GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Natural Resources
Geological Survey

TILL GEOCHEMISTRY OF THE LETITIA LAKE AREA, CENTRAL LABRADOR

(PARTS OF NTS MAP SHEETS 13L/1 AND 13L/8)

M.J. Batterson and D.M. Taylor

Open File 13L/0121

St. John's, Newfoundland
June, 2005

NOTE

DISCLAIMER

Recommended citation:
Batterson, M.J. and Taylor, D.M.
2005: Till geochemistry of the Letitia Lake area, central Labrador (parts of NTS map sheets 13L/1 and 13L/8). Government of Newfoundland and Labrador, Department of Natural Resources, Geological Survey, Open File 13L/0121, 93 pages.

Cover photo: Mineralized syenite gneiss boulder from near Two-Tom Lake. The area is boulder strewn, although mineralized syenite bedrock contains REE (Rare Earth Elements) bearing minerals, with beryllium and niobium minerals as accessories. Ice flow in this area was generally eastward.

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Natural Resources
Geological Survey

TILL GEOCHEMISTRY OF THE LETITIA LAKE AREA, CENTRAL LABRADOR

(PARTS OF NTS MAP SHEETS 13L/1 AND 13L/8)

M.J. Batterson and D.M. Taylor

Open File 13L/0121

St. John's, Newfoundland
June, 2005

CONTENTS

FIGURES

TABLES

ABSTRACT

This is a re-analysis of till samples originally collected in 1985 as part of a Canada–Newfoundland Mineral Development Agreement project. The samples cover the previously known Mann #1 and #2, Michelin #1, and Two-Tom Lake rare-earth, beryllium and niobium prospects. The area was covered by eastward-flowing ice from the Laurentide ice sheet that deposited a thin blanket of till over much of the landscape. Valleys commonly are filled with glaciofluvial sand and gravel, and extensive bog cover developed in the postglacial period.

The till-geochemical data highlights the main mineral occurrences. Values for REE's, Be, Nb (at Two-Tom Lake), Y and Zr are elevated in till overlying or down-ice of occurrences. These areas are also associated with elevated Pb and Zn. Areas of elevated Be and Nb, not associated with known occurrences, are located south of Letitia Lake within the Letitia Lake Group and northeast of Two-Tom Lake in an area underlain by rocks of the Red Wine Intrusive Suite.

INTRODUCTION

The Letitia Lake till-geochemistry project was conducted in 1985 as part of the 1984–1989 Canada–Newfoundland Mineral Development Agreement. Data from this project were released as a preliminary report (Batterson and LeGrow, 1986), an open file geochemical report (Batterson, 1989) and digital surficial geology map (Batterson, 2001). Since release of the geochemical data, increased accuracy and cost-effectiveness of analytical techniques has occurred, plus a wider range of elements can be analyzed by the newer equipment. Till samples from the 1985 survey were, therefore, re-analysed for a broad suite of elements, and are presented here. Much of the text is taken from the earlier report of Batterson and LeGrow (1986).

The Letitia Lake area (Figure 1) has been the focus of exploration activity since 1956 when Kennco Exploration Ltd. discovered the Mann REE–Be–Nb prospects following a stream geochemistry survey (Brummer, 1957; Evans and Dujardin, 1961). The Mann #1 prospect was assessed through shallow (~60 m) drilling to contain slightly over 2 million tonnes of Be0 at grades of 0.35-0.40% (Dujardin, 1960), although problems with extraction, and market considerations, have rendered this prospect uneconomic. The nearby Mann #2 and Michelin #1 prospects have, to date, had insufficient work to determine reserves.

Interest in other areas around Letitia Lake was generated by a Barringer airborne radiometric survey which identified a series of anomalies (Boniwell, 1967). One of these, around Two-Tom Lake (Figure 1), received some attention when Brinex followed up on a report that rock types in the area contained over 2 percent total rare earths, and up to 1 percent Nb and 1 percent Be (Westoll, 1971). However, Brinex was unable to reproduce these values and therefore concluded that the prospect was unworthy of further consideration.

This present project focused on two specific aspects of the Letitia Lake area: 1) regional-till sampling and terrain mapping of a 480 km^2 area, comprising the northern half of map area NTS 13L/1; the southern part of map area NTS 13L/8 was studied to generate an overview of the regional dispersal patterns and ice-flow directions, and 2) a detailed, drift-exploration survey in the Two-Tom Lake area. Results from the latter project were released earlier (Batterson and Miller, 1987).

REGIONAL SETTING

Letitia Lake (54°15'N 62°20'W) is situated 160 km northwest of Goose Bay, Labrador. Access is by fixed wing aircraft or helicopter. Physiographically, the area is subdivided into two broad regions (Lopoukhine *et al.*, 1977). The ‘Postville Land Region’, north of Letitia Lake, is an area of parallel bedrock ridges up to 500 m in elevation, and broad, glacially enlarged valleys. The ‘Nipishish Lake Land Region’ to the south is a plateau dominated by glacial sediments, bedrock outcrops and numerous bogs. Both regions have a continental climatic regime, are within the boreal forest zone (Rowe, 1972), and lie within the zone of discontinuous permafrost.

Figure 1. *Location of study area and places mentioned in text.*

GENERAL GEOLOGY

The Letitia Lake area lies just south of the boundary between the Churchill and Grenville provinces, along the southern margin of the Grenville Front. The area was studied in detail by Thomas (1981) and Curtis and Currie (1981) (Figure 2). The Letitia Lake Group underlies the Letitia Lake region, including the Two-Tom Lake area. The group consists of massive quartz-feldspar porphyry at its base, overlain by a sequence of porphyritic rhyolite, banded rhyolite, crystal tuff and ignimbritic tuff, and an upper regolith derived from the underlying units. The Letitia Lake Group is in fault contact to the north with rocks of the Seal Lake Group, which consists of

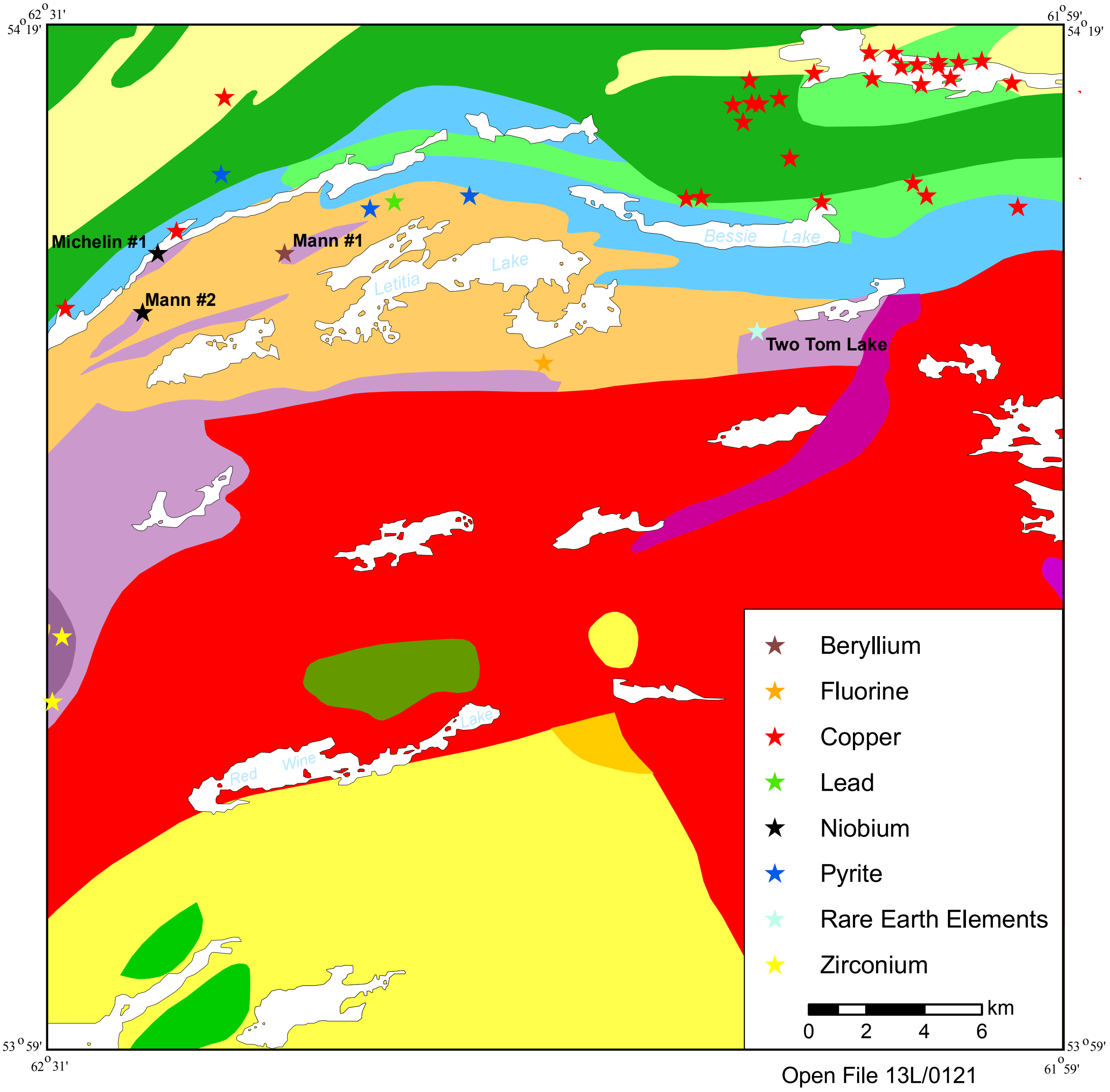
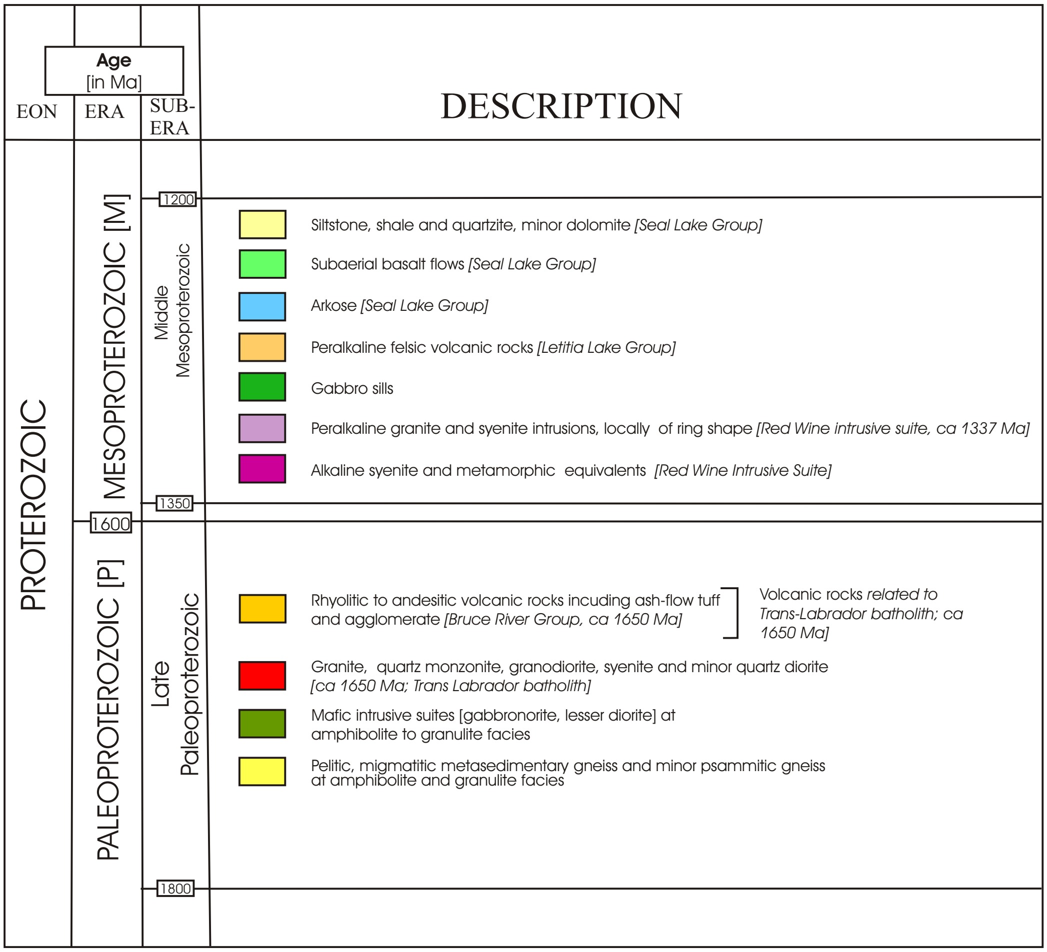


Figure 2. *Bedrock geology (after Wardle* et al., *1997) and Mineral Occurrences (MODS).*

Legend for Figure 2.



siltstone, shale, argillite and interbedded chert of the Wuchusk Lake Formation, and porphyry-cobble conglomerate, quartzite and basaltic flows of the Bessie Lake Formation. Alkali syenites, alkali-feldspar porphyry and peralkaline granite of the Arc Lake Intrusive Suite, and granodiorite–quartz monzonite, biotite granite and diorite of the North Pole Brook Intrusive Suite occur south of the Letitia Lake Group. Much of the area is heavily drift covered making direct observations of the underlying bedrock difficult.

MINERAL DEPOSITS

Four mineral prospects occur within the study area (Figure 2). The Mann #1 prospect, located within the Arc Lake Intrusive Suite, has anomalous radioactivity and contains an average ore grade of 0.35 to 0.40% Be0, within barylite and eudidymite minerals and niobium is an important secondary element. The Mann #2 prospect, located 5.6 km southwest of Mann #1, is within an Arc Lake Intrusive Suite inlier, and contains similar minerals; however, assay values are lower than the Mann #1 prospect (Brummer, 1957). The Michelin #1 property occurs to the north of Mann #2 prospect and is developed within the green pyroxene–aenigmatite gneiss of the Red Wine Alkaline Intrusive Suite. It has anomalous radioactivity and contains low assay values of Nb_20_3

(Robinson and Cruft, 1958). The fourth prospect, in the vicinity of Two-Tom Lake, was identified through an airborne radiometric survey and originally comprised several areas of radioactive alkali gneiss boulders within the quartz-feldspar porphyry terrane of the Letitia Lake Group (Deane, 1970). The main mineralization is rare earth elements (REE) bearing minerals, and Be and Nb minerals are accessories (Westoll, 1971). Batterson and Miller (1987) report locating the source of the boulders in syenite and syenitic gneiss bedrock with 0.27% BeO, 0.25% Y_2O_3, and 0.25% Nb_2O_5.

SURFICIAL GEOLOGY

An interpretation of the surficial geology was made of NTS map area 13L/1 and the southern part of NTS 13L/8 using 1:50 000 scale black and white aerial photographs. The resultant map was extensively field checked and is summarized in Figure 3. It shows that the terrain is subdivided into five broad categories, similar to those defined by Fulton *et al.*, (1975). The area north of Letitia Lake is almost entirely dominated by bedrock ridges underlain by the Seal Lake Group, although numerous areas of till veneer occur between the ridges. South of Letitia Lake, the change in rock types is reflected by a change in topography to an undulating plateau containing numerous areas of bog, scattered bedrock outcrops, and till of varying thickness generally having a fluted appearance. The major valleys, notably the Red Wine and Naskaupi rivers, are dominated by glaciofluvial outwash deposits. The outwash varies from sand plains of varying thickness that commonly flank well defined eskers that reach heights of 3 to 5 m. The Letitia Lake valley is an exception to the outwash-dominated valleys. Although eskers are evident here, they are generally poorly developed, dissected and covered with a veneer of large boulders, many greater than 2 m in diameter. Till of varying thickness, locally exceeding 3 m, commonly has a ridged or hummocky surface expression. Numerous erosional channels enter the valley from its northern and southern margins.

GLACIAL HISTORY

Letitia Lake lies in the central part of the Labrador sector of the Laurentide Ice Sheet dispersal area. Prest *et al.* (1968) described the general dispersal pattern of late Wisconsin ice as flowing through the Labrador Trough and then trending approximately east or northeast, probably following the line of least resistance along the Grenville Front (Rogerson, 1981). (Recession is poorly understood in this part of Labrador.) Ives (1960) suggested that ice on the Northern Labrador plateaux stagnated and down-wasted, while in the larger valleys gravity drainage helped maintain an active ice flow. In the central Labrador region, the lack of recessional features may be an indication of stagnation.

Several observations are significant in a discussion of glacial advance and retreat within the study area. Evidence from directional indicators, notably striae (Figure 3), show that three ice-flow events affected the area. The earliest flow, preserved in the lee of later events, trends northeast (045°). The consistency of this trend throughout the area, oblique to the topographic grain, suggests that it was a major event. The second flow ranges from the east (090°) in the south to east-southeast (114°) in the north. The dominant flow event, based on striae and glacial landform evidence, is east-northeast (074°) in the north and ranges to east (080°) in the south. Earlier stri-

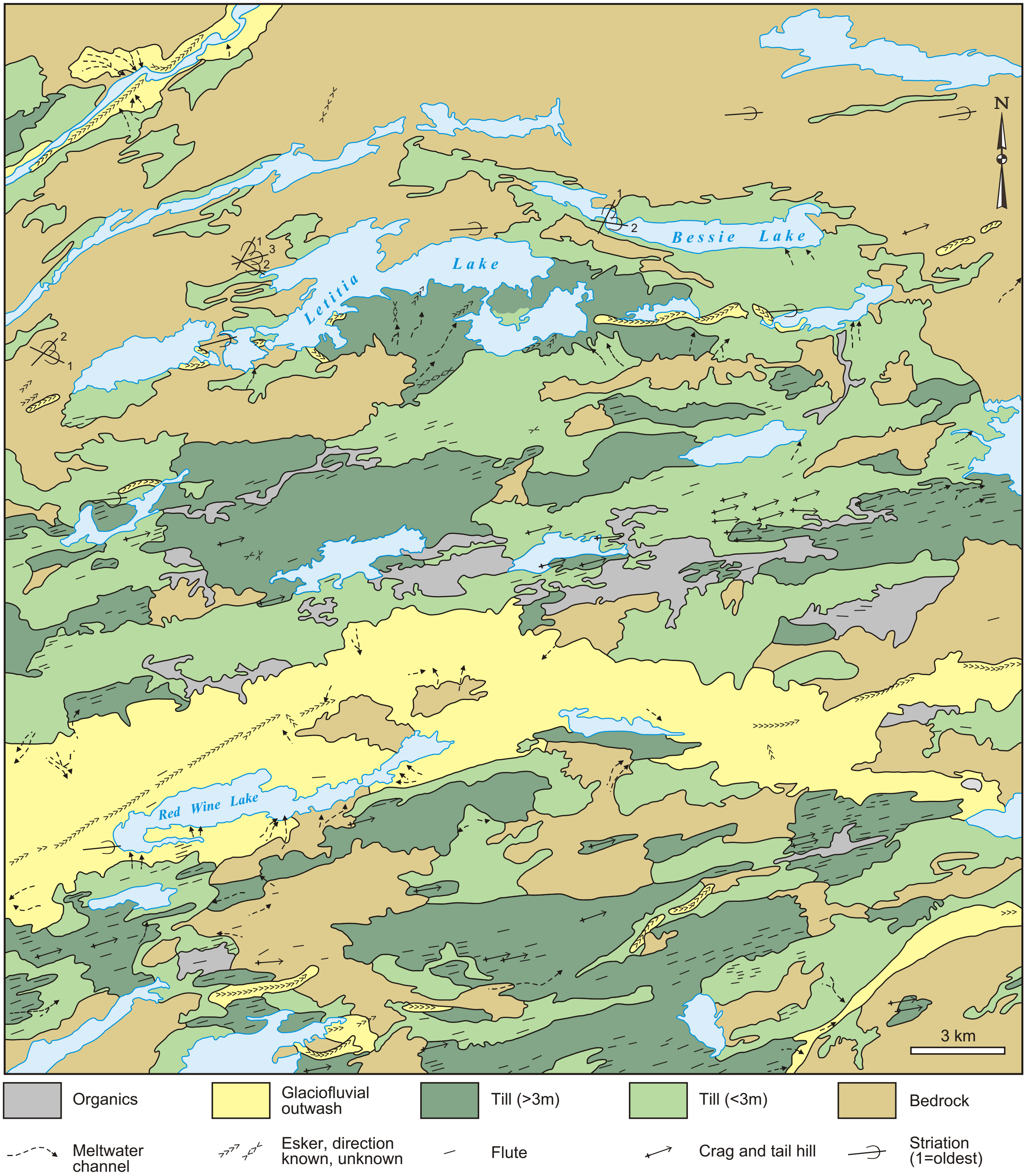


Figure 3. *Surficial geology (after Batterson and LeGrow, 1986).*

ae are always preserved in the lee of later events and crossing striae were rarely observed. The lack of a glacial stratigraphy and dateable material means the age of each of these flow events is open to conjecture. However, the fact that no set of striae showed any evidence of weathering and that each was observed within glacial polish suggests that all flows could be related to the same event, presumably the late Wisconsin. All glacial landforms, e.g., flutes, crag-and-tail hills, are consistent with the last ice-flow event, and it is expected that patterns of geochemical and lithological dispersal should also be consistent with this flow.

Recession of the Laurentide Ice Sheet produced large quantities of meltwater, which is reflected by the extensive outwash deposits and eskers within both the Naskaupi and Red Wine River valleys that coalesce to the east and exit into Grand Lake. It is perhaps due to its proximity to the altitudinally lower Naskaupi Valley, and the resultant drawdown, that the Letitia Lake valley shows evidence of only minor outwash and esker deposits. Letitia Lake was an area of ice stagnation. Meltwater channels entering the valley add to the complexity of deposits here. Features within the valley, such as hummocky till, randomly oriented till ridges (crevasse fillings?), numerous meltwater channels, and poorly defined and discontinuous eskers, are consistent with ice-stagnation topography. The Letitia Lake valley is completely covered by a surface mantle of large (commonly greater than 2 m in diameter), angular boulders of predominantly local origin. However, few such boulders are noted on the plateau area to the south. A suggested explanation for this is that as glacial ice entered the head of the Letitia Lake basin, the subsequent movement down a concave surface resulted in an extending-flow regime. This regime enhanced erosion of the substrate and large blocks were quarried and entrained. Upon stagnation, the boulders were deposited upon the surface. The large amounts of meltwater caused winnowing of material from around the boulders, resulting in the present terrain. The lack of recessional features on the plateau implies that deglaciation was through a downwasting process.

REGIONAL SURFICIAL-SEDIMENT SAMPLING

SAMPLING AND SAMPLE PREPARATION METHODS

A regional till-sampling program was conducted using the surficial geology as a guide (Figure 4). Glaciofluvial, fluvial, marine and aeolian sediments were excluded from the data collection. Most samples were from the C- or BC-soil horizon, taken at about 0.5 m depth. In rare instances, the lack of surface sediment necessitated the sampling of bedrock detritus. Sample spacing was controlled by access as well as surficial geology, but was generally about 1 sample per 4 km^2, in areas where helicopter support was required, although a closer spacing was attained adjacent to the known mineral showings.

Data from 182 samples is presented (Figure 4). In the field, samples were placed in kraft-paper sample bags, and sent to the Geological Survey’s Geochemical Laboratory in St. John’s, where they were air-dried in ovens at 40°C and dry-sieved through 63 µm stainless steel sieves.

GEOCHEMICAL ANALYSIS

Analytical work was carried out at the Geological Survey’s Geochemical Laboratory, with additional analyses from a commercial laboratory. The appended data listings contain all the field

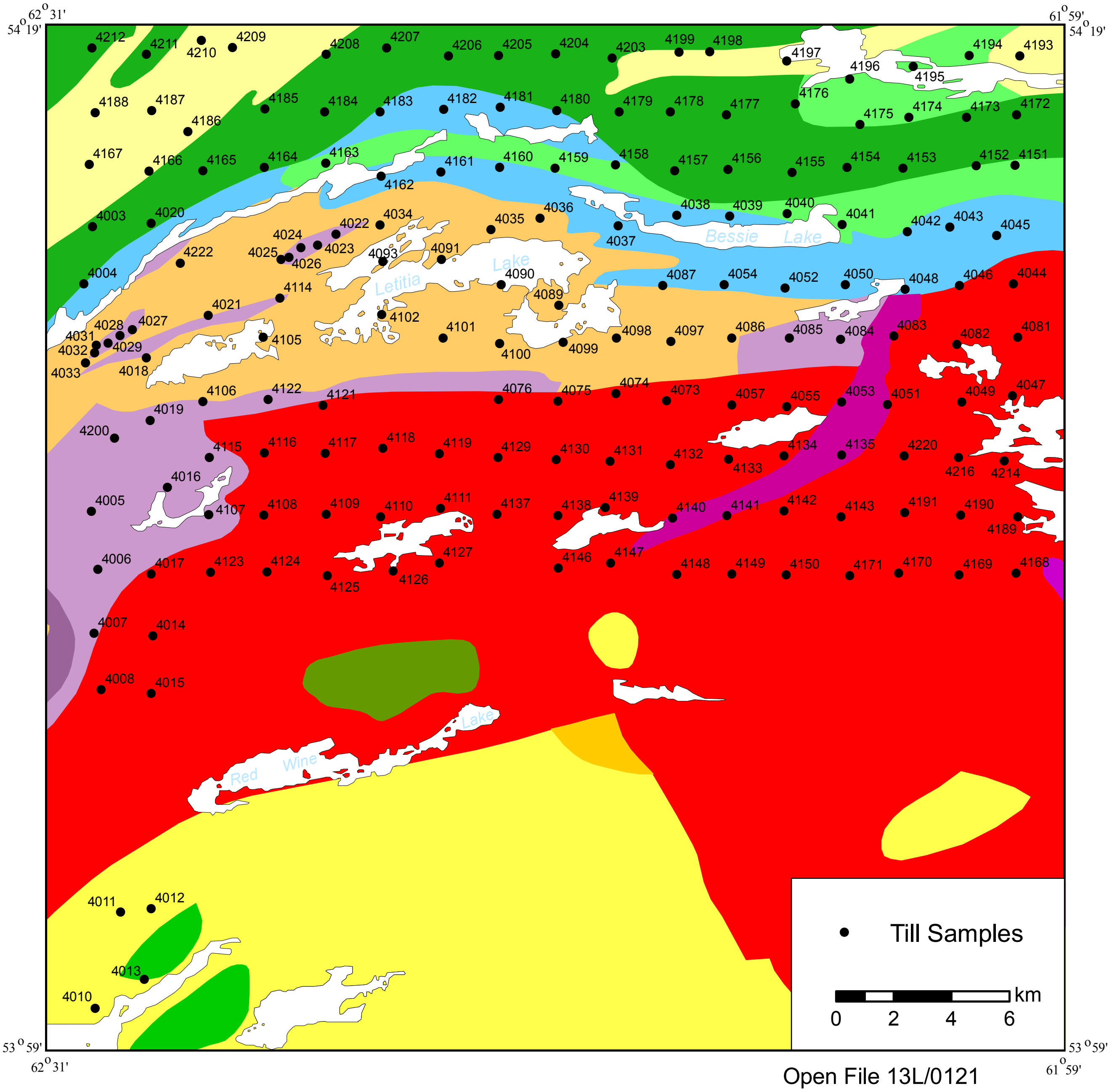


Figure 4. *Sample location map.*

and analytical data from the sediment survey. To distinguish the different analytical methods/laboratories, the trace-element variables are labeled with a combination of the element name, a numeric code and the unit of measurement.

A complete list of variables is given in Table 1, and a full listing of field and geochemical data is contained in Appendix A.

ANALYTICAL METHODS

Gravimetric Analysis (LOI)

Organic carbon content was estimated from the weight loss on ignition (LOI) during a controlled combustion in which 1 g aliquots of sample were gradually heated to 500°C in air over a 3 h period. Accuracy can be judged from the results for reference materials (Table 2).

Inductively Coupled Plasma-Emission Spectrometry (ICP-ES)

For these analyses, the procedures outlined by Finch (1998) are followed. One gram of sample is weighed into a 125 ml Teflon beaker, and 5mL of concentrated HCl and 5 mL of perchloric acid is added to each sample. The samples are placed on a hotplate at 200°C and evaporated to dryness, after which the beakers are half-filled with10% hydrochloric acid and returned to the hotplate at 100°C. When the residue is completely dissolved the samples are removed, cooled and transferred to 50 ml volumetric flasks. One ml of 50 g/l boric acid is added to each sample to complex any residual hyrdoflouric acid. The samples are made to volume and analyzed by ICP-ES (Licthe *et al.*, 1987). For most elements dissolution is total; exceptions are Cr from chromite, Ba from barite and Zr from zircon as these minerals are not usually completely dissolved. Accuracy can be judged from the results for reference materials (Table 2).

The following elements were determined:

Aluminium, barium, beryllium, calcium, cerium, cobalt, chromium, copper, dysprosium, iron, gallium, potassium, lanthanum, lithium, magnesium, manganese, molybdenum, sodium, niobium, nickel, phosphorus, lead, scandium, strontium, titanium, vanadium, yttrium, zinc and zirconium (Al2, Ba2, Be2, Ca2, Ce2, Co2, Cr2, Cu2, Dy2, Fe2, Ga2, K2, La2, Li2, Mg2, Mn2, Mo2, Na2, Nb2, Ni2, P2, Pb2, Sc2, Sr2, Ti2, V2, Y2, Zn2 and Zr2, respectively)

Instrumental Neutron Activation Analysis (INAA)

These analyses were carried out at Activation Laboratories Ltd., Ancaster, Ontario. On average 24 g of sample was used for analysis, and the samples (with duplicates and control reference materials included incognito) were weighed and encapsulated in the Geochemical Laboratory of the Department of Natural Resources in St. John’s. Total contents of the following elements were determined quantitatively: silver, arsenic, gold, barium, bromine, calcium, cerium, cobalt, chromium, cesium, europium, iron, hafnium, mercury, iridium, lanthanum, lutetium, molybdenum, sodium, neodymium, nickel, rubidium, antimony, scandium, selenium, samarium, tin, strontium, tan-

Table 1. Variable list and description of data

VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
Sample	Unique sample ID	Li2 ppm	Lithium, ppm, by ICP
NTS	NTS sheet (1:50 000)	LOI	Loss-on-ignition
Easting	UTM map coordinate	Lu1 ppm	Lutetium, ppm, by INAA
Northing	UTM map coordinate	Mg2 pct	Magnesium, %, by ICP
Site	Sample site number	Mn2 ppm	Manganese, ppm, by ICP
Zone	UTM zone	Mo1 ppm	Molybdenum, ppm, by INAA
Horizon	Soil horizon sampled	Mo2 ppm	Molybdenum, ppm, by ICP
Depth	Sample depth (cm)	Na1 pct	Sodium, %, by INAA
Ag1 ppm	Silver, ppm, by INAA	Na2 pct	Sodium, %, by ICP
Al2 pct	Aluminium, %, by ICP	Nb2 ppm	Niobium, ppm, by ICP
As1 ppm	Arsenic, ppm, by INAA	Nd1 ppm	Neodymium, ppm, by INAA
As2 ppm	Arsenic, ppm, by ICP	Ni1 ppm	Nickel, ppm, by INAA
Au1 ppb	Gold, ppb, by INAA	Ni2 ppm	Nickel, ppm, by ICP
Ba1 ppm	Barium, ppm, by INAA	P2 ppm	Phosphorus, ppm, by ICP
Ba2 ppm	Barium, ppm, by ICP	Pb2 ppm	Lead, ppm, by ICP
Be2 ppm	Beryllium, ppm, by ICP	Rb1 ppm	Rubidium, ppm, by INAA
Br1 ppm	Bromine, ppm, by INAA	Sb1 ppm	Antimony, ppm, by INAA
Ca1 pct	Calcium, %, by INAA	Sc1 ppm	Scandium, ppm, by INAA
Ca2 pct	Calcium, %, by ICP	Sc2 ppm	Scandium, ppm, by ICP
Cd2 ppm	Cadmium, ppm, by ICP	Se1 ppm	Selenium, ppm, by INAA
Ce1 ppm	Cerium, ppm, by INAA	Sm1 ppm	Samarium, ppm, by INAA
Ce2 ppm	Cerium, ppm, by ICP	Sn1 ppm	Tin, ppm, by INAA
Co1 ppm	Cobalt, ppm, by INAA	Sr1 ppm	Strontium, ppm, by INAA
Co2 ppm	Cobalt, ppm, by ICP	Sr2 ppm	Strontium, ppm, by ICP
Cr1 ppm	Chromium, ppm, by INAA	Ta1 ppm	Tantalum, ppm, by INAA
Cr2 ppm	Chromium, ppm, by ICP	Tb1 ppm	Terbium, ppm, by INAA
Cs1 ppm	Cesium, ppm, by INAA	Th1 ppm	Thorium, ppm, by INAA
Cu2 ppm	Copper, ppm, by ICP	Ti2 ppm	Titanium, ppm, by ICP
Dy2 ppm	Dysprosium, ppm, by ICP	U1 ppm	Uranium, ppm, by INAA
Eu1 ppm	Europium, ppm, by INAA	V2 ppm	Vanadium, ppm, by ICP
Fe1 pct	Iron, %, by INAA	W1 ppm	Tungsten, ppm, by INAA
Fe2 pct	Iron, %, by ICP	Y2 ppm	Yttrium, ppm, by ICP
Hf1 ppm	Hafnium, ppm, by INAA	Yb1 ppm	Ytterbium, ppm, by INAA
Hg1 ppm	Mercury, ppm, by INAA	Zn1 ppm	Zinc, ppm, by INAA
Ir1 ppm	Iridium, ppm, by INAA	Zn2 ppm	Zinc, ppm, by ICP
K2 pct	Potassium, %, by ICP	Zr1 ppm	Zirconium, ppm, by INAA
La1 ppm	Lanthanum, ppm, by INAA	Zr2 ppm	Zirconium, ppm, by ICP
La2 ppm	Lanthanum, ppm, by ICP		

Table 2. Accuracy of till geochemical data by ICP. Results of analyses of CANMET Reference samples TILL-1 to -4. Observed values (Obs) are compared against recommended values (Rec). Recommended values are from Lynch (1996). Negative numbers indicate below detection limit.

		Till-1	N=3	**Till-2**	N=2	**Till-3**	N=3	**Till-4**	N=3
		Obs	**Rec**	**Obs**	**Rec**	**Obs**	**Rec**	**Obs**	**Rec**
Al2	**%**	6.52	7.3	7.72	8.5	5.89	6.5	6.89	7.6
As2	**ppm**	12.99		19.21		68.63		90.84	
Ba2	**ppm**	694.41	702.0	531.53	540.0	475.87	489.0	386.43	396.0
Be2	**ppm**	1.60	2.4	3.54	4.0	1.34	2.0	3.11	3.7
Ca2	**%**	1.79	1.9	0.89	0.9	1.76	1.9	0.87	0.9
Cd2	**ppm**	0.31		0.30		-0.03		-0.10	
Ce2	**ppm**	62.14	71.0	84.67	98.0	34.44	42.0	66.08	78.0
Co2	**ppm**	18.39	18.0	15.60	15.0	14.71	15.0	8.06	8.0
Cr2	**ppm**	55.23	65.0	58.82	74.0	96.99	123.0	38.24	53.0
Cu2	**ppm**	51.31	47.0	170.83	150.0	24.05	22.0	261.79	237.0
Dy2	**ppm**	4.71		4.02		2.10		3.35	
Fe2	**%**	4.89	4.8	3.86	3.8	2.75	2.8	3.95	4.0
K2	**%**	1.70	1.8	2.29	2.6	1.82	2.0	2.42	2.7
La2	**ppm**	27.19	28.0	43.73	44.0	19.20	21.0	38.79	41.0
Li2	**ppm**	15.04	15.0	45.72	47.0	21.07	21.0	28.16	30.0
Mg2	**%**	1.26	1.3	1.09	1.1	1.02	1.0	0.72	0.8
Mn2	**ppm**	1591.34	1420.0	870.68	780.0	549.91	520.0	546.48	490.0
Mo2	**ppm**	1.38	2.0	13.96	14.0	1.52	16.9	15.76	
Na2	**%**	2.05	2.0	1.72	1.6	2.00	2.0	1.86	1.8
Nb2	**ppm**	9.62	10.0	16.47	20.0	6.36	7.0	13.05	15.0
Ni2	**ppm**	23.78	24.0	32.92	32.0	40.16	39.0	17.54	17.0
P2	**ppm**	894.63	930.0	703.30	750.0	467.07	490.0	850.55	880.0
Pb2	**ppm**	23.65	22.0	34.58	31.0	26.08	26.0	51.36	50.0
Sc2	**ppm**	43.17	13.0	133.00	12.0	50.36	10.0	151.38	10.0
Sr2	**ppm**	14.31	291.0	12.96	144.0	10.45	300.0	11.17	109.0
Rb2	**ppm**	318.19		162.28		325.61		125.61	
Ti2	**ppm**	5872.46	5990.0	5305.79	5300.0	2928.39	2910.0	4839.12	4840.0
V2	**ppm**	116.67	99.0	90.96	77.0	71.77	62.0	78.97	67.0
Y2	**ppm**	20.86	38.0	14.45	40.0	9.91	17.0	13.08	33.0
Zn2	**ppm**	87.53	98.0	116.23	130.0	48.18	56.0	64.95	70.0
Zr2	**ppm**	128.94	502.0	125.94	390.0	100.67	390.0	109.53	385.0

talum, terbium, thorium, uranium, tungsten, ytterbium, zinc and zirconium. (Ag1, As1, Au1, Ba1, Br1, Ca1, Ce1, Co1, Cr1, Cs1, Eu1, Fe1, Hf1, Hg1, Ir1, La1, Lu1, Mo1, Na1, Nd1, Ni1, Rb1, Sb1, Sc1, Se1, Sm1, Sn1, Sr1, Ta1, Tb1, Th1, U1, W1 Yb1, Zn1, and Zr1 respectively).

QUALITY CONTROL

Data quality was monitored using laboratory duplicates (analytical precision only), estimates of which are given in Table 4. Accuracy estimates are provided by the results from standard reference materials analysed with them (Tables 2 and 3). These data show that for almost all elements, with Zr2 as an exception, all data is of high quality.

It should be emphasized that for mineral exploration, the relative variation of an element is of primary concern. Of the 51 elements determined, 16 were determined by both ICP and INAA (As, Ba, Ca, Ce, Co, Cr, Fe, La, Mo, Na, Ni, Rb, Sc, Sr, Zn, and Zr). To reduce the size of the data for presentation and statistical analysis, for these 16, the data from the method with the best quality determined from comparison with laboratory and field duplicates have been used (As1, Ba2, Ca2, Ce2, Co2, Cr2, Fe2, La2, Mo1, Na2, Ni2, Rb1, Sc2, Sr2, Zn2, Zr2), although all are presented in the data listing (Appendix A). A summary of control data is included in this report, and detailed data are available on request.

STATISTICAL ANALYSIS – FREQUENCY DISTRIBUTIONS

The frequency distributions of the geochemical data were examined using the Jenks optimization method, also known as the goodness of variance fit (Jenks, 1967) found within the ArcMap GIS application. The method identifies natural breaks in the data set, and has replaced the selection of breaks using cumulative frequency plots (cf., Batterson and Taylor, 2001). Comparison of the two methods produced similar subdivisions of the data. Breaks in slope of the curves were used to subdivide the element values into 4-6 natural population groups. These groups are represented by symbols that increase in size with increasing element levels in Figures 5 to 51. Statistics (maximum, minimum, median, mean, standard deviation) were generated from the Excel computer application, and are presented in Table 4. A correlation matrix is shown in Table 5.

INTERPRETATION OF GEOCHEMICAL DATA

Dot plot maps of selected elements (As, Au, Be, Cu, La, Nb, Pb, Th, U, Y, Zn) are presented in Figures 5 to 15. Other element plots are presented in Appendix B. Individuals and companies are encouraged to undertake their own interpretation of the presented data, the following being a preliminary guide.

ARSENIC (As)

The maximum value for arsenic (Figure 5) is 16 ppm, found overlying the Seal Lake Group, which is generally enriched in arsenic compared to other parts of the study area.

Arsenic shows low correlation to all other analysed elements.

Table 3. Accuracy of till geochemical data by INAA and gravimetry. Results of analyses of CANMET Reference samples TILL-1 to -4. Observed values (Obs) are compared against recommended values (Rec). Recommended values are from Lynch (1996). Negative numbers indicate below detection limit.

		Till-1	N=14	**Till-2**	N=14	**Till-3**	N=14	**Till-4**	N=13
		Obs	**Rec**	**Obs**	**Rec**	**Obs**	**Rec**	**Obs**	**Rec**
As1	**ppm**	18.33	18	24.8	26	84.2	87	105.0	111
Au1	**ppb**	4.87	13	-2.0	2	0.3	6	-2.0	5
Ba1	**ppm**	1069.0	702	628.6	540	460.2	489	439.3	395
Br1	**ppm**	6.39	6.4	12.2	12.2	4.4	4.5	8.3	8.6
Ca1	**%**	1.10		-1.0		1.8		-0.9	
Ce1	**ppm**	59.87	71	90.5	98	38.1	42	79.0	78
Co1	**ppm**	16.30	18	18.6	15	13.0	15	7.1	8
Cr1	**ppm**	63.27	65	73.5	74	116.0	123	51.3	53
Cs1	**ppm**	-0.13	1.0	8.4	12.0	2.1	1.7	10.3	12.0
Eu1	**ppm**	1.46	1.3	1.3	1.0	0.9	0.5	1.0	.5
Fe1	**%**	4.44	4.8	4.4	3.8	2.6	2.8	3.6	4.0
Hf1	**ppm**	12.13	13.0	9.8	11.0	6.8	8.0	9.0	10.0
La1	**ppm**	26.47	28	52.7	44	19.0	21	44.6	41
Lu1	**ppm**	0.65	0.6	0.6	0.6	0.2	<0.5	0.6	0.5
Mo1	**ppm**	-1.00	<5	7.0	14	-1.0	<5	16.4	16
Na1	**%**	1.97	2.01	1.6	1.62	2.0	1.96	1.8	1.82
Nd1	**ppm**	24.00	26	41.0	36	15.1	16	27.5	30
Rb1	**ppm**	18.53	44	72.3	143	47.3	55	127.7	161
Sb1	**ppm**	6.93	7.8	2.1	0.8	0.8	0.9	1.3	1.0
Sc1	**ppm**	12.70	13	13.2	12	9.4	10	10.8	10
Sm1	**ppm**	5.74	5.9	7.4	7.4	3.3	3.3	5.8	6.1
Ta1	**ppm**	-0.23	0.7	-0.1	1.9	0.7	<0.5	1.1	1.6
Tb1	**ppm**	-0.01	1.1	0.1	1.2	-0.5	<0.5	0.4	1.1
Th1	**ppm**	5.18	5.6	13.8	18.4	4.7	4.6	14.3	17.4
U1	**ppm**	1.40	2.2	4.9	5.7	1.9	2.1	3.7	5.0
W1	**ppm**	-1.00	<4	4.7	<2	-1.0	<4	152.7	204
Yb1	**ppm**	4.24	3.9	4.1	3.7	1.6	1.5	4.1	3.4
Zn1	**ppm**	54.63		137.5		-4.8		-5.0	
Zr1	**%**	0.01		0.0		0.0		0.0	
LOI	**%**	6.4	6.3	7.0	6.8	3.9	3.6	4.7	4.4

Table 4. Units, detection limits, ranges, medians and standard deviations of geochemical data. Values below detection are coded as half of the detection limit value. Data in *italics* indicates not used in data plots or interpretation.

		Detection limit	Minimum	Maximum	Median	Mean	Standard Deviation
Ag1	**ppm**	1	2.50	2.50	2.50	2.50	0.00
Al2	**pct**	0.01	4.58	7.47	6.14	6.10	0.45
As1	**ppm**	0.5	0.25	16.00	2.39	2.75	2.64
As2	**ppm**	2	1.00	8.65	1.00	1.13	0.75
Au1	**ppb**	1	1.00	14.40	1.00	2.22	2.63
Ba1	**ppm**	50	25.00	1280.00	636.00	652.67	148.95
Ba2	**ppm**	50	246.85	906.70	640.72	631.88	94.47
Be2	**ppm**	0.2	1.00	12.00	2.53	2.80	1.57
Br1	**ppm**	0.5	0.25	51.20	6.04	7.84	6.79
Ca1	**pct**	1	0.50	6.00	0.50	1.29	1.04
Ca2	**pct**	0.01	0.61	3.49	1.66	1.60	0.36
Cd2	**ppm**	0.1	0.05	0.65	0.17	0.19	0.09
Ce1	**ppm**	3	41.30	264.00	98.50	103.60	38.56
Ce2	**ppm**	2	27.69	368.12	91.93	94.91	43.87
Co1	**ppm**	1	0.50	20.00	5.60	3.60	2.67
Co2	**ppm**	2	2.51	19.53	6.58	7.30	2.79
Cr1	**ppm**	5	2.50	96.00	36.58	37.91	14.19
Cr2	**ppm**	2	1.63	78.56	34.36	34.69	9.41
Cs1	**ppm**	1	0.50	37.00	0.80	1.50	2.97
Cu2	**ppm**	2	0.50	119.95	13.80	16.73	14.95
Dy2	**ppm**	0.2	1.30	26.27	5.62	6.33	3.53
Eu1	**ppm**	0.5	0.72	12.48	1.44	1.59	0.94
Fe1	**pct**	0.1	1.53	13.60	3.10	3.34	1.26
Fe2	**pct**	0.01	1.43	13.23	3.34	3.55	1.24
Hf1	**ppm**	2	7.20	40.00	14.40	16.11	5.50
Hg1	**ppm**	1	0.50	0.50	0.50	0.50	0.00
Ir1	**ppb**	5	2.50	5.00	2.50	2.52	0.20
K2	**pct**	0.01	0.77	2.34	1.83	1.78	0.23
La1	**ppm**	1	21.60	176.00	48.15	50.61	20.53
La2	**ppm**	1	16.86	188.87	48.08	50.22	21.73
Li2	**ppm**	0.2	4.46	88.71	12.20	14.39	9.73
LOI	**pct**	0.01					
Lu1	**ppm**	0.05	0.21	2.26	0.59	0.67	0.30
Mg2	**pct**	0.01	0.17	1.20	0.54	0.57	0.17
Mn2	**ppm**	2	258.03	2819.63	527.33	570.10	268.28
Mo1	**ppm**	1	0.50	11.20	0.50	1.50	1.78
Mo2	**ppm**	1	0.50	11.17	1.36	1.57	1.22
Na1	**pct**	0.1	0.97	4.91	2.18	2.18	0.04

Table 4. (Continued)

		Detection limit	Minimum	Maximum	Median	Mean	Standard Deviation
Na2	**pct**	0.01	1.10	4.89	2.26	2.27	0.41
Nb2	**ppm**	2	8.14	92.56	17.05	18.43	8.57
Nd1	**ppm**	5	11.20	136.00	34.00	36.99	17.54
Ni1	**ppm**	5	10.00	10.00	10.00	10.00	0.00
Ni2	**ppm**	2	3.31	37.14	10.76	12.13	5.08
P2	**ppm**	5	103.52	4584.09	718.22	716.56	387.53
Pb2	**ppm**	2	11.01	108.05	22.05	25.21	13.57
Rb1	**ppm**	5	2.50	290.00	52.25	54.00	30.72
Sb1	**ppm**	0.1	0.5	1.20	0.16	0.17	0.15
Sc1	**ppm**	0.1	4.96	36.00	9.60	9.48	2.67
Sc2	**ppm**	1	5.08	41.43	10.45	10.70	3.26
Se1	**ppm**	2	0.50	4.20	0.50	0.57	0.42
Sm1	**ppm**	0.1	2.88	25.60	7.20	7.88	3.54
Sn1	**pct**	0.01	0.01	0.01	0.01	0.01	0.00
Sr1	**pct**	0.05	0.03	0.12	0.03	0.03	0.02
Sr2	**ppm**	2	86.42	494.71	305.27	303.82	71.84
Ta1	**ppm**	0.2	0.10	2.80	0.10	0.66	0.76
Tb1	**ppm**	0.5	0.25	4.08	0.88	0.90	0.64
Th1	**ppm**	0.2	2.60	16.80	7.12	7.24	2.23
Ti2	**ppm**	5	3243.82	19999.56	5074.85	5393.72	1441.89
U1	**ppm**	0.2	0.25	4.08	1.52	1.55	0.75
V2	**ppm**	5	14.28	116.86	70.81	71.62	14.15
W1	**ppm**	1	0.50	4.80	0.50	0.58	0.45
Y2	**ppm**	2	6.71	103.66	22.58	25.18	13.17
Yb1	**ppm**	0.2	2.16	15.20	3.82	4.41	2.10
Zn1	**ppm**	50	25.00	408.00	25.00	59.66	54.85
Zn2	**ppm**	2	16.38	348.31	46.71	60.59	44.18
Zr1	**pct**	0.01	0.01	0.09	0.04	0.04	0.02
Zr2	**ppm**	2	58.59	834.75	257.79	270.03	92.05

Table 5. Correlation matrix

	Al2	*As1*	*Au1*	*Ba2*	*Be2*	*Br1*	*Ca2*	*Cd2*	*Ce2*	*Co2*	*Cr2*	*Cs1*	*Cu2*	*Dy2*	*Eu1*	*Fe2*	*Hf1*	*Ir1*	*K2*	*La2*	*Li2*	*Lu1*	*Mg2*	*Mn2*	*Mo1*
Al2_pct	1.00																								
As1_ppm	0.05	1.00																							
Au1_ppb	-0.03	-0.03	1.00																						
Ba2_ppm	0.37	-0.20	-0.05	1.00																					
Be2_ppm	0.02	-0.25	0.12	-0.08	1.00																				
Br1_ppm	-0.13	0.44	-0.04	-0.34	-0.08	1.00																			
Ca2_pct	0.38	-0.05	-0.09	0.52	-0.12	-0.24	1.00																		
Cd2_ppm	0.13	-0.19	-0.04	0.02	0.35	-0.07	0.21	1.00																	
Ce2_ppm	0.11	-0.25	0.06	0.03	0.72	-0.23	0.17	0.56	1.00																
Co2_ppm	0.44	0.39	-0.06	-0.02	-0.20	-0.07	0.34	0.00	-0.04	1.00															
Cr2_ppm	0.15	0.40	-0.04	0.01	-0.31	0.22	0.13	-0.23	-0.29	0.56	1.00														
Cs1_ppm	-0.01	-0.10	-0.04	-0.25	0.33	-0.12	-0.25	0.41	0.48	-0.11	-0.30	1.00													
Cu2_ppm	0.11	0.31	-0.03	-0.13	-0.06	0.03	0.15	0.06	0.03	0.54	0.35	-0.08	1.00												
Dy2_ppm	0.12	-0.24	0.02	-0.06	0.71	-0.18	0.15	0.61	0.92	-0.07	-0.41	0.52	-0.01	1.00											
Eu1_ppm	0.27	-0.04	-0.02	0.09	0.17	-0.02	0.50	0.50	0.34	0.20	-0.24	0.06	0.05	0.50	1.00										
Fe2_pct	0.15	0.05	0.03	-0.37	0.33	-0.07	0.14	0.45	0.52	0.18	-0.23	0.52	0.08	0.62	0.46	1.00									
Hf1_ppm	-0.14	-0.02	0.03	0.00	0.21	-0.05	-0.15	-0.18	0.08	-0.45	-0.24	0.02	-0.35	0.07	-0.17	-0.04	1.00								
Ir1_ppb	0.04	-0.07	-0.04	0.07	0.05	-0.04	0.08	0.02	0.07	0.00	-0.08	0.01	-0.04	0.08	-0.01	0.02	-0.03	1.00							
K2_pct	0.15	-0.19	0.07	0.63	0.22	-0.47	0.07	-0.06	0.22	-0.18	-0.13	-0.07	-0.17	0.12	-0.08	-0.32	0.32	0.05	1.00						
La2_ppm	0.09	-0.28	0.04	0.03	0.72	-0.20	0.17	0.55	0.96	-0.11	-0.35	0.54	-0.02	0.92	0.37	0.52	0.14	0.09	0.21	1.00					
Li2_ppm	0.03	-0.11	0.03	-0.14	0.66	-0.19	0.05	0.37	0.66	-0.06	-0.35	0.42	0.00	0.68	0.33	0.71	0.06	0.06	0.04	0.63	1.00				
Lu1_ppm	0.07	-0.13	0.02	-0.20	0.60	-0.19	0.00	0.42	0.67	-0.19	-0.52	0.55	-0.07	0.81	0.41	0.68	0.32	0.05	0.09	0.74	0.63	1.00			
Mg2_pct	0.43	0.38	-0.06	0.11	-0.29	-0.02	0.43	-0.06	-0.16	0.92	0.62	-0.19	0.53	-0.18	0.16	0.10	-0.45	0.00	-0.14	-0.22	-0.11	-0.29	1.00		
Mn2_ppm	0.10	-0.04	0.02	-0.17	0.44	-0.22	0.23	0.41	0.66	0.11	-0.28	0.44	0.04	0.68	0.37	0.90	0.06	0.04	-0.11	0.64	0.79	0.71	0.01	1.00	
Mo1_ppm	-0.06	0.16	-0.01	0.03	-0.10	-0.06	0.00	-0.20	-0.09	0.05	0.03	-0.07	0.09	-0.14	-0.06	-0.10	0.07	-0.04	0.09	-0.09	-0.09	-0.07	0.05	-0.09	1.00
Na2_pct	0.28	-0.24	-0.07	0.24	0.34	-0.43	0.48	0.30	0.50	-0.05	-0.42	0.22	-0.09	0.55	0.36	0.58	0.19	0.09	0.14	0.51	0.63	0.66	-0.06	0.73	-0.07
Nb2_ppm	-0.13	-0.22	0.08	-0.25	0.67	-0.16	-0.23	0.36	0.71	-0.32	-0.51	0.74	-0.16	0.75	0.13	0.58	0.37	0.02	0.13	0.76	0.65	0.82	-0.43	0.61	-0.08
Nd1_ppm	0.08	-0.18	0.00	-0.07	0.65	-0.03	0.13	0.57	0.78	-0.13	-0.34	0.51	0.05	0.84	0.51	0.54	0.09	0.05	0.05	0.86	0.54	0.75	-0.19	0.56	-0.07
Ni2_ppm	0.29	0.44	-0.02	-0.09	-0.27	0.04	0.12	-0.15	-0.19	0.89	0.72	-0.12	0.54	-0.25	-0.07	0.05	-0.42	-0.05	-0.17	-0.26	-0.16	-0.31	0.89	-0.05	0.05
P2_ppm	0.34	-0.10	-0.03	0.21	0.13	-0.14	0.68	0.42	0.41	0.23	-0.21	-0.01	-0.04	0.48	0.84	0.47	-0.10	0.09	0.02	0.42	0.39	0.36	0.19	0.47	-0.05
Pb2_ppm	0.04	-0.17	-0.03	-0.20	0.69	-0.05	-0.27	0.38	0.65	-0.26	-0.40	0.60	-0.13	0.72	0.04	0.50	0.28	0.03	0.07	0.69	0.64	0.72	-0.37	0.57	-0.13
Rb1_ppm	0.06	-0.16	0.00	-0.15	0.37	-0.23	-0.15	0.32	0.41	-0.20	-0.39	0.69	-0.22	0.48	0.16	0.55	0.14	0.03	0.06	0.46	0.47	0.59	-0.26	0.48	-0.09
Sb1_ppm	-0.01	0.20	-0.07	-0.16	0.13	0.07	-0.16	0.18	0.28	0.04	-0.01	0.53	0.01	0.26	0.00	0.23	0.01	0.07	0.04	0.31	0.15	0.26	-0.05	0.20	0.07
Sc2_ppm	0.45	-0.03	-0.07	0.24	-0.10	-0.14	0.72	0.34	0.18	0.46	-0.04	-0.11	0.12	0.28	0.78	0.36	-0.28	0.04	-0.14	0.18	0.08	0.15	0.46	0.27	-0.05
Se1_ppm	-0.18	-0.07	0.01	-0.07	-0.08	0.09	-0.08	-0.02	-0.10	-0.05	-0.01	-0.03	-0.07	-0.08	-0.05	-0.06	-0.03	-0.01	-0.07	-0.09	-0.06	-0.09	-0.04	-0.06	0.02
Sm1_ppm	0.11	-0.13	0.00	-0.12	0.65	-0.03	0.16	0.57	0.78	-0.09	-0.35	0.49	0.05	0.87	0.58	0.61	0.06	0.06	0.00	0.84	0.60	0.81	-0.15	0.61	-0.11
Sn1_pct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sr2_ppm	0.40	-0.20	-0.10	0.79	-0.12	-0.23	0.74	0.01	0.01	0.02	0.07	-0.31	-0.08	-0.09	0.09	-0.27	-0.02	0.07	0.30	0.02	-0.12	-0.23	0.14	-0.11	0.08
Ta1_ppm	-0.15	-0.19	-0.01	0.02	0.15	-0.13	0.05	0.12	0.26	-0.11	-0.10	0.22	-0.02	0.24	0.03	0.12	0.10	-0.06	0.04	0.31	0.14	0.19	-0.11	0.15	-0.01
Tb1_ppm	0.12	-0.20	0.06	-0.09	0.59	-0.12	0.15	0.54	0.74	-0.11	-0.42	0.47	-0.09	0.84	0.57	0.57	0.14	0.08	0.06	0.81	0.58	0.79	-0.20	0.58	-0.16
Th1_ppm	0.13	0.29	0.07	-0.03	0.54	0.15	-0.07	0.14	0.44	0.10	0.16	0.26	0.21	0.36	0.08	0.17	0.17	-0.05	0.19	0.46	0.37	0.40	0.05	0.24	0.03
Ti2_ppm	0.12	-0.12	-0.01	0.01	-0.01	-0.16	0.39	0.38	0.22	0.18	-0.28	0.22	-0.06	0.39	0.75	0.51	0.00	0.01	-0.18	0.25	0.20	0.39	0.16	0.40	-0.09
U1_ppm	0.05	0.05	0.14	0.16	0.03	0.03	0.03	-0.13	0.01	-0.03	0.05	-0.11	-0.08	0.00	0.05	-0.20	0.13	0.01	0.21	0.00	-0.09	0.07	-0.07	-0.13	-0.01
V2_ppm	0.17	0.27	-0.02	0.03	-0.44	0.10	0.13	-0.31	-0.46	0.53	0.65	-0.34	0.37	-0.53	-0.32	-0.23	-0.25	-0.03	-0.28	-0.50	-0.47	-0.60	0.59	-0.37	0.12
W1_ppm	0.03	0.00	0.02	0.05	0.02	-0.05	-0.01	0.05	0.09	0.12	0.13	-0.01	0.07	0.04	-0.02	0.03	-0.08	-0.01	0.02	0.02	0.03	-0.05	0.13	0.06	-0.03
Y2_ppm	0.10	-0.25	0.01	-0.06	0.70	-0.20	0.13	0.62	0.91	-0.09	-0.44	0.54	0.00	0.99	0.46	0.61	0.11	0.09	0.14	0.92	0.65	0.83	-0.20	0.67	-0.12
Yb1_ppm	0.04	-0.16	0.02	-0.21	0.62	-0.15	0.00	0.44	0.69	-0.21	-0.54	0.54	-0.04	0.83	0.44	0.67	0.28	0.06	0.08	0.77	0.64	0.98	-0.31	0.71	-0.06
Zn2_ppm	0.07	-0.14	0.02	-0.18	0.75	-0.16	-0.01	0.53	0.79	-0.09	-0.39	0.64	-0.03	0.87	0.38	0.75	0.08	0.05	0.04	0.81	0.86	0.80	-0.16	0.78	-0.13
Zr2_ppm	-0.26	-0.25	0.05	-0.18	0.59	-0.18	-0.36	0.08	0.51	-0.42	-0.36	0.22	-0.12	0.50	-0.12	0.11	0.54	0.02	0.36	0.51	0.40	0.58	-0.51	0.27	0.00
	Al2	**As1**	**Au1**	**Ba2**	**Be2**	**Br1**	**Ca2**	**Cd2**	**Ce2**	**Co2**	**Cr2**	**Cs1**	**Cu2**	**Dy2**	**Eu1**	**Fe2**	**Hf1**	**Ir1**	**K2**	**La2**	**Li2**	**Lu1**	**Mg2**	**Mn2**	**Mo1**

Table 5. Continued

	Na2	*Nb2*	*Nd1*	*Ni2*	*P2*	*Pb2*	*Rb1*	*Sb1*	*Sc2*	*Se1*	*Sm1*	*Sn1*	*Sr2*	*Ta1*	*Tb1*	*Th1*	*Ti2*	*U1*	*V2*	*W1*	*Y2*	*Yb1*	*Zn2*	*Zr2*
Al2_pct																								
As1_ppm																								
Au1_ppb																								
Ba2_ppm																								
Be2_ppm																								
Br1_ppm																								
Ca2_pct																								
Cd2_ppm																								
Ce2_ppm																								
Co2_ppm																								
Cr2_ppm																								
Cs1_ppm																								
Cu2_ppm																								
Dy2_ppm																								
Eu1_ppm																								
Fe2_pct																								
Hf1_ppm																								
Ir1_ppb																								
K2_pct																								
La2_ppm																								
Li2_ppm																								
Lu1_ppm																								
Mg2_pct																								
Mn2_ppm																								
Mo1_ppm																								
Na2_pct	1.00																							
Nb2_ppm	0.47	1.00																						
Nd1_ppm	0.45	0.67	1.00																					
Ni2_ppm	-0.22	-0.36	-0.24	1.00																				
P2_ppm	0.51	0.10	0.41	-0.05	1.00																			
Pb2_ppm	0.40	0.79	0.60	-0.31	0.03	1.00																		
Rb1_ppm	0.39	0.66	0.44	-0.25	0.10	0.60	1.00																	
Sb1_ppm	0.00	0.35	0.29	0.05	0.01	0.23	0.28	1.00																
Sc2_ppm	0.37	-0.14	0.23	0.18	0.79	-0.20	-0.03	-0.09	1.00															
Se1_ppm	-0.10	-0.04	-0.05	-0.05	-0.09	-0.02	-0.05	-0.09	-0.05	1.00														
Sm1_ppm	0.50	0.66	0.96	-0.22	0.48	0.62	0.46	0.27	0.31	-0.07	1.00													
Sn1_pct	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00												
Sr2_ppm	0.30	-0.32	-0.07	-0.12	0.31	-0.27	-0.21	-0.22	0.36	-0.09	-0.10	0.00	1.00											
Ta1_ppm	0.14	0.24	0.28	-0.10	0.02	0.15	0.11	0.15	0.00	0.02	0.26	0.00	0.01	1.00										
Tb1_ppm	0.51	0.67	0.80	-0.26	0.52	0.61	0.44	0.23	0.32	-0.10	0.85	0.00	-0.10	0.23	1.00									
Th1_ppm	0.08	0.40	0.46	0.14	0.05	0.39	0.21	0.37	-0.14	-0.15	0.46	0.00	-0.09	0.11	0.40	1.00								
Ti2_ppm	0.40	0.26	0.30	-0.06	0.62	0.06	0.25	0.00	0.72	0.04	0.37	0.00	-0.02	0.06	0.41	-0.22	1.00							
U1_ppm	-0.03	-0.04	-0.01	-0.07	0.06	0.00	-0.01	0.02	0.00	-0.06	0.00	0.00	0.13	-0.09	0.04	0.26	-0.07	1.00						
V2_ppm	-0.39	-0.56	-0.48	0.58	-0.26	-0.51	-0.43	-0.12	0.06	0.01	-0.49	0.00	0.19	-0.12	-0.56	-0.12	-0.14	0.00	1.00					
W1_ppm	0.01	-0.03	-0.08	0.16	-0.01	-0.01	0.06	0.11	0.04	0.16	-0.05	0.00	0.01	-0.03	-0.07	0.05	-0.03	0.12	0.06	1.00				
Y2_ppm	0.56	0.78	0.81	-0.27	0.45	0.72	0.51	0.27	0.25	-0.08	0.84	0.00	-0.10	0.23	0.82	0.34	0.39	-0.01	-0.54	0.04	1.00			
Yb1_ppm	0.65	0.82	0.79	-0.33	0.37	0.72	0.58	0.27	0.16	-0.07	0.84	0.00	-0.24	0.20	0.81	0.41	0.38	0.06	-0.61	-0.07	0.84	1.00		
Zn2_ppm	0.57	0.80	0.77	-0.19	0.34	0.80	0.62	0.28	0.09	-0.06	0.82	0.00	-0.22	0.21	0.74	0.42	0.30	-0.10	-0.53	0.01	0.85	0.81	1.00	
Zr2_ppm	0.27	0.69	0.37	-0.40	-0.13	0.59	0.26	0.14	-0.38	0.01	0.35	0.00	-0.31	0.19	0.37	0.32	-0.02	0.11	-0.43	-0.02	0.54	0.59	0.46	1.00
	Na2	**Nb2**	**Nd1**	**Ni2**	**P2**	**Pb2**	**Rb1**	**Sb1**	**Sc2**	**Se1**	**Sm1**	**Sn1**	**Sr2**	**Ta1**	**Tb1**	**Th1**	**Ti2**	**U1**	**V2**	**W1**	**Y2**	**Yb1**	**Zn2**	**Zr2**

Figure 5. *Distribution of arsenic in till.*

GOLD (Au)

Values for gold (Figure 6) are generally low across the study area, with the maximum value of 14 ppb found overlying rocks of the Letitia Lake Group. Other relatively high values (8 to 11 ppb) are found north of Bessie Lake in till overlying the Seal Lake Group.

Gold shows no strong correlation with any of the analysed elements.

BERYLLIUM (Be)

The maximum value for beryllium (Figure 7) is 12.1 ppm, found overlying the Mann #1 Be-Nb prospect. Regional background is about 2.5 ppm (median value). Other anomalous values are commonly associated with known prospects, including Mann #2 (Be up to 8.5 ppm), Michelin (6.1 ppm), Two-Tom Lake (7.2 ppm), and down-ice of North Red Wine showing (9.4 pp). Till overlying the Letitia Lake Group, the Red Wine Intrusive Suite and late Paleoproterozoic granite plutons is relatively enriched in beryllium compared to tills overlying the Sea Lake Group to the north. Several anomalous samples are currently unrelated to known showings, including an area northeast of Two Tom Lake (8.3 ppm Be), and north of Letitia Lake (7.3 ppm). It is possible that both may be related to glacial dispersal from known sources.

Beryllium is well correlated with REE’s, particularly Ce (0.72), Dy (0.71), La (0.72), Lu (0.60), Nd (0.65), Sm (0.65) and Yb (0.75), as well as Li (0.66), Nb (0.67), Pb (0.69), Y (0.70) and Zn (0.75). Be shows no regional correlation to U (0.03), although slightly anomalous uranium values are noted from tills overlying the Mann #1 (up to 2.6 ppm) and Mann #2 (up to 3.2 ppm) prospects. This may suggest the poor mobility of uranium in the glacial environment.

COPPER (Cu)

The maximum value for copper (Figure 8) in till was 120 ppm, recorded northeast of Bessie Lake overlying rocks of the Seal Lake Group. Regionally, copper is enriched over the Seal Lake Group, and numerous copper showings have been recorded from this unit.

Copper is moderately correlated with Co (0.54), Ni (0.54) and Mg (0.53).

LANTHANUM (La)

The highest value for lanthanum (Figure 9) was 189 ppm recorded in till overlying the Two-Tom Lake prospect. Lanthanum and other REE’s (e.g., Nd (Figure 11) and Yb (Figure 16)) show relative enrichment in tills overlying the Red Wine Intrusive Suite and Letitia Lake Group, and are relatively low over the Seal Lake Group and granitic terrane to the north and south respectively. Several areas of anomalous La are currently unrelated to known sources: they are generally consistent with those identified for Be.

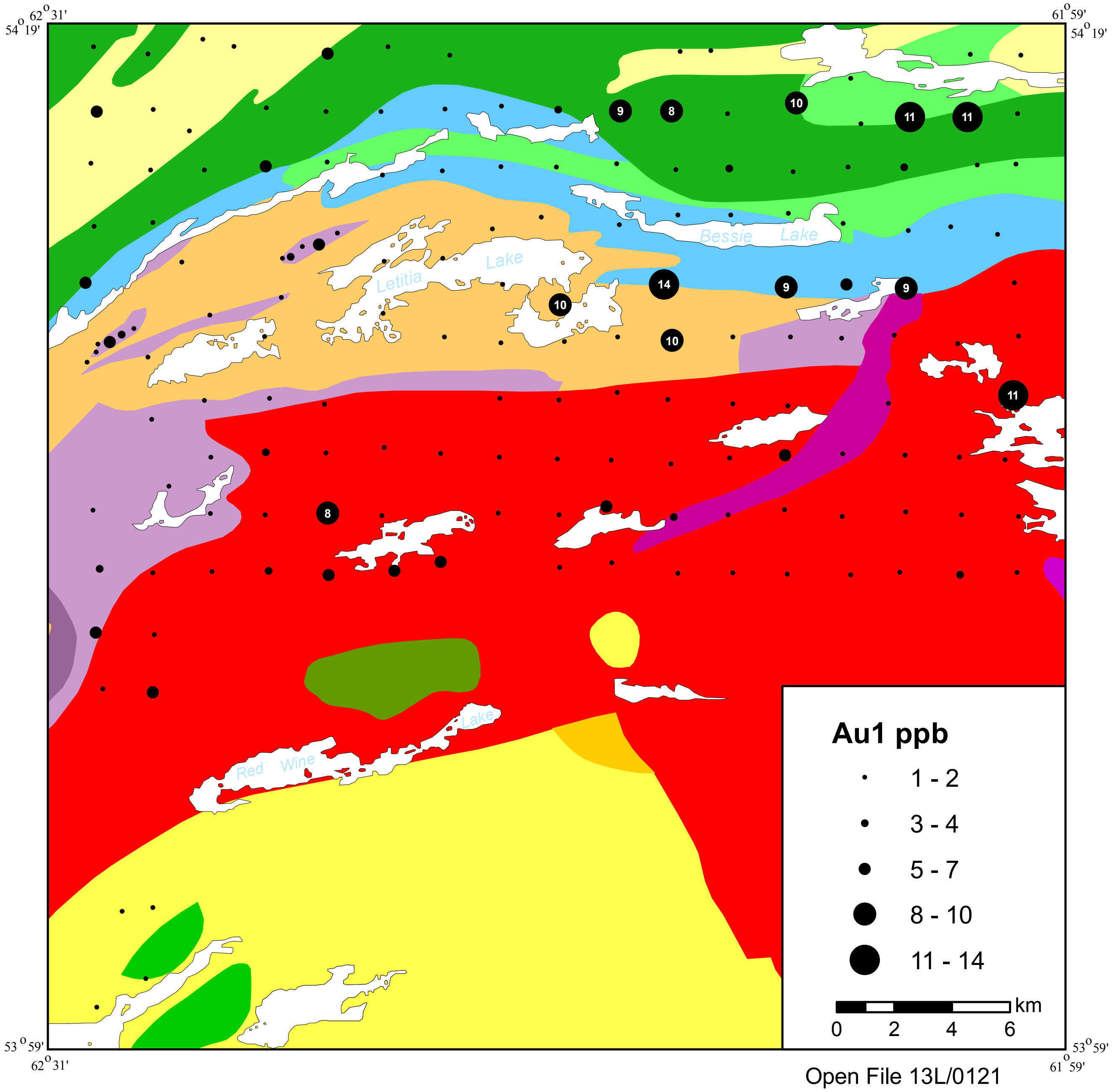


Figure 6. *Distribution of gold in till.*

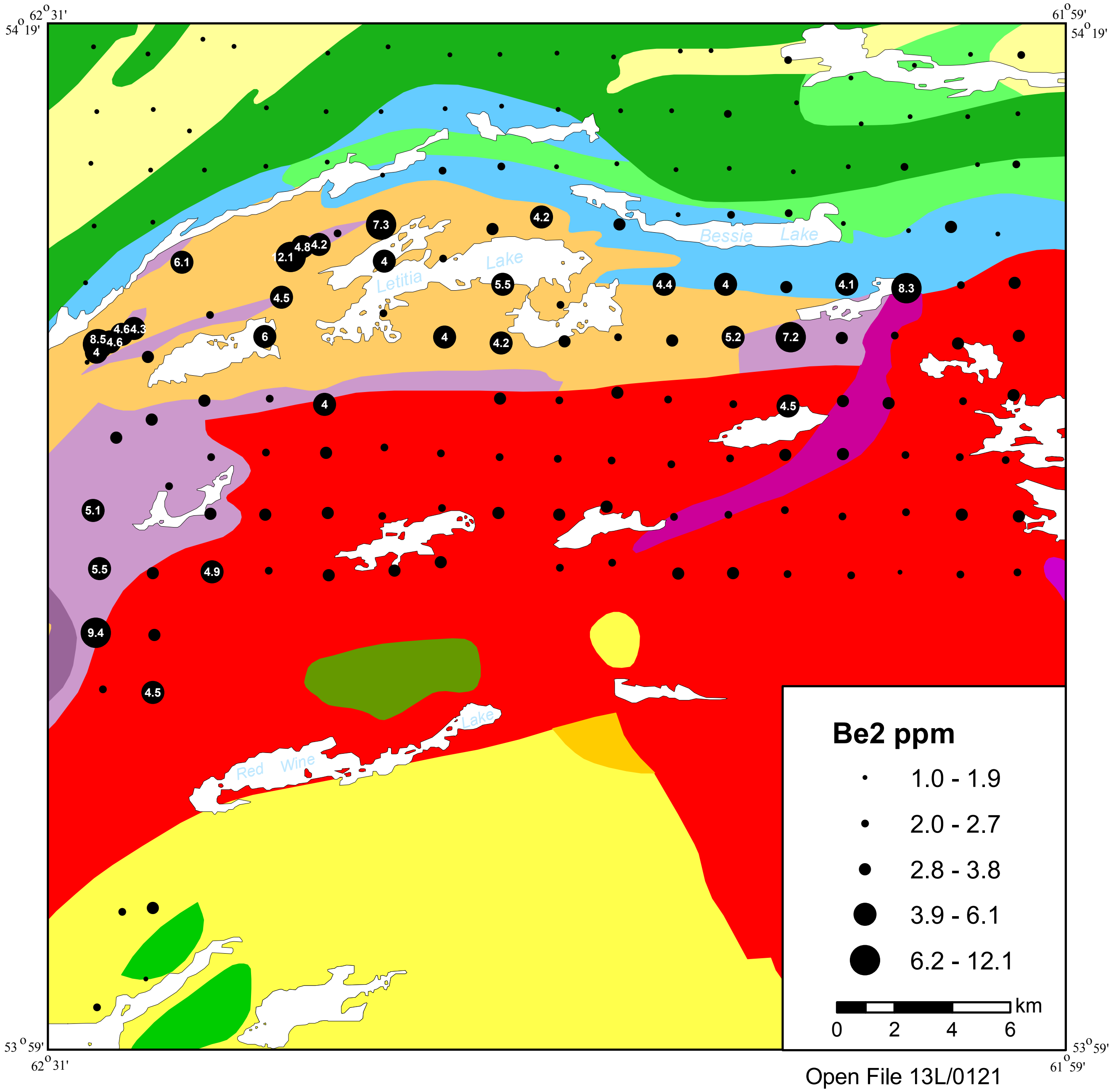


Figure 7. *Distribution of beryllium in till.*

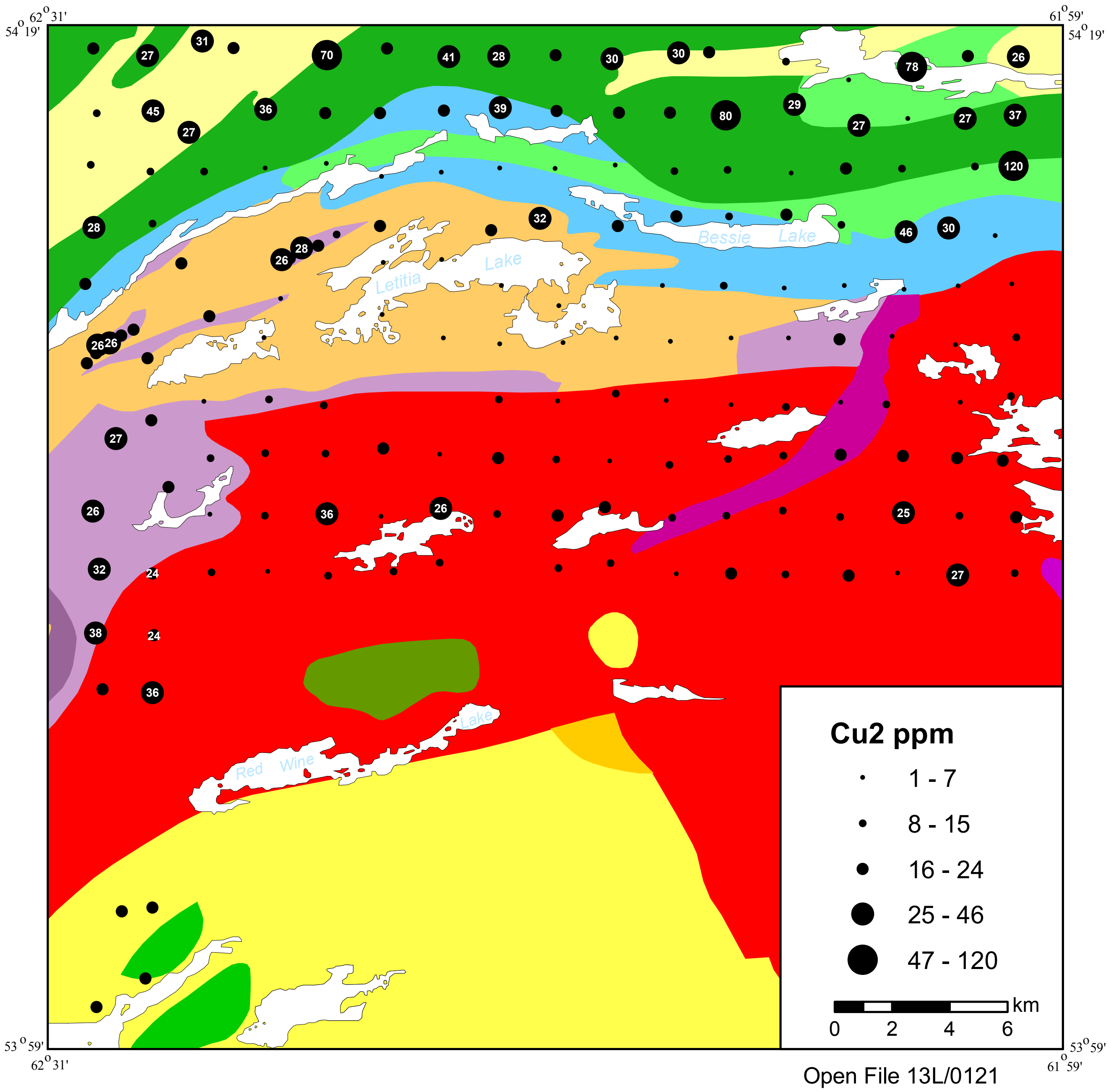
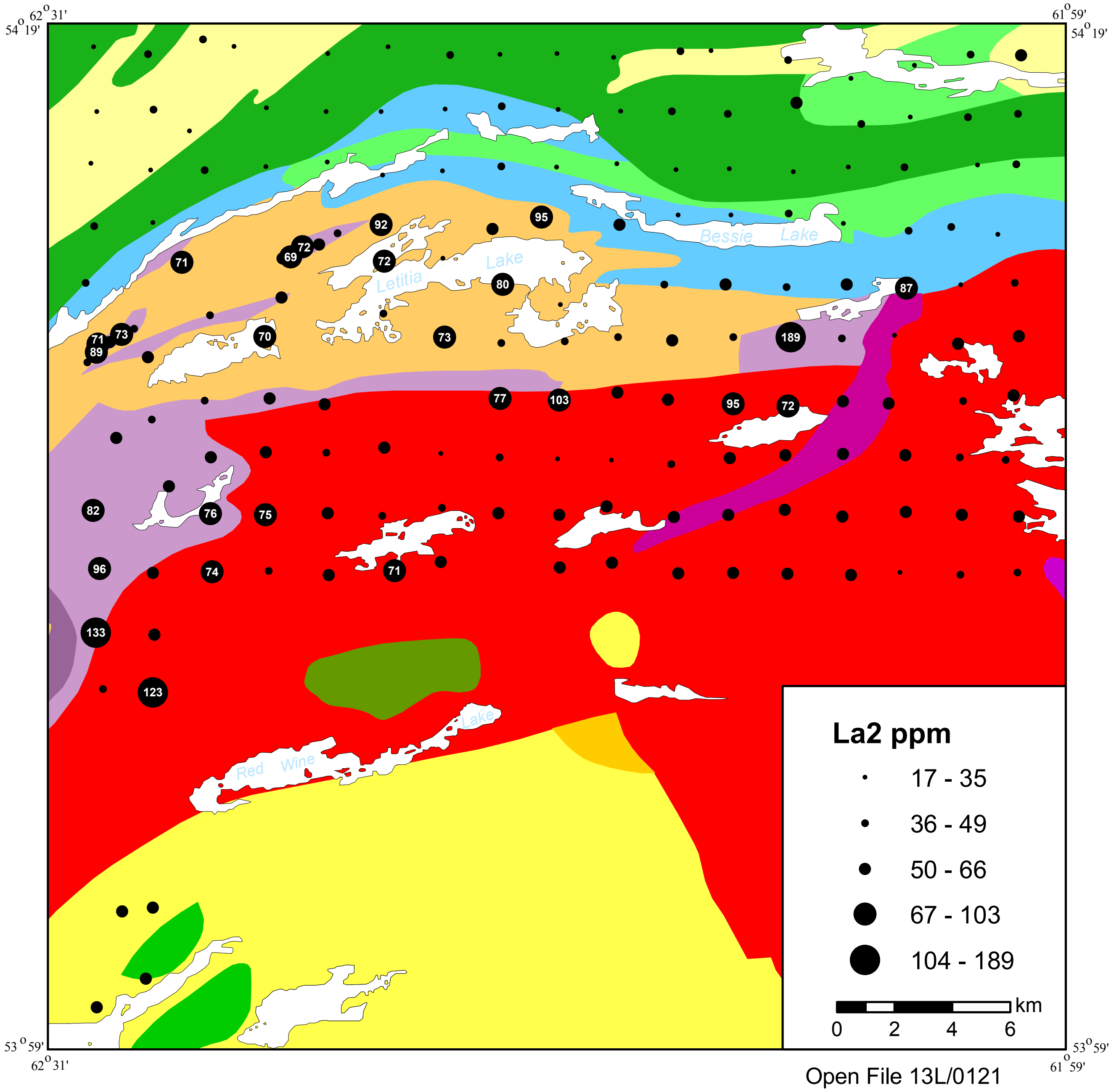


Figure 8. *Distribution of copper in till.*



Open File 13L/0121

Figure 9. *Distribution of lanthanum in till.*

Lanthanum is well correlated with other REE's including Ce (0.96), Dy (0.92), Lu (0.74), Nd (0.86), Sm (0.84), Tb (0.81) and Yb (0.77), and also with Be (0.72), Mn (0.64), Nb (0.76), Pb (0.69), Y (0.92) and Zn (0.81).

NIOBIUM (Nb)

The highest value for Niobium (Figure 10) was 93 ppm recorded over the Two-Tom Lake prospect. The Mann #1, Mann #2, and Michelin prospects show little surface expression in till, although Nb is associated with the mineralisation. Several Nb anomalies unrelated to known sources are noted. They occur west of Letitia Lake (53 ppm), south of Letitia Lake (up to 44 ppm), and northeast of Two-Tom Lake (44 ppm). It is uncertain whether these represents new exploration targets or are the result of glacial dispersal from known sources.

Niobium is well correlated with REE's including Ce (0.71), Dy (0.75), La (0.76), Lu (0.82), Nd (0.67), Sm (0.66), Tb (0.67), and Yb (0.82) and also with Be (0.67), Cs (0.74), Li (0.65), Pb (0.66), Y (0.78), Zn (0.80) and Zr (0.69).

LEAD (Pb) and ZINC (Zn)

These metals are well correlated (0.80) and are associated with similar rock types. The highest lead (108 ppm) (Figure 12) and zinc (348 ppm) (Figure 17) values are both found in till overlying the Two-Tom Lake prospect, but elevated values are common in tills overlying the Letitia Lake Group and Red Wine Intrusive Suite. A site west of Letitia Lake overlying Letitia Lake Group bedrock records 99 ppm Pb and 310 ppm Zn and is unrelated to known sources.

Both Pb and Zn show good correlations with REE's (Ce, Dy, La, Lu, Nd, Sm, Tb, Yb) and with Be, Li, Nb, and Y.

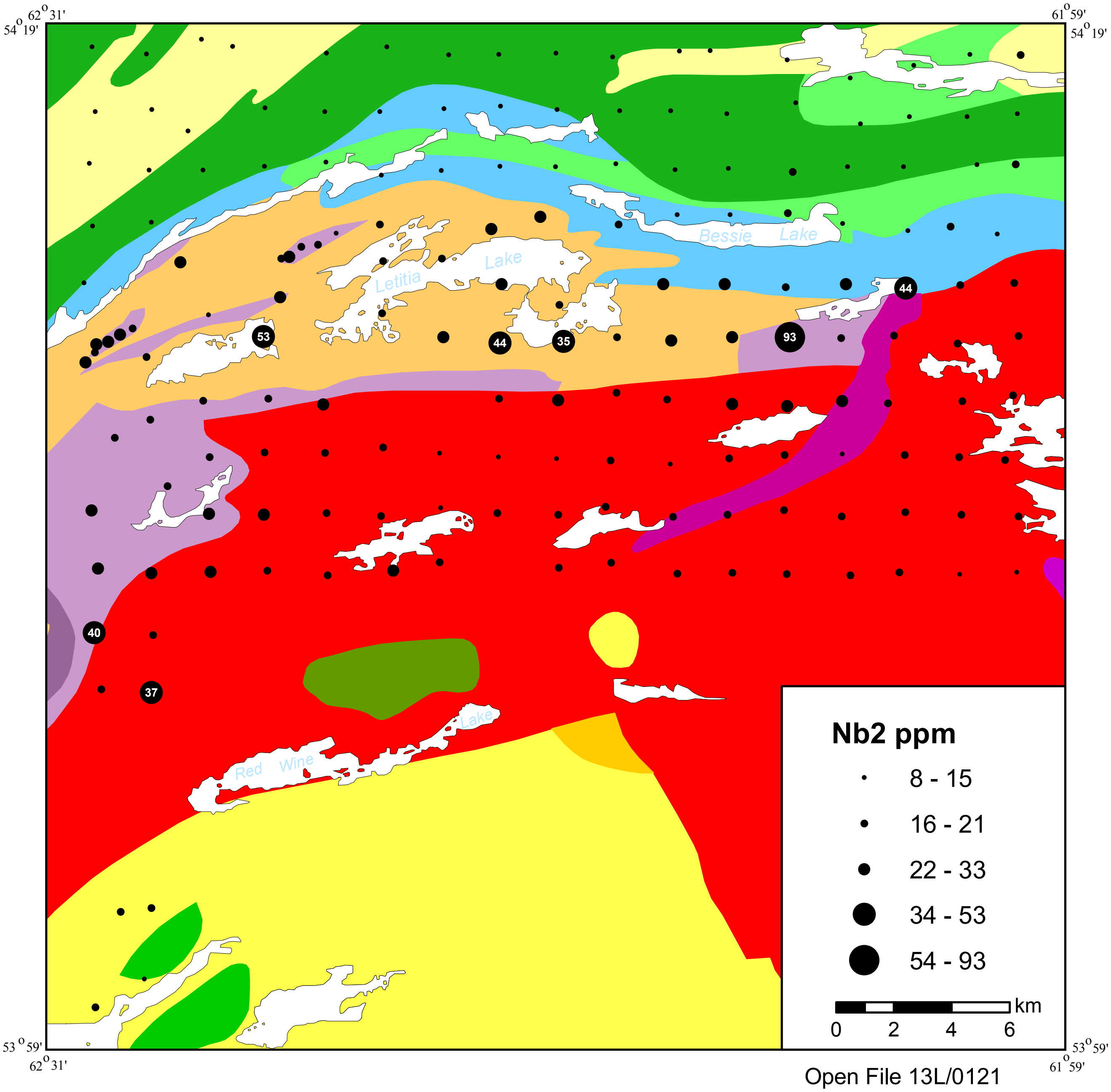
THORIUM (Th)

Thorium (Figure 13) is an accessory element in the Mann #2 and Michelin prospects, and likely associated with the REE composition of the Two-Tom Lake and North Red Wine showings. The maximum value for Th is 16.8 ppm, recorded overlying bedrock of the Red Wine Intrusive Suite. Elevated values are associated with the Mann #1 (up to 13.3 ppm), Mann #2 (up to 11.9 ppm), Michelin (13.6 ppm) and Two-Tom Lake (13.6 ppm) prospects. Several areas in the till overlying Seal Lake Group rocks (up to 13.6 ppm), and northeast of the Two-Tom Lake prospect (16 ppm) are unrelated to known sources.

Thorium is shows the highest correlation with Be (0.54).

URANIUM (U)

Although uranium (Figure 14) is an associated element in the Mann #1 prospect, geochemical values in till are generally low in that area (up to 2.6 ppm). Several relatively high values are found overlying the Mann #2 prospect (up to 3.2 ppm). The maximum value of 4.1 ppm is found



Open File 13L/0121

Figure 10. *Distribution of niobium in till.*

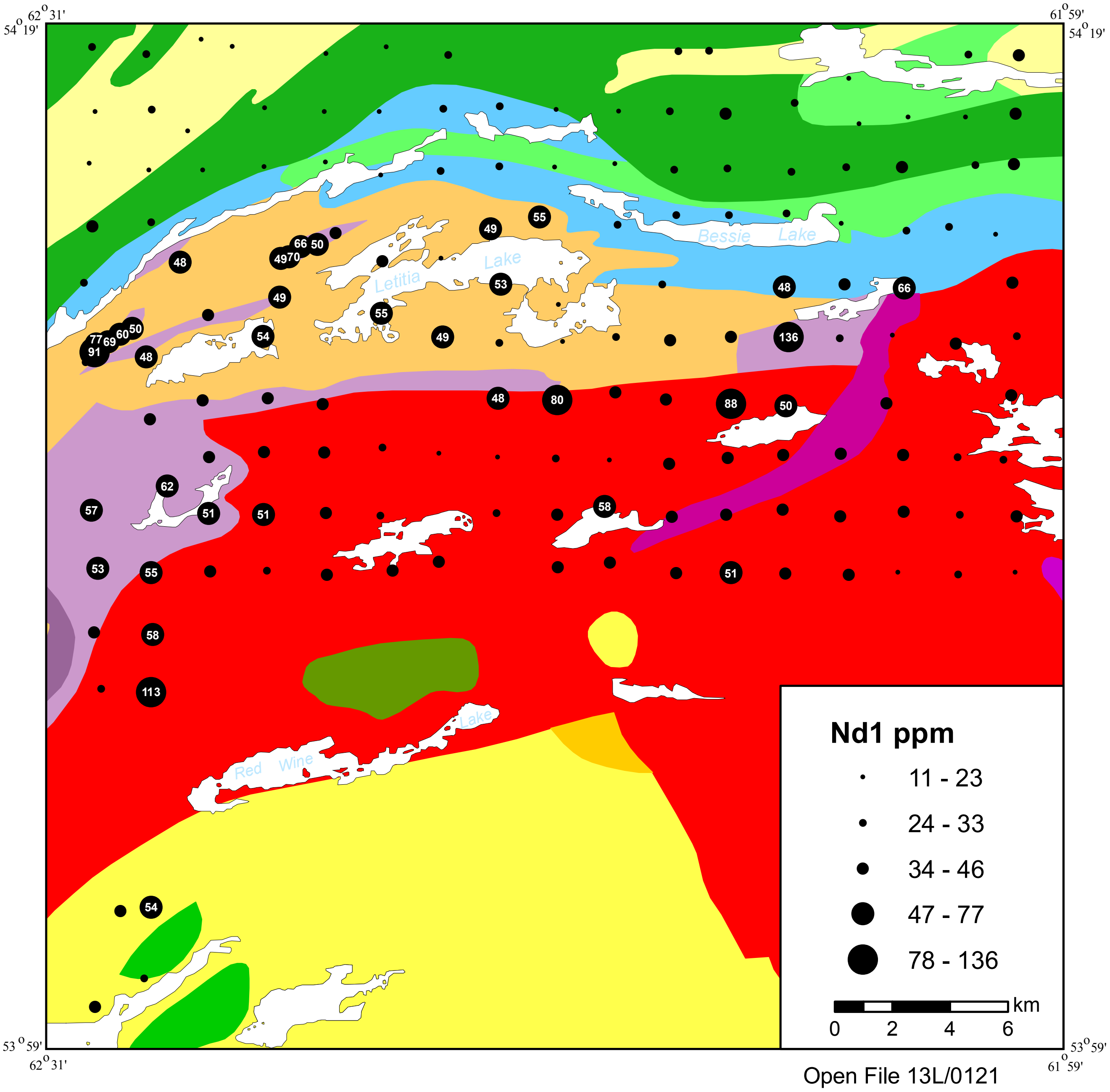


Figure 11. *Distribution of neodymium in till.*

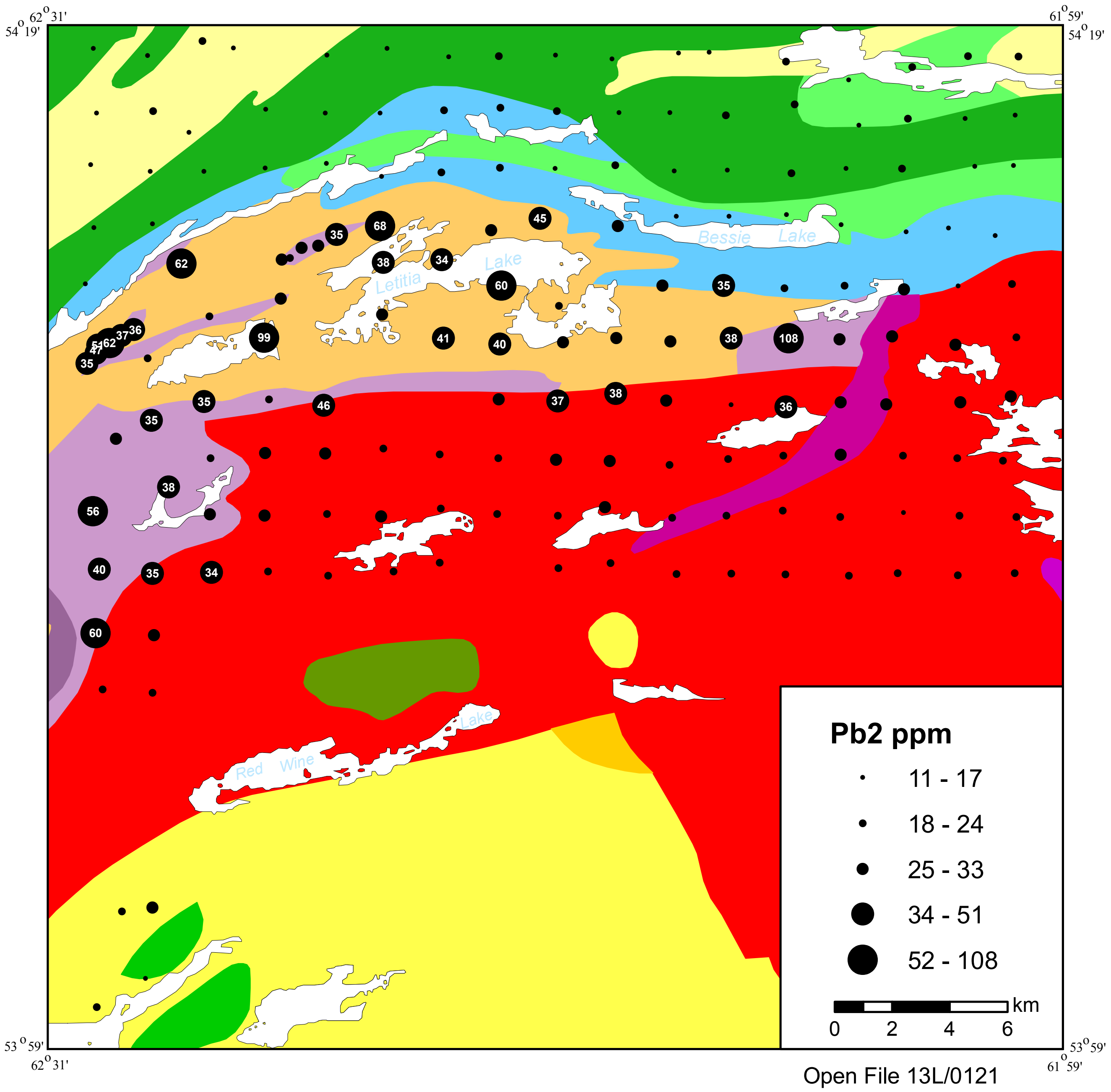


Figure 12. *Distribution of lead in till.*

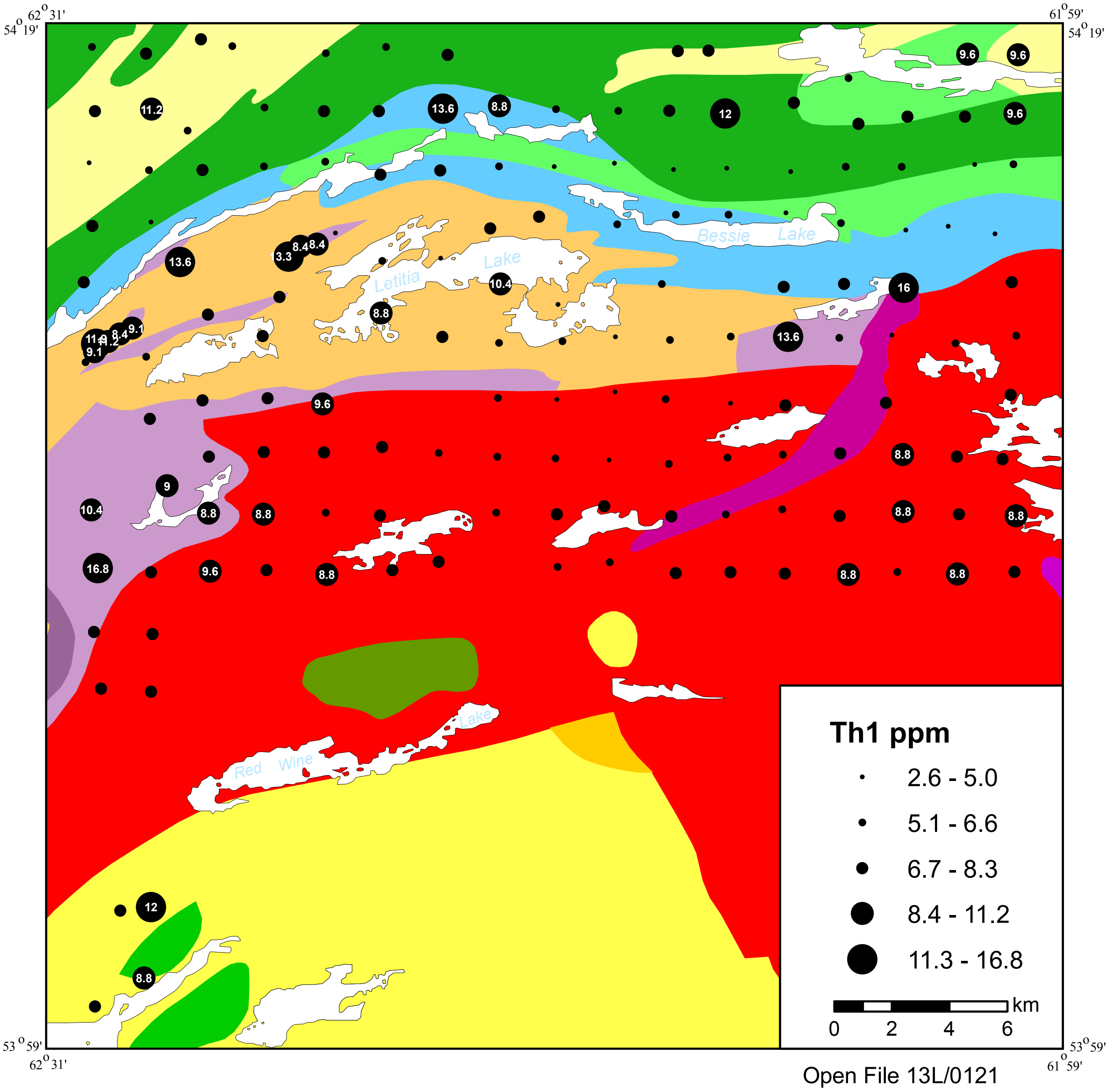


Figure 13. *Distribution of thorium in till.*

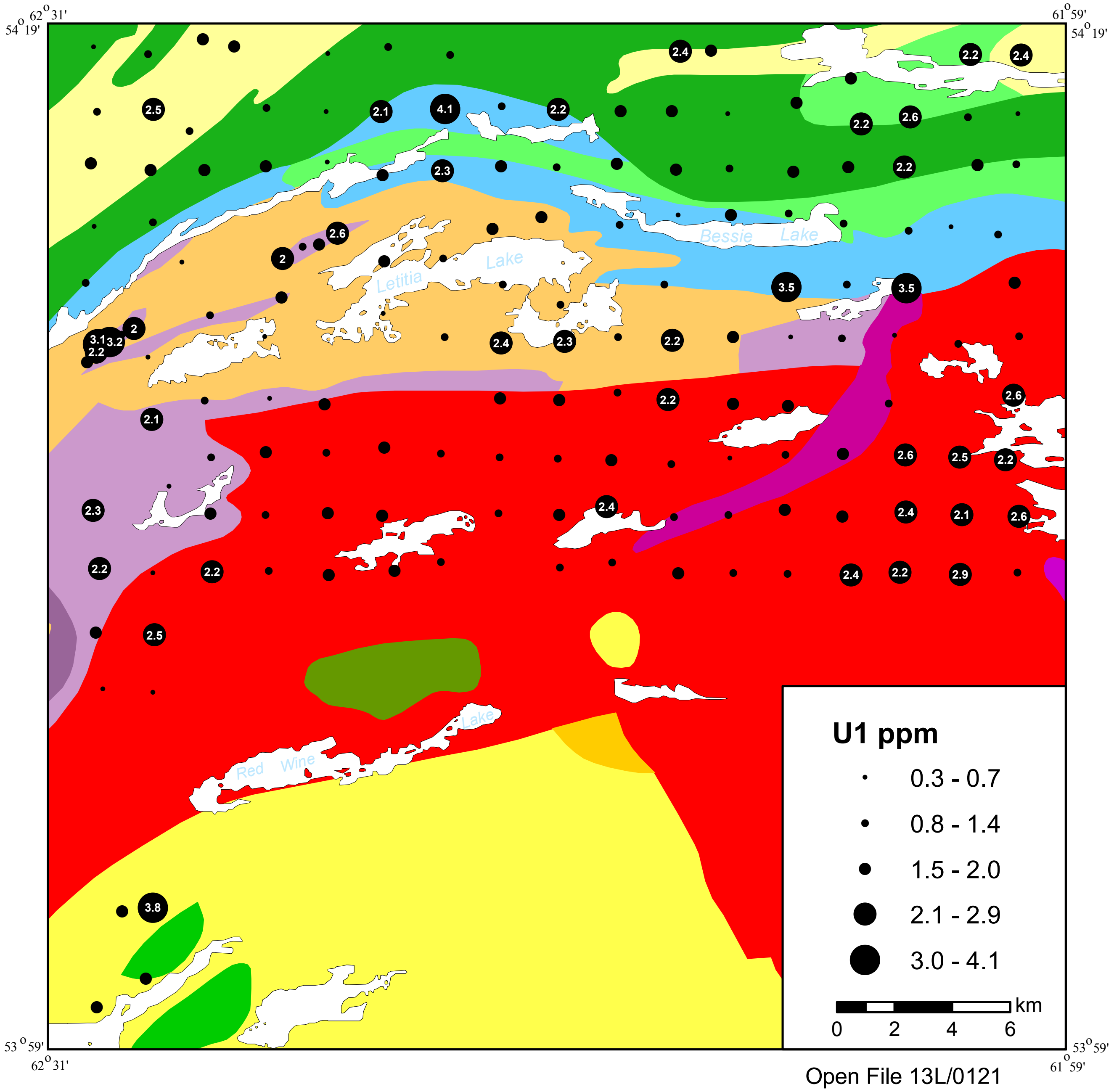


Figure 14. *Distribution of uranium in till.*

overlying bedrock of the Seal Lake Group. Several anomalies are located north and northeast of the Two-Tom Lake prospect, which recorded 187 ppm U in boulders and 86 ppm U in bedrock (Batterson and Miller, 1987), but <1 ppm U in till.

YTTRIUM (Y)

Yttrium (Figure 15) is an accessory element at the Mann #2, Michelin #1 and Two-Tom Lake prospects, the latter of which shows the highest value in till at 104 ppm. Other relatively high values are found either overlying or down-ice of known sources, and the tills overlying Letitia Lake Group bedrock is higher than that associated with the Seal Lake Group to the north or much of the granite terrane to the south.

Yttrium is well correlated with REE's including Ce (0.91), Dy (0.99), La (0.92), Lu (0.83), Nd (0.81), Sm (0.84), Tb (0.82), and Yb (0.84) and also with Be (0.70), Nb (0.78), Pb (0.72), and Zn (0.85).

SUMMARY

The regional till geochemistry highlights the know areas of mineralisation at the Mann prospects, and the Michelin and Two-Tom Lake prospects. In particular, values for Nb, Be, Y and REE's are anomalous, but are commonly associated with elevated Pb and Zn, and to a lesser extent U. Tills overlying the Two-Tom Lake prospect contain the highest La (189 ppm), Nb (93 ppm), Nd (136 ppm), Y (104 ppm) Yb (15.2 ppm), Zn (348 ppm), Pb (108 ppm), Cs (37 ppm), Dy (26.3 ppm), Lu (2.3 ppm), Sb (1.2 ppm), Sm (26 ppm), Tb (4.1 ppm). These are likely associated with the areas of syenite and syenite bedrock described by Batterson and Miller (1985).

Several areas had anomalous values not associated with known sources. These were on the east shore of the lake west of Letitia Lake (elevated Zn, Pb, Y, Yb, Zr, Nb, Nd) and along the southern shore of Letitia Lake (elevated Be, Nd, Y, Pb, La, Th), both associated with the Letitia Lake Group; and northeast of Two-Tom Lake (elevated Th, U, Yb, La, Be, Nb, Nd), and southwest of Letitia Lake (elevated Be, Nd, Y, Yb, Zr, Pb, La, Th) both associated with the Red Wine Intrusive Suite.

ACKNOWLEDGMENTS

We would like to recognise the following for their contribution to the project. Paul LeGrow and Robert Smith provided excellent field assistance during the initial sampling phase of the project in 1985, and Wayne Tuttle is thanked for his expediting skills during the project. More recently, staff at the Geological Survey's Geochemical Laboratory under the supervision of Chris Finch completed the ICP analysis of the samples. The manuscript benefited from reviews by Dr. Dave Liverman and Dr. Shirley McCuaig. Joanne Rooney is thanked for assembling the various components of the report into the final document, and Terry Sears drafted Figure 3..

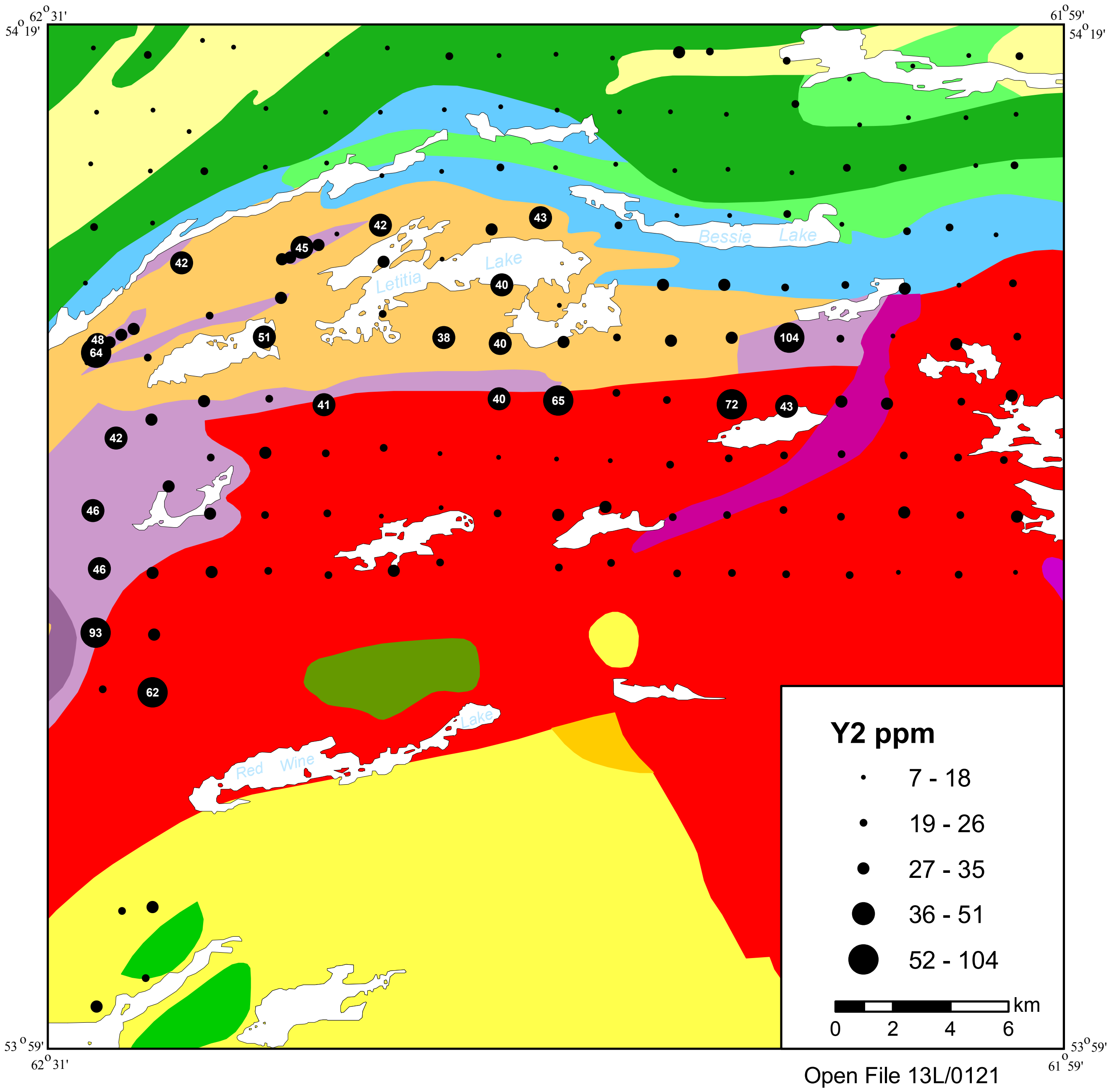
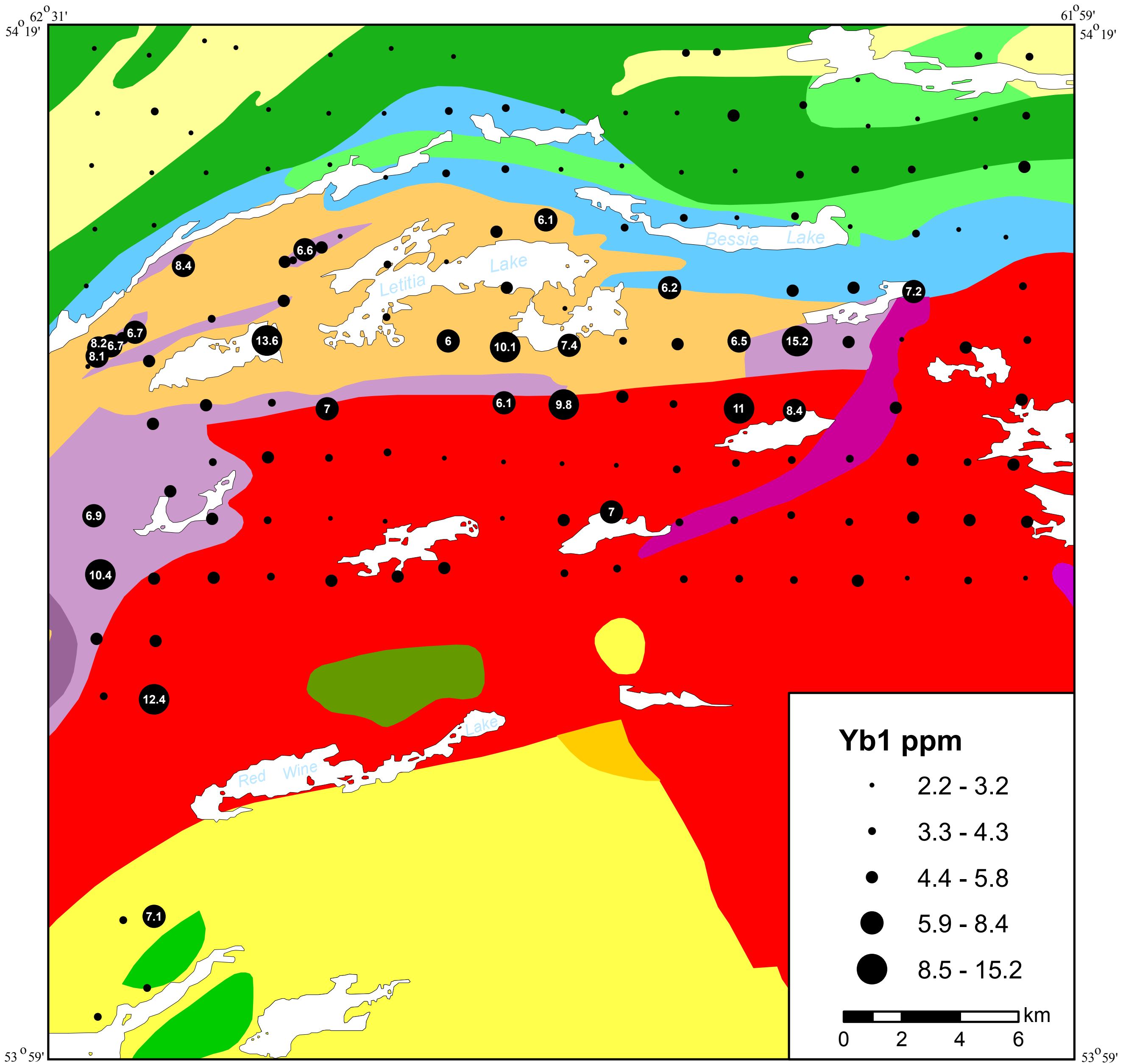
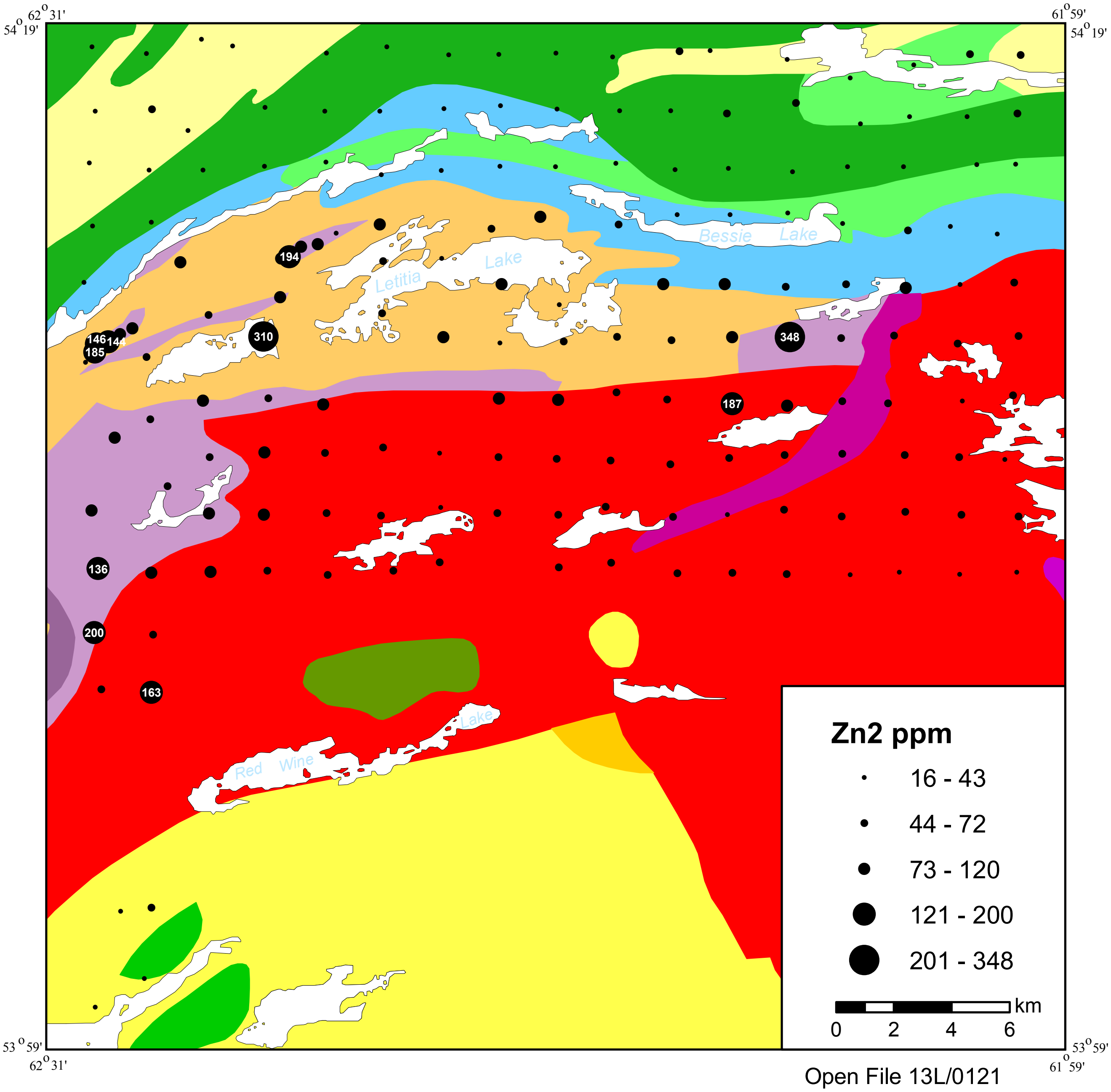


Figure 15. *Distribution of yttrium in till.*



Open File 13L/0121

Figure 16. *Distribution of ytterbium in till.*



Open File 13L/0121

Figure 17. *Distribution of zinc in till.*

REFERENCES

Batterson, M.J.

1989: Till geochemical maps of the Letitia Lake area, Labrador. Geological Survey, Department of Mines and Energy, Open File 013L/0069, Maps 89-109 to 89-124.

2001: Landforms and surficial geology of NTS map sheet 13L/01 (untitled), Labrador. Geological Survey, Department of Mines and Energy, Map 2001-032, Open File 13L/01/0114.

Batterson, M.J. and LeGrow, P.

1986: Quaternary exploration and surficial mapping in the Letitia Lake area, Labrador. *In* Current Research. Newfoundland Department of Mines and Energy, Mineral Development Division, Report 86-1, pages 257-265.

Batterson, M. and Miller, R.

1987: A New Y-Nb-Be showing in the western part of the Central Mineral Belt, Labrador. Geological Survey, Department of Mines and Energy. Open File 013L/01/0066. 6 pages.

Batterson, M.J. and Taylor, D.M.

2001: Till geochemistry of the Bonavista Peninsula area. Newfoundland Geological Survey, Department of Mines and Energy, Open File NFLD 2734, 181 pages.

Boniwell, J.B:

1967: Airborne gamma ray spectrometer survey, areas ‘E’ and ‘F’, Seal Lake, Labrador. Unpublished report of Barringer Research Limited for Brinex. [13K/5(71)]

Brummer, J.J.

1957: Report on Frobisher’s Seal Lake Concession, Labrador Volume I. Unpublished report prepared for Kennco Explorations (Canada) Ltd. [13K(11)]

Curtis, L.W. and Currie, K.L.

1981: Geology and petrology of the Red Wine Alkaline Complex, central Labrador. Geological Survey of Canada, Bulletin 294, 61 pages.

Deane, R.W.

1970: Microscopic examination of rare earth samples submitted by British Newfoundland Exploration Limited. Progress Report Number 2. Project L.R.1394. Unpublished Report of Lakefield Research of Canada Limited for Brinex. [13L/2(24)]

Dujardin, R.A.

1960: Beryllium bearing rocks of the Ten Mile Lake area in the Seal Lake area, Labrador. British Newfoundland Exploration Limited. Unpublished report. [013L/01/0021]

Evans, E.L. and Dujardin, R.A.
1961: A unique beryllium deposit in the vicinity of Ten Mile Lake, Seal Lake Area, Labrador. Proceedings of the Geological Association of Canada, Volume 13, pages 45 51.

Finch, C.J.
1998: Inductively coupled plasma-emission spectrometry (ICP-ES) at the Geochemical Laboratory. *In* Current Research. Newfoundland and Labrador Department of Mines and Energy, Geological Survey, Report 98-1, pages 179-193.

Fulton, R.J., Hodgson, D.A. and Minning, G.V.
1975: Inventory of Quaternary geology, southern Labrador: an example of Quaternary geology terrain studies in undeveloped areas. Geological Survey of Canada, Paper 74 46, 15 pages.

Ives, J.D.
1960: The deglaciation of Labrador Ungava an outline. Cahiers de Geographie, Quebec 4, pages 323 343.

Jenks, G.F.
1967: The Data Model Concept in Statistical Mapping. International Yearbook of Cartography 7: 186-190.

Licthe, F.E., Golightly, D.W. and Lamothe, P.J.
1987: Inductively coupled Plasma-Atomic emission Spectrometry. *In* Methods for Geochemical Analysis. U.S. Geological Survey Bulletin 1770, pages B1-B10.

Lopoukhine, N., Prout, N.A. and Hirvonen, H.E.
1977: The ecological land classification of Labrador: a reconnaissance. Ecological Land Classification Series, Number 4, Fisheries and Environment Canada, 85 pages.

Lynch, J.
1996: Provisional elemental values for four new geochemical soil and till reference materials, Till-1, Till-2, Till-3 and Till-4. Geostandards Newsletter, Volume 20, pages 277-287.

MODS
Mineral Occurrence Data System. Web accessible database of the Geological Survey, Department of Natural Resources. Web address: http://gis.geosurv.gov.nl.ca/mods/mods.asp

Prest, V.K., Grant, D.R. and Rampton, V.N.
1968: Geological Map of Canada. 1:5,000,000 scale, Geological Survey of Canada, Map 1253A.

Robinson, W.G. and Cruft, E.F.
1958: Exploration during 1957 in an area adjacent to the Frobisher Concessions in Labrador. Unpublished Report of Frobisher Limited. [13K(13)]

Rogerson, R.J.

1981: The tectonic evolution and surface morphology of Newfoundland. Pages 24 55. *In* The natural environment of Newfoundland past and present. *Edited by* A.G. Macpherson and J.B. Macpherson. Department of Geography, Memorial University of Newfoundland, 265 pages.

Rowe, J.S.

1972: Forest region of Canada. Department of Environment, Canadian Forestry Service, Bulletin 1300, 172 pages.

Thomas, A.

1981: Geology along the southwestern margin of the Central Mineral Belt. Newfoundland Department of Mines and Energy, Mineral Development Division, Report 81 4, 40 pages.

Westoll, N.D.S.

1971: Geological report on the Two Tom Lake area, Seal Lake, Labrador. Brinex unpublished report. [13L/1(43)]

Appendix A

Letitia Lake Till Geochemistry

Sample	NTS	Easting	Northing	Site	Zone	Horizon	Depth cm	Ag1 ppm	Al2 pct	As1 ppm	As2 ppm	Au1 ppb	Ba1 ppm	Ba2 ppm	Be2 ppm	Br1 ppm	Ca1 pct	Ca2 pct	Cd2 ppm	Ce1 ppm	Ce2 ppm	Co1 ppm	Co2 ppm	Cr1 ppm	Cr2 ppm
854003	13L/1	532970	6010990	1	20	BC	30	3	6.21	0.3	1	1	656	662	1.5	9.6	1	1.76	0.2	88	77	7	9	59	41
854004	13L/1	532670	6009030	2	20	BC	20	3	6.16	3.8	1	6	560	619	1.5	11.2	2	1.73	0.2	74	71	5	7	46	40
854005	13L/1	532930	6001150	3	20	BC	45	3	5.94	3.3	1	2	592	606	5.1	6.3	1	1.34	0.2	160	157	5	6	31	27
854006	13L/1	533150	5999130	4	20	C	25	3	5.74	1.8	1	3	448	638	5.5	2.4	1	1.39	0.2	264	192	4	7	16	25
854007	13L/1	533020	5996930	5	20	C	70	3	5.86	0.3	1	5	444	701	9.4	3.2	1	1.67	0.5	138	368	4	9	19	26
854008	13L/1	533260	5994970	6	20	C	50	3	5.93	0.3	1	1	528	701	2.5	2.2	2	1.77	0.3	88	90	4	6	31	31
854010	13L/1	533050	5983950	10	20	C	50	3	6.25	2.1	1	1	776	802	2.0	4.1	2	2.25	0.2	104	109	3	6	34	34
854011	13L/1	533930	5987280	9	20	BC	60	3	6.58	2.2	1	1	880	830	2.5	3.8	2	2.13	0.2	104	101	4	6	38	31
854012	13L/1	535000	5987400	12	20	C	55	3	6.19	4.7	1	1	960	746	3.0	6.5	1	1.84	0.2	160	114	4	5	46	30
854013	13L/1	534750	5984950	11	20	BC	65	3	6.18	4.0	1	1	672	750	1.9	9.6	2	1.90	0.3	96	93	4	6	40	38
854014	13L/1	535040	5996840	16	20	C	50	3	5.86	0.3	1	1	705	694	2.8	0.3	2	1.76	0.2	113	106	7	7	42	34
854015	13L/1	535000	5994850	15	20	BC	60	3	5.55	0.3	1	7	495	473	4.5	7.1	1	1.90	0.3	233	239	6	6	17	23
854016	13L/1	535560	6001980	18	20	mudboil	30	3	6.55	3.5	1	1	638	549	2.7	33.8	1	1.39	0.3	120	102	6	5	57	40
854017	13L/1	534990	5998990	17	20	BC	30	3	5.60	0.3	1	1	548	634	3.1	10.5	1	1.29	0.2	120	116	5	4	27	24
854018	13L/1	534820	6006460	20	20	BC	25	3	6.00	1.7	1	1	630	665	2.8	6.2	2	1.42	0.3	90	89	5	5	33	30
854019	13L/1	534950	6004300	19	20	BC	30	3	6.38	0.3	1	1	570	565	2.9	29.3	1	1.38	0.3	90	83	6	5	38	33
854020	13L/1	534990	6011110	22	20	BC	30	3	6.28	3.6	1	1	563	601	1.4	21.8	2	1.47	0.2	60	50	8	8	36	34
854021	13L/1	536960	6007920	21	20	BC	45	3	6.18	0.3	1	1	608	693	2.7	7.5	2	1.63	0.3	105	97	7	6	44	35
854022	13L/1	541380	6010740	24	20	B	30	3	5.92	2.7	1	1	608	668	2.5	21.0	3	1.37	0.2	83	73	5	4	37	30
854023	13L/1	540750	6010360	26	20	BC	50	3	5.99	2.9	1	5	700	649	4.2	5.6	1	1.70	0.2	126	124	7	7	37	36
854024	13L/1	540170	6010270	27	20	BC	55	3	6.27	0.3	1	1	630	695	4.8	0.3	2	1.66	0.3	126	131	8	8	36	40
854025	13L/1	539770	6009930	29	20	BC	50	3	6.09	3.2	1	3	637	664	12.1	7.7	3	1.68	0.2	140	135	8	7	36	34
854026	13L/1	539480	6009860	30	20	BC	55	3	6.17	2.9	1	2	560	649	3.1	5.2	1	1.71	0.2	98	99	8	8	40	38
854027	13L/1	534350	6007440	31	20	BC	45	3	6.34	4.3	1	1	770	594	4.3	11.9	1	1.33	0.3	112	94	6	5	35	31
854028	13L/1	533920	6007240	32	20	BC	40	3	6.16	0.3	1	4	504	636	4.6	10.5	1	1.51	0.3	126	124	5	6	34	31
854029	13L/1	533500	6006980	33	20	BC	35	3	6.16	3.9	3	5	700	581	4.6	9.1	1	1.34	0.3	154	130	6	6	40	34
854031	13L/1	533100	6006900	34	20	BC	30	3	6.21	0.3	1	1	609	612	8.5	18.2	2	1.37	0.3	147	134	6	6	39	36
854032	13L/1	533040	6006630	35	20	BC	30	3	6.17	3.9	1	1	770	670	4.0	14.0	1	1.69	0.2	168	165	7	6	38	37
854033	13L/1	532720	6006280	36	20	BC	20	3	5.16	1.0	1	1	616	631	1.7	4.2	2	1.26	0.2	59	65	4	5	33	32
854034	13L/1	542900	6011050	134	20	BC	50		6.76		1			500	7.3			1.30	0.4		158		13		45
854035	13L/1	546750	6010900	38	20	BC	15	3	5.64	2.6	1	1	760	574	3.1	8.0	1	1.58	0.2	120	112	6	5	30	31
854036	13L/1	548450	6011300	136	20	BC	60	3	6.28	2.5	1	1	736	631	4.2	2.0	2	1.49	0.4	144	165	7	8	34	35
854037	13L/1	551150	6011040	40	20	BC	45	3	6.34	2.0	1	1	584	636	3.0	5.8	2	1.51	0.3	88	106	6	7	35	39
854038	13L/1	553180	6011380	138	20	BC	40	3	5.05	4.6	1	1	608	472	1.6	11.2	1	1.06	0.2	70	65	5	5	34	28
854039	13L/1	554990	6011370	42	20	BC	20	3	5.73	2.1	1	1	496	493	2.0	9.6	1	0.97	0.2	62	69	6	6	30	30
854040	13L/1	557000	6011440	140	20	BC	55	3	5.24	0.3	1	1	456	473	2.4	8.8	2	1.39	0.2	63	78	6	6	23	28
854041	13L/1	558900	6011070	44	20	BC	35	3	4.63	0.3	1	1	360	441	1.5	8.8	1	0.72	0.2	50	55	4	4	22	24
854042	13L/1	561140	6010830	142	20	BC	45	3	5.95	0.3	1	1	488	376	1.7	8.0	2	1.80	0.1	60	67	12	15	34	41
854043	13L/1	562620	6010970	46	20	BC	40	3	5.62	0.3	1	1	368	332	2.8	6.2	2	1.77	0.2	54	65	10	11	33	39
854044	13L/1	564820	6009030	144	20	BC	55	3	5.92	1.4	1	1	710	603	3.0	7.3	2	1.40	0.1	94	88	5	6	26	30

Sample	NTS	Easting	Northing	Site	Zone	Horizon	Depth	Ag1	Al2	As1	As2	Au1	Ba1	Ba2	Be2	Br1	Ca1	Ca2	Cd2	Ce1	Ce2	Co1	Co2	Cr1	Cr2
854045	13L/1	564230	6010700	48	20	BC	40	3	4.58	2.2	1	1	450	417	1.8	8.5	1	0.93	0.1	58	49	6	7	19	24
854046	13L/1	562950	6008960	146	20	BC	30		5.05		1			559	2.1			0.98	0.2		54		4		25
854047	13L/1	564770	6005140	50	20	C	65	3	6.17	1.8	1	11	840	692	3.2	5.2	3	1.81	0.2	130	119	6	7	30	31
854048	13L/1	561070	6008840	148	20	BC	50	3	5.68	2.9	1	9	1100	503	8.3	22.0	1	1.32	0.1	200	141	6	5	30	28
854049	13L/1	563020	6004930	52	20	BC	25		6.26		1			644	2.5			1.55	0.2		69		4		30
854050	13L/1	559010	6008980	150	20	BC	55	3	6.01	1.4	1	7	890	733	4.1	0.3	3	1.43	0.2	100	98	6	6	25	31
854051	13L/1	560450	6004850	53	20	C	60	3	6.34	0.3	1	1	900	728	3.3	2.8	2	1.83	0.1	130	124	6	8	30	33
854052	13L/1	556910	6008880	152	20	BC	40	3	5.94	0.3	1	9	740	631	3.3	13.0	1	1.29	0.1	99	76	4	5	25	29
854053	13L/1	558880	6004930	54	20	BC	35		6.39		1			580	2.9			1.59	0.2		96		5		32
854054	13L/1	554820	6008980	154	20	BC	45		6.31		1			462	4.0			0.92	0.1		126		6		28
854055	13L/1	556980	6004770	56	20	C	50	3	6.47	0.3	1	1	900	689	4.5	4.8	4	1.83	0.2	150	136	6	7	22	26
854057	13L/1	555080	6004840	58	20	BC	50	3	7.42	0.3	1	1	920	747	2.5	0.3	6	3.49	0.7	190	176	10	12	0	2
854073	13L/1	552820	6004980	74	20	BC	45	3	5.69	0.3	1	1	890	715	2.5	6.5	1	1.73	0.2	94	88	4	5	27	33
854074	13L/1	551070	6005230	75	20	C	60	3	6.04	2.4	1	1	775	664	3.5	4.6	1	1.82	0.2	96.0	101	6	7	20	35
854075	13L/1	549060	6004970	76	20	BC	35	3	7.34	0.3	1	1	920	772	2.5	0.3	4	2.71	0.4	144.0	187	8	10	0	4
854076	13L/1	547000	6005020	77	20	BC	45	3	6.33	0.3	1	1	785	724	3.8	4.7	1	1.99	0.2	104.0	136	6	7	16	25
854081	13L/1	564960	6007180	181	20	BC	45	3	6.18	1.6	1	1	830	704	3.0	5.6	1	1.69	0.3	75.2	95	6	7	31	35
854082	13L/1	562850	6006920	182	20	BC	60	3	6.09	2.1	1	1	620	617	3.1	11.0	1	1.69	0.1	80.0	102	4	6	24	30
854083	13L/1	560670	6007210	183	20	B	40	3	6.34	0.3	1	1	915	729	2.2	4.6	1	1.37	0.2	42.4	53	6	6	20	25
854084	13L/1	558830	6007110	184	20	BC	30	3	6.65	0.3	1	2	785	562	2.9	4.5	2	1.45	0.2	63.2	72	8	9	25	25
854085	13L/1	557070	6007150	185	20	BC	90	3	5.87	0.3	1	1	635	410	7.2	0.3	1	0.69	0.6	264.0	339	4	4	5	8
854086	13L/1	555080	6007150	186	20	BC	35	3	6.13	0.3	1	1	730	687	5.2	4.9	1	1.30	0.2	88.0	81	5	5	24	23
854087	13L/1	552690	6008970	187	20			3	6.62	3.5	1	14	480	419	4.4	4.6	1	0.65	0.1	96	91	3	3	18	21
854089	13L/1	549090	6008270	189	20			3	5.63	2.2	1	10	504	608	2.3	4.4	2	1.01	0.1	57	53	3	4	18	24
854090	13L/1	547100	6008980	190	20	BC	25	3	6.96	0.3	1	1	416	536	5.5	4.0	2	1.00	0.2	184	190	5	6	34	33
854091	13L/1	545030	6009870	191	20	B	20	3	5.64	1.3	1	1	464	632	2.2	4.8	2	1.27	0.2	54	61	3	5	21	31
854093	13L/1	543000	6009780	193	20	BC	20	3	6.19	2.1	1	1	488	554	4.0	21.6	1	1.48	0.1	112	124	3	5	28	32
854097	13L/1	552970	6007030	197	20	BC	40	3	6.21	3.0	1	10	568	671	3.5	2.6	1	1.56	0.1	120	116	5	6	31	32
854098	13L/1	551080	6007150	198	20	BC	30	3	5.74	1.8	1	1	560	635	2.5	1.9	1	1.08	0.2	63	64	3	4	26	23
854099	13L/1	549250	6007000	199	20	BC	50	3	5.89	6.3	1	1	376	480	3.1	4.0	1	0.71	0.1	88	72	0	3	20	17
854100	13L/1	547040	6006950	200	20	B	30	3	5.95	0.3	1	1	536	558	4.2	2.6	1	0.61	0.1	80	67	0	3	10	8
854101	13L/1	545080	6007150	201	20	BC	45	3	6.09	2.8	1	1	624	646	4.0	3.7	1	1.41	0.1	128	125	6	6	30	28
854102	13L/1	542960	6007970	202	20	BC	60	3	5.96	12.0	1	1	728	636	2.2	20.8	1	1.46	0.1	112	81	11	6	54	40
854105	13L/1	538870	6007170	205	20	C	80	3	5.37	6.1	1	1	376	247	6.0	4.2	1	1.49	0.2	168	132	5	4	22	8
854106	13L/1	536780	6004950	206	20	C	80	3	6.40	3.6	1	1	544	597	3.1	5.4	3	1.44	0.2	104	102	5	6	30	42
854107	13L/1	536990	6001040	207	20	C	50	3	5.92	2.0	1	1	528	642	3.5	4.6	2	1.65	0.2	152	153	6	7	32	31
854108	13L/1	538880	6001010	208	20	C	80	3	5.99	2.1	1	1	512	673	3.2	7.6	1	1.71	0.3	144	135	6	7	37	32
854109	13L/1	541050	6001050	209	20	C	80	3	6.48	0.3	1	8	544	696	2.8	8.8	1	1.97	0.2	112	107	7	8	31	31
854110	13L/1	542920	6000960	210	20	BC	50	3	7.47	0.3	1	1	736	907	2.6	6.6	1	1.58	0.2	96	91	7	9	47	45
854111	13L/1	545000	6001250	211	20	BC	50		6.37		1			606	2.1			1.55	0.1		69		7		34
854113	13L/1	640570	6008350	213	20	BC	50	3	6.30	2.3	1	1	696	678	3.0	4.4	2	1.68	0.2	128	108	6	7	42	41
854114	13L/1	539440	6008520	214	20	BC	55	3	5.87	2.4	1	1	648	652	4.5	6.4	3	1.72	0.1	120	104	6	6	37	38

Sample	NTS	Easting	Northing	Site	Zone	Horizon	Depth	Ag1	Al2	As1	As2	Au1	Ba1	Ba2	Be2	Br1	Ca1	Ca2	Cd2	Ce1	Ce2	Co1	Co2	Cr1	Cr2
854115	13L/1	537000	6003000	215	20	BC	55	3	6.18	2.0	1	1	680	718	2.3	3.9	2	1.95	0.3	112	101	6	8	45	44
854116	13L/1	538900	6003170	216	20	C	60	3	6.02	1.2	1	4	592	686	2.7	3.8	1	1.81	0.2	120	111	6	7	34	35
854117	13L/1	541000	6003150	217	20	BC	60	3	6.36	1.7	1	1	776	712	2.8	4.3	2	1.72	0.2	120	96	6	6	34	35
854118	13L/1	543000	6003320	218	20	C	60	3	5.97	1.8	1	1	616	657	2.6	4.6	2	1.69	0.2	128	104	6	7	34	34
854119	13L/1	544950	6003130	219	20	BC	55	3	6.53	0.3	1	1	664	753	2.2	5.4	1	1.22	0.2	80	69	4	5	34	34
854121	13L/1	540930	6004820	83	20	BC	45	3	5.99	1.2	1	1	520	605	4.0	13.6	1	1.49	0.2	144	115	6	6	29	27
854122	13L/1	539040	6005020	84	20	C	55	3	6.13	2.9	1	1	696	688	2.5	4.2	1	1.80	0.2	128	93	6	8	40	38
854123	13L/1	537040	5999030	85	20	C	60	3	6.22	3.0	1	1	624	639	4.9	4.1	1	1.69	0.1	168	154	6	8	33	35
854124	13L/1	538990	5999060	86	20	BC	45	3	6.40	1.4	1	3	600	686	2.2	9.6	1	1.86	0.1	96	86	6	7	45	40
854125	13L/1	541080	5998920	87	20	C	60	3	5.77	3.8	1	7	560	675	2.9	4.6	1	1.76	0.3	160	118	6	6	30	34
854126	13L/1	543360	5999070	88	20	BC	40	3	5.74	0.3	1	5	472	606	3.0	8.8	1	1.78	0.1	144	126	5	6	44	43
854127	13L/1	544960	5999360	89	20	C	45	3	5.91	1.8	1	5	704	695	3.0	1.8	1	1.80	0.2	128	117	4	5	31	34
854129	13L/1	546980	6003000	229	20	BC	50	3	6.67	1.7	1	1	664	730	2.2	6.6	2	1.72	0.1	88	68	6	7	38	32
854130	13L/1	549000	6002930	230	20	BC	40	3	6.94	0.3	1	1	712	744	2.3	6.0	2	1.76	0.1	78	66	4	5	26	22
854131	13L/1	550870	6002880	231	20	BC	40	3	6.44	2.0	1	1	760	735	2.0	4.9	1	1.51	0.2	62	44	6	6	28	24
854132	13L/1	552940	6002760	232	20	BC	50	3	6.63	1.6	1	1	784	841	2.3	8.0	1	1.98	0.2	96	77	5	6	20	23
854133	13L/1	554960	6002950	233	20	C	70	3	6.10	1.6	2	1	640	728	2.7	3.7	1	1.84	0.1	112	102	5	6	22	30
854134	13L/1	556880	6003070	234	20	C	60	3	6.20	2.5	1	5	696	742	2.8	6.3	2	1.83	0.2	112	99	4	6	30	30
854135	13L/1	558870	6003100	235	20	BC	60	3	6.66	2.3	1	1	656	769	3.0	7.1	2	1.88	0.2	112	98	5	7	28	27
854137	13L/1	546960	6001050	237	20	C	50	3	6.32	3.1	1	1	640	653	3.0	6.1	2	1.55	0.1	112	97	7	8	48	45
854138	13L/1	549060	6001000	238	20	C	90	3	5.90	2.2	1	1	552	658	3.5	1.9	1	1.75	0.2	136	124	5	7	32	79
854139	13L/1	550700	6001280	239	20	C	90	3	5.88	2.6	1	5	616	652	3.7	1.8	1	1.82	0.2	136	121	6	7	38	34
854140	13L/1	553020	6000920	240	20	BC	30	3	5.86	1.7	1	3	632	648	2.7	4.6	2	1.72	0.3	112	102	5	6	30	32
854141	13L/1	554910	6001000	241	20	BC	80	3	5.71	2.4	1	1	560	621	2.6	7.8	2	1.73	0.1	112	103	5	5	30	33
854142	13L/1	556870	6001160	242	20	C	90	3	5.92	1.7	1	1	584	660	2.7	2.5	1	1.86	0.2	112	115	5	6	32	33
854143	13L/1	558850	6000950	243	20	C	90	3	6.00	1.2	1	1	616	660	2.7	4.9	2	1.85	0.3	120	112	6	6	31	32
854146	13L/1	549080	5999180	91	20	BC	35	3	5.84	2.7	1	1	568	653	2.6	3.9	1	1.81	0.2	104	101	5	6	30	33
854147	13L/1	550890	5999350	92	20	C	35	3	5.91	0.3	1	1	680	690	2.5	3.1	2	1.86	0.1	104	102	5	5	34	32
854148	13L/1	553170	5998970	93	20	BC	50	3	6.50	0.3	1	1	768	744	2.9	6.3	3	1.66	0.1	104	98	6	8	41	36
854149	13L/1	555070	5998980	98	20	BC	50	3	6.25	2.6	1	1	616	637	3.1	14.4	1	1.82	0.2	136	113	6	7	42	38
854150	13L/1	556960	5998950	99	20	BC	25	3	6.43	2.2	1	1	672	712	2.6	7.5	2	2.13	0.2	96	95	6	7	40	40
854151	13L/8	564870	6013120	251	20	C	40	3	5.83	2.8	1	1	448	567	2.2	5.9	1	1.69	0.1	98	95	9	10	39	37
854152	13L/8	563520	6013100	252	20	BC	70	3	5.64	0.3	1	1	532	591	1.5	13.3	1	1.44	0.1	58	56	6	6	37	33
854153	13L/8	561000	6013030	253	20	BC	70	3	5.79	3.6	1	4	504	543	2.2	14.0	2	1.66	0.2	91	82	9	9	43	38
854154	13L/8	559060	6013040	254	20	BC	60	3	5.47	2.7	1	1	630	570	1.7	9.8	1	1.49	0.1	70	66	6	6	34	29
854155	13L/8	557150	6012870	255	20	BC	40	3	5.34	0.3	1	1	623	594	1.5	10.5	2	1.36	0.2	62	54	7	8	39	42
854156	13L/8	554950	6012980	256	20	BC	40	3	5.55	2.4	1	4	476	594	1.6	14.7	1	1.52	0.2	57	55	8	7	38	39
854157	13L/8	553100	6012940	257	20	BC	35	3	5.51	2.2	1	1	602	563	1.3	14.0	1	1.18	0.2	53	51	7	7	38	37
854158	13L/8	551050	6013140	258	20	BC	40	3	5.35	2.0	1	1	700	733	1.2	6.0	1	1.15	0.1	41	36	5	4	31	29
854159	13L/8	548970	6013030	259	20	BC	40	3	5.42	3.7	1	1	525	589	1.4	11.2	1	1.27	0.1	45	42	6	6	38	36
854160	13L/8	547050	6013050	260	20	BC	75	3	5.97	3.8	1	1	511	623	2.2	5.8	1	1.47	0.1	84	83	8	8	37	38
854161	13L/8	545010	6012900	261	20	BC	60	3	6.38	2.3	1	1	688	615	2.0	15.2	2	1.24	0.1	88	60	4	6	53	35

Sample	NTS	Easting	Northing	Site	Zone	Horizon	Depth	Ag1	Al2	As1	As2	Au1	Ba1	Ba2	Be2	Br1	Ca1	Ca2	Cd2	Ce1	Ce2	Co1	Co2	Cr1	Cr2
854162	13L/8	542950	6012750	262	20	BC	75	3	6.44	2.8	1	2	608	657	1.6	6.0	2	1.71	0.1	72	63	6	8	55	42
854163	13L/8	541030	6013200	263	20	C	100	3	6.46	1.7	1	1	696	631	1.5	9.6	2	1.65	0.1	64	54	6	6	41	37
854164	13L/8	538910	6013050	264	20	C	70	3	5.96	1.6	1	6	680	713	1.4	6.6	1	1.46	0.1	51	41	4	5	36	36
854165	13L/8	536780	6012930	265	20	C	70	3	6.08	2.1	1	1	560	639	1.5	4.8	1	2.04	0.1	80	78	6	9	64	49
854166	13L/8	534920	6012920	266	20	C	90	3	6.29	3.1	1	1	656	657	1.4	3.8	2	1.83	0.2	67	64	6	8	49	45
854167	13L/8	532850	6013160	267	20	BC	50	3	6.03	2.6	1	1	632	648	1.3	5.6	1	1.73	0.1	47	45	6	6	43	38
854168	13L/1	564900	5999000	268	20	BC	40	3	6.14	2.5	1	1	624	701	2.0	9.6	1	1.85	0.1	77	76	3	6	40	36
854169	13L/1	562930	5998940	269	20	BC	50	3	6.23	2.5	1	3	744	746	2.3	3.8	1	1.87	0.1	104	92	6	7	42	39
854170	13L/1	560850	5999010	270	20	BC	70	3	5.99	2.5	1	1	680	750	1.7	4.2	1	1.44	0.1	54	51	4	4	36	30
854171	13L/1	559150	5998920	271	20	C	60	3	6.13	3.4	1	1	880	744	2.4	4.3	1	1.95	0.2	128	102	5	6	46	35
854172	13L/8	564920	6014880	272	20	BC	75	3	6.89	8.8	1	1	1280	716	1.9	9.6	1	1.67	0.1	120	74	20	16	66	47
854173	13L/8	563200	6014770	273	20	C	70	3	6.42	2.5	1	11	696	647	1.8	7.0	2	1.68	0.2	96	76	8	11	50	44
854174	13L/8	561200	6014770	274	20	BC	10	3	4.94	3.2	1	11	800	693	1.1	2.5	1	0.88	0.2	51	28	4	3	42	23
854175	13L/8	559500	6014530	275	20	C	60	3	6.19	2.9	1	1	640	617	1.7	9.6	1	1.65	0.1	80	70	8	10	51	41
854176	13L/8	557270	6015250	276	20	C	85	3	6.38	4.0	1	10	552	706	1.9	2.7	2	2.09	0.1	112	96	10	13	59	47
854177	13L/8	554880	6014870	277	20	C	80	3	6.62	15.2	5	1	880	631	2.2	9.6	5	1.63	0.1	128	72	18	16	75	48
854178	13L/8	552950	6014970	278	20	C	85	3	6.35	4.3	1	8	600	588	1.6	12.0	2	2.09	0.2	80	76	8	9	59	51
854179	13L/8	551180	6014970	279	20	BC	35	3	6.41	5.3	1	9	800	632	1.6	16.0	1	1.34	0.1	77	58	8	9	54	42
854180	13L/8	549020	6015030	280	20	BC	40	3	6.37	6.1	1	3	648	587	1.5	12.0	2	1.55	0.2	77	61	10	11	50	42
854181	13L/8	547060	6015130	281	20	C	50	3	6.53	4.7	1	1	880	698	1.7	0.3	1	1.78	0.1	96	68	15	15	61	45
854182	13L/8	545100	6015050	282	20	B	85	3	6.26	14.4	1	1	960	510	1.5	40.8	6	1.46	0.2	112	58	11	10	80	50
854183	13L/8	542900	6014960	283	20	C	60	3	6.61	3.0	1	1	800	708	1.8	0.3	1	1.60	0.1	88	68	10	13	46	42
854184	13L/8	540990	6014960	284	20	B	50	3	5.09	16.0	1	1	0	454	1.0	51.2	1	1.04	0.2	61	38	6	7	96	53
854185	13L/8	538930	6015080	285	20	BC	30	3	6.37	3.2	1	1	672	630	1.5	8.0	2	1.80	0.1	76	61	6	9	48	43
854186	13L/8	536260	6014290	286	20	BC	80	3	6.53	3.5	1	1	600	605	1.5	5.3	2	1.88	0.2	73	69	8	12	50	46
854187	13L/8	535020	6015020	287	20	BC	75	3	7.29	9.6	1	1	736	621	1.9	2.9	2	1.47	0.1	104	77	18	20	69	51
854188	13L/8	533050	6014950	288	20	BC	70	3	6.61	4.5	1	5	544	598	1.4	4.8	1	1.87	0.1	72	63	7	10	49	42
854189	13L/1	564960	6000950	289	20	C	90	3	6.21	3.0	1	1	712	682	3.0	4.0	1	1.94	0.1	120	114	5	7	40	36
854190	13L/1	562990	6001010	290	20	C	90	3	5.96	2.6	5	1	624	650	2.8	3.3	2	1.95	0.1	112	108	6	7	38	36
854191	13L/1	561050	6001100	291	20	C	85	3	5.95	4.8	1	1	704	662	2.6	4.9	3	1.93	0.2	128	112	5	6	40	31
854193	13L/8	565030	6016900	100	20	C	45	3	6.15	5.1	1	1	616	574	2.2	6.9	1	1.53	0.2	112	104	10	12	55	49
854194	13L/8	563280	6016930	101	20	C	50	3	6.55	5.4	1	1	576	532	1.7	8.0	1	0.99	0.3	112	86	14	17	80	64
854195	13L/8	561350	6016550	102	20	B	15		5.62		1			494	1.4			1.19	0.2		47		8		44
854196	13L/8	559150	6016100	103	20	BC	15	3	5.68	3.7	1	1	616	552	1.4	10.4	2	1.44	0.1	72	56	6	8	48	43
854197	13L/8	556980	6016740	104	20	C	40		6.05		2			495	2.0			1.58	0.1		116		15		54
854198	13L/8	554300	6017060	105	20	BC	25	3	5.85	3.3	1	1	600	575	1.4	10.4	2	2.14	0.2	76	68	7	9	59	45
854199	13L/8	553240	6017030	106	20	C	45	3	6.12	4.6	1	1	792	751	1.7	3.0	2	2.02	0.3	80	77	8	11	54	42
854200	13L/1	533720	6003670	109	20	mudboil	50		6.03		1			740	3.3			1.88	0.3		117		9		37
854203	13L/8	550930	6016830	113	20	BC	45		6.26		1			550	1.4			1.83	0.2		59		10		40
854204	13L/8	548980	6016970	114	20	BC	70		6.01		1			644	1.3			1.46	0.3		48		7		33
854205	13L/8	547000	6016930	115	20	BC	30		7.19		2			380	1.1			0.75	0.2		43		6		38
854206	13L/8	545270	6016900	116	20	BC	50	3	6.23	7.4	3	1	640	661	1.6	4.2	1	1.64	0.2	88	77	10	13	50	39

Sample	NTS	Easting	Northing	Site	Zone	Horizon	Depth	Ag1	Al2	As1	As2	Au1	Ba1	Ba2	Be2	Br1	Ca1	Ca2	Cd2	Ce1	Ce2	Co1	Co2	Cr1	Cr2
854207	13L/8	543140	6017190	117	20	BC	30	3	6.01	5.6	1	1	800	640	1.3	8.0	1	1.98	0.3	77	63	6	8	54	40
854208	13L/8	541040	6016960	118	20	BC	35	3	6.78	4.3	1	5	616	568	1.5	8.8	2	2.03	0.2	65	56	11	15	58	48
854209	13L/8	537800	6017200	119	20	BC	25	3	6.16	4.7	2	1	640	591	1.3	9.6	1	1.72	0.3	62	53	8	9	50	40
854210	13L/8	536720	6017450	120	20	BC	25	3	6.35	11.2	9	1	592	569	1.4	12.8	2	1.83	0.2	77	69	9	10	52	41
854211	13L/8	534820	6016950	121	20	BC	40	3	6.40	5.1	1	1	768	679	1.4	3.4	2	2.16	0.2	88	76	9	11	64	45
854212	13L/8	532950	6017180	122	20	mudboil	40	3	6.08	4.6	1	1	736	600	1.2	13.6	2	1.61	0.3	66	49	6	6	49	33
854213	13L/1	564500	6002900	123	20	C	75	3	5.76	2.1	1	1	536	674	2.6	3.7	1	2.00	0.3	104	112	4	6	34	30
854214	13L/1	564500	6002900	123	20	BC	50	3	5.93	3.1	1	1	664	679	2.4	4.8	2	1.76	0.2	96	91	5	6	46	36
854215	13L/1	564500	6002900	123	20	B	10	3	5.80	4.2	1	1	752	595	2.2	20.0	1	1.48	0.2	96	71	3	4	48	28
854216	13L/1	562910	6003000	124	20	C	75	3	5.95	3.0	1	1	680	674	2.7	3.6	2	1.88	0.2	104	94	4	6	34	30
854217	13L/1	562910	6003000	124	20	BC	25		6.21		1			619	2.4			1.64	0.1		73		6		32
854218	13L/1	562910	6003000	124	20	B	10		5.98		1			638	1.9			1.54	0.3		54		4		32
854219	13L/1	561030	6003070	125	20	C	60	3	6.27	1.8	1	1	704	645	2.6	7.7	2	2.42	0.3	120	103	7	9	54	47
854220	13L/1	561030	6003070	125	20	BC	25	3	5.94	4.7	1	1	776	620	2.7	12.8	2	1.87	0.2	136	103	6	7	50	33
854221	13L/1	561030	6003070	125	20	B	10		5.73		1			565	2.1			1.43	0.2		57		5		35
854222	13L/1	535990	6009740	126	20	BC	50	3	6.14	0.3	1	1	960	583	6.1	18.4	1	1.32	0.2	176	110	6	6	55	31

Sample	NTS	Easting	Northing	Cs1 ppm	Cu2 ppm	Dy2 ppm	Eu1 ppm	Fe1 pct	Fe2 pct	Hf1 ppm	Hg1 ppm	Ir1 ppb	K2 pct	La1 ppm	La2 ppm	Li2 ppm	LOI pct	Lu1 ppm	Mg2 pct	Mn2 ppm	Mo1 ppm	Mo2 ppm	Na1 pct	Na2 pct	Nb2 ppm
854003	13L/1	532970	6010990	2	28	4.4	1.8	3.02	3.07	15	1	3	1.65	46.4	43	10.3	7.53	0.42	0.71	468	1	1	2.14	2.18	13
854004	13L/1	532670	6009030	1	21	4.3	1.6	3.10	3.46	15	1	3	1.62	38.4	39	7.6	6.75	0.33	0.61	458	1	2	1.94	2.16	14
854005	13L/1	532930	6001150	2	26	13.1	1.9	3.30	3.60	14	1	3	1.90	80.0	82	30.8	5.57	1.04	0.46	808	1	2	2.11	2.46	28
854006	13L/1	533150	5999130	3	32	12.2	2.3	3.42	4.43	14	1	3	1.96	96.0	96	50.8	3.41	1.40	0.44	1170	1	2	1.82	2.89	32
854007	13L/1	533020	5996930	1	38	23.2	1.5	2.95	5.39	12	1	3	2.06	66.0	133	51.4	2.75	0.70	0.53	1348	1	4	1.86	2.85	40
854008	13L/1	533260	5994970	1	18	5.7	1.4	2.52	2.89	14	1	3	2.01	44.8	48	12.0	1.45	0.46	0.48	516	1	1	2.04	2.40	18
854010	13L/1	533050	5983950	1	17	6.6	1.8	2.74	3.14	22	1	3	2.19	54.4	60	6.5	2.16	0.58	0.47	593	5	1	2.17	2.44	19
854011	13L/1	533930	5987280	1	16	6.0	1.8	2.67	2.84	16	1	3	2.24	56.0	57	10.3	2.46	0.63	0.53	584	1	1	2.42	2.58	17
854012	13L/1	535000	5987400	1	21	7.7	2.1	3.38	2.78	26	1	3	2.26	75.2	61	10.0	1.82	0.94	0.45	544	4	1	3.00	2.56	19
854013	13L/1	534750	5984950	2	19	5.9	1.6	2.57	2.86	18	1	3	2.00	49.6	52	8.5	4.16	0.48	0.60	518	2	1	2.01	2.27	15
854014	13L/1	535040	5996840	2	24	6.7	2.1	3.38	3.41	15	1	3	1.98	66.0	60	18.9	1.82	0.78	0.54	599	3	2	2.69	2.41	20
854015	13L/1	535000	5994850	4	36	15.3	3.1	7.90	9.05	16	1	3	1.53	127.5	123	21.6	3.87	1.72	0.48	2008	1	2	3.41	3.45	37
854016	13L/1	535560	6001980	1	21	8.1	2.2	3.63	3.62	15	1	3	1.60	64.5	58	11.3	14.39	0.63	0.49	493	1	2	2.12	1.90	19
854017	13L/1	534990	5998990	2	24	7.9	1.7	2.95	3.11	16	1	3	1.94	66.0	66	29.4	4.27	0.66	0.39	606	1	2	2.53	2.47	25
854018	13L/1	534820	6006460	2	16	6.2	1.6	3.35	3.56	13	1	3	1.83	51.0	50	9.1	4.91	0.68	0.46	450	1	2	2.42	2.24	19
854019	13L/1	534950	6004300	2	15	7.0	1.9	3.46	3.71	11	1	3	1.54	49.5	46	12.7	14.67	0.66	0.46	483	1	2	2.18	2.06	18
854020	13L/1	534990	6011110	1	14	3.4	1.6	3.11	3.25	8	1	3	1.55	30.8	28	9.5	12.11	0.21	0.61	381	5	1	2.21	2.06	11
854021	13L/1	536960	6007920	2	17	5.7	1.7	2.95	3.14	11	1	3	1.88	50.3	47	10.9	3.48	0.55	0.55	473	1	1	2.47	2.34	15
854022	13L/1	541380	6010740	2	12	4.6	1.4	1.53	1.52	12	1	3	1.60	46.5	44	6.5	16.88	0.34	0.44	348	1	1	2.03	1.91	12
854023	13L/1	540750	6010360	3	22	7.9	1.9	3.74	4.19	13	1	3	1.86	58.1	58	23.4	2.61	0.76	0.61	653	1	1	2.39	2.40	21
854024	13L/1	540170	6010270	1	28	10.3	1.9	3.23	3.67	12	1	3	1.95	70.0	72	13.7	2.02	0.93	0.65	588	1	1	2.32	2.38	21
854025	13L/1	539770	6009930	4	16	9.3	2.8	3.61	3.97	10	1	3	1.80	68.6	69	45.2	3.83	0.62	0.68	604	1	1	2.42	2.50	22
854026	13L/1	539480	6009860	1	26	7.2	1.8	3.09	3.49	12	1	3	1.86	51.8	51	12.3	2.59	0.75	0.61	538	5	2	2.29	2.33	19
854027	13L/1	534350	6007440	3	19	7.4	1.8	3.38	3.36	14	1	3	1.98	56.7	49	13.4	5.15	1.00	0.46	477	1	2	2.58	2.30	21
854028	13L/1	533920	6007240	2	20	8.2	1.7	2.84	3.21	11	1	3	1.86	70.0	73	20.5	5.04	0.70	0.52	487	6	1	2.37	2.41	22
854029	13L/1	533500	6006980	4	26	9.5	2.0	4.01	4.12	15	1	3	1.82	70.0	64	23.0	5.52	0.97	0.50	582	1	3	2.40	2.22	23
854031	13L/1	533100	6006900	3	25	14.0	2.3	3.71	3.95	14	1	3	1.80	77.0	71	25.1	6.93	1.24	0.55	541	1	3	2.25	2.22	27
854032	13L/1	533040	6006630	2	20	17.8	3.2	2.85	3.14	12	1	3	1.81	91.0	89	19.8	6.59	1.19	0.63	563	1	2	2.32	2.29	21
854033	13L/1	532720	6006280	2	20	4.2	1.3	2.58	2.97	16	1	3	1.71	39.2	38	10.1	5.24	0.46	0.45	450	2	2	1.82	1.95	25
854034	13L/1	542900	6011050		24	12.3			4.45				1.39		92	10.1	16.77		0.47	1075		5		1.71	19
854035	13L/1	546750	6010900	1	22	8.3	2.0	3.19	3.05	19	1	3	1.82	70.4	64	11.2	4.37	0.84	0.49	474	1	1	1.96	1.99	22
854036	13L/1	548450	6011300	2	32	10.3	1.8	3.48	3.62	14	1	3	2.19	96.0	95	15.0	1.91	0.86	0.60	593	1	2	1.86	2.06	23
854037	13L/1	551150	6011040	2	22	6.5	1.5	2.81	3.18	11	1	3	1.87	48.0	50	12.3	4.18	0.53	0.57	504	1	2	1.88	2.14	17
854038	13L/1	553180	6011380	1	16	3.9	1.4	3.21	2.87	14	1	3	1.51	44.0	35	6.2	7.97	0.54	0.39	334	6	1	1.50	1.42	13
854039	13L/1	554990	6011370	2	15	3.9	1.2	2.76	2.94	10	1	3	1.68	34.4	32	11.4	6.21	0.40	0.44	346	1	2	1.36	1.47	12
854040	13L/1	557000	6011440	1	23	5.8	1.3	2.54	2.86	13	1	3	1.60	42.4	45	9.5	6.11	0.51	0.49	440	1	1	1.58	1.82	16
854041	13L/1	558900	6011070	1	12	3.3	1.0	2.11	2.31	9	1	3	1.45	28.8	28	5.9	4.58	0.30	0.32	260	3	1	0.97	1.10	10
854042	13L/1	561140	6010830	1	46	5.6	1.6	4.38	4.56	10	1	3	1.20	37.6	36	11.9	5.38	0.40	1.07	608	1	1	2.18	2.30	13
854043	13L/1	562620	6010970	1	30	5.5	1.5	4.20	4.41	10	1	3	1.04	36.8	36	12.1	6.09	0.43	0.73	517	1	1	2.13	2.19	18
854044	13L/1	564820	6009030	1	6	5.8	1.6	2.90	3.08	15	1	3	1.84	48.8	49	14.1	3.84	0.60	0.44	481	1	2	2.03	2.08	18

Sample	NTS	Easting	Northing	Cs1	Cu2	Dy2	Eu1	Fe1	Fe2	Hf1	Hg1	Ir1	K2	La1	La2	Li2	LOI	Lu1	Mg2	Mn2	Mo1	Mo2	Na1	Na2	Nb2
854045	13L/1	564230	6010700	1	2	3.1	1.0	2.73	2.81	10	1	3	1.58	29.6	28	9.0	4.95	0.32	0.48	352	3	1	1.33	1.37	13
854046	13L/1	562950	6008960		2	3.6			2.36				1.88		32	10.9	7.89		0.33	373		1		1.80	21
854047	13L/1	564770	6005140	1	14	7.3	1.8	3.02	3.19	18	1	3	2.01	58.4	58	13.7	1.32	0.77	0.49	580	1	1	2.46	2.55	18
854048	13L/1	561070	6008840	1	4	7.7	2.3	3.86	3.32	25	1	3	1.56	104.0	87	20.5	9.72	1.01	0.35	498	1	1	2.34	2.06	44
854049	13L/1	563020	6004930		2	4.9			3.54				1.72		38	11.1	6.95		0.38	527		1		2.32	19
854050	13L/1	559010	6008980	1	6	5.7	1.5	2.74	2.98	16	1	3	1.97	49.6	51	18.3	1.75	0.67	0.44	507	3	2	2.03	2.19	23
854051	13L/1	560450	6004850	1	11	7.1	1.7	3.10	3.37	19	1	3	2.02	60.8	62	15.9	1.66	0.79	0.53	663	6	1	2.40	2.59	19
854052	13L/1	556910	6008880	1	3	4.5	1.8	3.08	2.81	17	1	3	1.93	48.0	44	11.2	6.40	0.69	0.38	428	1	1	2.18	2.02	19
854053	13L/1	558880	6004930		6	7.7			4.45				1.56		53	16.1	7.66		0.42	629		1		2.36	23
854054	13L/1	554820	6008980		9	8.4			3.69				1.84		62	17.7	7.63		0.40	527		3		1.80	27
854055	13L/1	556980	6004770	2	9	10.9	2.6	4.40	4.48	20	1	3	1.84	73.6	72	25.9	3.54	1.27	0.48	804	1	2	2.87	2.97	26
854057	13L/1	555080	6004840	3	0	20.2	12.5	8.72	9.41	8	1	3	1.66	96.0	95	43.2	4.52	1.62	0.82	1405	1	1	3.35	3.68	23
854073	13L/1	552820	6004980	2	5	5.7	1.8	3.10	3.32	14	1	3	1.80	52.0	52	14.0	5.73	0.60	0.50	520	1	1	2.34	2.42	16
854074	13L/1	551070	6005230	1	9	6.4	1.5	3.27	3.34	15	1	3	1.77	54.4	52	16.7	2.56	0.73	0.50	582	1	2	2.41	2.45	17
854075	13L/1	549060	6004970	1	0	17.1	3.2	5.27	5.80	10	1	3	1.28	96.0	103	8.0	6.57	1.41	0.59	1006	1	2	3.37	3.76	23
854076	13L/1	547000	6005020	2	9	10.2	1.5	3.35	3.90	14	1	5	1.94	67.2	77	22.7	2.37	0.87	0.58	712	1	1	2.41	2.77	21
854081	13L/1	564960	6007180	1	9	5.4	1.2	2.70	3.11	13	1	3	2.05	48.0	52	13.7	2.20	0.59	0.55	535	1	1	2.10	2.35	19
854082	13L/1	562850	6006920	1	7	6.9	1.4	2.74	2.99	16	1	3	1.83	57.6	59	13.4	4.45	0.67	0.47	511	1	1	2.21	2.36	19
854083	13L/1	560670	6007210	3	5	3.6	0.9	3.22	3.55	12	1	3	1.82	29.6	30	13.7	6.76	0.42	0.55	499	1	2	2.37	2.56	17
854084	13L/1	558830	6007110	6	18	4.8	1.0	4.25	4.50	11	1	3	1.61	38.4	37	26.1	6.02	0.66	0.66	529	5	2	2.28	2.45	18
854085	13L/1	557070	6007150	37	4	26.3	1.6	8.64	9.78	16	1	3	1.58	176.0	189	46.9	6.98	2.26	0.20	1622	1	1	2.42	2.81	93
854086	13L/1	555080	6007150	2	1	6.0	1.0	2.25	2.48	34	1	3	2.02	46.4	48	13.2	4.34	1.03	0.46	466	5	3	2.18	2.39	24
854087	13L/1	552690	6008970	2	0	8.4	1.1	4.14	4.78	22	1	3	2.27	46.4	47	17.7	9.60	1.02	0.35	508	1	2	1.22	1.33	28
854089	13L/1	549090	6008270	2	2	4.1	0.8	2.70	3.08	20	1	3	2.00	27.2	30	7.7	6.34	0.52	0.35	371	1	3	1.74	2.02	20
854090	13L/1	547100	6008980	3	6	11.0	1.3	3.23	3.63	18	1	3	2.02	73.6	80	19.7	5.83	0.91	0.50	521	1	4	1.86	2.15	25
854091	13L/1	545030	6009870	1	2	4.3	0.8	2.18	2.66	24	1	3	1.84	29.6	35	7.7	6.65	0.47	0.48	408	1	7	1.54	1.92	17
854093	13L/1	543000	6009780	1	7	8.5	1.3	2.62	3.05	18	1	3	1.67	62.4	72	11.0	9.66	0.52	0.46	410	1	2	1.64	2.01	18
854097	13L/1	552970	6007030	1	5	7.9	1.4	3.35	3.98	24	1	3	2.04	58.4	64	16.3	2.34	0.72	0.55	654	1	3	2.13	2.47	24
854098	13L/1	551080	6007150	1	1	4.4	0.7	2.32	2.70	23	1	3	1.96	31.2	36	9.7	3.91	0.55	0.37	394	3	5	1.77	2.15	19
854099	13L/1	549250	6007000	3	2	5.4	0.7	3.62	3.46	34	1	3	2.12	44.8	42	11.2	5.22	1.11	0.29	427	6	11	2.42	2.43	35
854100	13L/1	547040	6006950	2	0	7.6	0.7	1.76	1.74	40	1	3	2.34	39.2	39	5.9	7.98	1.56	0.17	317	1	5	2.96	3.25	44
854101	13L/1	545080	6007150	4	6	9.5	1.3	3.54	3.91	25	1	3	2.11	68.8	73	18.5	2.89	0.92	0.50	676	1	3	2.26	2.61	27
854102	13L/1	542960	6007970	1	7	5.4	1.7	4.26	3.33	30	1	3	1.73	61.0	46	8.7	11.14	0.61	0.51	453	1	2	2.20	1.94	18
854105	13L/1	538870	6007170	6	4	13.6	1.6	13.60	13.23	27	1	3	1.04	77.6	70	88.7	5.63	2.10	0.35	2820	1	3	4.91	4.89	53
854106	13L/1	536780	6004950	2	5	8.8	1.4	4.56	4.96	17	1	3	1.95	46.4	48	20.6	3.36	0.82	0.49	893	1	3	2.54	2.86	21
854107	13L/1	536990	6001040	1	7	9.2	1.4	3.01	3.49	21	1	3	1.96	68.0	76	32.4	2.08	0.66	0.52	701	1	1	2.19	2.55	24
854108	13L/1	538880	6001010	1	13	6.6	1.4	3.26	3.47	24	1	3	1.96	73.6	75	27.2	2.17	0.60	0.53	644	1	1	2.35	2.52	22
854109	13L/1	541050	6001050	1	36	4.9	1.4	3.38	3.62	18	1	3	1.79	57.6	58	23.1	5.86	0.44	0.70	656	1	1	2.12	2.26	17
854110	13L/1	542920	6000960	2	5	4.3	1.2	3.26	3.56	19	1	3	2.24	47.2	48	18.8	4.26	0.50	0.71	645	1	1	2.24	2.39	16
854111	13L/1	545000	6001250		26	3.7			3.41				1.57		40	15.2	12.82		0.57	527		1		1.85	13
854113	13L/1	640570	6008350	2	7	6.8	1.6	3.45	3.49	25	1	3	1.86	52.8	51	12.2	3.22	0.66	0.57	557	1	1	2.24	2.33	19
854114	13L/1	539440	6008520	2	7	6.9	1.4	3.05	3.10	30	1	3	1.88	64.8	63	12.1	5.42	0.66	0.57	549	1	2	2.15	2.20	22

Sample	NTS	Easting	Northing	Cs1	Cu2	Dy2	Eu1	Fe1	Fe2	Hf1	Hg1	Ir1	K2	La1	La2	Li2	LOI	Lu1	Mg2	Mn2	Mo1	Mo2	Na1	Na2	Nb2
854115	13L/1	537000	6003000	2	13	6.4	1.8	3.46	3.50	26	1	3	1.90	56.8	54	10.3	2.39	0.61	0.66	583	1	1	2.26	2.29	18
854116	13L/1	538900	6003170	2	10	7.1	1.6	3.20	3.65	14	1	3	1.97	62.4	62	15.6	2.08	0.68	0.58	630	2	1	2.32	2.44	20
854117	13L/1	541000	6003150	2	10	5.5	1.4	3.14	3.26	14	1	3	1.95	51.2	49	15.9	2.41	0.55	0.57	554	2	1	2.44	2.46	17
854118	13L/1	543000	6003320	1	16	6.0	1.4	2.98	3.15	16	1	3	1.92	52.8	51	15.1	1.97	0.63	0.52	553	2	2	2.34	2.46	17
854119	13L/1	544950	6003130	1	4	3.6	1.0	2.70	2.97	14	1	3	2.16	34.4	34	14.7	4.09	0.47	0.49	474	1	1	2.01	2.10	14
854121	13L/1	540930	6004820	4	8	10.6	1.4	3.92	4.12	21	1	3	1.74	67.2	66	21.2	7.66	1.04	0.55	609	1	2	2.37	2.39	26
854122	13L/1	539040	6005020	2	14	5.7	1.6	3.34	3.29	15	1	3	1.92	56.8	51	12.5	1.91	0.65	0.62	558	1	2	2.47	2.39	17
854123	13L/1	537040	5999030	2	12	9.5	1.8	3.58	4.09	18	1	3	1.90	72.8	74	34.4	3.24	0.89	0.54	890	1	1	2.38	2.54	26
854124	13L/1	538990	5999060	2	7	5.0	1.4	3.03	3.40	17	1	3	1.85	47.2	46	12.2	4.59	0.55	0.64	547	3	2	2.14	2.25	17
854125	13L/1	541080	5998920	2	12	7.3	1.8	3.30	3.15	18	1	3	1.91	65.6	62	16.6	1.96	0.66	0.49	551	4	2	2.38	2.37	19
854126	13L/1	543360	5999070	1	9	7.6	1.8	3.70	4.08	22	1	3	1.75	71.2	71	20.0	4.36	0.74	0.51	631	4	2	2.14	2.25	23
854127	13L/1	544960	5999360	1	13	7.9	1.6	2.78	3.17	13	1	3	1.97	60.0	62	16.3	1.07	0.70	0.49	539	5	1	2.33	2.45	19
854129	13L/1	546980	6003000	1	19	3.9	1.3	3.13	3.16	14	1	3	1.80	37.6	36	12.1	4.33	0.49	0.61	544	2	2	2.34	2.37	13
854130	13L/1	549000	6002930	1	9	3.6	1.1	2.63	2.92	15	1	3	1.62	36.0	34	13.2	6.56	0.50	0.45	541	3	1	2.54	2.66	12
854131	13L/1	550870	6002880	2	2	3.9	1.0	4.06	3.83	15	1	3	1.63	24.8	24	13.5	7.44	0.52	0.52	502	1	1	2.42	2.48	16
854132	13L/1	552940	6002760	2	10	4.7	1.4	2.74	2.82	14	1	3	1.79	47.2	46	12.1	4.59	0.59	0.54	544	1	2	2.65	2.68	13
854133	13L/1	554960	6002950	1	12	6.1	1.4	2.67	3.04	14	1	3	1.91	50.4	53	13.1	1.70	0.62	0.49	573	5	1	2.33	2.56	16
854134	13L/1	556880	6003070	1	9	6.0	1.4	2.76	3.15	14	1	3	1.95	53.6	55	13.7	2.00	0.59	0.53	550	2	1	2.34	2.57	16
854135	13L/1	558870	6003100	1	19	5.4	1.2	3.07	3.16	14	1	3	1.84	54.4	53	15.9	4.04	0.57	0.57	594	2	1	2.46	2.60	14
854137	13L/1	546960	6001050	2	10	4.9	1.3	3.30	3.59	14	1	3	1.80	51.2	51	21.7	4.00	0.51	0.69	598	3	2	2.17	2.25	17
854138	13L/1	549060	6001000	1	18	7.7	1.4	2.98	3.34	14	1	3	1.89	60.8	63	19.3	1.46	0.70	0.54	618	2	6	2.30	2.48	19
854139	13L/1	550700	6001280	2	18	10.5	1.8	3.25	3.27	23	1	3	1.90	65.6	64	16.1	1.08	1.02	0.51	597	2	2	2.41	2.44	19
854140	13L/1	553020	6000920	1	8	5.8	1.4	2.90	2.95	22	1	3	1.88	55.2	53	14.7	2.99	0.58	0.47	506	1	1	2.32	2.37	17
854141	13L/1	554910	6001000	1	10	6.3	1.4	3.04	3.05	24	1	3	1.84	56.8	58	13.6	3.27	0.60	0.43	511	4	1	2.29	2.36	17
854142	13L/1	556870	6001160	1	11	6.8	1.4	2.68	3.08	21	1	3	1.91	54.4	59	13.7	1.26	0.59	0.46	552	2	1	2.20	2.47	18
854143	13L/1	558850	6000950	1	8	6.3	1.4	2.75	2.90	22	1	3	1.93	52.8	54	13.4	1.50	0.61	0.44	545	1	1	2.36	2.52	17
854146	13L/1	549080	5999180	1	12	5.8	1.3	2.86	3.10	22	1	3	1.89	52.8	56	15.0	1.66	0.58	0.46	535	1	2	2.18	2.42	18
854147	13L/1	550890	5999350	1	7	5.6	1.4	2.88	3.09	20	1	3	1.96	56.0	58	14.0	1.51	0.55	0.49	524	2	1	2.25	2.43	19
854148	13L/1	553170	5998970	1	6	5.3	1.4	3.22	3.29	24	1	3	2.03	56.0	55	16.4	2.89	0.55	0.58	600	1	1	2.22	2.28	17
854149	13L/1	555070	5998980	1	17	6.6	1.7	3.26	3.18	23	1	3	1.74	65.6	60	15.9	5.18	0.62	0.57	552	4	1	2.26	2.21	18
854150	13L/1	556960	5998950	2	14	5.6	1.4	3.38	3.63	26	1	3	1.83	49.6	50	13.4	2.64	0.56	0.66	606	1	1	2.26	2.45	18
854151	13L/8	564870	6013120	1	120	5.7	1.8	3.95	3.76	11	1	3	1.59	48.3	46	14.4	1.99	0.63	0.71	525	1	1	2.56	2.33	16
854152	13L/8	563520	6013100	1	7	3.5	1.4	2.77	2.67	12	1	3	1.60	32.9	31	7.2	5.93	0.49	0.54	414	4	1	2.18	2.04	14
854153	13L/8	561000	6013030	1	8	5.0	1.6	3.59	3.49	12	1	3	1.58	44.1	43	8.0	4.46	0.57	0.57	504	1	1	2.12	2.00	15
854154	13L/8	559060	6013040	2	19	4.0	1.6	2.86	2.59	14	1	3	1.75	39.9	35	9.8	4.05	0.56	0.51	422	1	1	2.42	2.08	14
854155	13L/8	557150	6012870	1	4	3.6	1.4	3.99	3.67	15	1	3	1.61	32.9	30	7.4	8.59	0.57	0.67	480	3	1	1.98	1.82	17
854156	13L/8	554950	6012980	1	12	3.7	1.3	3.30	3.36	11	1	3	1.62	30.8	31	7.8	9.04	0.44	0.64	458	3	1	2.04	1.99	14
854157	13L/8	553100	6012940	1	11	2.8	1.3	3.78	3.80	16	1	3	1.42	28.7	28	5.8	12.71	0.48	0.49	400	1	1	1.69	1.63	15
854158	13L/8	551050	6013140	1	3	2.0	1.1	2.37	2.26	18	1	3	1.85	22.4	21	4.7	5.08	0.37	0.39	365	4	1	1.90	1.77	15
854159	13L/8	548970	6013030	1	5	2.6	1.1	3.75	3.78	13	1	3	1.58	24.5	23	6.4	8.95	0.39	0.52	405	1	1	1.91	1.85	15
854160	13L/8	547050	6013050	1	7	4.9	1.7	3.05	3.10	11	1	3	1.84	41.3	39	9.9	2.32	0.51	0.53	465	1	1	2.06	1.97	15
854161	13L/8	545010	6012900	2	3	3.9	1.4	3.00	3.21	17	1	3	1.80	34.4	31	9.0	6.37	0.54	0.49	409	1	1	1.73	1.81	14

Sample	NTS	Easting	Northing	Cs1	Cu2	Dy2	Eu1	Fe1	Fe2	Hf1	Hg1	Ir1	K2	La1	La2	Li2	LOI	Lu1	Mg2	Mn2	Mo1	Mo2	Na1	Na2	Nb2
854162	13L/8	542950	6012750	1	4	3.4	1.2	2.74	3.21	16	1	3	1.79	28.8	29	8.5	2.55	0.48	0.65	473	1	1	1.95	2.23	14
854163	13L/8	541030	6013200	1	7	3.4	1.2	2.50	3.07	13	1	3	1.64	26.4	30	6.7	6.59	0.42	0.55	419	1	1	1.79	2.10	12
854164	13L/8	538910	6013050	2	4	2.7	1.0	1.63	2.08	15	1	3	1.78	24.0	24	6.6	5.09	0.42	0.48	398	1	2	1.84	2.22	14
854165	13L/8	536780	6012930	1	10	4.7	1.4	3.04	3.69	20	1	3	1.64	35.2	41	7.2	1.77	0.59	0.68	598	2	1	1.91	2.30	15
854166	13L/8	534920	6012920	1	8	3.9	1.2	2.61	3.34	13	1	3	1.70	28.0	33	7.8	2.07	0.44	0.67	483	1	1	1.83	2.31	13
854167	13L/8	532850	6013160	1	8	2.9	1.0	2.30	2.97	14	1	3	1.61	21.6	26	6.8	6.98	0.34	0.59	425	1	3	1.79	2.25	12
854168	13L/1	564900	5999000	2	9	4.5	1.2	2.33	3.09	14	1	3	1.86	35.2	43	9.7	4.39	0.53	0.55	527	1	1	1.87	2.30	15
854169	13L/1	562930	5998940	2	27	5.7	1.4	2.62	3.04	14	1	3	1.95	42.4	48	11.1	1.74	0.59	0.61	534	2	2	2.06	2.37	15
854170	13L/1	560850	5999010	1	3	3.1	1.0	1.70	2.16	14	1	3	1.90	24.8	29	7.2	2.20	0.49	0.39	412	2	1	1.78	2.23	16
854171	13L/1	559150	5998920	2	17	6.1	1.8	2.74	2.87	16	1	3	1.95	56.8	55	10.3	1.67	0.82	0.55	527	3	2	2.44	2.39	16
854172	13L/8	564920	6014880	1	37	4.4	1.8	4.42	3.99	10	1	3	1.91	46.4	39	14.0	3.75	0.68	1.08	571	1	1	2.46	2.17	13
854173	13L/8	563200	6014770	2	27	4.7	1.4	3.25	3.72	11	1	3	1.69	37.6	40	10.3	3.72	0.55	0.77	518	1	1	1.94	2.20	14
854174	13L/8	561200	6014770	1	2	1.3	0.9	1.62	1.43	22	1	3	1.66	23.2	17	4.5	3.04	0.45	0.27	258	1	1	2.01	1.93	13
854175	13L/8	559500	6014530	1	27	4.6	1.4	3.37	3.76	10	1	3	1.66	36.8	38	9.3	3.58	0.50	0.75	497	1	1	1.98	2.16	13
854176	13L/8	557270	6015250	1	29	5.4	1.5	3.38	3.99	11	1	3	1.84	46.4	50	11.6	1.84	0.60	0.95	669	6	1	2.07	2.36	15
854177	13L/8	554880	6014870	1	80	4.6	2.1	5.10	4.38	14	1	3	1.91	48.0	39	15.2	4.46	0.68	1.15	634	11	2	2.43	2.07	15
854178	13L/8	552950	6014970	1	16	4.6	1.5	3.34	3.77	18	1	3	1.57	38.4	41	7.9	4.77	0.55	0.77	574	2	1	1.98	2.21	15
854179	13L/8	551180	6014970	2	20	3.7	1.4	3.25	3.26	7	1	3	1.70	35.2	33	11.4	9.70	0.44	0.74	398	1	1	1.97	1.96	10
854180	13L/8	549020	6015030	1	20	3.9	1.4	3.22	3.48	10	1	3	1.64	32.8	33	9.7	5.52	0.43	0.77	438	2	1	1.98	2.13	11
854181	13L/8	547060	6015130	2	39	4.4	1.7	3.75	3.64	12	1	3	1.98	38.4	36	8.4	1.72	0.58	0.93	560	1	1	2.14	2.16	12
854182	13L/8	545100	6015050	1	22	3.5	1.9	5.62	4.13	19	1	3	1.36	41.6	31	9.2	19.18	0.50	0.62	576	1	1	2.23	1.71	12
854183	13L/8	542900	6014960	1	17	4.1	1.4	3.00	3.21	12	1	3	2.17	33.6	34	7.9	1.76	0.49	0.72	508	1	1	1.90	2.07	12
854184	13L/8	540990	6014960	1	20	2.6	1.4	5.82	4.20	14	1	3	1.19	28.0	21	6.0	31.82	0.40	0.55	346	1	2	1.62	1.23	11
854185	13L/8	538930	6015080	1	36	3.9	1.3	2.93	3.18	10	1	3	1.70	32.8	34	8.8	4.68	0.46	0.73	456	1	1	2.06	2.22	13
854186	13L/8	536260	6014290	1	27	3.6	1.3	2.79	3.38	10	1	3	1.60	27.2	30	9.3	3.74	0.40	0.90	505	1	1	1.86	2.20	12
854187	13L/8	535020	6015020	3	45	4.5	1.6	4.25	4.21	13	1	3	1.99	37.6	37	18.2	2.44	0.56	1.20	850	3	1	2.18	2.15	13
854188	13L/8	533050	6014950	1	12	3.4	1.3	2.69	2.87	13	1	3	1.63	27.2	28	9.1	2.30	0.43	0.69	475	3	1	2.09	2.26	11
854189	13L/1	564960	6000950	2	18	7.5	1.5	2.66	3.11	15	1	3	1.98	52.8	59	12.7	1.66	0.82	0.51	586	2	1	2.14	2.48	18
854190	13L/1	562990	6001010	1	13	6.8	1.5	2.75	3.21	15	1	3	1.88	52.0	59	13.7	1.23	0.75	0.50	602	1	1	2.14	2.47	18
854191	13L/1	561050	6001100	1	25	6.5	1.8	3.02	3.06	18	1	3	1.99	55.2	55	12.8	1.19	0.86	0.47	545	1	1	2.48	2.56	16
854193	13L/8	565030	6016900	2	26	5.8	1.6	3.83	4.43	11	1	3	1.68	49.6	54	12.7	2.98	0.63	0.83	621	2	2	1.78	2.11	16
854194	13L/8	563280	6016930	2	23	4.7	1.7	4.66	4.88	9	1	3	1.59	40.8	38	14.3	3.80	0.59	1.14	724	1	1	1.83	2.00	11
854195	13L/8	561350	6016550		78	3.7			3.74				1.33		26	8.6	16.62		0.59	387		4		1.64	13
854196	13L/8	559150	6016100	2	4	3.5	1.3	2.83	2.91	14	1	3	1.54	32.8	31	9.7	8.64	0.50	0.66	427	1	1	1.76	1.97	14
854197	13L/8	556980	6016740		11	5.2			3.93				1.50		41	11.3	2.76		0.82	674		1		2.16	15
854198	13L/8	554300	6017060	2	22	4.6	1.4	3.11	3.38	23	1	3	1.47	34.4	35	7.1	8.64	0.60	0.70	542	1	1	1.95	2.05	14
854199	13L/8	553240	6017030	2	30	5.5	1.5	3.05	3.55	12	1	3	1.82	40.8	44	9.7	2.03	0.64	0.84	527	1	1	2.06	2.28	13
854200	13L/1	533720	6003670		27	9.2			3.73				2.03		63	16.7	1.84		0.72	641		2		2.43	20
854203	13L/8	550930	6016830		30	3.9			3.29				1.48		31	7.6	8.49		0.67	452		2		1.97	12
854204	13L/8	548980	6016970		15	3.1			2.73				1.71		26	7.3	8.88		0.57	363		1		1.98	10
854205	13L/8	547000	6016930		28	2.8			4.61				0.77		21	7.2	21.86		0.36	310		1		2.21	8
854206	13L/8	545270	6016900	1	41	4.6	1.5	2.98	3.37	9	1	3	1.90	36.8	40	9.4	2.15	0.46	0.89	510	1	2	2.07	2.24	11

Sample	NTS	Easting	Northing	Cs1	Cu2	Dy2	Eu1	Fe1	Fe2	Hf1	Hg1	Ir1	K2	La1	La2	Li2	LOI	Lu1	Mg2	Mn2	Mo1	Mo2	Na1	Na2	Nb2
854207	13L/8	543140	6017190	1	20	3.8	1.4	2.97	3.03	14	1	3	1.75	32.8	31	6.0	2.32	0.50	0.67	463	2	1	2.25	2.21	11
854208	13L/8	541040	6016960	1	70	3.8	1.4	3.40	3.72	9	1	3	1.51	26.4	27	8.8	6.93	0.45	0.99	525	1	1	1.89	2.02	11
854209	13L/8	537800	6017200	1	19	3.1	1.2	3.02	3.34	14	1	3	1.63	28.0	29	9.7	5.88	0.43	0.73	420	1	1	2.01	2.15	11
854210	13L/8	536720	6017450	1	31	3.9	1.4	2.97	3.29	14	1	3	1.53	33.6	36	10.5	7.06	0.44	0.71	452	2	2	1.94	2.08	12
854211	13L/8	534820	6016950	1	27	4.2	1.6	3.18	3.37	14	1	3	1.78	36.8	38	9.1	2.24	0.51	0.80	533	1	1	2.21	2.29	13
854212	13L/8	532950	6017180	1	16	2.8	1.3	2.50	2.41	14	1	3	1.55	28.0	26	7.5	6.87	0.46	0.53	366	1	1	2.10	2.03	11
854213	13L/1	564500	6002900	1	23	6.8	1.4	2.42	3.07	14	1	3	1.95	44.8	54	11.6	1.31	0.74	0.47	548	1	1	2.06	2.44	19
854214	13L/1	564500	6002900	2	19	6.3	1.4	2.70	3.24	16	1	3	1.84	34.4	37	11.4	2.43	0.74	0.56	501	1	1	1.99	2.24	16
854215	13L/1	564500	6002900	2	19	4.8	1.4	2.78	2.73	18	1	3	1.71	40.0	39	9.0	9.11	0.74	0.34	402	1	1	2.20	2.08	15
854216	13L/1	562910	6003000	1	20	5.6	1.3	2.61	3.02	14	1	3	1.96	44.8	49	13.1	1.90	0.70	0.50	539	1	2	2.24	2.44	17
854217	13L/1	562910	6003000		14	4.8			3.34				1.80		37	12.4	4.51		0.47	504		1		2.27	16
854218	13L/1	562910	6003000		18	3.6			3.60				1.64		29	9.3	9.99		0.49	488		1		2.45	16
854219	13L/1	561030	6003070	2	27	5.8	1.5	3.48	3.86	16	1	3	1.69	52.0	54	15.4	3.01	0.73	0.86	671	1	1	2.35	2.46	18
854220	13L/1	561030	6003070	1	20	5.9	1.8	3.14	3.34	19	1	3	1.73	52.0	51	13.6	4.49	0.66	0.53	580	9	1	2.38	2.32	17
854221	13L/1	561030	6003070		16	3.8			4.09				1.58		32	11.1	11.54		0.44	470		1		1.99	17
854222	13L/1	535990	6009740	1	22	9.3	2.0	4.16	3.57	26	1	3	1.76	80.0	71	12.5	8.50	1.29	0.48	495	1	2	2.52	2.18	33

Sample	NTS	Easting	Northing	Nd1 ppm	Ni1 ppm	Ni2 ppm	P2 ppm	Pb2 ppm	Rb1 ppm	Rb6 ppm	Sb1 ppm	Sc1 ppm	Sc2 ppm	Se1 ppm	Sm1 ppm	Sn1 pct	Sr1 pct	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm
854003	13L/1	532970	6010990	37	10	15	647	13	49	46	0.1	10.4	11.8	1	6.5	0.01	0.05	325	0.1	0.6	7.4	5838	0.3	74	1	19
854004	13L/1	532670	6009030	27	10	12	462	14	32	46	0.1	9.6	11.1	1	5.4	0.01	0.05	319	1.7	0.7	7.5	5615	0.9	77	1	17
854005	13L/1	532930	6001150	57	10	9	771	56	38	66	0.1	7.3	8.7	1	10.4	0.01	0.05	259	1.4	1.8	10.4	4419	2.3	57	1	46
854006	13L/1	533150	5999130	53	10	9	920	40	50	74	0.3	6.5	8.7	1	13.6	0.01	0.05	254	1.6	2.3	16.8	4305	2.2	51	1	46
854007	13L/1	533020	5996930	44	10	12	1191	60	50	89	0.2	5.3	10.8	1	8.4	0.01	0.04	274	0.1	1.2	7.8	6306	1.5	55	2	93
854008	13L/1	533260	5994970	31	10	10	821	21	39	64	0.2	7.9	10.2	1	6.0	0.01	0.05	338	1.1	0.8	6.9	4720	0.3	66	1	24
854010	13L/1	533050	5983950	38	10	8	1127	18	49	63	0.2	10.4	13.4	1	7.0	0.01	0.05	416	0.1	0.8	7.6	5477	2.0	79	1	29
854011	13L/1	533930	5987280	40	10	10	1062	22	64	70	0.2	10.4	12.3	1	7.1	0.01	0.06	407	1.6	0.8	7.3	4607	1.9	67	1	26
854012	13L/1	535000	5987400	54	10	8	868	26	120	74	0.4	11.2	10.8	1	10.4	0.01	0.05	353	0.1	1.3	12.0	4662	3.8	63	1	32
854013	13L/1	534750	5984950	33	10	10	815	16	54	61	0.2	9.6	12.2	1	6.4	0.01	0.05	368	1.0	1.0	8.8	5234	1.7	73	1	24
854014	13L/1	535040	5996840	58	10	11	940	25	65	65	0.2	11.3	11.1	1	10.5	0.01	0.03	336	1.2	1.1	8.3	5068	2.5	71	1	28
854015	13L/1	535000	5994850	113	10	9	1209	20	68	90	0.3	12.8	13.0	1	21.0	0.01	0.03	210	2.1	2.3	7.4	7782	0.3	51	1	62
854016	13L/1	535560	6001980	62	10	11	876	38	51	57	0.3	10.5	10.0	1	12.0	0.01	0.03	256	0.1	1.4	9.0	4973	0.3	68	1	31
854017	13L/1	534990	5998990	55	10	8	649	35	56	73	0.2	8.3	8.6	2	10.5	0.01	0.03	263	1.1	1.0	7.5	5286	0.3	53	1	30
854018	13L/1	534820	6006460	48	10	10	548	22	45	64	0.2	9.8	9.6	1	9.0	0.01	0.03	279	1.4	1.1	6.5	5705	0.3	71	1	25
854019	13L/1	534950	6004300	44	10	9	822	35	56	52	0.1	9.8	10.0	1	9.8	0.01	0.03	252	0.1	1.2	7.5	4966	2.1	62	1	27
854020	13L/1	534990	6011110	28	10	16	431	13	53	52	0.2	9.8	9.7	1	5.8	0.01	0.03	282	0.1	0.3	3.8	4368	1.3	71	1	14
854021	13L/1	536960	6007920	42	10	11	767	22	67	65	0.3	10.5	10.6	1	8.3	0.01	0.03	324	0.1	0.9	7.5	4887	1.4	67	1	21
854022	13L/1	541380	6010740	42	10	8	487	35	32	53	0.1	9.0	8.8	1	7.5	0.01	0.03	299	0.1	0.8	4.8	4983	2.6	49	1	17
854023	13L/1	540750	6010360	50	10	13	743	29	55	73	0.3	10.5	11.2	1	10.5	0.01	0.03	297	1.3	1.1	8.4	5801	1.8	70	1	30
854024	13L/1	540170	6010270	66	10	15	589	26	61	78	0.1	10.5	10.9	1	12.6	0.01	0.03	311	0.1	1.3	8.4	5318	1.1	74	1	45
854025	13L/1	539770	6009930	70	10	12	928	23	77	78	0.3	10.5	11.2	1	16.1	0.01	0.03	302	1.2	1.3	13.3	5184	0.3	71	1	30
854026	13L/1	539480	6009860	49	10	14	771	25	70	70	0.3	9.8	10.7	1	9.1	0.01	0.03	305	1.7	1.2	7.7	5291	2.0	73	1	28
854027	13L/1	534350	6007440	50	10	10	620	36	84	80	0.1	9.8	8.4	1	10.5	0.01	0.03	258	0.1	1.0	9.1	4418	2.0	59	1	30
854028	13L/1	533920	6007240	60	10	10	360	37	48	65	0.1	8.4	8.9	1	11.2	0.01	0.03	293	1.6	1.0	8.4	4427	1.1	59	1	32
854029	13L/1	533500	6006980	69	10	10	644	62	91	74	0.4	9.8	9.2	1	14.7	0.01	0.07	260	0.1	1.3	11.2	4368	3.2	61	1	35
854031	13L/1	533100	6006900	77	10	11	270	51	61	66	0.2	9.8	9.6	1	16.1	0.01	0.03	272	1.5	1.8	11.9	4943	3.1	70	1	48
854032	13L/1	533040	6006630	91	10	12	807	47	53	61	0.1	10.5	10.6	1	21.7	0.01	0.03	317	1.5	2.5	9.1	5004	2.2	66	1	64
854033	13L/1	532720	6006280	25	10	9	315	35	42	55	0.1	7.7	8.9	1	5.5	0.01	0.03	265	1.3	0.3	5.9	6808	1.8	78	1	18
854034	13L/1	542900	6011050			12	684	68		51			9.8					239				4884		73		42
854035	13L/1	546750	6010900	49	10	9	712	31	63	70	0.3	8.8	9.3	1	11.2	0.01	0.03	277	2.2	1.7	6.9	5563	1.8	65	1	34
854036	13L/1	548450	6011300	55	10	14	732	45	67	98	0.2	8.8	9.5	1	12.0	0.01	0.03	269	0.1	1.5	7.4	5032	1.6	69	1	43
854037	13L/1	551150	6011040	32	10	13	610	26	55	65	0.1	8.8	10.2	1	7.4	0.01	0.03	289	0.1	1.1	6.4	4994	0.9	68	1	25
854038	13L/1	553180	6011380	27	10	9	534	11	0	49	0.3	7.7	7.6	1	6.5	0.01	0.03	198	2.0	0.3	5.4	4430	0.3	60	1	17
854039	13L/1	554990	6011370	24	10	12	556	16	41	58	0.2	7.2	8.3	1	5.1	0.01	0.03	184	0.1	0.9	5.2	3793	1.8	57	1	16
854040	13L/1	557000	6011440	29	10	11	660	16	27	55	0.2	7.6	9.2	1	6.5	0.01	0.03	219	1.3	0.3	4.6	4974	1.1	61	1	25
854041	13L/1	558900	6011070	21	10	8	491	11	33	47	0.2	5.8	6.9	1	4.5	0.01	0.03	145	0.1	0.6	5.3	3244	0.9	50	1	14
854042	13L/1	561140	6010830	28	10	24	756	15	0	42	0.1	14.4	16.3	1	6.6	0.01	0.03	217	0.1	1.0	4.2	7362	0.9	106	1	23
854043	13L/1	562620	6010970	30	10	17	639	14	34	35	0.2	14.4	16.6	1	6.0	0.01	0.03	213	0.1	0.3	3.8	6606	0.3	100	1	22
854044	13L/1	564820	6009030	36	10	10	680	23	76	64	0.3	8.0	9.2	1	7.3	0.01	0.03	284	0.1	0.9	7.9	4290	1.6	61	1	23

Sample	NTS	Easting	Northing	Nd1	Ni1	Ni2	P2	Pb2	Rb1	Rb6	Sb1	Sc1	Sc2	Se1	Sm1	Sn1	Sr1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2
854045	13L/1	564230	6010700	20	10	12	515	12	52	53	0.1	6.8	8.0	1	4.0	0.01	0.03	151	0.1	0.6	4.5	4007	1.2	66	1	14
854046	13L/1	562950	6008960			8	330	17		65			7.1					229				4443		49		16
854047	13L/1	564770	6005140	44	10	11	806	30	67	68	0.1	9.6	10.8	1	8.8	0.01	0.03	371	0.1	1.3	7.6	4927	2.6	68	1	29
854048	13L/1	561070	6008840	66	10	8	828	31	63	54	0.1	9.6	9.4	1	12.8	0.01	0.03	282	0.1	2.4	16.0	5063	3.5	61	1	31
854049	13L/1	563020	6004930			7	951	25		63			10.5					365				5890		81		21
854050	13L/1	559010	6008980	34	10	10	620	22	63	70	0.1	8.8	10.1	1	7.1	0.01	0.08	305	0.7	1.4	7.6	4859	1.1	62	1	23
854051	13L/1	560450	6004850	38	10	10	868	27	67	69	0.4	10.4	12.1	1	8.8	0.01	0.03	398	1.1	1.5	7.5	5142	1.3	74	1	28
854052	13L/1	556910	6008880	48	10	8	635	22	0	67	0.1	8.8	8.9	1	7.3	0.01	0.03	268	0.1	0.9	7.0	4695	3.5	63	1	19
854053	13L/1	558880	6004930			8	971	29		54			10.9					353				6413		90		31
854054	13L/1	554820	6008980			9	426	35		76			8.0					182				4687		65		35
854055	13L/1	556980	6004770	50	10	9	1133	36	58	75	0.1	9.6	10.6	1	12.0	0.01	0.03	353	0.1	2.2	7.4	6088	1.9	61	1	43
854057	13L/1	555080	6004840	88	10	5	4584	15	110	115	0.1	36.0	41.4	1	21.6	0.01	0.03	360	0.1	4.0	2.6	20000	1.6	14	1	72
854073	13L/1	552820	6004980	36	10	10	877	30	42	61	0.3	9.6	10.8	1	7.4	0.01	0.03	350	1.3	1.3	5.7	5166	2.2	63	1	23
854074	13L/1	551070	6005230	36	10	10	890	38	55	61	0.1	10.4	10.4	1	8.0	0.01	0.03	369	1.1	0.9	5.0	4803	1.4	67	1	25
854075	13L/1	549060	6004970	80	10	6	1833	37	72	86	0.1	9.6	31.1	1	18.4	0.01	0.03	495	1.5	2.6	4.5	10661	1.6	68	1	65
854076	13L/1	547000	6005020	48	10	9	1153	31	66	80	0.3	8.0	12.4	1	10.4	0.01	0.03	371	0.1	1.5	5.8	5528	1.6	66	1	40
854081	13L/1	564960	6007180	31	10	12	573	22	68	67	0.1	8.8	10.2	1	6.6	0.01	0.03	332	0.8	0.3	5.6	4912	1.3	70	1	23
854082	13L/1	562850	6006920	41	10	9	850	25	45	58	0.3	8.0	10.0	1	8.0	0.01	0.06	316	0.1	1.0	5.6	5115	1.2	61	1	28
854083	13L/1	560670	6007210	23	10	9	502	26	89	80	0.1	8.0	9.4	1	4.4	0.01	0.03	397	0.1	0.3	3.7	5210	0.3	88	1	15
854084	13L/1	558830	6007110	27	10	13	694	27	98	70	0.1	5.3	9.4	1	6.2	0.01	0.03	433	0.1	0.7	5.4	5166	1.4	91	1	22
854085	13L/1	557070	6007150	136	10	6	444	108	290	291	1.2	7.4	5.9	1	25.6	0.01	0.03	86	2.8	4.1	13.6	8696	0.3	24	1	104
854086	13L/1	555080	6007150	34	10	7	450	38	63	80	0.1	11.2	8.7	1	6.6	0.01	0.03	299	1.7	1.0	6.2	5489	1.6	53	1	27
854087	13L/1	552690	6008970	28	10	7	495	31	96	132	0.3	7.6	8.9	1	8.0	0.01	0.03	133	0.1	1.5	6.6	4846	1.1	60	1	33
854089	13L/1	549090	6008270	17	10	7	173	22	54	78	0.1	5.6	7.1	1	4.0	0.01	0.03	230	1.4	0.3	4.0	5041	1.3	64	1	18
854090	13L/1	547100	6008980	53	10	11	533	60	66	94	0.1	7.5	9.3	1	12.0	0.01	0.03	207	0.1	1.6	10.4	4171	1.3	54	1	40
854091	13L/1	545030	6009870	20	10	9	251	34	44	64	0.1	6.5	8.6	3	4.3	0.01	0.03	268	0.1	0.3	4.2	5896	1.0	72	1	18
854093	13L/1	543000	6009780	42	10	9	779	38	50	57	0.1	7.1	9.4	1	8.8	0.01	0.03	270	0.1	1.4	5.7	4455	1.7	58	1	29
854097	13L/1	552970	6007030	39	10	10	761	25	65	85	0.2	8.8	11.3	1	8.0	0.01	0.03	316	0.1	1.0	6.4	6039	2.2	71	1	32
854098	13L/1	551080	6007150	24	10	7	226	29	60	76	0.1	5.6	7.2	1	4.6	0.01	0.03	246	0.1	0.9	4.4	5315	1.4	62	1	19
854099	13L/1	549250	6007000	22	10	6	171	30	96	103	0.1	5.6	5.6	1	5.8	0.01	0.03	160	0.1	0.3	6.2	5251	2.3	62	1	27
854100	13L/1	547040	6006950	27	10	3	233	40	61	90	0.3	5.0	5.1	1	5.8	0.01	0.03	107	0.1	1.0	5.3	7666	2.4	33	1	40
854101	13L/1	545080	6007150	49	10	10	718	41	65	104	0.3	7.8	9.6	1	9.6	0.01	0.03	248	1.9	1.6	7.2	6043	1.4	58	1	38
854102	13L/1	542960	6007970	55	10	11	305	30	88	56	0.1	11.2	10.2	1	11.3	0.01	0.03	294	0.1	1.3	8.8	5694	0.3	72	1	20
854105	13L/1	538870	6007170	54	10	6	1212	99	192	203	0.1	7.4	7.2	1	15.2	0.01	0.03	90	0.1	2.2	7.5	6840	0.3	21	1	51
854106	13L/1	536780	6004950	36	10	14	673	35	55	95	0.2	8.0	9.9	1	8.8	0.01	0.03	243	1.1	1.1	7.3	5531	1.2	51	1	33
854107	13L/1	536990	6001040	51	10	11	902	30	30	74	0.1	8.0	10.1	1	10.4	0.01	0.03	302	1.4	1.4	8.8	4781	1.6	63	1	29
854108	13L/1	538880	6001010	51	10	11	915	26	62	71	0.2	8.8	10.2	1	8.8	0.01	0.08	330	2.0	1.0	8.8	4885	1.4	66	1	25
854109	13L/1	541050	6001050	40	10	10	1020	24	22	65	0.1	9.6	11.1	1	7.2	0.01	0.03	447	0.1	0.3	5.7	5021	1.9	83	1	20
854110	13L/1	542920	6000960	31	10	15	536	27	58	78	0.1	10.4	11.7	1	6.0	0.01	0.03	444	0.1	0.3	7.0	4525	2.0	72	1	18
854111	13L/1	545000	6001250			9	782	19		52			10.4					342				4256		80		15
854113	13L/1	640570	6008350	42	10	12	578	30	53	69	0.3	10.4	11.7	1	8.8	0.01	0.03	325	2.4	1.0	8.8	6093	1.6	73	2	25
854114	13L/1	539440	6008520	49	10	11	877	31	45	70	0.1	9.6	10.3	1	8.8	0.01	0.03	303	0.1	1.3	8.0	6146	1.7	69	1	27

Sample	NTS	Easting	Northing	Nd1	Ni1	Ni2	P2	Pb2	Rb1	Rb6	Sb1	Sc1	Sc2	Se1	Sm1	Sn1	Sr1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2
854115	13L/1	537000	6003000	43	10	13	959	21	38	63	0.2	10.4	11.6	1	8.8	0.01	0.03	352	1.5	1.1	7.1	6473	1.1	84	1	25
854116	13L/1	538900	6003170	36	10	11	1038	29	39	71	0.3	9.6	10.9	1	8.0	0.01	0.03	321	1.3	1.0	7.2	5511	1.6	71	1	29
854117	13L/1	541000	6003150	35	10	10	750	25	46	66	0.1	9.6	10.4	1	7.0	0.01	0.03	387	1.8	0.9	7.2	4854	1.2	71	1	21
854118	13L/1	543000	6003320	33	10	11	820	22	44	66	0.2	8.8	9.9	1	7.4	0.01	0.03	315	1.0	0.9	7.9	4903	1.5	67	1	23
854119	13L/1	544950	6003130	18	10	10	491	21	59	81	0.2	8.0	9.2	1	4.4	0.01	0.03	303	0.1	0.3	5.9	4589	1.1	68	1	15
854121	13L/1	540930	6004820	42	10	9	979	46	76	85	0.2	8.8	9.8	1	9.6	0.01	0.03	295	2.4	1.4	9.6	5006	1.8	66	1	41
854122	13L/1	539040	6005020	38	10	12	831	20	51	65	0.3	10.4	10.9	1	8.0	0.01	0.03	336	0.1	0.3	7.0	5387	0.3	75	1	23
854123	13L/1	537040	5999030	45	10	11	1012	34	66	70	0.2	9.6	11.1	1	10.4	0.01	0.03	342	1.2	1.4	9.6	5064	2.2	70	1	33
854124	13L/1	538990	5999060	28	10	11	931	22	45	62	0.2	10.4	11.3	1	6.3	0.01	0.03	382	0.9	0.8	7.4	5584	1.2	79	1	20
854125	13L/1	541080	5998920	39	10	10	909	24	41	63	0.3	9.6	10.1	1	9.6	0.01	0.03	327	0.1	1.1	8.8	5008	1.5	67	1	26
854126	13L/1	543360	5999070	41	10	11	1011	23	45	59	0.1	10.4	11.2	1	8.8	0.01	0.03	316	2.0	1.2	8.0	6144	1.8	82	1	29
854127	13L/1	544960	5999360	42	10	10	887	23	51	63	0.2	8.8	10.3	1	8.8	0.01	0.03	335	0.7	1.1	7.4	4873	1.2	67	1	26
854129	13L/1	546980	6003000	23	10	10	632	21	50	61	0.1	9.6	10.5	1	5.4	0.01	0.03	384	0.1	0.3	5.5	4756	1.2	75	2	16
854130	13L/1	549000	6002930	25	10	7	636	25	26	59	0.2	10.4	11.5	1	4.5	0.01	0.03	458	0.9	0.3	5.4	4223	1.3	71	1	15
854131	13L/1	550870	6002880	18	10	8	390	29	58	63	0.1	8.8	9.7	1	4.6	0.01	0.03	371	0.1	0.6	4.3	5268	1.7	95	1	16
854132	13L/1	552940	6002760	35	10	9	765	24	50	63	0.1	11.2	12.4	1	6.0	0.01	0.03	443	0.1	0.8	5.2	4867	1.4	73	1	20
854133	13L/1	554960	6002950	36	10	9	836	22	41	64	0.2	9.6	11.2	1	7.0	0.01	0.03	380	0.7	1.0	6.2	4771	0.3	68	1	24
854134	13L/1	556880	6003070	36	10	10	831	23	38	67	0.2	9.6	10.9	1	6.8	0.01	0.03	378	0.7	1.0	6.1	4770	0.9	68	1	24
854135	13L/1	558870	6003100	34	10	10	871	26	35	60	0.2	10.4	11.5	1	6.7	0.01	0.03	440	0.1	1.0	6.8	4220	1.6	71	1	22
854137	13L/1	546960	6001050	33	10	15	596	22	62	58	0.2	9.6	10.8	1	6.0	0.01	0.03	343	0.1	0.3	6.4	4921	1.4	75	1	20
854138	13L/1	549060	6001000	42	10	16	799	23	44	62	0.1	8.8	10.2	1	8.0	0.01	0.03	353	0.1	1.2	7.4	4625	1.8	69	1	29
854139	13L/1	550700	6001280	58	10	11	842	25	0	63	0.2	9.6	10.4	1	12.8	0.01	0.03	342	0.1	1.8	7.8	4949	2.4	69	1	33
854140	13L/1	553020	6000920	40	10	10	811	21	49	60	0.2	8.8	10.0	1	7.8	0.01	0.06	338	1.2	1.0	7.0	4556	1.0	64	1	22
854141	13L/1	554910	6001000	38	10	9	718	20	42	61	0.1	8.8	10.0	1	8.0	0.01	0.03	346	2.4	0.9	6.6	4694	1.3	66	1	24
854142	13L/1	556870	6001160	35	10	10	859	22	58	61	0.1	8.8	10.3	1	7.9	0.01	0.06	356	1.8	1.1	6.6	4885	1.6	68	1	25
854143	13L/1	558850	6000950	43	10	9	840	20	40	61	0.2	8.8	10.5	1	8.0	0.01	0.03	376	0.1	1.0	7.0	4594	1.5	65	1	24
854146	13L/1	549080	5999180	36	10	10	827	24	45	61	0.4	8.8	10.3	1	7.5	0.01	0.03	362	1.8	0.8	6.2	4704	1.4	68	2	23
854147	13L/1	550890	5999350	37	10	10	925	19	46	62	0.1	8.8	10.3	1	7.8	0.01	0.03	363	1.4	1.1	6.4	4867	1.0	67	1	23
854148	13L/1	553170	5998970	38	10	12	679	23	49	64	0.2	10.4	11.3	1	7.6	0.01	0.03	365	1.9	0.3	7.9	4773	1.5	71	1	20
854149	13L/1	555070	5998980	51	10	12	817	24	39	56	0.2	10.4	11.3	1	9.6	0.01	0.03	379	0.1	1.4	7.8	4639	1.1	73	1	25
854150	13L/1	556960	5998950	34	10	11	742	23	47	57	0.1	11.2	12.6	1	7.2	0.01	0.03	472	1.8	0.8	7.3	5646	1.1	89	1	22
854151	13L/8	564870	6013120	41	10	16	412	14	50	48	0.1	12.6	12.5	1	9.1	0.01	0.03	273	1.3	0.3	5.7	6524	1.4	85	1	22
854152	13L/8	563520	6013100	31	10	11	514	15	34	49	0.1	10.5	10.2	2	6.0	0.01	0.03	270	0.1	0.3	4.3	6470	1.8	73	1	15
854153	13L/8	561000	6013030	46	10	13	925	19	44	50	0.1	9.8	10.2	2	8.4	0.01	0.03	271	1.4	0.6	5.7	5421	2.2	77	1	20
854154	13L/8	559060	6013040	31	10	10	582	13	52	56	0.2	10.5	9.9	1	7.0	0.01	0.03	270	0.1	0.8	5.4	5513	1.8	64	1	20
854155	13L/8	557150	6012870	30	10	14	284	19	49	51	0.1	11.2	11.3	1	5.8	0.01	0.03	253	1.2	0.3	4.6	7371	1.5	97	1	16
854156	13L/8	554950	6012980	24	10	12	468	15	48	53	0.1	10.5	10.9	4	5.6	0.01	0.08	275	1.1	0.6	4.9	5689	1.3	78	2	15
854157	13L/8	553100	6012940	25	10	11	312	17	47	42	0.2	9.1	9.1	1	5.1	0.01	0.03	226	0.1	0.3	4.3	7521	1.6	103	1	12
854158	13L/8	551050	6013140	19	10	8	314	20	53	58	0.1	7.7	7.5	1	3.9	0.01	0.03	263	1.2	0.3	4.2	7394	1.5	78	1	9
854159	13L/8	548970	6013030	21	10	10	145	15	56	52	0.3	9.8	9.7	1	4.4	0.01	0.03	251	0.1	0.3	3.6	7025	1.3	117	1	11
854160	13L/8	547050	6013050	32	10	12	629	19	57	66	0.1	9.8	10.1	1	7.7	0.01	0.08	280	0.1	0.3	6.0	4909	1.5	69	1	19
854161	13L/8	545010	6012900	26	10	11	868	24	96	69	0.1	8.8	9.8	1	5.4	0.01	0.12	255	0.1	0.3	8.0	5095	2.3	70	1	15

Sample	NTS	Easting	Northing	Nd1	Ni1	Ni2	P2	Pb2	Rb1	Rb6	Sb1	Sc1	Sc2	Se1	Sm1	Sn1	Sr1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2
854162	13L/8	542950	6012750	16	10	12	458	15	80	55	0.3	9.6	11.4	1	4.5	0.01	0.03	332	0.1	0.3	7.7	5405	2.0	76	1	13
854163	13L/8	541030	6013200	21	10	12	805	16	54	51	0.3	7.8	9.7	1	4.3	0.01	0.03	303	0.1	0.3	6.1	4786	0.7	71	1	14
854164	13L/8	538910	6013050	11	10	11	265	17	57	55	0.2	7.3	9.3	1	3.4	0.01	0.03	307	0.1	0.3	5.1	6281	1.8	64	1	12
854165	13L/8	536780	6012930	21	10	15	868	15	0	51	0.2	8.8	11.5	1	5.6	0.01	0.03	344	0.1	0.7	7.1	6691	1.8	92	1	19
854166	13L/8	534920	6012920	20	10	14	665	17	62	53	0.2	8.0	10.9	1	4.4	0.01	0.03	336	0.1	0.3	5.8	5552	1.5	81	1	15
854167	13L/8	532850	6013160	15	10	11	308	16	43	49	0.1	7.2	9.5	1	3.4	0.01	0.03	329	0.1	0.3	5.0	5520	1.6	83	1	12
854168	13L/1	564900	5999000	22	10	11	696	19	0	61	0.2	8.0	11.0	1	5.0	0.01	0.03	366	0.1	0.7	6.7	4688	1.2	71	1	18
854169	13L/1	562930	5998940	26	10	12	755	19	80	66	0.2	8.8	10.9	1	6.7	0.01	0.03	371	0.1	0.3	8.8	4540	2.9	73	5	21
854170	13L/1	560850	5999010	16	10	8	315	20	36	65	0.2	7.0	9.2	1	3.5	0.01	0.03	339	0.1	0.3	5.6	5900	2.2	64	1	13
854171	13L/1	559150	5998920	37	10	10	853	19	51	63	0.2	10.4	10.7	1	8.0	0.01	0.03	395	0.1	0.3	8.8	4550	2.4	70	1	23
854172	13L/8	564920	6014880	38	10	36	879	17	0	69	0.1	13.6	12.4	1	7.7	0.01	0.03	272	0.1	0.3	9.6	5326	0.3	87	1	17
854173	13L/8	563200	6014770	23	10	21	536	14	54	59	0.1	9.6	11.8	1	5.8	0.01	0.03	288	2.3	0.9	7.5	5612	1.2	85	1	18
854174	13L/8	561200	6014770	14	10	6	104	22	58	48	0.1	5.8	5.6	1	2.9	0.01	0.03	245	0.1	0.3	7.0	6214	2.6	59	1	7
854175	13L/8	559500	6014530	21	10	19	420	16	62	54	0.2	9.6	11.7	1	5.7	0.01	0.03	283	2.8	0.6	7.1	5369	2.2	84	1	17
854176	13L/8	557270	6015250	29	10	23	1021	18	53	63	0.2	10.4	12.4	1	7.0	0.01	0.03	318	0.1	0.8	8.0	5937	2.0	91	1	21
854177	13L/8	554880	6014870	44	10	27	656	20	0	74	0.2	14.4	13.3	1	8.0	0.01	0.03	241	0.1	0.3	12.0	5745	0.3	99	1	18
854178	13L/8	552950	6014970	26	10	16	913	15	56	52	0.1	10.4	12.0	1	5.9	0.01	0.03	329	0.7	0.3	8.0	6611	1.9	95	1	18
854179	13L/8	551180	6014970	23	10	18	704	16	43	58	0.1	9.6	10.8	1	5.4	0.01	0.03	243	0.1	1.0	6.1	4081	1.7	75	1	14
854180	13L/8	549020	6015030	21	10	21	696	19	76	53	0.2	9.6	11.0	1	5.2	0.01	0.03	260	1.8	0.3	6.6	4789	2.2	78	1	15
854181	13L/8	547060	6015130	30	10	24	897	18	88	67	0.3	11.2	11.8	1	6.3	0.01	0.03	291	0.1	0.3	8.8	5066	1.4	84	1	17
854182	13L/8	545100	6015050	31	10	15	1088	18	0	45	0.6	12.8	10.3	1	7.3	0.01	0.03	254	0.1	0.3	13.6	4634	4.1	86	1	13
854183	13L/8	542900	6014960	22	10	18	847	16	78	71	0.1	9.6	11.1	1	5.4	0.01	0.09	288	0.1	0.8	7.3	4975	2.1	78	1	16
854184	13L/8	540990	6014960	15	10	15	517	14	0	37	0.5	12.0	9.7	1	5.1	0.01	0.03	184	0.1	0.3	7.5	4630	0.3	78	1	10
854185	13L/8	538930	6015080	18	10	15	528	16	55	53	0.1	9.6	11.3	1	5.3	0.01	0.03	318	0.1	0.3	5.8	5086	1.3	78	1	16
854186	13L/8	536260	6014290	17	10	24	648	14	46	51	0.1	8.8	11.7	1	4.6	0.01	0.03	313	1.8	0.6	5.7	5327	1.0	84	1	15
854187	13L/8	535020	6015020	29	10	32	869	23	0	79	0.6	12.0	13.4	1	6.2	0.01	0.03	242	0.1	1.4	11.2	5677	2.5	101	1	18
854188	13L/8	533050	6014950	18	10	16	650	16	88	50	0.2	8.8	9.8	1	4.5	0.01	0.03	335	0.1	0.3	6.9	4778	1.1	74	1	14
854189	13L/1	564960	6000950	34	10	11	830	23	38	67	0.2	9.6	11.8	1	7.9	0.01	0.03	398	0.1	1.0	8.8	4750	2.6	72	1	29
854190	13L/1	562990	6001010	31	10	11	871	22	55	62	0.2	8.8	11.3	1	7.2	0.01	0.03	387	0.1	1.0	7.8	4796	2.1	74	1	26
854191	13L/1	561050	6001100	34	10	9	897	17	49	62	0.1	9.6	11.0	1	8.0	0.01	0.03	393	1.9	1.2	8.8	4705	2.4	67	1	28
854193	13L/8	565030	6016900	35	10	23	899	22	69	62	0.1	9.6	12.5	1	7.2	0.01	0.03	240	0.1	0.6	9.6	5936	2.4	86	1	23
854194	13L/8	563280	6016930	26	10	37	533	18	72	61	0.5	12.0	13.8	1	6.7	0.01	0.07	190	0.1	1.0	9.6	5231	2.2	93	3	18
854195	13L/8	561350	6016550			16	295	19		43			10.2					207				5375		103		15
854196	13L/8	559150	6016100	22	10	15	444	17	43	53	0.3	9.6	11.1	1	4.9	0.01	0.03	246	2.0	0.3	6.2	6115	1.8	71	1	14
854197	13L/8	556980	6016740			21	810	19		58			12.7					227				6413		97		21
854198	13L/8	554300	6017060	25	10	13	910	11	50	41	0.1	9.6	11.4	1	5.8	0.01	0.03	335	0.1	0.9	7.7	6772	1.9	84	1	21
854199	13L/8	553240	6017030	28	10	18	923	14	56	59	0.1	10.4	13.7	1	6.4	0.01	0.03	324	1.5	1.1	7.7	5833	2.4	83	1	27
854200	13L/1	533720	6003670			13	988	33		84			12.5					330				5893		76		42
854203	13L/8	550930	6016830			15	715	11		48			11.1					282				5545		78		18
854204	13L/8	548980	6016970			11	497	13		55			9.7					282				4584		65		14
854205	13L/8	547000	6016930			11	432	20		25			9.2					134				3382		99		13
854206	13L/8	545270	6016900	25	10	19	584	16	52	61	0.1	9.6	11.6	1	5.8	0.01	0.03	294	0.1	0.6	6.8	4501	1.4	78	1	20

Sample	NTS	Easting	Northing	Nd1	Ni1	Ni2	P2	Pb2	Rb1	Rb6	Sb1	Sc1	Sc2	Se1	Sm1	Sn1	Sr1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2
854207	13L/8	543140	6017190	23	10	14	647	12	0	54	0.2	9.6	10.9	1	5.4	0.01	0.03	342	0.1	0.9	6.2	4901	1.4	77	1	18
854208	13L/8	541040	6016960	18	10	29	570	11	0	50	0.1	11.2	13.2	1	4.8	0.01	0.03	297	0.1	0.6	5.2	5760	0.3	91	1	17
854209	13L/8	537800	6017200	18	10	14	280	13	49	52	0.1	8.0	9.8	1	4.3	0.01	0.10	311	0.1	0.3	6.6	5003	1.5	77	1	14
854210	13L/8	536720	6017450	21	10	13	186	19	41	46	0.2	8.8	10.9	1	5.5	0.01	0.03	317	0.1	0.7	7.7	5480	1.9	78	1	17
854211	13L/8	534820	6016950	25	10	17	816	13	56	57	0.1	9.6	11.4	1	6.2	0.01	0.03	358	0.1	0.3	8.0	5713	1.4	85	1	19
854212	13L/8	532950	6017180	24	10	10	553	13	0	48	0.2	8.0	8.7	1	4.7	0.01	0.03	301	0.1	0.3	6.5	5082	0.3	66	1	14
854213	13L/1	564500	6002900	29	10	9	816	19	62	67	0.3	8.8	11.5	1	6.9	0.01	0.03	392	0.1	1.0	7.4	4713	2.3	68	1	29
854214	13L/1	564500	6002900	27	10	10	462	19	50	63	0.1	9.6	11.9	1	6.7	0.01	0.03	364	0.1	0.8	6.9	5129	2.2	76	1	25
854215	13L/1	564500	6002900	29	10	6	501	17	56	57	0.1	9.6	9.8	1	6.6	0.01	0.03	323	0.1	0.3	7.3	4104	0.3	61	1	21
854216	13L/1	562910	6003000	30	10	9	741	19	62	68	0.2	8.8	10.8	1	6.4	0.01	0.03	390	0.1	0.9	7.4	4372	2.5	67	1	26
854217	13L/1	562910	6003000			9	753	21		62			10.8					361				4175		71		21
854218	13L/1	562910	6003000			10	400	21		34			10.6					348				5523		98		19
854219	13L/1	561030	6003070	34	10	16	1263	22	0	59	0.1	11.2	13.3	1	7.4	0.01	0.12	539	0.1	1.0	6.9	5677	2.0	96	1	27
854220	13L/1	561030	6003070	39	10	10	800	21	65	55	0.3	10.4	11.5	1	7.5	0.01	0.03	398	0.1	0.3	8.8	4547	2.6	72	1	26
854221	13L/1	561030	6003070			11	696	19		52			9.6					323				4463		92		18
854222	13L/1	535990	6009740	48	10	10	395	62	88	68	0.1	8.8	8.4	1	11.2	0.01	0.03	255	0.1	2.1	13.6	5267	0.3	61	1	42

Sample	NTS	Easting	Northing	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 pct	Zr2 ppm
854003	13L/1	532970	6010990	2.7	25	34	0.03	194
854004	13L/1	532670	6009030	2.8	25	29	0.05	208
854005	13L/1	532930	6001150	6.9	153	107	0.05	435
854006	13L/1	533150	5999130	10.4	164	136	0.04	586
854007	13L/1	533020	5996930	4.8	92	200	0.03	571
854008	13L/1	533260	5994970	3.6	98	50	0.05	261
854010	13L/1	533050	5983950	4.3	25	30	0.06	254
854011	13L/1	533930	5987280	4.0	93	41	0.03	210
854012	13L/1	535000	5987400	7.1	25	44	0.09	296
854013	13L/1	534750	5984950	3.7	25	33	0.06	242
854014	13L/1	535040	5996840	5.3	89	64	0.05	311
854015	13L/1	535000	5994850	12.4	203	163	0.06	400
854016	13L/1	535560	6001980	5.3	100	56	0.05	319
854017	13L/1	534990	5998990	5.4	99	89	0.05	426
854018	13L/1	534820	6006460	4.7	74	48	0.04	274
854019	13L/1	534950	6004300	4.9	75	59	0.01	225
854020	13L/1	534990	6011110	2.5	25	30	0.01	142
854021	13L/1	536960	6007920	3.9	77	57	0.04	228
854022	13L/1	541380	6010740	2.8	86	26	0.05	209
854023	13L/1	540750	6010360	5.6	118	98	0.04	285
854024	13L/1	540170	6010270	6.6	99	111	0.04	325
854025	13L/1	539770	6009930	4.3	221	194	0.01	232
854026	13L/1	539480	6009860	5.2	111	77	0.04	293
854027	13L/1	534350	6007440	6.7	97	81	0.04	335
854028	13L/1	533920	6007240	4.9	96	93	0.04	338
854029	13L/1	533500	6006980	6.7	203	144	0.07	409
854031	13L/1	533100	6006900	8.2	171	146	0.06	432
854032	13L/1	533040	6006630	8.1	245	185	0.04	293
854033	13L/1	532720	6006280	3.0	25	37	0.01	358
854034	13L/1	542900	6011050			86		302
854035	13L/1	546750	6010900	5.7	82	53	0.06	400
854036	13L/1	548450	6011300	6.1	114	120	0.04	464
854037	13L/1	551150	6011040	3.6	25	68	0.01	283
854038	13L/1	553180	6011380	3.3	25	27	0.01	283
854039	13L/1	554990	6011370	2.4	25	40	0.04	236
854040	13L/1	557000	6011440	3.7	25	43	0.04	327
854041	13L/1	558900	6011070	2.2	25	23	0.02	223
854042	13L/1	561140	6010830	3.4	74	45	0.02	202
854043	13L/1	562620	6010970	3.1	25	38	0.05	222
854044	13L/1	564820	6009030	4.3	77	49	0.01	261

Sample	NTS	Easting	Northing	Yb1	Zn1	Zn2	Zr1	Zr2
854045	13L/1	564230	6010700	2.5	25	27	0.02	182
854046	13L/1	562950	6008960			28		269
854047	13L/1	564770	6005140	5.7	92	64	0.06	294
854048	13L/1	561070	6008840	7.2	100	86	0.04	333
854049	13L/1	563020	6004930			38		294
854050	13L/1	559010	6008980	4.4	25	64	0.06	278
854051	13L/1	560450	6004850	5.4	100	59	0.04	294
854052	13L/1	556910	6008880	4.5	25	44	0.07	255
854053	13L/1	558880	6004930			68		375
854054	13L/1	554820	6008980			101		445
854055	13L/1	556980	6004770	8.4	132	114	0.06	329
854057	13L/1	555080	6004840	11.0	233	187	0.01	59
854073	13L/1	552820	6004980	4.1	85	51	0.05	228
854074	13L/1	551070	6005230	4.7	91	72	0.01	248
854075	13L/1	549060	6004970	9.8	25	88	0.01	158
854076	13L/1	547000	6005020	6.1	112	93	0.03	294
854081	13L/1	564960	6007180	3.8	58	51	0.04	254
854082	13L/1	562850	6006920	5.0	112	52	0.05	297
854083	13L/1	560670	6007210	3.1	25	46	0.04	186
854084	13L/1	558830	6007110	4.5	98	66	0.01	218
854085	13L/1	557070	6007150	15.2	408	348	0.01	426
854086	13L/1	555080	6007150	6.5	85	81	0.05	376
854087	13L/1	552690	6008970	6.2	99	79	0.01	395
854089	13L/1	549090	6008270	3.2	25	38	0.03	295
854090	13L/1	547100	6008980	5.7	69	110	0.04	361
854091	13L/1	545030	6009870	2.9	70	40	0.03	304
854093	13L/1	543000	6009780	3.4	57	51	0.01	254
854097	13L/1	552970	6007030	4.8	63	72	0.04	329
854098	13L/1	551080	6007150	3.3	25	47	0.02	300
854099	13L/1	549250	6007000	7.4	25	67	0.01	539
854100	13L/1	547040	6006950	10.1	25	42	0.06	835
854101	13L/1	545080	6007150	6.0	25	90	0.01	407
854102	13L/1	542960	6007970	3.7	25	46	0.06	256
854105	13L/1	538870	6007170	13.6	225	310	0.01	415
854106	13L/1	536780	6004950	5.4	90	115	0.01	260
854107	13L/1	536990	6001040	4.4	90	101	0.03	336
854108	13L/1	538880	6001010	3.8	67	93	0.03	322
854109	13L/1	541050	6001050	2.7	25	63	0.01	188
854110	13L/1	542920	6000960	3.0	25	60	0.03	191
854111	13L/1	545000	6001250			41		178
854113	13L/1	640570	6008350	4.1	73	77	0.05	291
854114	13L/1	539440	6008520	4.5	25	77	0.04	327

Sample	NTS	Easting	Northing	Yb1	Zn1	Zn2	Zr1	Zr2
854115	13L/1	537000	6003000	3.9	25	54	0.03	276
854116	13L/1	538900	6003170	4.4	91	75	0.05	303
854117	13L/1	541000	6003150	3.6	58	55	0.04	277
854118	13L/1	543000	6003320	3.9	54	59	0.05	293
854119	13L/1	544950	6003130	3.0	25	40	0.04	232
854121	13L/1	540930	6004820	7.0	95	102	0.04	307
854122	13L/1	539040	6005020	3.8	25	47	0.01	244
854123	13L/1	537040	5999030	5.8	117	111	0.06	436
854124	13L/1	538990	5999060	3.5	25	48	0.01	273
854125	13L/1	541080	5998920	4.4	102	59	0.03	302
854126	13L/1	543360	5999070	4.7	54	59	0.06	365
854127	13L/1	544960	5999360	4.5	25	58	0.04	318
854129	13L/1	546980	6003000	3.0	25	46	0.03	200
854130	13L/1	549000	6002930	3.0	58	47	0.03	217
854131	13L/1	550870	6002880	3.0	84	49	0.01	199
854132	13L/1	552940	6002760	3.4	25	45	0.03	209
854133	13L/1	554960	6002950	3.9	51	48	0.04	270
854134	13L/1	556880	6003070	4.1	25	50	0.03	253
854135	13L/1	558870	6003100	3.5	25	61	0.03	225
854137	13L/1	546960	6001050	3.2	25	65	0.03	260
854138	13L/1	549060	6001000	4.5	25	70	0.03	322
854139	13L/1	550700	6001280	7.0	101	65	0.05	318
854140	13L/1	553020	6000920	3.6	25	45	0.04	260
854141	13L/1	554910	6001000	3.9	25	40	0.05	286
854142	13L/1	556870	6001160	3.9	67	54	0.03	296
854143	13L/1	558850	6000950	4.2	25	46	0.03	272
854146	13L/1	549080	5999180	3.5	60	45	0.04	275
854147	13L/1	550890	5999350	3.6	25	45	0.03	269
854148	13L/1	553170	5998970	3.6	76	54	0.04	264
854149	13L/1	555070	5998980	3.9	97	60	0.04	255
854150	13L/1	556960	5998950	3.6	25	44	0.04	266
854151	13L/8	564870	6013120	4.5	25	42	0.04	257
854152	13L/8	563520	6013100	3.2	25	29	0.03	236
854153	13L/8	561000	6013030	3.9	83	41	0.04	237
854154	13L/8	559060	6013040	4.3	25	33	0.03	250
854155	13L/8	557150	6012870	4.1	82	36	0.04	290
854156	13L/8	554950	6012980	2.9	25	34	0.02	225
854157	13L/8	553100	6012940	2.9	25	27	0.04	255
854158	13L/8	551050	6013140	2.4	25	22	0.05	275
854159	13L/8	548970	6013030	2.7	66	28	0.04	240
854160	13L/8	547050	6013050	3.8	40	39	0.04	243
854161	13L/8	545010	6012900	3.7	25	40	0.07	239

Sample	NTS	Easting	Northing	Yb1	Zn1	Zn2	Zr1	Zr2
854162	13L/8	542950	6012750	2.9	25	33	0.06	237
854163	13L/8	541030	6013200	2.5	25	28	0.01	180
854164	13L/8	538910	6013050	2.3	25	24	0.04	237
854165	13L/8	536780	6012930	3.2	25	32	0.01	276
854166	13L/8	534920	6012920	2.6	25	33	0.07	207
854167	13L/8	532850	6013160	2.2	25	28	0.06	196
854168	13L/1	564900	5999000	3.1	25	33	0.01	211
854169	13L/1	562930	5998940	3.8	25	39	0.01	217
854170	13L/1	560850	5999010	2.6	25	25	0.06	241
854171	13L/1	559150	5998920	4.5	25	39	0.06	218
854172	13L/8	564920	6014880	4.2	25	55	0.08	161
854173	13L/8	563200	6014770	3.2	25	38	0.05	202
854174	13L/8	561200	6014770	2.2	25	16	0.01	245
854175	13L/8	559500	6014530	3.2	25	36	0.06	185
854176	13L/8	557270	6015250	3.4	25	49	0.06	197
854177	13L/8	554880	6014870	4.5	25	59	0.01	209
854178	13L/8	552950	6014970	3.2	25	37	0.08	258
854179	13L/8	551180	6014970	2.6	25	36	0.01	122
854180	13L/8	549020	6015030	2.6	25	37	0.01	167
854181	13L/8	547060	6015130	3.4	25	41	0.06	174
854182	13L/8	545100	6015050	3.5	25	38	0.01	182
854183	13L/8	542900	6014960	3.1	25	36	0.04	185
854184	13L/8	540990	6014960	2.5	25	26	0.01	136
854185	13L/8	538930	6015080	2.9	25	33	0.05	177
854186	13L/8	536260	6014290	2.4	25	36	0.05	169
854187	13L/8	535020	6015020	3.4	25	56	0.01	192
854188	13L/8	533050	6014950	2.6	25	31	0.05	181
854189	13L/1	564960	6000950	5.0	85	46	0.06	275
854190	13L/1	562990	6001010	4.4	25	48	0.09	290
854191	13L/1	561050	6001100	5.3	25	46	0.05	276
854193	13L/8	565030	6016900	3.6	25	56	0.06	260
854194	13L/8	563280	6016930	3.4	25	49	0.01	181
854195	13L/8	561350	6016550			32		239
854196	13L/8	559150	6016100	2.8	25	32	0.07	224
854197	13L/8	556980	6016740			43		273
854198	13L/8	554300	6017060	3.4	25	33	0.08	290
854199	13L/8	553240	6017030	3.7	25	44	0.05	209
854200	13L/1	533720	6003670			87		247
854203	13L/8	550930	6016830			32		200
854204	13L/8	548980	6016970			28		153
854205	13L/8	547000	6016930			21		151
854206	13L/8	545270	6016900	2.9	25	41	0.06	156

Sample	NTS	Easting	Northing	Yb1	Zn1	Zn2	Zr1	Zr2
854207	13L/8	543140	6017190	3.0	25	29	0.01	167
854208	13L/8	541040	6016960	2.6	25	40	0.01	145
854209	13L/8	537800	6017200	2.6	25	36	0.08	196
854210	13L/8	536720	6017450	2.6	25	33	0.06	208
854211	13L/8	534820	6016950	3.2	25	39	0.01	199
854212	13L/8	532950	6017180	2.6	25	27	0.01	178
854213	13L/1	564500	6002900	4.4	25	42	0.06	284
854214	13L/1	564500	6002900	4.6	25	38	0.06	252
854215	13L/1	564500	6002900	4.5	25	29	0.01	239
854216	13L/1	562910	6003000	4.2	25	46	0.06	250
854217	13L/1	562910	6003000			40		235
854218	13L/1	562910	6003000			34		233
854219	13L/1	561030	6003070	4.2	25	58	0.08	248
854220	13L/1	561030	6003070	4.6	77	48	0.08	259
854221	13L/1	561030	6003070			39		211
854222	13L/1	535990	6009740	8.4	143	96	0.01	423

Appendix B

List of element plots not discussed in text

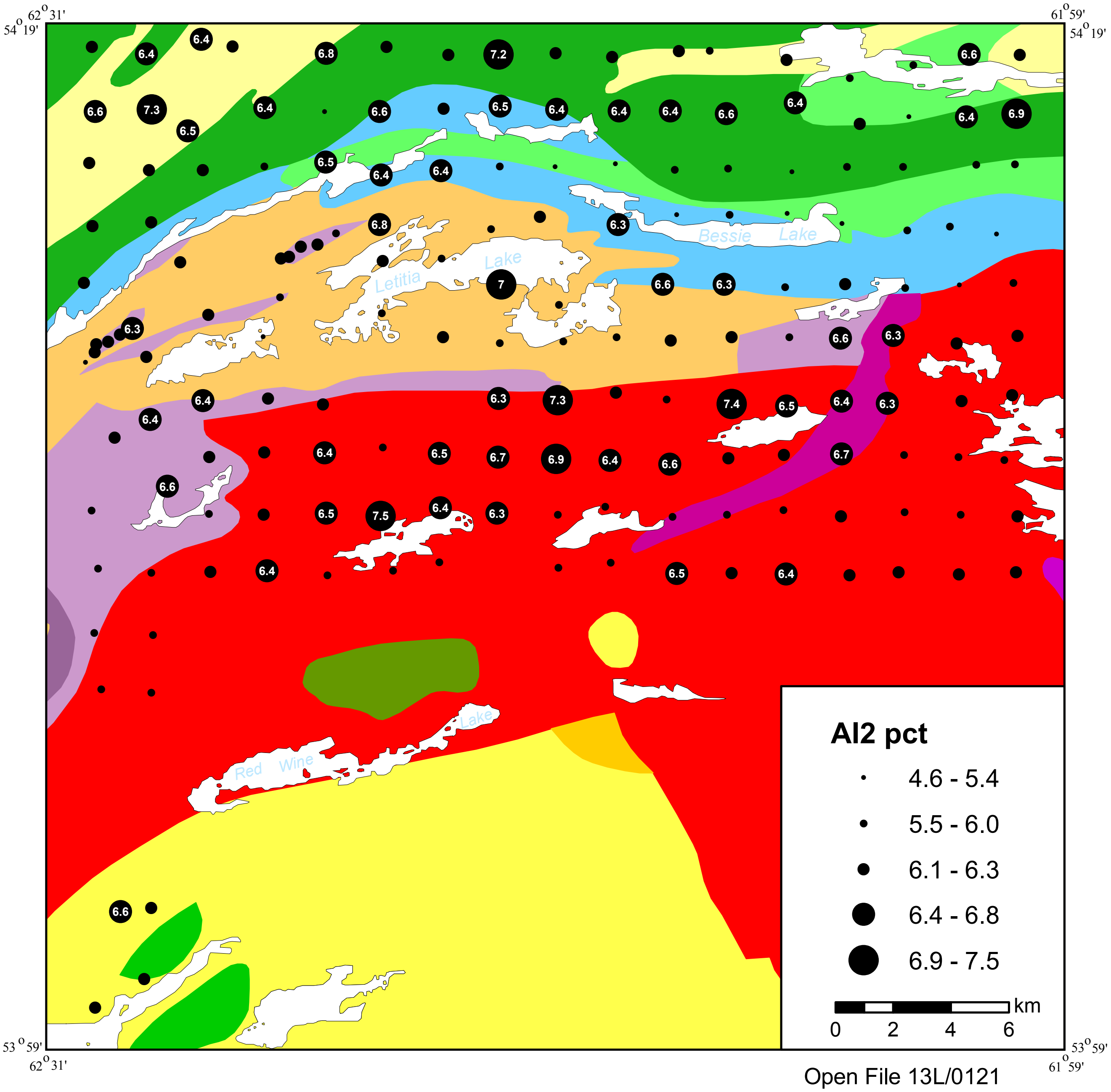


Figure 18. *Distribution of aluminum in till.*

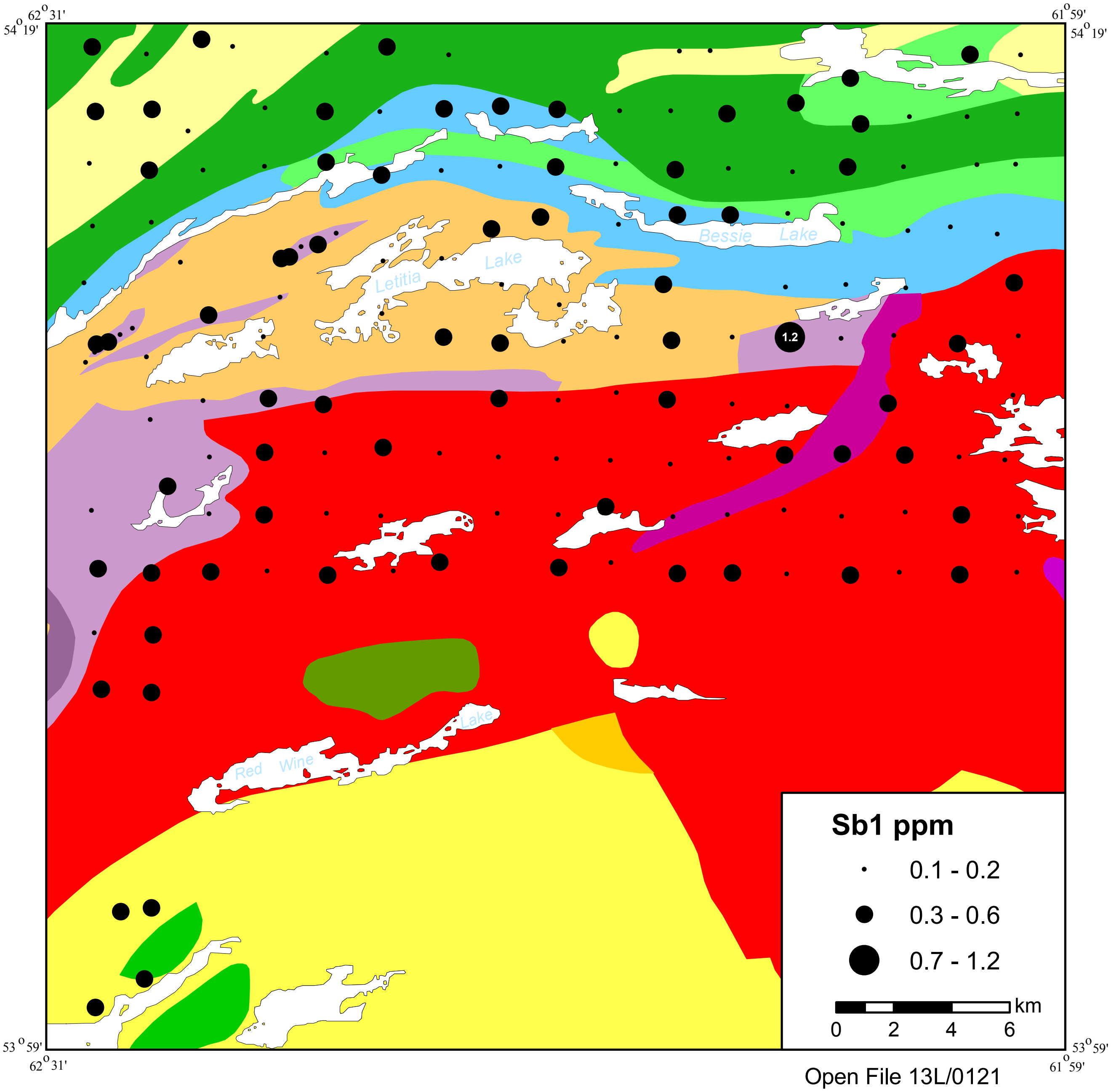


Figure 19. *Distribution of antimony in till.*

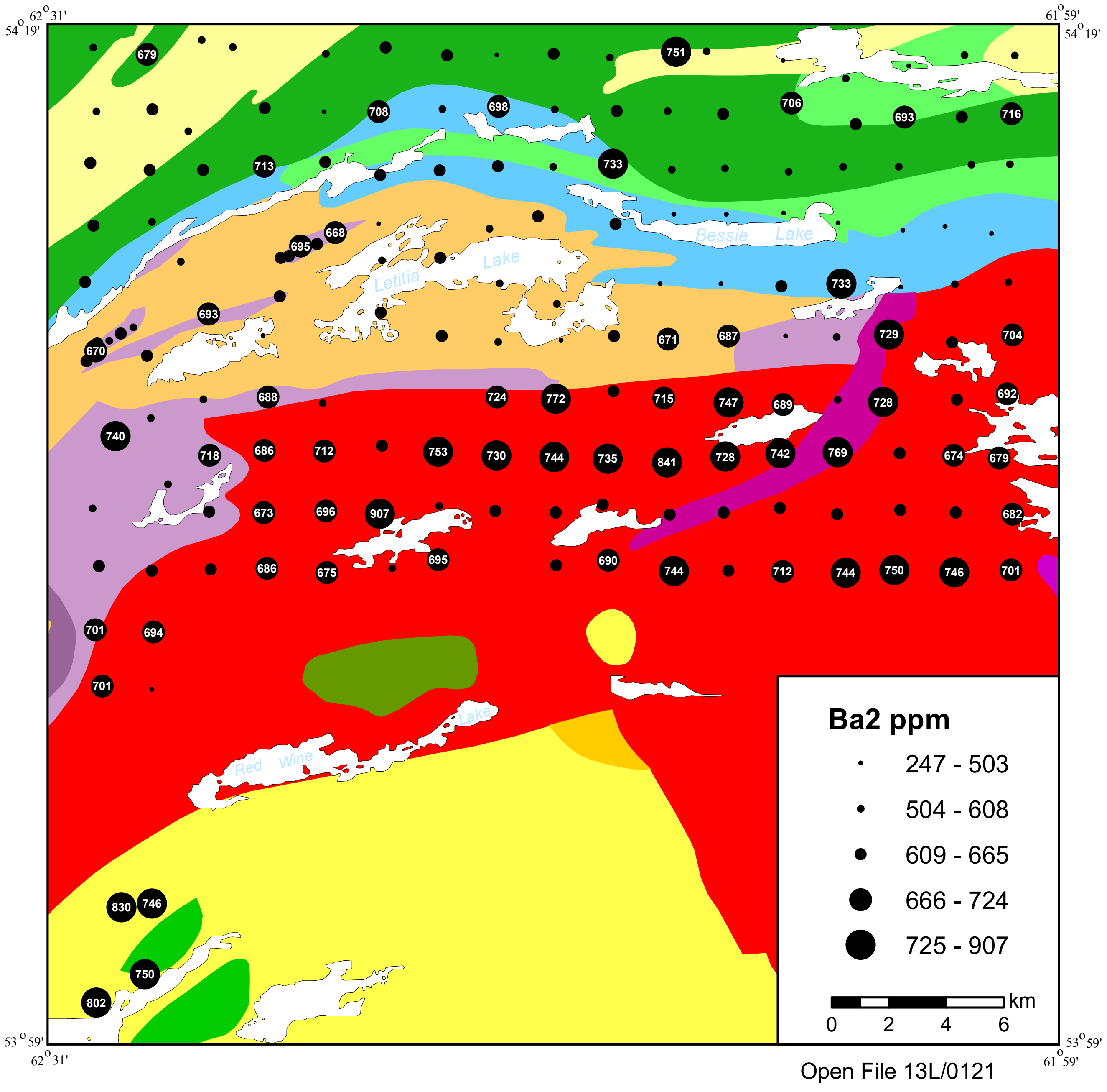


Figure 20. *Distribution of barium in till.*

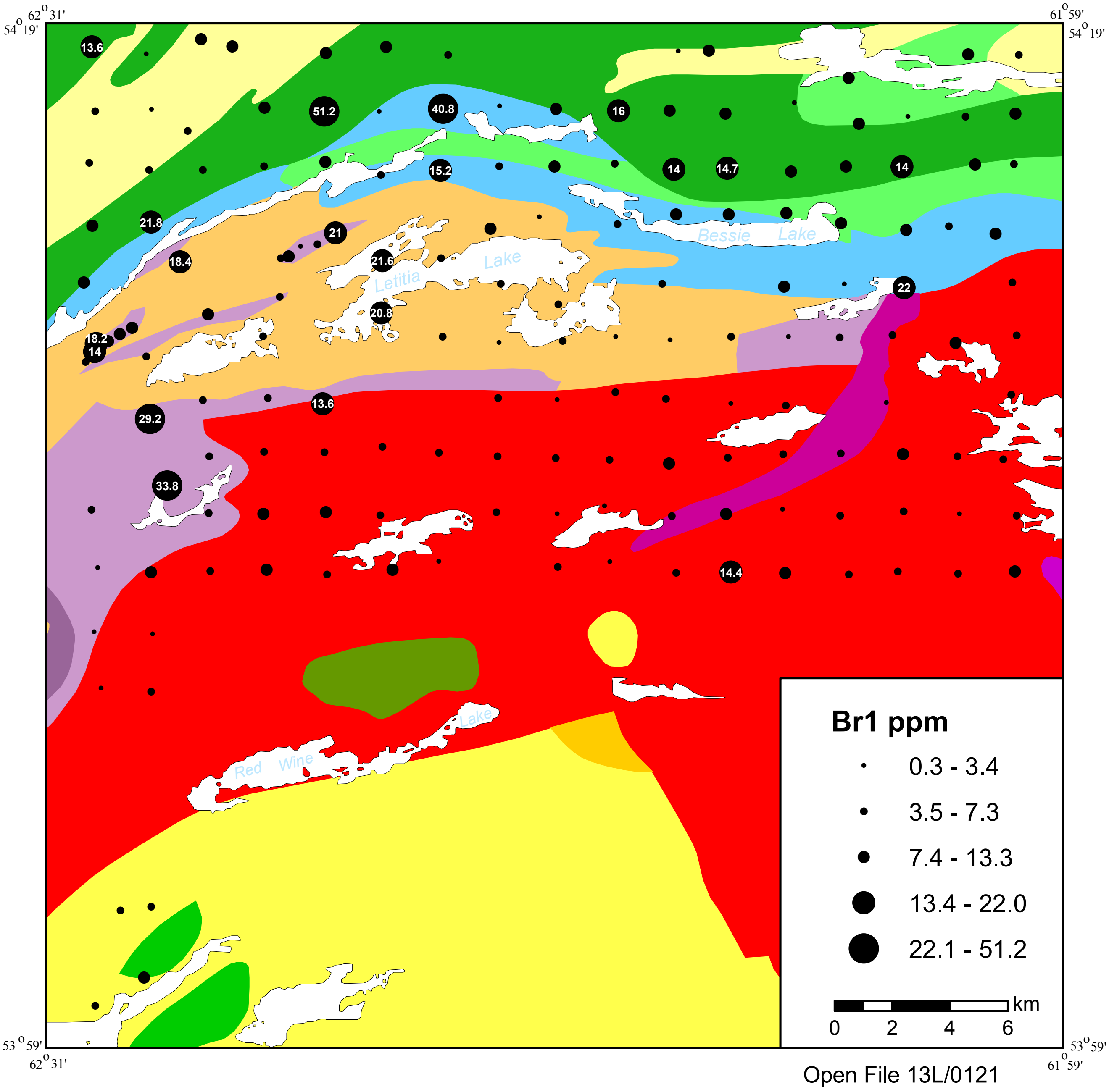


Figure 21. *Distribution of bromine in till.*

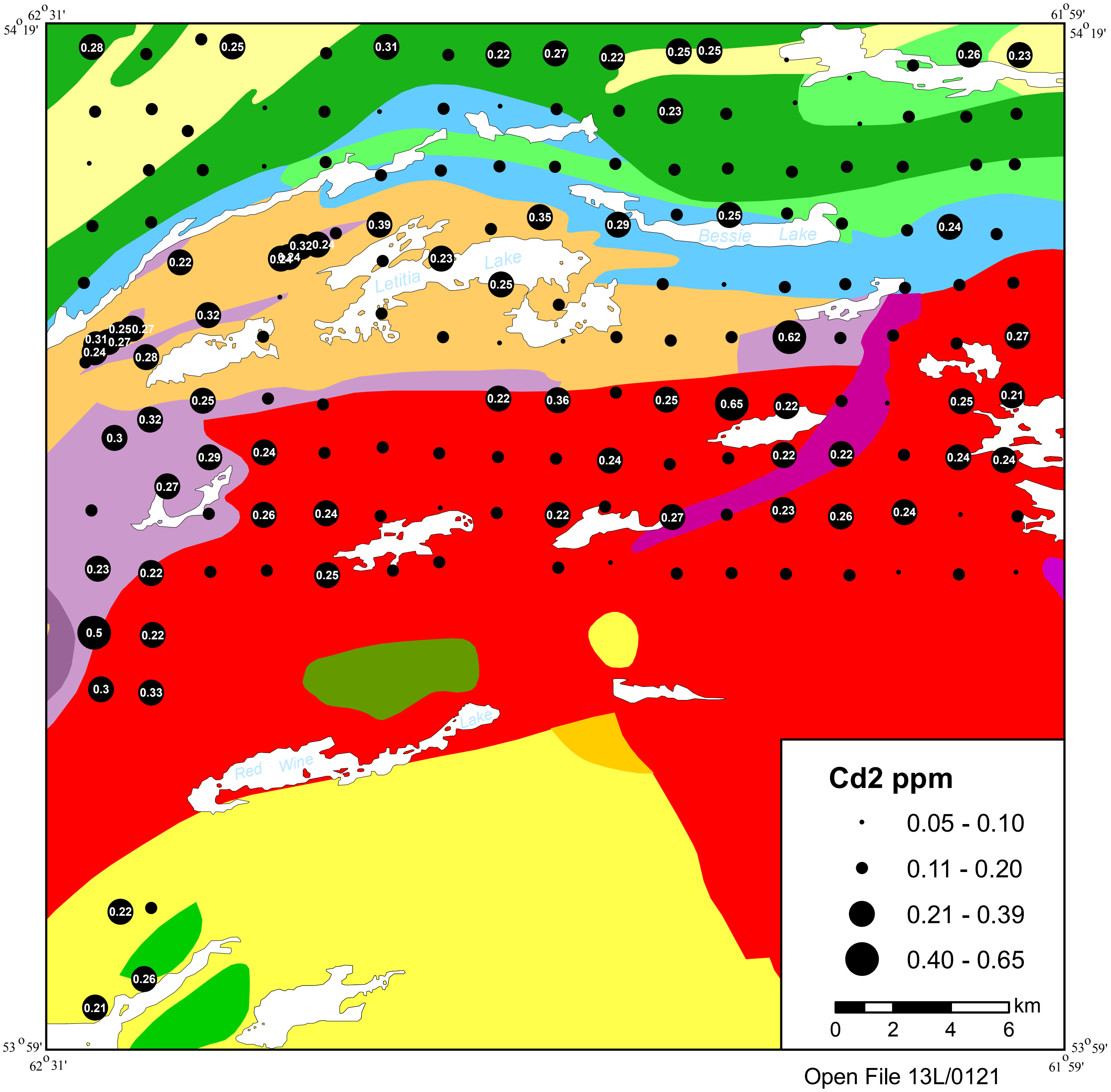


Figure 22. *Distribution of cadmium in till.*

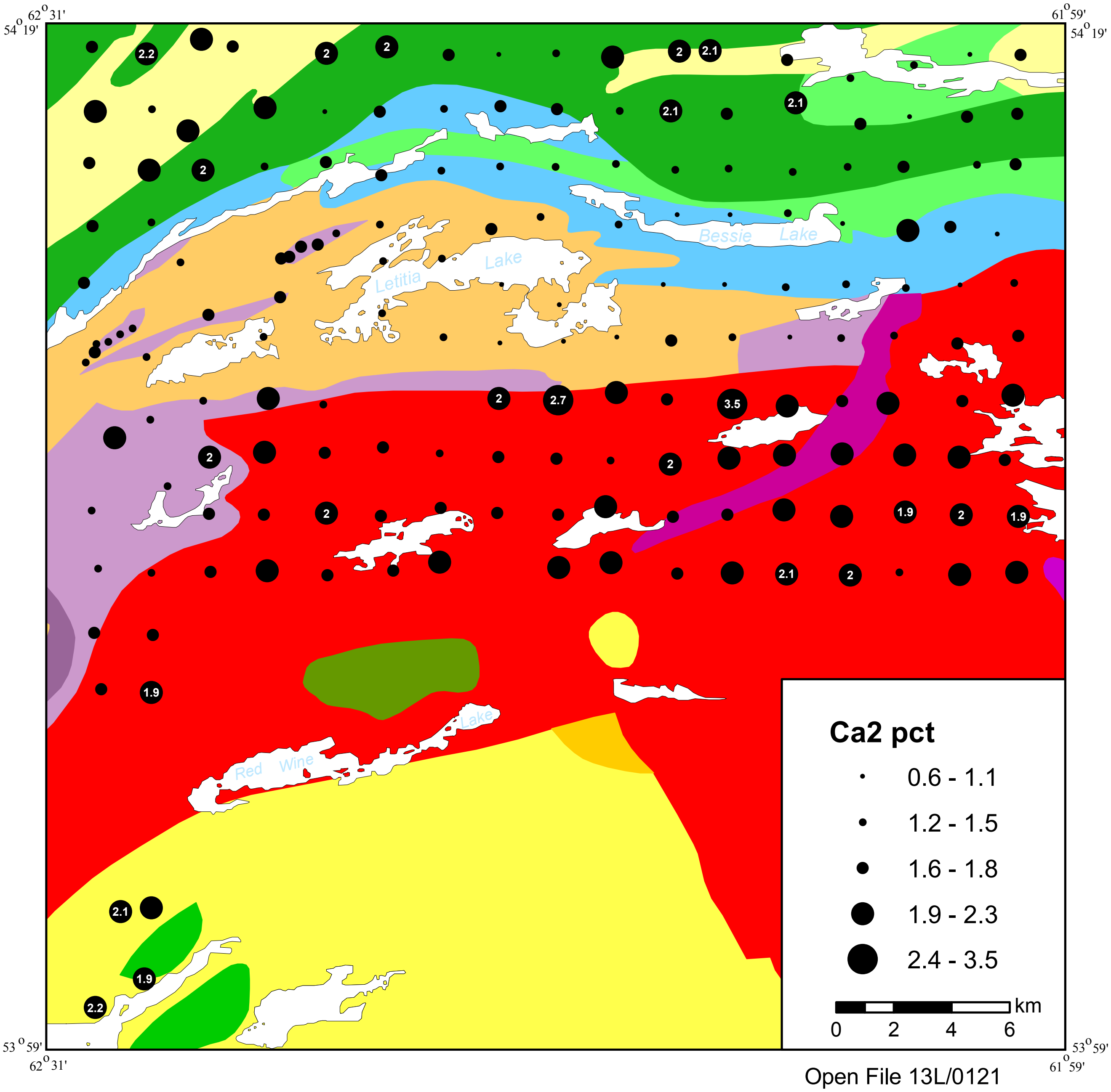


Figure 23. *Distribution of calcium in till.*

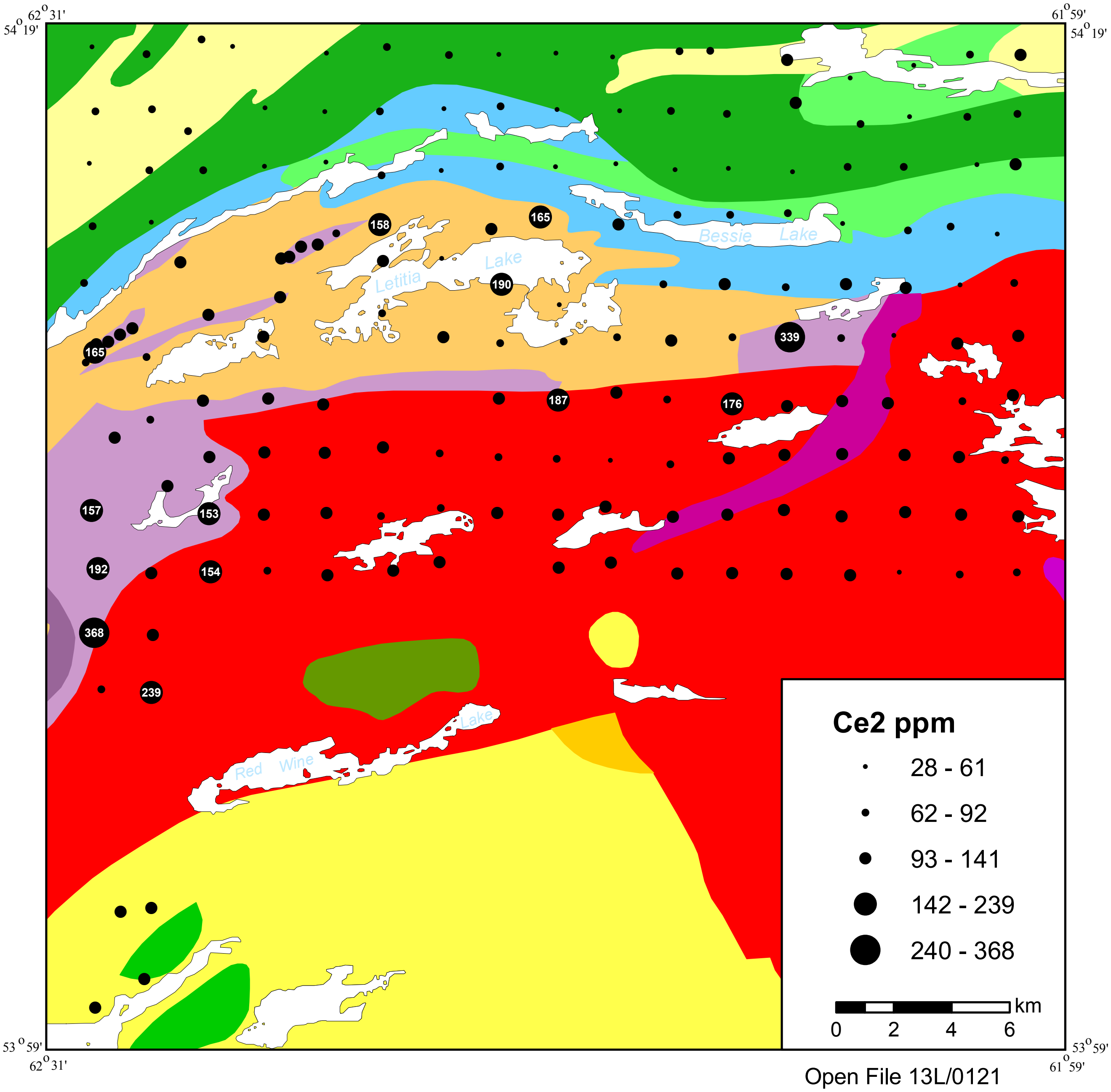


Figure 24. *Distribution of cerium in till.*

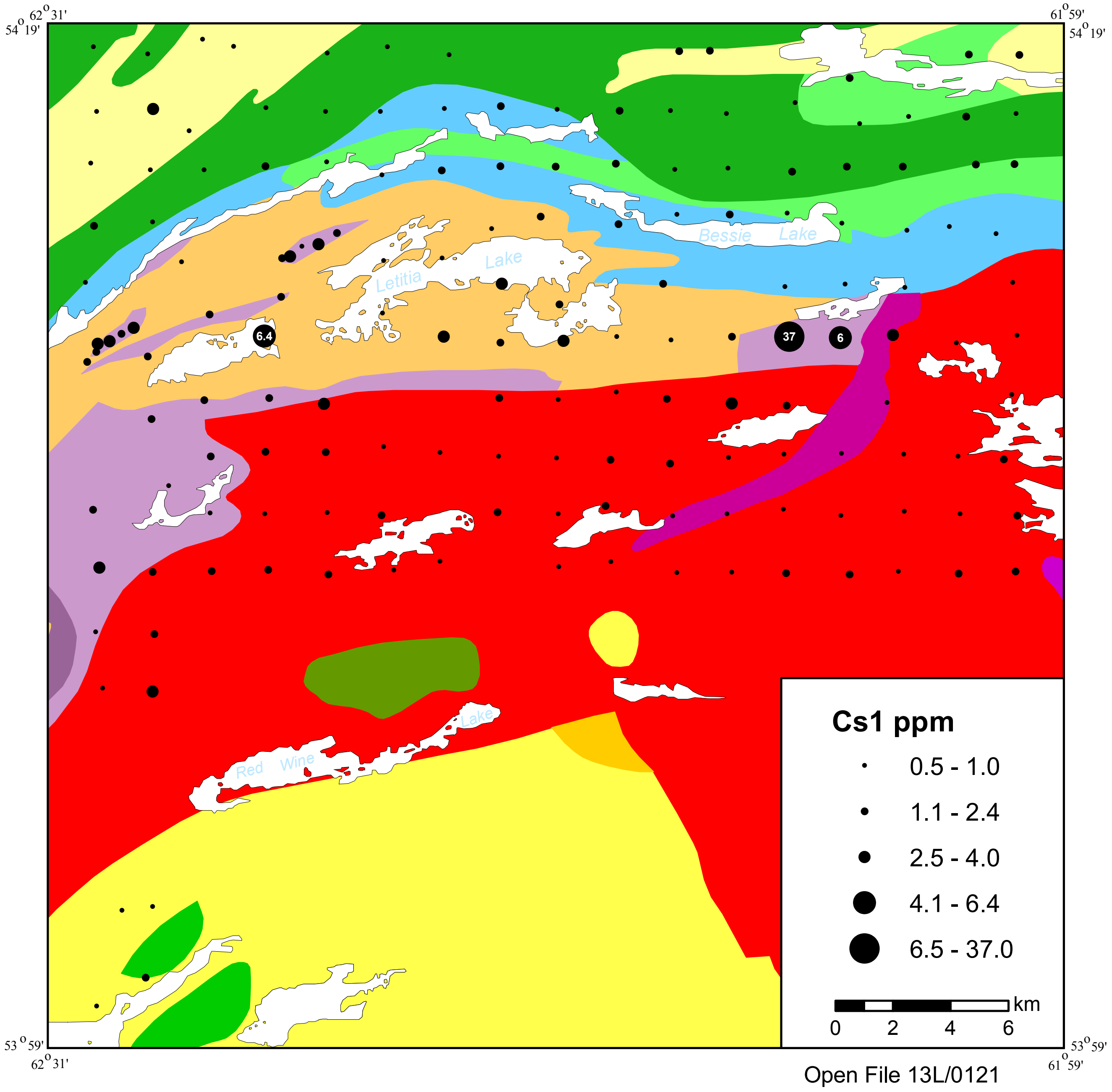


Figure 25. *Distribution of cesium in till.*

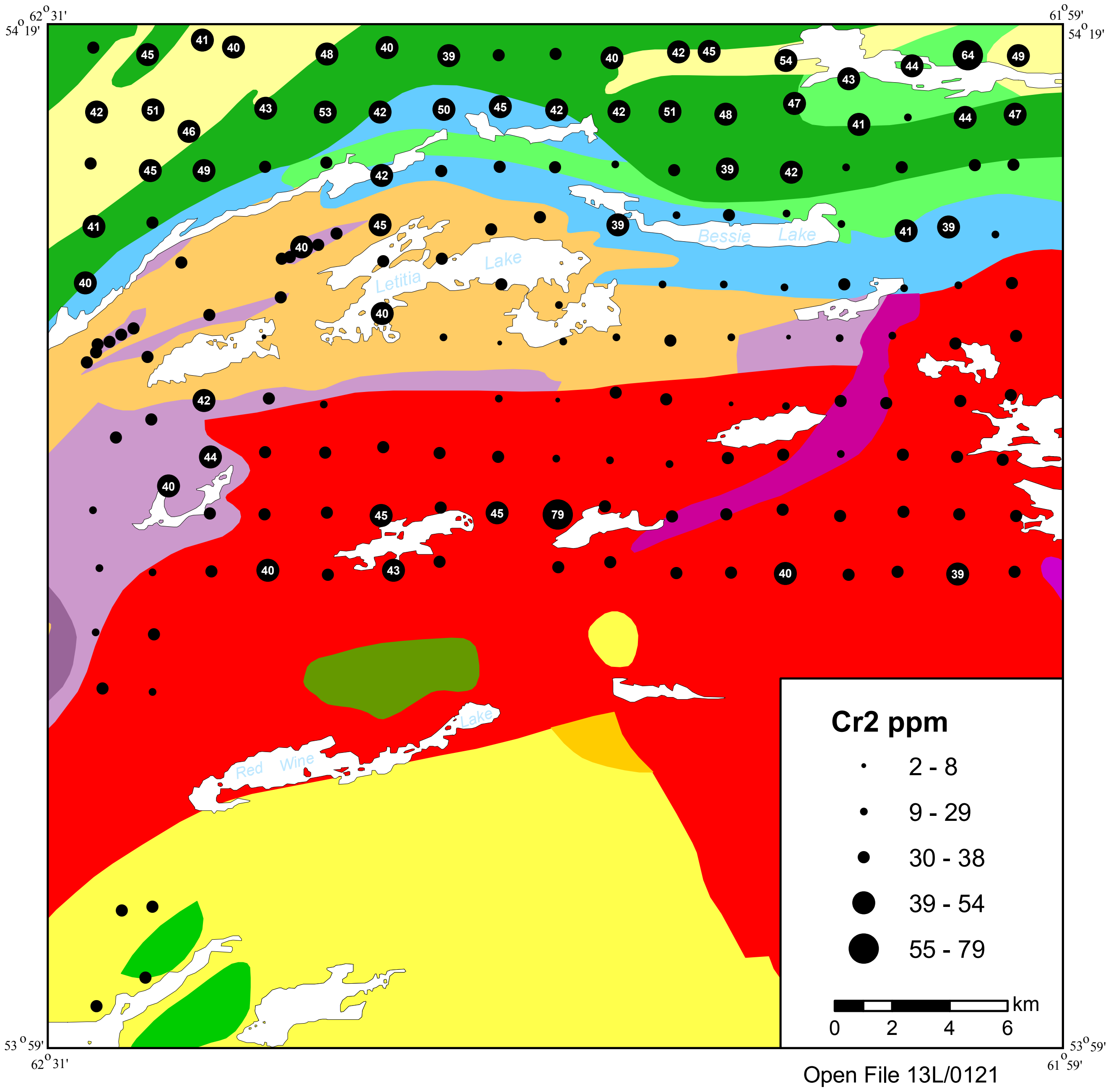


Figure 26. *Distribution of chromium in till.*

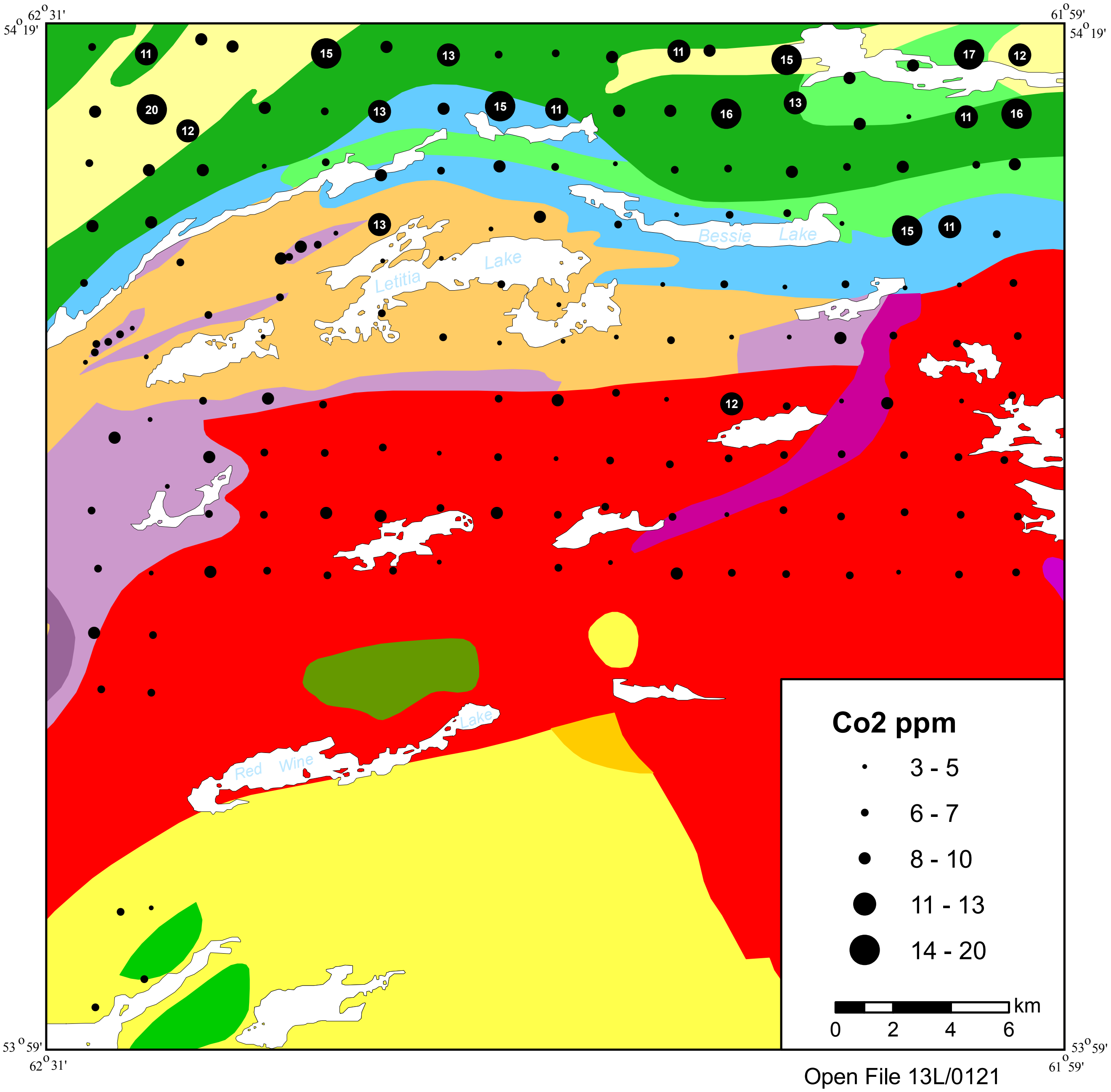


Figure 27. *Distribution of cobalt in till.*

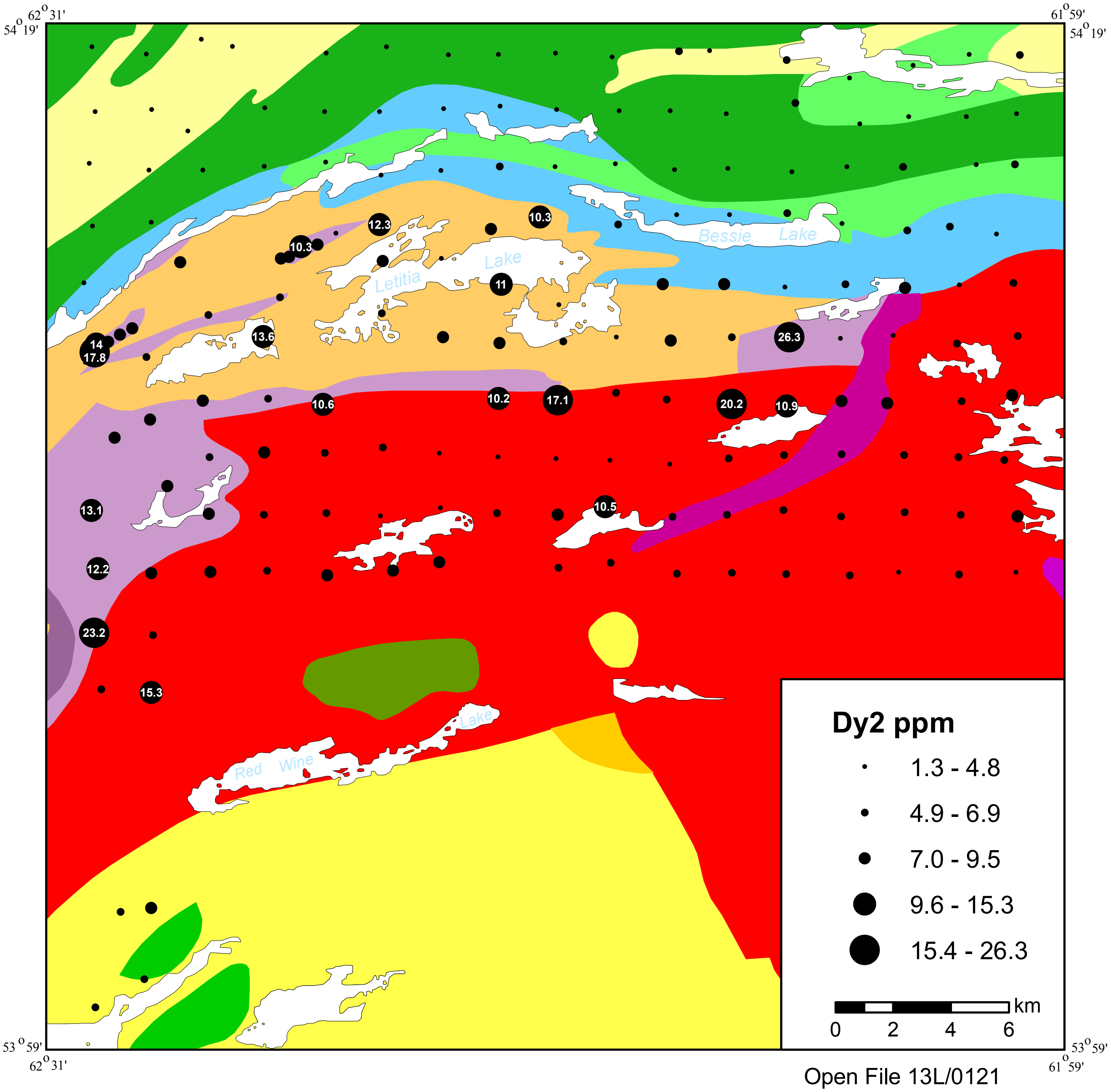


Figure 28. *Distribution of dysprosium in till.*

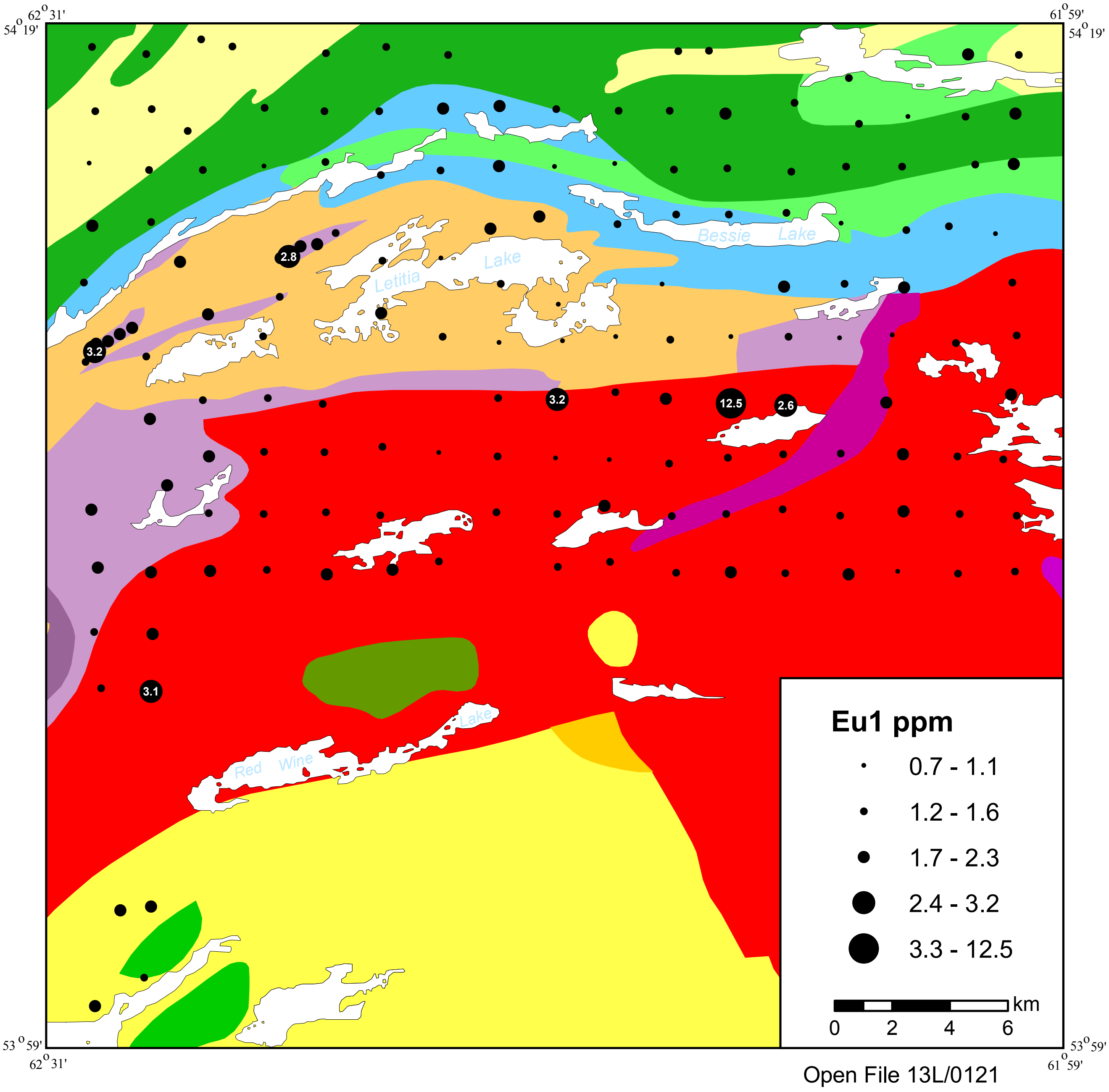


Figure 29. *Distribution of europium in till.*

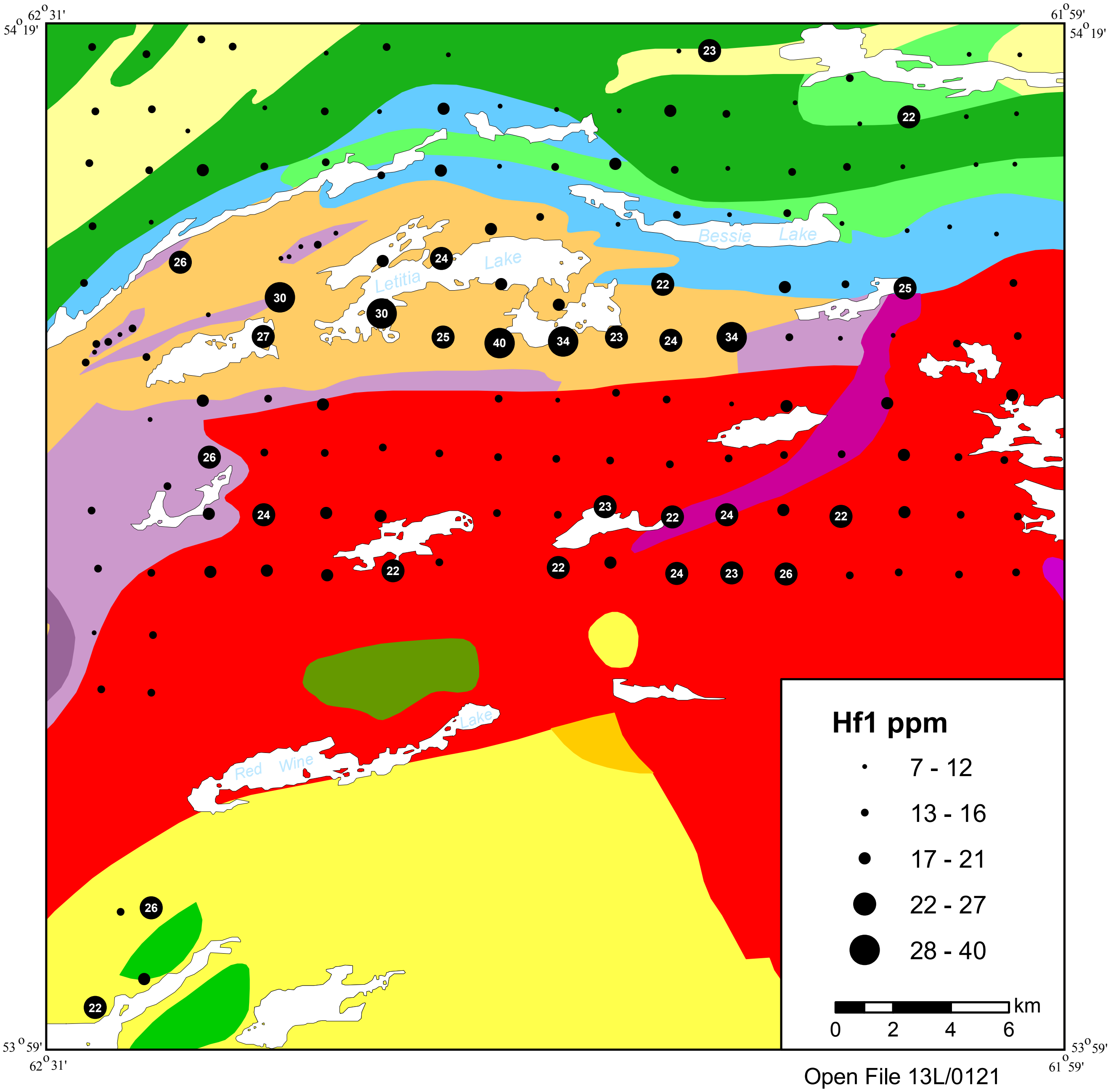


Figure 30. *Distribution of hafnium in till.*

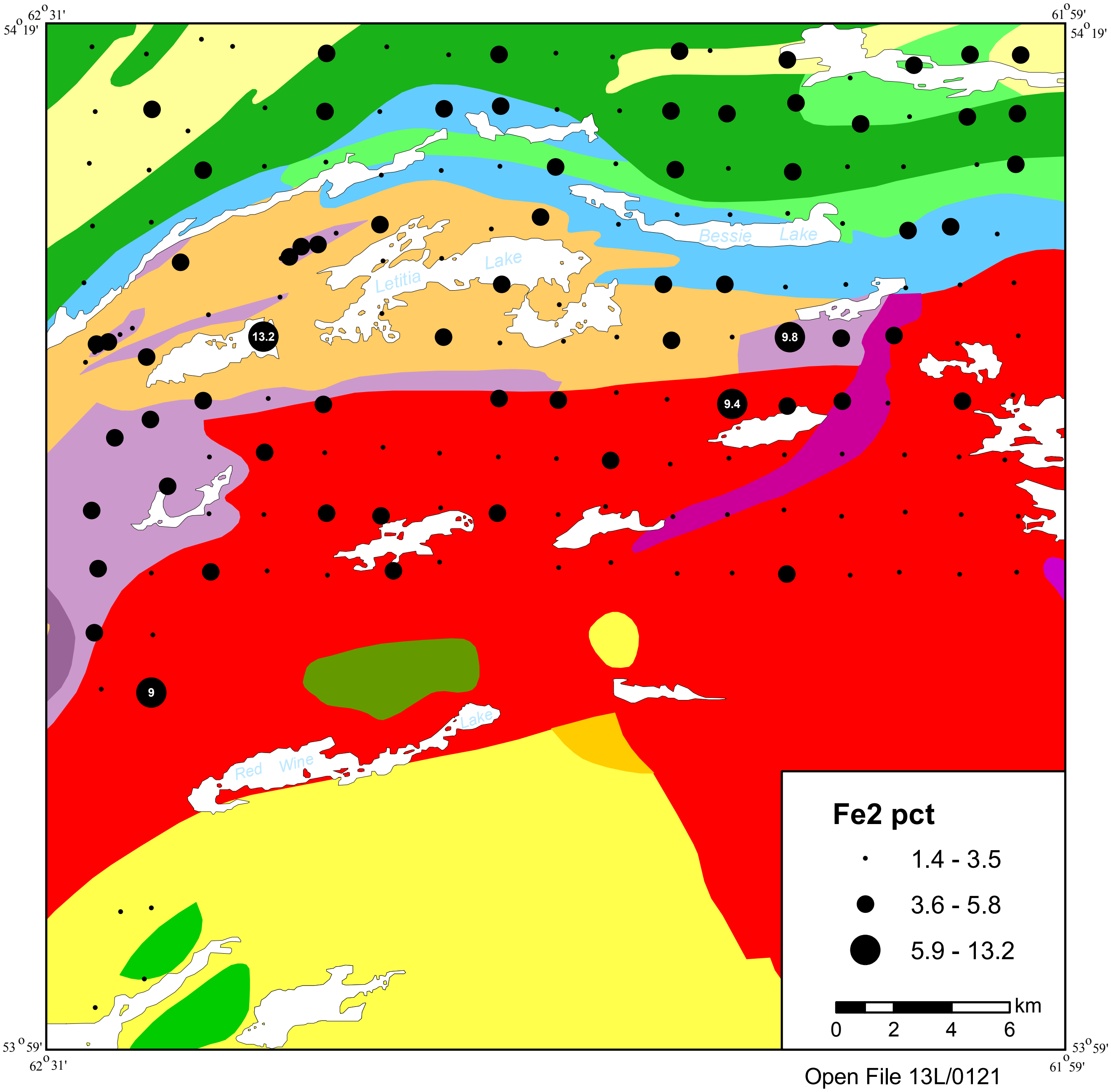


Figure 31. *Distribution of iron in till.*

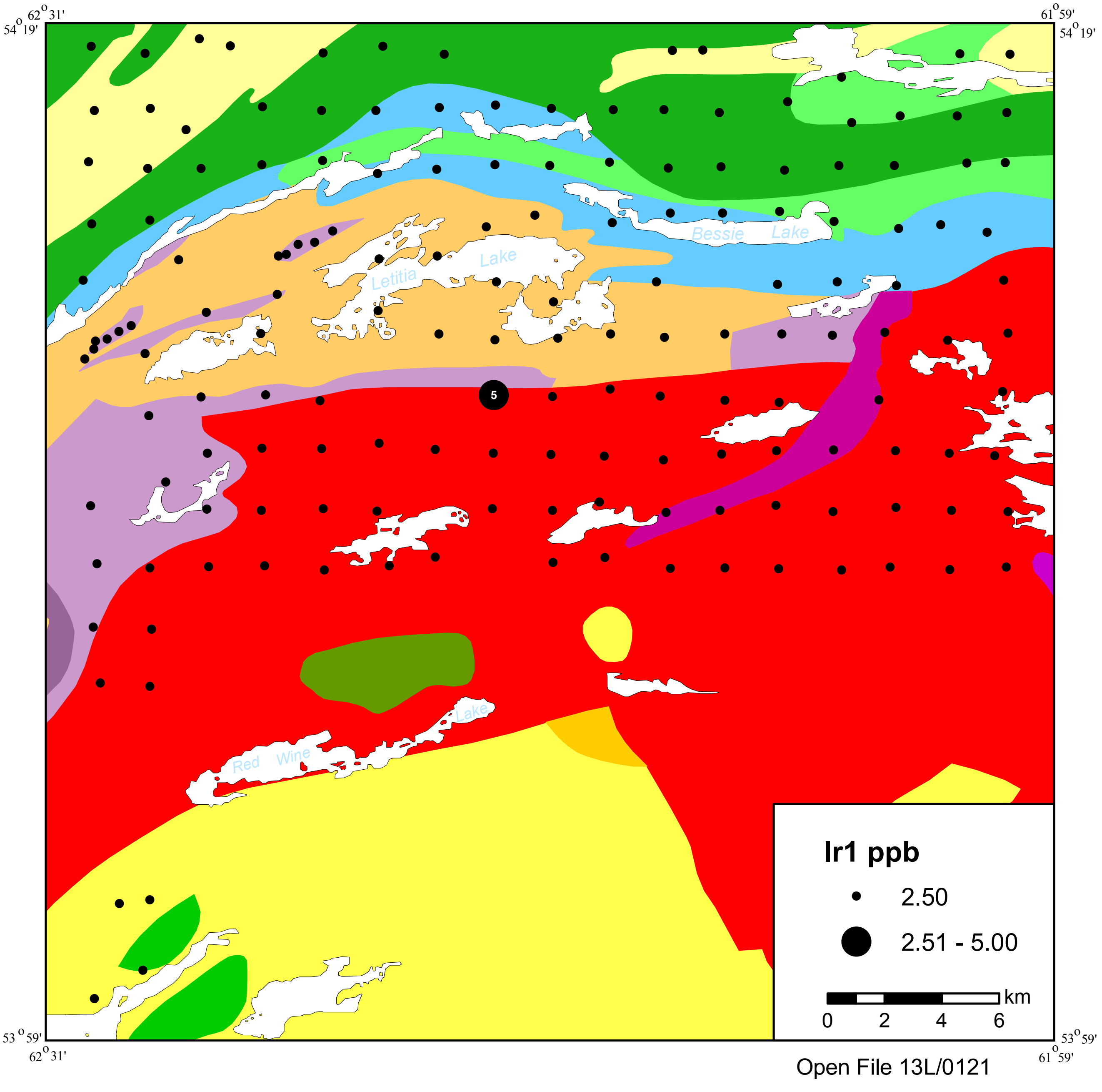


Figure 32. *Distribution of iridium in till.*

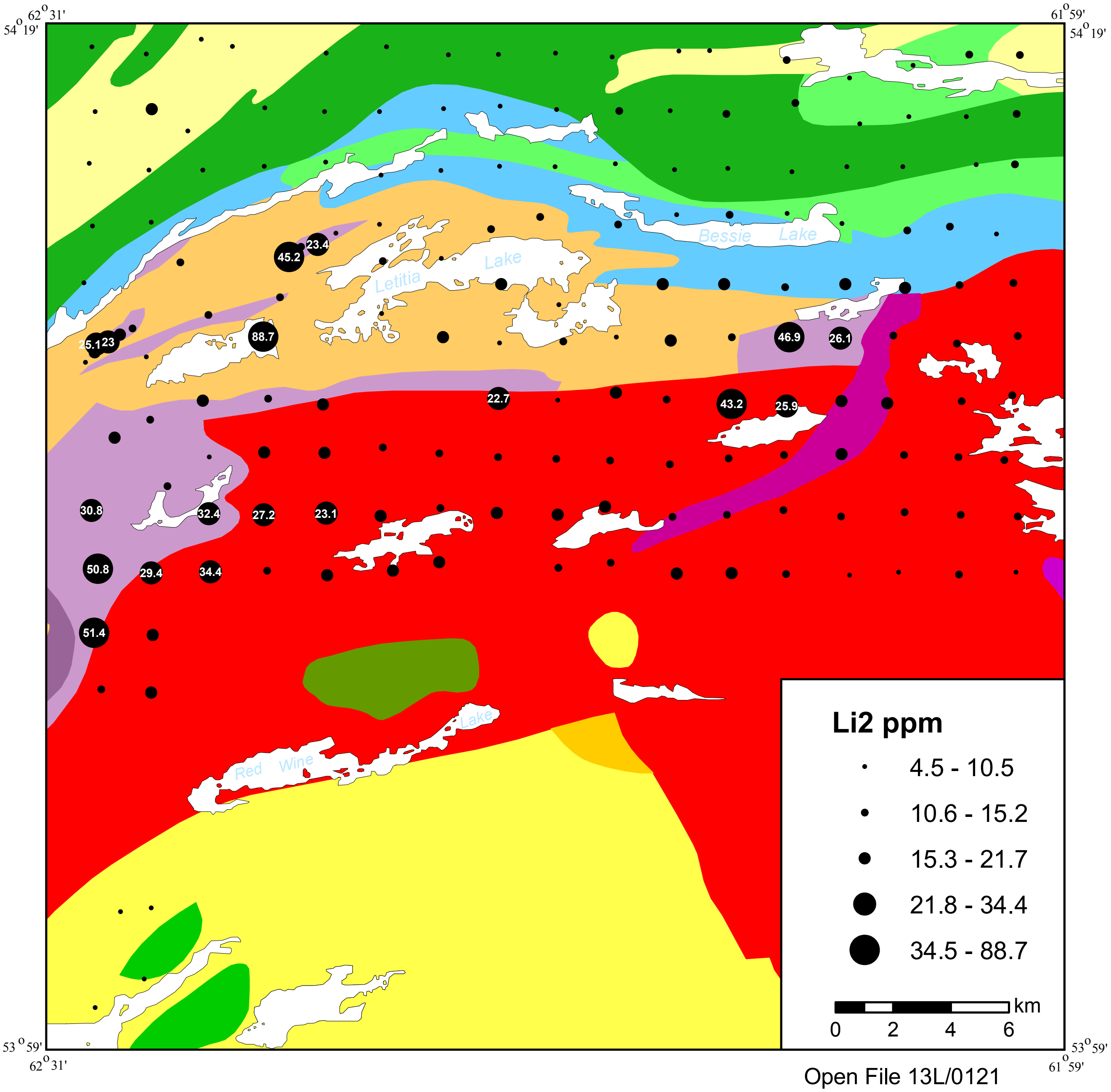


Figure 33. *Distribution of lithium in till.*

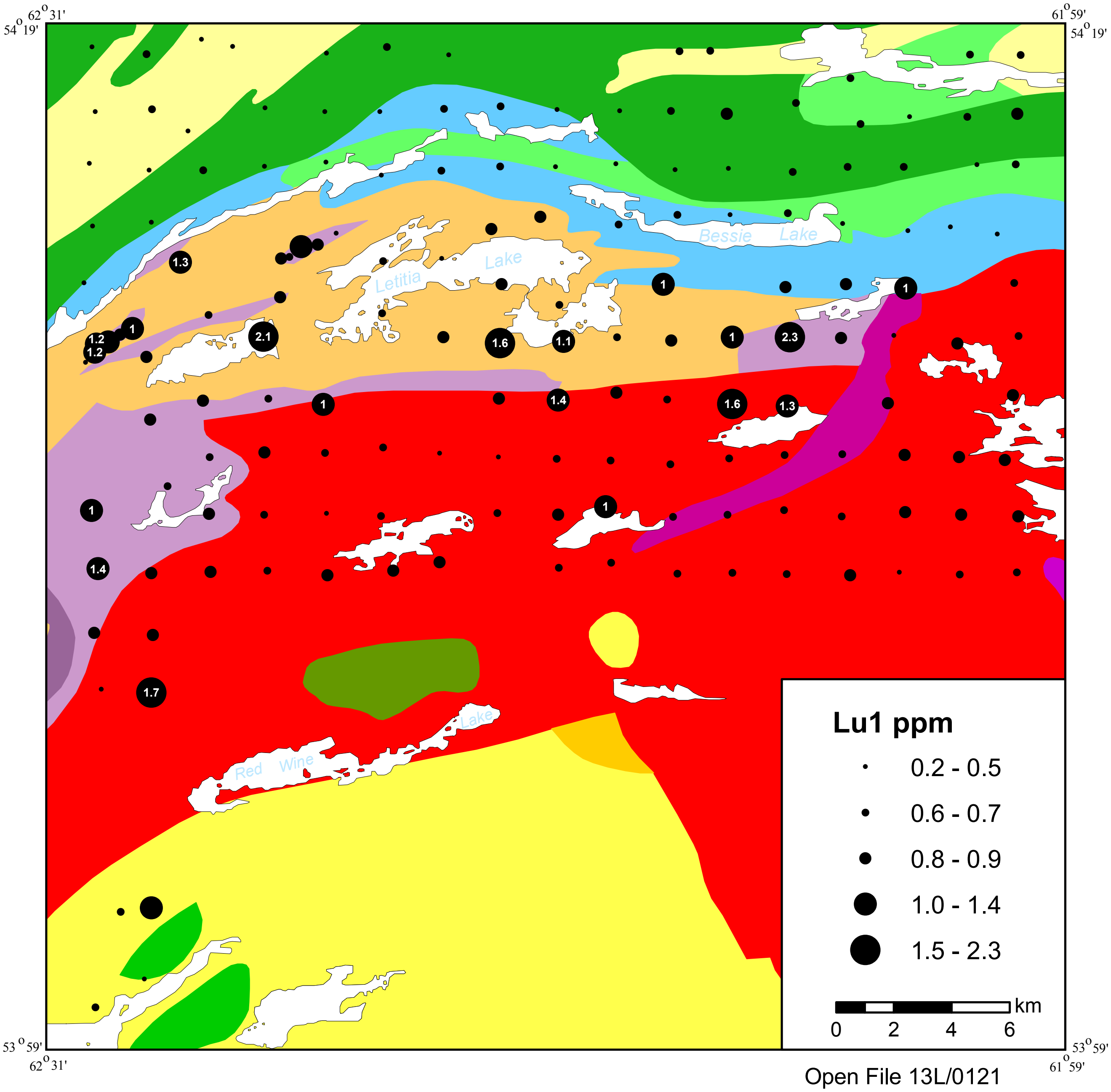
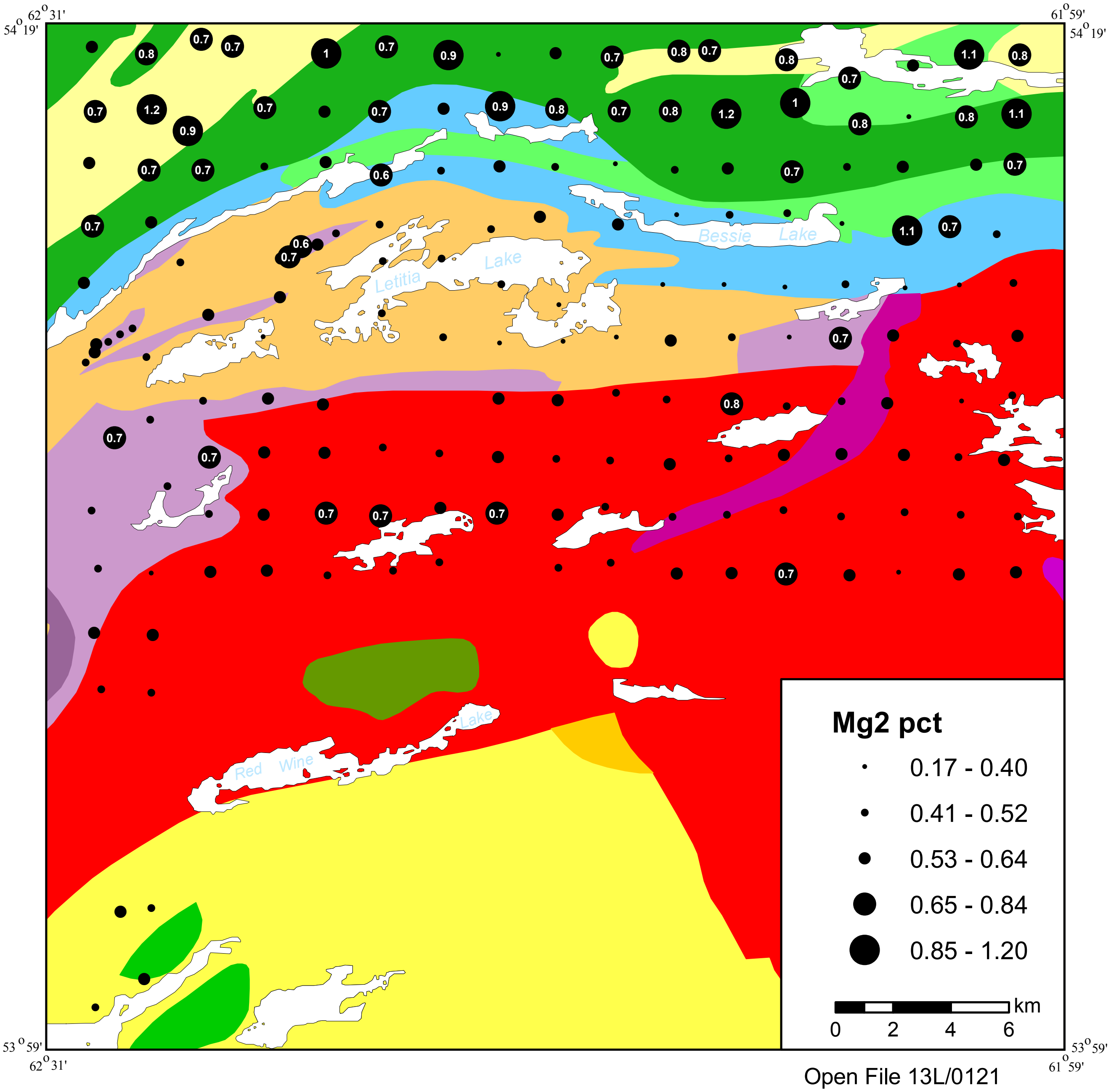


Figure 34. *Distribution of lutetium in till.*



Open File 13L/0121

Figure 35. *Distribution of magnesium in till.*

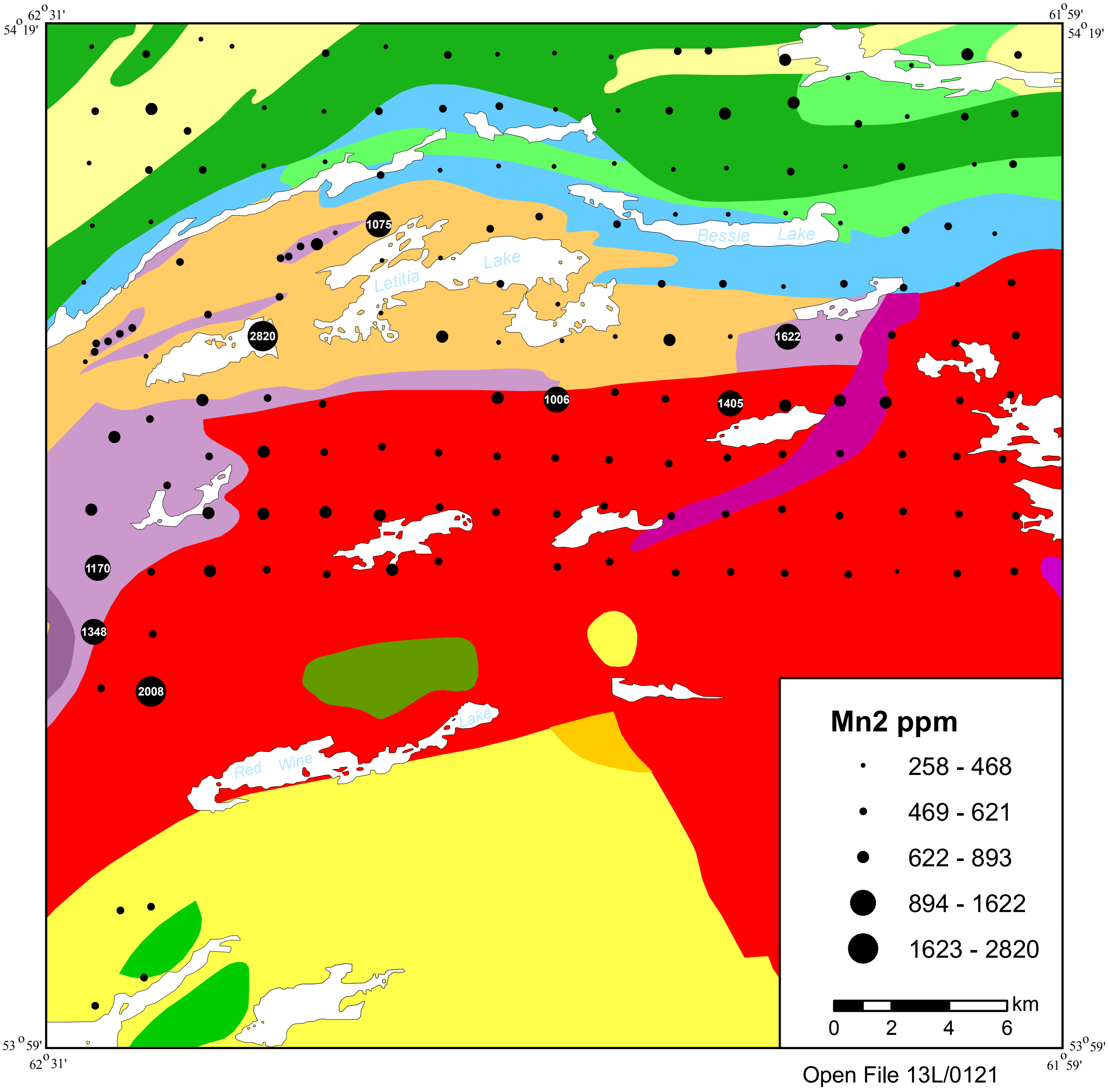


Figure 36. *Distribution of manganese in till.*

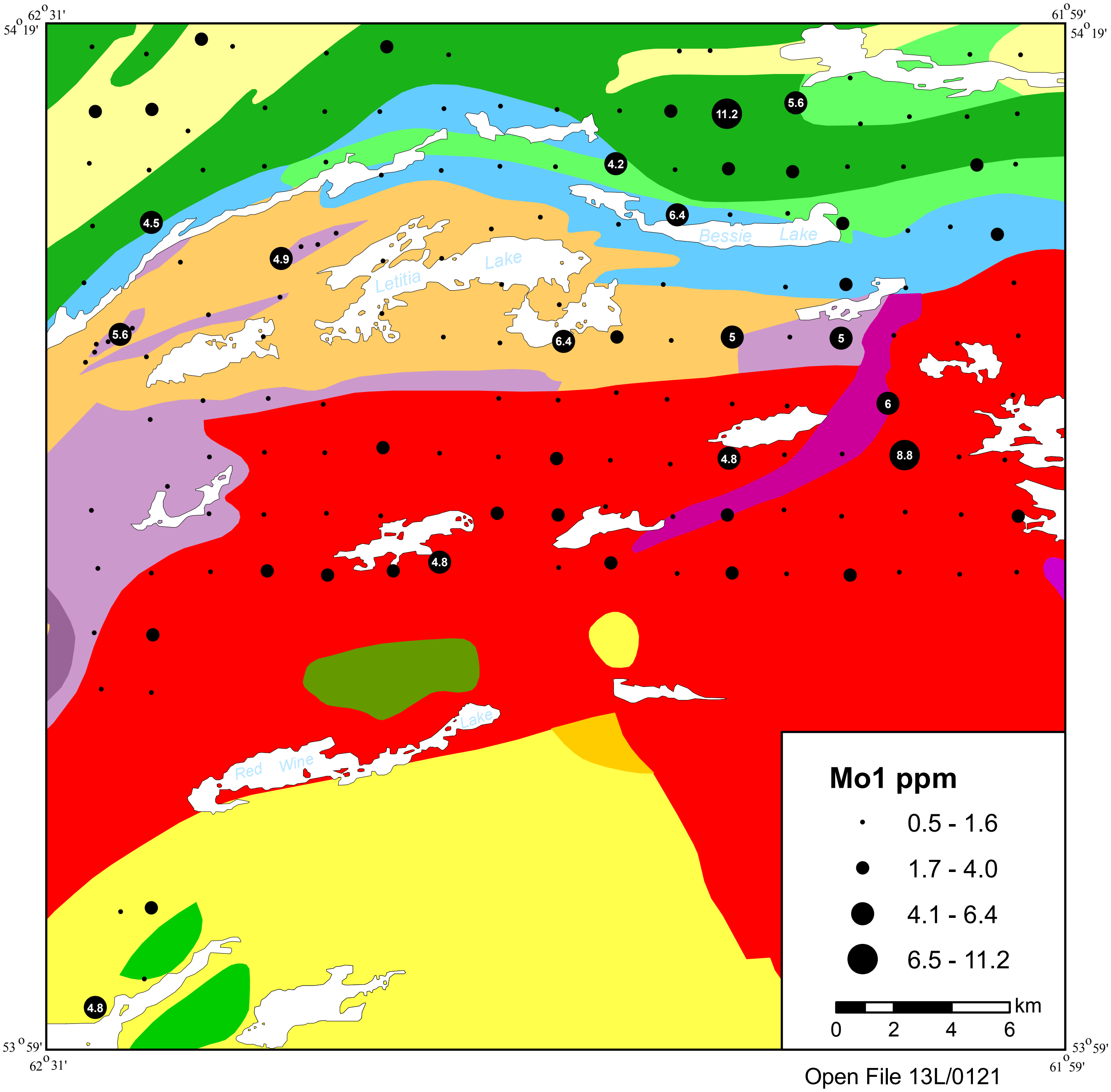


Figure 37. *Distribution of molybdenum in till.*

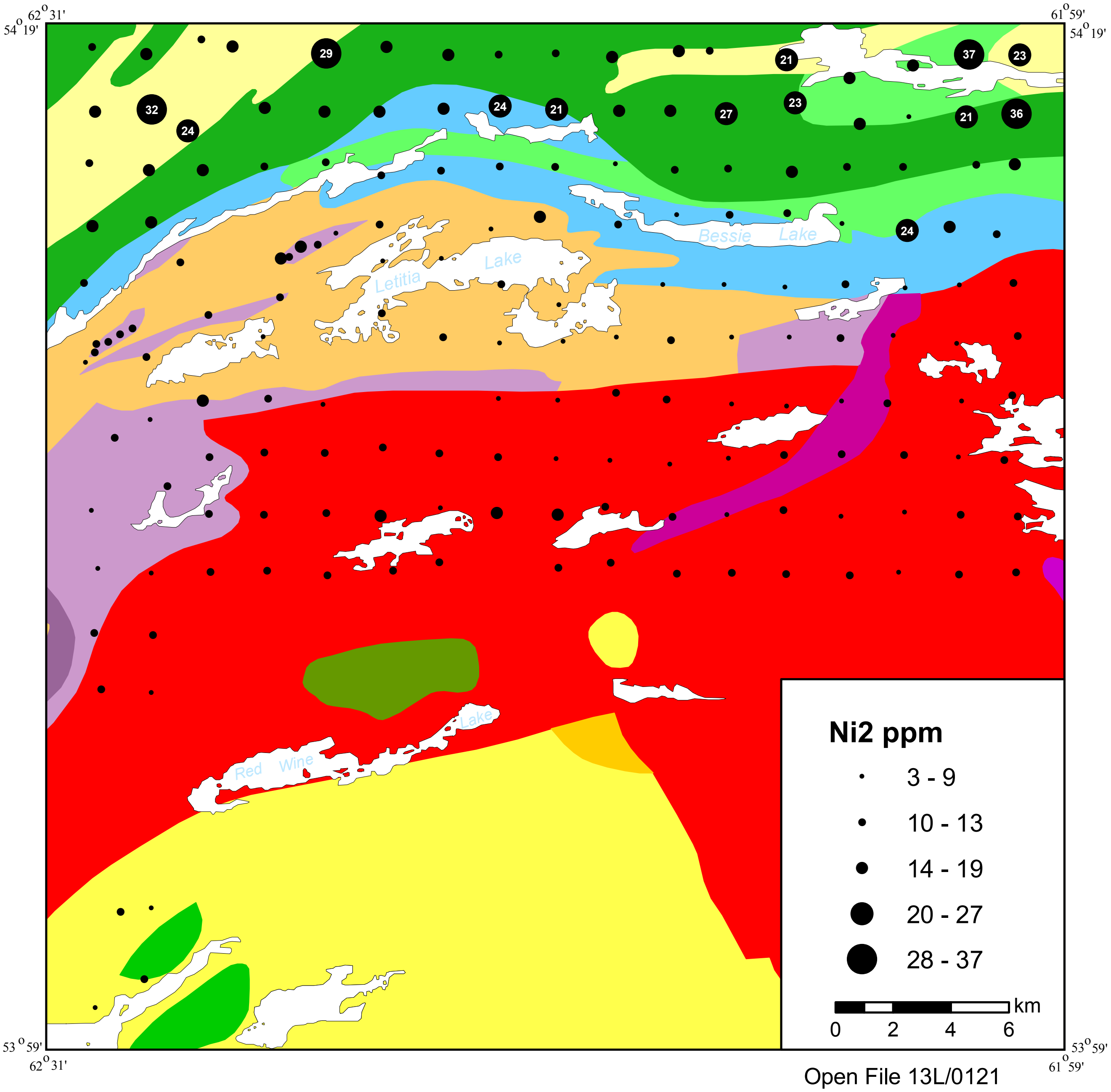
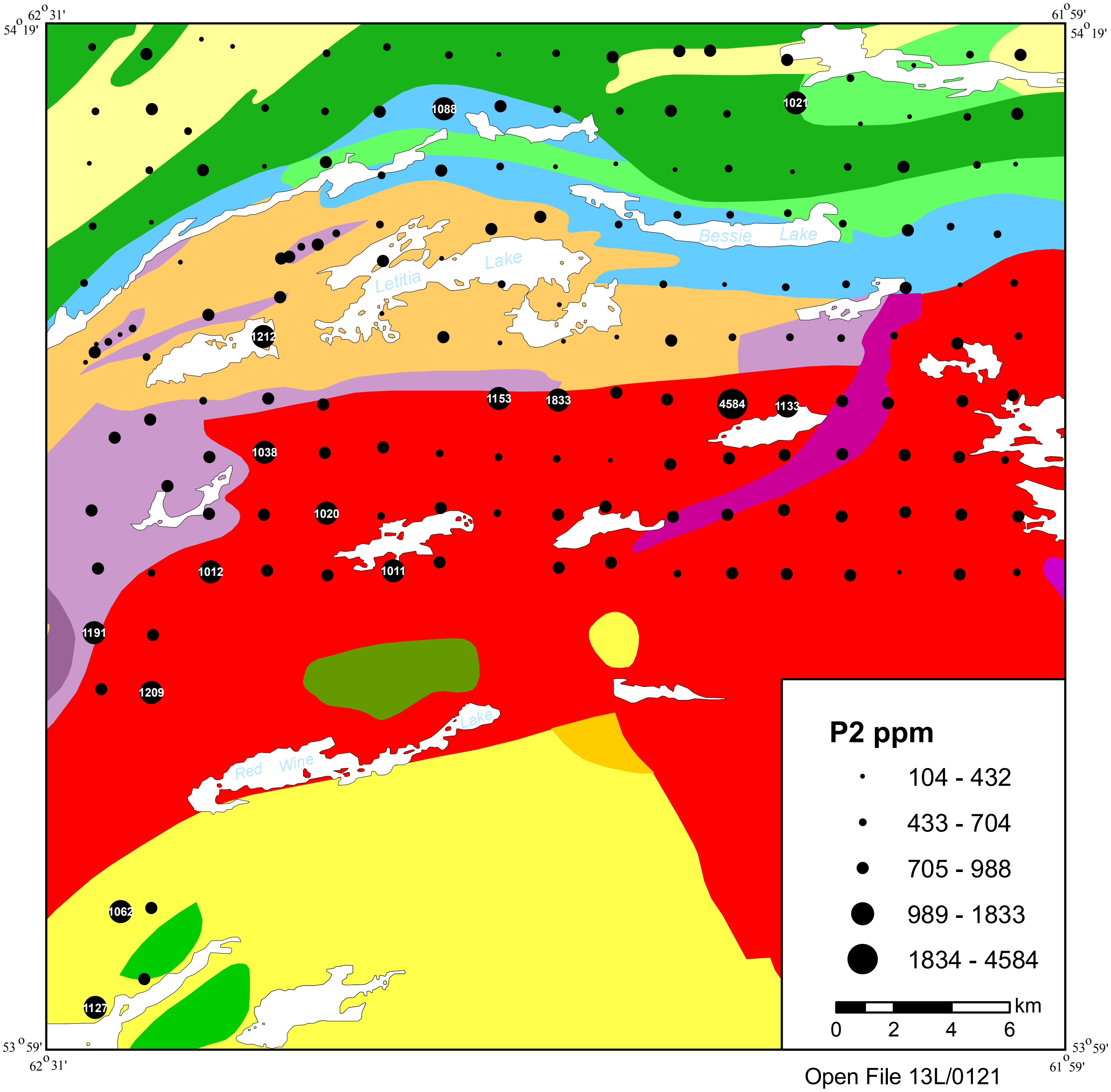


Figure 38. *Distribution of nickel in till.*



Open File 13L/0121

Figure 39. *Distribution of phosphorous in till.*

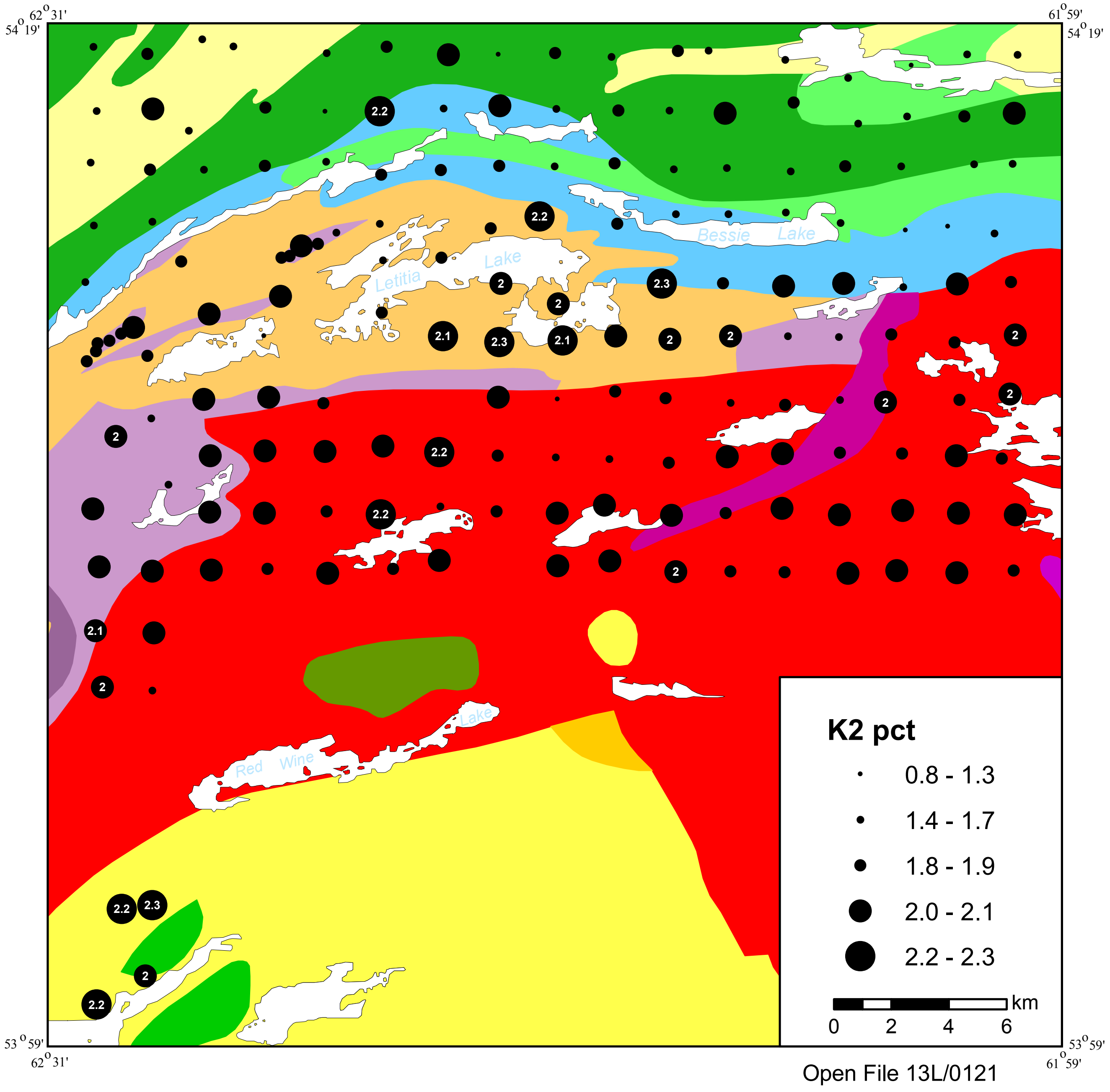


Figure 40. *Distribution of potassium in till.*

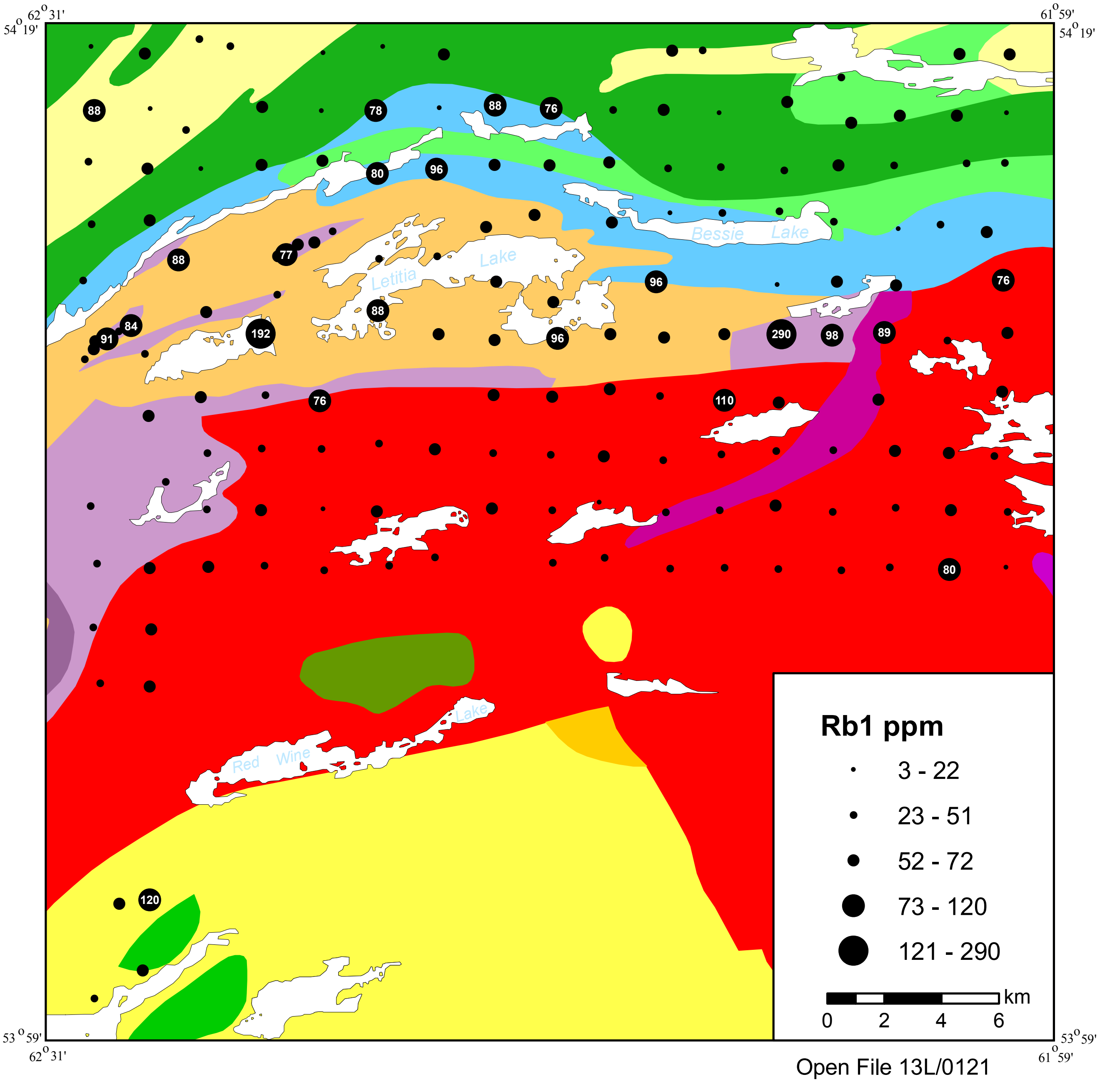


Figure 41. *Distribution of rubidium in till.*

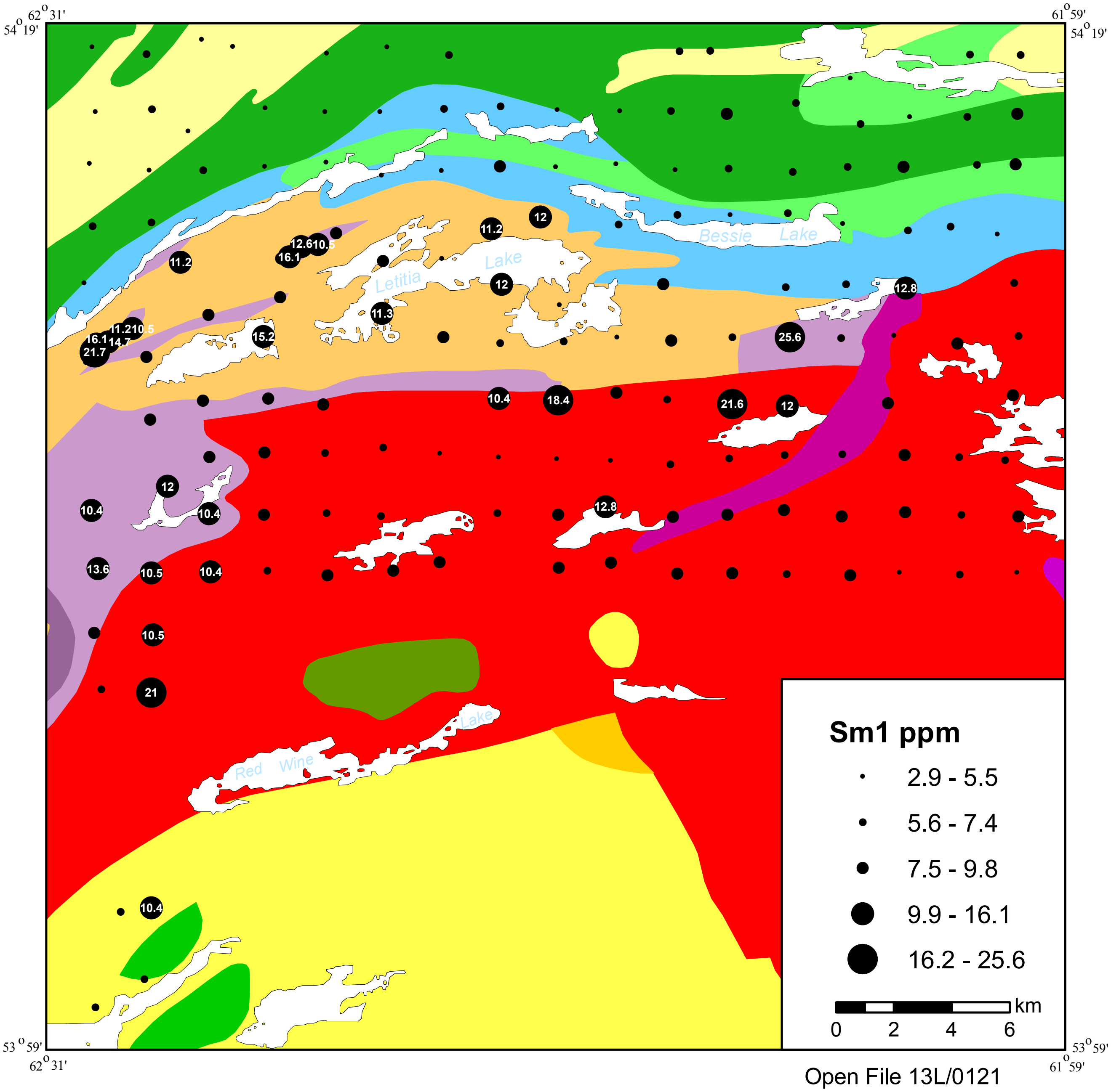


Figure 42. *Distribution of samarium in till.*

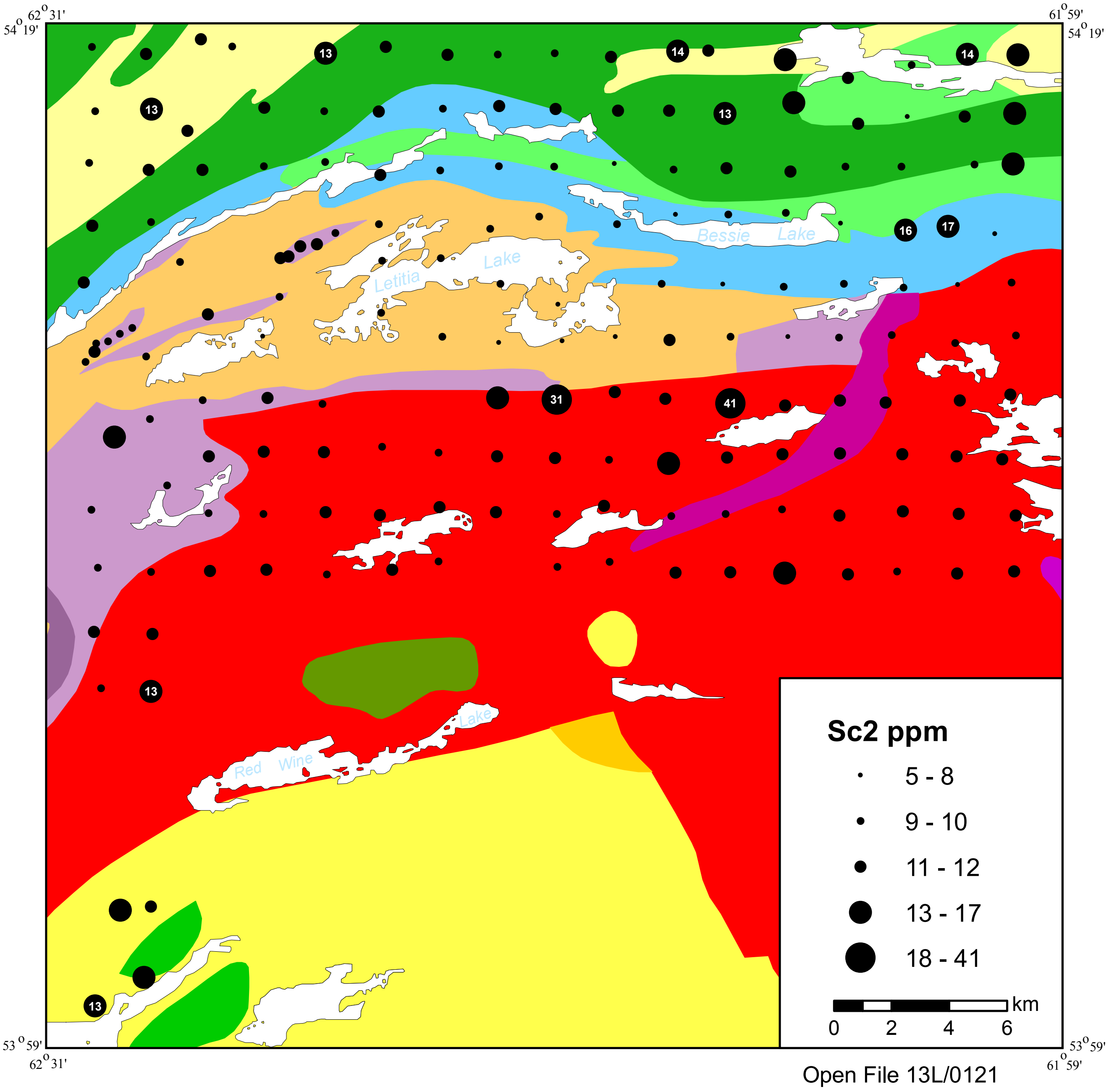


Figure 43. *Distribution of scandium in till.*

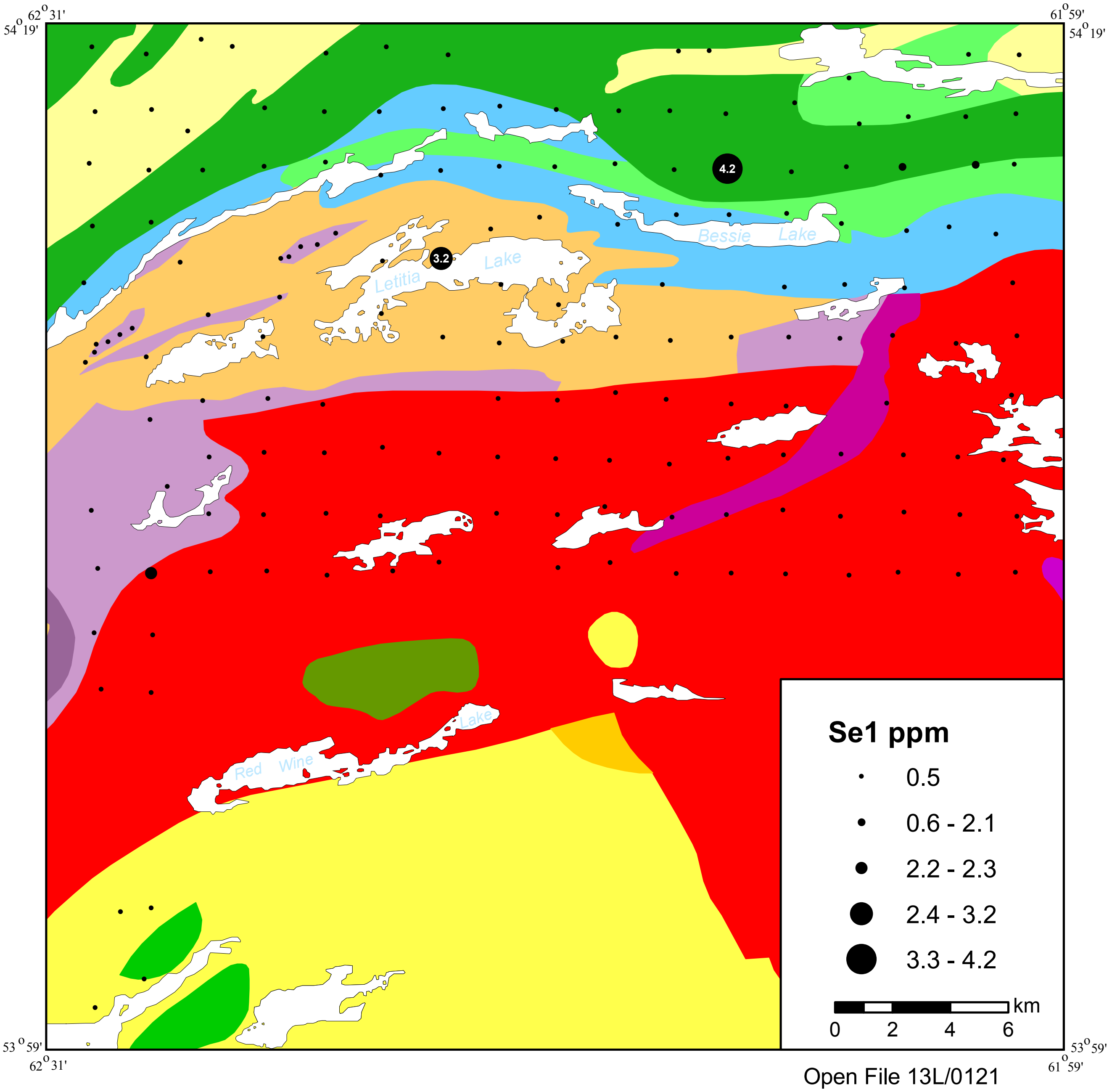


Figure 44. *Distribution of selenium in till.*

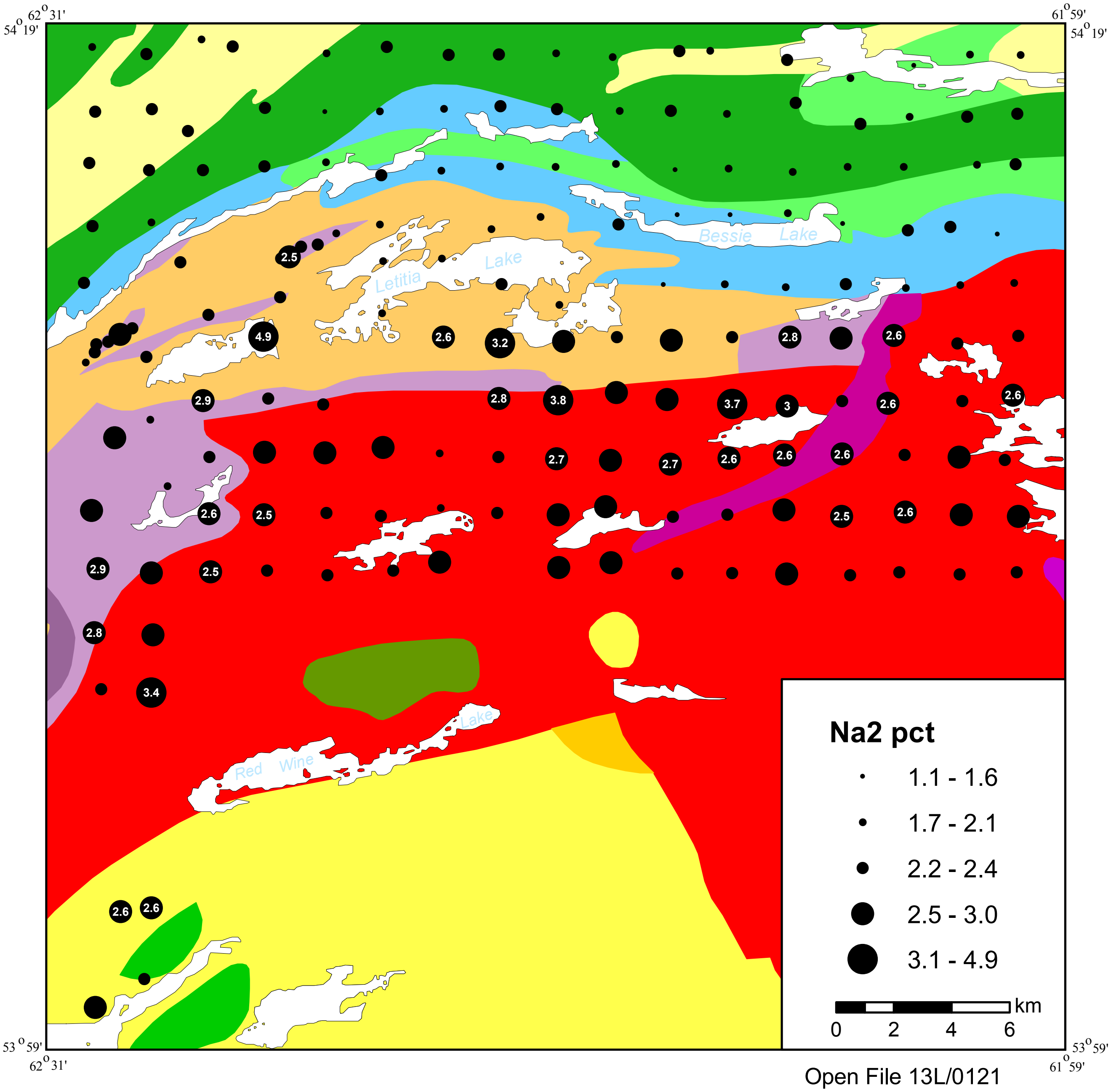


Figure 45. *Distribution of sodium in till.*

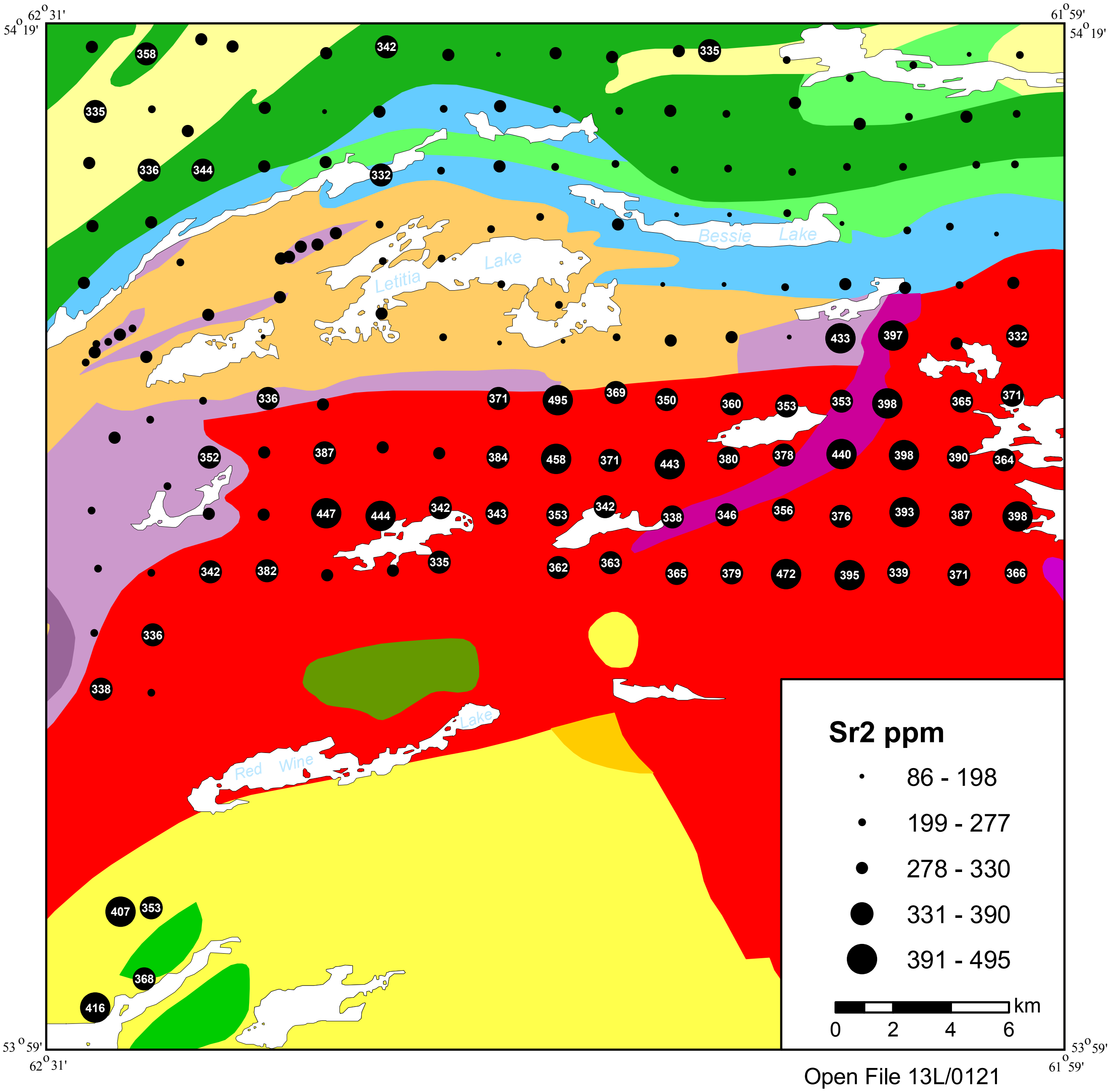


Figure 46. *Distribution of strontium in till.*

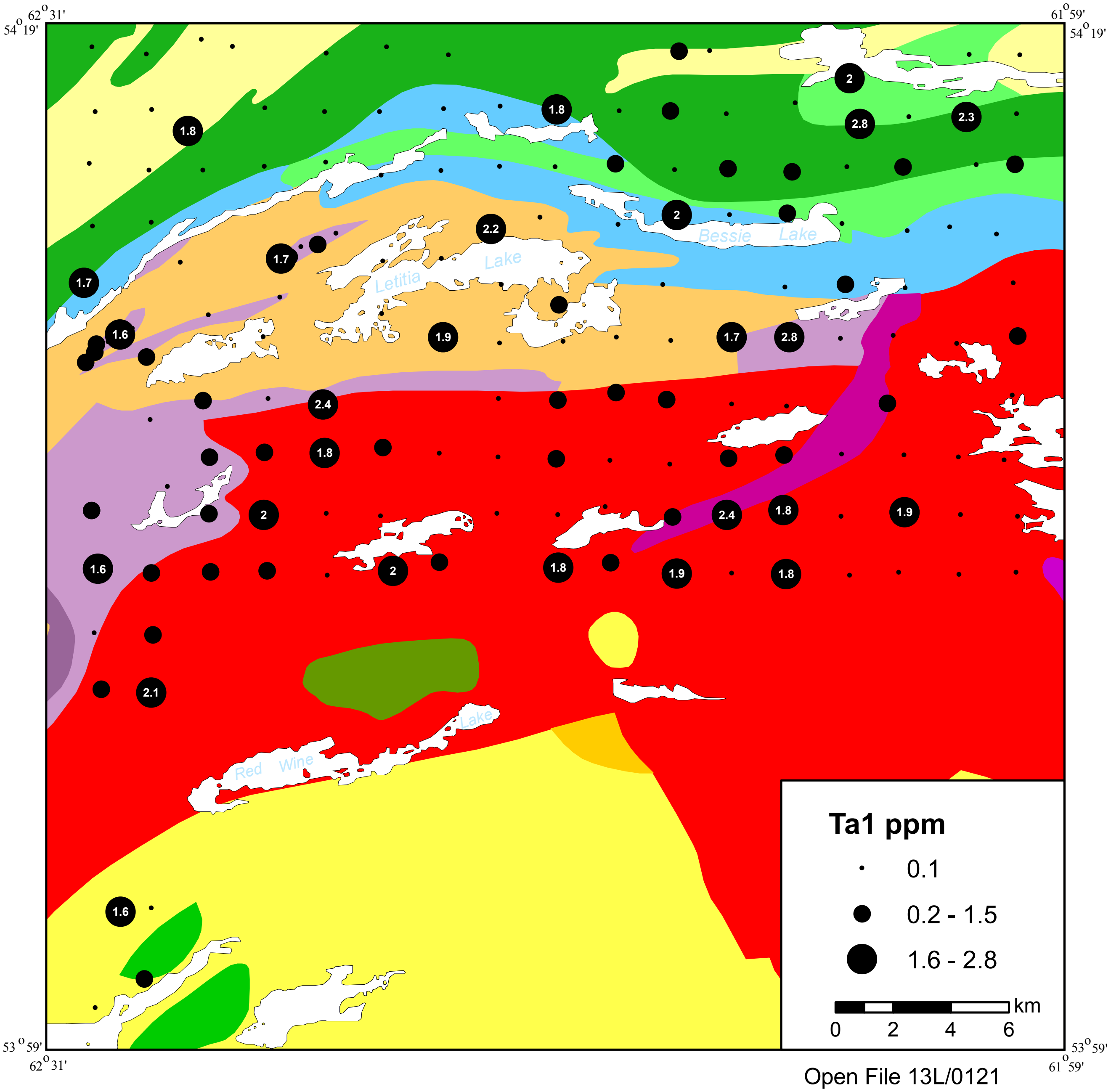


Figure 47. *Distribution of tantalum in till.*

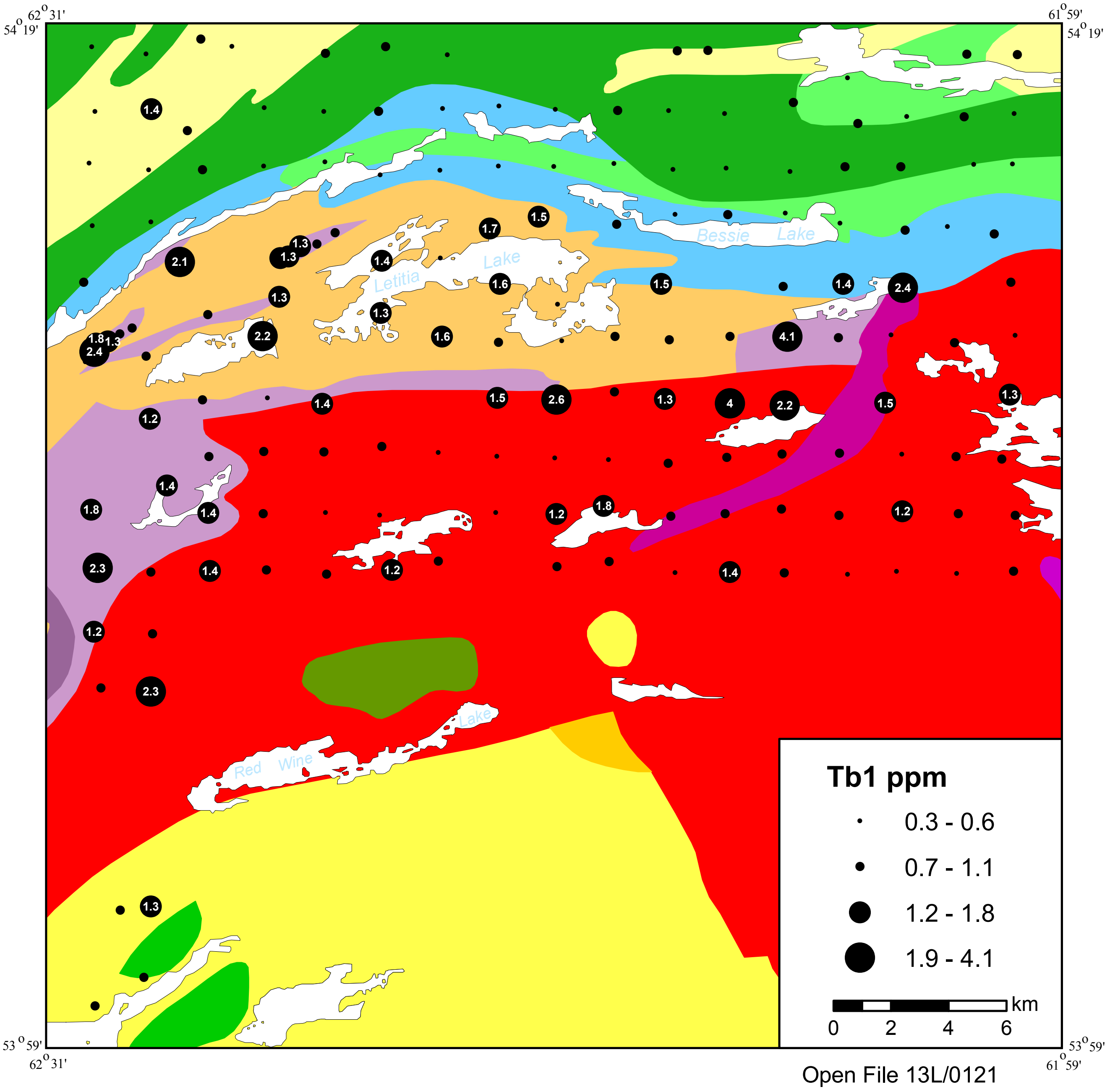


Figure 48. *Distribution of terbium in till.*

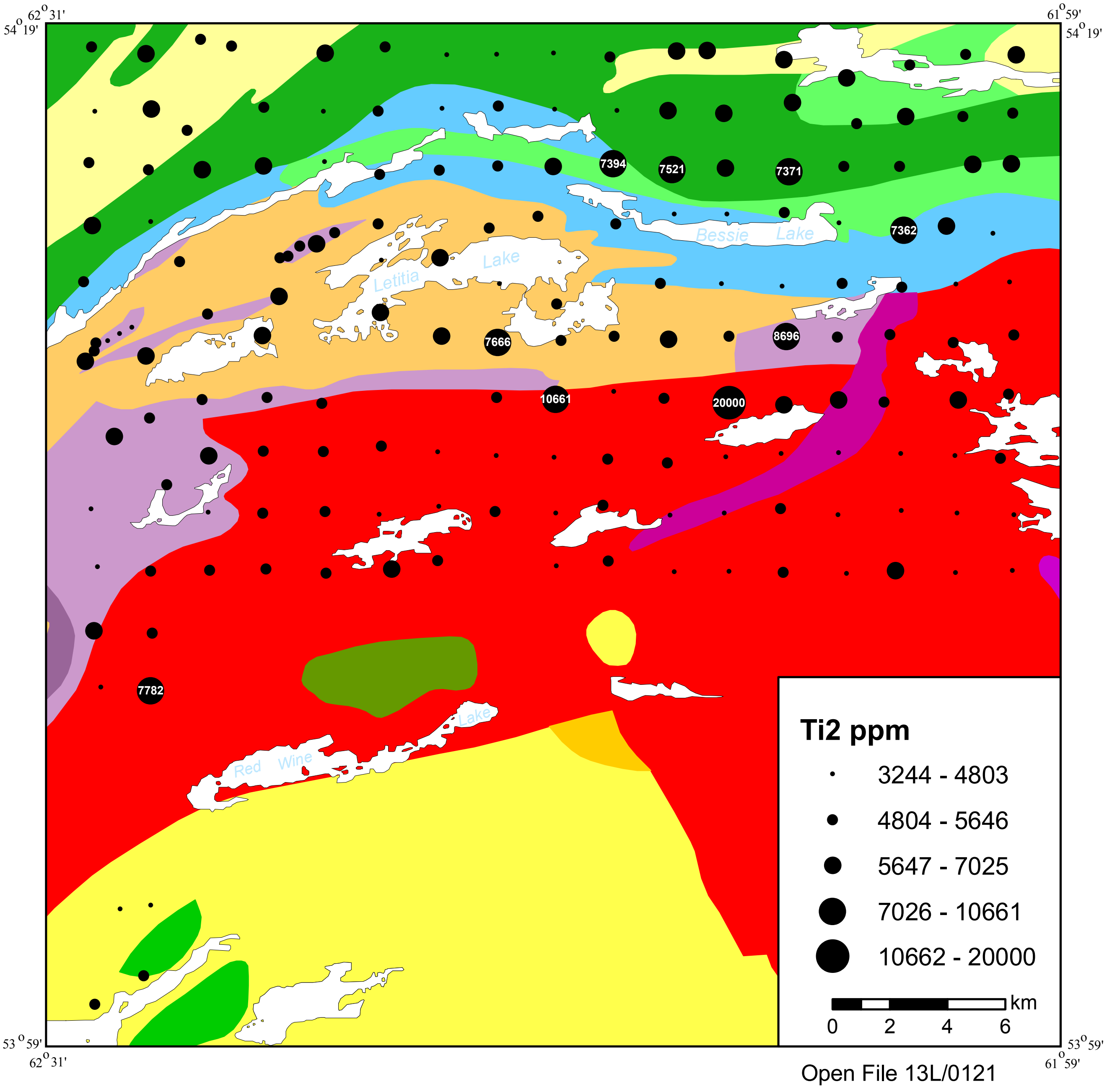


Figure 49. *Distribution of titanium in till.*

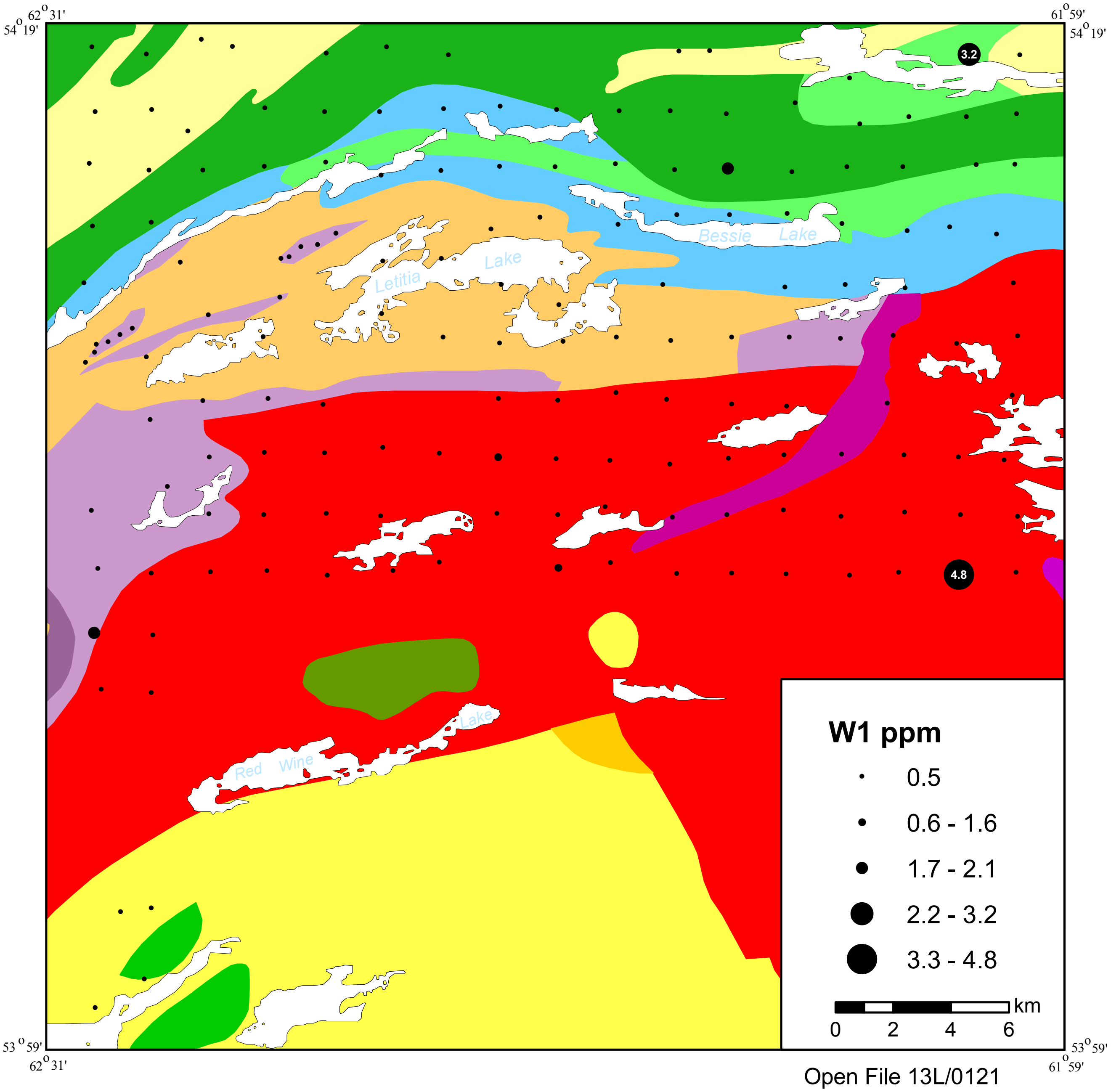


Figure 50. *Distribution of tungsten in till.*

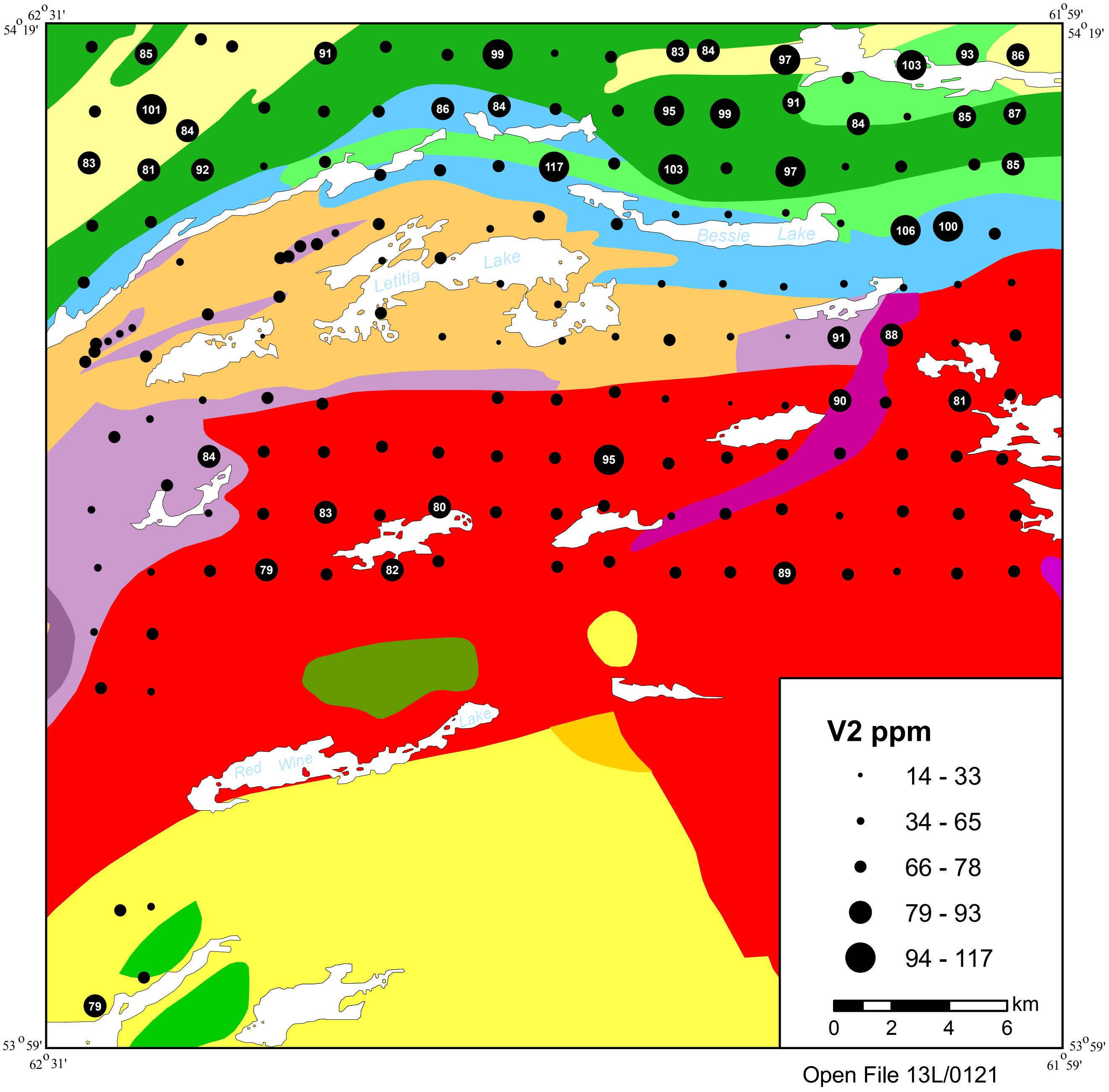
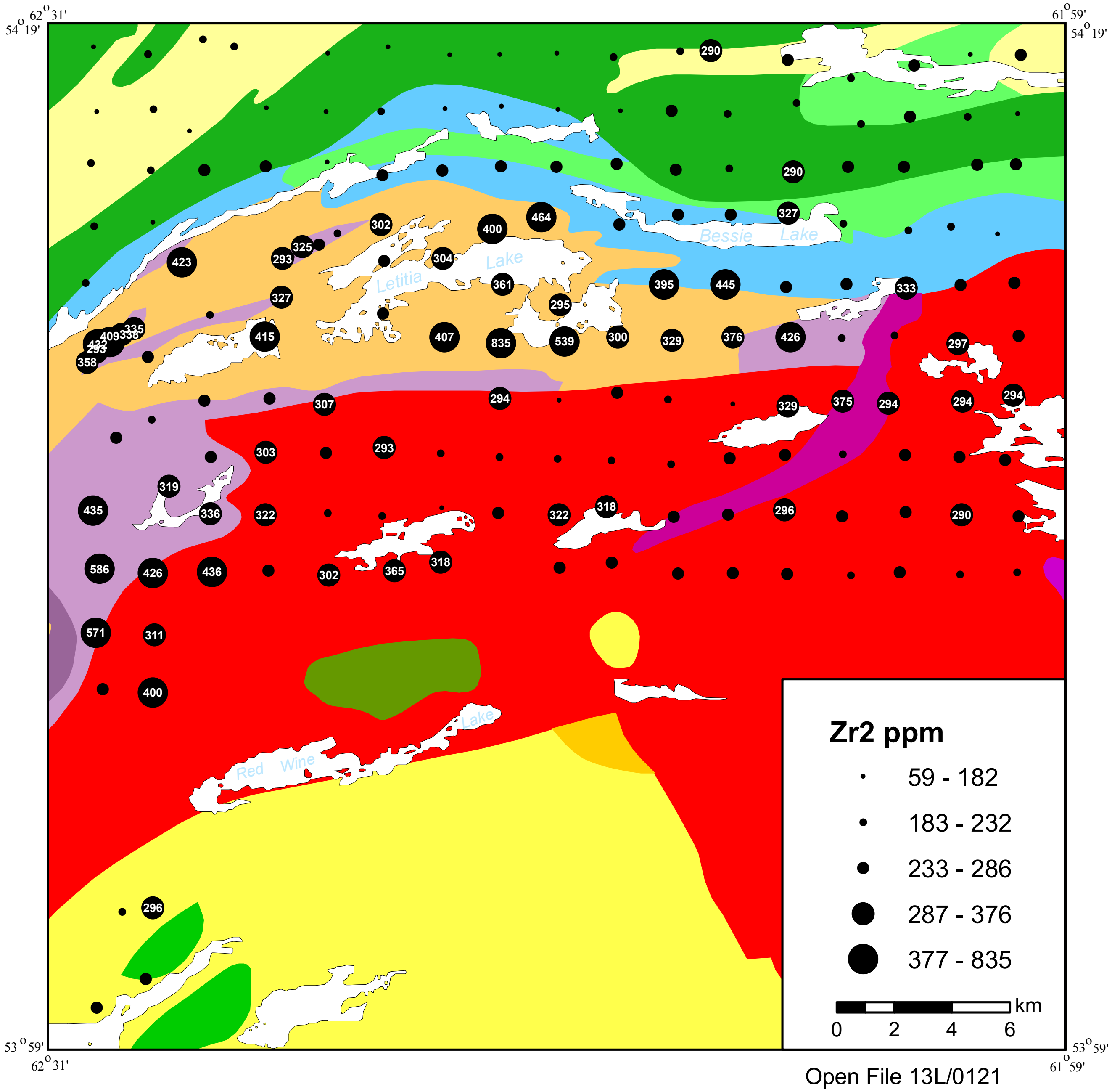


Figure 51. *Distribution of vanadium in till.*



Open File 13L/0121

Figure 52. *Distribution of zirconium in till.*