Komatiitic cumulate	Serpentinite	7129.340	4456.110
89TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTILAHTI	Gabbroic dike	Gabbro / plagioclase cumulate with intercumulus pyroxene	7132.536	4456.164
132TTT 96 2	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Pyroxenite dike	Pyroxenite	7131.980	4455.728
133TTT 96 2	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Olivine augite orthocumulate	7131.983	4455.771
136TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Olivine meso-adcumulate	7131.831	4455.792
144TTT 96 2	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	White pyroxenite	7131.801	4455.960
146TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Gabbro / poikilitic plagioclase cumulate with intercumulus pyroxene oikoryst	7131.702	4455.840
150TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Komatiitic gabbro	7131.544	4455.711
152TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Poikilitic olivine orthocumulate with intercumulus augite oikocryst	7131.871	4455.648
200TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Gabbroic dike	Margin of gabbro dike	7131.773	4456.016
200TTT 96 2	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Pyroxenite	Pyroxenite	7131.771	4456.013
200TTT 96 4	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Inclusion / enclave	Gabbroic pegmatite	7131.772	4456.010
200TTT 96 4	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Inclusion / enclave	Gabbroic pegmatite	7131.771	4456.013
201TTT 96 1	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	White pyroxenite	7131.810	4456.010
201TTT 96 2	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Green pyroxenite	7131.808	4456.013
201TTT 96 3	P		KUHMO	KELLOJÄRVI	HYTTIMÄKI NW	Komatiitic cumulate	Orthopyroxenite	7131.812	4456.015
16TTT 96 1	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Olivine meso-adcumulate	7132.931	4455.209
16TTT 96 3	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Inclusion / enclave	Anorthosite	7132.931	4455.209
63TTT 96 7	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Inclusion / enclave	Pyroxenite	7132.875	4455.104
63TTT 9610	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Inclusion / enclave	Pyroxenite	7132.887	4455.091
63TTT 9612	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT	Komatiitic cumulate	Serpentinite	7132.889	4455.094
21TTT 96 1	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	Poikilitic olivine orthocumulate with intercumulus augite oikocryst	7132.610	4455.451
22TTT 96 1	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	White pyroxenite	7132.607	4455.467
22TTT 96 1	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	White pyroxenite	7132.615	4455.477
23TTT 96 1	P		KUHMO	KELLOJÄRVI	KOLJOSENKALLIOT SE	Komatiitic cumulate	Black pyroxenite	7132.638	4455.477
127TTT 96 1	P		KUHMO	KELLOJÄRVI	LAITALA	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7131.885	4456.018
82TTT 96 1	P		KUHMO	KELLOJÄRVI	LAITALA	Pyroxenite dike	Pyroxenite	7132.137	4456.087
84TTT 96 1	P		KUHMO	KELLOJÄRVI	LAITALA	Komatiitic cumulate	Poikilitic olivine orthocumulate with intercumulus augite oikocryst	7132.109	4456.134
84TTT 96 2	P		KUHMO	KELLOJÄRVI	LAITALA	Pyroxenite dike	Pyroxenite	7132.090	4456.122
94TTT 96 1	P		KUHMO	KELLOJÄRVI	LAITALA S	Gabbroic dike	Gabbro	7131.801	4456.116
16HP 92 1	P		KUHMO	KELLOJÄRVI	LIKONEN	Komatiitic cumulate	Serpentinite	7129.210	4456.565
288TOH 93 1	P		KUHMO	KELLOJÄRVI	MATONEVANSUO	Komatiitic cumulate	Dunite	7130.900	4457.070
113TTT 96 1	P		KUHMO	KELLOJÄRVI	NIITTYJOKI	Gabbro	Komatiitic gabbro	7130.013	4455.308
268TOH 93 1	P		KUHMO	KELLOJÄRVI	NIITTYLAHTI	Komatiitic cumulate	Wehrlite	7130.450	4455.155
155TTT 96 1	P		KUHMO	KELLOJÄRVI	NIITTYLAHTI E	Pyroxenite	Gabbro-pyroxenite	7130.734	4455.408
164TTT 96 1	P		KUHMO	KELLOJÄRVI	NIITTYLAHTI E	Pyroxenite	Pyroxenite / poikilitic olivine cumulate with intercumulus pyroxene oikoryst	7130.563	4455.648
114TTT 96 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Gabbro	Komatiitic gabbro	7128.119	4454.070
18HP 92 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Serpentinite	7128.375	4454.015
200TOH 93 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7127.690	4452.845
206TOH 93 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI	Komatiitic cumulate	Wehrlite	7128.070	4453.110
119TOH 94 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Pyroxenite fragment	7128.019	4453.106
124TOH 94 1	P		KUHMO	KELLOJÄRVI	NÄÄTÄNIEMI, DETAIL OUTCROP	Komatiitic cumulate	Pyroxenite	7127.980	4453.157
36TTT 96 1	P		KUHMO	KELLOJÄRVI	PALOLAMMINSUO N	Gabbroic dike	Gabbro	7132.376	4455.087
67TTT 96 1	P		KUHMO	KELLOJÄRVI	PUUKARINNIEMI	Komatiitic cumulate	Olivine mesocumulate with intercumulus augite	7132.853	4454.704
13HP 92 1	P		KUHMO	KELLOJÄRVI	PÄRSÄMÄNSUO	Komatiitic cumulate	Serpentinite	7128.565	4455.134
14HP 92 1	P		KUHMO	KELLOJÄRVI	PÄRSÄMÄNSUO	Komatiitic cumulate	Serpentinite	7128.565	4455.134
183TTT 96 4	P		KUHMO	KELLOJÄRVI	VATTUNIEMI N	Pyroxenite	Pyroxenite	7131.766	4454.217
184TTT 96 1	P		KUHMO	KELLOJÄRVI	VATTUNIEMI N	Komatiitic cumulate	Poikilitic olivine orthocumulate with intercumulus augite oikocryst	7131.753	4454.274
169TOH 94 1	P		KUHMO	KELLOJÄRVI EAST MARGIN	NÄÄTÄNIEMI TH	Plutonic rock	Granite gneiss	7125.770	4459.410
20SMS 60 1	K	28.50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7228.050	4556.620
20SMS 60 3	K	82.87	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Talc-carbonate rock	7228.050	4556.620
20SMS 60 4	K	141.40	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Komatiitic lava rock	7228.050	4556.620
20SMS 60 6	K	180.60	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Chlorite-talc rock	7228.050	4556.620
20SMS 60 7	K	184.50	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Ultramafic volcanic rock	Komatiitic lava rock	7228.050	4556.620
20SMS 60 9	K	193.40	SUOMUSSALMI	KIANNANNIEMI	HIETAHARJU	Mafic volcanic rock	Amphibolite	7228.050	4556.620
79-1-JSK-94	P		SUOMUSSALMI	KIANNANNIEMI	HUURUNVAARA	Plutonic rock	Pyroxenite	7233.540	4452.900
111TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	HUUTONIEMI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7228.560	4460.770
63TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	JOKINIEMI	Komatiitic cumulate	Gabbro	7225.470	4455.035
29TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	KUIKKAVAARA	Mafic volcanic rock	Tholeiitic basalt	7228.993	4456.215
83TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	KÄRKKÄISENSUO	Mafic volcanic rock	Tholeiitic basalt	7232.540	4458.535
1SMS 60 1	K	76.25	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Chlorite-hornblende rock	7233.520	4458.600
1SMS 60 1	K	92.75	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Chlorite-hornblende rock	7233.520	4458.600
1SMS 60 1	K	135.40	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Ultramafic volcanic rock	Tremolite-chrorite rock	7233.520	4458.600
1SMS 60 3	K	102.50	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233.520	4458.600
1SMS 60 3	K	118.65	SUOMUSSALMI	KIANNANNIEMI	PEURA-AHO	Komatiitic cumulate	Serpentinite	7233.520	4458.600
12TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Plutonic rock	Gabbro	7232.670	4458.310
12TOH 96 3	P		SUOMUSSALMI	KIANNANNIEMI	SUOTTAKANGAS	Plutonic rock	Gabbronorite	7232.690	4458.040
87TOH 96 1	P		SUOMUSSALMI	KIANNANNIEMI	SYRJÄJOKI	Komatiitic cumulate	Serpentinite / olivine mesocumulate	7227.360	4455.045
11TOH 96 3	P		SUOMUSSALMI	KIANNANNIEMI	TARRONNIEMI	Boninitic dike	Boninitic dike rock	7231.610	4458.935
10-TOH-93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Hybrid rock	Tremolite rock (metapyroxenite)	7126.223	4455.992
12TOH 93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126.229	4455.997
16TOH 93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126.238	4456.006
24-TOH-93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock (thin spinifex layer)	7126.245	4456.017
38TOH 93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Ultramafic volcanic rock	Komatiitic lava rock	7126.257	4456.020
7-TOH-93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Sedimentary rock	Banded iron formation	7126.221	4455.99
8TOH 93 1	P		KUHMO	PAHAKANGAS	LONG PROFILE (Fig. 4)	Hybrid rock	Tremolite rock	7126.222	4455.991
10HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Gabbroic dike	Gabbro	7126.155	4455.745
12HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7126.140	4455.705
1HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126.355	4455.895
2HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126.320	4455.900
3HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126.275	4455.900
4HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Uralite porfyrite	7126.215	4455.845
5HP 92 1	P		KUHMO	PAHAKANGAS	PAHAKANGAS	Mafic volcanic rock	Tholeiitic basalt	7126.204	4455.775
8SII 93 5	K	115.70	KUHMO	PAHAKANGAS	PAHAKANGAS	Ultramafic volcanic rock	Komatiitic lava rock	7126.160	4456.000
8SII 93 6	K	98.05	KUHMO	PAHAKANGAS	PAHAKANGAS	Komatiitic cumulate	Serpentinite	7126.160	4456.000
126TOH 93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Plutonic rock	Granodiorite inclusion / enclave	7126.711	4455.829
128TOH 93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Tremolite rock	7126.708	4455.833
132TOH 93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Wehrlite	7126.715	4455.791
135-TOH-93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Inner alteration rim of the chlorite magnetite dike	7126.723	4455.793
136-TOH-93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Outer alteration rim of the chlorite magnetite dike	7126.724	4455.792
141TOH 93 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock	7126.722	4455.813
17HP 92 1	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126.785	4455.650
2TOH 93 2	P		KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Hybrid rock	Chlorite-magnetite rock	7126.723	4455.793
6SII 93 2	K	41.00	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Komatiitic cumulate	Serpentinite	7126.908	4455.499
6SII 93 3	K	99.80	KUHMO	PAHAKANGAS NW	SMALL SERPENTINITE (Fig. 7)	Pyroxenite	Pyroxenite	7126.908	4455.499
195TOH 93 1	P		KUHMO	SIIVIKKO	JUURIKKALAHTI	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7127.800	4454.597
13SII 94 1	K	87.95	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Mafic volcanic rock	7127.519	4454.600
15SII 94 1	K	39.00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7127.592	4454.800
15SII 94 1	K	130.00	KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	Cr basalt	7127.592	4454.800
4SII 93 2	K	102.90	KUHMO	SIIVIKKO	MÄKISENSUO	Intermediate volcanic rock	Intermediate volcanic rock	7127.500	4455.300
4SII 93 3	K	74.80	KUHMO	SIIVIKKO	MÄKISENSUO	Felsic volcanic rock	Felsic volcanic rock	7127.500	4455.300
57TOH 94 1	P		KUHMO	SIIVIKKO	MÄKISENSUO	Mafic volcanic rock	High-Cr basalt	7128.018	4455.220
58TOH 94 1	P		KUHMO	SIIVIKKO	MÄKISENSUO	Ultramafic volcanic rock	Komatiitic lava rock	7128.025	4455.217
129TOH 94 1	P		KUHMO	SIIVIKKO	SIIVIKKOVAARA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126.986	4456.203
133TOH 94 1	P		KUHMO	SIIVIKKO	SIIVIKKOVAARA	Ultramafic volcanic rock	Komatiitic lava rock	7127.229	4457.126
30TOH 94 1	P		KUHMO	SIIVIKKO	SIIVIKKOVAARA	Mafic volcanic rock	Tholeiitic basalt	7126.891	4457.197
167TOH 93 1	P		KUHMO	SIIVIKKO	VIITALA	Plutonic rock	Granodiorite	7127.135	4455.540
174TOH 93 1	P		KUHMO	SIIVIKKO	VIITALA	High-magnesium basalt / komatiitic basalt	Komatiitic basalt	7126.930	4455.870

Sample id 2	SiO_2 % XRF	TiO_2 % XRF	Al_2O_3 % XRF	FeO* % XRF	MnO % XRF	MgO % XRF	CaO % XRF	Na_2O % XRF	K_2O % XRF	P_2O_5 % XRF	CO_2 % XRF	LOI % XRF	Cr ppm XRF	Ni ppm XRF	Co ppm XRF	V ppm XRF	Cu ppm XRF	Pb ppm XRF	Zn ppm XRF	S ppm XRF	Rb ppm XRF	Ba ppm XRF	Sr ppm XRF	Ga ppm XRF	Nb ppm XRF	Zr ppm XRF	Y ppm XRF	La ppm XRF	Ce ppm XRF	Cl ppm XRF	Tot XRF	Anal Nr.
2ARO 93 2	49.39	0.680	14.130	12.27	0.334	6.08	8.29	1.940	0.160	0.038			1125	289	73	278	6	10	90	460	0	31	83	15	0	31	18	0	2	40	94.66	970059
3ARO 93 3	41.28	0.310	6.640	9.41	0.230	20.35	10.54	0.050	0.020	0.020			2474	985	84	138	31	10	70	790	0	0	43	7	0	14	5	5	7	0	89.88	970067
111-JSK-93 1																																
125-JSK-93 1																																
95JSK 93 1	43.85	0.288	6.140	12.00	0.209	23.87	6.52	0.070	0.020	0.013			2519	1049	65	111	37	5	130	700	0	5	5	5	1	13	9	4	11	10	94.30	9505200527
81TOH 94 2	34.70	0.804	19.00	13.50	0.193	17.00	3.75	0.950	0.084	0.071			1314	560	160	150	0	10	160	0	5	27	53		7	37	9	10	10	120	90.05	9411156
112TOH 94 1	49.10	0.215	2.91	6.45	0.279	18.00	19.00	0.000	0.019	0.010			2600	300	60	184	10	120	100	0	5	18	7		6	0	4	30	0	70	95.98	9411196
114TOH 94 1	46.50	0.748	4.39	11.20	0.164	21.60	10.80	0.120	0.036	0.062			2456	780	100	170	70	10	60	550	5	9	21		8	37	10	30	30	100	95.62	9411197
100TTT 96 3	49.39	0.990	5.830	13.16	0.372	12.10	14.27	1.150	0.610	0.020			26	272	59	232	43	220	211	50	10	225	113	12	1	53	20	0	10	640	99.34	960040
12TTT 96 1	52.10	1.580	13.700	13.60	0.567	4.23	5.47	4.170	2.110	0.144			33	50	50	353	260	180	320	550	68	1747	134		28	89	14	20	60	530	97.67	9612618
12TTT 96 1	47.80	0.913	13.400	12.80	0.477	7.46	8.56	0.650	3.100	0.089			259	90	20	319	60	130	360	340	123	1684	154		20	30	18	0	40	330	95.25	9612619
3TTT 96 1	68.50	0.504	15.600	4.07	0.080	1.44	2.59	4.900	1.520	0.138			92	20	0	61	0	20	50	50	47	376	195		17	126	16	10	30	80	99.34	9612616
117TTT 96 1	38.73	0.080	1.640	9.68	0.135	36.89	0.31	0.010	0.000	0.003			3527	2145	124	45	2	9	92	2	0	5	1	2	0	7	2	7	11	2	88.55	960046
15HP 92 1	36.40	0.020	0.920	7.58	0.128	39.02	0.01	0.000	0.000	0.005			4201	2627	113	20	9	6	70	130	0	8	0	2	0	3	4	1	0	510	84.08	970200
89TTT 96 1	50.20	1.620	14.300	13.00	0.396	4.13	7.59	4.100	1.640	0.116			26	50	60	394	160	70	290	360	70	1102	251		23	74	8	10	20	540	97.09	9612628
132TTT 96 2	30.36	1.570	8.680	15.95	0.402	17.83	12.37	0.160	0.040	0.130			1350	938	95	248	253	19	160	340	0	5	71	14	4	125	18	23	27	10	89.25	960054
133TTT 96 2	44.02	0.180	4.420	6.62	0.225	25.28	9.00	0.080	0.010	0.006			994	1217	73	123	1	11	103	2	0	5	26	5	1	15	9	0	3	2	90.57	960056
136TTT 96 1	37.84	0.130	2.380	10.64	0.176	36.85	0.12	0.010	0.000	0.009			1900	2503	114	55	3	9	70	130	0	5	0	4	1	7	4	0	1	150	89.33	960058
144TTT 96 2	50.65	0.230	3.420	5.49	0.192	24.13	10.17	0.007	0.010	0.015			3861	260	77	91	125	10	72	30	0	5	2	7	1	17	5	4	3	2	94.91	960061
146TTT 96 1	44.37	1.600	15.670	8.99	0.204	7.75	18.67	0.300	0.120	0.173			163	105	38	310	13	21	64	2	1	4	374	21	9	114	25	8	29	2	98.84	960062
150TTT 96 1	51.90	0.395	15.100	7.31	0.184	9.64	9.16	2.550	1.560	0.027			323	170	30	184	130	190	500	360	65	502	112		10	7	7	20	0	110	97.83	9612716
152TTT 96 1	40.19	0.220	3.910	10.21	0.185	32.21	2.32	0.010	0.000	0.008			2009	1969	99	73	17	16	111	230	0	5	3	5	1	10	7	2	6	2	90.38	960065
200TTT 96 1	48.00	0.989	14.600	12.90	0.204	7.10	10.20	2.500	0.709	0.102			235	110	50	333	200	20	120	1360	33	170	90		19	44	17	10	40	120	97.30	9612731
200TTT 96 2	52.54	0.350	5.640	8.73	0.208	16.43	12.73	0.590	0.370	0.020			1363	342	54	300	10	8	97	10	18	126	39	8	1	34	11	2	8	0	98.57	960076
200TTT 96 4	53.69	0.420	12.420	6.85	0.161	10.73	10.52	2.450	0.700	0.085			156	215	39	169	10	27	79	2	37	330	203	13	2	45	14	11	26	110	98.78	960077
200TTT 96 4																																
201TTT 96 1	49.29	0.140	4.280	7.74	0.214	23.23	9.21	0.010	0.010	0.002			4798	415	58	96	151	11	91	1340	0	5	1	9	1	4	8	7	3	2	94.98	960079
201TTT 96 2	51.19	0.330	3.710	7.60	0.228	21.18	10.93	0.100	0.020	0.013			4264	425	48	163	5	11	85	2	0	5	2	6	2	15	9	7	4	2	96.14	960080
201TTT 96 3	51.84	0.200	2.960	7.32	0.218	21.97	10.79	0.050	0.010	0.007			5824	692	68	174	39	17	131	10	0	5	3	7	1	10	7	3	4	2	96.18	960081
16TTT 96 1	37.39	0.070	1.530	13.02	0.141	36.03	0.06	0.007	0.000	0.009			3651	2092	157	43	6	8	98	2	0	5	0	5	1	1	3	0	4	2	89.69	960002
16TTT 96 3	35.00	1.150	12.100	11.00	0.254	10.00	24.00	0.000	0.019	0.079			256	170	50	197	0	10	60	30	7	36	1		18	37	9	0	30	60	93.60	9612620
63TTT 96 7	38.35	1.550	12.760	15.65	0.343	10.86	14.23	0.420	0.080	0.145			150	141	81	285	7	21	94	2	0	5	122	14	9	110	27	21	26	2	96.11	960021
63TTT 9610	39.67	1.680	16.260	11.45	0.258	8.41	18.39	0.000	0.010	0.156			166	106	60	334	6	15	65	2	0	5	180	18	3	121	36	12	32	0	97.54	960023
63TTT 9612	41.81	0.090	1.720	5.42	0.146	37.63	0.22	0.010	0.000	0.007			4239	1698	209	54	42	216	291	800	0	5	0	2	1	7	2	2	4	2	87.65	960024
21TTT 96 1	45.60	0.270	4.290	7.59	0.151	27.33	7.29	0.090	0.020	0.016			2425	1340	74	110	19	2	52	170	0	12	2	6	1	17	10	0	6	70	93.49	960003
22TTT 96 1	49.09	0.240	4.190	5.76	0.135	25.66	8.91	0.030	0.010	0.015			3207	521	61	103	10	11	38	2	0	5	4	8	1	17	6	0	9	30	94.67	960004
22TTT 96 1	50.62	0.290	7.720	6.59	0.181	18.12	11.90	0.380	0.960	0.010			1513	627	61	151	345	8	82	90	43	600	42	8	1	13	9	2	9	10	97.49	960005
23TTT 96 1	46.27	0.240	4.550	7.20	0.148	26.54	7.80	0.050	0.020	0.015			2063	1107	75	106	35	123	168	2	0	1	3	5	1	14	6	6	7	40	93.62	960006
127TTT 96 1	38.97	0.160	2.690	12.90	0.218	32.47	1.31	0.030	0.000	0.010			3171	1417	113	100	7	18	113	30	0	5	3	4	1	7	4	1	0	2	90.18	960048
82TTT 96 1	42.24	0.740	4.130	13.03	0.241	26.97	4.62	0.110	0.030	0.048			2793	1209	118	133	38	8	200	430	0	5	8	9	1	54	11	6	20	80	93.59	960032
84TTT 96 1	39.00	0.140	2.660	10.17	0.193	34.33	0.77	0.000	0.010	0.011			4221	1239	90	71	11	63	190	200	0	5	3	5	1	7	2	7	4	2	88.40	960034
84TTT 96 2	33.72	1.610	7.620	14.46	1.026	15.69	13.78	0.170	0.050	0.134			1160	537	82	257	205	210	676	90	0	16	31	10	5	130	17	10	23	2	89.85	960035
94TTT 96 1	63.33	0.990	14.170	7.55	0.135	2.72	3.49	3.530	2.220	0.122			31	36	17	118	11	18	100	0	76	500	193	20	3	198	30	13	38	110	99.09	960037
16HP 92 1	39.62	0.100	3.000	8.59	0.126	32.57	2.59	0.000	0.000	0.009			3774	1816	97	63	7	9	71	10	0	22	9	4	0	4	3	0	6	0	86.61	970201
288TOH 93 1	34.31	0.060	1.420	5.59	0.111	34.54	0.05	0.100	0.010	0.012			3113	2177	83	20	0	8	124	60	0	5	0	2	0	6	2	1	0	190	76.82	971666
113TTT 96 1	50.23	0.430	15.550	7.22	0.178	10.54	8.35	2.350	1.490	0.058			181	247	41	153	37	82	329	0	62	252	188	13	1	49	11	2	16	180	97.19	960043
268TOH 93 1	40.75	0.140	3.590	9.04	0.129	33.13	0.46	0.000	0.000	0.011			2758	2026	111	62	92	8	72	390	0	36	0	6	0	14	5	3	0	0	88.24	971646
155TTT 96 1	46.47	0.800	4.480	11.44	0.191	20.94	10.96	0.290	0.050	0.039			2454	714	87	145	54	7	68	210	0	5	31	7	1	48	11	1	11	170	96.92	960066
164TTT 96 1	42.73	1.240	6.720	11.05	0.140	18.26	14.79	0.010	0.010	0.088			1744	734	83	195	21	13	42	10	0	5	7	13	3	98	19	19	30	0	96.25	960069
114TTT 96 1	52.09	0.400	16.190	5.74	0.151	9.68	10.64	2.860	0.410	0.027			597	248	30	147	43	15	65	0	16	101	388	13	1	32	13	0	4	70	98.82	960044
18HP 92 1	40.96	0.060	1.970	6.04	0.097	37.90	0.41	0.000	0.000	0.001			2844	2571	121	32	0	3	61	100	0	5	0	3	0	7	2	0	6	0	87.44	970203
200TOH 93 1	38.95	0.060	2.280	6.25	0.085	34.29	1.18	0.000	0.000	0.005			3345	1858	99	43	0	8	65	170	0	7	2	3	0	5	2	3	0	0	83.79	971579
206TOH 93 1	40.83	0.153	2.93	13.11	0.200	28.25	5.22	0.030	0.000	0.012			3611	1123	100	93	0	8	93	200	0	5	2	4	1	8	7	2	13	2	90.73	9505241627
119TOH 94 1	46.50	0.304	3.96	8.96	0.175	21.80	14.60	0.060	0.003	0.023			3359	510	90	190	10	10	40	0	5	45	6		17	0	6	0	30	40	96.39	9411204
124TOH 94 1	48.20	0.315	4.19	9.18	0.176	22.30	10.50	0.020	0.018	0.017			3243	830	90	184	50	10	50	0	5	45	11		16	0	0	10	20	70	94.92	9411209
36TTT 96 1	51.01	1.150	6.460	11.17	0.375	13.01	12.57	1.480	0.270	0.053			616	254	63	208	13	2018	2593	470	2	13	52	0	1	71	4	10	46	180	98.78	960012
67TTT 96 1	38.09	0.160	2.850	11.09	0.230	34.49	1.03	0.010	0.000	0.010			3171	2099	114	67	14	9	133	50	0	5	0	5	1	10	7	3	4	2	89.18	960027
13HP 92 1	40.07	0.150	3.150	11.52	0.162	31.01	1.47	0.000	0.000	0.014			2915	1737	109	78	47	3	108	290	0	3	8	4	0	6	5	0	7	0	87.55	970198
14HP 92 1	38.41	0.160	3.560	11.55	0.198	29.96	2.99	0.000	0.000	0.009			3044	1519	111	82	205	24	215	70	0	33	10	6	0	7	6	4	3	0	86.84	970199
183TTT 96 4	49.57	1.230	5.660	11.52	0.303	14.85	13.08	0.470	0.180	0.085			1479	665	62	197	121	33	265	130	0	17	26	12	1	91	20	4	20	150	98.22	960072
184TTT 96 1	45.51	0.220	3.210	7.38	0.179	25.02	10.16	0.007	0.000	0.003			3448	1237	87	107	40	6	102	2	0	5	4	3	1	8	6	2	4	2	92.50	960074
169TOH 94 1	70.90	0.342	14.90	2.82	0.047	1.49	2.43	5.010	1.410	0.120			39	30	0	48	0	10	30	0	45	600	208		19	148	8	40	50	90	99.47	9411254
20SMS 60 1	51.06	0.530	6.710	10.16	0.191	16.79	10.90	0.470	0.050	0.013	0.33	2.69	2360	380	71	223	82	8	99	520	0	16	7	8	0	27	14	2	8	10	97.99	971352
20SMS 60 3	38.56	0.280	4.190	11.07	0.122	26.37	5.06	0.000	0.000	0.017	8.14	12.75	2866	1071	106	101	129	11	84	1840	0	0	26	5	0	16	6	1	12	20	86.89	971355
20SMS 60 4	38.06	0.350	5.260	14.52	0.153	25.20	3.36	0.000	0.000	0.023	5.20	9.99	5105	2070	157	126	498	2	82	5590	0	27	13	7	0	16	7	1	2	0	88.53	971358
20SMS 60 6	42.50	0.580	7.780	13.77	0.252	21.26	5.86	0.140	0.020	0.036	2.20	6.90	2435	690	94	156	6	7	123	110	0	3	34	12	0	33	11	2	8	20	93.72	971361
20SMS 60 7	41.17	0.680	7.840	16.01	0.291	18.91	6.71	0.260	0.030	0.019	3.19	6.93	2104	634	155	174	0	7	113	330	1	2	135	12	0	39	16	0	32	20	93.68	971362
20SMS 60 9	40.85	0.490	6.720	12.09	0.225	21.97	6.00	0.070	0.010	0.034	5.90	9.79	2535	734	106	150	10	9	108	510	0	0	115	8	0	28	9	1	13	20	89.79	971367
79-1-JSK-94																																
111TOH 96 1	37.90	0.261	4.75	13.50	0.217	29.50	2.73	0.000	0.016	0.025		8.69	4694	1230	220	116	50	0	100	450	3	18	8		13	0	4	20	20	60	88.90	9634252
63TOH 96 1	43.10	0.224	18.80	7.98	0.136	12.60	10.60	1.100	0.225	0.019		4.16	250	480	80	68	10	20	60	350	15	63	103		17	0	1	10	0	20	94.78	9612673
29TOH 96 1	49.70	0.712	14.60	11.60	0.206	7.53	10.50	2.140	0.133	0.059			233	120	60	286	30	10	80	100	5	99	68		22	22	12	20	10	180	97.18	9612648
83TOH 96 1	53.50	0.632	14.60	8.90	0.202	6.84	11.20	1.470	0.108	0.056			274	70	40	279	90	10	70	160	10	90	53		14	22	13	20	30	70	97.51	9612667
1SMS 60 1	46.78	0.830	10.490	13.03	0.248	14.33	8.58	1.440	0.070	0.063	0.09	3.67	1165	385	70	225	0	5	131	20	0	25	34	16	0	50	17	0	6	170	97.29	971331
1SMS 60 1	44.17	0.520	6.710	12.73	0.333	18.04	10.74	0.120	0.040	0.025	1.68	5.73	1867	1416	113	211	460	8	123	3270	1	4	28	13	0	25	12	0	7	0	94.83	971339
1SMS 60 1	45.95	0.440	7.280	11.79	0.229	20.42	8.18	0.050	0.010	0.030	1.61	5.05	2591	1016	85	152	0	6	101	30	0	18	6	12	0	23	10	0	2	0	95.68	971350
1SMS 60 3	40.29	0.310	4.750	13.58	0.162	27.99	3.01	0.000	0.010	0.026	0.24	8.31	5140	1215	107	104	161	4	116	2530	0	29	5	6	0	14	7	0	0	0	91.62	971344
1SMS 60 3	37.67	0.380	4.450	13.80	0.196	29.02	2.34	0.010	0.000	0.032	2.01	10.31	5972	1299	129	115	78	4	154	560	0	7	15	5	0	24	5	6	0	0	89.42	971346
12TOH 96 1	51.20	0.662	15.90	8.26	0.158	8.14	9.33	2.850	0.516	0.029			159	130	50	184	30	10	80	190	22	179	324		28	15	5	10	20	100	97.05	9612639
12TOH 96 3	50.90	0.341	9.70	9.15	0.170	15.50	7.94	1.050	0.436	0.026			1006	480	60	143	120	10	70	820	30	143	140		13	7	1	0	20	480	95.21	9612640
87TOH 96 1	40.20	0.087	3.57	7.49	0.145	33.70	2.47	0.000	0.010	0.013		11.01	1498	1680	80	75	0	0	100	460	8	45	3		10	0	1	0	10	20	87.69	9612675
11TOH 96 3	52.50	0.687	11.50	9.36	0.175	10.10	7.74	3.470	0.176	0.095			855	230	80	231	40	20	70	410	12	90	56		16	59	6	20	30	180	95.80	9612638
10-TOH-93 1	48.25	0.28	6.02	9.35	0.16	21.76	7.67	0.06	0.01	0.01			2191	522	35	123	2	9	194	150	3	9	4	9	0	13	12	6	41	20	93.57	
12TOH 93 1	44.63	0.316	7.03	9.63	0.154	25.57	4.78	0.020	0.010	0.021			2696	1170	65	117	44	8	67	270	1	5	2	8	1	18	10	2	9	30	92.16	9505180551
16TOH 93 1	43.37	0.197	4.69	8.59	0.096	28.97	1.24	0.000	0.010	0.013			2874	1599	91	90	1	5	68	610	0	5	12	4	1	13	5	4	99	2	87.18	9505240838
24-TOH-93 1	46.34	0.46	7.48	8.81	0.19	21.86	8.30	0.19	0.01	0.02			1682	836	51	147	8	7	72	50	6	31	9	11	3	24	8	7	16	50	93.66	
38TOH 93 1	45.63	0.300	6.870	9.50	0.125	25.08	3.58	0.090	0.000	0.020			2787	1273	80	131	17	9	85	280	0	3	6	9	0	15	8	1	1	30	92.25	971413
7-TOH-93 1																																
8TOH 93 1	48.10	0.276	7.33	9.75	0.128	23.30	5.36	0.000	0.014	0.024			2210	600	40	132	30	0	230	0	0	90	3		5	7	6	0	10	60	94.28	9314397
10HP 92 1	50.52	0.890	14.710	10.99	0.241	7.65	10.44	2.100	1.070	0.063			291	75	60	263	41	20	151	30	53	237	103	16	0	57	15	2	14	280	98.67	970195
12HP 92 1	53.51	0.820	16.040	9.14	0.188	5.29	11.27	2.680	0.230	0.042			410	161	81	267	90	20	140	730	0	60	119	17	0	43	18	0	1	170	99.21	970197
1HP 92 1	44.51	0.330	7.560	9.74	0.169	23.02	7.46	0.270	0.020	0.023			2745	1132	85	134	74	10	73	340	0	19	25	8	0	17	8	1	0	30	93.10	970186
2HP 92 1	46.70	0.350	7.100	8.38	0.177	23.27	7.31	0.320	0.010	0.009			2330	951	83	112	15	12	81	870	0	8	15	8	0	17	9	0	0	0	93.63	970187
3HP 92 1	43.67	0.380	8.520	9.76	0.179	24.09	5.70	0.380	0.010	0.016			2623	1073	82	133	2	6	72	20	0	17	9	9	0	16	10	0	5	0	92.71	970188
4HP 92 1	71.69	0.440	13.930	3.83	0.028	1.82	0.37	6.820	0.030	0.080			17	10	92	39	17	14	36	130	0	41	65	18	2	143	17	14	23	0	99.04	970189
5HP 92 1	49.49	0.770	15.730	11.28	0.220	7.28	12.83	1.160	0.150	0.050			267	172	76	236	132	14	94	1380	1	23	73	16	0	42	21	0	11	120	98.96	970190
8SII 93 5	42.83	0.440	9.890	11.13	0.205	20.96	6.84	0.280	0.020	0.022			2531	728	87	171	0	10	108	30	0	7	7	12	0	23	9	0	2	90	93.84	971315
8SII 93 6	41.31	0.300	6.740	8.36	0.116	24.44	3.78	0.600	0.490	0.031			2268	1327	79	101	0	14	91	490	13	191	107	9	0	31	5	0	1	0	87.09	971316
126TOH 93 1	61.80	0.575	16.20	4.94	0.057	5.43	0.89	7.480	1.710	0.166			138	120	30	120	0	0	40	0	29	430	145		7	104	12	0	30	110	99.25	9314437
128TOH 93 1	47.50	0.319	7.05	8.40	0.207	20.60	8.61	0.310	0.143	0.035			2258	1070	90	135	0	10	60	0	5	54	10		5	7	8	20	10	80	93.17	9314438
132TOH 93 1	36.72	0.115	3.12	9.40	0.118	32.30	0.81	0.000	0.000	0.007			4644	1786	116	70	15	3	75	560	0	5	12	4	1	6	6	5	11	10	82.59	9505191544
135-TOH-93 1	47.05	0.11	2.93	7.96	0.15	26.80	3.40	0.00	0.00	0.00			3869	1664	85	62	4	5	74	40	2	40	47	3	3	4	6	2	5	50	88.40	
136-TOH-93 1	44.84	0.11	2.90	8.92	0.11	28.77	2.41	0.01	0.00	0.01			4106	1793	100	66	3	9	84	230	2	38	40	6	2	5	5	1	3	30	88.08	
141TOH 93 1	26.82	0.93	21.07	15.40	0.24	22.84	0.33	0.020	0.10	0.210			126	132	74	127	9	5	137	50	2	8	4	20	9	179	18	41	75	0	87.96	
17HP 92 1	40.68	0.130	3.070	8.61	0.104	32.43	1.72	0.000	0.000	0.013			4364	2007	103	64	44	7	84	1230	0	9	20	6	0	10	4	1	2	0	86.76	970202
2TOH 93 2	30.10	0.659	17.80	11.80	0.116	29.30	0.27	0.000	0.002	0.214			325	650	140	137	0	0	60	0	0	9	0		15	252	9	20	10	70	90.26	9313504
6SII 93 2	40.32	0.120	3.120	8.45	0.129	29.49	1.93	0.020	0.000	0.008			4241	1885	105	74	21	6	61	970	0	0	20	4	0	7	4	2	7	70	84.52	971301
6SII 93 3	52.54	0.120	2.860	7.13	0.185	20.70	11.25	0.180	0.020	0.019			6992	1174	88	57	0	10	158	80	0	0	8	4	0	11	12	0	2	210	95.78	971302
195TOH 93 1	47.80	0.510	10.230	11.09	0.245	13.59	11.64	0.960	0.130	0.032			1567	544	88	192	0	15	176	20	0	17	45	12	0	26	16	0	3	0	97.45	971574
13SII 94 1	54.70	0.740	15.40	8.56	0.119	6.14	7.62	3.550	0.741	0.091			377	190	50	272	80	30	50	21300	27	152	110		18	37	16	30	20	20	97.66	9414635
15SII 94 1	52.00	0.662	14.80	8.00	0.143	7.65	9.46	3.310	0.575	0.055			1676	550	110	286	0	10	70	160	24	179	106		17	15	11	0	30	70	96.66	9414674
15SII 94 1	51.30	0.750	15.10	8.27	0.228	6.50	10.30	3.110	0.253	0.080			608	200	90	286	30	20	80	200	11	99	106		19	30	18	0	30	60	95.89	9414683
4SII 93 2	55.37	0.870	15.610	6.03	0.165	7.36	8.62	3.990	0.210	0.073			428	113	89	261	0	27	81	40	3	94	138	16	0	60	18	0	19	0	98.96	971288
4SII 93 3	56.43	0.380	11.610	14.42	0.053	1.79	3.38	3.670	0.390	0.073			50	619	123	59	300	201	174	29400	12	121	72	13	0	119	16	12	36	0	93.79	971289
57TOH 94 1	48.80	0.570	12.10	11.70	0.245	6.25	11.10	2.180	0.233	0.046			2162	310	110	258	0	10	60	0	2	81	95		6	30	16	0	0	220	93.22	9414499
58TOH 94 1	44.30	0.309	7.41	9.48	0.162	21.40	8.08	0.000	0.007	0.028			3038	810	110	143	160	0	100	970	4	18	3		6	7	9	20	20	40	91.18	9414500
129TOH 94 1	48.40	0.511	10.60	11.20	0.217	12.00	11.00	1.530	0.183	0.032			978	290	80	218	0	20	100	0	6	27	46		15	7	8	10	10	180	95.67	9411214
133TOH 94 1	44.70	0.330	8.30	9.43	0.246	19.20	9.93	0.350	0.020	0.027			2340	900	90	136	30	10	110	0	2	27	27		12	0	2	10	10	90	92.53	9411218
30TOH 94 1	53.30	0.615	13.80	13.00	0.227	8.49	1.09	0.540	0.368	0.032			958	250	0	279	50	0	60	0	16	349	13		7	30	14	10	10	170	91.46	9414400
167TOH 93 1	66.10	0.656	15.80	4.68	0.080	2.01	2.78	4.830	2.120	0.186			29	20	0	78	0	0	60	0	32	367	162		12	185	24	20	70	120	99.24	9314454
174TOH 93 1	51.10	0.680	14.500	9.97	0.231	8.60	11.77	2.230	0.230	0.044			949	313	102	258	76	12	61	130	1	53	119	15	0	38	14	2	4	390	100.46	971553

Sample id 2	Sc ppm ICP MS	W ppm ICP MS	Se ppm ICP MS	Ru ppm ICP MS	Rh ppm ICP MS	Pd ppm ICP MS	Os ppm ICP MS	Ir ppm ICP MS	Pt ppm ICP MS	Au ppm ICP MS	Ta ppm ICP MS	Nb ppm ICP MS	Zr ppm ICP MS	Y ppm ICP MS	Th ppm ICP MS	U ppm ICP MS	La ppm ICP MS	Ce ppm ICP MS	Pr ppm ICP MS	Nd ppm ICP MS	Sm ppm ICP MS	Eu ppm ICP MS	Gd ppm ICP MS	Tb ppm ICP MS	Dy ppm ICP MS	Ho ppm ICP MS	Er ppm ICP MS	Tm ppm ICP MS	Yb ppm ICP MS	Lu ppm ICP MS	ANALNO
2ARO 93 2	0	0	0	0.004	0.002	0.010	0.002	0.002	0.022	0.005	2.0	1.5	5	16.5	0.5	0.2	2.4	6.4	1.2	5.8	2.4	0.9	3.0	0.6	4.0	0.8	2.5	0.5	2.5	0.4	970059
3ARO 93 3						0.013				0.005	0.6		9	6.6	0.1	0.3	0.8	2.3	0.6	2.9	1.3	0.3	1.7	0.3	2.0	0.5	1.3	0.2	1.5	0.2	970067
111-JSK-93 1						0.004				0.008	0.4	2.5	30	8.4	0.9	0.4	3.3	8.0	1.4	7.0	2.4	0.9	2.9	0.5	2.6	0.5	1.4	0.2	1.4	0.3	970462
125-JSK-93 1						0.006				0.006	1.2	1.5	3	17.0	0.5	0.2	2.6	6.4	1.2	6.6	2.4	1.2	3.5	0.6	4.2	0.9	2.5	0.5	2.8	0.5	970500
95JSK 93 1						0.012				0.018	0.8	1.5	15	6.8	0.3	0.8	0.6	1.7	0.5	2.9	1.3	0.4	1.5	0.4	2.2	0.4	1.3	0.3	1.4	0.2	970352
81TOH 94 2												2.5	11	8.8	0.2		1.4	4.3	0.7	3.2	1.1	0.50	1.6	0.2	1.7	0.3	1	0.1	1	0.2	9411156
112TOH 94 1												0.5	14	6	0.1		0.7	1.7	0.3	1.6	0.6	0.20	1	0.2	1.2	0.2	0.6	0.1	0.6	0.1	9411196
114TOH 94 1												4	48	11	1.2	0.3	4.5	11.8	1.9	8.4	2.3	0.80	3.1	0.5	2.4	0.5	1.2	0.2	1	0.2	9411197
100TTT 96 3	46										0.2	2.5	36	19.0	0.6	0.2	5.8	18.0	2.9	14.5	4.4	1.2	4.9	0.8	4.7	0.8	2.2	0.3	1.8	0.3	960040
12TTT 96 1	14										0.6	8.0	80	17.5	2.7	0.6	12.0	28.0	3.8	16.5	3.8	1.1	4.3	0.7	4.2	0.7	1.9	0.3	1.4	0.3	9612618
12TTT 96 1	40										0.2	3.5	15	19.5	0.4	0.2	3.7	9.6	1.5	7.4	2.2	0.7	3.1	0.6	4.0	0.7	2.2	0.4	1.9	0.4	9612619
3TTT 96 1	8		0								0.6	6.0	125	19.5	5.2	1.7	17.5	36.0	4.4	17.0	3.6	0.9	4.0	0.6	3.8	0.8	2.1	0.3	2.1	0.3	9612616
117TTT 96 1	6											0.5	9	1.2	0.1	0.1	0.3	0.8	0.1	0.6	0.2	0.1	0.3	0.1	0.3	0.1	0.2		0.2		960046
15HP 92 1	6	18				0.002			0.002	0.006	0.6	0.5	2	0.9	0.2		0.3	0.7	0.1	0.7	0.1		0.2		0.3	0.1	0.1		0.2		970200
89TTT 96 1	16										0.6	7.5	62	18.0	2.5	0.6	10.6	26.5	3.7	16.5	4.1	1.3	4.8	0.7	4.2	0.8	2.0	0.3	1.6	0.3	9612628
132TTT 96 2	24										0.6	8.5	102	21.0	2.7	0.7	17.0	37.0	5.0	21.0	4.9	1.1	5.2	0.8	4.7	0.8	2.2	0.3	2.0	0.3	960054
133TTT 96 2	20											0.5	15	6.2	0.3	0.4	1.5	4.2	0.7	3.0	1.0	0.3	1.2	0.2	1.5	0.3	0.8	0.1	0.7	0.1	960056
136TTT 96 1	10											0.5	16	3.4	0.2	0.1	0.6	1.6	0.2	1.4	0.5	0.2	0.7	0.1	0.8	0.2	0.5	0.1	0.4		960058
144TTT 96 2	26											0.5	10	4.3	0.2	0.1	0.6	1.5	0.3	1.6	0.6	0.2	0.9	0.2	1.0	0.2	0.6	0.1	0.5	0.1	960061
146TTT 96 1	38										0.8	10.5	56	26.5	2.3	0.6	15.0	33.0	4.4	18.5	4.4	1.3	5.2	0.9	5.8	1.1	3.0	0.4	2.6	0.4	960062
150TTT 96 1	34											1.0	15	9.8	0.3	0.2	2.1	5.0	0.8	3.8	1.1	0.5	1.7	0.3	2.1	0.4	1.2	0.2	1.0	0.2	9612716
152TTT 96 1	12											0.5	9	4.1	0.2	0.1	1.1	2.7	0.4	1.9	0.5	0.1	0.8	0.2	0.9	0.2	0.5	0.1	0.5	0.1	960065
200TTT 96 1	40										0.2	4.5	19	21.0	0.5	0.2	4.1	10.6	1.6	7.8	2.4	0.9	3.5	0.6	4.3	0.9	2.6	0.4	2.2	0.3	9612731
200TTT 96 2	48											1.0	29	9.6	0.8	0.3	3.3	7.2	1.0	4.4	1.3	0.4	1.8	0.3	2.2	0.4	1.2	0.2	1.1	0.2	960076
200TTT 96 4	16										0.2	3.0	44	13.5	1.3	0.3	10.8	27.5	2.7	10.2	2.4	0.6	2.8	0.5	2.9	0.6	1.5	0.2	1.2	0.2	960077
200TTT 96 4	48		10									1.0	20	10.2	0.5	0.3	2.1	6.6	0.8	3.6	1.3	0.4	1.7	0.4	2.2	0.4	1.3	0.2	1.1	0.2	960078
201TTT 96 1	20		10									0.5	4	3.2	0.2	0.2	0.5	1.4	0.2	1.1	0.3	0.1	0.6	0.1	0.8	0.2	0.5	0.1	0.6	0.1	960079
201TTT 96 2	42											0.5	7	6.2	0.3	0.2	1.0	2.4	0.4	2.1	0.7	0.2	1.2	0.2	1.4	0.3	0.8	0.1	0.7	0.1	960080
201TTT 96 3	20		10									0.5	10	3.9	0.2	0.2	0.6	1.6	0.3	1.5	0.5	0.2	0.8	0.2	1.0	0.2	0.5	0.1	0.5	0.1	960081
16TTT 96 1	6												5	0.9	0.1	0.1	0.2	0.5	0.1	0.4	0.1	0.1	0.3		0.3		0.2	0.1	0.2	0.1	960002
16TTT 96 3	20										0.2	2.5	62	16.5	0.3	0.1	3.2	8.6	1.5	7.6	2.5	0.8	3.3	0.6	3.5	0.6	1.7	0.2	1.7	0.2	9612620
63TTT 96 7	32										0.6	11.0	30	26.5	2.4	0.7	17.5	37.0	4.8	20.0	4.8	1.7	5.6	0.9	5.8	1.1	2.9	0.4	2.2	0.3	960021
63TTT 9610	40										0.8	11.5	33	34.0	2.5	0.7	17.0	36.0	4.7	20.0	5.0	3.0	6.2	1.0	7.0	1.3	3.8	0.6	3.3	0.5	960023
63TTT 9612	8											0.5	2	2.0	0.1	0.1	0.3	1.0	0.2	0.9	0.3	0.1	0.5	0.1	0.5	0.1	0.3	0.1	0.3	0.1	960024
21TTT 96 1	24											0.5	11	5.6	0.3	0.2	1.6	4.0	0.6	2.7	0.8	0.2	1.1	0.2	1.2	0.2	0.8	0.1	0.7	0.1	960003
22TTT 96 1	24											0.5	16	5.2	0.3	0.1	1.3	3.4	0.5	2.4	0.8	0.1	1.1	0.2	1.2	0.2	0.7	0.1	0.7	0.1	960004
22TTT 96 1	36											0.5	15	6.2	0.3	0.1	1.1	2.9	0.5	2.4	0.8	0.2	1.2	0.2	1.3	0.2	0.7	0.2	0.7	0.1	960005
23TTT 96 1	24											0.5	11	5.8	0.3	0.2	1.3	2.9	0.4	2.2	0.6	0.2	1.1	0.2	1.3	0.2	0.6	0.1	0.8	0.1	960006
127TTT 96 1	16											0.5	7	3.6	0.3	0.1	1.3	2.6	0.4	1.5	0.5	0.2	0.7	0.1	0.8	0.2	0.5	0.1	0.4	0.1	960048
82TTT 96 1	16										0.2	4.0	60	9.2	1.2	0.3	4.0	9.8	1.5	7.0	2.0	0.7	2.3	0.4	2.3	0.4	1.1	0.2	1.1	0.2	960032
84TTT 96 1	10											0.5	6	2.1	0.2	0.5	0.9	2.1	0.3	1.6	0.4	0.1	0.6	0.1	0.7	0.1	0.3	0.1	0.4	0.1	960034
84TTT 96 2	26										0.6	9.5	88	17.5	3.1	0.5	12.0	29.0	4.1	18.0	4.4	1.3	4.7	0.7	4.2	0.8	2.0	0.3	1.6	0.2	960035
94TTT 96 1	16										0.6	9.0	180	28.5	4.8	1.3	20.0	44.0	5.2	20.0	4.7	1.2	5.0	0.9	6.0	1.1	3.2	0.5	3.2	0.5	960037
16HP 92 1	10	21				0.004			0.004	0.006	0.6	1.0	2	2.0	0.3	0.2	1.1	2.2	0.4	1.7	0.7	0.1	0.8	0.1	0.9	0.2	0.5	0.1	0.5	0.1	970201
288TOH 93 1				0.020	0.002	0.028	0.010	0.006	0.008	0.020	0.6	1.5	2	1.3	0.4	0.1	0.8	1.7	0.3	1.6	0.4	0.1	0.4	0.1	0.3	0.1	0.1		0.1		971666
113TTT 96 1	32											2.0	42	10.0	0.9	0.3	4.5	10.0	1.3	5.8	1.5	0.4	1.9	0.3	2.1	0.4	1.2	0.2	1.0	0.2	960043
268TOH 93 1						0.006				0.006	0.2	0.5	5	3.6	0.4	0.1	1.1	2.3	0.5	2.5	0.9		0.7	0.2	1.2	0.2	0.8	0.1	0.9	0.1	971646
155TTT 96 1	28										0.2	3.5	28	9.8	1.1	0.2	3.5	10.2	1.6	7.6	2.1	0.7	2.4	0.4	2.4	0.4	1.1	0.2	1.0	0.1	960066
164TTT 96 1	20										0.4	6.5	88	16.5	2.2	0.5	15.5	34.0	4.2	16.5	3.7	0.3	3.9	0.6	3.9	0.7	1.9	0.2	1.6	0.2	960069
114TTT 96 1	30											1.0	22	10.0	0.5	0.2	3.1	7.0	0.9	4.3	1.3	0.5	1.7	0.3	2.1	0.4	1.2	0.2	1.1	0.2	960044
18HP 92 1	6	48				0.004			0.002	0.010	0.8	1.0	6	1.2	0.3	0.1	0.9	1.9	0.3	1.3	0.5	0.1	0.6	0.1	0.6	0.1	0.4		0.4	0.1	970203
200TOH 93 1						0.006				0.006	0.2	0.5	1	2.3	0.1	0.1	0.6	1.3	0.2	1.5	0.4	0.1	0.7	0.1	0.6	0.1	0.4		0.2		971579
206TOH 93 1												1	10	4.2	0.1		0.6	1.7	0.2	1.3	0.5	0.20	0.8	0.1	0.8	0.1	0.5	0.1	0.5	0.1	9505241627
119TOH 94 1												1	20	7.8	0.2	0.1	1.2	3.2	0.5	2.7	0.9	0.30	1.5	0.2	1.6	0.3	0.9	0.1	0.8	0.1	9411204
124TOH 94 1												1	12	7.2	0.2		0.8	2.5	0.5	2.1	0.8	0.30	1.4	0.2	1.4	0.3	0.8	0.1	0.8	0.1	9411209
36TTT 96 1	44										0.2	4.5	46	15.5	1.4	0.4	6.4	16.0	2.4	11.6	3.3	0.9	3.8	0.6	3.8	0.7	1.7	0.3	1.4	0.2	960012
67TTT 96 1	10											0.5	4	2.9	0.2	0.1	1.3	2.6	0.3	1.5	0.5	0.2	0.7	0.1	0.7	0.2	0.4	0.1	0.4	0.1	960027
13HP 92 1	14	42				0.020			0.022	0.010	0.2	1.0	2	4.3	0.9	1.1	2.4	5.0	0.7	2.7	0.9	0.3	1.2	0.2	1.4	0.3	0.9	0.1	1.0	0.2	970198
14HP 92 1	14	40				0.004			0.002	0.008	0.2	1.0	1	3.8	0.2	0.1	1.2	2.6	0.5	2.2	0.9	0.3	1.1	0.2	1.3	0.3	0.7	0.1	0.9	0.1	970199
183TTT 96 4	22										0.4	7.0	84	16.0	2.2	0.5	8.2	21.5	3.1	14.5	3.7	1.3	4.0	0.6	3.8	0.7	1.8	0.3	1.6	0.2	960072
184TTT 96 1	30											0.5	4	5.6	0.2	0.1	1.0	2.4	0.4	2.0	0.7	0.2	1.1	0.2	1.4	0.3	0.7	0.1	0.7	0.1	960074
169TOH 94 1												5.5	130	12.5	7.6	0.8	20	33	4.3	15	3.5	1.00	3.4	0.5	2.5	0.5	1.2	0.2	1.1	0.2	9411254
20SMS 60 1	50	125				0.012			0.012	0.040	0.4	1.0	22	11.8	0.4	0.2	2.1	4.5	0.9	4.3	1.6	0.7	2.4	0.5	3.0	0.6	1.7	0.3	1.8	0.3	971352
20SMS 60 3	14	26				0.012			0.008	0.006	2.0	2.0	9	2.9	0.3	0.1	1.8	4.2	0.7	3.3	1.1	0.4	1.3	0.2	1.2	0.2	0.6	0.1	0.6		971355
20SMS 60 4	16	14				0.104			0.042	0.012	1.0	1.5	11	2.7	0.4	0.1	1.8	4.0	0.7	3.2	1.1	0.4	1.4	0.2	1.3	0.2	0.7	0.1	0.5	0.1	971358
20SMS 60 6	22	46				0.022			0.014	0.006	0.8	2.5	32	10.6	0.6	0.3	2.1	5.2	0.9	4.6	1.7	0.8	2.3	0.5	2.8	0.6	1.6	0.3	1.7	0.3	971361
20SMS 60 7	24	56				0.014			0.008	0.012	0.8	3.5	37	13.5	0.8	0.3	1.0	2.4	0.5	2.8	1.4	0.5	2.2	0.5	3.3	0.7	2.0	0.4	2.0	0.4	971362
20SMS 60 9	20	31				0.018			0.012	0.008	0.4	2.0	27	8.6	0.7	0.3	0.9	2.2	0.5	2.6	1.4	0.5	1.9	0.4	2.1	0.5	1.4	0.3	1.3	0.3	971367
79-1-JSK-94															0.8		2.3	5.4	0.9	3.9	1.1	0.3	1.3	0.2	1.2	0.2	0.6	0.1	0.6	0.1	
111TOH 96 1												1			0.3		1.3	3.2	0.5	2.4	0.7	0.2	1.0	0.2	1.1	0.2	0.6	0.1	0.5	0.1	9634252
63TOH 96 1												0.5			0.1		1.2	2.6	0.4	1.9	0.5	0.3	1.0	0.1	1.0	0.2	0.6	0.1	0.6	0.1	9612673
29TOH 96 1												2			0.3		1.6	5.0	0.9	4.5	1.8	0.7	2.7	0.5	3.6	0.7	2.1	0.3	2.0	0.3	9612648
83TOH 96 1												1.5			0.7		3.0	7.2	1.1	5.4	1.8	0.7	2.7	0.5	3.4	0.7	2.1	0.4	2.0	0.3	9612667
1SMS 60 1	30	104				0.016			0.012	0.006	1.0	3.0	48	16.5	1.0	0.3	2.5	7.2	1.3	6.4	2.6	0.9	3.6	0.7	4.5	0.9	2.6	0.4	2.3	0.4	971331
1SMS 60 1	52	42				0.225			0.165	0.024	0.6	1.5	17	11.8	0.5	0.1	3.7	8.4	1.4	6.4	2.1	1.0	2.7	0.5	3.2	0.7	1.8	0.3	1.7	0.3	971339
1SMS 60 1	24	40				0.006			0.004	0.006	0.4	1.5	24	9.4	0.5	0.2	1.9	4.2	0.7	3.3	1.5	0.5	2.2	0.4	2.5	0.5	1.5	0.3	1.5	0.3	971350
1SMS 60 3	14	38				0.038			0.014	0.008	0.2	1.5	5	4.8	0.4	0.2	1.2	2.7	0.5	2.3	0.9	0.3	1.2	0.3	1.7	0.3	1.0	0.2	1.0	0.2	971344
1SMS 60 3	14	26				0.030			0.014	0.008	0.4	1.5	6	4.2	0.5	0.1	0.6	1.6	0.4	2.0	0.9	0.3	1.3	0.2	1.4	0.3	0.9	0.2	0.9	0.2	971346
12TOH 96 1												1.5			0.9		5.0	10.8	1.4	6.2	1.5	0.7	1.8	0.3	1.8	0.3	1.0	0.2	0.8	0.2	9612639
12TOH 96 3												1			0.9		4.0	8.2	1.0	4.5	1.1	0.4	1.3	0.2	1.5	0.3	0.8	0.1	0.8	0.1	9612640
87TOH 96 1															0.1		0.3	1.0	0.2	1.1	0.5	0.1	0.8	0.1	0.9	0.2	0.6	0.1	0.6	0.1	9612675
11TOH 96 3												3.5			2.4		7.0	17.0	2.1	9.2	2.2	0.5	2.5	0.4	2.8	0.5	1.4	0.2	1.2	0.2	9612638
10-TOH-93 1												1	37	12.5	0.1	0.1	0.7	1.7	0.4	2.3	1.1	0.30	1.9	0.3	2.1	0.4	1.3	0.2	1.2	0.2	
12TOH 93 1												1	11	7.4	0.1	0.1	0.7	2.1	0.4	1.9	0.7	0.20	1.2	0.2	1.4	0.3	0.9	0.1	0.9	0.1	9505180551
16TOH 93 1												1	6	1.5			0.8	1.2	0.2	1.1	0.3	0.10	0.5	0.1	0.3	0.1	0.2		0.2		9505240838
24-TOH-93 1												1.5	25	7.2	0.1		0.4	1.5	0.3	1.6	0.7	0.20	1	0.2	1.3	0.3	0.9	0.1	0.9	0.1	
38TOH 93 1						0.008				0.006	0.4	1.5	3	5.6	0.2	0.1	0.7	1.6	0.5	2.5	1.0	0.3	1.3	0.3	1.9	0.4	1.1	0.2	1.3	0.2	971413
7-TOH-93 1												0.5	6	5	0.1	0.2	1.3	2.1	0.4	1.8	0.5	0.30	0.8	0.1	0.9	0.2	0.5	0.1	0.5	0.1	
8TOH 93 1												1	23	8.6	0.2	0.1	0.9	2.2	0.4	1.6	0.7	0.20	1.3	0.2	1.5	0.3	0.9	0.1	0.9	0.1	9314397
10HP 92 1	40	275				0.012			0.014	0.008	1.0	4.0	32	19.5	1.1	0.5	5.2	12.5	2.0	9.0	3.2	1.5	4.0	0.8	4.8	1.0	2.9	0.5	3.0	0.5	970195
12HP 92 1	44	360				0.010			0.012	0.010	1.0	2.5	15	20.0	0.4	0.2	2.8	7.2	1.4	6.4	2.5	0.9	3.4	0.7	4.5	0.9	2.8	0.5	2.9	0.5	970197
1HP 92 1	26	38				0.014			0.012	0.010	1.3	2.0	8	8.2	0.4	0.2	1.4	3.1	0.7	3.1	1.2	0.5	1.7	0.3	2.2	0.5	1.5	0.3	1.6	0.3	970186
2HP 92 1	26	56				0.008			0.012	0.012	1.0	1.5	9	7.8	0.3	0.1	0.8	1.9	0.5	2.6	1.1	0.5	1.7	0.3	2.3	0.5	1.5	0.3	1.5	0.3	970187
3HP 92 1	28	33				0.008			0.014	0.008	1.0	1.5	7	7.8	0.5	0.1	1.5	3.4	0.7	3.2	1.2	0.5	1.5	0.3	2.4	0.5	1.5	0.3	1.6	0.3	970188
4HP 92 1	8					0.004				0.018	1.8	7.0	135	10.4	5.0	1.6	15.0	25.5	2.8	11.0	2.8	0.7	3.5	0.6	3.3	0.5	1.6	0.3	1.6	0.3	970189
5HP 92 1	38	360				0.004			0.004	0.008	1.2	2.5	15	19.5	0.5	0.2	3.0	7.2	1.3	6.6	2.5	1.1	3.6	0.7	4.6	1.0	2.9	0.5	3.0	0.5	970190
8SII 93 5						0.018				0.004	3.8	2.5	12	8.8	0.2	0.1	0.8	2.1	0.5	3.0	1.4	0.4	1.9	0.4	2.5	0.5	1.6	0.3	1.8	0.3	971315
8SII 93 6				0.012	0.002	0.016	0.006	0.002	0.010	0.005	3.8	3.0	9	3.6	0.7	0.3	2.5	5.6	0.8	4.2	1.3	0.7	1.5	0.2	1.5	0.3	0.8		0.8	0.1	971316
126TOH 93 1												5.5	68	8.2	3	0.7	12	26.5	3.2	11.6	2.8	0.70	2.8	0.3	1.8	0.3	0.9	0.1	0.7	0.1	9314437
128TOH 93 1												0.5	31	10.4	0.2	0.1	1.4	3.9	0.7	3.4	1.2	0.90	1.9	0.3	1.8	0.4	1.1	0.2	1.1	0.2	9314438
132TOH 93 1												0.5	33	1.9			0.4	1.1	0.2	0.9	0.3	0.10	0.4		0.4	0.1	0.2		0.3		9505191544
135-TOH-93 1												0.5	12	2.9	0.2		0.3	0.8	0.1	0.7	0.3	0.10	0.5	0.1	0.6	0.1	0.3		0.3	0.1	
136-TOH-93 1												1	9	2.2	0.1	0.1	0.3	0.8	0.1	0.6	0.2	0.10	0.4	0.1	0.4	0.1	0.2		0.3		
141TOH 93 1												8	110	8.6	3.9	0.8	29.5	62	7.4	25.5	4.9	1.20	5.2	0.7	2.5	0.4	1.1	0.2	0.8	0.2	
17HP 92 1	12	38				0.006			0.004	0.012	0.8	1.0	1	2.4	0.1	0.1	0.6	1.3	0.3	1.6	0.7	0.2	1.0	0.2	1.1	0.2	0.6	0.1	0.6	0.1	970202
2TOH 93 2												11	200	8.4	7.8	0.7	38	78	9.2	32	4.9	0.80	4.6	0.5	2	0.3	1	0.1	0.7	0.1	9313504
6SII 93 2						0.006				0.007	0.2	0.5		1.6	0.2	0.1	2.1	4.9	0.9	3.6	1.1	0.3	1.0	0.1	0.5	0.1	0.3		0.3	0.1	971301
6SII 93 3						0.010				0.005	0.2		10	7.4	0.5	0.3	2.9	5.6	0.8	4.0	1.6	0.6	1.7	0.4	2.1	0.4	1.2	0.2	1.2	0.2	971302
195TOH 93 1						0.012				0.002	0.8	1.5	3	11.8	0.2	0.1	1.9	4.9	1.0	5.2	1.9	1.0	2.6	0.5	3.2	0.7	2.0	0.8	2.1	0.3	971574
13SII 94 1												3.5	26	18	0.4	0.2	3.6	9.8	1.6	7.4	2.3	1.00	3.3	0.5	3.3	0.7	1.9	0.3	1.7	0.3	9414635
15SII 94 1												3.5	17	17.5	0.3		4	11	1.8	8.6	2.7	1.00	4	0.6	4.4	0.9	2.5	0.4	2.4	0.4	9414674
15SII 94 1												2.5	17	23	0.2	0.1	2.1	6.2	1.1	5.2	2	0.70	3	0.5	3.1	0.6	1.8	0.3	1.7	0.3	9414683
4SII 93 2						0.011				0.006	1.4	2.5	21	14.5	0.5	0.2	3.1	8.2	1.5	7.2	2.5	1.2	3.1	0.6	4.0	0.8	2.1	0.4	2.3	0.4	971288
4SII 93 3			10			0.006				0.009	1.4	2.5	92	16.5	4.8	1.4	15.0	33.0	4.1	16.0	3.8	1.3	3.8	0.7	4.1	0.8	2.4	0.4	5.0	0.4	971289
57TOH 94 1												2.5	15	17	0.1		0.5	1.7	0.4	2.6	1.2	0.50	2.1	0.4	2.9	0.6	1.9	0.3	1.9	0.3	9414499
58TOH 94 1												1.5	24	8.6	0.1		0.7	2.6	0.5	2.3	0.9	0.20	1.4	0.2	1.6	0.3	0.9	0.1	0.9	0.1	9414500
129TOH 94 1												1.5	16	14.5	0.1	0.1	0.6	1.8	0.4	2.3	1.1	0.50	2.2	0.4	2.7	0.5	1.6	0.2	1.6	0.2	9411214
133TOH 94 1												0.5	19	1.6			0.4	1	0.2	0.7	0.2	0.40	0.2		0.2		0.2		0.3		9411218
30TOH 94 1												2	24	13	0.1		1.5	4	0.7	3	1.3	0.50	1.4	0.3	2.1	0.5	1.4	0.2	1.3	0.2	9414400
167TOH 93 1												12.5	82	26	5.8	1.1	24	52	6.6	24.5	5.2	1.60	6.2	0.9	4.9	0.9	2.7	0.4	2.4	0.3	9314454
174TOH 93 1						0.020				0.010	1.0	1.5	3	14.0	0.3	0.1	2.1	5.4	1.1	5.6	2.3	0.9	2.8	0.5	3.7	0.7	2.1	0.4	2.4	0.4	971553

K = drill hole, P = outcrop and M = trench/excavation

XRF analyses - 0=element analysed but not detected

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The study summarizes and reviews the detailed field and geochemical data of the Tipasjärvi-Kuhmo-Suomussalmi greenstone complex collected during the regional geological mapping and ore exploration programs of the Geological Survey of Finland and the Department of Geology, University of Turku. The main emphasis of the study is on the interpretation of the data in terms of stratigraphy and reconstruction of the Archaean evolution of the greenstone belts. The authors conclude that the greenstone belts evolved in an intra-continental rift system since this geotectonic model best satisfies the overall the stratigraphic context, together with lithological, volcanological, structural, as well as major, trace element, and isotope geochemical data.

ISBN 978-952-217-074-3 (paperback)
ISBN 978-952-217-075-0 (PDF)
ISSN 0367-522X