



Metal Levels in the Soils of the Sudbury Smelter Footprint

A Report To:

Safety, Health and Environment,
INCO Ltd., Ontario Division,
Copper Cliff, ON.
POM 1N0

and

Falconbridge Ltd.,
Sudbury Smelter Business Unit,
Falconbridge, ON.
POM 1S0

Submitted:
July 12, 2004



EXECUTIVE SUMMARY

Metals constitute a natural component of soils, with contents dependent on soil mineral composition and geochemical history. Man has added metals to soils through atmospheric deposition from industrial processes, or by fertilizing with manure and fertilizers in amounts that add more metal to the soil matrix than is removed by plant uptake. Localized, strongly enhanced metal concentrations have been created in surface soils by atmospheric deposition in the neighbourhood of metal extraction plants.

With the release of the OMOE report describing the distribution of metals in soil and vegetation in the Sudbury area in 2001, the need was recognized for an extensive statistically defensible regional soil sampling programme to enable accurate delineation of any metal loadings to the soils ecosystem from anthropogenic activities. The necessity of obtaining a reliable estimate of pre-industrial background levels in surficial sediments was paramount so that reasonable loading estimates to surface soils could be calculated.

This data is necessary to study the fate of, or to determine the environmental health risk posed by, metals added to soils by atmospheric deposition or by other sources. An understanding of the natural physicochemical processes in the soil-plant system that govern and regulate the behaviour of their natural metal content is also necessary in estimating the potential ecological or human health risk of anthropogenic metals in the Sudbury environment. Crucial in the development of the understanding of these processes is knowledge of the geological history, of the glacial history and of the soil mineralogical and background elemental composition.

The objectives of the study described in this report are to:

- Describe the planning and sampling program the Sudbury Regional Soil Sampling Programme;
- Document the background levels for selected metal concentrations in regional soil parent materials extracted with *Aqua Regia*; and
- Document the regional distribution of selected metal concentrations in defined depth increments for regional soil materials extracted with *Aqua Regia*.

This report describing the study consists of two main sections, namely:

- A detailed narrative report documenting a summary of the geology and soil chemistry, with a summary of the data obtained during this study, with overview maps describing the elemental distribution in both surface soils and their parent materials. The metadata describing the individual sampling sites, together with the analytical data for a series of elements of environmental interest are documented in two appendices;
- An interactive electronic map and database which combines all the meta- and chemical data in the written narrative in a friendly interactive form which can, by following simple installation instructions, be installed on any desktop computer data. This interactive database also contains images of all sites sampled for analysis in study.

ACKNOWLEDGEMENTS

Many people have contributed to the data collection for, and production of, this report. In particular we would like to acknowledge to following: Glen Watson, Bruce Conard, and Pat Thompson from INCO Ltd together with Marc Butler and Denis Kemp from Falconbridge Ltd., for their financial and moral support, their incredible patience and many interesting discussions. David Pearson and Graeme Spiers from Laurentian University guided the project from inception to completion. Field crews and laboratory assistants without whom this report could not have been started include: Caroline Hawson, Miriam Kaliomaki, Alan Lock, Duncan Quick, Chris Peloso, Francois Prevost, Ryan Post, Jacqueline Richard, Chantal Rosen, Paula Takats, Dana Willson. Special thanks go to Francois Prevost for data display and statistical analysis; Caroline Hawson for the literature review and quality control.

National Tilden and Day Aviation provided excellent field support. The Ontario Geological Survey provided base maps and data on Quaternary materials.

Acknowledgement is also given to personnel of the Ontario Ministry of the Environment, especially Brain McMahon and Rusty Moody. Personnel from Golders Associates, namely Sam Gauvreau and Natalie Boudreau, provided support and discussions during the sample design and sample collection phases. Without their collaboration approximately 25 per cent of the study region would not have been adequately and effectively sampled.

The principal author of this report is Graeme Spiers. Caroline Hawson, as well as completing the data quality control analyses, prepared the first draught of the review segments of the report. Francois Prevost completed much of the statistical analyses, the maps and the interactive display for Appendix III. Dr. David Pearson provided thoughtful insight in reviewing the report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
ACKNOWLEDGEMENTS	5
LIST OF TABLES.....	9
LIST OF FIGURES	11
SUDBURY REGIONAL SOILS PROJECT	14
INTRODUCTION	14
Industrial History	15
GEOLOGY OF THE SUDBURY AREA	16
Introduction	16
Geological Setting	16
PRECAMBRIAN GEOLOGY	16
QUATERNARY GEOLOGY	18
Ice Flow Direction	19
Till	20
Landforms.....	20
Sedimentary Deposits	20
PHYSIOGRAPHY OF THE SUDBURY AREA	22
Drainage	23
SOILS OF THE SUDBURY AREA	23
MINING AND SMELTING EMISSIONS.....	24
Metal Particulate Deposition	27
SOIL.....	28

MINERALOGY OF SUDBURY SOILS	29
Silicate Minerals	30
Clay Mineralogy	31
Organic Horizons	33
SOIL CHEMISTRY	34
Parent Materials	34
SUDBURY SOILS	37
REGIONAL SOIL STUDIES IN THE SUDBURY AREA.....	45
THE SUDBURY REGIONAL SOILS PROJECT.....	48
Regional Sampling Plan	48
SOIL SAMPLING PROTOCOL.....	50
Parent Material Sampling	53
Soil Profile Sampling	54
SOIL SAMPLE PREPARATION	54
SAMPLE ANALYSIS	55
Quality Program.....	56
NUMERICAL ANALYSIS TECHNIQUES	58
Cluster Analysis	59
Factor Analysis	59
DATA PRESENTATION	60
RESULTS.....	62
Metal Distribution in Soil Profiles	62
Metal Distribution in Regional Parent Materials	64
Regional Geochemical Maps.....	74
Metal Correlations in Regional Parent Materials.....	92
Metal Distribution in Regional Surface Soils	98
Soil Layer 0-5 cm	100
Soil Layer 5-10 cm.....	109

Soil Layer 10-20 cm.....	116
Regional Geochemical Maps for Surface Soils	124
Metal Correlations in Regional Surface Soil Layers.....	143
Metal Enrichment in Regional Soil Surface Layers.....	144
Zonation of Metal Enrichment in the Sudbury Smelter Footprint.....	146
RECOMMENDATIONS	149
Area Sampled.....	149
Clay Mineralogy	150
Chemical and Mineralogical Nature of Emissions	150
Solid Phase Speciation	151
Bioavailability and/or Bioaccessibility of Metals	151
REFERENCES	153

List of Tables

Table 1: Heavy metal and sulphur discharges for 2001 for Inco Limited and Falconbridge Limited.	16
Table 2: Distribution of major and trace elements in Canadian soil parent materials.	38
Table 3: MOE guidelines for the upper normal limit for metals in Ontario soils (from Heale, 1993).....	39
Table 4: Distribution of selected major and trace elements within the surface layers of selected soils at various distances from the Coniston smelter.	41
Table 5: Metal proportions in the various fractions from selected soils of the Sudbury region using the European Union extraction procedure.	42
Table 6: Distribution of selected major and trace elements within the surface layers of selected soils of the Coniston airshed. From Dudka <i>et al.</i> , (1995).	45
Table 7: Distribution of selected major and trace elements within the solum for a pedon equidistant from the Copper Cliff and Coniston smelters. The EMMA data provide total concentrations of the analyte elements within the soil samples.....	57
Table 8: Distribution of Aqua Regia extractable levels of 19 major and trace elements in parent materials ▲ of the Sudbury Smelter footprint region.	66
Table 9: Pearson Correlation for the Aqua Regia extracted metals for all samples from parent materials sampled within the study region (n = 255 samples).....	93
Table 10: Principle component analysis describing the relationship between the compositional chemistry of Aqua Regia extracted metal(loid)s in the soil parent materials of the soils of the Sudbury smelter footprint.	95
Table 11: Varimax rotated loading matrix for Aqua Regia extracted metal(loid)s in the soil parent materials of the soils of the Sudbury smelter footprint.....	96
Table 12: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 0 to 5 cm depth of soils within the Sudbury area.	99
Table 13: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 5 to 10 cm depth of soils within the Sudbury area.....	99
Table 14: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 10 to 20 cm depth of soils within the Sudbury area.....	100

Table 15: Pearson Correlation for the Aqua Regia extracted metal(loid)s for all samples from the 0 to 5 cm layer within the study region (n = 387 samples). 144

Table 16: Mean concentration of Aqua Regia extractable metal(oids) from the individual layers of all sites sampled in the Sudbury region, along with calculated enrichment factors for the surface (0 - 5 cm) layer calculated using aluminium as an immobile element. 146

Table 17: Mean concentration of metal(loid)s in the 0 to 5 cm layer of sampled soils within concentric zones around the Sudbury smelter region. The centre of the circular zones is at the centroid of the three smelters in the region..... 149

List of Figures

Figure 1: Regional geology of the Sudbury area.	17
Figure 2: Quaternary geology of the Sudbury region.	19
Figure 3: Sampling program for the regional soil study, with sampling exclusion zones delineated.....	49
Figure 4: Photograph of vegetation at a representative soil sampling site.....	51
Figure 5: Typical soil sample in the Sudbury area.....	52
Figure 6: Diagram illustrating the variability of horizons, horizon boundaries in undisturbed soils at forested sites. Coloured boxes indicate the difficulty in obtaining homogeneous samples of any one layer unless sampling is completed on a horizon basis.	53
Figure 7: Collection of a soil parent material sample with Dutch augur.	54
Figure 8: Typical Podzolic pedon developed under mixed birch and coniferous vegetation in the Sudbury region.	55
Figure 9: Examples of weathered aerosolic particles retained in the LFH horizons of a forested soil from the Sudbury region.	63
Figure 10: Distribution of aluminium in the soil parent materials of the Sudbury Region.	75
Figure 11: Distribution of arsenic in the soil parent materials of the Sudbury Region.	76
Figure 12: Distribution of barium in the soil parent materials of the Sudbury Region.	77
Figure 13: Distribution of beryllium in the soil parent materials of the Sudbury Region.....	78
Figure 14: Distribution of calcium in the soil parent materials of the Sudbury Region.....	79
Figure 15: Distribution of cobalt in the soil parent materials of the Sudbury Region.	80
Figure 16: Distribution of chromium in the soil parent materials of the Sudbury Region.	81
Figure 17: Distribution of copper in the soil parent materials of the Sudbury Region.	82
Figure 18: Distribution of iron in the soil parent materials of the Sudbury Region.....	83
Figure 19: Distribution of molybdenum in the soil parent materials of the Sudbury Region.	84
Figure 20: Distribution of magnesium in the soil parent materials of the Sudbury Region.	85
Figure 21: Distribution of manganese in the soil parent materials of the Sudbury Region.....	86

Figure 22: Distribution of nickel in the soil parent materials of the Sudbury Region.	87
Figure 23: Distribution of lead in the soil parent materials of the Sudbury Region.	88
Figure 24: Distribution of selenium in the soil parent materials of the Sudbury Region.	89
Figure 25: Distribution of strontium in the soil parent materials of the Sudbury Region.	90
Figure 26: Distribution of vanadium in the soil parent materials of the Sudbury Region.	91
Figure 27: Distribution of zinc in the soil parent materials of the Sudbury Region.	92
Figure 28: Distribution of aluminium in the 0-5 cm layer of soils of the Sudbury Region.	125
Figure 29: Distribution of arsenic in the 0-5 cm layer of soils of the Sudbury Region.	126
Figure 30: Distribution of barium in the 0-5 cm layer of soils of the Sudbury Region.	127
Figure 31: Distribution of beryllium in the 0-5 cm layer of soils of the Sudbury Region.	128
Figure 32: Distribution of calcium in the 0-5 cm layer of soils of the Sudbury Region.	129
Figure 33: Distribution of cadmium in the 0-5 cm layer of soils of the Sudbury Region.	130
Figure 34: Distribution of cobalt in the 0-5 cm layer of soils of the Sudbury Region.	131
Figure 35: Distribution of chromium in the 0-5 cm layer of soils of the Sudbury Region.	132
Figure 36: Distribution of copper in the 0-5 cm layer of soils of the Sudbury Region.	133
Figure 37: Distribution of iron in the 0-5 cm layer of soils of the Sudbury Region.	134
Figure 38: Distribution of magnesium in the 0-5 cm layer of soils of the Sudbury Region.	135
Figure 39: Distribution of manganese in the 0-5 cm layer of soils of the Sudbury Region.	136
Figure 40: Distribution of molybdenum in the 0-5 cm layer of soils of the Sudbury Region. ..	137
Figure 41: Distribution of lead in the 0-5 cm layer of soils of the Sudbury Region.	138
Figure 42: Distribution of nickel in the 0-5 cm layer of soils of the Sudbury Region.	139
Figure 43: Distribution of selenium in the 0-5 cm layer of soils of the Sudbury Region.	140
Figure 44: Distribution of strontium in the 0-5 cm layer of soils of the Sudbury Region.	141
Figure 45: Distribution of vanadium in the 0-5 cm layer of soils of the Sudbury Region.	142
Figure 46: Distribution of zinc in the 0-5 cm layer of soils of the Sudbury Region.	143

Figure 47: Graphs illustrating the concentrations of the individual anthropogenic metal(loid)s along a gradient from the smelter zone centroid indicate the impact of the smelter tends towards regional background approximately 120km from the heart of the Sudbury metallurgical region. 148

Sudbury Regional Soils Project

INTRODUCTION

Metals constitute a natural component of soils, with concentrations dependent on soil mineral composition and geochemical history. Man has added metals to soils through atmospheric deposition from industrial processes, or by fertilizing with manure and fertilizers in amounts that add more metal to the soil matrix than is removed by plant uptake. Localized, strongly enhanced metal concentrations have been created in surface soils by atmospheric deposition in the neighbourhood of metal extraction facilities. Soils, more than any other sampling medium, reflect the total historical metal accumulation from the point source, but modified to varying degrees by soil forming processes and erosion.

The metals originating from anthropogenic sources in a soil do not behave differently from the natural metal ions present. Therefore, to study the fate of, or to determine the environmental health risk posed by, metals added to soils by atmospheric deposition or by other sources, an understanding of the natural physicochemical processes in the soil-plant system that govern and regulate the behaviour of their natural metal content is necessary. Crucial in the development of the understanding of these processes is knowledge of the geological history, of the glacial history and of the soil mineralogical and background elemental composition.

In Sudbury, home of one of the world's largest copper–nickel mining camps, the mining and processing of mineral deposits for over a century has raised concern about the potentially high levels of heavy metals in the soil environment. Identification of chemical contamination of Sudbury soils thus requires an understanding of the natural processes involved in the formation of the regional soils, of the inherent heavy metal content of underlying rock units, of the potential increased metal content of surficial materials through mineralizing processes. The anthropogenic processes, such as mining and smelting, have released metal-rich aerosols that have been washed from the atmosphere by meteorological events to be deposited on the landscape surface. Locally, leaching of heavy metals from rock piles and tailings ponds, together with fugitive emissions from ground sources and smelter sites, may prove significant.

The Sudbury Regional Soils Project is a sampling, analytical and interpretative program designed to provide detailed information describing metal levels in parent materials and soils within the footprint of the Sudbury smelter region as a pre-requisite to the initiation and development of one of the largest and comprehensive ecological and human risk assessment projects ever completed on this sensitive planet.

Industrial History

The first industry in the Sudbury area developed around the rich forests (Gunn, 1995). After the great fire of Chicago in 1871, Sudbury area lumber helped rebuild the city. The transcontinental railway development also put demands on the local forests because of the need for railway ties and trestles. Denudation of the forests resulted in the faster spread of man made and natural fires. Lumbering remained dominant until the 1920s (Winterhalder, 1995). A major consequence of the increased acreage being felled was an increase in regional soil erosion, especially on the shallow soils of the steeper slopes.

The first Cu-Ni discovery was made in 1856 (Murray, 1857). The Canadian Copper Company commenced production at Copper Cliff in 1886 at the Murray Mine, discovered in 1883. Heap roasting began the same year. Although several companies have been involved in the development of the Sudbury mining camp, there are now only two producers, Falconbridge Limited and INCO Limited. Peak production occurred in 1974 when 209,000 tonnes of nickel were produced, decreasing to 128,558 tonnes of nickel (21% of the world's nickel production) in 1988. In 2000 Sudbury operations for the two companies produced 113,945 tonnes nickel and 301,987 tonnes copper (MNDM Information and Marketing Services Section, unpublished data, 2002).

Smelter emissions from Sudbury area smelters have decreased dramatically from their maximum in the late 1960s. In 1995 total SO₂ emitted from the INCO and Falconbridge smelters was 281,000 tonnes; the Residual Discharge Information System (Environment Canada, unpublished data, 1995) places the total of suspended particulate matter discharged to the atmosphere for the INCO Copper Cliff smelter at 7050 tonnes per year and for the Falconbridge smelter 1180 tonnes per year (Table 1). The data in Table 1 are from National Pollution Release Inventory 2002 (Environment Canada, unpublished data, 2002).

Table 1: Heavy metal and sulphur discharges for 2001 for Inco Limited and Falconbridge Limited.

Location	Cu	Zn	Ni	Pb	Cd	As	H ₂ SO ₄	H ₂ S
	tonnes							
Inco Central Mills	37.76	3.84	195.80	0.91	0.36	0.12	27.26	--
Copper Cliff Nickel Refinery	5.98	--	12.42	6.68	--	3.94	--	--
Copper Cliff Smelter Complex	109.64	18.96	64.19	63.40	4.84	52.91	1271.08	--
Inco Copper Refinery	43.42	1.20	0.50	2.92	0.05	2.54	0.99	--
Falconbridge Smelter	10.66	5.32	11081	6.24	1.70	0.27	24.87	21.20

NB: Data from National Pollution Release Inventory 2002 (Environment Canada, unpublished data, 2002).

GEOLOGY OF THE SUDBURY AREA

Introduction

This overview places Sudbury soils into a regional geological context. The geology and chemistry of the bedrock, the Quaternary history, and especially the provenance, transportation and metal chemistry of the glacial units are summarized. These processes influence soil chemistry and generate the normal background levels of individual elements. Knowledge of this background data enables a review of the chemical composition of the soils to ascertain the presence and level of anthropogenic contamination. A synopsis of previous soil regional published and unpublished soil studies, with an emphasis on limitations of the analytical methods used, is presented. Limited analytical data for vegetation and dustfall-rainfall-snowfall processes is also reviewed.

Geological Setting

PRECAMBRIAN GEOLOGY

The Sudbury Structure (Figure 1) is an elliptical unit produced by a meteorite colliding with the southern part of the Superior Province at 1.85 Ga. The impact melted rocks to form the world's largest impact-related melt sheet. The melt sheet of Sudbury Igneous Complex is composed, from base to top, of norite, quartz gabbro and granophyre. Above the Sudbury Igneous Complex is the Whitewater Group composed from base to top of the Onaping, Onwatin and Chelmsford formations. The Onaping Formation is a series of fallback breccias

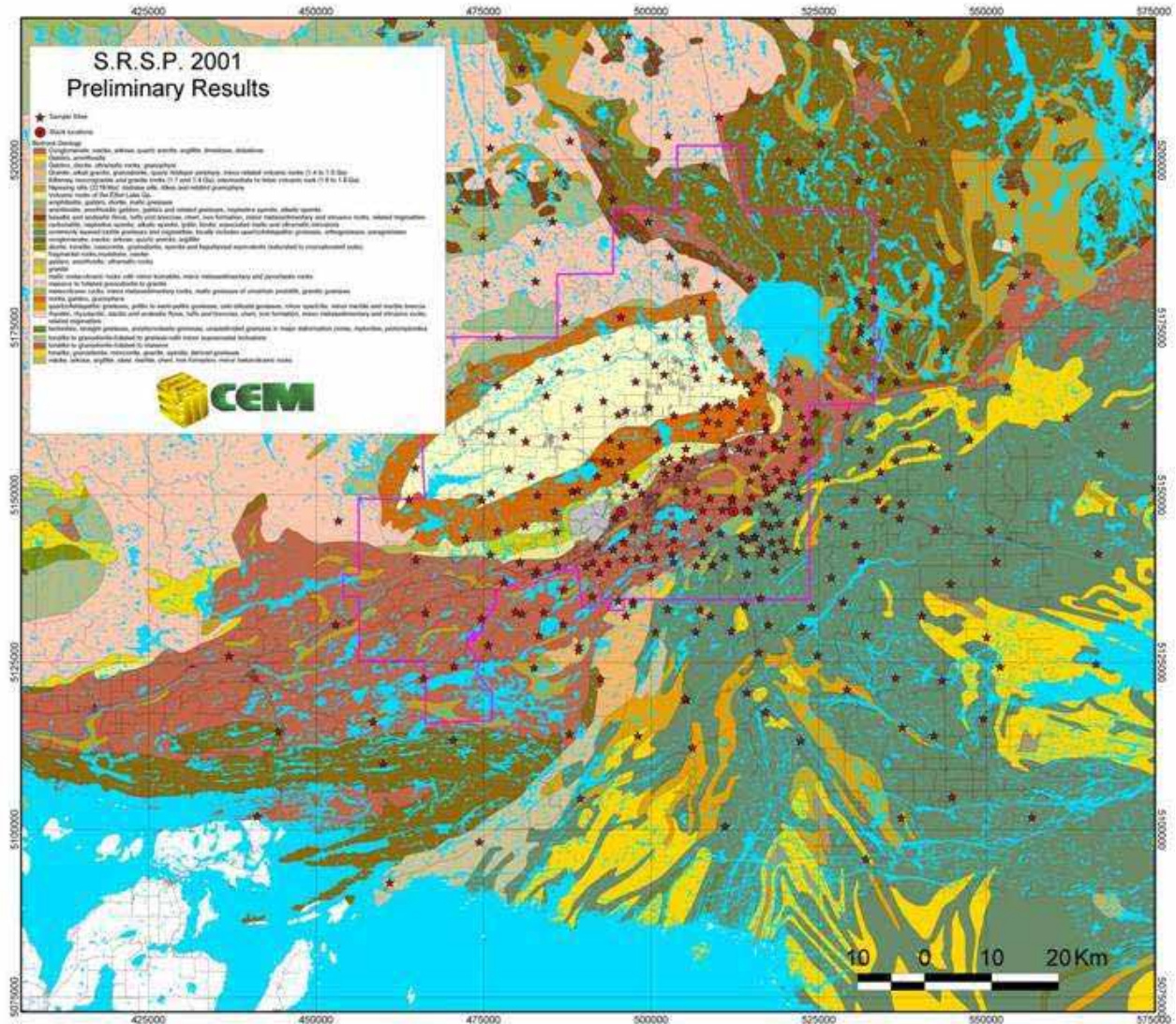


Figure 1: Regional geology of the Sudbury area.

overlain by Chelmsford and Onwatin formations. The Onaping Formation represents impact-related volcanism.

Two major, cross cutting types of breccia are present 1) Sudbury Breccia and 2) Footwall Breccia. Sudbury Breccia is a heterolithic breccia forming bodies from several metres to kilometres in size that cross cut all pre-impact units up to 80 km from the Sudbury Igneous Complex. Footwall Breccia occurs along the contact between the Sudbury Igneous Complex and country rocks and in both radial and concentric “offset dikes”. This latter breccia unit consists of quartz diorite and various other Sudbury Igneous rock types and is host to most of

the Sudbury ore bodies, both where it is subjacent to the Sudbury Igneous Complex and in “offset dikes”. As host to the ore deposits, its mineralogy and geochemistry are important in discriminating between anthropogenic contamination and influences of bedrock in the geochemistry of soils. Note an endogenic origin has also been proposed for the origin of the Sudbury Igneous Complex (Muir, 1984). The Sudbury Igneous Complex has been divided into the Main Mass (norite, quartz gabbro, and granophyre) and Sublayer (Contact Sublayer and Offset Sublayer) (Dressler *et al.*, 1991). Mineralization of importance occurs in the sublayer and the offset dikes.

QUATERNARY GEOLOGY

Quaternary and minor Holocene deposits form the soil parent material of the Sudbury region (Figure 2). An understanding of these deposits is therefore important in any interpretation of soil geochemistry. Quaternary deposits and features preserved within the Sudbury area are almost certainly Wisconsinan. Tills found in the area likely correlate to the Adam Till of the Hudson Bay Lowland (Skinner, 1973) and the Matheson Till of the Timmins and Kirkland Lake areas (Hughes, 1959, 1965). No nonglacial sediments attributed to the last interglacial period occur in the Sudbury area (Barnett and Bajc, 2002).

The Laurentide Ice Sheet covered Ontario, extending into the northern United States of America about 20,000 years ago. This ice sheet had three main centres of growth: 1) the interior uplands of Labrador and Quebec, 2) the Keewatin area in the Northwest Territories and 3) Baffin Island. Ice of the Labrador Sector covered the Sudbury area and generally flowed to the south-southwest (Boissoneau, 1968). Boissoneau (1968) describes an eastern lobe that flowed southwest and a western lobe that flowed more southerly both meeting near Sudbury.

During deglaciation, glacial lakes formed against the receding ice margin within the Great Lakes Basin. Glacial Lake Algonquin occupied the Lake Huron, Lake Michigan and part of the Lake Superior basins including the Sudbury area (Barnett and Bajc, 2002). Deglaciation of the Sudbury area occurred 10,500 to 10,000 years ago. There is much evidence of the glaciation, ranging from striae on bedrock to kilometre-scale roche moutonnées and

whalebacks, to large erratic, far-travelled boulders littering the surface and many stony soils, attesting to the presence of continental glaciers.

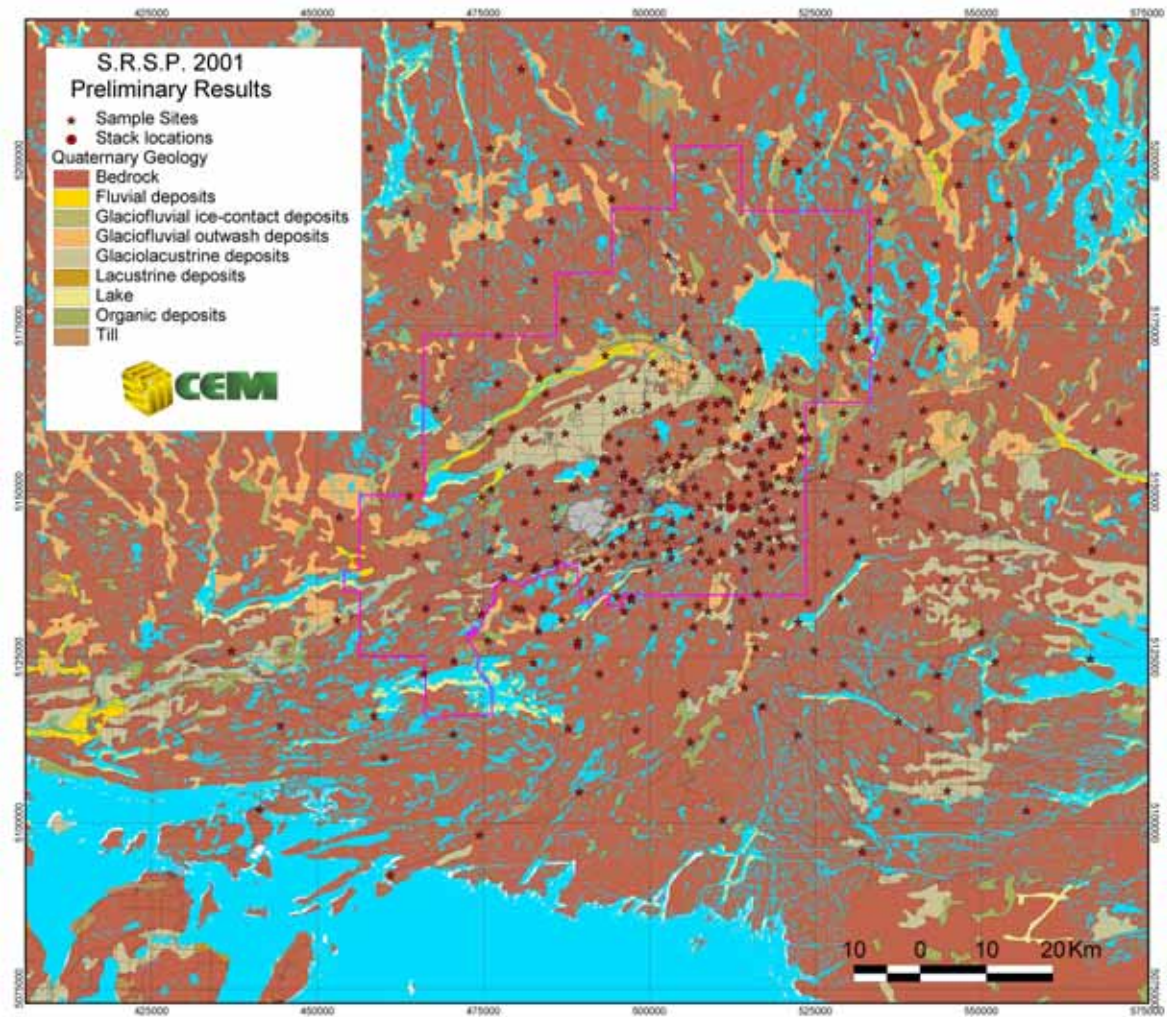


Figure 2: Quaternary geology of the Sudbury region.

Ice Flow Direction

Ice-flow directional indicators define an ice-flow pattern that was strongly influenced by regional topography. Ice-flow across the Abitibi Uplands and the north edge of the Sudbury Basin was north to south (170° to 210°). Within the Valley, a shift in flow was recorded at between 220° and 245° . South of the Sudbury Basin, ice flowed at 205° to 225° . Evidence of an earlier ice flow event is recorded along the north rim; however, the magnitude of glacial dispersal associated with this older event is not known (Barnett and Bajc, 2002).

Till

Till is “sediment deposited directly by a glacier with little or no subsequent reworking” (Dreimanis, 1988). There are two main types of till 1) subglacial till deposited by lodgement and melt-out processes and 2) supraglacial tills deposited by flow from the upper surface of glaciers. Debris within the glacier can move between the various transport zones (Barnett, 1992). Tills are poorly sorted, sheet-like deposits that contain clay to boulder sized particles. Till appears massive but may contain discontinuous lenses or layers of stratified sediment.

Landforms

Landforms created by a continental ice sheet influence pedological development. Landforms include: 1) linear features parallel to flow, 2) linear features transverse to flow and 3) features lacking consistent orientation. Linear features formed parallel to ice-flow include drumlins, crag-and-tail features and interlobate moraines. Linear features that form transverse to ice flow include Rogen and de Geer moraines. Landforms lacking in orientation are ground moraine and hummocky ground moraine (Barnett, 1992) are common in the Sudbury region.

Sedimentary Deposits

Sediments deposited from glacial meltwater streams form glaciofluvial sediments, which are sorted, stratified gravel and/or sand. As a result of being deposited in contact with the glacier, abrupt changes in grain size and stratification occur vertically and laterally. Glaciofluvial outwash deposits are generally more consistent laterally and tend to become finer grained in a down-flow direction (Barnett and Bajc, 2002). Glaciolacustrine deposits are commonly stratified sediments deposited directly from the glacier into a standing body of water. Coarse-grained glaciolacustrine sediments of sand and gravel form beaches, deltas and subaqueous fans. Fine-grained glaciolacustrine sediments, silt and clay, are deposited in deeper water basinal settings. The dominant depositional environments for glacial sediments in the Sudbury area are: the subglacial environment, the proglacial lake, and braided streams.

There are many erosional features on the bedrock of the Sudbury area; these were produced by abrasion due to the dragging of glacial debris at the base of a glacier and/or by plucking as a result of pressure gradients. Subglacial meltwater also modified the bedrock surface by

aiding the plucking process and sculpting the bedrock surface leaving a suite of elaborate erosional forms.

Till forms the most widespread glacial sediment in the Sudbury area, forming a thin discontinuous layer above bedrock (<1 m thick), with thicker accumulations along the slopes of bed rock knolls and ridges. In some areas, such as along the west shore of Lake Wahnapiatae, there is extensive continuous till masking the bedrock.

Transportation, depositional history, and postdepositional weathering processes all influence the appearance of till. Glacial debris transported subglacially contains striated and faceted clasts. Debris transported englacially or supraglacially tends to be more angular and striated clasts are rare. The process of deposition, for example, lodgement, subsole-deformation, melt-out or flow processes will also influence the appearance of till. Bedrock type, either immediately beneath or up-ice, influences the overall appearance and chemistry of the till. Local topography affects the depositional setting and postdepositional processes affect the colour, texture and structure of the till. There have been three distinct till facies identified in the Sudbury area (Bajc and Hall, 2000): subglacially deposited till forming ground moraine, ice-marginal flow till forming recessional moraine, and supraglacial meltout till forming hummocky terrain.

The properties of these tills were described from shallow test pits, road cuts and exploration trenches. At shallow depths, the tills are generally loose and exhibit an orangey-brown to brownish-grey colour. Typically, Sudbury area tills contain less than 1% total carbonate, (Bajc personal communication, 2002) suggesting that till provenance is several tens of kilometres to the north, but not as far north as the Hudson Bay Lowlands or the Cobalt Embayment. The subglacially deposited till varies widely across the region, reflecting the diversity of source materials. Tills from areas dominated by coarse crystalline rocks (e.g., Sudbury Igneous Complex, Levack gneiss) have, in general, a sand-rich matrix and contain a high proportion of boulders, cobbles and pebbles. Tills from regions underlain by the Huronian metasedimentary rocks generally have a finer grained matrix, with a lower proportion of boulders, cobbles and pebbles (Bajc and Hall, 2000).

Although glacial deposits are generally thin and discontinuous within the Sudbury Basin (Barnett and Bajc, 2002), isolated areas with thicknesses of 120 m are reported (Burwasser, 1979). In the rock dominated Abitibi Uplands, Penokean Hills and the Cobalt Plain, Quaternary sediments are thin (<1 m), except along valley bottoms where thicknesses of over 60 m have been reported in water well records.

PHYSIOGRAPHY OF THE SUDBURY AREA

The Sudbury area includes parts of the Abitibi Uplands, Penokean Hills and Cobalt Plain of the James Physiographic Region and a small part of the Laurentian Highlands within the Laurentian Physiographic Region (Barnett and Bajc, 2002). The Abitibi Uplands north of Sudbury are underlain by Archean crystalline rocks and comprise broad, rolling, bedrock-controlled surfaces rising gently towards the Abitibi Uplands southern boundary to a maximum elevation of 450 m. Locally, relief may be as much as 90 m along deeply incised canyons (Dredge and Cowan 1989). The Penokean Hills southwest of Sudbury comprise the folded metasedimentary rocks of the Huronian Supergroup with quartzite ridges reaching elevations of 240–300 m above sea level. Locally, relief may be as much as 100 m (Dredge and Cowan, 1989). The Cobalt Plain, northeast of Sudbury, is underlain by nearly flat lying clastic metasedimentary rocks with some ridges and hills formed by gabbro sills (Nipissing gabbro) or older Archean rocks forming inliers (Dredge and Cowan, 1989). The Laurentian Highlands is an old erosion surface consisting of low, rounded knobs and ridges, locally, relief may be as much as 30 to 50 m. Elevation of this area is up to 300 m (Barnett and Bajc, 2002).

The Sudbury Basin consists of an oval central low, the “Valley”, rimmed by a zone of high relief ridges to the north, east and south. The rocks of the Sudbury Igneous Complex and the Onaping Formation form these ridges. The Valley floor is dominantly Quaternary glaciolacustrine, glaciofluvial and fluvial sediments. Rocks of the Chelmsford and Onwatin formations underlie these Quaternary sediments. Rocks of the Onaping Formation can be found at the northeastern end of the basin underlying the Quaternary sediments. The Valley is a plain exhibiting low relief interrupted by bedrock ridges caused by the broad folding of the Chelmsford Formation. The plain slopes to the southwest with a drop in elevation of

about 40 m over 39 km (Barnett and Bajc, 2002). Local relief in the Valley is about 15 m and in places as much as 30 m. Some bedrock ridges reach 320 m above sea level

Drainage

The Sudbury area is drained southward by rivers and streams that flow into Georgian Bay (Pearson *et al.*, 2002). Most of the region is drained by the Spanish River in the west; the French River in the east drains a small part of the region. The river courses are largely bedrock controlled, although the Vermillion River where it cuts unconsolidated sediments of the Sudbury Basin has well developed meander patterns. Surface drainage influences transportation of glacial material and contaminated materials from tailings ponds, ore heaps and other industrial sites. Pearson *et al.*, (2002) have produced a watershed map of the region from which it is possible to deduce the probable path of any surface runoff.

SOILS OF THE SUDBURY AREA

The characteristics of soil are greatly influenced by the nature of the parent material, together weathering and erosion processes. The soil mineralogical and chemical composition in the Sudbury area will, therefore, reflect the bedrock geology of the region, the up-ice geology, the organic input from the flora and fauna of the region, and exogenous materials such as particulate matter from both long and short-range transport processes. Sudbury area soils belong to five orders of the Canadian Soil Classification System (Agriculture Canada Expert Committee on Soil Survey, 1987): Luvisolic, Gleysolic, Podzolic, Brunisolic, and Organic (Gillespie *et al.*, 1983).

Luvisolic soils occur on calcareous or high base status soil parent materials. They have light coloured eluvial horizons and an illuvial B-horizon in which silicate clay has accumulated. Luvisols develop in well to imperfectly drained sites on sandy loam to clay textured parent materials under forest vegetation. Luvisols of the Sudbury area belong to the Gray Luvisol Great Group, due primarily to the effect of climate and parent material on soil development. These soils have developed on glaciolacustrine sediments.

Gleysols are poorly drained and their profile is indicative of long periods of water saturation and reducing conditions. Two groups of Gleysols are described in this area 1)

Humic Gleysols with a high base status and a thick organic rich Ah horizon underlain by a gleyed mottled Bg or Cg horizon; 2) Gleysol Great Group developed on mineral soils of low base status. The Ahg horizon is either absent or less than 10 cm thick. These soils have commonly developed on glaciolacustrine, glaciofluvial or fluvial sediments.

Podzols occur in coarse to medium textured low-base parent materials under forest or heath vegetation in cool to very cold humid to perhumid climates. Podzolic soils can also develop in strongly leached calcareous materials.

Brunisols exhibit a lack of horizon development compared to the other soils groups. The two Brunisols mapped in the Sudbury area are Melanic Brunisols and Sombric Brunisols. Melanic Brunisols have a high base status and develop on calcareous parent materials, whereas Sombric Brunisols have a relatively low base saturation. These soils commonly form on coarser textured morainal and outwash parent materials

Organic soils have developed from organic deposits of mosses, reeds, or woody vegetation. The three groups recognized in the area are Fibrisol, Mesisol and Humisol depending on the degree of decomposition of the organic material. Organic soils are commonly found in enclosed basins, or on the margins of lake basins.

As the focus of this study was on well to imperfectly drained soils developed on the regional glaciogenic sediments, the organic or wetland soils were not sampled in this study. However, as the ombrotrophic peat soils are only fed by atmospheric sources, these organic soils are excellent archives of historical aerosolic inputs (Shotyk *et al.*, 2000, 2001, 2002; Zoltai, 1988) that must be critically sampled and studied to enable currently non-available emissions histories to be reconstructed.

MINING AND SMELTING EMISSIONS

Sudbury has been home to mining, smelting and refining of nickel-copper ores since the late nineteenth century. The early methods of refining included the use of roast beds, and later, roast yards. Layering sulphide ore with locally cut timber that was then ignited to heat the ore until the sulphide minerals ignited formed the roast beds. The resultant nickel and copper concentrates were gathered for further refining (Winterhalder, 1995). The roasting process

generated dense plumes of smoke, including sulphur dioxide (Freedman and Hutchinson, 1980). Thus the local forests were denuded by felling for use as fuel and for construction of the railway, and also by the noxious gases emanating from the roast beds. Rapid, severe erosion of the barren soils ensued, resulting in exposure of the bedrock that has, in turn, been subject to intense acid weathering.

Estimates suggest that as much as 2.7×10^5 tonnes of SO_2 were emitted annually, together with many tonnes of heavy metal particulates (Holloway, 1917), at the peak of the ore roast yard era between about 1895 and 1928. In 1928 the use of open roast beds was forbidden by an order from the Ontario Legislature. The open roast beds were supplemented with more efficient smelter facilities with smoke stacks. The three smelters in the Sudbury region were located at Copper Cliff, Coniston and Falconbridge. In the mid 1970s, Ni and Cu emissions from the three smelters were estimated at 1100 tonnes per year (Cox and Hutchinson, 1981). The Coniston Smelter was decommissioned in 1972 when the “Super Stack” (381 m) was brought on line at INCO Limited’s Copper Cliff smelter. Today all smelting in the region is carried out at the Copper Cliff (INCO Limited) or Falconbridge (Falconbridge Limited) smelter. The INCO stack emitted 1.1×10^6 tonnes of SO_2 and 1.2×10^6 tonnes in 1977 (Freedman and Hutchinson, 1980). This represented a reduction from the 2.5×10^6 tonnes reported in 1970. Emissions from the Falconbridge smelter totaled approximately 2.0×10^5 tonnes in 1977, about 17% of the Copper Cliff total (Freedman and Hutchinson, 1980). In 1976 Total Canadian SO_2 emissions were 6.0×10^6 tonnes (Air Pollution Control Directorate, 1976), with emissions from the Sudbury area representing about 25% of the national inventory.

In addition to sulphur-rich emissions, large quantities of metal-containing particulate materials are vented through the stacks. In 1976 and 1977 emissions from the Copper Cliff stack amounted to 1.0×10^4 tonnes, a reduction from the total INCO emissions of 3.4×10^4 tonnes in 1970 (Freedman and Hutchinson, 1980). The particulate material emitted primarily comprises of iron oxides, with significant amounts of nickel and copper emissions. The majority of the particulates sampled were less than $7 \mu\text{m}$ as the Cotrell dust collectors in use at the Copper Cliff smelter did not efficiently trap these small particles (Freedman and Hutchinson, 1980). Total Canadian emissions for all particulates in 1972 were 2.12×10^6

tonnes with 1.42×10^6 tonnes originating from industrial processes (Air Pollution Control Directorate, 1976). Thus, particulate emissions from the Copper Cliff smelter complex account for approximately 0.5% of the total Canadian emissions from all sources.

Smelter emissions from the Sudbury area smelters have decreased over the years. In 1995 total SO₂ emitted from the INCO Copper Cliff and the Falconbridge smelters totaled 281,000 tonnes per year. Annual metal emissions, in 1995, were approximately; 140 tonnes Cu, 10 tonnes Zn, 87 tonnes Ni, 52 tonnes Pb, 10 tonnes Cd, and 48 tonnes As (Air Pollution Control Directorate, 1976). The Residual Discharge Information System (Ministry of Environment, unpublished data, 1995) places the annual total of suspended particulate matter emitted to the atmosphere for the Copper Cliff smelter at 7050 tonnes and for the Falconbridge smelter 1180 tonnes. The 2001 data for the INCO and Falconbridge operations in Sudbury are presented in Table 1.

The amount of trace elements released during smelter operations is a function several factors. These factors include the mineralogy of the ores being processed, the tonnage processed, the temperature of the smelting process, with the more volatile elements (e.g., As, Cd, Hg, Pb, Sb, Se, Tl, Zn) emitted at lower temperatures than the less volatile elements (e.g., Cu, Fe, Mn, Ni), and the efficiency of the emission control equipment at the facility (e.g., multi-cyclones, electrostatic precipitators or bag houses).

Although there is limited data on the size of particles released, the particulate matter released by the INCO smelter is dominantly fine grained (80% by mass) with particles <3 µm, and particles from fugitive emissions (dust from roads, wind erosion of exposed surfaces, releases from material handling and on site storage) are relatively coarse grained at >2 µm (Environment Canada, unpublished data, 1999). Metals such as Cu and Ni may be primarily associated with coarse particle sizes (>2.5 µm) with mass median diameters <9 µm (Chan and Lusic, 1986). These authors further reported that Pb, Zn and As are most frequently associated with fine particles (<2.5 µm), typically with mass median diameters closer to 1 µm. Cumulative plots for coarse particle distributions of Cu indicate that 60-95% of Cu was associated with particles greater than 2.5 µm.

Regional rainfall contains both particulate and soluble phase emissions from smelting operations. Rainfall close to the smelters in the Sudbury region is acidic, containing high levels of soluble metallic ions. In 1970 the conductivity of rainwater collected 1.6 km from the Coniston smelter was 450 μmhos and at 13.5 km was still 64 μmhos . The fallout of Ni dissolved in rainwater decreased from 271 $\text{m g}^{-2} \text{month}^{-1}$ at 1.6 km to 8.1 $\text{m g}^{-2} \text{month}^{-1}$ at 19.3 km (Cox, 1975).

Snow sampling provides a means of examining deposition over the duration of the winter period of elements of interest. Snow sampling in the Sudbury area was carried out in 1972 (McGovern and Balsillie, 1973), with samples being analyzed for total S, Cd, Cl, Co, Cu, Fe, Ni, Zn and pH. Three sets of samples were collected 1) after significant snowfall in January and 2) February and 3) during freeze-thaw in April. The values for April were significantly lower than the other two sets of samples, suggesting that metals were removed by run-off to regional lakes, streams or groundwaters, or they percolated or leached out during the thaw. Levels of all elements except Cl decreased with increasing distance from Sudbury, indicative of the influence of smelting operations on regional precipitation chemistry.

Metal Particulate Deposition

Metals, deposited from the atmosphere by wet and dry depositional processes, can accumulate in a variety of environmental media including soil, water and sediment. Concentrations of emitted metals typically decrease exponentially with distance from the source. Particulate matter is generally subdivided into a fine fraction ($<2.5\mu\text{m}$) and a coarse fraction ($>2.5\mu\text{m}$). Particulate matter may be primary or secondary. Primary particulate matter is emitted directly into the atmosphere, whereas secondary is formed in the atmosphere through chemical and physical transformations. The principal gases involved in secondary particulate formation include SO_2 , NO_x , volatile organic compounds and NH_3 .

Primary particles are present in both the coarse and fine fractions, while secondary particles are dominantly in the respirable fine fraction. Particulate matter may include elemental and organic carbon compounds, aluminium, iron and silicon oxides, trace metal rich spheres, metal sulphates, and metal nitrates.

Extremely fine particles ($<0.1 \mu\text{m}$) are formed mainly from the condensation of hot vapours during high temperature combustion processes and the nucleation of atmospheric species. These tiny particle nuclei mode have a short atmospheric residence time as they nucleate and coagulate to yield larger particles. Particles $0.1\text{-}2.0 \mu\text{m}$ in diameter result from the coagulation of particles in the nuclei mode, and from the condensation of metal-rich vapours onto previously existing particles. Thus the growth of these particles may be continuous. This group of particles accounts for much of the particle mass in the atmosphere. Atmospheric removal processes are least efficient in this size range. These fine particles can remain in the atmosphere for days to weeks. Eventually, these particles are removed from the atmosphere by dry deposition and precipitation. Scavenging by precipitation accounts for 80-90% of the mass of particles in the accumulation mode (Wallace and Hobbs, 1977).

Particles larger than $2.5 \mu\text{m}$, the sedimentation or coarse mode, are typically associated with mechanical processes such as wind erosion and grinding operations. These particles are generally removed by gravitational settling. Quantitatively, these particles are not particularly numerous, however, they contribute significantly to mass, especially immediately downwind of major industrial sites.

SOIL

Soil is “the top layer of the earth’s surface, consisting of rock and mineral particles mixed with organic matter” (Concise Oxford Dictionary, 1982) formed by the interaction of parent material, climate, relief, vegetation over time (Jenny, 1994). Soil is chemically stable with a strong buffering of elemental availability, with variable H_2O availability, with ion rich soil solutions, an active microbial and inorganic catalysis, a source and sink of all the elements essential to living organisms, with a high P content, but low P availability, with a variable ratio of biomass/unit area and photosynthesis/unit area. Bohn *et al.*, (2001) further state that

“plant uptake and decay, plus the strong retention of transition metals by inorganic and organic soil components, lead to a slight accumulation of trace metal ions near the soil surface. Total concentrations in the surface layers or horizons of untilled soil can be several times the concentration shown in the subsoil”.

This biodynamic accumulation of metals (van Tilbourg, 1998) supports the suggestion by Bohn *et al.*, (2001) that normal concentration of Ni and Cu in surface soils can range from 10 to 1000 mg kg⁻¹ and 2 to 100 mg kg⁻¹. Complexation by soluble organic anions increases the concentration of Cu and Zn in the surface soil.

Natural levels of metals in soils are in equilibrium with the inorganic and organic components of a soil. Due to soil processes, these metals are not biologically available. This is also valid for metals added to soils, given time to reach the same equilibrium position. Time decreases the availability of ions added to soils. Recent experiments have shown, for example, that the ecotoxicity of added zinc decreases with time (Smit, 1997) as the applied zinc becomes incorporated in soil organic matter or soil secondary minerals. Time allows ions to diffuse through the soil solution to the strongest sorptive sites on weathered soil particles (Bohn *et al.*, 2001). Time leads to the aging of soil solids, with smaller reactive phases evolving into larger, less reactive phases and less plant-available phases. Leaching of toxic ions through the solum is generally negligible in undisturbed sites. Potentially toxic elements generally remain within a few centimetres of where they first come into contact with the soil matrix unless stirred by cultivation. If retained at the immediate soil surface, they may be above the active portion of the root zone and may, therefore, be relatively unavailable to plants unless active acidic dissolution processes are dominant.

MINERALOGY OF SUDBURY SOILS

Minerals formed by igneous or metamorphic processes are commonly unstable at the surface of the Earth. The minerals undergo weathering, with the products being re-equilibrated with the current dynamic system. The Precambrian bedrock, in this area, is above global background levels in nickel and copper in sulphide minerals that are the major ore minerals; also as trace elements in silicate minerals, for example, olivine and pyroxene, and the oxide minerals, for example, magnetite (Deer *et al.*, 1966). Copper is an incompatible element with a partition coefficient of <1.0 for minerals such as olivine, orthopyroxene and clinopyroxene and amphibole, whereas, Ni is a compatible element with partition coefficients >1.0 for the same minerals (Rollinson, 1993; Earthref, 2002). Hosted within the silicate mineral phases of the Quaternary sediments forming the parent materials of the region will also be immiscible mineral phases such as blebs of sulphide minerals (Sposito, 1989).

There is minimal information in the open literature on Sudbury soils describing relict silicate mineralogy, clay mineralogy, and soil solution composition (Costescu and Hutchinson, 1972; McGovern and Balsillie, 1973; Whitby and Hutchinson, 1974; Cox, 1975; Dreisinger, 1976; Dreisinger and Buchannan, 1977, 1979; Dreisinger, 1978; Rutherford and Bray, 1979; Hazlett *et al.*, 1983; Taylor and Crowder, 1983; Chan and Lusi, 1986; Negusanti and McIlveen, 1990; Heale, 1993; Dudka *et al.*, 1995, 1996; Gundermann and Hutchinson, 1995; Adamo *et al.*, 1996; Chuan *et al.*, 1996; Dudka and Adriano, 1997; Bajc and Hall, 2000; Morra and McIlveen, 2001; Adamo *et al.*, 2002). Therefore, speculation about the bioavailability of metals is difficult. Metals within the lattice of resistant minerals are not readily available for uptake by biologic processes whereas heavy minerals adsorbed on clay minerals are more readily available, whilst those existing as either free ions or ionic complexes in the soil solution are perhaps most readily bioavailable (Sposito, 1989). There is, however, a voluminous literature on the bedrock geology and mineralogy of the area (Pye *et al.*, 1984; Lightfoot and Naldrett, 1994).

Silicate Minerals

Adamo *et al.*, (2002) used scanning electron microscopy and energy dispersive spectroscopy (SEM/EDS) for the analysis on iron oxides and sulphides in the soil, both before and after sequential extractions. They observed the results of incomplete dissolution of the mineral phases at the second and third stages of the sequential extraction. Microchemical analysis indicated the presence of Ni, Cu and Zn in some of the particles along with Al, Si, K, Ca, Mn, Fe, \pm Zr and \pm S. In the fine sand fraction Adamo *et al.*, (1996) observed numerous spherical particles containing encapsulated Fe and Ni metallic or oxide phases in a matrix rich in Si, Ca, and Fe. These particles were formed from molten materials during the smelting process, and were deposited on the sampled soils following emission from the regional smelters. Hollow spheres containing particles rich in Cu and S, with smaller amounts of Fe and Ni, were also observed. Trace amounts of Cu and Ni were observed in the clay fraction (Adamo *et al.*, 1996). Elemental maps of crushed soil materials indicated that Cu to be diffused throughout the soil matrix, whereas Ni was concentrated in zones. These researchers did not attempt to identify the specific minerals species by X-ray diffraction.

The residue remaining from the sequential leaching experiments contained silicate and clay minerals, as well as Fe containing micro-aggregates. These micro-aggregates sometimes also contained P, Cu and Ni, with isolated 20-40 µm diameter framboids of pyrite also being identified. Hollow spherical particles were found to exist in the residue from the sequential leaching experiments. The residue, after “total digestion”, contained particles with C and S contents, as well as measurable concentrations of Si, Al, Fe, Ca, Ti, Zr, Cr, ±Mg, ±K, ±Ni, and ±Cu. These particles were insoluble in HF (Adamo *et al.*, 1996). Adamo *et al.*, (1996) found Cu to be more readily extractable than Ni from the Sudbury soil samples studied, suggesting that Cu may be more mobile. Alloway (1990) suggests that adsorption of heavy metals to soil particles follows the order Cd < Ni < Co < Zn << Cu < Pb < Hg. The few Sudbury soil studies utilizing SEM/EDX indicate that Cu is strongly associated with organic matter and homogeneously distributed on the surfaces of the clay fraction, whereas Ni was associated with Fe oxides and in the spherical silicate particles. This observation may indicate the Cu is associated with mineral phases that are more easily weathered than the Ni-rich mineral phases.

Clay Mineralogy

The minerals of the clay fraction (< 2µm) have a major influence upon the variability of soil chemistry (Bohn *et al.*, 2001). The sand (50-200 µm) and silt (2-50 µm) fractions are much less chemically active and are commonly composed largely of chemically inert quartz. Primary minerals do occur in the clay fraction of weakly weathered soils but are generally minor constituents of the clay fraction of most soils. Clay minerals are largely secondary, formed by low temperature reactions, and are either inherited from sedimentary rocks or formed directly in the soil by weathering. The authigenic clay-sized minerals include layer silicates, Al and Fe hydroxides, carbonates and sulphur compounds.

The free oxides range from gels of short-range order to crystalline and are often found as the weathered, or precipitated, outer layer of soil mineral grains (Bohn *et al.*, 2001). This layer is commonly found on quartz, feldspar and mica grains in soils. Allophane and imogolite are aluminosilicate gels of short-range order, having a very high cation exchange capacity that is pH and hydration dependent (Bohn *et al.*, 2001), common in podzolic soils (Farmer, 1982). These gels of short-range order have been documented to retaining phosphate and sulphate in

Solonchic soils (Spiers *et al.*, 1984), a mechanism that may be very important in controlling the effects of acid deposition on the soils of the Sudbury region. Secondary iron oxide minerals, common in the orange coloured B-horizons of the Podzolic and Brunisolic soils of the Sudbury region, have been described as important sinks for arsenic in Boreal soils of Northern Alberta (Dudas *et al.*, 1988).

An understanding of the clay mineralogy of regional soils is crucial. The secondary or authigenic minerals of the clay fraction, when exposed to metal ions in the soil solution, show ion exchange properties at their surface that are very important in controlling the bioavailability of the soluble metal phases. On longer exposure not only is the surface of the mineral particle involved, but the dissolved phase metal may penetrate the lattice layers or tubes of these minerals, or exchange ions with the surface oxide layers. Once thus fixed in the mineral structure, the metal ion cannot easily escape. Such processes must limit the availability of the metal ions to the biota. Thus the soluble metal ion may be transformed from a bioavailable free ion form into a bio-inert soil mineral complex.

Kodama (1979), in a literature survey of the clay mineralogical data of Canadian soils, related the distribution of various clay fraction compositional assemblages to the soil-physiographic regions of Canada. He indicated the subsoils of the Shield regions of Canada to have a clay mineral assemblage dominated by clay mica, followed in order by mixed-layer minerals, vermiculite, kaolinite and smectite. The smectite tended to be found in soils on the western border of the Shield region, or in areas impacted by the draining of Glacial Lake Agassiz. In 1993 clay mineralogical data from 461 publications were integrated with the Soil Map of Canada to produce a clay mineralogical map for the surface soils of Canada at a 1:10 million scale (Kodama *et al.*, 1993). Although the region of the Sudbury smelter footprint is conspicuous by the absence of data, the clay mineralogy soils to the north of the region are dominated by an admixture clay mica, chlorite and kaolinite. Bajc and Hall (2000) noted that labile minerals such as sulphides and carbonates are slowly dissolved in a neutral to acid soil environment, with the associated chemical constituents either removed in solution to the water table, or scavenged locally by clay-sized phyllosilicates and secondary oxides/hydroxides. Minor amounts of secondary carbonate minerals have been observed in

the finer textured subsoils immediately south of the abandoned Coniston smelter (Spiers, personal observation).

Evans (1980, 1982) and Evans and Wilson (1985), in studies examining development of podzolic soils west of the Sudbury region, documented presence of clay mica, chlorite and kaolinite in the clay fraction of the loamy sand and sandy loam soils of the Chapleau area. These studies, together with that of Jensen (1988), also provided extraction chemistry evidence for presence of allophone and imogolite in the B-horizons of the Podzolic and Brunisolic soils of the same area. Cruickshank *et al.*, (1990), in micromorphological and microchemical study of podzolic Ae and Bhf horizons documented the presence of carbon-rich allophone-like layers encapsulating sand grains. The presence of a mineral with an imogolite-like structure, observed with scanning electron microscopy and energy dispersive spectroscopy, was also documented. As these latter studies have all been on soils formed on similar parent materials in the same climate and vegetation zones as Sudbury, the presence of the same inherited and authigenic clay mineral suite is probable in the soils of the Sudbury smelter footprint.

Although there is no clay mineralogical data presented, Adamo *et al.*, (2002) report the content of the clay fraction as ranging from 30-209 $\mu\text{g g}^{-1}$ with a mean value of 109 $\mu\text{g g}^{-1}$ for the soils studied in the Sudbury area, with the highest content of clay-sized particles in the finer textured soils of the Copper Cliff area. Acidification in soil environments adjacent to sulphur piles has been shown to dissolve chlorite, micaceous and smectitic minerals (Warren and Dudas, 1992; Warren *et al.*, 1993), a result possible in the study region with historic emissions of sulphurous gases in the hundreds of thousands of tonnes from the Sudbury smelters. The weathering of soil clay minerals also causes solubilization and translocation of the dissolved trace metals released from the mineral structures.

Organic Horizons

The well to imperfectly drained undisturbed soils of the Sudbury region are characterized by having organic (LFH) horizons ranging in thickness from 2 to 15 centimetres. The designation LFH refers to the fresh plant detritus (L=litter) on the soil surface, the partially decomposed organic layer (F=fermentation) and the well-decomposed organic layer

(H=humus). These poorly studied LFH horizons, initially composed almost entirely of organic matter, are crucial sinks for the aerosolic particles (Spiers *et al.*, 2002) from both local and long-range sources, acting both as filters to prevent particle translocation to lower horizons, and as exchange surfaces to absorb dissolved metals in precipitation and throughflow. Colloidal soil organic matter, for example, strongly adsorbs Cu, Zn, Fe and other transition metal ions, by acting as a chelating agent (Bohn *et al.*, 2001).

In a study in the Falconbridge area, Golder Associates Ltd. (2001) reported total C content ranges from a low of 0.16% to high of 10.1% in the 0-5 cm layer of the sampled soils. The study documented carbonate contents to range below detection limit to a high of 0.89% in the same 0-5 cm layer, with the higher levels being in areas which were either landscaped or limed. Gundermann and Hutchinson (1995) reported that the organic C content of soils in the 0-5 cm layer in the Coniston smelter area decreased over the period between 1972 and 1992, probably because of soil erosion. The latter study also reported a concomitant decrease in water extractable metal content from 74, 33 and 52 $\mu\text{g g}^{-1}$ Ni, Cu, and Al to 2, 2, and 3 $\mu\text{g g}^{-1}$ Ni, Cu and Al, respectively, suggesting that the decrease is strongly linked to the erosion of surface organic matter. Hazlett *et al.*, (1983) report organic C content of soils around the Coniston smelter in the range 0.1% to 19.4%, with the high values being for the LFH horizons and the lowest values for C-horizons. A recent study, for samples collected for the 0-20 cm layer from throughout the Sudbury region some 12 years ago, documented organic carbon content ranges from about 0.5% to 2.1% (Adamo *et al.*, 2002).

SOIL CHEMISTRY

Parent Materials

McKeague *et al.*, (1979) compiled much of the published data in conjunction with their studies of background levels of minor and trace elements in Canadian soils. They describe levels for 53 profiles both on a national and regional basis. The mean levels ($\mu\text{g g}^{-1}$) documented are: Cr 43, Mn 520, Co 21, Ni 20, Cu 22, Zn 74, Sr 210, Hg 0.06, Pb 20. Their data compare closely with data reported for levels in soils of the U.S.A. (Shacklette *et al.*, 1971). However, McKeague *et al.*, (1979), with data for only 12 sites for the entire Canadian Shield region, document no sites within the present study region, and base the

prediction of levels on a small sample base. Webb and Howarth (1979) point out that extrapolation of the results of detailed studies from such type localities ignores the often significant differences in composition within single stratigraphic formations that are lithologically different in space.

Ginocchio *et al.*, (2004), in a recent study describing micro-spatial variation in metal contamination in the vicinity of a Chilean copper smelter, document a wide range of variability in soil metal concentrations at the micro-site level having a dramatic influence on plant recruitment. Such observations tend to temper the statement of Dudas and Pawluk (1980) that predictions of elemental status of soil material can be based on average values of parent rocks, even in glaciated terrains. Such prediction is complicated, even if the parent lithology is uniform, by changes in composition owing to sedimentary source variations and/or selective mobilization and redeposition of individual elements during weathering processes (Webb and Howarth, 1979). Prediction of soil elemental status is further compounded by the vagaries of glacial/fluvial/aeolian processes on surficial materials within the Sudbury region.

The approach investigated by the U.S. Geological Survey, in conducting a reconnaissance geochemical survey of Missouri State, was based on random sampling of previously mapped broad geological, pedological, vegetational and hydrological units at different densities (Tidball, 1978; Miesch, 1976; Erdmann *et al.*, 1976). Analyses of variance were used to study geochemical variation between each selected unit, and it was found, for many of the 30 to 40 analyzed elements, that significant differences occurred between the previously mapped surficial units. These techniques were deemed suitable for regions containing relatively homogeneous pedologic units, such as may be associated with glaciated terrain.

McKeague *et al.*, (1979) used the data obtained in their compilation to calculate prediction equations for minor elements based on more easily determined parameters such as clay, organic C and the major elements (Al, Fe, Ca, Mg) as independent variables. They were able to account for more than 50% of the variability of Mn, Cu, Pb, Co, Ni, Cr, Sr and Se in this for manner for different sample groupings. Such relationships are obviously based on the ability of the minor elements to proxy for the major elements in the crystal lattices of various minerals (Dudas and Pawluk, 1980). They were able to predict Sr levels based on Ca alone for non-

calcareous samples, probably because Sr can proxy for Ca in plagioclase feldspars (McKeague and Wolynetz, 1980).

Geochemical exploration work has produced a vast body of data in regions of known mineralization, much of which is not pertinent to this study because the determinations are made on a range of size fractions, rather than only <2mm material. Data of relevance to the 2 µm (clay size) fraction will be mentioned here. Shilts (1977), in a study of till samples from the Keewatin region, describes the content of the following in the clay separate: Zn 100 µg g⁻¹, Cu 100 µg g⁻¹, Ni 80 µg g⁻¹. Bajc and Hall (2000), in a study of till geochemistry to the immediate north of the area of Sudbury, stated that, intuitively, the underlying bedrock should have a direct relationship with the composition of both the overlying till (C-horizon) and the soils developed on them. Thus, in their study, various till facies were investigated to determine whether distinct background concentrations of metals could be associated with different till types. They also sampled the local vegetation to ascertain whether different forest types partitioned metals differently, which would, in turn, influence the background geochemical signature of the resulting humus. Factors such as slope and drainage were directly linked to the soil-forming processes, thus affecting the A- B- horizon geochemistry. The Bajc and Hall (2000) study did not, however, document the aqua-regia extractable trace metal contents of the tills and soils examined.

McMartin *et al.*, (1999) documented the influence of the smelter emissions on soils in the Flin Flon area of Manitoba. They concluded that the humus layers contained a record of historical smelter airfall additions, with the degree of contamination with As, Cd, Cu, Hg, Pb and Zn decreasing with increasing distance from the smelter. The levels of these metals in the parent tills or C-horizons reflect complete absence of any significant contamination. In a recent survey in the Rouyn–Noranda area within a 100 km radius of the Horne Smelter Henderson et al (2002) described the metal concentrations of soil parent materials. The study provides geochemical maps and summary statistics for the <2 mm fraction of soils analyzed by ICP-AES following aqua-regia digestion for both diamicton and clay deposits. Diamicton includes all poorly sorted to unsorted clastic sediments, primarily till, which, at a few sites, may be significantly reworked. Clay includes all fine-grained clastic glacial lake sediment such as clay, silt and silty clay. The study documents parent material concentrations for As,

Cd, Cu, Pb and Zn as 3.95 ± 0.17 , 0.67 ± 0.22 , 26.07 ± 0.12 , 52.5 ± 0.14 , 79.74 ± 0.2 , respectively. These values are considerably higher than those documented by McKeague *et al.*, (1979), possible reflecting the inclusion of underlying metal-rich bedrocks in the diamicton deposits forming the parent materials of the regional soils. The Geological Survey of Canada completed a broad regional sampling and analytical program for much of Ontario to approximately to lower half of the current study region as a component of a National Geochemical mapping initiative in the 1990s (Garret, personal communication), with data analysis and report publication currently in a preliminary stage only.

This brief overview has shown that, although there is a considerable amount of site-specific data on levels of minor elements in soils in Canada, there are very few studies describing regional variation of major, minor and trace elements. Studies relating concentrations of specific elements to parent material variation are similarly sparse, and there is only one detailed study of elemental partitioning among the various particle size fractions of soils, although this does, admittedly, discuss the data with genetic overtones.

SUDBURY SOILS

McKeague *et al.* (1979) compiled much of the published data in conjunction with their studies of background levels of minor and trace elements in Canadian soils, describing levels for 53 profiles both on a national and regional basis (Table 2).

Table 2: Distribution of major and trace elements in Canadian soil parent materials.

Element	Granite	Shale	Crustal Abundance	Canadian Shield Soils
Major elements %				
Al	7.7	8.0	8.2	6.7
Ca	1.6	2.5	4.1	1.8
Fe	2.7	4.7	5.6	2.5
K	3.3	2.3	2.1	na
Mg	0.16	1.34	2.3	0.53
Na	2.8	0.66	2.4	na
Trace elements ($\mu\text{g}/\text{gm}^{-1}$)				
As				na
Cr	4	100	100	19
Co	1	20	25	19
Cu	10	57	55	12
Mn	400	850	950	417
Ni	< 1	95	75	12
P	700	770	1050	na
Pb	20	20	12.5	20
Se				0.18
S	285	450	375	409
V	20	130	135	na
Zn	40	80	70	57
(ng/gm^{-1})				
Hg				107

Notes:

- 1) Values from Taylor (1964)
- 2) Values for soils from the Canadian Shield (McKeague, 1979)

They also document levels for surface horizons of Canadian soils which are similar in range to those documented for surface soils worldwide, namely for Ni, Cu and As are $40 \mu\text{g g}^{-1}$, $30\text{--}20 \mu\text{g g}^{-1}$ and $5 \mu\text{g g}^{-1}$ respectively (Dreisinger, 1976; Alloway, 1990). Maximum values of $2300 \mu\text{g g}^{-1}$ Ni for soil in the Sudbury area before the construction of the super stack, in Copper Cliff, are documented as decreasing to $1715 \mu\text{g g}^{-1}$ after the introduction of the super stack (Dreisinger, 1976). For Cu, these values are essentially unchanged at $1750 \mu\text{g g}^{-1}$ and $1738 \mu\text{g g}^{-1}$, both results obtained from samples taken at Copper Cliff (Dreisinger, 1976).

Maximum pre-Super Stack S values of 0.38% were reported in samples from the Sudbury area and maximum post-stack S values of 0.36% (Dreisinger, 1976). MOE acceptable level for S in soil is 0.1% (Table 3; Heale, 1993). Iron levels in soils in the Sudbury region have on the whole increased since the construction of the Super Stack from 4.7% up to 5.30%. Zinc levels declined from 416 $\mu\text{g g}^{-1}$ to 313 $\mu\text{g g}^{-1}$, with a concomitant increase in As levels from 50 $\mu\text{g g}^{-1}$ to 63 $\mu\text{g g}^{-1}$. These levels contrast greatly with maximum Cu and Ni values reported by Taylor and Crowder (1983), 6912 $\mu\text{g g}^{-1}$, and 9372 $\mu\text{g g}^{-1}$, respectively, close to the Copper Cliff smelter, decreasing with distance. The differences reported over time by the above authors may merely reflect the natural site variability of the region, or be a product of site micro-topographic variation which leads to micro-zones of enrichment because of snow-melt or runoff translocation of aeolian materials.

Table 3: MOE guidelines for the upper normal limit for metals in Ontario soils (from Heale, 1993).

Parameter	Soil (0-5 cm)	
	Urban ($\mu\text{m/g dry weight}$)	Rural ($\mu\text{m/g dry weight}$)
As	20	10
B	15	10
Cd	4	3 or 4
Cr	50	50
Co	25	25
Cu	100	60
Fe (%)	3.5	3.5
Hg	--	0.5
Mg (%)	--	1
Mn	700	700/1000
Ni	60	60
Pb	500	150
Sb	8	1
Se	2	2
S (%)	0.1	0.1
V	70	70
Zn	500	500

The maximum values for NH_4OAc extractable metals are Cu 2243 $\mu\text{g g}^{-1}$, Ni 6730 $\mu\text{g g}^{-1}$. The maximum DTPA (diethylenetriaminepentaacetic acid) extractable metals are Cu 717 $\mu\text{g g}^{-1}$, and Ni 1013 $\mu\text{g g}^{-1}$. Taylor and Crowder (1983) report that Cu and Ni concentrations in wetland soil-sediment material are comparable to Sudbury area lake sediments (Semkin and Kramer, 1976) and are comparable to concentrations measured in regional forest soils by Freedman and Hutchinson (1980).

The 1978 the Ontario Ministry of the Environment (MOE) documented the guidelines for maximum acceptable Ni, Cu, As and Co content in soils between pH 5.0 and 8.0 (0-10 cm

depth) at $100 \mu\text{g g}^{-1}$ Ni, $100 \mu\text{g g}^{-1}$ Cu, $25 \mu\text{g g}^{-1}$ As and $25 \mu\text{g g}^{-1}$ Co. Data collected from a sparse sample set collected adjacent regional roads and highways in 1977 indicated that the MOE guideline for surface soils were exceeded in an area of over 930 square kilometres for Ni, 580 square miles for Cu, 65 square miles for As, and 43 square miles for Co (Heale, 1993), with no data being documented describing the soil pH. The information on analytical procedures is not provided, but the data being reported as total concentrations of metals. As the standard analytical procedure used by MOE is based on an aqua regia extraction of dried and ground soil materials, the data cannot be described as total concentrations. By 1993 MOE guidelines for upper normal limits for heavy metal content of soils had been changed as shown in Table 3 (Heale, 1993). In 1988 Ni levels in soil were up to 9 times background level, As levels were 7 times greater than background levels, Cu levels were up to 14 times above background levels (Heale, 1993), although the source for regional background concentration data was not documented.

Hutchinson and Whitby (1974) describe the pH, electrical conductivity, LOI (loss on ignition) and metal content of soil samples collected around the Coniston smelter impact zone. The reported pH values ranged from 2.19 at 0.8 km from the smelter up to pH 3.39 about 50 km from the smelter on the surface. At 10 cm depth, pH ranged from 2.5 to 4.19 at a distance of, 19.3 km, increasing to 3.42 about at 50 km. Generally, pH increased with depth in the soil profile. Electrical conductivity decreased both with distance away from the smelter and with depth in the soil profile.

The variability in LOI, whilst apparently showing no correlation with soil type, is probably a function of increasing organic content away from the smelter and decreasing sulphur compounds with distance. Hutchinson and Whitby (1974) also analyzed homogenized samples taken from the upper 10 cm of soil for metal content by atomic absorption spectrometry following digestion with a mixture of HF:H₂SO₄, with the digestate being dissolved in HNO₃ prior to analysis. The results indicated a trend of decreasing metal content in soil with increased distance from the smelter (Table 4).

Adamo *et al.*, (2002) analyzed pH of 20 samples collected from the east and northeast of the 3 Sudbury area smelters in 1992. They reported a mean pH of 4.5, which is within the range

(3.8-4.8) for unpolluted podzolic soils of the Sudbury area; however 40% of the samples had a pH<4.0, perhaps indicative of acidification as a result of SO₂ emissions. The mean S

Table 4: Distribution of selected major and trace elements within the surface layers of selected soils at various distances from the Coniston smelter.0

Element	Distance from smelter	
	1.1 km	50 km
	(µg/g)	
Cu	2892	26
Ni	5104	35
Co	200	22
Zn	97	84
Ag	7.9	1
Pb	83	20
Mn	255	168
V	103	23
	(%)	
Fe	7.75	1.15
Al	1.1%	0.22

Values from Hutchinson and Whitby (1988).

content of soils in the same study (Adamo *et al.*, 2002) was 3.3 µg g⁻¹; however almost half the samples had a total S content of >10 µg g⁻¹, which exceeds the OMOE (Negusanti and McIlveen, 1990) guideline of 10 µg g⁻¹.

Adamo *et al.*, (2002), using air-dried, crushed by hand and sieved soil samples from 0-20 cm depth, analyzed for metal content by ICP-AES following acid digestion (HF/HNO₃). A four-step chemical extraction procedure (Singh *et al.*, 1998; Ure *et al.*, 1993) was also used to fractionate the chemical forms of the heavy metals into the following fractions: 1) soluble and exchangeable, 2) occluded in iron and manganese oxides, 3) organically bound or in the form of sulphides, and 4) present mainly in mineral structures. These four fractions are extractable with increasing difficulty: 1) easily extractable, 2) reducible, 3) oxidizable and 4) residual. The concentration of Cu, Ni, Fe, Mn, Zn, Pb Cr and Cd in the various extracts was determined by inductively coupled plasma atomic emission spectroscopy (ICP-AES), with the analytical results summarized in Table 5.

Adamo *et al.*, (2002) used scanning electron microscope (SEM) and energy dispersive X-ray (EDS) spectroscopic analysis to examine the heavy mineral separate of the fine sand fraction of the soils before and after sequential extraction treatments. Iron oxide and sulphide phases, with associated Cr, Cu, Ni, Mn and Zn were associated with the Fe phases, with some iron

Table 5: Metal proportions in the various fractions from selected soils of the Sudbury region using the European Union extraction procedure.

	HOAc	Reducing (% total metal)	Oxidizing	Residue	Mean Total
Cu	27	17	26	31	433±474
Ni	2-46	2-24	2-20	17-92	410±410
Fe	0.1-2.2	7.9	2.8-14.7	85	2.6±0.85%
Mn	0.3-18.1		0.6-8.4	52	389±195
Zn	1.8-34.6	1.2-25.7	15.6	29.1-90	57±34.4
Pb	5	2.4-46.7	14	15.1-96.6	30±23.8
Cr				78.2-92-4	63±24
Cd	3.8	3.7	13.9%		2.7±0.8

Notes: Adamo et al. (2002)

oxide and sulphide particles being still visible after the various sequential extraction procedures. The results suggested that some of the soil Cu may be in potentially more mobile phases in the soils, with Ni being dominantly (average 64%) in the inorganic residual phase. Unfortunately, detailed mineralogical examination of the various metal-rich phases was not documented.

In an examination of regional surficial material geochemistry, Bajc and Hall (2000) noted that concentrations of Cu and Ni in humus are significantly higher than concentrations in B- and C-horizon soils, an observation supported by Spiers *et al.*, (2002) (*see* Table 7). However, Bajc and Hall (2000) attribute the higher content in the humus layer to the scavenging and binding properties of fulvic and humic acids in complexing soluble airfall metals, thus recognizing the possibility of anthropogenic sources being possibly responsible for the elevated concentrations. Bajc and Hall (2000) report that the absolute concentration of Cu in the B-horizon is lower than in the C-horizon, attributing the distribution to the dissolution and hydromorphic dispersion under acidic soil conditions in the zone of pedogenic weathering. Nickel shows a similar distribution in the horizons of the sampled

pedons (Bajc and Hall, 2000), suggestive of Ni being less affected by hydromorphic processes. The authors do not attribute the differing distributions of Cu and Ni in the sola to the different affinity of the elements to the mobile dissolved organic acids in the pedologic system.

In analyzing the control of bedrock geology on humus-form chemistry, Bajc and Hall (2000) noted only slight variations in the Ni and Cu ranges. However, definite trends were observed in the B- and C-horizon data. The contents of Cu and Ni from samples collected over norite and Levack gneiss were consistently higher than samples collected over other bedrock units. The C-horizon also showed elevated Cu and Ni concentrations in samples collected over quartz diorite and mafic extrusive rocks. The lower limit of concentration is similar to those obtained from other bedrock domains.

Bajc and Hall (2000) sampled the pedogenic mineral horizons of soil profiles at several geochemically anomalous sites to examine the vertical variation in Ni and Cu. The postdepositional, low-temperature geochemical processes that occur in the porous and permeable Quaternary sediments in an oxidizing environment may modify the chemistry of mineral phases originally sorted into grain size fractions on the basis of resistance to glacial abrasion. In an oxidizing environment, for example, fine carbonates and sulphide minerals are dissolved (Bajc and Hall, 2000), with the dissolved products either translocated in solution to be either reprecipitated in an authigenic phase, or absorbed by phyllosilicates and secondary oxides/hydroxides. The translocation of the dissolved ions or ionic complexes may result in elevated concentrations of the elements at depths. The samples from the Ae horizon, the B- and C-horizons were size fractionated prior to analysis (Bajc and Hall, 2000), with <63 μm fraction being analyzed by ICP-AES and ICP-MS following both *aqua regia* and a hydroxylamine hydrochloric acid extractions, with <2 μm fraction being analyzed following an aqua regia digestion. The results from the Bajc and Hall (2000) study are summarized below:

- The Ae-horizon is usually depleted in the elements present in the underlying B-horizon. The authors attribute this depletion to the hydromorphic dissolution of metals from this horizon by humic and fulvic acids originating in the overlying organic horizons.

- The B-horizon is usually depleted in the elements present in the C-horizon, with the depletion attributed to the destruction of labile minerals by oxidation and the hydromorphic dispersion of the contained metals within the profile. There are some instances where Ni is enriched in the B-horizon, usually coincident with an increase in Fe in either the clay and/or silt and clay fraction.
- Concentration of elements generally increases downward through the C-horizon. Bajc and Hall (2000) are not sure whether this is a primary or secondary signature.
- The proportion of Ni and Cu extracted with the hydroxylamine hydrochloric acid leach in the $-63 \mu\text{m}$ fraction is quite high relative to that of the aqua regia digest. This is indicative of a large proportion of Ni and Cu being potentially mobile in the pedologic environment and not tightly bound as sulphide minerals.

The study provided data for mineral soil horizons only. The surface organic (LFH) horizons were not sampled and analyzed.

Dudka *et al.*, (1995) using ICP-AES (HNO_3 and HClO_4 acid digestion) present metal content for 73 soil samples (Table 6). Gundermann and Hutchinson (1995) found concentrations of Cu, Ni and H ions have decreased significantly in the surface soil horizons at the site of the Coniston smelter, over the period, 1972-1992. As there was a concomitant reduction in the organic carbon content in the soils over the same period, they suggested the reduction was a result of surface horizon leaching and erosion, effectively removing metals from the top 5 cm of the soil profile. Water extraction of metals indicated a high of $75 \mu\text{g g}^{-1}$ Ni in 1972 and in 1992 this value was about $5 \mu\text{g g}^{-1}$, together with about $30 \mu\text{g g}^{-1}$ Cu in 1972 and in 1992 about $2 \mu\text{g g}^{-1}$ Cu. Although the water extraction may be indicative of the bioavailability of Ni and Cu, the values obtained cannot be readily compared to other regional studies because of the variability in digestion methods.

Plants are the integrator of bioavailability of metals in soils, and various species have different levels of tolerance for high levels of anthropogenic contaminant metals in soils. Bowen (1966) documents, for example, normal levels of Ni and Cu in vegetation as $3 \mu\text{m/g}$ and $14 \mu\text{m/g}$, respectively, compared with values of $45 \mu\text{g g}^{-1}$ and $98 \mu\text{g g}^{-1}$ in Coniston area

vegetation for samples analyzed by Hutchinson and Whitby (1974). Hutchinson and Whitby (1974) sampled foliage from *Vaccinium augustifolium* (low sweet blueberry), *Acer rubum* (red maple) and *Deschampsia flexuosa* (wavy hair grass).

Table 6: Distribution of selected major and trace elements within the surface layers of selected soils of the Coniston airshed. From Dudka *et al.*, (1995).

Element	Geometric mean	Geometric deviation	Observed range	95% expected range
		%		
Ca	0.41	2.15	0.06-2.5	0.09-1.9
Fe	2.08	1.43	0.70-4.5	1.0-4.3
Mg	0.39	1.83	0.08-1.5	0.1-1.3
Na	0.04	2.74	0.004-0.2	0.005-0.3
		µg/g		
B	17.93	1.73	1.6-56.2	6.0-53.7
Cd	0.29	4.67	<0.06-10.1	0.01-6.3
Co	10.50	2.45	0.9-113.3	1.7-63.0
Cr	49.29	1.66	4.0-131.6	17.9-135.8
Cu	116.20	2.81	11.4-1891.0	14.7-917.5
Mn	260.70	2.06	63.6-4714.0	61.4-1106.3
Ni	104.80	3.04	5.3-2149.0	11.0-994.2
S%	0.13	4.53	0.008-7.3	0.006-2.7
V	52.25	1.36	25.9-97.9	28.2-96.9
Zn	34.80	2.64	1.5-336.1	5.0-242.0

These regionally widespread species are fairly tolerant of SO₂ pollution. In all three species, analysis was carried out on washed, dried and ground samples. Further, these authors noted that Cu and Ni concentrations decreased markedly with increased distance from the smelter zone. More detailed descriptions of levels of metals in vegetation in the Sudbury area may be found in papers McIlveen and Nagusanti (1994).

REGIONAL SOIL STUDIES IN THE SUDBURY AREA

A series of large-scale studies on the effects of smelter metal emissions on soils and vegetation in the Sudbury area have been carried out in the past, starting in the, 1970s. The results of these studies are documented the publications of Dreisinger (1975, 1976, 1978); Dreisinger and Buchannan (1977, 1979); Heale (1993); Negusanti and McIlveen (1990);

Morra and McIlveen (2001). The timing of these studies is related to aspects of regional smelting operations and changes as follows:

In 1971–1972, prior to the installation and operation of the super stack, 60 permanent sampling stations were established throughout the Sudbury area to determine background levels of SO₂ and various other contaminants in snow, soil and vegetation. Sampling of soil and vegetation was also carried out at 22 long distance transport sites. The results of these investigations are found in Dreisinger (1976) and Dreisinger and Buchanan (1979).

In 1973–1975, following the commencement of operation of the Superstack, the soil and vegetation sampling program was carried out during 3 consecutive growing seasons at 90 stations up to 280 km from Copper Cliff. The results are presented in Dreisinger and Buchanan (1979).

In 1976–1978, soil and vegetation sampling was repeated at 90 stations. Analyses for Ni, Cu, Fe, S, Zn, As and Co were carried out to determine on a yearly basis, existing levels and distribution patterns of these elements in the Sudbury area. Soil pH was also determined throughout the 7 seasons of this report (Dreisinger and Buchanan, 1979). In 1988, soil and vegetation was sampled at 59 stations within an 80 km radius of Copper Cliff. Data are presented in Heale (1993). In 2001 Morra and McIlveen described the metal concentrations of 21 widely distributed sample sites were selected in 1971 to comprise the Sudbury Regular Survey. Sporadic sample collection at these sites commenced in 1971. This report also included the results of the Sudbury Special Survey, also initiated in 1971. In the latter study, 92 sample locations were established along cardinal compass directions at increasing distances from the three smelting centres of Copper Cliff, Coniston and Falconbridge. Sites extended up to 30 km distance from the smelters. In 2000 a soil survey of an expanded sample set containing 11 additional sites was completed.

The data described in all these studies is inconsistent, both in terms of sampling, documentation of actual sample location, and description of analytical methodology. Most of the sample sites, for example, are dotted within metres of major highways leaving large regions completely unrepresented in the resultant databases. There is minimal discussion of the quality program with these reports, and samples were frequently not archived to enable

external, or future, checking of analytical accuracy. The data do, however, provide a broad picture of the major impact of anthropogenic metal additions to the surface layers of regional soils, although whether the data are for extractable or total metal concentrations in soils is often unknown. Unfortunately, the data provide no indication of the actual horizon of metal loading, and are essentially useless for providing any insight into metal bioavailability into the food webs of the Sudbury smelter footprint, especially as the data are generally for a strong acid digestion, the results from which do not have any relationship to an available metal pool (Prokop *et al.*, 2003).

THE SUDBURY REGIONAL SOILS PROJECT

The 2001 Sudbury Regional Soils Project was developed following discussions between INCO Ltd., Falconbridge Ltd., MIRARCO's Centre for Environmental Monitoring at Laurentian University (CEM), the Ontario Ministry of the Environment (OMOE), the Sudbury Health Unit and the City of Greater Sudbury following a review of the historical data described above, together with data from the OMOE 2000 Regular and Special Soil Surveys. Significant geographic gaps were recognized within the data sets, generating a need for a comprehensive sampling program to provide the required input for an upcoming detailed Regional Risk Assessment Project. These data gaps prevented the preparation of an accurate geochemical map of the Sudbury smelter footprint to describe the impacts of anthropogenic metals on regional soils, waters, vegetation or sediments.

The CEM designed the regional soil sampling survey, and OMOE designed the urban soil sample program. The CEM and Golder Associates, with the OMOE sampling in intensive detail the public parks, schoolyards, private gardens and yards, completed the regional sampling project. INCO Ltd. and Falconbridge Ltd funded the project.

Regional Sampling Plan

The sampling program was developed using a randomized stratified sampling plan with modifications to remove, wherever possible, the potential effects of infrastructure. Previously existing "historical" sites sampled by INCO personnel on a regular basis since 1972 were included in the appropriate grid cell for this study to enable possible utilization of the historical data for time series analyses. The nested sampling grid, covering an area 200 km by 200 km, was centred on the three smelters, Copper Cliff, Coniston and Falconbridge. The centroid was in the vicinity of the Copper Cliff smelter.

The cells of the stratified sampling plan ranged in size, with the smallest cells being in the zones of historically known high smelter impact. The cells were 2, 4, 8 and 16 km square, respectively. The irregular 2 km grid cells extended approximately 8 km in each direction from the individual smelters. The 4 km grid cells extended 12 km out from the edge of the 2 km grid cells, with the 8 km grid cell area being squared off and designed to encompass the rest of the Greater City of Sudbury. The 16 x 16 km border grid was only one cell deep. The

design of this survey will allow systematic expansion in any direction should a detailed examination of the resultant chemical data indicate a significant emissions impact of the smelting operations outside of the immediate region as already sampled. The details of the final sampling grid and sample locations are illustrated in Figure 3.

Within each cell one proposed sampling point was selected using a random lookup table in ArcView. A series of sampling exclusion zones were developed to minimize any

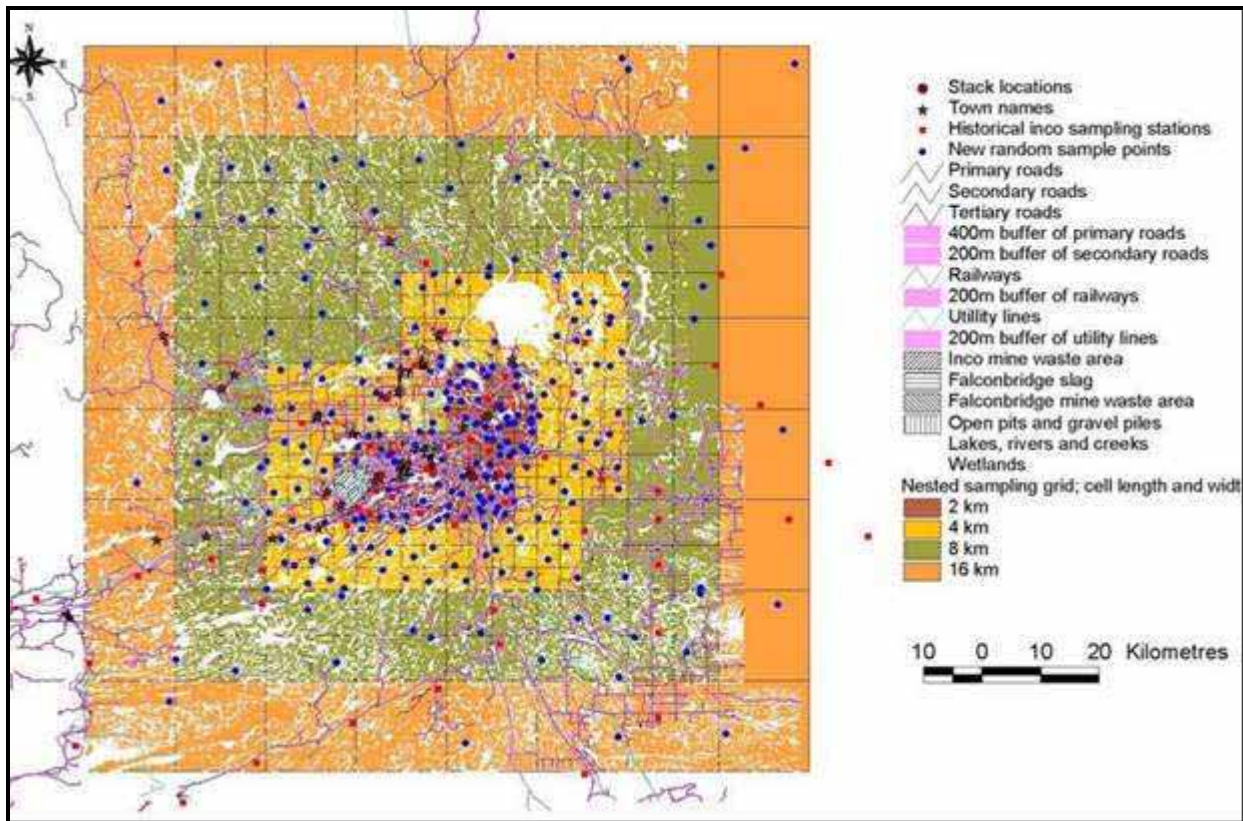


Figure 3: Sampling program for the regional soil study, with sampling exclusion zones delineated.

resultant data bias from contamination by recent erosion, sedimentation or flooding, as well as from non-smelting anthropogenic activities such as effects of road construction, road salt drift, and railway traffic fugitive dust. These exclusion zones included:

Industrial lands, such as tailings ponds, slag heaps, open pits

- Wetlands

- Lakes
- Rivers and streams
- 200 m of the centre line on primary roads
- 100 m of the centre line on secondary roads
- 100 m of railway lines
- 100 m of major utility lines.

In the 8 and 16 km outer cells, a replacement point was randomly reassigned if the initial sample location fell within an exclusion zone. The distribution of exclusion zones is illustrated in Figure 2. In the 2 and 4 km grid cell zones, sampling density was deemed sufficient to minimize the requirement of selecting a replacement point if the initial selection was in an exclusion zone, especially given the extreme density of the parallel urban program being completed by OMOE. The final number of sites sampled in the Regional Soils Project was 386.

SOIL SAMPLING PROTOCOL

Soil samples were collected according to standard protocol in the OMOE publication “*Field Investigation Manual, Part 1, General Methodology*” (OMOE, May, 1993). All sites for the survey were in stable landscape positions, with minimal evidence of erosion and with a full stable vegetation cover. Limed sites from the regional greening program were not selected as core sites for the sampling program. In the wooded areas, sampling was conducted within a 10 m quadrat, with the duff (leaf/grass litter) being lightly scraped away with a boot or hand, even though this procedure would naturally remove recent airfall material from the solum to be sampled. The UTM coordinates of the stake at the quadrat corner were taken with a GPS unit and recorded on standard site description forms. On the form, the sample name and location were recorded, a sketch of the area and the sample location drawn and sample labels for the laboratory were recorded. Each site was also photographed (Figure 4).

Soil cores were collected using Star Quality Soil Sampler that was cleaned between sample locations. The soil was cored by pushing the auger into the soil to at least 20 cm or the maximum attainable depth, rotating to the right to break off the core, enlarging the hole slightly and removing the auger from the soil taking care to maintain the bottom of the sample. At each sampling site, a digital photo of a representative core was taken (Figure 5), together with written description of a representative sample core. According to OMOE procedure, a large “W” pattern was walked and cores collected along this pattern until a full sample of 30 cores was collected. Duplicate samples were collected from an adjacent quadrat.



Figure 4: Photograph of vegetation at a representative soil sampling site.



Figure 5: Typical soil sample in the Sudbury area.

These samples or field ‘duplicates’ are not a split from the first sample, but rather a separate sample, or replicate, collected from the same area. Each core was sectioned according to MOE depth protocol: from 0 to 5 cm depth, from 5 to 10 cm depth and from 10 to 20 cm depth. Cores were sectioned using stainless steel spatulae, with each depth interval being placed in a plastic bag together with an MOE tracking label. Additional field notes recorded for each site provide descriptions of the dominant vegetation, slope, topography, outcrop, weather, location and directions (see Appendix III).

The sampling procedure, originally developed for contaminated industrial sites and contaminated brownfields within municipal environments, is not ideally suited for sampling undisturbed soils in natural soilscapes within relatively pristine ecosystems. The pedogenic horizons of undisturbed soils have undulating boundaries sub-parallel to the land surface. For example, the potential of mixing the pedogenic horizons using the defined 0-5, 5-10 and 10-20 cm depth increment sampling protocol required by OMOE is illustrated in Figure 6. The sampling at uniform depth increments as in this study may lead to variable mixing of the natural soils horizons, thus leading to a loss of any pedogenic overprint which could aid in understanding the natural geochemical and weathering processes responsible for

translocation of soluble and colloidal materials. The mixing of soil horizons that is inevitable in following such a protocol will also lead to the field replicate composite samples possible exhibiting a high degree of variability in chemical and textural composition.

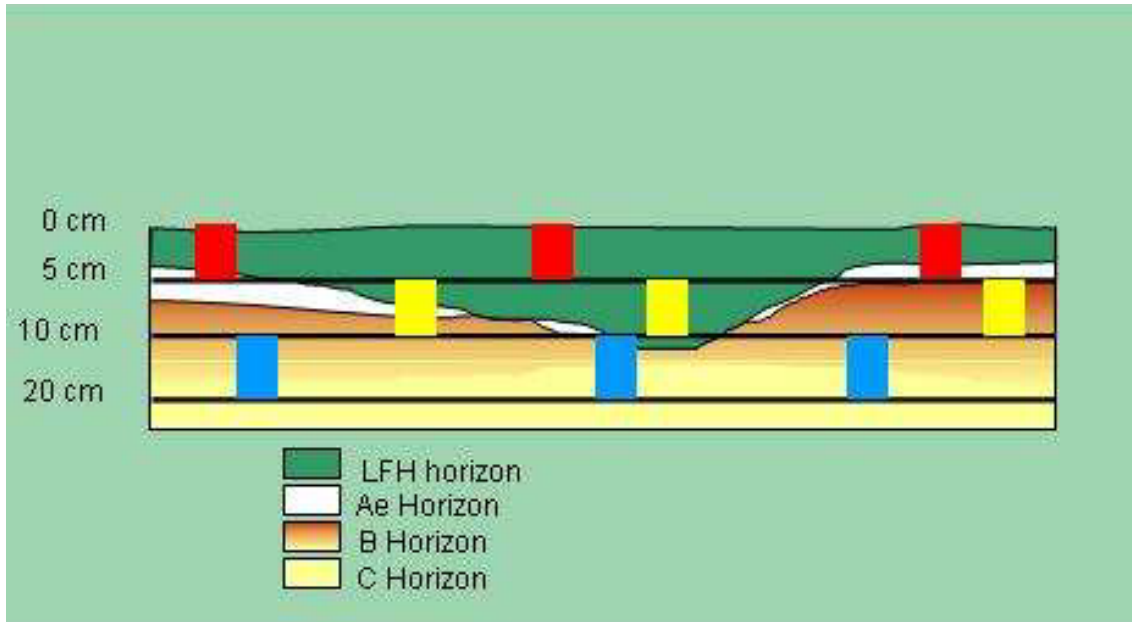


Figure 6: Diagram illustrating the variability of horizons, horizon boundaries in undisturbed soils at forested sites. Coloured boxes indicate the difficulty in obtaining homogeneous samples of any one layer unless sampling is completed on a horizon basis.

Parent Material Sampling

Soil parent material was collected to determine “normal” background levels on the contaminants-of-concern. Soil for parent/background material is collected using a bucket auger. A Dutch auger is first used to remove the top 60-80 cm of soil, with a bucket auger with an enclosed liner being used to collect 25 to 30 cm depth of soil (Figure 7). The soil sampling depth was noted (e.g., between 85 and 112 cm). A field identification number is placed in the sample bag, with the material being characterized and photographed.



Figure 7: Collection of a soil parent material sample with Dutch augur.

Soil Profile Sampling

In order to better define the localization of anthropogenic materials in the solum, a series of pedons formed on undisturbed sites adjacent the regional smelters were sampled by genetic horizon. Soil pits were excavated to a depth of approximately 1.5 metres, taking care to preserve one face of the pedon for sampling by genetic horizon. A 2 kg composite horizon sample was collected from across the exposed pit face. A typical pedon is illustrated in Figure 8, with the genetic horizon boundaries indicated by the sub-horizontal lines.

SOIL SAMPLE PREPARATION

Samples were delivered to the laboratory within 12 hours of collection. The sample bags were opened immediately, and the soil material was disaggregated to initiate air-drying in order to minimize chemical alteration consequent to the development of anaerobic conditions within the sealed bags. The samples were then homogenized and further dried in weighed plastic containers to constant moisture, and weighed to enable bulk density calculation in order to quantify actual metal loadings to soils is subsequent data analysis. The soil sample was then passed through a 2 mm mesh Fritsch Pulveriser, with the coarse material (>2mm

fraction) being weighed and stored for future analysis. The pulverized soil was split, using a stainless steel sample splitter, with a 200 g split being ground and sieved to 45 mesh and stored in labeled 250 ml plastic jars ready for shipment to the analytical facility.



Figure 8: Typical Podzolic pedon developed under mixed birch and coniferous vegetation in the Sudbury region.

Samples were shipped to Lakefield Research (Peterborough, Ontario) for analysis. All remaining <2mm soil material was archived.

SAMPLE ANALYSIS

The prepared soil samples were analyzed at the Environmental Analytical Services Division of Lakefield according to Method #9-2-37 (June 2000). The sample was mixed thoroughly to ensure sub-samples would be homogenous. Between 0.5 and 0.505 g of the sample was weighed into a Teflon sleeve and was treated with 5 ml each of concentrated HNO₃ and HCl (*Aqua Regia*). The vessels were placed in a MARS 5 MAW2 Microwave Oven, put through a

heat cycle and allowed to cool to less than 60 C. The contents were poured into 50 ml volumetric flasks and diluted to volume with deionized water. The solutions were analyzed by a combination of Inductively-Coupled Plasma-Optical Emission Spectrometry (ICP-AES), Inductively-Coupled Plasma-Mass Spectrometry (ICP-MS) and hydride generation atomic emission spectrometry (HG-AAS).

The soil profile samples were analyzed by energy dispersive X-ray fluorescence spectrometry using the EMMA system in the CEM laboratories (Cheburkin and Shoty, 1996). Approximately 5 g of the 45-mesh sample was placed in a plastic tube sealed with a Mylar sheet and irradiated for 120 seconds. Data reduction was completed with propriety software, with data accuracy and precision being checked with selected NIST SRM materials.

Quality Program

The samples were analyzed at Lakefield, which is certified by the Standards Council of Canada (accredited ISO/IEC Guide 1725 level) and the Canadian Association of Environmental Analytical Laboratories. The calibration and testing activities at Lakefield follow the requirements of the ISO/IEC 9000 series standards. According to the Lakefield Research Analytical Services Description of Quality Control and Accreditation, quality control measures include duplicate samples, spiked blanks, spiked replicates, reagent/instrument blanks, preparation control samples, certified reference material analysis and instrument control samples. The Lakefield SOP required that, internally, at least 20% of samples analyzed are quality control samples.

In addition to the laboratory QA/QC procedures, the CEM quality control program included submission of periodic splits of soil samples, and an analytical drift-monitoring sample collected from within the Sudbury region. This Internal Reference Material (IRM) was prepared from a 100kg air-dried surface soil sample by sieving through the 2 mm mesh Fritsch Pulveriser, then through a 45 mesh sieve. The IRM sample was then tumbled for 24 hours to ensure homogenization, and bottled in 250 ml plastic jars for storage and submission for analysis. Blind CEM IRM samples were submitted for every thirty samples. Reported

laboratory values are considered accurate if their reported value is $\pm 10\%$ of the “target” value of the blind reference material established by the analytical program.

Table 7: Distribution of selected major and trace elements within the solum for a pedon equidistant from the Copper Cliff and Coniston smelters. The EMMA data provide total concentrations of the analyte elements within the soil samples.

Horizon	K	Ca	Ti	Fe	As	Cr	Cu	Ni	Pb	Se	Zn
	%				$\mu\text{g gm}^{-1}$						
LFH	1.27	0.66	0.26	5.12	59.7	99.3	4551	2563	416	23.8	187
Ae	1.87	0.45	0.35	1.26	17.3	41.6	105	40.4	12.1	1.22	32.0
Bhf1	2.1	0.66	0.36	3.09	6.6	82.3	12.9	62.3	11.5	1.3	116
Bhf2	1.66	0.61	0.3	2.12	4.44	66.5	14.0	31.8	6.22		46.3
C	1.94	0.59	0.28	2.19	6.54	55.4	16.9	22.6	7.71	1.06	36.6
EF _{C-LFH}	0.7	1.2	1.0	2.5	9.9	1.9	289	122	58.2	24.2	5.5

$$\text{EF} = \text{Enrichment factor} \text{EF} = ((M) / (\text{Ti})_{\text{LFH}}) / ((M)_{\text{pm}} / (\text{Ti})_{\text{pm}})$$

Blind duplicates of the field samples were submitted every twenty samples. Reported laboratory values of the blind duplicate samples were considered precise and accurate if the values were within the 95% confidence intervals when plotted, with a slope of the regression line of the plotted data being between 0.95 and 1.05. The field duplicate accuracy and precision was evaluated in the same manner as the blind sample duplicates. The overall QA/QC requirements of the Sudbury Soils project meant that approximately 40% of all samples digested and analyzed were for data quality assessment and assurance, exclusive of the field duplicates which were required to allow for an assessment of landscape homogeneity.

All IRM samples and duplicates were submitted in a randomized sequence relative to their duplicate, their geographic location, and their order of field collection. The laboratory analyses of duplicated splits of soil samples indicate very good reproducibility (precision). In general, there is also good agreement between the CEM laboratory analysis values and the reported values for the IRM. For the elemental analyses of the soil IRM, the majority analyses fell within the $\pm 10\%$ criterion.

NUMERICAL ANALYSIS TECHNIQUES

The chemical data obtained in this study were subjected to analysis by techniques described as numerical classification by Webster (1979). The purpose of numerical classification is to produce groups that are as homogeneous as possible within the groups, but are as distinct as possible between the groups. To achieve this purpose, a measure of similarity is used to objectively evaluate the similarity or dissimilarity between the individuals; then another measure of similarity, called a sorting strategy, is applied to form groups. This process of grouping individuals on the basis of similarity or dissimilarity is called classification (Sokal, 1966).

Studies that examine relationships between variables are called R-mode analyses, whereas investigations of between individual relationships are called Q-mode analyses. Classification can be utilised to identify generic units for mapping purposes (Volland and Connelly, 1978). The classification phase may be hierarchical or reticulate, and may also be divisive or agglomerative in the way groups of similar individuals are formed. Finally, the classification may be based on monothetic or polythetic procedures. Webster (1979) indicates that hierarchical agglomerative procedures, although they may not perform optimally on poorly structured populations such as soils, are the most popular in pedological studies and are, by nature, polythetic.

The coefficients used in numerical classification can be grouped into three categories (Williams and Dale, 1964), namely information statistics, Euclidean distances and disjoint-space functions. Information statistics are used in conjunction with either presence-absence or continuous data, and are considered non-metric and non-Euclidean. Euclidean distance statistics are metric, and measure the distance in space between two individuals, or between a cluster of individuals and other individuals. Use of Euclidean distance metrics requires an assumption that the variables are uncorrelated, an assumption not necessarily valid with geochemical data unless the sources of variation are a result of varying lithology or provenance. Pyott (1972) notes that Euclidean distance is biased towards attributes that are highly variable across the data set, and the resulting classification will be regulated by the more abundant rather than the diagnostic attributes. This tendency may be alleviated by data standardization. Disjoint-space functions use a probabilistic approach to classification in

which a null hypothesis is required, and thus an assurance that the data follows some known probability distribution is required (Williams and Dale, 1964).

In a study of soil trace element data, Moore and Russell (1967) indicate that Euclidean distance coefficients possess the following advantages: 1. They are metric; 2. They are likely to separate groups with aberrant attributes; 3. They provide models that may be grasped mentally with comparative ease. For these reasons the Euclidean distance coefficients are used in this study.

Cluster Analysis

Cluster analysis is a term applied to a host of methods used to combine either individuals or groups in either a hierarchical or a reticulate classification. As hierarchical classification optimizes a route between a population and its individuals (Volland and Connelly, 1978), it is used in this study. Different classifications result from the application of different clustering techniques to the same transformation matrix (Williams, 1971). The most common hierarchical clustering strategies as outlined by Webster (1979) are: single linkage grouping (nearest neighbour); centroid method; weighted centroid method; group average method; complete linkage grouping (farthest neighbour); flexible grouping; and Ward's method. As is indicated by Webster (1979), it was necessary to perform analyses by several of the above methods to ascertain the degree of clustering exhibited by the data generated in the course of this study.

Factor Analysis

Factor analysis or, more correctly, principal components analysis is a procedure used to interpret relationships within the variance - covariance matrix of a standardized multivariate data set (Davis, 1973). Rummell (1970) describes factor analysis as taking numerous measurements and resolving them into distinct patterns of occurrence, with no particular assumption of underlying variable structure being required. Principal Components Analysis can be separated into two steps:

- Computation of a correlation matrix of variables as a measure of associations;

- Extraction of initial components from the correlation matrix as eigenvalues and eigenvectors, with these components being orthogonal or independent of each other.

The first of these composite variables or components represents the linear combination of variables accounting for more of the variance within the data set than any other combination. The second component is defined as the second linear combination of variables, conditionally orthogonal to the first, accounting for most residual variance in the data following removal of the first component. Subsequent components are defined similarly until all variance in the data is exhausted.

The Principal Components Analysis routine within Systat™ program was used to determine the interrelationships present among geochemical variables of the 0-5, 5-10 and 10-20 cm soil samples, as well as for the soil parent materials. The chemical variables were standardized prior to analysis so that each variable had a mean of zero and unit variance to allow comparison between variables when units of measurement differ in type or relative order of magnitude as was found with the chemical compositional data of this study (Davis, 1973).

DATA PRESENTATION

The written report is primarily focused on the results of the chemical analyses of the soil samples collected by CEM and Golders personnel during the summer and fall of 2001 for the Sudbury Soils Study project. The fundamental purpose is to provide an overview of the regional distribution of analyzed metals in surficial materials, and to provide a structured database that will serve as the foundation for the Sudbury Regional Risk Assessment project. The data is interpreted to provide an assessment of the regional influence of smelting operations within the Sudbury smelter footprint.

Contour maps were produced for all analyzed elements using both the surface (0-5 cm), subsurface (5-10, 10-20 cm) and the soil parent material extraction chemistry data. The regional metal distributional maps were produced using the Inverse Distance Weighted interpolation (IDW) in ARCVIEW GIS (version 8.13). IDW interpolation explicitly implements the assumption that sites close to one another are more alike than those that are farther apart. To predict a value for any unmeasured location, IDW will use the measured

values surrounding the prediction location. Those measured values closest to the prediction location will have more influence on the predicted value than those farther away. Thus, IDW assumes that each measured point has a local influence that diminishes with distance, thus weighting the points closer to the prediction location greater than those farther away, hence the name inverse distance weighted.

The regional maps provided with this report are designed to illustrate the predicted distribution zones of effect of both anthropogenic metal inputs and parent material zonation, rather than to provide **exact** concentration contours at any specific soil depth. The concentrations of extracted metal(loids) are known with certainty **only** at the sampled sites, with values between the sites being mathematical interpolations estimated using the IDW algorithms. The maps are designed to provide visual interpretative tools **ONLY**.

The database for the Sudbury Soils project is organized into a series of Appendices, with all data keyed to GPS location and site number. These appendices list the site and sample metadata, as well as the *Aqua Regia* soluble concentrations, reported on 105 C dry weight, of aluminum, arsenic, barium, beryllium, cadmium, calcium, cobalt, copper, chromium, iron, lead, magnesium, manganese, molybdenum, nickel, selenium, strontium, vanadium and zinc. The *Aqua Regia* digestion does not produce a total digest of soil organic materials and minerals. As aluminosilicate minerals and some oxide minerals are not totally digested, quantitative concentration values are NOT obtained for recalcitrant elements such as Al, Cr, Ti and Zr. The incomplete digestion also leads to poor precision in data for the recalcitrant metals. The analytical results in Appendices I, II, and III are arranged on a site basis, with the data for the replicate samples from all sites being in Appendices I and II only.

The Appendix tables are organized by sample depth, with the GPS location for each site being listed in the first column of the file. The Appendix contains the averaged raw data from the field duplicates, as well as the full vertical sequence data for all sampled soils. Appendix III (on CD) is an interactive database of all the site metadata, the soil description, and the MEAN analytical data from the replicate sites referenced to individual sample points on a regional map display. The data associated with the individual sites are accessed in the HTML files by clicking on the point of interest. Navigation throughout the entire sampled area is possible.

RESULTS

The site descriptions recorded during the soil-sampling program and for the chemical analysis of the sampled soils are documented in Appendix I and II. All chemical data listed in the Appendices are averages of duplicate samples on an oven dry weight basis. The data are presented for soil samples for all depths, 0-5cm, 5-10cm, 10-20cm and parent material. The data in Appendix III, the interactive database, are also mean data from the field replicate samples.

Metal Distribution in Soil Profiles

A series of pedons formed in stable landscape position were sampled by genetic horizon adjacent to the principal areas of industrial activity within the Sudbury region, namely Copper Cliff, Falconbridge and Coniston. The pedons were located within 5 km of either the active or decommissioned smelters, respectively.

The EMMA data listed in Table 7 for a site approximately equidistant the Copper Cliff and Coniston smelter areas illustrate the relatively high concentrations of the metal(loid)s As, Co, Cu, Fe, Mn, Pb, Se and Zn in the LFH horizons of the sampled soils relative to the concentrations measured in the sub-soil or parent material. The data in Table 7 document total concentration of the individual analytes.

The localization of airfall materials in the surface horizons is indicative of particulate fallout, with the LFH layers effectively acting as a filter retaining the airfall and preventing translocation to underlying mineral horizons, an observation also described for the Kola region of Russia (Nikonov *et al.*, 1999; Koptsik *et al.*, 2003). The retention of the anthropogenic metals in this filter zone is further suggestive of a relatively low solubility and bioavailability of metals in the high temperature particulates. In contrast to our observations, however, the study of Nikonov *et al.*, (1999) considered the aerial contaminants to be soluble and retained as metal-organic complexes, not as particulates such as illustrated in Figure 9.

In order to evaluate if the metal(loid) content of the LFH is derived from natural or anthropogenic sources, an approximate enrichment factor (EF) was calculated for the above elements using the following equation: $EF = ((M) / (Ti)_{LFH}) / ((M)_{pm} / (Ti)_{pm})$. Enrichment factors ranging between 0.5 and 2 can be considered in the range of natural variability,

whereas ratios greater than 2 indicate enrichment from anthropogenic inputs (Hernandez *et al.*, 2003; Shotyk *et al.*, 2000).

The enrichment factors calculated in this study are normalized to Ti as a reference element because Ti is relatively immobile in the solum, and there is minimal indication of additions to the soils from the industrial sector. This approach could be utilized, with analyses of appropriate reference elements such as Sc, Ti, Y or Zr for the entire regional sample dataset, to indicate the potential zone of anthropogenic influence within the Sudbury smelter footprint if data for total elemental concentrations were available.

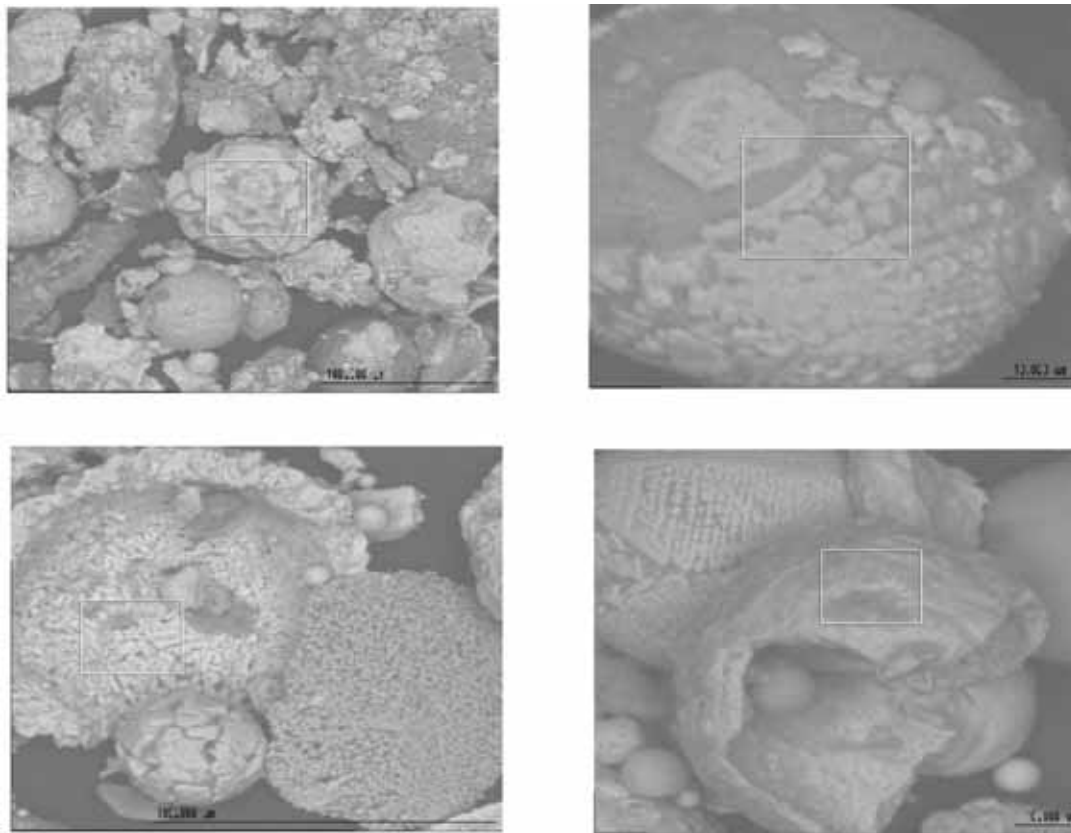


Figure 9: Examples of weathered aerosolic particles retained in the LFH horizons of a forested soil from the Sudbury region.

Iron, an element suggested in some studies (Shotyk *et al.*, 2000), is unsuitable as a reference element in the Sudbury region because of the amounts found in modern smelter emissions. The effective use of Al as a reference element in the current regional data set is also limited

because of the incomplete dissolution of Al-bearing phases in both the soils and parent materials by *Aqua regia*. The calculated EF values do, however, suggest a strong anthropogenic influence in the concentrations of the metal(loid)s As, Cu, Fe, Mn, Pb, Se and Zn in the LFH horizons. The lack of enrichment for Cr in the surface (LFH) horizon suggests that there has been minimal anthropogenic output of this element from the industrial activity within the region. This enrichment of specific elements in the LFH horizons suggests that these organic-rich layers act a filter preventing the translocation of the aerosol particles to the deeper soil horizons. There is also evidence for the possible solubilization and translocation of Mn, Ni and Zn in dissolved phases to the Bf1 horizon lower in the profile, an indication of potential bioavailability of these metals to soil fauna and flora.

However, copper, known to be chelated by soil the potentially mobile soil humic acids, is only translocated to the Ae horizon of the pedon. Arsenic exhibits the same profile distribution pattern as copper. These observations indicate the importance of sampling the genetic horizons of soils to the parent material to enable the determination of potential impacts of anthropogenic emissions in relatively undisturbed sites. The possibility of vertical translocation of specific elements also supports the conjecture of Ngriau *et al.*, (1998) that the release of anthropogenic metals from regional sola may affect metal levels in regional lakes for perhaps hundreds of years. The evidence for translocation also points to the potential slow solubility and bioavailability of the anthropogenic metals retained in the surface organic layers of regional soils.

Metal Distribution in Regional Parent Materials

The sites selected for this study were sampled to a depth of greater than 80cm wherever possible using bucket augurs to obtain soil samples assumed to unaffected by recent industrial activities. These samples, referred to as parent material samples, were obtained from over 70% of the sites visited during the sampling program. The analytical data obtained from these samples represent the first known attempt to establish the pre-industrial levels of metals in regional soils, with the data providing an excellent indication of regional backgrounds levels of *Aqua Regia* extractable metal(loid)s. As the textures of the soil-forming parent materials in the region are variable, with the clay fraction commonly being

enriched in many of the transition metals, the lack of textural data does limit interpretation of the regional background concentration data.

The summary statistics of the individual elements in the soil parent materials of the region are shown in Table 8. The statistical data indicate that all the elements measured in this study show some deviation from statistical normality, an observation that would normally indicate the need to subject the data to a log-normal transformation.

Similar observations with soil chemical compositional data in previous studies (Spiers *et al.*, 1984) has, however, indicated that the log transformation of the data did not significantly affect any of the general interpretations, the multivariate calculations discussed later in this report use standardized data. The variability in textures of the soils, together with the wide range of igneous and metamorphic minerals inherited in the diamictons from the regional bedrock, should balance the usual log-normal distribution of minor and trace elements in minerals in natural systems.

The mean values of the individual elements in the soil parent materials of the region in Table 8 are compared with values for mean crustal abundance, for granite as a major rock type common to region, for the soils of the conterminous United States (Shacklette *et al.*, 1971), and for soils of the Canadian Shield (McKeague *et al.*, 1979) for comparative purposes. Values for the individual elements are discussed below. In the following discussion the values obtained are compared with data for soils parent materials from a variety of sources, including those documented by MOE in the *Guidelines for Use at Contaminated Sites in Ontario* (MOE, 1997).

Direct comparison with the latter data must be tempered by the fact that the ranges documented by the MOE are for soils in the pH range 5.0-9.0. In the current study, soil pH values were determined on a sub-set (35) only of the samples, with a pH range from slightly alkaline (7.78) to acidic (3.69) being reported. The lower pH values are trending northeast from Copper Cliff, with the highest pH values between 6.5 and 7.78 being obtained for samples from an area of calcareous soils formed on silt loam glaciolacustrine materials in the Verner area.

Table 8: Distribution of Aqua Regia extractable levels of 19 major and trace elements in parent materials▲ of the Sudbury Smelter footprint region.

Element	Arithmetic Mean	Minimum	Maximum	Standard error	Standard Deviation	Skewness	Kurtosis	Granite*	Crustal Abundance (%)	U.S. Soils	Shield Soils**	
Al	1.78	0.21	9.10	0.067	1.07	1.84	8.26	7.7	8.2	6.6	6.7	
Ca	0.78	0.10	5.80	0.067	1.11	3.11	8.94	1.6	4.1	2.4	1.8	
Fe	2.27	0.21	7.80	0.068	1.09	0.96	1.81	2.7	5.6	2.5	2.5	
Mg	0.67	0.04	3.80	0.034	0.54	2.47	9.57	0.16	2.3	0.92	0.53	
	(µg gm ⁻¹)							(µg gm ⁻¹)				
As	1.11	nd	29	na	6.8	12	166			7.4	na	
Ba	98	13	390	na	80.2	1.2	0.61			580		
Be	0.15	nd	1.1	na	0.29	1.57	0.86			0.92		
Cd	na	na	na	na	na	na	na			na		
Cr	56.4	12	130	1.63	26.04	0.53	-0.47	4	100	53	19	
Co	8.9	2	38	0.29	4.64	1.73	7.11	1	25	10	19	
Cu	26.4	nd	270	1.73	27.65	4.61	32.12	10	55	25	12	
Mn	293	23	1800	11.35	180.8	2.66	17.86	400	950	560	417	
Mo	0.11	nd	3.1	0.03	0.46	4.14	16.45			2	na	
Ni	36.1	8.5	163	1.32	21.0	2.39	9.77	<1	75	20	12	
Pb	5.9	1	47	0.24	3.85	5.12	50.97	20	12.5	20	20	
Se	0.06	nd	2.0	0.02	0.31	5.51	29.92			na	0.18	
Sr	43.8	11	80	1.08	17.27	-0.08	-1.09	285	375	240	409	
V	43.3	6.7	220	1.29	20.61	2.63	19.21	20	135	76	na	
Zn	29.7	5.4	160	1.16	18.5	1.98	9.07	40	70	54	57	

Notes:

Average values (Total) of the elements in the earth's crust, in the major rock type common to the region and in soils of the Canadian Shield are listed for comparison.

▲ Based on values for 254 sample sites

* Values for Taylor (1964)

** Values for conterminous US soils (Shacklette et al. 1971, Gough et al. 1988)

** Values for soils of the Canadian Shield (McKeague et al. 1979)

The maximum value for aluminum in parent material was 9.1%, with a minimum reported value of 0.21%. The mean value for Shield soils listed by McKeague *et al.*, (1979) is 6.7% and for U.S. soils by Shacklette *et al.*, (1971) is 6.6%, considerably higher than the arithmetic mean of 1.78% of this study. The data are, however, similar to the 2.32% documented for coarse textured soils of Shield glacial and glaciofluvial origin in North East Alberta (Spiers *et al.*, 1989). Although there is no MOE Table F value for aluminium in surface materials, the OTR₉₈ value was exceeded in 28 of the 254 sites sampled; these sites are apparently random within the area (see Appendix III), with aluminum levels obtained perhaps reflecting the chemistry and mineralogy of the underlying bedrock.

Arsenic

The maximum value for arsenic in the parent samples was 98 µg/g, with minimum values below detection limits. The arithmetic mean concentration of arsenic in the parent materials of the Sudbury region is 1.1 µg/g. Of the 285 parent material samples analyzed, only 24 have an arsenic concentration above detection limits by the methodology used in this study. The MOE Table F background concentration limit for arsenic (17 µg/g) for all non-agricultural use for surface materials was exceeded in 6 samples, centered on the Copper Cliff smelter, with an outlier in Val Caron. Although comparative data for the levels of arsenic in Shield soil materials is not available, mean levels for uncontaminated soils of Southern Ontario are documented at 5.2 µg/g, whilst that for U.S. soils is 7.4 µg/g, with a range from 1-97 µg/g (Shacklette *et al.*, 1971; Gough *et al.*, 1988). For comparison, Henderson *et al.*, (2002) estimate the background level of arsenic for soils of the Rouyn-Noranda area approximately 250 km north east of Sudbury at 6 µg/g. In a similar study of background concentrations for 1366 soils formed in tills underlain by Precambrian bedrock formations in the Flin Flon region of Manitoba, McMartin *et al.*, (1999) document arsenic mean concentration as 20 µg/g.

Barium

The arithmetic mean barium concentration documented in this study is 98 µg/g, a content much lower than that documented by Shacklette *et al.*, (1971; Gough *et al.*, 1988) for conterminous U.S. soils (500 µg/g), with the range for Sudbury soil forming materials being at

the lower end of the documented range for U.S. soils. The MOE Table D limit is 210 µg/g for surface materials used for non-agricultural uses for surface materials in the pH range of 5.0 to 11.0, with the Table F level being 210 µg/g.

Beryllium

The arithmetical mean regional soil beryllium concentration is 0.15 µg/g, actually below Ontario Table F background concentration limits of 1.2 µg/g. The highest concentration documented in the soil parent materials of the region is 1.1 µg/g. Although comparative data for the levels of beryllium in Shield soil materials is not available, mean levels for nickel-contaminated soils in Port Colborne, Southern Ontario are documented at 1.0 µg/g (MOE, 2002). The documented beryllium concentration level for U.S. soils is 7.4 µg/g, with a range from 1-97 µg/g (Shacklette *et al.*, 1971; Gough *et al.*, 1988).

Cadmium

Cadmium was below method detection levels for the 285 samples of regional soil parent materials. Henderson *et al.*, (2002) estimate the background level of cadmium for soils of the Rouyn-Noranda area at 1 µg/g, a level in contrast to a measured mean background concentration of 0.3 µg/g for soils formed in tills in the Flin Flon region of Manitoba, (McMartin *et al.*, 1999).

Calcium

The arithmetic mean calcium concentration documented in this study is 0.78%, a content median to that documented by McKeague *et al.*, (1979), Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield (2.4%) and conterminous U.S. soils (1.8%), respectively. The parent material sites with calcium concentrations at the higher end of the range (0.22% – 5.8%) are all at the eastern edge of the study area. These data reflect the fact that only about 15% of the soils sampled in the Sudbury region are developed on calcareous parent materials, specifically the medium textured glaciolacustrine sediments of the Warren-Verner area. The OTR₉₈ value for calcium is 5.5 %, with no Table F limit. In a similar study of background concentrations for 1366 soils formed in tills underlain by Precambrian bedrock formations in

the Flin Flon region of Manitoba, McMartin *et al.*, (1999) document calcium mean concentration as 0.32 %. The OTR₉₈ value for calcium reflects the dominance of data from the calcareous soils of southern Ontario used in the production of the advisory tables.

Chromium

The regional mean for chromium concentration of the soil parent materials is 56.4 µg/g, with a range of 12 - 130 µg/g. These data are in fairly close agreement with the Canadian (45 µg/g) mean soil parent material chromium content, but significantly higher than that documented for Shield soils (19 µg/g). Several sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background chromium concentration limit of 71 µg/g for all non-agricultural uses for surface materials. The data of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for the less than 75 µm fraction of subsurface soils of the conterminous U.S.A. (51 µg gm⁻¹) indicate that the levels of this study are about normal background for surficial soil forming sediments. Interestingly, the higher chromium values in the regional parent materials are primarily to the south of the major industrial region. The measured mean background concentration of chromium in soils formed in tills in the Flin Flon region of Manitoba was 135 µg/g (McMartin *et al.*, 1999).

Cobalt

With a range in concentration from 2-38 µg/g, the arithmetic mean cobalt levels (8.9 µg/g) in soil parent materials of the Sudbury region are lower than those described by McKeague *et al.*, (1979) for Shield soils. However, the mean value is similar to that defined for U.S. soils (10 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988). Several sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background cobalt concentration limit of 21 µg/g for all non-agricultural uses for surface materials.

Copper

The overall mean level of copper (26.4 µg gm⁻¹) is similar to that defined for U.S. soils (25 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988), but double that documented by McKeague *et al.*, (1979) for samples for Shield soils. One site in the Kelley Lake delta, with a

level of copper at 270 µg/g, skewed the data for the regional distribution of Cu. This site is probably enriched with copper as a result of erosion from the mining and smelter operations further up the Junction Creek watershed. This is also the only site in the region with soil copper levels above the MOE Table F guidelines (85 µg/g) for surface materials.

Interestingly, the data obtained in the current Sudbury study are similar to the estimation of background concentration of copper at 30 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). The measured mean background concentration of copper in soils formed in tills in the Flin Flon region of Manitoba was 122 µg/g (McMartin *et al.*, 1999).

Iron

The mean iron concentration documented in this study is 2.27 %, essentially identical to the values documented by McKeague *et al.*, (1979), Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield and conterminous U.S. soils, respectively. The OTR₉₈ value for iron is 3.5 %, with no Table D limit. There were 40 samples that exceeded the OTR₉₈ values for surface material. The samples are dominantly in the area to the south of the 3 smelters, and reflect the local bedrock influence (see later). In comparison, the measured mean background concentration of iron in soils formed in tills in the Flin Flon region of Manitoba was 5.28% (McMartin *et al.*, 1999).

Lead

The mean regional value for lead (5.9 µg/g) in Sudbury area soil parent materials is much below that documented by Dudas and Pawluk (1980) for Prairie soils, by McKeague *et al.*, (1979) for soils of the Shield region and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soil forming materials of the conterminous U.S. (20 µg/g). The lead levels for all parent material sample sites in this Sudbury area study have concentrations below the Ontario MOE Table D background lead concentration limit of 1000 µg/g for all non-agricultural uses for surface materials. Furthermore, the data obtained in the current Sudbury study are much lower than the estimate of background concentration of lead at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002).

The measured mean background concentration of lead in soils formed in tills in the Flin Flon region of Manitoba was 8 µg/g (McMartin *et al.*, 1999).

Magnesium

The arithmetic mean magnesium concentration documented in this study is 0.62%, a content median to that documented by McKeague *et al.*, (1979), Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield (0.53%) and conterminous U.S. soils (0.92%), respectively. The OTR98 value for magnesium is 2.0 %, with no Table F limit. The parent material sites with magnesium concentrations at the higher end of the range (0.04% – 3.8%) are all at the eastern edge of the study area. These soils at these sites are probably developed on calcareous medium textured glaciolacustrine sediments. In comparison, the measured mean background concentration of magnesium in soils formed in tills in the Flin Flon region of Manitoba was 1.89% (McMartin *et al.*, 1999).

Manganese

The arithmetic mean manganese concentration documented in this study is 293 µg/g, with a range of 23 – 1800 µg/g. No samples exceed the OTR₉₈ values of 2200 µg/g for manganese for surface materials. The manganese levels described in this study are lower than those documented elsewhere (McKeague *et al.*, 1979; Shacklette *et al.*, 1971; Spiers *et al.*, 1989) for background soil levels in North America.

Molybdenum

With a mean of 0.11 µg/g, levels of molybdenum are lower than those documented by Shacklette *et al.*, (1971) for U.S. soils (0.98 µg/g) and Gough *et al.*, (1988) for Alaskan soils (1.3 µg/g), with no comparable data being readily available for Canadian Shield soil parent materials, with the exception of the data of Pawluk and Bayrock (1969) who describe a background level of 1-2 µg/g molybdenum for the clay-rich soils Northeastern Alberta. No sampling sites exceed the MOE Table F guideline of 2.5 µg/g molybdenum for all non-agricultural uses for surface materials. The data obtained in the current Sudbury study are similar to the estimation of background concentration of molybdenum at 1 µg/g for soil

forming materials of the Rouyn-Noranda area approximately 15 km north east of Sudbury (Henderson *et al.*, 2002).

Nickel

The arithmetic nickel levels (36 µg/g) for the Sudbury region in this region are higher than those levels documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (12 µg/g) and in the USGS documented levels for soils (20 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in parent material nickel concentrations is from 9 to 163 µg/g, with the higher concentrations being in the soil parent materials in the vicinity of the Kelly Lake delta that is the receiver of the sediment load from the major mineral extraction operations of the region. The high values are, however, below the MOE Table D guideline of 710 µg/g for surface materials where soil pH is 5.0 to 11.0. The measured mean background concentration of nickel in soils formed in tills in the Flin Flon region of Manitoba was 67 µg/g (McMartin *et al.*, 1999), approximately twice as high as in the soils of the Sudbury region. The data obtained in the current Sudbury study are much lower than the estimation of background concentration of nickel at 1 µg/g for the humus layer of soils of the Rouyn-Noranda area approximately 15 km north east of Sudbury (Henderson *et al.*, 2002).

Selenium

The arithmetic selenium levels (0.06 µg/g) for the Sudbury region in this region are lower than documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (0.18 µg/g). The reports of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soils of the conterminous U.S. soils do not document levels for selenium. The values documented in this study are considerably below the potentially toxic levels of the MOE Table D guideline of 2500 µg/g for surface materials where soil pH is 5.0 to 11.0.

Strontium

The arithmetic strontium levels (44 µg/g) for the Sudbury region in this region are considerably lower than documented both in the review by McKeague *et al.*, (1971) for

agricultural soils of the Shield region (409 µg/g) and in the USGS documented levels estimated from 563 soil profiles (240 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The values documented in the latter studies are similar to those documented for both granite and the estimated mean crustal abundance (Taylor, 1964). The range in parent material strontium concentrations is from 11 to 80 µg/g. The lower concentrations in this study compared to those listed above is a reflection of the non-calcareous nature of the soil forming materials of the Sudbury region. Similar levels are, however, documented for soil parent materials formed on glaciofluvial materials of North East Alberta (Spiers *et al.*, 1989). There are no soil remediation criteria listed in the MOE Table D guideline for surface materials where soil pH is 5.0 to 11.0. However, the OTR₉₈ value for strontium is 64 µg/g.

Vanadium

The arithmetic mean vanadium level for the Sudbury region is 43 µg/g, with a range of 6 to 220 µg/g. The mean value in this region is lower than documented for soils in the USGS study estimated from 563 soil profiles (76 µg/g) of the conterminous U.S. (Shacklette *et al.*, 1971; Gough *et al.*, 1988), and for soils of North East Alberta (Spiers *et al.*, 1989). The low level of vanadium found in the current study may reflect the relatively high proportion of granite incorporated in the regional glaciogenic sediments that form the soil parent materials. There values documented for soil parent materials in this study are below the level of 910 µg/g listed in the MOE Table D guideline for surface materials where soil pH is 5.0 to 11.0 where soil remediation is an issue.

Zinc

The arithmetic mean zinc concentration for soil parent materials in the Sudbury region is 30 µg/g, with a range from 5.4 to 160 µg/g. The mean value is lower than that documented for both Shield soils (57 µg/g) by McKeague *et al.*, (1979) and the conterminous U.S. soils (54 µg/g) and Alaskan soils (79 µg/g) in the USGS studies of Shacklette *et al.*, (1971) and Gough *et al.*, (1988), respectively. Pawluk and Bayrock (1969) document levels of 40 - 50 µg gm⁻¹ for the North East of Alberta for coarse textured soils formed in glaciogenic materials

primarily of Shield source. Elevated concentrations are to the west, south and east of the three smelters. The background zinc levels obtained in this study are lower than estimates of background concentration of zinc at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 150 km north east of Sudbury (Henderson *et al.*, 2002).

Regional Geochemical Maps

Overlain on regional bedrock maps (Figure 1), the regional elemental concentration maps display geochemical data as proportional dots illustrating concentrations of individual elements in the soil parent materials of the Sudbury region (Figure 10 to 27). The geochemical maps indicate that metal concentrations in the parent materials of the Sudbury region vary with underlying bedrock composition. The apparent associations between concentrations of metals extracted by *Aqua Regia* from soil parent materials and the regional bedrock geology will be briefly developed in the following section.

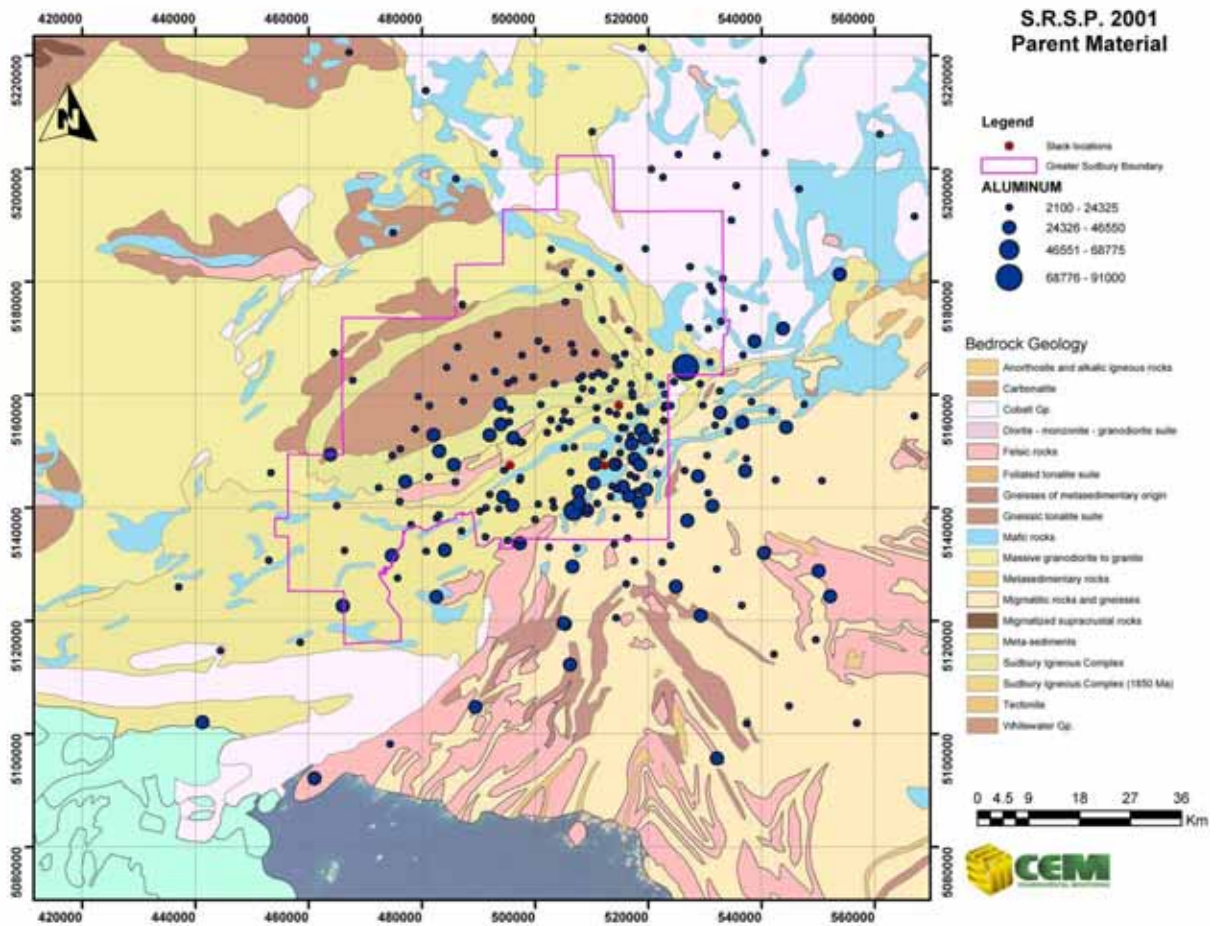


Figure 10: Distribution of aluminium in the soil parent materials of the Sudbury Region.

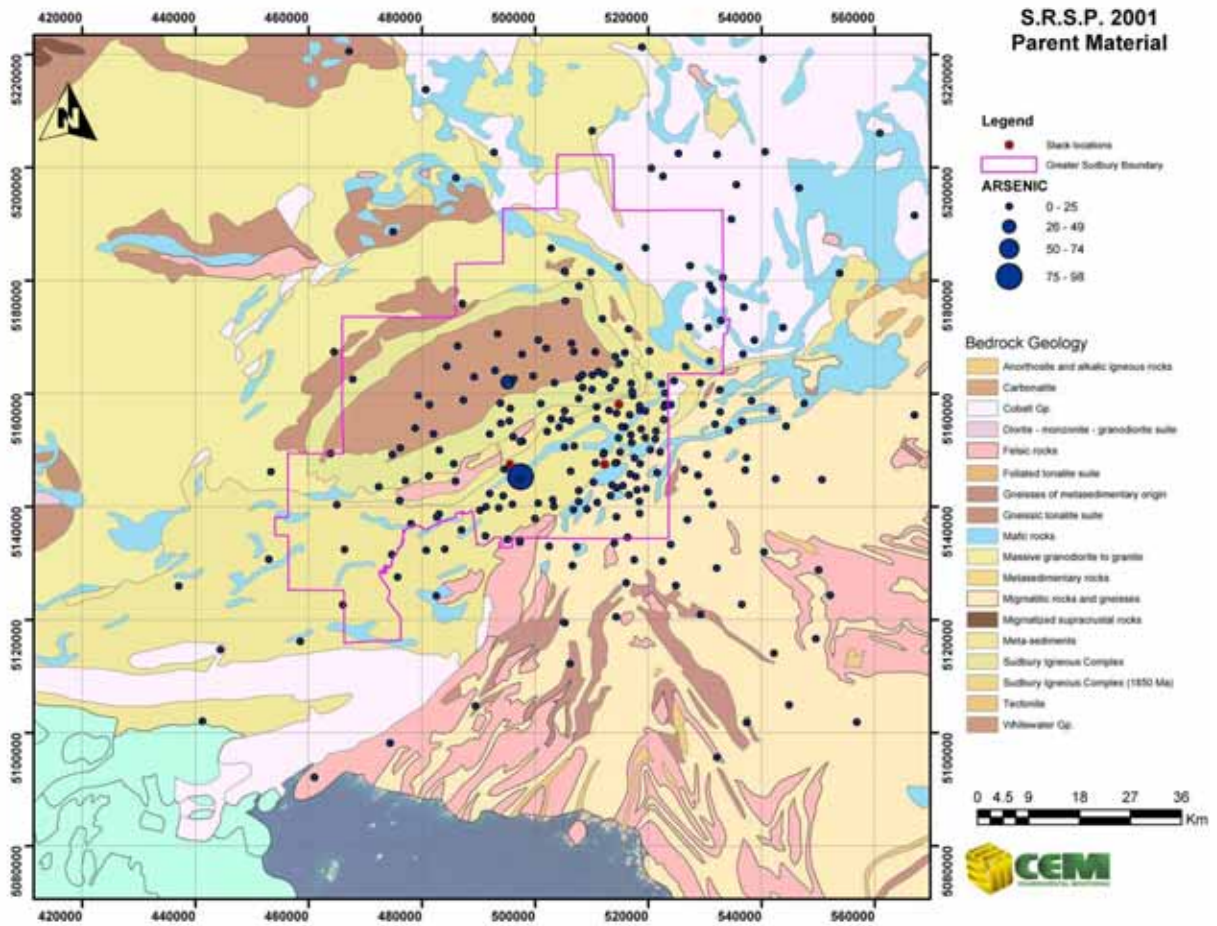


Figure 11: Distribution of arsenic in the soil parent materials of the Sudbury Region.

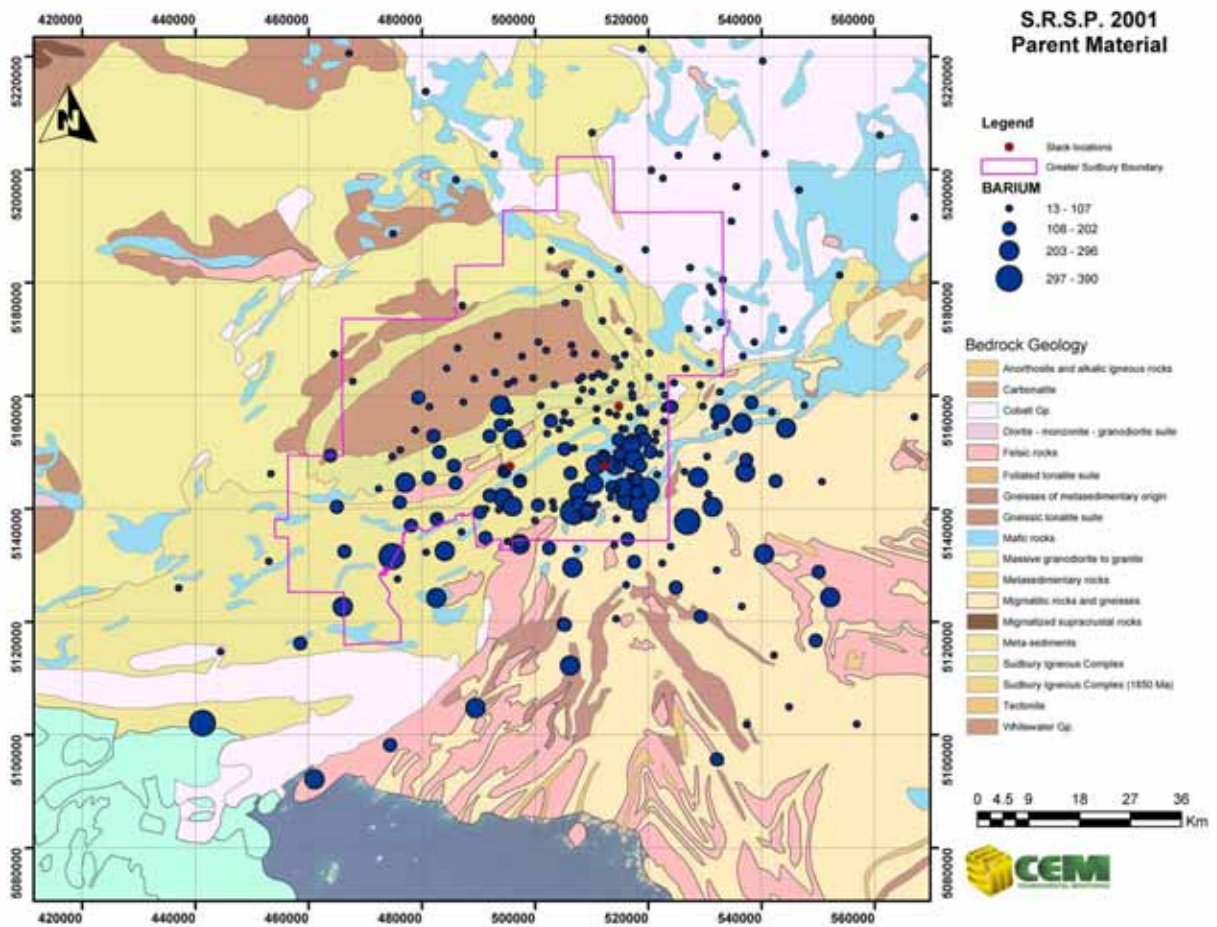


Figure 12: Distribution of barium in the soil parent materials of the Sudbury Region.

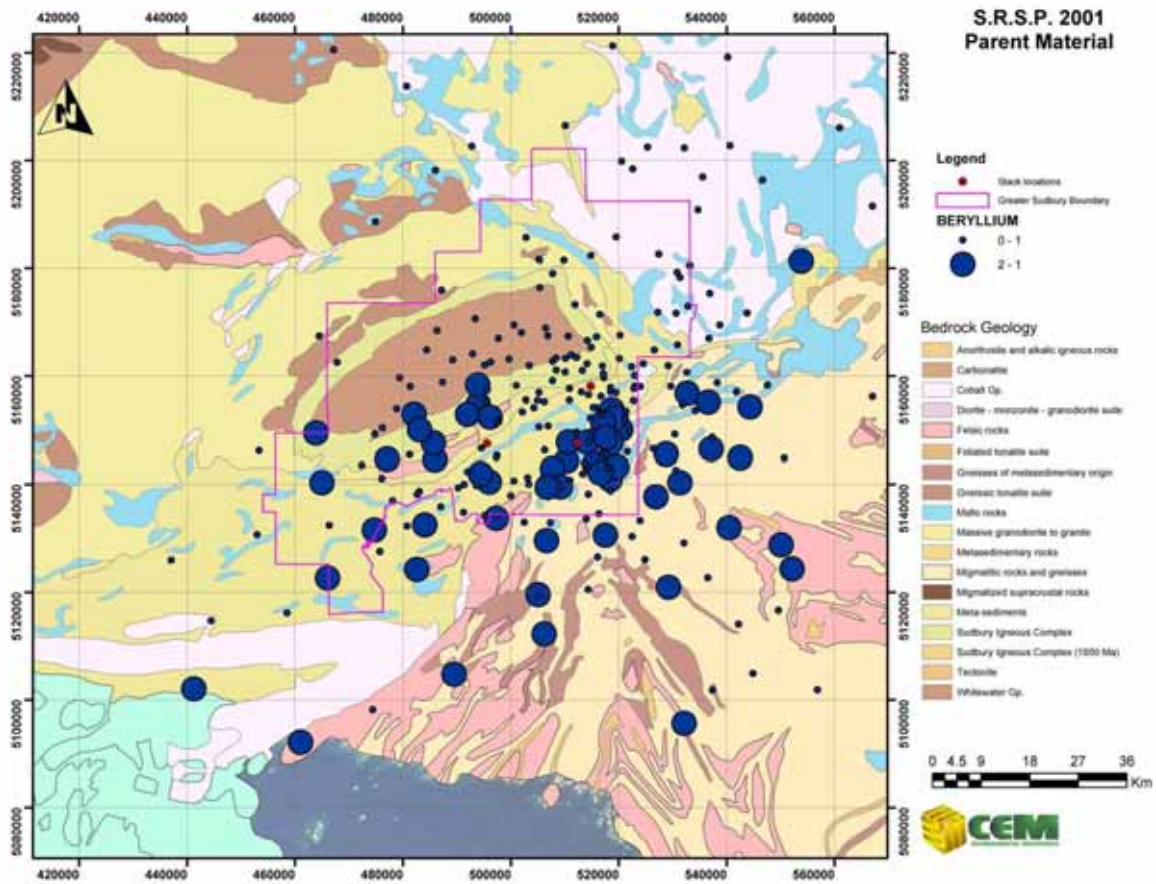


Figure 13: Distribution of beryllium in the soil parent materials of the Sudbury Region.

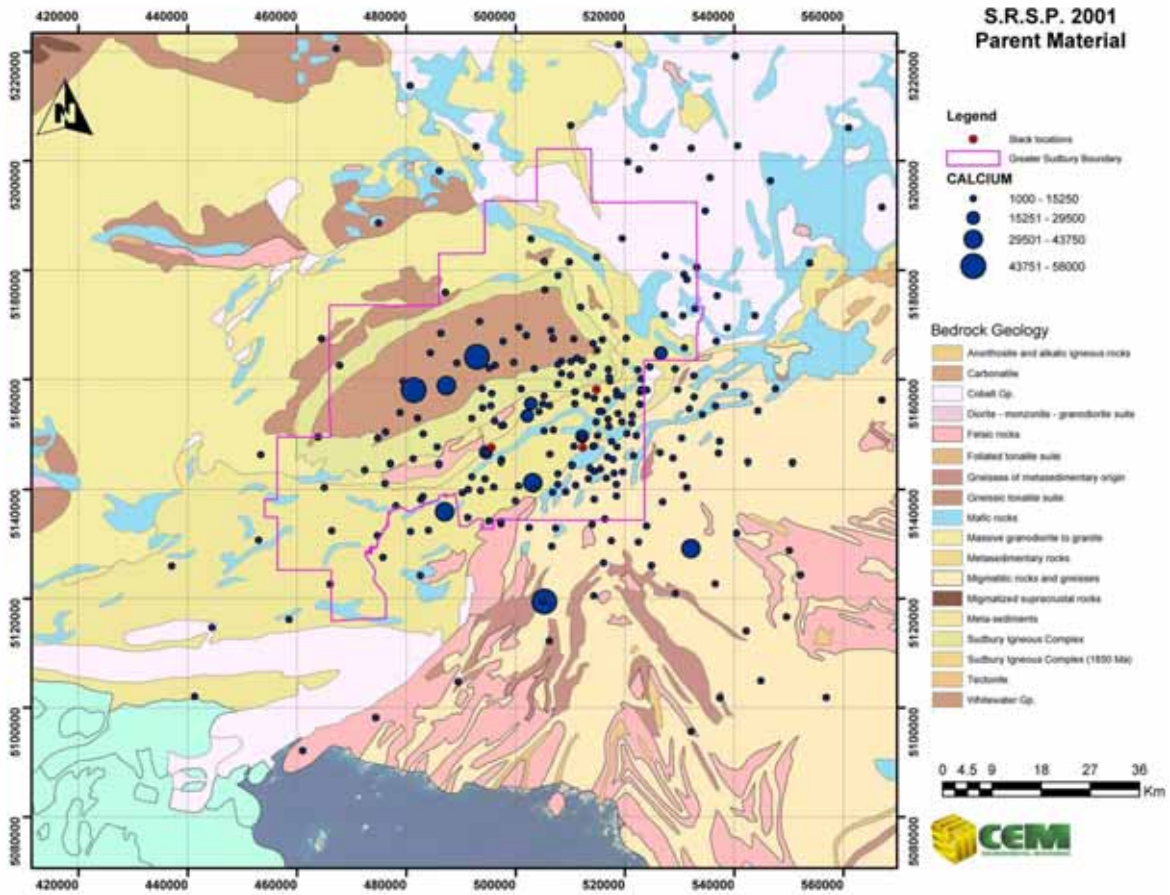


Figure 14: Distribution of calcium in the soil parent materials of the Sudbury Region.

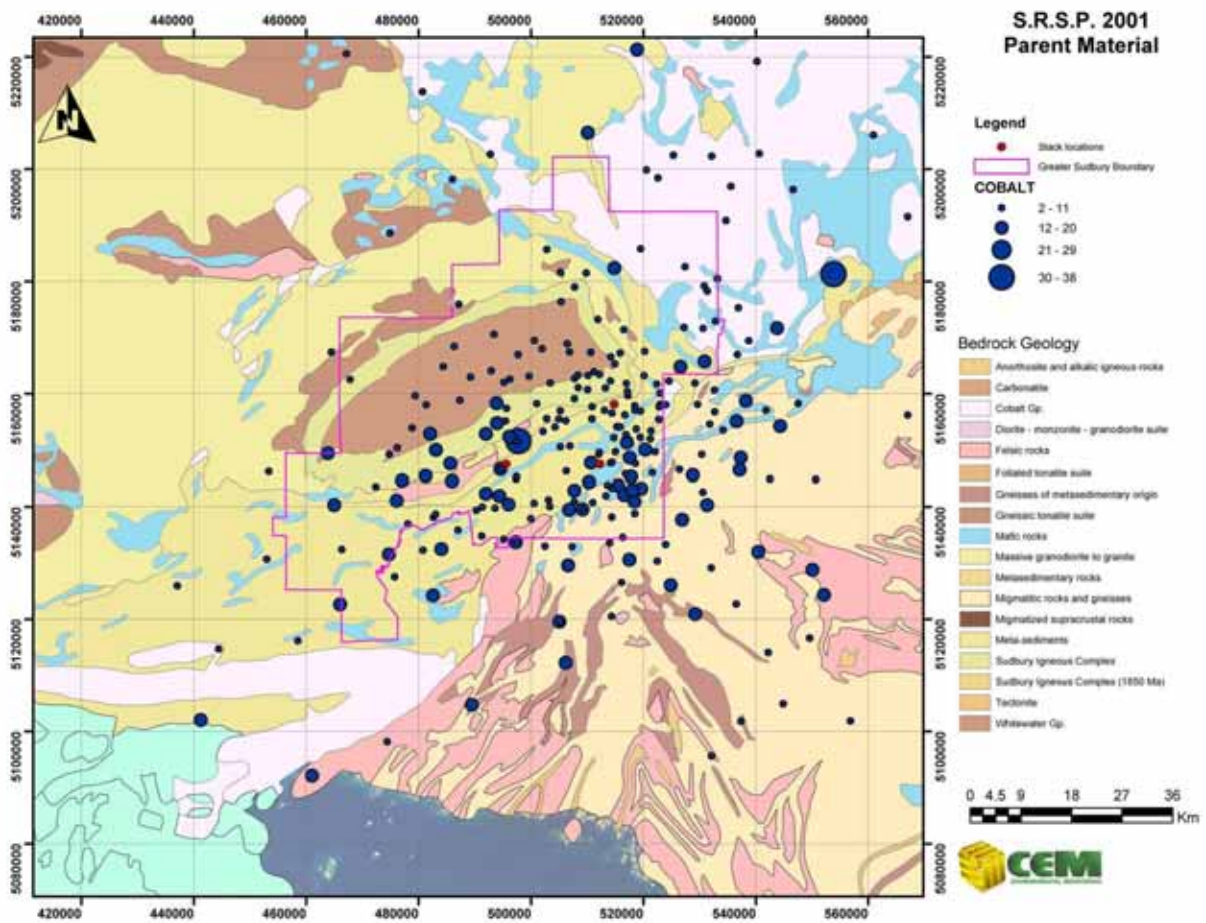


Figure 15: Distribution of cobalt in the soil parent materials of the Sudbury Region.

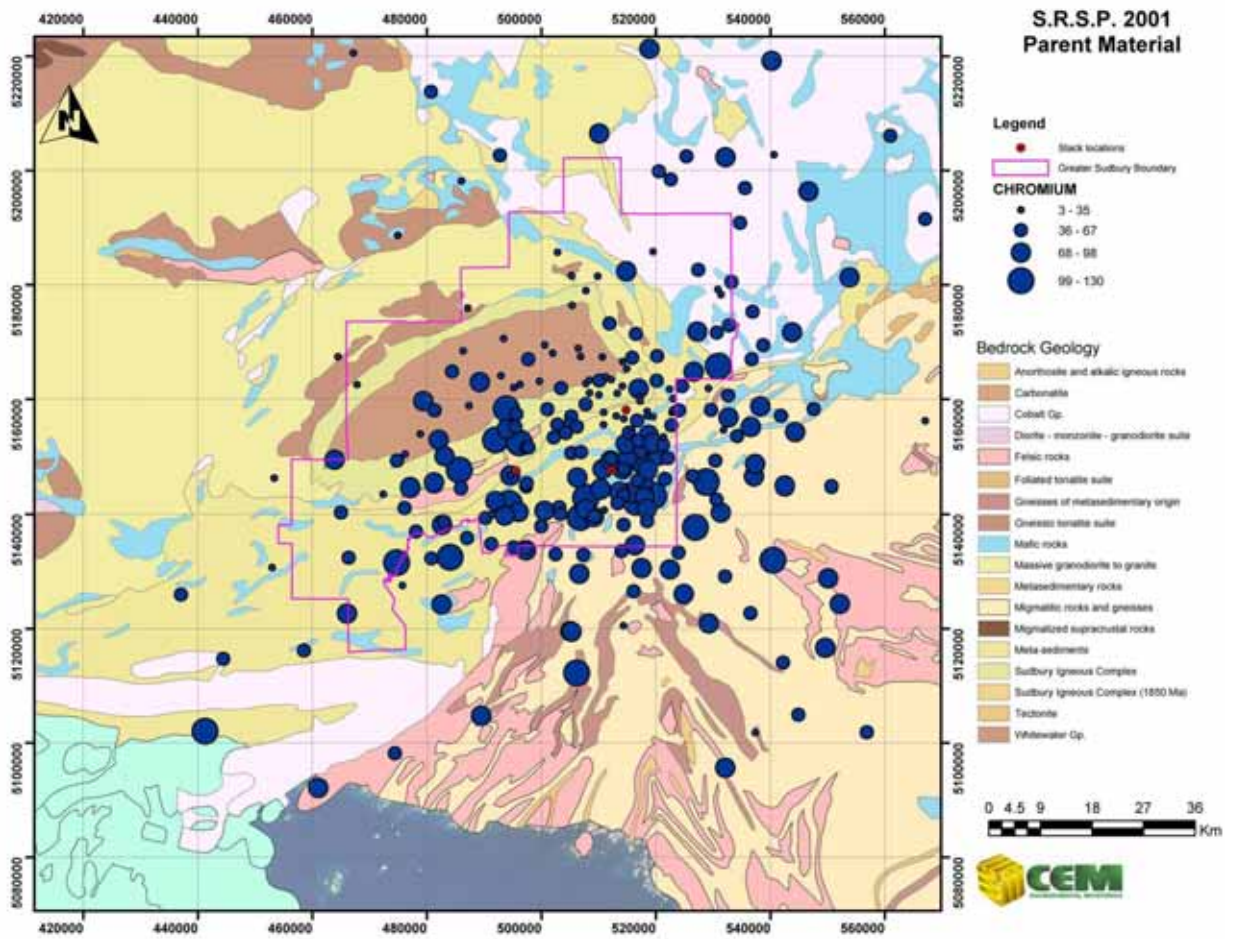


Figure 16: Distribution of chromium in the soil parent materials of the Sudbury Region.

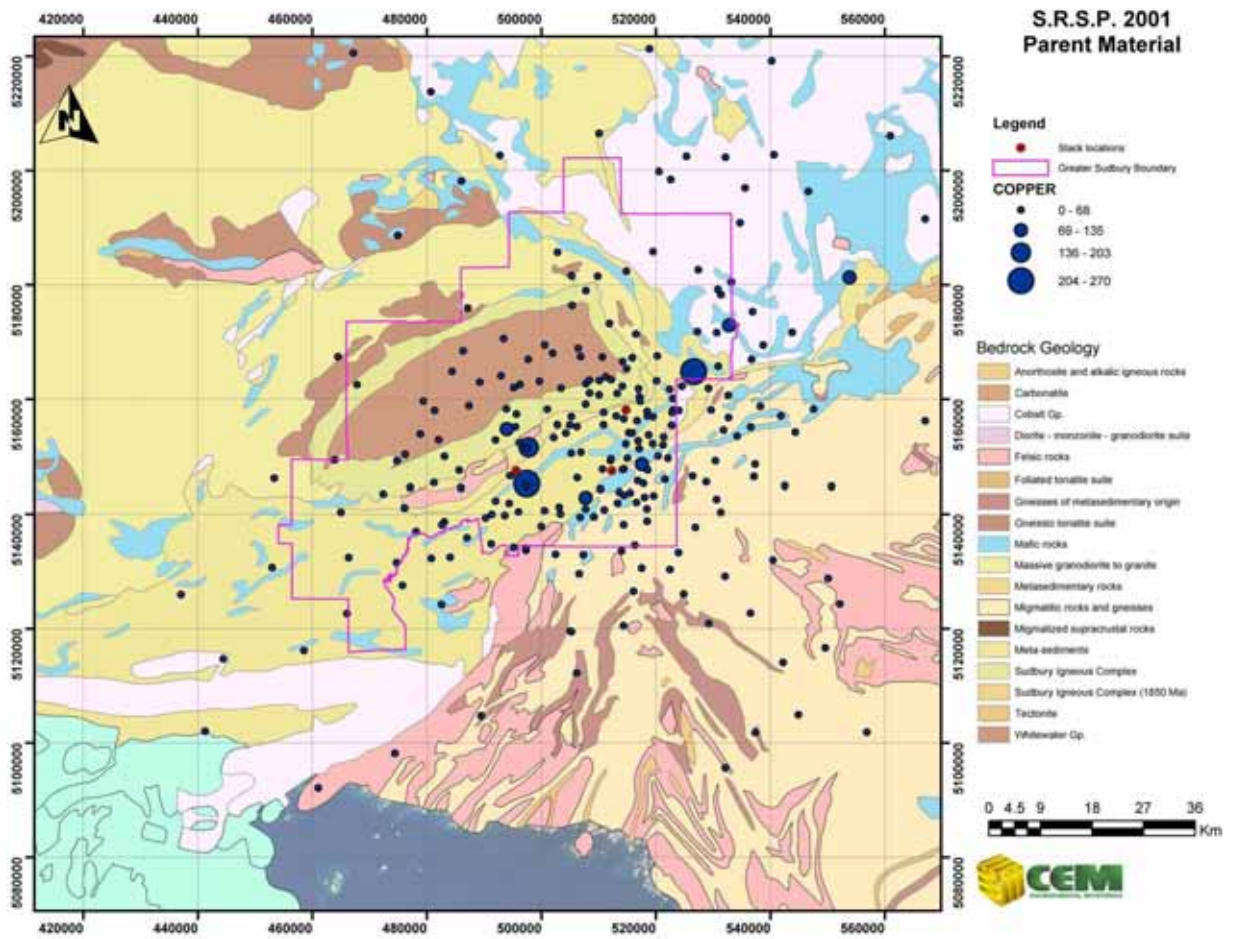


Figure 17: Distribution of copper in the soil parent materials of the Sudbury Region.

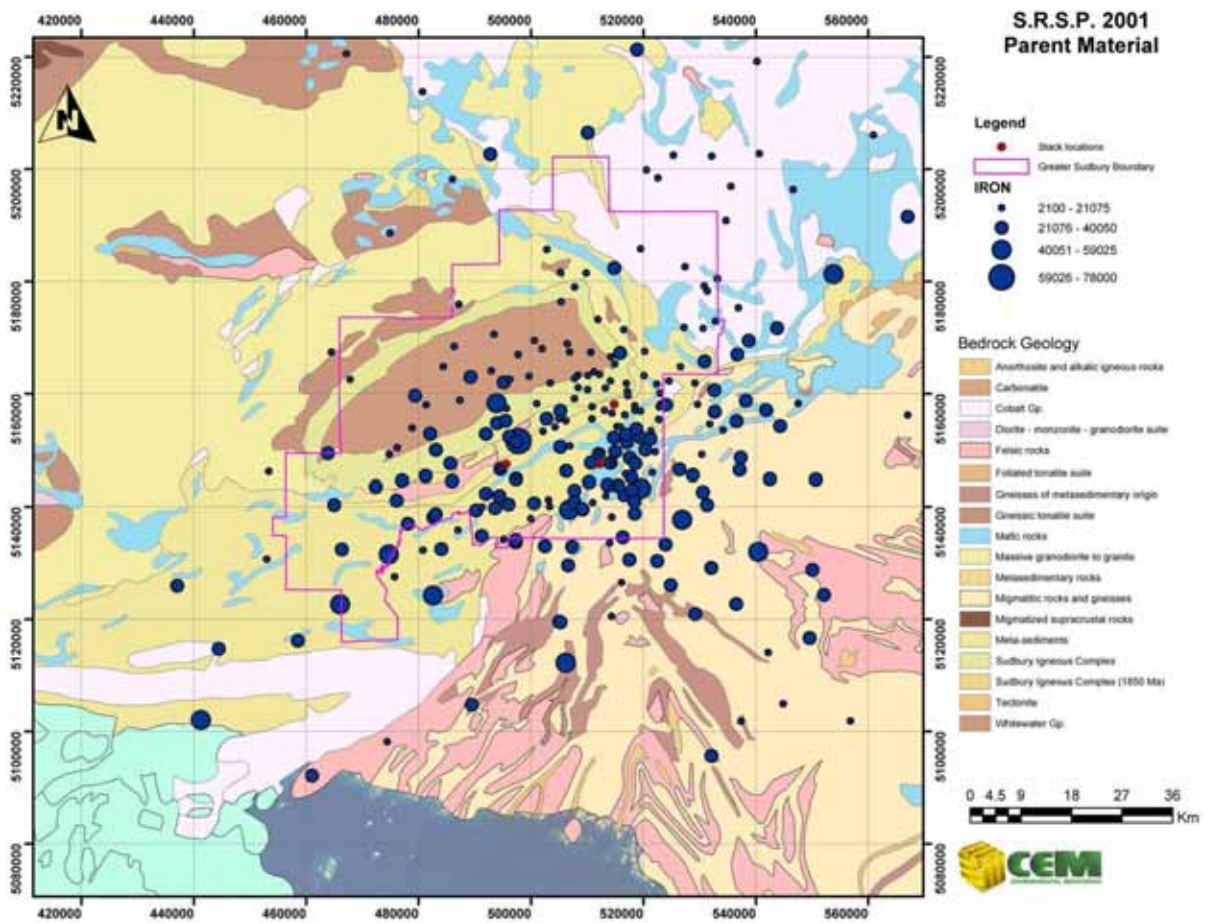


Figure 18: Distribution of iron in the soil parent materials of the Sudbury Region.

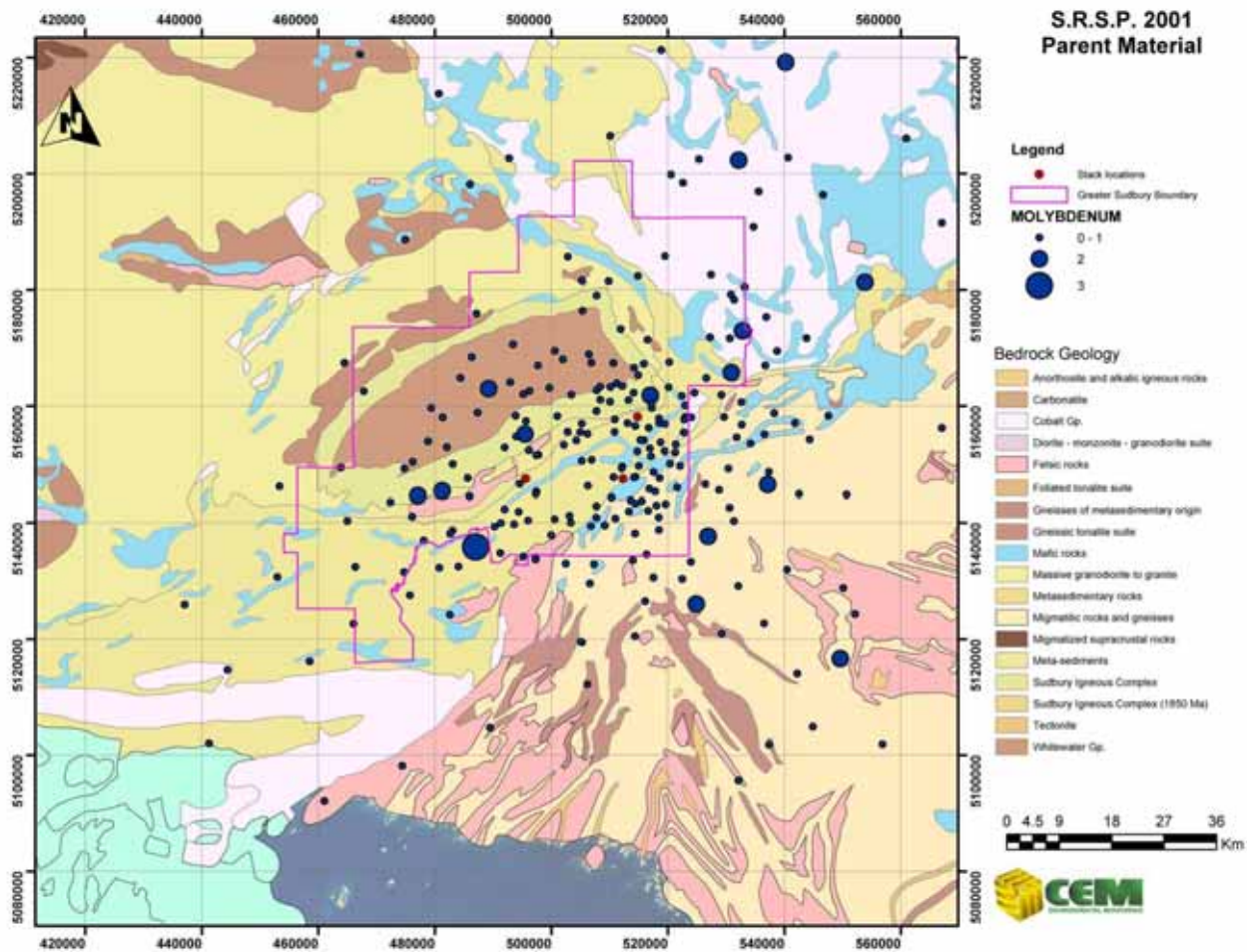


Figure 19: Distribution of molybdenum in the soil parent materials of the Sudbury Region.

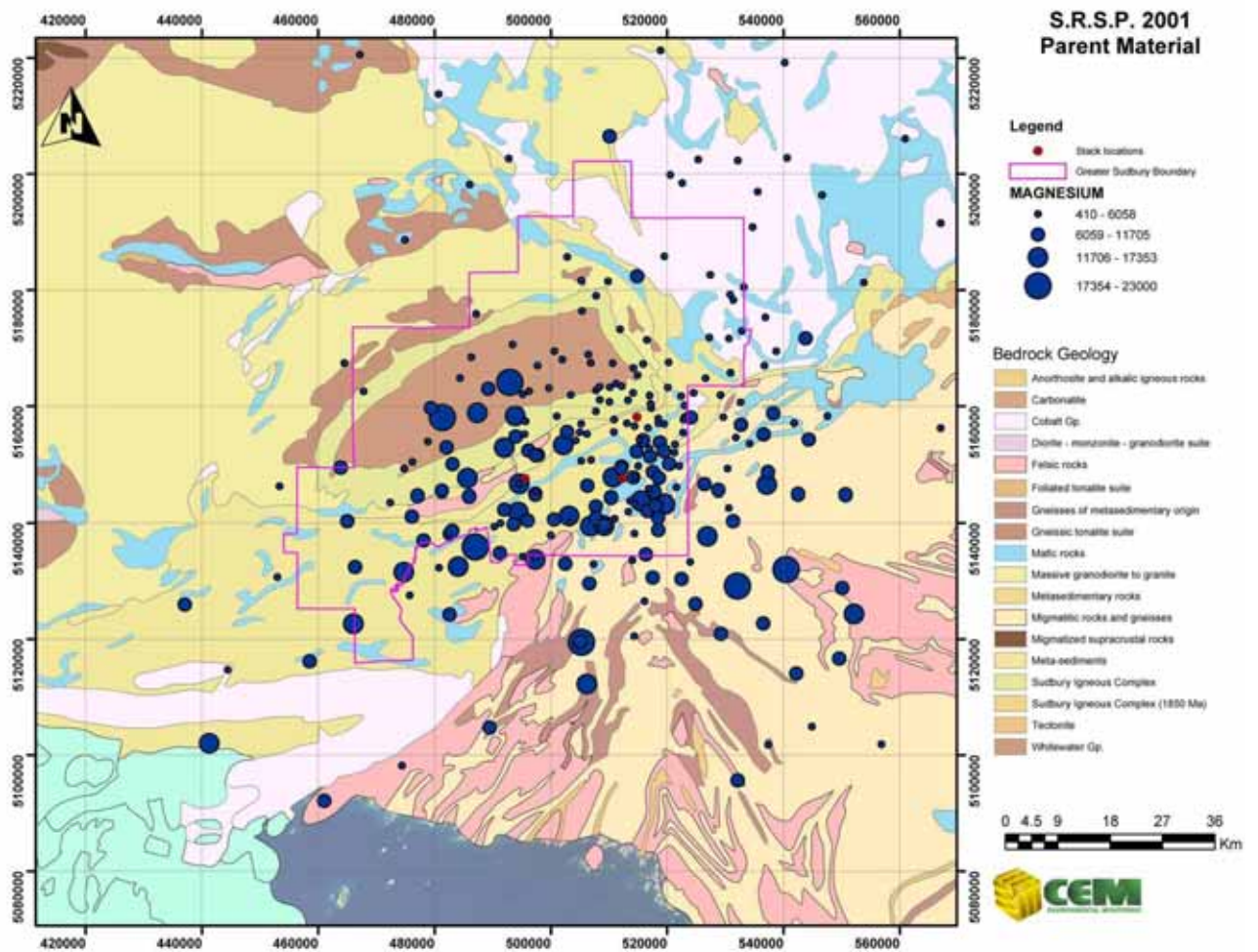


Figure 20: Distribution of magnesium in the soil parent materials of the Sudbury Region.

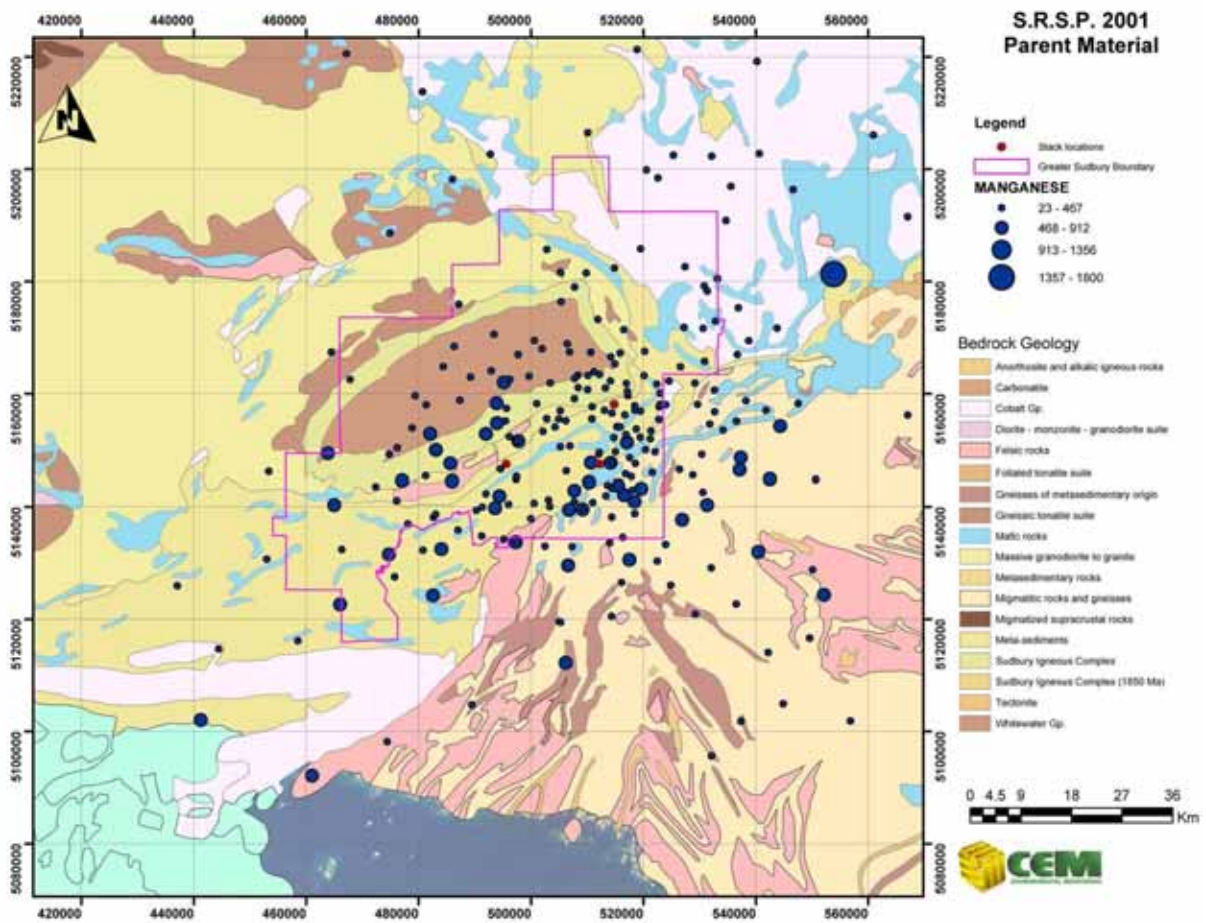


Figure 21: Distribution of manganese in the soil parent materials of the Sudbury Region.

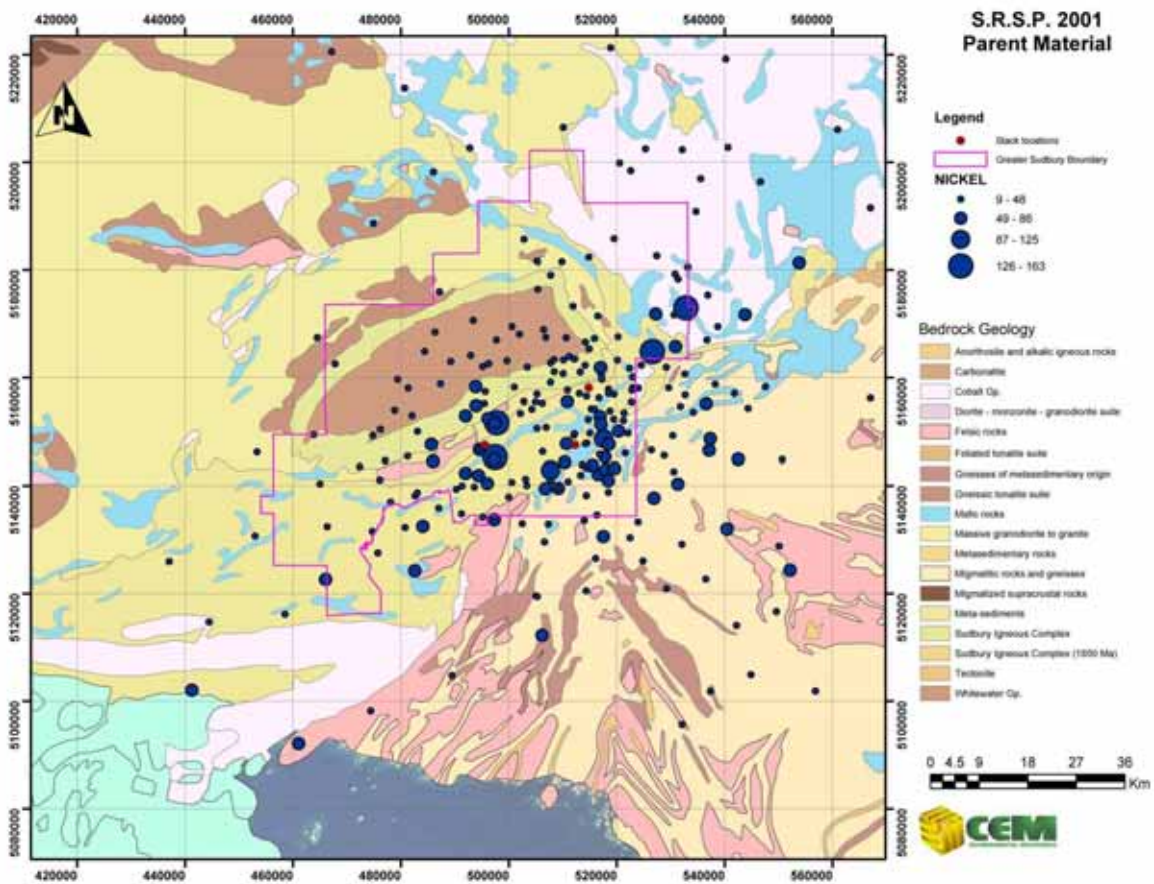


Figure 22: Distribution of nickel in the soil parent materials of the Sudbury Region.

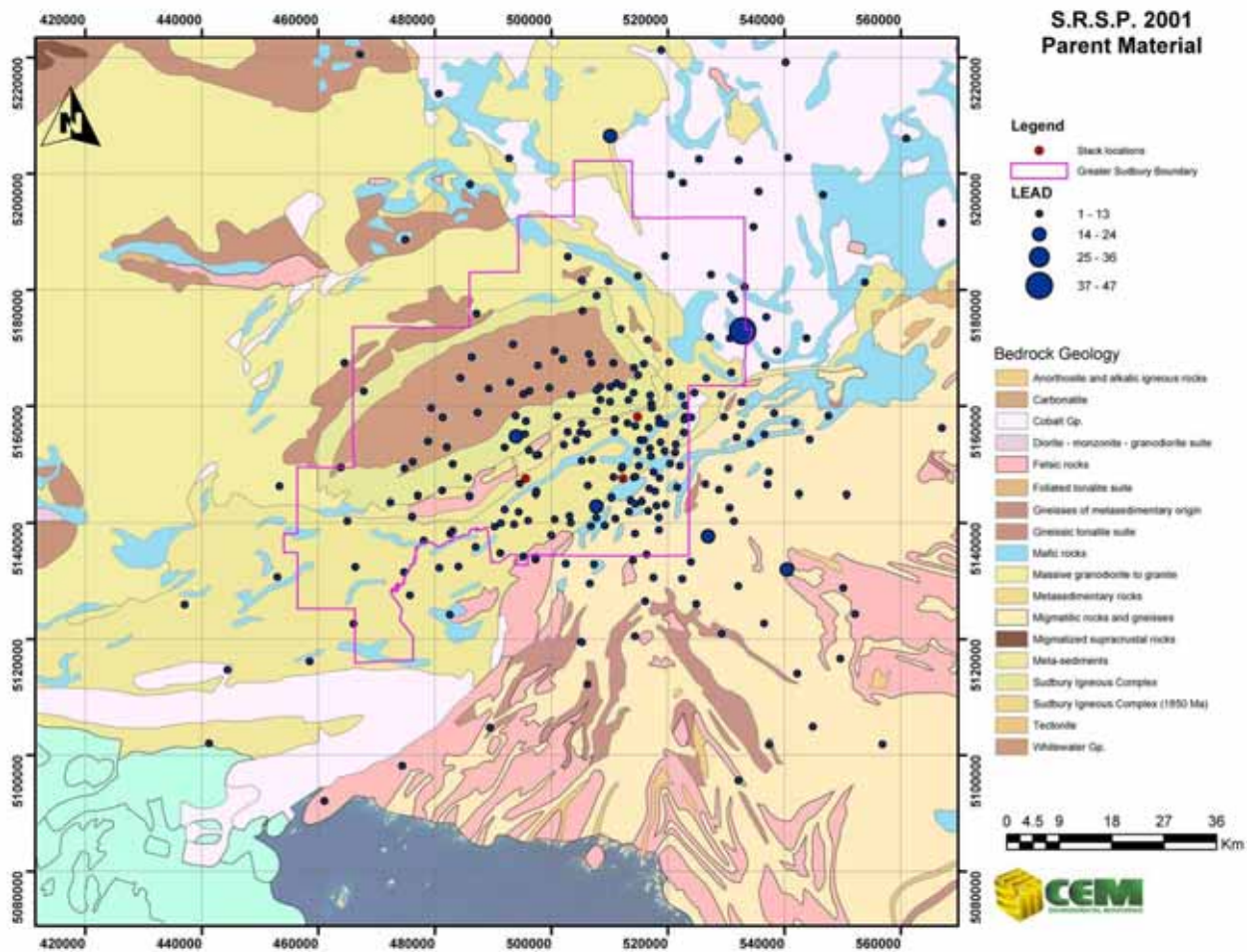


Figure 23: Distribution of lead in the soil parent materials of the Sudbury Region.

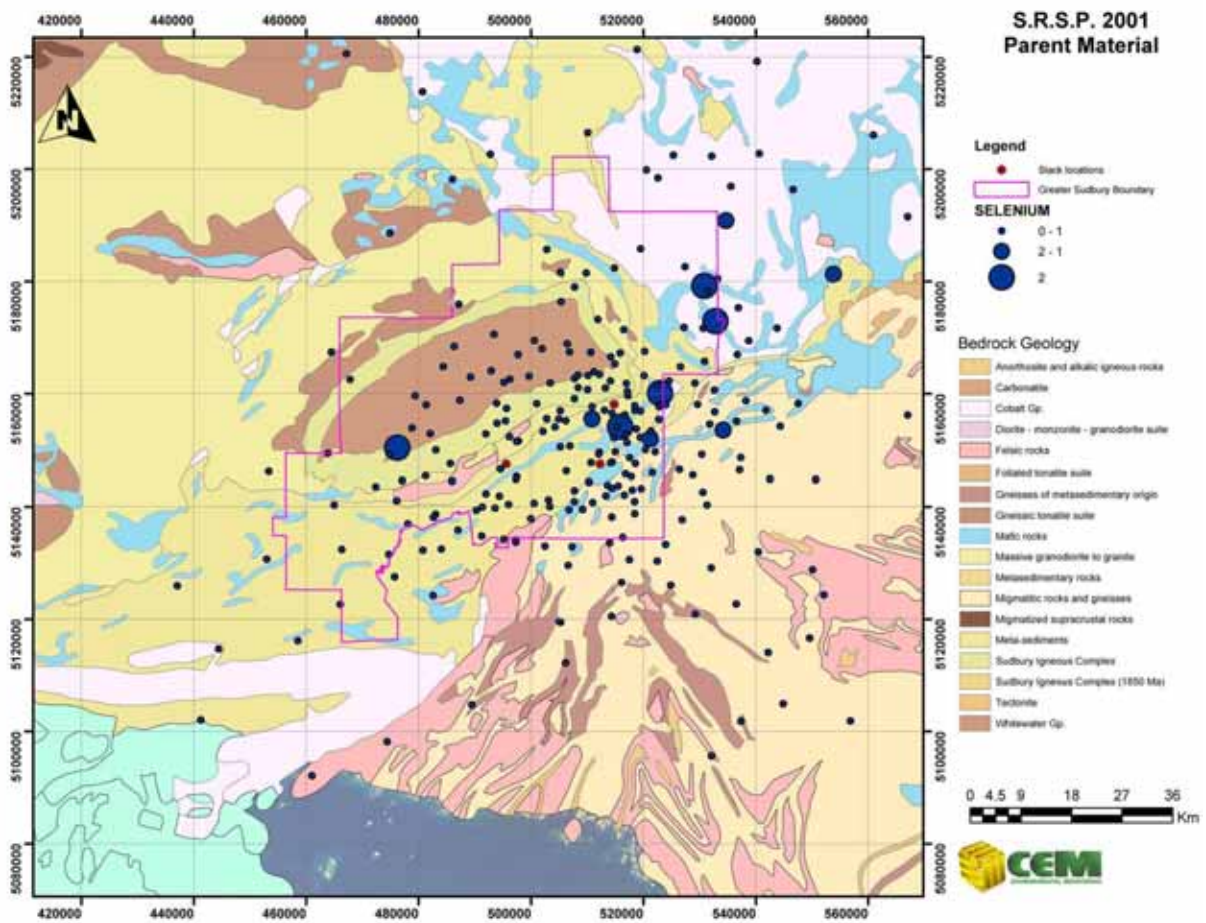


Figure 24: Distribution of selenium in the soil parent materials of the Sudbury Region.

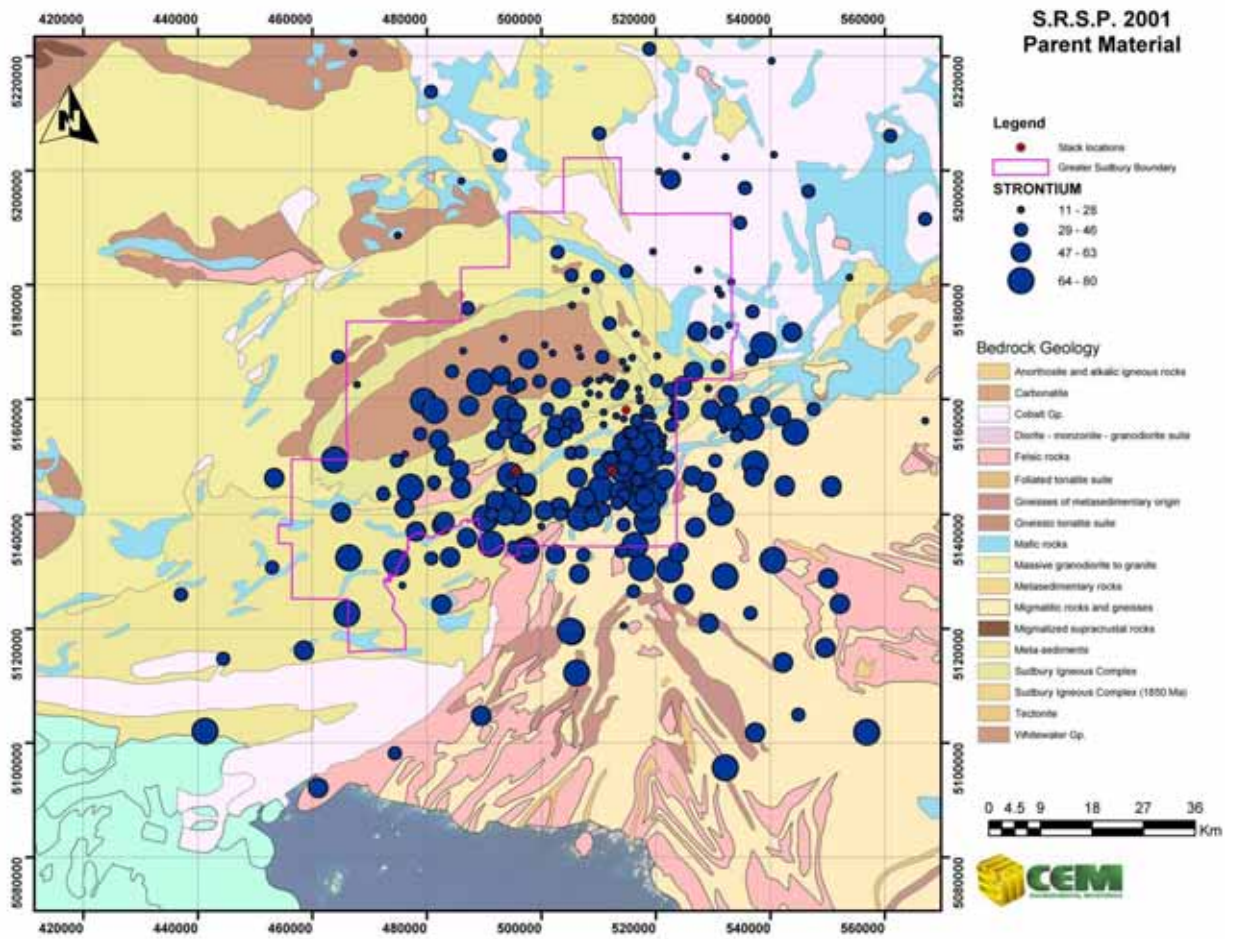


Figure 25: Distribution of strontium in the soil parent materials of the Sudbury Region.

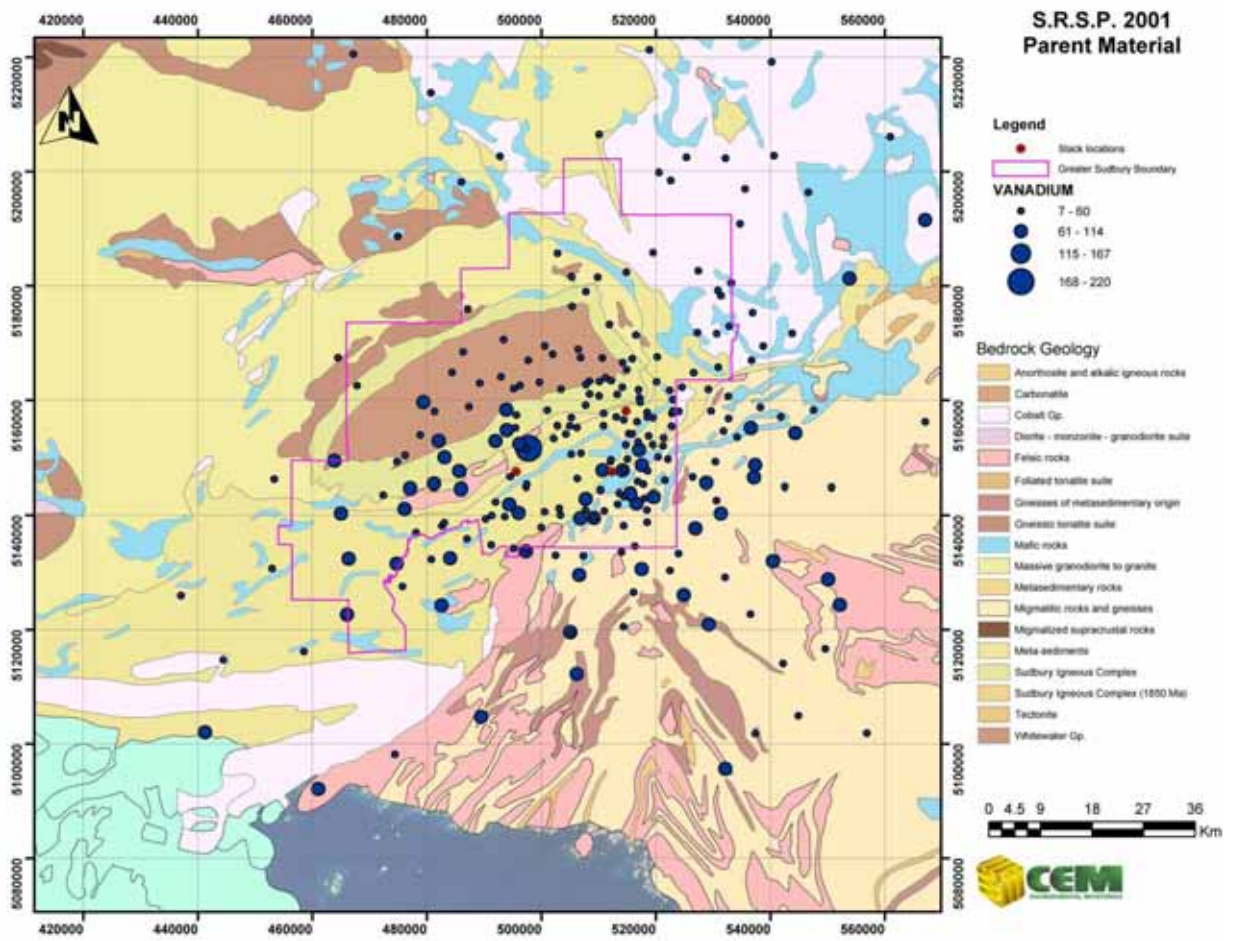


Figure 26: Distribution of vanadium in the soil parent materials of the Sudbury Region.

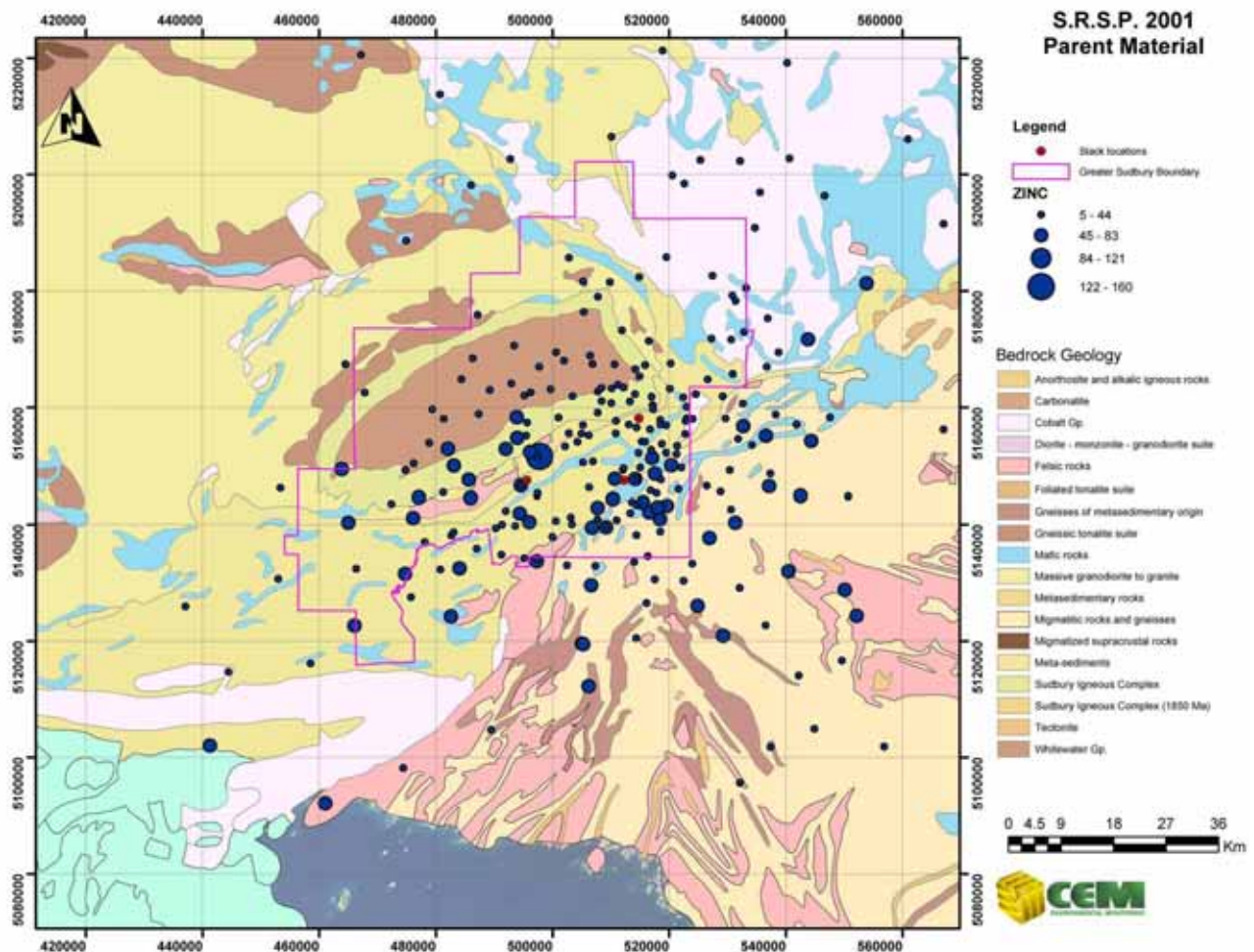


Figure 27: Distribution of zinc in the soil parent materials of the Sudbury Region.

Metal Correlations in Regional Parent Materials

The relationships between the individual elements extracted from the regional soil parent material samples with *Aqua Regia* are listed in the Pearson correlation matrix (Table 9) calculated using SPSS™ with a correlation value of $r < 0.5$ being highly significant at the 0.01 level. The major elements, aluminium, iron, magnesium and manganese, are all strongly positively correlated, probably reflecting the abundance of ferromagnesian minerals partially digested by the *Aqua Regia* extractant from the soil matrix. These minerals would have been incorporated from the underlying basic metavolcanic bedrock by glacial activity.

Table 9: Pearson Correlation for the Aqua Regia extracted metals for all samples from parent materials sampled within the study region (n = 255 samples).

	Arsenic	Barium	Beryllium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Strontium	Selenium	Vanadium	Zinc
Aluminium	0.01	0.80 ^b	0.74 ^b	0.16 ^b	0.82 ^b	0.76 ^b	0.56 ^b	0.79 ^b	0.51 ^b	0.60 ^b	0.62 ^b	0.07	0.86 ^b	-0.12 ^a	0.86 ^b	0.68 ^b	0.74 ^b
Argon		0.02	0.02	0.01	0.02	0.07	0.57 ^b	0.03	0.14 ^a	-0.03	0.08	0.08	0.38 ^b	0.02	0.04	0.03	0.05
Barium			0.87 ^b	0.11	0.85 ^b	0.71 ^b	0.40 ^b	0.84 ^b	0.56 ^b	0.70 ^b	0.68 ^b	0.06	0.57 ^b	-0.13 ^a	0.74 ^b	0.71 ^b	0.77 ^b
Beryllium				0.05	0.74 ^b	0.64 ^b	0.34 ^b	0.75 ^b	0.49 ^b	0.60 ^b	0.68 ^b	0.04	0.46 ^b	-0.07	0.54 ^b	0.63 ^b	0.72 ^b
Calcium					0.14 ^a	0.13 ^a	0.08	0.13 ^a	0.04	0.72 ^b	0.20 ^b	0.07	0.11	-0.06	0.41 ^b	0.11	0.15 ^a
Chromium						0.79 ^b	0.42 ^b	0.84 ^b	0.54 ^b	0.67 ^b	0.68 ^b	0.22 ^b	0.88 ^b	-0.15 ^a	0.71 ^b	0.73 ^b	0.76 ^b
Cobalt							0.60 ^b	0.90 ^b	0.54 ^b	0.63 ^b	0.80 ^b	0.15 ^a	0.73 ^b	-0.08	0.57 ^b	0.86 ^b	0.90 ^b
Copper								0.48 ^b	0.52 ^b	0.28 ^b	0.41 ^b	0.11	0.84 ^b	0.07	0.30 ^b	0.49 ^b	0.54 ^b
Iron									0.57 ^b	0.70 ^b	0.83 ^b	0.11	0.60 ^b	-0.13 ^a	0.70 ^b	0.96 ^b	0.96 ^b
Lead										0.38 ^b	0.47 ^b	0.26 ^b	0.66 ^b	0.20 ^b	0.40 ^b	0.54 ^b	0.58 ^b
Magnesium											0.66 ^b	0.09	0.43 ^b	-0.14 ^a	0.71 ^b	0.61 ^b	0.67 ^b
Manganese												0.16 ^a	0.44 ^b	-0.04	0.61 ^b	0.75 ^b	0.80 ^b
Molybdenum													0.19 ^b	0.10	0.00	0.09	0.09
Nickel														0.03	0.42 ^b	0.58 ^b	0.64 ^b
Selenium															-0.22 ^b	-0.14 ^a	-0.08
Vanadium																0.63 ^b	0.61 ^b
Zinc																	0.94 ^b

b Correlation is significant at the 0.01 level (2-tailed).
a Correlation is significant at the 0.05 level (2-tailed).

Calcium is only correlated strongly with magnesium, perhaps reflecting the association of these two elements in the small area of slightly calcareous soils formed on lacustrine sediments both in the Valley area, and in the materials to the east of the study area. The correlation between magnesium and strontium may further support this suggestion (McKeague and Wolynetz, 1979). The Group II metals, barium, beryllium and strontium are all strongly correlated, indicative of a common mode of occurrence in the soil parent materials.

The strong positive correlations between arsenic, cobalt, copper, lead, nickel and zinc is indicative of a strong mineralogical relationship in mode of occurrence of these elements in the soil parent materials. Also strongly correlated with iron and manganese, these elements are probably to be found primarily in either sulphides or as minor inclusions in the weathered iron and manganese (oxy)hydroxides of the glaciogenic sediments. Chromium, on the other hand, being strongly correlated with the major elements aluminium, iron, magnesium and manganese, as well as with the other trace elements such as barium, beryllium, cobalt, lead, nickel, strontium, vanadium and zinc, is to be found in a different mineral assemblage associated with the metasedimentary rocks to the south of the study area. Neither molybdenum nor selenium are highly correlated with any other element, with selenium being

the only element exhibiting a significant inverse relationship with other elements such as aluminium, barium, chromium, iron, lead and strontium.

The interrelationships between minor and major elements indicated by the correlation matrix are probably related to chemical substitution in the various minerals comprising the soil matrix. The sources of data variation described by the correlation matrix were examined by Principal Component Analysis (Harman, 1967) using the Systat™ 10 program. The data were standardized prior to analysis to give a mean of zero and a standard deviation of unity, a technique that has been successfully applied to soils data by Stynes *et al.*, (1979). The initial factor extracted by Principal Component Analysis tends to be a general factor, which means that it loads significantly on every variable. The second factor tends to be bipolar, as do the remaining factors. This makes factor interpretation difficult, especially as every variable tends to be decomposed into positive and negative factors. Examination of plots of orthogonal factors generally indicates grouping of the variables in two-dimensional factor space.

Rotation of the original axis, however, produces completely different factor loadings. This rotation causes the clustered variables to load heavily on one factor only, thus producing a simplification of the factor structure, and produces factor loadings that are conceptually simpler than those on the unrotated factors. Thus Varimax rotation was utilized in an attempt to arrive at “Simple Structure” (Harman, 1967). Principal components were extracted (Table 10), and a Varimax rotation was performed. The Varimax rotated loading matrix results of this analysis is described in Table 11.

The importance of individual variables (elements) as members of a component are indicated by the magnitude of their loadings, with these components being generally interpreted in the earth sciences as factors describing geochemistry, mineralogy, hydrology or provenance. The four component analysis defined in Table 10 to explain the variability of the data matrix lists Component I explaining 53 %, Component II explaining 11 %, Component III explaining 7 % and Component IV explaining 6 % of the variance in the initial correlation matrix respectively.

Examination of the resultant Varimax rotated factor matrix, in which a simplified geometric structure is defined, indicates that the first factor, explaining the major proportion of the variance, reflects high loadings (<0.6) by zinc, barium, vanadium, chromium, cobalt, beryllium and strontium in the minor elements, and aluminium, iron, magnesium and manganese in the major elements.

Table 10: Principle component analysis describing the relationship between the compositional chemistry of Aqua Regia extracted metal(loid)s in the soil parent materials of the soils of the Sudbury smelter footprint.

	1	2	3	4
Iron	0.954	0.088	0.148	0.004
Zinc	0.925	0.012	0.125	0.002
Cobalt	0.909	-0.072	0.093	0.001
Chromium	0.896	0.078	0.082	-0.040
Barium	0.887	0.146	0.142	0.024
Vanadium	0.883	0.045	0.155	0.035
Aluminum	0.863	0.027	0.077	0.069
Manganese	0.826	0.096	0.036	-0.092
Beryllium	0.800	0.121	0.236	-0.018
Magnesium	0.768	0.384	-0.432	-0.101
Strontium	0.756	0.313	-0.213	0.106
Nickel	0.744	-0.511	-0.136	0.092
Lead	0.658	-0.360	0.049	-0.304
Copper	0.608	-0.650	-0.198	0.237
Arsenic	0.120	-0.671	-0.380	0.399
Calcium	0.241	0.369	-0.861	-0.122
Selenium	-0.107	-0.404	0.009	-0.647
Molybdenum	0.154	-0.254	-0.166	-0.611
Percent of Total Variance Explained				
	1	2	3	4
	53.640	10.778	7.587	6.454

Table 11: Varimax rotated loading matrix for Aqua Regia extracted metal(loid)s in the soil parent materials of the soils of the Sudbury smelter footprint.

	1	2	3	4
Iron	0.958	0.110	0.101	0.005
Zinc	0.913	0.171	0.084	0.039
Barium	0.901	0.058	0.114	-0.041
Vanadium	0.885	0.137	0.059	-0.009
Chromium	0.884	0.110	0.147	0.051
Cobalt	0.877	0.245	0.074	0.078
Beryllium	0.843	0.005	0.008	-0.005
Aluminium	0.841	0.190	0.112	-0.027
Manganese	0.808	0.073	0.187	0.090
Strontium	0.695	0.061	0.461	-0.165
Magnesium	0.658	0.002	0.708	0.009
Lead	0.594	0.298	-0.028	0.463
Nickel	0.590	0.675	0.047	0.191
Arsenic	-0.102	0.869	0.034	-0.036
Copper	0.420	0.835	0.000	0.117
Calcium	0.034	0.035	0.973	0.037
Selenium	-0.137	0.016	-0.131	0.747
Molybdenum	0.079	0.042	0.136	0.680
Percent of Total Variance Explained				
	1	2	3	4
	48.879	12.117	10.045	7.419

The elements lead and nickel exhibit intermediate loadings (<0.5) on this first Varimax rotated factor. These elements are generally associated with the ferromagnesian and micaceous minerals, and thus this first factor is related to mineralogical variability in the parent materials. The higher concentrations of aluminium and beryllium display a similar pattern in the soil parent materials of the Sudbury region (Figure 10 and 13), and are commonly in glacial sediments overlying the mafic and metasedimentary rocks to the southeast of the Sudbury basin. The pattern for barium is similar, with the highest concentrations associated with parent materials overlying the mafic units. The regional distribution of iron and manganese has the highest concentration zones in soil parent materials overlying the mafic rocks along the Grenville boundary (Figures 18 and 21), with intermediate concentrations in the parent materials overlying the rocks of the Sudbury Igneous Complex.

The distribution for the higher concentrations of the minor elements chromium, cobalt, vanadium and zinc extracted by *Aqua Regia* display similar broad regional patterns to the other elements loading highly on the first Varimax rotated factor (Figure 16, 15, 26 and 27). The highest concentrations of all four elements are generally in the glacial parent materials over the mafic rocks, and over members of the Sudbury Igneous Complex. The concentration of lead in soil parent materials (Figure 23), which also has a loading of 0.46 on the fourth factor, does not appear to have a strong association with any of the major rock types underlying the Sudbury region.

The second factor has high loadings by arsenic, nickel and copper. These latter elements are commonly associated with sulphides minerals, perhaps inherited in the tills by sub-glacial erosion from base-metal rich regional deposits. With the exception of the high extremes in the Kelly Lake delta and in the centre of the Sudbury basin, levels of arsenic (Figure 11) do not appear to display any major pattern in the soil parent materials of the region. The higher concentrations of copper and nickel are in the sediments overlying the mafic rocks of the region (Figures 17 and 22).

The only three elements to load significantly on the third Varimax rotated factor are the major elements calcium and magnesium, together with the minor element, strontium. These three elements are commonly associated in carbonate minerals, and are especially enriched in calcareous soil parent materials (McKeague and Wolynetz, 1979). This factor suggests that approximately 10% of the regional parent material variability may be associated with the minor area of calcareous glaciolacustrine sediments. The higher concentrations of calcium (Figure 14) are generally associated with the pockets of lacustrine sediments in the region, whereas higher levels of magnesium (Figure 20) are also associated with glacial sediments overlying the mafic rocks to the east of the City of Greater Sudbury. The distribution pattern for strontium shows all soil forming materials to the south east of the Sudbury Basin to be generally similar in concentration (Figure 25).

Only two trace elements, molybdenum and selenium, have significant loadings (<0.68) on the fourth Varimax rotated factor. Lead, with no apparent strong association between soil parent material concentrations (Figure 23) and the regional basement geology, is also

important in this fourth factor. The first two elements appear to be associated with the glacial sediments overlying the mafic rocks of the region (Figures 19 and 24).

Hierarchical classification techniques were used to produce natural groupings based on numerical similarities between both individuals and variables. The cluster analysis using Ward's method similarity coefficients produced four major groupings. These groupings of soil parent materials based on partial chemical composition using the concentrations of individual elements extracted from the original soils materials using *Aqua Regia* form a broad pattern reflecting the provenance of the glacial sediments in which the soils have been developing for the past 10,000 years.

Metal Distribution in Regional Surface Soils

The sites selected for this study were sampled in specific depth increments as defined by MOE in the *Guidelines for Sampling Contaminated Sites in Ontario* (MOE, 1997). The depth increments were 0 – 5 cm, 5 –10 cm and 10 – 20 cm. Samples from a depth of greater than 80cm have been discussed in the previous sections of this report. As the textures of the soil-forming materials in the region are variable, with the clay fraction commonly being enriched in many of the transition metals, the lack of textural data does limit interpretation of the regional metal(loid) concentration data.

The summary statistics of the individual elements in the individual soil layers from all sites sampled in the region are shown in Table 12, 13 and 14. The statistical data indicate that all the elements measured in this study show some deviation from statistical normality, an observation that would normally indicate the need to subject the data to a log-normal transformation. A similar observation with soil chemical compositional data in previous studies (Spiers *et al.*, 1984) has, however, indicated that the log transformation of the data did not significantly affect any of the general interpretations. The multivariate calculations discussed in this report use standardized data. The variability in textures of the soil profiles, together with the wide range of igneous and metamorphic minerals inherited in the diamictons from the regional bedrock, should balance the conventional use of log-normal distribution of minor and trace elements in minerals in natural systems.

Table 12: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 0 to 5 cm depth of soils within the Sudbury area.

STATISTICS	Aluminum	Calcium	Iron	Magnesium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Strontium	Vanadium	Zinc	
	%				µg																
Mean	1.00	0.31	1.59	0.18	0.13	14.8149	89.44	0.01	0.36	38.72	12.45	261.40	49.98	306	0.30	263.05	2.19	32.90	31.13	39.00	
Standard Deviation	0.45	0.20	0.60	0.12	0.28	21.2601	36.60	0.12	0.54	13.34	10.30	313.91	24.99	286	0.62	296.27	2.11	12.38	8.87	20.63	
Min	0.24	0.05	0.46	0.04	0.00	0	16.50	0.00	0.00	10.00	2.00	6.10	3.50	43	0.00	14.00	0.00	0.00	10.05	0.00	
Max	3.10	2.45	4.30	0.62	1.20	305	215.00	1.77	3.20	98.00	78.50	3850.00	194.00	2200	4.55	2900.00	17.00	62.50	61.50	115.00	
Range	2.87	2.40	3.85	0.58	1.20	305	198.50	1.77	3.20	88.00	76.50	3843.90	190.50	2157	4.55	2886.00	17.00	62.50	51.45	115.00	
Median	0.92	0.28	1.55	0.15	0.00	9	85.00	0.00	0.00	36.50	9.00	145.00	48.00	200	0.00	165.00	2.00	32.00	30.50	35.00	
Kurtosis	2.21	39.33	1.97	1.25	2.97	95.7272	0.51	164.27	2.55	1.06	9.01	46.59	3.37	9.80	7.84	18.81	8.24	-0.42	0.50	1.24	
Skew	1.26	4.54	0.92	1.25	2.01	7.46556	0.69	12.03	1.55	0.80	2.35	4.80	1.14	2.60	2.50	3.25	2.17	0.19	0.55	1.02	
Mode																					
Count	365	365	365	365	355	362	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365
ND	0	0	0	0	282	89	0	357	230	0	0	0	0	0	282	0	49	2	0	2	
Blank/Not Analysed	4	4	4	4	14	7	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Value above 0	365	365	365	365	73	273	365	8	135	365	365	365	365	365	83	365	316	363	365	363	

Table 13: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 5 to 10 cm depth of soils within the Sudbury area.

STATISTICS	Aluminum	Calcium	Iron	Magnesium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Strontium	Vanadium	Zinc	
	%				µg																
Mean	1.34	0.28	1.68	0.23	0.04	5.72	61.77	0.02	0.01	38.88	7.17	101.22	14.56	232	0.13	81.50	0.60	34.58	37.81	31.61	
Standard Deviation	0.48	0.13	0.50	0.13	0.17	15.61	33.32	0.08	0.08	14.03	5.38	128.56	14.54	168	0.54	110.93	1.14	13.32	9.19	19.72	
Min	0.43	0.05	0.63	0.05	0.00	0.00	20.00	0.00	0.00	15.00	1.80	5.15	3.00	95	0.00	7.50	0.00	0.00	17.00	0.00	
Max	3.45	1.04	3.00	0.78	1.50	150.00	250.00	0.78	0.80	85.50	38.80	945.00	119.50	1250	3.60	738.50	6.50	56.50	65.50	146.00	
Range	3.02	0.99	2.37	0.72	1.50	150.00	230.00	0.78	0.80	71.50	37.00	939.85	116.50	1155	3.60	731.00	6.50	56.50	48.50	146.00	
Median	1.25	0.27	1.65	0.20	0.00	7.50	54.25	0.00	0.00	31.50	6.00	57.25	11.25	175	0.00	45.75	0.00	34.75	37.00	27.50	
Kurtosis	2.25	55.1	0.44	1.97	31.87	94.77	6.00	47.54	50.85	0.56	7.16	12.45	25.57	7.71	25.58	15.56	3.92	1.79	0.04	6.12	
Skew	1.19	1.50	0.26	1.32	5.11	8.47	1.87	6.78	7.12	0.76	2.21	3.07	4.57	2.24	4.50	3.67	2.82	0.27	0.41	1.72	
Mode																					
Count	150	150	150	150	157	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	
ND	0	0	0	0	173	45	0	184	195	0	0	0	0	0	174	0	116	4	0	3	
Blank/Not Analysed	179	179	179	179	152	179	179	179	179	179	179	179	179	179	179	179	179	179	179	179	
Value above 0	150	150	150	150	14	144	150	6	4	150	150	150	150	150	16	150	74	155	150	157	

Values for the individual elements are discussed below, with a focus on the data obtained for the 0 – 5 cm layer in which the aerosolic fallout particles rich in metal(loid)s has been shown earlier in this report to be concentrated. The data obtained in this study are similar to that documented in the OMOE report released in 2001 (OMOE, 2001), with a greater degree of internal consistency because the data in the current study were all obtained using identical sampling protocols and analytical methodology. In the following discussion the values

obtained are compared with data for soil materials from a variety of sources, including those documented by MOE in the *Guidelines for Use at Contaminated Sites in Ontario* (MOE 1997), for the soils of the conterminous United States (Shacklette *et al.*, 1971), and for surface mineral soils (equivalent approximately to the 5 to 10 cm layer in this study) of the Canadian Shield (McKeague *et al.*, 1979) for comparative purposes. Direct comparison with the MOE data must be tempered by the fact that the ranges documented by the MOE are for soils in the pH range 5.0-9.0. In the current study, soil pH values were determined on a subset (35) only of the samples, with a pH range from slightly alkaline (7.78) to acidic (3.69) being reported. The lower pH values are trending northeast from Copper Cliff, with the highest pH values between 6.5 and 7.78 being obtained for samples from an area of calcareous and/or agricultural soils formed on silt loam glaciolacustrine materials in the Verner and Valley East areas.

Table 14: Summary statistics describing the Aqua Regia extractable concentrations for 20 elements in the 10 to 20 cm depth of soils within the Sudbury area.

STATISTICS	Aluminum	Calcium	Iron	Magnesium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Strontium	Vanadium	Zinc	
Mean	1.72	0.32	1.92	0.32	0.04	3.80	63.45	0.01	0.00	44.04	7.30	49.67	8.90	215	0.11	50.57	0.17	38.04	40.29	33.70	
Standard Deviation	0.54	0.13	0.50	0.17	0.16	10.14	32.81	0.07	0.04	16.16	3.25	75.05	8.37	105	0.45	58.18	0.49	11.07	8.90	15.82	
Min	0.41	0.07	0.64	0.07	0.00	0.00	21.50	0.00	0.00	18.00	2.50	3.15	3.00	4.3	0.00	10.00	0.00	0.00	10.20	10.80	
Max	3.65	1.26	3.70	0.96	0.90	88.50	185.00	0.67	0.40	115.00	20.00	510.00	74.00	697	3.80	485.00	3.00	65.00	66.00	84.00	
Range	3.24	1.18	3.07	0.89	0.90	88.50	163.50	0.67	0.40	97.00	17.50	506.85	71.00	654	3.80	475.00	3.00	65.00	55.80	73.80	
Median	1.70	0.31	1.90	0.27	0.00	0.00	65.50	0.00	0.00	42.00	6.50	24.50	7.00	185	0.00	33.00	0.00	38.00	40.00	32.00	
Kurtosis	0.93	14.53	0.53	1.60	13.30	38.60	2.20	72.45	82.95	3.17	1.65	13.37	27.15	2.57	38.78	23.92	13.67	0.42	0.65	0.13	
Skew	0.61	2.48	0.24	1.31	3.76	5.65	1.45	8.46	9.16	1.34	1.16	3.45	4.70	1.38	5.75	4.38	3.56	-0.23	0.14	0.79	
Mode																					
Count	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	
ND	0	0	0	0	169	106	0	168	169	0	0	0	0	0	167	0	145	1	0	0	
Blank/Not Analyzed	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	
Value above 0	171	171	171	171	12	65	171	3	2	171	171	171	171	171	14	171	25	170	171	171	

Soil Layer 0-5 cm

Aluminum

The maximum value for aluminum in 0 – 5 cm layer was 3.1%, with a minimum reported value of 0.235%. The mean value for Shield surface mineral soils listed by McKeague *et al.*, (1979) is 6.28% and for U.S. surface soils by Shacklette *et al.*, (1971) is 6.6%, considerably higher than the arithmetic mean of 1.00% of this study. The data are, however, similar to the

2.32% documented for coarse textured soils of Shield glacial and glaciofluvial origin in North East Alberta (Spiers *et al.*, 1989). Although there is no MOE Table F value for aluminium in surface materials, the OTR₉₈ value was exceeded at 1 of the 254 sites sampled.

Arsenic

The maximum value for arsenic in the 0-5 cm samples was 305 µg/g, with minimum values below detection limits. The regional arithmetic mean value is 14.8 µg/g, which compares with an upper crustal average of 4.8 µg/g (Rudnick and Gao, 2003). Although there is no OTR₉₈ value for arsenic, the OMOE Table F limit is 17µg/g and the MOE Table A limit is 20 µg/g. The Table A limit was exceeded in 113 samples. The elevated arsenic concentrations are centred on the Coniston, Inco and Falconbridge smelters (Figure 29), with the maximum values in the vicinity of the Falconbridge smelter.

Barium

With a mean concentration of 89.4 µg/g, barium levels are substantially below the expected upper crustal average of 628 µg/g (Rudnick and Gao, 2003) and the level documented in the surface soils of the conterminous States (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value, the MOE Table A guideline is 750 µg/g and the Table F value is 210 µg/g, values again substantially greater than any concentration measured in this study.

Beryllium

Beryllium, potentially very toxic if ingested in excess, exists at very low concentrations in surface soils of the region with a mean content of 0.01 µg/g, below the mean concentration (0.92 µg/g) documented for U.S. soils (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value for beryllium, the MOE Table A and Table F guideline of 0.2 µg/g was exceeded in one instance at site 82 in the south east of the study region, with a measured concentration of 1.77 µg/g.

Cadmium

With a mean concentration of 0.36 µg/g, and a maximum concentration of 3.2 µg/g, cadmium did not exceed the MOE Table F limit of 12 µg/g at any site within the study region.

Henderson *et al.*, (2002) estimate the background level of cadmium for soils of the Rouyn-Noranda area at 1 µg/g, a level in contrast to a measured mean background concentration of 0.3 µg/g for soils formed in tills in the Flin Flon region of Manitoba, (McMartin *et al.*, 1999).

Calcium

The arithmetic mean calcium concentration documented in this study is 0.31%, a concentration lower than that documented by McKeague *et al.*, (1979) for samples for Shield surface soils (2.05 %) and conterminous U.S. soils (1.8%), respectively (Shacklette *et al.*, 1971). The surface soils sites with calcium concentrations at the higher end of the range (1.5 – 2.7%) are all at the eastern and southern edges of the study area. These data reflect the fact that only about 15% of the soils sampled in the Sudbury region are developed on calcareous parent materials, specifically the medium textured glaciolacustrine sediments of the Warren-Verner area. The OTR₉₈ value for calcium is 5.5 %, with no Table F limit. The OTR₉₈ value for calcium reflects the dominance of data from the calcareous soils of southern Ontario used in the production of the advisory tables. In a similar study of background concentrations for 1366 soils formed in tills underlain by Precambrian bedrock formations in the Flin Flon region of Manitoba, McMartin *et al.*, (1999) document calcium mean concentration as 0.32 %.

Chromium

The regional mean for chromium concentration of the 0 to 5 cm layer is 38.7 µg/g, with a range of 10 - 98 µg/g. These data are in fairly close agreement with the Canadian (45 µg/g) mean soil parent material chromium content, but significantly higher than that documented for Shield surface soils (24 µg/g). Thus some sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background chromium concentration limit of 71 µg/g for all non-agricultural uses for surface materials, but well below the Table F value of 750 µg/g. The data of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for the less than 75 µm fraction of

subsurface soils of the conterminous U.S.A. ($54 \mu\text{g gm}^{-1}$) indicate that the levels of this study are about normal background for surficial soil forming sediments. Interestingly, the higher chromium values in the surface soil layer reflect the pattern displayed for regional parent materials, being highest to the south of the major industrial region. For comparison, the measured mean background concentration of chromium in soils formed in tills in the Flin Flon region of Manitoba was $135 \mu\text{g/g}$ (McMartin *et al.*, 1999).

Cobalt

With a range in concentration from 2-78 $\mu\text{g/g}$, the arithmetic mean cobalt levels ($12.5 \mu\text{g/g}$) in soil surface layers of the Sudbury region are slightly lower than those described by McKeague *et al.*, (1979) for the surface mineral horizon of Shield soils. However, the mean value is similar to that defined for U.S. soils ($10 \mu\text{g/g}$) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988). Several sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background cobalt concentration limit of $21 \mu\text{g/g}$ for all non-agricultural uses for surface materials. The distributional map for cobalt (Figure 34) shows the effect of regional aerosolic fallout, with the higher concentrations being around the centroid area of the regional smelters.

Copper

The overall mean level of copper ($261.4 \mu\text{g gm}^{-1}$) for the 0 to 5 cm layer of Sudbury region surface soils is substantially greater than those defined for U.S. soils ($25 \mu\text{g/g}$) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988), and for surface layers of Canadian Shield soils ($11 \mu\text{g/g}$) as documented by McKeague *et al.*, (1979). With a range from 6 to $3850 \mu\text{g/g}$, the distribution of copper in surface soils as illustrated in Figure 36 shows a classic wind driven ellipsoidal pattern centred on the regional smelter complex. The highest levels of copper at $270 \mu\text{g/g}$ are on treed landscapes adjacent the mining and smelter operations in the Junction Creek watershed. Interestingly, the data obtained in the current Sudbury study are considerably higher than that documented for humus copper at $43 \mu\text{g/g}$ for in the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). The measured mean humus concentration of copper in soils formed in tills within 5 km of the Flin Flon region of

Manitoba was 1970 µg/g (McMartin *et al.*, 1999). With no OTR₉₈ value, the Table A limit is 225 µg/g. Of the analyzed surface samples 145 exceeded the MOE Table A guideline.

Iron

The mean iron concentration documented for the 0 to 5 cm layer in this study is 1.59 %, with a range from 0.46 to 4.3 %. These values are almost identical to those documented by both McKeague *et al.*, (1979) for surface mineral layers of Shield soils, and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples from the conterminous U.S. soils. The OTR₉₈ value for iron is 3.5 %, with no Table A or F limit. There were 5 samples that exceeded the OTR₉₈ values for surface material. The samples include: site 269, 35500 µg/g; site 293, 40500 µg/g; site 304, 36500 µg/g; site 308, 35500 µg/g; and site 332, 43000 µg/g. In comparison, the measured mean background concentration of iron in soils formed in tills in the Flin Flon region of Manitoba was 5.28% (McMartin *et al.*, 1999).

Lead

With a range in concentrations from 3.5 to 194 µg/g , the mean regional value for lead (50 µg/g) in Sudbury area soil 0 to 5 cm layers is higher than that documented by Dudas and Pawluk (1980) for Prairie soils, by McKeague *et al.*, (1979) for soils of the Shield region (20 µg/g) and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soil forming materials of the conterminous U.S. (20 µg/g). The lead levels for all surface layers sample sites in this Sudbury area study have concentrations below the Ontario MOE Table A background lead concentration limit of 200 µg/g for all non-agricultural uses for surface materials. Furthermore, the data obtained in the current Sudbury study are lower than the estimate of background concentration of lead at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). In comparison, the measured mean background concentration of lead in soils formed in tills in the Flin Flon region of Manitoba was 8 µg/g (McMartin *et al.*, 1999).

Although some of the high concentrations of lead in surface layers of soils of the Sudbury region are found in the vicinity of the smelter complexes, a series of regional high levels to

the south of the industrial area are centred on the above the boundaries of Cobalt group (Figure 41), reflecting a parent material influence on concentrations in the surface layers.

Magnesium

With a concentration range of 0.04 to 0.62 %, the arithmetic mean magnesium concentration documented for the 0 to 5 cm layers in this study is 0.18%, a content below that documented by both McKeague *et al.*, (1979) and Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield (0.51%) and conterminous U.S. soils (0.92%), respectively. The OTR98 value for magnesium is 2.0 %, with no Table F limit.

The sites with magnesium concentrations at the higher end of the range (0.2% – 0.8%) are all in southern half of the study area where soils are formed on tills and sediments overlying the felsic and diorite members of the Grenville Province. These soils with highest concentrations of magnesium are probably developed on calcareous medium textured glaciolacustrine sediments. In comparison, the measured mean background concentration of magnesium in soils formed in tills in the Flin Flon region of Manitoba was 1.89% (McMartin *et al.*, 1999). The mean humus magnesium content in the Rouyn area is 0.28 %, with a range from 0.02 to 0.89 % (Henderson *et al.*, 2002).

Manganese

The arithmetic mean manganese concentration documented in this study is 306 µg/g, with a range of 43 – 2200 µg/g. No samples exceed the OTR₉₈ values of 2200 µg/g for manganese for surface materials. The manganese levels described in this study are lower than those documented elsewhere (McKeague *et al.*, 1979; Shacklette *et al.*, 1971, ; Spiers *et al.*, 1989) for background soil levels in North America. In comparison, the measured mean concentration of manganese in the humus layers of soils formed in tills in the Rouyn area is 800 µg/g with a range from 25 to 3190 µg/g (Henderson *et al.*, 2002).

Molybdenum

With a mean of 0.3 µg/g, levels of molybdenum are lower than those documented by Shacklette *et al.*, (1971) for U.S. soils (0.98 µg/g) and Gough *et al.*, (1988) for Alaskan soils

(1.3 µg/g), with no comparable data being readily available for Canadian Shield soil parent materials, with the exception of the data of Pawluk and Bayrock (1969) who describe a background level of 1-2 µg/g molybdenum for the clay-rich soils Northeastern Alberta. Some sampling sites exceed the MOE Table F guideline of 2.5 µg/g molybdenum for all non-agricultural uses for surface materials. In comparison, the measured mean concentration of molybdenum in the humus layers of soils formed in tills in the Rouyn area is 2.32 µg/g with a range from 0.5 to 29 µg/g (Henderson *et al.*, 2002).

Nickel

The arithmetic nickel levels (263 µg/g) for the Sudbury region in this region are much higher than those levels documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (12 µg/g) and in the USGS documented levels for soils (20 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in the 0 to 5 cm soil layer nickel concentrations is from 14 to 2900 µg/g, with the higher concentrations being in the soil parent materials in the vicinity of the regional smelter operations (Figure 42). The nickel distribution around the smelter centroid zone forms an ellipsoid centred on the Copper Cliff operations of INCO Ltd, with the long axis in a SW to NE direction. The nickel concentrations for the 0 to 5 cm layers of the sola in the core of the study area are considerably above the MOE Table A (43 µg/g) and F (150 µg/g) guidelines for surface materials where soil pH is 5.0 to 11.0. For comparison, the measured mean background concentration of nickel in the humus layers if soils formed in tills in the Flin Flon region of Manitoba was 7 µg/g (McMartin *et al.*, 1999). In Rouyn, on the other hand, Henderson *et al.*, (2002) report levels of nickel in the humus layers of 20.55 µg/g, with a range of 7 to 82 µg/g, levels much lower than in the soils of the Sudbury region.

Selenium

The arithmetic selenium levels (2.19 µg/g) for 0 to 5 cm layer of undisturbed soils the Sudbury region in this region are higher than documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (0.18 µg/g). The reports of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soils of the conterminous U.S. soils do not document

levels for selenium. The values documented in this study are considerably below the potentially toxic levels of the MOE Table A guideline of 10 µg/g for surface materials where soil pH is 5.0 to 11.0, with some sites above the Table F guideline of 1.9 µg/g for soils with a pH between 5.0 and 11.0.

The distributional map for selenium (Figure 43) also illustrates the classic ellipsoidal nature characteristic of aerosolic deposition of point source origin, with a locus in the vicinity of the Copper Cliff smelting operations. The highest concentration zone is immediately to the northeast of the Copper Cliff operations.

Strontium

The arithmetic strontium levels (32.9 µg/g) for the 0 to 5 cm layer of the surface soils of the Sudbury region in this region are considerably lower than documented both in the review by McKeague *et al.*, (1971) for surface mineral layers of agricultural soils of the Shield region (402 µg/g) and in the USGS documented levels estimated from 563 soil profiles (240 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The values documented in the latter studies are similar to those documented for both granite and the estimated mean crustal abundance (Rudnick and Gao, 2003). The range in the 0 to 5 cm layer strontium concentrations is from 10 to 62 µg/g. The lower concentrations in this study compared to those listed above is a reflection of the non-calcareous nature of the soil forming materials of the Sudbury region. Similar levels are, however, documented for soil parent materials formed on glaciofluvial materials of North East Alberta (Spiers *et al.*, 1989). There are no soil remediation criteria listed in the MOE Tables A or F guidelines for surface materials where soil pH is 5.0 to 11.0. However, the OTR₉₈ value for strontium is 64 µg/g. None of the samples collected and analyzed in the 0-5 cm exceed the OTR₉₈ value of 64 µg/g. For comparison, the measured mean concentration of strontium in the humus layers of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec at 37 µg/g, with a range of 7 to 96 µg/g, levels similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002).

The distributional map for strontium (Figure 44) indicates no relationship with historical smelting operations. The distribution pattern illustrates the relationship between strontium levels in surface soils and the glaciolacustrine sediments of the region. The highest concentration zones are associated with soils formed in the glacial sediments immediately overlying the metasediments of the Grenville Province.

Vanadium

The arithmetic mean vanadium level for 0 to 5 cm layer of undisturbed soils of the Sudbury region is 31 µg/g, with a range of 10 to 62 µg/g. The mean value in this region is lower than documented for soils in the USGS study estimated from 563 soil profiles (76 µg/g) of the conterminous U.S. (Shacklette *et al.*, 1971; Gough *et al.*, 1988), and for soils of North East Alberta (Spiers *et al.*, 1989). The low level of vanadium found in the current study may reflect the relatively high proportion of granite incorporated in the regional glaciogenic sediments that form the soil parent materials. The measured mean concentration of vanadium in the humus layers of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec at 19 µg/g, with a range of 3 to 63 µg/g, levels similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002).

The values documented for all surface soil materials in this study are below the level of 200 and 91 µg/g, respectively, listed in the MOE Table A and F guidelines for surface materials where soil pH is 5.0 to 11.0 where soil remediation is an issue. The distributional map for vanadium (Figure 45) indicates no relationship with historical smelting operations. The distribution pattern illustrates the relationship between vanadium levels in surface soils and the finer textured glaciolacustrine sediments of the region, with the highest concentration zones associated with soils formed in the glacial sediments immediately overlying the metasediments of the Grenville Province.

Zinc

The arithmetic mean zinc concentration for the 0 to 5 cm layer of undisturbed soils of the Sudbury region is 39 µg/g, with a range from <1 to 115 µg/g. The mean value is lower than that documented for both the surface mineral layers of Shield soils (54 µg/g) by McKeague

et al., (1979) and the conterminous U.S. soils (54 µg/g) and Alaskan soils (79 µg/g) in the USGS studies of Shacklette *et al.*, (1971) and Gough *et al.*, (1988), respectively. Pawluk and Bayrock (1969) document levels of 40 - 50 µg gm⁻¹ for the North East of Alberta for coarse textured surface soils formed in glaciogenic materials primarily of Shield source. Elevated concentrations are to the west, south and east of the three smelters. The background zinc levels obtained in this study are lower than estimates of background concentration of zinc at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 150 km north east of Sudbury (Henderson *et al.*, 2002).

There is no OTR₉₈ value, and no samples exceed the MOE Table A or F guidelines of 600 and 160 µg/g, respectively. The distributional map for zinc (Figure 46) indicates no relationship with historical smelting operations, rather illustrating the relationship between zinc levels in surface soils and the glaciogenic sediments of the region. The highest concentration zones are associated with soils to the south west of the study region formed in the glacial sediments immediately overlying the rocks of the Cobalt Group.

Soil Layer 5-10 cm

Aluminum

The maximum value for aluminum in 5 – 10 cm layer was 1.34%, with a minimum reported value of 0.43% and a maximum value of 3.45%. The mean value for Shield surface mineral soils listed by McKeague *et al.*, (1979) is 6.28% and for U.S. surface soils by Shacklette *et al.*, (1971) is 6.6%, considerably higher than the arithmetic mean of 1.00% of this study. The data are, however, similar to the 2.32% documented for coarse textured soils of Shield glacial and glaciofluvial origin in North East Alberta (Spiers *et al.*, 1989). The OTR₉₈ value is 3.0 % for surface materials. There is neither a Table F nor a Table A limit for aluminum.

Arsenic

The maximum value for arsenic in the 5 to 10 cm samples was 190 µg/g, with minimum values below detection limits. The regional arithmetic mean value is 9.7 µg/g, which compares with an upper crustal average of 4.8 µg/g (Rudnick and Gao, 2003). Although there is no OTR₉₈ value for arsenic, the OMOE Table F limit is 17µg/g and the MOE Table A limit

is 20 µg/g. The elevated arsenic concentrations are centred on the Coniston, Inco and Falconbridge smelters, with the maximum values in the vicinity of the Falconbridge smelter.

Barium

With a mean concentration of 61.8 µg/g barium levels of the 5 to 10 cm layer of the regional soils are substantially below the expected upper crustal average of 628 µg/g (Rudnick and Gao, 2003) and the level documented in the surface soils of the conterminous States (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value, the MOE Table A guideline is 750 µg/g and the Table F value is 210 µg/g, values again substantially greater than any concentration measured in this study.

Beryllium

Beryllium, potentially very toxic if ingested in excess, exists at very low concentrations in surface soils of the region with a mean content of 0.01 µg/g, below the mean concentration (0.92 µg/g) documented for U.S. soils (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value for beryllium, the MOE Table A and Table F guideline of 0.2 µg/g was exceeded in one instance at site 82 in the south east of the study region, with a measured concentration of 0.78 µg/g.

Cadmium

With a mean concentration of 0.001 µg/g, and a maximum concentration of 0.8 µg/g, cadmium did not exceed the MOE Table F limit of 12 µg/g at any site within the study region. Henderson *et al.*, (2002) estimate the background level of cadmium for soils of the Rouyn-Noranda area at 1 µg/g, a level in contrast to a measured mean background concentration of 0.3 µg/g for soils formed in tills in the Flin Flon region of Manitoba, (McMartin *et al.*, 1999). There is no OTR₉₈ value, the MOE Table F limit is 12 µg/g for surface materials, this was not exceeded.

Calcium

The arithmetic mean calcium concentration documented in this study for the 5 to 10 cm layer is 0.28 %, a concentration lower than that documented by McKeague *et al.*, (1979) for samples for Shield surface soils (2.05 %) and conterminous U.S. soils (1.8%), respectively (Shacklette *et al.*, 1971). The OTR₉₈ value for calcium is 5.5 %, with no Table F limit. The OTR₉₈ value for calcium reflects the dominance of data from the calcareous soils of southern Ontario used in the production of the advisory tables. In a similar study of background concentrations for soils formed in tills underlain by Precambrian bedrock formations in the Flin Flon region of Manitoba, McMartin *et al.*, (1999) document calcium mean concentration as 0.32 %.

Chromium

The regional mean for chromium concentration of the 5 to 10 cm layer is 38.9 µg/g, with a range of 15 - 86 µg/g. These data are in fairly close agreement with the Canadian (45 µg/g) mean soil parent material chromium content, but significantly higher than that documented for Shield surface soils (24 µg/g). Thus some sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background chromium concentration limit of 71 µg/g for all non-agricultural uses for surface materials, but well below the Table F value of 750 µg/g. The data of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for the less than 75 µm fraction of subsurface soils of the conterminous U.S.A. (54 µg gm⁻¹) indicate that the levels of this study are about normal background for surficial soil forming sediments. Interestingly, the higher chromium values in the surface soil layer reflect the pattern displayed for regional parent materials, being highest to the south of the major industrial region. For comparison, the measured mean background concentration of chromium in soils formed in tills in the Flin Flon region of Manitoba was 135 µg/g (McMartin *et al.*, 1999).

Cobalt

With a range in concentration from 1.5 to 38.5 µg/g, the arithmetic mean cobalt levels (7.2 µg/g) in soil 5 to 10 cm layers of the Sudbury region are slightly lower than those described by McKeague *et al.*, (1979) for the surface mineral horizon of Shield soils. However, the mean value is similar to that defined for U.S. soils (10 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988). Several sample sites in the Sudbury area have concentrations above the Ontario MOE

Table F background cobalt concentration limit of 21 µg/g for all non-agricultural uses for surface materials.

Copper

The overall mean level of copper (101.2 µg gm⁻¹) for the 5 to 10 cm layer of Sudbury region surface soils is substantially greater than those defined for U.S. soils (25 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988), and for surface layers of Canadian Shield soils (11 µg/g) as documented by McKeague *et al.*, (1979). The range in concentrations of copper is from 5 to 545 µg/g, with the distribution of copper being highest in the soils closer to the regional smelter complex. The highest levels of copper at 545 µg/g are on treed landscapes adjacent the mining and smelter operations in the Junction Creek watershed. Interestingly, the data obtained in the current Sudbury study are considerably higher than that documented for B-horizon copper levels of 31 µg/g for in the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). The measured mean B-horizon concentration of copper in soils formed in tills within 5 km of the Flin Flon region of Manitoba was 155 µg/g (McMartin *et al.*, 1999). With no OTR₉₈ value, the Table A limit is 225 µg/g, with 19 samples analyzed exceeding the latter limits for surface materials. These samples are largely trending south of the Copper Cliff smelter with some elevated values around the Coniston and Falconbridge smelters.

Iron

The mean iron concentration documented for the 5 to 10 cm layer in this study is 1.68 %, with a range from 0.63 to 3.0 %. These values are similar to those documented by both McKeague *et al.*, (1979) for surface mineral layers of Shield soils, and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples from the conterminous U.S. soils. The OTR₉₈ value for iron is 3.5 %, with no Table A or F limit. There were no samples exceeding the OTR₉₈ values for surface material. In comparison, the measured mean background concentration of iron in soils formed in tills in the Flin Flon region of Manitoba was 5.28% (McMartin *et al.*, 1999).

Lead

With a range in concentrations from 3.0 to 119 µg/g, the mean regional value for lead (15 µg/g) in Sudbury area soil 5 to 10 cm layers is higher than that documented by Dudas and Pawluk (1980) for Prairie soils, by McKeague *et al.*, (1979) for soils of the Shield region (20 µg/g) and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soil forming materials of the conterminous U.S. (20 µg/g). The lead levels for all surface layers sample sites in this Sudbury area study have concentrations below the Ontario MOE Table A background lead concentration limit of 200 µg/g for all non-agricultural uses for surface materials. Furthermore, the data obtained in the current Sudbury study are lower than the estimate of background concentration of lead at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). In comparison, the measured mean background concentration of lead in soils formed in tills in the Flin Flon region of Manitoba was 8 µg/g (McMartin *et al.*, 1999).

Magnesium

With a concentration range of 0.06 to 0.78 %, the arithmetic mean magnesium concentration documented for the 0 to 5 cm layers in this study is 0.23%, a content below that documented by McKeague *et al.*, (1979), Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield (0.51%) and conterminous U.S. soils (0.92%), respectively. The OTR98 value for magnesium is 2.0 %, with no Table F limit. The soils with highest concentrations of magnesium are probably developed on calcareous medium textured glaciolacustrine sediments. In comparison, the measured mean background concentration of magnesium in soils formed in tills in the Flin Flon region of Manitoba was 1.89% (McMartin *et al.*, 1999). The mean B-horizon magnesium content in the Rouyn area is 0.76 %, with a range from 0.06 to 2.32 % (Henderson *et al.*, 2002).

Manganese

The arithmetic mean manganese concentration for the 5 to 10 cm layers in regional soils documented in this study is 232 µg/g, with a range of 55 to 1250 µg/g. No samples exceed the OTR₉₈ values of 2200 µg/g for manganese for surface materials. The manganese levels described in this study are lower than those documented elsewhere (McKeague *et al.*, 1979;

Shacklette *et al.*, 1971; Spiers *et al.*, 1989) for background soil levels in North America. In comparison, the measured mean concentration of manganese in the B-horizons of soils formed in tills in the Rouyn area is 410 µg/g with a range from 20 to 3110 µg/g (Henderson *et al.*, 2002).

Molybdenum

With a mean of 0.13 µg/g, levels of molybdenum levels in the 5 to 10 cm layer of regional soils are lower than those documented by Shacklette *et al.*, (1971) for U.S. soils (0.98 µg/g) and Gough *et al.*, (1988) for Alaskan soils (1.3 µg/g). There is no comparable data readily available for Canadian Shield soil materials, with the exception of the data of Pawluk and Bayrock (1969) who describe a background level of 1-2 µg/g molybdenum for the clay-rich soils Northeastern Alberta. Some sampling sites exceed the MOE Table F guideline of 2.5 µg/g molybdenum for all non-agricultural uses for surface materials. In comparison, the measured mean concentration of molybdenum in the C-horizon of soils formed in tills in the Rouyn area is 2.1 µg/g with a range from 0.5 to 9 µg/g (Henderson *et al.*, 2002).

Nickel

The arithmetic nickel levels (81.5 µg/g) for 5 to 10 cm layers of soils of the Sudbury region are much higher than those levels documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (12 µg/g) and in the USGS documented levels for soils (20 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in the 5 to 10 cm soil layer nickel concentrations is from 7.5 to 739 µg/g, with the higher concentrations being in the soil parent materials in the vicinity of the regional smelter operations. The nickel concentrations for the 5 to 10 cm layers of the sola in the core of the study area are considerably above the MOE Table A (43 µg/g) and, in some cases, F (150 µg/g) guidelines for surface materials where soil pH is 5.0 to 11.0. For comparison, the measured mean concentration of nickel in the B-horizon of soils formed in tills in the In Rouyn-Noranda region of Quebec was 34 µg/g (Henderson *et al.*, 2002), with a range of 9 to 347 µg/g, levels much lower than in the soils of the Sudbury region.

Selenium

The arithmetic selenium levels (0.6 µg/g) for 5 to 10 cm layer of undisturbed soils the Sudbury region in this region are higher than documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (0.18 µg/g). The reports of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soils of the conterminous U.S. soils do not document levels for selenium. The values documented in this study are considerably below the potentially toxic levels of the MOE Table A guideline of 10 µg/g for surface materials where soil pH is 5.0 to 11.0, with some sites above the Table F guideline of 1.9 µg/g for soils with a pH between 5.0 and 11.0.

Strontium

The arithmetic strontium levels (35 µg/g) for the 5 to 10 cm layer of the surface soils of the Sudbury region in this region are considerably lower than documented both in the review by McKeague *et al.*, (1971) for surface mineral layers of agricultural soils of the Shield region (402 µg/g) and in the USGS documented levels estimated from 563 soil profiles (240 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in the 5 to 10 cm layer strontium concentrations is from < 1 to 96 µg/g. The lower concentrations in this study compared to those listed above is a reflection of the non-calcareous nature of the soil forming materials of the Sudbury region. Similar levels are, however, documented for soil parent materials formed on glaciofluvial materials of North East Alberta (Spiers *et al.*, 1989). There are no soil remediation criteria listed in the MOE Tables A or F guidelines for surface materials where soil pH is 5.0 to 11.0. However, the OTR₉₈ value for strontium is 64 µg/g. A few of the samples collected and analyzed in the 5 to 10 cm layer exceed the OTR₉₈ value of 64 µg/g. For comparison, the measured mean concentration of strontium in the B-horizon of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec is 24 µg/g, with a range of 9 to 65 µg/g, levels similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002).

Vanadium

The arithmetic mean vanadium level for 5 to 10 cm layer of undisturbed soils of the Sudbury region is 37.8 µg/g, with a range of 17 to 67 µg/g. The mean value in this region is lower

than documented for soils in the USGS study estimated from 563 soil profiles (76 µg/g) of the conterminous U.S. (Shacklette *et al.*, 1971; Gough *et al.*, 1988), and for soils of North East Alberta (Spiers *et al.*, 1989). The measured mean concentration of vanadium in the B-horizon of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec at 53 µg/g, with a range of 9 to 155 µg/g, levels relatively similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002). The values documented for all surface soil materials in this study are below the level of 200 and 91 µg/g, respectively, listed in the MOE Table A and F guidelines for surface materials where soil pH is 5.0 to 11.0 where soil remediation is an issue.

Zinc

The arithmetic mean zinc concentration for the 5 to 10 cm layer of undisturbed soils of the Sudbury region is 31.6 µg/g, with a range from <1 to 149 µg/g. The mean value is lower than that documented for both the surface mineral layers of Shield soils (54 µg/g) by McKeague *et al.*, (1979) and the conterminous U.S. soils (54 µg/g) and Alaskan soils (79 µg/g) in the USGS studies of Shacklette *et al.*, (1971) and Gough *et al.*, (1988), respectively. Pawluk and Bayrock (1969) document levels of 40 - 50 µg g⁻¹ for the North East of Alberta for coarse textured surface soils formed in glaciogenic materials primarily of Shield source. The background zinc levels obtained in this study are lower than estimates of B-horizon concentrations for zinc at 60 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). There is no OTR₉₈ value, and no samples exceed the MOE Table A or F guidelines of 600 and 160 µg/g, respectively.

Soil Layer 10-20 cm

Aluminum

The maximum value for aluminum in 10 – 20 cm layer was 1.72 %, with a minimum reported value of 0.41 % and a maximum value of 3.65 %. The mean value for Shield surface mineral soils listed by McKeague *et al.*, (1979) is 6.28% and for U.S. surface soils by Shacklette *et al.*, (1971) is 6.6%, considerably higher than the arithmetic mean of 1.00% of

this study. The data are, however, similar to the 2.32% documented for coarse textured soils of Shield glacial and glaciofluvial origin in North East Alberta (Spiers *et al.*, 1989). The OTR₉₈ value is 3.0 % for surface materials. There is neither a Table F nor a Table A limit for aluminum.

Arsenic

The maximum value for arsenic in the 10 to 20 cm samples was 88.5 µg/g, with minimum values below detection limits. The regional arithmetic mean value for the 10 to 20 cm layer is 3.8 µg/g, which compares with an upper crustal average of 4.8 µg/g (Rudnick and Gao, 2003). Although there is no OTR₉₈ value for arsenic, the OMOE Table F limit is 17µg/g and the MOE Table A limit is 20 µg/g. The highest arsenic concentration is found in the sediments of the Junction Creek delta, probably reflecting modern sedimentation as a result of erosion of mining lands in the watershed. The secondary region of high concentration is on the soils of the Falconbridge area, again probably reflecting the detrital arsenic in the shallow weathered overburden materials.

Barium

With a mean concentration of 63.5 µg/g barium levels of the 10 to 20 cm layer of the regional soils are substantially below the expected upper crustal average of 628 µg/g (Rudnick and Gao, 2003) and the level documented in the surface soils of the conterminous States (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value, the MOE Table A guideline is 750 µg/g and the Table F value is 210 µg/g, values again substantially greater than any concentration measured in this study.

Beryllium

Beryllium exists at very low concentrations in surface soils of the region with a mean content in the 10 to 20 cm soil layers of 0.01 µg/g, below the mean concentration (0.92 µg/g) documented for U.S. soils (Shacklette *et al.*, 1971). Although there is no OTR₉₈ value for beryllium, the MOE Table A and Table F guideline of 0.2 µg/g was exceeded in one instance at site 82 in the south east of the study region, with a measured concentration of 0.67 µg/g.

Cadmium

With a mean concentration of $<0.01 \mu\text{g/g}$, and a maximum concentration of $0.67 \mu\text{g/g}$ in the 10 to 20 cm layer of the Sudbury region soils, cadmium did not exceed the MOE Table F limit of $12 \mu\text{g/g}$ at any site within the study region. Henderson *et al.*, (2002) estimate the background level of cadmium for soils of the Rouyn-Noranda area at $1 \mu\text{g/g}$, a level in contrast to a measured mean background concentration of $0.3 \mu\text{g/g}$ for soils formed in tills in the Flin Flon region of Manitoba, (McMartin *et al.*, 1999). There is no OTR₉₈ value, the MOE Table F limit is $12 \mu\text{g/g}$ for surface materials, this was not exceeded.

Calcium

The arithmetic mean calcium concentration documented in this study for the 10 to 30 cm layer is 0.32% , a concentration lower than that documented by McKeague *et al.*, (1979) for samples for Shield surface soils (2.05%) and conterminous U.S. soils (1.8%), respectively (Shacklette *et al.*, 1971). The OTR₉₈ value for calcium is 5.5% , with no Table F limit. The OTR₉₈ value for calcium reflects the dominance of data from the calcareous soils of southern Ontario used in the production of the advisory tables. In a similar study of background concentrations for soils formed in tills underlain by Precambrian bedrock formations in the Flin Flon region of Manitoba, McMartin *et al.*, (1999) document calcium mean concentration as 0.32% . The mean calcium content of soils in the Rouyn-Noranda area is documented at 0.37% for B-horizon soils.

Chromium

The regional mean for chromium concentration of the 10 to 20 cm layer is $44 \mu\text{g/g}$, with a range of 18 to $115 \mu\text{g/g}$. These data are in fairly close agreement with the Canadian ($45 \mu\text{g/g}$) mean Shield soil parent material chromium content, but significantly higher than that documented for Shield surface soils ($24 \mu\text{g/g}$). Thus some sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background chromium concentration limit of $71 \mu\text{g/g}$ for all non-agricultural uses for surface materials, but well below the Table F value of $750 \mu\text{g/g}$. The data of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for the less than 75 μm fraction of subsurface soils of the conterminous U.S.A. ($54 \mu\text{g gm}^{-1}$) indicate that the levels of this

study are about normal background for surficial soil forming sediments. For comparison, the measured mean background concentration of chromium in soils formed in tills in the Flin Flon region of Manitoba was 135 µg/g (McMartin *et al.*, 1999), and for B-horizon soils in the Rouyn-Noranda area was 78 µg/g (Henderson *et al.*, 2002).

Cobalt

With a range in concentration from 2.5 to 20 µg/g, the arithmetic mean cobalt levels (7.3 µg/g) in soil 10 to 20 cm layers of the Sudbury region are slightly lower than those described by McKeague *et al.*, (1979) for the surface mineral horizon of Shield soils. However, the mean value is similar to that defined for U.S. soils (10 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988). No sample sites in the Sudbury area have concentrations above the Ontario MOE Table F background cobalt concentration limit of 21 µg/g for all non-agricultural uses for surface materials. There is no OTR₉₈ value, the MOE Table A limit is 40 µg/g for surface materials, no samples exceeded this value. In comparison, B-horizons in the Rouyn-Noranda region have a mean cobalt concentration of 12 µg/g (Henderson *et al.*, 2002).

Copper

The overall mean level of copper (49.7 µg gm⁻¹) for the 10 to 20 cm layer of Sudbury region surface soils is substantially greater than those defined for U.S. soils (25 µg/g) by Shacklette *et al.*, (1971) and Gough *et al.*, (1988), and for surface layers of Canadian Shield soils (11 µg/g) as documented by McKeague *et al.*, (1979). The range in concentrations of copper is from 3 to 510 µg/g, with the distribution of copper being highest in the soils closer to the regional smelter complex. The highest levels of copper at 510 µg/g are on treed landscapes adjacent the mining and smelter operations in the Junction Creek watershed. Interestingly, the data obtained in the current Sudbury study are considerably higher than that documented for B-horizon copper levels of 31 µg/g for in the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). The measured mean B-horizon concentration of copper in soils formed in tills within 5 km of the Flin Flon region of Manitoba was 155 µg/g (McMartin *et al.*, 1999). With no OTR₉₈ value, the Table A limit is 225 µg/g, with 10 samples analyzed

exceeding the latter limits for surface materials. These samples are from sites trending south of the Copper Cliff smelter.

Iron

The mean iron concentration documented for the 10 to 20 cm layer in this study is 1.92 %, with a range from 0.64 to 3.7 %. These values are similar to those documented by both McKeague *et al.*, (1979) for surface mineral layers of Shield soils, and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples from the conterminous U.S. soils. The OTR₉₈ value for iron is 3.5 %, with no Table A or F limit. There were no samples exceeding the OTR₉₈ values for surface material. In comparison, the measured mean concentration of iron in soils formed in tills in the Flin Flon region of Manitoba was 5.28% (McMartin *et al.*, 1999), and 2.82 % for the B-horizons of soils formed in glaciogenic sediments in the Rouyn-Noranda area (Henderson *et al.*, 2002).

Lead

With a range in concentrations from 3.0 to 74 µg/g , the mean regional value for lead (8.9 µg/g) in Sudbury area soil 10 to 20 cm layers is lower than that documented by Dudas and Pawluk (1980) for Prairie soils, by McKeague *et al.*, (1979) for soils of the Shield region (20 µg/g) and by Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soil forming materials of the conterminous U.S. (20 µg/g). The lead levels for all surface layers sample sites in this Sudbury area study have concentrations below the Ontario MOE Table A background lead concentration limit of 200 µg/g for all non-agricultural uses for surface materials. Furthermore, the data obtained in the current Sudbury study are lower than the estimate of background concentration of lead at 80 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). In comparison, the measured mean background concentration of lead in soils formed in tills in the Flin Flon region of Manitoba was 8 µg/g (McMartin *et al.*, 1999).

Magnesium

With a concentration range of 0.07 to 0.96 %, the arithmetic mean magnesium concentration documented for the 10 to 20 cm layers in this study is 0.032 %, a content below that documented by McKeague *et al.*, (1979), Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for samples for Shield (0.51%) and conterminous U.S. soils (0.92%), respectively. The OTR98 value for magnesium is 2.0 %, with no Table F limit. The soils with highest concentrations of magnesium are probably developed on calcareous medium textured glaciolacustrine sediments. In comparison, the measured mean background concentration of magnesium in soils formed in tills in the Flin Flon region of Manitoba was 1.89% (McMartin *et al.*, 1999). The mean B-horizon magnesium content in the Rouyn area is 0.76 %, with a range from 0.06 to 2.32 % (Henderson *et al.*, 2002).

Manganese

The arithmetic mean manganese concentration for the 10 to 20 cm layers in regional soils documented in this study is 215 µg/g, with a range of 43 to 697 µg/g. No samples exceed the OTR₉₈ values of 2200 µg/g for manganese for surface materials. The manganese levels described in this study are lower than those documented elsewhere (McKeague *et al.*, 1979; Shacklette *et al.*, 1971; Spiers *et al.*, 1989) for background soil levels in North America. In comparison, the measured mean concentration of manganese in the B-horizons of soils formed in tills in the Rouyn area is 410 µg/g with a range from 20 to 3110 µg/g (Henderson *et al.*, 2002).

Molybdenum

With a mean of 0.11 µg/g, levels of molybdenum levels in the 10 to 20 cm layer of regional soils are lower than those documented by Shacklette *et al.*, (1971) for U.S. soils (0.98 µg/g) and Gough *et al.*, (1988) for Alaskan soils (1.3 µg/g). There is no comparable data readily available for Canadian Shield soil materials, with the exception of the data of Pawluk and Bayrock (1969) who describe a background level of 1-2 µg/g molybdenum for the clay-rich soils Northeastern Alberta. Some sampling sites exceed the MOE Table F guideline of 2.5 µg/g molybdenum for all non-agricultural uses for surface materials. In comparison, the

measured mean concentration of molybdenum in the C-horizon of soils formed in tills in the Rouyn area is 2.1 µg/g with a range from 0.5 to 9 µg/g (Henderson *et al.*, 2002).

Nickel

The arithmetic nickel levels (50.6 µg/g) for 10 to 20 cm layers of soils of the Sudbury region are much higher than those levels documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (12 µg/g) and in the USGS documented levels for soils (20 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in the 5 to 10 cm soil layer nickel concentrations is from 10 to 485 µg/g, with the higher concentrations being in the soil parent materials in the vicinity of the regional smelter operations. The nickel concentrations for the 10 to 20 cm layers of the sola in the core of the study area are considerably above the MOE Table A (43 µg/g) and, in some cases, F (150 µg/g) guidelines for surface materials where soil pH is 5.0 to 11.0. For comparison, the measured mean concentration of nickel in the B-horizon of soils formed in tills in the In Rouyn-Noranda region of Quebec was 34 µg/g (Henderson *et al.*, 2002), with a range of 9 to 347 µg/g, levels much lower than in the soils of the Sudbury region.

Selenium

The arithmetic selenium levels (0.17 µg/g) for 10 to 20 cm layer of undisturbed soils the Sudbury region in this region are lower than documented in the review by McKeague *et al.*, (1971) for agricultural soils of the Shield region (0.18 µg/g). The reports of Shacklette *et al.*, (1971) and Gough *et al.*, (1988) for soils of the conterminous U.S. soils do not document levels for selenium. The values documented in this study are considerably below the potentially toxic levels of the MOE Table A guideline of 10 µg/g for surface materials where soil pH is 5.0 to 11.0, with some sites above the Table F guideline of 1.9 µg/g for soils with a pH between 5.0 and 11.0.

Strontium

The arithmetic strontium levels (38 µg/g) for the 10 to 20 cm layer of the surface soils of the Sudbury region in this region are considerably lower than documented both in the review by

McKeague *et al.*, (1971) for surface mineral layers of agricultural soils of the Shield region (402 µg/g) and in the USGS documented levels estimated from 563 soil profiles (240 µg/g) of the conterminous U.S. soils (Shacklette *et al.*, 1971; Gough *et al.*, 1988). The range in the 10 to 20 cm layer strontium concentrations is from < 1 to 65 µg/g. The lower concentrations in this study compared to those listed above is a reflection of the non-calcareous nature of the soil forming materials of the Sudbury region. Similar levels are, however, documented for soil parent materials formed on coarse textured glaciofluvial materials of North East Alberta (Spiers *et al.*, 1989). There are no soil remediation criteria listed in the MOE Tables A or F guidelines for surface materials where soil pH is 5.0 to 11.0. However, the OTR₉₈ value for strontium is 64 µg/g. No samples collected and analyzed in the 10 to 20 cm layer exceed the OTR₉₈ value of 64 µg/g. For comparison, the measured mean concentration of strontium in the B-horizon of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec is 24 µg/g, with a range of 9 to 65 µg/g, levels similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002).

Vanadium

The arithmetic mean vanadium level for 10 to 20 cm layer of undisturbed soils of the Sudbury region is 40 µg/g, with a range of 10 to 66 µg/g. The mean value in this region is lower than documented for soils in the USGS study estimated from 563 soil profiles (76 µg/g) of the conterminous U.S. (Shacklette *et al.*, 1971; Gough *et al.*, 1988), and for soils of North East Alberta (Spiers *et al.*, 1989). The measured mean concentration of vanadium in the B-horizon of soils formed on glacial sediments in the Rouyn-Noranda region of Quebec was 53 µg/g, with a range of 9 to 155 µg/g, levels relatively similar to the surface layers of the soils of the Sudbury region (Henderson *et al.*, 2002). The values documented for all surface soil materials in this study are below the level of 200 and 91 µg/g, respectively, listed in the MOE Table A and F guidelines for surface materials where soil pH is 5.0 to 11.0 where soil remediation is an issue.

Zinc

The arithmetic mean zinc concentration for the 10 to 20 cm layer of undisturbed soils of the Sudbury region is 33.7 µg/g, with a range from 10 to 84 µg/g. The mean value is lower than that documented for both the surface mineral layers of Shield soils (54 µg/g) by McKeague *et al.*, (1979) and the conterminous U.S. soils (54 µg/g) and Alaskan soils (79 µg/g) in the USGS studies of Shacklette *et al.*, (1971) and Gough *et al.*, (1988), respectively. Pawluk and Bayrock (1969) document levels of 40 - 50 µg gm⁻¹ for the North East of Alberta for coarse textured surface soils formed in glaciogenic materials primarily of Shield source. The background zinc levels obtained in this study are lower than estimates of B-horizon concentrations for zinc at 60 µg/g for soil forming materials of the Rouyn-Noranda area approximately 250 km north east of Sudbury (Henderson *et al.*, 2002). There is no OTR₉₈ value, and no samples exceed the MOE Table A or F guidelines of 600 and 160 µg/g, respectively.

Regional Geochemical Maps for Surface Soils

Overlain on regional bedrock maps (Figure 1), the regional elemental concentration maps for the non-anthropogenic metal(loid)s display geochemical data as proportional dots illustrating concentrations of individual elements in the soil parent materials of the Sudbury region (Figures 28 to 46).

These geochemical maps indicate that the non-anthropogenic metal(loid)s concentration in the 0-5 cm layer of the Sudbury region vary with underlying bedrock composition. There is an apparent association between concentrations of these metal(loid)s extracted by *Aqua Regia* from the 0-5 cm layer of the Sudbury region soils and the regional bedrock geology. This relationship was discussed in more detail in an earlier section of this report describing the regional distribution of metal(loid)s in soil parent materials of the region.

The associations apparent in the regional maps, especially for the anthropogenic metal(loid)s, will be discussed on an individual metals basis in the following section. The concentrations of the elements arsenic, cobalt, copper, nickel, lead and selenium all display an ellipsoidal distribution, with the long axis in the approximate SW-NE trend of the dominant vector of the annual wind rose diagram, approximately centred on the smelter area.

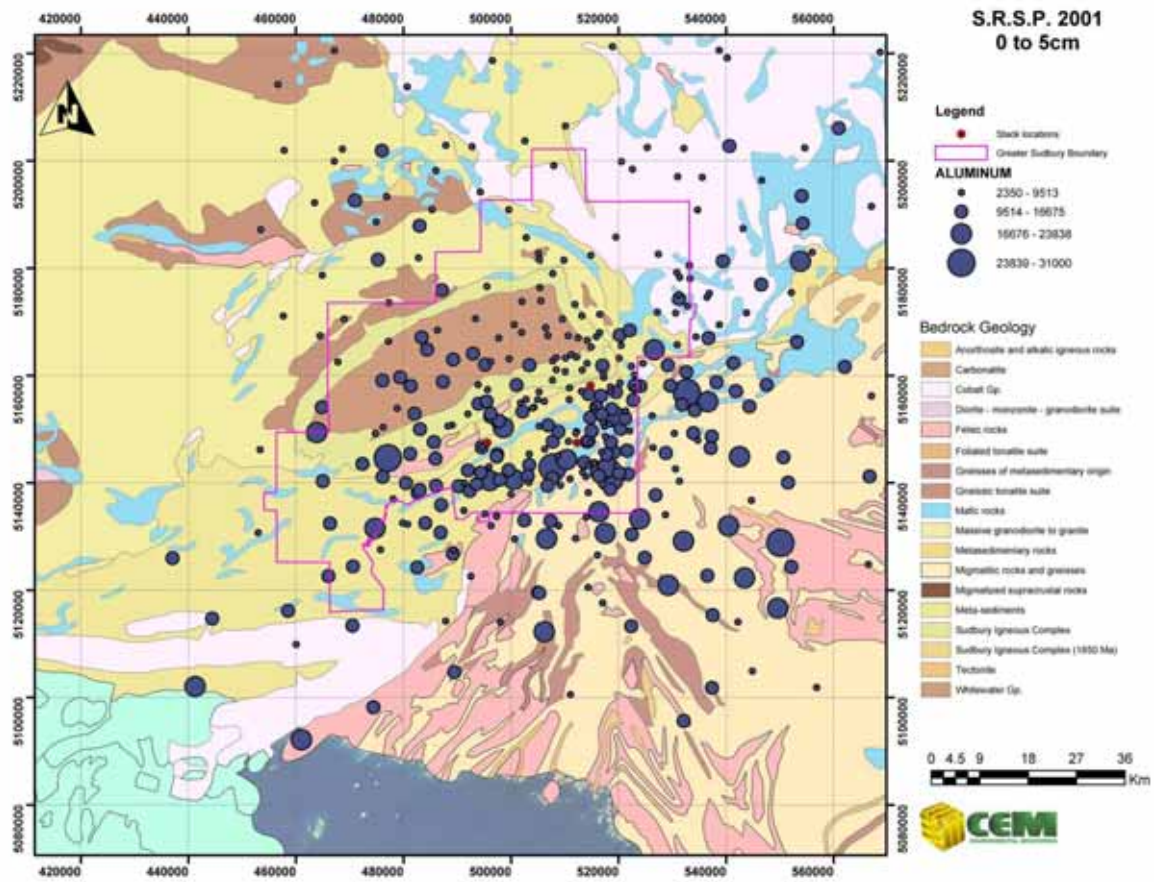


Figure 28: Distribution of aluminium in the 0-5 cm layer of soils of the Sudbury Region.

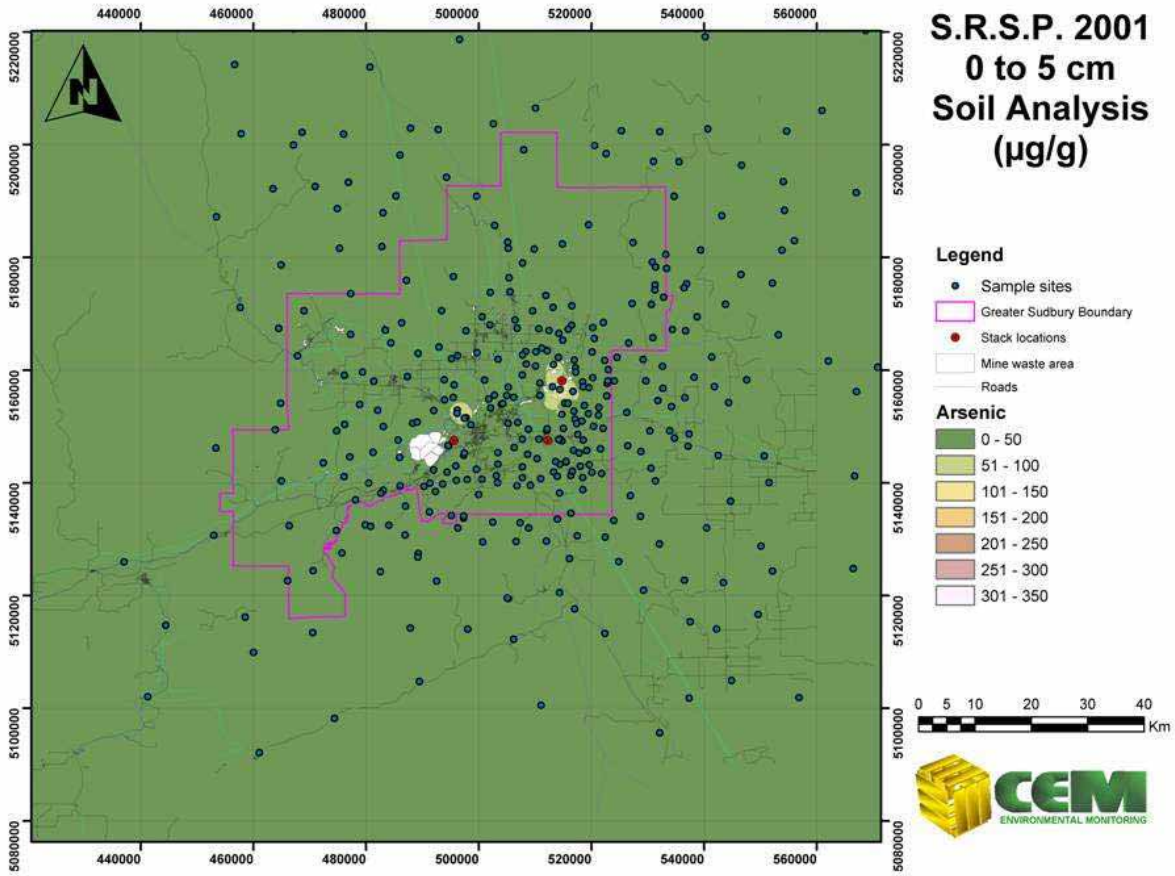


Figure 29: Distribution of arsenic in the 0-5 cm layer of soils of the Sudbury Region.

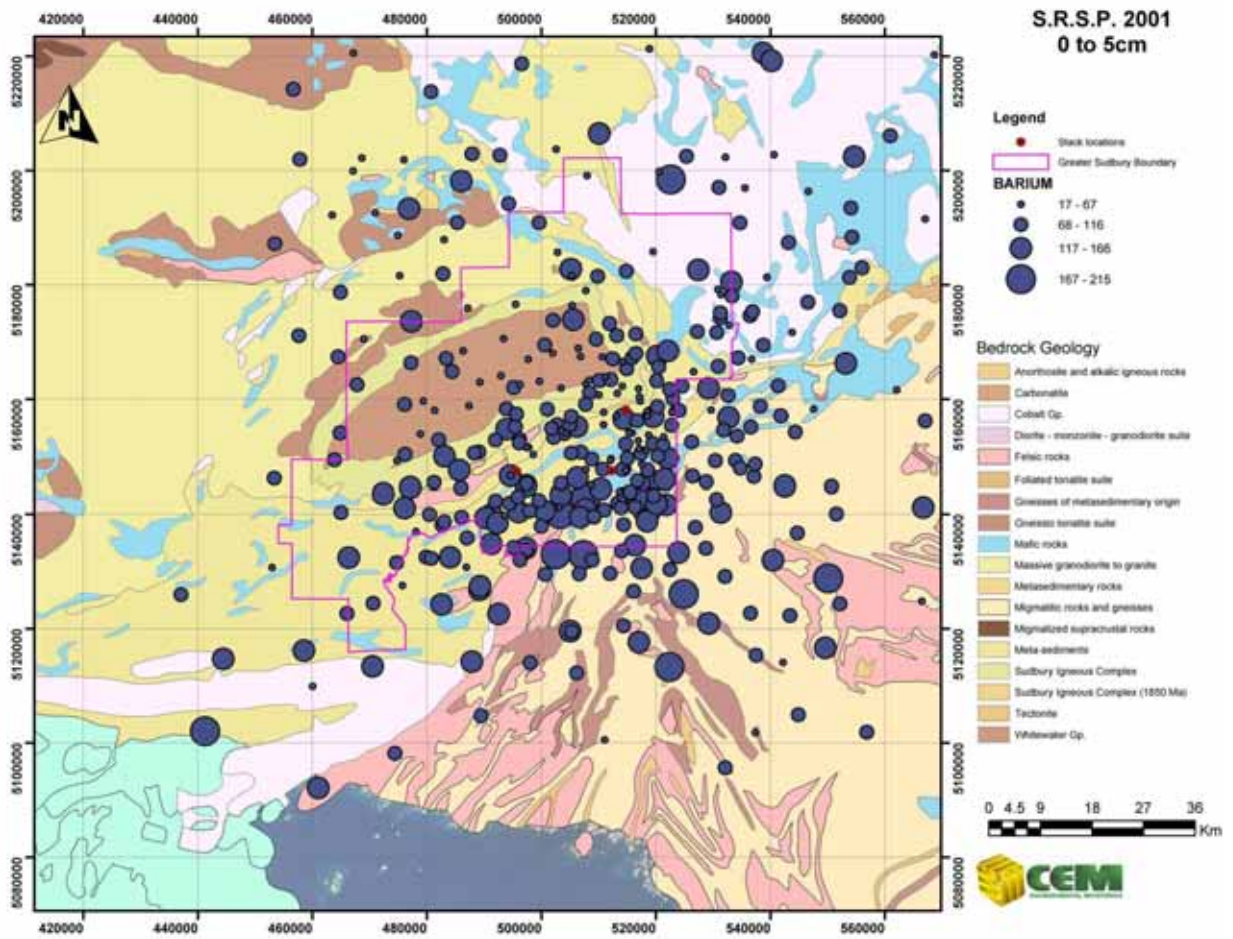


Figure 30: Distribution of barium in the 0-5 cm layer of soils of the Sudbury Region.

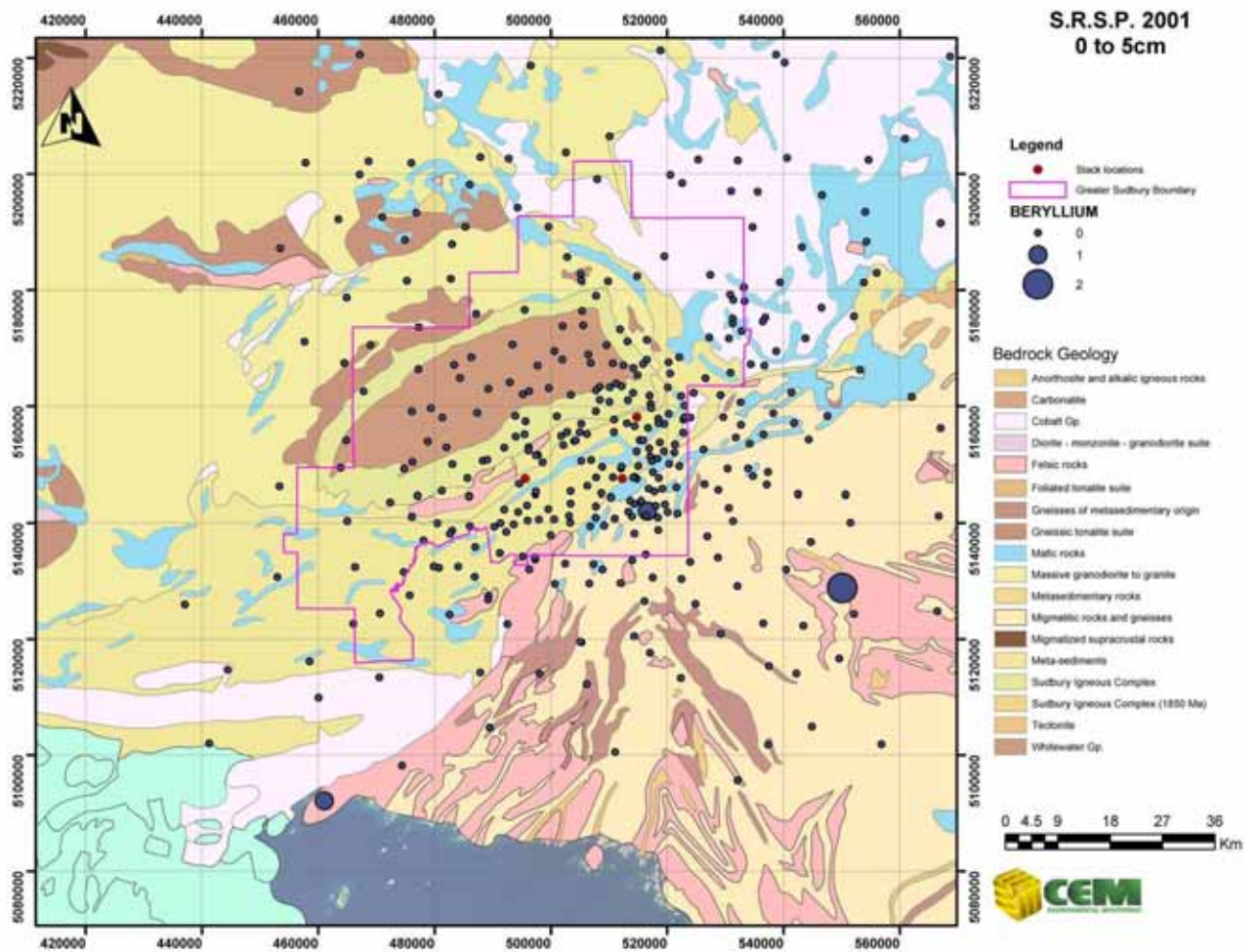


Figure 31: Distribution of beryllium in the 0-5 cm layer of soils of the Sudbury Region.

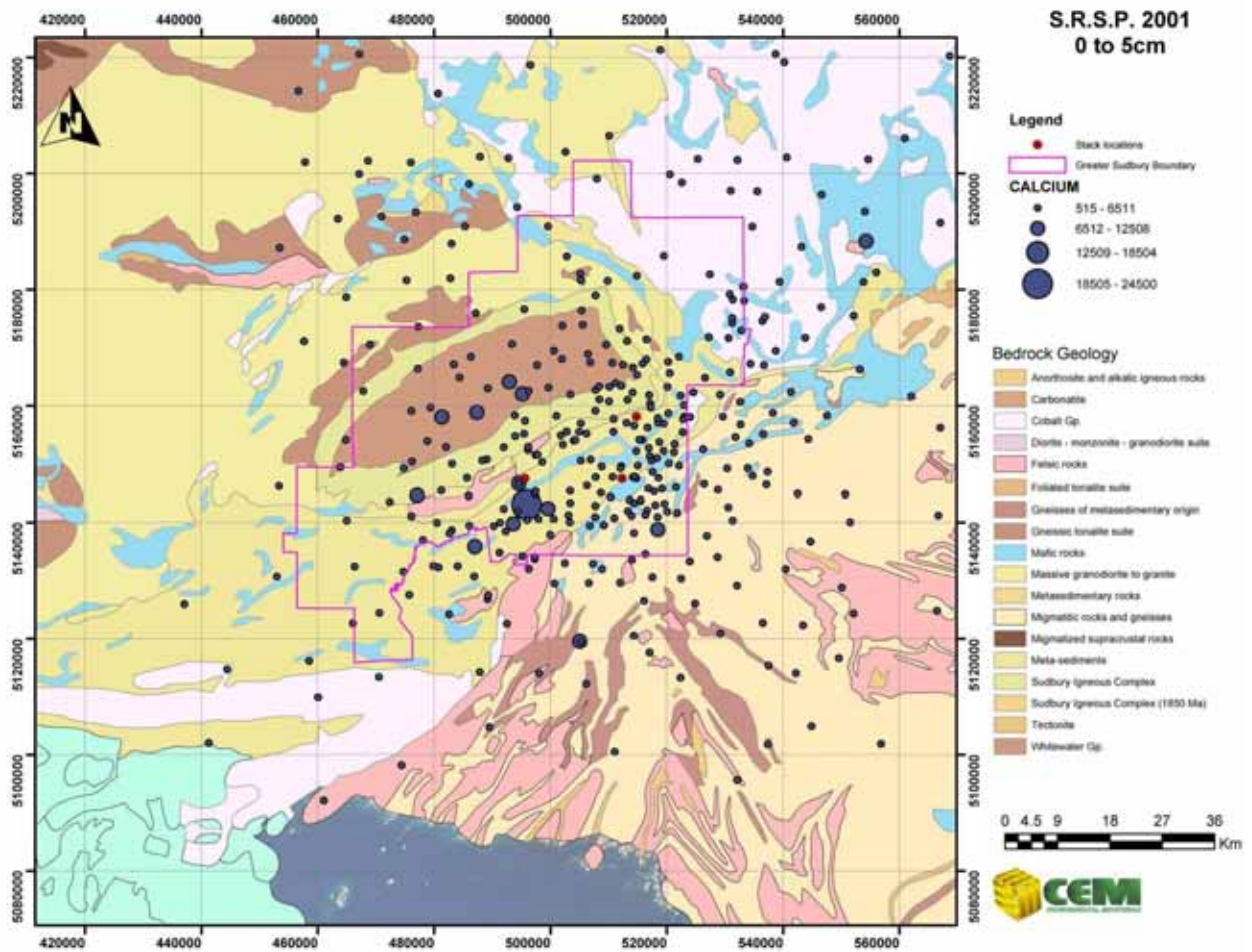


Figure 32: Distribution of calcium in the 0-5 cm layer of soils of the Sudbury Region.

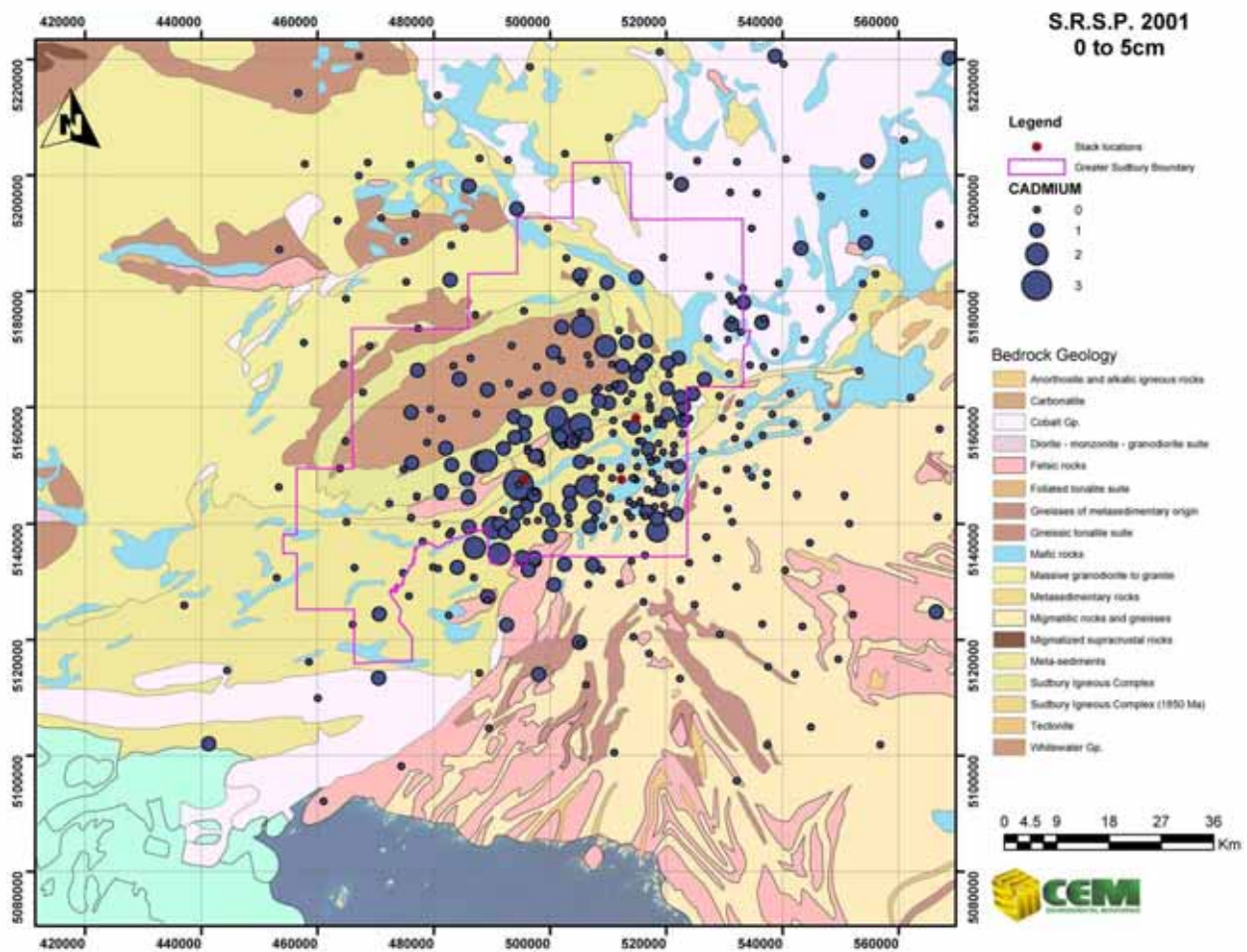


Figure 33: Distribution of cadmium in the 0-5 cm layer of soils of the Sudbury Region.

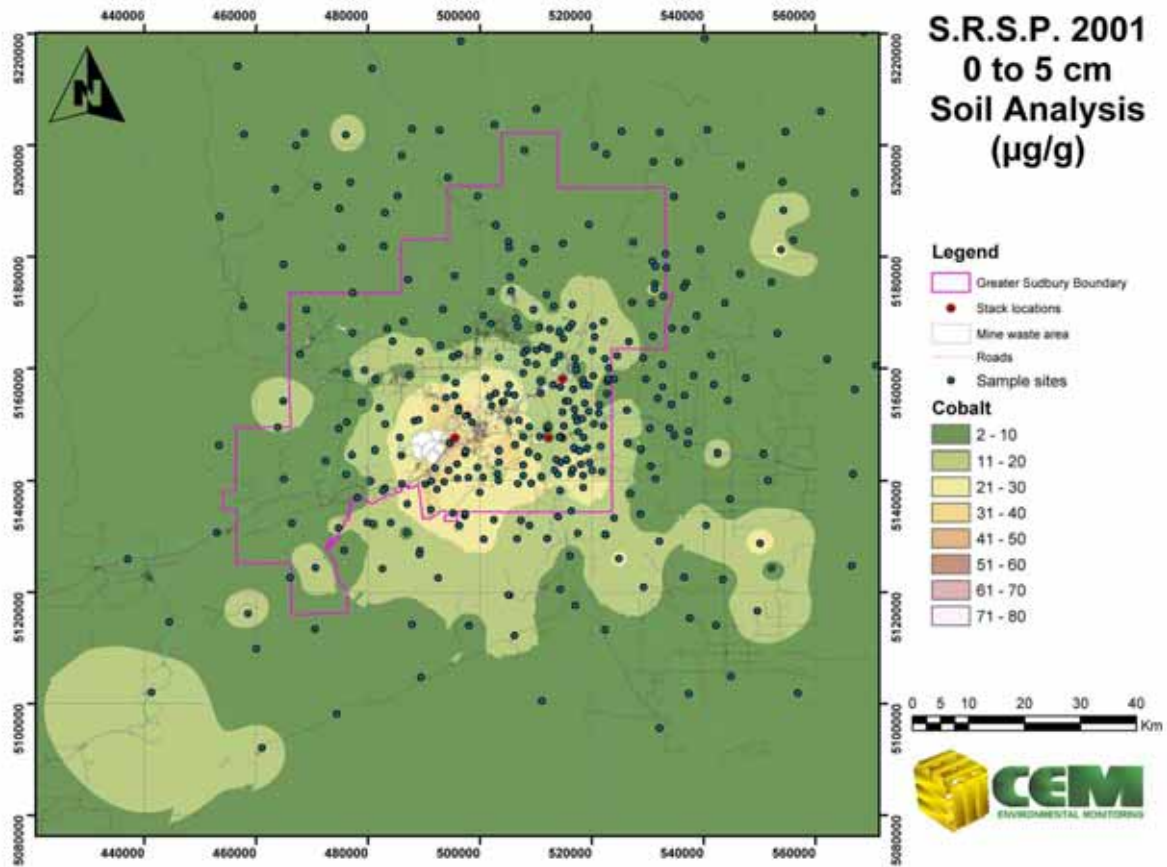


Figure 34: Distribution of cobalt in the 0-5 cm layer of soils of the Sudbury Region.

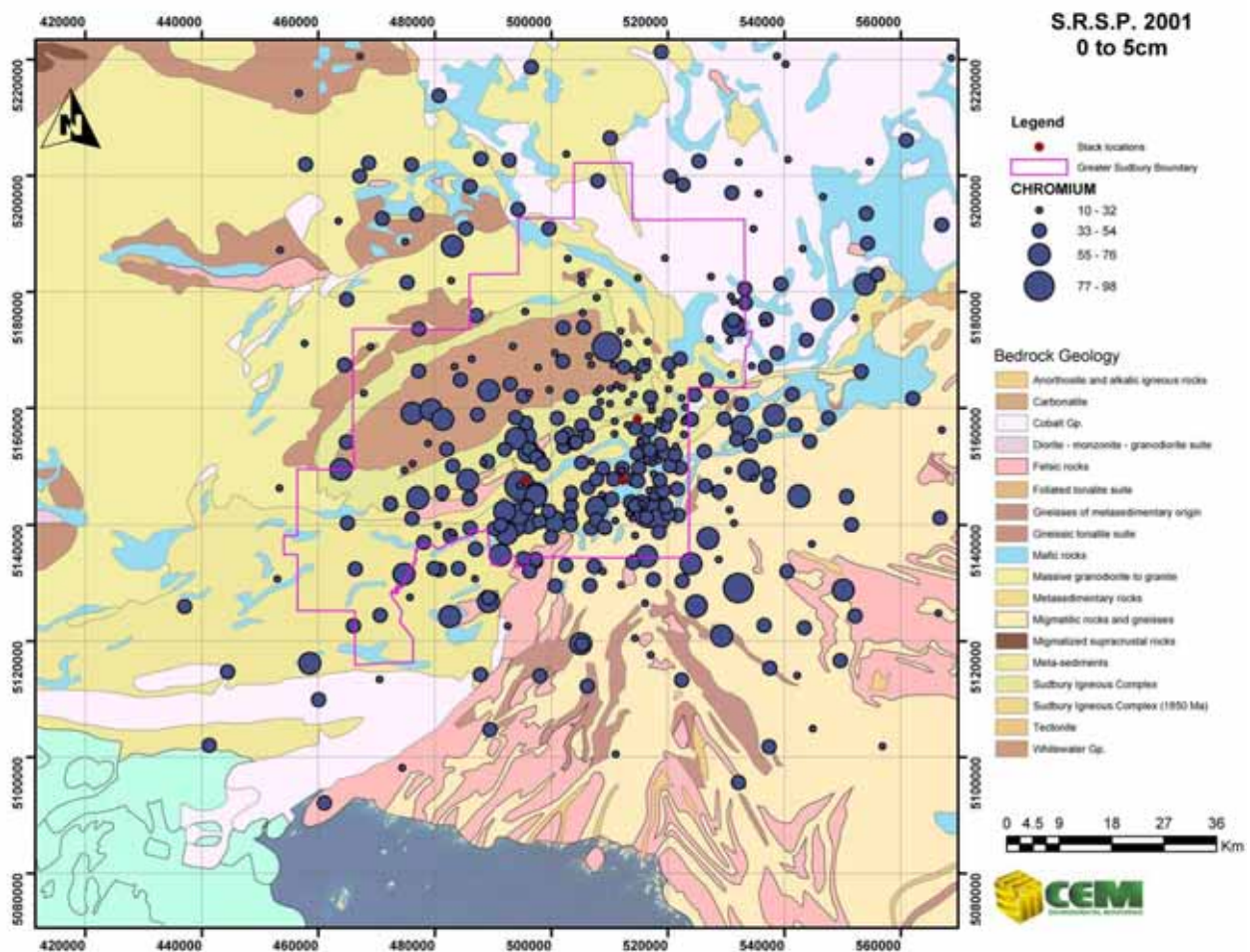


Figure 35: Distribution of chromium in the 0-5 cm layer of soils of the Sudbury Region.

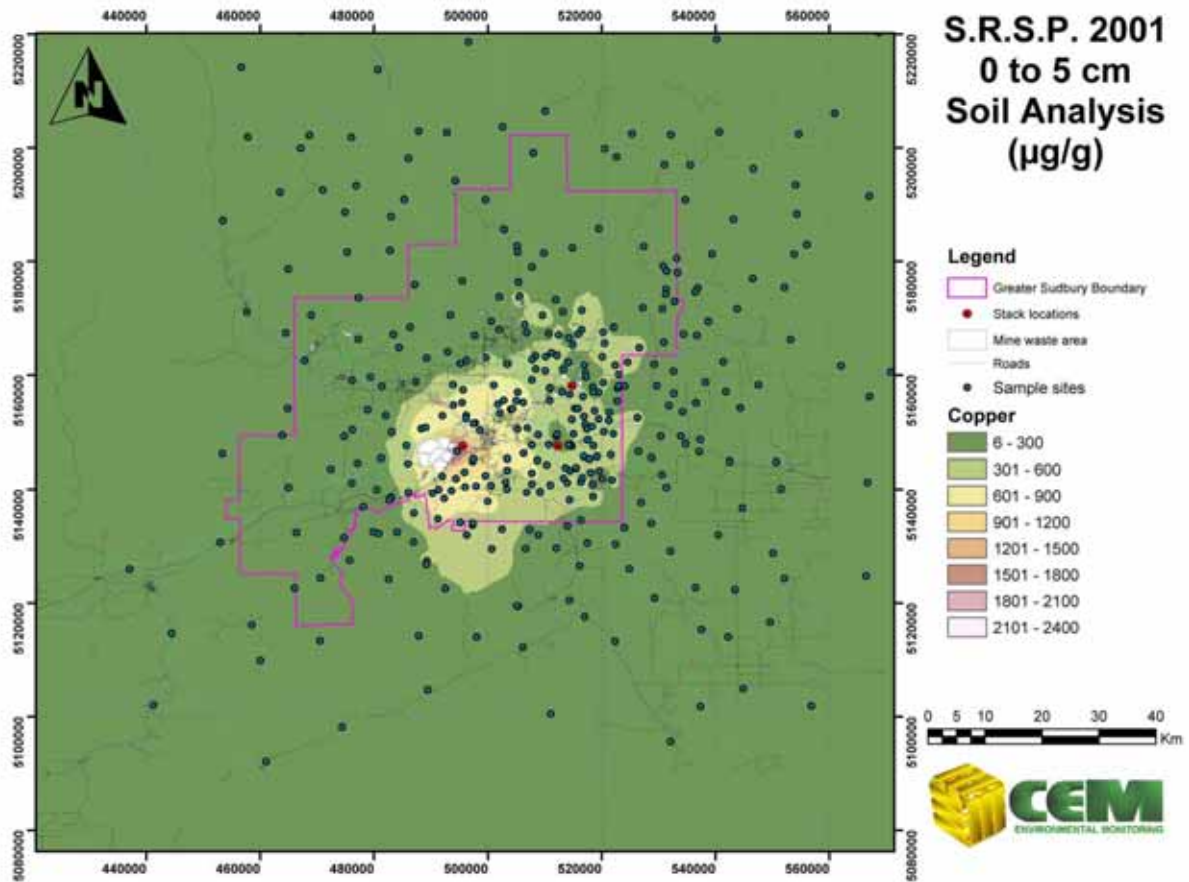


Figure 36: Distribution of copper in the 0-5 cm layer of soils of the Sudbury Region.

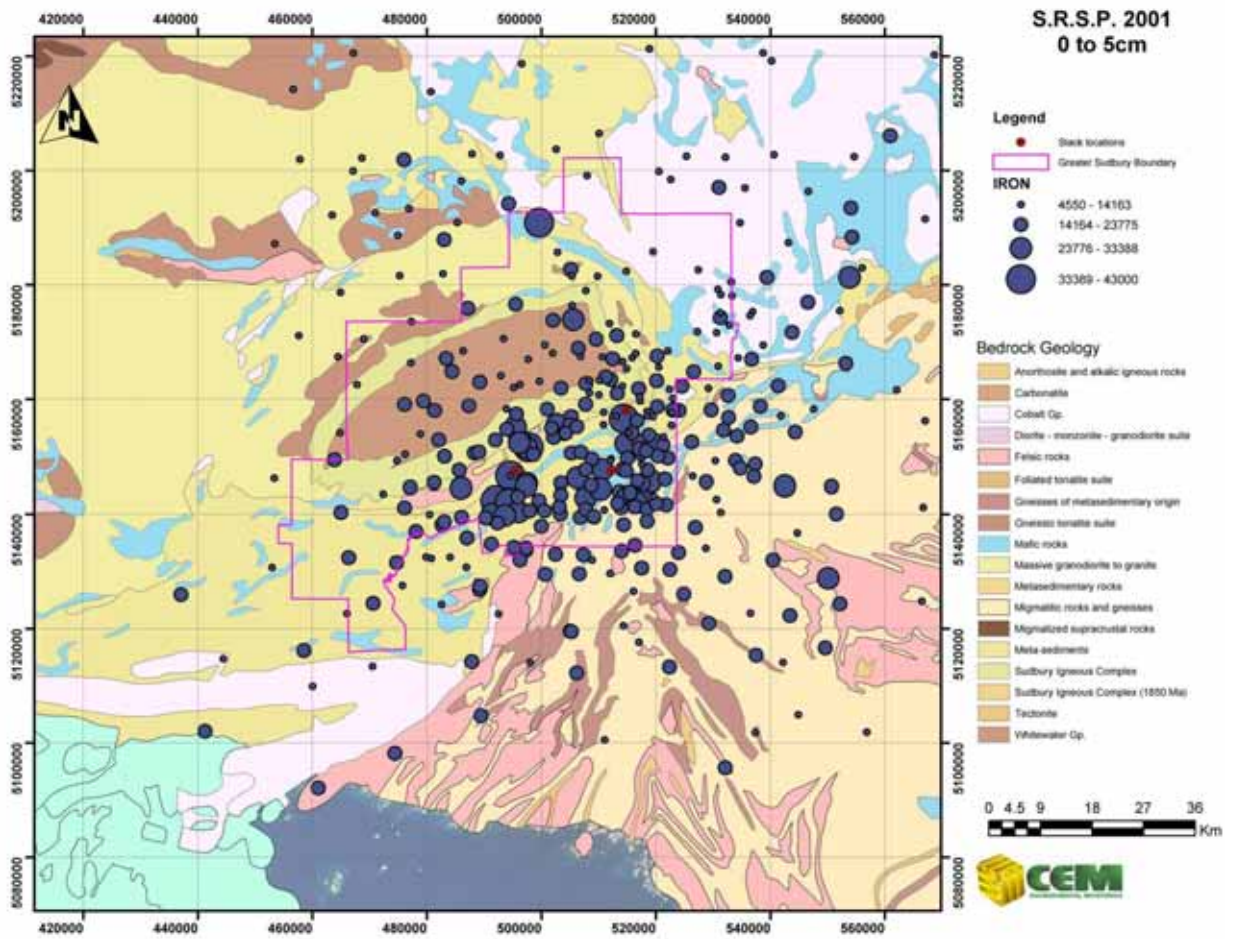


Figure 37: Distribution of iron in the 0-5 cm layer of soils of the Sudbury Region.

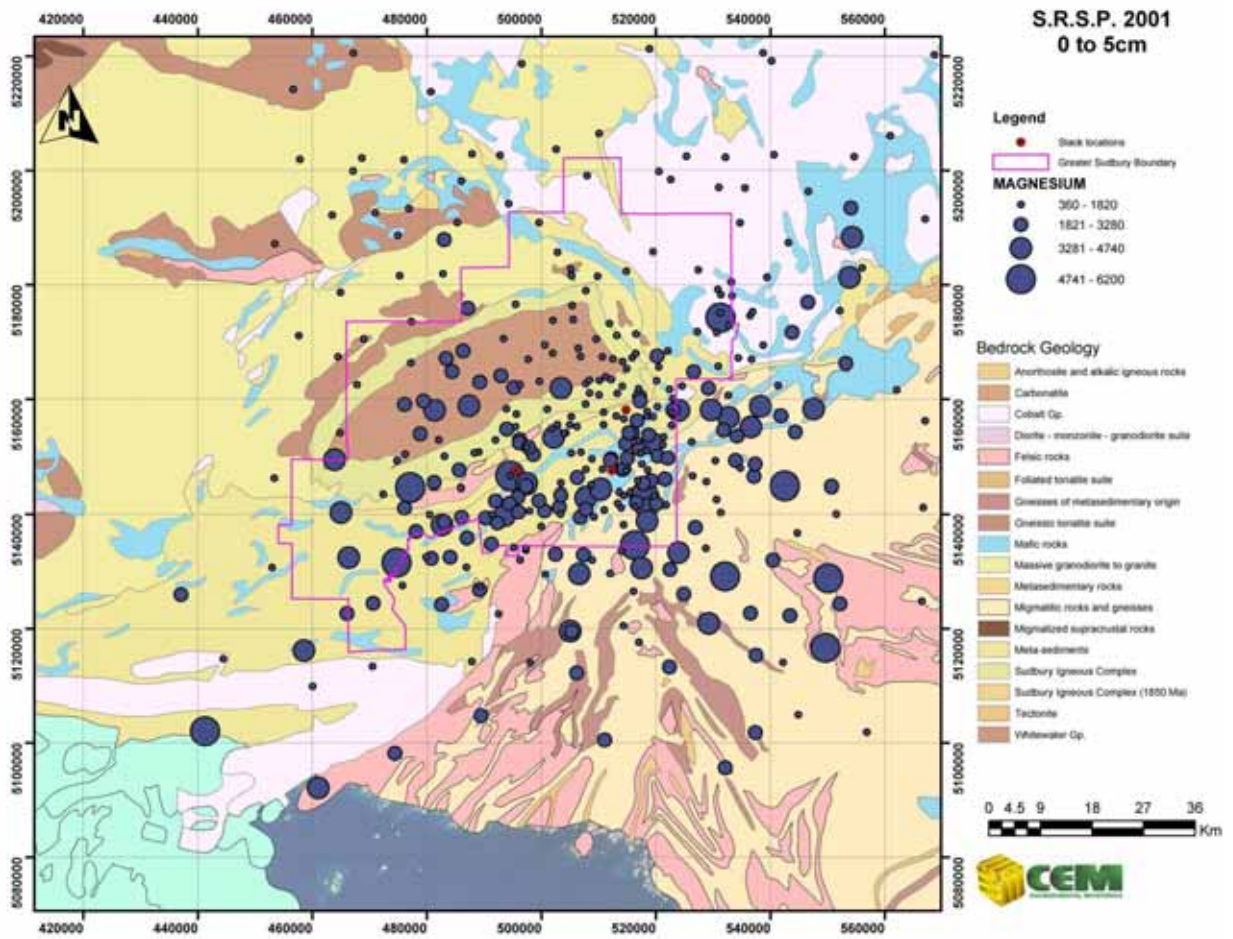


Figure 38: Distribution of magnesium in the 0-5 cm layer of soils of the Sudbury Region.

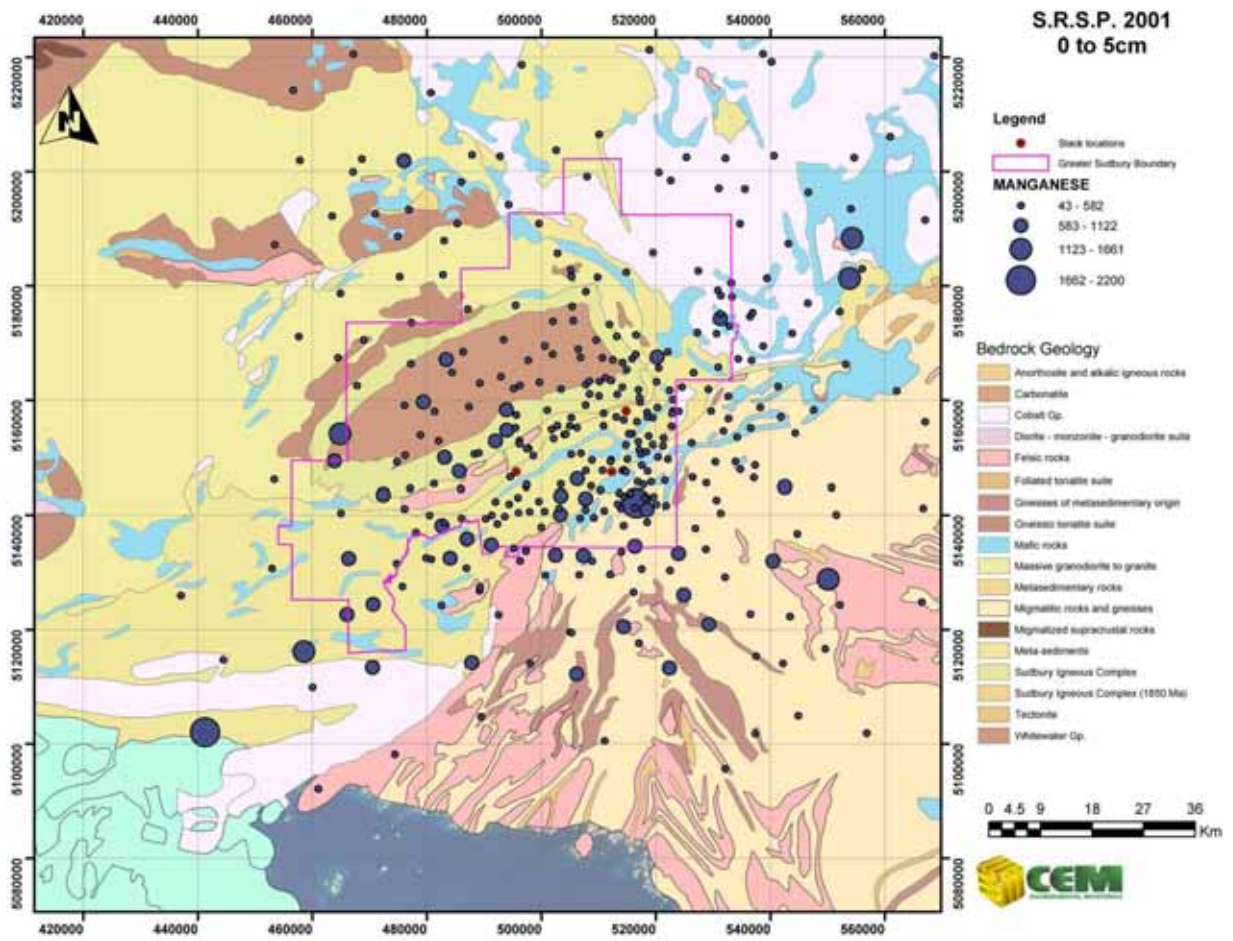


Figure 39: Distribution of manganese in the 0-5 cm layer of soils of the Sudbury Region.

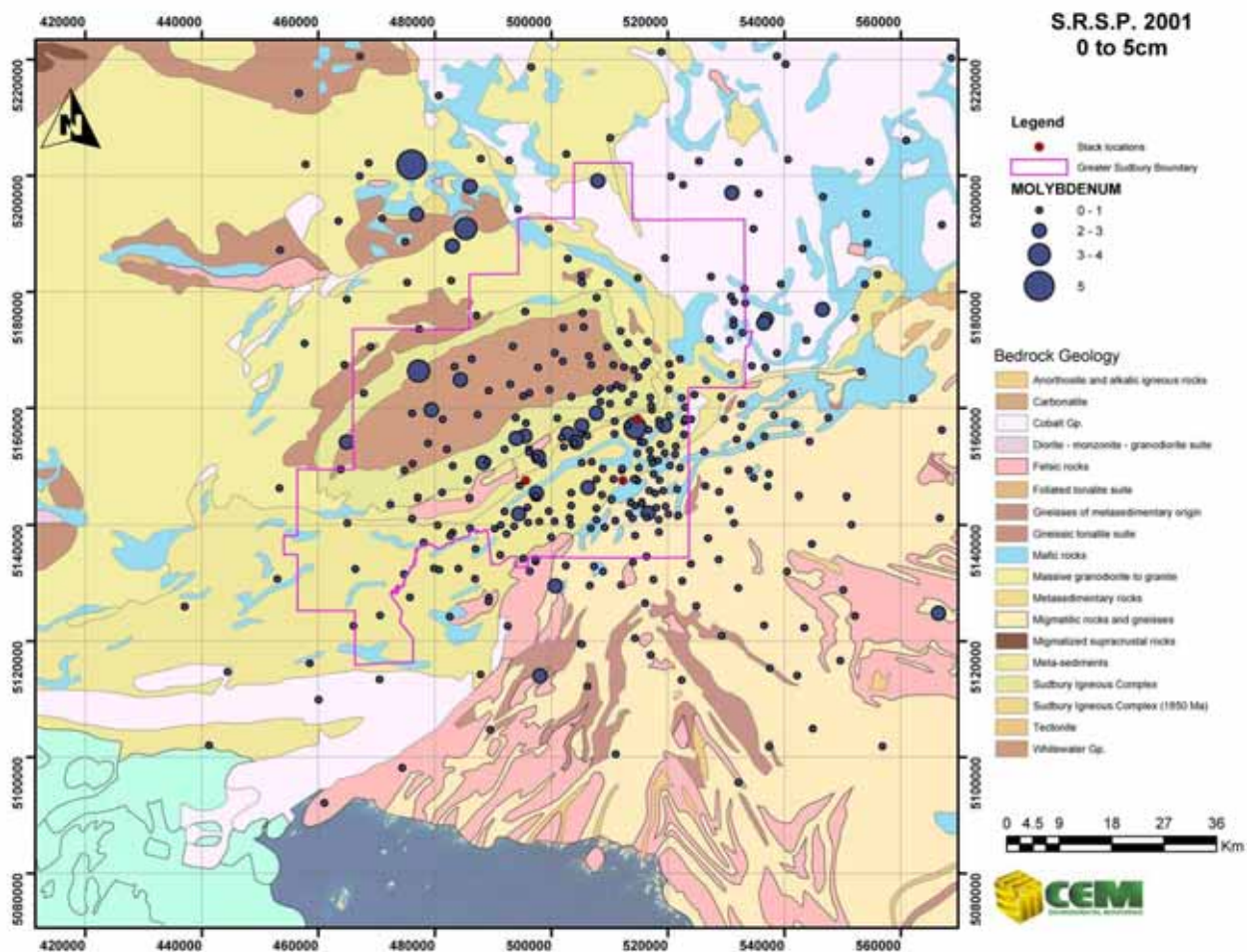


Figure 40: Distribution of molybdenum in the 0-5 cm layer of soils of the Sudbury Region.

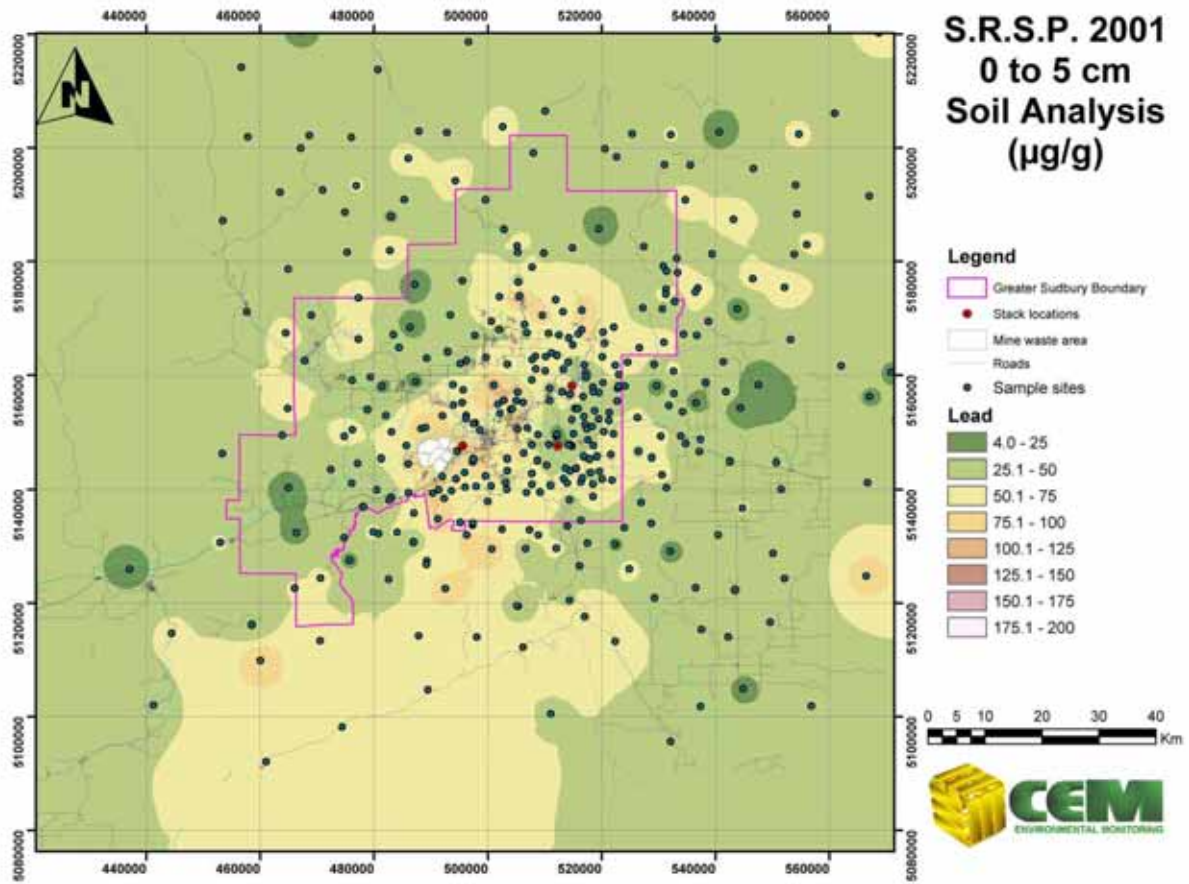


Figure 41: Distribution of lead in the 0-5 cm layer of soils of the Sudbury Region.

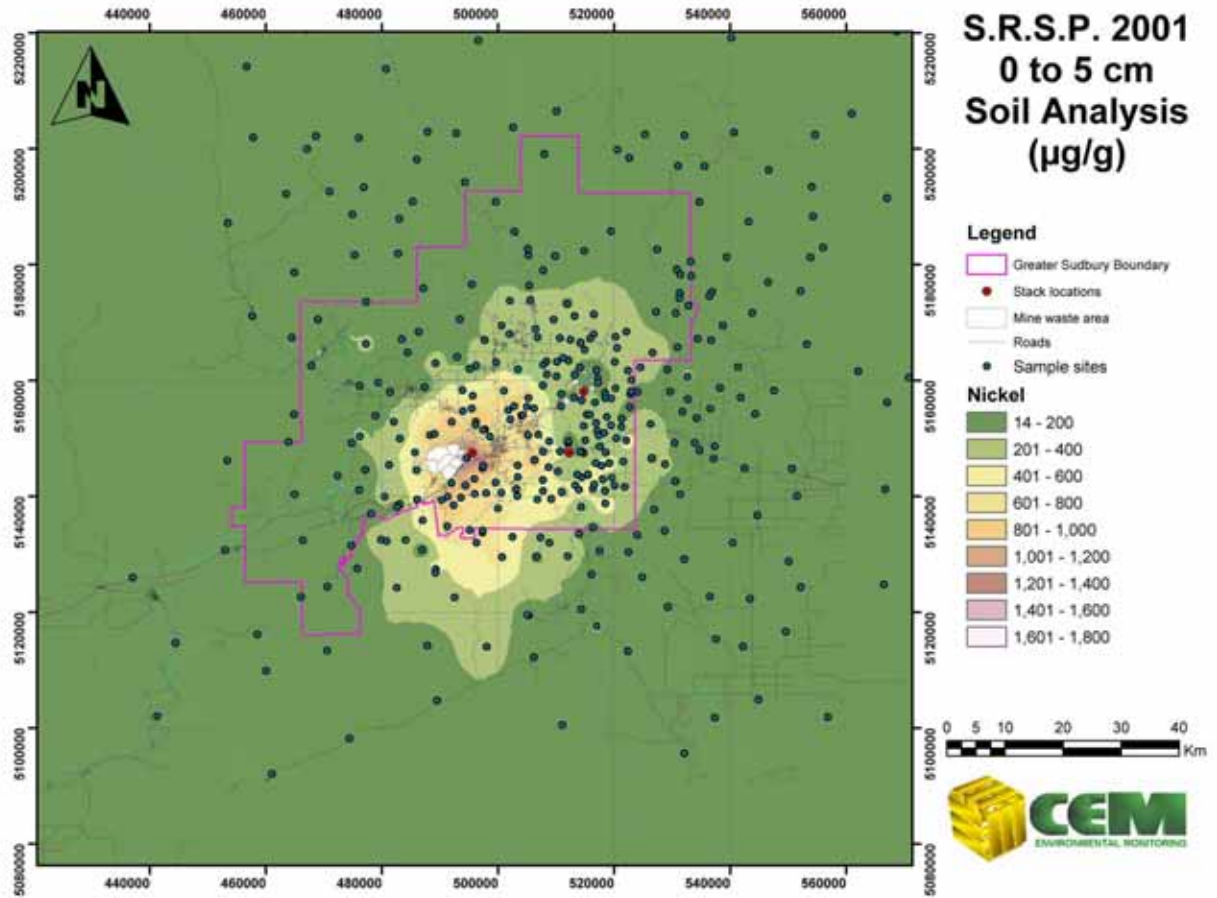


Figure 42: Distribution of nickel in the 0-5 cm layer of soils of the Sudbury Region.

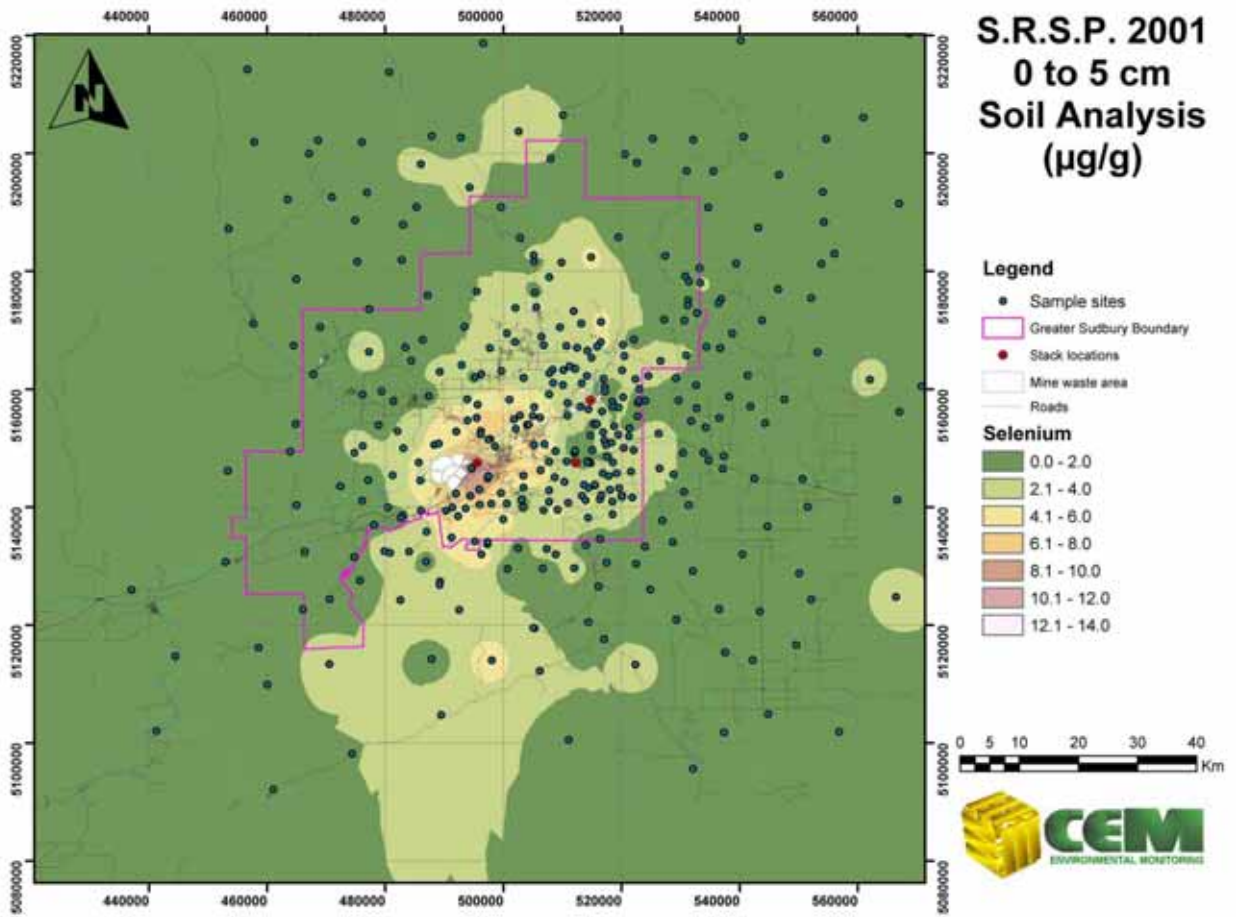


Figure 43: Distribution of selenium in the 0-5 cm layer of soils of the Sudbury Region.

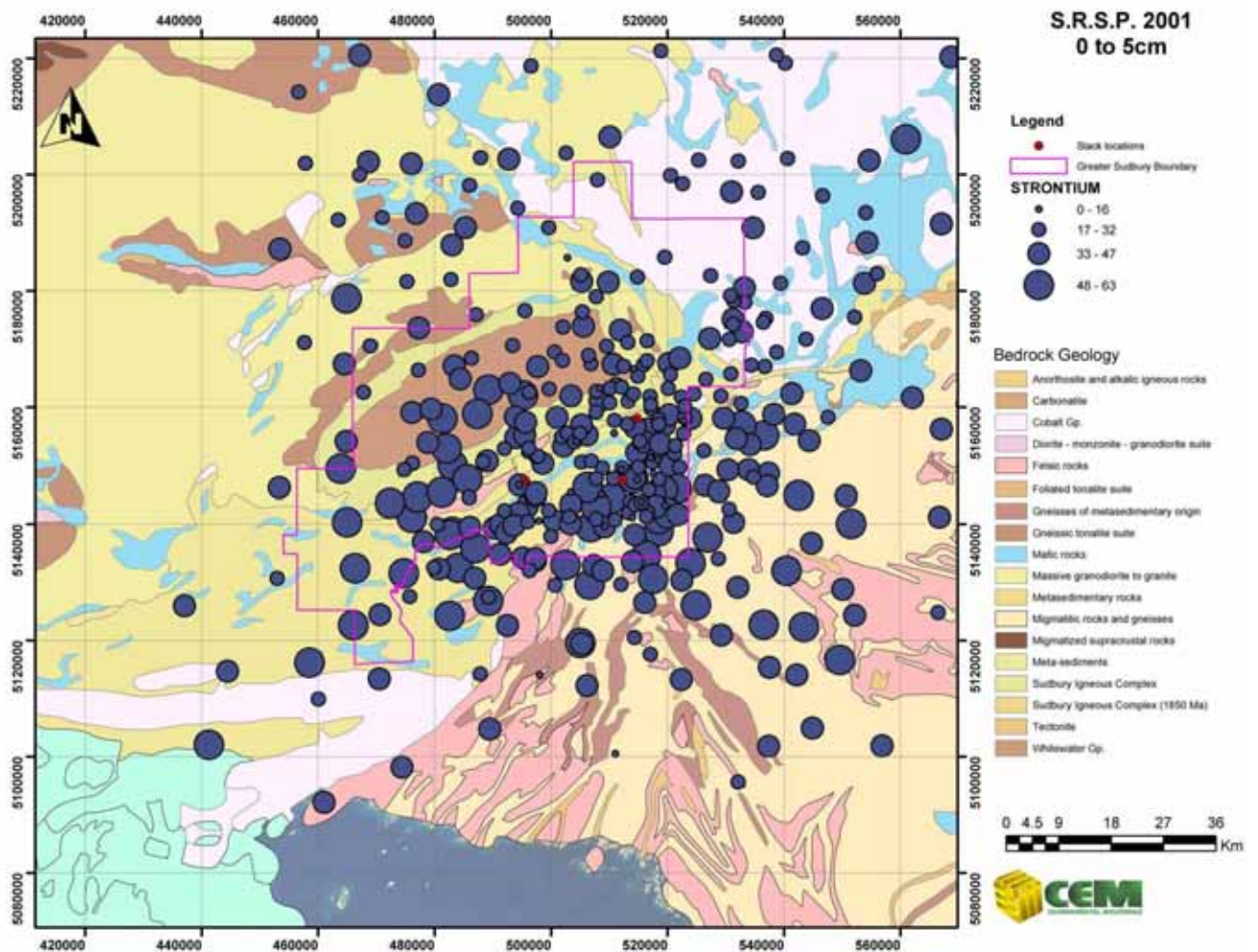


Figure 44: Distribution of strontium in the 0-5 cm layer of soils of the Sudbury Region.

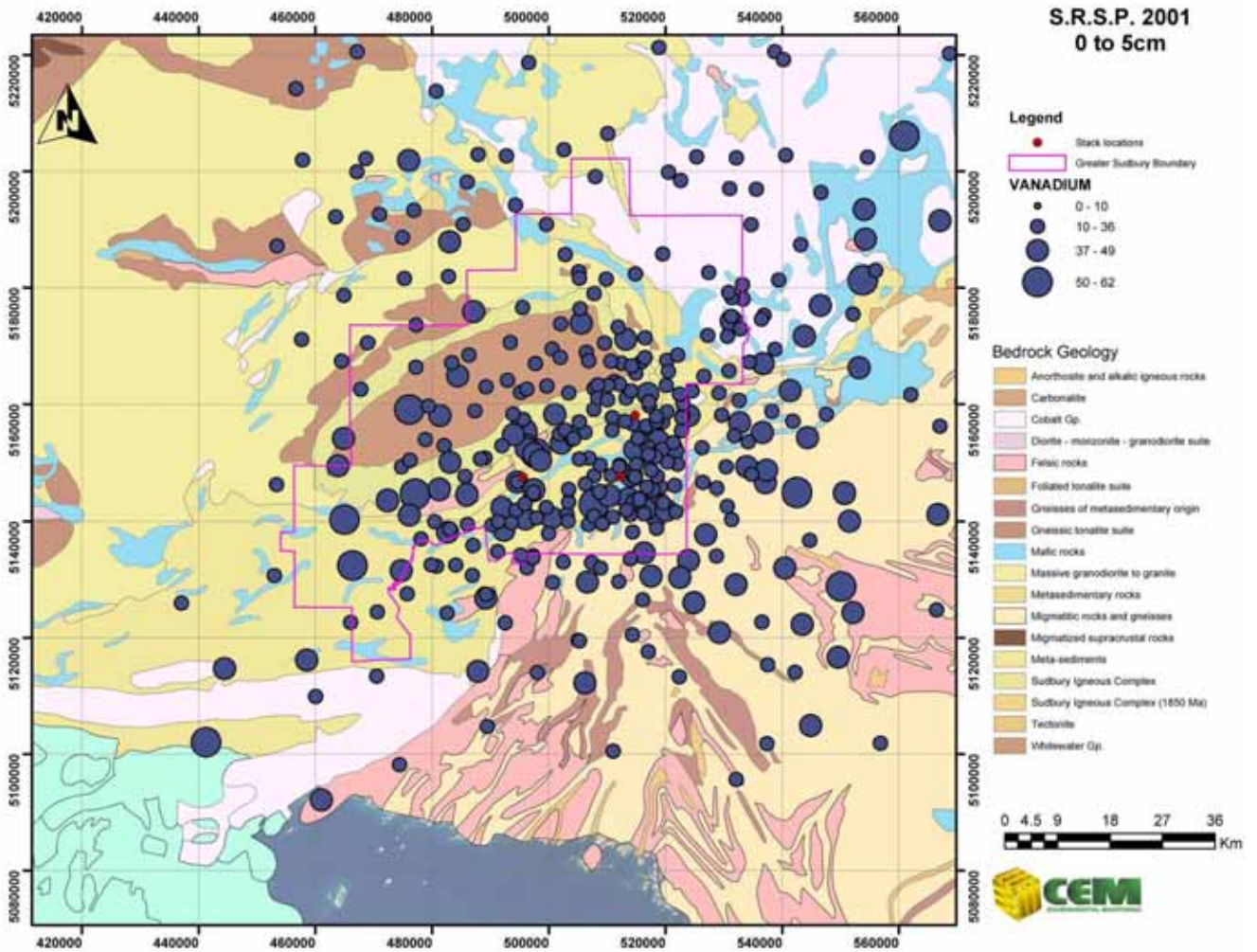


Figure 45: Distribution of vanadium in the 0-5 cm layer of soils of the Sudbury Region.

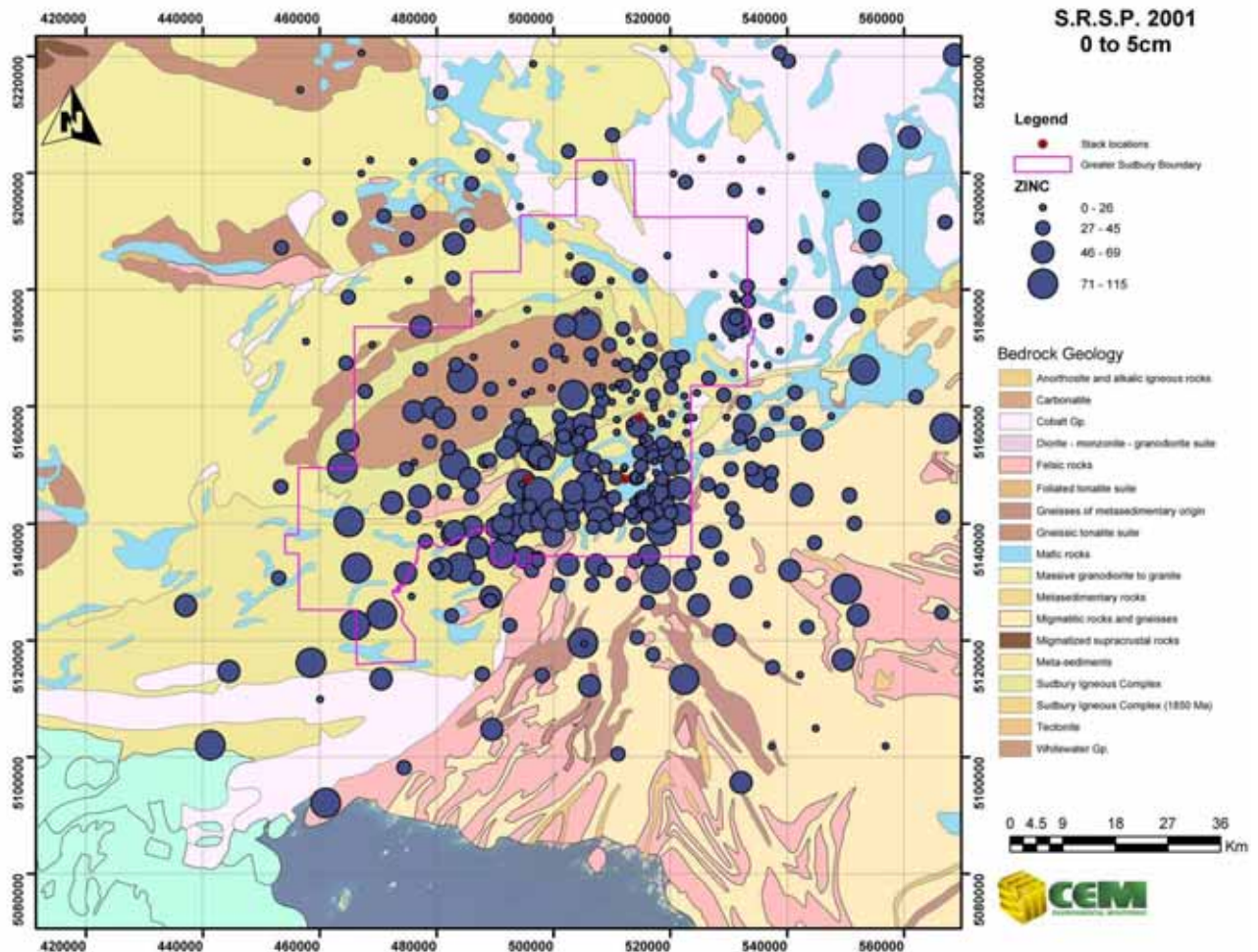


Figure 46: Distribution of zinc in the 0-5 cm layer of soils of the Sudbury Region.

Metal Correlations in Regional Surface Soil Layers

The relationships between the individual elements extracted from the individual sampled layers of the regional soil samples with *Aqua Regia* are listed in the Pearson correlation matrix (Table 15) calculated using SPSS™ with a correlation value of $r < 0.5$ being highly significant at the 0.01 level. The major elements, aluminium, iron, magnesium and manganese, are all strongly positively correlated, probably reflecting the abundance of ferromagnesian minerals partially digested by the *Aqua Regia* extractant from the soil matrix. These minerals would have been incorporated from the underlying basic metavolcanic bedrock by glacial activity. The trace elements of non-anthropogenic origin, namely

chromium, strontium, vanadium and zinc are also strongly correlated with the major elements in the regional soils.

Table 15: Pearson Correlation for the Aqua Regia extracted metal(loid)s for all samples from the 0 to 5 cm layer within the study region (n = 387 samples).

	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CALCIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	MANGANESE	MOLYBDENUM	NICKEL	SELENIUM	STRONTIUM	VANADIUM	ZINC	
ALUMINIUM	0.004	0.443*	0.330*	-0.017	0.418*	0.730*	0.297*	0.005	0.695*	-0.164*	0.521*	-0.005	0.044	-0.045	0.634*	0.776*	0.541*	
ARSENIC		0.003	-0.028	0.290*	-0.051	0.068	0.502*	0.541*	0.495*	0.545*	-0.000	-0.050	0.231*	0.474*	0.552*	-0.143	0.058	
BARIUM			0.219*	0.330*	0.236*	0.473*	0.398*	0.141*	0.225*	0.334*	0.338*	0.590*	0.085	0.195*	0.141*	0.510*	0.325*	
BERYLLIUM				-0.004	0.011	0.233*	0.223*	-0.025	0.134*	-0.000	0.217*	0.361*	0.090	0.016	-0.017	0.016	0.134*	
CADMIUM					0.210*	0.157*	0.625*	0.575*	0.302*	0.703*	0.026	0.207*	0.231*	0.647*	0.572*	0.096	-0.012	
CALCIUM						0.427*	0.175*	0.059	0.245*	-0.073	0.680*	0.334*	0.020	0.052	0.603*	0.364*	0.419*	
CHROMIUM							0.443*	0.205*	0.605*	0.082	0.717*	0.474*	0.245*	0.274*	0.173*	0.554*	0.660*	
COBALT								0.525*	0.720*	0.609*	0.314*	0.361*	0.229*	0.253*	0.766*	0.102	0.204*	
COPPER									0.587*	0.687*	0.085	-0.045	0.225*	0.953*	0.325*	-0.115*	0.226*	
IRON										0.336*	0.180*	0.305*	0.180*	0.609*	0.516*	0.255*	0.625*	
LEAD											-0.202*	0.002	0.359*	0.700*	0.752*	-0.135*	-0.109*	
MANGANESE												0.002	0.359*	0.105*	-0.017	0.658*	0.607*	
MOLYBDENUM													0.003	0.025	-0.076	0.495*	0.443*	
NICKEL														0.220*	0.325*	-0.012	0.052	
SELENIUM															0.284*	-0.049	0.025	
STRONTIUM																-0.160*	-0.030	
VANADIUM																	0.575*	
ZINC																		0.523*

b Correlation is significant at the 0.01 level (2-tailed).

a Correlation is significant at the 0.05 level (2-tailed).

The elements, namely copper, cobalt, iron, lead, nickel and selenium, enriched in the surface layer (0-5 cm) of the soils of the Sudbury smelter footprint zone are all significantly correlated at the 0.01 level. This correlation (not shown) is not as strong at the 5-10 and 10-20 cm depths, indicating that there is may be minimal solubilization and translocation of the anthropogenic metal(loid)s to lower depths of the solum. This lack of consistent correlation of the anthropogenic metals in the slightly deeper soil layers may indicate that there is minimal bioaccessibility and/or bioavailability of these metal(loid)s within the region, an observation not necessarily consistent with the conjecture of Nriagu *et al.*, (1998) about long term release of metal(loid)s to regional waters as a result of soil weathering.

Metal Enrichment in Regional Soil Surface Layers

Table 16 summarizes the mean concentrations from all sites of *Aqua Regia* extractable metal(loids) for all soil layers sampled during the regional survey program. Although this data summary does not account for the potential decrease anthropogenic in metal(loid) concentration with distance form the smelter foci, the enrichment of antimony, arsenic, cobalt, copper, lead, molybdenum, nickel, selenium and zinc in the surface layers (0 to 5 cm) may be indicative of particulate fallout from regional smelting operations. The surface

organic soil layers (LFH horizons) effectively act as a filter retaining the airfall and preventing translocation to underlying mineral horizons, an observation also described for the Kola region of Russia (Nikonov *et al.*, 1999; Koptsik *et al.*, 2003). The retention of the anthropogenic metals in this filter zone is further suggestive of a relatively low solubility and bioavailability of metals in the high temperature particulates.

In order to evaluate if the metal(loid) content of the 0 – 5 cm layer is derived from natural or anthropogenic sources, an approximate enrichment factor (EF) was calculated for the above elements using the following equation: $EF = ((M) / (Al)_{LFH}) / ((M)_{pm} / (Al)_{pm})$. Enrichment factors ranging between 0.5 and 2 can be considered in the range of natural variability, whereas ratios greater than 2 indicate enrichment from anthropogenic inputs (Hernandez *et al.*, 2003; Shotyky *et al.*, 2000). The enrichment factors calculated in this study are normalized to Al as a reference element because Al is relatively immobile in the solum, and there is minimal indication of Al additions to the soils from the industrial sector. This approach in use Al as a reference element must, however, be interpreted with caution because of the incomplete dissolution of Al-bearing phases in both the soils and parent materials by *Aqua regia*. Such enrichment estimates are more rigorous if based on total elemental concentrations using analytical techniques such as XRF, or analyzing solutions by ICP-AES or ICP-MS following either hydrofluoric acid digestion or fusion with acid digestion of the resultant glass.

The calculated EF values do, however, suggest a strong anthropogenic influence in the concentrations of the metal(loid)s Sb, As, Cu, Pb, Mo, and Se in the 0 – 5 cm layers of regional soils. Cadmium, although at concentrations below detection limits for many of the soil parent material samples may also be enriched in the surface (0 – 5 cm) layers of the regional soils. The lack of enrichment for elements such as Cr, Co and Zn in the surface layers (0 – 5 cm) suggests that there has been minimal anthropogenic output of these elements from the industrial activity within the region. This enrichment of specific elements in the 0 – 5 cm depth layers suggests that the LFH horizons which dominate 0 – 5 layer act a filter preventing the translocation of the aerosol particles to the deeper soil horizons.

Table 16: Mean concentration of Aqua Regia extractable metal(oids) from the individual layers of all sites sampled in the Sudbury region, along with calculated enrichment factors for the surface (0 - 5 cm) layer calculated using aluminium as an immobile element.

Depth	Aluminum	Calcium	Iron	Magnesium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Strontium	Vanadium	Zinc
	Aluminum				(μg gm)															
0 - 5 cm	1.00	0.31	1.59	0.18	0.13	14.81	89.44	0.01	0.36	38.72	12.45	261.4	49.98	306	0.30	263.1	2.19	32.90	31.13	39.09
5 - 10 cm	1.34	0.28	1.68	0.23	0.04	9.72	61.77	0.02	0.01	38.88	7.17	101.2	14.96	232	0.13	81.5	0.60	34.98	37.81	31.61
10 - 20 cm	1.72	0.32	1.92	0.32	0.04	3.80	63.45	0.01	0.00	44.04	7.30	49.7	8.90	215	0.11	50.6	0.17	38.04	40.29	33.70
Parent Material	1.78	0.58	2.28	0.62	0.02	1.11	98.37	0.15	na	56.37	8.97	26.4	5.91	293	0.11	36.13	0.06	43.86	45.31	29.75
0 - 5 / Parent	0.56	0.53	0.70	0.29	7.96	13.34	0.91	0.09		0.69	1.39	9.92	8.46	1.04	2.65	7.28	37.09	0.75	0.69	1.31
EF _(C-0-5)	0.6	0.5	0.7	0.3	8.0	13.3	0.9	0.1		0.7	1.4	9.9	8.5	1.0	2.6	7.3	37.1	0.8	0.7	1.3

Enrichment factor EF = ((M) / (Al)_{LH}) / ((M)_{pm} / (Al)_{pm})

However, copper, known to be chelated by soil the potentially mobile soil humic acids, appears to be slightly translocated to the 5-10 cm layer in these undisturbed forested soils of the Sudbury region. Arsenic and lead exhibit a similar depth distribution pattern to copper, an observation in agreement to the data describing total metal concentrations in soil horizons documented in Table 9. The possibility of vertical translocation of specific elements further supports the conjecture of Nriagu *et al.*, (1998) that release of anthropogenic metals from regional sola may affect dissolved metal levels in regional lakes for perhaps hundreds of years. The evidence for translocation also points to the potential slow solubility and potential bioavailability of the some anthropogenic metals currently stored as particulates in the surface layers of regional soils.

Zonation of Metal Enrichment in the Sudbury Smelter Footprint

The regional geochemical maps (Figure 28 to 46) indicate that the loading of the aerosolic particular fallout from the regional smelters follows an ellipsoid, with a dominant SW – NE axis. The graphs in Figure 47 illustrating the concentrations of the individual anthropogenic metal(oid)s along a gradient from the smelter zone centroid indicate the impact of the smelter ejecta tends towards regional background approximately 120 km from the heart of Sudbury. This estimate of regional impact of smelter emissions agrees well with those estimated using metal accumulation on lichen thalli as deposition indices (Tomassini et al,

1976), although the latter study could not provide an estimate of regional soil background because the lichens grow on a rock substrate. This estimate also compares with a calculated distance to regional background in humus of between 50 and 110 km (Henderson *et al.*, 2002; McMartin *et al.*, 1999; Zoltai, 1988) for the smelter in the Flin Flon area of Manitoba, and a zone of 40 to 50 km for the Horne Smelter in the Rouyn-Noranda area of Quebec (Henderson *et al.*, 2002). Goodarzi *et al.*, (2001, 2002) documented enrichment of a series of six elements (As, Cd, Cu, Hg, Pb and Zn) in soils of the Trail area to a distance of 26 km from the smelter, concluding that, using associated moss bag studies, the enrichment of mercury and arsenic in the regional soils was not attributed to smelter activity. These authors emphasized the need for high quality atmospheric deposition data to supplement, and help to explain, data obtained from regional soil survey data.

The data in Table 17 document the mean concentration of the 20 *Aqua Regia* extracted elements in the 0 to 5 cm layer of the soils of this study in a series of circular zones around the centroid of smelter activity in the Sudbury region. The circular zonation does not exactly mimic the ellipsoidal zone suggested by wind rose and extrapolated map concentration data (Figures 21 to 40), but does provide an indication of the decrease in anthropogenic metal concentration in the surface soils with distance, to a final distance of 100 km at the borders of the current study zone.

The non-smelter emitted elements (aluminium, calcium, magnesium manganese, barium, beryllium, chromium, strontium, vanadium and zinc) tend to generally exhibit a similar concentration in the surface layer throughout the zones of the region, with no obvious enrichment pattern in the 0 to 5 cm layer. Some of these elements (calcium, manganese, and strontium) actually are depleted in the surface layer nearer to the smelter zone centroid. This depletion perhaps reflects the effects of earlier higher levels of soil acidification from the high sulphur dioxide washout to regional soils prior to the implementation of the modern control systems. These control systems have resulted in the sulphur dioxide from the smelting process being converted into sulphuric acid, a valuable by-product of the mineral extraction process.

The metal(loid)s which are influenced by anthropogenic or smelter processes, on the other hand, show distinct concentration drops in the 0 to 5 cm layer with distance from the smelter zone centroid, a characteristic response to point source emissions documented in most studies (eg. Goodarzi *et al.*, 2001, 2002; Henderson *et al.*, 2002; Koptsik *et al.*, 2003; McMartin *et al.*, 1999; Nikonov *et al.*, 1999; Zoltai, 1988). The last zone (60 to 100 km) may exaggerate the drop in concentration with distance because the data are predominantly from the outer portion of the survey region with the 16 km cells at the extreme corners of the square.

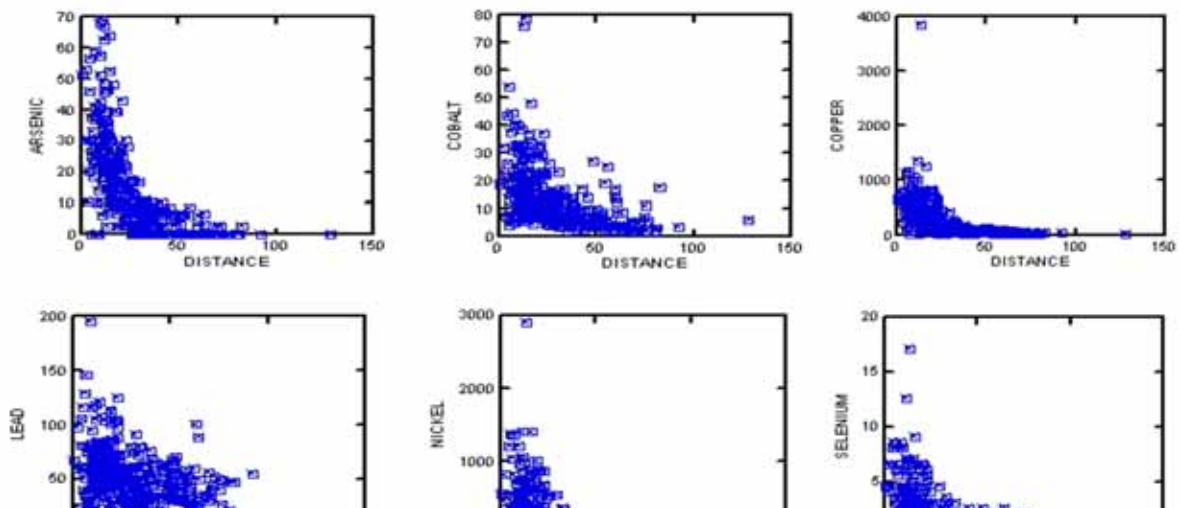


Figure 47: Graphs illustrating the concentrations of the individual anthropogenic metal(loid)s along a gradient from the smelter zone centroid indicate the impact of the smelter tends towards regional background approximately 120km from the heart of the Sudbury metallurgical region.

Table 17: Mean concentration of metal(loid)s in the 0 to 5 cm layer of sampled soils within concentric zones around the Sudbury smelter region. The centre of the circular zones is at the centroid of the three smelters in the region.

Parent Material Influence Metals										
Aluminum	Calcium	Magnesium	Manganese	Barium	Beryllium	Chromium	Strontium	Vanadium	Zinc	
<i>(ug gm)</i>										
0 to 5 km	8564	2036	1510	220	80	0.03	37	23	26	35
5 to 15 km	9980	2649	1918	265	81	0.02	38	28	31	39
15 to 30 km	10054	3286	1853	308	91	0.00	40	35	31	40
30 to 60 km	9730	3154	1773	344	92	0.02	38	35	32	39
60 to 100 km	8720	3025	1556	343	87	0.02	36	33	29	41
Anthropogenic Influence Metal(loid)s										
Antimony	Arsenic	Cadmium	Cobalt	Copper	Iron	Lead	Molybdenum	Nickel	Selenium	
<i>(ug gm)</i>										
0 to 5 km	0.24	30	0.52	23	545	19145	62	0.40	582	4.4
5 to 15 km	0.18	30	0.41	19	511	19352	58	0.33	450	3.3
15 to 30 km	0.14	14	0.52	14	283	16205	53	0.23	307	2.3
30 to 60 km	0.09	3.1	0.19	7.2	82	13789	43	0.29	104	1.1
60 to 100 km	0.13	0.57	0.17	4.6	33	11620	40	0.19	47	0.7
Parent Material	0.02	1.11	na	8.9	26	22800	5.9	0.11	36	0.06

RECOMMENDATIONS

The following are a series of recommendations for further study to provide key data to further develop an understanding of the effects of anthropogenic emissions on the soils, landscapes and watersheds of the Sudbury smelter. Several key data gaps in the following areas became apparent during the course of the study.

Area Sampled

The key data gap relates to the actual area sampled in this study. Relative to studies in both Flin Flon and Rouyn-Noranda conducted by the Geological Survey of Canada researchers, the current survey only samples to a distance of approximately one half (50 km) from the smelter zone centroid. As the other studies indicate that the impact is still detectable to in excess of 100 km, the sampling design should be further extended by selecting random points within another four (4) series of 16 km cells to a distance some

95km from the smelter centroid. Two (2) 32 km cells should then bound the study area. This extension will give the outer zone of sampling at approximately 160 km from the smelter centroid. This sampling design may lead to impact zone overlaps with the mining operations of the Timmins and Rouyn-Noranda areas, but the true extent of the Sudbury operations would be much better defined.

Clay Mineralogy

To date, there has been no research describing the clay mineralogy of the soils of the Sudbury region, aside from two studies to the northwest in the Chapleau area. Acidification of soils has been demonstrated to cause accelerated weathering of clay minerals in the smectite-rich soils of western regions of Canada. Given the importance of clay-sized minerals in trace metal and nutrient retention in soils, detailed mineralogical determinations on a series of pedons within the Sudbury smelter footprint are crucial to determine the effects acidification and metal loading on the individual minerals. This knowledge is also needed to enable accurate prediction of the long-term effects of the liming and fertilization program, which is key to the regional re-greening initiatives, on metal absorption by clay mineral species and on metal retention within the sola. The information will help predict present and future bioavailability and mobility of metals if the pH and physicochemical properties of the soils are changed with revegetation processes, or with enhanced land management programs.

Chemical and Mineralogical Nature of Emissions

A detailed mineralogical, micro-chemical and release study of the particulate matter trapped in the bag-houses of the smelter complexes would positively identify the materials currently emitted by the smelters, and provide insight into their potential availability to the biosphere. The results from this study, if coupled with longitudinal data from analyses at a series of aerosol sampling stations with the region, would provide data invaluable for the prediction of potential ecological and human health risk. A series of column experiments, especially if linked with freeze-thaw capabilities, will provide crucial information on the sequential availability of metalloids and metals layered in the aerosol particles for transport through the sola to groundwater and/or surface water systems.

Solid Phase Speciation

There is no detailed information on the solid phase speciation of metal(loid) compounds within the soils of the Sudbury area. The actual form of the metals within the surface and subsoils of the Sudbury region can only be ascertained by detailed chemical and mineralogical studies. The results of such studies will provide information on the potential solubility, and hence availability, of the soil-borne metals to vegetation, animals and humans.

There is also a need to understand the mechanics and chemistry of the land reclamation program to ensure that process does not cause more problems than are resolved by modifying the availability of the complexed and adsorbed metals currently retained in the humus layers of the regional soils. These metals could potentially become more bioavailable as the pH of the soils changes over time as a result of either climate change events, or as the effects of the liming activities, so crucial in the regreening program, are minimized through the weathering of the surface applied limestone.

Bioavailability and/or Bioaccessibility of Metals

There has been no published research assessing the bioavailability and/or bioaccessibility of metals in Sudbury area soils. The large-scale projects provide concentrations of either total or acid-extractable metals within the soil matrix but have not assessed bioavailability of the metals. There is a need to study 1) speciation, 2) localization, and 3) bioavailability of metals. These studies could provide answers to crucial questions such as:

- What is the form and site of the metals in the soils of the region?
- Is any vegetation in the agricultural food chain a bioaccumulator, and are the metals stored in a form potentially available to humans through animal uptake?
- Is any vegetation directly in the human food chain a metal bioaccumulator, and are the metals accumulated in the vegetation in a form that is bioavailable to humans?

The latter question may be, in part, answered by the detailed Sudbury area local 'food-basket' survey being completed during the summer of 2003. This survey will not, however, provide any information on the availability of any metal(loids) in the vegetables and fruit to humans.

REFERENCES

- Adamo, P., Dudka, S., Wilson, M.J., and McHardy, W.J., 1996, Chemical and mineralogical forms of Cu and Ni in contaminated soils from the Sudbury mining and smelting region, Canada: *Environmental Pollution*, v.91, p.11–19.
- Adamo, P., Dudka, S., Wilson, M.J., and McHardy, W.J., 2002, Distribution of trace elements in soils from the Sudbury Smelting area (Ontario, Canada): *Water, Air, and Soil Pollution*, v.137, p.95–116.
- Agriculture Canada Expert Committee on Soil Survey, 1987, *The Canadian system of soil classification: 2nd ed.* Agriculture Canada Publication 1646. 164p.
- Air Pollution Control Directorate, 1976, Ministry of Environment.
- Alloway, B.J., 1990, *Heavy metals in soils*: Glasgow, Blackie (John Wiley & Sons, Inc), 339p.
- Bajc, A.F. and Hall, G.E.M. 2000, Geochemical responses of surficial media, north and east ranges, Sudbury basin: Ontario Geological Survey, Open File Report 6033, 265p.
- Barnett, P.J., 1992, Quaternary Geology: *in* *Geology of Ontario*: Ontario Geological Survey, Special Volume 4, Part 2, p.1011–1088.
- Barnett, P.J. and Bajc, A.F., 2002, Quaternary geology, *in* *Physical Environment of the City of Greater Sudbury*: Ontario Geological Survey, Special Volume 6, p.57–86.
- Bayrock, L.A., 1967, Trace elements in tills of Alberta; *Canadian Journal of Earth Science*, v.4, p.597–607.
- Bohn, H.L., McNeal, B.L., and O'Connor, G.A., 2001, *Soil Chemistry*: New York, New York, USA, John Wiley & Sons, Inc., 307 p.
- Boissoneau, A.N., 1968, Glacial History of northeastern Ontario II. The Temiskaming–Algoma area: *Canadian Journal of Earth Sciences*, v.5, p.97–109.
- Bowen, H.J.M., 1966, *Trace elements in biochemistry*; Academic Press, New York, 241p.
- Brady, N.C. and Weil, R.R., 1996, *The nature and properties of soils*: Upper Saddle River, New Jersey: Prentice Hall, 740p.
- Burwasser, G.J., 1979, Quaternary geology of the Sudbury Basin area; Ontario Geological Survey, Geological Report 181, 103p.
- Chan, W.H. and Lusi, M., 1986, *Smelting operations and trace metals in air and precipitation in the Sudbury Basin*: New York, New York, John Wiley & Sons.
- Chander, K., Dyckmans, J., Joergensen, R.G., and Meyer, B.R.M., 2001, Different sources of heavy metals and their long-term effects on soil microbial properties: *Biology and Fertility of Soils*, v.34, p. 241–247.
- Cheburkin, A.K. and Shotyk, W., 1996, An Energy-dispersive Miniprobe Multielement Analyzer (EMMA) for direct analysis of Pb and other trace elements in peats: *Fresenius Journal of Analytical Chemistry*, v.354, p.688–691.
- Chuan, M.C., Shu, G.Y., and Liu, J.C., 1996, Solubility of heavy metals in a contaminated soil: effects of redox potential and pH: *Water, Air and Soil Pollution*, v.90, p.543–556.
- Costescu, L.M. and Hutchinson, T.C., 1972, The ecological consequences of soil pollution by metallic dust from the Sudbury smelters: *Proceedings of the 18th annual meeting of the Institute of Environmental Sciences*. New York, p.540–545.
- Cox, G.L., 1975, *The effects of smelter emissions on the soils of the Sudbury area*: unpublished M.Sc thesis, University of Guelph, Ontario

- Cox, R.M. and Hutchinson, T.C., 1981, Environmental factors influencing the rate of spread of the grass *Deschampsia ceaspitosa* invading areas around the Sudbury nickel-copper smelters: *Water, Air, Soil Pollution*, v.16, p.83–106.
- Cruickshank, C.L., Evans, L.J., Spiers, G.A., 1990, Chemical and morphological features on mineral grains in some Spodosolic soils; *in*: Douglas, L.A. (ed), *Soil Micromorphology: a Basic and Applied Science: Proc. of the VIII International Working Meeting on Soil Micromorphology*, San Antonio, Texas; Elsevier. p.557-563.
- Davis, J.C., 1973, *Statistics and data analysis in geology*. Wiley. New York, 550 p.
- Deer, W.A., Howie, R.A., and Zussman, J, 1966, *An introduction to the rock-forming minerals*: London, Longman, 528p.
- Doyle, P.J. 1977, *Regional geochemical reconnaissance and compositional variations in grain and forage crops on the Southern Canadian Interior Plain*; unpublished Ph.D. Thesis, University of British Columbia, Vancouver, B.C., 285p.
- Doyle, P.J. and Fletcher, W.K. 1979, *Regional geochemical mapping in areas lacking surface drainages: Cu, Fe, Mn and Zn content of overburden and soil in south-central Saskatchewan*; *Canadian Journal of earth Science*, v.16, p.1086-1093.
- Dredge, L.A. and Cowan, W.R., 1989, *Quaternary geology of the southwestern Canadian Shield*: Ottawa, Geological Society of America (Geological Survey of Canada), vol. v.K-1 (no.1), p.214–249.
- Dreimanis, A., 1988, *Tills: their genetic terminology and classification*: Rotterdam, Netherlands, Balkema Publishers.
- Dreisinger, B.R.1975, *Heavy metal levels in soils and vegetation during pre and post superstack periods (1971, 1972 and, 1973): Copper Cliff, INCO*.
- Dreisinger, B.R., 1976, *Heavy metal levels in soil and vegetation prior to (1971–72) and after (1973–75). The operation of INCO's 1250 ft chimney: Copper Cliff, INCO*.
- Dreisinger, B.R., 1978, *The degree and extent of heavy metal loading of soil and vegetation in the Sudbury area as of 1978; Copper Cliff, INCO limited*.
- Dreisinger, B.R. and Buchannan, M., 1977, *Heavy metal content of soil and vegetation in the Sudbury area; Copper Cliff, INCO Limited*.
- Dreisinger, B.R. and Buchannan, M.1979, *Heavy metal content of soil and vegetation in the Sudbury area, 1971–1977; Copper Cliff, INCO limited*.
- Dressler, B.O., Gupta, V.K., and Muir, T.L., 1991, *The Sudbury structure*, *in The Geology of Ontario*: Ontario Geological Survey, Special Volume 4, Part 1, p.593–625.
- Dudka, S. and Adriano, D.C., 1997, *Environmental impacts of metal ore mining and processing a review: Journal of Environmental Quality*, v.26, p.590–602.
- Dudka, S., Ponce-Hernandez, R., and Hutchinson, T.C., 1995, *Current level of total element concentrations in the surface layer of Sudbury's soils: Science Total Environment*, v.162, p.161–171.
- Dudka, S., Ponce-Hernandez, R., Tate, G., and Hutchinson, T.C., 1996, *Forms of Cu, Ni, and Zn in soils in Sudbury, Ontario and the metal concentration in plants: Water, Soil and Air Pollution*, v.90, p.531–542.
- Dudas, M.J., Warren, C.J., Spiers, G.A., 1988, *Chemistry of arsenic in acid sulphate soils of northern Alberta: Communications in Soil Science and Plant Analysis*, v.19, p.887-895.
- Dudas, M.T. and Pawluk, S. 1976, *The nature of Hg in Chernozemic and Luvisolic soils in Alberta*; *Canadian Journal of Soil Science* v.56, p.413-423.
- Dudas, M.T. and Pawluk, S., 1980, *Natural abundance and mineralogical partitioning of trace elements in selected Alberta soils: Canadian Journal of Soil Science*, v.62, p. 763-771.

- Earthref, 2002, Earth reference data and models; earthref.org.
- Environment Canada, 1995, unpublished data.
- Environment Canada, 1999, unpublished data.
- Environment Canada, 2002, unpublished data.
- Erdman, J.A., Shacklette, H.T. and Keith, J.R., 1976, Elemental composition of selected native plants and associated soils from major vegetation-type areas in Missouri; United States Geological Survey Professional paper 954-C, 87p.
- Evans, L.J., 1980, Podzol development north of Lake Huron in relation to geology and vegetation: Canadian Journal of Soil Science, v.60, p.527-539.
- Evans, L.J., 1982, Characteristics of loamy textured podzols in northeastern Ontario: Canadian Journal of Soil Science; v.62, p.381-290.
- Evans, L.J. and Wilson, G.W., 1985, Extractable Fe, Al, Si and C in B horizons of Podzolic and Brunisolic soils from Ontario: Canadian Journal of Soil Science, v.65, p. 489-496.
- Farmer, V.C., 1982, Significance of the presence of allophone and imogolite in the Podzol Bs horizon for podzolization mechanisms: Soil Science and Plant Nutrition, v.28, p.571-578.
- Freedman, B. and Hutchinson, T.C., 1980, Pollutant inputs from the atmosphere and accumulation in soils and vegetation near a nickel-copper smelter at Sudbury, Ontario, Canada: Canadian Journal of Botany, v.58, p.108-132.
- Gillespie, J.E., Acton, C.J., and Hoffman, D.W., 1983; Soils of Sudbury Area; Ontario Institute of Pedology; Soil Survey Report.
- Ginnocchio, R., Carvallo, G., Toro, I., Bustamante, E., Silva, Y. and Sepulveda, N. 2004. Micro-spatial variation of soil metal pollution and plant recruitment near a copper smelter in Central Chile. Environmental Pollution, v.127, p. 343-352.
- Golder Associates Ltd., 2001, Town of Falconbridge soil sampling program comprehensive Falconbridge Survey; Unpublished report prepared for Falconbridge Ltd.14p.
- Gough, L.P., Severson, R.C. and Shacklette H.J. 1988. Element concentrations in soils and other surficial materials of Alaska; United States Geological Survey, Professional Paper 1458.
- Gundermann, D.G. and Hutchinson, T.C., 1995, Changes in soil chemistry 20 years after the closure of a nickel-copper smelter near Sudbury, Ontario, Canada: Amsterdam-New York, International, Elsevier , p.559-562.
- Gunn, J.M., 1995, The Restoration of an Industrial Region: New York, Springer-Verlag, 358p.
- Goodarzi, F., Sanei, H., and Duncan, W.F., 2001, Monitoring the distribution and deposition of trace elements associated with the zinc-lead smelter in the Trail area, British Columbia, Canada. Journal of Environmental Monitoring, v. 3, p.515-525.
- Goodarzi, F., Sanei, H., Garrett, R.G. and Duncan, W.F., 2002, Accumulation of trace elements in the surface soils around the Trail smelter, British Columbia, Canada. Environmental Geology, v. 43, p. 29-38.
- Harmen, H.H. 1967. Modern Factor Analysis. University of Chicago Press.
- Hazlett, P.W., Rutherford, G.K., and van Loon, G.W., 1983, Metal contaminants in surface soils and vegetation as a result of nickel/copper smelting at Coniston, Ontario Canada; Reclamational Revegetation Research, v.2, p.123-127.
- Heale, E.L., 1993, Metal content of soil and vegetation in the Sudbury area, 1971-1988: Copper Cliff, INCO Limited.

- Henderson, P.J., Knight, R.D. and McMartin, I. 2002, Geochemistry of soils within a 100 km radius of the Horne Cu smelter, Rouyn-Noranda, Québec: Geological Survey of Canada Open File Report 4169.
- Hernandez, L., Probst, A., Probst, J.L. and Ulrich, E. 2003, Heavy metal distribution in some French forest soils: evidence for atmospheric contamination: *The Science of the Total Environment*, v.312, p.195-219.
- Holloway, M.E., 1917, Report of the Ontario Nickel Commission, with Appendix: Toronto, Legislative Assembly of Ontario.
- Hughes, O.L., 1959, Surficial geology of Smooth Rock and Iroquois Fall map areas, Cochrane District, Ontario: Unpublished Ph.D thesis University of Kansas, Lawrence, Kansas.190p.
- Hughes, O.L., 1965, Surficial Geology of part of the Cochrane District, Ontario, Canada; Geological Society of America, Special Paper 84, p.535–565.
- Hutchinson, T.C. and Whitby, L.M., 1974, Heavy-metal pollution in the Sudbury mining and smelting region of Canada I. Soil and vegetation contamination by nickel, copper and other metals: *Environmental Conservation*, v.2, p.123–132.
- Jensen, F.A., 1988, Molecular weight fractionation of Al and Fe species in podzols and phenolic acid retention by amorphous Fe hydroxide: M.Sc. thesis, University of Guelph. 226p.
- Jenny, H., 1994, *Factors of Soil Formation: a system of quantitative pedology*: Dover Publications, New York. 281 pp.
- Kodama, H., 1979, Clay minerals in Canadian soils: their origin, distribution and alteration: *Canadian Journal of Soil Science*, v.59, p.37-58.
- Kodama, H., Ross, G.J., Wang, C. and MacDonald, K.B. 1993, Clay mineralogical database of Canadian Soils with a clay mineralogical map of surface soils: Technical Bulletin, 1993-1E. CLBRR Contribution 92-82, Research Branch, Agriculture Canada.
- Koptsik, S. Koptsik, G., Livantisova, S. Eruslankina, L., Zhmelkova, T., and Vologdina, Zh. 2003, Heavy metals in soils near the nickel smelter: chemistry, spatial variation, and impacts on plant diversity: *Journal of Environmental Monitoring*, v.5, p.441-450.
- Lightfoot, P.C. 1997, Analytical data from the Sudbury Igneous Complex, Ontario: Ontario Geological Survey; MRD-30.
- Lightfoot, P.C. and Naldrett, A.J., 1994, Proceedings of the Sudbury–Noril’sk Symposium: Ontario Geological Survey, Special Volume 5, 421p.
- Lindsay, W.F., 1979, *Chemical equilibria in soils*: John Wiley & Sons, New York, New York, 412p.
- McIlveen, W.D. and Negusanti, J.J., 1994, Nickel in the terrestrial environment: *Science of the Total Environment*, v. 148, p. 109-138.
- McKeague, J.A., Desjardins, J.G., Wolynetz, M.S., 1979, Minor elements in Canadian Soils; Agriculture Canada, Research Branch, 75p.
- McKeague, J.A. and Wolynetz, M.S. 1979, Ca/Sr relationships in Canadian soils. *Canadian Journal of Soil Science*, v59, p.445-449.
- McKeague, J.A. and Wolynetz, M.S., 1980, Background levels of minor elements in some Canadian Soils; *Geoderma*, v.24, p.299-307.
- McMartin, I., Henderson, P.J. and Nielsen, E., 1999, Impact of a base metal smelter on the geochemistry of soils of the Flin Flon region, Manitoba and Saskatchewan: *Canadian Journal of Earth Science*, v.36, p.141–160.
- McGovern, P.C. and Balsillie, D., 1973, Sulphur dioxide (1972) Heavy Metals (1971) levels and vegetation effects in the Sudbury area: Ministry of Environment, Air Pollution Control Branch.

- Miesche, A.T., 1976, Geochemical survey of Missouri—methods of sampling, laboratory analysis, and statistical reduction data; United States Geological Survey Professional paper 954-B.
- Ministry of Environment, 1995, unpublished data.
- Ministry of the Environment, 1997, Guidelines for Use at Contaminated Sites in Ontario.
- MNDM Information and Marketing Services Section, 2002, unpublished data.
- Moore, A.W. and Russell, J.S., 1967, Comparison of coefficients and grouping procedures in the numerical analysis of trace element data. *Geoderma*, v. 1, p. 139-158.
- Morra, L. and McIlveen, W.D. 2001, Metals and soil and vegetation in the Sudbury area (Survey 2000 and additional historical data): Ontario Ministry of Environment.
- Muir, T.L., 1984, The Sudbury Structure: considerations and models for an endogenic origin; *in* The geology and ore deposits of the Sudbury Structure: Ontario Geological Survey, Special Volume 1, p.449–489.
- Murray, A. 1857, Ottawa, Geological Survey of Canada.
- Negusanti, J.J. and McIlveen, W.D., 1990, Studies of the Terrestrial Environment in the Sudbury area, 1978 to, 1987: Northeastern Region, Ontario, Ministry of the Environment.
- Nriagu, J., Wong, H.K.T., Lawson, G. and Daniel, P. 1998. Saturation of ecosystems with toxic metals in Sudbury basin, Ontario, Canada. *The Science of the Total Environment*; v.223, p.99-117.
- Nikonov, V.V, Lukina, N.V. and Frontas'eva, M.V. 1999, Trace elements in Al-Fe-Humus podzolic soils subjected to aerial pollution from the Apatite-Nepheline production industry: *Eurasian Soil Science* v.32(12), p.1331-1339.
- Ontario Ministry of the Environment, 1993, Field Investigation Manual, Part 1, General Methodology
- Pawluk and Bayrock, L.A. 1969, Some characteristics of physical properties of Alberta Soils; research Council of Alberta Bulletin 26, 72p.
- Pearson, D.A.B., Gunn J.B., and Keller, W., 2002, The Past, Present and Future of Sudbury's Lakes; *in* The physical environment of the City of Greater Sudbury: Ontario Geological Survey, Special Volume 6, p.195–216.
- Prokop, Z., Cupr, P., Zlevorova-Zlamalikova, V., Komarek, J., Dusek, L. and Holoubek, I., 2003, Mobility, bioavailability, and toxic effects of cadmium in soil samples: *Environmental Research*, v.91, p.119–126
- Pye, E.G., Naldrett, A.J., and Giblin, P.E., 1984, The geology and ore deposits of the Sudbury Structure: Ontario Geological Survey, Special Volume 1, 603p.
- Pyott, W.T., 1972, Numerical classification of range vegetation and statistical analysis of its ecology: *Dissertation Abstr. Int., B.*, v. 33, no.1, p. 14-15.
- Rollinson, H., 1993, Using geochemical data: evaluation, presentation, interpretation; 1st ed, Longman, London, 352p.
- Rudnick, R.L., Gao, S., 2003, Composition of the continental crust, pp 1-64. *In* *The Crust* (ed. R.L. Rudnick) Vol. 3 *Treatise on Geochemistry* (eds. H.D. Holland and K.K. Turekian), Elsevier-Pergamon, Oxford.
- Rummell, R.J., 1970, Applied factor analysis. Northwestern University Press. Evanston.
- Rutherford, G.K. and Bray, C.R., 1979, Extent and distribution of soil heavy metal contamination near a nickel smelter at Coniston, Ontario: *Journal of Environmental Quality*, v.8, p.219–222.
- Shacklette H.J., Hamilton, J.C., Boerngen, J.G., Bowles, J.G.M. 1971, Elemental composition of surficial materials in the conterminous United States; United States Geological Survey, Professional Paper 574-D.
- Shilts, W.W., 1977, Geochemistry of till in perennially frozen terrain of the Canadian Shield—application to prospecting; *Boreas*, v.5, 203-212.

- Shotyk W., Blaser P., Grunig A. and Cheburkin A., 2000, A new approach for quantifying cumulative anthropogenic, atmospheric lead deposition using peat cores from bogs: Pb in eight Swiss peat bog profiles: *The Science of the Total Environment*; v.249, p.281-295.
- Shotyk, W., Krachler, M., Martinez-Cortizas, A., Cheburkin, A.K., and Emons, H., 2002, A peat bog record of natural, pre-anthropogenic enrichments of trace elements in atmospheric aerosols since 12,370 14C yr BP, and their variation with Holocene climate change: *Earth and Planetary Science Letters*; v.199, p.21-37.
- Shotyk, W., Weiss, D., Heisterkamp, M., Cheburkin, A.K., and Adams, F.C., 2002, A new peat bog record of atmospheric lead pollution in Switzerland: Pb concentrations, enrichment factors, isotopic composition, and organolead species: *Environmental Science and Technology*; v.36 (18), p.3893-3900.
- Shotyk, W., Weiss, D., Kramers, J.D., Frei, R., Cheburkin, A.K., Gloor, M. and Reese, S., 2001, Geochemistry of the peat bog at Etang de la Gruère, Jura Mountains, Switzerland, and its record of atmospheric Pb and lithogenic trace elements (Sc, Ti, Y, Zr, Hf and REE) since 12,370 14C yr BP: *Geochimica et Cosmochimica Acta*, v.65(14), p.2337-2360.
- Semkin, R.G., Kramer, J.R., 1976, Sediment geochemistry of Sudbury area lakes: *Canadian Mineralogist*, v.14, p. 73-90.
- Siegel, F.R., 2002, *Environmental Geochemistry of Potentially Toxic Metals*: Berlin, Springer-Verlag, 218p.
- Singh, S.P., Tack, F.M., and Verloo, M.G., 1998, Heavy metal fractionation and extractability in dredged sediment derived surface soils: *Water, Air and Soil Pollution*, v.102, p.313-328.
- Skinner, R.G., 1973, Quaternary stratigraphy of the Moose River Basin, Ontario; Geological Survey of Canada.
- Smit, C.E., 1997, Field relevance of the *Folsomia candida* soil toxicity test: unpublished Ph.D. Thesis, University of Utrecht.
- Sokal, R.R., 1966, Numerical taxonomy. *Scientific American*, v. 215, p. 106-116.
- Sparks, D.L. and Suarez, D.L., 1991, Rates of soil chemical processes: Madison, Wisconsin, USA: Soil Science Society of America, 302p.
- Spiers, G.A., Pawluk, S., and Dudas, M.J., 1984, Authigenic mineral formation by Solodization: *Canadian Journal of Soil Science* 64: 515-532.
- Spiers, G.A., Dudas, M.J., and Turchenek, L.W., 1989, Mineralogy and geochemistry of soil parent materials, Athabasca Oil Sands Area, Northeast Alberta: *Canadian Journal of Soil Science*, v.69, p.721-738.
- Spiers, G.A., Pearson, D.A.B., and Prevost, F., 2002, Distribution of Anthropogenic Metals in Soils of the Sudbury Smelter Footprint: Presented at the 5th International Nickel Conference, Murmansk, Russia.
- Sposito, G., 1989, *The chemistry of soils*: New York, Oxford, Oxford University Press, 277 p.
- Sutherland, R.A. 2003, A first look at platinum in road-deposited sediments and soils, Honolulu, Oahu, Hawaii: *Archives of Environmental Contamination and Toxicology*, v.44, p.430-436.
- Stahl, R.S. and James, B.R., 1991, Zinc sorbtion by B horizon soils as a function of pH: *Journal of the Soil Science Society of America*, v.55, p.1592-1597.
- Stynes, B.A., Wallace, H.R. and Veitch, L.G. 1979. A synoptic approach to crop loss assessment used to study wheat. 1. An appraisal of the physical and chemical soil properties in the study area. *Australian Journal of Soil Research*, v17, p.217-225.
- Taylor, J.G. and Crowder, A.A., 1983, Accumulation of atmospherically deposited metals in wetland soils of Sudbury, Ontario: *Water, Air, Soil Pollution*, v.19.
- Tidball, R.R., 1978, Chemical variation in soils of Missouri associated with selected levels of the soil classification system. U.S. Geological Survey Professional 954 A.

- Tomassini, F.D., Puckett, K. J., Nieboer, E., Richardson, D.H.S., Grace, B., (1976)., Determination of copper, iron, nickel and sulphur by X-ray fluorescence in lichens from the Mackenzie Valley, Northwest Territories, and the Sudbury District, Ontario: Canadian Journal of Botany, v. 54, p. 1591-1603.
- Ure, A.Q.P., Muntau, H., and Griepink, B., 1993, Speciation of heavy metals in soils and sediments. An account of the improvement and harmonisation of extraction techniques undertaken under the auspices of the BCR and the CEC: International Journal of Environmental Analytical Chemistry, v.51, p.135–151.
- Van Tibourg, W.J.M., 1998, Fate of metals in soils: geochemical transformation and bioavailability of metals – the time factor; Proceeding of the Workshop on the Atmospheric Transport and Fate of Metals in the Environment: The International Council on Metals and the Environment, Ottawa, Canada, p.171-188.
- Volland, L.A. and Connelly, M, 1978, Computer analysis of ecological data. U.S.D.A. Forest Service, Pacific Northwest Region, R-ECOL-79-003.
- Wallace, J.M., Hobbs, P.V., 1977, Atmospheric Science: An introductory survey, Academic Press, Inc., New York. 467.
- Warren, C.J., Dudas M.J., 1992, Acidification adjacent to an elemental sulfur stockpile: I. Mineral weathering: Canadian Journal of Soil Science, v.72, p.113-126.
- Warren, C.J., Dudas M.J., 1992, Acidification adjacent to an elemental sulfur stockpile: II. Trace element redistribution: Canadian Journal of Soil Science, v.72, p.127-134.
- Warren, C.J., Dudas, M.J., and Abboud, S.A., 1993. Effects of acidification on the chemical composition and layer charge of smectite from calcareous till: Clays and Clay Minerals, v.40, p.731-739.
- Webb, J.S. and Howarth, R.J., 1979, Regional geochemical mapping. Philosophical Transactions of the Royal Society (London) B228, p. 81-93.
- Webster, R., 1979, Quantitative and numerical methods in soil survey and classification. Clarendon Press. Oxford. 269 p.
- Whitby, L.M. and Hutchinson, T.C., 1974, Heavy-metal pollution in the Sudbury mining and smelting region of Canada II. Soil toxicity tests: Environment Conservation, v.2.
- Williams, W.T., 1971, Principles of clustering. Annual Reviews of Ecology and Systematics, v. 2, 303-326.
- Williams, W.T. and Dale, M.B., 1964, Fundamental problems in numerical taxonomy. Advances in Ecological Research, v. 2, p. 35-67.
- Whitby, L.M. and Hutchinson, T.C., 1974, Heavy-metal pollution in the Sudbury mining and smelting region of Canada II. Soil toxicity tests: Environmental Conservation, v.2.
- Winterhalder, K., 1995, Dynamics of plant communities and soils in revegetated ecosystems: a Sudbury case study: New York, New York, Springer-Verlag, p.173p.
- Zoltai, S., 1988, Distribution of base metals in peat near a smelter at Flin Flon, Manitoba; Water, Air and Soil Pollution, v.37, p.217-228.

Appendix I

Site Description and Chemistry

Sudbury Regional Soils Project 2001

Site Number

1

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F001

Location of sampling site

Helicopter site: east of the Sturgeon River near Solace Provincial Park.

Historical Inco sample station

OBM map number

41 P/2

Field observations

Densely forested coniferous wooded area, level.

Easting

518891

Northing

5221274

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

337

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry and unconsolidated 3 to 6 cm thick. Horizon 2 (Bf) is a medium reddish-brown, fine-grained sand mixed with pebbles and persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm and consists of a light brown, wet, silty sand mixed with pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12858

Depth 5 - 10 cm:

12860

Depth 10 - 20 cm:

12862

Dup. Depth 0 - 5 cm:

12859

Dup. Depth 5 - 10 cm:

12861

Dup. Depth 10 - 20 cm:

12863

Parent material:

12866

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F001\F001-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F001\F001-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F001\F001-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

1

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6500	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	46
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	12	Nickel Parent:	42
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	31	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	5	Selenium Parent:	ND
Barium 0 to 5cm:	55	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	66	Iron Parent:	22000	Strontium Parent:	34
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	44
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	770	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5200	Zinc Parent:	26
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3300	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

2

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F002

Location of sampling site

Helicopter site: west of Obabika River Provincial Park, Seagram Township.

Historical Inco sample station

OBM map number

41 P/1

Field observations

Wooded coniferous area, steep slope to water, rocky shallow soil. Ground cover is predominantly litter/needles.

Easting

538704

Northing

5220581

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 5 to 7 cm thick. Horizon 2 (Ae) is a grey, moist sand with occasional red-brown sand mottled in, moist, to 10 to 15 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12742

Depth 5 - 10 cm:

12744

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12743

Dup. Depth 5 - 10 cm:

12745

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F002\F002-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F217\F217-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F002\F002-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

2

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5050	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	40	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	135	Iron 0 to 5cm:	7050	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	445	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1150	Manganese 0 to 5cm:	78	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

3

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

3

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Near clear cut area. Forested area dominated by spruce and balsam fir (80%), some birch (20%).

Easting

467162

NAD83
Zone 17

Northing

5220525

Reference

Helicopter

Altitude(m)

399

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 10 cm (grey); Bf/BC: >10 cm, gradual change in horizons. Texture: fine-grained.

Parent material field description

Sample was collected between 80 and 100 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26395

Depth 5 - 10 cm:

26396

Depth 10 - 20 cm:

26397

Dup. Depth 0 - 5 cm:

26398

Dup. Depth 5 - 10 cm:

26399

Dup. Depth 10 - 20 cm:

26400

Parent material:

26401

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\003\2001-CEM-003-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\003\CEM-003-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\003\2001-CEM-003-
Core_1.jpg

Parent material photo

Site Number

3

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5350	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	23
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7200	Cobalt Parent:	4	Nickel Parent:	12
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	12	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	5.8	Selenium Parent:	ND
Barium 0 to 5cm:	43	Iron 0 to 5cm:	6700	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	18	Iron Parent:	9600	Strontium Parent:	23
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	21	Vanadium 0 to 5cm:	18
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	23
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	735	Zinc 0 to 5cm:	3.1
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1800	Zinc Parent:	13
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	210	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2600	Manganese Parent:	390	pH Parent:	NA
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	25	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

4

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F004

Location of sampling site

Helicopter site: on peninsula in Ferguson Bay of Lake Temagami, Cynthia Township.

Historical Inco sample station

OBM map number

41 P/1

Field observations

Thickly vegetated coniferous and deciduous wooded area, near shore of lake, slight slope. Ground cover is shrubs and litter.

Easting

568660

Northing

5220224

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 5 to 7 cm thick. Sampled to approximately 5 to 7 cm, but at occasional soil pockets the soil profile contains red-brown sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12748

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12749

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F004\F004-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F004\F004-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F004\F004-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

4

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	3400	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	67
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	45	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	65	Iron 0 to 5cm:	5050	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	55	Vanadium 0 to 5cm:	14
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.9	Magnesium 0 to 5cm:	730	Zinc 0 to 5cm:	54
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	5600	Manganese 0 to 5cm:	225	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	334
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

5

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F005

Location of sampling site

Helicopter site: west of Obabika River Provincial Park, Seagram Township.

Historical Inco sample station

OBM map number

41 P/1

Field observations

Wooded area, previously logged, level. Thick dead wood and shrub layer.

Easting

540207

Northing

5219164

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black to brown, moist and unconsolidated, 3 to 5 cm thick. Horizon 2 (Bf) is a medium reddish-brown, fine- to medium-grained sand mixed with pebbles and gravel, and persists to 20 cm.

Parent material field description

Depth sample collected from 50 to 70 cm consists of a light brown-grey, wet, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12867

Depth 5 - 10 cm:

12869

Depth 10 - 20 cm:

12871

Dup. Depth 0 - 5 cm:

12868

Dup. Depth 5 - 10 cm:

12870

Dup. Depth 10 - 20 cm:

12872

Parent material:

12875

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F005\F005-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F005\F005-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F005\F005-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

5

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5650	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	54
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5000	Cobalt Parent:	3	Nickel Parent:	41
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	39	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	3.9	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	5950	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	42	Iron Parent:	6000	Strontium Parent:	19
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	18
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	15
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	515	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1000	Zinc Parent:	5.4
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	89	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1200	Manganese Parent:	59	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	74	Molybdenum Parent:	2.2	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

6

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

6

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 P 4

Field observations

slope 5% to east, hummocky, a lot of dead wood, lichen on trees. Trees: 60% balsam fir, shrub: bracken fern; herb: 1% bunch berry, 30% sphagnum; 5% lichens; gold thread.

Easting

456680

Northing

5214204

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

447

Conditions

Cloudy

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 0.5 cm dead leaves; FH: 0.5 to 8 cm; Ae: 0 to 2.5 cm (10YR 4/1) silty/sandy; Bt: 2.5 to 24 cm (10YR4/2), silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25463

Depth 5 - 10 cm:

25464

Depth 10 - 20 cm:

25465

Dup. Depth 0 - 5 cm:

25466

Dup. Depth 5 - 10 cm:

25467

Dup. Depth 10 - 20 cm:

25468

Parent material:

Parent material field description

No parent material was collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\006\2001-CEM-006-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\006\CEM-006-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\006\2001-CEM-006-
CORE_1.JPG

Parent material photo

Site Number

6

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4150	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	46
Aluminum 5 to 10cm:	10000	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	14
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	31	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	9.2	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	86	Iron 0 to 5cm:	4550	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	36	Iron 5 to 10cm:	11000	Strontium 5 to 10cm:	52
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	10
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	520	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	15
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3500	Manganese 5 to 10cm:	140	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

7

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

7

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Trees: 85% spruce and fir, 15% birch. Shrubs: bracken fern, blueberry. Herbs: moss, lichens, liver worts.

Easting

480708

NAD83
Zone 17

Northing

5213769

Reference

Helicopter

Altitude(m)

286

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ae: 0 to 7 cm; Bt: 7 to 16 cm; buried Ae: 16 to 26 cm; Bt/Bf: 26 to 48 cm.

Parent material field description

Sample collected >50 cm. Texture: medium to coarse sand; dark brown in colour.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25910

Depth 5 - 10 cm:

25911

Depth 10 - 20 cm:

25912

Dup. Depth 0 - 5 cm:

25913

Dup. Depth 5 - 10 cm:

25914

Dup. Depth 10 - 20 cm:

25915

Parent material:

25919

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\007\2001-CEM-007-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\007\CEM-007-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\007\2001-CEM-007-
Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

7

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	30
Aluminum 5 to 10cm:	7350	Cobalt 5 to 10cm:	1.5	Nickel 5 to 10cm:	7.5
Aluminum 10 to 20cm:	11000	Cobalt 10 to 20cm:	2.5	Nickel 10 to 20cm:	10
Aluminum Parent:	12000	Cobalt Parent:	7	Nickel Parent:	27
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	22	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	5.2	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	4.6	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	109	Iron 0 to 5cm:	6800	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	26	Iron 5 to 10cm:	9100	Strontium 5 to 10cm:	31
Barium 10 to 20cm:	22	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	32
Barium Parent:	26	Iron Parent:	20000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	28
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	31
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	40
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	880	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	830	Zinc 5 to 10cm:	15
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1200	Zinc 10 to 20cm:	21
Cadmium Parent:	ND	Magnesium Parent:	3800	Zinc Parent:	26
Calcium 0 to 5cm:	3250	Manganese 0 to 5cm:	275	pH 0 to 5cm:	4
Calcium 5 to 10cm:	2050	Manganese 5 to 10cm:	99	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	2250	Manganese 10 to 20cm:	105	pH 10 to 20cm:	4.9
Calcium Parent:	3700	Manganese Parent:	220	pH Parent:	5.5
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	153
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	29
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	52	Molybdenum Parent:	ND	C TOC Parent:	8.7

Sudbury Regional Soils Project 2001

Site Number

8

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F008

Location of sampling site

Helicopter site: north of Lower Bass Lake near Lake Temagami, Belfast Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded birch stand slope area near swamp. Soil is very shallow and a boulder layer is present at ~10 cm.

Easting

560938

NAD83
Zone 17

Northing

5206059

Reference

Helicopter

Altitude(m)

343

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 3 to 5 cm thick. Horizon 2 (Bf) is a medium reddish-brown, fine-grained sand mixed with pebbles, and persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a light brown, wet, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12876

Depth 5 - 10 cm:

12878

Depth 10 - 20 cm:

12880

Dup. Depth 0 - 5 cm:

12877

Dup. Depth 5 - 10 cm:

12879

Dup. Depth 10 - 20 cm:

12881

Parent material:

12884

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F008\F008-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F008\F008-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F008\F008-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

8

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	38
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	4.5	Nickel 5 to 10cm:	20
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	24
Aluminum Parent:	15000	Cobalt Parent:	8	Nickel Parent:	21
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	30	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	12	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	13	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	ND	Selenium Parent:	ND
Barium 0 to 5cm:	85	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	47	Iron 5 to 10cm:	24500	Strontium 5 to 10cm:	38
Barium 10 to 20cm:	51	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	38
Barium Parent:	46	Iron Parent:	19000	Strontium Parent:	34
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	26	Vanadium 0 to 5cm:	54
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	61
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	47
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	37
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	56
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	35
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2450	Zinc 10 to 20cm:	39
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	20
Calcium 0 to 5cm:	4850	Manganese 0 to 5cm:	340	pH 0 to 5cm:	5.1
Calcium 5 to 10cm:	3150	Manganese 5 to 10cm:	190	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3400	Manganese 10 to 20cm:	200	pH 10 to 20cm:	5.1
Calcium Parent:	3200	Manganese Parent:	220	pH Parent:	5.2
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	1.2	C TOC 0 to 5cm:	93
Chromium 5 to 10cm:	42	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	1
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	23
Chromium Parent:	39	Molybdenum Parent:	ND	C TOC Parent:	11

Sudbury Regional Soils Project 2001

Site Number

9

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

9

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 I/3

Field observations

Moss and lichens on dead logs and trees, along with some fungi. Herb: ground pine 10%, bunchberry 2%; Shrub: 10% balsam fir. Trees: 80% balsam fir.

Easting

457829

NAD83
Zone 17

Northing

5201943

Reference

Helicopter

Altitude(m)

473

Conditions

Cloudy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ae: 0 to 3.5 cm (7.5YR 5/2), silty; Bf: 3.5 to >19 cm (7.5YR 3/4), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25472

Depth 5 - 10 cm:

25473

Depth 10 - 20 cm:

25474

Dup. Depth 0 - 5 cm:

25475

Dup. Depth 5 - 10 cm:

25476

Dup. Depth 10 - 20 cm:

25477

Parent material:

Parent material field description

No parent material could be collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\009\2001-CEM-009-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\009\CEM-009-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\009\2001-CEM-009-
CORE 1.JPG

Parent material photo

Site Number

9

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4850	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	29
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	16	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	75	Iron 0 to 5cm:	5950	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	660	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	195	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

10

Date sampled

10/24/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

10

Location of sampling site

Follow Hwy 144 N of Benny, to Onaping Lake Rd.

Historical Inco sample station

21

OBM map number

41 I/13

Field observations

Moss and lichen on trees. Herb: moss, brachythecium, bunchberry, some bracken fern. Shrub: alder. Trees: 10% white spruce, 3% balsam fir, few birch(2%), jack pine.

Easting

453435

NAD83
Zone 17

Northing

5187186

Reference

Onaping Lake Rd.
off Hwy 144

Altitude(m)

406

Conditions

Fog-clear

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 3 cm; Ae: 3 to 6 cm (5YR 4/3), fine-grained sand; Bf: 6 to 13 cm (5YR 4/6), sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25286

Depth 5 - 10 cm:

25287

Depth 10 - 20 cm:

25288

Dup. Depth 0 - 5 cm:

25292

Dup. Depth 5 - 10 cm:

25293

Dup. Depth 10 - 20 cm:

25294

Parent material:

Parent material field description

Could not collect parent material; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\010\2001-CEM-010-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\010\CEM-010-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\010\2001-CEM-010-
CORE_1.JPG.jpg

Parent material photo

Site Number

10

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6650	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	44
Aluminum 5 to 10cm:	8900	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	22
Aluminum 10 to 20cm:	21000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	25
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	35	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	11	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	84	Iron 0 to 5cm:	9800	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	44	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	30
Barium 10 to 20cm:	45	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	38
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	50	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	43
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	985	Zinc 0 to 5cm:	45
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1010	Zinc 5 to 10cm:	27
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1700	Zinc 10 to 20cm:	42
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	205	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2350	Manganese 5 to 10cm:	140	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	41	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	45	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

11

Date sampled

10/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

11

Location of sampling site

Hwy 17 E to Warren, left onto Hwy 539. North past Glen Afton, past Mud Lake, Past McNish Lake. Look for cart road (truck access) to the east, ~380 m from site.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Plateau, flat area, hummocky. Messy forest, mostly spruce and pine. Quadrant adjacent to small clearing in spruce forest; could be artificial (overgrown trail leads out to cart road 30-50 m from site). 25% Trees (spruce 80%, pine 15% birch 1%. 75% shrubs-juvenile spruce, pine and sheep laurel. Herbs: ferns in open areas, wintergreen. Forest floor: buried logs, moss lichen, mostly leaves, mushrooms.

Easting

556035

NAD83
Zone 17

Northing

5182955

Reference

Glen Afton-north
Hwy 805

Altitude(m)

323

Conditions

Cool humid

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 9 cm; Ah: 0 to 3 cm (black); Ae: 3 to 4 cm (whitish grey), fine-grained; Bt: 4 to >16 cm (brown) coarser fragments.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10891

Depth 5 - 10 cm:

10892

Depth 10 - 20 cm:

10893

Dup. Depth 0 - 5 cm:

10919

Dup. Depth 5 - 10 cm

10920

Dup. Depth 10 - 20 cm:

10921

Parent material:

Parent material field description

No sample taken; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\011\CEM-011-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

11

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7350	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	99
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	89	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	79	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

12

Date sampled

10/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

12

Location of sampling site

1 km south of Cartier.

Historical Inco sample station

21

OBM map number

Field observations

Hummocky, flat, exposed boulders, hit bedrock on south side with corer. Trees 10% trembling Aspen; 5% Birch; <1% red maple; 1% balsam fir. Shrub: 5-10% bracken fern; 2-3% maple seedlings; 5% alder. Herb: 25% aster (big leaf); 2-3% polytrichen moss; 2-3% brachythecium thesian. Floor: some lichen on trees; 50% leaf litter/fallen trees

Easting

457638

NAD83
Zone 17

Northing

5171100

Reference

Hwy 144 N Cartier
Gas Station

Altitude(m)

450

Conditions

Clear/cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 2 cm; Ae: 2 to 4 cm; Bf: 4 to 16 cm; Bt: 16 to >59 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11051

Depth 5 - 10 cm:

11052

Depth 10 - 20 cm:

11053

Dup. Depth 0 - 5 cm:

11054

Dup. Depth 5 - 10 cm:

11055

Dup. Depth 10 - 20 cm:

11056

Parent material:

Parent material field description

Sample could not be collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\012\CEM-012-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

12

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	3900	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	24
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	22	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	86	Iron 0 to 5cm:	7000	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	500	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	410	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	13	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

13

Date sampled

10/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	13	Location of sampling site	Hwy 17 to Warren, turn left onto Hwy 539 to River Valley. Turn onto 539A before River Valley cross the Temagami River via the Bailey Bridge. Pass ch Guenette on the left (west) & look for gravel driveway on right hand side of 539A (east) that opens up to a cart road.
Historical Inco sample station	54		
OBM map number	41 I/9	Field observations	Semi forested, rocky area at the top of a small mountain/ plateau. Undulating & slightly sloping. Soil site is 20 m east of Aspen site. Trees: 15% maple (dominant), birch, big tooth aspen, spruce, whit pine. Shrubs: 1% small spruce, maple. Herb 10%, fern, sweet fern, ground cedar, mushrooms; floor=moss, lichen, leaf litter, needles.
Easting	562056	NAD83 Zone 17	
Northing	5161601		
Reference	River Valley		
Altitude(m)	291		
Conditions	Humid, rain		

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 5 cm; Ae: 5 to 6 cm (white); Bm: 6 to >34 cm (medium brown).
Texture: silty-clayey with some coarse fractions.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm: 10913

Depth 5 - 10 cm: 10914

Depth 10 - 20 cm: 10915

Dup. Depth 0 - 5 cm:

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No sample taken; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\013\CEM-013-soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

13

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	68
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	50	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	58	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1700	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	140	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	116
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

14

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F014

Location of sampling site

Helicopter site: near Hwy 539, west of Desaulniers near the Sturgeon River, Gibbons Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Wooded birch stand, level. Ground cover is deadfall and dried small shrubs.

Easting

567045

Northing

5156202

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist and unconsolidated, 5 cm thick. Horizon 2 (Bf) is a red-brown, very fine-grained, loose, moist sand mixed with some silt, ~4 cm thick. Horizon 3 (BC) is a brown, soft, moist sandy silt.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown, wet, compacted, very fine-grained sand and silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12630

Depth 5 - 10 cm:

12632

Depth 10 - 20 cm:

12634

Dup. Depth 0 - 5 cm:

12631

Dup. Depth 5 - 10 cm:

12633

Dup. Depth 10 - 20 cm:

12635

Parent material:

12639

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F014\F014-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F014\F014-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F014\F014-core.jpg

Parent material photo

Site Number

14

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7400	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	26
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	15
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	14
Aluminum Parent:	6300	Cobalt Parent:	4	Nickel Parent:	14
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	44	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	11	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	4.4	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	5.6	Selenium Parent:	ND
Barium 0 to 5cm:	73	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	35	Iron 5 to 10cm:	14000	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	39	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	42
Barium Parent:	18	Iron Parent:	9900	Strontium Parent:	21
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	32
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	36
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	975	Zinc 0 to 5cm:	82
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1100	Zinc 5 to 10cm:	34
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	32
Cadmium Parent:	ND	Magnesium Parent:	2200	Zinc Parent:	12
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	195	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2500	Manganese 5 to 10cm:	155	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	150	pH 10 to 20cm:	NA
Calcium Parent:	2900	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	21	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	24	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	37	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	26	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

15

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

15

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/5

Field observations

Site is hummocky, forested with young and mature balsam and white spruce. 75% of ground is covered with mosses. Shrubs: blueberry. Herbs: ground pine, brachythecium, sphagnum, bunchberry, polytrichum, some lichens.

Easting

453345

Northing

5146153

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

317

Conditions

Cold, windy, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Insufficient time to collect.

Parent material field description

Sample collected from 80 to 100 cm. Texture: medium grained sand. Soil very wet.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25958

Depth 5 - 10 cm:

25959

Depth 10 - 20 cm:

25960

Dup. Depth 0 - 5 cm:

25961

Dup. Depth 5 - 10 cm:

25962

Dup. Depth 10 - 20 cm:

25963

Parent material:

25967

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\015\2001-CEM-015-
Site_1.jpg

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\015\2001-CEM-015-
Pot_1.jpg

Parent material photo

Site Number

15

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	96
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	6	Nickel Parent:	17
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	72	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	9.4	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	8150	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	39	Iron Parent:	19000	Strontium Parent:	52
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	43
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	720	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4300	Zinc Parent:	21
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	77	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4700	Manganese Parent:	220	pH Parent:	NA
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	34	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

16

Date sampled

10/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

16

Location of sampling site

Hwy 17 east from Sudbury to Verner. Turn north to Hwy 575, site is ~1.5 km N of Hwy intersection.

Historical Inco sample station

71

OBM map number

41 I/8

Field observations

Soil site is 110 m west of Aspen site. Area is flat, semi forested, mixed forest, undulating and hummocky--some are real hummocks, others just bedrock covered in shallow soil. Slight. Rise to the west (outcrop covered in lichen) & drops into a lake.

Easting

566701

NAD83
Zone 17

Northing

5141198

Reference

Verner

Altitude(m)

251

Conditions

Humid, wet rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 3 cm; Charcoal: 3 to 4 cm; Ae: 4 to 5 cm (greyish), silty; Bm: 5 to 17 cm, sandy; buried organic material: 17 to 20 cm; Bm: 20 to >42 cm, sandy with some pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10935

Depth 5 - 10 cm:

10936

Depth 10 - 20 cm:

10937

Dup. Depth 0 - 5 cm:

10938

Dup. Depth 5 - 10 cm

10939

Dup. Depth 10 - 20 cm:

10940

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\016\2001-CEM-016-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\016\CEM-016-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\016\2001-CEM-016-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\016\2001-CEM-016-
PARENT_1.JPG.jpg

Site Number

16

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10400	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	42	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	130	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4000	Manganese 0 to 5cm:	170	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

17

Date sampled

10/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

17

Location of sampling site

Nairn Centre. Domtar plantation site.

Historical Inco sample station

7

OBM map number

41-1/5

Field observations

Red pine plantation, trees >30 m tall, area level, very open under pine canopy. Area has not been disturbed for >15 years. No Birch or Aspen, evidence of germination of pine--red pines in clast. Veg: red pine dominant, few maple, few fir, few white pine, grasses, bracken fern, mushrooms, moss sweet fern, blueberry. Floor--grasses, needles, twigs, roots.

Easting

452981

NAD83
Zone 17

Northing

5130691

Reference

Nairn Centre

Altitude(m)

238

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: Om: 0 to 5 cm; Ah: 0 to 2 cm (10YR 2/1); Bf: 2 to 12 cm (7.5YR 3/4); Bm: 4 to >30 cm (10YR 4/6). 40% of cores contained an Ae horizon (7.5YR 4/1) between 2 to 8 cm. Texture: sand. Soil is slightly variable core to core.

Parent material field description

Sample was taken between 75 and 110 cm. Texture: very coarse to medium sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10378

Depth 5 - 10 cm:

10380

Depth 10 - 20 cm:

10382

Dup. Depth 0 - 5 cm:

10379

Dup. Depth 5 - 10 cm

10381

Dup. Depth 10 - 20 cm:

10383

Parent material:

10384

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\017\2001-CEM-017-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\017\CEM-017-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\017\2001-CEM-017-
Core_1.JPG

Parent material photo

Site Number

17

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	57
Aluminum 5 to 10cm:	9050	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	11
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	14
Aluminum Parent:	9800	Cobalt Parent:	5	Nickel Parent:	14
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	49	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	11	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	6.9	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	50	Iron 0 to 5cm:	11500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	35	Iron 5 to 10cm:	14500	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	38	Iron 10 to 20cm:	23000	Strontium 10 to 20cm:	36
Barium Parent:	38	Iron Parent:	18000	Strontium Parent:	42
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	42
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	41
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1000	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2450	Zinc 10 to 20cm:	36
Cadmium Parent:	ND	Magnesium Parent:	3800	Zinc Parent:	22
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	185	pH 0 to 5cm:	3.9
Calcium 5 to 10cm:	2100	Manganese 5 to 10cm:	215	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3750	Manganese 10 to 20cm:	225	pH 10 to 20cm:	4.8
Calcium Parent:	4600	Manganese Parent:	220	pH Parent:	5.6
Chromium 0 to 5cm:	20	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	85
Chromium 5 to 10cm:	19	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	27
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	18
Chromium Parent:	27	Molybdenum Parent:	ND	C TOC Parent:	3.3

Sudbury Regional Soils Project 2001

Site Number

18

Date sampled

12/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

18

Location of sampling site

Island on Lake Nipissing.

Historical Inco sample station

OBM map number

Field observations

Relatively flat; 50% open ground. Trees: 10% white pine; Shrubs: 1% young white pine, 20% juniper, 10% blueberry; Herbs: 4% moss, 5% grass. Floor: needle litter.

Easting

566461

NAD83
Zone 17

Northing

5124789

Reference

Helicopter/Nipissing

Altitude(m)

209

Conditions

Dry and windy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 11 cm; Ah: 0 to 6 cm (black); Bm: >6 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25671

Depth 5 - 10 cm:

25672

Depth 10 - 20 cm:

25673

Dup. Depth 0 - 5 cm:

25674

Dup. Depth 5 - 10 cm

25675

Dup. Depth 10 - 20 cm:

25676

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\018\2001-CEM-018-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\018\CEM-018-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\018\2001-CEM-018-
CORE 1.JPG

Parent material photo

Site Number

18

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5750	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	92
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	78	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	64	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	88	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.4	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3450	Manganese 0 to 5cm:	77	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

19

Date sampled

11/2/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	<input type="text" value="19"/>	Location of sampling site	<input type="text" value="~80 m S of Aspen site.Treed."/>
Historical Inco sample station	<input type="text" value="8"/>		
OBM map number	<input type="text" value="41 I/4"/>	Field observations	<input type="text" value="Found level area with slightly undulating topography; highest point in area. Hard to find suitable sampling site; area very rocky. Veg: T. aspen, maple, oak, birch, fir, clubmoss, wintergreen, ferns, grasses, juniper. Floor: leaf litter, needles, twigs, logs."/>
Easting	<input type="text" value="444439"/>		
Northing	<input type="text" value="5114695"/>	NAD83 Zone 17	
Reference	<input type="text" value="Hwy 6"/>		
Altitude(m)	<input type="text" value="248"/>		
Conditions			

SOIL DESCRIPTION

Soil profile horizon descriptions

Parent material field description

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:
 Depth 5 - 10 cm:
 Depth 10 - 20 cm:
 Dup. Depth 0 - 5 cm:
 Dup. Depth 5 - 10 cm:
 Dup. Depth 10 - 20 cm:
 Parent material:

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

19

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	47
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	2100	Cobalt Parent:	6	Nickel Parent:	22
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	36	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	125	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	37
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	84	Iron Parent:	24000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	59
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3700	Zinc Parent:	23
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	315	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2400	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	51	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

20

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

20

Location of sampling site

Hwy 637 @ Wanapitei River.

Historical Inco sample station

32

OBM map number

41 I/2

Field observations

Found level, forested, rocky area. Evidence of logging at one time but tree stumps appear to be very old. Bedrock outcrops visible, trees very tall. Veg: white pine, oak, maple, T. aspen, spruce, jack pine, moss, wintergreen, ferns, lichen. Floor: leaf litter, needles, logs, twigs, cones, moss.

Easting

506191

NAD83
Zone 17

Northing

5112251

Reference

Hwy 637 @
Wanapitei River

Altitude(m)

246

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm (10YR2/1); Ae: 0 to 6 cm (7.5YR5/2); B: 0 to 15 cm (7.5YR3/4); BC: 8 to >30 cm (10YR5/4).
Texture: clay loam; soil horizons and depth were fairly uniform throughout site.

Parent material field description

Sample was taken between 70 and 100 cm.
Texture: clay. Colour: 10YR 5/3. Soil was very sticky and wet.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10526

Depth 5 - 10 cm:

10528

Depth 10 - 20 cm:

10530

Dup. Depth 0 - 5 cm:

10527

Dup. Depth 5 - 10 cm

10529

Dup. Depth 10 - 20 cm:

10531

Parent material:

10532

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\020\2001-CEM-020-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\020\CEM-020-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\020\2001-CEM-020-
Core_1.JPG

Parent material photo

Site Number

20

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17000	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	130
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	34000	Cobalt Parent:	17	Nickel Parent:	61
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	100	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	39	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	260	Iron Parent:	45000	Strontium Parent:	71
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	54	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.7	Lead Parent:	8	Vanadium Parent:	73
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	62
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	13000	Zinc Parent:	64
Calcium 0 to 5cm:	3400	Manganese 0 to 5cm:	600	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7200	Manganese Parent:	540	pH Parent:	NA
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

21

Date sampled

12/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

21

Location of sampling site

Site within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Site on slope; area very hummocky, some exposed rock; a few downed trees. Trees: 50% oak, 20% maple. Shrubs: lichen, blueberry, birdsfoot trefoil. Herbs: 10% moss, 20% grass.

Easting

460038

NAD83
Zone 17

Northing

5109890

Reference

Helicopter

Altitude(m)

462

Conditions

Sunny & windy;
snow on ground

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 6 cm (black); Bt: 6 to >20 cm, (dark brown).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11823

Depth 5 - 10 cm:

11824

Depth 10 - 20 cm:

11825

Dup. Depth 0 - 5 cm:

11826

Dup. Depth 5 - 10 cm:

11827

Dup. Depth 10 - 20 cm:

11828

Parent material:

Parent material field description

No parent material was collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\021\2001-CEM-021-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\021\CEM-021-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\021\2001-CEM-021-
CORE_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

21

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	5450	Cobalt 0 to 5cm:	2.5	Nickel 0 to 5cm:	62
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	64	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	6	Copper 5 to 10cm:	20	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	61	Iron 0 to 5cm:	7850	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	51	Iron 5 to 10cm:	14000	Strontium 5 to 10cm:	26
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	100	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	48
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	615	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	960	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	540	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1600	Manganese 5 to 10cm:	160	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	1	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	59	Molybdenum 5 to 10cm:	1.8	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

22

Date sampled

11/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

22

Location of sampling site

Hwy 69 S to Hwy 64, turn east and follow directly to site.

Historical Inco sample station

51

OBM map number

41 I/1

Field observations

N-S slope, 10% slope, no understory. Site has less than 1% downed limbs and twigs. Ground is covered with leaf and needle litter. Moss around base of trees. Site is forested with adult balsam fir and very little shrub species.

Easting

544889

NAD83
Zone 17

Northing

5104909

Reference

Hwy 64, Noelville

Altitude(m)

235

Conditions

Cloudy, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 5 cm; Ae: 5 to 10 cm (7.5YR 6/2); Bf: 10 to 17 cm (7.5YR4/6); Bf: 17 to 122 cm (7.5YR 5/6). LFH: 0 to 2 cm; Ah: 0 to 2 cm; Ae: 2 to 6 cm (7.5YR 6/2); Bf: 6 to 9 cm (7.5YR 4/6); Bg: 9 to 18 cm (7.5YR 6/2); Bf: 18 to 25 cm (7.5YR 4/6); Bt: 25 to 122 cm (10YR 6/3). Texture: sandy.

Parent material field description

Sample was collected between 80 and 122 cm. Texture: clay. Colour: 2.5Y 5/2; mottles: 2.5Y 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25379

Depth 5 - 10 cm:

25380

Depth 10 - 20 cm:

25381

Dup. Depth 0 - 5 cm:

25376

Dup. Depth 5 - 10 cm

25377

Dup. Depth 10 - 20 cm:

25378

Parent material:

25385

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\022\2001-CEM-22-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\022\CEM-022-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\022\2001-CEM-22-
Core_1.jpg

Parent material photo

Site Number

22

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8600	Cobalt 0 to 5cm:	2.5	Nickel 0 to 5cm:	20
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	6	Nickel Parent:	16
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	15	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	18	Selenium Parent:	ND
Barium 0 to 5cm:	69	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	44	Iron Parent:	16000	Strontium Parent:	44
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	22	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	38
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	15
Calcium 0 to 5cm:	3150	Manganese 0 to 5cm:	160	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6200	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	38	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

23

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

23

Location of sampling site

Hwy 637@ Mahzenazing River.

Historical Inco sample station

33

OBM map number

41 I/3

Field observations

Area very rocky and hilly. Found level area with slightly undulating topography within forest. Forest dominated by conifers. Area at highest elevation of surrounding area. Veg: fir, spruce, white pine, large tooth aspen, T. aspen, oak, maple, moss, lichen, ferns, bunchberry. Floor: leaf litter, twigs, needles, logs.

Easting

489480

NAD83
Zone 17

Northing

5104742

Reference

Mahzenazing
River & Hwy 637

Altitude(m)

246

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 2 cm; Ae: 0 to 4 cm (10YR6/2); B: 0 to 17 cm (10YR4/4); BC: 4 to >30 cm (2.5Y5/5). Texture: silty clay loam. Horizon depths and profiles changed core to core.

Parent material field description

Sample was taken between 75 and 100 cm. Texture: clay. Mottles: many, medium, distinct, strong brown (7.5YR 5/4). Soil very hard to auger.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10516

Depth 5 - 10 cm:

10518

Depth 10 - 20 cm:

10520

Dup. Depth 0 - 5 cm:

10517

Dup. Depth 5 - 10 cm

10519

Dup. Depth 10 - 20 cm:

10521

Parent material:

10522

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\023\2001-CEM-023-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\023\CEM-023-
soilprofilecdr.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\023\2001-CEM-023-
Core_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

23

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	96
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	27000	Cobalt Parent:	15	Nickel Parent:	44
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	57	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	34	Selenium Parent:	ND
Barium 0 to 5cm:	89	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	210	Iron Parent:	36000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	7	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	58
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9800	Zinc Parent:	42
Calcium 0 to 5cm:	3150	Manganese 0 to 5cm:	455	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5200	Manganese Parent:	380	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	82	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

24

Date sampled

12/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

24

Location of sampling site

~320m SW of UTM site.

Historical Inco sample station

OBM map number

41 I/1

Field observations

Undulating area; mature forest. Veg: T.aspen, largetooth aspen, maple, fir, spruce, birch, clubmoss, braken fern, grasses. Floor cover: leaf litter, needles, logs, twigs.

Easting

556826

NAD83
Zone 17

Northing

5101889

Reference

Altitude(m)

219

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm, Ah: 0 to 2 cm, Ae: 0 to 15 cm (10YR 6/2), B: 15 to 22 cm (10YR 4/6); BC: 15 to >30 cm (2.5Y 5/4).

Parent material field description

Soil was sampled between 75 and 110 cm; colour: 2.5Y 6/3; texture: silty clay loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26944

Depth 5 - 10 cm:

26946

Depth 10 - 20 cm:

26948

Dup. Depth 0 - 5 cm:

26945

Dup. Depth 5 - 10 cm

26947

Dup. Depth 10 - 20 cm:

26949

Parent material:

26950

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\024\2001-CEM-024-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\024\CEM-024-
soilprofilecdr.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\024\2001-CEM-024-
Core_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

24

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5250	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	30
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	12000	Cobalt Parent:	5	Nickel Parent:	17
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	16	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	7100	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	63	Iron Parent:	18000	Strontium Parent:	80
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	40
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	960	Zinc 0 to 5cm:	18
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3800	Zinc Parent:	19
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	270	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	8800	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	46	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

25

Date sampled

12/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

25

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

W to E slope 1%, moss covered dead logs. Moss and Lichen on live trees. Herb: ground pine, poverty grass, polytrichium, brachythecium; shrub: 80% alder, bracken fern, 4% balsam fir. Trees: 5% balsam fir, 1% poplar.

Easting

537349

NAD83
Zone 17

Northing

5101810

Reference

Alban

Altitude(m)

241

Conditions

Clear, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm (black); Ae: 1 to 6 cm; Bt: 2 to 9 cm (10YR 5/3), silty; Bg: 9 to 16 cm (2.5YR 6/2), silty to sandy.

Parent material field description

Sample collected between 82 and 109 cm. Texture: silty to clay. Colour: 2.5Y 5/2; mottles: 2.5Y 5/6.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26094

Depth 5 - 10 cm:

26095

Depth 10 - 20 cm:

26096

Dup. Depth 0 - 5 cm:

26097

Dup. Depth 5 - 10 cm:

26098

Dup. Depth 10 - 20 cm:

26099

Parent material:

26103

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\025\CEM-025-
soilprofilecdr.jpg

Core photo 1

Parent material photo

Site Number

25

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	39
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	14
Aluminum 10 to 20cm:	14000	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	15
Aluminum Parent:	9100	Cobalt Parent:	6	Nickel Parent:	17
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	8.4	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	6.5	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	61	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	56	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	46	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	44
Barium Parent:	34	Iron Parent:	17000	Strontium Parent:	48
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	28	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	36
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	37
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2450	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2950	Zinc 10 to 20cm:	22
Cadmium Parent:	ND	Magnesium Parent:	3400	Zinc Parent:	23
Calcium 0 to 5cm:	4750	Manganese 0 to 5cm:	345	pH 0 to 5cm:	5
Calcium 5 to 10cm:	4400	Manganese 5 to 10cm:	245	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	4950	Manganese 10 to 20cm:	180	pH 10 to 20cm:	5.5
Calcium Parent:	6800	Manganese Parent:	240	pH Parent:	6.5
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	65
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	14
Chromium 10 to 20cm:	32	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	7.4
Chromium Parent:	33	Molybdenum Parent:	ND	C TOC Parent:	0.56

Sudbury Regional Soils Project 2001

Site Number

26

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

26

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Rocky terrain. Trees: spruce, red pine.

Easting

511061

Northing

5100526

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ae: fine-grained sand; Bt: (yellow), fine-grained sand-sandy; Bg: (grey), fine-grained sand to clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25981

Depth 5 - 10 cm:

25982

Depth 10 - 20 cm:

25983

Dup. Depth 0 - 5 cm:

25984

Dup. Depth 5 - 10 cm:

25985

Dup. Depth 10 - 20 cm:

25986

Parent material field description

Could not collect sample; soil too shallow.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\026\2001-CEM-026-
Site_1.jpg

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\026\2001-CEM-026-
Core_1.jpg

Parent material photo

Site Number

26

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5550	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	75
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	66	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	60	Iron 0 to 5cm:	10200	Strontium 0 to 5cm:	13
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3350	Manganese 0 to 5cm:	295	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	21	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

27

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

27

Location of sampling site

Hwy 637: ~15.6 km east of Kilarney.

Historical Inco sample station

34

OBM map number

41 I/3

Field observations

Found level area with slightly undulating topography. Forest dominated by conifers. Soil is wet, trees very tall. Veg: fir, white pine, spruce, cedar, club moss, maple, bunchberry, grasses, fern, moss, T. aspen, oak; Floor: leaf litter, twigs, logs, cones.

Easting

474408

Northing

5098193

NAD83
Zone 17

Reference

Altitude(m)

223

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

50% of cores: LFH: 5 to 0 cm; Ah: 0 to 2 cm; Ae: 0 to 6 cm (10YR1/1); Bf: 0 to 15 cm (10YR4/4 to 7.5YR3/4); BC: 8 to >30 cm (10YR3/4). Other 50% of cores: Ah: 0 to 2 cm; Bf: 0 to 12 cm 10YR 4/4 to 7.5 YR 3/4) BC: 0 to 30 cm (10YR 5/4) Texture: silty clay. Soil very wet and sticky.

Parent material field description

Sample was taken between 75 and 105 cm. Texture: silty clay to clay. Colour: 10YR 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10506

Depth 5 - 10 cm:

10508

Depth 10 - 20 cm:

10510

Dup. Depth 0 - 5 cm:

10507

Dup. Depth 5 - 10 cm

10509

Dup. Depth 10 - 20 cm:

10511

Parent material:

10512

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\027\2001-CEM-027-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\027\CEM-027-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\027\2001-CEM-027-
Core_1.JPG

Parent material photo

Site Number

27

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	66
Aluminum 5 to 10cm:	19000	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	19
Aluminum 10 to 20cm:	24500	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	21
Aluminum Parent:	17000	Cobalt Parent:	6	Nickel Parent:	26
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	45	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	14	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	11	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	6	Selenium Parent:	ND
Barium 0 to 5cm:	95	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	68	Iron 5 to 10cm:	20500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	74	Iron 10 to 20cm:	25500	Strontium 10 to 20cm:	37
Barium Parent:	110	Iron Parent:	19000	Strontium Parent:	43
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	45
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1850	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2650	Zinc 5 to 10cm:	36
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4600	Zinc 10 to 20cm:	44
Cadmium Parent:	ND	Magnesium Parent:	3700	Zinc Parent:	14
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	175	pH 0 to 5cm:	4
Calcium 5 to 10cm:	2450	Manganese 5 to 10cm:	175	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3100	Manganese 10 to 20cm:	190	pH 10 to 20cm:	4.5
Calcium Parent:	3800	Manganese Parent:	170	pH Parent:	5.5
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	173
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	29
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	19
Chromium Parent:	50	Molybdenum Parent:	ND	C TOC Parent:	1.1

Sudbury Regional Soils Project 2001

Site Number

28

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F028

Location of sampling site

Helicopter site: east of the Wanapitei River near Grigg Lake, Grigg Township.

Historical Inco sample station

OBM map number

41 P/2

Field observations

Thickly vegetated, swampy area, level. Ground cover is a thick shrubby layer and some deadwood.

Easting

510092

Northing

5206487

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

289

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist and consolidated, 3 to 6 cm thick.
Horizon 2 (Ae) is a light grey-brown, moist, consolidated silt, persists to 15 to 20 cm.

Parent material field description

Depth sample collected from 40 to 60 cm consists of a light grey, wet, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12903

Depth 5 - 10 cm:

12905

Depth 10 - 20 cm:

12907

Dup. Depth 0 - 5 cm:

12904

Dup. Depth 5 - 10 cm:

12906

Dup. Depth 10 - 20 cm:

12908

Parent material:

12911

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F028\F028-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F028\F028-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F028\F028-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

28

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9350	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	62
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	12	Nickel Parent:	40
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	50	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	40
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	63	Iron Parent:	23000	Strontium Parent:	38
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	18	Vanadium Parent:	50
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6200	Zinc Parent:	38
Calcium 0 to 5cm:	3400	Manganese 0 to 5cm:	165	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

29

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

29

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Flat with some hummocks, downed trees. Trees: 5% spruce, jack pine. Shrubs: 20% baby birch and baby jack pine. Herbs: moss, lichen.

Easting

487894

NAD83
Zone 17

Northing

5202908

Reference

Helicopter

Altitude(m)

453

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 2 cm; Ae: 2 to 4 cm; Bf: 4 to 13 cm (red brown), sandy; Bt: >13 cm (yellow brown), silty sand. LFH: 0 to 8 cm; Ah: 0 to 8 cm; Ae: 8 to 15 cm; Bt: >15 cm (yellow brown), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11742

Depth 5 - 10 cm:

11743

Depth 10 - 20 cm:

11744

Dup. Depth 0 - 5 cm:

11745

Dup. Depth 5 - 10 cm:

11746

Dup. Depth 10 - 20 cm:

11747

Parent material:

Parent material field description

No sample collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\029\CEM-029-
soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

29

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	52
Aluminum 5 to 10cm:	10200	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	13
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	13
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	44	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	12	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	3.2	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	75	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	39	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	39	Iron 10 to 20cm:	15500	Strontium 10 to 20cm:	40
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	38
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	950	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	30
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1600	Zinc 10 to 20cm:	42
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	330	pH 0 to 5cm:	4
Calcium 5 to 10cm:	2700	Manganese 5 to 10cm:	130	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3050	Manganese 10 to 20cm:	200	pH 10 to 20cm:	4.8
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	166
Chromium 5 to 10cm:	26	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	38
Chromium 10 to 20cm:	34	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

30

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

30

Location of sampling site

~360m NW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/5

Field observations

Sloping area (~15 degrees), site on the side of a forested hill; area very rocky; swamp at the bottom of hill. Veg: birch, fir, maple, white pine, T. aspen, red pine, sheep laurel, bunchberry, ferns, moss. Floor: needles, leaf litter, twigs, logs.

Easting

502581

NAD83
Zone 17

Northing

5203703

Reference

Helicopter

Altitude(m)

436

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah 0 to 2 cm; Ae: 0 to 11 cm (10YR 5/2); Bf: 2 to >30 cm (7.5YR 2.5/3) texture: silty sand with some pebble size clasts. Soil horizon depth and colour were highly variable.

Parent material field description

No parent material collected. Soil too shallow, very rocky.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11414

Depth 5 - 10 cm:

11416

Depth 10 - 20 cm:

11418

Dup. Depth 0 - 5 cm:

11415

Dup. Depth 5 - 10 cm

11417

Dup. Depth 10 - 20 cm:

11419

Parent material:

11420

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\030\2001-CEM-030-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\030\CEM-030-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\030\2001-CEM-030-
Core_1.JPG

Parent material photo

Site Number

30

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4750	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	102
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	62	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	64	Iron 0 to 5cm:	9500	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	655	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	170	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

31

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

31

Location of sampling site

~40m SE of UTM site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Area flat, slightly sloping with undulating topography. Veg: maple, spruce, jackpine, white pine, wintergreen, ferns, sheep laurel, clubmoss.

Easting

492777

NAD83
Zone 17

Northing

5202668

Reference

Helicopter

Altitude(m)

461

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 2 cm; Ae: 1 to 6 cm; Bm: 2 to >30 cm. Texture: silty clay loam.

Parent material field description

Sample was taken at 2 locations between 50 and 75 cm. Hit bedrock @ 75 cm. Texture: sandy silt (fine-grained sand: 20 to 25%). Light brown in colour; mottles: common, prominent, irregular, orangey red.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11461

Depth 5 - 10 cm:

11463

Depth 10 - 20 cm:

11465

Dup. Depth 0 - 5 cm:

11462

Dup. Depth 5 - 10 cm

11464

Dup. Depth 10 - 20 cm:

11466

Parent material:

11467

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\031\2001-CEM-031-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\031\CEM-031-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\031\2001-CEM-031-Core 1.JPG

Parent material photo

Site Number

31

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7550	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	73
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	8	Nickel Parent:	26
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	53	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	99	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	56	Iron Parent:	23000	Strontium Parent:	44
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	49
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	780	Zinc 0 to 5cm:	13
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4000	Zinc Parent:	25
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	135	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	53	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

32

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F032

Location of sampling site

Helicopter site: north of Lake Wanapitei near Chiniguchi Lake, Telfer Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous and deciduous (birch) slope area near swamp, level. Ground cover is predominantly leaf and needle litter.

Easting

525327

NAD83
Zone 17

Northing

5202472

Reference

Helicopter

Altitude(m)

356

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist and unconsolidated, 5 to 7 cm thick. Horizon 2 (Bt) is a medium brown, fine-grained, moist sand mixed with occasional pebbles, and persists to 20 cm.

Parent material field description

Depth sample collected from 20 to 40 cm consists of a medium brown, fine-grained, moist sand mixed with occasional pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12894

Depth 5 - 10 cm:

12896

Depth 10 - 20 cm:

12898

Dup. Depth 0 - 5 cm:

12895

Dup. Depth 5 - 10 cm

12897

Dup. Depth 10 - 20 cm:

12899

Parent material:

12902

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F032\F032-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F032\F032-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F032\F032-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

32

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	56
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	38	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	73	Iron 0 to 5cm:	9300	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	49	Iron Parent:	18000	Strontium Parent:	24
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	29	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	580	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	18
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	185	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1700	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	45	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

33

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F033

Location of sampling site

Helicopter site: north of Sturgeon River Provincial Park, Clary Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Thickly vegetated coniferous (pine) plantation. Ground cover is a thick shrub layer and needles.

Easting

540628

NAD83
Zone 17

Northing

5202767

Reference

Helicopter

Altitude(m)

280

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Ae) is a dark grey-brown, moist sand, to 6 cm. Horizon 2 (Bf) is an orange-brown, drier, fine-grained sand, persists to 20 cm. Certain cores contain a very thin (<1 cm thick) organic layer (LFH/Ah), certain cores contain only sand at the surface.

Parent material field description

Depth sample collected from 80 to 120 cm consists of an orange-brown, drier, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12885

Depth 5 - 10 cm:

12887

Depth 10 - 20 cm:

12889

Dup. Depth 0 - 5 cm:

12886

Dup. Depth 5 - 10 cm

12888

Dup. Depth 10 - 20 cm:

12890

Parent material:

12893

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F033\F033-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F033\F033-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F033\F033-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

33

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9750	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	18
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5300	Cobalt Parent:	4	Nickel Parent:	14
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	7.5	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	6	Selenium Parent:	ND
Barium 0 to 5cm:	33	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	19	Iron Parent:	11000	Strontium Parent:	15
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	6	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	21
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	14
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	23	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

34

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F034

Location of sampling site

Helicopter site: east of Obabika Lake, Scholes Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Thickly vegetated wooded coniferous area on shore of swamp. Not enough 10-20 cm sample found.

Easting

554651

Northing

5202413

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, between 5 and 10 cm thick. Horizon 2 (Bf) is a light medium red, moist, medium- to fine-grained sand, to 10 to 15 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12751

Depth 5 - 10 cm:

12753

Depth 10 - 20 cm:

12755

Dup. Depth 0 - 5 cm:

12752

Dup. Depth 5 - 10 cm:

12754

Dup. Depth 10 - 20 cm:

12756

Parent material:

Parent material field description

Depth sample not possible

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F034\F034-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F034\F034-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F034\F034-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

34

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6050	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	73
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	27
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	53	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	11	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	120	Iron 0 to 5cm:	9150	Strontium 0 to 5cm:	38
Barium 5 to 10cm:	55	Iron 5 to 10cm:	18000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	52	Iron 10 to 20cm:	21000	Strontium 10 to 20cm:	45
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	42
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.55	Magnesium 0 to 5cm:	1050	Zinc 0 to 5cm:	78
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2050	Zinc 5 to 10cm:	48
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2450	Zinc 10 to 20cm:	59
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4350	Manganese 0 to 5cm:	545	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	3500	Manganese 5 to 10cm:	225	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3450	Manganese 10 to 20cm:	270	pH 10 to 20cm:	4.8
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	216
Chromium 5 to 10cm:	41	Molybdenum 5 to 10cm:	0.85	C TOC 5 to 10cm:	56
Chromium 10 to 20cm:	54	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	19
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

35

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

35

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Site surrounded by a deforested/peatland.

Easting

468643

Northing

5202187

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

439

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; charcoal layer: 0 to 1 cm; Ae: 1 to 5 cm; BC: >5 cm. Texture: silt/clay.

Parent material field description

No parent material collected; soil too shallow.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26408

Depth 5 - 10 cm:

26381

Depth 10 - 20 cm:

26382

Dup. Depth 0 - 5 cm:

26405

Dup. Depth 5 - 10 cm:

26406

Dup. Depth 10 - 20 cm:

26407

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\035\2001-CEM-035-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\035\CEM-035-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\035\2001-CEM-035-
Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

35

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4700	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	38
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	63	Iron 0 to 5cm:	5850	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	34	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	630	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2800	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

36

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

36

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Dense spruce/fir forest. Clumps of peat.

Easting

476019

Northing

5201865

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 7 cm; Bt: 3 to >10 cm.

Parent material field description

No parent material was collected.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25920

Depth 5 - 10 cm:

25921

Depth 10 - 20 cm:

25922

Dup. Depth 0 - 5 cm:

25923

Dup. Depth 5 - 10 cm:

25924

Dup. Depth 10 - 20 cm:

25925

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\036\2001-CEM-036-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\036\CEM-036-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

36

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	48
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	36	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	59	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	27	Vanadium 0 to 5cm:	43
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	18
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	770	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	4.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

37

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F037

Location of sampling site

Helicopter site: north of Lake Wanapitei near Chiniguchi Lake, Telfer Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area near swamp, slight slope. Small saplings, thick shrub layer.

Easting

520532

Northing

5199851

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

343

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist and unconsolidated, 3 to 5 cm thick. Horizon 2 (Bf) is an orange-brown, fine-grained sand mixed with occasional pebbles, and persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 40 cm consists of a light grey-brown, very wet silt. Depth sample was difficult to obtain.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12912

Depth 5 - 10 cm:

12914

Depth 10 - 20 cm:

12916

Dup. Depth 0 - 5 cm:

12913

Dup. Depth 5 - 10 cm:

12915

Dup. Depth 10 - 20 cm:

12917

Parent material:

12920

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F037\F037-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F037\F037-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F037\F037-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

37

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7350	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	75
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	6	Nickel Parent:	27
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	55	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	8.8	Selenium Parent:	ND
Barium 0 to 5cm:	58	Iron 0 to 5cm:	10250	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	37	Iron Parent:	16000	Strontium Parent:	28
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	660	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	17
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	85	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2100	Manganese Parent:	110	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	57	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

38

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

38

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Spruce and fir forest.

Easting

486011

NAD83
Zone 17

Northing

5198152

Reference

Helicopter

Altitude(m)

453

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ae: 0 to 8 cm; charcoal layer @ 5 cm; Bf: 8 to >20 cm.

Parent material field description

Sample collected between 75 and 100 cm.
Teature: fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25932

Depth 5 - 10 cm:

25933

Depth 10 - 20 cm:

25934

Dup. Depth 0 - 5 cm:

25929

Dup. Depth 5 - 10 cm

25930

Dup. Depth 10 - 20 cm:

25931

Parent material:

25938

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\038\2001-CEM-038-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\038\CEM-038-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\038\2001-CEM-038-
Core_1.jpg

Parent material photo

Site Number

38

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5100	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	112
Aluminum 5 to 10cm:	10500	Cobalt 5 to 10cm:	1.5	Nickel 5 to 10cm:	17
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	19
Aluminum Parent:	8400	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	90	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	17	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	10	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	119	Iron 0 to 5cm:	7550	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	62	Iron 5 to 10cm:	10900	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	50	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	29
Barium Parent:	22	Iron Parent:	14000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	63	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	42
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	49
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	28
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	710	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2150	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	4000	Zinc Parent:	17
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	87	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2250	Manganese 5 to 10cm:	97	pH 5 to 10cm:	3.7
Calcium 10 to 20cm:	2700	Manganese 10 to 20cm:	120	pH 10 to 20cm:	4.5
Calcium Parent:	2600	Manganese Parent:	150	pH Parent:	5.1
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	40	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	50
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	23
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	4.3

Sudbury Regional Soils Project 2001

Site Number

39

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F039

Location of sampling site

Helicopter site: northwest of Lake Wanapitei near Fraleck Lake, Fraleck Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area, exposed bedrock, slight slope. Abundant small saplings and thick shrub layer.

Easting

507972

Northing

5199103

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 3 to 7 cm thick. Horizon 2 (Bf) is a red-brown, moist, fine-grained to silty sand, persists to 10 to 20 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12778

Depth 5 - 10 cm:

12780

Depth 10 - 20 cm:

12782

Dup. Depth 0 - 5 cm:

12779

Dup. Depth 5 - 10 cm:

12781

Dup. Depth 10 - 20 cm:

12783

Parent material field description

No depth sample possible.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F039\F039-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F039\F039-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F039\F039-core.jpg

Parent material photo

Site Number

39

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	95
Aluminum 5 to 10cm:	10300	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	23
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	25
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	65	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	21	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8.6	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	61	Iron 0 to 5cm:	10650	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	41	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	35	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	50
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	13	Vanadium 10 to 20cm:	56
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1070	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2200	Zinc 5 to 10cm:	19
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2950	Zinc 10 to 20cm:	22
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2450	Manganese 5 to 10cm:	175	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3250	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	2	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	3.5	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	67	Molybdenum 10 to 20cm:	3	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

40

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F040

Location of sampling site

Helicopter site: near Laura Lake, McConnell Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Narrow wooded birch area between lakes, on a slope. Ground cover is a thick leaf litter layer, some small saplings.

Easting

531007

Northing

5197023

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 7 cm thick. Horizon 2 (Bt) is an orange sand mixed with gravel, to 10 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12786

Depth 5 - 10 cm:

12788

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12787

Dup. Depth 5 - 10 cm:

12789

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F040\F040-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F040\F040-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F040\F040-core.jpg

Parent material photo

Site Number

40

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9450	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	80
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	48	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	104	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	40
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	355	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	1.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

41

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F041

Location of sampling site

Helicopter site: southeast of Halleck Lake, Shepard Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Thickly vegetated wooded coniferous/deciduous area, level. Ground cover is Labrador tea and litter.

Easting

535555

NAD83
Zone 17

Northing

5196942

Reference

Helicopter

Altitude(m)

316

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist and cohesive mat, very rooted and fungal, 8 cm thick. Horizon 2 (Ae) is grey, coarse grained sand to gravel to 20 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12921

Depth 5 - 10 cm:

12923

Depth 10 - 20 cm:

12925

Dup. Depth 0 - 5 cm:

12922

Dup. Depth 5 - 10 cm

12924

Dup. Depth 10 - 20 cm:

12926

Parent material:

12929

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F041\F041-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F041\F041-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F041\F041-core.jpg

Parent material photo

Site Number

41

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5950	Cobalt 0 to 5cm:	2.5	Nickel 0 to 5cm:	80
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	9300	Cobalt Parent:	2	Nickel Parent:	24
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	63	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	5	Copper Parent:	3	Selenium Parent:	ND
Barium 0 to 5cm:	65	Iron 0 to 5cm:	4950	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	23	Iron Parent:	9400	Strontium Parent:	41
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	37	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	38
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	575	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	10
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	70	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3000	Manganese Parent:	100	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	51	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

42

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F042

Location of sampling site

Helicopter site: between Sturgeon River and Emerald Lake, Afton Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded coniferous hilltop, level. Ground cover is a thick litter layer, as well as deadwood.

Easting

546653

NAD83
Zone 17

Northing

5196359

Reference

Helicopter

Altitude(m)

354

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, unconsolidated, 5 to 7 cm thick. Horizon 2 (Ae) is a light grey, very dense and consolidated silt, between 2 and 4 cm thick. Horizon 3 (Bt) is a medium brown, fine-grained, moist sand, to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown, fine-grained, moist sand mixed with gravel with increasing depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12974

Depth 5 - 10 cm:

12976

Depth 10 - 20 cm:

12978

Dup. Depth 0 - 5 cm:

12975

Dup. Depth 5 - 10 cm

12977

Dup. Depth 10 - 20 cm:

12979

Parent material:

12983

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F042\F042-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F042\F042-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F042\F042-core.jpg

Parent material photo

Site Number

42

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5750	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	77
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	7	Nickel Parent:	38
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	61	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	8650	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	30	Iron Parent:	15000	Strontium Parent:	32
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	700	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3700	Zinc Parent:	19
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	107	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	68	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

43

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

43

Location of sampling site

~760m SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Sample taken in a level area within a spruce forest. Soil very shallow and gravelly. Veg: spruce (dominant), jackpine, Labrador tea, lichen, wintergreen, sheep laurel, bunchberry, moss (covering forest floor). Floor: needles, moss, logs, twigs.

Easting

494301

NAD83
Zone 17

Northing

5194202

Reference

Helicopter

Altitude(m)

389

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Ae: 0 to 6 cm; Bm: 0 to >15 cm. Texture coarse sand with abundant pebble size clasts.

Parent material field description

No parent material collected. Soil too gravelly; could not auger below 30 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11451

Depth 5 - 10 cm:

11453

Depth 10 - 20 cm:

11455

Dup. Depth 0 - 5 cm:

11452

Dup. Depth 5 - 10 cm

11454

Dup. Depth 10 - 20 cm:

11456

Parent material:

11457

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\043\2001-CEM-043-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\043\CEM-043-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\043\2001-CEM-043-
Core_1.JPG

Parent material photo

Site Number

43

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5700	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	117
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	5	Copper 0 to 5cm:	88	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	69	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	63	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.85	Magnesium 0 to 5cm:	850	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	135	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

44

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

44

Location of sampling site

~1.02km SW of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Level area on side of hill, dominated by conifers. Veg: fir, spruce, sheep laurel, bunchberry.

Easting

476878

NAD83
Zone 17

Northing

5193317

Reference

Helicopter

Altitude(m)

456

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

Insufficient time to collect.

Parent material field description

No parent material collected.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11471

Depth 5 - 10 cm:

11473

Depth 10 - 20 cm:

11475

Dup. Depth 0 - 5 cm:

11472

Dup. Depth 5 - 10 cm

11474

Dup. Depth 10 - 20 cm:

11476

Parent material:

11477

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\044\2001-CEM-044-Core_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

44

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5250	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	85
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	54	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	125	Iron 0 to 5cm:	6950	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	795	Zinc 0 to 5cm:	34
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2600	Manganese 0 to 5cm:	160	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

45

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

45

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Snow on ground. Site is densely forested and lies off a lumber road. Has some fallen trees and limbs. It is a mature forest. Herbs: bunchberry (20%), brachythecium (30%); shrubs: sweet fern (10%); trees: red pine (5%), balsam fir (20%), white birch (5%).

Easting

463477

Northing

5192175

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

422

Conditions

Cold, windy, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 5 cm (black); Ae: 5 to 17 cm (light grey), sandy to silty; Bf: 17 to 23 cm (brownish orange) silty; Bt: 8 to >20 cm (brownish yellow), very fine-grained silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25939

Depth 5 - 10 cm:

25940

Depth 10 - 20 cm:

25941

Dup. Depth 0 - 5 cm:

25942

Dup. Depth 5 - 10 cm:

25943

Dup. Depth 10 - 20 cm:

25944

Parent material:

Parent material field description

No parent material could be collected

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\045\CEM-045-
soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

45

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	55
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	36	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	52	Iron 0 to 5cm:	8350	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	795	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

46

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

46

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

???

Field observations

Top of ridge: sloping away on all sides, exposed rock, leaf coverage and needles, downed trees. Trees: 20% birch and jack pine; shrubs: 40% sweet fern, bracken fern; herbs: lichen, moss.

Easting

470987

NAD83
Zone 17

Northing

5192585

Reference

Helicopter

Altitude(m)

442

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 12 cm; Ah: 0 to 8 cm (black) roots, fibrous to mesic; Ae: 8 to 10.5 cm (grey), sandy silt; Bt: 10.5 to 17 cm; Bm: 17 to 19 cm (light beige).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11769

Depth 5 - 10 cm:

11770

Depth 10 - 20 cm:

11771

Dup. Depth 0 - 5 cm:

11772

Dup. Depth 5 - 10 cm:

11773

Dup. Depth 10 - 20 cm:

11774

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\046\2001-CEM-046-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\046\CEM-046-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\046\2001-CEM-046-
CORE_1.JPG

Parent material photo

Site Number

46

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10250	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	43
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	25	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	47	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3450	Manganese 0 to 5cm:	165	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

47

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F047

Location of sampling site

Helicopter site: near Hwy 805, south of Emerald Lake near Iron Mountain, Scholes Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded deciduous (birch/poplar) area, level, some small saplings. Ground cover is a thick leaf/litter area.

Easting

554067

NAD83
Zone 17

Northing

5193436

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt/Bm) is brown to red sand and some organic material, with trace silt and gravel, to 10 cm.

Parent material field description

Depth sample collected from 35 to 50 cm consists of a brown to red fine-grained sand mixed with gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13330

Depth 5 - 10 cm:

13332

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13331

Dup. Depth 5 - 10 cm:

13333

Dup. Depth 10 - 20 cm:

Parent material:

13335

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F047\F047-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F047\F047-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F047\F047-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

47

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	51
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	45	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	73	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2850	Zinc 0 to 5cm:	66
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2800	Manganese 0 to 5cm:	500	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

48

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

48

Location of sampling site

~800m SE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Level area with slightly undulating topography. Area very rocky, bedrock and boulders visible on surface; shallow soil; swamp to the W. Veg: dominated by T. aspen, jack pine, birch, bunchberry, ferns, moss. Floor: leaf litter, needles, twigs, logs, rocks, stumps.

Easting

485312

NAD83
Zone 17

Northing

5190880

Reference

Helicopter

Altitude(m)

449

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm; Ae: 1 to 18 cm (7.5 YR 5/2); Bf: 18 to >25 cm (7.5YR 4/6).
Texture: silty sand with abundant gravel. In addition to the above profile, some cores also contained a Bm horizon @ ~20 cm.

Parent material field description

No parent material could be collected; area too rocky.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11424

Depth 5 - 10 cm:

11433

Depth 10 - 20 cm:

11435

Dup. Depth 0 - 5 cm:

11425

Dup. Depth 5 - 10 cm

11434

Dup. Depth 10 - 20 cm:

11436

Parent material:

11437

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\048\2001-CEM-044-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\048\CEM-048-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\048\2001-CEM-048-
Core_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

48

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5700	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	81
Aluminum 5 to 10cm:	9350	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	30
Aluminum 10 to 20cm:	14000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	46
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	63	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	12	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.6	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	110	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	29	Iron 5 to 10cm:	15500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	31	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	41	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	41	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	50
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	990	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	16
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3750	Zinc 10 to 20cm:	26
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	220	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	125	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	3250	Manganese 10 to 20cm:	165	pH 10 to 20cm:	4.9
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	2.8	C TOC 0 to 5cm:	129
Chromium 5 to 10cm:	62	Molybdenum 5 to 10cm:	3.6	C TOC 5 to 10cm:	28
Chromium 10 to 20cm:	115	Molybdenum 10 to 20cm:	3.8	C TOC 10 to 20cm:	17
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

49

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F049

Location of sampling site

Helicopter site: near Hwy 805, western shore of Manitou Lake near Ranger Point, Clement Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded coniferous/deciduous slope area. Cores only to approximately 15 cm.

Easting

554266

Northing

5188337

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

293

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, cohesive, 3 to 5 cm thick. Horizon 2 (Bf) is a red-brown, fine- to medium-grained sand with increasing gravel with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12966

Depth 5 - 10 cm:

12968

Depth 10 - 20 cm:

12970

Dup. Depth 0 - 5 cm:

12967

Dup. Depth 5 - 10 cm:

12969

Dup. Depth 10 - 20 cm:

12971

Parent material field description

No depth sample possible.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F049\F049-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F049\F049-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F049\F049-core.jpg

Parent material photo

Site Number

49

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16000	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	69
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	86	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	89	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	3350	Zinc 0 to 5cm:	64
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	8000	Manganese 0 to 5cm:	1200	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

50

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

50

Location of sampling site

~230m from UTM grid site.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Poor sampling site, however had no other choice, entire area was logged and recently replanted. Very gravelly, shallow soil. Left over material (rocks, stumps, branches) piled up in long corridors between tree plots.

Easting

483017

NAD83
Zone 17

Northing

5187907

Reference

Helicopter

Altitude(m)

441

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

Insufficient time to collect.

Parent material field description

No parent material could be collected; area too rocky.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11499

Depth 5 - 10 cm:

11501

Depth 10 - 20 cm:

11503

Dup. Depth 0 - 5 cm:

11500

Dup. Depth 5 - 10 cm:

11502

Dup. Depth 10 - 20 cm:

11504

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\050\2001-CEM-050-
Site_1.JPG

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\050\2001-CEM-050-
Core_1.JPG

Parent material photo

Site Number

50

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15500	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	51
Aluminum 5 to 10cm:	14000	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	45
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	34	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	37	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	55	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	58	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	48
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	20	Vanadium 0 to 5cm:	49
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	20	Vanadium 5 to 10cm:	48
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2900	Zinc 0 to 5cm:	55
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	29
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4250	Manganese 0 to 5cm:	320	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4500	Manganese 5 to 10cm:	210	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	69	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	58	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

51

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F051

Location of sampling site

Helicopter site: north of Maskinonge Lake, McCarthy Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded mixed coniferous/deciduous hilltop area, level. Abundant small saplings, ground cover is leaf litter.

Easting

543154

Northing

5187389

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Site is very rocky, and soil sampling via auger is only possible to 5 cm. Horizon 1 (LFH/Ah) is organic, black, to 5 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13336

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13337

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F051\F051-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F051\F051-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F051\F051-core.jpg

Parent material photo

Site Number

51

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5700	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	88
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	83	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	91	Iron 0 to 5cm:	9750	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	63	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.85	Magnesium 0 to 5cm:	770	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	440	pH 0 to 5cm:	4
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	188
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

52

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

52

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 I/14

Field observations

E-W slope, hummocky, dead trees, moss on trees, snow on ground. Trees: poplar 50%, <1% birch, 5% spruce.

Easting

474903

Northing

5188645

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

427

Conditions

Cloudy, cold, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 4 cm (greyish brown), silty-sandy; Bt: >4 cm, fine-grained sand with silt.

Parent material field description

Sample collected from several holes. Texture: silty sand to medium grained sand with some pebble size clasts.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25481

Depth 5 - 10 cm:

25482

Depth 10 - 20 cm:

25483

Dup. Depth 0 - 5 cm:

25484

Dup. Depth 5 - 10 cm

25485

Dup. Depth 10 - 20 cm:

25486

Parent material:

25490

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\052\2001-CEM-052-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\052\CEM-052-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\052\2001-CEM-052-
CORE_1.JPG.jpg

Parent material photo

Site Number

52

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	41
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	8000	Cobalt Parent:	6	Nickel Parent:	17
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	30	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	4.1	Selenium Parent:	ND
Barium 0 to 5cm:	58	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	18	Iron Parent:	14000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	30
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3100	Zinc Parent:	21
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	390	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2200	Manganese Parent:	210	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

53

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F053

Location of sampling site

Helicopter site: north of North Arm of Matagamasi Lake, MacKelcan Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area on shore of swamp. Soil at this site is very shallow, with most cores to 10 cm.

Easting

528395

Northing

5186726

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 2 to 5 cm thick. Horizon 2 (Ae) is a light grey, moist, fine-grained sand and silt, 2 to 5 cm thick. Horizon 3 (Bf) is a reddish, moist to wet, fine-grained sand with occasional gravel, 5 cm thick.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12972

Depth 5 - 10 cm:

12974

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12973

Dup. Depth 5 - 10 cm:

12975

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F053\F053-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F053\F053-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F053\F053-core.jpg

Parent material photo

Site Number

53

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	NA	Cobalt 0 to 5cm:	NA	Nickel 0 to 5cm:	NA
Aluminum 5 to 10cm:	5750	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	77
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	NA	Copper 0 to 5cm:	NA	Selenium 0 to 5cm:	NA
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	61	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	NA	Iron 0 to 5cm:	NA	Strontium 0 to 5cm:	NA
Barium 5 to 10cm:	62	Iron 5 to 10cm:	8650	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	NA	Lead 0 to 5cm:	NA	Vanadium 0 to 5cm:	NA
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	46	Vanadium 5 to 10cm:	24
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	NA	Magnesium 0 to 5cm:	NA	Zinc 0 to 5cm:	NA
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	700	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	NA	Manganese 0 to 5cm:	NA	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2100	Manganese 5 to 10cm:	107	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	NA	Molybdenum 0 to 5cm:	NA	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	30	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

54

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F054

Location of sampling site

Helicopter site: near north shore of Lake Wanapite near Bragg's Point.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Thickly vegetated wooded area, coniferous (pine) plantation. Ground cover is litter and exposed sand.

Easting

519512

Northing

5185787

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bg) is a light reddish-brown, dry to moist, fine-grained sand mottled with light grey silt. sand.

Parent material field description

Depth sample collected from 70 to 90 cm consists of a grey, dry to moist, fine-grained sand and silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13289

Depth 5 - 10 cm:

13291

Depth 10 - 20 cm:

13293

Dup. Depth 0 - 5 cm:

13290

Dup. Depth 5 - 10 cm

13292

Dup. Depth 10 - 20 cm:

13294

Parent material:

13296

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F054\F054-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F054\F054-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F054\F054-core.jpg

Parent material photo

Site Number

54

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7000	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	14
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5000	Cobalt Parent:	4	Nickel Parent:	12
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	6.1	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	7.2	Selenium Parent:	ND
Barium 0 to 5cm:	17	Iron 0 to 5cm:	9750	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	18	Iron Parent:	7200	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	4.5	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	17
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1030	Zinc 0 to 5cm:	17
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1800	Zinc Parent:	9.7
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	145	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2300	Manganese Parent:	110	pH Parent:	NA
Chromium 0 to 5cm:	21	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	18	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

55

Date sampled

10/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	<input type="text" value="55"/>	Location of sampling site	<input type="text" value="Follow regional Rd. 84 to Capreol; follow it N until you reach the fork to Milnet. Take fork due N; site is on the west side of road."/>
Historical Inco sample station	<input type="text" value="28"/>		
OBM map number	<input type="text" value="41 I/15"/>	Field observations	<input type="text" value="Relatively flat, slight slope (2 degrees W to E) and hummocks. Site is forested with white birch. Herb: bunchberry, blueberry. Shrub: bracken fern (90%). Trees: 10% white birch, 3% jack pine, 5% cherry."/>
Easting	<input type="text" value="502834"/>		
Northing	<input type="text" value="5185673"/>	NAD83 Zone 17	
Reference	<input type="text" value="Milnet Village (Capreol)"/>		
Altitude(m)	<input type="text" value="336"/>		
Conditions	<input type="text" value="Overcast, light snow"/>		

SOIL DESCRIPTION

Soil profile horizon descriptions

Parent material field description

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

Dup. Depth 5 - 10 cm:

Dup. Depth 10 - 20 cm:

Parent material:

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

55

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	2350	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7500	Cobalt Parent:	4	Nickel Parent:	14
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	49	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	2.8	Selenium Parent:	ND
Barium 0 to 5cm:	53	Iron 0 to 5cm:	7850	Strontium 0 to 5cm:	13
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	28	Iron Parent:	12000	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	10
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	32
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	360	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2600	Zinc Parent:	13
Calcium 0 to 5cm:	950	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4000	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	10	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	33	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

57

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

57

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Hummocky, hill on southeast side. Floor: pine cones, leaves, pine needles, downed trees. Trees: 60% white pine, white spruce, jack pine. Shrubs: 30% fern (bracken fern). Herbs: lichen, bunchberry, moss, blueberry.

Easting

482800

NAD83
Zone 17

Northing

5181920

Reference

Helicopter

Altitude(m)

453

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10.5 cm; Ah: 0 to 10 cm; Ae: 10 to 11 cm; Bf/Bt: >11 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11760

Depth 5 - 10 cm:

11761

Depth 10 - 20 cm:

11762

Dup. Depth 0 - 5 cm:

11763

Dup. Depth 5 - 10 cm

11764

Dup. Depth 10 - 20 cm:

11765

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\057\CEM-057-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

57

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4100	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	176
Aluminum 5 to 10cm:	4300	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	125	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	46	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	98	Iron 0 to 5cm:	8000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	39	Iron 5 to 10cm:	9400	Strontium 5 to 10cm:	ND
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	76	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	26	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	685	Zinc 0 to 5cm:	37
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	580	Zinc 5 to 10cm:	ND
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2650	Manganese 0 to 5cm:	125	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	540	Manganese 5 to 10cm:	55	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	31	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

58

Date sampled

12/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

58

Location of sampling site

Val Therese.

Historical Inco sample station

OBM map number

Field observations

Forested area. Veg: birch, spruce, blueberries. Highly variable soil profiles.

Easting

495509

NAD83
Zone 17

Northing

5176577

Reference

Altitude(m)

350

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ae: 0 to 1 cm; BC: >1 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26465

Depth 5 - 10 cm:

26466

Depth 10 - 20 cm:

26467

Dup. Depth 0 - 5 cm:

26468

Dup. Depth 5 - 10 cm:

26469

Dup. Depth 10 - 20 cm:

26470

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\058\CEM-058-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\058\2001-CEM-058-
Core_1.jpg

Site Number

58

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6600	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	114
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	14
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	15
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	115	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	5	Copper 5 to 10cm:	20	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.5	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	56	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	29	Iron 5 to 10cm:	22000	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	36	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	37
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	57
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	51
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	810	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2550	Zinc 10 to 20cm:	41
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	130	pH 0 to 5cm:	3.9
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	145	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	190	pH 10 to 20cm:	4.8
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	123
Chromium 5 to 10cm:	34	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	24
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	17
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

59

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F059

Location of sampling site

Helicopter site: near Hwy 805, south of Wawiashkashi Lake, McNish Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded coniferous/deciduous stand, thickly vegetated, level. Ground cover is predominantly leaf litter.

Easting

553836

NAD83
Zone 17

Northing

5181276

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry and unconsolidated, 5 cm thick. Horizon 2 (Bt) is an orange-brown, moist to wet, loose fine-grained sand mixed with occasional gravel, and persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13321

Depth 5 - 10 cm:

13323

Depth 10 - 20 cm:

13325

Dup. Depth 0 - 5 cm:

13322

Dup. Depth 5 - 10 cm

13324

Dup. Depth 10 - 20 cm:

13326

Parent material:

13329

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F059\F059-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F059\F059-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F059\F059-core.jpg

Parent material photo

Site Number

59

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	19000	Cobalt 0 to 5cm:	25	Nickel 0 to 5cm:	84
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	35000	Cobalt Parent:	32	Nickel Parent:	57
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	95	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	9	Copper Parent:	110	Selenium Parent:	1
Barium 0 to 5cm:	97	Iron 0 to 5cm:	33000	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	79	Iron Parent:	51000	Strontium Parent:	28
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	31	Vanadium 0 to 5cm:	61
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.67	Lead Parent:	11	Vanadium Parent:	92
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	96
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5200	Zinc Parent:	81
Calcium 0 to 5cm:	4100	Manganese 0 to 5cm:	1300	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3800	Manganese Parent:	1800	pH Parent:	NA
Chromium 0 to 5cm:	61	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	92	Molybdenum Parent:	1.8	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

60

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

60

Location of sampling site

Within UTM grid; between bedrock outcrops at top of hill.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Soil is very shallow and rocky. Veg: dominated by spruce. Some alder, ferns jackpine, Labrador tea, maple, sheep laurel, birch. Floor: leaf litter, logs, twigs, needles.

Easting

475268

NAD83
Zone 17

Northing

5181595

Reference

Helicopter

Altitude(m)

456

Conditions

Snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 3 cm; Ae: 0 to 4 cm (10YR 5/3); Bf: 1 to >10 cm (10YR 3/6). Soil horizon depth and profile highly variable. Many cores only contained an LFH layer. Texture: sandy soil with some gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11426

Depth 5 - 10 cm:

11428

Depth 10 - 20 cm:

11430

Dup. Depth 0 - 5 cm:

11427

Dup. Depth 5 - 10 cm

11429

Dup. Depth 10 - 20 cm:

11431

Parent material:

11432

Parent material field description

No parent material could be collected

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\060\2001-CEM-060-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\060\CEM-060-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\060\2001-CEM-060-
Core_1.JPG

Parent material photo

Site Number

60

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9600	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	56
Aluminum 5 to 10cm:	8100	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	88
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	40	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	57	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	44	Iron 0 to 5cm:	8400	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	120	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	54	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	53
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	81	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4400	Manganese 5 to 10cm:	300	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	80	Molybdenum 5 to 10cm:	3.3	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

61

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

61

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 I/14

Field observations

Close to a mining camp, slope 5% SW, hummocky, rock outcrops, bouldery, some dead trees, moss & lichen on trees. Herb: bunchberry, brachythecium; shrub: bracken fern; trees: 40% balsam fir, 1% white birch.

Easting

464897

NAD83
Zone 17

Northing

5178666

Reference

Helicopter

Altitude(m)

423

Conditions

Overcast, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 1 cm, dead leaves, needles; FH: 1 to 7 cm; Ah: 0 to 0.5 cm (black); Ae: 0.5 to 3 cm (light grey), silty to sand; Bf: 3 to 22 cm (reddish brown), fine- to medium-grained sand; Bt: 22 to 27 cm (yellowish brown), silty-sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25491

Depth 5 - 10 cm:

25492

Depth 10 - 20 cm:

25493

Dup. Depth 0 - 5 cm:

25496

Dup. Depth 5 - 10 cm

25495

Dup. Depth 10 - 20 cm:

25494

Parent material:

Parent material field description

Could not sample parent material; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\061\2001-CEM-061-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\061\CEM-061-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\061\2001-CEM-061-
CORE_1.JPG.jpg

Parent material photo

Site Number

61

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8300	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	58
Aluminum 5 to 10cm:	10750	Cobalt 5 to 10cm:	1.5	Nickel 5 to 10cm:	12
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	2.5	Nickel 10 to 20cm:	15
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	31	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	6.3	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	3.4	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	115	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	51
Barium 5 to 10cm:	49	Iron 5 to 10cm:	12250	Strontium 5 to 10cm:	48
Barium 10 to 20cm:	49	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	46
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	10	Vanadium 10 to 20cm:	39
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	970	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	975	Zinc 5 to 10cm:	19
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	20
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	185	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2800	Manganese 5 to 10cm:	90	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3300	Manganese 10 to 20cm:	115	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

62

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

62

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Site is hummocky, and forested. Trees: 60% jackpine, 1% white birch, 5% balsam fir, 5% white spruce. Shrubs: 10% Labrador tea, 5% sheep laurel. Herbs: 15% brachythecium.

Easting

487159

Northing

5175898

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

363

Conditions

Cold, windy, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 4 cm; Ae: 4 to 7 cm; Bt: 7 to 100 cm. Texture: sandy.

Parent material field description

Sample was collected from 85 to 100 cm. Texture: sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25945

Depth 5 - 10 cm:

25946

Depth 10 - 20 cm:

25951

Dup. Depth 0 - 5 cm:

25952

Dup. Depth 5 - 10 cm:

25953

Dup. Depth 10 - 20 cm:

25954

Parent material:

25950

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\062\2001-CEM-062-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\062\CEM-062-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\062\2001-CEM-062-
Core_1.jpg

Parent material photo

Site Number

62

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	17
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7400	Cobalt Parent:	5	Nickel Parent:	18
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	6.3	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	7.1	Selenium Parent:	ND
Barium 0 to 5cm:	23	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	17	Iron Parent:	12000	Strontium Parent:	31
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	5	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	27
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3300	Zinc Parent:	16
Calcium 0 to 5cm:	2500	Manganese 0 to 5cm:	120	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3000	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

63

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F063

Location of sampling site

Helicopter site: near Hwy 805, east of Maskinonge Lake, McNish Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Dense wooded coniferous area, moss cover. Site is very rocky and soil is very shallow. Most cores to 15 cm.

Easting

552141

NAD83
Zone 17

Northing

5175449

Reference

Helicopter

Altitude(m)

257

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist and unconsolidated, 5 to 7 cm thick.
Horizon 2 (Bt) is a dark medium brown, loose, moist, fine-grained sand that persists to bedrock or rocky layer (to 15 cm).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12960

Depth 5 - 10 cm:

12962

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12961

Dup. Depth 5 - 10 cm

12963

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F063\F063-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F063\F063-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F063\F063-core.jpg

Parent material photo

Site Number

63

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5650	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	141
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	130	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	76	Iron 0 to 5cm:	9450	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	68	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	810	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

64

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

64

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Leaf coverage; slightly hummocky; exposed rock. Trees: 65% spruce, birch, jack pine. Shrubs: 45% bracken fern, jack pine; Herbs: running club moss, ground pine.

Easting

477287

NAD83
Zone 17

Northing

5173584

Reference

Helicopter

Altitude(m)

422

Conditions

Snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8.5 cm, leaves, needles, moss; Ah: 0 to 8.5 cm (black); Ae: 8.5 to 12.5 cm (grey); Bm: >12.5 cm (red). Texture: sandy silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11778

Depth 5 - 10 cm:

11779

Depth 10 - 20 cm:

11780

Dup. Depth 0 - 5 cm:

11781

Dup. Depth 5 - 10 cm:

11782

Dup. Depth 10 - 20 cm:

11783

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\064\2001-CEM-064-Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\064\CEM-064-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\064\2001-CEM-064-Core_1.jpg

Parent material photo

Site Number

64

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7800	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	133
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	108	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	145	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	41
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	63	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	970	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	230	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

65

Date sampled

12/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

65

Location of sampling site

Val Therese.

Historical Inco sample station

OBM map number

Field observations

Fairly dense pine forest with some birch. Snow on ground.

Easting

493398

Northing

5170569

NAD83
Zone 17

Reference

Altitude(m)

306

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ae: 0 to 6 cm; BC: >6 cm.

Parent material field description

Sample was collected between 80 and 100 cm. Texture: sandy silt, sand content increases with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26577

Depth 5 - 10 cm:

26578

Depth 10 - 20 cm:

26579

Dup. Depth 0 - 5 cm:

26580

Dup. Depth 5 - 10 cm:

26581

Dup. Depth 10 - 20 cm:

26582

Parent material:

26586

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\065\2001-CEM-065-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\065\CEM-065-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\065\2001-CEM-065-
Core_1.jpg

Parent material photo

Site Number

65

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4600	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	124
Aluminum 5 to 10cm:	6100	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	19
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6400	Cobalt Parent:	4	Nickel Parent:	16
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	113	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	7.9	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	7000	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	20	Iron 5 to 10cm:	7500	Strontium 5 to 10cm:	18
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	21	Iron Parent:	11000	Strontium Parent:	13
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	44	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	23
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	23
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	700	Zinc 0 to 5cm:	8.1
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	860	Zinc 5 to 10cm:	ND
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2800	Zinc Parent:	14
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	155	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1600	Manganese 5 to 10cm:	76	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	27	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

66

Date sampled

11/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

66

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Leaf coverage, downed trees, slight slope to the north, water on west side. Trees: 80% birch, jack pine. Shrubs: 60% baby birch. Herbs: bracken fern, ground pine, lichen, moss.

Easting

464501

NAD83
Zone 17

Northing

5167396

Reference

Helicopter

Altitude(m)

Conditions

Snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm, leaves, needles, moss; Ah: 0 to 10 cm (black); Ae: 10 to 13 cm (light grey); Bf: 13 to 32 cm (red); Bt: >32 cm.

Parent material field description

Sample was collected between 50 and 75 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11787

Depth 5 - 10 cm:

11788

Depth 10 - 20 cm:

11789

Dup. Depth 0 - 5 cm:

11790

Dup. Depth 5 - 10 cm:

11791

Dup. Depth 10 - 20 cm:

11792

Parent material:

11838

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\066\2001-CEM-066-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\066\CEM-066-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\066\2001-CEM-066-
Core_1.jpg

Parent material photo

Site Number

66

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7150	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	112
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	9700	Cobalt Parent:	4	Nickel Parent:	13
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	80	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	6.5	Selenium Parent:	ND
Barium 0 to 5cm:	98	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	19	Iron Parent:	13000	Strontium Parent:	32
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	32
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	945	Zinc 0 to 5cm:	34
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3000	Zinc Parent:	19
Calcium 0 to 5cm:	2650	Manganese 0 to 5cm:	110	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2800	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	24	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

67

Date sampled

10/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

67

Location of sampling site

Glen Afton; Hwy 805.

Historical Inco sample station

55

OBM map number

41 I/9

Field observations

Birch stand 20-30 m N and E of aspen site, slopes to the southeast, slightly undulating and hummocky. Relatively open forest, rocky with boulders. Trees: 80% birch, 20% spruce, some aspen 15%; Shrubs--ferns (dried up) 20%, Herbs--leaves with no flowers 6-8 cm wide & some long ground cedar~15%; floor--leaves, leaf litter, spruce needles, moss, lichen, mushrooms ~50%.

Easting

553195

Northing

5166237

NAD83
Zone 17

Reference

Glen Afton

Altitude(m)

263

Conditions

Humid cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 3 cm; Ae: 3 to 4 cm; Bm: 4 to 42 cm (medium brown), sandy with pebbles; Bmt: 42 to 64 cm (light brown), fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10922

Depth 5 - 10 cm:

10923

Depth 10 - 20 cm:

10924

Dup. Depth 0 - 5 cm:

10925

Dup. Depth 5 - 10 cm

10926

Dup. Depth 10 - 20 cm:

10927

Parent material:

Parent material field description

No sample was collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\067\CEM-067-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

67

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	64
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	57	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	140	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	41	Vanadium 0 to 5cm:	46
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2050	Zinc 0 to 5cm:	76
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	5600	Manganese 0 to 5cm:	465	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

68

Date sampled

10/24/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

68

Location of sampling site

Hwy144 N to Tamarack Ave, Onaping.

Historical Inco sample station

20

OBM map number

41 I/11

Field observations

Site is densely forested with balsam fir. Lots of leaf litter from surrounding oaks and aspens. Site is relatively flat. Herb: ground pine 5%. Trees: 95% balsam fir, oak.

Easting

467806

NAD83
Zone 17

Northing

5162520

Reference

Hwy 144N,
Tamarack Ave

Altitude(m)

416

Conditions

Fog

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 1 cm; Ae: 1 to 4 cm (5YR 6/2); Bf: 4 to 88 cm (5YR 5/8). Texture: silty-sandy.

Parent material field description

Two samples collected: 1) 50 to 82 cm 2) 82 to 88 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25298

Depth 5 - 10 cm:

25299

Depth 10 - 20 cm:

25300

Dup. Depth 0 - 5 cm:

25301

Dup. Depth 5 - 10 cm:

25302

Dup. Depth 10 - 20 cm:

25303

Parent material:

25304

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\068\2001-CEM-068-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\068\CEM-068-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\068\2001-CEM-068-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\068\2001-CEM-068-
PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

68

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6200	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	64
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7700	Cobalt Parent:	5	Nickel Parent:	16
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	59	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	6.2	Selenium Parent:	ND
Barium 0 to 5cm:	68	Iron 0 to 5cm:	9950	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	19	Iron Parent:	13000	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	30
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	880	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	15
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	390	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2400	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

69

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F069

Location of sampling site

Helicopter site: northeast of Riviere Veuve, Henry Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Grassy area at edge of woods and bedrock outcrop, slight slope, hummocky.

Easting

547569

Northing

5158254

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, wet, with occasional very fine-grained sand, 10 cm thick. Horizon 2 (Ae) is a grey, wet, fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey, wet, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12644

Depth 5 - 10 cm:

12640

Depth 10 - 20 cm:

12642

Dup. Depth 0 - 5 cm:

12645

Dup. Depth 5 - 10 cm:

12641

Dup. Depth 10 - 20 cm:

12643

Parent material:

12648

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F069\F069-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F069\F069-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F069\F069-core.jpg

Parent material photo

Site Number

69

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	21
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	7	Nickel Parent:	23
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	14	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	28	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	26	Iron Parent:	17000	Strontium Parent:	31
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	3.5	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	29
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3300	Zinc 0 to 5cm:	8.5
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5300	Zinc Parent:	20
Calcium 0 to 5cm:	3050	Manganese 0 to 5cm:	160	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	36	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

70

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F070

Location of sampling site

Helicopter site: north of Riviere Veuve, Loughrin Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Wooded area, mixed deciduous (birch) and coniferous trees, level. Ground cover is predominantly leaf litter.

Easting

541845

NAD83
Zone 17

Northing

5157069

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 3 to 5 cm thick. Horizon 2 (Bt) is a reddish brown, moist, fine-grained sand with some organic content.

Parent material field description

Depth sample collected from 70 to 100 cm consists of a moist brown sand with occasional pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12649

Depth 5 - 10 cm:

12651

Depth 10 - 20 cm:

12653

Dup. Depth 0 - 5 cm:

12650

Dup. Depth 5 - 10 cm

12652

Dup. Depth 10 - 20 cm:

12654

Parent material:

12657

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F070\F070-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F070\F070-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F070\F070-core.jpg

Parent material photo

Site Number

70

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10150	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	69
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	18000	Cobalt Parent:	9	Nickel Parent:	27
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	58	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	104	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	68	Iron Parent:	23000	Strontium Parent:	49
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	48
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1900	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5900	Zinc Parent:	29
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	325	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5500	Manganese Parent:	290	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

71

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

71

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Hummocks, N-S slope. Herb: moss, brachythecium. Shrub: 5% maple, 5% balsam fir. Trees: 5% poplar, 2% maple.

Easting

464842

NAD83
Zone 17

Northing

5154109

Reference

Helicopter

Altitude(m)

366

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 1.5 cm (7.5YR6/2), silty; Bf: 1.5 to 28 cm (7.5YR4/4), silty to sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26222

Depth 5 - 10 cm:

26223

Depth 10 - 20 cm:

26224

Dup. Depth 0 - 5 cm:

26225

Dup. Depth 5 - 10 cm:

26226

Dup. Depth 10 - 20 cm:

26227

Parent material:

Parent material field description

Could not collect parent material; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\071\2001-CEM-071-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\071\CEM-071-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\071\2001-CEM-071-
Core_1.jpg

Parent material photo

Site Number

71

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	121
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	84	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	110	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	0.26	Lead 0 to 5cm:	64	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	59
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	1400	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	1.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

72

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

72

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Flat, level area, some wet, saturated soil; downward slope 30 m east. Trees: poplar. Shrubs: Alder 5%, dwarf birch 30%, fern 12%, maple 6%, poplar 5%. Herb: grass 3%, clubmoss 1%, fragaria <1%, other 1% (unknown). Floor: leaf litter 50%, deadwood 20%.

Easting

463880

NAD83
Zone 17

Northing

5149394

Reference

Helicopter

Altitude(m)

284

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ae: 0 to 3 cm (2.5Y 5/2); Bt: 2 to 17 cm (10YR 3/3). Texture: silty-sandy.

Parent material field description

Sample collected between 81 and 100 cm. Texture: silty clay loam with some pebbles. Colour: 10YR 3/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26231

Depth 5 - 10 cm:

26232

Depth 10 - 20 cm:

26233

Dup. Depth 0 - 5 cm:

26234

Dup. Depth 5 - 10 cm

26235

Dup. Depth 10 - 20 cm:

26236

Parent material:

26237

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\072\2001-CEM-072-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\072\CEM-072-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

72

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17000	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	74
Aluminum 5 to 10cm:	20000	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	30000	Cobalt Parent:	13	Nickel Parent:	46
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	47	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	19	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	6	Copper Parent:	44	Selenium Parent:	ND
Barium 0 to 5cm:	105	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	54
Barium 5 to 10cm:	90	Iron 5 to 10cm:	24000	Strontium 5 to 10cm:	54
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	170	Iron Parent:	38000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	49
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	57
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	11	Vanadium Parent:	83
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	3900	Zinc 0 to 5cm:	79
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4800	Zinc 5 to 10cm:	53
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	60
Calcium 0 to 5cm:	5250	Manganese 0 to 5cm:	845	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4600	Manganese 5 to 10cm:	490	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7600	Manganese Parent:	660	pH Parent:	NA
Chromium 0 to 5cm:	61	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	64	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	88	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

73

Date sampled

10/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

73

Location of sampling site

100m west of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Found level, slightly undulating area within forest. Soil very rocky. Veg: maple, oak, white pine, moss, blueberry, bracken fern, lichen stumps. No Birch or Aspen. Floor: leaf litter, needles, twigs, logs, rocks.

Easting

474769

NAD83
Zone 17

Northing

5149214

Reference

Altitude(m)

332

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 2 cm; Ae: 2 to 5 cm (10YR 3/1); Bf: 2 to 30 cm (7.5YR 3/4); Bm: 5 to >30 cm (7.5YR 4/6). Texture: sandy loam. Soil horizons remained the same throughout the sample area, however, depth of horizon changed core to core.

Parent material field description

Sample was collected from 60 to 80 cm at two locations. Texture: sandy loam. Soil was very rocky below 50 cm. Mottles: common, coarse, prominent.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10398

Depth 5 - 10 cm:

10400

Depth 10 - 20 cm:

10402

Dup. Depth 0 - 5 cm:

10399

Dup. Depth 5 - 10 cm

10401

Dup. Depth 10 - 20 cm:

10403

Parent material:

10404

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\073\2001-CEM-073-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\073\CEM-073-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\073\2001-CEM-073-Core 1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

73

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	9250	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	179
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	5	Nickel Parent:	22
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	145	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	1.7	Selenium Parent:	ND
Barium 0 to 5cm:	44	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	33	Iron Parent:	16000	Strontium Parent:	37
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	57	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	700	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	16
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2900	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	42	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

74

Date sampled

11/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

74

Location of sampling site

Hwy 534 N to Riviere Veuve.

Historical Inco sample station

48

OBM map number

41 I/7

Field observations

Semi-forested area sloping slightly to the south/southwest approx 200 m from gravel pit to the north. Scrap metal located ~100m from site. 80% trees: dominantly conifers i.e. balsam fir, spruce, some birch, aspen. 5% shrubs: young trees; 1% herbaceous: grass. 15% forest floor: buried logs, moss, exposed roots, lichen, leaf pine litter.

Easting

544352

NAD83
Zone 17

Northing

5154239

Reference

Riviere Veuve

Altitude(m)

266

Conditions

Overcast, humid

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 6 cm (black); Ae: 6 to 7 cm (white), sandy silt; Bt: 7 to 17 cm, sandy; Bg: 17 to 121 cm (greyish white with prominent mottling), clay. Layer of coarse fragments ~60 to 64 cm.

Parent material field description

Sample collected from 91 to 121 cm. Texture: clay. Colour: grey with prominent mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11565

Depth 5 - 10 cm:

11563

Depth 10 - 20 cm:

11564

Dup. Depth 0 - 5 cm:

11577

Dup. Depth 5 - 10 cm

11578

Dup. Depth 10 - 20 cm:

11579

Parent material:

11566

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\074\2001-CEM-074-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\074\CEM-074-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

74

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	37000	Cobalt Parent:	14	Nickel Parent:	46
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	36	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	39	Selenium Parent:	ND
Barium 0 to 5cm:	87	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	250	Iron Parent:	37000	Strontium Parent:	75
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	19	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	8	Vanadium Parent:	68
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3250	Zinc 0 to 5cm:	53
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	47
Calcium 0 to 5cm:	4150	Manganese 0 to 5cm:	520	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7900	Manganese Parent:	510	pH Parent:	NA
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	92	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

75

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

75

Location of sampling site

~670 m NE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Level, undulating topography at top of small hill. Forested, trees very tall. River to west, good soil formation. Veg: large tooth aspen, trembling aspen, birch, spruce, moss, fern, bunchberry; Floor: leaf litter, needles, logs, twigs. Note: near camp to the southeast.

Easting

472378

NAD83
Zone 17

Northing

5143541

Reference

Helicopter

Altitude(m)

279

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm; Ae: 0 to 11 cm (10YR5/1); Bf: 0 to 18 cm (10YR3/4); BC: 11 to >30 cm (2.5Y 5/4). Texture: silt loam. Depth of horizons varied core to core, some cores did not contain an Ae layer.

Parent material field description

Sample taken between 60 and 90 cm. Hit bedrock @ 90 cm. Texture: sandy loam. Colour: 2.5Y 4/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11441

Depth 5 - 10 cm:

11443

Depth 10 - 20 cm:

11445

Dup. Depth 0 - 5 cm:

11442

Dup. Depth 5 - 10 cm

11444

Dup. Depth 10 - 20 cm:

11446

Parent material:

11447

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\075\2001-CEM-075-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\075\CEM-075-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\075\2001-CEM-075-
Core_1.JPG

Parent material photo

Site Number

75

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10000	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	97
Aluminum 5 to 10cm:	17000	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	27
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	25
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	19
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	80	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	25	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	11	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	88	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	59
Barium 10 to 20cm:	63	Iron 10 to 20cm:	23000	Strontium 10 to 20cm:	43
Barium Parent:	80	Iron Parent:	25000	Strontium Parent:	42
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	35	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	51
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	48
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	48
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2100	Zinc 5 to 10cm:	52
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3100	Zinc 10 to 20cm:	67
Cadmium Parent:	ND	Magnesium Parent:	4300	Zinc Parent:	33
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	585	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	4350	Manganese 5 to 10cm:	340	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3650	Manganese 10 to 20cm:	270	pH 10 to 20cm:	4.9
Calcium Parent:	4300	Manganese Parent:	330	pH Parent:	5.5
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	79
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	19
Chromium 10 to 20cm:	35	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	14
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	1.8

Sudbury Regional Soils Project 2001

Site Number

76

Date sampled

10/2/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

76

Location of sampling site

On Hwy 17, 14 km west of Hagar.

Historical Inco sample station

47

OBM map number

41 1/8

Field observations

Area is flat, forested; adjacent to former farm field (cultivated/ploughed last ~15 yrs ago.) Mixed forest: birch, balsam poplar and spruce all 40 to 50 feet tall. Forest is very messy, buried logs, fallen trees and mangled alder; climbs to south; area probably receiving large amount of run off. Trees: 20% >40 feet, mostly birch, balsam poplar & spruce (30% each). Shrubs: 80% alder, hazelnut? Herbs: grass, vines, 5% flowering plants. Floor cover: 20% needles, leaves, grass, moss, mushrooms, stumps, fallen trees.

Easting

542517

NAD83
Zone 17

Northing

5144876

Reference

Hagar

Altitude(m)

201

Conditions

Sunny mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 13 cm (grey-black); Bg: 13 to 120 cm. Texture: clay. Horizon depths and colour are highly variable.

Parent material field description

Two samples were collected: 1) 60 to 91 cm 2) 91 to 120 cm. Texture: clay. Colour; grey with orange-brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10902

Depth 5 - 10 cm:

10903

Depth 10 - 20 cm:

10904

Dup. Depth 0 - 5 cm:

10905

Dup. Depth 5 - 10 cm

10906

Dup. Depth 10 - 20 cm:

10907

Parent material:

10909

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\076\CEM-076-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

76

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	23000	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	57
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	23000	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	30
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	50
Arsenic 0 to 5cm:	5	Copper 0 to 5cm:	40	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	15	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	28	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	24000	Strontium 0 to 5cm:	54
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	88	Iron 10 to 20cm:	31000	Strontium 10 to 20cm:	47
Barium Parent:	130	Iron Parent:	30000	Strontium Parent:	47
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	57
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	12	Vanadium 10 to 20cm:	63
Beryllium Parent:	0.52	Lead Parent:	8	Vanadium Parent:	60
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5500	Zinc 0 to 5cm:	59
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	7800	Zinc 10 to 20cm:	59
Cadmium Parent:	ND	Magnesium Parent:	8400	Zinc Parent:	48
Calcium 0 to 5cm:	5700	Manganese 0 to 5cm:	880	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4900	Manganese 10 to 20cm:	570	pH 10 to 20cm:	NA
Calcium Parent:	6800	Manganese Parent:	530	pH Parent:	NA
Chromium 0 to 5cm:	65	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	61	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	77	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

77

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	77	Location of sampling site	Nepawassi Lake Rd. @ Finland creek ~10km from Hwy 69 S.
Historical Inco sample station	46		
OBM map number	41 I/7	Field observations	Flat with slight hummocks; lots of fallen trees. Trees are young with occasional old growth. 15% trees, balsam fir, spruce, birch. 15% shrubs: bracken fern, balsam fir, maple and beech. 10% herbaceous: cornus, goldthread, blueberry; 60% forest floor: 3% cornus, 4% goldthread, 30% ferns, leaf and tree litter, needle litter <1% moss.
Easting	531346	NAD83 Zone 17	
Northing	5140315		
Reference	Nepawassi Lake Rd. @ Finland		
Altitude(m)	239		
Conditions	Overcast		

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 5 cm; Ae: 5 to 6 cm, silty; Bm: 6 to 55 cm (medium brown), clay; Bt: 55 to 118 cm (light brown), clay; Bg: >118 cm, clay. LFH: 0 to 7 cm; Ah: 0 to 5 cm; Ae: 5 to 6 cm; Bg: 6 to 118 cm.

Parent material field description

Sample collected from 83 to 118 cm. Texture: clay with some clasts. Colour: grey with burnt orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm: 11516

Depth 5 - 10 cm: 11517

Depth 10 - 20 cm: 11518

Dup. Depth 0 - 5 cm: 11519

Dup. Depth 5 - 10 cm: 11520

Dup. Depth 10 - 20 cm: 11521

Parent material: 11523

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\077\2001-CEM-077-SITE 1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\077\CEM-077-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

77

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8000	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	119
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	38000	Cobalt Parent:	13	Nickel Parent:	48
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	110	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	37	Selenium Parent:	ND
Barium 0 to 5cm:	125	Iron 0 to 5cm:	8600	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	270	Iron Parent:	37000	Strontium Parent:	70
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.7	Lead Parent:	8	Vanadium Parent:	66
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	47
Calcium 0 to 5cm:	2950	Manganese 0 to 5cm:	125	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6900	Manganese Parent:	480	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	94	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

78

Date sampled

10/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

78

Location of sampling site

~10 m E of Aspen site.

Historical Inco sample station

6

OBM map number

41-I/16

Field observations

Level area on crest of hill, slight undulation. Soil site within T. Aspen dominated area. Soil hard; rare rocks found. Veg: T. Aspen, hazelnut, spruce, bracken fern, strawberry grasses, moss large leaf aspen, fireweed. Floor: leaf litter, twigs, logs.

Easting

466352

NAD83
Zone 17

Northing

5132416

Reference

Sleepy Hollow Rd./Boundary Rd.

Altitude(m)

272

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

L 0 to 1 cm; Ah 0 to 6 cm (10YR 3/1); Bm: 2 to >25 cm (2.5Y 6/2). Texture: silt. Soil profile was fairly homogeneous throughout area.

Parent material field description

Parent material collected between 75 and 110 cm. Texture: silt. Colour: 2.5Y 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10388

Depth 5 - 10 cm:

10390

Depth 10 - 20 cm:

10392

Dup. Depth 0 - 5 cm:

10389

Dup. Depth 5 - 10 cm

10391

Dup. Depth 10 - 20 cm:

10393

Parent material:

10394

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\078\2001-CEM-078-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\078\CEM-078-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\078\2001-CEM-078-Core 1.JPG

Parent material photo

Site Number

78

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16500	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	9	Nickel Parent:	28
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	32	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	28	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	130	Iron Parent:	26000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	19	Vanadium 0 to 5cm:	50
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4650	Zinc 0 to 5cm:	97
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7100	Zinc Parent:	40
Calcium 0 to 5cm:	5650	Manganese 0 to 5cm:	710	pH 0 to 5cm:	6
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7100	Manganese Parent:	430	pH Parent:	NA
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	50
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	54	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

79

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

79

Location of sampling site

Hwy 535; North of St Charles.

Historical Inco sample station

49

OBM map number

41 1/8

Field observations

Flat to slightly hummocky; semi forested. Shallow soil. Tree cover 35%, spruce (70%), Balsam fir (20%), Birch (5%), Maple (5%); Shrubs 5%: maple, bracken fern, balsam, willow, cornus, grass, feather moss; Forest floor 55%: buried logs, lichen and moss, leaves and pine needles, spruce needles.

Easting

544710

NAD83
Zone 17

Northing

5136736

Reference

St. Charles

Altitude(m)

256

Conditions

Sunny, dry, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm; Ae: 2 to 5 cm, sandy; Bm: 5 to 48 cm (medium brown), sandy with pebbly/coarse fragments at depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11545

Depth 5 - 10 cm:

11546

Depth 10 - 20 cm:

11547

Dup. Depth 0 - 5 cm:

11551

Dup. Depth 5 - 10 cm

11552

Dup. Depth 10 - 20 cm:

11553

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\079\2001-CEM-079-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\079\CEM-079-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

79

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9500	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	90
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	80	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	99	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3450	Manganese 0 to 5cm:	195	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

80

Date sampled

10/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

80

Location of sampling site

Penage Golf Course.

Historical Inco sample station

4

OBM map number

41-I/16

Field observations

Found level area amongst aspen trees at edge of field. Not rocky; spruce forest to the south. Veg: T. aspen, maple, spruce, birch, pine--bracken fern, fireweed, large leaf aster, bunchberry, aster, sweet fern, strawberry; Floor: leaf litter, logs, twigs. No Leaves picked.

Easting

474719

NAD83
Zone 17

Northing

5131534

Reference

Panache Lake
Rd. @ golf course

Altitude(m)

272

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ap: 0 to 7 cm (10YR 3/2); Bm: 3 to 18 cm (10YR 5/3); Bg: 9 to >30 cm (10YR 6/3), mottles: many, medium, distinct brown (7.5YR 4/4). Texture: clay.

Parent material field description

Sample taken between 75 and 105 cm. Colour: 10YR 5/3. Mottles: common, medium, faint. Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10359

Depth 5 - 10 cm:

10361

Depth 10 - 20 cm:

10363

Dup. Depth 0 - 5 cm:

10360

Dup. Depth 5 - 10 cm

10362

Dup. Depth 10 - 20 cm:

10364

Parent material:

10365

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\080\CEM-080-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\080\2001-CEM-080-
Core_1.JPG

Site Number

80

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	18500	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	88
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	43000	Cobalt Parent:	13	Nickel Parent:	46
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	62	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	44	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	53
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	330	Iron Parent:	45000	Strontium Parent:	70
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	25	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	1	Lead Parent:	9	Vanadium Parent:	90
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5000	Zinc 0 to 5cm:	67
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	14000	Zinc Parent:	76
Calcium 0 to 5cm:	4800	Manganese 0 to 5cm:	565	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7900	Manganese Parent:	620	pH Parent:	NA
Chromium 0 to 5cm:	58	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

81

Date sampled

12/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

81

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Open site, flat, fallen trees & branches. Trees: 4% birch, 3% T. aspen, 2% largetooth aspen. Shrubs: 25% bracken fern, 25% strawberry. Herbs: 20% grass

Easting

540444

NAD83
Zone 17

Northing

5131990

Reference

Altitude(m)

254

Conditions

Sunny and cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 6 cm (black); Bg: 0 to >20 cm (light brown to grey matrix with rust coloured mottling).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25698

Depth 5 - 10 cm:

25699

Depth 10 - 20 cm:

25700

Dup. Depth 0 - 5 cm:

25701

Dup. Depth 5 - 10 cm:

25702

Dup. Depth 10 - 20 cm:

25703

Parent material:

11843

Parent material field description

Sample taken between 69 and 108 cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\081\2001-CEM-081-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\081\CEM-081-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\081\2001-CEM-081-
CORE 1.JPG

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\081\2001-CEM-081-
PARENT 1.JPG

Site Number

81

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	73
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	44000	Cobalt Parent:	20	Nickel Parent:	67
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	53	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	60	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	51
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	290	Iron Parent:	52000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	35	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.9	Lead Parent:	13	Vanadium Parent:	89
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3250	Zinc 0 to 5cm:	54
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	18000	Zinc Parent:	76
Calcium 0 to 5cm:	5150	Manganese 0 to 5cm:	895	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	9600	Manganese Parent:	710	pH Parent:	NA
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	130	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

82

Date sampled

12/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

82

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Flat, open site, very wet. Trees: 10% aspen, 5% birch, 10% maple. Shrubs: 50% braken fern. Herbs: 5% moss, 20% grass.

Easting

550092

NAD83
Zone 17

Northing

5128790

Reference

Altitude(m)

218

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 3 cm (black); Bm: 3 to 15 cm (brown); Bg: >15 cm (light brown).
Some cores did not contain a Bm horizon.

Parent material field description

Sample taken between 70 and 107 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25680

Depth 5 - 10 cm:

25681

Depth 10 - 20 cm:

25682

Dup. Depth 0 - 5 cm:

25683

Dup. Depth 5 - 10 cm

25684

Dup. Depth 10 - 20 cm:

25685

Parent material:

11841

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\082\CEM-082-
soilprofile_1.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\082\2001-CEM-082-
CORE_1.JPG

c:\SRSP_2001\2001-CEM-Soil
Photos\082\2001-CEM-082-
PARENT_1.JPG

Site Number

82

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	31000	Cobalt 0 to 5cm:	27	Nickel 0 to 5cm:	71
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	31000	Cobalt Parent:	12	Nickel Parent:	40
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	53	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	36	Selenium Parent:	ND
Barium 0 to 5cm:	200	Iron 0 to 5cm:	25000	Strontium 0 to 5cm:	38
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	160	Iron Parent:	33000	Strontium Parent:	59
Beryllium 0 to 5cm:	1.8	Lead 0 to 5cm:	31	Vanadium 0 to 5cm:	50
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	9	Vanadium Parent:	66
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5200	Zinc 0 to 5cm:	82
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7800	Zinc Parent:	46
Calcium 0 to 5cm:	3650	Manganese 0 to 5cm:	1500	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6400	Manganese Parent:	400	pH Parent:	NA
Chromium 0 to 5cm:	72	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	84	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

83

Date sampled

12/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

83

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Site is on a slight slope, open area with some hummocks. Trees: 4% birch, 4% T. aspen, 5% alder. Shrubs: 80% braken fern. Herbs: 10% moss(polytrichum, brachythecium)

Easting

552129

NAD83
Zone 17

Northing

5124340

Reference

Altitude(m)

169

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 4 cm (black); Bt: 4 to 10 cm (dark brown); Bg: >10 cm (light brown). Some cores did not contain a Bt horizon.

Parent material field description

Sample taken between 67 and 107 cm. Ah, 3 cm; Bf, 6 cm; Bg, >107 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25689

Depth 5 - 10 cm:

25690

Depth 10 - 20 cm:

25691

Dup. Depth 0 - 5 cm:

25692

Dup. Depth 5 - 10 cm

25693

Dup. Depth 10 - 20 cm:

25694

Parent material:

11842

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\083\2001-CEM-083-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\083\CEM-082-
soilprofile 1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\083\2001-CEM-083-
CORE 1.JPG

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\083\2001-CEM-083-
PARENT 1.JPG

Site Number

83

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	46
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	34000	Cobalt Parent:	14	Nickel Parent:	48
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	32	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	40	Selenium Parent:	ND
Barium 0 to 5cm:	92	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	210	Iron Parent:	39000	Strontium Parent:	61
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.8	Lead Parent:	10	Vanadium Parent:	74
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3100	Zinc 0 to 5cm:	60
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	56
Calcium 0 to 5cm:	3750	Manganese 0 to 5cm:	285	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7100	Manganese Parent:	500	pH Parent:	NA
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	96	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

84

Date sampled

11/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

84

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Hummocky, sloping to southwest, leaf cover, fallen trees. Trees 50% birch, spruce, oak, large tooth aspen. Shrubs: 20% baby birch, spruce, oak, large tooth aspen, bracken ferns. Herbs: 20% moss (club moss) wintergreen, grass.

Easting

489216

NAD83
Zone 17

Northing

5126812

Reference

Helicopter

Altitude(m)

299

Conditions

Damp

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 4 cm (black); Ae: 4 to 8 cm (light grey), sandy silt; Bn: 8 to 13 cm (light red); Bt: >13 cm (yellowish).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11721

Depth 5 - 10 cm:

11722

Depth 10 - 20 cm:

11723

Dup. Depth 0 - 5 cm:

11724

Dup. Depth 5 - 10 cm:

11725

Dup. Depth 10 - 20 cm:

11726

Parent material:

Parent material field description

Could not collect sample.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\084\2001-CEM-084-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\084\CEM-084-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\084\2001-CEM-084-
Core_1.JPG

Parent material photo

Site Number

84

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	226
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	180	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	135	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	2400	Zinc 0 to 5cm:	35
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3650	Manganese 0 to 5cm:	400	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	58	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

85

Date sampled

10/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

85

Location of sampling site

Lake Penage; west of Marina.

Historical Inco sample station

5

OBM map number

41-116

Field observations

Forested, level to slightly undulating area. Veg: T Aspen, maple, fir, alder, birch, large leaf aster, moss, mushrooms. Floor: leaf litter, twigs, logs, tree stumps, rocks. Soil very rocky, hard to get enough soil. No leaves collected.

Easting

470609

NAD83
Zone 17

Northing

5124415

Reference

Lake Panche-
Northshore Rd.

Altitude(m)

272

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 0 to 5 cm; Ah: 0 to 2 cm; Bm: 0 to 15 cm (10YR 4/4); Bf: 13 to >30 cm (10YR 3/4). 40% of cores: Ah: 0 to 2 cm; Ae: 2 to 8 cm (10YR 5/2); Bm: 4 to 17 cm (10YR 4/4); Bf: 9 to >30 cm. Soil horizon and depths are highly variable, soil is exceedingly stony! Texture: sandy clay loam--containing abundant gravel sized clasts.

Parent material field description

No parent material could be collected; soil too rocky.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10369

Depth 5 - 10 cm:

10371

Depth 10 - 20 cm:

10373

Dup. Depth 0 - 5 cm:

10370

Dup. Depth 5 - 10 cm:

10372

Dup. Depth 10 - 20 cm:

10374

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\085\2001-CEM-085-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\085\CEM-085-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\085\2001-CEM-085-
Core_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

85

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	177
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	110	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	70	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	2650	Zinc 0 to 5cm:	79
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	5550	Manganese 0 to 5cm:	995	pH 0 to 5cm:	5.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	81
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

86

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

86

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Area flat, open, site at edge of swamp, very high water table, lichen on tree base. Trees: 5% white spruce, 5% birch, 5% balsam fir, 5% oak. Shrubs: 20% leather leaf, 5% blueberry. Herbs: 10% moss, 10% bunchberry, 5% grass, 30% twin flowers.

Easting

482568

NAD83
Zone 17

Northing

5124231

Reference

Helicopter/Whitefish

Altitude(m)

268

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm (needles, twigs, moss, wood); Ah: 0 to 10 cm (black, roots, twigs); Bg: 5 to >20 cm (light brown to light grey with orange mottling; clay).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25725

Depth 5 - 10 cm:

25726

Depth 10 - 20 cm:

25727

Dup. Depth 0 - 5 cm:

25728

Dup. Depth 5 - 10 cm:

25729

Dup. Depth 10 - 20 cm:

25730

Parent material:

11846

Parent material field description

Sample taken between 75 and 94 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\086\CEM-086-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\086\2001-CEM-086-
CORE_1.JPG

Site Number

86

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	205
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	27000	Cobalt Parent:	14	Nickel Parent:	49
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	115	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	36	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	210	Iron Parent:	41000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.68	Lead Parent:	9	Vanadium Parent:	67
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3000	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	62
Calcium 0 to 5cm:	3750	Manganese 0 to 5cm:	245	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6200	Manganese Parent:	490	pH Parent:	NA
Chromium 0 to 5cm:	61	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	81	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

87

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

87

Location of sampling site

Trout Lake Rd.; south of Estaire, Hwy 69.

Historical Inco sample station

69

OBM map number

41 I/7

Field observations

site on a relatively flat forested, plateau; slopes to the south. Undulating, moderately hummocky; large old tree stumps covered in moss. 40% trees: spruce 80%, birch, large tooth aspen, maple. Shrubs: ferns and young trees. Herbs: ground cedar and club moss. Floor: leaf litter, spruce needles, buried logs, stumps covered in moss.

Easting

516101

Northing

5126544

NAD83
Zone 17

Reference

Etaire

Altitude(m)

227

Conditions

Clear 8°C

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm; Ae: 2 to 5 cm (greyish white), silt; Bm: 5 to 30 cm (brown/yellowish brown), silty; Bt: 30 to 137 cm (greyish brown), silty coarse sand grading to a fine-grained sand-clay with depth.

Parent material field description

Sample was collected from 93 to 137 cm. Texture: fine-grained sand; increasing in clay content with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10981

Depth 5 - 10 cm:

10982

Depth 10 - 20 cm:

10983

Dup. Depth 0 - 5 cm:

10984

Dup. Depth 5 - 10 cm:

10985

Dup. Depth 10 - 20 cm:

10986

Parent material:

10990

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\087\CEM-087-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

87

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7150	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	140
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	9800	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	135	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	36	Iron Parent:	15000	Strontium Parent:	30
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	37
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4200	Zinc Parent:	15
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	180	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4300	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	38	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

88

Date sampled

12/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

88

Location of sampling site

Trout Lake Rd.; ~370m SE of original UTM site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Level area, forested, aspen grove surrounded by conifers. Bedrock outcrops visible. Veg: dominated by largetooth aspen. Some T. aspen, birch, whitepine spruce, clubmoss, brackenfern, wintergreen, mosses, lichens, grasses. Floor: leaf litter, logs, stumps, twigs.

Easting

536510

NAD83
Zone 17

Northing

5122698

Reference

Trout Lake Rd.

Altitude(m)

252

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm; Ae: 0 to 7 cm (10YR 5/2); Bm: 1 to 16 cm (10YR 3/6); BC: 7 to >25 cm (2.5Y 5/4).

Parent material field description

Sample was taken between 70 and 100 cm. Texture: loamy sand (medium grained) with some pebble size clasts. Colour: 2.5Y 5/3. Mottles: few, fine, distinct.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26964

Depth 5 - 10 cm:

26966

Depth 10 - 20 cm:

26968

Dup. Depth 0 - 5 cm:

26965

Dup. Depth 5 - 10 cm:

26967

Dup. Depth 10 - 20 cm:

26969

Parent material:

26970

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\088\CEM-088-soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\088\2001-CEM-088-Core_1.JPG

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

88

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	10000	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	74
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	10	Nickel Parent:	38
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	46	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	29	Selenium Parent:	ND
Barium 0 to 5cm:	92	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	49	Iron Parent:	23000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1850	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6900	Zinc Parent:	27
Calcium 0 to 5cm:	4150	Manganese 0 to 5cm:	305	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5200	Manganese Parent:	250	pH Parent:	NA
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	61	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

89

Date sampled

12/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

89

Location of sampling site

Trout Lake Rd.; ~2,39km SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Found level, forested area dominated by T. aspen and birch. Area rocky, wet, with frost. Surrounding area undulating. Veg: T. aspen, birch oak, maple, fir, white pine, spruce, moss, wintergreen, clubmoss, grasses, bunchberry, brackenfern. Floor: leaf litter, needles, logs, twigs.

Easting

529251

NAD83
Zone 17

Northing

5120920

Reference

Trout Lake Rd.

Altitude(m)

224

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Bm 0 to 12 cm (10YR 4/3); BC: 1 to >30 cm (2.5Y 6/2).
Texture: loam. There was little variability in the soil profile. Area was previously logged at one time.

Parent material field description

Sample was taken between 70 and 100 cm.
Texture: clay loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26974

Depth 5 - 10 cm:

26976

Depth 10 - 20 cm:

26978

Dup. Depth 0 - 5 cm:

26975

Dup. Depth 5 - 10 cm

26977

Dup. Depth 10 - 20 cm:

26979

Parent material:

26980

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\089\2001-CEM-089-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\089\CEM-088-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\089\2001-CEM-089-
Core_1.JPG

Parent material photo

Site Number

89

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	20500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	68
Aluminum 5 to 10cm:	27500	Cobalt 5 to 10cm:	13	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	29000	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	41
Aluminum Parent:	28000	Cobalt Parent:	12	Nickel Parent:	42
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	53	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	24	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	19	Selenium 10 to 20cm:	1
Arsenic Parent:	ND	Copper Parent:	31	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	125	Iron 5 to 10cm:	27500	Strontium 5 to 10cm:	48
Barium 10 to 20cm:	110	Iron 10 to 20cm:	30000	Strontium 10 to 20cm:	45
Barium Parent:	160	Iron Parent:	36000	Strontium Parent:	60
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	43
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	53
Beryllium 10 to 20cm:	0.25	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	51
Beryllium Parent:	0.56	Lead Parent:	6	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3450	Zinc 0 to 5cm:	57
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5700	Zinc 5 to 10cm:	90
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	7300	Zinc 10 to 20cm:	72
Cadmium Parent:	ND	Magnesium Parent:	9700	Zinc Parent:	46
Calcium 0 to 5cm:	3800	Manganese 0 to 5cm:	965	pH 0 to 5cm:	5.3
Calcium 5 to 10cm:	4350	Manganese 5 to 10cm:	570	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	4050	Manganese 10 to 20cm:	415	pH 10 to 20cm:	4.9
Calcium Parent:	7100	Manganese Parent:	400	pH Parent:	6.2
Chromium 0 to 5cm:	60	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	85
Chromium 5 to 10cm:	64	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	28
Chromium 10 to 20cm:	68	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	83	Molybdenum Parent:	ND	C TOC Parent:	2.2

Sudbury Regional Soils Project 2001

Site Number

91

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

91

Location of sampling site

Hwy 535 S; West Arm.

Historical Inco sample station

50

OBM map number

41 1/8

Field observations

Level, slightly hummocky, sloping to the SW, towards river; outcrops to SE. Trees: 60% Aspen and birch, black spruce. Floor: 80% leaf litter, 10% needle litter, 5% moss, 5% fallen trees. Herb: winter green and blueberry. Shrub: black spruce, fern, maple, shallow sandy soil.

Easting

543413

NAD83
Zone 17

Northing

5122298

Reference

West Arm @ Hwy
535 S

Altitude(m)

222

Conditions

Cool, sunny dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 3 cm (black); Ae: 3 to 8 cm (greyish white), silty to sandy; Bm: 8 to 53 cm (medium brown), sandy; or Bg: 8 to 53 cm (grey), sandy with some coarse fragments.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11536

Depth 5 - 10 cm:

11537

Depth 10 - 20 cm:

11538

Dup. Depth 0 - 5 cm:

11539

Dup. Depth 5 - 10 cm:

11540

Dup. Depth 10 - 20 cm:

11541

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\091\CEM-091-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

91

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17000	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	44
Aluminum 5 to 10cm:	14000	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	32
Aluminum 10 to 20cm:	15150	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	50
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	34	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	20	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	35	Selenium 10 to 20cm:	0.5
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	76	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	48	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	75	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	43
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	46
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	23.5	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	28	Vanadium 10 to 20cm:	41
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2950	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	37
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2800	Zinc 10 to 20cm:	41
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	6350	Manganese 0 to 5cm:	345	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3900	Manganese 5 to 10cm:	305	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	5000	Manganese 10 to 20cm:	315	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	48	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

92

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

92

Location of sampling site

4 km past main road into Burwash training area.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Hummocky, slight N-S slope (5 degrees). Abundant oak and maple leaf litter, twigs and branches. Herbs: 5 to 10% ground pine, moss. Shrubs: 20 to 25% maple saplings. Trees: 5 to 10% oak, 5% maple, 5% balsam fir.

Easting

514330

NAD83
Zone 17

Northing

5120515

Reference

MND Burwash

Altitude(m)

249

Conditions

Sunny, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 15 cm; Ah: 0 to 3 cm; Ae: 3 to 5 cm (5YR 5/2); Bf: 5 to 21 cm (5YR 4/6); Bt: 21 to 122 cm (2.5Y 6/2). Texture: sandy.

Parent material field description

Sample collected from 75 to 122 cm. Texture: sandy with some pebble size clasts. Colour: 2.5Y 6/2; mottles; 10YR 4/6.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25398

Depth 5 - 10 cm:

25399

Depth 10 - 20 cm:

25400

Dup. Depth 0 - 5 cm:

25401

Dup. Depth 5 - 10 cm:

25402

Dup. Depth 10 - 20 cm:

25403

Parent material:

25404

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\092\2001-CEM-092-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\092\CEM-092-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\092\2001-CEM-092-
Core_1.jpg

Parent material photo

Site Number

92

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6550	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	117
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6900	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	100	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	85	Iron 0 to 5cm:	8550	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	20	Iron Parent:	14000	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	26
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	965	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3600	Zinc Parent:	14
Calcium 0 to 5cm:	3150	Manganese 0 to 5cm:	755	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2900	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	20	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	30	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

93

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

93

Location of sampling site

Burwash.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Flat area with small hummocks; dead trees and limbs. Trees: 20% spruce, 10% fir. Shrubs: 5% bunchberry. Herbs: 95% moss floor cover, grass, strawberry, lichen on the trees.

Easting

505259

Northing

5119454

NAD83
Zone 17

Reference

Helicopter/Burwash

Altitude(m)

217

Conditions

Rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm (black); Bg: 5 to >25 cm (light yellow).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25707

Depth 5 - 10 cm:

25708

Depth 10 - 20 cm:

25709

Dup. Depth 0 - 5 cm:

25710

Dup. Depth 5 - 10 cm:

25711

Dup. Depth 10 - 20 cm:

25712

Parent material:

11663

Parent material field description

Sample was taken between 75 and 109 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\093\CEM-093-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

93

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	155
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	26000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	140	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	85	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	130	Iron Parent:	27000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	56
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	22000	Zinc Parent:	47
Calcium 0 to 5cm:	3500	Manganese 0 to 5cm:	160	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	46000	Manganese Parent:	400	pH Parent:	NA
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	73	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

94

Date sampled

12/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

94

Location of sampling site

Noelville: ~5.3km SE of UTM site.

Historical Inco sample station

OBM map number

41 I/1

Field observations

Level, wet, area within forest. Veg: Largetooth aspen, T. aspen, birch, maple, spruce, moss, brachen fern. Floor: leaf litter, needles, twigs, logs.

Easting

542216

NAD83
Zone 17

Northing

5114069

Reference

Noelville

Altitude(m)

245

Conditions

Cloudy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 3 cm; Bm: 0 to 12 cm (10YR 4/4); BC: 0 to >30 cm (10YR 5/3).
Texture: loam with some gravel sized clasts.
Small number of cores also contained an Ae horizon.

Parent material field description

Sample was taken between 70 and 105 cm.
Colour: 10YR 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25652

Depth 5 - 10 cm:

25654

Depth 10 - 20 cm:

25656

Dup. Depth 0 - 5 cm:

25653

Dup. Depth 5 - 10 cm:

25655

Dup. Depth 10 - 20 cm:

25657

Parent material:

25658

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\094\2001-CEM-094-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\094\CEM-094-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

94

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7450	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	135
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	16000	Cobalt Parent:	8	Nickel Parent:	27
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	103	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	19	Selenium Parent:	ND
Barium 0 to 5cm:	53	Iron 0 to 5cm:	9200	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	64	Iron Parent:	21000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	35	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6300	Zinc Parent:	28
Calcium 0 to 5cm:	3150	Manganese 0 to 5cm:	360	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5700	Manganese Parent:	440	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	65	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

95

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

95

Location of sampling site

Murdock Rd., east of Hwy 69 S.

Historical Inco sample station

31

OBM map number

41 I/2

Field observations

Relatively flat, some hummocks. Site is forested predominantly with pine, containing much oak leaf litter from surrounding trees. Site has a few shallow spots with standing water. Herbs: 1% moss, 5% bunchberry. Shrubs: bracken fern 5%, 1% spruce (young). Trees: balsam fir 1 to 2%, 20% red pine, 20% white pine.

Easting

517038

NAD83
Zone 17

Northing

5117635

Reference

Murdock Rd. @
Hwy 69S

Altitude(m)

246

Conditions

Clear, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 11.5 cm; Ah: 0 to 2 cm; Ae: 2 to 12 cm (5Y 4/1), sandy; Bt: 12 to 20 cm (10YR 3/4), sand to gravelly texture.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25389

Depth 5 - 10 cm:

25390

Depth 10 - 20 cm:

25391

Dup. Depth 0 - 5 cm:

25392

Dup. Depth 5 - 10 cm:

25393

Dup. Depth 10 - 20 cm:

25394

Parent material:

Parent material field description

No parent material was collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\095\2001-CEM-095-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\095\CEM-095-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\095\2001-CEM-095-
Core_1.jpg

Parent material photo

Site Number

95

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4300	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	209
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	170	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	135	Iron 0 to 5cm:	9600	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	79	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	815	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	83	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	20	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

96

Date sampled

11/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

96

Location of sampling site

Hwy 64, Monetville.

Historical Inco sample station

OBM map number

41 I/1

Field observations

Hummocky, relatively flat. Site has shallow soil with standing water. Site is forested with Balsam fir and cedars and has lots of maple and aspen leaf litter. Shrub: bracken fern trace, balsam fir 5%; Trees: 50% balsam fir, 10 to 20% cedar.

Easting

549579

NAD83
Zone 17

Northing

5116651

Reference

Monetville

Altitude(m)

230

Conditions

Clear, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 3 cm; Bg: 3 to 67 cm (7.5YR 5/2). Texture: clay.

Parent material field description

Sample was collected from >67 cm. Colour: 10YR 5/4; mottles: 10YR 6/1.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25408

Depth 5 - 10 cm:

25409

Depth 10 - 20 cm:

25410

Dup. Depth 0 - 5 cm:

25411

Dup. Depth 5 - 10 cm:

25412

Dup. Depth 10 - 20 cm:

25413

Parent material:

25414

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\096\2001-CEM-096-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\096\CEM-096-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\096\2001-CEM-096-
Core_1.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\096\2001-CEM-096-
PARENT_1.JPG.jpg

Site Number

96

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	20500	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	9	Nickel Parent:	43
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	36	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	37	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	49
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	140	Iron Parent:	28000	Strontium Parent:	48
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	27	Vanadium 0 to 5cm:	48
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	55
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5000	Zinc 0 to 5cm:	56
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6300	Zinc Parent:	32
Calcium 0 to 5cm:	5900	Manganese 0 to 5cm:	560	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6800	Manganese Parent:	330	pH Parent:	NA
Chromium 0 to 5cm:	53	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	88	Molybdenum Parent:	2.1	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

97

Date sampled

12/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

97

Location of sampling site

~1.51km NW of UTM site.

Historical Inco sample station

OBM map number

41 1/4

Field observations

Level, forested area along side of snowmobile trail (D122); near Walker Lake Area dominated by bedrock and swamps. Veg: Largetooth aspen, T. aspen, maple, fir, birch, fern, ground cedar. Floor: needles, logs, twigs.

Easting

458542

Northing

5116157

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

238

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 7 cm (10YR 3/1); B: 7 to >30 cm (10YR 6/3). There was little variability in horizon depth and profile among cores.

Parent material field description

Sample taken at 2 locations between 75 and 90 cm. Texture: silty clay. Colour: 10YR 6/3. Mottles: common, fine, faint.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25602

Depth 5 - 10 cm:

25604

Depth 10 - 20 cm:

25606

Dup. Depth 0 - 5 cm:

25603

Dup. Depth 5 - 10 cm

25605

Dup. Depth 10 - 20 cm:

25607

Parent material:

25608

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\097\CEM-097-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\097\2001-CEM-097-
Core_1.JPG

Site Number

97

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16000	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	47
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	16000	Cobalt Parent:	8	Nickel Parent:	31
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	26	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	120	Iron Parent:	24000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	23	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4500	Zinc 0 to 5cm:	115
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7000	Zinc Parent:	29
Calcium 0 to 5cm:	4100	Manganese 0 to 5cm:	1300	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5500	Manganese Parent:	290	pH Parent:	NA
Chromium 0 to 5cm:	58	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

98

Date sampled

12/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

98

Location of sampling site

Hwy 69 S; ~3km south of bridge over Murdock River.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Flat-hummocky. Herb: 80% wintergreen, brachythecium, pohlia. Shrub: 15% alder. Trees: 15% white pine; 10% poplar.

Easting

522378

NAD83
Zone 17

Northing

5113292

Reference

Hwy 69 S

Altitude(m)

223

Conditions

Clear, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Ae: 1 to 6 cm; (7.5YR 4/2); Bf: >6 cm (7.5YR 4/4). Texture: sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26190

Depth 5 - 10 cm:

26191

Depth 10 - 20 cm:

26192

Dup. Depth 0 - 5 cm:

26193

Dup. Depth 5 - 10 cm:

26194

Dup. Depth 10 - 20 cm:

26195

Parent material:

Parent material field description

No sample could be collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\098\2001-CEM-098-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\098\CEM-098-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\098\2001-CEM-098-
CORE_1.JPG.jpg

Parent material photo

Site Number

98

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	103
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	88	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	175	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	68	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	71
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	860	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

99

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

99

Location of sampling site

~670m SW of UTM site.

Historical Inco sample station

OBM map number

41 I/3

Field observations

Level, forested area, near swamp.. Evidence of selective logging in area; ATV roads. Veg: Jackpine, white pine, spruce, large-tooth aspen, maple, ferns, grasses. Floor: leaf litter, needles, logs.

Easting

487852

NAD83
Zone 17

Northing

5114238

Reference

Helicopter

Altitude(m)

248

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 1 cm; Ae: 0 to 7 cm (5YR 5/3); Bf: 0 to >30 cm (5YR 3/4). Texture: loamy sand.

Parent material field description

No parent material collected; area too rocky; hit bedrock at ~30 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25632

Depth 5 - 10 cm:

25634

Depth 10 - 20 cm:

25636

Dup. Depth 0 - 5 cm:

25633

Dup. Depth 5 - 10 cm:

25635

Dup. Depth 10 - 20 cm:

25637

Parent material:

25638

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\099\2001-CEM-099-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\099\CEM-099-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\099\2001-CEM-099-
Core_1.JPG

Parent material photo

Site Number

99

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9300	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	96
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	86	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	125	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	690	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

100

Date sampled

12/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

100

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Relatively flat. Herb: moss, leaves on ground, grasses, 10% wild strawberry. Shrub: 20% bracken fern, 10% maple, 1% raspberry; Trees: 30% maple.

Easting

470524

NAD83
Zone 17

Northing

5113379

Reference

Killarney

Altitude(m)

251

Conditions

Overcast to clear

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 1 cm; Ae: 1 to 6 cm (10YR 4/2), silty; Bt: 2 to 25 cm (7.5YR 4/6), silty to sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25567

Depth 5 - 10 cm:

25568

Depth 10 - 20 cm:

26087

Dup. Depth 0 - 5 cm:

26088

Dup. Depth 5 - 10 cm:

26089

Dup. Depth 10 - 20 cm:

26090

Parent material:

Parent material field description

No sample could be collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\100\CEM-100-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

100

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9550	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	97
Aluminum 5 to 10cm:	27000	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	35
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	90	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	19	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	165	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	140	Iron 5 to 10cm:	25000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	67	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	55
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	68
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3500	Zinc 5 to 10cm:	83
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3250	Manganese 0 to 5cm:	860	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3000	Manganese 5 to 10cm:	560	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	62	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

101

Date sampled

12/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

101

Location of sampling site

~3.25 N of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Flat area dominated by tall red pine. Could not get closer to site due to large swamp to the S. Shallow soil over bedrock. Veg: Red pine, spruce, T. aspen, large-tooth aspen, white pine, bracken fern, grasses, bunchberry, clubmoss. Floor: leaf litter, needles, trees, logs, twigs.

Easting

537510

Northing

5115350

NAD83
Zone 17

Reference

Altitude(m)

223

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 0 to 5 cm (10YR 5/1); Bf: 0 to >30 cm (10YR 3/6).
Texture: sandy loam with abundant gravel/pebble size clasts.

Parent material field description

Could not collect parent material. Hit bedrock ~45 cm at a number of locations.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26954

Depth 5 - 10 cm:

26956

Depth 10 - 20 cm:

26958

Dup. Depth 0 - 5 cm:

26955

Dup. Depth 5 - 10 cm:

26957

Dup. Depth 10 - 20 cm:

26959

Parent material:

26960

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\101\2001-CEM-101-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\101\CEM-101-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\101\2001-CEM-101-
Core_1.JPG

Parent material photo

Site Number

101

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10350	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	83
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	51	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	78	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	50	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2400	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3750	Manganese 0 to 5cm:	265	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

102

Date sampled

10/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

102

Location of sampling site

East side of Regional road 84, South of Millnet.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Site is located within a jack pine/ T. aspen, dominated forest with hummocky terrain. Aspen trees are more prevalent in the more open spaces of site. Herb: brachythecium. Shrub: 5% blueberry, trace cherry. Trees: 15% trembling aspen, 15% jack pine.

Easting

505129

Northing

5182726

NAD83
Zone 17

Reference

North of Capreol

Altitude(m)

344

Conditions

Light snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7.5 cm; Ah: 0 to 3 cm; Ae: 3 to 6 cm (7.5YR 5/2), silty-sandy; Bf: >6 cm (7.5YR 5/6), sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25319

Depth 5 - 10 cm:

25320

Depth 10 - 20 cm:

25321

Dup. Depth 0 - 5 cm:

25322

Dup. Depth 5 - 10 cm:

25323

Dup. Depth 10 - 20 cm:

25324

Parent material field description

No sample could be collected; soil too shallow.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\102\2001-CEM-102-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\102\CEM-102-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\102\2001-CEM-102-
Core_1.jpg

Parent material photo

Site Number

102

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6850	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	191
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	53
Aluminum 10 to 20cm:	8400	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	27
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	170	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	40	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	6	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	130	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	62	Iron 5 to 10cm:	22000	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	42	Iron 10 to 20cm:	13000	Strontium 10 to 20cm:	32
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	75	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	53
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	11	Vanadium 10 to 20cm:	47
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	58
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2900	Zinc 5 to 10cm:	59
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1600	Zinc 10 to 20cm:	32
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	360	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2600	Manganese 5 to 10cm:	250	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	2000	Manganese 10 to 20cm:	190	pH 10 to 20cm:	4.5
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	57	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	43
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	23
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

103

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F103

Location of sampling site

Helicopter site: west of North Arm of Matagamasi Lake, Rathbun Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Dense wooded coniferous area, level, thick ground cover of small shrubs and deadfall.

Easting

527393

NAD83
Zone 17

Northing

5182621

Reference

Helicopter

Altitude(m)

280

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, consolidated, 2 to 4 cm thick. Horizon 2 (Ae) is a light grey silty sand, between 2 and 7 cm thick. Horizon 3 (Bt) is an orange-brown, fine-grained sand, to 20 cm.

Parent material field description

Depth sample collected from 50 to 80 cm consists of an orange-brown, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12930

Depth 5 - 10 cm:

12932

Depth 10 - 20 cm:

12934

Dup. Depth 0 - 5 cm:

12931

Dup. Depth 5 - 10 cm

12933

Dup. Depth 10 - 20 cm:

12935

Parent material:

12939

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F103\F103-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F103\F103-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F103\F103-core.jpg

Parent material photo

Site Number

103

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5050	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	123
Aluminum 5 to 10cm:	8950	Cobalt 5 to 10cm:	1.5	Nickel 5 to 10cm:	20
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7400	Cobalt Parent:	5	Nickel Parent:	28
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	91	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	14	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	4.7	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	7700	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	57	Iron 5 to 10cm:	11500	Strontium 5 to 10cm:	27
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	58	Iron Parent:	9400	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	40	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	32
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	17
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	585	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	720	Zinc 5 to 10cm:	10
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1800	Zinc Parent:	9.9
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1500	Manganese 5 to 10cm:	72	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1300	Manganese Parent:	95	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	35	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	46	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

104

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F104

Location of sampling site

Helicopter site: near north shore of Lake Wanapitei near Wanapitei Provincial Park

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous/deciduous stand, slight slope, ground cover is predominantly leaves/litter.

Easting

514842

Northing

5182369

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

295

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, 5 to 7 cm thick. Horizon 2 (Bf) is a reddish brown, fine-grained sand mixed with occasional gravel.

Parent material field description

Depth sample collected from 50 to 70 cm consists of a grey, moist, dense clay mixed with occasional gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13001

Depth 5 - 10 cm:

13003

Depth 10 - 20 cm:

13005

Dup. Depth 0 - 5 cm:

13002

Dup. Depth 5 - 10 cm:

13004

Dup. Depth 10 - 20 cm:

13006

Parent material:

13009

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F104\F104-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F104\F104-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F104\F104-core.jpg

Parent material photo

Site Number

104

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5450	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	106
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	14	Nickel Parent:	44
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	105	Selenium 0 to 5cm:	5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	86	Iron 0 to 5cm:	9600	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	75	Iron Parent:	26000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	50
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	1210	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7000	Zinc Parent:	34
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	185	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4400	Manganese Parent:	330	pH Parent:	NA
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	70	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

105

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F105

Location of sampling site

Helicopter site: west of Lake Wanapitei near Post Lake.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area, hummocky, ground cover is a thick layer of needle cover.

Easting

509825

Northing

5181480

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

312

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry, unconsolidated, 3 to 6 cm thick. Horizon 2 (Ae) is a light grey silty sand, moist, consolidated, 4 to 10 cm thick. Horizon 3 (Bt) is an orange-brown, fine-grained sand, to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown, wet, very dense and consolidated silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12940

Depth 5 - 10 cm:

12942

Depth 10 - 20 cm:

12944

Dup. Depth 0 - 5 cm:

12941

Dup. Depth 5 - 10 cm

12943

Dup. Depth 10 - 20 cm:

12945

Parent material:

12949

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F105\F105 site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F105\F105-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F105\F105-core.jpg

Parent material photo

Site Number

105

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5000	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	109
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	8100	Cobalt Parent:	5	Nickel Parent:	17
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	102	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	3.6	Selenium Parent:	ND
Barium 0 to 5cm:	107	Iron 0 to 5cm:	8550	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	25	Iron Parent:	12000	Strontium Parent:	35
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	41	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	27
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	590	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2600	Zinc Parent:	15
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	86	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3300	Manganese Parent:	220	pH Parent:	NA
Chromium 0 to 5cm:	23	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	30	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

106

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F106

Location of sampling site

Helicopter site: west of Maskinonge Lake, Kelly Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Clear cut area. Vegetation is sparse, mixed deciduous and coniferous, ground cover is stumps and small shrubs. Shallow soil at this site, cores only to approximately 15 cm.

Easting

539390

NAD83
Zone 17

Northing

5181313

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, brown to black, 5 to 7 cm thick. Horizon 2 (Btgj) is a light reddish brown, mottled, moist, fine-grained sand mixed with occasional gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13339

Depth 5 - 10 cm:

13341

Depth 10 - 20 cm:

13340

Dup. Depth 0 - 5 cm:

13342

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F106\F106-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F106\F106-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F106\F106-core.jpg

Parent material photo

Site Number

106

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9600	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	85
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	7400	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	100
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	79	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	6	Copper 10 to 20cm:	91	Selenium 10 to 20cm:	1
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	45	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	55	Iron 10 to 20cm:	13000	Strontium 10 to 20cm:	26
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	38	Vanadium 10 to 20cm:	32
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	810	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	700	Zinc 10 to 20cm:	30
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1300	Manganese 0 to 5cm:	79	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2000	Manganese 10 to 20cm:	89	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	36	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

108

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F108

Location of sampling site

Helicopter site: near east shore of Matagamasi Lake, Rathbun Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded area, coniferous/deciduous stand on slope near Lake Wanapitei.

Easting

530816

Northing

5179174

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, consolidated, moist, 5 cm thick. Horizon 2 (Ae) is a white, moist, medium- to fine-grained sand, 5 to 10 cm thick. Horizon 3 (Bt) is an orange-brown, fine-grained sand, to 20 cm.

Parent material field description

Depth sample collected from 60 to 80 cm consists of an orange-brown, moist, loose, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13353

Depth 5 - 10 cm:

13355

Depth 10 - 20 cm:

13357

Dup. Depth 0 - 5 cm:

13354

Dup. Depth 5 - 10 cm

13356

Dup. Depth 10 - 20 cm:

13414

Parent material:

13418

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F108\F108-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F108\F108-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F108\F108-core.jpg

Parent material photo

Site Number

108

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	3550	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	74
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	8000	Cobalt Parent:	6	Nickel Parent:	17
Arsenic 0 to 5cm:	5	Copper 0 to 5cm:	63	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	2
Barium 0 to 5cm:	59	Iron 0 to 5cm:	4750	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	37	Iron Parent:	11000	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	12
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	20
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	500	Zinc 0 to 5cm:	10
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	12
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	43	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1300	Manganese Parent:	99	pH Parent:	NA
Chromium 0 to 5cm:	10	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	22	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

109

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F109

Location of sampling site

Helicopter site: near east shore of Matagamasi Lake, Rathbun Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Small clearing surrounded by coniferous forest, level. Ground cover is small shrubs.

Easting

531375

NAD83
Zone 17

Northing

5178272

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, dry, unconsolidated, 5 cm thick. Horizon 2 (Ae) is a white, dry, loose, medium- to fine-grained sand, 5 to 10 cm thick. Horizon 3 (Bm) is an orange-brown, dry, unconsolidated, medium- to fine-grained sand, to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a white, dry, unconsolidated fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13419

Depth 5 - 10 cm:

13421

Depth 10 - 20 cm:

13423

Dup. Depth 0 - 5 cm:

13420

Dup. Depth 5 - 10 cm

13422

Dup. Depth 10 - 20 cm:

13424

Parent material:

13428

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F109\F109-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F109\F109-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F109\F109-core.jpg

Parent material photo

Site Number

109

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7150	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	46
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	3500	Cobalt Parent:	3	Nickel Parent:	8.5
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	40	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	3.5	Selenium Parent:	ND
Barium 0 to 5cm:	56	Iron 0 to 5cm:	8050	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	15	Iron Parent:	6400	Strontium Parent:	12
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	19	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	1	Vanadium Parent:	12
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	755	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1600	Zinc Parent:	11
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	235	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1100	Manganese Parent:	79	pH Parent:	NA
Chromium 0 to 5cm:	16	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	12	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

110

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F110

Location of sampling site

Helicopter site: near west shore of Kukagami Lake, Kelly Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area, fairly level, exposed bedrock. Groud cover is litter and small shrubs.

Easting

533312

NAD83
Zone 17

Northing

5178033

Reference

Helicopter

Altitude(m)

302

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dry, unconsolidated, 3 to 5 cm thick. Horizon 2 (Bt) is a medium brown, fine-grained, crumbly sand up to 10 cm thick.

Parent material field description

No depth sample possible. Large boulders and bedrock are encountered at approximately 30 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13020

Depth 5 - 10 cm:

13022

Depth 10 - 20 cm:

13024

Dup. Depth 0 - 5 cm:

13021

Dup. Depth 5 - 10 cm

13023

Dup. Depth 10 - 20 cm:

13025

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F110\F110-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F110\F110-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F110\F110-core.jpg

Parent material photo

Site Number

110

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6150	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	200
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	180	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	75	Iron 0 to 5cm:	9350	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	67	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.55	Magnesium 0 to 5cm:	700	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2650	Manganese 0 to 5cm:	73	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

111

Date sampled

12/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

111

Location of sampling site

Capreol.

Historical Inco sample station

OBM map number

Field observations

Dense forest dominated by poplar; some ground pine and moss.

Easting

505350

NAD83
Zone 17

Northing

5176369

Reference

Capreol

Altitude(m)

338

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ae: 0 to 5 cm; BC: >5 cm.
Texture: very fine-grained sand.

Parent material field description

Sample was collected between 80 and 100 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26457

Depth 5 - 10 cm:

26458

Depth 10 - 20 cm:

26459

Dup. Depth 0 - 5 cm:

26460

Dup. Depth 5 - 10 cm:

26461

Dup. Depth 10 - 20 cm:

26462

Parent material:

26463

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\111\2001-CEM-111-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\111\CEM-111-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\111\2001-CEM-111-
Core_1.jpg

Parent material photo

Site Number

111

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4050	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	81
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5700	Cobalt Parent:	4	Nickel Parent:	13
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	80	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	3.4	Selenium Parent:	ND
Barium 0 to 5cm:	63	Iron 0 to 5cm:	6700	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	18	Iron Parent:	10000	Strontium Parent:	27
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	16
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	23
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	570	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2000	Zinc Parent:	11
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	335	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2900	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	23	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

112

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F112

Location of sampling site

Helicopter site: south of Outlet Bay of Kukagami Lake, Kelly Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Thick wooded coniferous area. Ground cover is predominantly needles and shrubs. Site is gravelly and heavily rooted.

Easting

536897

NAD83
Zone 17

Northing

5175302

Reference

Helicopter

Altitude(m)

308

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, unconsolidated, 3 to 6 cm thick. Horizon 2 (Bt) is a medium brown, moist, silty sand mixed with occasional pebbles.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown silty sand mixed with occasional pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12849

Depth 5 - 10 cm:

12851

Depth 10 - 20 cm:

12853

Dup. Depth 0 - 5 cm:

12850

Dup. Depth 5 - 10 cm

12852

Dup. Depth 10 - 20 cm:

12854

Parent material:

12857

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F112\F112-site2.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F112\F112-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F112\F112-core.jpg

Parent material photo

Site Number

112

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6450	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	156
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	31
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	30
Aluminum Parent:	18000	Cobalt Parent:	6	Nickel Parent:	22
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	145	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	27	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	4	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.5	Selenium Parent:	ND
Barium 0 to 5cm:	81	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	40	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	40	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	42
Barium Parent:	38	Iron Parent:	20000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	55	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	50
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	42
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	42
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	845	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2050	Zinc 10 to 20cm:	23
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	28
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	103	pH 0 to 5cm:	3.6
Calcium 5 to 10cm:	2850	Manganese 5 to 10cm:	110	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	3100	Manganese 10 to 20cm:	135	pH 10 to 20cm:	4.7
Calcium Parent:	3300	Manganese Parent:	130	pH Parent:	4.7
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	189
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	4.6
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	24
Chromium Parent:	38	Molybdenum Parent:	ND	C TOC Parent:	18

Sudbury Regional Soils Project 2001

Site Number

113

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F113

Location of sampling site

Helicopter site: east of Kukagami Rd. near McLaren Creek, Rathbun Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous and deciduous area, thin. Ground cover is needles, dead wood, and shrubs. Site is near a logging road. Soil is very shallow, soil cores only to approximately 10 cm.

Easting

531274

NAD83
Zone 17

Northing

5175087

Reference

Helicopter

Altitude(m)

352

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, and unconsolidated, 5 cm thick. Horizon 2 (Bm) is an orange brown, fine- to medium-grained, unconsolidated sand. Horizon 1 is organic, black, moist, and unconsolidated, 5 cm thick. Horizon 2 is an orange brown, fine- to medium-grained, unconsolidated sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13429

Depth 5 - 10 cm:

13431

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13430

Dup. Depth 5 - 10 cm

13432

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F113\F113-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F113\F113-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F113\F113-core.jpg

Parent material photo

Site Number

113

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8450	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	155
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	140	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	85	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	1400	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

114

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F114

Location of sampling site

Helicopter site: east of Kukagami Lake west of Ford Lake, Kelly Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Dense wooded coniferous area, level, ground cover is predominantly needles. Bedrock is exposed in areas.

Easting

536455

Northing

5174581

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Soil is very shallow, sampled only to approximately 5 cm. Horizon 1 (LFH/Ah) is organic, black, with occasional sand, up to 7 cm thick.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12740

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12741

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F114\F114-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F114\F114-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F114\F114-core.jpg

Parent material photo

Site Number

114

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7850	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	187
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	160	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	90	Iron 0 to 5cm:	11550	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.9	Magnesium 0 to 5cm:	875	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2400	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	1.7	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

115

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

115

Location of sampling site

Hanmer Lake Rd. East.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Flat but undulating topography; rock outcrops; hit bed rock on almost every core. Herb: hard to tell, bunchberry, ground pine, brachythesius, moss and fungi on trees. Shrubs: 50% bracken fern, trace blueberry; Trees: 10% white birch, 10% red maple; 5% maple; 1% aspen.

Easting

502034

NAD83
Zone 17

Northing

5173760

Reference

Desmaris
Rd./Frenchman

Altitude(m)

352

Conditions

Sunny, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 10.5 cm; Ae: 10.5 to 15.5 cm (5Y 5/1), clay; Bf: 15.5 to 32 cm (5Y 4/6), silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25277

Depth 5 - 10 cm:

25278

Depth 10 - 20 cm:

25279

Dup. Depth 0 - 5 cm:

25280

Dup. Depth 5 - 10 cm:

25281

Dup. Depth 10 - 20 cm:

25282

Parent material:

Parent material field description

No sample could be collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\115\2001-CEM-115-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\115\CEM-115-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\115\2001-CEM-115-
CORE_1.JPG.jpg

Parent material photo

Site Number

115

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5500	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	253
Aluminum 5 to 10cm:	16500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	26
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	235	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	5.5	Copper 5 to 10cm:	35	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	31	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	95	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	34	Iron 5 to 10cm:	22000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	25	Iron 10 to 20cm:	22000	Strontium 10 to 20cm:	34
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	71	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9.5	Vanadium 10 to 20cm:	46
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	740	Zinc 0 to 5cm:	55
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1550	Zinc 5 to 10cm:	38
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1600	Zinc 10 to 20cm:	41
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	260	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	3250	Manganese 5 to 10cm:	190	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2550	Manganese 10 to 20cm:	175	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	147
Chromium 5 to 10cm:	36	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	36	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

116

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

116

Location of sampling site

Right after Stull St. in Capreol.

Historical Inco sample station

27

OBM map number

41 I/10

Field observations

Moved site on account of metallic garbage. Area flat to hummocky, relatively open; hit bedrock with all cores. Herb: 4 or 5 lichen species 5%, trace moss (Caribou, reindeer, British Soldier). Shrub: 40% blueberry, 10% sweet fern, 15% bracken fern, 5% grass, false pixie cup); Trees: 5% white birch, 2% aspen, 2% cherry.

Easting

505572

NAD83
Zone 17

Northing

5173901

Reference

Altitude(m)

322

Conditions

Sunny warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4.5 cm; Ah: 0 to 9 cm; either Bf or Bt: 9 to 18.5 cm. Texture: sandy to silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11139

Depth 5 - 10 cm:

11140

Depth 10 - 20 cm:

11141

Dup. Depth 0 - 5 cm:

11142

Dup. Depth 5 - 10 cm:

11143

Dup. Depth 10 - 20 cm:

11144

Parent material:

Parent material field description

No sample collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\116\2001-CEM-116-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\116\CEM-116-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\116\2001-CEM-116-
CORE_1.JPG.jpg

Parent material photo

Site Number

116

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9000	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	375
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	400	Selenium 0 to 5cm:	5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	130	Iron 0 to 5cm:	24500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	124	Vanadium 0 to 5cm:	45
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.6	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	73
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3850	Manganese 0 to 5cm:	505	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

117

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F117

Location of sampling site

Helicopter site: southwest of Klondike Bay on Kukagami Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded predominantly coniferous area with minor deciduous, level. Ground cover is predominantly needles/litter.

Easting

532815

NAD83
Zone 17

Northing

5172929

Reference

Helicopter

Altitude(m)

295

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, dry, unconsolidated, 3 to 5 cm thick. Horizon 2 (Ae) is a light grey to white, talc-like silty sand, 1-3 cm thick. Horizon 3 (Bt) is a light to medium brown silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a light brown silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12840

Depth 5 - 10 cm:

12842

Depth 10 - 20 cm:

12844

Dup. Depth 0 - 5 cm:

12841

Dup. Depth 5 - 10 cm

12843

Dup. Depth 10 - 20 cm:

12845

Parent material:

12849

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F117\F117-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F117\F117-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F117\F117-core.jpg

Parent material photo

Site Number

117

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6450	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	111
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7000	Cobalt Parent:	6	Nickel Parent:	134
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	104	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	7	Copper Parent:	120	Selenium Parent:	2
Barium 0 to 5cm:	60	Iron 0 to 5cm:	10800	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	77	Iron Parent:	13000	Strontium Parent:	28
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	47	Vanadium Parent:	30
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1260	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	870	Zinc Parent:	22
Calcium 0 to 5cm:	2400	Manganese 0 to 5cm:	96	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2000	Manganese Parent:	95	pH Parent:	3.7
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	37	Molybdenum Parent:	1.8	C TOC Parent:	175

Sudbury Regional Soils Project 2001

Site Number

118

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F118

Location of sampling site

Helicopter site: off Kukagami Rd. east of Cochrane Bay of Lake Wanapitei

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous/deciduous stand, level, ground cover is predominantly litter.

Easting

527225

Northing

5171807

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, 5 cm thick.
Horizon 2 (Bf) is a reddish brown, moist, fine-grained sand and gravel mixed with occasional pebbles.

Parent material field description

Depth sample collected from 50 to 60 cm consists of a reddish brown sand mixed with both clay and pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12720

Depth 5 - 10 cm:

12722

Depth 10 - 20 cm:

12724

Dup. Depth 0 - 5 cm:

12721

Dup. Depth 5 - 10 cm

12723

Dup. Depth 10 - 20 cm:

12725

Parent material:

12730

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F118\F118-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F118\F118-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F118\F118-core.jpg

Parent material photo

Site Number

118

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9100	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	77
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	81
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	27
Aluminum Parent:	20000	Cobalt Parent:	11	Nickel Parent:	54
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	82	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	92	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.9	Selenium Parent:	ND
Barium 0 to 5cm:	79	Iron 0 to 5cm:	10150	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	100	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	43
Barium 10 to 20cm:	50	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	37
Barium Parent:	79	Iron Parent:	20000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	25	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	27	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	38
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	38
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1550	Zinc 5 to 10cm:	22
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2150	Zinc 10 to 20cm:	25
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	29
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3400	Manganese 5 to 10cm:	145	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2400	Manganese 10 to 20cm:	185	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	35	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	41	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	84	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

119

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F119

Location of sampling site

Helicopter site: southwest of Klondike Bay on Kukagami Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous/deciduous area, level, ground cover is litter and shrubs. Soil at this site is very rooted and has an uneven boulder layer that prevents collection of a sample at 1 m.

Easting

530638

NAD83
Zone 17

Northing

5171639

Reference

Helicopter

Altitude(m)

347

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, unconsolidated, fluffy, 3 to 6 cm thick. Horizon 2 (Bt) is a medium brown, moist, fine-grained sand.

Parent material field description

Depth sample collected from 25 to 50 cm consists of a medium brown, wet, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12821

Depth 5 - 10 cm:

12823

Depth 10 - 20 cm:

12825

Dup. Depth 0 - 5 cm:

12822

Dup. Depth 5 - 10 cm

12824

Dup. Depth 10 - 20 cm:

12826

Parent material:

12829

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F119\F119-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F119\F119-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F119\F119-core.jpg

Parent material photo

Site Number

119

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6150	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	129
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	19
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	20
Aluminum Parent:	17000	Cobalt Parent:	8	Nickel Parent:	26
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	125	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	17	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	11	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	1.5	Selenium Parent:	ND
Barium 0 to 5cm:	76	Iron 0 to 5cm:	9000	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	29	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	25
Barium 10 to 20cm:	27	Iron 10 to 20cm:	15500	Strontium 10 to 20cm:	23
Barium Parent:	32	Iron Parent:	19000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6.5	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	600	Zinc 0 to 5cm:	13
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	760	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1200	Zinc 10 to 20cm:	16
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	21
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	75	pH 0 to 5cm:	3.6
Calcium 5 to 10cm:	1500	Manganese 5 to 10cm:	72	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	1500	Manganese 10 to 20cm:	77	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	140	pH Parent:	4.8
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	135
Chromium 5 to 10cm:	30	Molybdenum 5 to 10cm:	0.75	C TOC 5 to 10cm:	1.1
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	53	Molybdenum Parent:	ND	C TOC Parent:	8.6

Sudbury Regional Soils Project 2001

Site Number

120

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F120

Location of sampling site

Helicopter site: off West Bay Road on the west shore of Lake Wanapitei.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous area, level. Ground cover is predominantly needles/litter with some small shrubs.

Easting

516503

NAD83
Zone 17

Northing

5171412

Reference

Helicopter

Altitude(m)

286

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry, unconsolidated, 5 to 6 cm thick. Horizon 2 (Bt) is a medium brown, moist, fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey-brown silt changing to grey clay with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13028

Depth 5 - 10 cm:

13030

Depth 10 - 20 cm:

13032

Dup. Depth 0 - 5 cm:

13029

Dup. Depth 5 - 10 cm

13031

Dup. Depth 10 - 20 cm:

13033

Parent material:

13036

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F120\F120-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F120\F120-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F120\F120-core.jpg

Parent material photo

Site Number

120

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6200	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	305
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	9	Nickel Parent:	41
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	375	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	12650	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	62	Iron Parent:	14000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	94	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	33
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	850	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	20
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	87	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1800	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	1.2	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	58	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

121

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F121

Location of sampling site

Helicopter site: off Regional Rd. 97 east of Capreol and west of Ella Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded area on shore of swamp, exposed bedrock. Soil at this site is shallow, average soil depth is approximately 10 cm, and samples were collected in a narrow area.

Easting

509565

Northing

5170500

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 5 to 7 cm thick. Horizon 2 (Bf) is a reddish brown sand and gravel with trace silt and occasional pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13306

Depth 5 - 10 cm:

13308

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13307

Dup. Depth 5 - 10 cm

13309

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F121\F121-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F121\F121-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F121\F121-core.jpg

Parent material photo

Site Number

121

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6650	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	430
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	445	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	79	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	111	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.7	Magnesium 0 to 5cm:	730	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	98	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

122

Date sampled

10/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

122

Location of sampling site

Hwy 17 E; left at Kukagami Lake Rd. ~1km south of Sportsman's Lodge.

Historical Inco sample station

45

OBM map number

41-I/10

Field observations

Relatively flat area, undulating, forested, rocky, many outcrops, recreational use, trees painted red (~5 of them in quadrant), some styrofoam garbage. Forest floor: leaf litter, mosses, club moss, grasses, needles, pine, lichen. Herb/Shrub: sheep's laurel, juniper, fern, lots of outcrops. Trees: oak, maple, pine, some willow, many downed trees.

Easting

531260

Northing

5174230

NAD83
Zone 17

Reference

Kukagami Lake-Sportsman's Lodge

Altitude(m)

324

Conditions

Humid & overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 3 cm; Ae: 3 to 4 cm; Bm: 4 to 64 cm. Texture: silt-sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10941

Depth 5 - 10 cm:

10942

Depth 10 - 20 cm:

10943

Dup. Depth 0 - 5 cm:

10947

Dup. Depth 5 - 10 cm:

10948

Dup. Depth 10 - 20 cm:

10949

Parent material:

Parent material field description

No sample collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\122\CEM-122-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

122

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	211
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	205	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	100	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	72	Vanadium 0 to 5cm:	46
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	6000	Zinc 0 to 5cm:	71
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4400	Manganese 0 to 5cm:	1020	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	59	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

123

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F123

Location of sampling site

Helicopter site, west of Washagami Lake, Davis Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Wooded slope area, exposed bedrock. Soil at this site is shallow, average soil depth is approximately 10 cm.

Easting

538753

Northing

5169441

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 cm thick. Horizon 2 (Bt) is a brown sand mixed with gravel, containing trace silt and occasional pebbles.

Parent material field description

Depth sample collected from 20 to 30 cm consists of a brown sand mixed with gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12733

Depth 5 - 10 cm:

12735

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12734

Dup. Depth 5 - 10 cm:

12736

Dup. Depth 10 - 20 cm:

Parent material:

12739

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F123\F123-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F123\F123-core.jpg

Parent material photo

Site Number

123

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7600	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	160
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	26000	Cobalt Parent:	10	Nickel Parent:	32
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	140	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	5	Copper Parent:	19	Selenium Parent:	ND
Barium 0 to 5cm:	89	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	64	Iron Parent:	23000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	50	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	48
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	750	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	24
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	93	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	5000	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	59	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

124

Date sampled

10/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

124

Location of sampling site

Deschene Rd. off Regional Rd. 80, Val Therese.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Forested area, slightly hummocky; a few fallen trees. Hard to identify shrubs due to snow cover. Shrubs: bunchberry, jack pine seedlings (trace), some moss, blueberry, grass. Trees: Trembling Aspen (25%).

Easting

500594

Northing

5169464

NAD83
Zone 17

Reference

Val Therese

Altitude(m)

312

Conditions

Overcast snow on ground

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3.5; Ah: 0 to 6.5 cm; Ae: 6.5 to 8 cm; Bf: 8 to 126 cm (5YR 5/8). Texture: sandy.

Parent material field description

Sample was collected between 87 and 126 cm. Texture: fine to coarse sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11119

Depth 5 - 10 cm:

11120

Depth 10 - 20 cm:

11121

Dup. Depth 0 - 5 cm:

11122

Dup. Depth 5 - 10 cm:

11123

Dup. Depth 10 - 20 cm:

11124

Parent material:

11125

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\124\2001-CEM-124-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\124\CEM-124-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\124\2001-CEM-124-CORE_1.JPG.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

124

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	5250	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	239
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5900	Cobalt Parent:	4	Nickel Parent:	18
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	230	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	9.3	Selenium Parent:	ND
Barium 0 to 5cm:	82	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	19	Iron Parent:	9900	Strontium Parent:	19
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	20
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	885	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	11
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	535	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2100	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	24	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

125

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

125

Location of sampling site

Regional Rd. 80, south of Capreol; across from Suez gravel pit.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open, hummocky forest dominated by jackpine with some shrub species i.e. 5% pin cherry. Herb: 10% brachythecium, 10% pohlia; 15% winterberry family *shin leaf; 15% grass; 10% blueberry. Trees: 45% jack pine.

Easting

506463

NAD83
Zone 17

Northing

5168896

Reference

Regional Rd.
80/Capreol

Altitude(m)

313

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 5 cm; Ae: 5 to 10 cm; Bt: 10 to 30 cm. Some cores had a Bf horizon in place of a Bt. Texture: fine-grained sand grading to coarse sand with depth.

Parent material field description

Sample collected between 83 and 122 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11109

Depth 5 - 10 cm:

11110

Depth 10 - 20 cm:

11111

Dup. Depth 0 - 5 cm:

11112

Dup. Depth 5 - 10 cm:

11113

Dup. Depth 10 - 20 cm:

11114

Parent material:

11118

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\125\2001-CEM-125-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\125\CEM-124-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\125\2001-CEM-125-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\125\2001-CEM-125-
PARENT_1.JPG.jpg

Site Number

125

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7300	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	274
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6100	Cobalt Parent:	6	Nickel Parent:	23
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	330	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	48	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	20	Iron Parent:	14000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	71	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	32
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1175	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3000	Zinc Parent:	13
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	165	pH 0 to 5cm:	3.6
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	160
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	31	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

126

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F126

Location of sampling site

Helicopter site: east of Ashigami Lake off Kukagami Lake Rd., Davis Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous area beside swamp, exposed bedrock. Soil at this site is very shallow, average soil depth is approximately 5 cm. Bedrock is visible at surface.

Easting

534375

NAD83
Zone 17

Northing

5167189

Reference

Helicopter

Altitude(m)

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 cm thick.

Parent material field description

No depth sample possible.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12731

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12732

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F126\F126-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F126\F126-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F126\F126-core.jpg

Parent material photo

Site Number

126

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	166
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	9.5	Copper 0 to 5cm:	135	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	71	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	680	Zinc 0 to 5cm:	18
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	97	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	1.1	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

127

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

127

Location of sampling site

Nickel Offset Rd.; 1 km past Fire Route B.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Site is forested, flat, no slope. Herb: 10% ground pin brachythecium. Shrub, 50% bracken fern, 5% white birch; Trees: 10% trembling aspen, 5% birch (white) some alder.

Easting

483400

NAD83
Zone 17

Northing

5167089

Reference

Chelmsford

Altitude(m)

310

Conditions

Overcast, rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 5 cm (dark brown); Ae: 5 to 14 cm (light grey); Bt: 14 to 20 cm (light brown); Bg: >20 cm. Texture: sandy to silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11100

Depth 5 - 10 cm:

11101

Depth 10 - 20 cm:

11102

Dup. Depth 0 - 5 cm:

11103

Dup. Depth 5 - 10 cm:

11104

Dup. Depth 10 - 20 cm:

11105

Parent material field description

No sample could be collected; soil too shallow.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\127\2001-CEM-127-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\127\CEM-127-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\127\2001-CEM-127-
CORE_1.JPG.jpg

Parent material photo

Site Number

127

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	78
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	67	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	91	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2050	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4000	Manganese 0 to 5cm:	615	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

128

Date sampled

10/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

128

Location of sampling site

Suez Dr. south of Capreol.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Area is Flat; lower storey of trees dead. Herb: trace lichens; 70% ground cedar, 10% polytrichium moss. Shrub: velvet leaf, blueberry, sheep laurel; Trees: 90% Jack Pine; 3% Dogwood.

Easting

506837

NAD83
Zone 17

Northing

5167445

Reference

Suez Dr/Capreol

Altitude(m)

311

Conditions

Cloudy, rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 4 cm; Ae: 4 to 7 cm; Bt: 7 to 16 cm; Ae: 16 to 24 cm; Bt: 24 to 92 cm; Bg: >24 cm. (some cores did not contain an Ae horizon between 16 to 24 cm). Texture: silty.

Parent material field description

Sampe was collected between 54 and 122 cm. Texture: silty-sandy (sandier at depth). Red mottles appear >90 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11090

Depth 5 - 10 cm:

11091

Depth 10 - 20 cm:

11092

Dup. Depth 0 - 5 cm:

11093

Dup. Depth 5 - 10 cm

11094

Dup. Depth 10 - 20 cm:

11095

Parent material:

11099

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\128\2001-CEM-128-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\128\CEM-128-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\128\2001-CEM-128-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\128\2001-CEM-128-
PARENT_1.JPG.jpg

Site Number

128

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8050	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	175
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5200	Cobalt Parent:	4	Nickel Parent:	18
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	190	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	5.5	Selenium Parent:	ND
Barium 0 to 5cm:	23	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	20	Iron Parent:	8500	Strontium Parent:	21
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	20
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2000	Zinc Parent:	9.8
Calcium 0 to 5cm:	2000	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	160	pH Parent:	NA
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	22	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

129

Date sampled

10/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

129

Location of sampling site

Kenneth St. Val Therese.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Area is flat, forested. Herb: trace wild strawberry, poverty grass trace, trace alder; Shrubs: 80% raspberry, 2% aster, 5% fireweed, 5% Canada bluejoint grass, poplar seedlings. Trees: 30% T.aspen, <1% white birch, 25% alder.

Easting

497710

Northing

5166965

NAD83
Zone 17

Reference

Desmarais Rd.

Altitude(m)

307

Conditions

Sunny-overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah & charcoal: 0 to 5 cm; Ae: 5 to 11.5 cm; Bt: 11.5 to 20 cm; Bg: >20 cm.
High soil variability.

Parent material field description

Sample was collected between 83 and 123 cm. Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11060

Depth 5 - 10 cm:

11061

Depth 10 - 20 cm:

11062

Dup. Depth 0 - 5 cm:

11063

Dup. Depth 5 - 10 cm:

11064

Dup. Depth 10 - 20 cm:

11065

Parent material:

11069

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\129\CEM-129-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

129

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6750	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	195
Aluminum 5 to 10cm:	10500	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	38
Aluminum 10 to 20cm:	12500	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	22
Aluminum Parent:	9300	Cobalt Parent:	5	Nickel Parent:	22
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	180	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	40	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8.3	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	10	Selenium Parent:	ND
Barium 0 to 5cm:	50	Iron 0 to 5cm:	10000	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	33	Iron 5 to 10cm:	12500	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	30	Iron 10 to 20cm:	15000	Strontium 10 to 20cm:	35
Barium Parent:	31	Iron Parent:	14000	Strontium Parent:	51
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	31
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1950	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2300	Zinc 10 to 20cm:	20
Cadmium Parent:	ND	Magnesium Parent:	5800	Zinc Parent:	24
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	160	pH 0 to 5cm:	4
Calcium 5 to 10cm:	3400	Manganese 5 to 10cm:	140	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3050	Manganese 10 to 20cm:	135	pH 10 to 20cm:	4.4
Calcium Parent:	11000	Manganese Parent:	290	pH Parent:	7
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	147
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	31
Chromium 10 to 20cm:	32	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	11
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	0.96

Sudbury Regional Soils Project 2001

Site Number

130

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

130

Location of sampling site

Follow R.R. 80 to Hanmer; turn N onto Deschene Rd., turn E onto gravel drive 500 m and turn S onto cart road and follow into site.

Historical Inco sample station

26

OBM map number

41 I/10

Field observations

Site is located within a jackpine forest with some open areas; hummocky. Herb: 50% brachythecium, 2% bunchberry. Shrub: 10% sheep's laurel, 1% bracken fern, blueberry. Trees: 80% Jack Pine, 5% white spruce.

Easting

501991

NAD83
Zone 17

Northing

5168019

Reference

Deschene Rd.
Hanmer

Altitude(m)

320

Conditions

Sunny warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm; Ae: 1 to 6 cm (10YR 6/2); Bt: 6 to 119 cm (10YR 5/8).
Texture: sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25339

Depth 5 - 10 cm:

25340

Depth 10 - 20 cm:

25341

Dup. Depth 0 - 5 cm:

25342

Dup. Depth 5 - 10 cm:

24343

Dup. Depth 10 - 20 cm:

25344

Parent material:

25345

Parent material field description

Sample collected from 78 to 119 cm. Colour: 2.5Y 5/4.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\130\2001-CEM-130-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\130\CEM-130-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\130\2001-CEM-130-
Core_1.jpg

Parent material photo

Site Number

130

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4950	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	231
Aluminum 5 to 10cm:	6600	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	23
Aluminum Parent:	5100	Cobalt Parent:	4	Nickel Parent:	16
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	190	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	37	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.9	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	6.9	Selenium Parent:	ND
Barium 0 to 5cm:	49	Iron 0 to 5cm:	9150	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	32	Iron 5 to 10cm:	7400	Strontium 5 to 10cm:	16
Barium 10 to 20cm:	32	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	28
Barium Parent:	18	Iron Parent:	9700	Strontium Parent:	19
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	19
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	28
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	740	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	710	Zinc 5 to 10cm:	16
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1850	Zinc 10 to 20cm:	25
Cadmium Parent:	ND	Magnesium Parent:	2500	Zinc Parent:	9.6
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	200	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	1200	Manganese 5 to 10cm:	260	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2400	Manganese 10 to 20cm:	185	pH 10 to 20cm:	NA
Calcium Parent:	1900	Manganese Parent:	160	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	94
Chromium 5 to 10cm:	17	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	29	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	23	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

131

Date sampled

10/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F131

Location of sampling site

Helicopter site: east of Ashigami Lake off Kukagami Lake Rd., Davis Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous/deciduous stand, level. Ground cover is litter, shrubs, and mosses.

Easting

536725

Northing

5166970

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

318

Conditions

Overcast, raining

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry, unconsolidated, 2 to 5 cm thick. Horizon 2 (Bt) is a medium brown, fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 40 to 60 cm consists of a medium brown, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12830

Depth 5 - 10 cm:

12832

Depth 10 - 20 cm:

12834

Dup. Depth 0 - 5 cm:

12831

Dup. Depth 5 - 10 cm

12833

Dup. Depth 10 - 20 cm:

12835

Parent material:

12838

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F131\F131-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F131\F131-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F131\F131-core.jpg

Parent material photo

Site Number

131

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10350	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	135
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	9.5	Copper 0 to 5cm:	115	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	8	Copper Parent:	27	Selenium Parent:	ND
Barium 0 to 5cm:	65	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	31	Iron Parent:	25000	Strontium Parent:	38
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	41	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	50
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1030	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	25
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	99	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3000	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

132

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

132

Location of sampling site

Helicopter site; within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Flat to slightly undulating, sloping to the south, exposed bedrock to the west. Tree cover 35%: birch, maple, jack pine. Shrubs 60%: bracken fern, young birch and maple, Labrador tea. Herbs 5%: leaves, wintergreen(?), cornus, moss. Floor: leaves.

Easting

477228

NAD83
Zone 17

Northing

5166336

Reference

Helicopter

Altitude(m)

410

Conditions

Damp

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 11.5 cm; Ah: 0 to 3 cm; Ae: 3-7 cm; Bt: 7-15 cm, sandy; Bt: >15 cm, silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11706

Depth 5 - 10 cm:

11707

Depth 10 - 20 cm:

11708

Dup. Depth 0 - 5 cm:

11709

Dup. Depth 5 - 10 cm:

11710

Dup. Depth 10 - 20 cm:

11711

Parent material field description

No sample could be collected.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\132\2001-CEM-132-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\132\CEM-132-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\132\2001-CEM-132-
CORE_1.JPG.jpg

Parent material photo

Site Number

132

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	228
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	37
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	25
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	170	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	42	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	115	Iron 0 to 5cm:	8300	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	56	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	38
Barium 10 to 20cm:	45	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	38
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	80	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	21	Vanadium 5 to 10cm:	49
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	10	Vanadium 10 to 20cm:	50
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	745	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1350	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1950	Zinc 10 to 20cm:	30
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2600	Manganese 5 to 10cm:	275	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	145	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	2.5	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	45	Molybdenum 5 to 10cm:	2.8	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	52	Molybdenum 10 to 20cm:	1.3	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

133

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F133

Location of sampling site

Helicopter site: east of Kukagami Rd. west of Ashigami Lake, Scadding Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous/shrub slope area. Ground cover is needles and Labrador tea.

Easting

530903

Northing

5165758

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

285

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, unconsolidated, 3-5 cm thick. Horizon 2 (Bt) is a medium brown, silty sand, persists to 20 cm. Occasional cores have a thin (<1.5 cm thick) grey silty horizon (Ae) which grades into the medium brown sand.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12812

Depth 5 - 10 cm:

12814

Depth 10 - 20 cm:

12816

Dup. Depth 0 - 5 cm:

12813

Dup. Depth 5 - 10 cm:

12815

Dup. Depth 10 - 20 cm:

12817

Parent material:

12820

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F133\F133-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F133\F133soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F133\F133-core.jpg

Parent material photo

Site Number

133

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4500	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	191
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	15000	Cobalt Parent:	15	Nickel Parent:	77
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	200	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	5	Copper Parent:	ND	Selenium Parent:	ND
Barium 0 to 5cm:	88	Iron 0 to 5cm:	9450	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	44	Iron Parent:	22000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	57	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	48
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	530	Zinc 0 to 5cm:	23
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5400	Zinc Parent:	16
Calcium 0 to 5cm:	1200	Manganese 0 to 5cm:	66	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2400	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	130	Molybdenum Parent:	1.6	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

134

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

134

Location of sampling site

Helicopter site; within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Hummocky to undulating; exposed bedrock to the north. Tree cover 50%: aspen, maple. Shrub 40%: bracken ferns, small aspen, small maple. Herb: 10% running club moss, grasses, moss. Floor cover: leaves and moss, fallen trees.

Easting

484396

NAD83
Zone 17

Northing

5164828

Reference

Helicopter

Altitude(m)

316

Conditions

Dry to damp

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6.5 cm; Ah: 0 to 3.5 cm (black); Ae: 3.5 to 4.5 cm (grey), silty; Bg: >4.5 cm (grey-brown), clay or Bt: >4.5 cm (brown), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11699

Depth 5 - 10 cm:

11700

Depth 10 - 20 cm:

11701

Dup. Depth 0 - 5 cm:

11702

Dup. Depth 5 - 10 cm:

11703

Dup. Depth 10 - 20 cm:

11704

Parent material:

11705

Parent material field description

Sample was collected between 52 and 86 cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\134\2001-CEM-134-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\134\CEM-134-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\134\2001-CEM-134-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\134\2001-CEM-134-
PARENT_1.JPG.jpg

Site Number

134

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	165
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	7	Nickel Parent:	28
Arsenic 0 to 5cm:	13	Copper 0 to 5cm:	120	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	68	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	52	Iron Parent:	20000	Strontium Parent:	44
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	42
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	98
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4200	Zinc Parent:	29
Calcium 0 to 5cm:	3350	Manganese 0 to 5cm:	575	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3700	Manganese Parent:	250	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	2.2	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	48	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

135

Date sampled

10/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

135

Location of sampling site

Vern Rd., Blezard Valley.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Relatively flat, low lying area; wet. Dense bush; floor littered with dead wood. Herb 5% pholia; 39% wild strawberry; trash Bachy thesium. Shrub 3% solidago, 3% mountain ash; birch seedlings, fir seedlings, alder coppice. Trees 10% yellow birch, 15% alder; spruce.

Easting

492933

NAD83
Zone 17

Northing

5164071

Reference

Blezard Valley

Altitude(m)

306

Conditions

Cloudy-sunny,
warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 1 cm (black); Bg: 1 to 21 cm (dark grey); Bt: 21 to 28 cm; Bg: >28 cm (dark grey).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11040

Depth 5 - 10 cm:

11041

Depth 10 - 20 cm:

11042

Dup. Depth 0 - 5 cm:

11043

Dup. Depth 5 - 10 cm:

11044

Dup. Depth 10 - 20 cm:

11045

Parent material:

11050

Parent material field description

Sample collected between 80 and 100 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\135\CEM-135-
soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

135

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	10600	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	123
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6800	Cobalt Parent:	6	Nickel Parent:	29
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	90	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	8.8	Selenium Parent:	ND
Barium 0 to 5cm:	45	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	24	Iron Parent:	12000	Strontium Parent:	52
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	21	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	24
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3150	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	20000	Zinc Parent:	16
Calcium 0 to 5cm:	8450	Manganese 0 to 5cm:	290	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	53000	Manganese Parent:	210	pH Parent:	NA
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

136

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F136

Location of sampling site

Helicopter site: west of Kukagami Rd. near Moose Rapids, Scadding Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded/shrubby area near swamp, level. Ground cover is Labrador tea and small shrubs. Soil at this site is very shallow, and bedrock is exposed. Average soil depth is approximately 10 cm.

Easting

526610

NAD83
Zone 17

Northing

5164805

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, mixed with some sand, 10 cm thick. Horizon 2 (Bt) is a sandy gravel on top of bedrock, persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 45 cm consists of moist organic material and grey-brown gravel on bedrock.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12714

Depth 5 - 10 cm:

12716

Depth 10 - 20 cm:

12718

Dup. Depth 0 - 5 cm:

12715

Dup. Depth 5 - 10 cm:

12717

Dup. Depth 10 - 20 cm:

12719

Parent material:

12729

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F136\F136-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F136\F136-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F136\F136-core.jpg

Parent material photo

Site Number

136

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	20000	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	289
Aluminum 5 to 10cm:	32000	Cobalt 5 to 10cm:	7.5	Nickel 5 to 10cm:	88
Aluminum 10 to 20cm:	35000	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	50
Aluminum Parent:	91000	Cobalt Parent:	20	Nickel Parent:	145
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	345	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	145	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	72	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	210	Selenium Parent:	ND
Barium 0 to 5cm:	40	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	33	Iron 5 to 10cm:	15500	Strontium 5 to 10cm:	31
Barium 10 to 20cm:	38	Iron 10 to 20cm:	15000	Strontium 10 to 20cm:	39
Barium Parent:	37	Iron Parent:	18000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	65	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	38
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	32
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	1900	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2550	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3050	Zinc 10 to 20cm:	21
Cadmium Parent:	ND	Magnesium Parent:	6000	Zinc Parent:	30
Calcium 0 to 5cm:	4050	Manganese 0 to 5cm:	94	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	5700	Manganese 5 to 10cm:	93	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	6650	Manganese 10 to 20cm:	125	pH 10 to 20cm:	NA
Calcium Parent:	22000	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	60	Molybdenum 5 to 10cm:	1.7	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	65	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	82	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

137

Date sampled

11/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

137

Location of sampling site

North side of Main St. in Blezard Valley.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Soil very wet. Vegetation: T. aspen, willows.

Easting

495154

Northing

5162005

NAD83
Zone 17

Reference

Blezard Valley

Altitude(m)

286

Conditions

Snowing

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 0.3 cm; Ah: 0 to 15 cm (brown); Bg: >15 cm (gleyed, with rust coloured mottles).
Texture: clay.

Parent material field description

Sample collected between 80 and 100 cm.
Texture: clay. Colour: gleyed with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26437

Depth 5 - 10 cm:

26438

Depth 10 - 20 cm:

26439

Dup. Depth 0 - 5 cm:

26440

Dup. Depth 5 - 10 cm:

26441

Dup. Depth 10 - 20 cm:

26442

Parent material:

26446

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\137\2001-CEM-137-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\137\CEM-137-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\137\2001-CEM-137-
Core_1.jpg

Parent material photo

Site Number

137

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	136
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6600	Cobalt Parent:	4	Nickel Parent:	15
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	91	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	36	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	87	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	49
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	55	Iron Parent:	27000	Strontium Parent:	42
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	16	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	30
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2850	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	14
Calcium 0 to 5cm:	10000	Manganese 0 to 5cm:	365	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7500	Manganese Parent:	520	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	27	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

138

Date sampled

10/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

138

Location of sampling site

End of Main St in Val Caron.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Moss and Lichens on trees and ground. 20 degree slope (West to East); flattening on E corner; abundant dead wood. Herb: pohlia; brachthecium; lichen, hard to asses %. Shrub 15% aster, 1% pin cherry, <1% maple, 2% poverty grass. Trees: 10% trembling Aspen; 5% white birch, 3% alder.

Easting

503435

Northing

5161919

NAD83
Zone 17

Reference

Val Caron

Altitude(m)

338

Conditions

Windy, sun, cloud

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2.5 cm; Ah: 0 to 2.5 cm (dark brown); Bt: 2.5 to 84 cm (light brown).
Texture: silty.

Parent material field description

Sample was collected from several holes from 55 to 80 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11080

Depth 5 - 10 cm:

11081

Depth 10 - 20 cm:

11082

Dup. Depth 0 - 5 cm:

11083

Dup. Depth 5 - 10 cm

11084

Dup. Depth 10 - 20 cm:

11085

Parent material:

11089

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\138\CEM-138-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

138

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	291
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	5	Nickel Parent:	21
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	245	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	56	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	44	Iron Parent:	14000	Strontium Parent:	61
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	3550	Zinc 0 to 5cm:	71
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3100	Zinc Parent:	22
Calcium 0 to 5cm:	4250	Manganese 0 to 5cm:	440	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7100	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	46	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

139

Date sampled

10/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

139

Location of sampling site

Hwy 17 East; Kukagami Lake Rd.

Historical Inco sample station

44

OBM map number

41-I/10

Field observations

Spruce forest, flat, semi-dense, carpeted in moss; few small hummocks. Many dead and buried trees covered in lichen. NE corner of quadrant wetter with ~90% grass. Trees (24%): 95% spruce, 5% birch and trembling Aspen (none in quadrant). Shrubs (1%): willow? Herbs (1%): small flowering plants --wintergreen? 74% floor cover--leaf litter on moss carpet (2 types of moss) logs covered in moss.

Easting

529182

NAD83
Zone 17

Northing

5161888

Reference

Kukagami Lake Rd. @ railway

Altitude(m)

285

Conditions

Drizzle; downpour

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 6 cm; Ae: 6 to 14 cm (whitish grey), silt; Bm: 14 to >157 cm (light, yellow/brown) fine-coarse sand with coarse fragment at depth.

Parent material field description

Three bags of parent material collected: 1) collected 65 to 85 cm; yellow/brown, sand 2) 85 to 127 cm; yellow/brown, coarse sand 3) 127 to 157 cm; greyer in colour with dark "specs" with sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10964

Depth 5 - 10 cm:

10965

Depth 10 - 20 cm:

10966

Dup. Depth 0 - 5 cm:

10953

Dup. Depth 5 - 10 cm

10954

Dup. Depth 10 - 20 cm:

10955

Parent material:

10956

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\139\CEM-139-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

139

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9950	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	173
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	6500	Cobalt Parent:	6	Nickel Parent:	22
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	170	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	36	Iron Parent:	13000	Strontium Parent:	15
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	24
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	1850	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	14
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	425	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1500	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	27	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

140

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F140

Location of sampling site

Helicopter site: west of Kukagami Lake Rd., north of the Wanapitei River, Street Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded coniferous area, flat, ground cover is small shrubs and some deadwood.

Easting

524550

NAD83
Zone 17

Northing

5162270

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black. Horizon 2 (Bf/Bg) is a reddish brown, medium- to fine-grained sand, with occasional gravel and pebbles, persists to 20 cm. Colour of sand varies to grey in some cores.

Parent material field description

Depth sample collected from 60 to 80 cm consists of a light grey silt with trace sand and pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12677

Depth 5 - 10 cm:

12679

Depth 10 - 20 cm:

12681

Dup. Depth 0 - 5 cm:

12678

Dup. Depth 5 - 10 cm

12680

Dup. Depth 10 - 20 cm:

12682

Parent material:

12685

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F140\F140-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F140\F140-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F140\F140-core.jpg

Parent material photo

Site Number

140

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7950	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	351
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	17000	Cobalt Parent:	8	Nickel Parent:	25
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	470	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	105	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	96	Iron Parent:	19000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	85	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	40
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	1020	Zinc 0 to 5cm:	23
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4400	Zinc Parent:	16
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	82	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4100	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

141

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F141

Location of sampling site

Helicopter site: east of Kukagami Lake Rd., south of rail line.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded coniferous area with occasional deciduous trees and some bedrock outcropping. Ground cover is predominantly litter/needles. Soil at this site is very rooted.

Easting

532614

Northing

5160645

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

298

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, unconsolidated, 3 to 6 cm thick. Horizon 2 (Bt) is a medium brown, moist, fine-grained sand, persists to 20 cm. Occasional cores have a thin (<1 cm thick) light grey silt horizon (Ae) present below the organic material.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12378

Depth 5 - 10 cm:

12380

Depth 10 - 20 cm:

12382

Dup. Depth 0 - 5 cm:

12379

Dup. Depth 5 - 10 cm

12381

Dup. Depth 10 - 20 cm:

12383

Parent material:

12386

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F141\F141-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F141\F141-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F141\F141-core.jpg

Parent material photo

Site Number

141

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9900	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	224
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	6	Nickel Parent:	24
Arsenic 0 to 5cm:	13	Copper 0 to 5cm:	225	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	66	Iron Parent:	22000	Strontium Parent:	53
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	46
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	37
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3900	Zinc Parent:	31
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5200	Manganese Parent:	240	pH Parent:	NA
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	1	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	59	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

142

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

142

Location of sampling site

Martin Rd., Blezard Valley.

Historical Inco sample station

25

OBM map number

41 I/11

Field observations

Site was slightly forested with mature aspen and spruce trees; predominantly herbaceous cover, slightly hummocky. Herb: bunchberry, liverwort, brachythecium (10%) polytrichnium. Shrubs: 90% Labrador tea and sheep laurel, pin cherry, spruce, 5% ptd shrub. Trees: 15% Jack Pine, 5% trembling aspen, spruce.

Easting

496252

NAD83
Zone 17

Northing

5162556

Reference

Altitude(m)

307

Conditions

Cool, windy, sun & cloud

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm (black); Bg: 5 to 15.5 cm (10YR 6/3); Ah: 15.5 to 16.5 cm (black); Bt: 16.5 to 126 cm (10YR 6/6).
Texture: clay.

Parent material field description

Sample collected between 84 and 126 cm.
Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11129

Depth 5 - 10 cm:

11130

Depth 10 - 20 cm:

11131

Dup. Depth 0 - 5 cm:

11132

Dup. Depth 5 - 10 cm:

11133

Dup. Depth 10 - 20 cm:

11134

Parent material:

11138

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\142\2001-CEM-142-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\142\CEM-142-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\142\2001-CEM-142-CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\142\2001-CEM-142-PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

142

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	7150	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	258
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	8100	Cobalt Parent:	5	Nickel Parent:	24
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	205	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	6.2	Selenium Parent:	ND
Barium 0 to 5cm:	29	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	27	Iron Parent:	13000	Strontium Parent:	37
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	29
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	14
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4300	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	33	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

143

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

143

Location of sampling site

East of Onaping Falls; Hwy 144 N; East onto Wallace Rd.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Forested with a few open areas, hummocky terrain, fallen trees, lots of litter and moss on ground. Hit bedrock on most of the cores. Some low lying areas with water in them. Ground: lichens, moss. Herb: polytrichium, brachythecium. Shrub: blueberry 1-5%. Trees: 50% balsam fir, 1% aspen, >1% white birch, 5% spruce.

Easting

479378

Northing

5159652

NAD83
Zone 17

Reference

Wallace Rd., S of Dowling

Altitude(m)

310

Conditions

Cloudy, cool, windy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 13 cm; Ah: 0 to 3 cm (black); Ae: 3 to 8 cm (light grey); Bg: 8 to 33 cm (10YR 6/1 with brown mottles), clay; Bt: 33 to 82 cm (10YR 5/8); Bg: >82 cm (2.5Y 6/2), sandy texture.

Parent material field description

Two samples were collected: 1) 50 to 79 cm 2) 80 to 107 cm. Texture: clay. Colour: 2.5Y 6/2 with brown mottling.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25325

Depth 5 - 10 cm:

25326

Depth 10 - 20 cm:

35327

Dup. Depth 0 - 5 cm:

25328

Dup. Depth 5 - 10 cm:

25329

Dup. Depth 10 - 20 cm:

25330

Parent material:

25334

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\143\2001-CEM-143-Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\143\CEM-143-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\143\2001-CEM-143-Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

143

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	207
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	22000	Cobalt Parent:	10	Nickel Parent:	40
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	125	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	33	Selenium Parent:	ND
Barium 0 to 5cm:	66	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	130	Iron Parent:	28000	Strontium Parent:	77
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	9	Vanadium Parent:	63
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2200	Zinc 0 to 5cm:	62
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6600	Zinc Parent:	39
Calcium 0 to 5cm:	3800	Manganese 0 to 5cm:	605	pH 0 to 5cm:	5
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7100	Manganese Parent:	440	pH Parent:	NA
Chromium 0 to 5cm:	62	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	103
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	85	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

144

Date sampled

12/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

144

Location of sampling site

Hwy 144 to Larchwood Ave, just south of Dowling.

Historical Inco sample station

OBM map number

41 I/11

Field observations

5 degree slope; many hidden rocks when coring. Floor: dead leaves and logs. No shrubs Trees: 90% Balsam fir, 1% poplar.

Easting

476121

Northing

5159066

NAD83
Zone 17

Reference

Dowling

Altitude(m)

286

Conditions

Clear, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ae: 0 to 3 cm (5Y 4/1), silty; Bg: 3 to 21 cm (5Y 4/1), silty-sandy; Bg/Bt: >21 cm (10YR 5/8, with mottles), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26124

Depth 5 - 10 cm:

26125

Depth 10 - 20 cm:

26126

Dup. Depth 0 - 5 cm:

26127

Dup. Depth 5 - 10 cm:

26128

Dup. Depth 10 - 20 cm:

26129

Parent material:

Parent material field description

No sample was collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\144\2001-CEM-144-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\144\CEM-144-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\144\2001-CEM-144-
CORE_1.JPG.jpg

Parent material photo

Site Number

144

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16000	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	158
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	125	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	112	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	59
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	2800	Zinc 0 to 5cm:	66
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	5100	Manganese 0 to 5cm:	190	pH 0 to 5cm:	4.5
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	64	Molybdenum 0 to 5cm:	1.1	C TOC 0 to 5cm:	214
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

145

Date sampled

11/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

145

Location of sampling site

Chelmsford: ~60 m from UTM site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Area surrounded by farmland, this site may have been farmland at one time. Area very flat, dominated by alders with some T. aspen. Area very wet, upper part of soil very wet; not much LFH, just a bit of leaf litter. Veg: alder, T. aspen, strawberry, ferns (ostrich fern), mosses, grasses. Floor: leaf litter, twigs, logs.

Easting

487353

NAD83
Zone 17

Northing

5158836

Reference

Bonin, Chelmsford

Altitude(m)

304

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ah (Ap?): 0 to 14 cm; B: 8 to >30 cm (2.5Y6/3). Texture: silt. Little variability in profile.

Parent material field description

Sample was taken between 75 and 110 cm. Texture: silt. Colour: 2.5Y 6/3; mottles: common, fine, distinct (7.5YR 5/8).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11331

Depth 5 - 10 cm:

11333

Depth 10 - 20 cm:

11335

Dup. Depth 0 - 5 cm:

11332

Dup. Depth 5 - 10 cm

11334

Dup. Depth 10 - 20 cm:

11336

Parent material:

11337

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\145\2001-CEM-145-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\145\CEM-145-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\145\2001-CEM-145-
Core_1.JPG

Parent material photo

Site Number

145

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	75
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	8100	Cobalt Parent:	5	Nickel Parent:	19
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	46	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	57	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	28	Iron Parent:	13000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	13	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	27
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4050	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	15000	Zinc Parent:	14
Calcium 0 to 5cm:	11200	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	31000	Manganese Parent:	240	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	30	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

146

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F146

Location of sampling site

Helicopter site: northeast of North Rd., Loughrin Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous area, slightly sloping. Ground cover is small saplings, shrubs, moss, and litter.

Easting

538245

Northing

5158742

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 7 cm thick. Horizon 2 (Ae) is a light grey, very compact and dense clay, varies from moist to dry and crumbly.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey, moist clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12415

Depth 5 - 10 cm:

12417

Depth 10 - 20 cm:

12419

Dup. Depth 0 - 5 cm:

12416

Dup. Depth 5 - 10 cm

12418

Dup. Depth 10 - 20 cm:

12420

Parent material:

12423

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F146\F146-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F146\F146-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F146\F146-core.jpg

Parent material photo

Site Number

146

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16000	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	92
Aluminum 5 to 10cm:	17500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	34
Aluminum 10 to 20cm:	27000	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	31
Aluminum Parent:	19000	Cobalt Parent:	12	Nickel Parent:	40
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	64	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	15	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	11	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	29	Selenium Parent:	ND
Barium 0 to 5cm:	79	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	77	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	52
Barium 10 to 20cm:	150	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	65
Barium Parent:	130	Iron Parent:	28000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	53
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	50
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3300	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4350	Zinc 5 to 10cm:	44
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6050	Zinc 10 to 20cm:	43
Cadmium Parent:	ND	Magnesium Parent:	7400	Zinc Parent:	37
Calcium 0 to 5cm:	3800	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4400	Manganese 5 to 10cm:	185	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	6100	Manganese 10 to 20cm:	265	pH 10 to 20cm:	NA
Calcium Parent:	6000	Manganese Parent:	320	pH Parent:	NA
Chromium 0 to 5cm:	60	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	48	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	75	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

147

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F147

Location of sampling site

Helicopter site: between Falconbridge and Kukagami Lake Rd., west of Wanapitei River

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open clearing, fairly flat with some exposed bedrock. Vegetation is a mix of deciduous and coniferous saplings. Ground cover is small shrubs, mosses, and litter.

Easting

524036

NAD83
Zone 17

Northing

5158038

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bg) is a light grey clayey silt with light brown inclusions, moist to dry, firm and consolidated.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a light grey clayey silt with light brown inclusions, dry, firm and consolidated.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12605

Depth 5 - 10 cm:

12607

Depth 10 - 20 cm:

12609

Dup. Depth 0 - 5 cm:

12606

Dup. Depth 5 - 10 cm:

12608

Dup. Depth 10 - 20 cm:

12610

Parent material:

12612

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F147\F147-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F147\F147-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F147\F147-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

147

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	57
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	16000	Cobalt Parent:	10	Nickel Parent:	37
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	37	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	27	Selenium Parent:	ND
Barium 0 to 5cm:	69	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	120	Iron Parent:	25000	Strontium Parent:	49
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	10	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	44
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4100	Zinc 0 to 5cm:	18
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6400	Zinc Parent:	27
Calcium 0 to 5cm:	3050	Manganese 0 to 5cm:	205	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3800	Manganese Parent:	280	pH Parent:	NA
Chromium 0 to 5cm:	53	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	60	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

148

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F148

Location of sampling site

Helicopter site: east of Kukagami Lake Rd. near Leblanc Creek, Street Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous area, small saplings, level. Ground cover is mostly sandy with patchy moss/lichem.

Easting

529656

NAD83
Zone 17

Northing

5158088

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a light brown, sandy silt, moist, consolidated. Occasional cores contain a thin (<3 cm thick) organic layer (LFH/Ah).

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey, dry, very stiff and consolidated clayey silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12613

Depth 5 - 10 cm:

12615

Depth 10 - 20 cm:

12617

Dup. Depth 0 - 5 cm:

12614

Dup. Depth 5 - 10 cm

12616

Dup. Depth 10 - 20 cm:

12618

Parent material:

12620

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F148\F148-site2.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F148\F148-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F148\F148-core.jpg

Parent material photo

Site Number

148

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	37
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	7	Nickel Parent:	23
Arsenic 0 to 5cm:	4.5	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	58	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	92	Iron Parent:	21000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	7	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	40
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3350	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4500	Zinc Parent:	23
Calcium 0 to 5cm:	3400	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4500	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

149

Date sampled

10/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

149

Location of sampling site

McCrea Heights St.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Herb: <5% lycopodium moss; 50% tuft grass, 5% pohlia, <1% lichen. Shrub: 10% sheep laurel, 80% bracken fern, <1% white birch. Trees: 10% white birch.

Easting

501033

NAD83
Zone 17

Northing

5158231

Reference

McCrea Heights

Altitude(m)

322

Conditions

Windy, cool, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah & charcoal: 0 to 5 cm; Ae: 5 to 8 cm; Bt: 8 to 33 cm; Bg: >33 cm. Some soil variability.

Parent material field description

Sample was collected between 50 and 80 cm. Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11070

Depth 5 - 10 cm:

11071

Depth 10 - 20 cm:

11072

Dup. Depth 0 - 5 cm:

11073

Dup. Depth 5 - 10 cm

11074

Dup. Depth 10 - 20 cm:

11075

Parent material:

11079

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\149\2001-CEM-149-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\149\CEM-149-soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

149

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	10400	Cobalt 0 to 5cm:	25	Nickel 0 to 5cm:	737
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	46
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	27
Aluminum Parent:	16000	Cobalt Parent:	10	Nickel Parent:	33
Arsenic 0 to 5cm:	40	Copper 0 to 5cm:	745	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	96	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	28	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	106	Iron 0 to 5cm:	22500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	41	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	40
Barium 10 to 20cm:	43	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	41
Barium Parent:	69	Iron Parent:	20000	Strontium Parent:	41
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	115	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	45
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	44
Cadmium 0 to 5cm:	1.5	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1600	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2550	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	4100	Zinc Parent:	27
Calcium 0 to 5cm:	3000	Manganese 0 to 5cm:	120	pH 0 to 5cm:	4
Calcium 5 to 10cm:	2750	Manganese 5 to 10cm:	125	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3200	Manganese 10 to 20cm:	145	pH 10 to 20cm:	4.3
Calcium Parent:	3900	Manganese Parent:	220	pH Parent:	4.5
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	141
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	29
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	14
Chromium Parent:	50	Molybdenum Parent:	ND	C TOC Parent:	3.3

Sudbury Regional Soils Project 2001

Site Number

150

Date sampled

10/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

150

Location of sampling site

Montee Rouleau.

Historical Inco sample station

OBM map number

Field observations

hummocky; flat; some fallen trees; forested; lots of ferns (chest height). Herb: 1% polytrichium, 2% unknown (solidago); Shrubs: 80% bracken fern (chest high); 5% red maple; 1% large tooth aspen; Trees: 15% white birch; 10% red maple; 10% trembling aspen; some large tooth aspens

Easting

493875

NAD83
Zone 17

Northing

5158291

Reference

Azilda

Altitude(m)

324

Conditions

Scattered clouds,
warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 2 cm (black); Ae: 2 to 4 cm (white); AB: 4 to 7 cm; Bt: >7 cm.

Parent material field description

Sample was collected between 80 and 113 cm. Texture: clay. Colour: grey with brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11027

Depth 5 - 10 cm:

11028

Depth 10 - 20 cm:

11029

Dup. Depth 0 - 5 cm:

11030

Dup. Depth 5 - 10 cm:

11031

Dup. Depth 10 - 20 cm:

11032

Parent material:

11036

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\150\CEM-150-
soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

150

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	7200	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	350
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	47
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	38000	Cobalt Parent:	17	Nickel Parent:	66
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	335	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	56	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	52	Selenium Parent:	ND
Barium 0 to 5cm:	105	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	38	Iron 5 to 10cm:	14000	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	260	Iron Parent:	45000	Strontium Parent:	63
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.89	Lead Parent:	12	Vanadium Parent:	79
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1600	Zinc 5 to 10cm:	35
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	15000	Zinc Parent:	66
Calcium 0 to 5cm:	2600	Manganese 0 to 5cm:	595	pH 0 to 5cm:	4.7
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	240	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6600	Manganese Parent:	610	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	78
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	23
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	120	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

151

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F151

Location of sampling site

Helicopter site: between Kukagami Lake Rd. and North Rd., north of Hwy 17.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Grassy area at edge of coniferous wooded area, some small saplings, level.

Easting

532693

NAD83
Zone 17

Northing

5156779

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 cm thick. Horizon 2 (Ae) is a light grey, dry, very compact and dense clay, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey, moist, consolidated silty clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12621

Depth 5 - 10 cm:

12623

Depth 10 - 20 cm:

12625

Dup. Depth 0 - 5 cm:

12622

Dup. Depth 5 - 10 cm

12624

Dup. Depth 10 - 20 cm:

12626

Parent material:

12629

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F151\F151-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F151\F151-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F151\F151-core.jpg

Parent material photo

Site Number

151

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	27000	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	132
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	30000	Cobalt Parent:	10	Nickel Parent:	37
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	93	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	32	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	210	Iron Parent:	30000	Strontium Parent:	70
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	29	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.5	Lead Parent:	7	Vanadium Parent:	59
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	3800	Zinc 0 to 5cm:	52
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	8200	Zinc Parent:	45
Calcium 0 to 5cm:	4450	Manganese 0 to 5cm:	220	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7100	Manganese Parent:	310	pH Parent:	NA
Chromium 0 to 5cm:	63	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	79	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

152

Date sampled

12/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

152

Location of sampling site

Falconbridge Rd., left on Donnelly, left on O'Neil west ~1 km.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Relatively flat. Trees: 10% poplar, 3% white birch. Shrubs: 20% bracken fern, 30% alder, 1% birch. Herb: 80% tuft grass.

Easting

505244

NAD83
Zone 17

Northing

5156954

Reference

Falconbridge Rd.

Altitude(m)

288

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 9 cm; Ae: 0 to 4 cm (10YR 4/3); Bt: 4 to >20 cm (10YR 6/4). Texture: silty.

Parent material field description

Sample collected between 77 and 99 cm. Texture: very silty, clayey, wet. Colour: 2.5Y 6/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26161

Depth 5 - 10 cm:

26162

Depth 10 - 20 cm:

26163

Dup. Depth 0 - 5 cm:

26164

Dup. Depth 5 - 10 cm:

26165

Dup. Depth 10 - 20 cm:

26166

Parent material:

26170

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\152\2001-CEM-152-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\152\CEM-152-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\152\2001-CEM-152-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\152\2001-CEM-152-
PARENT_1.JPG.jpg

Site Number

152

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6900	Cobalt 0 to 5cm:	38	Nickel 0 to 5cm:	1038
Aluminum 5 to 10cm:	8300	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	56
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	9	Nickel Parent:	27
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	900	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	110	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	72	Iron 0 to 5cm:	23000	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	39	Iron 5 to 10cm:	9000	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	86	Iron Parent:	22000	Strontium Parent:	48
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	129	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	24
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	45
Cadmium 0 to 5cm:	1.6	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	46
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	ND
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5700	Zinc Parent:	19
Calcium 0 to 5cm:	3400	Manganese 0 to 5cm:	170	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1800	Manganese 5 to 10cm:	92	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5100	Manganese Parent:	350	pH Parent:	NA
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	50	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

153

Date sampled

10/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

153

Location of sampling site

MacKenzie Rd. just past Chelmsford.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Soil site is level, dominated by conifers. Day very wet, snow on top of soil. Veg: fir, birch, T. aspen, spruce, rose bushes, fireweed, mosses, mushrooms, grasses; floor: leaf litter, needles, twigs, logs; not much F, H, only leaf litter.

Easting

481358

NAD83
Zone 17

Northing

5158030

Reference

Altitude(m)

279

Conditions

Snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ap: 0 to 12 cm (10YR4/2); B: 8 to >30 cm. Texture: clay. Soil horizon and depths were very similar throughout area.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10486

Depth 5 - 10 cm:

10488

Depth 10 - 20 cm:

10490

Dup. Depth 0 - 5 cm:

10487

Dup. Depth 5 - 10 cm

10489

Dup. Depth 10 - 20 cm:

10491

Parent material:

10492

Parent material field description

Sample was collected between 75 and 100 cm. Texture: clay. Colour: 2.5Y 6/2.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\153\2001-CEM-153-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\153\CEM-153-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\153\2001-CEM-153-
Core_1.JPG

Parent material photo

Site Number

153

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	77
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	42	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	2.2	Selenium Parent:	ND
Barium 0 to 5cm:	55	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	52
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	50	Iron Parent:	18000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	14	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	36
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4350	Zinc 0 to 5cm:	49
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	23000	Zinc Parent:	19
Calcium 0 to 5cm:	7350	Manganese 0 to 5cm:	325	pH 0 to 5cm:	6.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	58000	Manganese Parent:	300	pH Parent:	NA
Chromium 0 to 5cm:	55	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	39
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	45	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

154

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F154

Location of sampling site

Helicopter site: east of North Rd., Loughrin Township.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Grassy/shrubby area on edge of coniferous stand, level.

Easting

536586

Northing

5155100

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

236

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 2 to 5 cm thick. Horizon 2 (Ae) is a light grey-brown silt, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey-brown silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12803

Depth 5 - 10 cm:

12805

Depth 10 - 20 cm:

12807

Dup. Depth 0 - 5 cm:

12804

Dup. Depth 5 - 10 cm:

12806

Dup. Depth 10 - 20 cm:

12808

Parent material:

12811

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F154\F154-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F154\F154-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F154\F154-core.jpg

Parent material photo

Site Number

154

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	58
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	31000	Cobalt Parent:	14	Nickel Parent:	52
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	37	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	5.5	Selenium Parent:	ND
Barium 0 to 5cm:	93	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	59
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	240	Iron Parent:	35000	Strontium Parent:	72
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	16	Vanadium 0 to 5cm:	45
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	8	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3900	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	10000	Zinc Parent:	45
Calcium 0 to 5cm:	4900	Manganese 0 to 5cm:	315	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6800	Manganese Parent:	420	pH Parent:	NA
Chromium 0 to 5cm:	53	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	94	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

155

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F155

Location of sampling site

Helicopter site: between Kukagami Lake Rd. and North Rd., north of Hwy 17.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous area, level. Ground cover is predominantly litter/needles with some small shrubs.

Easting

531800

NAD83
Zone 17

Northing

5154580

Reference

Helicopter

Altitude(m)

260

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, loose, 1 to 5 cm thick. Horizon 2 (Ae) is a light grey silt, persists to 20 cm. The texture ranges from wet and sticky to dry and crumbly.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey, dry, crumbly clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12387

Depth 5 - 10 cm:

12389

Depth 10 - 20 cm:

12391

Dup. Depth 0 - 5 cm:

12388

Dup. Depth 5 - 10 cm:

12390

Dup. Depth 10 - 20 cm:

12392

Parent material:

12395

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F155\F155-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F155\F155-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F155\F155-core.jpg

Parent material photo

Site Number

155

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	93
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	12000	Cobalt Parent:	4.8	Nickel Parent:	21
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	98	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	40	Selenium Parent:	ND
Barium 0 to 5cm:	71	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	57	Iron Parent:	13000	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	31
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	850	Zinc Parent:	12
Calcium 0 to 5cm:	3000	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1500	Manganese Parent:	77	pH Parent:	NA
Chromium 0 to 5cm:	45	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	3	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

156

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

156

Location of sampling site

Vermillion Lake Rd. @ Stobie Dam. Moved 360 m north of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Tailings basin covered with granular till. Falconbridge Ltd in cooperation with Lakefield Research Inc. Also see this granular till just N of site. New site: level, forested area, north of road. Trees 30-40 m tall. Veg: T. aspen, spruce, fir, few birch, cherry, bracken fern, club moss, moss, grasses, large leaf aster, royal fern, goldenrod. Floor: leaf litter, moss, twigs, logs, trees, stumps.

Easting

478850

NAD83
Zone 17

Northing

5153875

Reference

Altitude(m)

305

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 0 to 2 cm; Ah: 0 to 8 cm (10YR 3/2); Ae: 1 to 11 cm; Bf: 4 to 19 cm (10YR 4/6); BC: 11 to >30 cm (2.5Y 6/3). 40% of cores: LFH: 0 to 2 cm; Ah: 0 to 10 cm (10YR 3/2); Bf: 2 to 14 cm (10YR 4/6); BC: 2 to >30 cm (2.5Y 6/3). Texture: silt loam.

Parent material field description

Sample was collected between 75 and 110 cm. Texture: silt to silt loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10437

Depth 5 - 10 cm:

10439

Depth 10 - 20 cm:

10441

Dup. Depth 0 - 5 cm:

10438

Dup. Depth 5 - 10 cm:

10440

Dup. Depth 10 - 20 cm:

10442

Parent material:

10443

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\156\2001-CEM-156-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\156\CEM-156-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\156\2001-CEM-156-Core 1.JPG

Parent material photo

Site Number

156

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9250	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	81
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	45
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7500	Cobalt Parent:	5	Nickel Parent:	19
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	60	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	6	Copper 5 to 10cm:	33	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	46	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	46	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	53
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	28	Iron Parent:	12000	Strontium Parent:	32
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	20	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	27
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2400	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	16
Calcium 0 to 5cm:	3950	Manganese 0 to 5cm:	375	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	5400	Manganese 5 to 10cm:	290	pH 5 to 10cm:	5.5
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	28
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	33	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

157

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F157

Location of sampling site

Helicopter site: north of Swiety Rd. west of North Rd. near Spring Creek, Hagar Township Municipality

Historical Inco sample station

OBM map number

41 I/10

Field observations

Dense coniferous wooded area, level. Ground cover is dense dried shrubs, some deadfall, small saplings, and mosses.

Easting

534193

Northing

5153519

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

227

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, fluffy and unconsolidated, 1 to 4 cm thick.
Horizon 2 (Ae) is a light grey-brown silt, moist, very dense and consolidated, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light grey-brown silt grading to a coarser-grained light grey, fine-grained sand with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12471

Depth 5 - 10 cm:

12473

Depth 10 - 20 cm:

12475

Dup. Depth 0 - 5 cm:

12472

Dup. Depth 5 - 10 cm:

12474

Dup. Depth 10 - 20 cm:

12799

Parent material:

12802

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F157\F157-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F157\F157-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F157\F157-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

157

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	89
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	7	Nickel Parent:	25
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	76	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	1
Barium 0 to 5cm:	94	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	68	Iron Parent:	21000	Strontium Parent:	31
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	28	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	40
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5300	Zinc Parent:	25
Calcium 0 to 5cm:	4200	Manganese 0 to 5cm:	205	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	240	pH Parent:	NA
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	49	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

158

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

158

Location of sampling site

280 m west of grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Level area with undulating topography. Area rocky, surrounded by swamp to the north, south and east. Veg: maple, birch, fir, oak, fern. Floor: leaf litter, logs, twigs, roots.

Easting

482060

Northing

5152866

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

322

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 5 cm; Ae: 5 to 10 cm; B: 5 to >30 cm.

Parent material field description

Sample was collected between 70 and 95 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11381

Depth 5 - 10 cm:

11383

Depth 10 - 20 cm:

11385

Dup. Depth 0 - 5 cm:

11382

Dup. Depth 5 - 10 cm

11384

Dup. Depth 10 - 20 cm:

11386

Parent material:

11387

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\158\2001-CEM-158-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\158\CEM-158-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\158\2001-CEM-158-
Core_1.JPG

Parent material photo

Site Number

158

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9750	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	196
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	38
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	9	Nickel 10 to 20cm:	38
Aluminum Parent:	30000	Cobalt Parent:	13	Nickel Parent:	43
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	185	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	31	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	17	Selenium 10 to 20cm:	ND
Arsenic Parent:	7	Copper Parent:	49	Selenium Parent:	ND
Barium 0 to 5cm:	110	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	44	Iron 5 to 10cm:	18000	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	51	Iron 10 to 20cm:	23000	Strontium 10 to 20cm:	33
Barium Parent:	170	Iron Parent:	38000	Strontium Parent:	61
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	43
Beryllium Parent:	0.64	Lead Parent:	12	Vanadium Parent:	82
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1900	Zinc 5 to 10cm:	36
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3000	Zinc 10 to 20cm:	54
Cadmium Parent:	ND	Magnesium Parent:	9900	Zinc Parent:	59
Calcium 0 to 5cm:	3650	Manganese 0 to 5cm:	570	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3050	Manganese 5 to 10cm:	310	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2850	Manganese 10 to 20cm:	315	pH 10 to 20cm:	NA
Calcium Parent:	5000	Manganese Parent:	640	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	35	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	78	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

159

Date sampled

9/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

159

Location of sampling site

Hwy 17 East @ Callum.

Historical Inco sample station

43

OBM map number

41 I/10

Field observations

Semi-forested, rocky area; undulating; slopes down to the east towards a stream. Forest floor: lichens, moss, 60% leaf and spruce needles, ground cedar, tufts of grass. Shrubs: blueberry, sweet ferns, willow, sheep laurel (5%) Trees: mixed spruce and birch; some maple trees (15%).

Easting

526262

NAD83
Zone 17

Northing

5152499

Reference

Callum

Altitude(m)

303

Conditions

Sunny/dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 3 cm; Ae: 3 to 6 cm; Bt: 6 to 42 cm. Texture: sand; some pebbles at depth. Not all cores had an Ae horizon.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10873

Depth 5 - 10 cm:

10874

Depth 10 - 20 cm:

10875

Dup. Depth 0 - 5 cm:

10876

Dup. Depth 5 - 10 cm:

10877

Dup. Depth 10 - 20 cm:

10878

Parent material:

Parent material field description

No sample was collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\159\CEM-159-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

159

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9100	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	300
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	340	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	105	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	65	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1400	Zinc 0 to 5cm:	40
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2400	Manganese 0 to 5cm:	175	pH 0 to 5cm:	4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	139
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

160

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

160

Location of sampling site

South west of Stobie Dam.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Flat to slightly undulating, few minor low relief hummocks. Tree cover 80%: balsam fir, poplar, spruce. Shrub: 15% baby balsam, poplar, spruce, bracken ferns. Herb cover: club moss, grass. Floor cover leaves and needles.

Easting

476191

Northing

5150373

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 5 cm; Ae: 5 to 9 cm (grey); Bf: 9 to 20 cm (dark); Bf: >20 cm (light in colour).

Parent material field description

Sample was collected between 82 and 124 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11674

Depth 5 - 10 cm:

11675

Depth 10 - 20 cm:

11677

Dup. Depth 0 - 5 cm:

11678

Dup. Depth 5 - 10 cm:

11679

Dup. Depth 10 - 20 cm:

11680

Parent material:

11681

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\160\CEM-160-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\160\2001-CEM-160-
CORE_1.JPG.jpg

c:\SRSP_2001\2001-CEM-Soil
Photos\160\2001-CEM-160-
PARENT_1.JPG.jpg

Site Number

160

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4200	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	224
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5100	Cobalt Parent:	5	Nickel Parent:	13
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	155	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	3.4	Selenium Parent:	2
Barium 0 to 5cm:	104	Iron 0 to 5cm:	7300	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	15	Iron Parent:	9700	Strontium Parent:	19
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	15
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	21
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	690	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	10
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2200	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	21	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

161

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

161

Location of sampling site

SW of Whitewater Lake

Historical Inco sample station

OBM map number

41 I/11

Field observations

Flat to slightly hummocky. Tree cover 90%: aspens, birch, balsam, spruce. Shrub cover 5%: bracken fern, small aspens and birch, small balsam and spruce. Herb cover 5%: club moss (running) moss, lichen..

Easting

483079

Northing

5149984

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

332

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8.5 cm; Ah: 0 to 4 cm (black); Ae: 4 to 6 cm (grey); Bf: 6 to 25 cm; Bg: >25 cm.
Texture: silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11692

Depth 5 - 10 cm:

11693

Depth 10 - 20 cm:

11694

Dup. Depth 0 - 5 cm:

11695

Dup. Depth 5 - 10 cm:

11696

Dup. Depth 10 - 20 cm:

11697

Parent material:

11698

Parent material field description

Sample was collected from two holes.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\161\CEM-161-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

161

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9850	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	291
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	33000	Cobalt Parent:	14	Nickel Parent:	44
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	260	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	7	Copper Parent:	55	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	190	Iron Parent:	36000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.68	Lead Parent:	12	Vanadium Parent:	80
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1700	Zinc 0 to 5cm:	73
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9500	Zinc Parent:	58
Calcium 0 to 5cm:	3950	Manganese 0 to 5cm:	620	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4900	Manganese Parent:	620	pH Parent:	NA
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	77	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

162

Date sampled

11/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

162

Location of sampling site

~440m NE of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site located on top of hill, on a slightly sloping area between outcrops; area surrounded by swamp. Ground covered by 25 cm of snow. Trees: 15% dominated by jack pine and birch, some aspen. Floor: ferns, blueberry, grass.

Easting

522088

NAD83
Zone 17

Northing

5149646

Reference

Helicopter

Altitude(m)

287

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Ae: 0 to 10 cm (10YR 5/2); Bf: 0 to 20 cm (5YR 3/4); Bm: 12 to >30 cm (10YR 5/4); Texture: silt.

Parent material field description

Sample taken between 65 to 100 cm. Texture: silt. Colour: 2.5Y 6/2. Mottles: many, coarse, distinct, 7.5YR 4/6.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25582

Depth 5 - 10 cm:

25584

Depth 10 - 20 cm:

25586

Dup. Depth 0 - 5 cm:

25583

Dup. Depth 5 - 10 cm

25585

Dup. Depth 10 - 20 cm:

25587

Parent material:

25588

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\162\2001-CEM-162-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\162\CEM-162-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\162\2001-CEM-162-Core 1.JPG

Parent material photo

Site Number

162

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8350	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	589
Aluminum 5 to 10cm:	14000	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	90
Aluminum 10 to 20cm:	23000	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	49
Aluminum Parent:	13000	Cobalt Parent:	4	Nickel Parent:	20
Arsenic 0 to 5cm:	31	Copper 0 to 5cm:	785	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	16	Copper 5 to 10cm:	140	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	39	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	155	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	64	Iron 5 to 10cm:	21000	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	62	Iron 10 to 20cm:	25000	Strontium 10 to 20cm:	41
Barium Parent:	49	Iron Parent:	17000	Strontium Parent:	33
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	107	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	18	Vanadium 5 to 10cm:	56
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9	Vanadium 10 to 20cm:	60
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	35
Cadmium 0 to 5cm:	1.4	Magnesium 0 to 5cm:	1850	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3050	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3850	Zinc 10 to 20cm:	36
Cadmium Parent:	ND	Magnesium Parent:	3300	Zinc Parent:	14
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	160	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3450	Manganese 5 to 10cm:	170	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	180	pH 10 to 20cm:	NA
Calcium Parent:	2600	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	73	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	104	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	42	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

163

Date sampled

10/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	163	Location of sampling site	~1.4km south of railway on Chain Lake road; Markstay.
Historical Inco sample station			
OBM map number	41 I/7	Field observations	Area is flat, semi-forested (mix forest), slightly hummocky. Soil shallow to the NW, large outcrop and gentle slope to the NW. Soil is deep to the NE (>199 cm) & well developed. Trees (30%): ~75% balsam fir, 25% deciduous (paper birch and trembling aspen. Shrubs (9%) -juvenile/young balsam fir. Herb(1%): -bracken fern, large leafed aster. Forest floor: fallen trees, buried logs covered in moss and lichen, leaf litter, club moss, moss, lichen, mushroom -60%.
Easting	530373		
Northing	5149203	NAD83 Zone 17	
Reference	Markstay-Chain Lake Rd.		
Altitude(m)	274		
Conditions	Rain/snow/sleet		

SOIL DESCRIPTION

Soil profile horizon descriptions
 LFH: 0 to 11.5 cm; Ah: 0 to 2 cm (black); Ae: 2 to 3 cm (greyish white), clay; Bt: 3 to 11 cm (yellow-brown), clay; Bm: 11 to 40 cm (light yellowish brown), clay; Bg: 40 to >70 cm (greenish grey with burnt orange mottles), sand.

Parent material field description
 Sample was collected between 75 and 119 cm. Texture sandy clay. Colour greenish grey with large prominent mottles (burnt orange).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm: 11512
 Depth 5 - 10 cm: 11511
 Depth 10 - 20 cm: 11510
 Dup. Depth 0 - 5 cm: 11515
 Dup. Depth 5 - 10 cm: 11514
 Dup. Depth 10 - 20 cm: 11513
 Parent material: 11003

IMAGES

Site photo 1
c:\SRSP_2001\2001-CEM-Soil Photos\163\2001-CEM-163-SITE_1.JPG

Soil profile diagram
c:\SRSP_2001\2001-CEM-Soil Photos\163\CEM-163-soilprofile.jpg

Core photo 1
c:\SRSP_2001\2001-CEM-Soil Photos\163\2001-CEM-163-Core_1.JPG

Parent material photo

Site Number

163

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8350	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	207
Aluminum 5 to 10cm:	10000	Cobalt 5 to 10cm:	4.5	Nickel 5 to 10cm:	29
Aluminum 10 to 20cm:	16000	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	31
Aluminum Parent:	13000	Cobalt Parent:	7	Nickel Parent:	23
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	180	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6	Copper 5 to 10cm:	36	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	15	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	96	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	37
Barium 5 to 10cm:	48	Iron 5 to 10cm:	14500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	65	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	36
Barium Parent:	59	Iron Parent:	18000	Strontium Parent:	34
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	61	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	43
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	37
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2000	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3550	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	4300	Zinc Parent:	19
Calcium 0 to 5cm:	3750	Manganese 0 to 5cm:	225	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2750	Manganese 5 to 10cm:	190	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2800	Manganese 10 to 20cm:	255	pH 10 to 20cm:	NA
Calcium Parent:	4300	Manganese Parent:	270	pH Parent:	NA
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	36	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	47	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

164

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

164

Location of sampling site

East of Markstay; McKerral Rd.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Rocky, semi forested area. Undulating topography, slopes to the east. Herbs: trace wild strawberry, moss. Shrub: 60% bracken fern, 2% cherry. Trees: 50% balsam fir, 5% white pine, 5% trembling aspen. Hit bedrock along SW edge of quadrant. NE of quadrant underlain by compact clay-very dry: difficult to core through.

Easting

537327

NAD83
Zone 17

Northing

5148650

Reference

Markstay

Altitude(m)

244

Conditions

Cool & cloudy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 2 cm; Ae: 2 to 3 cm; Bg: 3 to >100 cm (10YR 5/3). Texture: clay.

Parent material field description

Two samples collected. 1) 55 to 80 cm; colour: 10YR 6/1 with prominent orange mottles (10YR 4/6). 2) 80 to 100 cm; colour: 10YR 5/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10995

Depth 5 - 10 cm:

10996

Depth 10 - 20 cm:

10997

Dup. Depth 0 - 5 cm:

10998

Dup. Depth 5 - 10 cm

10999

Dup. Depth 10 - 20 cm:

11000

Parent material:

10991

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\164\CEM-164-soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

164

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	70
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	31
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	24000	Cobalt Parent:	15	Nickel Parent:	52
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	62	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	17	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	39	Selenium Parent:	ND
Barium 0 to 5cm:	102	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	66	Iron 5 to 10cm:	17000	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	180	Iron Parent:	34000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3100	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9300	Zinc Parent:	42
Calcium 0 to 5cm:	3650	Manganese 0 to 5cm:	395	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3300	Manganese 5 to 10cm:	310	pH 5 to 10cm:	5
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6600	Manganese Parent:	500	pH Parent:	NA
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	45	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	18
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	82	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

165

Date sampled

11/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

165

Location of sampling site

~1.08 km SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Level, forested area, surrounded by swamp. Veg: T. aspen, large-tooth aspen, birch, spruce, grasses, clubmoss. Floor: leaf litter, twigs, roots, logs.

Easting

485663

NAD83
Zone 17

Northing

5147591

Reference

Helicopter

Altitude(m)

326

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah; 0 to 3 cm; Ae: 0 to 11 cm (10YR 5/3) Bt: 0 to 19 cm (2.5Y 5/4); BC: 11 to >30 cm. Texture: clay loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11391

Depth 5 - 10 cm:

11393

Depth 10 - 20 cm:

11395

Dup. Depth 0 - 5 cm:

11392

Dup. Depth 5 - 10 cm

11394

Dup. Depth 10 - 20 cm:

11396

Parent material:

11397

Parent material field description

Sample was taken between 75 and 100 cm. Texture: clay.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\165\2001-CEM-165-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\165\CEM-165-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\165\2001-CEM-165-
Core_1.JPG

Parent material photo

Site Number

165

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	30	Nickel 0 to 5cm:	569
Aluminum 5 to 10cm:	21500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	37
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	36
Aluminum Parent:	25000	Cobalt Parent:	17	Nickel Parent:	65
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	425	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	45	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	34	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	47	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	22000	Strontium 0 to 5cm:	49
Barium 5 to 10cm:	100	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	62
Barium 10 to 20cm:	86	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	51
Barium Parent:	200	Iron Parent:	37000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	70	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	47
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	48
Beryllium Parent:	0.56	Lead Parent:	10	Vanadium Parent:	66
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	49
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4250	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4350	Zinc 10 to 20cm:	42
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	56
Calcium 0 to 5cm:	3850	Manganese 0 to 5cm:	870	pH 0 to 5cm:	5.1
Calcium 5 to 10cm:	4650	Manganese 5 to 10cm:	390	pH 5 to 10cm:	5
Calcium 10 to 20cm:	3950	Manganese 10 to 20cm:	440	pH 10 to 20cm:	5
Calcium Parent:	5600	Manganese Parent:	580	pH Parent:	6.1
Chromium 0 to 5cm:	64	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	100
Chromium 5 to 10cm:	51	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	9.6
Chromium 10 to 20cm:	48	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	9.7
Chromium Parent:	99	Molybdenum Parent:	ND	C TOC Parent:	1.6

Sudbury Regional Soils Project 2001

Site Number

166

Date sampled

12/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

166

Location of sampling site

Markstay: Hwy 17 E @ Pioneer St.

Historical Inco sample station

OBM map number

41 I/7

Field observations

W-E slope 3%, a few hummocks. Herb: 2% wintergreen, dead leaves. Shrub: 2% maple, 5% alder. Trees: 2% birch, 2% poplar, 1% maple.

Easting

533895

NAD83
Zone 17

Northing

5149249

Reference

Markstay

Altitude(m)

272

Conditions

Sunny, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm (black); Ae: 2 to 10 cm (5YR 6/1); Bf: 10 to 27 cm (5YR 4/6). Texture: silty to sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26133

Depth 5 - 10 cm:

26134

Depth 10 - 20 cm:

26135

Dup. Depth 0 - 5 cm:

26136

Dup. Depth 5 - 10 cm:

26137

Dup. Depth 10 - 20 cm:

26138

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\166\2001-CEM-166-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\166\CEM-166-
soilprofil.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\166\2001-CEM-166-
CORE_1.JPG.jpg

Parent material photo

Site Number

166

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	104
Aluminum 5 to 10cm:	16000	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	77
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	77	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	43	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	110	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	78	Iron 5 to 10cm:	24000	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	31	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	52
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2900	Zinc 5 to 10cm:	24
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	515	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3900	Manganese 5 to 10cm:	350	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	58	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	74	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

167

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

167

Location of sampling site

Hwy 17E to Markstay (north side of Hwy).

Historical Inco sample station

70

OBM map number

41 I/7

Field observations

Undulating/slightly hummocky. Site slopes gently down to the North. Outcrop to the south (~5 m long); rocky and shallow soil to the south; deeper soil to the north. Floor cover: snow, moss on rocks & logs, spruce needles. Shrubs 1% juvenile trees (spruce) and ferns. Trees 50% spruce 90%, 10% mixed aspen and birch.

Easting

534763

NAD83
Zone 17

Northing

5147933

Reference

Markstay

Altitude(m)

249

Conditions

Sunny & cold

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 2 cm; Ae: 2 to 7 cm (white); Bm: 7 to >25 cm (medium brown); some cores show coarse fragment layer 7 to 10 cm, some cores have ~10 cm Bt/silt layer above Bm; fine-grained, Bedrock >51 cm. Texture: silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10975

Depth 5 - 10 cm:

10976

Depth 10 - 20 cm:

10977

Dup. Depth 0 - 5 cm:

10978

Dup. Depth 5 - 10 cm:

10979

Dup. Depth 10 - 20 cm:

10980

Parent material:

Parent material field description

No sample was collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\167\CEM-167-soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

167

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7750	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	93
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	80	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	94	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	46
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	310	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

168

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

168

Location of sampling site

~150m SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Found flat area on top of a slope (sloping to the SW). Veg: Area dominated by T. aspen; some birch, spruce, red pine, jackpine, wintergreen, ferns. Floor: leaf litter, needles, twigs, logs.

Easting

526443

NAD83
Zone 17

Northing

5146549

Reference

Altitude(m)

242

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 2 cm; Ae: 0 to 14 cm (10YR 5/1); Bm/Bf: 1 to 20 cm (Bf: 7.5 YR 5/8; Bm: 10YR 5/6); BC: 16 cm to >25 cm (2.5Y 6/4) Texture: loamy sand to sandy loam, containing gravel size clasts.

Parent material field description

Sample taken between 60 and 80 cm; hit bedrock at 80 cm. Texture: loamy sand; colour: 2.5Y 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11481

Depth 5 - 10 cm:

11483

Depth 10 - 20 cm:

11485

Dup. Depth 0 - 5 cm:

11482

Dup. Depth 5 - 10 cm

11484

Dup. Depth 10 - 20 cm:

11486

Parent material:

11487

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\168\2001-CEM-168-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\168\CEM-168-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\168\2001-CEM-168-
Core_1.JPG

Parent material photo

Site Number

168

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8000	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	173
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	11	Nickel Parent:	35
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	150	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	101	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	95	Iron Parent:	27000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	53
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6800	Zinc Parent:	33
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	365	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7300	Manganese Parent:	420	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	66	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

169

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

169

Location of sampling site

~170 m west of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Level area with undulating topography. Site surrounded by swamp. Veg: maple, oak, birch, large tooth aspen, (T. aspen), spruce, grasses, mosses, ground cedar, club moss. Floor: leaf litter, logs, twigs.

Easting

481246

NAD83
Zone 17

Northing

5145414

Reference

Helicopter

Altitude(m)

313

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 0 to 5 cm; Ah: 0 to 3 cm; Bf: 0 to 17 cm (7.5YR 3/4); Bm: 3 to >30 cm (10YR 4/4). In addition 30% of cores also contained an Ae horizon from 0 to 8 cm (10YR 5/3).

Parent material field description

Sample was collected between 50 and 70 cm. Colour: 2.5Y 5/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11371

Depth 5 - 10 cm:

11373

Depth 10 - 20 cm:

11375

Dup. Depth 0 - 5 cm:

11372

Dup. Depth 5 - 10 cm

11374

Dup. Depth 10 - 20 cm:

11376

Parent material:

11377

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\169\2001-CEM-169-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\169\CEM-169-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\169\2001-CEM-169-
Core_1.JPG

Parent material photo

Site Number

169

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	271
Aluminum 5 to 10cm:	19500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	42
Aluminum 10 to 20cm:	23500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	33
Aluminum Parent:	22000	Cobalt Parent:	18	Nickel Parent:	45
Arsenic 0 to 5cm:	17	Copper 0 to 5cm:	230	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	55	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	19	Selenium 10 to 20cm:	ND
Arsenic Parent:	9	Copper Parent:	44	Selenium Parent:	ND
Barium 0 to 5cm:	100	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	53
Barium 5 to 10cm:	81	Iron 5 to 10cm:	22500	Strontium 5 to 10cm:	55
Barium 10 to 20cm:	76	Iron 10 to 20cm:	26000	Strontium 10 to 20cm:	42
Barium Parent:	110	Iron Parent:	34000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	43
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	57
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	51
Beryllium Parent:	ND	Lead Parent:	10	Vanadium Parent:	62
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	3000	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4050	Zinc 5 to 10cm:	42
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5350	Zinc 10 to 20cm:	42
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	42
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	355	pH 0 to 5cm:	5
Calcium 5 to 10cm:	4250	Manganese 5 to 10cm:	285	pH 5 to 10cm:	5
Calcium 10 to 20cm:	3800	Manganese 10 to 20cm:	280	pH 10 to 20cm:	5.4
Calcium Parent:	3700	Manganese Parent:	440	pH Parent:	5.2
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	91
Chromium 5 to 10cm:	49	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	20
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	81	Molybdenum Parent:	1.6	C TOC Parent:	3.5

Sudbury Regional Soils Project 2001

Site Number

170

Date sampled

11/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

170

Location of sampling site

Hwy 17E; south of Markstay.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Slight N-S slope (2%) large hummock to one side. Could not determine herb due to snow cover. Shrub: 5% balsam fir, 10% alder, 2% willow. Trees: 50% balsam fir, 5% maple, 2% poplar, 1% birch.

Easting

537136

NAD83
Zone 17

Northing

5146482

Reference

E of Wahnapiatae

Altitude(m)

223

Conditions

Light snow, mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm (black); Ae: 1 to 6 cm (10YR 6/4) Bt: 6 to 19 cm (10YR 5/4).
Texture: silty-sandy.

Parent material field description

Sample was collected between 59 and 96 cm. Texture: silty. Colour: 10YR 5/3; mottles: 5YR 4/6 & 10YR 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25560

Depth 5 - 10 cm:

25561

Depth 10 - 20 cm:

25562

Dup. Depth 0 - 5 cm:

25563

Dup. Depth 5 - 10 cm:

25564

Dup. Depth 10 - 20 cm:

25565

Parent material:

25566

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\170\CEM-170-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

170

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	97
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	34000	Cobalt Parent:	15	Nickel Parent:	51
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	67	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	44	Selenium Parent:	ND
Barium 0 to 5cm:	105	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	250	Iron Parent:	40000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.64	Lead Parent:	10	Vanadium Parent:	69
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3150	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	51
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	375	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7400	Manganese Parent:	530	pH Parent:	NA
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	90	Molybdenum Parent:	1.7	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

171

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

171

Location of sampling site

~620m NE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area undulating. Found level site, dominated by conifers; very rocky; near swamp. Veg: spruce, red pine, jackpine, maple, birch, wintergreen, bracken fern, moss. Floor: needles, leaf litter, logs, twigs.

Easting

528792

NAD83
Zone 17

Northing

5145547

Reference

Helicopter

Altitude(m)

273

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Ae: 0 to 8 cm; Bm: 1 to 15 cm; BC: 8 to >30 cm.

Parent material field description

Sample was taken at 2 locations between 65 and 80 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

27024

Depth 5 - 10 cm:

27026

Depth 10 - 20 cm:

27028

Dup. Depth 0 - 5 cm:

27025

Dup. Depth 5 - 10 cm:

27027

Dup. Depth 10 - 20 cm:

27029

Parent material:

27030

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\171\2001-CEM-171-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\171\CEM-171-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\171\2001-CEM-171-
Core_1.JPG

Parent material photo

Site Number

171

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	225
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	43000	Cobalt Parent:	14	Nickel Parent:	46
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	190	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	41	Selenium Parent:	ND
Barium 0 to 5cm:	114	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	41
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	260	Iron Parent:	39000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.8	Lead Parent:	9	Vanadium Parent:	70
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9300	Zinc Parent:	40
Calcium 0 to 5cm:	3350	Manganese 0 to 5cm:	225	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5000	Manganese Parent:	340	pH Parent:	NA
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	100	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

172

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

172

Location of sampling site

UTM are estimates, no GPS.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Site is hummocky and very wet, a slight slope and some exposed rocks. Site is half open and half forested. Herbs: moss on trees. Shrubs: 20% bracken fern. Trees: 10% trembling aspen, 10% spruce (white).

Easting

477100

Northing

5144600

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Fog with sunny patches

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 9 cm (black); Ae: 9 to 12 cm (light grey); Bt: 12 to 25 (dark brown); Bg: 25 to 80 cm (dark grey). Texture: clay.

Parent material field description

Sample was collected between 63 and 80 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25887

Depth 5 - 10 cm:

25888

Depth 10 - 20 cm:

25889

Dup. Depth 0 - 5 cm:

25890

Dup. Depth 5 - 10 cm:

25891

Dup. Depth 10 - 20 cm:

25892

Parent material:

25896

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\172\2001-CEM-172-Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\172\CEM-172-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\172\2001-CEM-172-Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

172

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	24500	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	85
Aluminum 5 to 10cm:	19500	Cobalt 5 to 10cm:	12	Nickel 5 to 10cm:	109
Aluminum 10 to 20cm:	21500	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	33
Aluminum Parent:	29000	Cobalt Parent:	14	Nickel Parent:	42
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	63	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	5.5	Copper 5 to 10cm:	91	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	18	Selenium 10 to 20cm:	ND
Arsenic Parent:	6	Copper Parent:	46	Selenium Parent:	ND
Barium 0 to 5cm:	165	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	160	Iron 5 to 10cm:	23000	Strontium 5 to 10cm:	67
Barium 10 to 20cm:	95	Iron 10 to 20cm:	27000	Strontium 10 to 20cm:	51
Barium Parent:	210	Iron Parent:	40000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	26	Vanadium 0 to 5cm:	59
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	28	Vanadium 5 to 10cm:	56
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	55
Beryllium Parent:	0.64	Lead Parent:	10	Vanadium Parent:	76
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5050	Zinc 0 to 5cm:	62
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4750	Zinc 5 to 10cm:	73
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6650	Zinc 10 to 20cm:	64
Cadmium Parent:	ND	Magnesium Parent:	10000	Zinc Parent:	61
Calcium 0 to 5cm:	6550	Manganese 0 to 5cm:	540	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	5200	Manganese 5 to 10cm:	630	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	4150	Manganese 10 to 20cm:	430	pH 10 to 20cm:	5.1
Calcium Parent:	6200	Manganese Parent:	570	pH Parent:	6.1
Chromium 0 to 5cm:	63	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	54	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	54
Chromium 10 to 20cm:	55	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	9.5
Chromium Parent:	77	Molybdenum Parent:	1.5	C TOC Parent:	2.4

Sudbury Regional Soils Project 2001

Site Number

173

Date sampled

10/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

173

Location of sampling site

~1km east of junction between Regional Rd. 55 and Hwy 144 in Lively.

Historical Inco sample station

62

OBM map number

41 I/13

Field observations

Found level, undulating clearing with few trees, ~140 m from road. Bedrock and boulders visible. Veg: Birch (dominant), Aspen (to the south), Maple, Labrador tea, blueberry, club moss, grasses, lichens. Floor: leaf litter, lichen moss, rocks, twigs.

Easting

485954

NAD83
Zone 17

Northing

5144514

Reference

Altitude(m)

330

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

80% of cores: LFH: 0 to 5 cm; Ah: 0 to 2 cm; Ae: 2 to 10 cm (10YR6/2); Bf: 2 to 20 cm (10YR 4/4); Bm: 12 to >30 cm (2.5Y 5/3).
20% of cores: Ah: 0 to 3 cm; Bf: 8 to 18 cm (10YR 4/4) Bm: 8 to >30 cm (2.5Y 5/3)
Texture: sandy loam. Soil horizons are very similar throughout site, however, depths of horizons change core to core.

Parent material field description

Sample taken from 75 to 105 cm. Texture: sandy clay loam. Colour: 10YR 5/2. Mottles: common, medium, distinct.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10339

Depth 5 - 10 cm:

10341

Depth 10 - 20 cm:

10343

Dup. Depth 0 - 5 cm:

10340

Dup. Depth 5 - 10 cm

10342

Dup. Depth 10 - 20 cm:

10344

Parent material:

10345

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\173\CEM-173-soilprofile_1.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\173\2001-CEM-173-Core_1.JPG

Site Number

173

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10800	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	657
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	23000	Cobalt Parent:	16	Nickel Parent:	50
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	645	Selenium 0 to 5cm:	5.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	6	Copper Parent:	63	Selenium Parent:	ND
Barium 0 to 5cm:	88	Iron 0 to 5cm:	26500	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	140	Iron Parent:	37000	Strontium Parent:	51
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	89	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.54	Lead Parent:	8	Vanadium Parent:	67
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	45
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9200	Zinc Parent:	44
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	190	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6000	Manganese Parent:	530	pH Parent:	6.2
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	66	Molybdenum Parent:	ND	C TOC Parent:	1.8

Sudbury Regional Soils Project 2001

Site Number

174

Date sampled

9/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

174

Location of sampling site

Hwy 537 to Red Deer Lake Rd.

Historical Inco sample station

OBM map number

Field observations

Soil is located in a flat, balsam fir forest. Veg: balsam fir (dominant), few birch, club moss, few shrubs. Floor: moss, leaf litter, twigs, logs. Birch site: ~150 m from soil site-UTM519506, 5143073, 253. Aspen site: ~120 M from soil site UTM 519498, 5143178, 247 M.

Easting

519610

NAD83
Zone 17

Northing

5143195

Reference

Altitude(m)

245

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 0 to 7 cm; Ah: 0 to 1 cm; B or C 1 to >25 cm (2.5Y 6/2). 40% of cores: LFH: 0 to 7 cm; Ah: 0 to 2 cm; Ae: 2 to 8 cm (10YR 6/2); B: 8 to >25 cm (10YR 5/4).
Texture: clay.

Parent material field description

Sample was collected from 75 to 100 cm.
Texture: clay. Colour: 10YR 6/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10223

Depth 5 - 10 cm:

10225

Depth 10 - 20 cm:

10227

Dup. Depth 0 - 5 cm:

10224

Dup. Depth 5 - 10 cm

10226

Dup. Depth 10 - 20 cm:

10228

Parent material:

10229

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\174\2001-CEM-174-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\174\CEM-174-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\174\2001-CEM-174-
Core_1.JPG

Parent material photo

Site Number

174

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4600	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	240
Aluminum 5 to 10cm:	10000	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	51
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	35000	Cobalt Parent:	17	Nickel Parent:	57
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	235	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	45	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	50	Selenium Parent:	ND
Barium 0 to 5cm:	69	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	14
Barium 5 to 10cm:	63	Iron 5 to 10cm:	17000	Strontium 5 to 10cm:	20
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	320	Iron Parent:	41000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	15
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	28
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.9	Lead Parent:	12	Vanadium Parent:	72
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1400	Zinc 0 to 5cm:	42
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3500	Zinc 5 to 10cm:	49
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	14000	Zinc Parent:	65
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	300	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	1900	Manganese 5 to 10cm:	300	pH 5 to 10cm:	5
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7200	Manganese Parent:	590	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	91
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	12
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

175

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

175

Location of sampling site

Nepawassi Lake Rd.; Markstay.

Historical Inco sample station

grid

OBM map number

41 I/7

Field observations

Level, slightly undulating, with slight slope to the SW. Shallow soil with abundant boulders; semi forested (mixed forest). 23% Trees: balsam fir, black spruce, birch, large tooth aspen, (conifer: deciduous 2:1). 1% shrub-juvenile; 1% herbaceous: young trees, (balsam fir) bracken fern, wintergreen, lycopodium. 75% forest floor, leaf litter and needles, buried and overgrown logs, moss and lichen.

Easting

530589

NAD83
Zone 17

Northing

5142594

Reference

Nepawassi Lake Rd. West

Altitude(m)

256

Conditions

Overcast, mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 11 cm; Ah: 0 to 4 cm; Ae: 4 to 5 cm; Bm: 5 to 45 cm (dark brown). Some cores also contained Bg horizon from 30+cm. Texture: sandy- increasing in size with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11527

Depth 5 - 10 cm:

11528

Depth 10 - 20 cm:

11529

Dup. Depth 0 - 5 cm:

11530

Dup. Depth 5 - 10 cm:

11531

Dup. Depth 10 - 20 cm:

11532

Parent material:

11522

Parent material field description

Sample was collected from 50 to 73 cm. Texture: coarse grained-sandy clay.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\175\CEM-175-soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

175

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8850	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	184
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	8	Nickel Parent:	29
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	145	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	96	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	80	Iron Parent:	22000	Strontium Parent:	31
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	54	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	42
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	44
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4300	Zinc Parent:	22
Calcium 0 to 5cm:	2600	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3400	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	57	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

176

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

176

Location of sampling site

UTM's are an estimate, No GPS.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Site is slightly hummocky, open with young maple, birch, spruce and pine trees. There is one small (1.5 X 0.5 m) hollow in the middle of the site. Herbs: moss, lichens, a few of these on the ground. Shrubs: 50-60% bracken fern; Trees: 10% maple, 1% birch, 1% white spruce, 1% red pine.

Easting

476100

Northing

5141100

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Fog, sunny patches

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 2 cm (black); Ae: 2 to 4 cm (light grey), clay, Bt: 4 to 107 cm (light brown), silty clay.

Parent material field description

Sample was collected from 80 to 107 cm. Texture: fine-grained silty clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25877

Depth 5 - 10 cm:

25878

Depth 10 - 20 cm:

25879

Dup. Depth 0 - 5 cm:

25880

Dup. Depth 5 - 10 cm:

25881

Dup. Depth 10 - 20 cm:

25882

Parent material:

25883

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\176\CEM-176-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

176

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	122
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	12	Nickel Parent:	32
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	115	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	27	Selenium Parent:	ND
Barium 0 to 5cm:	145	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	110	Iron Parent:	33000	Strontium Parent:	47
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	49
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	61
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2900	Zinc 0 to 5cm:	37
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9400	Zinc Parent:	44
Calcium 0 to 5cm:	4150	Manganese 0 to 5cm:	385	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4400	Manganese Parent:	400	pH Parent:	NA
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	59	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

177

Date sampled

12/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

177

Location of sampling site

Red Deer Lake; east of Hwy 537 to Wahnapiatae.

Historical Inco sample station

OBM map number

Field observations

W-E slope 5%; hummocks. Trees: 5% balsam fir, 3% birch, 5% maple. Shrub: 5% balsam fir, 70% bracken fern. Herb: 5% club moss lichens, moss, fungi. Floor: dead leaves

Easting

521802

NAD83
Zone 17

Northing

5141638

Reference

Hwy 69
South/Hwy 537

Altitude(m)

256

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm (black); Ae: 0 to 3 cm (2.5Y 5/2), sandy; Bt: 3 to 23 cm (2.5Y 5/4), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26171

Depth 5 - 10 cm:

26172

Depth 10 - 20 cm:

26173

Dup. Depth 0 - 5 cm:

26174

Dup. Depth 5 - 10 cm:

26175

Dup. Depth 10 - 20 cm:

26176

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\177\CEM-177-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\177\2001-CEM-177-
CORE_1.JPG.jpg

Site Number

177

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	414
Aluminum 5 to 10cm:	24000	Cobalt 5 to 10cm:	15	Nickel 5 to 10cm:	77
Aluminum 10 to 20cm:	27500	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	50
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	330	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	88	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	36	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	160	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	92	Iron 5 to 10cm:	24500	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	97	Iron 10 to 20cm:	28000	Strontium 10 to 20cm:	44
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	68	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	18	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	47
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3150	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4550	Zinc 10 to 20cm:	41
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3700	Manganese 0 to 5cm:	540	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3350	Manganese 5 to 10cm:	445	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3600	Manganese 10 to 20cm:	280	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	47	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	66	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

178

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

178

Location of sampling site

~130 m NE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Level area within small shallow basin. Area very rocky, hard to find soil. Veg: birch, maple, T. aspen, club moss, grasses; floor: leaf litter, logs, twigs.

Easting

480468

Northing

5139955

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

321

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

80% of cores: LFH: 0 to 8 cm; Ah: 0 to 2 cm; Ae: 0 to 6 cm; Bf: 0 to 15 cm; BC: 7 to >20 cm. 20% of cores did not contain an Ae horizon. Texture: sandy loam, containing some pebble size clasts.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11361

Depth 5 - 10 cm:

11363

Depth 10 - 20 cm:

11365

Dup. Depth 0 - 5 cm:

11362

Dup. Depth 5 - 10 cm

11364

Dup. Depth 10 - 20 cm:

11366

Parent material:

Parent material field description

No sample could be collected soil was too rocky.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\178\2001-CEM-178-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\178\CEM-178-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\178\2001-CEM-178-
Core_1.JPG

Parent material photo

Site Number

178

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9800	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	245
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	25
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	230	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	2.5	Copper 5 to 10cm:	50	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	35	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	75	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	49	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	52	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	41
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	10	Vanadium 10 to 20cm:	44
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1050	Zinc 0 to 5cm:	17
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1700	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2900	Zinc 10 to 20cm:	34
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2450	Manganese 0 to 5cm:	185	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3600	Manganese 5 to 10cm:	165	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	210	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	35	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

179

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

179

Location of sampling site

North of sewage treatment plant in Naughton.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Area very rocky, found a slightly sloping area (<5%) between 2 bedrock outcrops. Snow on ground. Area east and west of site is sloping (>5%). Area forested with hilly topography. Veg: oak (dominant), maple, few birch, few pine, grasses, bracken fern, club moss, lichen, bunchberry, wintergreen, moss, blueberry(?), pussy willow, cherry; floor: leaf litter, grasses, moss, lichen, logs, twigs, rocks.

Easting

486044

NAD83
Zone 17

Northing

5139469

Reference

Naughton

Altitude(m)

304

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

70% of cores: LFH: 0 to 9 cm; Ah: 0 to 2 cm; Bf: 1 to 13 cm (7.5YR 3/4); Bm: 2 to >30 cm (10YR 4/4). 30% of cores: LFH: 0 to 8 cm; Ah: 0 to 2 cm; Ae: 1 to 7 cm (10YR 5/2) B: 1 to 14 cm (10YR 5/4); BC: 7 to >30 cm (10YR 6/4). Texture: sandy loam to sandy clay loam, containing many gravel size clasts. Soil is highly variable.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10428

Depth 5 - 10 cm:

10430

Depth 10 - 20 cm:

10432

Dup. Depth 0 - 5 cm:

10429

Dup. Depth 5 - 10 cm

10431

Dup. Depth 10 - 20 cm:

10433

Parent material:

Parent material field description

No sample could be collected; area too rocky.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\179\2001-CEM-179-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\179\CEM-179-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\179\2001-CEM-179-
Core_1.JPG

Parent material photo

Site Number

179

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	22	Nickel 0 to 5cm:	495
Aluminum 5 to 10cm:	20000	Cobalt 5 to 10cm:	22	Nickel 5 to 10cm:	55
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	440	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	9	Copper 5 to 10cm:	80	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	78	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	85	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	47
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.9	Magnesium 0 to 5cm:	1950	Zinc 0 to 5cm:	54
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2700	Zinc 5 to 10cm:	45
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	165	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3600	Manganese 5 to 10cm:	200	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	48	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	37
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

180

Date sampled

10/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

180

Location of sampling site

Black Lake Rd; south of Mikkola.

Historical Inco sample station

2

OBM map number

41 I/16

Field observations

Found suitable site on crest of a hill; slightly undulating--not rocky, but bedrock visible in area. Forested area on crest of hill. Ground slightly undulating. Veg: T. Aspen, birch, fir, maple, spruce; Club moss, large leaf aster, moss, bunchberry, grasses, blueberry, sweet fern, bracken fern; Floor, leaf litter, twigs, logs, moss.

Easting

490259

NAD83
Zone 17

Northing

5139373

Reference

Black Lake Rd.

Altitude(m)

277

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 6 to 0 cm; Ah: 0 to 2 cm, Bt: 4 to 18 cm (10YR 5/4); Bg: 4 to >30 cm (10YR 6/3) mottles: common, medium, distinct brown T.5 Y 5/4. 40% of cores: Ah; Ae (10YR 6/2); Bt: (10YR 5/4); Bm: (10YR 6/2). Soil was highly variable in profile and depth of horizons.

Parent material field description

Sample taken from 75 to 110 cm. Texture: silt to silt loam. Colour: 10YR 7/1.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10349

Depth 5 - 10 cm:

10351

Depth 10 - 20 cm:

10353

Dup. Depth 0 - 5 cm:

10350

Dup. Depth 5 - 10 cm

10352

Dup. Depth 10 - 20 cm:

10354

Parent material:

10355

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\180\CEM-180-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\180\2001-CEM-180-
Core_1.JPG

Site Number

180

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	33	Nickel 0 to 5cm:	860
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	17000	Cobalt Parent:	8	Nickel Parent:	26
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	710	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	23500	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	120	Iron Parent:	22000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	86	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	48
Cadmium 0 to 5cm:	1.5	Magnesium 0 to 5cm:	2200	Zinc 0 to 5cm:	64
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5700	Zinc Parent:	29
Calcium 0 to 5cm:	3800	Manganese 0 to 5cm:	515	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7000	Manganese Parent:	320	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	133
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

181

Date sampled

9/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

181

Location of sampling site

Dill Lake Rd., off Hwy 69 S.

Historical Inco sample station

30

OBM map number

41 I/7

Field observations

Flat, forested area with many mature trees, located along trail that leads behind the trailer park. Slightly hummocky. 1% pohlia, trace polytrichum, trace brackly thecium. Herb: 5% bracken fern, 10% bunchberry, 10% blueberry, 3% Solomon's seal. Shrubs: 3% red maple, 1% T. aspen; 1% balsam fir, poplar. Trees 10% Jack Pine, 5% White Birch, 1 alder 1 big trembling aspen.

Easting

509176

Northing

5139529

NAD83
Zone 17

Reference

Hwy 69 S/Dill
Lake Rd.

Altitude(m)

269

Conditions

Sunny/warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 5 cm; Ae: 5 to 15 cm; Bt: 15 to 18 cm; Bg: >15 cm. Texture: clay. Soil is highly variable.

Parent material field description

Sample was collected down to 116 cm. Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11021

Depth 5 - 10 cm:

11022

Depth 10 - 20 cm:

11023

Dup. Depth 0 - 5 cm:

11024

Dup. Depth 5 - 10 cm

11025

Dup. Depth 10 - 20 cm:

11026

Parent material:

11048

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\181\CEM-181-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

181

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8800	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	547
Aluminum 5 to 10cm:	10400	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	38
Aluminum 10 to 20cm:	21000	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	39
Aluminum Parent:	30000	Cobalt Parent:	16	Nickel Parent:	54
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	535	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	41	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	27	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	42	Selenium Parent:	ND
Barium 0 to 5cm:	92	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	70	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	92	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	53
Barium Parent:	260	Iron Parent:	36000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	65	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	43
Beryllium Parent:	0.7	Lead Parent:	10	Vanadium Parent:	64
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	37
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4650	Zinc 10 to 20cm:	36
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	52
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	380	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	2850	Manganese 5 to 10cm:	370	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3400	Manganese 10 to 20cm:	305	pH 10 to 20cm:	NA
Calcium Parent:	6900	Manganese Parent:	470	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	139
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	49	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	87	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

182

Date sampled

11/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

182

Location of sampling site

Hwy 537N from Wanup. West into Alexi Rd. Site is on southwest side of road.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area is level, on top of large hill. Birch forest, open forest, slightly hummocky. 30% Trees: paper birch. 5% Shrubs: juvenile birch. 1% herbaceous: grasses; 64% ground cover: birch leaves, moss, lichens, buried logs.

Easting

514355

NAD83
Zone 17

Northing

5138178

Reference

Wanup

Altitude(m)

270

Conditions

Dry, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 3 cm (white); Bt: 3 to 20 cm; Bm: >20 cm. Texture: sandy. Other cores exhibited: LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 3 cm; Bg: >3 cm (light brown with distinct, common, medium, brownish orange mottles) Texture: clay.

Parent material field description

Sample was collected from 76 to 90 cm. Texture: sandy. Colour: grey-brown with common, prominent, brownish orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11583

Depth 5 - 10 cm:

11584

Depth 10 - 20 cm:

11585

Dup. Depth 0 - 5 cm:

11586

Dup. Depth 5 - 10 cm

11587

Dup. Depth 10 - 20 cm:

11588

Parent material:

11593

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\182\CEM-182-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

182

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8900	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	279
Aluminum 5 to 10cm:	19500	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	56
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	51
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	38
Arsenic 0 to 5cm:	19	Copper 0 to 5cm:	315	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	68	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	25	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	96	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	91	Iron 5 to 10cm:	20500	Strontium 5 to 10cm:	55
Barium 10 to 20cm:	72	Iron 10 to 20cm:	22000	Strontium 10 to 20cm:	44
Barium Parent:	75	Iron Parent:	16000	Strontium Parent:	34
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	33
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	44
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2900	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3350	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	21
Calcium 0 to 5cm:	2450	Manganese 0 to 5cm:	475	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	4300	Manganese 5 to 10cm:	335	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	3300	Manganese 10 to 20cm:	250	pH 10 to 20cm:	4.8
Calcium Parent:	4500	Manganese Parent:	260	pH Parent:	5.7
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	76
Chromium 5 to 10cm:	48	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	17
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	13
Chromium Parent:	50	Molybdenum Parent:	ND	C TOC Parent:	3.5

Sudbury Regional Soils Project 2001

Site Number

183

Date sampled

10/24/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

183

Location of sampling site

North side of Hwy; just west of Simon Lake in Naughton.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Area rocky with many swamps. Found level area on top of hill. Railroad tracks ~75-100 m north of soil site. Area slopes beyond 10 m area. Area dominated by large tooth and trembling aspen. Very tall. Veg: T. aspen, large tooth aspen, spruce, birch, oak, bracken fern, large leaf aster. Floor: leaf litter, twigs, logs.

Easting

483030

NAD83
Zone 17

Northing

5138683

Reference

Naughton

Altitude(m)

282

Conditions

Rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ah: 0 to 5 cm; Ae: 2 to 10 cm (10YR 5/3); Bm: 3 to 16 cm (10YR 4/4); BC: 10 to >30 cm (2.5Y 5/2). Some cores did not contain an Ae horizon. Texture: silty clay. Soil is highly variable.

Parent material field description

Sample was collected between 75 and 105 cm. Texture: predominantly silty clay with some "lenses" of fine-grained sand. Colour: 2.5Y 5/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10476

Depth 5 - 10 cm:

10478

Depth 10 - 20 cm:

10480

Dup. Depth 0 - 5 cm:

10477

Dup. Depth 5 - 10 cm

10479

Dup. Depth 10 - 20 cm:

10481

Parent material:

10482

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\183\2001-CEM-183-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\183\CEM-183-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\183\2001-CEM-183-Core 1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

183

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	200
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	17000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	12	Copper 0 to 5cm:	155	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	84	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	51
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	100	Iron Parent:	26000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	34	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	53
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	50
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6400	Zinc Parent:	31
Calcium 0 to 5cm:	4350	Manganese 0 to 5cm:	390	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6100	Manganese Parent:	350	pH Parent:	NA
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	58	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

184

Date sampled

12/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

184

Location of sampling site

Long Lake Rd.; Mc Farlane Lake Rd. (left); South Lane Rd.; cart road.

Historical Inco sample station

OBM map number

Field observations

W-E slope 5%; some hummocks, rock outcrops and dead wood. Trees: 5% white birch. Shrub: 5% bracken fern, 1% poplar, 1% oak, 1% white birch. Herb 10% polytrichium, 5% tuft grass, lichen, moss.

Easting

503340

NAD83
Zone 17

Northing

5140033

Reference

Long Lake Rd.

Altitude(m)

248

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 1 cm (black) silty-sandy; Ae: 1 to 10 cm (7.5YR 6/2) silty-sandy; Bf: 10 to 24 cm (5YR 4/6) silty-sandy.

Parent material field description

Soil contained some slight mottling. Colour: 10YR 7/1. Mottles: 10YR 5/3 & 10YR 5/8. Hit bedrock @ 75 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26199

Depth 5 - 10 cm:

26200

Depth 10 - 20 cm:

26201

Dup. Depth 0 - 5 cm:

26202

Dup. Depth 5 - 10 cm

26203

Dup. Depth 10 - 20 cm:

26204

Parent material:

26208

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\184\2001-CEM-184-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\184\CEM-184-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\184\2001-CEM-184-
CORE_1.JPG.jpg

Parent material photo

Site Number

184

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8300	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	452
Aluminum 5 to 10cm:	10000	Cobalt 5 to 10cm:	4.5	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	35
Aluminum Parent:	12000	Cobalt Parent:	6	Nickel Parent:	26
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	495	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	83	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	20	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	200	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	76	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	50	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	31
Barium Parent:	55	Iron Parent:	16000	Strontium Parent:	44
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	67	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8.5	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	33
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	35
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1150	Zinc 5 to 10cm:	26
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1900	Zinc 10 to 20cm:	37
Cadmium Parent:	ND	Magnesium Parent:	3900	Zinc Parent:	12
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	980	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1900	Manganese 5 to 10cm:	320	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2200	Manganese 10 to 20cm:	180	pH 10 to 20cm:	NA
Calcium Parent:	3800	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	35	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	37	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

185

Date sampled

11/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

185

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Site is a birch transition forest. Site has a slight slope with lots of exposed rock. Site is open and lies on a rock shelf. Herbs: 50% grasses, 10% moss and lichens. Shrubs: a few red pine 30-60 cm tall. Trees: 2-3% red pine, 5% white birch.

Easting

492335

NAD83
Zone 17

Northing

5138468

Reference

Helicopter

Altitude(m)

259

Conditions

Fog and cloud

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 4 cm (black); Ae: 4 to 12 cm (light grey); Bt: 12 to >20 cm (dark brown); some cores contained a Bf (orange/red) horizon in place of a Bt. Texture: sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25897

Depth 5 - 10 cm:

25898

Depth 10 - 20 cm:

25899

Dup. Depth 0 - 5 cm:

25900

Dup. Depth 5 - 10 cm:

25901

Dup. Depth 10 - 20 cm:

25902

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\185\2001-CEM-185-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\185\CEM-185-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\185\2001-CEM-185-
Core_1.jpg

Parent material photo

Site Number

185

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	29	Nickel 0 to 5cm:	863
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	785	Selenium 0 to 5cm:	5.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	120	Iron 0 to 5cm:	23500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	80	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.4	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	63
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	330	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	57	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

186

Date sampled

10/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

186

Location of sampling site

Chief Lake Rd.; south of Long Lake.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Forested area ~100 m N of house; slightly undulating. Area very rocky; bed rock visible. Hard to get soil; soil shallow. Veg: birch, oak, maple, red pine, No Aspen, bracken fern, grasses, blueberry, some moss and lichen. Floor: leaf litter, twigs, logs, some moss and lichen.

Easting

499976

NAD83
Zone 17

Northing

5137914

Reference

Long Lake

Altitude(m)

295

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 3 cm; Ae: 0 to 12 cm (10YR 6/2); Bf: 6 to 15 cm (10YR 3/6); Bm: 11 to >25 cm (10YR 5/4). Texture: sandy loam, excessively gravelly. Soil is highly variable.

Parent material field description

Sample was collected from 60 to 90 cm. Texture: till.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10299

Depth 5 - 10 cm:

10301

Depth 10 - 20 cm:

10303

Dup. Depth 0 - 5 cm:

10300

Dup. Depth 5 - 10 cm

10302

Dup. Depth 10 - 20 cm:

10304

Parent material:

10305

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\186\2001-CEM-186-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\186\CEM-186-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\186\2001-CEM-186-
Core_1.JPG

Parent material photo

Site Number

186

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5900	Cobalt 0 to 5cm:	28	Nickel 0 to 5cm:	834
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	7700	Cobalt Parent:	8	Nickel Parent:	41
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	805	Selenium 0 to 5cm:	5.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	113	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	21	Iron Parent:	13000	Strontium Parent:	12
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	84	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	24
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	895	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	20
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	120	pH 0 to 5cm:	4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1400	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	40	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	137
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

187

Date sampled

11/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

187

Location of sampling site

Hwy 537 south from Wahnapiitae. Take Kuusiti Rd. east.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site is level, sloping down to the south (towards a stream/wetland system); semi-forested (mixed forest) but 85% deciduous. Large outcrop to the NW semi rocky terrain. 50% Trees: 75% balsam fir/balsam (birch?) 15% Shrubs: dwarf birch, raspberry. 5% Herbaceous: dogwood, fern, strawberry; 30% ground cover: moss, lichen, coniferous and deciduous leaves and needles, with buried logs and grass.

Easting

518485

NAD83
Zone 17

Northing

5138783

Reference

Kuusiti Rd.

Altitude(m)

262

Conditions

Dry, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 2 cm (black); Bg: >2 cm, compact clay @ 5 cm, common medium distinct clay mottling @ 32 cm, crumbly clay brownish @ 42 cm, with tree roots, black streaks, clay matrix is bluish in colour with prominent mottling, coarse common with lots of roots, 5 to 42 cm.

Parent material field description

Sample was collected between 77 and 114 cm. Texture: clay. Colour gleyed with common, prominent mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11567

Depth 5 - 10 cm:

11568

Depth 10 - 20 cm:

11569

Dup. Depth 0 - 5 cm:

11570

Dup. Depth 5 - 10 cm

11571

Dup. Depth 10 - 20 cm:

11572

Parent material:

11573

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\187\CEM-187-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

187

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	34	Nickel 0 to 5cm:	584
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	9	Nickel Parent:	34
Arsenic 0 to 5cm:	9.5	Copper 0 to 5cm:	395	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	61
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	130	Iron Parent:	27000	Strontium Parent:	68
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	77	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	52
Cadmium 0 to 5cm:	1.5	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	89
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	8200	Zinc Parent:	33
Calcium 0 to 5cm:	11700	Manganese 0 to 5cm:	545	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	10000	Manganese Parent:	380	pH Parent:	NA
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	66	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

188

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

188

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site is within a relatively flat clear cut area with new growth; littered with dead logs, Herb: pohlia moss, polytrichium, brachythecium. Shrub: 30% poplar, 5% balsam fir, 15% bracken fern. Trees: 1% red pine, <1% balsam fir.

Easting

526903

NAD83
Zone 17

Northing

5137716

Reference

Helicopter

Altitude(m)

245

Conditions

Scattered clouds,
warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 1.5 (dark grey), silty-sandy; Bg: >1.5 cm (light grey) silt-clay.

Parent material field description

Sample was collected between 48 and 57 cm. Texture: silty clay. Colour: light grey with medium brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25519

Depth 5 - 10 cm:

25520

Depth 10 - 20 cm:

25521

Dup. Depth 0 - 5 cm:

25522

Dup. Depth 5 - 10 cm:

25523

Dup. Depth 10 - 20 cm:

25524

Parent material:

25528

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\188\2001-CEM-188-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\188\CEM-188-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\188\2001-CEM-188-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\188\2001-CEM-188-
PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

188

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	127
Aluminum 5 to 10cm:	21500	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	30
Aluminum 10 to 20cm:	26500	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	30
Aluminum Parent:	45000	Cobalt Parent:	18	Nickel Parent:	66
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	95	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	22	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	10	Copper Parent:	57	Selenium Parent:	ND
Barium 0 to 5cm:	96	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	100	Iron 5 to 10cm:	21500	Strontium 5 to 10cm:	56
Barium 10 to 20cm:	130	Iron 10 to 20cm:	25500	Strontium 10 to 20cm:	60
Barium Parent:	390	Iron Parent:	44000	Strontium Parent:	61
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	34	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8.5	Vanadium 5 to 10cm:	48
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	57
Beryllium Parent:	0.96	Lead Parent:	13	Vanadium Parent:	76
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2900	Zinc 0 to 5cm:	51
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4600	Zinc 5 to 10cm:	52
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6600	Zinc 10 to 20cm:	53
Cadmium Parent:	ND	Magnesium Parent:	13000	Zinc Parent:	60
Calcium 0 to 5cm:	5400	Manganese 0 to 5cm:	360	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4650	Manganese 5 to 10cm:	310	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	6950	Manganese 10 to 20cm:	345	pH 10 to 20cm:	NA
Calcium Parent:	5900	Manganese Parent:	530	pH Parent:	NA
Chromium 0 to 5cm:	57	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	52	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	66	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	120	Molybdenum Parent:	2.4	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

189

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

189

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Area is flat; swamp to the East; rock-cut to the North. Trees (75%): birch, bigtooth aspen, maple. Shrubs (50%): small birch and aspen. Herbs: grass, moss, lichen.

Easting

520084

NAD83
Zone 17

Northing

5141864

Reference

Helicopter

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7.5 cm; Ah: 0 to 8 cm; Ae: 8 to 11 cm; Bt & Bg: 11 to 58 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11805

Depth 5 - 10 cm:

11806

Depth 10 - 20 cm:

11807

Dup. Depth 0 - 5 cm:

11808

Dup. Depth 5 - 10 cm:

11809

Dup. Depth 10 - 20 cm:

11810

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\189\2001-CEM-189-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\189\CEM-189-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\189\2001-CEM-189-
Core_1.jpg

Parent material photo

Site Number

189

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11450	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	202
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	195	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	120	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2100	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4100	Manganese 0 to 5cm:	255	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

190

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

190

Location of sampling site

Worthington; near Whitefish.

Historical Inco sample station

OBM map number

Field observations

Vegetation: T. aspen, dwarf birch, ash, spruce, alder.

Easting

478110

Northing

5136986

NAD83
Zone 17

Reference

Worthington

Altitude(m)

268

Conditions

Rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ae: 0 to 2 cm; C: >2 cm.
Texture: clay-silty clay.

Parent material field description

Sample was composed of fairly dry clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26675

Depth 5 - 10 cm:

26676

Depth 10 - 20 cm:

26677

Dup. Depth 0 - 5 cm:

26678

Dup. Depth 5 - 10 cm:

26679

Dup. Depth 10 - 20 cm:

26680

Parent material:

26684

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\190\2001-CEM-190-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\190\CEM-190-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\190\2001-CEM-190-
Core_1.jpg

Parent material photo

Site Number

190

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8950	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	73
Aluminum 5 to 10cm:	10600	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	21
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	25
Aluminum Parent:	20000	Cobalt Parent:	10	Nickel Parent:	29
Arsenic 0 to 5cm:	5.5	Copper 0 to 5cm:	61	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	17	Selenium 10 to 20cm:	1
Arsenic Parent:	10	Copper Parent:	42	Selenium Parent:	ND
Barium 0 to 5cm:	60	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	46	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	26
Barium 10 to 20cm:	96	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	54
Barium Parent:	110	Iron Parent:	28000	Strontium Parent:	60
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	21	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	49
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	58
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4650	Zinc 10 to 20cm:	41
Cadmium Parent:	ND	Magnesium Parent:	6100	Zinc Parent:	40
Calcium 0 to 5cm:	3450	Manganese 0 to 5cm:	230	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2570	Manganese 5 to 10cm:	185	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	5000	Manganese 10 to 20cm:	310	pH 10 to 20cm:	NA
Calcium Parent:	6700	Manganese Parent:	380	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	27	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	51	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

191

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

191

Location of sampling site

East side of Whitefish Lake Whitefish Indian Reserve.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Relatively flat area. Trees: 20% balsam fir, 2% cedar. Shrubs: 20% balsam fir, 5% fern. Herb: groundpine, moss.

Easting

486996

Northing

5135858

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

287

Conditions

Rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 0.5 cm; Ae: 0.5 to 6 cm (10YR 5/3) silty-sandy; Bt 6 to 16 cm (10YR 4/4) silty; Bg: 16 to 26.5 (5Y 6/3) silty-sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26114

Depth 5 - 10 cm:

26115

Depth 10 - 20 cm:

26116

Dup. Depth 0 - 5 cm:

26117

Dup. Depth 5 - 10 cm:

26118

Dup. Depth 10 - 20 cm:

26119

Parent material:

26123

Parent material field description

Sample taken between 76 and 110 cm.
Texture: silty clay. Colour: 5Y 6/2.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\191\CEM-191-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

191

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10800	Cobalt 0 to 5cm:	26	Nickel 0 to 5cm:	527
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	32
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	435	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	16	Selenium Parent:	ND
Barium 0 to 5cm:	73	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	41	Iron Parent:	20000	Strontium Parent:	55
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	73	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	37
Cadmium 0 to 5cm:	2	Magnesium 0 to 5cm:	3000	Zinc 0 to 5cm:	65
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	18000	Zinc Parent:	27
Calcium 0 to 5cm:	8550	Manganese 0 to 5cm:	705	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	39000	Manganese Parent:	330	pH Parent:	NA
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	3.1	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

192

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

192

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Relatively flat area with rock outcrops and no trees. Herb: caribou lichen 1%, reindeer lichen 3%, 1% wintergreen, mosses. Shrub: 40% blueberry, 5% sweet fern, 1% white spruce, 1% sycamore.

Easting

528719

NAD83
Zone 17

Northing

5134054

Reference

Helicopter

Altitude(m)

248

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 3 cm (black); Ae: 3 to 4 cm (greyish brown); Bf: 4 to 18 cm (dark red brown). Texture: silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25510

Depth 5 - 10 cm:

25511

Depth 10 - 20 cm:

25512

Dup. Depth 0 - 5 cm:

25513

Dup. Depth 5 - 10 cm:

25514

Dup. Depth 10 - 20 cm:

25515

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\192\2001-CEM-192-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\192\CEM-192-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\192\2001-CEM-192-
CORE_1.JPG.jpg

Parent material photo

Site Number

192

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6350	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	159
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	135	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	90	Iron 0 to 5cm:	11500	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

193

Date sampled

12/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

193

Location of sampling site

~230m N of Horseshoe Lake Rd.; ~2.99 km SE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Level, forested on top of hill. Veg: oak, white pine, T. aspen, red pine, maple, fir, spruce, ground cedar, mosses, grasses. Floor: leaf litter, needles, logs, twigs.

Easting

507324

NAD83
Zone 17

Northing

5132893

Reference

Road site

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 0 to 8 cm (10YR 6/2); B: 1 to 18 cm (10YR 4/4); BC: 8 to >30 cm (2.5y 6/3) Texture: silty clay loam.

Parent material field description

Sample taken at 2 locations between 60 and 85 cm. Hit bedrock at a number of locations. Texture: silt. Colour: 2.5Y 6/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25622

Depth 5 - 10 cm:

25624

Depth 10 - 20 cm:

25626

Dup. Depth 0 - 5 cm:

25623

Dup. Depth 5 - 10 cm

25625

Dup. Depth 10 - 20 cm:

25627

Parent material:

25628

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\193\2001-CEM-193-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\193\CEM-193-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\193\2001-CEM-193-
Core_1.JPG

Parent material photo

Site Number

193

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	310
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	7	Nickel Parent:	22
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	265	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	18	Selenium Parent:	ND
Barium 0 to 5cm:	170	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	47
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	71	Iron Parent:	22000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	40
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	68
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4700	Zinc Parent:	21
Calcium 0 to 5cm:	4450	Manganese 0 to 5cm:	790	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3200	Manganese Parent:	210	pH Parent:	NA
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

194

Date sampled

10/3/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

194

Location of sampling site

Tilton Lake Rd. @ Clearwater Lake.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Site is slightly forested; level to undulating, slightly sloping to north. Veg: oak, maple, birch, spruce, fir, large tooth aspen, T. aspen, bracken fern, moss, grass, pussy willow. Floor: leaf litter, twigs, logs, rocks.

Easting

495145

Northing

5134212

NAD83
Zone 17

Reference

Long Lake.

Altitude(m)

287

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

85% of cores: LFH: 0 to 7 cm; Ah: 0 to 2 cm (10YR 2/1); Ae: 2 to 15 cm (7.5YR 6/1); Bf: 4 to 22 cm (7.5YR 4/6); Bm: 20 to >30 cm (10YR 5/6). 15% of cores did not contain an Ae horizon. Texture: silty sand. Soil is highly variable.

Parent material field description

Sample was collected from 3 holes 70 to 85 cm. Texture: silty sand. Colour: 2.5Y 6/4; mottles: many, medium, prominent, strong brown (7.5YR 5/6).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10329

Depth 5 - 10 cm:

10331

Depth 10 - 20 cm:

10333

Dup. Depth 0 - 5 cm:

10330

Dup. Depth 5 - 10 cm

10332

Dup. Depth 10 - 20 cm:

10334

Parent material:

10335

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\194\CEM-194-soilprofile_1.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\194\2001-CEM-194-Core_1.JPG

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

194

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	8100	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	582
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	14000	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	495	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	104	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	56	Iron Parent:	14000	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	65	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	35
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	51
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	15
Calcium 0 to 5cm:	2800	Manganese 0 to 5cm:	340	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	112
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	42	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

195

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

195

Location of sampling site

Kantaloa Rd. North of Long Lake.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Found level area, slightly sloping to the west. Forested area dominated by hemlock and spruce. Soil very hard and dry. T. aspen very tall ~25 m. Veg: hemlock, spruce, cedar, T. aspen, grasses, clubmoss, moss, bracken fern, large leaf aster, bunchberry. Floor: leaf litter, needles, twigs, logs.

Easting

491242

NAD83
Zone 17

Northing

5134837

Reference

Long Lake.

Altitude(m)

297

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Bm: 0 to 14 cm (10YR 4/4); BC: 2.5Y 5/3).

Parent material field description

Sample was collected between 75 and 105 cm. Texture: clay loam. Colour: 10YR 6/2; mottles: many, medium, distinct, 10YR 5/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10456

Depth 5 - 10 cm:

10458

Depth 10 - 20 cm:

10460

Dup. Depth 0 - 5 cm:

10457

Dup. Depth 5 - 10 cm

10459

Dup. Depth 10 - 20 cm:

10461

Parent material:

10462

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\195\2001-CEM-195-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\195\CEM-195-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\195\2001-CEM-195-
Core_1.JPG

Parent material photo

Site Number

195

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7750	Cobalt 0 to 5cm:	37	Nickel 0 to 5cm:	870
Aluminum 5 to 10cm:	18500	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	63
Aluminum 10 to 20cm:	27000	Cobalt 10 to 20cm:	9	Nickel 10 to 20cm:	36
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	620	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	82	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	18	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	3	Selenium Parent:	ND
Barium 0 to 5cm:	160	Iron 0 to 5cm:	23000	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	125	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	56
Barium 10 to 20cm:	145	Iron 10 to 20cm:	26000	Strontium 10 to 20cm:	54
Barium Parent:	150	Iron Parent:	29000	Strontium Parent:	77
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	97	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	52
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	54
Cadmium 0 to 5cm:	2	Magnesium 0 to 5cm:	2100	Zinc 0 to 5cm:	87
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3800	Zinc 5 to 10cm:	61
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6650	Zinc 10 to 20cm:	59
Cadmium Parent:	ND	Magnesium Parent:	8400	Zinc Parent:	41
Calcium 0 to 5cm:	4250	Manganese 0 to 5cm:	910	pH 0 to 5cm:	4.7
Calcium 5 to 10cm:	4200	Manganese 5 to 10cm:	520	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4600	Manganese 10 to 20cm:	350	pH 10 to 20cm:	NA
Calcium Parent:	6600	Manganese Parent:	370	pH Parent:	NA
Chromium 0 to 5cm:	55	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	178
Chromium 5 to 10cm:	47	Molybdenum 5 to 10cm:	0.8	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	60	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	NA
Chromium Parent:	62	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

196

Date sampled

10/2/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

196

Location of sampling site

Sabourin Rd. East of Hwy 69 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Flat (level) forested area. Veg: aspen (dominant), birch, alder, fir, pussy willow, grasses, large leaf aster, bracken fern, shrubs. Floor: some leaf litter, twigs, logs.

Easting

516343

NAD83
Zone 17

Northing

5134591

Reference

Sabourin Rd.

Altitude(m)

250

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ah: 0 to 8 cm (10YR 2/1); B: 2 to 18 cm (2.5Y 6/3); Bg: 12 to >30 cm (2.5Y 6/3; mottles: many, coarse, distinct, light yellowish brown 10YR 6/4). Texture: silty clay. Soil is fairly uniform throughout site.

Parent material field description

Sample was collected between 75 and 105 cm. Texture: silty clay. Colour: 2.5Y 6/2; mottles: common, medium, faint, light olive brown 2.5Y 5/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10319

Depth 5 - 10 cm:

10321

Depth 10 - 20 cm:

10323

Dup. Depth 0 - 5 cm:

10320

Dup. Depth 5 - 10 cm

10322

Dup. Depth 10 - 20 cm:

10324

Parent material:

10325

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\196\2001-CEM-196-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\196\CEM-196-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\196\2001-CEM-196-Core 1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

196

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	22000	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	129
Aluminum 5 to 10cm:	17500	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	49
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	39
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	93	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	33	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	22	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	165	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	61
Barium 5 to 10cm:	96	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	55
Barium 10 to 20cm:	87	Iron 10 to 20cm:	25500	Strontium 10 to 20cm:	38
Barium Parent:	150	Iron Parent:	29000	Strontium Parent:	74
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	22	Vanadium 0 to 5cm:	48
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	42
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	43
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	56
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5000	Zinc 0 to 5cm:	63
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4450	Zinc 5 to 10cm:	56
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6700	Zinc 10 to 20cm:	57
Cadmium Parent:	ND	Magnesium Parent:	8800	Zinc Parent:	37
Calcium 0 to 5cm:	5050	Manganese 0 to 5cm:	585	pH 0 to 5cm:	5.7
Calcium 5 to 10cm:	4350	Manganese 5 to 10cm:	405	pH 5 to 10cm:	5.3
Calcium 10 to 20cm:	2550	Manganese 10 to 20cm:	360	pH 10 to 20cm:	NA
Calcium Parent:	8400	Manganese Parent:	420	pH Parent:	NA
Chromium 0 to 5cm:	68	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	51
Chromium 5 to 10cm:	53	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	17
Chromium 10 to 20cm:	56	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	68	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

197

Date sampled

11/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

197

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Site is located on a flat area near the base of a hill. Area is predominantly forested with young oak trees 50% with some birch. Herbs: bunchberry (20%), hairgrass (30%). Shrubs: blueberry (<1%), lichens (<1%). Ground covered with fallen limbs and leaves.

Easting

497319

NAD83
Zone 17

Northing

5134096

Reference

Helicopter

Altitude(m)

295

Conditions

Sun, cloud

SOIL DESCRIPTION

Soil profile horizon descriptions

L; Ah: 0 to 5 cm; Ae: 2 to 15 cm; Bf: 2 to 20 cm. Texture: clay

Parent material field description

Sample collected from 80 to 98 cm. Texture: fine clay. Colour: beige.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25906

Depth 5 - 10 cm:

25907

Depth 10 - 20 cm:

25908

Dup. Depth 0 - 5 cm:

0

Dup. Depth 5 - 10 cm:

0

Dup. Depth 10 - 20 cm:

0

Parent material:

25909

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\197\CEM-197-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

197

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9100	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	686
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	7	Nickel Parent:	25
Arsenic 0 to 5cm:	20	Copper 0 to 5cm:	610	Selenium 0 to 5cm:	5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	110	Iron Parent:	22000	Strontium Parent:	48
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	76	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	47
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5600	Zinc Parent:	26
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	310	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4100	Manganese Parent:	240	pH Parent:	NA
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

198

Date sampled

11/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

198

Location of sampling site

Makyon Rd. off Hwy 69 S; behind Estaire-Wanup volunteer fire station.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Hummocky, relatively flat, some boulders. Herbs: leaves on ground, brachythecium, wintergreen, ground pine, moss, lichens, fungi. Shrub: 25% bracken fern, 10% maple. Trees: 1% white birch, 1% white spruce, 2% poplar, 1% maple.

Easting

513984

NAD83
Zone 17

Northing

5133564

Reference

Hwy 69 S

Altitude(m)

254

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm; (black); Ae: 1 to 2 cm (7.5YR 5/2), silty; Bf: 2 to 11 cm (7.5YR 4/6), silty sand; Bt: 11 to 30 cm (10YR 5/3), silty sand.

Parent material field description

Sample was collected between 56 and 85 cm. Texture: silty. Colour: 5Y 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25547

Depth 5 - 10 cm:

25548

Depth 10 - 20 cm:

25549

Dup. Depth 0 - 5 cm:

25550

Dup. Depth 5 - 10 cm

25551

Dup. Depth 10 - 20 cm:

25552

Parent material:

25556

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\198\2001-CEM-198-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\198\CEM-198-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\198\2001-CEM-198-
CORE_1A.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\198\2001-CEM-198-
PARENT_1.JPG.jpg

Site Number

198

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9050	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	182
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	11000	Cobalt Parent:	7	Nickel Parent:	24
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	190	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	105	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	38
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	57	Iron Parent:	17000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	37	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3900	Zinc Parent:	16
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	230	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3500	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	40	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	36	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

199

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

199

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Some buried litter (14.5-16 cm); E-W slope (1%).
Shrub: alder 8%; Trees: 50% white pine, 1% poplar, 1% birch.

Easting

502491

NAD83
Zone 17

Northing

5132993

Reference

Helicopter

Altitude(m)

275

Conditions

Clear, sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 4 cm; (10YR 4/3); Bt: 4 to 27 cm (10YR 5/4).
Texture: silty sand.

Parent material field description

Sample collected from 80 to 110 cm. Texture: laminated silty clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26212

Depth 5 - 10 cm:

26213

Depth 10 - 20 cm:

26214

Dup. Depth 0 - 5 cm:

26215

Dup. Depth 5 - 10 cm:

26216

Dup. Depth 10 - 20 cm:

26217

Parent material:

26218

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\199\2001-CEM-199-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\199\CEM-199-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\199\2001-CEM-199-
Core_1.jpg

Parent material photo

Site Number

199

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	385
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	18000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	335	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	29	Selenium Parent:	ND
Barium 0 to 5cm:	170	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	140	Iron Parent:	26000	Strontium Parent:	60
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	50
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	2600	Zinc 0 to 5cm:	62
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7600	Zinc Parent:	38
Calcium 0 to 5cm:	5150	Manganese 0 to 5cm:	635	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5500	Manganese Parent:	330	pH Parent:	NA
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	62	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

200

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

200

Location of sampling site

~1.67km NW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Found level area between bedrock outcrops; very large T. aspen; soil very dry. Veg: dominated by T. aspen, some spruce, birch, large-tooth aspen, whitepine, jackpine, bunchberry, ferns. Floor: leaf litter, needles, twigs, logs.

Easting

523962

NAD83
Zone 17

Northing

5133309

Reference

Helicopter

Altitude(m)

263

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 2 cm; Ae: 0 to 10 cm (10YR 6/2); Bg: 1 to >25 cm (10YR 6/3).
Mottles: many, medium, distinct, 10YR 5/6.
Some cores also exhibited: Ah: 0 to 3 cm; Bm 0 to 14 cm; BC 12 to >25 cm. Texture: silt loam.

Parent material field description

Sample taken between 75 and 105 cm.
Texture: silt clay loam. Colour: 2.5 y 5/2.
Mottles: many, fine, distinct.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11401

Depth 5 - 10 cm:

11403

Depth 10 - 20 cm:

11405

Dup. Depth 0 - 5 cm:

11402

Dup. Depth 5 - 10 cm

11404

Dup. Depth 10 - 20 cm:

11406

Parent material:

11407

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\200\2001-CEM-200-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\200\CEM-200-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\200\2001-CEM-200-
Core_1.JPG

Parent material photo

Site Number

200

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	19000	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	129
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	9	Nickel Parent:	33
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	99	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	58
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	75	Iron Parent:	22000	Strontium Parent:	49
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	46
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	46
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5600	Zinc Parent:	24
Calcium 0 to 5cm:	5000	Manganese 0 to 5cm:	765	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6700	Manganese Parent:	280	pH Parent:	NA
Chromium 0 to 5cm:	67	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	54	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

201

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

201

Location of sampling site

~50m from cart road.

Historical Inco sample station

OBM map number

41 I/6

Field observations

N-S slope 5%; slight hummocks; dead wood, covered in moss. Trees: 5% balsam fir, 1% yellow birch. Shrub: 2% balsam fir, 5% alder. Herb: brachythium.

Easting

484046

Northing

5132483

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

271

Conditions

Fog/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 1 cm (10YR 5/1) silty to sandy; Bg: 1 to 8.5 cm (10YR 6/3) silty to sandy; Bt 8.5 to 20 cm (10YR 5/4) silty.

Parent material field description

Sample collected between 61 and 87 cm. Hard to auger; texture: silty clay. Colour: 10YR 6/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26104

Depth 5 - 10 cm:

26105

Depth 10 - 20 cm:

26106

Dup. Depth 0 - 5 cm:

26107

Dup. Depth 5 - 10 cm:

26108

Dup. Depth 10 - 20 cm:

26109

Parent material:

26113

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\201\CEM-201-soilprofile_2.jpg

Core photo 1

Parent material photo

Site Number

201

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	235
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	36000	Cobalt Parent:	14	Nickel Parent:	51
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	210	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	45	Selenium Parent:	ND
Barium 0 to 5cm:	141	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	230	Iron Parent:	40000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.7	Lead Parent:	10	Vanadium Parent:	72
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	73
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	13000	Zinc Parent:	58
Calcium 0 to 5cm:	5400	Manganese 0 to 5cm:	785	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6500	Manganese Parent:	550	pH Parent:	NA
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	100	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

202

Date sampled

12/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

202

Location of sampling site

~360m NE of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Sampled in flat, forested area. Surrounding area is hilly, rocky and undulating. Veg: oak, maple, fir, whitepine, red pine, spruce, bracken fern, clubmoss, wintergreen, moss lichen. Floor: leaf litter, twigs, logs, rocks.

Easting

479853

Northing

5132538

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

294

Conditions

Fog/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm; Ae: 0 to 9 cm (7.5YR 5/2); B: 1 to >30 cm (7.5YR 3/4).
Texture: sandy loam.

Parent material field description

No parent material could be collected. Area too rocky; could not auger past 40 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25642

Depth 5 - 10 cm:

25644

Depth 10 - 20 cm:

25646

Dup. Depth 0 - 5 cm:

25643

Dup. Depth 5 - 10 cm:

25645

Dup. Depth 10 - 20 cm:

25647

Parent material:

25648

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\202\2001-CEM-202-Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\202\CEM-202-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\202\2001-CEM-202-Core_1.JPG

Parent material photo

Site Number

202

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9350	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	364
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	250	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	97	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	61	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	995	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	360	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

203

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

203

Location of sampling site

~12 km down horseshoe Lake Rd. off Hwy 69 S. South onto Paddy Lake Rd.

Historical Inco sample station

OBM map number

41 I/8

Field observations

Site is located within a balsam fir dominated forest with undulating, hummocky topography. Climbs to the south, descends to the east. 70% Trees: 90% balsam fir, 9% birch, 1% aspen. 10% Shrub: juvenile trees. 1% Herb: dogwood; 11% ground: moss, lichen, buried logs, club moss.

Easting

508871

NAD83
Zone 17

Northing

5131995

Reference

Horseshoe Lake Rd.

Altitude(m)

252

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm (black); Ae: 1 to 3 cm (white), silty; B horizon varies from: Bm: 3 to 7 cm (medium brown), silty; Bt: >7 cm (brown), silty; to Bt: 3 to 67 cm, silty sand (clay increasing with depth); to Bg: 3 to 67 cm (brownish grey) clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11617

Depth 5 - 10 cm:

11618

Depth 10 - 20 cm:

11619

Dup. Depth 0 - 5 cm:

11620

Dup. Depth 5 - 10 cm:

11621

Dup. Depth 10 - 20 cm:

11592

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\203\CEM-202-soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

203

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7350	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	313
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	275	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	110	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	54	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	265	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

204

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

204

Location of sampling site

Whitefish Indian Reserve.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Hummocky, wet, few puddles, snow, fallen trees.
Trees: 60% Balsam, 4% birch. Shrubs: 5% ferns.
Herbs: 2% moss, 5% bunchberry.

Easting

480783

NAD83
Zone 17

Northing

5132276

Reference

Whitefish Indian Reserve

Altitude(m)

305

Conditions

Rain/fog

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 8 cm; Bg: 8 to >25 cm.

Parent material field description

Sample taken between 70 and 110 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25662

Depth 5 - 10 cm:

25663

Depth 10 - 20 cm:

25664

Dup. Depth 0 - 5 cm:

25665

Dup. Depth 5 - 10 cm:

25666

Dup. Depth 10 - 20 cm:

25667

Parent material:

11840

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\204\CEM-204-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\204\2001-CEM-204-
CORE_1.JPG

c:\SRSP_2001\2001-CEM-Soil
Photos\204\2001-CEM-204-
PARENT_1.JPG

Site Number

204

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9350	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	185
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	24
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	175	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	86	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	67	Iron Parent:	20000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	41
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1850	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4600	Zinc Parent:	24
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

205

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

205

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

5%N-S slope, open areas, boulders, dead logs on site. Herb: lichens, moss, polytrichium. Shrub: 1% red pine, 30% sheep laurel, 40% bracken fern. Trees: 10% red pine, 2% white spruce, 2% birch.

Easting

496284

NAD83
Zone 17

Northing

5132001

Reference

Helicopter

Altitude(m)

326

Conditions

Overcast, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 0.5 cm (black); Ae: 0.5 to 1.5 cm (7.5YR 4/0); Bt: 1.5 to 22 cm (7.5YR 5/6). Texture: silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25538

Depth 5 - 10 cm:

25539

Depth 10 - 20 cm:

25540

Dup. Depth 0 - 5 cm:

25541

Dup. Depth 5 - 10 cm

25542

Dup. Depth 10 - 20 cm:

25543

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\205\2001-CEM-205-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\205\CEM-205-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\205\2001-CEM-205-
CORE_1.JPG.jpg

Parent material photo

Site Number

205

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9400	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	575
Aluminum 5 to 10cm:	11950	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	406
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	33
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	474	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	15	Copper 5 to 10cm:	420	Selenium 5 to 10cm:	6.5
Arsenic 10 to 20cm:	4.5	Copper 10 to 20cm:	28	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	87	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	98	Iron 5 to 10cm:	17900	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	56	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	37
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	79	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	69	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	12	Vanadium 10 to 20cm:	39
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.8	Magnesium 0 to 5cm:	1075	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	0.7	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	37
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2450	Zinc 10 to 20cm:	29
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	73	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2650	Manganese 5 to 10cm:	98	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	130	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	31	Molybdenum 5 to 10cm:	0.8	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	52	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

206

Date sampled

10/2/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

206

Location of sampling site

Elbow Lake Rd. at UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site located within a small clearing, level within an Aspen dominated forest. Good soil, not very wet. No bedrock visible in this area. Bedrock to west and north. Veg: Aspen (dominant), maple, birch, alder, spruce, oak, pussy willow, bracken fern, large leaf aster, mushrooms, strawberry (?), golden rod, fireweed, grasses, purple aster, bunchberry. Floor: leaf litter, twigs, logs.

Easting

517509

NAD83
Zone 17

Northing

5130589

Reference

Elbow Lake Rd.

Altitude(m)

251

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

55% of cores: LFH: 0 to 4 cm; Ah: 0 to 3 cm; Bt: 3 to 15 cm (10YR4/3); Bg: 8 to >30 cm (2.5Y6/2), mottles: common, medium distinct, brownish yellow 10YR6/6. 45% of cores: Ah: 0 to 2 cm; Bt: 2 to 25 cm (10YR 4/3); Bm: 20 to >30 cm (2.5Y 6/4). Texture: clay loam.

Parent material field description

Sample was taken from 75 to 100 cm. Texture: silty clay loam to silty clay. Colour: 2.5Y 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10309

Depth 5 - 10 cm:

10311

Depth 10 - 20 cm:

10313

Dup. Depth 0 - 5 cm:

10310

Dup. Depth 5 - 10 cm

10312

Dup. Depth 10 - 20 cm:

10314

Parent material:

10315

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\206\2001-CEM-206-
Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\206\CEM-206-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\206\2001-CEM-206-
Core 1.JPG

Parent material photo

Site Number

206

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	18500	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	155
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	24000	Cobalt Parent:	12	Nickel Parent:	52
Arsenic 0 to 5cm:	12	Copper 0 to 5cm:	130	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	200	Iron Parent:	34000	Strontium Parent:	72
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.52	Lead Parent:	7	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4000	Zinc 0 to 5cm:	75
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9500	Zinc Parent:	37
Calcium 0 to 5cm:	4600	Manganese 0 to 5cm:	390	pH 0 to 5cm:	5.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7700	Manganese Parent:	470	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	68
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	85	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

207

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

207

Location of sampling site

South shore of Nepewassi Lake; off Nepewassi Lake Rd.-Twin Bay Rd.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Semi-forested, level, slightly hummocky area. Trees: birch, oak, balsam fir, aspen. Shrub: ferns, mountain maple, fireweed, dwarf birch. Herb: wintergreen, clubmoss, plantain, grass. Ground: leaf litter, moss, boulders, bare soil.

Easting

522450

NAD83
Zone 17

Northing

5130366

Reference

Nepewassi Lake

Altitude(m)

239

Conditions

Dry, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 1 cm; Bg: 1 to 21 cm (light brown, faint mottles); Bg: >21 cm (gleyed with common, distinct orange/brown mottles). Texture: clay.

Parent material field description

Sample was collected between 60 and 91 cm. Texture: clay. Colour: gleyed with common, coarse, prominent, brownish orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11597

Depth 5 - 10 cm:

11598

Depth 10 - 20 cm:

11599

Dup. Depth 0 - 5 cm:

11600

Dup. Depth 5 - 10 cm:

11601

Dup. Depth 10 - 20 cm:

11602

Parent material:

11607

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\207\CEM-207-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

207

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	65
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	9.5	Nickel 5 to 10cm:	54
Aluminum 10 to 20cm:	21500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	40
Aluminum Parent:	21000	Cobalt Parent:	9	Nickel Parent:	40
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	51	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	34	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	83	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	84	Iron 5 to 10cm:	23000	Strontium 5 to 10cm:	41
Barium 10 to 20cm:	88	Iron 10 to 20cm:	26500	Strontium 10 to 20cm:	57
Barium Parent:	93	Iron Parent:	29000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	17	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	50
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	57
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3250	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3450	Zinc 5 to 10cm:	48
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4000	Zinc 10 to 20cm:	46
Cadmium Parent:	ND	Magnesium Parent:	7200	Zinc Parent:	31
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	405	pH 0 to 5cm:	5.1
Calcium 5 to 10cm:	4250	Manganese 5 to 10cm:	380	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	5100	Manganese 10 to 20cm:	310	pH 10 to 20cm:	5.2
Calcium Parent:	7000	Manganese Parent:	300	pH Parent:	5.6
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	47
Chromium 5 to 10cm:	48	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	27
Chromium 10 to 20cm:	53	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	15
Chromium Parent:	79	Molybdenum Parent:	ND	C TOC Parent:	2.3

Sudbury Regional Soils Project 2001

Site Number

208

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

208

Location of sampling site

Helicopter site: within UTM grid.

Historical Inco sample station

OBM map number

Field observations

Flat, leafcover, some water. Trees (85%): aspen, white pine, birch. Shrubs (50%): aspen & birch. Herbs: grass, lichen.

Easting

532082

NAD83
Zone 17

Northing

5129136

Reference

Helicopter

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 1 cm; Bg: 1 to 23 cm (dark grey); Bg: 23 to 115 cm (light grey).

Parent material field description

Sample was collected between 78 and 115 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11796

Depth 5 - 10 cm:

11797

Depth 10 - 20 cm:

11798

Dup. Depth 0 - 5 cm:

11799

Dup. Depth 5 - 10 cm:

11800

Dup. Depth 10 - 20 cm:

11801

Parent material:

11839

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\208\CEM-208-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

208

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	57
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	20000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	26	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	23	Selenium Parent:	ND
Barium 0 to 5cm:	90	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	73	Iron Parent:	26000	Strontium Parent:	64
Beryllium 0 to 5cm:	0.26	Lead 0 to 5cm:	16	Vanadium 0 to 5cm:	49
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	49
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5600	Zinc 0 to 5cm:	67
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	22000	Zinc Parent:	39
Calcium 0 to 5cm:	5950	Manganese 0 to 5cm:	405	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	40000	Manganese Parent:	340	pH Parent:	NA
Chromium 0 to 5cm:	84	Molybdenum 0 to 5cm:	1.3	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	64	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

209

Date sampled

12/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

209

Location of sampling site

South of Sudbury.

Historical Inco sample station

OBM map number

Field observations

Flat; some hummocks; dead logs, moss, lichens.
Trees: 8% white pine, 3% alder. Shrub: 5% alder.
Herb: pohlia

Easting

500694

NAD83
Zone 17

Northing

5129520

Reference

Helicopter

Altitude(m)

290

Conditions

Clear, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm (black); Ae 1 to 2 cm (7.5YR 5/2) silty sand; Bf: 2 to 12 cm (7.5 YR 4/6) silty sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26143

Depth 5 - 10 cm:

26144

Depth 10 - 20 cm:

26145

Dup. Depth 0 - 5 cm:

26146

Dup. Depth 5 - 10 cm

26147

Dup. Depth 10 - 20 cm:

26148

Parent material:

Parent material field description

No parent material could be collected; hit bedrock with cores.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\209\2001-CEM-209-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\209\CEM-209-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\209\2001-CEM-209-
CORE_1.JPG.jpg

Parent material photo

Site Number

209

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6750	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	680
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	570	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	110	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	104	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	930	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	45	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

210

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

210

Location of sampling site

Whitefish Indian Reserve.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Flat site; hummocky; leaf cover; twigs and branches. Trees: 40% red pine, 30% white birch. Shrubs: 2% young cedar, 2% balsam fir. Herb: moss lichens.

Easting

486921

Northing

5130728

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

259

Conditions

Fog/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 3 cm (black); Ae: 3 to 9 cm (light grey); Bf: 9 to 16 cm (orangy brown), silty; Bt: 16 to >30 cm (yellowish brown), silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11832

Depth 5 - 10 cm:

11833

Depth 10 - 20 cm:

11834

Dup. Depth 0 - 5 cm:

11835

Dup. Depth 5 - 10 cm:

11836

Dup. Depth 10 - 20 cm:

11837

Parent material:

Parent material field description

No parent material could be collected. Hit bedrock at ~50 cm at a number of locations.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\210\2001-CEM-210-SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\210\CEM-210-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\210\2001-CEM-210-CORE 1.JPG

Parent material photo

Site Number

210

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	74
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	13000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	22
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	60	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	16	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	5.1	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	36	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	40
Barium 5 to 10cm:	29	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	33	Iron 10 to 20cm:	14500	Strontium 10 to 20cm:	34
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	15	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	31
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	35
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1600	Zinc 5 to 10cm:	39
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1900	Zinc 10 to 20cm:	46
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	230	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2800	Manganese 5 to 10cm:	160	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3100	Manganese 10 to 20cm:	155	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	27	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	30	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

211

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

211

Location of sampling site

Hwy 69 S; SW onto Secord Rd., continuing on to Rintala Rd.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Large hummocks, undulating, water table at 15-21 cm, large bedrock to east. Trees: oak, birch, 80% canopy cover (mostly one mature oak). Shrub: oak 4%, birch 1%, willow 1%, fern 2%. Herb: wintergreen <1%, clubmoss <1%, sedge 20%. Ground: leaf litter 30%, moss 1%, tree stumps 1%, boulders <1%.

Easting

512013

NAD83
Zone 17

Northing

5129656

Reference

Hwy 69 @ Secord Rd.

Altitude(m)

264

Conditions

Dry, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm; Ae: 1 to 2.5 cm, clay; Bm-Bt: 2.5 to 10 cm, sandy clay; Bg: >10 cm (common, coarse, prominent, orangish mottles), sandy clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11603

Depth 5 - 10 cm:

1604

Depth 10 - 20 cm:

11605

Dup. Depth 0 - 5 cm:

11608

Dup. Depth 5 - 10 cm:

11609

Dup. Depth 10 - 20 cm:

11610

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\211\CEM-211-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

211

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7550	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	280
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	250	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	96	Iron 0 to 5cm:	9950	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	870	Zinc 0 to 5cm:	35
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1250	Manganese 0 to 5cm:	500	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	23	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

212

Date sampled

12/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

212

Location of sampling site

~2.1km NE of UTM site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Level, forested area. Veg: dominated by birch and T. aspen; some spruce, alders, moss, bracken fern, grasses. Floor: leaf litter, logs, twigs.

Easting

506628

NAD83
Zone 17

Northing

5129574

Reference

Altitude(m)

250

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm (10YR 2/1); Bm: 0 to 6 cm (10YR 6/4); Bg: 2 to >30 cm (2.5Y 6/2), mottles: common, fine, faint. Texture: clayey silt.

Parent material field description

Sample taken between 70 and 105 cm. Texture: silty clay. Colour: 10YR 5/4 Mottles: common, medium, prominent, 5YR 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

27014

Depth 5 - 10 cm:

27016

Depth 10 - 20 cm:

27018

Dup. Depth 0 - 5 cm:

27015

Dup. Depth 5 - 10 cm

27017

Dup. Depth 10 - 20 cm:

27019

Parent material:

27020

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\212\2001-CEM-212-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\212\CEM-212-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\212\2001-CEM-212-Core 1.JPG

Parent material photo

Site Number

212

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17000	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	150
Aluminum 5 to 10cm:	18000	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	25
Aluminum Parent:	34000	Cobalt Parent:	12	Nickel Parent:	44
Arsenic 0 to 5cm:	9	Copper 0 to 5cm:	130	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	25	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	38	Selenium Parent:	ND
Barium 0 to 5cm:	102	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	58
Barium 5 to 10cm:	80	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	53
Barium 10 to 20cm:	65	Iron 10 to 20cm:	19500	Strontium 10 to 20cm:	54
Barium Parent:	240	Iron Parent:	38000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	27	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	41
Beryllium Parent:	0.83	Lead Parent:	9	Vanadium Parent:	71
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3450	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3650	Zinc 5 to 10cm:	38
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4100	Zinc 10 to 20cm:	38
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	53
Calcium 0 to 5cm:	4200	Manganese 0 to 5cm:	425	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3650	Manganese 5 to 10cm:	275	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4050	Manganese 10 to 20cm:	285	pH 10 to 20cm:	NA
Calcium Parent:	6800	Manganese Parent:	470	pH Parent:	NA
Chromium 0 to 5cm:	53	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	41	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	95	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

214

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

214

Location of sampling site

~530m SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Sample taken in a flat, small clearing. Veg: fir, spruce, red pine, white pine, oak, birch, ferns, wintergreen. Floor: leaf litter, twigs, needles, logs.

Easting

489266

NAD83
Zone 17

Northing

5127442

Reference

Helicopter

Altitude(m)

291

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 5 cm; Ae: 0 to 7 cm (10YR 5/2); Bf: 0 to 16 cm (5 YR 3/4); Bm: 7 to >30 cm (10YR 6/6) Texture: sandy loam.

Parent material field description

No parent material could be collected; soil too rocky.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25612

Depth 5 - 10 cm:

25614

Depth 10 - 20 cm:

25616

Dup. Depth 0 - 5 cm:

25613

Dup. Depth 5 - 10 cm

25615

Dup. Depth 10 - 20 cm:

25617

Parent material:

25618

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\214\2001-CEM-214-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\214\CEM-214-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\214\2001-CEM-214-
Core_1.JPG

Parent material photo

Site Number

214

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8150	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	539
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	17	Copper 0 to 5cm:	410	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	120	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	80	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.9	Magnesium 0 to 5cm:	1135	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2600	Manganese 0 to 5cm:	125	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

215

Date sampled

12/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

215

Location of sampling site

Whitefish Indian Reserve.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Vegetation: spruce, maple, cedar, poplar.

Easting

475725

Northing

5127542

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

269

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 2 cm; BC: >2 cm.

Parent material field description

Sample was a mottled, silty clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26587

Depth 5 - 10 cm:

26588

Depth 10 - 20 cm:

26589

Dup. Depth 0 - 5 cm:

26451

Dup. Depth 5 - 10 cm:

26452

Dup. Depth 10 - 20 cm:

26453

Parent material:

26590

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\215\2001-CEM-215-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\215\CEM-215-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\215\2001-CEM-215-
Core_1.jpg

Parent material photo

Site Number

215

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5250	Cobalt 0 to 5cm:	2.5	Nickel 0 to 5cm:	47
Aluminum 5 to 10cm:	7650	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	11
Aluminum 10 to 20cm:	12500	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	15
Aluminum Parent:	7200	Cobalt Parent:	5	Nickel Parent:	16
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	40	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	11	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	5	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	51	Iron 0 to 5cm:	7000	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	34	Iron 5 to 10cm:	10500	Strontium 5 to 10cm:	22
Barium 10 to 20cm:	39	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	27
Barium Parent:	28	Iron Parent:	13000	Strontium Parent:	17
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	19	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6.5	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	37
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	26
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	815	Zinc 0 to 5cm:	3.4
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	975	Zinc 5 to 10cm:	9.5
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1700	Zinc 10 to 20cm:	29
Cadmium Parent:	ND	Magnesium Parent:	3100	Zinc Parent:	15
Calcium 0 to 5cm:	1550	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1450	Manganese 5 to 10cm:	104	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2200	Manganese 10 to 20cm:	130	pH 10 to 20cm:	NA
Calcium Parent:	1700	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	22	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	29	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

216

Date sampled

11/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

216

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Slight W-E slope; one long hummock in centre of quadrant; fallen trees. Herb: moss, lichens. Shrub: bracken fern (40%, alder (5%), poverty grass (trace), goldenrod (5%). Trees: 10% poplar, 1% white spruce; 1% balsam fir.

Easting

524856

NAD83
Zone 17

Northing

5126038

Reference

Helicopter

Altitude(m)

240

Conditions

Overcast, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ae: 0 to 2 cm (medium Grey), sandy; Bt: 1.5 to 36 cm (pale orange-brown), silty-clay.

Parent material field description

Sample was collected from >52 cm. Texture: silt. Colour: light grey.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25500

Depth 5 - 10 cm:

25501

Depth 10 - 20 cm:

25502

Dup. Depth 0 - 5 cm:

25503

Dup. Depth 5 - 10 cm:

25504

Dup. Depth 10 - 20 cm:

25505

Parent material:

25509

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\216\2001-CEM-216-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\216\CEM-216-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\216\2001-CEM-216-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\216\2001-CEM-216-
PARENT_1.JPG.jpg

Site Number

216

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	158
Aluminum 5 to 10cm:	23500	Cobalt 5 to 10cm:	16	Nickel 5 to 10cm:	50
Aluminum 10 to 20cm:	30000	Cobalt 10 to 20cm:	14	Nickel 10 to 20cm:	51
Aluminum Parent:	26000	Cobalt Parent:	12	Nickel Parent:	40
Arsenic 0 to 5cm:	7.5	Copper 0 to 5cm:	113	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	33	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	28	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	215	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	57
Barium 5 to 10cm:	115	Iron 5 to 10cm:	27500	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	125	Iron 10 to 20cm:	30500	Strontium 10 to 20cm:	44
Barium Parent:	140	Iron Parent:	34000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	47
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9.5	Vanadium 10 to 20cm:	53
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	61
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	3250	Zinc 0 to 5cm:	69
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5350	Zinc 5 to 10cm:	62
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	7400	Zinc 10 to 20cm:	63
Cadmium Parent:	ND	Magnesium Parent:	8900	Zinc Parent:	44
Calcium 0 to 5cm:	4800	Manganese 0 to 5cm:	1080	pH 0 to 5cm:	4.9
Calcium 5 to 10cm:	3400	Manganese 5 to 10cm:	665	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3450	Manganese 10 to 20cm:	410	pH 10 to 20cm:	5
Calcium Parent:	5200	Manganese Parent:	410	pH Parent:	5.8
Chromium 0 to 5cm:	58	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	192
Chromium 5 to 10cm:	57	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	36
Chromium 10 to 20cm:	69	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	17
Chromium Parent:	75	Molybdenum Parent:	1.5	C TOC Parent:	4

Sudbury Regional Soils Project 2001

Site Number

217

Date sampled

12/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

217

Location of sampling site

~320m NE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Sample taken in level, forest area; some mature pine and T. aspen. Veg: T. aspen, largetooth aspen, fir, red pine, maple, clubmoss, wintergreen, mosses, bunchberry.

Easting

483326

Northing

5129003

NAD83
Zone 17

Reference

Whitefish Indian Reserve

Altitude(m)

285

Conditions

Fog/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm; Ae: 0 to 6 cm (7.5YR 6/2) B: 1 to >30 cm (7.5YR 4/6).
Texture: silt loam. There was little variability between cores.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

35653

Depth 5 - 10 cm:

35654

Depth 10 - 20 cm:

35655

Dup. Depth 0 - 5 cm:

35656

Dup. Depth 5 - 10 cm:

35657

Dup. Depth 10 - 20 cm:

35658

Parent material:

35659

Parent material field description

Sample taken between 65 and 95 cm. Colour: 2.5Y 5/3. Texture: silty clay.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\217\CEM-217-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

217

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
ND: not detected
NS: no sample

Aluminum 0 to 5cm:	NA	Cobalt 0 to 5cm:	NA	Nickel 0 to 5cm:	NA
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	NA	Copper 0 to 5cm:	NA	Selenium 0 to 5cm:	NA
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	NA	Iron 0 to 5cm:	NA	Strontium 0 to 5cm:	NA
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	NA	Lead 0 to 5cm:	NA	Vanadium 0 to 5cm:	NA
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	NA	Magnesium 0 to 5cm:	NA	Zinc 0 to 5cm:	NA
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	NA	Manganese 0 to 5cm:	NA	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	NA	Molybdenum 0 to 5cm:	NA	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

218

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F218

Location of sampling site

Helicopter site: off Skead Rd. east of Skead, south tip of Lake Wanapitei

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch stand, minor deciduous trees, slight slope. Ground cover is dried shrubs and litter.

Easting

520238

Northing

5167551

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

302

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, rooted, fungal, consolidated, 3 to 6 cm thick. Horizon 2 (Bt) is a medium brown gravelly sand with large pebbles and cobbles, persists to 20 cm.

Parent material field description

Depth sample from 40 to 60 cm consists of medium brown gravelly sand with large pebbles and cobbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12369

Depth 5 - 10 cm:

12371

Depth 10 - 20 cm:

12373

Dup. Depth 0 - 5 cm:

12370

Dup. Depth 5 - 10 cm:

12372

Dup. Depth 10 - 20 cm:

12374

Parent material:

12377

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F218\F218-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F218\F218-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F218\F218-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

218

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	313
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	41
Arsenic 0 to 5cm:	43	Copper 0 to 5cm:	330	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	160	Iron 0 to 5cm:	23000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	49	Iron Parent:	20000	Strontium Parent:	14
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	72	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	42
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	1950	Zinc 0 to 5cm:	69
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2600	Zinc Parent:	38
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	905	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1300	Manganese Parent:	210	pH Parent:	NA
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	62	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

219

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F219

Location of sampling site

Helicopter site: north of Radar Rd. east of Dupuis Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded coniferous area. Ground cover is thick shrub layer and litter. Some snow cover.

Easting

510658

NAD83
Zone 17

Northing

5167352

Reference

Helicopter

Altitude(m)

302

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 1.5 to 4 cm thick. Horizon 2 (Bt) is a light grey silty sand, less than 2 cm thick, only in occasional cores, not enough to sample. Horizon 3 is a light to medium brown, moist, silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown, very wet silt and clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12322

Depth 5 - 10 cm:

12324

Depth 10 - 20 cm:

12326

Dup. Depth 0 - 5 cm:

12323

Dup. Depth 5 - 10 cm:

12325

Dup. Depth 10 - 20 cm:

12327

Parent material:

12330

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F219\F219-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F219\F219-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F219\F219-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

219

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7350	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	221
Aluminum 5 to 10cm:	9400	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	18
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	17
Aluminum Parent:	6900	Cobalt Parent:	3	Nickel Parent:	15
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	265	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	17	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	6.1	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	4.9	Selenium Parent:	ND
Barium 0 to 5cm:	39	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	23	Iron 5 to 10cm:	10500	Strontium 5 to 10cm:	43
Barium 10 to 20cm:	32	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	47
Barium Parent:	22	Iron Parent:	9600	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	54	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	34
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	23
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	825	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2000	Zinc 10 to 20cm:	19
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	12
Calcium 0 to 5cm:	2500	Manganese 0 to 5cm:	103	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3450	Manganese 5 to 10cm:	115	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4400	Manganese 10 to 20cm:	155	pH 10 to 20cm:	NA
Calcium Parent:	4600	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	24	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	30	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	26	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

220

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F220

Location of sampling site

Helicopter site: off West Bay Rd. west of Boland's Bay.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch area, some saplings, on a slope with some exposed bedrock. Ground cover is predominantly leaves/litter.

Easting

515868

NAD83
Zone 17

Northing

5167236

Reference

Helicopter

Altitude(m)

367

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 2 to 5 cm thick. Horizon 2 (Ae) is a light grey silty sand. Horizon 3 (Bt) is a medium brown, gravelly sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown gravelly sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12359

Depth 5 - 10 cm:

12361

Depth 10 - 20 cm:

12363

Dup. Depth 0 - 5 cm:

12360

Dup. Depth 5 - 10 cm:

12362

Dup. Depth 10 - 20 cm:

12364

Parent material:

12368

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F220\F220-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F220\F220-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F220\F220-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

220

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6450	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	241
Aluminum 5 to 10cm:	10100	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	38
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	40
Aluminum Parent:	18000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	305	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	15	Copper 5 to 10cm:	35	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	6.5	Copper 10 to 20cm:	17	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	21	Selenium Parent:	ND
Barium 0 to 5cm:	83	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	40	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	32
Barium 10 to 20cm:	53	Iron 10 to 20cm:	18500	Strontium 10 to 20cm:	36
Barium Parent:	70	Iron Parent:	22000	Strontium Parent:	20
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	46
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	40
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	800	Zinc 0 to 5cm:	35
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	22
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	31
Cadmium Parent:	ND	Magnesium Parent:	5900	Zinc Parent:	33
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	155	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2050	Manganese 5 to 10cm:	115	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2350	Manganese 10 to 20cm:	155	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	240	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	45	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	51	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

221

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F221

Location of sampling site

Helicopter site: off West Bay Rd. west of Boland's Bay.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch slope area. Ground cover is predominantly Labrador tea, some litter and mosses. Moist environment.

Easting

514211

Northing

5166539

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

343

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, consolidated, 1 to 5 cm thick. Horizon 2 (Ae) is a light grey silty sand, 4 cm thick. Horizon 3 (Bt) is an orange-brown, silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of an orange-brown silty sand which grades to a lighter brown silty sand with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12339

Depth 5 - 10 cm:

12341

Depth 10 - 20 cm:

12343

Dup. Depth 0 - 5 cm:

12340

Dup. Depth 5 - 10 cm:

12342

Dup. Depth 10 - 20 cm:

12344

Parent material:

12348

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F221\F221-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F221\F221-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F221\F221-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

221

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4650	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	108
Aluminum 5 to 10cm:	7950	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	16
Aluminum 10 to 20cm:	12500	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	20
Aluminum Parent:	6500	Cobalt Parent:	4	Nickel Parent:	13
Arsenic 0 to 5cm:	12	Copper 0 to 5cm:	140	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	3.5	Copper 5 to 10cm:	21	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8.1	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	3.7	Selenium Parent:	ND
Barium 0 to 5cm:	54	Iron 0 to 5cm:	8450	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	28	Iron 5 to 10cm:	9900	Strontium 5 to 10cm:	17
Barium 10 to 20cm:	43	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	27
Barium Parent:	28	Iron Parent:	10000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5.5	Vanadium 5 to 10cm:	27
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	630	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	790	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	23
Cadmium Parent:	ND	Magnesium Parent:	2500	Zinc Parent:	11
Calcium 0 to 5cm:	1005	Manganese 0 to 5cm:	62	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1160	Manganese 5 to 10cm:	77	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2100	Manganese 10 to 20cm:	115	pH 10 to 20cm:	NA
Calcium Parent:	2200	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	15	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	19	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	25	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	21	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

222

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F222

Location of sampling site

Helicopter site: east of Skead Rd. and Boland's Bay.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch area at foot of slope, exposed bedrock. Ground cover is mosses/lichens and dried shrubs.

Easting

520494

Northing

5165618

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 1 to 7 cm thick. Horizon 2 (Bt) is a fine- to medium-grained sand, unconsolidated, with occasional gravel and pebbles, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a brown, moist to dry sand with occasional gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12705

Depth 5 - 10 cm:

12707

Depth 10 - 20 cm:

12709

Dup. Depth 0 - 5 cm:

12706

Dup. Depth 5 - 10 cm

12708

Dup. Depth 10 - 20 cm:

12710

Parent material:

12713

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F222\F222-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F222\F222-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F222\F222-core.jpg

Parent material photo

Site Number

222

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6700	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	216
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	31
Aluminum 10 to 20cm:	16500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	33
Aluminum Parent:	NA	Cobalt Parent:	NA	Nickel Parent:	NA
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	400	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	37	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	5.5	Copper 10 to 20cm:	15	Selenium 10 to 20cm:	ND
Arsenic Parent:	NA	Copper Parent:	NA	Selenium Parent:	NA
Barium 0 to 5cm:	93	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	35	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	22
Barium 10 to 20cm:	39	Iron 10 to 20cm:	19500	Strontium 10 to 20cm:	26
Barium Parent:	NA	Iron Parent:	NA	Strontium Parent:	NA
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	85	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	35
Beryllium Parent:	NA	Lead Parent:	NA	Vanadium Parent:	NA
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	905	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2300	Zinc 10 to 20cm:	29
Cadmium Parent:	NA	Magnesium Parent:	NA	Zinc Parent:	NA
Calcium 0 to 5cm:	1350	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1700	Manganese 5 to 10cm:	145	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2350	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	NA	Manganese Parent:	NA	pH Parent:	NA
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	34	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NA	Molybdenum Parent:	NA	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

223

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F223

Location of sampling site

Helicopter site: just north of Sudbury Airport.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch/poplar stand, level. Ground cover is predominantly litter with some small shrubs.

Easting

514929

NAD83
Zone 17

Northing

5165289

Reference

Helicopter

Altitude(m)

338

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, grading into sand, 1 to 3 cm thick. Horizon 2 (Ae) is a light grey, dry, medium-grained sand, 4 cm thick. Horizon 3 (Bf) is a medium brown, medium- to coarse-grained sand, dry, unconsolidated, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown coarse grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12349

Depth 5 - 10 cm:

12351

Depth 10 - 20 cm:

12353

Dup. Depth 0 - 5 cm:

12350

Dup. Depth 5 - 10 cm

12352

Dup. Depth 10 - 20 cm:

12354

Parent material:

12358

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F223\F223-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F223\F223-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F223\F223-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

223

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7600	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	224
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	4.5	Nickel 5 to 10cm:	38
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	34
Aluminum Parent:	7200	Cobalt Parent:	7	Nickel Parent:	26
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	310	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	15	Copper 5 to 10cm:	45	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	88	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	53	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	56	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	37
Barium Parent:	38	Iron Parent:	13000	Strontium Parent:	17
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	43
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	20
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	935	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2400	Zinc 10 to 20cm:	43
Cadmium Parent:	ND	Magnesium Parent:	4000	Zinc Parent:	17
Calcium 0 to 5cm:	2000	Manganese 0 to 5cm:	350	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2400	Manganese 5 to 10cm:	275	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3000	Manganese 10 to 20cm:	300	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	25	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

224

Date sampled

11/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

224

Location of sampling site

West Bay Rd. just south of Skead.

Historical Inco sample station

41

OBM map number

41 I/10

Field observations

Site has a slight E-W slope with some rock outcrops and a few hummocks. Lichens on trees, moss on base of trees. Dead leaves and needles on ground. Lots of oak and pine litter. Herbs: polytrichium 1%. Shrubs: 10 to 29% blueberry, <1% sheep laurel, <1% white spruce, 5 to 10% bracken fern. Trees: 5% red pine, 1% balsam fir, <1% birch, 1% oak.

Easting

516494

NAD83
Zone 17

Northing

5167981

Reference

West Bay Rd./
Skead

Altitude(m)

312

Conditions

Sunny, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 5 cm; Ae: 5 to 8 cm (7.5YR 6/2), silty clay; Bf: 8 to 21 cm (7.5YR 4/6), sandy silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25349

Depth 5 - 10 cm:

25350

Depth 10 - 20 cm:

25351

Dup. Depth 0 - 5 cm:

25352

Dup. Depth 5 - 10 cm:

25353

Dup. Depth 10 - 20 cm:

25354

Parent material:

Parent material field description

No sample collected; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\224\2001-CEM-224-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\224\CEM-224-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\224\2001-CEM-224-
Core_1.jpg

Parent material photo

Site Number

224

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5300	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	415
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	475	Selenium 0 to 5cm:	7
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	76	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	113	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	635	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	90	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

225

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F225

Location of sampling site

Helicopter site: south of Radar Rd. near Dupuis Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded/shrub area with exposed bedrock ridges.

Easting

508360

Northing

5163295

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

334

Conditions

Overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, cohesive. Horizon 2 (Bt) is a medium brown, moist, fine-grained sand, persists to 20 cm. Occasional cores contain a thin (<3 cm) grey silty horizon (Ae) below the organic horizon.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a brown, moist, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12284

Depth 5 - 10 cm:

12286

Depth 10 - 20 cm:

12288

Dup. Depth 0 - 5 cm:

12285

Dup. Depth 5 - 10 cm:

12287

Dup. Depth 10 - 20 cm:

12289

Parent material:

12292

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

Parent material photo

Site Number

225

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6100	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	173
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	21
Aluminum 10 to 20cm:	16500	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	19
Aluminum Parent:	15000	Cobalt Parent:	3	Nickel Parent:	21
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	250	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	25	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8.9	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.1	Selenium Parent:	ND
Barium 0 to 5cm:	48	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	5.5
Barium 5 to 10cm:	23	Iron 5 to 10cm:	14000	Strontium 5 to 10cm:	30
Barium 10 to 20cm:	25	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	36
Barium Parent:	24	Iron Parent:	16000	Strontium Parent:	24
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	46	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6.5	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	37
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	36
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	535	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1105	Zinc 5 to 10cm:	19
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1800	Zinc 10 to 20cm:	18
Cadmium Parent:	ND	Magnesium Parent:	1300	Zinc Parent:	18
Calcium 0 to 5cm:	660	Manganese 0 to 5cm:	62	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2150	Manganese 5 to 10cm:	120	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2850	Manganese 10 to 20cm:	140	pH 10 to 20cm:	NA
Calcium Parent:	1900	Manganese Parent:	110	pH Parent:	NA
Chromium 0 to 5cm:	18	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	27	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	32	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	27	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

226

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F226

Location of sampling site

Helicopter site: south of Radar Rd. west of Jack Pine Cresc.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded deciduous area, slight slope. Ground cover is Labrador tea, dried shrubs and ferns, mosses, and minor exposed bedrock.

Easting

511211

Northing

5163882

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

357

Conditions

Overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, unconsolidated, 5 to 6 cm thick.
Horizon 2 (Ae) is a light grey, moist, consolidated silty sand, 4 to 6 cm thick.
Horizon 3 (Bt) is a medium brown, moist, very fine-grained sand.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a medium brown, moist, very fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12302

Depth 5 - 10 cm:

12304

Depth 10 - 20 cm:

12306

Dup. Depth 0 - 5 cm:

12303

Dup. Depth 5 - 10 cm

12305

Dup. Depth 10 - 20 cm:

12307

Parent material:

12311

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F226\F226-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F226\F226-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F226\F226-core.jpg

Parent material photo

Site Number

226

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7050	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	287
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	25
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	20
Aluminum Parent:	11000	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	310	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	30	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	20	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	65	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	28	Iron 5 to 10cm:	18000	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	30	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	37
Barium Parent:	24	Iron Parent:	15000	Strontium Parent:	19
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	29
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	830	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1750	Zinc 10 to 20cm:	22
Cadmium Parent:	ND	Magnesium Parent:	2200	Zinc Parent:	17
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	107	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	104	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2700	Manganese 10 to 20cm:	140	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	31	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

227

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F227

Location of sampling site

Helicopter site: south of Radar Rd. near Falconbridge Cresc.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open deciduous area with shrubs, sloping. Snow covered. Soil at this site is very shallow, bedrock is exposed as well as a boulder layer.

Easting

512146

NAD83
Zone 17

Northing

5163403

Reference

Helicopter

Altitude(m)

365

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, rooted, cohesive, 5 cm thick. Horizon 2 (Ae) is a light grey, moist, very fine-grained sand, gradational in colour to medium brown, 3 to 4 cm thick. Horizon 3 (Bt) is a medium brown, wet, silty sand.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a medium brown, wet, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12312

Depth 5 - 10 cm:

12314

Depth 10 - 20 cm:

12316

Dup. Depth 0 - 5 cm:

12313

Dup. Depth 5 - 10 cm

12315

Dup. Depth 10 - 20 cm:

12317

Parent material:

12321

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F227\F227-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F227\F227-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F227\F227-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

227

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8400	Cobalt 0 to 5cm:	19	Nickel 0 to 5cm:	381
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	75
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	23
Aluminum Parent:	16000	Cobalt Parent:	4	Nickel Parent:	24
Arsenic 0 to 5cm:	47	Copper 0 to 5cm:	470	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	27	Copper 5 to 10cm:	134	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	11	Copper 10 to 20cm:	37	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	6.5	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	38	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	30	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	31
Barium Parent:	22	Iron Parent:	14000	Strontium Parent:	16
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	85	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	20	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	34
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	815	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	840	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	22
Cadmium Parent:	ND	Magnesium Parent:	1400	Zinc Parent:	24
Calcium 0 to 5cm:	1450	Manganese 0 to 5cm:	84	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1900	Manganese 5 to 10cm:	95	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2350	Manganese 10 to 20cm:	115	pH 10 to 20cm:	NA
Calcium Parent:	1200	Manganese Parent:	85	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	27	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

228

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F228

Location of sampling site

Helicopter site: east of Skead Rd. east of Sudbury Airport.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded deciduous (birch) area, occasional coniferous. Level with small grassy hummocks.

Easting

520114

NAD83
Zone 17

Northing

5163216

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is grey fine- to medium-grained, moist sand containing some organic material, 7 cm thick. Horizon 2 (Bf) is a reddish brown, moist to dry sand with some organic content and occasional gravel, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 100 cm consists of a brown, wet, unconsolidated gravel and sand mixture.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12696

Depth 5 - 10 cm:

12698

Depth 10 - 20 cm:

12700

Dup. Depth 0 - 5 cm:

12697

Dup. Depth 5 - 10 cm

12699

Dup. Depth 10 - 20 cm:

12701

Parent material:

12704

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F228\F228-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F228\F228-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F228\F228-core.jpg

Parent material photo

Site Number

228

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8850	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	295
Aluminum 5 to 10cm:	9450	Cobalt 5 to 10cm:	4.5	Nickel 5 to 10cm:	31
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	36
Aluminum Parent:	14000	Cobalt Parent:	10	Nickel Parent:	44
Arsenic 0 to 5cm:	40	Copper 0 to 5cm:	420	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	14	Copper 5 to 10cm:	34	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	89	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	39	Iron 5 to 10cm:	15500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	70	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	38
Barium Parent:	76	Iron Parent:	19000	Strontium Parent:	38
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	74	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	43
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	37
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	1050	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	19
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2500	Zinc 10 to 20cm:	30
Cadmium Parent:	ND	Magnesium Parent:	5100	Zinc Parent:	19
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	255	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	1635	Manganese 5 to 10cm:	175	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3000	Manganese 10 to 20cm:	200	pH 10 to 20cm:	4.9
Calcium Parent:	3100	Manganese Parent:	210	pH Parent:	5.3
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	69
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	8.2
Chromium 10 to 20cm:	45	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	17
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	6.8

Sudbury Regional Soils Project 2001

Site Number

229

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F229

Location of sampling site

Helicopter site: south of Radar Rd. near Dupuis Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open shrub/birch slope area, exposed bedrock. Ground cover is Labrador tea, dried ferns and shrubs, mosses/lichens.

Easting

510147

NAD83
Zone 17

Northing

5163248

Reference

Helicopter

Altitude(m)

Conditions

Overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 cm thick. Horizon 2 (Bf) is an orange brown, fine-grained consolidated sand, persists to 20 cm. Occasional cores contain a light grey silty sand layer less than 5 cm thick below the organic horizon, but not in enough cores to sample.

Parent material field description

Depth sample collected from 60 to 80 cm consists of an orange brown, fine-grained consolidated sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12293

Depth 5 - 10 cm:

12295

Depth 10 - 20 cm:

12297

Dup. Depth 0 - 5 cm:

12294

Dup. Depth 5 - 10 cm

12296

Dup. Depth 10 - 20 cm:

12298

Parent material:

12301

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F229\F229-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F229\F229-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F229\F229-core.jpg

Parent material photo

Site Number

229

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5900	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	230
Aluminum 5 to 10cm:	10300	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	29
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	23
Aluminum Parent:	15000	Cobalt Parent:	5	Nickel Parent:	22
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	310	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	33	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.5	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	7.4	Selenium Parent:	ND
Barium 0 to 5cm:	79	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	28	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	36	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	36
Barium Parent:	22	Iron Parent:	14000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	38
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	29
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	665	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	940	Zinc 5 to 10cm:	17
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1650	Zinc 10 to 20cm:	17
Cadmium Parent:	ND	Magnesium Parent:	2400	Zinc Parent:	18
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	90	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1500	Manganese 5 to 10cm:	91	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2650	Manganese 10 to 20cm:	135	pH 10 to 20cm:	NA
Calcium Parent:	2000	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	20	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	24	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	35	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

230

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F230

Location of sampling site

Helicopter site: south of Radar Rd. west of Bailey Corners.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open shrub/birch slope area, exposed bedrock. Ground cover is Labrador tea, dried ferns and shrubs, mosses/lichens.

Easting

507761

NAD83
Zone 17

Northing

5162691

Reference

Helicopter

Altitude(m)

332

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, unconsolidated, 5-8 cm thick. Horizon 2 (Bt) is a medium brown, fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 50 cm consists of a medium brown fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12275

Depth 5 - 10 cm:

12277

Depth 10 - 20 cm:

12279

Dup. Depth 0 - 5 cm:

12276

Dup. Depth 5 - 10 cm:

12278

Dup. Depth 10 - 20 cm:

12280

Parent material:

12283

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F230\F230-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F230\F230-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F230\F230-core.jpg

Parent material photo

Site Number

230

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9350	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	257
Aluminum 5 to 10cm:	15500	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	24
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	22
Aluminum Parent:	13000	Cobalt Parent:	4	Nickel Parent:	22
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	320	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	38	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	21	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	54	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	27	Iron 5 to 10cm:	18500	Strontium 5 to 10cm:	37
Barium 10 to 20cm:	30	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	45
Barium Parent:	27	Iron Parent:	14000	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	54	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	42
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	33
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1005	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1500	Zinc 5 to 10cm:	25
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2250	Zinc 10 to 20cm:	27
Cadmium Parent:	ND	Magnesium Parent:	1600	Zinc Parent:	21
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	105	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2900	Manganese 5 to 10cm:	135	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3850	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	1500	Manganese Parent:	89	pH Parent:	NA
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

231

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F231

Location of sampling site

Helicopter site: between Skead Rd. and Kukagami Lake Rd., west of Wanapitei River.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Birch and shrub open area, level. Ground cover is hummocky, grassy, Labrador tea.

Easting

522384

NAD83
Zone 17

Northing

5161717

Reference

Helicopter

Altitude(m)

336

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, unconsolidated, 5 cm thick. Horizon 2 (Ae) is a light grey, moist, unconsolidated silty sand with some organic content, 5 cm thick. Horizon 3 (Bt) is an orange-brown, moist to wet, fine-grained sand mixed with gravel and containing some organic material.

Parent material field description

Depth sample collected from 70 to 90 cm consists of a grey-brown, moist, very fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12686

Depth 5 - 10 cm:

12688

Depth 10 - 20 cm:

12690

Dup. Depth 0 - 5 cm:

12687

Dup. Depth 5 - 10 cm

12689

Dup. Depth 10 - 20 cm:

12691

Parent material:

12695

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F231\F231-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F231\F231-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F231\F231-core.jpg

Parent material photo

Site Number

231

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6550	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	245
Aluminum 5 to 10cm:	9600	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	27
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	24
Aluminum Parent:	12000	Cobalt Parent:	7	Nickel Parent:	25
Arsenic 0 to 5cm:	26	Copper 0 to 5cm:	335	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	29	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	9.1	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	78	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	33	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	20
Barium 10 to 20cm:	56	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	31
Barium Parent:	60	Iron Parent:	14000	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	30
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	30
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	860	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1150	Zinc 5 to 10cm:	11
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	16
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	12
Calcium 0 to 5cm:	1075	Manganese 0 to 5cm:	83	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1500	Manganese 5 to 10cm:	89	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2150	Manganese 10 to 20cm:	135	pH 10 to 20cm:	NA
Calcium Parent:	2800	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	22	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	30	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

232

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F232

Location of sampling site

Helicopter site: south of Radar Rd. west of Bailey Corners.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded deciduous (birch) area, sloping. Ground cover is grasses, shrubs, and litter.

Easting

508404

NAD83
Zone 17

Northing

5161073

Reference

Helicopter

Altitude(m)

304

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown to black, consolidated, 5 to 7 cm thick. Horizon 2 (Ae) is a light grey silty sand, 5 to 7 cm thick. Horizon 3 (Bf) is an orange brown, moist, silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 60 to 80 cm consists of an orange brown, moist, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12265

Depth 5 - 10 cm:

12267

Depth 10 - 20 cm:

12269

Dup. Depth 0 - 5 cm:

12266

Dup. Depth 5 - 10 cm

12268

Dup. Depth 10 - 20 cm:

12270

Parent material:

12274

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F232\F232-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F232\F232-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F232\F232-core.jpg

Parent material photo

Site Number

232

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6550	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	350
Aluminum 5 to 10cm:	7400	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	22
Aluminum Parent:	5500	Cobalt Parent:	4	Nickel Parent:	23
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	505	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	45	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	4	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	111	Iron 0 to 5cm:	11550	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	25	Iron 5 to 10cm:	11100	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	31	Iron 10 to 20cm:	14500	Strontium 10 to 20cm:	29
Barium Parent:	24	Iron Parent:	10000	Strontium Parent:	16
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	73	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	33
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	22
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	950	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	845	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1550	Zinc 10 to 20cm:	20
Cadmium Parent:	ND	Magnesium Parent:	2200	Zinc Parent:	12
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	250	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1300	Manganese 5 to 10cm:	125	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2200	Manganese 10 to 20cm:	155	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	18	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	25	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	20	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

233

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F233

Location of sampling site

Helicopter site: west side of Radar Rd. south of Bailey Corners.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open wooded and shrub area, level. Ground cover is mosses and Labrador tea.

Easting

513269

Northing

5161016

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

343

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 cm thick. Horizon 2 (Bg) is an orange and grey, moist, silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a grey, moist, consolidated silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12476

Depth 5 - 10 cm:

12478

Depth 10 - 20 cm:

12480

Dup. Depth 0 - 5 cm:

12477

Dup. Depth 5 - 10 cm:

12479

Dup. Depth 10 - 20 cm:

12481

Parent material:

12484

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F233\F233-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F233\F233-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F233\F233-core.jpg

Parent material photo

Site Number

233

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8550	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	160
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	35
Aluminum 10 to 20cm:	11500	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	23
Aluminum Parent:	11000	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	63	Copper 0 to 5cm:	250	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	88	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	43	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.9	Selenium Parent:	ND
Barium 0 to 5cm:	40	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	60	Iron 5 to 10cm:	14500	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	47	Iron 10 to 20cm:	14000	Strontium 10 to 20cm:	28
Barium Parent:	55	Iron Parent:	14000	Strontium Parent:	33
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	34
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	32
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	16
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	16
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	14
Calcium 0 to 5cm:	1450	Manganese 0 to 5cm:	105	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	1800	Manganese 5 to 10cm:	130	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	1850	Manganese 10 to 20cm:	145	pH 10 to 20cm:	4.4
Calcium Parent:	2700	Manganese Parent:	180	pH Parent:	4.2
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	32
Chromium 5 to 10cm:	25	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	21
Chromium 10 to 20cm:	25	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	15
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	3.4

Sudbury Regional Soils Project 2001

Site Number

234

Date sampled

11/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

234

Location of sampling site

Ethier gravel pit; south of Sudbury airport.

Historical Inco sample station

64

OBM map number

41 I/10

Field observations

Site is open, flat, with numerous young birch trees. Floor cover is predominantly moss with leaf and twig litter. Shrubs: 20% blueberry. Herbs: 20% moss, 2% lichens. Trees: 10% birch; 5% stumps; 1% fallen trees.

Easting

514136

NAD83
Zone 17

Northing

5162246

Reference

Sudbury
Airport/Ethier

Altitude(m)

328

Conditions

Sunny, warm,
windy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 12 cm; Ah: 0 to 19 cm (10YR 3/4); Ae: 19 to 38 cm (10YR 7/1); Bf: 38 to 102 cm (7.5YR 4/6). Texture: sandy.

Parent material field description

Sample collected from 76 to 117 cm. Texture: sandy silt-sand. Colour: 2.5YR 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25358

Depth 5 - 10 cm:

25359

Depth 10 - 20 cm:

25360

Dup. Depth 0 - 5 cm:

25357

Dup. Depth 5 - 10 cm:

25356

Dup. Depth 10 - 20 cm:

25355

Parent material:

25364

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\234\2001-CEM-234-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\234\CEM-234-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\234\2001-CEM-234-
Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

234

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	7200	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	142
Aluminum 5 to 10cm:	7300	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	42
Aluminum 10 to 20cm:	8550	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	133
Aluminum Parent:	7500	Cobalt Parent:	5	Nickel Parent:	18
Arsenic 0 to 5cm:	31	Copper 0 to 5cm:	196	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	22	Copper 5 to 10cm:	116	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	66	Copper 10 to 20cm:	282	Selenium 10 to 20cm:	2
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	ND
Barium 0 to 5cm:	36	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	33	Iron 5 to 10cm:	12500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	42	Iron 10 to 20cm:	14650	Strontium 10 to 20cm:	21
Barium Parent:	40	Iron Parent:	11000	Strontium Parent:	35
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	32
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	50	Vanadium 10 to 20cm:	32
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	24
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1135	Zinc 0 to 5cm:	23
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	940	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	0.4	Magnesium 10 to 20cm:	1280	Zinc 10 to 20cm:	23
Cadmium Parent:	ND	Magnesium Parent:	2500	Zinc Parent:	12
Calcium 0 to 5cm:	1550	Manganese 0 to 5cm:	120	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1550	Manganese 5 to 10cm:	140	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1800	Manganese 10 to 20cm:	138	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	23	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	22	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

235

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F235

Location of sampling site

Helicopter site: south of Radar Rd. west of Bailey Corners.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Fairly open wooded coniferous/deciduous stand, sloping with some outcropping bedrock. Ground cover is shrubs, Labrador tea, and mosses/lichens.

Easting

510086

Northing

5160723

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

308

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, firly dry, unconsolidated, 5 to 8 cm thick. Horizon 2 (Ae) is a light grey silty sand, unconsolidated, 3 cm thick. Horizon 3 (Bt) is a medium brown, moist, very fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 100 cm consists of a medium to light brown, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12246

Depth 5 - 10 cm:

12248

Depth 10 - 20 cm:

12250

Dup. Depth 0 - 5 cm:

12247

Dup. Depth 5 - 10 cm

12249

Dup. Depth 10 - 20 cm:

12251

Parent material:

12255

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F235\F235-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F235\F235-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F235\F235-core.jpg

Parent material photo

Site Number

235

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4600	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	298
Aluminum 5 to 10cm:	7500	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	47
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	24
Aluminum Parent:	9000	Cobalt Parent:	5	Nickel Parent:	24
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	420	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	63	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	7	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	66	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	17
Barium 5 to 10cm:	27	Iron 5 to 10cm:	11500	Strontium 5 to 10cm:	18
Barium 10 to 20cm:	35	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	33
Barium Parent:	38	Iron Parent:	14000	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	64	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	30
Cadmium 0 to 5cm:	0.9	Magnesium 0 to 5cm:	525	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	755	Zinc 5 to 10cm:	15
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1650	Zinc 10 to 20cm:	19
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	17
Calcium 0 to 5cm:	1045	Manganese 0 to 5cm:	91	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1200	Manganese 5 to 10cm:	110	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2600	Manganese 10 to 20cm:	180	pH 10 to 20cm:	NA
Calcium Parent:	2200	Manganese Parent:	160	pH Parent:	NA
Chromium 0 to 5cm:	15	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	20	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	30	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

236

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F236

Location of sampling site

Helicopter site: east of Falconbridge property.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open sandy area near Falconbridge smelter site, sloping, some deciduous trees and some snow cover. Ground cover is sand and some minor litter and shrubs.

Easting

517164

Northing

5160393

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

342

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a light to medium brown, moist, unconsolidated, medium-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 60 to 80 cm (depth to bedrock) consists of an orange to brown, moist, compact and consolidated fine- to medium-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12570

Depth 5 - 10 cm:

12572

Depth 10 - 20 cm:

12574

Dup. Depth 0 - 5 cm:

12571

Dup. Depth 5 - 10 cm:

12573

Dup. Depth 10 - 20 cm:

12575

Parent material:

12577

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F236\F236-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F236\F236-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F236\F236-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

236

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6450	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	40
Aluminum 5 to 10cm:	8200	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	27
Aluminum 10 to 20cm:	8450	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	28
Aluminum Parent:	10000	Cobalt Parent:	5	Nickel Parent:	22
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	41	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	37	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	29	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	59	Selenium Parent:	ND
Barium 0 to 5cm:	25	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	34	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	22
Barium 10 to 20cm:	39	Iron 10 to 20cm:	11000	Strontium 10 to 20cm:	25
Barium Parent:	31	Iron Parent:	13000	Strontium Parent:	12
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	6.5	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	26
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	26
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	27
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2750	Zinc 0 to 5cm:	ND
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	12
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1850	Zinc 10 to 20cm:	17
Cadmium Parent:	ND	Magnesium Parent:	1800	Zinc Parent:	14
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	110	pH 0 to 5cm:	6.9
Calcium 5 to 10cm:	2150	Manganese 5 to 10cm:	125	pH 5 to 10cm:	5.6
Calcium 10 to 20cm:	2050	Manganese 10 to 20cm:	135	pH 10 to 20cm:	5.1
Calcium Parent:	1000	Manganese Parent:	110	pH Parent:	4.6
Chromium 0 to 5cm:	21	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	6.3
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	5.4
Chromium 10 to 20cm:	23	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	4.9
Chromium Parent:	24	Molybdenum Parent:	ND	C TOC Parent:	7.4

Sudbury Regional Soils Project 2001

Site Number

237

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F237

Location of sampling site

Helicopter site: between Falconbridge and Kukagami Lake Rd., west of Wanapitei River.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous/shrub area, slight slope. Ground cover is grasses, Labrador tea, mosses/lichens.

Easting

522986

NAD83
Zone 17

Northing

5160084

Reference

Helicopter

Altitude(m)

345

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, unconsolidated, 5 cm thick. Horizon 2 (Ae) is a grey, medium-grained, wet, unconsolidated sand, 5 cm thick. Horizon 3 (Bf) is an orange brown, wet, unconsolidated medium-grained sand.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a brown, wet, unconsolidated sand mixed with gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12595

Depth 5 - 10 cm:

12597

Depth 10 - 20 cm:

12599

Dup. Depth 0 - 5 cm:

12596

Dup. Depth 5 - 10 cm:

12598

Dup. Depth 10 - 20 cm:

12600

Parent material:

12604

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F237\F237-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F237\F237-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F237\F237-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

237

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	281
Aluminum 5 to 10cm:	7600	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	18
Aluminum 10 to 20cm:	10500	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	18
Aluminum Parent:	10000	Cobalt Parent:	5	Nickel Parent:	24
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	375	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	6	Copper 10 to 20cm:	7.8	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	2
Barium 0 to 5cm:	90	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	17
Barium 5 to 10cm:	28	Iron 5 to 10cm:	9400	Strontium 5 to 10cm:	17
Barium 10 to 20cm:	36	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	22
Barium Parent:	36	Iron Parent:	12000	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	20
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	740	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1050	Zinc 5 to 10cm:	6.7
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1950	Zinc 10 to 20cm:	13
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	18
Calcium 0 to 5cm:	1150	Manganese 0 to 5cm:	92	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1250	Manganese 5 to 10cm:	63	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1700	Manganese 10 to 20cm:	102	pH 10 to 20cm:	NA
Calcium Parent:	1500	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	20	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

238

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F238

Location of sampling site

Helicopter site: south of Garson Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch area, fairly open, slight slope. Ground cover is litter and shrubs.

Easting

507733

Northing

5159121

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

323

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, unconsolidated, 3 to 5 cm thick.
Horizon 2 (Bt) is a medium brown, moist, fine-grained sand with some organic material in the upper section, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 100 cm consists of a medium brown, moist, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12256

Depth 5 - 10 cm:

12258

Depth 10 - 20 cm:

12260

Dup. Depth 0 - 5 cm:

12257

Dup. Depth 5 - 10 cm

12259

Dup. Depth 10 - 20 cm:

12261

Parent material:

12264

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F238\F238-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F238\F238-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F238\F238-core.jpg

Parent material photo

Site Number

238

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9400	Cobalt 0 to 5cm:	13	Nickel 0 to 5cm:	355
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	47
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	28
Aluminum Parent:	14000	Cobalt Parent:	5	Nickel Parent:	23
Arsenic 0 to 5cm:	26	Copper 0 to 5cm:	420	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	18	Copper 5 to 10cm:	78	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	4	Copper 10 to 20cm:	31	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	94	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	42	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	47	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	45
Barium Parent:	30	Iron Parent:	15000	Strontium Parent:	20
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	45
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	31
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1350	Zinc 5 to 10cm:	31
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2200	Zinc 10 to 20cm:	33
Cadmium Parent:	ND	Magnesium Parent:	2300	Zinc Parent:	29
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	180	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2350	Manganese 5 to 10cm:	175	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3600	Manganese 10 to 20cm:	205	pH 10 to 20cm:	NA
Calcium Parent:	1800	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	35	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

239

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F239

Location of sampling site

Helicopter site: east of Falconbridge property.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open sandy area near Falconbridge smelter site, level, some deciduous trees and some snow cover. Ground cover is sand and some minor litter and shrubs.

Easting

517239

NAD83
Zone 17

Northing

5159644

Reference

Helicopter

Altitude(m)

344

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a medium brown, moist, unconsolidated, medium-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 60 to 80 cm (depth to bedrock) consists of a brown, wet, unconsolidated medium-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12562

Depth 5 - 10 cm:

12564

Depth 10 - 20 cm:

12566

Dup. Depth 0 - 5 cm:

12563

Dup. Depth 5 - 10 cm:

12565

Dup. Depth 10 - 20 cm:

12567

Parent material:

12569

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F239\F239-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F239\F239-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F239\F239-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

239

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9150	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	26
Aluminum 5 to 10cm:	8200	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	23
Aluminum 10 to 20cm:	7850	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	23
Aluminum Parent:	5300	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	20	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	2.5	Copper 5 to 10cm:	17	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	8.8	Selenium Parent:	ND
Barium 0 to 5cm:	46	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	37	Iron 5 to 10cm:	11500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	36	Iron 10 to 20cm:	10500	Strontium 10 to 20cm:	24
Barium Parent:	24	Iron Parent:	11000	Strontium Parent:	20
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	4	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	3	Vanadium 5 to 10cm:	25
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	24
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	24
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	ND
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1900	Zinc 5 to 10cm:	12
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2050	Zinc 10 to 20cm:	11
Cadmium Parent:	ND	Magnesium Parent:	2600	Zinc Parent:	9.9
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	120	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2050	Manganese 10 to 20cm:	120	pH 10 to 20cm:	NA
Calcium Parent:	1900	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	20	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	20	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	22	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

240

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F240

Location of sampling site

Helicopter site: east of Falconbridge near Falcon Gold Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Swampy/boggy area, exposed bedrock. Soil at this site is very shallow, average soil depth is approximately 10 cm. Collected some sample from 10 to 20 cm, but it was minimal.

Easting

520250

NAD83
Zone 17

Northing

5158650

Reference

Helicopter

Altitude(m)

341

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, wet, unconsolidated, contains some silt at base, 5 cm thick. Horizon 2 (Ae) is a grey, wet silt with some roots, 5 cm thick.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12578

Depth 5 - 10 cm:

12580

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

12579

Dup. Depth 5 - 10 cm:

12581

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F240\F240-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F240\F240-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F240\F240-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

240

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9450	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	370
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	45
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	53	Copper 0 to 5cm:	415	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	36	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	84	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	78	Iron 5 to 10cm:	12500	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	64	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2200	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	88	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3150	Manganese 5 to 10cm:	115	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

241

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F241

Location of sampling site

Helicopter site: east of Falconbridge near Emery Creek.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Fairly open deciduous stand, small trees, exposed bedrock, snow cover.

Easting

518456

Northing

5157867

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Ae) is a grey, fine to grained sand, moist, unconsolidated, 5 to 8 cm thick.
Horizon 2 (Bf) is an orange brown, moist, unconsolidated fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 50 to 70 cm consists of a grey silt with some brown mottling, dry, consolidated.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12553

Depth 5 - 10 cm:

12555

Depth 10 - 20 cm:

12557

Dup. Depth 0 - 5 cm:

12554

Dup. Depth 5 - 10 cm:

12556

Dup. Depth 10 - 20 cm:

12558

Parent material:

12561

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F241\F241-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F241\F241-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F241\F241-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

241

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6900	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	185
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	25
Aluminum Parent:	10000	Cobalt Parent:	6	Nickel Parent:	23
Arsenic 0 to 5cm:	37	Copper 0 to 5cm:	305	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	49	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	26	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	16	Selenium Parent:	ND
Barium 0 to 5cm:	53	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	37	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	40	Iron 10 to 20cm:	15500	Strontium 10 to 20cm:	29
Barium Parent:	56	Iron Parent:	14000	Strontium Parent:	29
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	40	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	30
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	32
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	29
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	700	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	11
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2000	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	3300	Zinc Parent:	17
Calcium 0 to 5cm:	1345	Manganese 0 to 5cm:	79	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	110	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2100	Manganese 10 to 20cm:	135	pH 10 to 20cm:	NA
Calcium Parent:	2100	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	20	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	27	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

242

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F242

Location of sampling site

Helicopter site: west of Skead Rd. near Sunderland Rd.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open grassy area near deciduous stand, level, some mosses.

Easting

510869

Northing

5157693

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bg) is an orange and grey mottled, moist, unconsolidated fine-grained silty sand.

Parent material field description

Depth sample collected from 80 to 120 cm consists of an orange and grey mottled, fine-grained, silty sand, wet, compact.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12485

Depth 5 - 10 cm:

12487

Depth 10 - 20 cm:

12489

Dup. Depth 0 - 5 cm:

12486

Dup. Depth 5 - 10 cm

12488

Dup. Depth 10 - 20 cm:

12490

Parent material:

12492

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F242\F242-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F242\F242-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F242\F242-core.jpg

Parent material photo

Site Number

242

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5800	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	165
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	23
Aluminum 10 to 20cm:	10000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	21
Aluminum Parent:	5200	Cobalt Parent:	4	Nickel Parent:	18
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	245	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	24	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	17	Selenium Parent:	ND
Barium 0 to 5cm:	28	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	35	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	38
Barium 10 to 20cm:	30	Iron 10 to 20cm:	12000	Strontium 10 to 20cm:	22
Barium Parent:	30	Iron Parent:	11000	Strontium Parent:	18
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	31
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	24
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	740	Zinc 0 to 5cm:	13
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1500	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1800	Zinc 10 to 20cm:	16
Cadmium Parent:	ND	Magnesium Parent:	2300	Zinc Parent:	12
Calcium 0 to 5cm:	1075	Manganese 0 to 5cm:	60	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	110	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	2000	Manganese 10 to 20cm:	93	pH 10 to 20cm:	4.6
Calcium Parent:	2600	Manganese Parent:	170	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	44
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	12
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	9.2
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

243

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F243

Location of sampling site

Helicopter site: between Falconbridge and Kukagami Lake Rd., west of Wanapitei River.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open grassy clearing near small stream. Slight slope. Ground cover is hummocky grasses, mosses, and some snow.

Easting

522964

NAD83
Zone 17

Northing

5158075

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a brown, fine-grained sand with organic material, moist, unconsolidated, 5 cm thick. Horizon 2 (Bf) is an rust to red brown, moist, unconsolidated fine- to medium-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 50 to 70 cm consists of a grey, wet, unconsolidated, medium-grained sand with trace gravel.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12586

Depth 5 - 10 cm:

12588

Depth 10 - 20 cm:

12590

Dup. Depth 0 - 5 cm:

12587

Dup. Depth 5 - 10 cm:

12589

Dup. Depth 10 - 20 cm:

12591

Parent material:

12594

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F243\F243-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F243\F243-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F243\F243-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

243

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	138
Aluminum 5 to 10cm:	11750	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	48
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	32
Aluminum Parent:	8800	Cobalt Parent:	7	Nickel Parent:	23
Arsenic 0 to 5cm:	17	Copper 0 to 5cm:	175	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	60	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	23	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.3	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	72	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	20
Barium 10 to 20cm:	70	Iron 10 to 20cm:	14000	Strontium 10 to 20cm:	27
Barium Parent:	41	Iron Parent:	12000	Strontium Parent:	20
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	20
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1550	Zinc 5 to 10cm:	20
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2500	Zinc 10 to 20cm:	29
Cadmium Parent:	ND	Magnesium Parent:	4400	Zinc Parent:	17
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1300	Manganese 5 to 10cm:	102	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2000	Manganese 10 to 20cm:	125	pH 10 to 20cm:	NA
Calcium Parent:	1800	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	28	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

244

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F244

Location of sampling site

Helicopter site: between Falconbridge and Kukagami Lake Rd., west of Wanapitei River.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open grassy/hummocky area near mixed coniferous/deciduous wooded area. Level, some dead stumps, some mosses/lichens.

Easting

522792

NAD83
Zone 17

Northing

5157660

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, 6 cm thick. Horizon 2 (Ae) is a grey, fine- to medium-grained, wet, unconsolidated sand. Horizon 3 (Bf) is a red brown, moist, fine- to medium-grained sand.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a red brown, wet, unconsolidated sand, grades in colour to grey at 100 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12667

Depth 5 - 10 cm:

12669

Depth 10 - 20 cm:

12671

Dup. Depth 0 - 5 cm:

12668

Dup. Depth 5 - 10 cm

12670

Dup. Depth 10 - 20 cm:

12672

Parent material:

12676

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F244\F244-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F244\F244-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F244\F244-core.jpg

Parent material photo

Site Number

244

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5100	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	240
Aluminum 5 to 10cm:	6050	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	25
Aluminum 10 to 20cm:	12500	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	20
Aluminum Parent:	12000	Cobalt Parent:	3	Nickel Parent:	14
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	280	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	24	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	8.1	Selenium Parent:	ND
Barium 0 to 5cm:	48	Iron 0 to 5cm:	10000	Strontium 0 to 5cm:	13
Barium 5 to 10cm:	25	Iron 5 to 10cm:	9750	Strontium 5 to 10cm:	13
Barium 10 to 20cm:	36	Iron 10 to 20cm:	15000	Strontium 10 to 20cm:	20
Barium Parent:	62	Iron Parent:	12000	Strontium Parent:	28
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	26
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	34
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	27
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	750	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	840	Zinc 5 to 10cm:	9.2
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1650	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	3000	Zinc Parent:	13
Calcium 0 to 5cm:	1060	Manganese 0 to 5cm:	79	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1010	Manganese 5 to 10cm:	63	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1500	Manganese 10 to 20cm:	108	pH 10 to 20cm:	NA
Calcium Parent:	2300	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	15	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	24	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	30	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

245

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F245

Location of sampling site

Helicopter site: south of Longyear Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open sandy/muddy area, level, occasional deciduous trees. Ground cover is some grassy hummocks, some litter and mosses.

Easting

513092

Northing

5157031

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a light brown to orange, moist, unconsolidated fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 60 to 80 cm consists of a grey, moist, unconsolidated, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12493

Depth 5 - 10 cm:

12495

Depth 10 - 20 cm:

12497

Dup. Depth 0 - 5 cm:

12494

Dup. Depth 5 - 10 cm:

12496

Dup. Depth 10 - 20 cm:

12498

Parent material:

12500

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F245\F245-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F245\F245-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F245\F245-core.jpg

Parent material photo

Site Number

245

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7750	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	107
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	47
Aluminum 10 to 20cm:	10950	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	29
Aluminum Parent:	4600	Cobalt Parent:	4	Nickel Parent:	19
Arsenic 0 to 5cm:	39	Copper 0 to 5cm:	165	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	21	Copper 5 to 10cm:	101	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	9.5	Copper 10 to 20cm:	59	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	34	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	35	Iron 5 to 10cm:	14000	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	30	Iron 10 to 20cm:	12000	Strontium 10 to 20cm:	20
Barium Parent:	13	Iron Parent:	9800	Strontium Parent:	11
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	25	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	26
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	21
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1450	Zinc 5 to 10cm:	17
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1750	Zinc 10 to 20cm:	14
Cadmium Parent:	ND	Magnesium Parent:	2300	Zinc Parent:	10
Calcium 0 to 5cm:	1400	Manganese 0 to 5cm:	93	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1800	Manganese 5 to 10cm:	125	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1650	Manganese 10 to 20cm:	110	pH 10 to 20cm:	NA
Calcium Parent:	1400	Manganese Parent:	110	pH Parent:	NA
Chromium 0 to 5cm:	20	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	25	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	24	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	22	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

246

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F246

Location of sampling site

Helicopter site: east of Falconbridge near Emery Creek.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded area, deciduous stand with open grassy areas. Soil at this site is very shallow, very difficult to obtain a sample from 10 to 20 cm.

Easting

519519

Northing

5156906

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black with trace sand, wet, unconsolidated, 5 cm thick. Horizon 2 (Bt) is a light brown, wet, unconsolidated, very fine-grained sand and silt, persists to maximum depth obtained by corer.

Parent material field description

Depth sample collected from 5 to 15 cm consists of a light brown, wet, unconsolidated, very fine-grained sand and silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12544

Depth 5 - 10 cm:

12546

Depth 10 - 20 cm:

12548

Dup. Depth 0 - 5 cm:

12545

Dup. Depth 5 - 10 cm:

12547

Dup. Depth 10 - 20 cm:

12549

Parent material:

12552

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F246\F246-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F246\F246-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F246\F246-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

246

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11550	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	330
Aluminum 5 to 10cm:	9475	Cobalt 5 to 10cm:	2.5	Nickel 5 to 10cm:	37
Aluminum 10 to 20cm:	8850	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	28
Aluminum Parent:	6400	Cobalt Parent:	3	Nickel Parent:	26
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	360	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	24	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	8.9	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	9.1	Selenium Parent:	ND
Barium 0 to 5cm:	125	Iron 0 to 5cm:	11300	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	51	Iron 5 to 10cm:	7100	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	45	Iron 10 to 20cm:	7700	Strontium 10 to 20cm:	31
Barium Parent:	31	Iron Parent:	6400	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	22
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	23
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	18
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	1200	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	8.8
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1700	Zinc 10 to 20cm:	12
Cadmium Parent:	ND	Magnesium Parent:	1500	Zinc Parent:	8
Calcium 0 to 5cm:	2800	Manganese 0 to 5cm:	95	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2500	Manganese 5 to 10cm:	86	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2450	Manganese 10 to 20cm:	98	pH 10 to 20cm:	NA
Calcium Parent:	1800	Manganese Parent:	74	pH Parent:	NA
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	2.4	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	22	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	23	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	15	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

247

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F247

Location of sampling site

Helicopter site: east of Falconbridge property.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded area, small deciduous trees, boggy, level. Ground cover is grasses, litter, and moss.

Easting

518518

NAD83
Zone 17

Northing

5157036

Reference

Helicopter

Altitude(m)

Conditions

Overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bf) is an orange brown sand, moist, unconsolidated, fine-grained, persists to 20 cm. The organic layer (LFH/Ah) is negligible thickness, not enough to sample. Horizon 2 (Ae) is a grey to white, moist, unconsolidated, fine-grained sand, persists to 20 cm. Both horizons are present at this sampling site but are not present in the same core.

Parent material field description

Depth sample collected from 60 to 80 cm consists of a light brown, wet, compact, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12535

Depth 5 - 10 cm:

12537

Depth 10 - 20 cm:

12539

Dup. Depth 0 - 5 cm:

12536

Dup. Depth 5 - 10 cm

12538

Dup. Depth 10 - 20 cm:

12540

Parent material:

12543

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F247\F247-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F247\F247-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F247\F247-core.jpg

Parent material photo

Site Number

247

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8700	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	82
Aluminum 5 to 10cm:	9900	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	29
Aluminum 10 to 20cm:	8850	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	25
Aluminum Parent:	5300	Cobalt Parent:	5	Nickel Parent:	18
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	93	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	2.5	Copper 5 to 10cm:	22	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	9.9	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	6.5	Selenium Parent:	ND
Barium 0 to 5cm:	38	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	33	Iron 5 to 10cm:	9650	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	30	Iron 10 to 20cm:	10000	Strontium 10 to 20cm:	19
Barium Parent:	25	Iron Parent:	8200	Strontium Parent:	16
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	13	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	25
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	24
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	16
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	11
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	9.2
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1550	Zinc 10 to 20cm:	11
Cadmium Parent:	ND	Magnesium Parent:	2200	Zinc Parent:	8.6
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	76	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1700	Manganese 5 to 10cm:	77	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1300	Manganese 10 to 20cm:	71	pH 10 to 20cm:	NA
Calcium Parent:	1400	Manganese Parent:	100	pH Parent:	NA
Chromium 0 to 5cm:	22	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	20	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	22	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	17	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

248

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F248

Location of sampling site

Helicopter site: south of Norway Lake near Goodwill Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Exposed grassy/shrubby/rocky area near town of Falconbridge.

Easting

514420

Northing

5156546

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is a black loam, sandy, moist, unconsolidated, between 5 to 15 cm thick. Horizon 2 (Bg) is an orange to grey, fine-grained sand, moist, persists to 20 cm.

Parent material field description

Depth sample collected from 50 to 70 cm consists of a light brown, wet, soft, sandy silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12501

Depth 5 - 10 cm:

12503

Depth 10 - 20 cm:

12505

Dup. Depth 0 - 5 cm:

12502

Dup. Depth 5 - 10 cm

12504

Dup. Depth 10 - 20 cm:

12506

Parent material:

12509

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F248\F248-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F248\F248-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F248\F248-core.jpg

Parent material photo

Site Number

248

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	33	Nickel 0 to 5cm:	512
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	21	Nickel 5 to 10cm:	300
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	9	Nickel 10 to 20cm:	101
Aluminum Parent:	11000	Cobalt Parent:	4	Nickel Parent:	24
Arsenic 0 to 5cm:	305	Copper 0 to 5cm:	955	Selenium 0 to 5cm:	8.5
Arsenic 5 to 10cm:	190	Copper 5 to 10cm:	605	Selenium 5 to 10cm:	5.5
Arsenic 10 to 20cm:	89	Copper 10 to 20cm:	325	Selenium 10 to 20cm:	2
Arsenic Parent:	ND	Copper Parent:	60	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	35000	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	104	Iron 5 to 10cm:	27500	Strontium 5 to 10cm:	32
Barium 10 to 20cm:	76	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	30
Barium Parent:	59	Iron Parent:	13000	Strontium Parent:	24
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	194	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	116	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	46	Vanadium 10 to 20cm:	36
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	28
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1500	Zinc 5 to 10cm:	38
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1700	Zinc 10 to 20cm:	34
Cadmium Parent:	ND	Magnesium Parent:	2300	Zinc Parent:	14
Calcium 0 to 5cm:	2500	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2100	Manganese 5 to 10cm:	150	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2100	Manganese 10 to 20cm:	160	pH 10 to 20cm:	NA
Calcium Parent:	1800	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	2.5	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	33	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	33	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

249

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F249

Location of sampling site

Helicopter site: southeast of Falconbridge east of rail line.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Lightly vegetated deciduous stand, open areas, level. Groud cover is predominantly grasses and shrubs.

Easting

516719

Northing

5156224

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is a black loam, organic, 5 cm thick. Horizon 2 is a grey, wet, unconsolidated, very fine-grained sand with some silt, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown to grey, wet, firm and consolidated clayey silt with trace sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12526

Depth 5 - 10 cm:

12528

Depth 10 - 20 cm:

12530

Dup. Depth 0 - 5 cm:

12527

Dup. Depth 5 - 10 cm

12529

Dup. Depth 10 - 20 cm:

12531

Parent material:

12534

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F249\F249-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F249\F249-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F249\F249-core.jpg

Parent material photo

Site Number

249

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	244
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	24
Aluminum 10 to 20cm:	9200	Cobalt 10 to 20cm:	3.5	Nickel 10 to 20cm:	21
Aluminum Parent:	9300	Cobalt Parent:	6	Nickel Parent:	26
Arsenic 0 to 5cm:	69	Copper 0 to 5cm:	395	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	52	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	19	Selenium Parent:	ND
Barium 0 to 5cm:	87	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	54	Iron 5 to 10cm:	8900	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	41	Iron 10 to 20cm:	11000	Strontium 10 to 20cm:	29
Barium Parent:	54	Iron Parent:	16000	Strontium Parent:	38
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	29
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	33
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1900	Zinc 0 to 5cm:	23
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	11
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2150	Zinc 10 to 20cm:	14
Cadmium Parent:	ND	Magnesium Parent:	3600	Zinc Parent:	16
Calcium 0 to 5cm:	2950	Manganese 0 to 5cm:	110	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	3050	Manganese 5 to 10cm:	120	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	2050	Manganese 10 to 20cm:	130	pH 10 to 20cm:	4.8
Calcium Parent:	3800	Manganese Parent:	230	pH Parent:	6.1
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	1	C TOC 0 to 5cm:	46
Chromium 5 to 10cm:	30	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	11
Chromium 10 to 20cm:	31	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	5.5
Chromium Parent:	37	Molybdenum Parent:	ND	C TOC Parent:	1.4

Sudbury Regional Soils Project 2001

Site Number

250

Date sampled

9/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

250

Location of sampling site

Hwy 69N, just N of Tracks and Wheels, road following power line. Site is ~140 m W of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Found level area among some trees; small area surrounded by wetland. Does not seem to be affected by flooding. Soil hard. Veg: birch (dominant), t aspen, alder, pussy willow, grass, blueberry (no berries), goldenrod, aster, moss, wild ginger or marsh marigold, large leaf aster, equisetum, buncherry, sweet coltsfoot, wild sasparilla.

Easting

502782

NAD83
Zone 17

Northing

5155535

Reference

Altitude(m)

312

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

90% of cores: LFH: 0 to 1 cm; Ah: 0 to 1 cm; Bg or Cg: 1 to >30 cm (10YR7/2), Mottles: common, fine, distinct. 10% of cores also contained an Ae horizon. Texture: loam to silty clay loam.

Parent material field description

Sample between 80 and 115 cm. Texture: silty clay loam. Colour: 2.5Y 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10175

Depth 5 - 10 cm:

10177

Depth 10 - 20 cm:

10179

Dup. Depth 0 - 5 cm:

10176

Dup. Depth 5 - 10 cm

10178

Dup. Depth 10 - 20 cm:

10180

Parent material:

10181

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\250\2001-CEM-250-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\250\CEM-250-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\250\2001-CEM-250-
Core_1.JPG

Parent material photo

Site Number

250

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6850	Cobalt 0 to 5cm:	45	Nickel 0 to 5cm:	1350
Aluminum 5 to 10cm:	9900	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	155
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	31
Aluminum Parent:	17000	Cobalt Parent:	10	Nickel Parent:	35
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	1150	Selenium 0 to 5cm:	8
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	185	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	22	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	25000	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	55	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	25
Barium 10 to 20cm:	65	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	52
Barium Parent:	120	Iron Parent:	23000	Strontium Parent:	58
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	145	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	23	Vanadium 5 to 10cm:	30
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	38
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	49
Cadmium 0 to 5cm:	3.2	Magnesium 0 to 5cm:	1500	Zinc 0 to 5cm:	74
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2350	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3450	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	31
Calcium 0 to 5cm:	2950	Manganese 0 to 5cm:	285	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	185	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	4100	Manganese 10 to 20cm:	220	pH 10 to 20cm:	4.7
Calcium Parent:	17000	Manganese Parent:	410	pH Parent:	7
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	2.2	C TOC 0 to 5cm:	228
Chromium 5 to 10cm:	43	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	29
Chromium 10 to 20cm:	41	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	6.7
Chromium Parent:	60	Molybdenum Parent:	ND	C TOC Parent:	1.1

Sudbury Regional Soils Project 2001

Site Number

251

Date sampled

8/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

251

Location of sampling site

O'Neil Dr; Maley Conservation Area.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Undulating, forested area at top of hill. Veg: birch, maple, rare pine, rare pussy willow, bracken fern, blueberry, club moss, Labrador tea, moss, grass, lichen. Ground: leaf litter, bedrock, moss, lichen, twigs, logs. Aspen surrounding small clearing, grass, blueberry, pussy willow, spruce, birch, Labrador tea, alder, bracken fern, goldenrod.

Easting

504958

NAD83
Zone 17

Northing

5155482

Reference

Altitude(m)

303

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 2 cm (10YR2/1); Ae: 2 to 10 cm (7.5YR7/1); Bf: 10 to 18 cm (10YR5/6); Bm: 18 to >30 cm (10YR7/6).
A=fine loamy sand; B=gravelly loamy sand.

Parent material field description

Parent material was collected from four holes beginning at 60 cm (could not auger much further). Texture: fine to gravelly loamy sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10713

Depth 5 - 10 cm:

10715

Depth 10 - 20 cm:

10717

Dup. Depth 0 - 5 cm:

10714

Dup. Depth 5 - 10 cm

10716

Dup. Depth 10 - 20 cm:

10718

Parent material:

10719

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\251\2001-CEM-251-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\251\CEM-251-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\251\2001-CEM-251-
Core_1.JPG

Parent material photo

Site Number

251

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8850	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	363
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	66
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	31
Aluminum Parent:	14000	Cobalt Parent:	9	Nickel Parent:	44
Arsenic 0 to 5cm:	26	Copper 0 to 5cm:	480	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	88	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	23	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	32	Selenium Parent:	ND
Barium 0 to 5cm:	81	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	45	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	47	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	41
Barium Parent:	60	Iron Parent:	19000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	57	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	42
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1000	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2300	Zinc 10 to 20cm:	25
Cadmium Parent:	ND	Magnesium Parent:	3800	Zinc Parent:	27
Calcium 0 to 5cm:	1350	Manganese 0 to 5cm:	92	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	2400	Manganese 5 to 10cm:	115	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3500	Manganese 10 to 20cm:	150	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	50	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

252

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F252

Location of sampling site

Helicopter site: between Falconbridge and Kukagami Lake Rd., west of Wanapitei River.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Grass and moss clearing near coniferous stand. Terrain is overall level but is undulating/hummocky.

Easting

522722

Northing

5155409

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, 7 cm thick. Horizon 2 (Bf) is a red-brown, moist, unconsolidated, fine-grained sand, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 110 cm consists of a brown, wet, fine-grained sand changing to a moist, grey silt with depth (brown from 80 to 100 cm, grey from 100 to 110 cm).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12658

Depth 5 - 10 cm:

12660

Depth 10 - 20 cm:

12662

Dup. Depth 0 - 5 cm:

12659

Dup. Depth 5 - 10 cm

12661

Dup. Depth 10 - 20 cm:

12663

Parent material:

12666

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F252\F252-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F252\F252-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F252\F252-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

252

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10400	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	160
Aluminum 5 to 10cm:	8400	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	19
Aluminum 10 to 20cm:	9600	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	14
Aluminum Parent:	12000	Cobalt Parent:	5	Nickel Parent:	16
Arsenic 0 to 5cm:	13	Copper 0 to 5cm:	200	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	16	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.3	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	16	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	9250	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	26	Iron 5 to 10cm:	9250	Strontium 5 to 10cm:	21
Barium 10 to 20cm:	34	Iron 10 to 20cm:	11000	Strontium 10 to 20cm:	26
Barium Parent:	67	Iron Parent:	15000	Strontium Parent:	33
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	32	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	5	Vanadium 5 to 10cm:	24
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	3	Vanadium 10 to 20cm:	26
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	33
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	19
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	9.2
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1750	Zinc 10 to 20cm:	13
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	14
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	90	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1350	Manganese 5 to 10cm:	67	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2200	Manganese 10 to 20cm:	92	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	18	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	22	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	35	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

253

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

253

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Swamp to south and east (within 20 m), bedrock and high hills north and west. Trees: 5% cover, copious birch, 1 golden poplar; shrub: Labrador tea 6%, birch 5%, leatherleaf 1%, fern 1%, oak 1%; herb: sedge 25%, blueberry 15%, moss, leaf litter 5%, boulder/rock 3%, bare soil <1%.

Easting

495467

NAD83
Zone 17

Northing

5155134

Reference

Helicopter

Altitude(m)

Conditions

Sunny, clear

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 7 cm, dead leaves, moss, lichen; Ah: 0 to 7 cm; Ae: 7 to 8 cm; Bt: 8 to 25 cm
Texture: sandy silt.

Parent material field description

Sample was collected from a number of holes ranging from 47 to 77cm. Texture: sandy silt. Colour: 10YR 5/2. Mottles: common, prominent, dark brown-grey, often rimmed by red. Uncommon maganese nodules; soil was very wet.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25415

Depth 5 - 10 cm:

25416

Depth 10 - 20 cm:

25417

Dup. Depth 0 - 5 cm:

25418

Dup. Depth 5 - 10 cm

25419

Dup. Depth 10 - 20 cm:

25420

Parent material:

25421

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\253\2001-CEM-253-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\253\CEM-253-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\253\2001-CEM-253-CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\253\2001-CEM-253-PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

253

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	33	Nickel 0 to 5cm:	1000
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	125
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	57
Aluminum Parent:	18000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	47	Copper 0 to 5cm:	790	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	22	Copper 5 to 10cm:	210	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	15	Copper 10 to 20cm:	102	Selenium 10 to 20cm:	0.5
Arsenic Parent:	6	Copper Parent:	31	Selenium Parent:	ND
Barium 0 to 5cm:	87	Iron 0 to 5cm:	26500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	75	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	63	Iron 10 to 20cm:	21000	Strontium 10 to 20cm:	38
Barium Parent:	68	Iron Parent:	25000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	82	Vanadium 0 to 5cm:	51
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	24	Vanadium 5 to 10cm:	49
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	14	Vanadium 10 to 20cm:	49
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	54
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	46
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2450	Zinc 5 to 10cm:	30
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3050	Zinc 10 to 20cm:	37
Cadmium Parent:	ND	Magnesium Parent:	5900	Zinc Parent:	34
Calcium 0 to 5cm:	3250	Manganese 0 to 5cm:	200	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3150	Manganese 5 to 10cm:	205	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	220	pH 10 to 20cm:	NA
Calcium Parent:	4000	Manganese Parent:	320	pH Parent:	NA
Chromium 0 to 5cm:	59	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	42	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	52	Molybdenum Parent:	1.9	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

254

Date sampled

8/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

254

Location of sampling site

East of Mont Rouleau Rd.

Historical Inco sample station

OBM map number

Field observations

Ground undulating, soil found b/w rocky areas within 10m² Birch and blueberries found on solid site, aspen SE of soil site, site <1 km S of Inco Stn 18.

Easting

493939

NAD83
Zone 17

Northing

5154722

Reference

Altitude(m)

305

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7cm; Ah: 0 to 2 cm (Gley 1 2.5/N); Ae: 2 to 12 cm (2.5 Y8/l); Bm: 12+ cm (10YR 7/6). Texture: silt loam.

Parent material field description

Sample was taken from 70+ cm. Texture: silty loam to sandy silt with pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10611

Depth 5 - 10 cm:

10613

Depth 10 - 20 cm:

10615

Dup. Depth 0 - 5 cm:

10612

Dup. Depth 5 - 10 cm

10614

Dup. Depth 10 - 20 cm:

10616

Parent material:

10617

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\254\2001-CEM-254-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\254\CEM-254-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\254\2001-CEM-254-
Core_1.JPG

Parent material photo

Site Number

254

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	30	Nickel 0 to 5cm:	610
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	30	Nickel 5 to 10cm:	118
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	69
Aluminum Parent:	26000	Cobalt Parent:	14	Nickel Parent:	77
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	585	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	68	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	26	Selenium 10 to 20cm:	ND
Arsenic Parent:	13	Copper Parent:	76	Selenium Parent:	ND
Barium 0 to 5cm:	120	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	68	Iron 5 to 10cm:	18000	Strontium 5 to 10cm:	36
Barium 10 to 20cm:	70	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	39
Barium Parent:	150	Iron Parent:	39000	Strontium Parent:	47
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	45
Beryllium Parent:	0.53	Lead Parent:	14	Vanadium Parent:	76
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	2300	Zinc 0 to 5cm:	76
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3250	Zinc 5 to 10cm:	64
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4950	Zinc 10 to 20cm:	54
Cadmium Parent:	ND	Magnesium Parent:	8100	Zinc Parent:	54
Calcium 0 to 5cm:	3450	Manganese 0 to 5cm:	890	pH 0 to 5cm:	5.2
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	440	pH 5 to 10cm:	5.7
Calcium 10 to 20cm:	3400	Manganese 10 to 20cm:	290	pH 10 to 20cm:	NA
Calcium Parent:	4100	Manganese Parent:	680	pH Parent:	NA
Chromium 0 to 5cm:	55	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	64
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	13
Chromium 10 to 20cm:	53	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	84	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

255

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F255

Location of sampling site

Helicopter site: east of Goodwill Dr. near Coniston Creek.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded area, deciduous stand with open shrubby areas, level. Ground cover is patchy grass and moss with some small shrubs.

Easting

515286

NAD83
Zone 17

Northing

5154123

Reference

Helicopter

Altitude(m)

Conditions

Partly cloudy, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is a light to medium brown, fine-grained sand, moist, unconsolidated, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a grey, wet, firm and dense clayey silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12510

Depth 5 - 10 cm:

12512

Depth 10 - 20 cm:

12514

Dup. Depth 0 - 5 cm:

12511

Dup. Depth 5 - 10 cm:

12513

Dup. Depth 10 - 20 cm:

12515

Parent material:

12517

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F255\F255-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F255\F255-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F255\F255-core.jpg

Parent material photo

Site Number

255

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6800	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	53
Aluminum 5 to 10cm:	8200	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	31
Aluminum 10 to 20cm:	7750	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	30
Aluminum Parent:	11000	Cobalt Parent:	6	Nickel Parent:	27
Arsenic 0 to 5cm:	10	Copper 0 to 5cm:	82	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	5	Copper 5 to 10cm:	56	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	49	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	19	Selenium Parent:	ND
Barium 0 to 5cm:	27	Iron 0 to 5cm:	11500	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	36	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	34	Iron 10 to 20cm:	11500	Strontium 10 to 20cm:	19
Barium Parent:	63	Iron Parent:	16000	Strontium Parent:	32
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	11	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	27
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	25
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1900	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2050	Zinc 5 to 10cm:	12
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	3700	Zinc Parent:	22
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2350	Manganese 5 to 10cm:	140	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1650	Manganese 10 to 20cm:	130	pH 10 to 20cm:	NA
Calcium Parent:	3400	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	26	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	26	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	25	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

256

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F256

Location of sampling site

Helicopter site: east of Goodwill Dr. near Coniston Creek.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open grassy area near deciduous stand, slightly sloping. Ground cover is grasses and small shrubs with open mossy patches.

Easting

515853

Northing

5154090

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Ae) is a grey, wet, unconsolidated silty sand, persists to 20 cm. The horizon is overlain by a negligible organic layer.

Parent material field description

Depth sample collected from 70 to 110 cm consists of a grey, moist, stiff silt with some trace sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12518

Depth 5 - 10 cm:

12520

Depth 10 - 20 cm:

12522

Dup. Depth 0 - 5 cm:

12519

Dup. Depth 5 - 10 cm:

12521

Dup. Depth 10 - 20 cm:

12523

Parent material:

12525

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F256\F256-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F256\F256-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

256

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	443
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	110
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	33
Aluminum Parent:	6100	Cobalt Parent:	4	Nickel Parent:	15
Arsenic 0 to 5cm:	40	Copper 0 to 5cm:	485	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	48	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	16	Selenium Parent:	2
Barium 0 to 5cm:	55	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	37
Barium 5 to 10cm:	60	Iron 5 to 10cm:	13000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	62	Iron 10 to 20cm:	14500	Strontium 10 to 20cm:	45
Barium Parent:	27	Iron Parent:	12000	Strontium Parent:	31
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	40	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	32
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	26
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	42
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3150	Zinc 10 to 20cm:	18
Cadmium Parent:	ND	Magnesium Parent:	7600	Zinc Parent:	14
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	155	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4500	Manganese 5 to 10cm:	160	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4850	Manganese 10 to 20cm:	155	pH 10 to 20cm:	NA
Calcium Parent:	13000	Manganese Parent:	220	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	26	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

257

Date sampled

8/8/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

257

Location of sampling site

Goodwill Drive; Garson.

Historical Inco sample station

65

OBM map number

Field observations

Site consists of organic soil (humic peat). Soil pit dug, photos.

Easting

510861

NAD83
Zone 17

Northing

5155526

Reference

Goodwill Dr

Altitude(m)

Conditions

Sunny/hot

SOIL DESCRIPTION

Soil profile horizon descriptions

Humic peat >140 cm organic soil. Very little plant material; not much residual fibre. 8 or 9 on Von Post scale. Organic material unusual for here; mineral cap probably due to wash, basin kame and kettle top (?) mesic humosol. Mineral cap 0 to 2 cm (2.5Y 6/2), silt; OM1: 2 to 40 cm (7.5YR 2.5/3); Om2: 40 to 80 cm; OH: >80 cm.

Parent material field description

Parent material was collected from 75+ cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10574

Depth 5 - 10 cm:

10576

Depth 10 - 20 cm:

10578

Dup. Depth 0 - 5 cm:

10575

Dup. Depth 5 - 10 cm

10577

Dup. Depth 10 - 20 cm:

10579

Parent material:

10573

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\257\2001-CEM-257-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\257\CEM-257-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\257\2001-CEM-257-
Core_1.JPG

Parent material photo

Site Number

257

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6000	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	230
Aluminum 5 to 10cm:	5450	Cobalt 5 to 10cm:	10.5	Nickel 5 to 10cm:	280
Aluminum 10 to 20cm:	4100	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	335
Aluminum Parent:	3000	Cobalt Parent:	2	Nickel Parent:	52
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	290	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	37	Copper 5 to 10cm:	450	Selenium 5 to 10cm:	3
Arsenic 10 to 20cm:	18	Copper 10 to 20cm:	305	Selenium 10 to 20cm:	2.5
Arsenic Parent:	ND	Copper Parent:	11	Selenium Parent:	1
Barium 0 to 5cm:	33	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	13
Barium 5 to 10cm:	39	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	ND
Barium 10 to 20cm:	39	Iron 10 to 20cm:	6350	Strontium 10 to 20cm:	5.5
Barium Parent:	39	Iron Parent:	2100	Strontium Parent:	14
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	39	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	55	Vanadium 5 to 10cm:	17
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	29	Vanadium 10 to 20cm:	10
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	6.7
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1150	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	725	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	410	Zinc Parent:	8.6
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	125	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	1050	Manganese 5 to 10cm:	62	pH 5 to 10cm:	4.1
Calcium 10 to 20cm:	1165	Manganese 10 to 20cm:	43	pH 10 to 20cm:	4.3
Calcium Parent:	1600	Manganese Parent:	23	pH Parent:	NA
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	83
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	182
Chromium 10 to 20cm:	28	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	329
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

258

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F258

Location of sampling site

Helicopter site: south of Falconbridge east of Goodwill Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Grassy and mossy slope area, small shrubs and saplings. Some exposed bedrock.

Easting

518752

NAD83
Zone 17

Northing

5153729

Reference

Helicopter

Altitude(m)

268

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, consolidated, between 2 and 6 cm thick.
Horizon 2 (Bt) is a medium brown, medium-grained, dry and crumbly sand.

Parent material field description

Depth sample collected from 80 to 110 cm consists of a light grey-brown, crumbly, moist silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12434

Depth 5 - 10 cm:

12436

Depth 10 - 20 cm:

12438

Dup. Depth 0 - 5 cm:

12435

Dup. Depth 5 - 10 cm

12437

Dup. Depth 10 - 20 cm:

12439

Parent material:

12442

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F258\F258-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F258\F258-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F258\F258-core.jpg

Parent material photo

Site Number

258

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	229
Aluminum 5 to 10cm:	16500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	19000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	31
Aluminum Parent:	28000	Cobalt Parent:	11	Nickel Parent:	39
Arsenic 0 to 5cm:	40	Copper 0 to 5cm:	365	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	39.5	Copper 5 to 10cm:	54	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	30	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	34	Selenium Parent:	ND
Barium 0 to 5cm:	65	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	56	Iron 5 to 10cm:	20500	Strontium 5 to 10cm:	40
Barium 10 to 20cm:	67	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	41
Barium Parent:	190	Iron Parent:	27000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	40
Beryllium Parent:	0.5	Lead Parent:	6	Vanadium Parent:	55
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3000	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3500	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	7900	Zinc Parent:	31
Calcium 0 to 5cm:	2750	Manganese 0 to 5cm:	125	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3100	Manganese 5 to 10cm:	165	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3300	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	8500	Manganese Parent:	310	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	72	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

259

Date sampled

8/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

259

Location of sampling site

Nickeldale Conservation Area.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Undulating area between bedrock outcrops. Veg: birch, rosebush, trembling aspen, blueberry (no berries); ground: leaf litter, moss, grass.

Easting

502129

NAD83
Zone 17

Northing

5153276

Reference

Altitude(m)

292

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; A: 0 to 3 cm (10YR5/3); B: 3 to 17 cm (10YR6/3); C: 17 to >30 cm (10YR8/1), mottles present. Texture: very fine-grained silt loam to loam.

Parent material field description

Sample collected from 75 to 107 cm. Texture: silt loam to loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10693

Depth 5 - 10 cm:

10695

Depth 10 - 20 cm:

10697

Dup. Depth 0 - 5 cm:

10694

Dup. Depth 5 - 10 cm

10696

Dup. Depth 10 - 20 cm:

10698

Parent material:

10699

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\259\2001-CEM-259-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\259\CEM-259-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\259\2001-CEM-259-
Core_1.JPG

Parent material photo

Site Number

259

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	370
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	51
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	59
Aluminum Parent:	14000	Cobalt Parent:	9	Nickel Parent:	33
Arsenic 0 to 5cm:	19	Copper 0 to 5cm:	355	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	86	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	35	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	22500	Strontium 0 to 5cm:	38
Barium 5 to 10cm:	79	Iron 5 to 10cm:	18500	Strontium 5 to 10cm:	43
Barium 10 to 20cm:	84	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	47
Barium Parent:	100	Iron Parent:	21000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	42
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	41
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4000	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4350	Zinc 5 to 10cm:	43
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6200	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	14000	Zinc Parent:	28
Calcium 0 to 5cm:	2800	Manganese 0 to 5cm:	305	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	415	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3850	Manganese 10 to 20cm:	380	pH 10 to 20cm:	4.9
Calcium Parent:	23000	Manganese Parent:	340	pH Parent:	6.7
Chromium 0 to 5cm:	49	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	21
Chromium 5 to 10cm:	45	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	9.7
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	5.5
Chromium Parent:	47	Molybdenum Parent:	ND	C TOC Parent:	1

Sudbury Regional Soils Project 2001

Site Number

260

Date sampled

8/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

260

Location of sampling site

Azilda.

Historical Inco sample station

OBM map number

Field observations

Did not collect sample; soil too shallow and rocky

Easting

493128

Northing

5155080

NAD83
Zone 17

Reference

Azilda

Altitude(m)

300

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

Parent material field description

Site photo 1

Core photo 1

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

IMAGES

Soil profile diagram

Parent material photo

Site Number

260

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	NA	Cobalt 0 to 5cm:	NA	Nickel 0 to 5cm:	NA
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	NA	Copper 0 to 5cm:	NA	Selenium 0 to 5cm:	NA
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	NA	Iron 0 to 5cm:	NA	Strontium 0 to 5cm:	NA
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	NA	Lead 0 to 5cm:	NA	Vanadium 0 to 5cm:	NA
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	NA	Magnesium 0 to 5cm:	NA	Zinc 0 to 5cm:	NA
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	NA	Manganese 0 to 5cm:	NA	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	NA	Molybdenum 0 to 5cm:	NA	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

261

Date sampled

8/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

261

Location of sampling site

Maley Conservation Area: O'Neil Drive.

Historical Inco sample station

40

OBM map number

Field observations

Top of small ridge, sloping gently on N and S side. Approx 75 m South from O'Neil Dr. Veg: aspen, birch, blueberry bushes (no blueberries) grass, bracken fern, cherry trees, other shrubs, ground cover, leaf litter.

Easting

506207

NAD83
Zone 17

Northing

5155186

Reference

O'Neil Drive

Altitude(m)

294

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 5 to 0 cm, 7.5YR3/1; Ah: 5 to 7 cm, 7.5YR5/1; Ae: 7 to 10 cm, 7.5 YR 8/1; Bm: 10 to >20 cm, 10YR8/4, Note roots found throughout core.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10587

Depth 5 - 10 cm:

10589

Depth 10 - 20 cm:

10591

Dup. Depth 0 - 5 cm:

10588

Dup. Depth 5 - 10 cm

10590

Dup. Depth 10 - 20 cm:

10592

Parent material:

10593

Parent material field description

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\261\2001-CEM-261-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\261\CEM-261-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\261\2001-CEM-261-
Core_1.JPG

Parent material photo

Site Number

261

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6900	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	545
Aluminum 5 to 10cm:	9300	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	42
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	34
Aluminum Parent:	9600	Cobalt Parent:	6	Nickel Parent:	28
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	680	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	81	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	21	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	38
Barium 5 to 10cm:	47	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	36
Barium 10 to 20cm:	43	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	31
Barium Parent:	54	Iron Parent:	15000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	81	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	30
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	31
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	33
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1500	Zinc 5 to 10cm:	15
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2400	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	3200	Zinc Parent:	18
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	340	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	2450	Manganese 5 to 10cm:	200	pH 5 to 10cm:	4.2
Calcium 10 to 20cm:	2450	Manganese 10 to 20cm:	175	pH 10 to 20cm:	4.7
Calcium Parent:	3800	Manganese Parent:	240	pH Parent:	6
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	99
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	16
Chromium 10 to 20cm:	30	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	12
Chromium Parent:	41	Molybdenum Parent:	ND	C TOC Parent:	2.5

Sudbury Regional Soils Project 2001

Site Number

262

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F262

Location of sampling site

Helicopter site: north of Hwy 17 near Stinson.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Fairly thickly vegetated coniferous (pine) plantation. Ground cover is a thick needle layer.

Easting

521335

NAD83
Zone 17

Northing

5153376

Reference

Helicopter

Altitude(m)

264

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, fairly dry, unconsolidated and light, 4 cm thick. Horizon 2 (Ae) is a brown-grey, silty sand, 9 cm thick, gradational. Horizon 3 (Bf) is an orange brown, dry, silty sand to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown, dry, silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12452

Depth 5 - 10 cm:

12454

Depth 10 - 20 cm:

12456

Dup. Depth 0 - 5 cm:

12453

Dup. Depth 5 - 10 cm

12455

Dup. Depth 10 - 20 cm:

12457

Parent material:

12461

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F262\F262-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F262\F262-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F262\F262-core.jpg

Parent material photo

Site Number

262

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6650	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	120
Aluminum 5 to 10cm:	7850	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	20
Aluminum 10 to 20cm:	9600	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	26
Aluminum Parent:	6400	Cobalt Parent:	3	Nickel Parent:	12
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	170	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	5.5	Copper 5 to 10cm:	46	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	12	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	8.3	Selenium Parent:	ND
Barium 0 to 5cm:	29	Iron 0 to 5cm:	11500	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	41	Iron 5 to 10cm:	9350	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	43	Iron 10 to 20cm:	10250	Strontium 10 to 20cm:	20
Barium Parent:	31	Iron Parent:	11000	Strontium Parent:	16
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	24
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	26
Beryllium Parent:	ND	Lead Parent:	1	Vanadium Parent:	23
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1050	Zinc 5 to 10cm:	12
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1250	Zinc 10 to 20cm:	14
Cadmium Parent:	ND	Magnesium Parent:	2300	Zinc Parent:	9.2
Calcium 0 to 5cm:	1200	Manganese 0 to 5cm:	66	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1250	Manganese 5 to 10cm:	68	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1400	Manganese 10 to 20cm:	89	pH 10 to 20cm:	NA
Calcium Parent:	1500	Manganese Parent:	83	pH Parent:	NA
Chromium 0 to 5cm:	17	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	16	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	18	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	20	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

263

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F263

Location of sampling site

Helicopter site: south of Falconbridge east of Goodwill Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded deciduous(birch and poplar) area, level. Ground cover is small shrubs and grasses.

Easting

516895

NAD83
Zone 17

Northing

5152712

Reference

Helicopter

Altitude(m)

289

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, loose, dry, 3 to 5 cm thick. Horizon 2 (Ae) is a light grey, moist, consolidated, silty sand, 8 cm thick. Horizon 3 (Bt) is a medium brown, moist, consolidated, silty sand. Occasional cores showed a reverse profile, with medium brown sand grading to grey silty sand.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a light brown, wet silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12424

Depth 5 - 10 cm:

12426

Depth 10 - 20 cm:

12428

Dup. Depth 0 - 5 cm:

12425

Dup. Depth 5 - 10 cm

12427

Dup. Depth 10 - 20 cm:

12429

Parent material:

12432

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F263\F263-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F263\F263-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F263\F263-core.jpg

Parent material photo

Site Number

263

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	430
Aluminum 5 to 10cm:	14000	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	80
Aluminum 10 to 20cm:	16500	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	64
Aluminum Parent:	20000	Cobalt Parent:	7	Nickel Parent:	56
Arsenic 0 to 5cm:	51	Copper 0 to 5cm:	565	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	4.5	Copper 5 to 10cm:	42	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	15	Selenium 10 to 20cm:	ND
Arsenic Parent:	5	Copper Parent:	30	Selenium Parent:	ND
Barium 0 to 5cm:	66	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	52	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	48
Barium 10 to 20cm:	66	Iron 10 to 20cm:	18500	Strontium 10 to 20cm:	49
Barium Parent:	80	Iron Parent:	23000	Strontium Parent:	52
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	47
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2000	Zinc 5 to 10cm:	29
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3050	Zinc 10 to 20cm:	28
Cadmium Parent:	ND	Magnesium Parent:	3300	Zinc Parent:	34
Calcium 0 to 5cm:	4400	Manganese 0 to 5cm:	305	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3350	Manganese 5 to 10cm:	225	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4150	Manganese 10 to 20cm:	200	pH 10 to 20cm:	NA
Calcium Parent:	4100	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

264

Date sampled

9/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

264

Location of sampling site

SE of Whitewater Lake, ~50 W of original UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Sampled within a level area surrounded by bedrock outcrops. Undulating topography. Outcrop slopes to the N towards lake. Veg: birch (dominant), t. aspen, maple, pine (rare), pussy willow, grasses, blueberry (no berries), moss, lichen, bracken fern, sweet fern. Ground: leaf litter, grass, lichen, moss. Aspen ~65 m NE of soil site.

Easting

492000

Northing

5152832

NAD83
Zone 17

Reference

Altitude(m)

309

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

50% of cores: LFH: 0 to 5 cm; Ah: 0 to 5 cm; Ae: 0 to 5 cm (10YR 7/2); B: 5 to 18 cm (2.5Y 7/4); C: 18 to >30 cm (2.5Y 7/2). 30% of cores: LFH: 0 to 4 cm Ah: 0 to 1 cm; B/C ? 1 to >30 cm (2.5Y 7/2). Texture: silt loam to loam. Soil is highly variable, depths change with almost every core. Very hard to characterize soil profile.

Parent material field description

Parent material collected from 60 to 95 cm. Texture: clay loam. Colour: 2.5Y 6/2. Mottles: abundant 10YR 5/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10185

Depth 5 - 10 cm:

10187

Depth 10 - 20 cm:

10189

Dup. Depth 0 - 5 cm:

10186

Dup. Depth 5 - 10 cm

10188

Dup. Depth 10 - 20 cm:

10190

Parent material:

10191

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\264\2001-CEM-264-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\264\CEM-264-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\264\2001-CEM-264-
Core_1.JPG

Parent material photo

Site Number

264

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9450	Cobalt 0 to 5cm:	37	Nickel 0 to 5cm:	875
Aluminum 5 to 10cm:	15500	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	94
Aluminum 10 to 20cm:	21500	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	41
Aluminum Parent:	31000	Cobalt Parent:	14	Nickel Parent:	66
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	735	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	120	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	34	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	39	Selenium Parent:	ND
Barium 0 to 5cm:	110	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	80	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	37
Barium 10 to 20cm:	109	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	58
Barium Parent:	200	Iron Parent:	38000	Strontium Parent:	56
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	77	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	48
Beryllium Parent:	0.61	Lead Parent:	10	Vanadium Parent:	71
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	57
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2950	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4650	Zinc 10 to 20cm:	41
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	47
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	635	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	2900	Manganese 5 to 10cm:	455	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	4450	Manganese 10 to 20cm:	385	pH 10 to 20cm:	5.1
Calcium Parent:	6300	Manganese Parent:	520	pH Parent:	NA
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	133
Chromium 5 to 10cm:	51	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	23
Chromium 10 to 20cm:	63	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	8.6
Chromium Parent:	100	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

265

Date sampled

8/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

265

Location of sampling site

Hwy 144: Rest spot with plaque marking the " site of first ore body discovery", across from old open pit.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Flat area, very slight slope to E; soil taken amongst trees. Veg: birch, aspen, small white pine, club moss, alder. Floor: leaf litter and moss. No blueberry bushes. Industry to the west, not rocky but few bedrock outcrops. Marsh/wetlands scattered throughout area.

Easting

496160

Northing

5152339

NAD83
Zone 17

Reference

McKim Minesite

Altitude(m)

320

Conditions

Sunny/hot

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 2 cm (10YR3/3); Ae: 2 to 20 cm (2.5Y 7/2). No B horizon sampled with depth or horizon sampling. One core may have been B, Soil very dry and very hard. Texture: silt.

Parent material field description

Parent material collected from 75+cm. Texture: silty loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10621

Depth 5 - 10 cm:

10623

Depth 10 - 20 cm:

10625

Dup. Depth 0 - 5 cm:

10622

Dup. Depth 5 - 10 cm

10624

Dup. Depth 10 - 20 cm:

10626

Parent material:

10627

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\265\2001-CEM-265-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\265\CEM-265-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\265\2001-CEM-265-
Core_1.JPG

Parent material photo

Site Number

265

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	26	Nickel 0 to 5cm:	745
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	15	Nickel 5 to 10cm:	250
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	89
Aluminum Parent:	31000	Cobalt Parent:	15	Nickel Parent:	77
Arsenic 0 to 5cm:	49	Copper 0 to 5cm:	725	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	25	Copper 5 to 10cm:	340	Selenium 5 to 10cm:	2.5
Arsenic 10 to 20cm:	5	Copper 10 to 20cm:	122	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	63	Selenium Parent:	ND
Barium 0 to 5cm:	75	Iron 0 to 5cm:	25000	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	76	Iron 5 to 10cm:	21500	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	71	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	38
Barium Parent:	220	Iron Parent:	36000	Strontium Parent:	52
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	71	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	30	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	12	Vanadium 10 to 20cm:	36
Beryllium Parent:	0.62	Lead Parent:	9	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	52
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3250	Zinc 5 to 10cm:	39
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3950	Zinc 10 to 20cm:	33
Cadmium Parent:	ND	Magnesium Parent:	10000	Zinc Parent:	45
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	185	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	2200	Manganese 5 to 10cm:	320	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	3050	Manganese 10 to 20cm:	195	pH 10 to 20cm:	4.3
Calcium Parent:	3900	Manganese Parent:	420	pH Parent:	5.9
Chromium 0 to 5cm:	75	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	63
Chromium 5 to 10cm:	61	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	26
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	10
Chromium Parent:	99	Molybdenum Parent:	ND	C TOC Parent:	2.5

Sudbury Regional Soils Project 2001

Site Number

266

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F266

Location of sampling site

Helicopter site: north of Hwy 17 near Stinson.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Sparsely vegetated deciduous (birch) area, sloped, ground cover is predominantly shrubs and grasses.

Easting

521248

NAD83
Zone 17

Northing

5151973

Reference

Helicopter

Altitude(m)

264

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, unconsolidated, between 2 to 4 cm thick.
Horizon 2 (Bt) is a light to medium brown, fine-grained sand which varies from moist to wet.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a medium brown, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12462

Depth 5 - 10 cm:

12464

Depth 10 - 20 cm:

12466

Dup. Depth 0 - 5 cm:

12463

Dup. Depth 5 - 10 cm

12465

Dup. Depth 10 - 20 cm:

12467

Parent material:

12470

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F266\F266-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F266\F266-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F266\F266-core.jpg

Parent material photo

Site Number

266

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	302
Aluminum 5 to 10cm:	20500	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	37
Aluminum 10 to 20cm:	23500	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	35
Aluminum Parent:	23000	Cobalt Parent:	4	Nickel Parent:	27
Arsenic 0 to 5cm:	32	Copper 0 to 5cm:	450	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	46	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	34	Selenium 10 to 20cm:	ND
Arsenic Parent:	6	Copper Parent:	62	Selenium Parent:	1
Barium 0 to 5cm:	74	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	50	Iron 5 to 10cm:	21500	Strontium 5 to 10cm:	40
Barium 10 to 20cm:	51	Iron 10 to 20cm:	25000	Strontium 10 to 20cm:	42
Barium Parent:	33	Iron Parent:	26000	Strontium Parent:	27
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	44
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1150	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1950	Zinc 5 to 10cm:	27
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3250	Zinc 10 to 20cm:	29
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	31
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	107	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2850	Manganese 5 to 10cm:	130	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	2200	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	45	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	48	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	48	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

267

Date sampled

12/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

267

Location of sampling site

~2km south from end of Goodwill Dr in Garson.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Flat area. Trees: 20% white birch, 2% poplar. Shrub: 1% sheeps laurel, 5% willow, 5% white birch, 3% poplar. Herb: 40% pohlia, 1% british soldier, 2% false dixie cup, 2% lichens.

Easting

514749

NAD83
Zone 17

Northing

5152153

Reference

Garson

Altitude(m)

281

Conditions

Clear

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ae: 0 to 6 cm (10YR 5/2), silty; Bg: 6 to 30 cm (10YR 5/3), silty-sandy.

Parent material field description

Sample collected between 75 and 114 cm. Colour: 10YR 5/3. Mottles: 10YR 6/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26180

Depth 5 - 10 cm:

26181

Depth 10 - 20 cm:

26182

Dup. Depth 0 - 5 cm:

26183

Dup. Depth 5 - 10 cm

26184

Dup. Depth 10 - 20 cm:

26185

Parent material:

26189

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\267\2001-CEM-267-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\267\CEM-267-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\267\2001-CEM-267-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\267\2001-CEM-267-
PARENT_1.JPG.jpg

Site Number

267

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	415
Aluminum 5 to 10cm:	15500	Cobalt 5 to 10cm:	7.5	Nickel 5 to 10cm:	78
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	34
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	59	Copper 0 to 5cm:	555	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	17	Copper 5 to 10cm:	155	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	51	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	36	Selenium Parent:	ND
Barium 0 to 5cm:	89	Iron 0 to 5cm:	24500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	72	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	83	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	47
Barium Parent:	160	Iron Parent:	29000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	41
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	54
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2350	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3050	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4400	Zinc 10 to 20cm:	30
Cadmium Parent:	ND	Magnesium Parent:	8400	Zinc Parent:	30
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	190	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2550	Manganese 5 to 10cm:	195	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2850	Manganese 10 to 20cm:	240	pH 10 to 20cm:	NA
Calcium Parent:	5900	Manganese Parent:	420	pH Parent:	NA
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	44	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	67	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

268

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F268

Location of sampling site

Helicopter site: north of Hwy 17 near Stinson.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Open area near deciduous stand, level. Ground cover is grasses and small shrubs.

Easting

519448

Northing

5152245

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

266

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, consolidated, 1 to 3 cm thick. Horizon 2 (Ae) is a light grey-brown, silty clay, varies from wet and sticky to dry and crumbly across the site, persists to 20 cm.

Parent material field description

Depth sample collected from 80 to 120 cm consists of a wet, light grey silty clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12443

Depth 5 - 10 cm:

12445

Depth 10 - 20 cm:

12447

Dup. Depth 0 - 5 cm:

12444

Dup. Depth 5 - 10 cm

12446

Dup. Depth 10 - 20 cm:

12448

Parent material:

12451

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F268\F268-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F268\F268-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F268\F268-core.jpg

Parent material photo

Site Number

268

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	18000	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	270
Aluminum 5 to 10cm:	21500	Cobalt 5 to 10cm:	11	Nickel 5 to 10cm:	49
Aluminum 10 to 20cm:	21500	Cobalt 10 to 20cm:	9	Nickel 10 to 20cm:	42
Aluminum Parent:	28000	Cobalt Parent:	10	Nickel Parent:	43
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	345	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6	Copper 5 to 10cm:	58	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	20	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	29	Selenium Parent:	ND
Barium 0 to 5cm:	100	Iron 0 to 5cm:	24000	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	110	Iron 5 to 10cm:	23500	Strontium 5 to 10cm:	56
Barium 10 to 20cm:	110	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	59
Barium Parent:	190	Iron Parent:	28000	Strontium Parent:	65
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	47
Beryllium Parent:	0.5	Lead Parent:	7	Vanadium Parent:	52
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	49
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5250	Zinc 5 to 10cm:	42
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5100	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	7300	Zinc Parent:	35
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	455	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3750	Manganese 5 to 10cm:	495	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4300	Manganese 10 to 20cm:	380	pH 10 to 20cm:	NA
Calcium Parent:	5500	Manganese Parent:	360	pH Parent:	NA
Chromium 0 to 5cm:	53	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	55	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	53	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	72	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

269

Date sampled

8/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

269

Location of sampling site

Lasalle Ext. ~1km SW of Frood Mine.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Found level area with soil between bedrock outcrops. Veg: maple, oak, large tooth aspen, trembling aspen, willow, birch, spruce, dwarf birch. Ground: rare leaf litter, moss, twigs, rocks, stumps. Note: large body of water between site and R.R. 35 (Hwy 144) Not on map. Floor: rare leaf litter, moss, twigs, rocks.

Easting

497784

Northing

5151560

NAD83
Zone 17

Reference

Altitude(m)

339

Conditions

Cloud/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

70% of cores: LFH:0 to 8 cm; Ah: 0 to 12 cm; Ae: 12 to 17 cm (10YR7/1); Bm: 17 to >30 cm (7.5 YR5/6). 30% of cores: LFH: 0 to 8 cm; A: 0 to 10 cm (10YR 4/3); B: 10 to >30 cm. Texture: loamy to a silty sand.

Parent material field description

Parent material collected from 25 to 60 cm. Area very rocky; could not auger past 60 cm. Texture: fine to coarse sand (loamy sand).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10664

Depth 5 - 10 cm:

10666

Depth 10 - 20 cm:

10668

Dup. Depth 0 - 5 cm:

10665

Dup. Depth 5 - 10 cm

10667

Dup. Depth 10 - 20 cm:

10669

Parent material:

10670

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\269\2001-CEM-269-
site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\269\CEM-269-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\269\2001-CEM-269-
core_1.JPG

Parent material photo

Site Number

269

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	40	Nickel 0 to 5cm:	1200
Aluminum 5 to 10cm:	17650	Cobalt 5 to 10cm:	22	Nickel 5 to 10cm:	420
Aluminum 10 to 20cm:	22300	Cobalt 10 to 20cm:	17	Nickel 10 to 20cm:	180
Aluminum Parent:	21000	Cobalt Parent:	38	Nickel Parent:	127
Arsenic 0 to 5cm:	68	Copper 0 to 5cm:	1050	Selenium 0 to 5cm:	8
Arsenic 5 to 10cm:	37	Copper 5 to 10cm:	470	Selenium 5 to 10cm:	4.5
Arsenic 10 to 20cm:	16	Copper 10 to 20cm:	280	Selenium 10 to 20cm:	2.5
Arsenic Parent:	ND	Copper Parent:	150	Selenium Parent:	ND
Barium 0 to 5cm:	51	Iron 0 to 5cm:	35500	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	54	Iron 5 to 10cm:	29000	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	57	Iron 10 to 20cm:	25600	Strontium 10 to 20cm:	31
Barium Parent:	79	Iron Parent:	78000	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	94	Vanadium 0 to 5cm:	62
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	43	Vanadium 5 to 10cm:	67
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	23	Vanadium 10 to 20cm:	66
Beryllium Parent:	ND	Lead Parent:	10	Vanadium Parent:	220
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	2250	Zinc 0 to 5cm:	76
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	71
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3150	Zinc 10 to 20cm:	75
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	160
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	305	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	4100	Manganese 5 to 10cm:	402	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3050	Manganese 10 to 20cm:	302	pH 10 to 20cm:	NA
Calcium Parent:	6400	Manganese Parent:	640	pH Parent:	NA
Chromium 0 to 5cm:	45	Molybdenum 0 to 5cm:	1.7	C TOC 0 to 5cm:	63
Chromium 5 to 10cm:	39	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	60	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

270

Date sampled

8/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

270

Location of sampling site

Lasalle Ext. ~1km SW of Frood Mine.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Found level area surrounded by bedrock. Veg: Jack Pine, maple, oak, trembling aspen, birch, dwarf birch, Labrador tea, bunch grass; Ground: grass rocks, moss, rare leaf litter.

Easting

497429

Northing

5151494

NAD83
Zone 17

Reference

Altitude(m)

321

Conditions

Cloud/rain

SOIL DESCRIPTION

Soil profile horizon descriptions

70% of cores: LFH: 0 to 5 cm; A: 0 to 10 cm (10YR 6/4); charcoal 10 to 12 cm; Ae: 12 to 18 cm (10YR 6/3); Bm: 18 to >25 cm (2.5Y 6/4 to 10YR 4/3). About 20% of cores did not contain a charcoal layer. 10% of Cores: LFH: 0 to 5 cm B: 0 to >25 cm. Soil was highly variable. Texture: silt with fine- to coarse-grained sand with rare pebbles, silt loam with charcoal.

Parent material field description

Sample was collected from two holes between 65 and 82 cm. Texture: silty loam. Colour: 10YR 7/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10674

Depth 5 - 10 cm:

10676

Depth 10 - 20 cm:

10678

Dup. Depth 0 - 5 cm:

10675

Dup. Depth 5 - 10 cm

10677

Dup. Depth 10 - 20 cm:

10679

Parent material:

10680

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\270\2001-CEM-270-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\270\CEM-269-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\270\2001-CEM-270-
Core_1.JPG

Parent material photo

Site Number

270

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	33	Nickel 0 to 5cm:	965
Aluminum 5 to 10cm:	15500	Cobalt 5 to 10cm:	25	Nickel 5 to 10cm:	739
Aluminum 10 to 20cm:	16000	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	273
Aluminum Parent:	21000	Cobalt Parent:	9	Nickel Parent:	49
Arsenic 0 to 5cm:	58	Copper 0 to 5cm:	720	Selenium 0 to 5cm:	8
Arsenic 5 to 10cm:	57	Copper 5 to 10cm:	620	Selenium 5 to 10cm:	6
Arsenic 10 to 20cm:	28	Copper 10 to 20cm:	395	Selenium 10 to 20cm:	3
Arsenic Parent:	ND	Copper Parent:	59	Selenium Parent:	ND
Barium 0 to 5cm:	45	Iron 0 to 5cm:	29000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	70	Iron 5 to 10cm:	27500	Strontium 5 to 10cm:	36
Barium 10 to 20cm:	69	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	39
Barium Parent:	95	Iron Parent:	26000	Strontium Parent:	36
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	68	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	55	Vanadium 5 to 10cm:	42
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	27	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	49
Cadmium 0 to 5cm:	0.75	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	46
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	44
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	30
Cadmium Parent:	ND	Magnesium Parent:	6300	Zinc Parent:	30
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	145	pH 0 to 5cm:	5.5
Calcium 5 to 10cm:	2600	Manganese 5 to 10cm:	170	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	3000	Manganese 10 to 20cm:	150	pH 10 to 20cm:	4.3
Calcium Parent:	2600	Manganese Parent:	290	pH Parent:	4.6
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	44
Chromium 5 to 10cm:	40	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	35
Chromium 10 to 20cm:	36	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	30
Chromium Parent:	62	Molybdenum Parent:	ND	C TOC Parent:	2.5

Sudbury Regional Soils Project 2001

Site Number

271

Date sampled

9/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

271

Location of sampling site

~5km NE of Sudbury Water Treatment Plant off Hwy 17.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Found level to undulating topography in forested area for soil site. Power lines to the east and ATV trail just south of site. Veg: birch, aspen (dominant), alder, pussy willow, grasses, sweet fern, clubmoss, lichen, goldenrod, bracken fern, mushrooms, bunchberry, large leaf aster, blueberry. Floor: leaf litter, moss, lichen, logs, twigs.

Easting

517085

NAD83
Zone 17

Northing

5151308

Reference

Altitude(m)

279

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

70% of cores: LFH: 0 to 4 cm; Ae: 0 to 2 cm (10YR6/2); B: 2 to 17 cm (10YR6/2); BC or C 17 to >25 cm (10YR6/2). 30% of cores: LFH: 0 to 4 cm; B or C: 0 to >25 cm (10YR 6/2). Texture: silty clay. Soil horizons and depth are highly variable.

Parent material field description

Sample was collected from 75 to 110 cm. Texture: silty clay. Colour: 10YR 6/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10233

Depth 5 - 10 cm:

10235

Depth 10 - 20 cm:

10237

Dup. Depth 0 - 5 cm:

10234

Dup. Depth 5 - 10 cm

10236

Dup. Depth 10 - 20 cm:

10238

Parent material:

10239

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\271\2001-CEM-271-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\271\CEM-271-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\271\2001-CEM-271-
Core_1.JPG

Parent material photo

Site Number

271

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6400	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	295
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	40
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	47
Aluminum Parent:	30000	Cobalt Parent:	17	Nickel Parent:	56
Arsenic 0 to 5cm:	31	Copper 0 to 5cm:	510	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	77	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	31	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	44	Selenium Parent:	ND
Barium 0 to 5cm:	66	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	65	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	41
Barium 10 to 20cm:	88	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	51
Barium Parent:	240	Iron Parent:	36000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	44
Beryllium Parent:	0.67	Lead Parent:	10	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2200	Zinc 0 to 5cm:	37
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4150	Zinc 5 to 10cm:	41
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5650	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	53
Calcium 0 to 5cm:	1600	Manganese 0 to 5cm:	275	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	3050	Manganese 5 to 10cm:	365	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	3950	Manganese 10 to 20cm:	330	pH 10 to 20cm:	5.1
Calcium Parent:	6400	Manganese Parent:	520	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	40
Chromium 5 to 10cm:	43	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	9.9
Chromium 10 to 20cm:	54	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	5.7
Chromium Parent:	90	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

272

Date sampled

11/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

272

Location of sampling site

~4km North of Wahnapeitei; at Savard Rd., off Laren St.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site is sparsely forested, rocky, undulating, covered in moss, with a well developed soil profile. Area strewn with boulders >15 cm and old rotted tree trunks. Trees: paper birch 5%; blueberry. Shrubs: 21% juvenile poplars, leatherleaf, Labrador tea, grasses. Herbs 1% dominant mosses, lichen. Note: tree planting had recently been carried out.

Easting

518326

Northing

5150947

NAD83
Zone 17

Reference

Wahnapeitei north @ Savard

Altitude(m)

284

Conditions

Dry, mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 3 cm (black); Ae: 3 to 6 cm (white), sandy silt; Bm: 6 to 12 cm (yellowish brown), silty; Bt: >12 cm (light brown), silty.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11639

Depth 5 - 10 cm:

11640

Depth 10 - 20 cm:

11641

Dup. Depth 0 - 5 cm:

11642

Dup. Depth 5 - 10 cm:

11643

Dup. Depth 10 - 20 cm:

11644

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\272\CEM-272-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

272

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4900	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	280
Aluminum 5 to 10cm:	9250	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	49
Aluminum 10 to 20cm:	10200	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	31
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	34	Copper 0 to 5cm:	440	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	93	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	34	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	58	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	12
Barium 5 to 10cm:	31	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	27	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	8.5
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	33
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	655	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	16
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	695	Manganese 0 to 5cm:	67	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1315	Manganese 5 to 10cm:	102	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	1055	Manganese 10 to 20cm:	110	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	28	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	40	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	37	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

273

Date sampled

8/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

273

Location of sampling site

New Sudbury: ~600m S of LaCroix Construction/Excavation.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Abundant bed rock, found level site at high elevation, with between 5 and 80 cm of soil, not much LFH, moss covered. Trees small, area somewhat barren, lots of bedrock visible., No aspen, Veg: birch (dominant), rare maple, rare oak, Labrador tea, blueberry moss (no berries), clubmoss, grass; floor: rare leaf litter, moss, twigs.

Easting

506916

NAD83
Zone 17

Northing

5150698

Reference

Altitude(m)

312

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: OF: 0 to 5 cm; Ah: 5 to 7 cm (10YR2/1); Ae: 7 to 14 cm (2.5YR7/2) Bg: 14 to >25 cm (2.5Y6/8), Mottles common, medium, prominent (10YR 6/8). 40% of cores did not exhibit a Bg horizon; instead they contained a Bt (5YR 4/6). Texture: very fine-grained sandy loam. Soil horizon depth and colour were highly variable.

Parent material field description

Parent material was collected from 3 holes between 60 and 80 cm. Texture: very fine-grained sandy loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10703

Depth 5 - 10 cm:

10705

Depth 10 - 20 cm:

10707

Dup. Depth 0 - 5 cm:

10704

Dup. Depth 5 - 10 cm

10706

Dup. Depth 10 - 20 cm:

10708

Parent material:

10709

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\273\2001-CEM-273-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\273\CEM-273-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\273\2001-CEM-273-
Core_1.JPG

Parent material photo

Site Number

273

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	19	Nickel 0 to 5cm:	556
Aluminum 5 to 10cm:	10700	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	58
Aluminum 10 to 20cm:	11000	Cobalt 10 to 20cm:	3	Nickel 10 to 20cm:	21
Aluminum Parent:	15000	Cobalt Parent:	4	Nickel Parent:	19
Arsenic 0 to 5cm:	51	Copper 0 to 5cm:	640	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	90	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	29	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	15	Selenium Parent:	ND
Barium 0 to 5cm:	90	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	44	Iron 5 to 10cm:	6300	Strontium 5 to 10cm:	32
Barium 10 to 20cm:	27	Iron 10 to 20cm:	7450	Strontium 10 to 20cm:	24
Barium Parent:	69	Iron Parent:	16000	Strontium Parent:	38
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	67	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	22
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	22
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	940	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	705	Zinc 5 to 10cm:	9.7
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1150	Zinc 10 to 20cm:	11
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	12
Calcium 0 to 5cm:	960	Manganese 0 to 5cm:	58	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	76	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	1520	Manganese 10 to 20cm:	73	pH 10 to 20cm:	4.3
Calcium Parent:	2700	Manganese Parent:	110	pH Parent:	4.4
Chromium 0 to 5cm:	30	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	83
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	19
Chromium 10 to 20cm:	22	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	9.9
Chromium Parent:	41	Molybdenum Parent:	ND	C TOC Parent:	1.5

Sudbury Regional Soils Project 2001

Site Number

274

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

274

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Sloping N (10%); hummocky with rock outcrops, lichen on mature trees. Herb: pohlia, lichens. Shrub: blueberry 10%, sheep laurel (trace). Trees: 25% white birch, 10% red maple, 1% oak.

Easting

488284

Northing

5150557

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

349

Conditions

50% cloud

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm (charcoal); Ae: 1 to 4.5 cm (light grey), silty; Bm: 4.5 to 15 cm (orange), sandy with pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25442

Depth 5 - 10 cm:

25446

Depth 10 - 20 cm:

25447

Dup. Depth 0 - 5 cm:

25448

Dup. Depth 5 - 10 cm:

25449

Dup. Depth 10 - 20 cm:

25450

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\274\2001-CEM-274-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\274\CEM-274-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\274\2001-CEM-274-
CORE_1.JPG

Parent material photo

Site Number

274

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5550	Cobalt 0 to 5cm:	30	Nickel 0 to 5cm:	1007
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	97
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	33
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	26	Copper 0 to 5cm:	775	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	20	Copper 5 to 10cm:	155	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	6.5	Copper 10 to 20cm:	43	Selenium 10 to 20cm:	0.5
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	81	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	49	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	37	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	33
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	100	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	20	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	11	Vanadium 10 to 20cm:	43
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.5	Magnesium 0 to 5cm:	675	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1000	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	24
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	145	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2600	Manganese 5 to 10cm:	160	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2400	Manganese 10 to 20cm:	195	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	32	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

275

Date sampled

8/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

275

Location of sampling site

Little Britian.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Area dominated by bedrock and dwarf birch. Veg: dwarf birch, trembling aspen, pussy willow, white pine, birch, sweet fern, spruce, rare oak; ground: leaf litter, bedrock, rocks, moss, stumps.

Easting

498602

Northing

5150292

NAD83
Zone 17

Reference

Altitude(m)

328

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

95% of cores: LFH: 0 to 2 cm; A: 0 to 10 cm (10YR5/3); B: 10 to >30 cm (10YR6/6) 5% of cores: A: 0 to 6 cm (10YR 6/6); Ah: 6 to 7 cm; Ae: 7 to 15 cm (10YR 7/1); Bf: 15 to 20 cm (10YR 5/6); Bm: 20 to >30 cm (10YR 6/6). Texture very fine-grained sandy loam with 30% of samples containing abundant gravel in B horizon, depth of soil ranged from 1 cm to a max of 35 cm.

Parent material field description

No parent material could be collected; could not auger past 35 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10684

Depth 5 - 10 cm:

10686

Depth 10 - 20 cm:

10688

Dup. Depth 0 - 5 cm:

10685

Dup. Depth 5 - 10 cm

10687

Dup. Depth 10 - 20 cm:

10689

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\275\2001-CEM-275-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\275\CEM-275-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\275\2001-CEM-275-
Core_1.JPG

Parent material photo

Site Number

275

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	255
Aluminum 5 to 10cm:	19500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	61
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	30
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	14	Copper 0 to 5cm:	265	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	115	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	83	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	45	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	44	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	36	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	41
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	22	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	36
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	40
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2350	Zinc 5 to 10cm:	38
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2550	Zinc 10 to 20cm:	32
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4750	Manganese 0 to 5cm:	150	pH 0 to 5cm:	6
Calcium 5 to 10cm:	3550	Manganese 5 to 10cm:	145	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	3550	Manganese 10 to 20cm:	160	pH 10 to 20cm:	4.8
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	24
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	19
Chromium 10 to 20cm:	36	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	15
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

276

Date sampled

11/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

276

Location of sampling site

South of Whitewater Lake; Azilda.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Relatively flat; hummocks; rock outcrops. Herb: 1% tuff grass, 10% brachy thecium, 1% pohlia, 2% lichens. Shrub: 5% bracken fern; 1 % blueberry. Trees: 10% oak, 3% birch.

Easting

489059

Northing

5150757

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

316

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm; Ah: 0 to 2.5 cm (black); Ae: 2.5 to 4 cm (10YR 4/2); Bf: 4 to 6.5 cm (2.5YR 3/4), silty sand; Bt: 6.5 to 22 cm (10YR 4/4), silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25454

Depth 5 - 10 cm:

25455

Depth 10 - 20 cm:

25456

Dup. Depth 0 - 5 cm:

25457

Dup. Depth 5 - 10 cm

25458

Dup. Depth 10 - 20 cm:

25459

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\276\2001-CEM-276-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\276\CEM-276-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\276\2001-CEM-276-
Core_1.jpg

Parent material photo

Site Number

276

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8050	Cobalt 0 to 5cm:	22	Nickel 0 to 5cm:	766
Aluminum 5 to 10cm:	16000	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	60
Aluminum 10 to 20cm:	23000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	28
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	780	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	86	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	21	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	89	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	49	Iron 5 to 10cm:	21000	Strontium 5 to 10cm:	52
Barium 10 to 20cm:	59	Iron 10 to 20cm:	27000	Strontium 10 to 20cm:	58
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	78	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	56
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	59
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.5	Magnesium 0 to 5cm:	845	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1550	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3050	Zinc 10 to 20cm:	36
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	135	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4100	Manganese 5 to 10cm:	145	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	5050	Manganese 10 to 20cm:	215	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	34	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	44	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

277

Date sampled

8/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

277

Location of sampling site

~1km N of Shopping Centre in Coniston.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Small treed area--aspen, birch, soil collected; veg: birch, aspen, willow, lady fern, equisetum, goldenrod, fireweed, moss, clubmoss, other herbs, pearly everlasting, white, seet cloves; floor: leaf litter moss.

Easting

512154

Northing

5149564

NAD83
Zone 17

Reference

Altitude(m)

263

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

45% of cores: LFH: 0 to 3 cm; A: 0 to 17 cm (10YR6/6), loamy sand to sandy loam; B: 17 to >30 cm (2.5Y6/3) silty clay loam. 55% of cores: LFH: 0 to 3 cm; B: 0 to >30 cm (2.5Y 6/3).

Parent material field description

Sample was collected between 80 and 110 cm. Texture: silt. Colour: 2.5Y 7/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10733

Depth 5 - 10 cm:

10735

Depth 10 - 20 cm:

10737

Dup. Depth 0 - 5 cm:

10734

Dup. Depth 5 - 10 cm

10736

Dup. Depth 10 - 20 cm:

10738

Parent material:

10739

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\277\2001-CEM-277-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\277\CEM-277-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\277\2001-CEM-277-Core 1.JPG

Parent material photo

Site Number

277

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7650	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	86
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	75
Aluminum 10 to 20cm:	19000	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	71
Aluminum Parent:	9100	Cobalt Parent:	7	Nickel Parent:	27
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	76	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	57	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	16	Copper 10 to 20cm:	60	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	16	Selenium Parent:	ND
Barium 0 to 5cm:	43	Iron 0 to 5cm:	12500	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	72	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	110	Iron 10 to 20cm:	22500	Strontium 10 to 20cm:	46
Barium Parent:	63	Iron Parent:	16000	Strontium Parent:	37
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	9	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6.5	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	43
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	10
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3650	Zinc 5 to 10cm:	22
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5350	Zinc 10 to 20cm:	25
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	19
Calcium 0 to 5cm:	2400	Manganese 0 to 5cm:	210	pH 0 to 5cm:	5.3
Calcium 5 to 10cm:	3250	Manganese 5 to 10cm:	270	pH 5 to 10cm:	5.6
Calcium 10 to 20cm:	5300	Manganese 10 to 20cm:	280	pH 10 to 20cm:	NA
Calcium Parent:	18000	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	13
Chromium 5 to 10cm:	47	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	4.6
Chromium 10 to 20cm:	54	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	40	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

278

Date sampled

9/4/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

278

Location of sampling site

~2km NW of Town of Wahnapiatae; off Hwy 17 E.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Not many places to sample; much of the area looks affected by runoff. Found flat, level area among some trees. Bedrock visible, very rocky area. Small creek and wet area to the west. Veg: birch (dominant), T. aspen, larch (rare), pine (rare) clubmoss, grasses, pussy willow, Labrador tea, moss, blueberry, goldenrod. Ground: leaf litter, moss, twigs.

Easting

515026

NAD83
Zone 17

Northing

5149647

Reference

Altitude(m)

271

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

70% of cores: LFH: 0 to 5 cm; Ah: 0 to 7 cm (10YR4/4); B: 7 to >30 cm (10YR3/2), mottles common. 30% of cores: LFH: 0 to 5 cm; B: 0 to 17 cm (10YR 5/2) C: 17 to >30 cm (10YR 6/2), mottles, many. Texture: silt loam.

Parent material field description

Sample collected between 80 and 115 cm. Texture: silt loam-loam. Colour: 2.5Y 7/2. Mottles: abundant, medium, distinct (10YR 5/6).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10166

Depth 5 - 10 cm:

10168

Depth 10 - 20 cm:

10170

Dup. Depth 0 - 5 cm:

10167

Dup. Depth 5 - 10 cm

10169

Dup. Depth 10 - 20 cm:

10171

Parent material:

10753

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\278\2001-CEM-278-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\278\CEM-278-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\278\2001-CEM-278-Core 1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

278

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	230
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	13	Nickel 5 to 10cm:	183
Aluminum 10 to 20cm:	16500	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	112
Aluminum Parent:	17000	Cobalt Parent:	9	Nickel Parent:	39
Arsenic 0 to 5cm:	26	Copper 0 to 5cm:	390	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	24	Copper 5 to 10cm:	350	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	17	Copper 10 to 20cm:	260	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	27	Selenium Parent:	ND
Barium 0 to 5cm:	79	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	96	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	96	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	45
Barium Parent:	120	Iron Parent:	23000	Strontium Parent:	59
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	31	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	24	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	18	Vanadium 10 to 20cm:	37
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	44
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2950	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	5400	Zinc Parent:	26
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	150	pH 0 to 5cm:	4
Calcium 5 to 10cm:	2150	Manganese 5 to 10cm:	160	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	3250	Manganese 10 to 20cm:	165	pH 10 to 20cm:	NA
Calcium Parent:	5400	Manganese Parent:	360	pH Parent:	NA
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	43
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	30
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	67	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

279

Date sampled

8/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	279	Location of sampling site	Maley Conservation area; west of Timber Wolf golf course.
Historical Inco sample station	39		
OBM map number	41 I/10	Field observations	Swamp and small pond to the south, rocky hill to the west, cart road and golf course to the east.
Easting	504296		
Northing	5154067	NAD83 Zone 17	
Reference	Maley Conservation Area		
Altitude(m)	281		
Conditions	Raining		

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; A: 0 to 7 cm; B: >7 cm.
Texture: silt/loam.

Parent material field description

Sample was collected >60 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:	10006
Depth 5 - 10 cm:	10007
Depth 10 - 20 cm:	10003
Dup. Depth 0 - 5 cm:	10026
Dup. Depth 5 - 10 cm:	10012
Dup. Depth 10 - 20 cm:	11146
Parent material:	10008

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\279\CEM-279-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\279\2001-CEM-279-
Core_1.JPG

Site Number

279

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8650	Cobalt 0 to 5cm:	19	Nickel 0 to 5cm:	550
Aluminum 5 to 10cm:	8650	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	52
Aluminum 10 to 20cm:	10850	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	25
Aluminum Parent:	9600	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	20	Copper 0 to 5cm:	430	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	73	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	23	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	14
Barium 5 to 10cm:	45	Iron 5 to 10cm:	7950	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	44	Iron 10 to 20cm:	10750	Strontium 10 to 20cm:	34
Barium Parent:	55	Iron Parent:	14000	Strontium Parent:	34
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	60	Vanadium 0 to 5cm:	20
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	22
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	28
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1100	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1450	Zinc 5 to 10cm:	16
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1850	Zinc 10 to 20cm:	18
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	15
Calcium 0 to 5cm:	1185	Manganese 0 to 5cm:	69	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	1500	Manganese 5 to 10cm:	79	pH 5 to 10cm:	5.3
Calcium 10 to 20cm:	2550	Manganese 10 to 20cm:	120	pH 10 to 20cm:	NA
Calcium Parent:	3000	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	1.7	C TOC 0 to 5cm:	144
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	36
Chromium 10 to 20cm:	28	Molybdenum 10 to 20cm:	0.9	C TOC 10 to 20cm:	NA
Chromium Parent:	38	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

280

Date sampled

8/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

280

Location of sampling site

Godfrey Dr; SE of Murray Mine.

Historical Inco sample station

58

OBM map number

41 I/11

Field observations

Area very rocky; very little if any soil. Veg: willow bushes, stunted aspen and birch growing in a few cm of moss.

Easting

496235

Northing

5149855

NAD83
Zone 17

Reference

Old Murray Mine Rd.

Altitude(m)

300

Conditions

Sunny, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

Site not suitable for soil collection.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

Depth 5 - 10 cm:

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

Dup. Depth 5 - 10 cm

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\280\2001-CEM-280-
SITE_1.JPG

Soil profile diagram

Core photo 1

Parent material photo

Site Number

280

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	NA	Cobalt 0 to 5cm:	NA	Nickel 0 to 5cm:	NA
Aluminum 5 to 10cm:	NS	Cobalt 5 to 10cm:	NS	Nickel 5 to 10cm:	NS
Aluminum 10 to 20cm:	NS	Cobalt 10 to 20cm:	NS	Nickel 10 to 20cm:	NS
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	NA	Copper 0 to 5cm:	NA	Selenium 0 to 5cm:	NA
Arsenic 5 to 10cm:	NS	Copper 5 to 10cm:	NS	Selenium 5 to 10cm:	NS
Arsenic 10 to 20cm:	NS	Copper 10 to 20cm:	NS	Selenium 10 to 20cm:	NS
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	NA	Iron 0 to 5cm:	NA	Strontium 0 to 5cm:	NA
Barium 5 to 10cm:	NS	Iron 5 to 10cm:	NS	Strontium 5 to 10cm:	NS
Barium 10 to 20cm:	NS	Iron 10 to 20cm:	NS	Strontium 10 to 20cm:	NS
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	NA	Lead 0 to 5cm:	NA	Vanadium 0 to 5cm:	NA
Beryllium 5 to 10cm:	NS	Lead 5 to 10cm:	NS	Vanadium 5 to 10cm:	NS
Beryllium 10 to 20cm:	NS	Lead 10 to 20cm:	NS	Vanadium 10 to 20cm:	NS
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	NA	Magnesium 0 to 5cm:	NA	Zinc 0 to 5cm:	NA
Cadmium 5 to 10cm:	NS	Magnesium 5 to 10cm:	NS	Zinc 5 to 10cm:	NS
Cadmium 10 to 20cm:	NS	Magnesium 10 to 20cm:	NS	Zinc 10 to 20cm:	NS
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	NA	Manganese 0 to 5cm:	NA	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NS	Manganese 5 to 10cm:	NS	pH 5 to 10cm:	NS
Calcium 10 to 20cm:	NS	Manganese 10 to 20cm:	NS	pH 10 to 20cm:	NS
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	NA	Molybdenum 0 to 5cm:	NA	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NS	Molybdenum 5 to 10cm:	NS	C TOC 5 to 10cm:	NS
Chromium 10 to 20cm:	NS	Molybdenum 10 to 20cm:	NS	C TOC 10 to 20cm:	NS
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

281

Date sampled

8/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

281

Location of sampling site

Falconbridge Hwy: 410 Kristi.

Historical Inco sample station

63

OBM map number

41 I/10

Field observations

Site located in a flat area between two outcrops on a ridge behind a commercial area. Topography: undulating, hummocks and depressions; slopes to the SE towards a marsh. Trees: birch, aspen. Shrubs: blueberries, Labrador tea. Herbs: grasses, moss, ferns, lichen, wintergreen.

Easting

505227

NAD83
Zone 17

Northing

5150541

Reference

Falconbridge Hwy

Altitude(m)

283

Conditions

Sunny, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm; Ae: 0 to 8 cm (white); B: >8 cm (yellowish brown). Texture: silty.

Parent material field description

Sample was collected from several holes between 60 and 72 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10020

Depth 5 - 10 cm:

10018

Depth 10 - 20 cm:

10019

Dup. Depth 0 - 5 cm:

10040

Dup. Depth 5 - 10 cm

10042

Dup. Depth 10 - 20 cm:

10041

Parent material:

10021

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\281\2001-CEM-281-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\281\CEM-281-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\281\2001-CEM-281-
Core_1.JPG

Parent material photo

Site Number

281

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7500	Cobalt 0 to 5cm:	32	Nickel 0 to 5cm:	820
Aluminum 5 to 10cm:	7800	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	115
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	52
Aluminum Parent:	18000	Cobalt Parent:	10	Nickel Parent:	45
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	760	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	170	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	5.5	Copper 10 to 20cm:	52	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	88	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	48	Iron 5 to 10cm:	11150	Strontium 5 to 10cm:	20
Barium 10 to 20cm:	51	Iron 10 to 20cm:	15000	Strontium 10 to 20cm:	33
Barium Parent:	120	Iron Parent:	22000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	97	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	18	Vanadium 5 to 10cm:	27
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	33
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	45
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1600	Zinc 5 to 10cm:	20
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2150	Zinc 10 to 20cm:	19
Cadmium Parent:	ND	Magnesium Parent:	5900	Zinc Parent:	21
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	300	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	1450	Manganese 5 to 10cm:	195	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	2450	Manganese 10 to 20cm:	165	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	320	pH Parent:	NA
Chromium 0 to 5cm:	40	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	120
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	26
Chromium 10 to 20cm:	32	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	60	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

282

Date sampled

9/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

282

Location of sampling site

Coniston.

Historical Inco sample station

42

OBM map number

41 I/7

Field observations

Soil site NW of Aspen site; site on small hill and lower elevation, forested. May be influenced by erosion(?) Not much soil formation but area is dominated by small aspen and birch (could pick aspen at soil site in future). Train tracks to the W and S; river to W and N; Hwy to the E and S; power lines to the S. Veg: small aspen, birch (dominant), spruce, pussy willow, large tooth aspen, Labrador tea, clubmoss, grasses, blueberry, cow vetch, lichen, pearly everlasting(?) goldenrod, birdsfoot trefoil, clubmoss, lichen, leaf litter, moss, twigs, logs.

Easting

512063

NAD83
Zone 17

Northing

5149265

Reference

Altitude(m)

258

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 2 to 0 cm, Ae 0 to 8 cm 10YR7/1; Bg: 2 to >20 cm 10YR5/6. Mottles: many medium distinct yellowish brown 10YR5/8.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10262

Depth 5 - 10 cm:

10264

Depth 10 - 20 cm:

10266

Dup. Depth 0 - 5 cm:

10263

Dup. Depth 5 - 10 cm

10265

Dup. Depth 10 - 20 cm:

10267

Parent material:

10268

Parent material field description

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\282\2001-CEM-282-Core_1.JPG

Parent material photo

Site Number

282

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5950	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	75
Aluminum 5 to 10cm:	7900	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	33
Aluminum 10 to 20cm:	10150	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	30
Aluminum Parent:	19000	Cobalt Parent:	11	Nickel Parent:	39
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	97	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	70	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	59	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	29	Selenium Parent:	ND
Barium 0 to 5cm:	23	Iron 0 to 5cm:	9100	Strontium 0 to 5cm:	12
Barium 5 to 10cm:	25	Iron 5 to 10cm:	12500	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	34	Iron 10 to 20cm:	14000	Strontium 10 to 20cm:	35
Barium Parent:	120	Iron Parent:	26000	Strontium Parent:	56
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	7	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	4.5	Vanadium 5 to 10cm:	26
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	3.5	Vanadium 10 to 20cm:	30
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	50
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1950	Zinc 0 to 5cm:	15
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1850	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2250	Zinc 10 to 20cm:	14
Cadmium Parent:	ND	Magnesium Parent:	6800	Zinc Parent:	31
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	73	pH 0 to 5cm:	6.1
Calcium 5 to 10cm:	1650	Manganese 5 to 10cm:	93	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	140	pH 10 to 20cm:	4.8
Calcium Parent:	5800	Manganese Parent:	390	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	12
Chromium 5 to 10cm:	24	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	28	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	5.6
Chromium Parent:	70	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

283

Date sampled

8/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

283

Location of sampling site

Hwy 17 E @ Whnapiatae River.

Historical Inco sample station

67

OBM map number

41 I/7

Field observations

Not ideal site due to proximity of tracks but only suitable site near aspen. Railroad to the south and river to the north. Banks high on river, flooding may not be common--not shown in soil. Very rocky ground around aspen site-soil site level area, collected birch at soil site, aspen at aspen site.

Easting

517553

NAD83
Zone 17

Northing

5148600

Reference

Wahnapiatae

Altitude(m)

283

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 3 to 0 cm; A: 10YR3/4 0 to 17 cm; Bf: 10YR5/6 >17 cm. Texture medium to fine loamy sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10723

Depth 5 - 10 cm:

10725

Depth 10 - 20 cm:

10727

Dup. Depth 0 - 5 cm:

10724

Dup. Depth 5 - 10 cm

10726

Dup. Depth 10 - 20 cm:

10728

Parent material:

10729

Parent material field description

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\283\2001-CEM-283-Site_1.JPG

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\283\2001-CEM-283-Core_1.JPG

Parent material photo

Site Number

283

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5450	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	81
Aluminum 5 to 10cm:	10300	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	69
Aluminum 10 to 20cm:	9100	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	42
Aluminum Parent:	39000	Cobalt Parent:	16	Nickel Parent:	91
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	150	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	19	Copper 5 to 10cm:	150	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	8.5	Copper 10 to 20cm:	71	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	86	Selenium Parent:	ND
Barium 0 to 5cm:	29	Iron 0 to 5cm:	12000	Strontium 0 to 5cm:	5.5
Barium 5 to 10cm:	53	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	30
Barium 10 to 20cm:	45	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	25
Barium Parent:	230	Iron Parent:	31000	Strontium Parent:	51
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	22	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9	Vanadium 10 to 20cm:	30
Beryllium Parent:	0.57	Lead Parent:	7	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1950	Zinc 5 to 10cm:	22
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	21
Cadmium Parent:	ND	Magnesium Parent:	8100	Zinc Parent:	63
Calcium 0 to 5cm:	920	Manganese 0 to 5cm:	104	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	130	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	1950	Manganese 10 to 20cm:	150	pH 10 to 20cm:	4.6
Calcium Parent:	4600	Manganese Parent:	270	pH Parent:	NA
Chromium 0 to 5cm:	23	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	28
Chromium 5 to 10cm:	29	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	17
Chromium 10 to 20cm:	25	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	10
Chromium Parent:	95	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

284

Date sampled

8/21/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

284

Location of sampling site

~1km S of Water Treatment Plant off Hwy 17 E.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area very rocky barren bedrock outcrops everywhere, pockets of soil but very shallow and very rocky, found level area between 2 bedrock outcrops. Veg: birch, aspen, red pine, no shrubs, rare blueberry bush, (thorny tree), sheepsorel(?) red top grass(?); ground--sand, rocks, grass, moss, little leaf litter.

Easting

514415

NAD83
Zone 17

Northing

5147798

Reference

Altitude(m)

289

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; A: 0 to 8 cm (2.5Y 6/4), some samples exhibit an Ae: 0 to 4 cm (2.5Y 8/3); Bm: 8 to 20 cm (10YR 6/6), some mottles seen; C: 20+ cm. Texture: silt loam; soil very rocky.

Parent material field description

Sample was collected from several holes between 28 and 50 cm. Could not auger past 50 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10654

Depth 5 - 10 cm:

10656

Depth 10 - 20 cm:

10658

Dup. Depth 0 - 5 cm:

10655

Dup. Depth 5 - 10 cm

10657

Dup. Depth 10 - 20 cm:

10659

Parent material:

10660

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\284\CEM-284-
soilprofile_1.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\284\2001-CEM-284-
Core_1.JPG

Site Number

284

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14500	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	260
Aluminum 5 to 10cm:	17000	Cobalt 5 to 10cm:	15	Nickel 5 to 10cm:	195
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	93
Aluminum Parent:	16000	Cobalt Parent:	6	Nickel Parent:	45
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	275	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	21	Copper 5 to 10cm:	235	Selenium 5 to 10cm:	3
Arsenic 10 to 20cm:	11	Copper 10 to 20cm:	160	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	60	Selenium Parent:	ND
Barium 0 to 5cm:	91	Iron 0 to 5cm:	23500	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	97	Iron 5 to 10cm:	24000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	99	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	44
Barium Parent:	74	Iron Parent:	17000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	22	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	20	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	13	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2800	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3200	Zinc 5 to 10cm:	39
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3600	Zinc 10 to 20cm:	35
Cadmium Parent:	ND	Magnesium Parent:	3900	Zinc Parent:	18
Calcium 0 to 5cm:	2950	Manganese 0 to 5cm:	195	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	3000	Manganese 5 to 10cm:	250	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	3100	Manganese 10 to 20cm:	220	pH 10 to 20cm:	4.4
Calcium Parent:	3600	Manganese Parent:	200	pH Parent:	NA
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	26
Chromium 5 to 10cm:	49	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	17
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	11
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

285

Date sampled

8/21/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

285

Location of sampling site

~1.5km SW of Coniston.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Level area surrounded by bedrock hills with marshland/swamps in between some areas. Hydro lines to the W, bypass and railway to the E, Bancroft Dr and railway tracks to the N. Veg: few aspen, birch, willow, leatherleaf, lichens, moss, tuffgrass; Ground: moss, some leaf litter, lichens, twigs, logs.

Easting

510692

NAD83
Zone 17

Northing

5147744

Reference

Coniston

Altitude(m)

264

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 3 cm; Bm to Bf: 3 to >20 cm (2.5Y 6/4 to 10YR 4/6), texture varies from fine-grained silty loam to a coarseloamy sand. Soil is highly variable.

Parent material field description

Sample collected from 75 to 110 cm. Texture: silty clay loam. Colour: 2.5Y 8/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10644

Depth 5 - 10 cm:

10646

Depth 10 - 20 cm:

10648

Dup. Depth 0 - 5 cm:

10645

Dup. Depth 5 - 10 cm

10647

Dup. Depth 10 - 20 cm:

10649

Parent material:

10650

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\285\2001-CEM-285-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\285\CEM-285-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\285\2001-CEM-285-
Core_1.JPG

Parent material photo

Site Number

285

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6550	Cobalt 0 to 5cm:	26	Nickel 0 to 5cm:	550
Aluminum 5 to 10cm:	11750	Cobalt 5 to 10cm:	11	Nickel 5 to 10cm:	138
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	54
Aluminum Parent:	30000	Cobalt Parent:	16	Nickel Parent:	60
Arsenic 0 to 5cm:	57	Copper 0 to 5cm:	550	Selenium 0 to 5cm:	4.5
Arsenic 5 to 10cm:	19	Copper 5 to 10cm:	275	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	135	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	51	Selenium Parent:	ND
Barium 0 to 5cm:	82	Iron 0 to 5cm:	26500	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	71	Iron 5 to 10cm:	17000	Strontium 5 to 10cm:	37
Barium 10 to 20cm:	57	Iron 10 to 20cm:	14500	Strontium 10 to 20cm:	34
Barium Parent:	240	Iron Parent:	39000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	60	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	32
Beryllium Parent:	0.62	Lead Parent:	9	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1750	Zinc 5 to 10cm:	25
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2250	Zinc 10 to 20cm:	24
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	54
Calcium 0 to 5cm:	1250	Manganese 0 to 5cm:	125	pH 0 to 5cm:	4.5
Calcium 5 to 10cm:	2800	Manganese 5 to 10cm:	220	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	2450	Manganese 10 to 20cm:	150	pH 10 to 20cm:	4.6
Calcium Parent:	5300	Manganese Parent:	550	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	38
Chromium 5 to 10cm:	32	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	18
Chromium 10 to 20cm:	35	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	8.2
Chromium Parent:	92	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

286

Date sampled

9/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

286

Location of sampling site

Hwy 537 to Dryden Rd. @ trailer park.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Very rocky area, bedrock outcrops dominant. Very little soil accumulation. Pockets of soil between bedrock, not very deep. Found level area at lower elevation. Forested area with slightly undulating topography. Aspen sampled ~60 m S of soil site. Veg: birch, oak, maple, white pine, blueberry (no berries), sweet fern, lichen, bracken fern, grasses, club moss; Floor: leaf litter, grass, moss.

Easting

518565

NAD83
Zone 17

Northing

5147587

Reference

Altitude(m)

287

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

40% of cores: LFH: 0 to 7 cm; A: 0 to 2 cm (2.5YR2.5/1); B: 2 to 15 cm (10YR4/4); C: 15 to >30 cm (2.5Y6/3). 40% of cores: LFH: 0 to 7 cm; A: 0 to 2 cm; B (?); 2 to >25 cm (2.5Y 7/2 to 10YR 4/4). Soil is variable, last 20% of samples exhibit Ae-B-C horizons. Texture: silty, clay loam, many cores contain pebbles.

Parent material field description

Sample collected from 65 to 95 cm. Texture: silty clay loam; some cobble size clasts. Mottles: many, fine, prominent.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10213

Depth 5 - 10 cm:

10215

Depth 10 - 20 cm:

10217

Dup. Depth 0 - 5 cm:

10214

Dup. Depth 5 - 10 cm

10216

Dup. Depth 10 - 20 cm:

10218

Parent material:

10219

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\286\2001-CEM-286-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\286\CEM-286-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\286\2001-CEM-286-
Core_1.JPG

Parent material photo

Site Number

286

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9550	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	275
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	48
Aluminum 10 to 20cm:	21500	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	34
Aluminum Parent:	28000	Cobalt Parent:	11	Nickel Parent:	48
Arsenic 0 to 5cm:	20	Copper 0 to 5cm:	370	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	73	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	38	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	35	Selenium Parent:	ND
Barium 0 to 5cm:	74	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	63	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	94	Iron 10 to 20cm:	21000	Strontium 10 to 20cm:	47
Barium Parent:	170	Iron Parent:	29000	Strontium Parent:	52
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	42
Beryllium Parent:	0.5	Lead Parent:	6	Vanadium Parent:	55
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1600	Zinc 0 to 5cm:	32
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	30
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3950	Zinc 10 to 20cm:	32
Cadmium Parent:	ND	Magnesium Parent:	6400	Zinc Parent:	32
Calcium 0 to 5cm:	1450	Manganese 0 to 5cm:	145	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	2190	Manganese 5 to 10cm:	175	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	3200	Manganese 10 to 20cm:	220	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	300	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	73
Chromium 5 to 10cm:	43	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	20
Chromium 10 to 20cm:	52	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	70	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

287

Date sampled

9/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

287

Location of sampling site

Coniston Hydro Rd. (off Hwy 17).

Historical Inco sample station

OBM map number

41 I/7

Field observations

Found a level to slightly sloping area mid slope, with trees, soil very rocky, boulders visible, small narrow valley to the SW and SE, large bedrock outcrop to the N not suitable for soil on top of bedrock, very rocky. Veg: birch (dominant), maple, oak, pussy willow, grasses, clubmoss, moss, lichen, Labrador tea, white clover, blueberry, goldenrod, fireweed, only 3 very small aspen with a few leaves. Floor: moss, leaf litter, twigs, logs, pebbles. Aspen collected ~190 m NE of original site (near power lines UTM 514614, 5147515, 275 m (no aspen at soil site).

Easting

514779

NAD83
Zone 17

Northing

5147440

Reference

Altitude(m)

285

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

Soil is highly variable. Horizon depths change dramatically core to core as well as the horizons themselves. LFH: 0 to 3 cm; Ah: 0 to 5 cm; Ae: 0 to 8 cm (10YR7/1); Bf: 3 to 15 cm (7.5YR4/6); Bm: 5 to >30 cm (10YR5/6). LFH: 0 to 3 cm; Bf: 0 to 10 cm (7.5YR 4/6); Bm: 0 to >30 cm (10YR 6/6). Texture: loamy sand. Many cores also exhibit: LFH: 0 to 2 cm; A: 0 to 4 cm (10YR 3/2); Ae: 4 to 6 cm; Bf: 6 to 17 cm (10YR 5/3); Bm: 17 to >30 cm (2.5Y 6/3) Texture: very coarse sandy loam, horizons contain abundant gravel to pebble size clasts.

Parent material field description

No parent material could be collected. Could not auger deeper than 40 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10253

Depth 5 - 10 cm:

10255

Depth 10 - 20 cm:

10257

Dup. Depth 0 - 5 cm:

10254

Dup. Depth 5 - 10 cm

10256

Dup. Depth 10 - 20 cm:

10258

Parent material:

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\287\CEM-287-soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

287

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6400	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	280
Aluminum 5 to 10cm:	15000	Cobalt 5 to 10cm:	7.5	Nickel 5 to 10cm:	89
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	52
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	450	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	230	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	101	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	63	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	6
Barium 5 to 10cm:	70	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	41
Barium 10 to 20cm:	67	Iron 10 to 20cm:	18500	Strontium 10 to 20cm:	41
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	29	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	38
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1350	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2050	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2700	Zinc 10 to 20cm:	23
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	100	pH 0 to 5cm:	6.4
Calcium 5 to 10cm:	3150	Manganese 5 to 10cm:	160	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3450	Manganese 10 to 20cm:	165	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	27
Chromium 5 to 10cm:	39	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	42	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

288

Date sampled

8/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

288

Location of sampling site

Lake Laurentian Conservation Area @ Moonlight Beach.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Flat area between area of higher elevation to the E and W. Ramsey Lake to the N and a wetland to the S. Hiking trail to the south of site but no motorized vehicles use the trail. Ground cover: leaf litter, grass, logs; veg: aspen, alder, birch, oak, maple, golden rod, moss, fireweed, grasses, bracken fern, ladyfern, aster, mountain maple.

Easting

506292

NAD83
Zone 17

Northing

5146262

Reference

Lake Laurentian Conservation area

Altitude(m)

280

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

Soil profile varied greatly. LFH: 0 to 5 cm; Ah: 0 to 2 cm; B: 2 to 6 cm; C: 6 to >20 cm. LFH: 0 to 4 cm; Ah: 0 to 1 cm; Ae: 1 to 2 cm; B: 2 to 6 cm; C: 6 to >25 cm. Contacts between horizons diffuse; pebbles found in C.

Parent material field description

Collected parent material between 75 and 112 cm. Texture: clay loam to silty clay loam (very fine); some very coarsesand/pebbles also evident.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10631

Depth 5 - 10 cm:

10633

Depth 10 - 20 cm:

10635

Dup. Depth 0 - 5 cm:

10632

Dup. Depth 5 - 10 cm

10634

Dup. Depth 10 - 20 cm:

10636

Parent material:

10640

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\288\2001-CEM-288-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\288\CEM-288-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\288\2001-CEM-288-Core 1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

288

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	9450	Cobalt 0 to 5cm:	55	Nickel 0 to 5cm:	1425
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	180
Aluminum 10 to 20cm:	25000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	65
Aluminum Parent:	20000	Cobalt Parent:	10	Nickel Parent:	44
Arsenic 0 to 5cm:	37	Copper 0 to 5cm:	1110	Selenium 0 to 5cm:	9
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	210	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	40	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	35	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	26500	Strontium 0 to 5cm:	48
Barium 5 to 10cm:	91	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	43
Barium 10 to 20cm:	140	Iron 10 to 20cm:	22000	Strontium 10 to 20cm:	61
Barium Parent:	160	Iron Parent:	27000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	117	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	17	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	49
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	48
Cadmium 0 to 5cm:	2.3	Magnesium 0 to 5cm:	1950	Zinc 0 to 5cm:	88
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3100	Zinc 5 to 10cm:	51
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5500	Zinc 10 to 20cm:	46
Cadmium Parent:	ND	Magnesium Parent:	7300	Zinc Parent:	33
Calcium 0 to 5cm:	5100	Manganese 0 to 5cm:	780	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	610	pH 5 to 10cm:	5.4
Calcium 10 to 20cm:	4800	Manganese 10 to 20cm:	380	pH 10 to 20cm:	5.3
Calcium Parent:	5000	Manganese Parent:	340	pH Parent:	NA
Chromium 0 to 5cm:	44	Molybdenum 0 to 5cm:	1.6	C TOC 0 to 5cm:	259
Chromium 5 to 10cm:	50	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	30
Chromium 10 to 20cm:	61	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	9.4
Chromium Parent:	67	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

289

Date sampled

8/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

289

Location of sampling site

Hwy 537: ~2km S of Wannapitae.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Found slightly undulating area on top of bedrock outcrop. Slight slope to the N. Veg: birch, maple, spruce, pine, aspen, sweet fern, pussy willow, blueberry bushes, clubmoss, lichen, grass. Floor: leaf litter, moss, lichen, twigs.

Easting

516812

NAD83
Zone 17

Northing

5145751

Reference

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 2 cm; Charcoal 2 to 3 cm; Ae: 3 to 15 cm (10YR7/1); B: 15 to 25 (10YR6/8); B to C: 25 to >30 cm (2.5Y6/4).
Texture: silt loam.

Parent material field description

Sample collected from 80 to 120 cm. Texture: fine to very fine-grained silty sand. Colour: 2.5Y 7/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10743

Depth 5 - 10 cm:

10745

Depth 10 - 20 cm:

10747

Dup. Depth 0 - 5 cm:

10744

Dup. Depth 5 - 10 cm

10746

Dup. Depth 10 - 20 cm:

10748

Parent material:

10749

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\289\2001-CEM-289-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\289\CEM-289-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\289\2001-CEM-289-
Core_1.JPG

Parent material photo

Site Number

289

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5800	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	372
Aluminum 5 to 10cm:	10350	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	58
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	45
Aluminum Parent:	9200	Cobalt Parent:	6	Nickel Parent:	16
Arsenic 0 to 5cm:	22	Copper 0 to 5cm:	620	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	21.5	Copper 5 to 10cm:	84	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	20	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	81	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	36	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	55	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	46
Barium Parent:	34	Iron Parent:	14000	Strontium Parent:	41
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	895	Zinc 0 to 5cm:	25
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	15
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2100	Zinc 10 to 20cm:	21
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	13
Calcium 0 to 5cm:	1800	Manganese 0 to 5cm:	165	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	2600	Manganese 5 to 10cm:	150	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	160	pH 10 to 20cm:	4.8
Calcium Parent:	4300	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	77
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	16
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	18
Chromium Parent:	36	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

290

Date sampled

9/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

290

Location of sampling site

Dryden Rd. East: off Hwy 537 S of Wahnapiatae.

Historical Inco sample station

OBM map number

????

Field observations

Area is forested (dominantly deciduous) and flat. Area climbs to the NE (50 foot climb to power lines); large outcrops (20-30 feet) on SW. Tress: birch 10%, aspen (5%), spruce (1%), maple (5%). Shrubs: willow (2 to 3%), birch (1%), oak (10%), alder (1%), maple (5%); Herbs: blueberry (30 to 40%), bunchberry (5%), bracken fern (2 to 3%), hairgrass (5%), Canada bluejoint (5%), moss and lichen on trees, moss and lichen on ground.

Easting

519169

NAD83
Zone 17

Northing

5145725

Reference

Wahapitie Hwy
537/Dryden Rd. E

Altitude(m)

270

Conditions

Cool, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 7.5 cm; Ah: 0 to 2 cm, (fibrous, brown); Ae: 2 to 3 cm; Bg: 3 to >30 cm (grey; mottled: orange light grey); Texture: sand-silt-clay; clay fraction also contains pebble size clasts.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10823

Depth 5 - 10 cm:

10824

Depth 10 - 20 cm:

10825

Dup. Depth 0 - 5 cm:

10826

Dup. Depth 5 - 10 cm

10827

Dup. Depth 10 - 20 cm:

10828

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\290\CEM-290-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

290

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15500	Cobalt 0 to 5cm:	28	Nickel 0 to 5cm:	685
Aluminum 5 to 10cm:	21500	Cobalt 5 to 10cm:	19	Nickel 5 to 10cm:	90
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	55
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	31	Copper 0 to 5cm:	560	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	31	Copper 5 to 10cm:	78	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	28	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	155	Iron 0 to 5cm:	24000	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	120	Iron 5 to 10cm:	22000	Strontium 5 to 10cm:	49
Barium 10 to 20cm:	93	Iron 10 to 20cm:	21000	Strontium 10 to 20cm:	47
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	83	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	42
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	2800	Zinc 0 to 5cm:	54
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4150	Zinc 5 to 10cm:	35
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4200	Zinc 10 to 20cm:	33
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4050	Manganese 0 to 5cm:	500	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3550	Manganese 5 to 10cm:	565	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3400	Manganese 10 to 20cm:	300	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	58	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	57	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

291

Date sampled

8/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

291

Location of sampling site

Kelly Lake Road.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Site is not wet, old styrofoam board, and grass matted down (trail, track?) to the south. Veg: mounds/hummocks of grass, sphagnum moss under the grass, old desiccated tree stumps. Vegetation on and around ditch: weeds, goldenrod, and other flowering plants, grasses, trees mostly aspen. The ditch leads to Junction Creek, SE to NW, the creek is west of the sampling site.

Easting

497423

NAD83
Zone 17

Northing

5145275

Reference

Kelly Lake Delta

Altitude(m)

259

Conditions

Dry, cool, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 3 cm, dried grass, some sphagnum hummocks up to 6 cm thick; A: 3 to 18 cm, OM plus fibres (herbaceous) in silt, (light brown); B: 18 to 22 cm (grey brown), mottled orange; horizon (?): 22 to 30 cm, (light yellow), sand; possible flooding of Junction Creek ? silt and clay grey but crumbly contains fibres (yellow) roots(?) 30 to 116 cm grades from crumbly grey silt-clay to mottled clay (orange); peat gradation to more humified peat >116 cm.

Parent material field description

Two samples collected. One from 73 to 109 cm, the other 143 to 179 cm. Samples are composed of peat.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10077

Depth 5 - 10 cm:

10078

Depth 10 - 20 cm:

10079

Dup. Depth 0 - 5 cm:

10081

Dup. Depth 5 - 10 cm

10080

Dup. Depth 10 - 20 cm:

10083

Parent material:

10082

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\291\2001-CEM-291-
soilpit_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\291\CEM-291-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\291\2001-CEM-291-
Soilpit_1.JPG

Parent material photo

Site Number

291

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	39	Nickel 0 to 5cm:	1400
Aluminum 5 to 10cm:	15900	Cobalt 5 to 10cm:	26	Nickel 5 to 10cm:	733
Aluminum 10 to 20cm:	9200	Cobalt 10 to 20cm:	20	Nickel 10 to 20cm:	485
Aluminum Parent:	14000	Cobalt Parent:	10	Nickel Parent:	163
Arsenic 0 to 5cm:	46	Copper 0 to 5cm:	1350	Selenium 0 to 5cm:	13
Arsenic 5 to 10cm:	32	Copper 5 to 10cm:	945	Selenium 5 to 10cm:	4.5
Arsenic 10 to 20cm:	51	Copper 10 to 20cm:	510	Selenium 10 to 20cm:	1
Arsenic Parent:	98	Copper Parent:	270	Selenium Parent:	ND
Barium 0 to 5cm:	95	Iron 0 to 5cm:	31500	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	96	Iron 5 to 10cm:	22800	Strontium 5 to 10cm:	45
Barium 10 to 20cm:	68	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	28
Barium Parent:	98	Iron Parent:	14000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	105	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	43	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	19	Vanadium 10 to 20cm:	28
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4400	Zinc 0 to 5cm:	77
Cadmium 5 to 10cm:	0.8	Magnesium 5 to 10cm:	4200	Zinc 5 to 10cm:	67
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3050	Zinc 10 to 20cm:	56
Cadmium Parent:	ND	Magnesium Parent:	3500	Zinc Parent:	30
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	195	pH 0 to 5cm:	5.6
Calcium 5 to 10cm:	4550	Manganese 5 to 10cm:	213	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2850	Manganese 10 to 20cm:	175	pH 10 to 20cm:	6.2
Calcium Parent:	8300	Manganese Parent:	160	pH Parent:	NA
Chromium 0 to 5cm:	71	Molybdenum 0 to 5cm:	1.8	C TOC 0 to 5cm:	39
Chromium 5 to 10cm:	49	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	11
Chromium Parent:	53	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

292

Date sampled

11/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

292

Location of sampling site

Hwy 537: ~0.4 km past Finni Rd. (east side of Hwy)

Historical Inco sample station

OBM map number

41 I/7

Field observations

Flat with no hummocks; densely forested. Trees: 50% poplar, balsam, few birch. Shrub: 45% green alder, bracken ferns, juvenile poplar. Herb: grass, blueberry. Floor cover: leaves, dead trees.

Easting

517828

NAD83
Zone 17

Northing

5145288

Reference

Wahnapiatae

Altitude(m)

266

Conditions

Wet

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Bg: 0 to >42 cm (light grey).
Texture: silty grading to clay with depth. Soil profile was homogenous throughout site.

Parent material field description

Sample was collected from 74 to 112 cm.
Texture: clay. Colour: grey to light brown, with prominent red-brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11650

Depth 5 - 10 cm:

11651

Depth 10 - 20 cm:

11652

Dup. Depth 0 - 5 cm:

11657

Dup. Depth 5 - 10 cm

11658

Dup. Depth 10 - 20 cm:

11659

Parent material:

11656

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\292\2001-CEM-292-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\292\CEM-292-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\292\2001-CEM-292-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\292\2001-CEM-292-
PARENT_1.JPG.jpg

Site Number

292

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15000	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	514
Aluminum 5 to 10cm:	16500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	52
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	33
Aluminum Parent:	23000	Cobalt Parent:	12	Nickel Parent:	57
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	515	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	83	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	30	Selenium Parent:	ND
Barium 0 to 5cm:	106	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	78	Iron 5 to 10cm:	18000	Strontium 5 to 10cm:	55
Barium 10 to 20cm:	81	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	57
Barium Parent:	150	Iron Parent:	30000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	69	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	42
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	42
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	54
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	2650	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3500	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3650	Zinc 10 to 20cm:	25
Cadmium Parent:	ND	Magnesium Parent:	9200	Zinc Parent:	38
Calcium 0 to 5cm:	3850	Manganese 0 to 5cm:	265	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	3650	Manganese 5 to 10cm:	245	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4100	Manganese 10 to 20cm:	250	pH 10 to 20cm:	NA
Calcium Parent:	6800	Manganese Parent:	400	pH Parent:	NA
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	216
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	48	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	98	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

293

Date sampled

8/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

293

Location of sampling site

In the field behind the old INCO greenhouse, between Godfrey and School Rd.

Historical Inco sample station

1

OBM map number

41 I/6

Field observations

Field/opening near the aspen and soil site has not been filled nor contoured. There is a depression parallel to the old railway line, you will see a sewer pipe. Trees: all aspen, very large and small willow to the east. Shrubs: none; grasses: vetch. Observed patches of clay at the surface. Bedrock to the south, gently sloping to an old railway depression; walking path to the east.

Easting

494571

NAD83
Zone 17

Northing

5146598

Reference

Coper Cliff
Greenhouse

Altitude(m)

271

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 3 cm; A: 0 to 6 cm; B: 6 to 9 cm (5YR 14/1), very variable, sometimes not present, coarse-granular; Cg: 9 to >30 cm (2.5Y 5/11) mottles: 5YR 4/6, clay.

Parent material field description

Parent collected from 60 to 90 cm. Texture: clay. Colour 2.5Y 5/1. Mottles: 5YR 4/6.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10013

Depth 5 - 10 cm:

10028

Depth 10 - 20 cm:

10014

Dup. Depth 0 - 5 cm:

10016

Dup. Depth 5 - 10 cm

10015

Dup. Depth 10 - 20 cm:

10017

Parent material:

10027

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\293\2001-CEM-293-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\293\CEM-293-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\293\2001-CEM-293-
Core_1.JPG

Parent material photo

Site Number

293

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	79	Nickel 0 to 5cm:	2900
Aluminum 5 to 10cm:	16500	Cobalt 5 to 10cm:	19	Nickel 5 to 10cm:	554
Aluminum 10 to 20cm:	16550	Cobalt 10 to 20cm:	13	Nickel 10 to 20cm:	305
Aluminum Parent:	21000	Cobalt Parent:	12	Nickel Parent:	53
Arsenic 0 to 5cm:	29	Copper 0 to 5cm:	3850	Selenium 0 to 5cm:	17
Arsenic 5 to 10cm:	14	Copper 5 to 10cm:	460	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	8.5	Copper 10 to 20cm:	250	Selenium 10 to 20cm:	0.5
Arsenic Parent:	ND	Copper Parent:	41	Selenium Parent:	ND
Barium 0 to 5cm:	125	Iron 0 to 5cm:	40500	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	110	Iron 5 to 10cm:	24500	Strontium 5 to 10cm:	54
Barium 10 to 20cm:	99	Iron 10 to 20cm:	18750	Strontium 10 to 20cm:	50
Barium Parent:	160	Iron Parent:	28000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	120	Vanadium 0 to 5cm:	46
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	17	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	13	Vanadium 10 to 20cm:	41
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	54
Cadmium 0 to 5cm:	2.8	Magnesium 0 to 5cm:	6200	Zinc 0 to 5cm:	115
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	7750	Zinc 5 to 10cm:	40
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6900	Zinc 10 to 20cm:	33
Cadmium Parent:	ND	Magnesium Parent:	14000	Zinc Parent:	44
Calcium 0 to 5cm:	9400	Manganese 0 to 5cm:	290	pH 0 to 5cm:	6.1
Calcium 5 to 10cm:	10400	Manganese 5 to 10cm:	305	pH 5 to 10cm:	7.3
Calcium 10 to 20cm:	12550	Manganese 10 to 20cm:	279	pH 10 to 20cm:	NA
Calcium Parent:	21000	Manganese Parent:	460	pH Parent:	7.8
Chromium 0 to 5cm:	80	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	80
Chromium 5 to 10cm:	62	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	14
Chromium 10 to 20cm:	67	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	81	Molybdenum Parent:	ND	C TOC Parent:	2.1

Sudbury Regional Soils Project 2001

Site Number

294

Date sampled

9/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

294

Location of sampling site

SW bypass from Coniston; north side of Daisy Lake.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area dominated by bedrock outcrops with pockets of soil between bedrock. Very barren, trees small and rare. Veg: birch (dominant), spruce, dwarf birch, maple, oak, pine (all rare) Labrador tea, moss, lichen, blueberry (no berries), club moss, grasses. Ground: rare leaf litter and twigs, mostly moss. NO ASPEN

Easting

508678

NAD83
Zone 17

Northing

5145035

Reference

Altitude(m)

314

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

OM: 0 to 3 cm, Ah: 0 to 2 cm; Ae: 2 to 7 cm (10YR6/) clear boundary; Bf: 7 to 18 cm (10YR3/6), diffuse boundary; Bm or BC:18 to >30 cm (10YR5/6). Texture: silty sand (with some very coarse grained sand).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10195

Depth 5 - 10 cm:

10197

Depth 10 - 20 cm:

10199

Dup. Depth 0 - 5 cm:

10196

Dup. Depth 5 - 10 cm

10198

Dup. Depth 10 - 20 cm:

10200

Parent material:

Parent material field description

Could not collect parent material. Soil was too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\294\2001-CEM-294-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\294\CEM-294-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\294\2001-CEM-294-
Core_1.JPG

Parent material photo

Site Number

294

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5500	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	370
Aluminum 5 to 10cm:	15500	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	39
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	42
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	33	Copper 0 to 5cm:	600	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	5	Copper 5 to 10cm:	130	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	66	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	59	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	ND
Barium 5 to 10cm:	42	Iron 5 to 10cm:	18500	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	57	Iron 10 to 20cm:	19500	Strontium 10 to 20cm:	35
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	43
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	605	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1200	Zinc 5 to 10cm:	20
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2050	Zinc 10 to 20cm:	27
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	515	Manganese 0 to 5cm:	51	pH 0 to 5cm:	3.9
Calcium 5 to 10cm:	1900	Manganese 5 to 10cm:	95	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	2600	Manganese 10 to 20cm:	125	pH 10 to 20cm:	4.9
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	54
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	26
Chromium 10 to 20cm:	48	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	24
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

295

Date sampled

11/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

295

Location of sampling site

Hwy 17 to 2nd ave Conniston; right on Concession St.; left on Edward St.; Park car at Edward and Stevens (cart road).

Historical Inco sample station

OBM map number

41 I/7

Field observations

Flat perched plateau, outcrops on all sides. Trees: 10% birch and oak. Shrub: 30% baby birch and willow. Herbs: grass; floor cover moss, leaves.

Easting

510334

NAD83
Zone 17

Northing

5144292

Reference

Coniston

Altitude(m)

269

Conditions

Wet, rainy,
snowing

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ae: 0 to 6 cm (brownish grey); Bg: >6 cm (light grey). Texture: silty clay.

Parent material field description

Sample was collected from 76 to 105 cm. Texture: silty clay. Colour: light grey.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11667

Depth 5 - 10 cm:

11668

Depth 10 - 20 cm:

11669

Dup. Depth 0 - 5 cm:

11671

Dup. Depth 5 - 10 cm:

11672

Dup. Depth 10 - 20 cm:

11673

Parent material:

11670

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\295\2001-CEM-295-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\295\CEM-295-
soilprofilecdr.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\295\2001-CEM-295-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\295\2001-CEM-295-
PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

295

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	18500	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	271
Aluminum 5 to 10cm:	22000	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	140
Aluminum 10 to 20cm:	24500	Cobalt 10 to 20cm:	14	Nickel 10 to 20cm:	101
Aluminum Parent:	27000	Cobalt Parent:	16	Nickel Parent:	74
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	370	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	225	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	90	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	61	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	25500	Strontium 0 to 5cm:	58
Barium 5 to 10cm:	130	Iron 5 to 10cm:	25000	Strontium 5 to 10cm:	56
Barium 10 to 20cm:	135	Iron 10 to 20cm:	27500	Strontium 10 to 20cm:	52
Barium Parent:	210	Iron Parent:	35000	Strontium Parent:	65
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	27	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9.5	Vanadium 10 to 20cm:	49
Beryllium Parent:	0.58	Lead Parent:	11	Vanadium Parent:	59
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3850	Zinc 0 to 5cm:	39
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5950	Zinc 5 to 10cm:	56
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	7550	Zinc 10 to 20cm:	56
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	50
Calcium 0 to 5cm:	3950	Manganese 0 to 5cm:	340	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	4150	Manganese 5 to 10cm:	430	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	3850	Manganese 10 to 20cm:	440	pH 10 to 20cm:	5
Calcium Parent:	6600	Manganese Parent:	510	pH Parent:	6.3
Chromium 0 to 5cm:	54	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	25
Chromium 5 to 10cm:	57	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	10
Chromium 10 to 20cm:	65	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	6.2
Chromium Parent:	84	Molybdenum Parent:	ND	C TOC Parent:	3.7

Sudbury Regional Soils Project 2001

Site Number

296

Date sampled

9/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

296

Location of sampling site

Finni Rd. off Hwy 537 S of Wahnapiatae.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Semi forested flat area between 2 wet areas. Forest floor composed mostly of moss, not much leaf litter; hummocky. Trees: birch 2 to 3%; Shrubs: willow (1%), Labrador tea (10 to 29%), birch (10%); Herbs: blueberry (2%), 10% leaf litter.

Easting

513629

NAD83
Zone 17

Northing

5143798

Reference

Finni Rd. North

Altitude(m)

278

Conditions

Cool, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 7 cm; A: 0 to 18 cm (contains charcoal 6 to 9 cm below surface] Ah: 0 to 6 (brown to black); Ae: 6 to 18 cm, not always present; Bf: 18 to 31 cm (red brown); Bg: >31 cm. Texture: silty sand with some pebbles.

Parent material field description

Parent material collected from 61 to 80 cm. Texture: clay Colour: grey with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10831

Depth 5 - 10 cm:

10832

Depth 10 - 20 cm:

10838

Dup. Depth 0 - 5 cm:

10837

Dup. Depth 5 - 10 cm

10829

Dup. Depth 10 - 20 cm:

10830

Parent material:

10839

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\296\CEM-296-soilprofilecdr.jpg

Core photo 1

Parent material photo

Site Number

296

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	199
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	89
Aluminum 10 to 20cm:	16000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	36
Aluminum Parent:	19000	Cobalt Parent:	8	Nickel Parent:	47
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	290	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	160	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	50	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	33	Selenium Parent:	ND
Barium 0 to 5cm:	49	Iron 0 to 5cm:	22000	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	47	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	28
Barium 10 to 20cm:	53	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	40
Barium Parent:	130	Iron Parent:	22000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	44
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	7.6
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2050	Zinc 5 to 10cm:	17
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2650	Zinc 10 to 20cm:	18
Cadmium Parent:	ND	Magnesium Parent:	6000	Zinc Parent:	26
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	115	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2150	Manganese 5 to 10cm:	115	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3300	Manganese 10 to 20cm:	140	pH 10 to 20cm:	NA
Calcium Parent:	5300	Manganese Parent:	250	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	35	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

297

Date sampled

8/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

297

Location of sampling site

Southview Dr.

Historical Inco sample station

59

OBM map number

41 I/6

Field observations

Site contains unusual silty clay horizon; not suitable to sample due to buried garbage and high human traffic. Area undulating. Veg: mixed weeds, grasses, mosses, lichen 50% floor cover; no bushes, aspen, birch, pine ~5%, stunted maple. This site was difficult to sample: (1) to find a suitable 10 x 10 m area with no garbage, (2) to auger/core through the clay. In some places we hit clay just below leaf litter, further east the soil is well developed with distinct horizons. Great variability in soil at this site.

Easting

497326

NAD83
Zone 17

Northing

5144869

Reference

Robinson Lake

Altitude(m)

328

Conditions

Clear & sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 3 cm; A-Ae: 0 to 22 cm (brown to grey), silty; B: 22 to 60 cm (yellow), silt (horizon sometimes not seen); C: >60 cm (white), clay-silt.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10005

Depth 5 - 10 cm:

10011

Depth 10 - 20 cm:

10009

Dup. Depth 0 - 5 cm:

10004

Dup. Depth 5 - 10 cm

10010

Dup. Depth 10 - 20 cm:

10001

Parent material:

10002

Parent material field description

Parent material was collected from two holes between 60 and 75 cm. Texture: silt-clay. Colour: white with brown mottles.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\297\2001-CEM-297-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\297\CEM-297-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\297\2001-CEM-297-
Soilnit_1.JPG

Parent material photo

Site Number

297

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11500	Cobalt 0 to 5cm:	31	Nickel 0 to 5cm:	1050
Aluminum 5 to 10cm:	23900	Cobalt 5 to 10cm:	19	Nickel 5 to 10cm:	465
Aluminum 10 to 20cm:	25500	Cobalt 10 to 20cm:	14	Nickel 10 to 20cm:	210
Aluminum Parent:	19000	Cobalt Parent:	11	Nickel Parent:	76
Arsenic 0 to 5cm:	18	Copper 0 to 5cm:	995	Selenium 0 to 5cm:	7
Arsenic 5 to 10cm:	18	Copper 5 to 10cm:	405	Selenium 5 to 10cm:	3
Arsenic 10 to 20cm:	8.5	Copper 10 to 20cm:	250	Selenium 10 to 20cm:	1
Arsenic Parent:	ND	Copper Parent:	62	Selenium Parent:	ND
Barium 0 to 5cm:	155	Iron 0 to 5cm:	25500	Strontium 0 to 5cm:	41
Barium 5 to 10cm:	250	Iron 5 to 10cm:	23350	Strontium 5 to 10cm:	62
Barium 10 to 20cm:	165	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	58
Barium Parent:	160	Iron Parent:	25000	Strontium Parent:	55
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	118	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	120	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	74	Vanadium 10 to 20cm:	44
Beryllium Parent:	ND	Lead Parent:	9	Vanadium Parent:	48
Cadmium 0 to 5cm:	0.85	Magnesium 0 to 5cm:	3100	Zinc 0 to 5cm:	109
Cadmium 5 to 10cm:	0.45	Magnesium 5 to 10cm:	4250	Zinc 5 to 10cm:	149
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4150	Zinc 10 to 20cm:	84
Cadmium Parent:	ND	Magnesium Parent:	7000	Zinc Parent:	33
Calcium 0 to 5cm:	5150	Manganese 0 to 5cm:	295	pH 0 to 5cm:	5.8
Calcium 5 to 10cm:	7250	Manganese 5 to 10cm:	377	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4450	Manganese 10 to 20cm:	434	pH 10 to 20cm:	NA
Calcium Parent:	5000	Manganese Parent:	310	pH Parent:	NA
Chromium 0 to 5cm:	55	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	47
Chromium 5 to 10cm:	50	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	66	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

298

Date sampled

9/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

298

Location of sampling site

Finni Rd. off Hwy 537 S. of Wannapitae.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area dominated by bedrock. Found slightly undulating area, slightly sloping to SW, some trees. Veg: birch, oak, maple, red pine, pussy willow, blueberry (no berries) grasses, lichens, mosses. Floor: leaf litter, twigs, moss, lichen, NO ASPEN.

Easting

515515

Northing

5143814

NAD83
Zone 17

Reference

Altitude(m)

292

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm (10YR2/1); Ae: 1 to 11 cm (10YR6/2); B: 11 to 18 cm (7.5YR4/6); BC: 18 to >30 cm. Texture: loamy sand to silty sand (coarsesand); soil contains abundant pebbles through all horizons; area is very stony (exceedingly rocky).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10204

Depth 5 - 10 cm:

10206

Depth 10 - 20 cm:

10208

Dup. Depth 0 - 5 cm:

10205

Dup. Depth 5 - 10 cm:

10207

Dup. Depth 10 - 20 cm:

10209

Parent material:

Parent material field description

No parent material could be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\298\CEM-298-
soilprofilecdr.jpg

Core photo 1

Parent material photo

Site Number

298

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7700	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	405
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	8	Nickel 5 to 10cm:	56
Aluminum 10 to 20cm:	25500	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	53
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	465	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	11	Copper 5 to 10cm:	110	Selenium 5 to 10cm:	4.5
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	60	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	67	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	60	Iron 5 to 10cm:	17000	Strontium 5 to 10cm:	38
Barium 10 to 20cm:	95	Iron 10 to 20cm:	23000	Strontium 10 to 20cm:	44
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	23
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	45
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1350	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	33
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4150	Zinc 10 to 20cm:	39
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1150	Manganese 0 to 5cm:	145	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	2950	Manganese 5 to 10cm:	230	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	235	pH 10 to 20cm:	5
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	99
Chromium 5 to 10cm:	50	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	22
Chromium 10 to 20cm:	62	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	15
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

299

Date sampled

9/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

299

Location of sampling site

South shore of Lake Laurentian; Ida Rd., off Hwy 69 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

New soil site on level to slightly sloping area (<10, SSW). Took sample mid-slope, Area surrounded by Lake Laurentian, lots of vegetation. Veg: birch, (dominant), maple, oak, jack pine, pussy willow, bracken fern, blueberry, grasses, sweet fern, large leaf aster, very tall aspen, have to take aspen off site. Floor: grass, leaf litter, twigs, logs. Took aspen ~100 m west of soil site.

Easting

503407

NAD83
Zone 17

Northing

5143315

Reference

Altitude(m)

280

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 1 cm; Ae: 1 to 3 cm (found in ~10% of samples); Bt: 3 to 14 cm (10YR 5/4); Bm: 14 to >30 cm (2.5Y7/2).
Texture: silty clay loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10272

Depth 5 - 10 cm:

10274

Depth 10 - 20 cm:

10276

Dup. Depth 0 - 5 cm:

10273

Dup. Depth 5 - 10 cm

10275

Dup. Depth 10 - 20 cm:

10277

Parent material:

Parent material field description

Could not collect parent material. Area was too stony; could not auger past 40 cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\299\2001-CEM-299-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\299\CEM-299-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\299\2001-CEM-299-
Core_1.JPG

Parent material photo

Site Number

299

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	32	Nickel 0 to 5cm:	579
Aluminum 5 to 10cm:	16000	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	49
Aluminum 10 to 20cm:	16500	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	34
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	565	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	66	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	145	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	69	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	72	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	50
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8.5	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	39
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	55
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3250	Zinc 5 to 10cm:	35
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4050	Zinc 10 to 20cm:	38
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3100	Manganese 0 to 5cm:	1010	pH 0 to 5cm:	5
Calcium 5 to 10cm:	3750	Manganese 5 to 10cm:	355	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	275	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	74
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

300

Date sampled

8/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

300

Location of sampling site

Finni Rd. off Hwy 537 south from Wahnapite.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Forest floor cover 20%; mostly moss cover, some grass, Herb: 3 types of moss, 3 or 4 types of lichen (polytrichium, commune, pohlia, nutans) Brachythecium moss, lichen on trees, and rocks. Shrub: oak, maple, willow, sheep laurel; trees: birch (dominant). Topography, undulating, slightly hummocky, large outcrop to north. Wet soil.

Easting

514418

NAD83
Zone 17

Northing

5143282

Reference

Finni Rd. @ Hwy 537

Altitude(m)

265

Conditions

Windy/rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 3 cm, leaf litter, moss, lichen, grass;
Ah: 0 to 3 cm; Ae: 3 to 8 cm; Bt: 8 to 20 cm (horizon not always present); Bg: >20 cm.
Texture: clay. Almost no soil variability.

Parent material field description

Collected parent material from several holes between 61 and 78 cm. Texture: clay. Colour: grey to brown with brown/orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10754

Depth 5 - 10 cm:

10755

Depth 10 - 20 cm:

10756

Dup. Depth 0 - 5 cm:

10758

Dup. Depth 5 - 10 cm

10760

Dup. Depth 10 - 20 cm:

10759

Parent material:

10757

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\300\CEM-300-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

300

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6700	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	445
Aluminum 5 to 10cm:	17500	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	94
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	80
Aluminum Parent:	15000	Cobalt Parent:	9	Nickel Parent:	39
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	615	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	125	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	41	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	68	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	19
Barium 5 to 10cm:	80	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	52
Barium 10 to 20cm:	73	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	53
Barium Parent:	47	Iron Parent:	20000	Strontium Parent:	41
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	44
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	44
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	40
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2750	Zinc 5 to 10cm:	39
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3250	Zinc 10 to 20cm:	38
Cadmium Parent:	ND	Magnesium Parent:	4800	Zinc Parent:	21
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	290	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	4800	Manganese 5 to 10cm:	280	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	5000	Manganese 10 to 20cm:	225	pH 10 to 20cm:	5
Calcium Parent:	5100	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	83
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	6.8
Chromium 10 to 20cm:	50	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	17
Chromium Parent:	49	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

301

Date sampled

9/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

301

Location of sampling site

Red Deer Rd. N off Hwy 537 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Open field on stream bank: stream is 10 m to the north of quadrant, and is 20 to 30 cm wide, meander or beaver dam (not occupied) is 50 m to west. Field is hummocky, fallen and buried trees, vegetation is predominantly herbaceous (no trees) Shrubs: 1 or 2 stunted birch/golden rod. Herbs: yarrow and grasses, rice, Canada blue joint, quack, panicum species, hock weed, moss and lichen account for 99% of vegetation.

Easting

518037

NAD83
Zone 17

Northing

5142936

Reference

Major Rd.

Altitude(m)

243

Conditions

Sunny, mild, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 10 cm; Ah: 0 to 11 cm; Bg: 11 to 100 cm (grey with orange mottles). Texture: clay. In addition some cores contained an Ae horizon.

Parent material field description

Sample was collected from 80 to 100 cm. Texture: clay. Colour: light brown; containing black and "gold" coloured flecks.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10798

Depth 5 - 10 cm:

10799

Depth 10 - 20 cm:

10800

Dup. Depth 0 - 5 cm:

10801

Dup. Depth 5 - 10 cm

10802

Dup. Depth 10 - 20 cm:

10803

Parent material:

10796

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\301\CEM-301-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

301

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	335
Aluminum 5 to 10cm:	19000	Cobalt 5 to 10cm:	13	Nickel 5 to 10cm:	220
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	127
Aluminum Parent:	21000	Cobalt Parent:	12	Nickel Parent:	59
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	210	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	20.5	Copper 5 to 10cm:	115	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	50	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	40	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	24500	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	130	Iron 5 to 10cm:	23000	Strontium 5 to 10cm:	41
Barium 10 to 20cm:	120	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	49
Barium Parent:	160	Iron Parent:	28000	Strontium Parent:	53
Beryllium 0 to 5cm:	0.25	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	40
Beryllium 5 to 10cm:	0.26	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9	Vanadium 10 to 20cm:	45
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	52
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	5450	Zinc 0 to 5cm:	64
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5700	Zinc 5 to 10cm:	53
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6350	Zinc 10 to 20cm:	49
Cadmium Parent:	ND	Magnesium Parent:	7200	Zinc Parent:	44
Calcium 0 to 5cm:	2950	Manganese 0 to 5cm:	340	pH 0 to 5cm:	4.7
Calcium 5 to 10cm:	3550	Manganese 5 to 10cm:	280	pH 5 to 10cm:	5.5
Calcium 10 to 20cm:	4250	Manganese 10 to 20cm:	285	pH 10 to 20cm:	5.3
Calcium Parent:	4900	Manganese Parent:	390	pH Parent:	NA
Chromium 0 to 5cm:	67	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	76
Chromium 5 to 10cm:	73	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	35
Chromium 10 to 20cm:	65	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	19
Chromium Parent:	78	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

302

Date sampled

8/24/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

302

Location of sampling site

Richard Lake Rd. off Hwy 69 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area is predominantly flat with outcrops. Veg: 5% adult white birch, red maple, T. aspen, lichen on trees, moss on trees. Shrub: aspen, birch, willow, oak, alder; almost 50% ground cover with blueberry, common hair grass, flowering plants, patch of moss on ground, leaf litter.

Easting

507723

NAD83
Zone 17

Northing

5142849

Reference

Richard Lake

Altitude(m)

271

Conditions

Sunny, cool, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 5 cm, leaf litter, grass litter, fibrous organic matter; charcoal below organic matter; Ae: 5 to 14 cm (not always present); B: 7 to 15 cm (tan/brown), not always present; C: 15 to >30 cm.

Parent material field description

Sample was collected from several holes between 60 and 76 cm. Texture: clay. Colour: greyish brown with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10119

Depth 5 - 10 cm:

10120

Depth 10 - 20 cm:

10121

Dup. Depth 0 - 5 cm:

10122

Dup. Depth 5 - 10 cm

10123

Dup. Depth 10 - 20 cm:

10124

Parent material:

10115

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\302\CEM-302-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

302

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	27500	Cobalt 0 to 5cm:	40	Nickel 0 to 5cm:	695
Aluminum 5 to 10cm:	16000	Cobalt 5 to 10cm:	15	Nickel 5 to 10cm:	120
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	13	Nickel 10 to 20cm:	86
Aluminum Parent:	29000	Cobalt Parent:	17	Nickel Parent:	87
Arsenic 0 to 5cm:	38	Copper 0 to 5cm:	720	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	120	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	2.5	Copper 10 to 20cm:	48	Selenium 10 to 20cm:	ND
Arsenic Parent:	6	Copper Parent:	74	Selenium Parent:	ND
Barium 0 to 5cm:	215	Iron 0 to 5cm:	27000	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	101	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	104	Iron 10 to 20cm:	25500	Strontium 10 to 20cm:	37
Barium Parent:	260	Iron Parent:	37000	Strontium Parent:	53
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	88	Vanadium 0 to 5cm:	51
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9.5	Vanadium 10 to 20cm:	49
Beryllium Parent:	0.69	Lead Parent:	14	Vanadium Parent:	63
Cadmium 0 to 5cm:	1.4	Magnesium 0 to 5cm:	4050	Zinc 0 to 5cm:	103
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4400	Zinc 5 to 10cm:	67
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6100	Zinc 10 to 20cm:	58
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	48
Calcium 0 to 5cm:	4550	Manganese 0 to 5cm:	1030	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	595	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	2350	Manganese 10 to 20cm:	450	pH 10 to 20cm:	5.3
Calcium Parent:	5200	Manganese Parent:	490	pH Parent:	NA
Chromium 0 to 5cm:	65	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	62	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	21
Chromium 10 to 20cm:	78	Molybdenum 10 to 20cm:	0.9	C TOC 10 to 20cm:	14
Chromium Parent:	100	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

303

Date sampled

8/31/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

303

Location of sampling site

St Cloud Rd. off Hwy 537.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site was chosen within a flat, birch dominated forest. Herb: milkweed, horsetail, golden rod; shrub: blueberry, maple, oak, willow; trees 30%: white birch, aspen, maple, oak; mostly grass with lichen and moss covering forest floor.

Easting

516616

Northing

5142073

NAD83
Zone 17

Reference

St Cloud Rd. @
Wahamaa Rd.

Altitude(m)

276

Conditions

Humid, cool,
overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 10 cm, leaf, twig, moss; Ah: 0 to 5 cm; (dark grey with mottling); Bg: 15 to >30 cm (grey with orange mottling). Texture: clay. No soil variability.

Parent material field description

3 samples collected at varying depths. 1) taken between 47 and 58 cm; clay with pebbles; grey with orange mottles. 2) taken between 58 to 88 cm (same description as previous) 3) 88 to 105 cm; finer grained material, uniform grey in colour.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10164

Depth 5 - 10 cm:

10165

Depth 10 - 20 cm:

10773

Dup. Depth 0 - 5 cm:

10777

Dup. Depth 5 - 10 cm:

10778

Dup. Depth 10 - 20 cm:

10779

Parent material:

10774

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\303\CEM-303-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

303

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	23500	Cobalt 0 to 5cm:	76	Nickel 0 to 5cm:	700
Aluminum 5 to 10cm:	34500	Cobalt 5 to 10cm:	39	Nickel 5 to 10cm:	231
Aluminum 10 to 20cm:	32500	Cobalt 10 to 20cm:	17	Nickel 10 to 20cm:	135
Aluminum Parent:	44000	Cobalt Parent:	14	Nickel Parent:	68
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	370	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	120	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	45	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	47	Selenium Parent:	ND
Barium 0 to 5cm:	165	Iron 0 to 5cm:	24500	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	200	Iron 5 to 10cm:	30000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	185	Iron 10 to 20cm:	28000	Strontium 10 to 20cm:	45
Barium Parent:	320	Iron Parent:	40000	Strontium Parent:	55
Beryllium 0 to 5cm:	0.95	Lead 0 to 5cm:	56	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	0.78	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	59
Beryllium 10 to 20cm:	0.67	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	53
Beryllium Parent:	0.82	Lead Parent:	8	Vanadium Parent:	72
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	3050	Zinc 0 to 5cm:	66
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	5450	Zinc 5 to 10cm:	75
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	6150	Zinc 10 to 20cm:	64
Cadmium Parent:	ND	Magnesium Parent:	9500	Zinc Parent:	53
Calcium 0 to 5cm:	2500	Manganese 0 to 5cm:	2200	pH 0 to 5cm:	5.4
Calcium 5 to 10cm:	3000	Manganese 5 to 10cm:	1250	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	470	pH 10 to 20cm:	5.5
Calcium Parent:	5600	Manganese Parent:	470	pH Parent:	NA
Chromium 0 to 5cm:	84	Molybdenum 0 to 5cm:	2	C TOC 0 to 5cm:	166
Chromium 5 to 10cm:	87	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	104	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	17
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

304

Date sampled

8/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

304

Location of sampling site

West end of Kelly Lake.

Historical Inco sample station

57

OBM map number

41 I/6

Field observations

Flat area ~30m S of aspen site. Ground cover: leaf litter. Veg: birch, aspen, spruce, maple, some grass, bracken fern, no blueberry bushes.

Easting

491986

NAD83
Zone 17

Northing

5142300

Reference

Duhammel Rd.

Altitude(m)

286

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm (10YR3/2); Ah: 5 to 6 cm (10YR3/1); Ae: 6 to 7 cm (10YR6/1); B: 7 to >20 cm (2.5Y 6/6) Texture: silt. Very hard to get 20 cm of soil.

Parent material field description

Sample was taken from 75+ cm. Very hard to get sample.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10594

Depth 5 - 10 cm:

10596

Depth 10 - 20 cm:

10598

Dup. Depth 0 - 5 cm:

10595

Dup. Depth 5 - 10 cm

10597

Dup. Depth 10 - 20 cm:

10599

Parent material:

10600

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\304\2001-CEM-304-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\304\CEM-304-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\304\2001-CEM-304-
Core_1.JPG

Parent material photo

Site Number

304

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	29	Nickel 0 to 5cm:	830
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	7.5	Nickel 5 to 10cm:	123
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	48
Aluminum Parent:	23000	Cobalt Parent:	12	Nickel Parent:	57
Arsenic 0 to 5cm:	40	Copper 0 to 5cm:	755	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	18	Copper 5 to 10cm:	190	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	4	Copper 10 to 20cm:	49	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	52	Selenium Parent:	ND
Barium 0 to 5cm:	68	Iron 0 to 5cm:	36500	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	54	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	36
Barium 10 to 20cm:	68	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	44
Barium Parent:	170	Iron Parent:	32000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	71	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	40
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	55
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	44
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2350	Zinc 5 to 10cm:	29
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3300	Zinc 10 to 20cm:	35
Cadmium Parent:	ND	Magnesium Parent:	9200	Zinc Parent:	42
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	175	pH 0 to 5cm:	4.5
Calcium 5 to 10cm:	2650	Manganese 5 to 10cm:	145	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	3200	Manganese 10 to 20cm:	185	pH 10 to 20cm:	NA
Calcium Parent:	5500	Manganese Parent:	370	pH Parent:	NA
Chromium 0 to 5cm:	57	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	99
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	26
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	77	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

305

Date sampled

8/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

305

Location of sampling site

Hwy 537 to St Cloud. At St Cloud go North, Turn left (west) onto Wahamaa Rd.; site located at end.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Flat area, stream to SE. Forest floor cover predominantly moss (carpet) ~60%: mushrooms, grass, lichen, bunchberry/just leaf litter. Shrub: sheep laurel, golden rod, Labrador tea. Trees: dominantly birch, less aspen (trembling only). Contamination: can see owner's old bush camp.

Easting

513309

NAD83
Zone 17

Northing

5141926

Reference

Wahamaa Rd.

Altitude(m)

242

Conditions

Sunny cool, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 8 cm, leaf litter, sphagnum moss, grass; charcoal layer; Ah: 0 to 1 cm; Ae: 1 to 3 cm; Bt: 11 to 40 cm (orange brown); Bg: >40 cm (white with orange mottles). Texture: clay.

Parent material field description

Parent material was collected from 83 to 119 cm. Texture: clay. Colour: grey with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10149

Depth 5 - 10 cm:

10150

Depth 10 - 20 cm:

10151

Dup. Depth 0 - 5 cm:

10152

Dup. Depth 5 - 10 cm

10153

Dup. Depth 10 - 20 cm:

10154

Parent material:

10148

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\305\CEM-305-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

305

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4550	Cobalt 0 to 5cm:	21	Nickel 0 to 5cm:	475
Aluminum 5 to 10cm:	6850	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	68
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	56
Aluminum Parent:	7900	Cobalt Parent:	5	Nickel Parent:	22
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	685	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	105	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	37	Selenium 10 to 20cm:	0.5
Arsenic Parent:	6	Copper Parent:	16	Selenium Parent:	ND
Barium 0 to 5cm:	85	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	27	Iron 5 to 10cm:	9200	Strontium 5 to 10cm:	24
Barium 10 to 20cm:	30	Iron 10 to 20cm:	13500	Strontium 10 to 20cm:	28
Barium Parent:	30	Iron Parent:	13000	Strontium Parent:	33
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	63	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	63	Vanadium 5 to 10cm:	21
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	27
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	29
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	880	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	950	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1700	Zinc 10 to 20cm:	26
Cadmium Parent:	ND	Magnesium Parent:	3000	Zinc Parent:	13
Calcium 0 to 5cm:	1900	Manganese 0 to 5cm:	350	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	1850	Manganese 5 to 10cm:	195	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	2700	Manganese 10 to 20cm:	230	pH 10 to 20cm:	5.3
Calcium Parent:	3800	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	103
Chromium 5 to 10cm:	19	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	17
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	14
Chromium Parent:	36	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

306

Date sampled

8/31/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

306

Location of sampling site

St Cloud Rd. off Hwy 537.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Gently sloping to the NE, very rocky terrain, very open, boulders everywhere. Floor cover: moss and lichen. Herb: grass. Shrub: oak, young birch, and maple, ferns, blueberry bush. Trees: birch dominant, trembling aspen, some spruce. Old dried up tree stumps, 2 to 3 feet high in area, covered with lichen.

Easting

516346

NAD83
Zone 17

Northing

5141307

Reference

St Cloud Rd.
opposite Salo Rd.

Altitude(m)

264

Conditions

Humid, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 5 cm, leaf litter, moss, lichen, twigs;
Ah: 0 to 5 cm (black), roots, fibrous; Ae: 5 to 10 cm (dark grey); Bt: 10 to 43 cm, (tan brown) Texture: sand in A horizon, sandy with pebbles in B horizon. Bedrock >43 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10158

Depth 5 - 10 cm:

10159

Depth 10 - 20 cm:

10160

Dup. Depth 0 - 5 cm:

10161

Dup. Depth 5 - 10 cm

10162

Dup. Depth 10 - 20 cm:

10163

Parent material:

Parent material field description

Sample could not be collected; could not auger past 43 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\306\CEM-306-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

306

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10500	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	312
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	69
Aluminum 10 to 20cm:	22000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	50
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	490	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	14	Copper 5 to 10cm:	120	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	3	Copper 10 to 20cm:	43	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	77	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	50	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	7.5
Barium 10 to 20cm:	66	Iron 10 to 20cm:	25000	Strontium 10 to 20cm:	28
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	49
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2450	Zinc 5 to 10cm:	33
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4250	Zinc 10 to 20cm:	46
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1550	Manganese 0 to 5cm:	160	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	1150	Manganese 5 to 10cm:	155	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	230	pH 10 to 20cm:	5
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	107
Chromium 5 to 10cm:	51	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	36
Chromium 10 to 20cm:	67	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	28
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

307

Date sampled

8/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

307

Location of sampling site

Hwy 537 to St Cloud Rd., turn onto Salo Rd.

Historical Inco sample station

OBM map number

41 I/7

Field observations

On a mountain ridge, depressions contain soil and trees. Floor cover: almost none, bare soil, covered in moss and or lichen, bare outcrop and some soil. Herbaceous: some grass, no flowering plants. Shrub: bracken ferns, red pine, oak, willow, blueberry. Trees: predominantly birch, some large red pine.

Easting

513931

NAD83
Zone 17

Northing

5141135

Reference

Salo Rd./St Cloud Rd.

Altitude(m)

263

Conditions

Humid, gusting

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 2 cm, twigs, lichen, moss, leaf almost none; Ah: 0 to 3 cm (black); Ae: 3 to 5 cm; Charcoal layer: <1 cm; Bt 5 to >30 cm (tan brown). Texture: sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10764

Depth 5 - 10 cm:

10768

Depth 10 - 20 cm:

10769

Dup. Depth 0 - 5 cm:

10770

Dup. Depth 5 - 10 cm:

10771

Dup. Depth 10 - 20 cm:

10772

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\307\CEM-307-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

307

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7300	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	470
Aluminum 5 to 10cm:	9850	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	88
Aluminum 10 to 20cm:	20500	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	46
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	30	Copper 0 to 5cm:	655	Selenium 0 to 5cm:	5.5
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	195	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	72	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	74	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	ND
Barium 5 to 10cm:	40	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	ND
Barium 10 to 20cm:	52	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	73	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	29
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	45
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1750	Zinc 5 to 10cm:	24
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3200	Zinc 10 to 20cm:	32
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1200	Manganese 0 to 5cm:	116	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	1070	Manganese 5 to 10cm:	115	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	3800	Manganese 10 to 20cm:	200	pH 10 to 20cm:	4.7
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	128
Chromium 5 to 10cm:	31	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	41
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	26
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

308

Date sampled

8/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

308

Location of sampling site

South of Fielding Park @ west end of Kelly Lake.

Historical Inco sample station

60

OBM map number

41 I/6

Field observations

Note: city spreading lime on bedrock at road, Sudbury Land Reclamation. Took soil at Aspen site, flat area, sloping gently to NW between 5-10 degrees, leaf litter, logs and twigs cover ground. Veg: aspen, birch, alder, oak, pine, maple, sweet fern, bracken fern, grass. No blueberry bushes, not rocky, very dry.

Easting

494379

NAD83
Zone 17

Northing

5141889

Reference

Gibson Rd.

Altitude(m)

280

Conditions

Sunny hot

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm (7.5YR3/2); Ah: 0 to 1 cm (7.5YR3/2); Ae: 1 to 10 cm (10YR7/2); B: >10 cm (2.5Y7/3). Texture: silt. Soil very hard, very dry, transition from Ae to B very subtle and diffuse.

Parent material field description

Sample was taken between 75 and 125 cm. Texture: silty clay loam.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10601

Depth 5 - 10 cm:

10603

Depth 10 - 20 cm:

10605

Dup. Depth 0 - 5 cm:

10602

Dup. Depth 5 - 10 cm

10604

Dup. Depth 10 - 20 cm:

10606

Parent material:

10607

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\308\2001-CEM-304-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\308\CEM-308-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\308\2001-CEM-308-
Core_1.JPG

Parent material photo

Site Number

308

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9550	Cobalt 0 to 5cm:	48	Nickel 0 to 5cm:	1400
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	12	Nickel 5 to 10cm:	139
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	73
Aluminum Parent:	35000	Cobalt Parent:	14	Nickel Parent:	65
Arsenic 0 to 5cm:	48	Copper 0 to 5cm:	1250	Selenium 0 to 5cm:	9
Arsenic 5 to 10cm:	17	Copper 5 to 10cm:	250	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	44	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	52	Selenium Parent:	ND
Barium 0 to 5cm:	84	Iron 0 to 5cm:	35500	Strontium 0 to 5cm:	43
Barium 5 to 10cm:	83	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	49
Barium 10 to 20cm:	74	Iron 10 to 20cm:	19500	Strontium 10 to 20cm:	44
Barium Parent:	240	Iron Parent:	39000	Strontium Parent:	63
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	103	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	41
Beryllium Parent:	0.79	Lead Parent:	10	Vanadium Parent:	71
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	2600	Zinc 0 to 5cm:	67
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3250	Zinc 5 to 10cm:	38
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4950	Zinc 10 to 20cm:	45
Cadmium Parent:	ND	Magnesium Parent:	13000	Zinc Parent:	56
Calcium 0 to 5cm:	4450	Manganese 0 to 5cm:	390	pH 0 to 5cm:	4.9
Calcium 5 to 10cm:	3600	Manganese 5 to 10cm:	520	pH 5 to 10cm:	5.5
Calcium 10 to 20cm:	3400	Manganese 10 to 20cm:	365	pH 10 to 20cm:	NA
Calcium Parent:	6600	Manganese Parent:	530	pH Parent:	NA
Chromium 0 to 5cm:	60	Molybdenum 0 to 5cm:	2.1	C TOC 0 to 5cm:	109
Chromium 5 to 10cm:	41	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	12
Chromium 10 to 20cm:	50	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

309

Date sampled

8/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

309

Location of sampling site

Hwy 69 S to Ch. Provincial Gov't Offices Rd.; turn right (south) onto Goodview, then left on to CKSO Road. Site located north of driving range.

Historical Inco sample station

29

OBM map number

41 I/7

Field observations

Area is flat and inundated with trails. Veg: 1% trembling aspen, 40% adult white birch, 1% shrub: white birch, bracken fern, golden rod, asters (white) pearly everlasting, Labrador tea, common hairgrass, polytrichium moss, blueberries cover, ~30 to 40% of the forest floor. Shrubs: sweet fern, purple aster, willow. Forest floor: 50 to 60% cover, rest is open soil, not much litter.

Easting

503114

NAD83
Zone 17

Northing

5141239

Reference

Hwy 69 Drive in
Golf Academy

Altitude(m)

245

Conditions

Humid, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm; Bt: 5 to 16 cm (tan brown), silty-clay; Bg: 16 to 101 cm (grey/gley with black and orange mottles).
Texture: silty-clay.

Parent material field description

Sample collected from 75 to 101 cm. Texture: clay. Colour: grey with brown and black mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10126

Depth 5 - 10 cm:

10127

Depth 10 - 20 cm:

10128

Dup. Depth 0 - 5 cm:

10129

Dup. Depth 5 - 10 cm:

10130

Dup. Depth 10 - 20 cm:

10131

Parent material:

10125

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\309\CEM-309-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

309

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9600	Cobalt 0 to 5cm:	9.5	Nickel 0 to 5cm:	185
Aluminum 5 to 10cm:	11000	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	65
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	79
Aluminum Parent:	11000	Cobalt Parent:	7	Nickel Parent:	28
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	155	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	3	Copper 5 to 10cm:	65	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	42	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	6.8	Selenium Parent:	ND
Barium 0 to 5cm:	34	Iron 0 to 5cm:	14500	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	39	Iron 5 to 10cm:	14500	Strontium 5 to 10cm:	41
Barium 10 to 20cm:	46	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	47
Barium Parent:	42	Iron Parent:	18000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	21	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9	Vanadium 5 to 10cm:	33
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2650	Zinc 0 to 5cm:	28
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2800	Zinc 5 to 10cm:	24
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2600	Zinc 10 to 20cm:	26
Cadmium Parent:	ND	Magnesium Parent:	17000	Zinc Parent:	20
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	175	pH 0 to 5cm:	5.1
Calcium 5 to 10cm:	4350	Manganese 5 to 10cm:	220	pH 5 to 10cm:	5.5
Calcium 10 to 20cm:	4600	Manganese 10 to 20cm:	225	pH 10 to 20cm:	NA
Calcium Parent:	40000	Manganese Parent:	340	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	29
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	9.7
Chromium 10 to 20cm:	37	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	44	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

310

Date sampled

9/5/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

310

Location of sampling site

Hwy 537 from Wahanpitie; south past St cloud Rd., between Cross and Kivi Rds.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Forested area: 10 x 10 area is flat, surrounding area slopes to the NW, towards a swamp/pond. Outcrops 10-20 m to the south at least 2 trails probably snowmobile. Found black PVC tubing within site. Site located behind residential homes. Area slightly hummocky. Floor: fallen logs, trees, leaf litter (40%); trees: 40% aspen, 5 to 10% balsam fir, 1% birch; herbs: large leaved aster, bracken fern (20%). Shrubs: balsam fir, wild elderberry bracken fern (20%)

Easting

518433

NAD83
Zone 17

Northing

5140930

Reference

Hwy 537@Kivi Rd.

Altitude(m)

244

Conditions

Sunny mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 4 cm; Ah: 0 to 5 cm; Bt: 5 to >30 cm (grey with brown mottles). Texture: clay. Some cores contained a charcoal and Ae layer below the organic horizon.

Parent material field description

Sample was collected from 84 to 109 cm. Texture: clay. Colour: Light grey with brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10787

Depth 5 - 10 cm:

10788

Depth 10 - 20 cm:

10789

Dup. Depth 0 - 5 cm:

10790

Dup. Depth 5 - 10 cm

10791

Dup. Depth 10 - 20 cm:

10792

Parent material:

10786

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\310\CEM-310-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

310

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	24500	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	243
Aluminum 5 to 10cm:	8500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	75
Aluminum 10 to 20cm:	24500	Cobalt 10 to 20cm:	14	Nickel 10 to 20cm:	150
Aluminum Parent:	28000	Cobalt Parent:	14	Nickel Parent:	55
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	160	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	53	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	12	Copper 10 to 20cm:	109	Selenium 10 to 20cm:	1
Arsenic Parent:	ND	Copper Parent:	41	Selenium Parent:	ND
Barium 0 to 5cm:	185	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	60
Barium 5 to 10cm:	76	Iron 5 to 10cm:	12500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	165	Iron 10 to 20cm:	17300	Strontium 10 to 20cm:	61
Barium Parent:	250	Iron Parent:	33000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	45	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	24
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	29	Vanadium 10 to 20cm:	41
Beryllium Parent:	0.59	Lead Parent:	9	Vanadium Parent:	60
Cadmium 0 to 5cm:	0.6	Magnesium 0 to 5cm:	4450	Zinc 0 to 5cm:	77
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2850	Zinc 5 to 10cm:	64
Cadmium 10 to 20cm:	0.4	Magnesium 10 to 20cm:	4200	Zinc 10 to 20cm:	69
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	52
Calcium 0 to 5cm:	5900	Manganese 0 to 5cm:	920	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2250	Manganese 5 to 10cm:	760	pH 5 to 10cm:	5.5
Calcium 10 to 20cm:	5850	Manganese 10 to 20cm:	697	pH 10 to 20cm:	NA
Calcium Parent:	6700	Manganese Parent:	530	pH Parent:	NA
Chromium 0 to 5cm:	66	Molybdenum 0 to 5cm:	0.75	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	42	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	11
Chromium 10 to 20cm:	57	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	75	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

311

Date sampled

8/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

311

Location of sampling site

East shore of Crooked Lake off Niemi Rd.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Micro-topography, slightly rounded mounds due to rock or tufts of grass around trees. This site slopes to the SW and drains into the lake. Forested: floor cover: ~30% mostly moss and lichen, lots of leaves from this year, tufts of grass, lichen on rock, no flowering plants. Shrubs: young trees, maple, alder, Labrador tea Trees: oak dominant, stunted maple, birch. Old tree stumps which look burnt.

Easting

497959

NAD83
Zone 17

Northing

5140575

Reference

Crooked Lake
East

Altitude(m)

297

Conditions

Cool, dry, sunny,
windy

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 15 cm, moss, grass; charcoal layer right below L (1 cm thick); Ae: 0 to 8 cm (white); Ae not always present; B: 8 to >30 cm (tan brown), not always present.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10065

Depth 5 - 10 cm:

10066

Depth 10 - 20 cm:

10032

Dup. Depth 0 - 5 cm:

10033

Dup. Depth 5 - 10 cm:

10034

Dup. Depth 10 - 20 cm:

10035

Parent material:

Parent material field description

No parent material could be collected. Max soil depth ~50 cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\311\2001-CEM-311-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\311\CEM-311-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\311\2001-CEM-311-
CORE_1.JPG

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

311

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9950	Cobalt 0 to 5cm:	26	Nickel 0 to 5cm:	740
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	9.5	Nickel 5 to 10cm:	113
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	55
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	23	Copper 0 to 5cm:	760	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	18	Copper 5 to 10cm:	195	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	6	Copper 10 to 20cm:	81	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	68	Iron 0 to 5cm:	23500	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	47	Iron 5 to 10cm:	18500	Strontium 5 to 10cm:	13
Barium 10 to 20cm:	58	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	29
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	73	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	22	Vanadium 5 to 10cm:	38
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	11	Vanadium 10 to 20cm:	46
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	56
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1600	Zinc 5 to 10cm:	47
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2550	Zinc 10 to 20cm:	59
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1250	Manganese 0 to 5cm:	135	pH 0 to 5cm:	4.6
Calcium 5 to 10cm:	965	Manganese 5 to 10cm:	175	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	2050	Manganese 10 to 20cm:	170	pH 10 to 20cm:	4.6
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	105
Chromium 5 to 10cm:	41	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	39
Chromium 10 to 20cm:	53	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	24
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

312

Date sampled

8/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

312

Location of sampling site

Pine Grove Golf Course; off Hwy 69 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Topography is undulating, climbed ridge to the S; site is located on Pine grove property. Forested floor cover=20% leaf litter and tufts of grass and ferns and star moss, lichen on rocks and trees. Shrubs: blueberry, Labrador tea, ferns. Trees: mostly birch, spruce, large tooth aspen.

Easting

507743

NAD83
Zone 17

Northing

5140898

Reference

Pine Grove Golf Course

Altitude(m)

256

Conditions

Overcast drizzle, humid

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm, leaf litter, fibrous roots; charcoal layer below L; Ae: 0 to 2 cm (white); B: 2 to 13 cm (tan brown), not always present; C: 13 to >30 cm. Texture: Horizons A & B are silty; horizon C is a compacted clay.

Parent material field description

Sample was collected between 60 and 85 cm. Texture: clay. Colour: grey/brown with some orange mottling.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10105

Depth 5 - 10 cm:

10110

Depth 10 - 20 cm:

10111

Dup. Depth 0 - 5 cm:

10112

Dup. Depth 5 - 10 cm:

10113

Dup. Depth 10 - 20 cm:

10114

Parent material:

10106

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\312\2001-CEM-312-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\312\CEM-312-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\312\2001-CEM-312-CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\312\2001-CEM-312-PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

312

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	14000	Cobalt 0 to 5cm:	30	Nickel 0 to 5cm:	520
Aluminum 5 to 10cm:	20500	Cobalt 5 to 10cm:	26	Nickel 5 to 10cm:	126
Aluminum 10 to 20cm:	23500	Cobalt 10 to 20cm:	15	Nickel 10 to 20cm:	57
Aluminum Parent:	26000	Cobalt Parent:	11	Nickel Parent:	43
Arsenic 0 to 5cm:	28	Copper 0 to 5cm:	495	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	165	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	58	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	31	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	21500	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	120	Iron 5 to 10cm:	23500	Strontium 5 to 10cm:	30
Barium 10 to 20cm:	110	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	40
Barium Parent:	200	Iron Parent:	29000	Strontium Parent:	71
Beryllium 0 to 5cm:	0.3	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	0.64	Lead 5 to 10cm:	21	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	44
Beryllium Parent:	0.6	Lead Parent:	7	Vanadium Parent:	58
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2200	Zinc 0 to 5cm:	58
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3750	Zinc 5 to 10cm:	61
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4700	Zinc 10 to 20cm:	65
Cadmium Parent:	ND	Magnesium Parent:	7900	Zinc Parent:	33
Calcium 0 to 5cm:	1950	Manganese 0 to 5cm:	525	pH 0 to 5cm:	4.8
Calcium 5 to 10cm:	2050	Manganese 5 to 10cm:	775	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	2700	Manganese 10 to 20cm:	315	pH 10 to 20cm:	5.6
Calcium Parent:	6100	Manganese Parent:	360	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	151
Chromium 5 to 10cm:	58	Molybdenum 5 to 10cm:	1	C TOC 5 to 10cm:	47
Chromium 10 to 20cm:	67	Molybdenum 10 to 20cm:	0.9	C TOC 10 to 20cm:	22
Chromium Parent:	79	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

313

Date sampled

8/21/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

313

Location of sampling site

Long Lake Rd. @ Silver Lake.

Historical Inco sample station

OBM map number

41 I/7 & 41 I/6

Field observations

Site dominated by birch, some oak & pine. Shrubs: Labrador tea, sweet grass, blueberry bush, outside then grasses, sweet fern, ferns, and litter. Forest floor: over 30% lichen/moss. Undulating, hummocky topography with some boulders.

Easting

500570

NAD83
Zone 17

Northing

5140632

Reference

Silver Lake Area

Altitude(m)

284

Conditions

Sunny, mild, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; charcoal layer 0 to 1 cm; Ae: 1 to 3.5 cm (light, almost white); B: 3.5 to 12.5 cm (tan brown), not always present; C: 12.5 to >70 cm. Texture: clay.

Parent material field description

Sample taken from 60 to 85 cm. Texture: compact clay. Colour: white/grey, with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10089

Depth 5 - 10 cm:

10090

Depth 10 - 20 cm:

10091

Dup. Depth 0 - 5 cm:

10092

Dup. Depth 5 - 10 cm

10093

Dup. Depth 10 - 20 cm:

10094

Parent material:

10085

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\313\CEM-313-soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\313\2001-CEM-313-CORE_1.JPG

Site Number

313

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	20000	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	490
Aluminum 5 to 10cm:	17250	Cobalt 5 to 10cm:	20	Nickel 5 to 10cm:	474
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	45
Aluminum Parent:	19000	Cobalt Parent:	8	Nickel Parent:	45
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	435	Selenium 0 to 5cm:	3.5
Arsenic 5 to 10cm:	15	Copper 5 to 10cm:	405	Selenium 5 to 10cm:	3
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	39	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	34	Selenium Parent:	ND
Barium 0 to 5cm:	150	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	113	Iron 5 to 10cm:	19100	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	68	Iron 10 to 20cm:	17500	Strontium 10 to 20cm:	36
Barium Parent:	150	Iron Parent:	25000	Strontium Parent:	51
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	37
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	44	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	35
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	46
Cadmium 0 to 5cm:	0.55	Magnesium 0 to 5cm:	2600	Zinc 0 to 5cm:	47
Cadmium 5 to 10cm:	0.6	Magnesium 5 to 10cm:	2650	Zinc 5 to 10cm:	46
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3000	Zinc 10 to 20cm:	42
Cadmium Parent:	ND	Magnesium Parent:	6700	Zinc Parent:	27
Calcium 0 to 5cm:	3200	Manganese 0 to 5cm:	265	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3550	Manganese 5 to 10cm:	222	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2400	Manganese 10 to 20cm:	215	pH 10 to 20cm:	5.1
Calcium Parent:	4600	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	56	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	58	Molybdenum 5 to 10cm:	1.2	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	41	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	12
Chromium Parent:	67	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

314

Date sampled

8/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

314

Location of sampling site

Ethier Sand and Gravel industries off Hwy 69 S.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Forested area. Trees: paper birch, largetooth aspen, Trembling Aspen; Shrubs: Labrador tea, blueberry, oak aspen, willow dominates, sheep laurel, bracken fern, maple, and pine; herbs: grass, ground cedar, lichen, lichen on trees, moss. Rocky to the northeast, hummocky.

Easting

510977

Northing

5140742

NAD83
Zone 17

Reference

Ethier Sand and Gravel

Altitude(m)

261

Conditions

Humid, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 2 cm, moss, leaf litter, grass; Ah: 0 to 8 cm, fibric-mesic organic matter, contains roots, fibres; Charcoal burnt layer: <1 cm; Ae: 8 to 13 cm (white); Bt: 13 to ~40 cm (orange brown); Bg: don't know where it changes >40 to >113 cm, (grey with orange mottles).
Texture: silty clay.

Parent material field description

Sample collected between 81 and 113 cm.
Texture: silty clay. Colour grey with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10139

Depth 5 - 10 cm:

10140

Depth 10 - 20 cm:

10141

Dup. Depth 0 - 5 cm:

10142

Dup. Depth 5 - 10 cm

10143

Dup. Depth 10 - 20 cm:

10144

Parent material:

10138

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\314\CEM-314-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

314

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6100	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	330
Aluminum 5 to 10cm:	8750	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	88
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	48
Aluminum Parent:	7800	Cobalt Parent:	6	Nickel Parent:	25
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	430	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	9.5	Copper 5 to 10cm:	82	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	19	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	4.2	Selenium Parent:	ND
Barium 0 to 5cm:	76	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	26
Barium 5 to 10cm:	38	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	34	Iron 10 to 20cm:	15500	Strontium 10 to 20cm:	27
Barium Parent:	31	Iron Parent:	13000	Strontium Parent:	30
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	38	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	38	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4.5	Vanadium 10 to 20cm:	32
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	29
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	975	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1300	Zinc 5 to 10cm:	27
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1800	Zinc 10 to 20cm:	30
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	7.2
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	360	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	1850	Manganese 5 to 10cm:	220	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2050	Manganese 10 to 20cm:	180	pH 10 to 20cm:	NA
Calcium Parent:	3000	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	64
Chromium 5 to 10cm:	25	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	29	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

315

Date sampled

8/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

315

Location of sampling site

Lammi's Rd.; off Hwy 17 W south of Kelly Lake.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Climbed 50 feet to top of mountain. Features: undulating, lots of bedrock with pockets of soil, field areas which may be wet, grassy areas, sampled all three areas. Trees: dominantly birch, oak, no aspen; Shrubs: small trees, maple & oak, Labrador tea, blueberry on edge of rock, grasses, moss and lichen on rock. Floor 50% cover.

Easting

496001

NAD83
Zone 17

Northing

5140420

Reference

Altitude(m)

284

Conditions

Sunny, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 9 cm; Ae: 0 to 15 cm (white); B: 15 to >30 cm (gleyed with orange mottles).
Texture: predominantly clay; sand found in B horizon from cores taken overtop of bedrock.

Parent material field description

Sampled collected from 75 to 100 cm.
Texture: grannular. Colour: grey with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10053

Depth 5 - 10 cm:

10050

Depth 10 - 20 cm:

10051

Dup. Depth 0 - 5 cm:

10029

Dup. Depth 5 - 10 cm

10052

Dup. Depth 10 - 20 cm:

10030

Parent material:

10049

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\315\2001-CEM-315-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\315\CEM-315-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\315\2001-CEM-315-
CORE_A.JPG.jpg

Parent material photo

Site Number

315

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	19000	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	740
Aluminum 5 to 10cm:	24000	Cobalt 5 to 10cm:	8.5	Nickel 5 to 10cm:	162
Aluminum 10 to 20cm:	26500	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	92
Aluminum Parent:	26000	Cobalt Parent:	13	Nickel Parent:	56
Arsenic 0 to 5cm:	24	Copper 0 to 5cm:	685	Selenium 0 to 5cm:	7
Arsenic 5 to 10cm:	17	Copper 5 to 10cm:	255	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	6.5	Copper 10 to 20cm:	94	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	40	Selenium Parent:	ND
Barium 0 to 5cm:	130	Iron 0 to 5cm:	27500	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	130	Iron 5 to 10cm:	23500	Strontium 5 to 10cm:	25
Barium 10 to 20cm:	140	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	39
Barium Parent:	220	Iron Parent:	35000	Strontium Parent:	65
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	66	Vanadium 0 to 5cm:	41
Beryllium 5 to 10cm:	0.26	Lead 5 to 10cm:	24	Vanadium 5 to 10cm:	44
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	13	Vanadium 10 to 20cm:	47
Beryllium Parent:	0.63	Lead Parent:	9	Vanadium Parent:	64
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2550	Zinc 0 to 5cm:	57
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3200	Zinc 5 to 10cm:	59
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3950	Zinc 10 to 20cm:	58
Cadmium Parent:	ND	Magnesium Parent:	9900	Zinc Parent:	52
Calcium 0 to 5cm:	1550	Manganese 0 to 5cm:	115	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	1550	Manganese 5 to 10cm:	130	pH 5 to 10cm:	4.9
Calcium 10 to 20cm:	2550	Manganese 10 to 20cm:	160	pH 10 to 20cm:	5.4
Calcium Parent:	5600	Manganese Parent:	420	pH Parent:	NA
Chromium 0 to 5cm:	66	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	103
Chromium 5 to 10cm:	82	Molybdenum 5 to 10cm:	1.2	C TOC 5 to 10cm:	37
Chromium 10 to 20cm:	76	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	23
Chromium Parent:	85	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

316

Date sampled

8/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

316

Location of sampling site

Gibson Rd. south to Moxam's Landing to Kallio Rd. (off Hwy 17 W.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Forested site, dominated by aspen; compact soil. Shrubs: alder, willow, asters, goldenrod. Herbs: asters, goldenrod, thistles, wild strawberry, moss under grass, lichen on willow.

Easting

493623

Northing

5139784

NAD83
Zone 17

Reference

Gibson/Kallio Rd.

Altitude(m)

253

Conditions

Sunny, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; B: 0 to 8 cm (light grey/brown), silty-clay; C: 8 to >1m, grades from crumbly to sticky clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10099

Depth 5 - 10 cm:

10100

Depth 10 - 20 cm:

10101

Dup. Depth 0 - 5 cm:

10107

Dup. Depth 5 - 10 cm:

10108

Dup. Depth 10 - 20 cm:

10109

Parent material:

10095

Parent material field description

Sample was collected from 72 to 98 cm. Texture: clay. Colour: grey with brown mottles.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\316\2001-CEM-316-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\316\CEM-316-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\316\2001-CEM-316-
CORE_1.JPG.jpg

Parent material photo

Site Number

316

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12000	Cobalt 0 to 5cm:	29	Nickel 0 to 5cm:	646
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	11	Nickel 5 to 10cm:	205
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	10	Nickel 10 to 20cm:	133
Aluminum Parent:	17000	Cobalt Parent:	10	Nickel Parent:	42
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	550	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	12	Copper 5 to 10cm:	140	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	8	Copper 10 to 20cm:	82	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	59	Iron 0 to 5cm:	25500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	63	Iron 5 to 10cm:	19000	Strontium 5 to 10cm:	44
Barium 10 to 20cm:	66	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	47
Barium Parent:	90	Iron Parent:	26000	Strontium Parent:	61
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	10	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	53
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	4500	Zinc 0 to 5cm:	62
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4500	Zinc 5 to 10cm:	49
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5200	Zinc 10 to 20cm:	45
Cadmium Parent:	ND	Magnesium Parent:	9200	Zinc Parent:	36
Calcium 0 to 5cm:	7000	Manganese 0 to 5cm:	290	pH 0 to 5cm:	6.3
Calcium 5 to 10cm:	6700	Manganese 5 to 10cm:	315	pH 5 to 10cm:	6.6
Calcium 10 to 20cm:	6600	Manganese 10 to 20cm:	340	pH 10 to 20cm:	6.9
Calcium Parent:	10000	Manganese Parent:	610	pH Parent:	NA
Chromium 0 to 5cm:	64	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	66
Chromium 5 to 10cm:	67	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	24
Chromium 10 to 20cm:	92	Molybdenum 10 to 20cm:	1.9	C TOC 10 to 20cm:	20
Chromium Parent:	70	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

317

Date sampled

8/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

317

Location of sampling site

Kantola Rd.; off Hwy 17W.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Undulating topography, some hummocks, some bedrock. Forest floor: 10-20% cover, birch, spruce, maple, cover is dominantly leaf litter. Shrubs: young trees Herb: grasses, lichen, moss, minor amounts of grasses, flowering plants, wintergreen, tufts of grass.

Easting

491330

NAD83
Zone 17

Northing

5139956

Reference

South of Mikkola

Altitude(m)

266

Conditions

Cool, dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; charcoal layer @ 5.5 cm; Ae: 0 to 9 cm (white), silty; B: 9 to 34 cm (tan brown), silty; C: >34 cm (white), clayey.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10056

Depth 5 - 10 cm:

10054

Depth 10 - 20 cm:

10055

Dup. Depth 0 - 5 cm:

10059

Dup. Depth 5 - 10 cm

10060

Dup. Depth 10 - 20 cm:

10061

Parent material:

10067

Parent material field description

Sample was taken from two cores 80 to 97 cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\317\2001-CEM-317-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\317\CEM-317-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\317\2001-CEM-317-
CORE_1.JPG.jpg

Parent material photo

Site Number

317

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9200	Cobalt 0 to 5cm:	32	Nickel 0 to 5cm:	890
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	80
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	47
Aluminum Parent:	10000	Cobalt Parent:	5	Nickel Parent:	23
Arsenic 0 to 5cm:	21	Copper 0 to 5cm:	825	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	9	Copper 5 to 10cm:	107	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	31	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	14	Selenium Parent:	ND
Barium 0 to 5cm:	140	Iron 0 to 5cm:	28000	Strontium 0 to 5cm:	42
Barium 5 to 10cm:	62	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	77	Iron 10 to 20cm:	19500	Strontium 10 to 20cm:	48
Barium Parent:	49	Iron Parent:	15000	Strontium Parent:	45
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	86	Vanadium 0 to 5cm:	30
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	9.5	Vanadium 5 to 10cm:	32
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	37
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	32
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	1800	Zinc 0 to 5cm:	61
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2150	Zinc 5 to 10cm:	33
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2750	Zinc 10 to 20cm:	40
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	16
Calcium 0 to 5cm:	3350	Manganese 0 to 5cm:	360	pH 0 to 5cm:	4
Calcium 5 to 10cm:	3050	Manganese 5 to 10cm:	225	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	205	pH 10 to 20cm:	5
Calcium Parent:	3800	Manganese Parent:	190	pH Parent:	NA
Chromium 0 to 5cm:	45	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	122
Chromium 5 to 10cm:	34	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	23
Chromium 10 to 20cm:	38	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	13
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

318

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

318

Location of sampling site

~710m SE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Level area beside swamp; clearing (few trees); frost; soil freezing to core. Veg: jackpine, T. aspen, birch, pussywillow, grasses, bracken fern, moss, red pine. Floor: leaf litter.

Easting

506782

NAD83
Zone 17

Northing

5139466

Reference

Helicopter

Altitude(m)

258

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Bm: 0 to 8 cm (10YR 4/3); BC: 0 to >30 cm (2.5Y 6/3)
Texture: silt loam. Little variability between cores.

Parent material field description

Sample was taken between 70 and 105 cm.
Texture: silty clay. Colour: 10YR 5/3. Mottles: many, medium, distinct.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26994

Depth 5 - 10 cm:

26996

Depth 10 - 20 cm:

26998

Dup. Depth 0 - 5 cm:

26995

Dup. Depth 5 - 10 cm

26997

Dup. Depth 10 - 20 cm:

26999

Parent material:

27000

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\318\2001-CEM-318-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\318\CEM-318-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\318\2001-CEM-318-
Core_1.JPG

Parent material photo

Site Number

318

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	28	Nickel 0 to 5cm:	582
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	48000	Cobalt Parent:	17	Nickel Parent:	66
Arsenic 0 to 5cm:	27	Copper 0 to 5cm:	670	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	55	Selenium Parent:	ND
Barium 0 to 5cm:	145	Iron 0 to 5cm:	22000	Strontium 0 to 5cm:	50
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	310	Iron Parent:	46000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	81	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.95	Lead Parent:	12	Vanadium Parent:	78
Cadmium 0 to 5cm:	1	Magnesium 0 to 5cm:	2400	Zinc 0 to 5cm:	42
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	15000	Zinc Parent:	66
Calcium 0 to 5cm:	3900	Manganese 0 to 5cm:	560	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6900	Manganese Parent:	520	pH Parent:	NA
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	120	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

319

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

319

Location of sampling site

Off Hwy 64 in Field.

Historical Inco sample station

53

OBM map number

41 I/9

Field observations

Area sloping to southeast; site composed of an aspen stand to the south and spruce stand on the slope. Site is near ATV and snowmobile trails located behind residential subdivision. Undulating topography with extremely variable soil depth and soil type; site is 3 km from aspen site. Trees: 50% spruce, 50% T. aspen and large tooth aspen. Herbs: grasses; forest floor: logs, some moss, leaf litter with spruce needles, almost no litter

Easting

575206

NAD83
Zone 17

Northing

5151182

Reference

Field

Altitude(m)

269

Conditions

Cool, overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 0.5 cm; Ah: 0 to 10 cm (black), sandy; Ae: 10 to 12 cm (grey); Bt: 12 to 40 cm (light brown), sandy-silt; Bm: 40 to 60 cm (medium brown), sandy-silt; Bg: 60 to 80 cm (grey), clay; Bm: 80 to 104 cm.

Parent material field description

Sample collected from 81 to 104 cm. Texture: sandy. Colour: grey with mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10961

Depth 5 - 10 cm:

10962

Depth 10 - 20 cm:

10963

Dup. Depth 0 - 5 cm:

10968

Dup. Depth 5 - 10 cm

10969

Dup. Depth 10 - 20 cm:

10970

Parent material:

10971

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\319\CEM-319-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

319

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	28
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	7.5	Nickel 5 to 10cm:	53
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	33
Aluminum Parent:	9400	Cobalt Parent:	9	Nickel Parent:	39
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	18	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	5	Copper 5 to 10cm:	68	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	10	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	95	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	45
Barium 5 to 10cm:	88	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	45
Barium 10 to 20cm:	56	Iron 10 to 20cm:	23000	Strontium 10 to 20cm:	39
Barium Parent:	46	Iron Parent:	17000	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	19	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	16	Vanadium 5 to 10cm:	42
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	41
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	37
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2650	Zinc 0 to 5cm:	57
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2750	Zinc 5 to 10cm:	46
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3150	Zinc 10 to 20cm:	42
Cadmium Parent:	ND	Magnesium Parent:	4600	Zinc Parent:	18
Calcium 0 to 5cm:	4550	Manganese 0 to 5cm:	550	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3500	Manganese 5 to 10cm:	500	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3450	Manganese 10 to 20cm:	270	pH 10 to 20cm:	NA
Calcium Parent:	3900	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	54	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	75	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

320

Date sampled

10/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

320

Location of sampling site

Regional Road 55; Naughton.

Historical Inco sample station

3

OBM map number

41 I/6

Field observations

Found level area within a T. aspen and maple forest. Bedrock outcrops to the north. Soil waterlogged in area. Veg: T. aspen (very tall), large tooth aspen, maple, spruce, hazelnut(?), pussy willow, large leaf aster, bracken fern, moss. Floor: leaf litter, logs, twigs,

Easting

482642

NAD83
Zone 17

Northing

5138149

Reference

Altitude(m)

261

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 1 cm; Ah: 0 to 4 cm; Bf: 1 to 11 cm (7.5YR4/3); Bm: 4 to >30 cm (2.5Y6/3).
Texture: silty clay.

Parent material field description

Sample was collected from 75 to 105 cm.
Texture: silty clay. Colour: 2.5Y 6/2. Mottles: many, coarse, distinct, 7.5YR 5/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10418

Depth 5 - 10 cm:

10420

Depth 10 - 20 cm:

10422

Dup. Depth 0 - 5 cm:

10419

Dup. Depth 5 - 10 cm

10421

Dup. Depth 10 - 20 cm:

10423

Parent material:

10424

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\320\2001-CEM-320-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\320\CEM-320-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\320\2001-CEM-320-
Core_1.JPG

Parent material photo

Site Number

320

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	145
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	19000	Cobalt Parent:	11	Nickel Parent:	43
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	120	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	95	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	51
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	150	Iron Parent:	29000	Strontium Parent:	62
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	26	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	56
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	61
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	8500	Zinc Parent:	38
Calcium 0 to 5cm:	3750	Manganese 0 to 5cm:	615	pH 0 to 5cm:	5.4
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6300	Manganese Parent:	410	pH Parent:	NA
Chromium 0 to 5cm:	48	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	50
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

321

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

321

Location of sampling site

Hwy 17W ~3km West of Espanola turn off.

Historical Inco sample station

13

OBM map number

41 I/5

Field observations

None provided

Easting

437064

Northing

5125952

NAD83
Zone 17

Reference

Altitude(m)

287

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

60% of cores: LFH: 0 to 5 cm; Ah: 0 to 8 cm; B: 4 to 18 cm; BC 10 to >30 cm. 40% of cores also contained an Ae horizon 2 to 10 cm. Texture: silt.

Parent material field description

Sample was collected between 75 and 105 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11351

Depth 5 - 10 cm:

11353

Depth 10 - 20 cm:

11355

Dup. Depth 0 - 5 cm:

11352

Dup. Depth 5 - 10 cm

11354

Dup. Depth 10 - 20 cm:

11356

Parent material:

11357

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\321\2001-CEM-321-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\321\CEM-321-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\321\2001-CEM-321-
Core_1.JPG

Parent material photo

Site Number

321

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11400	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	32
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	22
Aluminum Parent:	17000	Cobalt Parent:	11	Nickel Parent:	33
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	14	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	15	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	7.9	Selenium 10 to 20cm:	1
Arsenic Parent:	ND	Copper Parent:	30	Selenium Parent:	ND
Barium 0 to 5cm:	76	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	39
Barium 5 to 10cm:	84	Iron 5 to 10cm:	16500	Strontium 5 to 10cm:	53
Barium 10 to 20cm:	71	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	54
Barium Parent:	88	Iron Parent:	27000	Strontium Parent:	43
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	18	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	44
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	53
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	65
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3000	Zinc 5 to 10cm:	71
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4250	Zinc 10 to 20cm:	63
Cadmium Parent:	ND	Magnesium Parent:	6800	Zinc Parent:	35
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	430	pH 0 to 5cm:	5.2
Calcium 5 to 10cm:	4850	Manganese 5 to 10cm:	470	pH 5 to 10cm:	4.7
Calcium 10 to 20cm:	4500	Manganese 10 to 20cm:	310	pH 10 to 20cm:	4.8
Calcium Parent:	4700	Manganese Parent:	330	pH Parent:	5.2
Chromium 0 to 5cm:	40	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	57
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	54
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	13
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	1.3

Sudbury Regional Soils Project 2001

Site Number

322

Date sampled

11/1/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

322

Location of sampling site

Birch Island.

Historical Inco sample station

9

OBM map number

41 I/4

Field observations

Area is undulating (bowl shaped). Soil very hard and dry; many little black flea-like bugs in soil. Veg: white pine, maple, T. aspen, oak, fir, jack pine, cedar, grasses, ferns, mosses, juniper; floor: leaf litter, needles, twigs, logs.

Easting

441266

NAD83
Zone 17

Northing

5102053

Reference

Birch Island

Altitude(m)

235

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 3 cm; Bm: 0 to 17 cm (10YR5/3); Bg: 15 to >30 cm (7.5YR4/3, mottles: many, medium, distinct, brownish yellow 10YR 6/3). Texture: clay. Soil horizons were fairly similar core to core, however, depth and colour changed slightly.

Parent material field description

Sample collected between 75 and 100 cm. Texture: clay. Colour: 7.5YR 4/3).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10536

Depth 5 - 10 cm:

10538

Depth 10 - 20 cm:

10540

Dup. Depth 0 - 5 cm:

10537

Dup. Depth 5 - 10 cm

10539

Dup. Depth 10 - 20 cm:

10541

Parent material:

10542

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\322\2001-CEM-322-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\322\CEM-322-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

322

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17500	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	48
Aluminum 5 to 10cm:	18500	Cobalt 5 to 10cm:	13	Nickel 5 to 10cm:	29
Aluminum 10 to 20cm:	27000	Cobalt 10 to 20cm:	15	Nickel 10 to 20cm:	35
Aluminum Parent:	46000	Cobalt Parent:	17	Nickel Parent:	62
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	30	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	14	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	36	Selenium Parent:	ND
Barium 0 to 5cm:	205	Iron 0 to 5cm:	22500	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	120	Iron 5 to 10cm:	25000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	130	Iron 10 to 20cm:	33000	Strontium 10 to 20cm:	43
Barium Parent:	350	Iron Parent:	48000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	47	Vanadium 0 to 5cm:	51
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	55
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	11	Vanadium 10 to 20cm:	60
Beryllium Parent:	1.1	Lead Parent:	11	Vanadium Parent:	90
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	5100	Zinc 0 to 5cm:	115
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	6450	Zinc 5 to 10cm:	87
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	9050	Zinc 10 to 20cm:	70
Cadmium Parent:	ND	Magnesium Parent:	17000	Zinc Parent:	80
Calcium 0 to 5cm:	5950	Manganese 0 to 5cm:	1985	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4450	Manganese 5 to 10cm:	870	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4650	Manganese 10 to 20cm:	500	pH 10 to 20cm:	NA
Calcium Parent:	9100	Manganese Parent:	640	pH Parent:	NA
Chromium 0 to 5cm:	52	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	54	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	58	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	110	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

323

Date sampled

11/2/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

323

Location of sampling site

Hwy 69 S @ bridge over French River.

Historical Inco sample station

36

OBM map number

41 I/2

Field observations

Site is relatively flat, sparsely forested with some hummocks. Some low lying water; soil very wet. Dead leaves & trees on ground, moss and lichens on trees. Herbs: ground pine 1%, pohlia, lichens. Shrubs: 10% cherry, 2% balsam fir, 5% alder. Trees: 5% balsam fir, 1% birch.

Easting

532103

NAD83
Zone 17

Northing

5095638

Reference

Hwy 69S/French
River Bridge

Altitude(m)

228

Conditions

In a.m.:
overcast/p.m.:

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 11 cm (10YR 3/2), sandy; Bt: 11 to 29 cm (10YR 5/3), sandy; Bg: 29 to 107 cm (10YR 5/3 with orange mottles 7.5YR 7/2), clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25368

Depth 5 - 10 cm:

25369

Depth 10 - 20 cm:

25370

Dup. Depth 0 - 5 cm:

25371

Dup. Depth 5 - 10 cm:

25372

Dup. Depth 10 - 20 cm:

25373

Parent material:

25374

Parent material field description

Sample was collected from 62 to 82 cm. Texture: clay. Colour: 10YR 5/3 with 7.5YR 7/2 mottles.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\323\2001-CEM-323-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\323\CEM-323-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\323\2001-CEM-323-
Core_1.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

323

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	47
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	25000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	31	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	83	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	170	Iron Parent:	32000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	6	Vanadium Parent:	62
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2850	Zinc 0 to 5cm:	58
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	8100	Zinc Parent:	42
Calcium 0 to 5cm:	2250	Manganese 0 to 5cm:	435	pH 0 to 5cm:	4.7
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7400	Manganese Parent:	400	pH Parent:	NA
Chromium 0 to 5cm:	46	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	62
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	78	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

324

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

324

Location of sampling site

Hwy 637: ~2km east of Killarney.

Historical Inco sample station

35

OBM map number

41 H/14

Field observations

Forested area with very tall trees. Veg: fir, white pine, T. aspen, maple, oak, some birch, bracken fern, bunch berry, club moss, moss, grasses; floor: leaf litter, needles, twigs, logs.

Easting

461049

NAD83
Zone 17

Northing

5092116

Reference

Killarney

Altitude(m)

204

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 5 cm; B: 2 to 10 cm (10YR5/3); Bg: 3 to >30 (7.5YR4/4, mottles: common, medium distinct, strong brown). Texture: clay, contained abundant gravel size clasts. Soil horizons were fairly uniform throughout area, little variation.

Parent material field description

Sample was collected from 75 to 105 cm. Texture: clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10496

Depth 5 - 10 cm:

10498

Depth 10 - 20 cm:

10500

Dup. Depth 0 - 5 cm:

10497

Dup. Depth 5 - 10 cm

10499

Dup. Depth 10 - 20 cm:

10501

Parent material:

10502

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\324\2001-CEM-324-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\324\CEM-324-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\324\2001-CEM-324-
Core_1.JPG

Parent material photo

Site Number

324

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	20500	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	73
Aluminum 5 to 10cm:	26500	Cobalt 5 to 10cm:	11	Nickel 5 to 10cm:	37
Aluminum 10 to 20cm:	36500	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	36
Aluminum Parent:	28000	Cobalt Parent:	14	Nickel Parent:	60
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	43	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	24	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	21	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	25	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	140	Iron 5 to 10cm:	27500	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	185	Iron 10 to 20cm:	37000	Strontium 10 to 20cm:	40
Barium Parent:	210	Iron Parent:	36000	Strontium Parent:	51
Beryllium 0 to 5cm:	0.71	Lead 0 to 5cm:	50	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	0.66	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	56
Beryllium 10 to 20cm:	0.64	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	66
Beryllium Parent:	0.63	Lead Parent:	8	Vanadium Parent:	66
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4450	Zinc 0 to 5cm:	72
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	7350	Zinc 5 to 10cm:	68
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	9600	Zinc 10 to 20cm:	65
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	57
Calcium 0 to 5cm:	3600	Manganese 0 to 5cm:	435	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3700	Manganese 5 to 10cm:	405	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	4200	Manganese 10 to 20cm:	335	pH 10 to 20cm:	NA
Calcium Parent:	6400	Manganese Parent:	500	pH Parent:	NA
Chromium 0 to 5cm:	51	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	72	Molybdenum 5 to 10cm:	0.85	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	80	Molybdenum 10 to 20cm:	1	C TOC 10 to 20cm:	NA
Chromium Parent:	90	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

325

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

325

Location of sampling site

Helicopter site.

Historical Inco sample station

OBM map number

Field observations

Flat site, outcrop to the west, swamp to the east, leaf cover, needle cover. Trees: 100% spruce and birch; shrubs: 0%; herbs: moss.

Easting

496575

NAD83
Zone 17

Northing

5218678

Reference

Helicopter

Altitude(m)

301

Conditions

Damp

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm, moss, leaves, spruce needles; Ah: 0 to 5 cm, fibrous to mesic; Ae: 5 to 11 cm (grey), silt; Bf: 11 to 15 cm; Bt: 15 to >30 cm. Texture: silty sand with pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11733

Depth 5 - 10 cm:

11734

Depth 10 - 20 cm:

11735

Dup. Depth 0 - 5 cm:

11736

Dup. Depth 5 - 10 cm:

11737

Dup. Depth 10 - 20 cm:

11738

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\325\2001-CEM-325-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\325\CEM-325-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\325\2001-CEM-325-
CORE_1.JPG.jpg

Parent material photo

Site Number

325

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7350	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	42
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	93	Iron 0 to 5cm:	9600	Strontium 0 to 5cm:	28
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	35	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	830	Zinc 0 to 5cm:	11
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	125	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

326

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

326

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/3

Field observations

Flat, weakly hummocky; dense forest. Trees: 75% cover, white pine 15%, red pine 2%, blue spruce 8%, balsam fir 1%. Shrub: blue spruce 15%, balsam fir 4%, fern 10%, Labrador tree 20%, red maple 2%. Ground: boulders 2%, sphagnum 5%, needles 80%.

Easting

498052

Northing

5114031

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

262

Conditions

Overcast, slightly foggy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 2 cm (black); Ae: 2 to 4 cm (10YR 3/1); Bt: 4 to 32 cm (2.5Y 6/4).
Texture: silty to sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25529

Depth 5 - 10 cm:

25530

Depth 10 - 20 cm:

25531

Dup. Depth 0 - 5 cm:

25532

Dup. Depth 5 - 10 cm:

25533

Dup. Depth 10 - 20 cm:

25534

Parent material field description

Could not collect sample; area too rocky.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\326\2001-CEM-326-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\326\CEM-326-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\326\2001-CEM-326-
CORE_1.JPG.jpg

Parent material photo

Site Number

326

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6650	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	250
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	51
Aluminum 10 to 20cm:	24000	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	22
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	180	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	7	Copper 5 to 10cm:	59	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	16	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	88	Iron 0 to 5cm:	9700	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	58	Iron 5 to 10cm:	15000	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	66	Iron 10 to 20cm:	20500	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	72	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	23	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	51
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.65	Magnesium 0 to 5cm:	760	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1335	Zinc 5 to 10cm:	21
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2850	Zinc 10 to 20cm:	24
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1250	Manganese 0 to 5cm:	59	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	1800	Manganese 5 to 10cm:	109	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2700	Manganese 10 to 20cm:	170	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	1.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	36	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	53	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

327

Date sampled

10/24/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

327

Location of sampling site

East end of Stony Bay-Lake Penache.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Soil very hard and dry. Trees very tall ~30 m. Veg: red pine; fir, white pine (conifers dominant), maple, oak, T. aspen, large leaf aster, bunchberry, bracken fern, mushrooms, grasses; floor: leaf litter, needles, logs, twigs.

Easting

466041

Northing

5122624

NAD83
Zone 17

Reference

Northshore Rd./Panache Lake

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 3 cm; Bm: 0 to 12 cm (7.5YR4/3); BC: 5 to >30 cm (2.5Y6/3).
Texture: silt. 10% of cores also contained an Ae horizon 0 to 5 cm; soil was very uniform throughout site.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10466

Depth 5 - 10 cm:

10468

Depth 10 - 20 cm:

10470

Dup. Depth 0 - 5 cm:

10467

Dup. Depth 5 - 10 cm

10469

Dup. Depth 10 - 20 cm:

10471

Parent material:

10472

Parent material field description

Sample was taken between 75 and 95 cm.
Texture: silt. Colour: 7.5YR 4/3.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\327\2001-CEM-327-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\327\CEM-327-
soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\327\2001-CEM-327-
Core_1.JPG

Parent material photo

Site Number

327

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	8.5	Nickel 0 to 5cm:	120
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	33000	Cobalt Parent:	16	Nickel Parent:	59
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	74	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	36	Selenium Parent:	ND
Barium 0 to 5cm:	115	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	51
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	270	Iron Parent:	45000	Strontium Parent:	63
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.81	Lead Parent:	11	Vanadium Parent:	81
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	75
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	14000	Zinc Parent:	73
Calcium 0 to 5cm:	5600	Manganese 0 to 5cm:	830	pH 0 to 5cm:	5.1
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7500	Manganese Parent:	620	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	119
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	91	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

328

Date sampled

11/23/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

328

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

Area is flat with a swamp located to the NW.
Trees: 100% jackpine and birch. Shrubs: bracken fern, jackpine, birch. Herbs: moss, lichens. Floor: leaves, needles.

Easting

492530

NAD83
Zone 17

Northing

5122557

Reference

Helicopter

Altitude(m)

316

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 8 cm (black); Ae: 8 to 12 cm (dark grey); Bt or Bf: >12 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11814

Depth 5 - 10 cm:

11815

Depth 10 - 20 cm:

11816

Dup. Depth 0 - 5 cm:

11817

Dup. Depth 5 - 10 cm:

11818

Dup. Depth 10 - 20 cm:

11819

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\328\2001-CEM-328-
SITE_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\328\CEM-328-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\328\2001-CEM-328-
CORE_1.JPG

Parent material photo

Site Number

328

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5750	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	351
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	275	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	160	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	90	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	765	Zinc 0 to 5cm:	44
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2350	Manganese 0 to 5cm:	105	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

329

Date sampled

10/15/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

329

Location of sampling site

Road to fairbanks provincial park. ~170 m west of original UTM site.

Historical Inco sample station

OBM map number

41 I/6

Field observations

Found level area within forest. Trees 20-30 m tall. Area very wet, soil very wet, hard to distinguish horizons. Area dominated by birch, T. aspen, and is surrounded by spruce and fir. Not much LFH. Veg: birch, T. aspen, spruce, fir, maple, hazelnut(?) fireweed, bracken fern, sweet fern, grasses, strawberry. Floor: leaf litter, twigs, logs. Most vegetation had died, hard to distinguish.

Easting

464984

NAD83
Zone 17

Northing

5140321

Reference

Altitude(m)

313

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 1 cm; A: 0 to 6 cm (10YR3/2); B: 2 to >30 cm (2.5Y5/3). Texture: clay loam.

Parent material field description

Sample was collected between 75 and 100 cm. Texture: clay. Colour: 2.5Y 5/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10408

Depth 5 - 10 cm:

10410

Depth 10 - 20 cm:

10412

Dup. Depth 0 - 5 cm:

10409

Dup. Depth 5 - 10 cm

10411

Dup. Depth 10 - 20 cm:

10413

Parent material:

10414

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\329\2001-CEM-329Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\329\CEM-329-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\329\2001-CEM-329-Core_1.JPG

Parent material photo

Site Number

329

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16000	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	37
Aluminum 5 to 10cm:	16500	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	30
Aluminum 10 to 20cm:	22000	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	23
Aluminum Parent:	20000	Cobalt Parent:	13	Nickel Parent:	40
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	13	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	15	Selenium 10 to 20cm:	ND
Arsenic Parent:	6	Copper Parent:	47	Selenium Parent:	ND
Barium 0 to 5cm:	82	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	54
Barium 5 to 10cm:	75	Iron 5 to 10cm:	22000	Strontium 5 to 10cm:	51
Barium 10 to 20cm:	100	Iron 10 to 20cm:	25000	Strontium 10 to 20cm:	55
Barium Parent:	150	Iron Parent:	35000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	14	Vanadium 0 to 5cm:	54
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	54
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	60
Beryllium Parent:	0.52	Lead Parent:	10	Vanadium Parent:	68
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	4100	Zinc 0 to 5cm:	75
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	4250	Zinc 5 to 10cm:	72
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	5600	Zinc 10 to 20cm:	66
Cadmium Parent:	ND	Magnesium Parent:	9300	Zinc Parent:	67
Calcium 0 to 5cm:	4250	Manganese 0 to 5cm:	500	pH 0 to 5cm:	5.4
Calcium 5 to 10cm:	4050	Manganese 5 to 10cm:	475	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	4700	Manganese 10 to 20cm:	385	pH 10 to 20cm:	5
Calcium Parent:	5600	Manganese Parent:	630	pH Parent:	6.3
Chromium 0 to 5cm:	50	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	38
Chromium 5 to 10cm:	43	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	23
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	11
Chromium Parent:	60	Molybdenum Parent:	ND	C TOC Parent:	1.3

Sudbury Regional Soils Project 2001

Site Number

330

Date sampled

11/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

330

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Entire area logged; logging road to the NW; river to the east. Area very gravelly. Found level area within jackpine forest which had not been logged. Shallow soil (~15 cm) over bedrock. Veg: jackpine, spruce, fir, birch, moss, lichen, wintergreen, bunchberry.

Easting

468964

Northing

5170526

NAD83
Zone 17

Reference

Altitude(m)

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 1 cm; Ae: 0 to 9 cm (2.5Y 6/2); Bf: 0 to >30 cm (10YR 4/6 to 10YR 3/6).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25572

Depth 5 - 10 cm:

25574

Depth 10 - 20 cm:

25576

Dup. Depth 0 - 5 cm:

25573

Dup. Depth 5 - 10 cm:

25575

Dup. Depth 10 - 20 cm:

25577

Parent material field description

No parent material could be collected.

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\330\2001-CEM-330-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\330\CEM-330-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\330\2001-CEM-330-
Core_1.JPG

Parent material photo

Site Number

330

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5650	Cobalt 0 to 5cm:	2.5	Nickel 0 to 5cm:	55
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	60	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	37	Iron 0 to 5cm:	9600	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	33	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	800	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	120	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

331

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

331

Location of sampling site

Helicopter site; North of Vermilion River.

Historical Inco sample station

OBM map number

Field observations

Slopes down to NE of quadrant. Trees: 60% aspen, birch. Shrub: 35%, baby aspen. Herb: 5% horse tails, grass, moss, bases of trees. Floor cover: leaves, fallen trees.

Easting

486336

NAD83
Zone 17

Northing

5168403

Reference

Helicopter

Altitude(m)

299

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 1 cm, moss, leaf litter; Ah: 1 to 4 cm; A: 4 to >30 cm. Texture: silty sand.

Parent material field description

Sample taken between 78 and 117 cm. Texture: silty sand. Colour: grey.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11715

Depth 5 - 10 cm:

11716

Depth 10 - 20 cm:

11717

Dup. Depth 0 - 5 cm:

11718

Dup. Depth 5 - 10 cm

11719

Dup. Depth 10 - 20 cm:

11720

Parent material:

11691

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\331\2001-CEM-331-
SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\331\CEM-331-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\331\2001-CEM-331-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\331\2001-CEM-331-
PARENT_1.JPG.jpg

Site Number

331

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5600	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	27
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	5200	Cobalt Parent:	4	Nickel Parent:	14
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	18	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	7.4	Selenium Parent:	ND
Barium 0 to 5cm:	29	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	20	Iron Parent:	10000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	5	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2600	Zinc 0 to 5cm:	20
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3000	Zinc Parent:	18
Calcium 0 to 5cm:	4350	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	3300	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	29	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	23	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

332

Date sampled

11/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

332

Location of sampling site

Helicopter site; North of Moose Mountain.

Historical Inco sample station

OBM map number

Field observations

Some exposed rock, leaf coverage, hill to west, swamp to east, slight slope; Trees: 35% birch and aspen; shrubs: 55% baby birch and aspen; herbs: bracken fern, moss.

Easting

499592

NAD83
Zone 17

Northing

5190860

Reference

Helicopter

Altitude(m)

379

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm, leaves; Ah: 0 to 6 cm, (black) fibrous to mesic; Ae: 6 to 9 cm, (light grey); Bf: 9 to >30 cm (reddish brown). Texture: sandy to clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11751

Depth 5 - 10 cm:

11752

Depth 10 - 20 cm:

11753

Dup. Depth 0 - 5 cm:

11754

Dup. Depth 5 - 10 cm

11755

Dup. Depth 10 - 20 cm:

11756

Parent material:

Parent material field description

No sample could be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\332\CEM-332-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\332\2001-CEM-332-
CORE_1.JPG.jpg

Site Number

332

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5150	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	56
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	39	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	100	Iron 0 to 5cm:	43000	Strontium 0 to 5cm:	25
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	28	Vanadium 0 to 5cm:	31
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1000	Zinc 0 to 5cm:	17
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	225	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	33	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

333

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

333

Location of sampling site

Hwy 539 S @ Warren.

Historical Inco sample station

OBM map number

41 I/8

Field observations

Level, semi-forested area. Many burnt out large tree stumps. Shallow soil; corer hit bedrock most of the time; coarse material on bedrock. 18% Trees: maple, balsam fir, white pine, willow, birch, Douglas fir, (80% conifers). 1% Shrub: bracken fern; willow, juvenile trees. 1% Herb: wintergreen. Floor: lichen, moss, buried logs.

Easting

551522

NAD83
Zone 17

Northing

5140054

Reference

South of Warren

Altitude(m)

259

Conditions

Clear

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Charcoal layer: 0 to 3 cm; Ah: 3 to 5 cm (black); Ae: 5 to 8 cm, fine-grained sand; Bm: >8 cm (yellowish brown), sandy with coarse clasts. Bm grades to a lighter colour along with a higher component of clay.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11557

Depth 5 - 10 cm:

11558

Depth 10 - 20 cm:

11559

Dup. Depth 0 - 5 cm:

11560

Dup. Depth 5 - 10 cm

11561

Dup. Depth 10 - 20 cm:

11562

Parent material:

Parent material field description

Could not collect sample; soil too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\333\2001-CEM-333-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\333\CEM-333-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\333\2001-CEM-333-
CORE 1.JPG

Parent material photo

Site Number

333

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10550	Cobalt 0 to 5cm:	4	Nickel 0 to 5cm:	62
Aluminum 5 to 10cm:	20000	Cobalt 5 to 10cm:	5	Nickel 5 to 10cm:	26
Aluminum 10 to 20cm:	25000	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	38
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	57	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	99	Iron 0 to 5cm:	15500	Strontium 0 to 5cm:	63
Barium 5 to 10cm:	57	Iron 5 to 10cm:	24000	Strontium 5 to 10cm:	96
Barium 10 to 20cm:	54	Iron 10 to 20cm:	26500	Strontium 10 to 20cm:	44
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	44	Vanadium 0 to 5cm:	43
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	43.5	Vanadium 5 to 10cm:	60
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	54
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1550	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2900	Zinc 5 to 10cm:	35
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3850	Zinc 10 to 20cm:	39
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4650	Manganese 0 to 5cm:	205	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	6400	Manganese 5 to 10cm:	220	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3800	Manganese 10 to 20cm:	210	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	57	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	59	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

334

Date sampled

11/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

334

Location of sampling site

Hwy 17 E to Warren. Site is ~2.5 km west of Warren; on north side of Hwy.

Historical Inco sample station

OBM map number

41 1/8

Field observations

Level, forested area, slopes very slightly to NE; undulating; swamp off to the NW. Trees: 80%, balsam fir, spruce, birch, poplar. Shrub: 15% poplar, willow, bracken fern, balsam. Herb 5%: clubmoss, grass, cornus, moss.

Easting

550671

NAD83
Zone 17

Northing

5144780

Reference

NW of Warren

Altitude(m)

255

Conditions

Dry, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 5 cm; Ae: white, silty sand; Bt: light brown, sandy; Bm: dark brown, grading back to a silty-clayey Bt horizon.

Parent material field description

Sample was collected from 84 to 110 cm. Texture: coarse to medium Grained sand with gravel size clasts. Colour: medium brown.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11625

Depth 5 - 10 cm:

11626

Depth 10 - 20 cm:

11627

Dup. Depth 0 - 5 cm:

11628

Dup. Depth 5 - 10 cm:

11629

Dup. Depth 10 - 20 cm:

11630

Parent material:

11606

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\334\CEM-334-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

334

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13000	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	54
Aluminum 5 to 10cm:	18000	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	28
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	17000	Cobalt Parent:	10	Nickel Parent:	33
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	38	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	18	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	18	Selenium Parent:	ND
Barium 0 to 5cm:	78	Iron 0 to 5cm:	18000	Strontium 0 to 5cm:	44
Barium 5 to 10cm:	57	Iron 5 to 10cm:	21500	Strontium 5 to 10cm:	51
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	61	Iron Parent:	22000	Strontium Parent:	50
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	30	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	11	Vanadium 5 to 10cm:	45
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	9	Vanadium Parent:	46
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2750	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2950	Zinc 5 to 10cm:	29
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6300	Zinc Parent:	29
Calcium 0 to 5cm:	4550	Manganese 0 to 5cm:	300	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	4700	Manganese 5 to 10cm:	230	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6500	Manganese Parent:	350	pH Parent:	NA
Chromium 0 to 5cm:	34	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	42	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	53	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

335

Date sampled

11/17/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

335

Location of sampling site

East of Onaping Lake.

Historical Inco sample station

OBM map number

Field observations

Site is located upslope from a floating bog. Dense, old spruce, fir forest; many fallen trees covered by a variety of mosses and lichens.

Easting

467117

NAD83
Zone 17

Northing

5199920

Reference

Helicopter

Altitude(m)

443

Conditions

Overcast

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 4 cm; BC: >4 cm.
Texture: fine-grained.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26389

Depth 5 - 10 cm:

26390

Depth 10 - 20 cm:

26391

Dup. Depth 0 - 5 cm:

26386

Dup. Depth 5 - 10 cm:

26387

Dup. Depth 10 - 20 cm:

26388

Parent material:

Parent material field description

Could not collect parent material; soil was too shallow.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\335\2001-CEM-335-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\335\CEM-335-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\335\2001-CEM-335-
Core_1.jpg

Parent material photo

Site Number

335

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6000	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	32
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	17	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	44	Iron 0 to 5cm:	8550	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	25	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	635	Zinc 0 to 5cm:	3.3
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	96	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

336

Date sampled

11/12/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

336

Location of sampling site

Within UTM grid site.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Gentle slope to south, high ridges (10 to 20 m) all around at distance; swamp to the south and east; bedrock within and around site (unavoidable). Trees: none, birch nearby are at 5 to 10 m spacing; shrub: fern 3%, birch 2%; herb: grasses, blueberry 45%; ground: boulder 3%, moss 30%, rotting wood 2%, lichen 10%.

Easting

495629

NAD83
Zone 17

Northing

5157372

Reference

Helicopter

Altitude(m)

329

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 6 cm; Ah: 0 to 5 cm (black); Ae: 5 to 10 cm, silty clay texture; Bt: 9 to 32 cm, sandy/clay texture.

Parent material field description

Sample collected from two holes 49 to 60 cm and 50 to 67 cm. Texture: sandy silt ~10% sand. Colour: dark grey/brown, more grey at depth. Mottles: common, prominent, red.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25425

Depth 5 - 10 cm:

25426

Depth 10 - 20 cm:

25427

Dup. Depth 0 - 5 cm:

25428

Dup. Depth 5 - 10 cm

25429

Dup. Depth 10 - 20 cm:

25430

Parent material:

25431

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\336\2001-CEM-336-SITE_1.JPG.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\336\CEM-336-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\336\2001-CEM-336-CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil Photos\336\2001-CEM-336-PARENT_1.JPG.jpg

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

336

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	9500	Cobalt 0 to 5cm:	18	Nickel 0 to 5cm:	600
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	19000	Cobalt Parent:	7	Nickel Parent:	30
Arsenic 0 to 5cm:	34	Copper 0 to 5cm:	685	Selenium 0 to 5cm:	6
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	22	Selenium Parent:	ND
Barium 0 to 5cm:	81	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	79	Iron Parent:	21000	Strontium Parent:	54
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	77	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	43
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	980	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	4200	Zinc Parent:	27
Calcium 0 to 5cm:	2100	Manganese 0 to 5cm:	135	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4200	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	56	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

337

Date sampled

11/13/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

337

Location of sampling site

Blezzard Flats.

Historical Inco sample station

OBM map number

41 I/11

Field observations

Forested to south; rock and swamp to north; flat with some puddled water; half forested, half alder thicket. Outcrop in sand ridges on east and west sides trending NW (within 50 m). Trees: 20 cover, 8% poplar, 1% white spruce. Shrub: alder 8%, birch 2%, willow 4%, spruce 1%, tall grass 3%, poplar 10%, raspberry 2%, laurel 4%, fire weed 2%, red pine <1%. Herb: grass 2%, moss 6%. Floor: leaf litter 35%, logs and wood 4%, needle litter 2%.

Easting

489246

NAD83
Zone 17

Northing

5162961

Reference

Helicopter

Altitude(m)

Conditions

Cloudy, warm

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH:0 to 5 cm; Ae: 0 to 1 cm (5Y2.5/2); Bg: >1 cm (5Y6/2, mottles: 5Y 5/4). Texture: silty

Parent material field description

Sample was collected from 52 to 82 cm. Texture: silty clay loam. Colour: 5Y 6/2; mottles: 7.5YR 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25435

Depth 5 - 10 cm:

25436

Depth 10 - 20 cm:

25437

Dup. Depth 0 - 5 cm:

25443

Dup. Depth 5 - 10 cm

25444

Dup. Depth 10 - 20 cm:

25445

Parent material:

25438

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\337\2001-CEM-337-
SITE 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\337\CEM-337-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\337\2001-CEM-337-
CORE 1.JPG

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\337\2001-CEM-337-
PARENT 1.JPG

Site Number

337

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	275
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	21000	Cobalt Parent:	11	Nickel Parent:	39
Arsenic 0 to 5cm:	12	Copper 0 to 5cm:	210	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	28	Selenium Parent:	ND
Barium 0 to 5cm:	58	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	53
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	100	Iron Parent:	28000	Strontium Parent:	67
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	56
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	2000	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	7700	Zinc Parent:	35
Calcium 0 to 5cm:	4100	Manganese 0 to 5cm:	275	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6000	Manganese Parent:	430	pH Parent:	NA
Chromium 0 to 5cm:	59	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	77	Molybdenum Parent:	1.5	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

338

Date sampled

11/26/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

338

Location of sampling site

Val Therese.

Historical Inco sample station

OBM map number

Field observations

Vegetation: 25% birch, 25% spruce, lichens; ground covered predominantly with moss.

Easting

499671

NAD83
Zone 17

Northing

5163107

Reference

Val Therese

Altitude(m)

321

Conditions

Overcast, snow

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ae: 0 to 15 cm; BC: >10 cm (light yellowish orange). Texture: sand.

Parent material field description

Sample was collected from 80 to 100 cm. Texture: sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26447

Depth 5 - 10 cm:

26448

Depth 10 - 20 cm:

26449

Dup. Depth 0 - 5 cm:

26353

Dup. Depth 5 - 10 cm:

26354

Dup. Depth 10 - 20 cm:

26355

Parent material:

26450

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\338\2001-CEM-338-
Site_1.jpg

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\338\CEM-338-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\338\2001-CEM-338-
Core_1.jpg

Parent material photo

Site Number

338

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7050	Cobalt 0 to 5cm:	11	Nickel 0 to 5cm:	316
Aluminum 5 to 10cm:	8450	Cobalt 5 to 10cm:	3	Nickel 5 to 10cm:	44
Aluminum 10 to 20cm:	13500	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	22
Aluminum Parent:	9700	Cobalt Parent:	6	Nickel Parent:	28
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	325	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	8	Copper 5 to 10cm:	65	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	19	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	10	Selenium Parent:	ND
Barium 0 to 5cm:	59	Iron 0 to 5cm:	13000	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	35	Iron 5 to 10cm:	8950	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	46	Iron 10 to 20cm:	15000	Strontium 10 to 20cm:	48
Barium Parent:	30	Iron Parent:	12000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	14	Vanadium 5 to 10cm:	31
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	39
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	25
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	21
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1250	Zinc 5 to 10cm:	14
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2850	Zinc 10 to 20cm:	21
Cadmium Parent:	ND	Magnesium Parent:	3900	Zinc Parent:	22
Calcium 0 to 5cm:	2200	Manganese 0 to 5cm:	165	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	135	pH 5 to 10cm:	4.2
Calcium 10 to 20cm:	3650	Manganese 10 to 20cm:	200	pH 10 to 20cm:	4.6
Calcium Parent:	3900	Manganese Parent:	170	pH Parent:	5.7
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	76
Chromium 5 to 10cm:	23	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	30
Chromium 10 to 20cm:	38	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	10
Chromium Parent:	29	Molybdenum Parent:	ND	C TOC Parent:	3.6

Sudbury Regional Soils Project 2001

Site Number

339

Date sampled

11/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

339

Location of sampling site

300 m N of Dryden Rd. approx 5-6 km on Dryden Rd. off Hwy 537.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Gentle slope to north, 50 m south of quadrant. Trees: 90% cover, densely spaced copus birches, small skinny, very dense conifers at east and west; birch, poplar, black spruce, balsam fir. Shrub: balsam fir, grass, ferns, clover, cornus, willow. Ground: leaf litter, moss, tree litter.

Easting

521600

NAD83
Zone 17

Northing

5146010

Reference

Dryden Lake Rd.

Altitude(m)

258

Conditions

Dry, overcast, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Texture: sand grading to silty sand.

Parent material field description

Sample collected from 80 to 114 cm. Texture: sand grading to silty sand with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11635

Depth 5 - 10 cm:

11631

Depth 10 - 20 cm:

11645

Dup. Depth 0 - 5 cm:

11646

Dup. Depth 5 - 10 cm

11647

Dup. Depth 10 - 20 cm:

11648

Parent material:

11649

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\339\2001-CEM-339-
SITE_1.JPG.jpg

Soil profile diagram

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\339\2001-CEM-339-
CORE_1.JPG.jpg

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\339\2001-CEM-339-
PARENT_1.JPG.jpg

Site Number

339

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	15500	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	281
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	18000	Cobalt Parent:	8	Nickel Parent:	25
Arsenic 0 to 5cm:	8	Copper 0 to 5cm:	295	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	19	Selenium Parent:	ND
Barium 0 to 5cm:	145	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	55
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	97	Iron Parent:	21000	Strontium Parent:	47
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	57	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	42
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	2850	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	5300	Zinc Parent:	19
Calcium 0 to 5cm:	4300	Manganese 0 to 5cm:	490	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	5000	Manganese Parent:	230	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	48	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

340

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F340

Location of sampling site

Helicopter site: northwest of Field, Gibbons Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Thickly wooded evergreen area, level. Ground cover is predominantly slash, deadwood, and dried shrubs.

Easting

570798

NAD83
Zone 17

Northing

5160498

Reference

Helicopter

Altitude(m)

294

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, moist, consolidated, 2 to 5 cm thick. Horizon 2 (Ae) is a light grey, dry, silty sand, 4 cm thick. Horizon 3 (Bt) is a medium to light brown, moist to dry fine-grained sand.

Parent material field description

Depth sample collected from 70 to 100 cm (depth to bedrock) consists of a light brown fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12396

Depth 5 - 10 cm:

12398

Depth 10 - 20 cm:

12400

Dup. Depth 0 - 5 cm:

12397

Dup. Depth 5 - 10 cm

12399

Dup. Depth 10 - 20 cm:

12401

Parent material:

12405

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F340\F340-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F340\F340-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F340\F340-core.jpg

Parent material photo

Site Number

340

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5950	Cobalt 0 to 5cm:	2	Nickel 0 to 5cm:	26
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	8	Nickel Parent:	20
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	20	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	8	Selenium Parent:	ND
Barium 0 to 5cm:	53	Iron 0 to 5cm:	9800	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	35	Iron Parent:	16000	Strontium Parent:	40
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	24	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	770	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3700	Zinc Parent:	17
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	85	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4500	Manganese Parent:	260	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	40	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

341

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F341

Location of sampling site

Helicopter site: McLean Peninsula on Lake Temagami, Vogt Township.

Historical Inco sample station

OBM map number

41 I/16

Field observations

Wooded coniferous area near swamp, exposed bedrock, slight slope. Ground cover is shrubs and grasses.

Easting

567013

Northing

5191510

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, loose, moist, 5 to 10 cm thick. Horizon 2 (Bf) is an orange brown, wet, unconsolidated sand mixed with trace gravel, persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 40 cm consists of an orange brown sand with some silt and trace gravel, wet, unconsolidated.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13312

Depth 5 - 10 cm:

13314

Depth 10 - 20 cm:

13316

Dup. Depth 0 - 5 cm:

13313

Dup. Depth 5 - 10 cm

13315

Dup. Depth 10 - 20 cm:

13317

Parent material:

13320

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F341\F341-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F341\F341-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F341\F341-core.jpg

Parent material photo

Site Number

341

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8700	Cobalt 0 to 5cm:	4.5	Nickel 0 to 5cm:	71
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	19000	Cobalt Parent:	5	Nickel Parent:	18
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	59	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	13500	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	36	Iron Parent:	27000	Strontium Parent:	35
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	44	Vanadium 0 to 5cm:	38
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	85
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1095	Zinc 0 to 5cm:	29
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1900	Zinc Parent:	20
Calcium 0 to 5cm:	2550	Manganese 0 to 5cm:	105	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2700	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	40	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	41	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

342

Date sampled

10/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F342

Location of sampling site

Helicopter site: north of Riviere Veuve, Loughrin Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Wooded hardwood and evergreen stand. Soil at this site is very shallow and rooted.

Easting

541363

Northing

5162317

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

289

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 2 to 5 cm thick. Horizon 2 (Bt) is a medium brown, fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12406

Depth 5 - 10 cm:

12408

Depth 10 - 20 cm:

12410

Dup. Depth 0 - 5 cm:

12407

Dup. Depth 5 - 10 cm:

12409

Dup. Depth 10 - 20 cm:

12411

Parent material:

12414

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F342\F342-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F342\F342-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F342\F342-core.jpg

Parent material photo

Site Number

342

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	86
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	79	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	96	Iron 0 to 5cm:	16000	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	36	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	41
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	4050	Manganese 0 to 5cm:	215	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

343

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F343

Location of sampling site

Helicopter site: north of Murray Lake, Davis Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Thickly wooded evergreen area, slight slope. Ground cover is shrubs and grasses.

Easting

543803

NAD83
Zone 17

Northing

5171669

Reference

Helicopter

Altitude(m)

243

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (Bt) is brown, dry, unconsolidated sand with trace amounts of gravel

Parent material field description

Depth sample collected from 60 to 80 cm consists of a dry, reddish brown sand with some gravel and occasional pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13345

Depth 5 - 10 cm:

13347

Depth 10 - 20 cm:

13349

Dup. Depth 0 - 5 cm:

13346

Dup. Depth 5 - 10 cm

13348

Dup. Depth 10 - 20 cm:

13350

Parent material:

13352

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F343\F343-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil Photos\F343\F343-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil Photos\F343\F343-core.jpg

Parent material photo

Site Number

343

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7900	Cobalt 0 to 5cm:	9	Nickel 0 to 5cm:	32
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	26000	Cobalt Parent:	13	Nickel Parent:	51
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	23	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	24	Selenium Parent:	ND
Barium 0 to 5cm:	38	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	100	Iron Parent:	33000	Strontium Parent:	56
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	7	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	9	Vanadium Parent:	56
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3150	Zinc 0 to 5cm:	24
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6500	Zinc Parent:	55
Calcium 0 to 5cm:	3250	Manganese 0 to 5cm:	195	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	6200	Manganese Parent:	270	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	80	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

344

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F344

Location of sampling site

Helicopter site: east of Maskinonge Lake, McNish Township.

Historical Inco sample station

OBM map number

41 I/9

Field observations

Wooded coniferous area near steep slope, thick needle cover. Soil at this site is very shallow and gravelly. Average soil depth in cores is approximately 10 cm.

Easting

546550

NAD83
Zone 17

Northing

5176948

Reference

Helicopter

Altitude(m)

273

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, 5 to 7 cm thick. Horizon 2 (Bt) is medium brown, moist, fine-grained sand, persists to 10 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12993

Depth 5 - 10 cm:

12995

Depth 10 - 20 cm:

12997

Dup. Depth 0 - 5 cm:

12994

Dup. Depth 5 - 10 cm:

12996

Dup. Depth 10 - 20 cm:

12998

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F344\F344-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F344\F344-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F344\F344-core.jpg

Parent material photo

Site Number

344

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9950	Cobalt 0 to 5cm:	7	Nickel 0 to 5cm:	120
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	6.5	Copper 0 to 5cm:	101	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	109	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	57	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	54
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2700	Manganese 0 to 5cm:	155	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	60	Molybdenum 0 to 5cm:	1.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

345

Date sampled

10/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F345

Location of sampling site

Helicopter site: near Little Valley Lake north of McCarthy Bay of Matagamasi Lake, McCarthy Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded slope area, deciduous, near gravel quarry. Soil at this site is very rocky.

Easting

534687

Northing

5190833

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

308

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1(LFH/Ah) is organic, dark brown, loose, dry, 3 to 5 cm thick. Certain cores contain a negligible (<0.5 to 1 cm thick) grey silt layer (Ae). Horizon 2 (Bt) is a medium brown, fine-grained sand, persists to 20 cm or rock layer.

Parent material field description

Depth sample collected from 40 to 60 cm is a medium brown, fine-grained sand increasing in silt content with depth.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12984

Depth 5 - 10 cm:

12986

Depth 10 - 20 cm:

12988

Dup. Depth 0 - 5 cm:

12985

Dup. Depth 5 - 10 cm

12987

Dup. Depth 10 - 20 cm:

12989

Parent material:

12992

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F345\F345-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F345\F345-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F345\F345-core.jpg

Parent material photo

Site Number

345

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5850	Cobalt 0 to 5cm:	5	Nickel 0 to 5cm:	96
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	15000	Cobalt Parent:	7	Nickel Parent:	20
Arsenic 0 to 5cm:	2.5	Copper 0 to 5cm:	82	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	1
Barium 0 to 5cm:	80	Iron 0 to 5cm:	7750	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	40	Iron Parent:	14000	Strontium Parent:	35
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	62	Vanadium 0 to 5cm:	22
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	32
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	630	Zinc 0 to 5cm:	33
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	20
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	220	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2800	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	27	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	37	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

346

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F346

Location of sampling site

Helicopter site: north of Lake Wanapitei near Chiniguchi Lake, Telfer Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Thickly wooded coniferous/shrub area near lake, exposed bedrock, level. Ground cover is thick shrubs.

Easting

522616

Northing

5198426

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 5 to 7 cm thick. Horizon 2 (Bf) is a reddish brown fine-grained sand to silt.

Parent material field description

Depth sample collected from 60 to 80 cm consists of a grey silt with trace amounts of reddish sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12769

Depth 5 - 10 cm:

12771

Depth 10 - 20 cm:

12773

Dup. Depth 0 - 5 cm:

12770

Dup. Depth 5 - 10 cm:

12772

Dup. Depth 10 - 20 cm:

12774

Parent material:

12777

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F346\F346-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F346\F346-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F346\F346-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

346

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7000	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	70
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	13000	Cobalt Parent:	5	Nickel Parent:	15
Arsenic 0 to 5cm:	5	Copper 0 to 5cm:	57	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	12	Selenium Parent:	ND
Barium 0 to 5cm:	183	Iron 0 to 5cm:	8050	Strontium 0 to 5cm:	31
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	90	Iron Parent:	15000	Strontium Parent:	49
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	33
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	750	Zinc 0 to 5cm:	31
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2800	Zinc Parent:	11
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	206	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2900	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	1.1	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	35	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

347

Date sampled

10/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F347

Location of sampling site

Helicopter site: between Alma Lake and McGown Lake west of the Sturgeon River, DeMorest Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area, exposed bedrock. Soil at this site is shallow. Average soil depth is 15 cm, with a narrow area of the site with soil depths greater than 30 cm.

Easting

532142

Northing

5202323

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool,
some snow

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 5 to 10 cm thick. Horizon 2 (Ae) is a light grey, moist, fine- to medium-grained sand, 3 to 5 cm thick. Horizon 3 (Bf) is a reddish brown sand with occasional gravel, persists to 20 cm.

Parent material field description

Depth sample collected from 40 to 50 cm consists of red sand mixed with gravel and pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12759

Depth 5 - 10 cm:

12761

Depth 10 - 20 cm:

12763

Dup. Depth 0 - 5 cm:

12760

Dup. Depth 5 - 10 cm:

12762

Dup. Depth 10 - 20 cm:

12764

Parent material:

12768

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F347\F347-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F347\F347-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F347\F347-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

347

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	3550	Cobalt 0 to 5cm:	3.5	Nickel 0 to 5cm:	99
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	17000	Cobalt Parent:	4	Nickel Parent:	34
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	82	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	8.6	Selenium Parent:	ND
Barium 0 to 5cm:	62	Iron 0 to 5cm:	5500	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	40	Iron Parent:	19000	Strontium Parent:	25
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	15
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	7	Vanadium Parent:	48
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	380	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	1000	Zinc Parent:	27
Calcium 0 to 5cm:	1150	Manganese 0 to 5cm:	60	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	1600	Manganese Parent:	82	pH Parent:	NA
Chromium 0 to 5cm:	21	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	69	Molybdenum Parent:	2	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

348

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F348

Location of sampling site

Helicopter site: west of Lake Wanapitei near Drill Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Shrubby and sparse deciduous knoll on edge of swamp. Soil at this site is very shallow, bedrock is encountered at approximately 10 cm.

Easting

513196

Northing

5171143

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, unconsolidated, 5 cm thick. Horizon 2 (Bf) is an orange brown, moist, unconsolidated, medium-grained sand to 10 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13441

Depth 5 - 10 cm:

13443

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13442

Dup. Depth 5 - 10 cm

13444

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F348\F348-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F348\F348-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F348\F348-core.jpg

Parent material photo

Site Number

348

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5250	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	186
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	200	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	68	Iron 0 to 5cm:	15000	Strontium 0 to 5cm:	20
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.5	Magnesium 0 to 5cm:	1090	Zinc 0 to 5cm:	26
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1500	Manganese 0 to 5cm:	73	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	31	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

349

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F349

Location of sampling site

Helicopter site: south of Lake Wanapitei north of Bonanza Lake.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded coniferous and deciduous stand, exposed bedrock ridge. Soil at this site is very shallow, bedrock is encountered at approximately 10 cm.

Easting

522103

Northing

5168434

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, moist, unconsolidated, 5 cm thick. Horizon 2 (Ae) is a white, wet, unconsolidated, medium-grained sand to 10 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13435

Depth 5 - 10 cm:

13437

Depth 10 - 20 cm:

Dup. Depth 0 - 5 cm:

13436

Dup. Depth 5 - 10 cm

13438

Dup. Depth 10 - 20 cm:

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F349\F349-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F349\F349-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F349\F349-core.jpg

Parent material photo

Site Number

349

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10550	Cobalt 0 to 5cm:	17	Nickel 0 to 5cm:	280
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	16	Copper 0 to 5cm:	190	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	118	Iron 0 to 5cm:	10900	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	51	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.6	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	36
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	3550	Manganese 0 to 5cm:	381	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	36	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

350

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F350

Location of sampling site

Helicopter site: near Regional Rd. 97.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Thick wooded coniferous and deciduous stand slope area. Groud cover is predominantly leaf and needle litter.

Easting

511897

Northing

5173222

NAD83
Zone 17

Reference

Helicopter

Altitude(m)

325

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, dry, consolidated, 2 to 5 cm thick. Horizon 2 (Ae) is a light grey, dry, silty sand, consolidated, 2 to 7 cm thick. Horizon 3 (Bt) is a medium to light brown, silty sand, persists to 20 cm.

Parent material field description

Depth sample collected from 30 to 60 cm (depth to bedrock) consists of a light brown silty sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12950

Depth 5 - 10 cm:

12952

Depth 10 - 20 cm:

12954

Dup. Depth 0 - 5 cm:

12951

Dup. Depth 5 - 10 cm

12953

Dup. Depth 10 - 20 cm:

12955

Parent material:

12959

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F350\F350-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F350\F350-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F350\F350-core.jpg

Parent material photo

Site Number

350

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6400	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	172
Aluminum 5 to 10cm:	9800	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	18
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	16000	Cobalt Parent:	9	Nickel Parent:	30
Arsenic 0 to 5cm:	8.5	Copper 0 to 5cm:	140	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6	Copper 5 to 10cm:	20	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	73	Iron 0 to 5cm:	10500	Strontium 0 to 5cm:	33
Barium 5 to 10cm:	36	Iron 5 to 10cm:	13150	Strontium 5 to 10cm:	36
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	41	Iron Parent:	18000	Strontium Parent:	29
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	44	Vanadium 0 to 5cm:	26
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	6	Vanadium Parent:	36
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	725	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1070	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2700	Zinc Parent:	23
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	130	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2150	Manganese 5 to 10cm:	100	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2400	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	28	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	38	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

351

Date sampled

10/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F351

Location of sampling site

Helicopter site: west of Lake Wanapitei near Selwyn Lake.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous area near swamp, exposed bedrock. Slight slope. Ground cover is litter and moss.

Easting

507768

NAD83
Zone 17

Northing

5178999

Reference

Helicopter

Altitude(m)

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, black, 7 cm thick. Horizon 2 (Bf) is a reddish brown, moist to wet fine-grained sand with trace silt and occasional gravel. Occasional cores contain a very thin grey horizon (Ae) underneath the organic horizon, not enough to sample.

Parent material field description

Depth sample collected from 40 to 60 cm consists of a reddish brown, moist sand grading to grey fine-grained sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13297

Depth 5 - 10 cm:

13299

Depth 10 - 20 cm:

13301

Dup. Depth 0 - 5 cm:

13298

Dup. Depth 5 - 10 cm:

13300

Dup. Depth 10 - 20 cm:

13302

Parent material:

13305

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F351\F351-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F351\F351-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F351\F351-core.jpg

Parent material photo

Site Number

351

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8450	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	141
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	16
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	4.5	Nickel 10 to 20cm:	21
Aluminum Parent:	12000	Cobalt Parent:	6	Nickel Parent:	20
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	130	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	5.5	Copper 5 to 10cm:	19	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	14	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	6.8	Selenium Parent:	ND
Barium 0 to 5cm:	58	Iron 0 to 5cm:	12800	Strontium 0 to 5cm:	29
Barium 5 to 10cm:	26	Iron 5 to 10cm:	15500	Strontium 5 to 10cm:	35
Barium 10 to 20cm:	31	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	33
Barium Parent:	18	Iron Parent:	13000	Strontium Parent:	20
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	60	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7	Vanadium 5 to 10cm:	43
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	45
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	28
Cadmium 0 to 5cm:	0.4	Magnesium 0 to 5cm:	830	Zinc 0 to 5cm:	22
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1010	Zinc 5 to 10cm:	12
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1650	Zinc 10 to 20cm:	18
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	14
Calcium 0 to 5cm:	2450	Manganese 0 to 5cm:	97	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2450	Manganese 5 to 10cm:	103	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2400	Manganese 10 to 20cm:	120	pH 10 to 20cm:	NA
Calcium Parent:	1700	Manganese Parent:	120	pH Parent:	NA
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	31	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	40	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	32	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

352

Date sampled

10/30/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F352

Location of sampling site

Helicopter site: near northwest shore of Kukagami Lake, Kelly Township.

Historical Inco sample station

OBM map number

41 I/15

Field observations

Wooded coniferous/deciduous area near swamp, level. Ground cover is predominantly litter.

Easting

533198

NAD83
Zone 17

Northing

5180524

Reference

Helicopter

Altitude(m)

285

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1(LFH/Ah) is organic, dark brown, dry, unconsolidated, 3 to 5 cm thick. Horizon 2 (Ae) is a light grey, cohesive, moist silt, 3 cm thick. Horizon 3 (Bf) is a reddish brown, fine-grained sand with occasional pebbles, persists to 20 cm.

Parent material field description

Depth sample collected from 40 to 60 cm consists of a light brown, fine-grained sand mixed with pebbles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

13010

Depth 5 - 10 cm:

13012

Depth 10 - 20 cm:

13014

Dup. Depth 0 - 5 cm:

13011

Dup. Depth 5 - 10 cm

13013

Dup. Depth 10 - 20 cm:

13015

Parent material:

13019

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F352\F352-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F352\F352-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F352\F352-core.jpg

Parent material photo

Site Number

352

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7300	Cobalt 0 to 5cm:	5.5	Nickel 0 to 5cm:	132
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	16000	Cobalt Parent:	9	Nickel Parent:	36
Arsenic 0 to 5cm:	6	Copper 0 to 5cm:	112	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	13	Selenium Parent:	ND
Barium 0 to 5cm:	135	Iron 0 to 5cm:	11500	Strontium 0 to 5cm:	32
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	58	Iron Parent:	19000	Strontium Parent:	26
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	49	Vanadium 0 to 5cm:	28
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	39
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	775	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	2900	Zinc Parent:	22
Calcium 0 to 5cm:	2150	Manganese 0 to 5cm:	140	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2000	Manganese Parent:	150	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	55	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

353

Date sampled

9/19/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

353

Location of sampling site

Maley Dr @ Timber Wolf golf course.

Historical Inco sample station

216SC

OBM map number

41 I/10

Field observations

Site is located within a slight depression between 2 outcrops, slightly sloped, semi-forested with shallow soil, location 50 to 100 m from E-W trail. Lots of garbage on trail to site i.e) tires, rusted car. Trees: 25% white birch, 20% red oak, 5% red maple. Shrubs: ericaceous 15% Labrador tea, 40% bracken fern. Herb: 25% ground cedar, 25% tuft grass, 15% mosses, 10% rock, 25% open soil.

Easting

504004

NAD83
Zone 17

Northing

5153951

Reference

Maley
Conservation Area

Altitude(m)

303

Conditions

Windy humid

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 5 cm; Ah: 0 to 3 cm; Ae: 3 to 10 cm (white); Bt: 10 to 30 cm (light brown). Texture: silty clay. Mottling is evident below 30 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10846

Depth 5 - 10 cm:

10847

Depth 10 - 20 cm:

10848

Dup. Depth 0 - 5 cm:

10849

Dup. Depth 5 - 10 cm

10850

Dup. Depth 10 - 20 cm:

10851

Parent material:

Parent material field description

No sample collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\353\CEM-353-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

353

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8050	Cobalt 0 to 5cm:	44	Nickel 0 to 5cm:	1200
Aluminum 5 to 10cm:	7950	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	118
Aluminum 10 to 20cm:	13000	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	29
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	46	Copper 0 to 5cm:	795	Selenium 0 to 5cm:	8
Arsenic 5 to 10cm:	20	Copper 5 to 10cm:	165	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	6.5	Copper 10 to 20cm:	40	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	82	Iron 0 to 5cm:	23000	Strontium 0 to 5cm:	22
Barium 5 to 10cm:	50	Iron 5 to 10cm:	12000	Strontium 5 to 10cm:	20
Barium 10 to 20cm:	38	Iron 10 to 20cm:	16000	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	0.28	Lead 0 to 5cm:	105	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	0.28	Lead 5 to 10cm:	25	Vanadium 5 to 10cm:	28
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	11	Vanadium 10 to 20cm:	33
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	1065	Zinc 0 to 5cm:	55
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	905	Zinc 5 to 10cm:	23
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1550	Zinc 10 to 20cm:	27
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1700	Manganese 0 to 5cm:	130	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	1320	Manganese 5 to 10cm:	152	pH 5 to 10cm:	4.6
Calcium 10 to 20cm:	2100	Manganese 10 to 20cm:	135	pH 10 to 20cm:	4.6
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	1.1	C TOC 0 to 5cm:	142
Chromium 5 to 10cm:	26	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	55
Chromium 10 to 20cm:	31	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	20
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

354

Date sampled

9/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

354

Location of sampling site

Hwy 17 E ~3km east of Wahnapiatae.

Historical Inco sample station

225SC

OBM map number

41 I/10

Field observations

Rocky semi-forested; slopes to SW; outcrop to NE. Trees: 20%, birch dominant (90%); oak adjacent to quadrant Aspen 5%. Shrubs (10%) willow, sweet fern, birch, sheep laurel. Grass: grass tufts, and flowering plants (30%) Forest floor: 30% barren, moss, lichen, mushrooms, 10%.

Easting

520378

NAD83
Zone 17

Northing

5150031

Reference

Uncle ED's on Hwy

Altitude(m)

275

Conditions

Sunny mild

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 5 cm, grass, moss, leaf litter; Ah: 0 to 3 cm, roots, fibre; Ae: 3 to 3.5 cm (white/grey); Bt: 3.5 to 17 cm (brown), sandy; Bg: >7 cm (white with prominent mottles), clay.

Parent material field description

Two samples collected; 1) 63 to 82 cm 2) 82 to 107 cm. Texture: clay. Colour: grey with orange brown mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10882

Depth 5 - 10 cm:

10883

Depth 10 - 20 cm:

10884

Dup. Depth 0 - 5 cm:

10885

Dup. Depth 5 - 10 cm

10886

Dup. Depth 10 - 20 cm:

10887

Parent material:

10894

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\354\CEM-354-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

354

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	12	Nickel 0 to 5cm:	195
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	58
Aluminum 10 to 20cm:	15000	Cobalt 10 to 20cm:	7.5	Nickel 10 to 20cm:	48
Aluminum Parent:	24000	Cobalt Parent:	14	Nickel Parent:	53
Arsenic 0 to 5cm:	33	Copper 0 to 5cm:	260	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	6.5	Copper 5 to 10cm:	88	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	35	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	30	Selenium Parent:	ND
Barium 0 to 5cm:	67	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	35
Barium 5 to 10cm:	58	Iron 5 to 10cm:	18500	Strontium 5 to 10cm:	34
Barium 10 to 20cm:	65	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	37
Barium Parent:	170	Iron Parent:	31000	Strontium Parent:	57
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	48	Vanadium 0 to 5cm:	35
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	37
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	9	Vanadium 10 to 20cm:	38
Beryllium Parent:	0.5	Lead Parent:	8	Vanadium Parent:	54
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2500	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2600	Zinc 5 to 10cm:	41
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3550	Zinc 10 to 20cm:	39
Cadmium Parent:	ND	Magnesium Parent:	8500	Zinc Parent:	44
Calcium 0 to 5cm:	2900	Manganese 0 to 5cm:	195	pH 0 to 5cm:	4.5
Calcium 5 to 10cm:	2700	Manganese 5 to 10cm:	195	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	210	pH 10 to 20cm:	NA
Calcium Parent:	4100	Manganese Parent:	410	pH Parent:	NA
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	67
Chromium 5 to 10cm:	40	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	46	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	81	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

355

Date sampled

9/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

355

Location of sampling site

Hwy 69 N: ~3km N of Lasalle Blvd.

Historical Inco sample station

Susan C.

OBM map number

41 I/10

Field observations

Area very rocky, outcrops visible. Soil very wet. Veg: birch (dominant), maple, alder, grasses, Labrador tea, lichen, moss, blueberry bushes, clubmoss. Floor: moss leaf litter, lichen twigs; no aspen at soil site, birch very bare. Birch and aspen collected W (100 m) of soil site. UTM 501707, 5154964, 309 m

Easting

501772

NAD83
Zone 17

Northing

5154859

Reference

Susan Cook site

Altitude(m)

291

Conditions

Rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 2 cm, Ae: 2 to 12 cm (10YR7/2); Bf: 12 to 17 cm (10YR4/6); Bm: 17 to >30 cm (2.5Y6/4). 10% of cores: LFH: 0 to 4 cm; Ah: 0 to 2 cm; Bm: 2 to >30 cm (10YR 6/6). Texture: sandy clay loam with some gravel. Soil very wet at time of sampling.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10287

Depth 5 - 10 cm:

10283

Depth 10 - 20 cm:

10285

Dup. Depth 0 - 5 cm:

10282

Dup. Depth 5 - 10 cm

10284

Dup. Depth 10 - 20 cm:

10286

Parent material:

Parent material field description

Could not collect parent material; site was exceedingly stony.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\355\CEM-355-
soilprofile.jpg

Core photo 1

Parent material photo

c:\SRSP_2001\2001-CEM-Soil
Photos\355\2001-CEM-355-
Core_1.JPG

Site Number

355

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9200	Cobalt 0 to 5cm:	22	Nickel 0 to 5cm:	555
Aluminum 5 to 10cm:	13000	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	57
Aluminum 10 to 20cm:	17500	Cobalt 10 to 20cm:	8	Nickel 10 to 20cm:	34
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	37	Copper 0 to 5cm:	665	Selenium 0 to 5cm:	5.5
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	91	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	25	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	73	Iron 0 to 5cm:	21000	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	48	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	25
Barium 10 to 20cm:	51	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	33
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	76	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	13	Vanadium 5 to 10cm:	36
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	37
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.85	Magnesium 0 to 5cm:	1300	Zinc 0 to 5cm:	38
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1900	Zinc 5 to 10cm:	30
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2800	Zinc 10 to 20cm:	34
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2050	Manganese 0 to 5cm:	125	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	1800	Manganese 5 to 10cm:	135	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	2600	Manganese 10 to 20cm:	165	pH 10 to 20cm:	4.6
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	37	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	65
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	19
Chromium 10 to 20cm:	45	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	11
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

356

Date sampled

9/28/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

356

Location of sampling site

~3km N of Wahnapiatae.

Historical Inco sample station

Susan C.

OBM map number

41 I/10

Field observations

Soil site sloping slightly to the SE <10 degrees. Area has some trees, but is mostly open. Soil very wet. Site located at highest elevation of area. Area very rocky, bedrock exposed, boulders visible, soil shallow. Veg: birch (dominant) not many leaves, maple, oak, moss, clubmoss, grasses, Labrador tea, some blueberry. Floor: moss, clubmoss, leaf litter, rocks.

Easting

517373

NAD83
Zone 17

Northing

5150506

Reference

Susan Cook site

Altitude(m)

301

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

85% of cores: Of: 0 to 2 cm; Ah: 0 to 2 cm (10YR2/1); Ae: 2 to 12 cm (10YR6/2); Bf: 8 to 17 cm (10YR3/6); Bm: 17 to >30 cm (2.5Y5/4). 15% of cores did not contain an Ae horizon. Texture: sandy loam; contains abundant gravel sized clasts.

Parent material field description

Parent material could not be collected; hit bedrock at 40 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10290

Depth 5 - 10 cm:

10292

Depth 10 - 20 cm:

10294

Dup. Depth 0 - 5 cm:

10291

Dup. Depth 5 - 10 cm

10293

Dup. Depth 10 - 20 cm:

10295

Parent material:

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\356\2001-CEM-355-
Site_1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\356\CEM-356-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\356\2001-CEM-356-
Core_1.JPG

Parent material photo

Site Number

356

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	8550	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	270
Aluminum 5 to 10cm:	12000	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	71
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	40
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	43	Copper 0 to 5cm:	425	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	16	Copper 5 to 10cm:	160	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	3.5	Copper 10 to 20cm:	56	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	79	Iron 0 to 5cm:	20000	Strontium 0 to 5cm:	17
Barium 5 to 10cm:	55	Iron 5 to 10cm:	17500	Strontium 5 to 10cm:	19
Barium 10 to 20cm:	40	Iron 10 to 20cm:	16500	Strontium 10 to 20cm:	21
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	34
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6.5	Vanadium 10 to 20cm:	35
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1200	Zinc 0 to 5cm:	23
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	18
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2350	Zinc 10 to 20cm:	19
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1200	Manganese 0 to 5cm:	88	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	1250	Manganese 5 to 10cm:	99	pH 5 to 10cm:	4.2
Calcium 10 to 20cm:	1600	Manganese 10 to 20cm:	120	pH 10 to 20cm:	4.3
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	40
Chromium 5 to 10cm:	38	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	20
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

357

Date sampled

9/25/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

357

Location of sampling site

Hwy 17W @ Southview Dr.

Historical Inco sample station

270SC

OBM map number

41 I/6

Field observations

Rocky flat. Herb: 5-10% festuchin Sp?, 1% birdsfoot trefoil, 1% pohlia, 1% falsepixie cup lichen. Shrub: 1% white birch; 3% balsam poplar. Trees: 30% trembling aspen, 15% white birch.

Easting

495927

Northing

5143008

NAD83
Zone 17

Reference

Hwy 17W/
Southview Dr

Altitude(m)

298

Conditions

Cold, rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 5 cm (black); Ae: 5 to 8 cm (grey); Bg: 8 to 12 cm (grey); Bf: >12 cm

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11009

Depth 5 - 10 cm:

11010

Depth 10 - 20 cm:

11011

Dup. Depth 0 - 5 cm:

11012

Dup. Depth 5 - 10 cm

11013

Dup. Depth 10 - 20 cm:

11014

Parent material:

Parent material field description

Parent material could not be collected; hit bedrock at 26 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\357\CEM-357-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

357

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7500	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	720
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	22.5	Nickel 5 to 10cm:	235
Aluminum 10 to 20cm:	18500	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	57
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	39	Copper 0 to 5cm:	705	Selenium 0 to 5cm:	8.5
Arsenic 5 to 10cm:	30	Copper 5 to 10cm:	395	Selenium 5 to 10cm:	3.5
Arsenic 10 to 20cm:	17	Copper 10 to 20cm:	140	Selenium 10 to 20cm:	1
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	74	Iron 0 to 5cm:	20500	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	67	Iron 5 to 10cm:	23500	Strontium 5 to 10cm:	30
Barium 10 to 20cm:	56	Iron 10 to 20cm:	22000	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	53	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	22	Vanadium 5 to 10cm:	51
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	10	Vanadium 10 to 20cm:	46
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.2	Magnesium 0 to 5cm:	3100	Zinc 0 to 5cm:	35
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2150	Zinc 5 to 10cm:	49
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2250	Zinc 10 to 20cm:	54
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	24500	Manganese 0 to 5cm:	165	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	5300	Manganese 5 to 10cm:	215	pH 5 to 10cm:	6.8
Calcium 10 to 20cm:	2950	Manganese 10 to 20cm:	190	pH 10 to 20cm:	5.4
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	0.95	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	43	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	34
Chromium 10 to 20cm:	43	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	18
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

358

Date sampled

9/27/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

358

Location of sampling site

Day Constuction off Hwy 144.

Historical Inco sample station

275SC

OBM map number

41 I/11

Field observations

Top of mountain/ridge barely forested rock area. Floor cover: moss, leaf litter, lichen, logs, buried twigs, rocks, stumps and mushrooms. Herb: minor amount of grass; shrub: pine trees, sweet fern, blueberry. Trees: birch (dominant species), some willow and some maple, area is flat, but outside quadrant it slopes slightly to the west. Outcrop to the east. A cart road to the north (slopes down) to lake/pond ~50 m to the north.

Easting

496187

Northing

5152906

NAD83
Zone 17

Reference

William Day
Construction Hwy

Altitude(m)

329

Conditions

Dry

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 7.5 cm; Ah: 0 to 2 cm; Ae: 2 to 4 cm (white); >4 cm horizons vary from: Bf: (redish brown), sandy; Bt: (light brown), silty; Bg: (white), clayey. Soil highly variable in colour and texture.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10867

Depth 5 - 10 cm:

10868

Depth 10 - 20 cm:

10869

Dup. Depth 0 - 5 cm:

10864

Dup. Depth 5 - 10 cm

10865

Dup. Depth 10 - 20 cm:

10866

Parent material:

Parent material field description

Parent material could not be collected.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\358\CEM-358-
soilprofile_1.jpg

Core photo 1

Parent material photo

Site Number

358

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	11000	Cobalt 0 to 5cm:	33	Nickel 0 to 5cm:	870
Aluminum 5 to 10cm:	14500	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	155
Aluminum 10 to 20cm:	20000	Cobalt 10 to 20cm:	12	Nickel 10 to 20cm:	56
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	67	Copper 0 to 5cm:	715	Selenium 0 to 5cm:	7
Arsenic 5 to 10cm:	21	Copper 5 to 10cm:	310	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	5.5	Copper 10 to 20cm:	95	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	79	Iron 0 to 5cm:	28500	Strontium 0 to 5cm:	17
Barium 5 to 10cm:	67	Iron 5 to 10cm:	20500	Strontium 5 to 10cm:	23
Barium 10 to 20cm:	64	Iron 10 to 20cm:	24000	Strontium 10 to 20cm:	34
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	74	Vanadium 0 to 5cm:	42
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	46
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7.5	Vanadium 10 to 20cm:	48
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.45	Magnesium 0 to 5cm:	2700	Zinc 0 to 5cm:	67
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3250	Zinc 5 to 10cm:	49
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3950	Zinc 10 to 20cm:	45
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1650	Manganese 0 to 5cm:	295	pH 0 to 5cm:	4.7
Calcium 5 to 10cm:	2000	Manganese 5 to 10cm:	375	pH 5 to 10cm:	4.8
Calcium 10 to 20cm:	3000	Manganese 10 to 20cm:	385	pH 10 to 20cm:	4.8
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	57
Chromium 5 to 10cm:	49	Molybdenum 5 to 10cm:	0.8	C TOC 5 to 10cm:	21
Chromium 10 to 20cm:	58	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	16
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

359

Date sampled

9/21/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

359

Location of sampling site

Hwy 17 E near Coniston.

Historical Inco sample station

313SC

OBM map number

41 I/7

Field observations

Area is forested with some open areas. Site is rocky, slopes 6 to 7 degrees to SW. Herbs: 15% green lichen (3 species) 15% moss, polytrichium 10% pohlia. Shrub: 25% birch, (15% paperifera) 5% red oak, 5% jack pine, 5% Labrador tea, trace of balsam and poplar. Trees: 25% birch (coppice).

Easting

508820

NAD83
Zone 17

Northing

5149526

Reference

Hwy 17E @ traffic lights

Altitude(m)

297

Conditions

Overcast with sunny breaks

SOIL DESCRIPTION

Soil profile horizon descriptions

L: 0 to 4 cm, leaf litter, moss, lichens, twigs;
Ah: 0 to 7 cm (black); Ae: 7 to 10 cm (white);
Bt: 7 to >30 cm. A Bf horizon was found in areas with trees. Texture: clay. Soil was very wet and easily compressed.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10858

Depth 5 - 10 cm:

10859

Depth 10 - 20 cm:

10860

Dup. Depth 0 - 5 cm:

10861

Dup. Depth 5 - 10 cm:

10862

Dup. Depth 10 - 20 cm:

10863

Parent material:

Parent material field description

Could not collect parent material.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\359\CEM-359-soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

359

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	11100	Cobalt 0 to 5cm:	23	Nickel 0 to 5cm:	463
Aluminum 5 to 10cm:	19400	Cobalt 5 to 10cm:	14	Nickel 5 to 10cm:	130
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	11	Nickel 10 to 20cm:	60
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	53	Copper 0 to 5cm:	605	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	18	Copper 5 to 10cm:	190	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	8.5	Copper 10 to 20cm:	89	Selenium 10 to 20cm:	1.5
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	96	Iron 0 to 5cm:	22000	Strontium 0 to 5cm:	23
Barium 5 to 10cm:	88	Iron 5 to 10cm:	17950	Strontium 5 to 10cm:	39
Barium 10 to 20cm:	63	Iron 10 to 20cm:	18500	Strontium 10 to 20cm:	31
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	59	Vanadium 0 to 5cm:	32
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	39
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8.5	Vanadium 10 to 20cm:	37
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1700	Zinc 0 to 5cm:	42
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2500	Zinc 5 to 10cm:	34
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	2750	Zinc 10 to 20cm:	36
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1750	Manganese 0 to 5cm:	190	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	3350	Manganese 5 to 10cm:	227	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	2250	Manganese 10 to 20cm:	205	pH 10 to 20cm:	4.6
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	43	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	47
Chromium 5 to 10cm:	46	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	49	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	14
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

360

Date sampled

9/20/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

360

Location of sampling site

Adamsdale: ~140m opposite correctional facility.

Historical Inco sample station

404SC

OBM map number

41 I/7

Field observations

Relatively flat, bare rock; open with small amount of vegetation in one corner (SW); glass just outside quadrant. Herb: 15 to 20% pohlia, 5% polytrichium, 10 to 15% rock outcrop. Shrub: 5 to 10% white birch. Trees: >5% white birch.

Easting

507753

NAD83
Zone 17

Northing

5147700

Reference

Moonlight
Ave/Bancroft Dr

Altitude(m)

300

Conditions

Windy/rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

L: virtually no litter; A: 0 to 1 cm; Bt: 1 to 4 cm; Bf: 2 to 12 cm; Bt: 2 to 15 cm; Bg: 8 to >30 cm. Texture: sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10852

Depth 5 - 10 cm:

10853

Depth 10 - 20 cm:

10854

Dup. Depth 0 - 5 cm:

10855

Dup. Depth 5 - 10 cm

10856

Dup. Depth 10 - 20 cm:

10857

Parent material:

Parent material field description

No sample could be collected; hit bedrock at 39 cm.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\360\CEM-360-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

360

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	12500	Cobalt 0 to 5cm:	7.5	Nickel 0 to 5cm:	187
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	6.5	Nickel 5 to 10cm:	110
Aluminum 10 to 20cm:	15500	Cobalt 10 to 20cm:	5	Nickel 10 to 20cm:	44
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	11	Copper 0 to 5cm:	250	Selenium 0 to 5cm:	1
Arsenic 5 to 10cm:	17	Copper 5 to 10cm:	205	Selenium 5 to 10cm:	2
Arsenic 10 to 20cm:	7	Copper 10 to 20cm:	110	Selenium 10 to 20cm:	1
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	61	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	21
Barium 5 to 10cm:	42	Iron 5 to 10cm:	20000	Strontium 5 to 10cm:	12
Barium 10 to 20cm:	30	Iron 10 to 20cm:	19000	Strontium 10 to 20cm:	0
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	25	Vanadium 0 to 5cm:	36
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	20	Vanadium 5 to 10cm:	34
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	12	Vanadium 10 to 20cm:	33
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1450	Zinc 0 to 5cm:	14
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1400	Zinc 5 to 10cm:	25
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1500	Zinc 10 to 20cm:	28
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1200	Manganese 0 to 5cm:	110	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	785	Manganese 5 to 10cm:	97	pH 5 to 10cm:	4.2
Calcium 10 to 20cm:	720	Manganese 10 to 20cm:	110	pH 10 to 20cm:	4.2
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	39	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	25
Chromium 10 to 20cm:	39	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	22
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

361

Date sampled

9/10/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

361

Location of sampling site

Laurentian University campus-N of soccer field.

Historical Inco sample station

SC

OBM map number

41 I/7

Field observations

Forested area between walking paths on LU campus. Deepest core 30 cm NW corner of quadrant. Moss and few lichens on ground. Trees: birch 10-15%, oak, 2%, maple 5%. Shrubs: birch 5%, willow 5%, oak 5%, bracken fern 2%; herbs: blueberry 40%, hair grass 15%, Canada bluejoint 4%, moss 2%.

Easting

503410

NAD83
Zone 17

Northing

5145357

Reference

Laurentian
University Campus

Altitude(m)

289

Conditions

Cloudy
intermittent rain

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 6 cm, leaf twig, moss and acorn shells; Ah: 0 to 3 cm; Ae: 3 to 6 cm (white), not always present; Bm: 5 to >10 cm; Bg: 5 to >10 cm (grey with bright orange mottles).

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10804

Depth 5 - 10 cm:

10805

Depth 10 - 20 cm:

10806

Dup. Depth 0 - 5 cm:

10807

Dup. Depth 5 - 10 cm:

10808

Dup. Depth 10 - 20 cm:

10809

Parent material:

Parent material field description

No sample could be collected; soil too shallow.

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\361\CEM-361-
soilprofile.jpg

Core photo 1

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

361

**Abbreviations: NA: not analysed
ND: not detected
NS: no sample**

Aluminum 0 to 5cm:	8050	Cobalt 0 to 5cm:	31	Nickel 0 to 5cm:	810
Aluminum 5 to 10cm:	12500	Cobalt 5 to 10cm:	21	Nickel 5 to 10cm:	94
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	19	Nickel 10 to 20cm:	48
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	41	Copper 0 to 5cm:	760	Selenium 0 to 5cm:	6.5
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	130	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	34	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	104	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	15
Barium 5 to 10cm:	59	Iron 5 to 10cm:	13500	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	76	Iron 10 to 20cm:	17000	Strontium 10 to 20cm:	37
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	75	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	30
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	36
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	1350	Zinc 0 to 5cm:	49
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2300	Zinc 5 to 10cm:	30
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3300	Zinc 10 to 20cm:	35
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	1035	Manganese 0 to 5cm:	305	pH 0 to 5cm:	4.1
Calcium 5 to 10cm:	1895	Manganese 5 to 10cm:	340	pH 5 to 10cm:	4.5
Calcium 10 to 20cm:	2900	Manganese 10 to 20cm:	285	pH 10 to 20cm:	4.6
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	122
Chromium 5 to 10cm:	37	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	59
Chromium 10 to 20cm:	51	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	14
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

362

Date sampled

10/22/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID	<input type="text" value="362"/>	Location of sampling site	<input type="text" value="East of Long Lake Rd."/>
Historical Inco sample station	<input type="text" value="SC"/>		
OBM map number	<input type="text" value="41 I/6"/>	Field observations	<input type="text" value="Level area between 2 rock outcrops. Not too many choices to sample; area very rocky. Area still wet. Soil site south of veg sampling site. Veg: birch (dominant), oak, pine, T. aspen, grasses, moss, sweet fern, blueberry, aster; floor: leaf litter, twigs, logs, moss."/>
Easting	<input type="text" value="499573"/>		
Northing	<input type="text" value="5142386"/>	NAD83 Zone 17	
Reference	<input type="text" value="E of Long Lake Rd."/>		
Altitude(m)	<input type="text" value="301"/>		
Conditions	<input type="text" value="Rainy"/>		

SOIL DESCRIPTION

Soil profile horizon descriptions

Parent material field description

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:
 Depth 5 - 10 cm:
 Depth 10 - 20 cm:
 Dup. Depth 0 - 5 cm:
 Dup. Depth 5 - 10 cm:
 Dup. Depth 10 - 20 cm:

Parent material:

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

Parent material photo

Site Number

362

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10050	Cobalt 0 to 5cm:	19	Nickel 0 to 5cm:	540
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	17	Nickel 5 to 10cm:	470
Aluminum 10 to 20cm:	18000	Cobalt 10 to 20cm:	9.5	Nickel 10 to 20cm:	210
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	31	Copper 0 to 5cm:	690	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	39	Copper 5 to 10cm:	520	Selenium 5 to 10cm:	4
Arsenic 10 to 20cm:	21	Copper 10 to 20cm:	315	Selenium 10 to 20cm:	1.5
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	82	Iron 0 to 5cm:	19500	Strontium 0 to 5cm:	27
Barium 5 to 10cm:	82	Iron 5 to 10cm:	24500	Strontium 5 to 10cm:	24
Barium 10 to 20cm:	63	Iron 10 to 20cm:	21500	Strontium 10 to 20cm:	34
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	74	Vanadium 0 to 5cm:	29
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	54	Vanadium 5 to 10cm:	40
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	34	Vanadium 10 to 20cm:	41
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	1.3	Magnesium 0 to 5cm:	2150	Zinc 0 to 5cm:	48
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1750	Zinc 5 to 10cm:	36
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1750	Zinc 10 to 20cm:	34
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	10800	Manganese 0 to 5cm:	94	pH 0 to 5cm:	6.1
Calcium 5 to 10cm:	2850	Manganese 5 to 10cm:	81	pH 5 to 10cm:	5.2
Calcium 10 to 20cm:	2950	Manganese 10 to 20cm:	100	pH 10 to 20cm:	5
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	41	Molybdenum 0 to 5cm:	0.8	C TOC 0 to 5cm:	98
Chromium 5 to 10cm:	47	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	46
Chromium 10 to 20cm:	47	Molybdenum 10 to 20cm:	0.8	C TOC 10 to 20cm:	40
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Sudbury Regional Soils Project 2001

Site Number

389

Date sampled

11/29/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

389

Location of sampling site

Falconbridge.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Level, barren area. Veg: oak, birch, maple, jackpine, red pine, moss, bracken fern. Floor: covered under 15 to 25 cm of snow.

Easting

516969

NAD83
Zone 17

Northing

5161816

Reference

Nosko

Altitude(m)

Conditions

Snowing

SOIL DESCRIPTION

Soil profile horizon descriptions

No LFH; Ah: 0 to 5 cm; Ae: 0 to 8 cm (10YR 6/2); B: 1 to 15 cm (5YR 3/4); BC: 9 to >30 cm (10YR 4/6). Texture: coarse sand.

Parent material field description

Sample collected from two holes between 70 and 80 cm. Could not auger past 80 cm due to gravelly nature of soil. Texture: coarse sand with abundant pebble size clasts. Colour: 10YR 4/6.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

25592

Depth 5 - 10 cm:

25594

Depth 10 - 20 cm:

25596

Dup. Depth 0 - 5 cm:

25593

Dup. Depth 5 - 10 cm

25595

Dup. Depth 10 - 20 cm:

25597

Parent material:

25598

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\389\2001-CEM-389-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\389\CEM-389-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\389\2001-CEM-389-Core 1.JPG

Parent material photo

Site Number

389

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	10400	Cobalt 0 to 5cm:	14	Nickel 0 to 5cm:	210
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	10000	Cobalt Parent:	8	Nickel Parent:	59
Arsenic 0 to 5cm:	64	Copper 0 to 5cm:	355	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	20	Selenium Parent:	ND
Barium 0 to 5cm:	57	Iron 0 to 5cm:	22000	Strontium 0 to 5cm:	24
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	34	Iron Parent:	18000	Strontium Parent:	23
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	58	Vanadium 0 to 5cm:	39
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	4	Vanadium Parent:	34
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1650	Zinc 0 to 5cm:	27
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	3600	Zinc Parent:	20
Calcium 0 to 5cm:	1850	Manganese 0 to 5cm:	145	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	2100	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	42	Molybdenum 0 to 5cm:	0.85	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	93	Molybdenum Parent:	1.6	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

392

Date sampled

12/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

392

Location of sampling site

Coniston, SE of water treatment plant; reclamation site site ~60m SW of UTM grid site.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Site is located between bedrock outcrops; grassed area. Ground had frozen prior to sampling, however subsequently thawed enough to sample. Frost heaving of soil evident throughout area; needle ice present. Veg: predominantly grasses and jackpine.

Easting

514180

NAD83
Zone 17

Northing

5147681

Reference

Dr Beckket

Altitude(m)

295

Conditions

Sunny/freezing

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 2 cm; Ah: 0 to 8 cm; Bg: 0 to >30 cm (10YR 6/2, mottles: common, medium, distinct 10YR 5/6). Texture: clay loam to silty clay loam.

Parent material field description

Sample was taken between 65 and 105 cm. Colour: 2.5Y 6/3; mottles: common, medium, distinct, 7.5YR 5/4.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26984

Depth 5 - 10 cm:

26986

Depth 10 - 20 cm:

26988

Dup. Depth 0 - 5 cm:

26985

Dup. Depth 5 - 10 cm

26987

Dup. Depth 10 - 20 cm:

26989

Parent material:

26990

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\392\CEM-392-soilprofile.jpg

Core photo 1

Parent material photo

Site Number

392

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	16500	Cobalt 0 to 5cm:	6.5	Nickel 0 to 5cm:	34
Aluminum 5 to 10cm:	19500	Cobalt 5 to 10cm:	7	Nickel 5 to 10cm:	23
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	33000	Cobalt Parent:	10	Nickel Parent:	36
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	19	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	8	Selenium 5 to 10cm:	1.5
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	32	Selenium Parent:	ND
Barium 0 to 5cm:	89	Iron 0 to 5cm:	18500	Strontium 0 to 5cm:	52
Barium 5 to 10cm:	66	Iron 5 to 10cm:	21500	Strontium 5 to 10cm:	42
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	230	Iron Parent:	40000	Strontium Parent:	74
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	21	Vanadium 0 to 5cm:	43
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	7.5	Vanadium 5 to 10cm:	41
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.8	Lead Parent:	8	Vanadium Parent:	75
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	2900	Zinc 0 to 5cm:	43
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	3800	Zinc 5 to 10cm:	59
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	11000	Zinc Parent:	55
Calcium 0 to 5cm:	4250	Manganese 0 to 5cm:	505	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	3950	Manganese 5 to 10cm:	360	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	8800	Manganese Parent:	470	pH Parent:	NA
Chromium 0 to 5cm:	50	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	44	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	98	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

500

Date sampled

12/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

93 A

Location of sampling site

Burwash: ~380m NE of UTM grid site.

Historical Inco sample station

OBM map number

41 I/2

Field observations

Level, forested area beside swamp dominated by conifers. Veg: cedar, spruce, fir, birch, T. aspen, grasses, brachenfern, mosses. Floor: leaf litter, needles, twigs, logs.

Easting

505067

NAD83
Zone 17

Northing

5119549

Reference

Helicopter/Burwash

Altitude(m)

237

Conditions

Rainy

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 7 cm; Ah: 0 to 1 cm; Bm: 0 to 10 cm; Cg: 1 to >30 cm (gleyed, mottled)

Parent material field description

Sample was taken between 75 and 110 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

27004

Depth 5 - 10 cm:

27006

Depth 10 - 20 cm:

27008

Dup. Depth 0 - 5 cm:

27005

Dup. Depth 5 - 10 cm

27007

Dup. Depth 10 - 20 cm:

27009

Parent material:

27010

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\093 A\2001-CEM-093-
Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\093 A\CEM-093 A-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\093 A\2001-CEM-093-
Core 1.JPG

Parent material photo

Site Number

500

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	13500	Cobalt 0 to 5cm:	16	Nickel 0 to 5cm:	185
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	26000	Cobalt Parent:	15	Nickel Parent:	44
Arsenic 0 to 5cm:	7	Copper 0 to 5cm:	130	Selenium 0 to 5cm:	2
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	38	Selenium Parent:	ND
Barium 0 to 5cm:	125	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	59
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	170	Iron Parent:	33000	Strontium Parent:	64
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	43	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.6	Lead Parent:	8	Vanadium Parent:	64
Cadmium 0 to 5cm:	1.4	Magnesium 0 to 5cm:	3950	Zinc 0 to 5cm:	82
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	9200	Zinc Parent:	60
Calcium 0 to 5cm:	8850	Manganese 0 to 5cm:	455	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	8800	Manganese Parent:	430	pH Parent:	NA
Chromium 0 to 5cm:	62	Molybdenum 0 to 5cm:	1.2	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	81	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

501

Date sampled

9/14/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

181 A

Location of sampling site

Dill Lake Rd., off Hwy 69 S.

Historical Inco sample station

30

OBM map number

Field observations

Site located near top of bedrock outcrop; flat level forested area @ highest elevation in area; slight slope to NE beyond quadrat. Veg: Jack Pine (dominant), birch, spruce, maple, oak, pussy willow, blueberry, bracken fern, bunchberry, lichen, moss, grasses. Floor, leaf litter, pine needles, twigs, logs.

Easting

509165

NAD83
Zone 17

Northing

5139592

Reference

Altitude(m)

288

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

50% of cores: LFH: 0 to 6 cm, Ah: 0 to 1 cm; Ae: 1 to 6 cm (10YR7/2); B: 6 to 12 cm (10YR6/6); Cg: 12 to >25 cm (2.5Y6/2), contains mottles 10YR 5/4. 40% of cores: Ah: 0 to 2 cm; B or C ? 2 to >25 cm (10YR 6/3). Texture: sandy loam to sandy clay loam.

Parent material field description

Parent material taken between 75 and 105 cm. Texture: sandy loam to sandy clay loam. Colour: 2.5Y 6/2.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10243

Depth 5 - 10 cm:

10245

Depth 10 - 20 cm:

10247

Dup. Depth 0 - 5 cm:

10244

Dup. Depth 5 - 10 cm

10246

Dup. Depth 10 - 20 cm:

10248

Parent material:

10249

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\181 A\2001-CEM-181-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\181 A\CEM-181-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\181 A\2001-CEM-181-Core 1.JPG

Parent material photo

Site Number

501

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	5400	Cobalt 0 to 5cm:	20	Nickel 0 to 5cm:	515
Aluminum 5 to 10cm:	11300	Cobalt 5 to 10cm:	5.5	Nickel 5 to 10cm:	42
Aluminum 10 to 20cm:	19500	Cobalt 10 to 20cm:	7	Nickel 10 to 20cm:	30
Aluminum Parent:	16000	Cobalt Parent:	9	Nickel Parent:	33
Arsenic 0 to 5cm:	25	Copper 0 to 5cm:	555	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	8.5	Copper 5 to 10cm:	66	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	72	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	12
Barium 5 to 10cm:	55	Iron 5 to 10cm:	14500	Strontium 5 to 10cm:	25
Barium 10 to 20cm:	97	Iron 10 to 20cm:	20000	Strontium 10 to 20cm:	56
Barium Parent:	120	Iron Parent:	24000	Strontium Parent:	60
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	67	Vanadium 0 to 5cm:	19
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	66.5	Vanadium 5 to 10cm:	32
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	6	Vanadium 10 to 20cm:	44
Beryllium Parent:	ND	Lead Parent:	5	Vanadium Parent:	47
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	34
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2400	Zinc 5 to 10cm:	19
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	4450	Zinc 10 to 20cm:	27
Cadmium Parent:	ND	Magnesium Parent:	6900	Zinc Parent:	28
Calcium 0 to 5cm:	1020	Manganese 0 to 5cm:	130	pH 0 to 5cm:	3.9
Calcium 5 to 10cm:	1850	Manganese 5 to 10cm:	200	pH 5 to 10cm:	4.4
Calcium 10 to 20cm:	3700	Manganese 10 to 20cm:	250	pH 10 to 20cm:	4.8
Calcium Parent:	6900	Manganese Parent:	320	pH Parent:	NA
Chromium 0 to 5cm:	35	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	131
Chromium 5 to 10cm:	35	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	13
Chromium 10 to 20cm:	50	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	6.7
Chromium Parent:	58	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

502

Date sampled

12/7/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

197 B

Location of sampling site

South of Sudbury, within UTM grid site.

Historical Inco sample station

OBM map number

Field observations

NW to SE slope 5%; slopes from a road down to a lake; found most level area; dead wood, boulders, on ground. Trees: 5% birch, 1% jackpine, 1% maple. Shrubs: 10% maple, 20% alder. Herb: 10% ground cedar, 1% wintergreen, 10% tuft grass.

Easting

497315

NAD83
Zone 17

Northing

5133709

Reference

Helicopter

Altitude(m)

283

Conditions

Clear, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 4 cm; Ah: 0 to 2 cm (10YR 3/1) silty; Ae: 2 to 8.5 cm (10YR 7/1) silty-sandy; Bt 8.5-23 cm (10YR 5/6) silty-sandy.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26151

Depth 5 - 10 cm:

26152

Depth 10 - 20 cm:

26153

Dup. Depth 0 - 5 cm:

26154

Dup. Depth 5 - 10 cm:

26155

Dup. Depth 10 - 20 cm:

26156

Parent material:

26160

Parent material field description

Sample taken between 76 and 91 cm.
Texture: silty-clayey loam. Colour: 2.5Y 5/3

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\197 B\CEM-197 B-
soilprofile.jpg

Core photo 1

Parent material photo

Site Number

502

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7600	Cobalt 0 to 5cm:	22	Nickel 0 to 5cm:	625
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	29000	Cobalt Parent:	14	Nickel Parent:	51
Arsenic 0 to 5cm:	15	Copper 0 to 5cm:	490	Selenium 0 to 5cm:	1.5
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	39	Selenium Parent:	ND
Barium 0 to 5cm:	101	Iron 0 to 5cm:	17500	Strontium 0 to 5cm:	36
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	230	Iron Parent:	38000	Strontium Parent:	66
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	69	Vanadium 0 to 5cm:	25
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	0.7	Lead Parent:	9	Vanadium Parent:	70
Cadmium 0 to 5cm:	1.1	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	30
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	58
Calcium 0 to 5cm:	2850	Manganese 0 to 5cm:	200	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	7000	Manganese Parent:	550	pH Parent:	NA
Chromium 0 to 5cm:	39	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	91	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

503

Date sampled

8/16/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

234 A

Location of sampling site

Bailey's corner: at aspen site.

Historical Inco sample station

64

OBM map number

41 I/10

Field observations

Sandy area. Some soil formation with areas of sand in between. Blueberry bushes without blueberries scattered without. Tufts of grass, few shrubs and birch. Old logs and stumps scattered. Slightly sloped to NE. Cores vary greatly-some have F,H horizon others start at A horizon.

Easting

514136

NAD83
Zone 17

Northing

5162246

Reference

Bailey's Corner

Altitude(m)

328

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

F,H: 0 to 5 cm; Ap-Ah: 0 to 10 cm (10YR7/2); Ae: 7 to 10 cm; Bf: 10 to >20 cm (10YR5/6); Bm/BC: 5 to >20 cm (10YR7/6). Soil horizons and depth vary greatly.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10581

Depth 5 - 10 cm:

10583

Depth 10 - 20 cm:

10585

Dup. Depth 0 - 5 cm:

10582

Dup. Depth 5 - 10 cm

10584

Dup. Depth 10 - 20 cm:

10586

Parent material:

10580

Parent material field description

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\234 A\2001-CEM-234 A - Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\234 A\CEM-234 A-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\234 A\2001-CEM-234 A - Core 1.JPG

Parent material photo

Site Number

503

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	7100	Cobalt 0 to 5cm:	8	Nickel 0 to 5cm:	135
Aluminum 5 to 10cm:	7200	Cobalt 5 to 10cm:	3.5	Nickel 5 to 10cm:	43
Aluminum 10 to 20cm:	9400	Cobalt 10 to 20cm:	6	Nickel 10 to 20cm:	26
Aluminum Parent:	5400	Cobalt Parent:	4	Nickel Parent:	15
Arsenic 0 to 5cm:	41	Copper 0 to 5cm:	240	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	19	Copper 5 to 10cm:	112	Selenium 5 to 10cm:	0.5
Arsenic 10 to 20cm:	17	Copper 10 to 20cm:	57	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	ND	Selenium Parent:	ND
Barium 0 to 5cm:	43	Iron 0 to 5cm:	14000	Strontium 0 to 5cm:	16
Barium 5 to 10cm:	34	Iron 5 to 10cm:	11000	Strontium 5 to 10cm:	15
Barium 10 to 20cm:	35	Iron 10 to 20cm:	12500	Strontium 10 to 20cm:	21
Barium Parent:	25	Iron Parent:	10000	Strontium Parent:	22
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	42	Vanadium 0 to 5cm:	27
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	15	Vanadium 5 to 10cm:	28
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	8	Vanadium 10 to 20cm:	29
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	900	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	950	Zinc 5 to 10cm:	6.9
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1300	Zinc 10 to 20cm:	15
Cadmium Parent:	ND	Magnesium Parent:	2000	Zinc Parent:	10
Calcium 0 to 5cm:	1030	Manganese 0 to 5cm:	89	pH 0 to 5cm:	4.3
Calcium 5 to 10cm:	960	Manganese 5 to 10cm:	91	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	1500	Manganese 10 to 20cm:	108	pH 10 to 20cm:	5.4
Calcium Parent:	2000	Manganese Parent:	130	pH Parent:	NA
Chromium 0 to 5cm:	25	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	41
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	21
Chromium 10 to 20cm:	21	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	12
Chromium Parent:	21	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

504

Date sampled

8/9/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

257 A

Location of sampling site

Goodwill Drive; Garson.

Historical Inco sample station

65A

OBM map number

Field observations

Site moved to top of a sloped area, away from organic soil (humic peat). Veg: dominated by small birch and blueberry bushes with few T. aspen.

Easting

494579

NAD83
Zone 17

Northing

5146608

Reference

Goodwill Dr

Altitude(m)

Conditions

Sunny/hot

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 1 to 5 cm (2.5Y2.5/1); Ae: 3 to 15 cm (Gley 1 7/10Y); B: 10 to >30 cm (10YR 5/6 to 2.5Y 6/4). Texture: silt. Note one core had charcoal into 10 to 20 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10567

Depth 5 - 10 cm:

10569

Depth 10 - 20 cm:

10571

Dup. Depth 0 - 5 cm:

10568

Dup. Depth 5 - 10 cm

10570

Dup. Depth 10 - 20 cm:

10572

Parent material:

10566

Parent material field description

Parent material was collected from 75+ cm.

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\257 A\2001-CEM-257
A-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil
Photos\257 A\CEM-257 A-
soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil
Photos\257 A\2001-CEM-257
A-Core 1.JPG

Parent material photo

Site Number

504

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	4000	Cobalt 0 to 5cm:	10	Nickel 0 to 5cm:	255
Aluminum 5 to 10cm:	7600	Cobalt 5 to 10cm:	4	Nickel 5 to 10cm:	73
Aluminum 10 to 20cm:	12000	Cobalt 10 to 20cm:	5.5	Nickel 10 to 20cm:	30
Aluminum Parent:	5300	Cobalt Parent:	4	Nickel Parent:	23
Arsenic 0 to 5cm:	34	Copper 0 to 5cm:	390	Selenium 0 to 5cm:	3
Arsenic 5 to 10cm:	20	Copper 5 to 10cm:	155	Selenium 5 to 10cm:	1
Arsenic 10 to 20cm:	8.5	Copper 10 to 20cm:	40	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	5.8	Selenium Parent:	ND
Barium 0 to 5cm:	29	Iron 0 to 5cm:	10850	Strontium 0 to 5cm:	5.5
Barium 5 to 10cm:	23	Iron 5 to 10cm:	11000	Strontium 5 to 10cm:	ND
Barium 10 to 20cm:	37	Iron 10 to 20cm:	13000	Strontium 10 to 20cm:	23
Barium Parent:	33	Iron Parent:	8500	Strontium Parent:	24
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	17
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	19	Vanadium 5 to 10cm:	25
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5.5	Vanadium 10 to 20cm:	29
Beryllium Parent:	ND	Lead Parent:	2	Vanadium Parent:	22
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	635	Zinc 0 to 5cm:	17
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	720	Zinc 5 to 10cm:	13
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1450	Zinc 10 to 20cm:	16
Cadmium Parent:	ND	Magnesium Parent:	2100	Zinc Parent:	8.3
Calcium 0 to 5cm:	715	Manganese 0 to 5cm:	54	pH 0 to 5cm:	4.2
Calcium 5 to 10cm:	580	Manganese 5 to 10cm:	60	pH 5 to 10cm:	4.3
Calcium 10 to 20cm:	1800	Manganese 10 to 20cm:	110	pH 10 to 20cm:	NA
Calcium Parent:	2400	Manganese Parent:	140	pH Parent:	NA
Chromium 0 to 5cm:	19	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	50
Chromium 5 to 10cm:	23	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	24
Chromium 10 to 20cm:	26	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	21	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

505

Date sampled

9/11/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

298 B

Location of sampling site

Peny Rd. off Hwy 537 S of Wahnapitae.

Historical Inco sample station

OBM map number

41 I/7

Field observations

Area is relatively flat, hummocky, forested. Quadrant does not slope: outside quadrant slopes to south. Terrain climbs to the NE beyond the field. Trees: 25 to 30% birch, 2 to 3% aspen, red pine, white spruce, few oak; shrubs: few bracken fern (4%), 10 to 15% blueberry, 5% oak, 5% birch, a few maple, a few white spruce, some willow. Herbs: few bracken fern, 3 to 4% grasses, lots of leaf litter (20 to 30%), lots of lichen (6 or 7 types) and moss on ground, few lichen on trees.

Easting

515507

Northing

5143682

NAD83
Zone 17

Reference

Wahnapitei (Hwy 537)/Peny Rd..

Altitude(m)

270

Conditions

Sunny, cool

SOIL DESCRIPTION

Soil profile horizon descriptions

LF: 0 to 6 cm leaf litter, twigs; Ah: 0 to 2 cm (brown); Ae: 2 to 6 cm, clay; Bt: 6 to 21 cm (brownish), this horizon missing in open areas, clay; Bg: 21 to >30 cm (grey with orange mottles).

Parent material field description

Sample collected from 66 to 93 cm. Texture: clay. Colour: grey with orange mottles.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

10813

Depth 5 - 10 cm:

10814

Depth 10 - 20 cm:

10815

Dup. Depth 0 - 5 cm:

10816

Dup. Depth 5 - 10 cm

10817

Dup. Depth 10 - 20 cm:

10818

Parent material:

10822

IMAGES

Site photo 1

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\298 B\CEM-298 B-soilprofilecdr.jpg

Core photo 1

Parent material photo

Site Number

505

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6300	Cobalt 0 to 5cm:	19	Nickel 0 to 5cm:	440
Aluminum 5 to 10cm:	13500	Cobalt 5 to 10cm:	9	Nickel 5 to 10cm:	64
Aluminum 10 to 20cm:	14500	Cobalt 10 to 20cm:	8.5	Nickel 10 to 20cm:	59
Aluminum Parent:	34000	Cobalt Parent:	16	Nickel Parent:	61
Arsenic 0 to 5cm:	37	Copper 0 to 5cm:	540	Selenium 0 to 5cm:	4
Arsenic 5 to 10cm:	7.5	Copper 5 to 10cm:	88	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	28	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	52	Selenium Parent:	ND
Barium 0 to 5cm:	67	Iron 0 to 5cm:	17000	Strontium 0 to 5cm:	18
Barium 5 to 10cm:	68	Iron 5 to 10cm:	16000	Strontium 5 to 10cm:	46
Barium 10 to 20cm:	67	Iron 10 to 20cm:	18000	Strontium 10 to 20cm:	41
Barium Parent:	260	Iron Parent:	39000	Strontium Parent:	68
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	52	Vanadium 0 to 5cm:	21
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	8.5	Vanadium 5 to 10cm:	35
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	5	Vanadium 10 to 20cm:	36
Beryllium Parent:	0.7	Lead Parent:	11	Vanadium Parent:	67
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	1750	Zinc 0 to 5cm:	46
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2950	Zinc 5 to 10cm:	48
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3800	Zinc 10 to 20cm:	51
Cadmium Parent:	ND	Magnesium Parent:	12000	Zinc Parent:	55
Calcium 0 to 5cm:	1700	Manganese 0 to 5cm:	285	pH 0 to 5cm:	4.4
Calcium 5 to 10cm:	3800	Manganese 5 to 10cm:	355	pH 5 to 10cm:	5.1
Calcium 10 to 20cm:	3350	Manganese 10 to 20cm:	260	pH 10 to 20cm:	5.2
Calcium Parent:	6300	Manganese Parent:	490	pH Parent:	NA
Chromium 0 to 5cm:	32	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	87
Chromium 5 to 10cm:	37	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	10
Chromium 10 to 20cm:	44	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	8
Chromium Parent:	95	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

507

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

363A

Location of sampling site

West Bay-Manitoulin Island.

Historical Inco sample station

OBM map number

Field observations

Found level area dominated by maple. Trees very tall, area seems undisturbed/Topography slightly undulating. Veg: maple, T. aspen, fir, elm, grasses, mosses, mushrooms, woodfern. Floor: leaf litter, twigs, logs.

Easting

406024

NAD83
Zone 17

Northing

5072792

Reference

Cross Hill Rd.
Manitoulin

Altitude(m)

Conditions

Sunny

SOIL DESCRIPTION

Soil profile horizon descriptions

80% of cores: LFH: 0 to 1 cm; Ah: 0 to 19 cm (10YR3/2); Bg: 10 to >30 cm (10YR6/3, mottles: common, medium, with varying colours i.e., 7.5YR5/6). 20% of cores: LFH: 0 to 1 cm; Ah: 0 to 12 cm (10YR 3/2); B: 6 to 18 cm (10YR 4/3); BC: 14 to >30 cm (2.5Y 5/3). Texture: silty clay loam.

Parent material field description

Sample collected between 75 and 105 cm. Texture: silty clay loam. Colour: 10YR 5/4. Mottles: common, medium, distinct, varying colours i.e. 2.5Y 6/3.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

11341

Depth 5 - 10 cm:

11343

Depth 10 - 20 cm:

11345

Dup. Depth 0 - 5 cm:

11342

Dup. Depth 5 - 10 cm

11344

Dup. Depth 10 - 20 cm:

11346

Parent material:

11347

IMAGES

Site photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\363A\2001-CEM-363A-Site 1.JPG

Soil profile diagram

c:\SRSP_2001\2001-CEM-Soil Photos\363A\CEM-363 A-soilprofile_1.jpg

Core photo 1

c:\SRSP_2001\2001-CEM-Soil Photos\363A\2001-CEM-363A-Core 1.JPG

Parent material photo

Site Number

507

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	17000	Cobalt 0 to 5cm:	6	Nickel 0 to 5cm:	24
Aluminum 5 to 10cm:	NA	Cobalt 5 to 10cm:	NA	Nickel 5 to 10cm:	NA
Aluminum 10 to 20cm:	NA	Cobalt 10 to 20cm:	NA	Nickel 10 to 20cm:	NA
Aluminum Parent:	19000	Cobalt Parent:	11	Nickel Parent:	38
Arsenic 0 to 5cm:	ND	Copper 0 to 5cm:	9.1	Selenium 0 to 5cm:	ND
Arsenic 5 to 10cm:	NA	Copper 5 to 10cm:	NA	Selenium 5 to 10cm:	NA
Arsenic 10 to 20cm:	NA	Copper 10 to 20cm:	NA	Selenium 10 to 20cm:	NA
Arsenic Parent:	ND	Copper Parent:	26	Selenium Parent:	ND
Barium 0 to 5cm:	84	Iron 0 to 5cm:	19000	Strontium 0 to 5cm:	46
Barium 5 to 10cm:	NA	Iron 5 to 10cm:	NA	Strontium 5 to 10cm:	NA
Barium 10 to 20cm:	NA	Iron 10 to 20cm:	NA	Strontium 10 to 20cm:	NA
Barium Parent:	84	Iron Parent:	29000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	15	Vanadium 0 to 5cm:	44
Beryllium 5 to 10cm:	NA	Lead 5 to 10cm:	NA	Vanadium 5 to 10cm:	NA
Beryllium 10 to 20cm:	NA	Lead 10 to 20cm:	NA	Vanadium 10 to 20cm:	NA
Beryllium Parent:	ND	Lead Parent:	8	Vanadium Parent:	52
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	3700	Zinc 0 to 5cm:	50
Cadmium 5 to 10cm:	NA	Magnesium 5 to 10cm:	NA	Zinc 5 to 10cm:	NA
Cadmium 10 to 20cm:	NA	Magnesium 10 to 20cm:	NA	Zinc 10 to 20cm:	NA
Cadmium Parent:	ND	Magnesium Parent:	6500	Zinc Parent:	37
Calcium 0 to 5cm:	4700	Manganese 0 to 5cm:	445	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	NA	Manganese 5 to 10cm:	NA	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	NA	Manganese 10 to 20cm:	NA	pH 10 to 20cm:	NA
Calcium Parent:	4600	Manganese Parent:	380	pH Parent:	NA
Chromium 0 to 5cm:	47	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	NA	Molybdenum 5 to 10cm:	NA	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	NA	Molybdenum 10 to 20cm:	NA	C TOC 10 to 20cm:	NA
Chromium Parent:	58	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

508

Date sampled

11/6/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

190 B

Location of sampling site

Historical Inco sample station

OBM map number

Field observations

Vegetation: Black spruce

Easting

505246

NAD83
Zone 17

Northing

5181613

Reference

Helicopter

Altitude(m)

347

Conditions

SOIL DESCRIPTION

Soil profile horizon descriptions

LFH: 0 to 3 cm; Ah: 0 to 3 cm; Ae: 3 to 6 cm; BC: >6 cm. Texture: sand.

Parent material field description

Sample was collected from 80 to 100 cm. Texture: sand.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

26359

Depth 5 - 10 cm:

26360

Depth 10 - 20 cm:

26361

Dup. Depth 0 - 5 cm:

26362

Dup. Depth 5 - 10 cm:

26363

Dup. Depth 10 - 20 cm:

26364

Parent material:

26365

IMAGES

Site photo 1

Soil profile diagram

Core photo 1

Parent material photo

Site Number

508

SITE CHEMISTRY ($\mu\text{g/g}$)

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	6950	Cobalt 0 to 5cm:	3	Nickel 0 to 5cm:	66
Aluminum 5 to 10cm:	8350	Cobalt 5 to 10cm:	2	Nickel 5 to 10cm:	13
Aluminum 10 to 20cm:	12500	Cobalt 10 to 20cm:	4	Nickel 10 to 20cm:	15
Aluminum Parent:	7300	Cobalt Parent:	3	Nickel Parent:	13
Arsenic 0 to 5cm:	3	Copper 0 to 5cm:	64	Selenium 0 to 5cm:	0.5
Arsenic 5 to 10cm:	ND	Copper 5 to 10cm:	11	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	3.6	Selenium 10 to 20cm:	ND
Arsenic Parent:	ND	Copper Parent:	6.8	Selenium Parent:	ND
Barium 0 to 5cm:	51	Iron 0 to 5cm:	11000	Strontium 0 to 5cm:	34
Barium 5 to 10cm:	22	Iron 5 to 10cm:	11500	Strontium 5 to 10cm:	29
Barium 10 to 20cm:	30	Iron 10 to 20cm:	14000	Strontium 10 to 20cm:	38
Barium Parent:	18	Iron Parent:	14000	Strontium Parent:	39
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	26	Vanadium 0 to 5cm:	24
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	6.5	Vanadium 5 to 10cm:	28
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	4	Vanadium 10 to 20cm:	32
Beryllium Parent:	ND	Lead Parent:	3	Vanadium Parent:	35
Cadmium 0 to 5cm:	ND	Magnesium 0 to 5cm:	835	Zinc 0 to 5cm:	16
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	1015	Zinc 5 to 10cm:	17
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	1550	Zinc 10 to 20cm:	26
Cadmium Parent:	ND	Magnesium Parent:	2200	Zinc Parent:	7.1
Calcium 0 to 5cm:	2650	Manganese 0 to 5cm:	150	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2300	Manganese 5 to 10cm:	150	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3200	Manganese 10 to 20cm:	195	pH 10 to 20cm:	NA
Calcium Parent:	3600	Manganese Parent:	180	pH Parent:	NA
Chromium 0 to 5cm:	24	Molybdenum 0 to 5cm:	ND	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	21	Molybdenum 5 to 10cm:	ND	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	31	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	34	Molybdenum Parent:	ND	C TOC Parent:	NA

Sudbury Regional Soils Project 2001

Site Number

517

Date sampled

10/18/2001

SITE LOCATION AND PHYSICAL PROPERTIES

Alphanumeric site ID

F217

Location of sampling site

Helicopter site: north of Radar Rd. east of Dupuis Dr.

Historical Inco sample station

OBM map number

41 I/10

Field observations

Wooded birch and coniferous slope area. Soil at this site is very shallow, bedrock and boulders are exposed.

Easting

512472

NAD83
Zone 17

Northing

5167043

Reference

Helicopter

Altitude(m)

328

Conditions

Sunny, cool,
some snow cover

SOIL DESCRIPTION

Soil profile horizon descriptions

Horizon 1 (LFH/Ah) is organic, dark brown, compacted, rooted, 3 to 6 cm thick. Horizon 2 (Bt) is a medium brown, coarse to grained sand, that persists to 20 cm or bedrock if shallower than 20 cm.

FIELD SAMPLE IDENTIFICATION

Depth 0 - 5 cm:

12331

Depth 5 - 10 cm:

12333

Depth 10 - 20 cm:

12335

Dup. Depth 0 - 5 cm:

12332

Dup. Depth 5 - 10 cm:

12334

Dup. Depth 10 - 20 cm:

12336

Parent material:

Parent material field description

No depth sample possible.

IMAGES

Site photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F217\F217-site.jpg

Soil profile diagram

c:\SRSP_2001\2001-GAL-Soil
Photos\F217\F217-soilprofile.jpg

Core photo 1

c:\SRSP_2001\2001-GAL-Soil
Photos\F217\F217-core.jpg

Parent material photo

SITE CHEMISTRY ($\mu\text{g/g}$)

Site Number

517

Abbreviations: NA: not analysed
 ND: not detected
 NS: no sample

Aluminum 0 to 5cm:	9300	Cobalt 0 to 5cm:	15	Nickel 0 to 5cm:	317
Aluminum 5 to 10cm:	11500	Cobalt 5 to 10cm:	6	Nickel 5 to 10cm:	41
Aluminum 10 to 20cm:	17000	Cobalt 10 to 20cm:	6.5	Nickel 10 to 20cm:	33
Aluminum Parent:	NS	Cobalt Parent:	NS	Nickel Parent:	NS
Arsenic 0 to 5cm:	29	Copper 0 to 5cm:	355	Selenium 0 to 5cm:	2.5
Arsenic 5 to 10cm:	13	Copper 5 to 10cm:	51	Selenium 5 to 10cm:	ND
Arsenic 10 to 20cm:	ND	Copper 10 to 20cm:	24	Selenium 10 to 20cm:	ND
Arsenic Parent:	NS	Copper Parent:	NS	Selenium Parent:	NS
Barium 0 to 5cm:	99	Iron 0 to 5cm:	16500	Strontium 0 to 5cm:	30
Barium 5 to 10cm:	37	Iron 5 to 10cm:	19500	Strontium 5 to 10cm:	33
Barium 10 to 20cm:	54	Iron 10 to 20cm:	23500	Strontium 10 to 20cm:	48
Barium Parent:	NS	Iron Parent:	NS	Strontium Parent:	NS
Beryllium 0 to 5cm:	ND	Lead 0 to 5cm:	79	Vanadium 0 to 5cm:	33
Beryllium 5 to 10cm:	ND	Lead 5 to 10cm:	12	Vanadium 5 to 10cm:	47
Beryllium 10 to 20cm:	ND	Lead 10 to 20cm:	7	Vanadium 10 to 20cm:	51
Beryllium Parent:	NS	Lead Parent:	NS	Vanadium Parent:	NS
Cadmium 0 to 5cm:	0.95	Magnesium 0 to 5cm:	1250	Zinc 0 to 5cm:	42
Cadmium 5 to 10cm:	ND	Magnesium 5 to 10cm:	2350	Zinc 5 to 10cm:	28
Cadmium 10 to 20cm:	ND	Magnesium 10 to 20cm:	3000	Zinc 10 to 20cm:	34
Cadmium Parent:	NS	Magnesium Parent:	NS	Zinc Parent:	NS
Calcium 0 to 5cm:	2300	Manganese 0 to 5cm:	200	pH 0 to 5cm:	NA
Calcium 5 to 10cm:	2550	Manganese 5 to 10cm:	180	pH 5 to 10cm:	NA
Calcium 10 to 20cm:	3950	Manganese 10 to 20cm:	240	pH 10 to 20cm:	NA
Calcium Parent:	NS	Manganese Parent:	NS	pH Parent:	NS
Chromium 0 to 5cm:	38	Molybdenum 0 to 5cm:	0.9	C TOC 0 to 5cm:	NA
Chromium 5 to 10cm:	53	Molybdenum 5 to 10cm:	0.8	C TOC 5 to 10cm:	NA
Chromium 10 to 20cm:	66	Molybdenum 10 to 20cm:	ND	C TOC 10 to 20cm:	NA
Chromium Parent:	NS	Molybdenum Parent:	NS	C TOC Parent:	NS

Appendix II

Chemical Data
by
Depth

Appendix II. A

Appendix II. A. Chemical data for 0 to 5 cm samples.

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
1	6500	ND	55	ND	NA	ND	1950	43	2	31	12500	39	770	140	ND	46	NA	0.5	26	34	25
2	5050	ND	135	ND	NA	1	1150	30	2	40	7050	49	445	78	0.8	53	NA	0.5	24	20	31
3	5350	ND	43	ND	NA	ND	2900	31	2	12	6700	21	735	210	ND	23	NA	0.5	35	18	3.1
4	3400	ND	65	ND	334	0.9	5600	31	3.5	45	5050	55	730	225	ND	67	4.1	1	34	14	54
5	5650	ND	130	ND	NA	ND	2350	27	2	39	5950	39	515	89	ND	54	NA	2	27	18	33
6	4150	ND	86	ND	NA	ND	2750	29	3	31	4550	47	520	140	ND	46	NA	1	28	10	20
7	6350	ND	109	ND	153	ND	3250	34	2	22	6800	36	880	275	ND	30	4	ND	42	22	29
8	13000	ND	85	ND	93	ND	4850	43	5.5	30	19500	26	1750	340	1.2	38	5.1	0.5	48	54	56
9	4850	ND	75	ND	NA	ND	2150	33	2	16	5950	32	660	195	ND	29	NA	ND	30	24	14
10	6650	ND	84	ND	NA	ND	3600	25	3.5	35	9800	50	985	205	ND	44	NA	0.5	39	29	45
11	7350	ND	79	ND	NA	ND	3100	37	4	89	11000	59	1250	150	ND	99	NA	2	24	27	38
12	3900	ND	86	ND	NA	ND	1500	13	2	22	7000	32	500	410	ND	24	NA	1	21	22	26
13	12000	ND	58	ND	116	ND	3500	35	5	50	14000	38	1700	140	ND	68	4.4	3	33	35	32
14	7400	ND	73	ND	NA	ND	2300	21	3	44	12000	24	975	195	ND	26	NA	ND	35	25	82
15	6300	ND	75	ND	NA	0.4	2150	31	3.5	72	8150	49	720	77	ND	96	NA	2	33	24	32
16	10400	ND	130	ND	NA	ND	4000	46	4	42	14000	48	1550	170	ND	53	NA	ND	46	37	39
17	6350	ND	50	ND	85	ND	2300	20	3.5	49	11500	51	1000	185	ND	57	3.9	0.5	29	32	30
18	5750	ND	64	ND	NA	1.4	3450	31	4	78	11000	88	1250	77	1.8	92	NA	2.5	16	23	36
19	13000	ND	125	ND	NA	ND	2700	37	4.5	36	13500	52	1500	315	ND	47	NA	1	37	37	59
20	17000	9	115	ND	NA	ND	3400	44	11	100	19000	54	2700	600	ND	130	NA	2	43	44	62
21	5450	3	61	ND	NA	0.45	1650	35	2.5	64	7850	100	615	540	1	62	NA	0.5	18	32	25
22	8600	ND	69	ND	NA	ND	3150	27	2.5	15	13500	22	1550	160	ND	20	NA	ND	36	37	25
23	14000	5.5	89	ND	NA	ND	3150	34	10	57	17000	53	2700	455	ND	96	NA	1.5	36	33	58
24	5250	ND	75	ND	NA	ND	3500	30	2	16	7100	30	960	270	ND	30	NA	ND	45	19	18
25	11500	ND	61	ND	65	ND	4750	43	6	23	13500	28	2000	345	ND	39	5	ND	45	34	22
26	5550	ND	60	ND	NA	ND	3350	21	4.5	66	10200	48	2150	295	ND	75	NA	0.5	13	23	33
27	14500	ND	95	ND	173	ND	2700	29	4	45	15000	59	1850	175	ND	66	4	1.5	34	34	43
28	9350	ND	130	ND	NA	ND	3400	34	4	50	10500	43	1650	165	0.8	62	NA	1.5	40	27	29
29	6350	ND	75	ND	166	ND	2850	38	3	44	10500	39	950	330	ND	52	4	0.5	29	25	29

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
30	4750	ND	64	ND	NA	ND	2550	31	3.5	62	9500	56	655	170	ND	102	NA	2.5	21	19	31
31	7550	ND	99	ND	NA	ND	1800	49	3.5	53	13500	43	780	135	ND	73	NA	1.5	35	34	13
32	6350	ND	73	ND	NA	ND	1600	35	3	38	9300	29	580	185	ND	56	NA	0.5	26	30	21
33	9750	ND	33	ND	NA	ND	1500	27	3.5	7.5	13000	6	1600	150	ND	18	NA	ND	21	29	16
34	6050	2.5	120	ND	216	0.55	4350	30	5	53	9150	56	1050	545	ND	73	4.2	1.5	38	24	78
35	4700	ND	63	ND	NA	ND	2800	39	2	23	5850	34	630	130	ND	38	NA	0.5	34	17	16
36	11500	5.5	59	ND	NA	ND	2750	47	17	36	20000	27	1500	770	4.6	48	NA	1.5	36	43	18
37	7350	ND	58	ND	NA	ND	1650	33	3.5	55	10250	33	660	85	ND	75	NA	1.5	24	27	21
38	5100		119	ND	NA	0.5	2250	43	4	90	7550	63	710	87	1.6	112	NA	3	19	19	30
39	6350	ND	61	ND	NA	ND	1900	34	4	65	10650	45	1070	130	2	95	NA	2	26	25	30
40	9450	6	104	ND	NA	ND	2700	43	5.5	48	16500	42	1600	355	1.9	80	NA	1	33	35	40
41	5950	ND	65	ND	NA	0.4	2100	25	2.5	63	4950	37	575	70	ND	80	NA	0.5	26	17	21
42	5750	ND	62	ND	NA	ND	2100	30	3.5	61	8650	46	700	107	ND	77	NA	1.5	23	24	26
43	5700	5	69	ND	NA	0.85	2350	43	4.5	88	18500	63	850	135	ND	117	NA	2.5	26	25	19
44	5250	ND	125	ND	NA	ND	2600	38	3.5	54	6950	53	795	160	1.8	85	NA	2	32	20	34
45	6300	ND	52	ND	NA	ND	2750	30	3	36	8350	42	795	140	ND	55	NA	1	29	21	32
46	10250	ND	47	ND	NA	ND	3450	41	3	25	14000	30	1300	165	ND	43	NA	0.5	31	35	30
47	12000	6.5	73	ND	NA	ND	2800	54	8.5	45	19500	30	2850	500	0.85	51	NA	0.5	28	44	66
48	5700	ND	110	ND	129	ND	3200	46	4	63	11000	41	990	220	2.8	81	4.3	1	34	30	28
49	16000	2.5	89	ND	NA	0.95	8000	37	14	86	16500	39	3350	1200	ND	69	NA	1.5	47	40	64
50	15500	ND	55	ND	NA	ND	4250	69	6.5	34	21500	20	2900	320	1.6	51	NA	0.5	36	49	55
51	5700	3	91	ND	188	0.85	2850	26	4	83	9750	63	770	440	ND	88	4	1.5	28	28	38
52	6300	ND	58	ND	NA	ND	2250	27	4	30	11000	32	1100	390	ND	41	NA	0.5	27	31	38
53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
54	7000	ND	17	ND	NA	ND	1650	21	3	6.1	9750	4.5	1030	145	ND	14	NA	ND	16	21	17
55	2350	ND	53	ND	NA	ND	950	10	2	49	7850	30	360	115	ND	53	NA	ND	13	10	14
57	4100	2.5	98	ND	NA	0.95	2650	32	6	125	8000	76	685	125	ND	176	NA	2	27	17	37
58	6600	9	56	ND	123	ND	1950	27	4	115	14500	48	810	130	ND	114	3.9	2	25	36	16
59	19000	8.5	97	ND	NA	ND	4100	61	25	95	33000	31	3700	1300	ND	84	NA	1	33	61	96
60	9600	ND	44	ND	NA	0.4	1900	35	3	40	8400	33	1100	81	ND	56	NA	1.5	24	27	21
61	8300	ND	115	ND	NA	ND	3500	42	3	31	11000	42	970	185	ND	58	NA	ND	51	28	39

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
62	15000	ND	23	ND	NA	ND	2500	33	3	6.3	18000	5	2000	120	ND	17	NA	ND	29	40	14
63	5650	3	76	ND	NA	0.4	2750	30	5	130	9450	68	810	130	0.95	141	NA	2	24	24	39
64	7800	7	145	ND	NA	ND	2700	37	6	108	12500	63	970	230	ND	133	NA	1.5	41	31	48
65	4600	2.5	62	ND	NA	ND	2250	28	4.5	113	7000	44	700	155	ND	124	NA	1.5	26	17	8.1
66	7150	ND	98	ND	NA	ND	2650	41	4.5	80	10500	59	945	110	0.8	112	NA	2	36	28	34
67	11500	ND	140	ND	NA	ND	5600	38	6.5	57	16000	41	2050	465	ND	64	4.8	ND	47	46	76
68	6200	2.5	68	ND	NA	ND	2200	27	4	59	9950	46	880	390	ND	64	NA	1	29	27	39
69	12000	ND	28	ND	NA	ND	3050	36	5	14	12500	3.5	3300	160	ND	21	NA	ND	29	27	8.5
70	10150	6	104	ND	NA	ND	3200	34	6	58	14000	33	1900	325	ND	69	NA	1	36	35	30
71	10500	7	110	0.26	NA	0.4	3500	49	17	84	14000	64	1250	1400	1.9	121	NA	0.5	45	38	59
72	17000	6	105	ND	NA	0.4	5250	61	9.5	47	20500	33	3900	845	ND	74	NA	0.5	54	49	79
73	9250	8	44	ND	NA	ND	2050	25	6	145	13000	57	700	215	ND	179	NA	2	29	30	28
74	14500	3	87	ND	NA	ND	4150	44	8.5	36	18500	19	3250	520	ND	53	NA	ND	45	38	53
75	10000	6.5	120	ND	79	ND	3500	33	6	80	14000	35	1650	585	ND	97	4.8	1	48	40	47
76	23000	5	130	ND	NA	ND	5700	65	12	40	24000	24	5500	880	ND	57	NA	ND	54	57	59
77	8000	ND	125	ND	NA	ND	2950	28	5.5	110	8600	47	1150	125	ND	119	NA	2	33	23	29
78	16500	ND	135	ND	50	ND	5650	52	10	32	20500	19	4650	710	ND	53	6	ND	60	50	97
79	9500	2.5	99	ND	NA	ND	3450	28	4	80	13000	52	1250	195	ND	90	NA	1.5	33	33	38
80	18500	ND	115	ND	NA	ND	4800	58	11	62	21000	25	5000	565	ND	88	NA	ND	53	44	67
81	17500	ND	120	ND	NA	ND	5150	51	14	53	18000	35	3250	895	ND	73	NA	ND	51	41	54
82	31000	ND	200	1.8	NA	ND	3650	72	27	53	25000	31	5200	1500	ND	71	NA	0.5	38	50	82
83	15000	ND	92	ND	NA	ND	3750	38	8	32	19500	32	3100	285	ND	46	NA	ND	34	39	60
84	14500	11	135	ND	NA	0.45	3650	58	13	180	17500	49	2400	400	ND	226	NA	2	48	41	35
85	11000	8.5	70	ND	81	1.1	5550	52	14	110	14500	58	2650	995	ND	177	5.4	1	35	33	79
86	15500	6	135	ND	NA	ND	3750	61	12	115	14000	38	3000	245	0.85	205	NA	3	48	29	41
87	7150	7	115	ND	NA	ND	2850	26	6	135	12000	43	1150	180	ND	140	NA	0.5	33	31	36
88	10000	ND	92	ND	NA	ND	4150	41	6	46	13000	43	1850	305	ND	74	NA	0.5	50	34	22
89	20500	5.5	130	ND	85	ND	3800	60	12	53	20000	33	3450	965	ND	68	5.3	1	43	43	57
91	17000	ND	76	ND	NA	ND	6350	51	7.5	34	19000	24	2950	345	ND	44	NA	0.5	55	46	43
92	6550	ND	85	ND	NA	0.4	3150	20	6	100	8550	47	965	755	ND	117	NA	0.5	31	23	39
93	12500	ND	85	ND	NA	ND	3500	48	7	140	14500	47	2500	160	ND	155	NA	1.5	43	31	25

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
94	7450	6.5	53	ND	NA	ND	3150	28	6.5	103	9200	35	1150	360	ND	135	NA	1.5	43	24	15
95	4300	ND	135	ND	NA	ND	1850	20	7.5	170	9600	79	815	83	ND	209	NA	2	21	23	27
96	20500	ND	130	ND	NA	ND	5900	53	18	36	21000	27	5000	560	ND	53	NA	1.5	49	48	56
97	16000	ND	150	ND	NA	ND	4100	58	13	26	20500	23	4500	1300	ND	47	NA	ND	50	44	115
98	11500	6.5	175	ND	NA	0.45	3600	35	9	88	14500	68	2250	860	0.8	103	NA	2.5	35	36	71
99	9300	10	125	ND	NA	ND	2300	46	6	86	17000	56	1650	690	ND	96	NA	1	22	44	43
100	9550	6	165	ND	NA	0.5	3250	31	8	90	12000	67	1650	860	ND	97	NA	3.5	34	30	68
101	10350	6	78	ND	NA	ND	3750	49	5.5	51	15500	50	2400	265	ND	83	NA	ND	36	35	31
102	6850	10	130	ND	NA	1.3	2900	32	8	170	18000	75	1600	360	ND	191	NA	2.5	31	33	58
103	5050	2.5	120	ND	NA	ND	1850	24	4	91	7700	40	585	140	ND	123	NA	0.5	25	20	25
104	5450	5.5	86	ND	NA	0.5	2550	29	6	105	9600	45	1210	185	ND	106	NA	5	21	25	28
105	5000	3	107	ND	NA	0.5	1750	23	4	102	8550	41	590	86	ND	109	NA	1.5	33	20	19
106	9600	6	45	ND	NA	ND	1300	41	4	79	15000	33	810	79	ND	85	NA	1	16	30	21
108	3550	5	59	ND	NA	ND	1500	10	3	63	4750	24	500	43	ND	74	NA	1	18	12	10
109	7150	ND	56	ND	NA	ND	1650	16	3.5	40	8050	19	755	235	ND	46	NA	ND	23	19	15
110	6150	8.5	75	ND	NA	0.55	2650	33	7	180	9350	67	700	73	0.85	200	NA	3	27	24	30
111	4050	ND	63	ND	NA	ND	1900	19	4	80	6700	36	570	335	ND	81	NA	0.5	29	16	14
112	6450	7.5	81	ND	189	ND	2200	37	6.5	145	12500	55	845	103	1.8	156	3.6	2	29	29	24
113	8450	7.5	85	ND	NA	0.45	2700	38	7	140	12500	46	1400	130	0.9	155	NA	2	35	31	31
114	7850	6	90	ND	NA	0.9	2400	29	8.5	160	11550	62	875	130	1.7	187	NA	2	29	22	28
115	5500	14	95	ND	147	1.2	2200	33	9	235	14500	71	740	260	ND	253	4.1	3	26	27	55
116	9000	22	130	ND	NA	1.6	3850	35	15	400	24500	124	1550	505	ND	375	NA	5	43	45	73
117	6450	2.5	60	ND	NA	ND	2400	25	5	104	10800	38	1260	96	ND	111	NA	1	32	29	19
118	9100	8.5	79	ND	NA	ND	2900	28	5	82	10150	25	1250	115	ND	77	NA	1	34	29	20
119	6150	5.5	76	ND	135	ND	1750	22	5	125	9000	42	600	75	ND	129	3.6	1.5	28	25	13
120	6200	16	115	ND	NA	1.2	2350	30	12	375	12650	94	850	87	1.2	305	NA	4.5	29	30	31
121	6650	16	79	ND	NA	1.7	2050	98	14	445	17500	111	730	140	0.95	430	NA	3.5	22	28	39
122	13500	11	100	ND	NA	1.3	4400	59	17	205	20000	72	6000	1020	ND	211	NA	1.5	29	46	71
123	7600	10	89	ND	NA	ND	1950	34	6	140	12500	50	750	93	ND	160	NA	1.5	29	32	26
124	5250	10	82	ND	NA	1.1	2300	19	9.5	230	10500	56	885	535	ND	239	NA	3	26	20	41
125	7300	16	48	ND	160	ND	1900	26	9	330	15500	71	1175	165	ND	274	3.6	3	21	27	33

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
126	6300	9.5	71	ND	NA	ND	2100	31	6.5	135	12000	49	680	97	1.1	166	NA	1.5	27	31	18
127	11000	8	91	ND	NA	ND	4000	32	6	67	14500	32	2050	615	ND	78	NA	1	47	31	43
128	8050	23	23	ND	NA	ND	2000	22	7	190	12500	38	1150	115	ND	175	NA	2	22	23	20
129	6750	10	50	ND	147	0.45	2900	25	7.5	180	10000	42	1250	160	ND	195	4	2	32	22	27
130	4950	11	49	ND	94	ND	1800	37	8	190	9150	43	740	200	ND	231	4.3	2	22	17	22
131	10350	9.5	65	ND	NA	ND	1850	41	6	115	19000	41	1030	99	ND	135	NA	1.5	26	44	26
132	6350	ND	115	ND	NA	1	2550	54	8.5	170	8300	80	745	215	2.5	228	NA	3	30	21	29
133	4500	8	88	ND	NA	0.45	1200	27	7	200	9450	57	530	66	ND	191	NA	2	19	23	23
134	13000	13	68	ND	NA	1.2	3350	54	17	120	17000	49	2250	575	2.2	165	NA	2	44	44	98
135	10600	2.5	45	ND	NA	ND	8450	42	8.5	90	13500	21	3150	290	ND	123	NA	1.5	42	29	21
136	20000	28	40	ND	NA	1.1	4050	49	12	345	16500	65	1900	94	0.75	289	NA	2.5	25	30	31
137	15000	8.5	87	ND	NA	ND	10000	54	8.5	91	13000	16	2850	365	ND	136	NA	0.5	49	29	26
138	10500	27	56	ND	NA	1.3	4250	35	14	245	21500	47	3550	440	ND	291	NA	2	33	36	71
139	9950	7.5	120	ND	NA	0.45	2900	34	10	170	13500	46	1850	425	ND	173	NA	1.5	31	31	43
140	7950	27	105	ND	NA	1.3	1750	36	13	470	16500	85	1020	82	0.85	351	NA	3	22	34	23
141	9900	13	75	ND	NA	ND	2750	36	8.5	225	16000	59	1150	115	1	224	NA	2	31	31	37
142	7150	14	29	ND	NA	ND	2850	28	9.5	205	12000	46	1550	115	ND	258	NA	3	28	23	24
143	11500	10	66	ND	103	ND	3800	62	14	125	16500	47	2200	605	1.8	207	5	2	43	33	62
144	16000	6.5	112	ND	214	0.95	5100	64	9	125	15000	49	2800	190	1.1	158	4.5	1.5	45	59	66
145	14500	6	57	ND	NA	ND	11200	54	7	46	15500	13	4050	215	ND	75	NA	0.5	50	35	27
146	16000	ND	79	ND	NA	ND	3800	60	7	64	15500	24	3300	150	ND	92	NA	ND	42	32	43
147	15000	2.5	69	ND	NA	ND	3050	53	8	37	21500	10	4100	205	ND	57	NA	ND	43	38	18
148	13500	4.5	58	ND	NA	ND	3400	42	8	23	20000	7	3350	215	ND	37	NA	ND	45	36	20
149	10400	40	106	ND	141	1.5	3000	33	25	745	22500	115	1600	120	ND	737	4	4.5	36	39	39
150	7200	18	105	ND	78	0.95	2600	33	15	335	13500	52	1250	595	ND	350	4.7	3	34	25	41
151	27000	9	150	ND	NA	0.4	4450	63	11	93	20000	29	3800	220	ND	132	NA	1.5	50	40	52
152	6900	23	72	ND	NA	1.6	3400	38	38	900	23000	129	1150	170	1.6	1038	NA	6	32	19	46
153	13000	ND	55	ND	39	ND	7350	55	8.5	42	17000	14	4350	325	ND	77	6.4	0.5	52	38	49
154	17500	ND	93	ND	NA	ND	4900	53	8.5	37	19000	16	3900	315	ND	58	NA	ND	59	45	32
155	14000	8.5	71	ND	NA	ND	3000	45	4.5	98	17000	30	2500	140	0.9	93	NA	1.5	42	35	28
156	9250	2.5	46	ND	NA	ND	3950	30	6	60	13000	20	2000	375	ND	81	NA	0.5	44	28	30

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
157	14000	5.5	94	ND	NA	ND	4200	42	5.5	76	14500	28	2250	205	ND	89	NA	1	47	35	33
158	9750	11	110	ND	NA	0.95	3650	37	9.5	185	15000	48	1450	570	ND	196	NA	2	48	36	43
159	9100	22	105	ND	139	ND	2400	43	12	340	17000	65	1400	175	ND	300	4	2.5	27	32	40
160	4200	ND	104	ND	NA	0.5	2150	26	10	155	7300	62	690	130	ND	224	NA	2.5	31	15	19
161	9850	14	130	ND	NA	1.2	3950	47	15	260	15500	52	1700	620	ND	291	NA	2	55	41	73
162	8350	31	155	ND	NA	1.4	2700	52	20	785	20500	107	1850	160	ND	589	NA	3.5	28	36	31
163	8350	8	96	ND	NA	ND	3750	31	9.5	180	12000	61	1550	225	ND	207	NA	2	37	27	37
164	15000	3	102	ND	NA	ND	3650	44	8	62	16500	30	2700	395	ND	70	NA	0.5	44	37	38
165	13000	22	120	ND	100	1.1	3850	64	30	425	22000	70	2550	870	ND	569	5.1	4.5	49	35	49
166	11500	7.5	110	ND	NA	ND	3900	58	9.5	77	18000	31	2550	515	ND	104	NA	1	39	41	28
167	7750	3	94	ND	NA	ND	2050	30	7.5	80	14500	49	1500	310	ND	93	NA	2	21	33	46
168	8000	8.5	101	ND	NA	ND	3900	33	8.5	150	12000	43	1250	365	ND	173	NA	1.5	44	26	33
169	13000	17	100	ND	91	1	3900	44	14	230	18500	51	3000	355	ND	271	5	2	53	43	41
170	13000	2.5	105	ND	NA	ND	3900	51	10	67	15500	45	3150	375	ND	97	NA	0.5	39	38	32
171	11500	10	114	ND	NA	ND	3350	46	9.5	190	14500	59	1650	225	ND	225	NA	2	41	32	31
172	24500	10	165	ND	NA	ND	6550	63	11	63	21500	26	5050	540	ND	85	NA	1	60	59	62
173	10800	30	88	ND	NA	1	3100	34	23	645	26500	89	1800	190	0.8	657	NA	5.5	31	37	45
174	4600	10	69	ND	91	ND	1600	35	13	235	11000	48	1400	300	ND	240	4.3	2	14	15	42
175	8850	7	96	ND	NA	ND	2600	28	7.5	145	12500	54	1250	140	ND	184	NA	2	30	29	44
176	15000	6.5	145	ND	NA	ND	4150	49	8	115	17500	33	2900	385	ND	122	NA	0.5	60	49	37
177	12500	18	160	ND	NA	1.2	3700	51	20	330	17000	68	1750	540	ND	414	NA	2.5	45	27	48
178	9800	10	75	ND	NA	ND	2450	31	9	230	12500	45	1050	185	ND	245	NA	2	31	30	17
179	12500	15	78	ND	NA	0.9	2550	38	22	440	21500	62	1950	165	ND	495	NA	4	32	36	54
180	13000	25	135	ND	133	1.5	3800	54	33	710	23500	86	2200	515	ND	860	4.4	6.5	47	35	64
181	8800	25	92	ND	139	0.45	3100	43	23	535	18500	65	1500	380	ND	547	4.1	4.5	36	25	43
182	8900	19	96	ND	76	ND	2450	32	15	315	16000	42	1500	475	ND	279	4.6	2	34	30	44
183	11500	12	84	ND	NA	ND	4350	29	13	155	16500	34	2550	390	ND	200	NA	1.5	51	34	50
184	8300	22	200	ND	NA	0.4	2250	39	21	495	17000	67	1100	980	ND	452	NA	1	35	27	41
185	12000	28	120	ND	NA	1.4	2900	57	29	785	23500	80	2150	330	ND	863	NA	5.5	36	37	63
186	5900	30	113	ND	137	1.3	1600	40	28	805	18500	84	895	120	ND	834	4	5.5	19	25	48
187	12000	9.5	130	ND	NA	1.5	11700	38	34	395	19000	77	3700	545	ND	584	NA	3	61	26	89

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
188	15000	7.5	96	ND	NA	ND	5400	57	9	95	17500	34	2900	360	ND	127	NA	ND	55	39	51
189	11450	14	120	ND	NA	ND	4100	48	11	195	16500	43	2100	255	ND	202	NA	1	48	37	41
190	8950	5.5	60	ND	NA	ND	3450	39	5.5	61	14500	21	2150	230	ND	73	NA	0.5	43	33	30
191	10800	18	73	ND	NA	2	8550	52	26	435	21000	73	3000	705	ND	527	NA	3	48	33	65
192	6350	6.5	90	ND	NA	ND	1750	30	6	135	11500	48	1300	140	ND	159	NA	1	16	25	39
193	13500	15	170	ND	NA	1.2	4450	51	18	265	15500	59	2250	790	ND	310	NA	2.5	47	36	68
194	8100	18	104	ND	112	1.2	2800	35	23	495	15500	65	1100	340	ND	582	4.2	4	34	26	51
195	7750	21	160	ND	178	2	4250	55	37	620	23000	97	2100	910	0.95	870	4.7	6	46	26	87
196	22000	6.5	165	ND	51	ND	5050	68	12	93	21500	22	5000	585	ND	129	5.7	1	61	48	63
197	9100	20	120	ND	NA	1.2	2700	38	23	610	17000	76	1100	310	ND	686	NA	5	34	30	41
198	9050	11	105	ND	NA	ND	3100	40	9	190	15500	37	1750	230	ND	182	NA	1	38	32	27
199	13500	15	170	ND	NA	1.1	5150	48	21	335	19500	58	2600	635	ND	385	NA	1	60	36	62
200	19000	8	150	ND	NA	ND	5000	67	15	99	20000	39	3700	765	ND	129	NA	1	58	46	41
201	12500	9	141	ND	NA	1.1	5400	46	12	210	13000	53	2550	785	ND	235	NA	3	60	35	73
202	9350	11	97	ND	NA	ND	1800	35	14	250	13500	61	995	360	ND	364	NA	3.5	24	23	43
203	7350	9	110	ND	NA	ND	2100	32	13	275	13000	54	1250	265	ND	313	NA	2	32	27	38
204	9350	8.5	86	ND	NA	ND	3200	37	7.5	175	10500	45	1850	150	ND	185	NA	2.5	36	25	47
205	9400	18	87	ND	NA	0.8	1750	37	18	474	17500	79	1075	73	0.75	575	NA	6	19	27	39
206	18500	12	150	ND	68	ND	4600	54	13	130	20500	38	4000	390	ND	155	5.4	0.5	55	44	75
207	12500	3	83	ND	47	ND	3900	48	8.5	51	19000	17	3250	405	ND	65	5.1	ND	42	39	48
208	17500	ND	90	0.26	NA	ND	5950	84	10	26	21500	16	5600	405	1.3	57	NA	ND	46	49	67
209	6750	14	110	ND	NA	1.3	1800	45	23	570	19000	104	930	130	1.8	680	NA	ND	23	27	32
210	11000	ND	36	ND	NA	ND	3100	31	5.5	60	12000	15	1600	230	ND	74	NA	ND	40	30	35
211	7550	3	96	ND	NA	ND	1250	23	18	250	9950	56	870	500	0.8	280	NA	2.5	19	20	35
212	17000	9	102	ND	NA	ND	4200	53	12	130	19500	27	3450	425	ND	150	NA	0.5	58	42	36
214	8150	17	120	ND	NA	0.9	2600	47	16	410	17000	80	1135	125	ND	539	NA	4.5	29	29	47
215	5250	ND	51	ND	NA	ND	1550	24	2.5	40	7000	19	815	140	ND	47	NA	ND	21	22	3.4
216	14500	7.5	215	ND	192	0.45	4800	58	23	113	17000	59	3250	1080	ND	158	4.9	1	57	37	69
217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
218	12500	43	160	ND	NA	1	3100	51	21	330	23000	72	1950	905	0.95	313	NA	2	34	35	69
219	7350	16	39	ND	NA	ND	2500	28	8	265	10500	54	825	103	0.75	221	NA	3	35	25	20

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
220	6450	22	83	ND	NA	1.1	1950	37	9	305	14000	56	800	155	0.75	241	NA	2	27	29	35
221	4650	12	54	ND	NA	ND	1005	15	4.5	140	8450	30	630	62	ND	108	NA	1.5	15	21	14
222	6700	24	93	ND	NA	0.4	1350	29	9.5	400	13000	85	905	150	0.9	216	NA	2	16	26	31
223	7600	23	88	ND	NA	0.95	2000	28	12	310	12000	59	935	350	ND	224	NA	2	26	25	33
224	5300	25	76	ND	NA	1.3	1750	24	18	475	13500	113	635	90	ND	415	NA	7	22	21	38
225	6100	21	48	ND	NA	ND	660	18	7	250	13000	46	535	62	ND	173	NA	2	5.5	22	19
226	7050	25	65	ND	NA	0.4	1850	26	12	310	16000	51	830	107	0.9	287	NA	3	28	33	24
227	8400	47	75	ND	NA	1	1450	26	19	470	18000	85	815	84	0.95	381	NA	3.5	20	30	33
228	8850	40	89	ND	69	1	1800	27	16	420	15000	74	1050	255	ND	295	4.4	2.5	27	32	28
229	5900	27	79	ND	NA	0.4	1500	20	9	310	12000	51	665	90	ND	230	NA	2	24	25	20
230	9350	27	54	ND	NA	ND	2350	32	11	320	16500	54	1005	105	ND	257	NA	2.5	30	29	30
231	6550	26	78	ND	NA	1	1075	22	11	335	12000	59	860	83	ND	245	NA	2.5	19	22	20
232	6550	23	111	ND	NA	1.2	2150	25	14	505	11550	73	950	250	0.75	350	NA	3.5	32	27	31
233	8550	63	40	ND	32	ND	1450	27	9.5	250	17500	45	1150	105	ND	160	4.2	2	25	32	19
234	7200	31	36	ND	NA	ND	1550	22	8.5	196	13500	36	1135	120	ND	142	NA	2	18	33	23
235	4600	28	66	ND	NA	0.9	1045	15	11	420	12000	64	525	91	ND	298	NA	2.5	17	21	19
236	6450	7	25	ND	6.3	ND	3200	21	5.5	41	11000	6.5	2750	110	ND	40	6.9	ND	18	22	ND
237	6300	22	90	ND	NA	1.1	1150	19	10	375	11000	59	740	92	ND	281	NA	2	17	22	15
238	9400	26	94	ND	NA	ND	2200	34	13	420	19000	59	1100	180	1.6	355	NA	4	30	32	36
239	9150	2.5	46	ND	NA	ND	2350	25	5.5	20	12000	4	2250	130	0.85	26	NA	ND	29	27	ND
240	9450	53	84	ND	NA	1	2200	34	16	415	18500	64	1450	88	0.8	370	NA	2.5	33	28	16
241	6900	37	53	ND	NA	ND	1345	22	9	305	12000	40	700	79	ND	185	NA	2	23	24	15
242	5800	28	28	ND	44	ND	1075	19	7	245	11000	30	740	60	ND	165	4.3	2	16	24	13
243	11500	17	62	ND	NA	ND	1600	31	8.5	175	16500	45	2000	115	ND	138	NA	1	21	32	20
244	5100	14	48	ND	NA	0.5	1060	19	8.5	280	10000	45	750	79	ND	240	NA	2	13	19	20
245	7750	39	34	ND	NA	ND	1400	20	7.5	165	13500	25	1250	93	ND	107	NA	1.5	18	24	15
246	11550	22	125	ND	NA	0.45	2800	52	12	360	11300	47	1200	95	2.4	330	NA	2.5	42	29	21
247	8700	15	38	ND	NA	ND	1600	22	5	93	11000	13	1100	76	ND	82	NA	ND	23	28	11
248	10500	305	130	ND	NA	1.1	2500	41	33	955	35000	194	1750	150	2.5	512	NA	8.5	35	35	47
249	15000	69	87	ND	46	ND	2950	44	14	395	18500	49	1900	110	1	244	4.4	2.5	43	35	23
250	6850	30	115	ND	228	3.2	2950	41	45	1150	25000	145	1500	285	2.2	1350	4.2	8	25	21	74

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
251	8850	26	81	ND	NA	ND	1350	28	14	480	18000	57	1000	92	ND	363	4.2	3.5	21	35	31	
252	10400	13	75	ND	NA	ND	2150	28	6.5	200	9250	32	1150	90	ND	160	NA	1.5	28	27	19	
253	11500	47	87	ND	NA	1.2	3250	59	33	790	26500	82	1650	200	1.8	1000	NA	6.5	43	51	46	
254	12500	30	120	ND	64	1.3	3450	55	30	585	21500	59	2300	890	1.6	610	5.2	4	46	38	76	
255	6800	10	27	ND	NA	ND	2050	26	5	82	11500	11	1900	115	ND	53	NA	ND	24	25	15	
256	12000	40	55	ND	NA	0.45	3900	37	20	485	16000	40	2250	155	ND	443	NA	2	37	28	42	
257	6000	27	33	ND	83	ND	1650	32	11	290	12000	39	1550	125	ND	230	4.6	3	13	22	26	
258	13000	40	65	ND	NA	ND	2750	39	11	365	20000	45	2000	125	0.85	229	NA	2	36	38	29	
259	12000	19	75	ND	21	ND	2800	49	17	355	22500	36	4000	305	ND	370	4.8	1.5	38	37	47	
260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
261	6900	30	135	ND	99	1.1	2900	38	21	680	16500	81	1100	340	ND	545	4.3	4.5	38	24	30	
262	6650	22	29	ND	NA	ND	1200	17	6.5	170	11500	36	1100	66	ND	120	NA	1	18	24	14	
263	11500	51	66	ND	NA	1.2	4400	33	23	565	19500	58	1800	305	ND	430	NA	2.5	44	30	43	
264	9450	25	110	ND	133	1.3	1950	42	37	735	20500	77	1750	635	ND	875	4.1	4.5	23	27	57	
265	12500	49	75	ND	63	ND	2150	75	26	725	25000	71	2700	185	ND	745	4.6	6	30	41	52	
266	11500	32	74	ND	NA	ND	2250	37	12	450	21000	56	1150	107	ND	302	NA	2.5	31	37	30	
267	13500	59	89	ND	NA	ND	2850	48	21	555	24500	62	2350	190	ND	415	NA	2	43	37	27	
268	18000	27	100	ND	NA	ND	2900	53	17	345	24000	43	3700	455	ND	270	NA	2	42	36	49	
269	12500	68	51	ND	63	0.95	1800	45	40	1050	35500	94	2250	305	1.7	1200	4.6	8	20	62	76	
270	14000	58	45	ND	44	0.75	2150	41	33	720	29000	68	1800	145	0.85	965	5.5	8	29	40	46	
271	6400	31	66	ND	40	ND	1600	35	16	510	18500	52	2200	275	ND	295	4.8	2	15	22	37	
272	4900	34	58	ND	NA	ND	695	28	11	440	14500	45	655	67	ND	280	NA	2.5	12	28	20	
273	11000	51	90	ND	83	ND	960	30	19	640	18500	67	940	58	ND	556	4.3	4.5	16	28	31	
274	5550	26	81	ND	NA	1.5	1500	31	30	775	18000	100	675	145	1.6	1007	NA	3.5	22	22	36	
275	17500	14	45	ND	24	ND	4750	39	11	265	19500	22	2550	150	ND	255	6	2	39	37	40	
276	8050	25	89	ND	NA	1.5	2550	33	22	780	17500	78	845	135	ND	766	NA	6	39	36	29	
277	7650	ND	43	ND	13	ND	2400	37	7	76	12500	9	2700	210	ND	86	5.3	ND	20	28	10	
278	12000	26	79	ND	43	ND	1900	47	14	390	21500	31	2500	150	ND	230	4	2	27	34	27	
279	8650	20	62	ND	144	ND	1185	34	19	430	17000	60	1100	69	1.7	550	4.4	6.5	14	20	30	
280	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
281	7500	30	88	ND	120	1.3	2150	40	32	760	21000	97	1450	300	ND	820	4.6	6.5	22	24	48	

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
282	5950	ND	23	ND	12	ND	2150	25	4	97	9100	7	1950	73	ND	75	6.1	ND	12	22	15
283	5450	11	29	ND	28	ND	920	23	5.5	150	12000	22	1650	104	ND	81	4.4	0.5	5.5	23	21
284	14500	22	91	ND	26	ND	2950	54	16	275	23500	22	2800	195	0.8	260	4.3	2	45	36	36
285	6550	57	82	ND	38	ND	1250	33	26	550	26500	60	1300	125	ND	550	4.5	4.5	20	26	32
286	9550	20	74	ND	73	ND	1450	39	15	370	17000	45	1600	145	ND	275	4.3	2	20	29	32
287	6400	22	63	ND	27	ND	3200	35	14	450	18000	29	1350	100	ND	280	6.4	2.5	6	25	24
288	9450	37	130	ND	259	2.3	5100	44	55	1110	26500	117	1950	780	1.6	1425	NA	9	48	24	88
289	5800	22	81	ND	77	ND	1800	24	15	620	15500	53	895	165	ND	372	4.1	3	24	25	25
290	15500	31	155	ND	NA	1.2	4050	46	28	560	24000	83	2800	500	ND	685	NA	4	50	34	54
291	13500	46	95	ND	39	ND	3600	71	39	1350	31500	105	4400	195	1.8	1400	5.6	13	32	40	77
292	15000	24	106	ND	216	0.4	3850	46	21	515	21500	69	2650	265	ND	514	4.2	3.5	43	32	48
293	14000	29	125	ND	80	2.8	9400	80	79	3850	40500	120	6200	290	0.9	2900	6.1	17	42	46	115
294	5500	33	59	ND	54	ND	515	27	16	600	18500	51	605	51	ND	370	3.9	3	ND	27	22
295	18500	24	130	ND	25	ND	3950	54	17	370	25500	27	3850	340	ND	271	4.8	1.5	58	42	39
296	12000	23	49	ND	NA	ND	1950	39	10	290	22000	24	1800	115	ND	199	NA	1.5	28	42	7.6
297	11500	18	155	ND	47	0.85	5150	55	31	995	25500	118	3100	295	0.8	1050	5.8	7	41	34	109
298	7700	25	67	ND	99	ND	1150	37	20	465	19000	59	1350	145	ND	405	4.2	3	15	23	31
299	10500	25	145	ND	74	1.1	3100	48	32	565	18500	58	2150	1010	ND	579	5	3.5	44	30	55
300	6700	24	68	ND	83	ND	1900	33	23	615	17500	49	1300	290	ND	445	4.3	4	19	24	40
301	17500	21	150	0.25	76	ND	2950	67	15	210	24500	33	5450	340	ND	335	4.7	2	33	40	64
302	27500	38	215	ND	NA	1.4	4550	65	40	720	27000	88	4050	1030	ND	695	NA	4	50	51	103
303	23500	21	165	0.95	166	1.3	2500	84	76	370	24500	56	3050	2200	2	700	5.4	3.5	31	38	66
304	10500	40	68	ND	99	ND	3200	57	29	755	36500	71	2500	175	0.95	830	4.5	6.5	31	37	44
305	4550	27	85	ND	103	ND	1900	24	21	685	16000	63	880	350	ND	475	4.2	2.5	20	17	31
306	10500	28	77	ND	107	ND	1550	39	14	490	21500	62	1800	160	ND	312	4.6	3	16	36	41
307	7300	30	74	ND	128	ND	1200	31	20	655	21000	73	1750	116	ND	470	4.2	5.5	ND	25	41
308	9550	48	84	ND	109	1.3	4450	60	48	1250	35500	103	2600	390	2.1	1400	4.9	9	43	33	67
309	9600	6	34	ND	29	ND	3600	43	9.5	155	14500	21	2650	175	ND	185	5.1	ND	29	30	28
310	24500	24	185	ND	NA	0.6	5900	66	20	160	20000	45	4450	920	0.75	243	NA	1.5	60	44	77
311	9950	23	68	ND	105	ND	1250	42	26	760	23500	73	1450	135	0.8	740	4.6	6.5	15	33	56
312	14000	28	150	0.3	151	ND	1950	43	30	495	21500	58	2200	525	ND	520	4.8	4	23	30	58

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
313	20000	21	150	ND	NA	0.55	3200	56	20	435	19500	51	2600	265	ND	490	NA	3.5	44	37	47
314	6100	16	76	ND	64	ND	2100	27	17	430	14000	38	975	360	ND	330	4.4	1.5	26	25	33
315	19000	24	130	ND	103	ND	1550	66	23	685	27500	66	2550	115	0.8	740	4.2	7	22	41	57
316	12000	21	59	ND	66	1.2	7000	64	29	550	25500	48	4500	290	ND	646	6.3	4	35	33	62
317	9200	21	140	ND	122	0.95	3350	45	32	825	28000	86	1800	360	0.85	890	4	6.5	42	30	61
318	13000	27	145	ND	NA	1	3900	48	28	670	22000	81	2400	560	ND	582	NA	4	50	33	42
319	11000	ND	95	ND	NA	ND	4550	39	5.5	18	17000	19	2650	550	ND	28	NA	ND	45	42	57
320	13500	8.5	95	ND	50	ND	3750	48	12	120	19000	26	3700	615	ND	145	5.4	0.5	51	38	61
321	11400	ND	76	ND	57	ND	3600	40	7	14	15500	18	2700	430	ND	32	5.2	0.5	39	35	65
322	17500	2.5	205	ND	NA	0.95	5950	52	18	30	22500	47	5100	1985	ND	48	NA	0.5	55	51	115
323	13500	ND	83	ND	62	ND	2250	46	8.5	31	18000	33	2850	435	ND	47	4.7	ND	29	35	58
324	20500	ND	135	0.71	NA	ND	3600	51	11	43	19500	50	4450	435	ND	73	NA	1	35	38	72
325	7350	ND	93	ND	NA	ND	1750	36	2	23	9600	35	830	125	ND	42	NA	0.5	28	25	11
326	6650	7	88	ND	NA	0.65	1250	36	8.5	180	9700	72	760	59	1.9	250	NA	6	15	19	38
327	11000	ND	115	ND	119	ND	5600	43	8.5	74	13000	51	2500	830	ND	120	5.1	1.5	51	33	75
328	5750	7	160	ND	NA	0.95	2350	32	12	275	13000	90	765	105	0.85	351	NA	2.5	36	25	44
329	16000	ND	82	ND	38	ND	4250	50	7	23	20500	14	4100	500	ND	37	5.4	ND	54	54	75
330	5650	ND	37	ND	NA	ND	2050	27	2.5	60	9600	33	800	120	ND	55	NA	0.5	27	32	24
331	5600	ND	29	ND	NA	ND	4350	29	5	18	10500	5	2600	215	ND	27	NA	ND	30	25	20
332	5150	ND	100	ND	NA	ND	1850	33	4	39	43000	28	1000	225	ND	56	NA	ND	25	31	17
333	10550	ND	99	ND	NA	ND	4650	35	4	57	15500	44	1550	205	ND	62	NA	0.5	63	43	33
334	13000	2.5	78	ND	NA	ND	4550	34	7	38	18000	30	2750	300	ND	54	NA	1	44	38	41
335	6000	ND	44	ND	NA	ND	2150	36	2	17	8550	25	635	96	ND	32	NA	ND	29	29	3.3
336	9500	34	81	ND	NA	1.2	2100	35	18	685	18500	77	980	135	ND	600	NA	6	34	34	26
337	12500	12	58	ND	NA	0.5	4100	59	12	210	15000	52	2000	275	ND	275	NA	2.5	53	34	29
338	7050	15	59	ND	76	0.5	2200	31	11	325	13000	62	1300	165	ND	316	4.1	2.5	30	27	21
339	15500	8	145	ND	NA	0.45	4300	43	16	295	18500	57	2850	490	ND	281	NA	1.5	55	36	48
340	5950	ND	53	ND	NA	ND	1500	24	2	20	9800	24	770	85	ND	26	NA	0.5	21	29	16
341	8700	2.5	62	ND	NA	ND	2550	40	4.5	59	13500	44	1095	105	ND	71	NA	1.5	32	38	29
342	12500	8.5	96	ND	NA	ND	4050	43	5	79	16000	36	1450	215	ND	86	NA	1	46	42	41
343	7900	ND	38	ND	NA	ND	3250	37	9	23	18500	7	3150	195	ND	32	NA	ND	27	39	24

Appendix II. A

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
344	9950	6.5	109	ND	NA	ND	2700	60	7	101	15000	57	2150	155	1.9	120	NA	1.5	46	39	54
345	5850	2.5	80	ND	NA	ND	2300	27	5	82	7750	62	630	220	ND	96	NA	1	34	22	33
346	7000	5	183	ND	NA	0.5	1850	37	3.5	57	8050	43	750	206	1.1	70	NA	1.5	31	26	31
347	3550	ND	62	ND	NA	ND	1150	21	3.5	82	5500	53	380	60	ND	99	NA	1.5	16	15	22
348	5250	16	68	ND	NA	0.5	1500	31	7.5	200	15000	49	1090	73	ND	186	NA	2.5	20	39	26
349	10550	16	118	ND	NA	0.6	3550	36	17	190	10900	51	1450	381	ND	280	NA	1	33	24	36
350	6400	8.5	73	ND	NA	ND	2050	25	6.5	140	10500	44	725	130	ND	172	NA	2	33	26	30
351	8450	11	58	ND	NA	0.4	2450	32	5.5	130	12800	60	830	97	ND	141	NA	3	29	32	22
352	7300	6	135	ND	NA	ND	2150	43	5.5	112	11500	49	775	140	ND	132	NA	1	32	28	27
353	8050	46	82	0.28	142	1.1	1700	35	44	795	23000	105	1065	130	1.1	1200	4.1	8	22	24	55
354	12500	33	67	ND	67	ND	2900	43	12	260	20500	48	2500	195	ND	195	4.5	2	35	35	48
355	9200	37	73	ND	65	0.85	2050	37	22	665	21000	76	1300	125	ND	555	4.1	5.5	30	34	38
356	8550	43	79	ND	40	ND	1200	32	14	425	20000	43	1200	88	ND	270	4.3	2.5	17	34	23
357	7500	39	74	ND	NA	1.2	24500	39	23	705	20500	53	3100	165	0.95	720	NA	8.5	46	32	35
358	11000	67	79	ND	57	0.45	1650	47	33	715	28500	74	2700	295	ND	870	4.7	7	17	42	67
359	11100	53	96	ND	47	ND	1750	43	23	605	22000	59	1700	190	ND	463	4.3	4	23	32	42
360	12500	11	61	ND	NA	ND	1200	42	7.5	250	18500	25	1450	110	ND	187	NA	1	21	36	14
361	8050	41	104	ND	122	0.95	1035	35	31	760	19000	75	1350	305	ND	810	4.1	6.5	15	21	49
362	10050	31	82	ND	98	1.3	10800	41	19	690	19500	74	2150	94	0.8	540	6.1	4	27	29	48
389	10400	64	57	ND	NA	ND	1850	42	14	355	22000	58	1650	145	0.85	210	NA	3	24	39	27
392	16500	ND	89	ND	NA	ND	4250	50	6.5	19	18500	21	2900	505	ND	34	NA	ND	52	43	43
500	13500	7	125	ND	NA	1.4	8850	62	16	130	17500	43	3950	455	1.2	185	NA	2	59	33	82
501	5400	25	72	ND	131	ND	1020	35	20	555	17000	67	1250	130	ND	515	3.9	4	12	19	34
502	7600	15	101	ND	NA	1.1	2850	39	22	490	17500	69	1250	200	ND	625	NA	1.5	36	25	30
503	7100	41	43	ND	41	ND	1030	25	8	240	14000	42	900	89	ND	135	4.3	2.5	16	27	16
504	4000	34	29	ND	50	ND	715	19	10	390	10850	52	635	54	ND	255	4.2	3	5.5	17	17
505	6300	37	67	ND	87	ND	1700	32	19	540	17000	52	1750	285	ND	440	4.4	4	18	21	46
507	17000	ND	84	ND	NA	ND	4700	47	6	9.1	19000	15	3700	445	ND	24	NA	ND	46	44	50
508	6950	3	51	ND	NA	ND	2650	24	3	64	11000	26	835	150	ND	66	NA	0.5	34	24	16
517	9300	29	99	ND	NA	0.95	2300	38	15	355	16500	79	1250	200	0.9	317	NA	2.5	30	33	42

Note: Abbreviations: NA, not analysed; ND, not detected; NS, no sample

Appendix II. B

Appendix II. B. Chemical data for 5 to 10 cm samples.

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	10000	ND	36	ND	NA	ND	3500	38	3	9.2	11000	11	1200	140	ND	14	NA	ND	52	34	15	
7	7350	ND	26	ND	29	ND	2050	21	1.5	5.2	9100	7	830	99	ND	7.5	4.3	ND	31	28	15	
8	15000	ND	47	ND	1	ND	3150	42	4.5	12	24500	7	1850	190	ND	20	4.8	0.5	38	61	35	
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	8900	ND	44	ND	NA	ND	2350	41	3	11	15000	12	1010	140	ND	22	NA	ND	30	45	27	
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	11000	ND	35	ND	NA	ND	2500	24	2	11	14000	9.5	1100	155	ND	15	NA	ND	33	32	34	
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	9050	ND	35	ND	27	ND	2100	19	2.5	11	14500	11	1250	215	ND	11	4.3	ND	29	40	26	
18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21	11000	6	51	ND	NA	ND	1600	59	2	20	14000	15	960	160	1.8	28	NA	ND	26	48	18	
22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	12000	ND	56	ND	14	ND	4400	33	5	8.4	15000	8	2450	245	ND	14	5.2	ND	46	37	26	
26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27	19000	ND	68	ND	29	ND	2450	38	4	14	20500	13	2650	175	ND	19	4.3	ND	34	46	36	
28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29	10200	ND	39	ND	38	ND	2700	26	2	12	13000	11	1200	130	ND	13	4.3	ND	35	33	30	
30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
34	12000	3	55	ND	56	ND	3500	41	5	18	18000	14	2050	225	0.85	26	4.3	ND	44	38	48	
35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
38	10500	ND	62	ND	50	ND	2250	40	1.5	17	10900	13	1200	97	ND	17	3.7	ND	28	42	14	
39	10300	ND	41	ND	NA	ND	2450	44	4	21	15000	16	2200	175	3.5	23	NA	1	44	46	19	
40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
48	9350	ND	29	ND	28	ND	2950	62	2.5	12	15500	41	1850	125	3.6	30	4.6	ND	35	43	16	
49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
50	14000	ND	58	ND	NA	ND	4500	58	6	37	20000	20	2600	210	ND	45	NA	ND	48	48	29	
51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	5750	ND	62	ND	NA	ND	2100	30	3.5	61	8650	46	700	107	ND	77	NA	1.5	23	24	26	
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
57	4300	ND	39	ND	NA	ND	540	31	2	46	9400	26	580	55	ND	40	NA	ND	ND	29	ND	
58	12500	5	29	ND	24	ND	2300	34	2.5	20	22000	11	1400	145	ND	14	4.5	0.5	28	57	28	
59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	8100	ND	120	ND	NA	ND	4400	80	5	57	13000	54	2500	300	3.3	88	NA	1	42	38	53	
61	10750	ND	49	ND	NA	ND	2800	29	1.5	6.3	12250	12	975	90	ND	12	NA	ND	48	33	19	
62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
65	6100	ND	20	ND	NA	ND	1600	21	2	18	7500	7	860	76	ND	19	NA	1	18	23	ND	

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
72	20000	ND	90	ND	NA	ND	4600	64	8	19	24000	14	4800	490	ND	40	NA	ND	54	57	53	
73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
75	17000	ND	88	ND	19	ND	4350	33	4	25	17500	13	2100	340	ND	27	4.8	ND	59	51	52	
76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
89	27500	ND	125	ND	28	ND	4350	64	13	24	27500	11	5700	570	ND	40	4.7	ND	48	53	90	
91	14000	ND	48	ND	NA	ND	3900	48	8.5	20	19000	23.5	2600	305	ND	32	NA	ND	35	46	37	
92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
100	27000	ND	140	ND	NA	ND	3000	62	9	19	25000	12	3500	560	ND	35	NA	ND	46	55	83	
101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
102	13000	ND	62	ND	43	ND	2600	57	6	40	22000	19	2900	250	ND	53	4.5	ND	34	53	59	
103	8950	ND	57	ND	NA	ND	1500	35	1.5	14	11500	6	720	72	ND	20	NA	ND	27	32	10	
104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
108	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
111	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
112	14500	8	40	ND	4.6	ND	2850	44	3.5	27	20000	9.5	1300	110	ND	31	4.4	ND	44	50	18	
113	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
114	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
115	16500	5.5	34	ND	NA	ND	3250	36	4	35	22000	11	1550	190	ND	26	NA	ND	46	44	38	
116	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
117	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
118	13000	7.5	100	ND	NA	ND	3400	35	5.5	92	13500	27	1550	145	ND	81	NA	1	43	31	22	
119	11000	ND	29	ND	1.1	ND	1500	30	2.5	17	13500	6.5	760	72	0.75	19	4.3	0.5	25	38	13	
120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
121	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
123	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
124	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
126	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
127	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
129	10500	6.5	33	ND	31	ND	3400	32	3	40	12500	11	1950	140	ND	38	4.3	ND	42	33	18	
130	6600	7	32	ND	NA	ND	1200	17	2	37	7400	9	710	260	ND	26	NA	ND	16	19	16	
131	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
132	12000	3	56	ND	NA	ND	2600	45	8.5	42	17500	21	1350	275	2.8	37	NA	0.5	38	49	28	
133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
134	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
135	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
136	32000	9.5	33	ND	NA	ND	5700	60	7.5	145	15500	16	2550	93	1.7	88	NA	1	31	35	21	
137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
138	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
141	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
142	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
144	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
145	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
146	17500	ND	77	ND	NA	ND	4400	48	7	15	16500	7.5	4350	185	ND	34	NA	ND	52	36	44	
147	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
148	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
149	13500	11	41	ND	29	ND	2750	32	4	96	16000	15	1600	125	ND	46	4.3	0.5	40	45	21	
150	12000	7	38	ND	23	ND	2000	32	5	56	14000	8	1600	240	ND	47	5.1	ND	29	31	35	
151	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
152	8300	11	39	ND	NA	ND	1800	28	3	110	9000	14	1400	92	ND	56	NA	ND	28	24	ND	
153	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
154	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
155	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
156	12000	6	46	ND	28	ND	5400	38	5	33	15000	11	2400	290	ND	45	5.5	ND	53	35	26	
157	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
158	14500	6.5	44	ND	NA	ND	3050	35	6	31	18000	9.5	1900	310	ND	38	NA	0.5	42	43	36	
159	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
162	14000	16	64	ND	NA	ND	3450	73	6	140	21000	18	3050	170	ND	90	NA	ND	33	56	28	
163	10000	6	48	ND	NA	ND	2750	36	4.5	36	14500	9	2000	190	ND	29	NA	ND	35	36	23	
164	15000	ND	66	ND	18	ND	3300	45	7	17	17000	8	3100	310	ND	31	5	ND	39	36	40	
165	21500	3	100	ND	9.6	ND	4650	51	7	45	20000	8	4250	390	ND	37	5	ND	62	47	40	
166	16000	ND	78	ND	NA	ND	3900	74	9	43	24000	16	2900	350	ND	77	NA	ND	39	52	24	

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
168	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
169	19500	9.5	81	ND	20	ND	4250	49	7	55	22500	15	4050	285	ND	42	5	1	55	57	42	
170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
171	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
172	19500	5.5	160	ND	54	ND	5200	54	12	91	23000	28	4750	630	ND	109	4.9	1.5	67	56	73	
173	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
174	10000	7	63	ND	12	ND	1900	46	8	45	17000	8	3500	300	ND	51	5	ND	20	28	49	
175	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
176	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
177	24000	12	92	ND	NA	ND	3350	47	15	88	24500	18	3150	445	ND	77	NA	0.5	42	45	40	
178	14500	2.5	49	ND	NA	ND	3600	28	4	50	17500	12	1700	165	ND	28	NA	1	46	44	26	
179	20000	9	85	ND	37	ND	3600	48	22	80	19000	14	2700	200	ND	55	5.2	1	46	47	45	
180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
181	10400	3	70	ND	NA	ND	2850	44	6	41	16500	11	2500	370	ND	38	NA	ND	35	38	37	
182	19500	6.5	91	ND	17	ND	4300	48	6.5	68	20500	8	2900	335	ND	56	4.5	ND	55	44	40	
183	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
184	10000	7	76	ND	NA	ND	1900	33	4.5	83	12000	8.5	1150	320	ND	40	NA	ND	29	29	26	
185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
186	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
188	21500	ND	100	ND	NA	ND	4650	52	8	22	21500	8.5	4600	310	ND	30	NA	ND	56	48	52	
189	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
190	10600	ND	46	ND	NA	ND	2570	27	5	18	15000	7	2500	185	ND	21	NA	ND	26	29	40	
191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
192	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
194	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
195	18500	8	125	ND	NA	ND	4200	47	9	82	19000	12	3800	520	0.8	63	NA	ND	56	43	61	
196	17500	3	96	ND	17	ND	4350	53	8	33	20000	9.5	4450	405	ND	49	5.3	ND	55	42	56	
197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
198	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
199	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
202	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
203	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
205	11950	15	98	ND	NA	0.7	2650	31	14	420	17900	69	1250	98	0.8	406	NA	6.5	33	34	37	
206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
207	15000	ND	84	ND	27	ND	4250	48	9.5	34	23000	12	3450	380	ND	54	5.2	ND	41	41	48	
208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
210	12000	ND	29	ND	NA	ND	2800	27	4	16	13500	6	1600	160	ND	26	NA	ND	35	31	39	
211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
212	18000	ND	80	ND	NA	ND	3650	41	7	25	19000	9	3650	275	ND	28	NA	ND	53	41	38	
214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
215	7650	ND	34	ND	NA	ND	1450	22	2	11	10500	6.5	975	104	ND	11	NA	ND	22	29	9.5	
216	23500	ND	115	ND	36	ND	3400	57	16	33	27500	11	5350	665	ND	50	4.8	ND	44	47	62	
217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
218	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
219	9400	7.5	23	ND	NA	ND	3450	24	2	17	10500	7	1300	115	ND	18	NA	ND	43	31	14	
220	10100	15	40	ND	NA	ND	2050	33	4	35	16000	8	1300	115	ND	38	NA	1	32	43	22	
221	7950	3.5	28	ND	NA	ND	1160	19	2	21	9900	5.5	790	77	ND	16	NA	2	17	27	13	
222	12000	13	35	ND	NA	ND	1700	34	3.5	37	16000	8	1250	145	ND	31	NA	ND	22	35	21	
223	12500	15	53	ND	NA	ND	2400	29	4.5	45	13500	8	1400	275	ND	38	NA	ND	34	38	28	
224	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
225	12500	7.5	23	ND	NA	ND	2150	27	2.5	25	14000	6.5	1105	120	ND	21	NA	ND	30	33	19	
226	12500	13	28	ND	NA	ND	2300	29	3	30	18000	7.5	1200	104	ND	25	NA	ND	33	43	21	
227	11500	27	38	ND	NA	ND	1900	27	4	134	13000	20	840	95	ND	75	NA	1	29	34	21	
228	9450	14	39	ND	8.2	ND	1635	29	4.5	34	15500	7.5	1300	175	ND	31	4.8	ND	23	39	19	
229	10300	12	28	ND	NA	ND	1500	24	3	33	13500	7	940	91	ND	29	NA	ND	23	34	17	
230	15500	9.5	27	ND	NA	ND	2900	32	3.5	38	18500	8	1500	135	ND	24	NA	ND	37	40	25	
231	9600	12	33	ND	NA	ND	1500	22	3	29	12000	6	1150	89	ND	27	NA	ND	20	30	11	
232	7400	11	25	ND	NA	ND	1300	18	2.5	45	11100	9	845	125	ND	28	NA	ND	19	29	13	
233	11000	9.5	60	ND	21	ND	1800	25	4	88	14500	9.5	1300	130	ND	35	4.3	ND	28	34	16	

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
234	7300	22	33	ND	NA	ND	1550	21	3.5	116	12500	16	940	140	ND	42	NA	0.5	23	32	14	
235	7500	12	27	ND	NA	ND	1200	20	3.5	63	11500	9	755	110	ND	47	NA	ND	18	31	15	
236	8200	6.5	34	ND	5.4	ND	2150	21	4	37	12000	5	1850	125	ND	27	5.6	ND	22	26	12	
237	7600	9.5	28	ND	NA	ND	1250	20	2	18	9400	5	1050	63	ND	18	NA	ND	17	29	6.7	
238	12000	18	42	ND	NA	ND	2350	32	5	78	16500	12	1350	175	ND	47	NA	ND	34	39	31	
239	8200	2.5	37	ND	NA	ND	2000	20	4	17	11500	3	1900	120	ND	23	NA	ND	23	25	12	
240	12500	6.5	78	ND	NA	ND	3150	33	4	36	12500	7.5	2200	115	ND	45	NA	ND	44	33	14	
241	11000	11	37	ND	NA	ND	2000	20	3	49	13000	7	1200	110	ND	28	NA	ND	28	30	11	
242	11000	7	35	ND	12	ND	2950	28	3	24	12000	5	1500	110	ND	23	4.4	ND	38	33	13	
243	11750	12	72	ND	NA	ND	1300	29	4	60	13000	14	1550	102	ND	48	NA	ND	20	35	20	
244	6050	8.5	25	ND	NA	ND	1010	15	2	24	9750	5	840	63	ND	25	NA	ND	13	26	9.2	
245	11500	21	35	ND	NA	ND	1800	25	6	101	14000	12	1450	125	ND	47	NA	ND	23	29	17	
246	9475	3	51	ND	NA	ND	2500	22	2.5	24	7100	5	1250	86	ND	37	NA	ND	34	22	8.8	
247	9900	2.5	33	ND	NA	ND	1700	20	3.5	22	9650	5	1250	77	ND	29	NA	ND	23	25	9.2	
248	11500	190	104	ND	NA	ND	2100	33	21	605	27500	116	1500	150	ND	300	NA	5.5	32	34	38	
249	12500	7	54	ND	11	ND	3050	30	3	52	8900	7	1850	120	ND	24	4.4	ND	42	31	11	
250	9900	13	55	ND	29	ND	2000	43	9	185	13500	23	2350	185	ND	155	4.5	0.5	25	30	28	
251	14500	13	45	ND	NA	ND	2400	32	5	88	17500	15	1400	115	ND	66	NA	0.5	34	41	21	
252	8400	7	26	ND	NA	ND	1350	18	2	16	9250	5	1200	67	ND	19	NA	ND	21	24	9.2	
253	15000	22	75	ND	NA	ND	3150	42	8.5	210	20000	24	2450	205	ND	125	NA	1	39	49	30	
254	15000	7.5	68	ND	13	ND	2950	46	30	68	18000	9	3250	440	ND	118	5.7	ND	36	39	64	
255	8200	5	36	ND	NA	ND	2350	26	5	56	12000	6	2050	140	ND	31	NA	ND	29	27	12	
256	13000	3	60	ND	NA	ND	4500	38	8.5	48	13000	7	2500	160	ND	110	NA	ND	44	31	23	
257	5450	37	39	ND	182	ND	1050	28	10.5	450	12000	55	1150	62	ND	280	4.1	3	ND	17	18	
258	16500	39.5	56	ND	NA	ND	3100	46	7	54	20500	7.5	3000	165	ND	40	NA	1.5	40	44	28	
259	13500	6.5	79	ND	9.7	ND	2950	45	8.5	86	18500	7.5	4350	415	ND	51	4.8	ND	43	37	43	
260	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
261	9300	9.5	47	ND	16	ND	2450	29	4	81	12000	9	1500	200	ND	42	4.2	ND	36	30	15	
262	7850	5.5	41	ND	NA	ND	1250	16	2	46	9350	6	1050	68	ND	20	NA	ND	19	24	12	
263	14000	4.5	52	ND	NA	ND	3350	32	8	42	17500	6	2000	225	ND	80	NA	ND	48	38	29	
264	15500	12	80	ND	23	ND	2900	51	14	120	16500	15	2950	455	ND	94	4.6	0.5	37	37	40	
265	14500	25	76	ND	26	ND	2200	61	15	340	21500	30	3250	320	ND	250	4.9	2.5	33	45	39	
266	20500	7	50	ND	NA	ND	2850	45	5.5	46	21500	9	1950	130	ND	37	NA	ND	40	46	27	

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
267	15500	17	72	ND	NA	ND	2550	38	7.5	155	19000	16	3050	195	ND	78	NA	ND	42	37	28	
268	21500	6	110	ND	NA	ND	3750	55	11	58	23500	8	5250	495	ND	49	NA	ND	56	46	42	
269	17650	37	54	ND	NA	ND	4100	39	22	470	29000	43	2600	402	ND	420	NA	4.5	39	67	71	
270	15500	57	70	ND	35	ND	2600	40	25	620	27500	55	1850	170	ND	739	4.5	6	36	42	44	
271	13500	8.5	65	ND	9.9	ND	3050	43	8	77	19500	7.5	4150	365	ND	40	5.2	ND	41	37	41	
272	9250	11	31	ND	NA	ND	1315	40	4	93	16000	8	1400	102	ND	49	NA	0.5	19	37	13	
273	10700	7.5	44	ND	19	ND	2000	21	3	90	6300	12	705	76	ND	58	4.6	ND	32	22	9.7	
274	11500	20	49	ND	NA	ND	2600	32	5	155	17500	20	1000	160	ND	97	NA	1	39	38	23	
275	19500	6.5	44	ND	19	ND	3550	38	6	115	19500	11	2350	145	ND	61	5.1	0.5	42	39	38	
276	16000	13	49	ND	NA	ND	4100	34	3.5	86	21000	13	1550	145	ND	60	NA	ND	52	56	23	
277	11500	ND	72	ND	4.6	ND	3250	47	8.5	57	17500	6.5	3650	270	ND	75	5.6	ND	33	36	22	
278	13500	24	96	ND	30	ND	2150	44	13	350	19500	24	2600	160	ND	183	4.4	1.5	34	35	28	
279	8650	3	45	ND	36	ND	1500	29	3	73	7950	12	1450	79	ND	52	5.3	0.5	19	22	16	
280	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
281	7800	12	48	ND	26	ND	1450	32	8	170	11150	18	1600	195	ND	115	5.1	2	20	27	20	
282	7900	ND	25	ND	NA	ND	1650	24	3	70	12500	4.5	1850	93	ND	33	NA	ND	19	26	14	
283	10300	19	53	ND	17	ND	2300	29	5.5	150	15000	19	1950	130	ND	69	4.6	ND	30	33	22	
284	17000	21	97	ND	17	ND	3000	49	15	235	24000	20	3200	250	ND	195	4.3	3	44	41	39	
285	11750	19	71	ND	18	ND	2800	32	11	275	17000	16	1750	220	ND	138	4.7	1	37	34	25	
286	14500	7.5	63	ND	20	ND	2190	43	8.5	73	16500	11	2600	175	ND	48	4.6	ND	29	35	30	
287	15000	8.5	70	ND	NA	ND	3150	39	7.5	230	17500	12	2050	160	ND	89	NA	ND	41	38	23	
288	13000	13	91	ND	30	ND	2950	50	14	210	16500	17	3100	610	ND	180	5.4	0.5	43	35	51	
289	10350	21.5	36	ND	16	ND	2600	28	5.5	84	13500	7	1250	150	ND	58	4.7	ND	35	33	15	
290	21500	31	120	ND	NA	ND	3550	58	19	78	22000	13	4150	565	ND	90	NA	ND	49	46	35	
291	15900	32	96	ND	NA	0.8	4550	49	26	945	22800	43	4200	213	ND	733	NA	4.5	45	40	67	
292	16500	8	78	ND	NA	ND	3650	46	6	83	18000	12	3500	245	ND	52	NA	ND	55	42	28	
293	16500	14	110	ND	14	ND	10400	62	19	460	24500	17	7750	305	ND	554	7.3	2	54	45	40	
294	15500	5	42	ND	26	ND	1900	38	4	130	18500	8	1200	95	ND	39	4.7	ND	28	43	20	
295	22000	8.5	130	ND	10	ND	4150	57	14	225	25000	15	5950	430	ND	140	4.7	ND	56	45	56	
296	13500	13	47	ND	NA	ND	2150	35	6.5	160	19500	13	2050	115	ND	89	NA	0.5	28	40	17	
297	23900	18	250	ND	NA	0.45	7250	50	19	405	23350	120	4250	377	ND	465	NA	3	62	45	149	
298	14500	11	60	ND	22	ND	2950	50	8	110	17000	11	2500	230	ND	56	4.9	4.5	38	37	33	
299	16000	8	69	ND	NA	ND	3750	38	9	66	17500	8.5	3250	355	ND	49	NA	0.5	46	35	35	

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
300	17500	9.5	80	ND	6.8	ND	4800	46	9	125	20000	11	2750	280	ND	94	4.9	ND	52	44	39	
301	19000	20.5	130	0.26	35	ND	3550	73	13	115	23000	19	5700	280	ND	220	5.5	ND	41	43	53	
302	16000	7.5	101	ND	21	ND	2300	62	15	120	19000	13	4400	595	ND	120	4.9	ND	33	39	67	
303	34500	8.5	200	0.78	NA	ND	3000	87	39	120	30000	19	5450	1250	ND	231	NA	0.5	44	59	75	
304	13000	18	54	ND	26	ND	2650	38	7.5	190	17500	15	2350	145	ND	123	4.7	1.5	36	35	29	
305	6850	8.5	27	ND	17	ND	1850	19	5.5	105	9200	63	950	195	ND	68	5.1	ND	24	21	18	
306	13000	14	50	ND	36	ND	1150	51	7	120	19500	15	2450	155	ND	69	5.2	0.5	7.5	40	33	
307	9850	8	40	ND	41	ND	1070	31	6.5	195	13500	16	1750	115	ND	88	4.5	1.5	ND	29	24	
308	12500	17	83	ND	12	ND	3600	41	12	250	16000	14	3250	520	ND	139	5.5	1	49	36	38	
309	11000	3	39	ND	9.7	ND	4350	38	6.5	65	14500	9	2800	220	ND	65	5.5	ND	41	33	24	
310	8500	7	76	ND	11	ND	2250	42	7	53	12500	7.5	2850	760	ND	75	5.5	ND	23	24	64	
311	12000	18	47	ND	39	ND	965	41	9.5	195	18500	22	1600	175	ND	113	4.6	2	13	38	47	
312	20500	12	120	0.64	47	ND	2050	58	26	165	23500	21	3750	775	1	126	5.1	1	30	43	61	
313	17250	15	113	ND	NA	0.6	3550	58	20	405	19100	44	2650	222	1.2	474	NA	3	44	36	46	
314	8750	9.5	38	ND	NA	ND	1850	25	6	82	15000	38	1300	220	ND	88	NA	0.5	23	31	27	
315	24000	17	130	0.26	37	ND	1550	82	8.5	255	23500	24	3200	130	1.2	162	4.9	1.5	25	44	59	
316	13500	12	63	ND	24	ND	6700	67	11	140	19000	13	4500	315	ND	205	6.6	1	44	36	49	
317	11500	9	62	ND	23	ND	3050	34	6	107	15000	9.5	2150	225	ND	80	4.6	0.5	42	32	33	
318	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
319	13000	5	88	ND	NA	ND	3500	44	7.5	68	17500	16	2750	500	ND	53	NA	ND	45	42	46	
320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
321	13000	ND	84	ND	54	ND	4850	38	6.5	15	16500	19	3000	470	ND	26	4.7	ND	53	39	71	
322	18500	ND	120	ND	NA	ND	4450	54	13	14	25000	14	6450	870	ND	29	NA	ND	46	55	87	
323	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
324	26500	ND	140	0.66	NA	ND	3700	72	11	24	27500	13	7350	405	0.85	37	NA	ND	39	56	68	
325	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
326	14500	7	58	ND	NA	ND	1800	36	3	59	15000	23	1335	109	ND	51	NA	0.5	23	39	21	
327	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
328	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
329	16500	ND	75	ND	23	ND	4050	43	6.5	13	22000	13	4250	475	ND	30	5.1	ND	51	54	72	
330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
331	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
332	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
333	20000	ND	57	ND	NA	ND	6400	57	5	18	24000	43.5	2900	220	ND	26	NA	ND	96	60	35	
334	18000	ND	57	ND	NA	ND	4700	42	7	18	21500	11	2950	230	ND	28	NA	1.5	51	45	29	
335	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
336	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
337	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
338	8450	8	35	ND	30	ND	2300	23	3	65	8950	14	1250	135	ND	44	4.2	ND	35	31	14	
339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
341	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
342	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
343	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
345	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
346	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
347	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
349	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
350	9800	6	36	ND	NA	ND	2150	28	2	20	13150	7	1070	100	ND	18	NA	1	36	39	13	
351	12500	5.5	26	ND	NA	ND	2450	31	3.5	19	15500	7	1010	103	ND	16	NA	ND	35	43	12	
352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
353	7950	20	50	0.28	55	ND	1320	26	6.5	165	12000	25	905	152	ND	118	4.6	1.5	20	28	23	
354	13500	6.5	58	ND	NA	ND	2700	40	7	88	18500	15	2600	195	ND	58	NA	ND	34	37	41	
355	13000	13	48	ND	19	ND	1800	38	6.5	91	17500	13	1900	135	ND	57	4.4	1	25	36	30	
356	12000	16	55	ND	20	ND	1250	38	7	160	17500	15	1400	99	ND	71	4.2	1	19	41	18	
357	14500	30	67	ND	34	ND	5300	43	22.5	395	23500	22	2150	215	ND	235	6.8	3.5	30	51	49	
358	14500	21	67	ND	21	ND	2000	49	14	310	20500	19	3250	375	0.8	155	4.8	2	23	46	49	
359	19400	18	88	ND	NA	ND	3350	46	14	190	17950	19	2500	227	ND	130	NA	1	39	39	34	
360	13500	17	42	ND	25	ND	785	39	6.5	205	20000	20	1400	97	ND	110	4.2	2	12	34	25	
361	12500	13	59	ND	59	ND	1895	37	21	130	13500	15	2300	340	ND	94	4.5	1.5	29	30	30	
362	13500	39	82	ND	46	ND	2850	47	17	520	24500	54	1750	81	ND	470	5.2	4	24	40	36	
389	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
392	19500	ND	66	ND	NA	ND	3950	44	7	8	21500	7.5	3800	360	ND	23	NA	1.5	42	41	59	
500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. B

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
501	11300	8.5	55	ND	13	ND	1850	35	5.5	66	14500	66.5	2400	200	ND	42	4.4	ND	25	32	19	
502	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
503	7200	19	34	ND	21	ND	960	21	3.5	112	11000	15	950	91	ND	43	4.3	0.5	15	28	6.9	
504	7600	20	23	ND	24	ND	580	23	4	155	11000	19	720	60	ND	73	4.3	1	ND	25	13	
505	13500	7.5	68	ND	10	ND	3800	37	9	88	16000	8.5	2950	355	ND	64	5.1	ND	46	35	48	
507	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
508	8350	ND	22	ND	NA	ND	2300	21	2	11	11500	6.5	1015	150	ND	13	NA	ND	29	28	17	
517	11500	13	37	ND	NA	ND	2550	53	6	51	19500	12	2350	180	0.8	41	NA	ND	33	47	28	

Note: Abbreviations: NA, not analysed; ND, not detected; NS, no sample

Appendix II. C

Appendix II. C. Chemical data for 10 to 20 cm samples.

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7	11000	ND	22	ND	16	ND	2250	26	2.5	4.6	13500	6	1200	105	ND	10	4.9	ND	32	31	21	
8	19500	ND	51	ND	23	ND	3400	43	8.5	13	23500	5.5	2450	200	ND	24	5.1	ND	38	47	39	
9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	21000	ND	45	ND	NA	ND	2900	45	5.5	8	21500	6.5	1700	170	ND	25	NA	ND	38	43	42	
11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	17000	ND	39	ND	NA	ND	3700	37	4	4.4	16500	6	2100	150	ND	14	NA	ND	42	36	32	
15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	17000	ND	38	ND	18	ND	3750	26	4.5	6.9	23000	8	2450	225	ND	14	4.8	ND	36	42	36	
18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	14000	ND	46	ND	7.4	ND	4950	32	5	6.5	17000	4	2950	180	ND	15	5.5	ND	44	36	22	
26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27	24500	ND	74	ND	19	ND	3100	42	6.5	11	25500	8	4600	190	ND	21	4.5	0.5	37	45	44	
28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29	15000	ND	39	ND	16	ND	3050	34	3.5	3.2	15500	6	1600	200	ND	13	4.8	ND	40	38	42	
30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
34	15000	3	52	ND	19	ND	3450	54	6	11	21000	7.5	2450	270	0.8	27	4.8	ND	45	42	59	
35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
38	19500	ND	50	ND	23	ND	2700	51	3.5	10	16500	7.5	2150	120	ND	19	4.5	ND	29	49	15	
39	13500	ND	35	ND	NA	ND	3250	67	5	8.6	21500	13	2950	170	3	25	NA	ND	50	56	22	
40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
48	14000	ND	31	ND	17	ND	3250	115	5.5	7.6	20000	7	3750	165	3.8	46	4.9	ND	31	50	26	
49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
58	20000	ND	36	ND	17	ND	3350	42	4	7.5	24000	6.5	2550	190	ND	15	4.8	ND	37	51	41	
59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
61	18500	ND	49	ND	NA	ND	3300	39	2.5	3.4	17000	10	1500	115	ND	15	NA	ND	46	39	20	
62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
75	18500	ND	63	ND	14	ND	3650	35	7	11	23000	8	3100	270	ND	25	4.9	ND	43	48	67	
76	23000	ND	88	ND	NA	ND	4900	61	12	15	31000	12	7800	570	ND	30	NA	ND	47	63	59	
77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
89	29000	ND	110	0.25	16	ND	4050	68	12	19	30000	6	7300	415	ND	41	4.9	1	45	51	72	
91	15150	ND	75	ND	NA	ND	5000	42	7.5	35	19000	28	2800	315	ND	50	NA	0.5	43	41	41	
92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
102	8400	6	42	ND	23	ND	2000	33	3	16	13000	11	1600	190	ND	27	4.5	ND	32	47	32	
103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
106	7400	6	55	ND	NA	ND	2000	36	4	91	13000	38	700	89	ND	100	NA	1	26	32	30	
108	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
111	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
112	18500	4	40	ND	24	ND	3100	46	6.5	16	21500	7.5	2050	135	ND	30	4.7	ND	42	42	23	
113	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
114	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
115	15000	3.5	25	ND	NA	ND	2550	36	4	31	22000	9.5	1600	175	ND	26	NA	ND	34	46	41	
116	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
117	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
118	14500	ND	50	ND	NA	ND	2400	41	6.5	12	17000	5.5	2150	185	ND	27	NA	ND	37	38	25	
119	15500	ND	27	ND	NA	ND	1500	33	4.5	11	15500	6	1200	77	ND	20	NA	ND	23	35	16	
120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
121	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
123	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
124	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
126	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
127	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
129	12500	ND	30	ND	11	ND	3050	32	4.5	8.3	15000	5.5	2300	135	ND	22	4.4	ND	35	31	20	
130	13500	ND	32	ND	NA	ND	2400	29	4.5	7.9	13500	4.5	1850	185	ND	23	NA	ND	28	28	25	
131	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
132	20500	ND	45	ND	NA	ND	2900	52	5.5	14	23500	10	1950	145	1.3	25	NA	ND	38	50	30	
133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
134	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
135	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
136	35000	ND	38	ND	NA	ND	6650	65	7.5	72	15000	6	3050	125	ND	50	NA	ND	39	38	21	
137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
138	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
141	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
142	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
144	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
145	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
146	27000	ND	150	ND	NA	ND	6100	75	8.5	11	24000	7	6050	265	ND	31	NA	ND	65	53	43	
147	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
148	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
149	18000	ND	43	ND	14	ND	3200	39	6	28	19000	7.5	2550	145	ND	27	4.3	ND	41	45	24	
150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
151	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
152	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
153	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
154	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
155	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
157	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
158	20500	ND	51	ND	NA	ND	2850	42	9	17	23000	8.5	3000	315	ND	38	NA	ND	33	43	54	
159	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
162	23000	ND	62	ND	NA	ND	3700	104	8.5	39	25000	9	3850	180	ND	49	NA	ND	41	60	36	
163	16000	ND	65	ND	NA	ND	2800	46	7.5	15	21500	5.5	3550	255	ND	31	NA	ND	36	43	40	
164	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
165	18000	3	86	ND	9.7	ND	3950	48	8.5	34	21500	8.5	4350	440	ND	36	5	0.5	51	48	42	
166	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
168	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
169	23500	ND	76	ND	16	ND	3800	51	10	19	26000	8.5	5350	280	ND	33	5.4	ND	42	51	42	
170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
171	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
172	21500	ND	95	ND	9.5	ND	4150	55	11	18	27000	7.5	6650	430	ND	33	5.1	ND	51	55	64	
173	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
174	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
175	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
176	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
177	27500	ND	97	ND	NA	ND	3600	66	11	36	28000	7.5	4550	280	0.8	50	NA	ND	44	47	41	
178	18000	ND	52	ND	NA	ND	3700	35	7	35	20500	10	2900	210	ND	25	NA	ND	41	44	34	
179	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
181	21000	ND	92	ND	NA	ND	3400	49	8.5	27	21500	8	4650	305	ND	39	NA	ND	53	43	36	
182	20000	ND	72	ND	13	ND	3300	46	9.5	25	22000	5	3350	250	ND	51	4.8	ND	44	40	40	
183	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
184	14500	ND	50	ND	NA	ND	2200	35	6	20	18000	5.5	1900	180	ND	35	NA	ND	31	33	37	
185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
186	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
188	26500	ND	130	ND	NA	ND	6950	66	8.5	16	25500	7	6600	345	ND	30	NA	ND	60	57	53	
189	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
190	19500	3	96	ND	NA	ND	5000	46	7.5	17	23500	6.5	4650	310	ND	25	NA	1	54	49	41	
191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
192	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
194	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
195	27000	ND	145	ND	NA	ND	4600	60	9	18	26000	6.5	6650	350	0.8	36	NA	ND	54	52	59	
196	18500	ND	87	ND	NA	ND	2550	56	10	22	25500	8	6700	360	ND	39	NA	ND	38	43	57	
197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
198	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
199	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
202	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
203	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
205	20500	4.5	56	ND	NA	ND	2900	52	4.5	28	20000	12	2450	130	ND	33	NA	ND	37	39	29	
206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
207	21500	ND	88	ND	15	ND	5100	53	10	16	26500	7.5	4000	310	ND	40	5.2	ND	57	50	46	
208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
210	13000	ND	33	ND	NA	ND	3100	30	5.5	5.1	14500	4.5	1900	155	ND	22	NA	ND	34	31	46	
211	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
212	14500	ND	65	ND	NA	ND	4050	42	7.5	12	19500	5	4100	285	ND	25	NA	ND	54	41	38	
214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
215	12500	ND	39	ND	NA	ND	2200	29	3.5	5	16500	4	1700	130	ND	15	NA	ND	27	37	29	
216	30000	ND	125	ND	17	ND	3450	69	14	28	30500	9.5	7400	410	ND	51	5	ND	44	53	63	
217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
218	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
219	12000	ND	32	ND	NA	ND	4400	30	4	6.1	13500	5	2000	155	ND	17	NA	ND	47	34	19	
220	15000	6.5	53	ND	NA	ND	2350	45	6.5	17	18500	7	2100	155	ND	40	NA	ND	36	46	31	
221	12500	ND	43	ND	NA	ND	2100	25	4	8.1	13500	4	1500	115	ND	20	NA	ND	27	35	23	
222	16500	5.5	39	ND	NA	ND	2350	43	6	15	19500	5	2300	170	ND	33	NA	ND	26	35	29	
223	18000	ND	56	ND	NA	ND	3000	40	6	14	19000	5	2400	300	ND	34	NA	ND	37	43	43	
224	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
225	16500	ND	25	ND	NA	ND	2850	32	3.5	8.9	16500	5.5	1800	140	ND	19	NA	ND	36	37	18	
226	14500	2.5	30	ND	NA	ND	2700	33	5	20	19000	6	1750	140	ND	20	NA	ND	37	39	22	
227	17500	11	30	ND	NA	ND	2350	33	3.5	37	16000	7.5	1500	115	ND	23	NA	0.5	31	40	22	
228	18000	2.5	70	ND	17	ND	3000	45	5.5	16	20500	6	2500	200	ND	36	4.9	ND	38	43	30	
229	17500	ND	36	ND	NA	ND	2650	33	5	7.5	16500	5	1650	135	ND	23	NA	ND	36	38	17	
230	17000	ND	30	ND	NA	ND	3850	39	4	21	19000	6	2250	170	ND	22	NA	0.5	45	42	27	
231	15500	ND	56	ND	NA	ND	2150	30	5	9.1	16000	4.5	2100	135	ND	24	NA	ND	31	35	16	
232	12000	4	31	ND	NA	ND	2200	25	4	14	14500	5	1550	155	ND	22	NA	ND	29	33	20	
233	11500	2.5	47	ND	15	ND	1850	25	4.5	43	14000	6.5	1500	145	ND	23	4.4	ND	28	34	16	

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
234	8550	66	42	ND	NA	0.4	1800	23	8.5	282	14650	50	1280	138	ND	133	NA	2	21	32	23
235	14500	7	35	ND	NA	ND	2600	30	5	12	16000	5	1650	180	ND	24	NA	ND	33	39	19
236	8450	ND	39	ND	4.9	ND	2050	23	5.5	29	11000	4.5	1850	135	ND	28	5.1	ND	25	26	17
237	10500	6	36	ND	NA	ND	1700	26	3	7.8	13500	4.5	1950	102	ND	18	NA	ND	22	35	13
238	17500	4	47	ND	NA	ND	3600	40	6	31	20500	7.5	2200	205	ND	28	NA	ND	45	45	33
239	7850	ND	36	ND	NA	ND	2050	20	4.5	14	10500	4	2050	120	ND	23	NA	ND	24	24	11
240	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
241	13500	3	40	ND	NA	ND	2100	27	5	26	15500	5.5	2000	135	ND	25	NA	ND	29	32	15
242	10000	ND	30	ND	9.2	ND	2000	26	4	14	12000	4	1800	93	ND	21	4.6	ND	22	31	16
243	15500	ND	70	ND	NA	ND	2000	33	5	23	14000	7	2500	125	ND	32	NA	ND	27	35	29
244	12500	3	36	ND	NA	ND	1500	24	4	12	15000	4.5	1650	108	ND	20	NA	ND	20	34	15
245	10950	9.5	30	ND	NA	ND	1650	24	5	59	12000	7	1750	110	ND	29	NA	ND	20	26	14
246	8850	ND	45	ND	NA	ND	2450	23	3	8.9	7700	4	1700	98	ND	28	NA	ND	31	23	12
247	8850	ND	30	ND	NA	ND	1300	22	4	9.9	10000	4	1550	71	ND	25	NA	ND	19	24	11
248	15500	89	76	ND	NA	ND	2100	33	9	325	20500	46	1700	160	ND	101	NA	2	30	36	34
249	9200	ND	41	ND	5.5	ND	2050	31	3.5	24	11000	5	2150	130	ND	21	4.8	ND	29	29	14
250	14500	ND	65	ND	6.7	ND	4100	41	7	22	16000	6	3450	220	ND	31	4.7	ND	52	38	24
251	19500	3.5	47	ND	NA	ND	3500	39	5.5	23	20000	9	2300	150	ND	31	NA	ND	41	40	25
252	9600	ND	34	ND	NA	ND	2200	22	3	7.3	11000	3	1750	92	ND	14	NA	ND	26	26	13
253	17000	15	63	ND	NA	ND	3350	40	8	102	21000	14	3050	220	ND	57	NA	0.5	38	49	37
254	20000	3	70	ND	NA	ND	3400	53	11	26	23500	7	4950	290	ND	69	NA	ND	39	45	54
255	7750	ND	34	ND	NA	ND	1650	25	5	49	11500	4.5	2100	130	ND	30	NA	ND	19	25	15
256	13500	ND	62	ND	NA	ND	4850	47	6	12	14500	4.5	3150	155	ND	33	NA	ND	45	32	18
257	4100	18	39	ND	329	ND	1165	28	8	305	6350	29	725	43	ND	335	4.3	2.5	5.5	10	15
258	19000	ND	67	ND	NA	ND	3300	47	6	30	19000	6	3500	170	ND	31	NA	ND	41	40	24
259	18000	ND	84	ND	5.5	ND	3850	51	11	35	23500	8	6200	380	ND	59	4.9	ND	47	42	40
260	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
261	12000	ND	43	ND	12	ND	2450	30	5.5	21	16500	4.5	2400	175	ND	34	4.7	ND	31	31	24
262	9600	ND	43	ND	NA	ND	1400	18	3	12	10250	4	1250	89	ND	26	NA	ND	20	26	14
263	16500	ND	66	ND	NA	ND	4150	40	6.5	15	18500	5	3050	200	ND	64	NA	ND	49	39	28
264	21500	3.5	109	ND	8.6	ND	4450	63	11	34	20000	7	4650	385	ND	41	5.1	ND	58	48	41
265	17000	5	71	ND	10	ND	3050	47	9.5	122	20000	12	3950	195	ND	89	4.3	ND	38	36	33
266	23500	3	51	ND	NA	ND	3350	48	8.5	34	25000	7.5	3250	170	ND	35	NA	ND	42	44	29

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
267	19500	ND	83	ND	NA	ND	2850	44	7.5	51	21500	8	4400	240	ND	34	NA	ND	47	41	30	
268	21500	ND	110	ND	NA	ND	4300	53	9	20	21500	6	5100	380	ND	42	NA	ND	59	47	40	
269	22300	16	57	ND	NA	ND	3050	40	17	280	25600	23	3150	302	ND	180	NA	2.5	31	66	75	
270	16000	28	69	ND	30	ND	3000	36	12	395	21500	27	2100	150	ND	273	4.3	3	39	39	30	
271	17500	2.5	88	ND	5.7	ND	3950	54	10	31	21500	6	5650	330	ND	47	5.1	ND	51	44	40	
272	10200	ND	27	ND	NA	ND	1055	37	6	34	16500	4.5	2100	110	ND	31	NA	ND	8.5	33	16	
273	11000	ND	27	ND	9.9	ND	1520	22	3	29	7450	6.5	1150	73	ND	21	4.3	ND	24	22	11	
274	14500	6.5	37	ND	NA	ND	2400	32	5	43	21500	11	1500	195	ND	33	NA	0.5	33	43	24	
275	19500	ND	36	ND	15	ND	3550	36	6	83	19000	8.5	2550	160	0.8	30	4.8	ND	41	36	32	
276	23000	ND	59	ND	NA	ND	5050	44	6	21	27000	7.5	3050	215	ND	28	NA	ND	58	59	36	
277	19000	16	110	ND	NA	ND	5300	54	8	60	22500	6.5	5350	280	ND	71	NA	ND	46	43	25	
278	16500	17	96	ND	NA	ND	3250	43	9.5	260	18000	18	2950	165	ND	112	NA	0.5	45	37	24	
279	10850	ND	44	ND	NA	ND	2550	28	4	23	10750	6	1850	120	0.9	25	NA	ND	34	28	18	
280	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
281	13500	5.5	51	ND	NA	ND	2450	32	6	52	15000	7	2150	165	ND	52	NA	ND	33	33	19	
282	10150	ND	34	ND	5.6	ND	3350	28	4	59	14000	3.5	2250	140	ND	30	4.8	ND	35	30	14	
283	9100	8.5	45	ND	10	ND	1950	25	5	71	13500	9	2100	150	ND	42	4.6	ND	25	30	21	
284	18500	11	99	ND	11	ND	3100	51	10	160	20500	13	3600	220	ND	93	4.4	ND	44	40	35	
285	12000	ND	57	ND	8.2	ND	2450	35	6	135	14500	4	2250	150	ND	54	4.6	ND	34	32	24	
286	21500	ND	94	ND	NA	ND	3200	52	9.5	38	21000	7	3950	220	ND	34	NA	ND	47	42	32	
287	17000	ND	67	ND	NA	ND	3450	42	7.5	101	18500	5.5	2700	165	ND	52	NA	ND	41	38	23	
288	25000	3	140	ND	9.4	ND	4800	61	9.5	40	22000	7	5500	380	ND	65	5.3	ND	61	49	46	
289	15000	ND	55	ND	18	ND	3700	40	7	20	16000	4	2100	160	ND	45	4.8	ND	46	39	21	
290	19500	ND	93	ND	NA	ND	3400	57	12	28	21000	6.5	4200	300	ND	55	NA	ND	47	42	33	
291	9200	51	68	ND	11	ND	2850	39	20	510	17000	19	3050	175	ND	485	6.2	1	28	28	56	
292	17000	ND	81	ND	NA	ND	4100	48	6.5	24	18000	5.5	3650	250	ND	33	NA	ND	57	42	25	
293	16550	8.5	99	ND	NA	ND	12550	67	13	250	18750	13	6900	279	ND	305	NA	0.5	50	41	33	
294	20000	2.5	57	ND	24	ND	2600	48	7.5	66	19500	7	2050	125	ND	42	4.9	ND	35	43	27	
295	24500	ND	135	ND	6.2	ND	3850	65	14	90	27500	9.5	7550	440	ND	101	5	ND	52	49	56	
296	16000	ND	53	ND	NA	ND	3300	39	5.5	50	18000	4.5	2650	140	ND	36	NA	ND	40	40	18	
297	25500	8.5	165	ND	NA	ND	4450	51	14	250	20000	74	4150	434	ND	210	NA	1	58	44	84	
298	25500	3	95	ND	15	ND	3700	62	12	60	23000	6.5	4150	235	ND	53	5	ND	44	45	39	
299	16500	ND	72	ND	NA	ND	3350	46	8	24	18000	6	4050	275	ND	34	NA	ND	50	39	38	

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
300	18500	ND	73	ND	17	ND	5000	50	8	41	21500	5	3250	225	ND	80	5	ND	53	44	38
301	20500	3.5	120	ND	19	ND	4250	65	12	50	24000	9	6350	285	ND	127	5.3	ND	49	45	49
302	20500	2.5	104	ND	14	ND	2350	78	13	48	25500	9.5	6100	450	0.9	86	5.3	ND	37	49	58
303	32500	ND	185	0.67	17	ND	3350	104	17	45	28000	8.5	6150	470	0.8	135	5.5	ND	45	53	64
304	17000	4	68	ND	NA	ND	3200	43	6	49	20000	7	3300	185	ND	48	NA	ND	44	40	35
305	12000	ND	30	ND	14	ND	2700	26	5.5	37	13500	5	1700	230	ND	56	5.3	0.5	28	27	26
306	22000	3	66	ND	28	ND	2900	67	9.5	43	25000	6.5	4250	230	ND	50	5	ND	28	49	46
307	20500	ND	52	ND	26	ND	3800	47	7	72	21500	7.5	3200	200	ND	46	4.7	ND	31	45	32
308	15000	3.5	74	ND	NA	ND	3400	50	9.5	44	19500	7	4950	365	ND	73	NA	ND	44	41	45
309	13500	ND	46	ND	NA	ND	4600	37	7	42	17000	7.5	2600	225	ND	79	NA	ND	47	35	26
310	24500	12	165	ND	NA	0.4	5850	57	14	109	17300	29	4200	697	ND	150	NA	1	61	41	69
311	20000	6	58	ND	24	ND	2050	53	9.5	81	21500	11	2550	170	ND	55	4.6	ND	29	46	59
312	23500	3.5	110	ND	22	ND	2700	67	15	58	24000	8	4700	315	0.9	57	5.6	ND	40	44	65
313	15000	3.5	68	ND	12	ND	2400	41	7	39	17500	6.5	3000	215	ND	45	5.1	ND	36	35	42
314	12000	ND	34	ND	NA	ND	2050	29	5.5	19	15500	4.5	1800	180	ND	48	NA	ND	27	32	30
315	26500	6.5	140	ND	23	ND	2550	76	8	94	24000	13	3950	160	ND	92	5.4	ND	39	47	58
316	14500	8	66	ND	20	ND	6600	92	10	82	20500	10	5200	340	1.9	133	6.9	ND	47	39	45
317	18000	ND	77	ND	13	ND	3700	38	7	31	19500	5.5	2750	205	ND	47	5	ND	48	37	40
318	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
319	15500	ND	56	ND	NA	ND	3450	54	7.5	10	23000	8	3150	270	ND	33	NA	ND	39	41	42
320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
321	17500	ND	71	ND	13	ND	4500	40	8	7.9	21500	8	4250	310	ND	22	4.8	1	54	44	63
322	27000	ND	130	ND	NA	ND	4650	58	15	16	33000	11	9050	500	ND	35	NA	ND	43	60	70
323	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
324	36500	ND	185	0.64	NA	ND	4200	80	11	21	37000	8.5	9600	335	1	36	NA	ND	40	66	65
325	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
326	24000	ND	66	ND	NA	ND	2700	53	4	16	20500	8.5	2850	170	ND	22	NA	ND	31	51	24
327	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
328	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
329	22000	ND	100	ND	11	ND	4700	47	7	15	25000	8.5	5600	385	ND	23	5	ND	55	60	66
330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
331	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
332	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
333	25000	ND	54	ND	NA	ND	3800	59	11	24	26500	6.5	3850	210	ND	38	NA	ND	44	54	39	
334	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
335	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
336	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
337	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
338	13500	ND	46	ND	10	ND	3650	38	4	19	15000	7.5	2850	200	ND	22	4.6	ND	48	39	21	
339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
341	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
342	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
343	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
345	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
346	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
347	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
349	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
351	18000	ND	31	ND	NA	ND	2400	40	4.5	14	19000	7	1650	120	ND	21	NA	ND	33	45	18	
352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
353	13000	6.5	38	ND	20	ND	2100	31	5	40	16000	11	1550	135	ND	29	4.6	ND	31	33	27	
354	15000	ND	65	ND	NA	ND	2900	46	7.5	35	19000	9	3550	210	ND	48	NA	ND	37	38	39	
355	17500	ND	51	ND	11	ND	2600	45	8	25	18000	6	2800	165	ND	34	4.6	ND	33	37	34	
356	14500	3.5	40	ND	16	ND	1600	43	8.5	56	16500	6.5	2350	120	ND	40	4.3	ND	21	35	19	
357	18500	17	56	ND	18	ND	2950	43	6	140	22000	10	2250	190	ND	57	5.4	1	31	46	54	
358	20000	5.5	64	ND	16	ND	3000	58	12	95	24000	7.5	3950	385	ND	56	4.8	ND	34	48	45	
359	17000	8.5	63	ND	14	ND	2250	49	11	89	18500	8.5	2750	205	ND	60	4.6	1.5	31	37	36	
360	15500	7	30	ND	22	ND	720	39	5	110	19000	12	1500	110	ND	44	4.2	1	0	33	28	
361	18000	ND	76	ND	14	ND	2900	51	19	34	17000	7	3300	285	ND	48	4.6	ND	37	36	35	
362	18000	21	63	ND	40	ND	2950	47	9.5	315	21500	34	1750	100	0.8	210	5	1.5	34	41	34	
389	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
392	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix II. C

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
501	19500	ND	97	ND	6.7	ND	3700	50	7	24	20000	6	4450	250	ND	30	4.8	ND	56	44	27	
502	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
503	9400	17	35	ND	12	ND	1500	21	6	57	12500	8	1300	108	ND	26	5.4	ND	21	29	15	
504	12000	8.5	37	ND	NA	ND	1800	26	5.5	40	13000	5.5	1450	110	ND	30	NA	ND	23	29	16	
505	14500	ND	67	ND	8	ND	3350	44	8.5	28	18000	5	3800	260	ND	59	5.2	ND	41	36	51	
507	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
508	12500	ND	30	ND	NA	ND	3200	31	4	3.6	14000	4	1550	195	ND	15	NA	ND	38	32	26	
517	17000	ND	54	ND	NA	ND	3950	66	6.5	24	23500	7	3000	240	ND	33	NA	ND	48	51	34	

Note: Abbreviations: NA, not analysed; ND, not detected; NS, no sample

Appendix II. D

Appendix II. D. Chemical data for parent material.

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
1	20000	ND	66	ND	NA	ND	3300	69	12	5	22000	6	5200	230	ND	42	NA	ND	34	44	26	
2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3	7200	ND	18	ND	NA	ND	2600	25	4	5.8	9600	3	1800	390	ND	12	NA	ND	23	23	13	
4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
5	5000	ND	42	ND	NA	ND	1200	74	3	3.9	6000	2	1000	59	2.2	41	NA	ND	19	15	5.4	
6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
7	12000	ND	26	ND	8.7	ND	3700	52	7	13	20000	5	3800	220	ND	27	5.5	ND	39	40	26	
8	15000	ND	46	ND	11	ND	3200	39	8	ND	19000	4	3500	220	ND	21	5.2	ND	34	37	20	
9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
14	6300	ND	18	ND	NA	ND	2900	26	4	5.6	9900	2	2200	130	ND	14	NA	ND	21	22	12	
15	11000	ND	39	ND	NA	ND	4700	34	6	9.4	19000	3	4300	220	ND	17	NA	ND	52	43	21	
16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
17	9800	ND	38	ND	3.3	ND	4600	27	5	14	18000	8	3800	220	ND	14	5.6	ND	42	41	22	
18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19	2100	ND	84	ND	NA	ND	2400	51	6	23	24000	5	3700	170	ND	22	NA	ND	36	47	23	
20	34000	ND	260	0.7	NA	ND	7200	110	17	39	45000	8	13000	540	ND	61	NA	ND	71	73	64	
21	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22	11000	ND	44	ND	NA	ND	6200	38	6	18	16000	3	3200	200	ND	16	NA	ND	44	38	15	
23	27000	ND	210	0.6	NA	ND	5200	82	15	34	36000	7	9800	380	ND	44	NA	ND	58	62	42	
24	12000	ND	63	ND	NA	ND	8800	46	5	12	18000	3	3800	260	ND	17	NA	ND	80	40	19	
25	9100	ND	34	ND	0.56	ND	6800	33	6	14	17000	3	3400	240	ND	17	6.5	ND	48	37	23	
26	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27	17000	ND	110	ND	1.1	ND	3800	50	6	6	19000	4	3700	170	ND	26	5.5	ND	43	39	14	
28	20000	ND	63	ND	NA	ND	3600	69	12	15	23000	18	6200	230	ND	40	NA	ND	38	50	38	
29	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
31	20000	ND	56	ND	NA	ND	3600	53	8	22	23000	6	4000	260	ND	26	NA	ND	44	49	25	
32	20000	ND	49	ND	NA	ND	1700	45	6	12	18000	6	1900	130	ND	25	NA	ND	24	39	18	

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
33	5300	ND	19	ND	NA	ND	1600	23	4	6	11000	2	3200	140	ND	14	NA	ND	15	21	14	
34	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
36	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
37	20000	ND	37	ND	NA	ND	2100	57	6	8.8	16000	5	1900	110	ND	27	NA	ND	28	35	17	
38	8400	ND	22	ND	4.3	ND	2600	29	6	13	14000	4	4000	150	ND	20	5.1	ND	22	28	17	
39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
41	9300	5	23	ND	NA	ND	3000	51	2	3	9400	5	1900	100	ND	24	NA	ND	41	38	10	
42	11000	ND	30	ND	NA	ND	2700	68	7	20	15000	4	3700	140	ND	38	NA	ND	32	34	19	
43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
44	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
52	8000	ND	18	ND	NA	ND	2200	29	6	4.1	14000	3	3100	210	ND	17	NA	ND	22	30	21	
53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
54	5000	ND	18	ND	NA	ND	2300	18	4	7.2	7200	2	1800	110	ND	12	NA	ND	18	17	9.7	
55	7500	ND	28	ND	NA	ND	4000	33	4	2.8	12000	3	2600	190	ND	14	NA	ND	40	32	13	
57	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
58	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
59	35000	9	79	0.67	NA	ND	3800	92	32	110	51000	11	5200	1800	1.8	57	NA	1	28	92	81	
60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
62	7400	ND	17	ND	NA	ND	3000	28	5	7.1	12000	3	3300	140	ND	18	NA	ND	31	27	16	
63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
65	6400	ND	21	ND	NA	ND	1600	27	4	7.9	11000	4	2800	130	ND	16	NA	ND	13	23	14	
66	9700	ND	19	ND	NA	ND	2800	24	4	6.5	13000	4	3000	130	ND	13	NA	ND	32	32	19	

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
68	7700	ND	19	ND	NA	ND	2400	29	5	6.2	13000	3	2900	130	ND	16	NA	ND	26	30	15	
69	11000	ND	26	ND	NA	ND	3900	36	7	15	17000	3	5300	230	ND	23	NA	ND	31	29	20	
70	18000	ND	68	ND	NA	ND	5500	56	9	23	23000	4	5900	290	ND	27	NA	ND	49	48	29	
71	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
72	30000	6	170	0.6	NA	ND	7600	88	13	44	38000	11	11000	660	ND	46	NA	ND	66	83	60	
73	14000	ND	33	ND	NA	ND	2900	42	5	1.7	16000	6	3500	170	ND	22	NA	ND	37	39	16	
74	37000	ND	250	0.6	NA	ND	7900	92	14	39	37000	8	11000	510	ND	46	NA	ND	75	68	47	
75	13000	ND	80	ND	1.8	ND	4300	28	8	23	25000	6	4300	330	ND	19	5.5	ND	42	48	33	
76	21000	ND	130	0.52	NA	ND	6800	77	11	28	30000	8	8400	530	ND	50	NA	ND	47	60	48	
77	38000	ND	270	0.7	NA	ND	6900	94	13	37	37000	8	11000	480	ND	48	NA	ND	70	66	47	
78	20000	ND	130	ND	NA	ND	7100	54	9	28	26000	7	7100	430	ND	28	NA	ND	67	62	40	
79	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
80	43000	ND	330	1	NA	ND	7900	110	13	44	45000	9	14000	620	ND	46	NA	ND	70	90	76	
81	44000	ND	290	0.9	NA	ND	9600	130	20	60	52000	13	18000	710	ND	67	NA	ND	64	89	76	
82	31000	ND	160	0.6	NA	ND	6400	84	12	36	33000	9	7800	400	ND	40	NA	ND	59	66	46	
83	34000	ND	210	0.8	NA	ND	7100	96	14	40	39000	10	12000	500	ND	48	NA	ND	61	74	56	
84	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
85	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
86	27000	ND	210	0.68	NA	ND	6200	81	14	36	41000	9	11000	490	ND	49	NA	ND	58	67	62	
87	9800	ND	36	ND	NA	ND	4300	38	6	13	15000	2	4200	200	ND	20	NA	ND	30	37	15	
88	14000	ND	49	ND	NA	ND	5200	61	10	29	23000	4	6900	250	ND	38	NA	ND	36	47	27	
89	28000	ND	160	0.56	2.2	ND	7100	83	12	31	36000	6	9700	400	ND	42	6.2	ND	60	64	46	
91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
92	6900	ND	20	ND	NA	ND	2900	30	6	13	14000	2	3600	200	ND	20	NA	ND	18	26	14	
93	26000	ND	130	ND	NA	ND	46000	73	10	20	27000	7	22000	400	ND	36	NA	ND	66	56	47	
94	16000	ND	64	ND	NA	ND	5700	65	8	19	21000	5	6300	440	ND	27	NA	ND	54	47	28	
95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
96	21000	ND	140	ND	NA	ND	6800	88	9	37	28000	5	6300	330	2.1	43	NA	ND	48	55	32	
97	16000	ND	120	ND	NA	ND	5500	52	8	25	24000	5	7000	290	ND	31	NA	ND	54	47	29	
98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
101	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
102	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
103	7400	ND	58	ND	NA	ND	1300	46	5	4.7	9400	3	1800	95	ND	28	NA	ND	22	17	9.9	
104	21000	ND	75	ND	NA	ND	4400	70	14	25	26000	7	7000	330	ND	44	NA	ND	45	50	34	
105	8100	ND	25	ND	NA	ND	3300	30	5	3.6	12000	3	2600	220	ND	17	NA	ND	35	27	15	
106	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
108	8000	ND	37	ND	NA	ND	1300	22	6	14	11000	3	2100	99	ND	17	NA	2	18	20	12	
109	3500	ND	15	ND	NA	ND	1100	12	3	3.5	6400	1	1600	79	ND	8.5	NA	ND	12	12	11	
110	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
111	5700	ND	18	ND	NA	ND	2900	23	4	3.4	10000	3	2000	170	ND	13	NA	ND	27	23	11	
112	18000	ND	38	ND	18	ND	3300	38	6	9.5	20000	6	1900	130	ND	22	4.7	ND	45	42	28	
113	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
114	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
115	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
116	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
117	7000	7	77	ND	175	ND	2000	37	6	120	13000	47	870	95	1.8	134	3.7	2	28	30	22	
118	20000	ND	79	ND	NA	ND	3600	84	11	9.9	20000	5	3500	170	ND	54	NA	ND	58	38	29	
119	17000	ND	32	ND	8.6	ND	2700	53	8	1.5	19000	4	2700	140	ND	26	4.8	ND	39	39	21	
120	13000	ND	62	ND	NA	ND	1800	58	9	15	14000	6	2900	120	ND	41	NA	ND	22	33	20	
121	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
122	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
123	26000	5	64	ND	NA	ND	5000	59	10	19	23000	7	3200	180	ND	32	NA	ND	64	48	24	
124	5900	ND	19	ND	NA	ND	2100	24	4	9.3	9900	2	2700	130	ND	18	NA	ND	19	20	11	
125	6100	ND	20	ND	NA	ND	2700	31	6	15	14000	3	3000	190	ND	23	NA	ND	22	32	13	
126	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
127	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
128	5200	ND	20	ND	NA	ND	2700	22	4	5.5	8500	2	2000	160	ND	18	NA	ND	21	20	9.8	
129	9300	ND	31	ND	0.96	ND	11000	44	5	10	14000	4	5800	290	ND	22	7	ND	51	34	24	
130	5100	ND	18	ND	NA	ND	1900	23	4	6.9	9700	2	2500	160	ND	16	NA	ND	19	22	9.6	
131	21000	8	31	ND	NA	ND	3000	56	11	27	25000	7	3500	170	ND	38	NA	ND	38	50	25	
132	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
133	15000	5	44	ND	NA	ND	2400	130	15	ND	22000	4	5400	150	1.6	77	NA	ND	36	48	16	
134	13000	ND	52	ND	NA	ND	3700	48	7	26	20000	5	4200	250	ND	28	NA	ND	44	42	29	

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
135	6800	ND	24	ND	NA	ND	53000	29	6	8.8	12000	3	20000	210	ND	29	NA	ND	52	24	16
136	91000	ND	37	ND	NA	ND	22000	82	20	210	18000	6	6000	130	ND	145	NA	ND	54	32	30
137	6600	36	55	ND	NA	ND	7500	27	4	11	27000	3	2900	520	ND	15	NA	ND	42	30	14
138	11000	ND	44	ND	NA	ND	7100	46	5	11	14000	4	3100	260	ND	21	NA	ND	61	34	22
139	6500	ND	36	ND	NA	ND	1500	27	6	11	13000	3	3500	180	ND	22	NA	ND	15	24	14
140	17000	ND	96	ND	NA	ND	4100	52	8	14	19000	4	4400	200	ND	25	NA	ND	50	40	16
141	21000	ND	66	ND	NA	ND	5200	59	6	17	22000	5	3900	240	ND	24	NA	ND	53	46	31
142	8100	ND	27	ND	NA	ND	4300	33	5	6.2	13000	3	2700	260	ND	24	NA	ND	37	29	14
143	22000	ND	130	ND	NA	ND	7100	85	10	33	28000	9	6600	440	ND	40	NA	ND	77	63	39
144	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
145	8100	ND	28	ND	NA	ND	31000	30	5	11	13000	3	15000	240	ND	19	NA	ND	58	27	14
146	19000	ND	130	ND	NA	ND	6000	69	12	29	28000	6	7400	320	ND	40	NA	ND	54	50	37
147	16000	ND	120	ND	NA	ND	3800	60	10	27	25000	6	6400	280	ND	37	NA	ND	49	44	27
148	14000	ND	92	ND	NA	ND	4500	44	7	26	21000	4	4500	260	ND	23	NA	ND	58	40	23
149	16000	ND	69	ND	3.3	ND	3900	50	10	17	20000	6	4100	220	ND	33	4.5	ND	41	44	27
150	38000	ND	260	0.89	NA	ND	6600	120	17	52	45000	12	15000	610	ND	66	NA	ND	63	79	66
151	30000	ND	210	0.5	NA	ND	7100	79	10	32	30000	7	8200	310	ND	37	NA	ND	70	59	45
152	14000	ND	86	ND	NA	ND	5100	50	9	25	22000	5	5700	350	ND	27	NA	ND	48	45	19
153	13000	ND	50	ND	NA	ND	58000	45	6	2.2	18000	4	23000	300	ND	25	NA	ND	64	36	19
154	31000	ND	240	0.6	NA	ND	6800	94	14	5.5	35000	8	10000	420	ND	52	NA	ND	72	64	45
155	12000	ND	57	ND	NA	ND	1500	3	4.8	40	13000	5	850	77	ND	21	NA	ND	26	31	12
156	7500	ND	28	ND	NA	ND	3900	33	5	11	12000	3	2700	230	ND	19	NA	ND	32	27	16
157	14000	ND	68	ND	NA	ND	3600	49	7	22	21000	3	5300	240	ND	25	NA	1	31	40	25
158	30000	7	170	0.64	NA	ND	5000	78	13	49	38000	12	9900	640	ND	43	NA	ND	61	82	59
159	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
160	5100	ND	15	ND	NA	ND	2200	21	5	3.4	9700	2	2100	190	ND	13	NA	2	19	21	10
161	33000	7	190	0.68	NA	ND	4900	77	14	55	36000	12	9500	620	ND	44	NA	ND	58	80	58
162	13000	ND	49	ND	NA	ND	2600	42	4	22	17000	4	3300	150	ND	20	NA	ND	33	35	14
163	13000	ND	59	ND	NA	ND	4300	47	7	24	18000	4	4300	270	ND	23	NA	ND	34	39	19
164	24000	ND	180	ND	NA	ND	6600	82	15	39	34000	8	9300	500	ND	52	NA	ND	64	62	42
165	25000	ND	200	0.56	1.6	ND	5600	99	17	47	37000	10	12000	580	ND	65	6.1	ND	50	66	56
166	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
167	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
168	20000	ND	95	ND	NA	ND	7300	66	11	15	27000	5	6800	420	ND	35	NA	ND	57	53	33
169	22000	9	110	ND	3.5	ND	3700	81	18	44	34000	10	11000	440	1.6	45	5.2	ND	36	62	42
170	34000	ND	250	0.64	NA	ND	7400	90	15	44	40000	10	12000	530	1.7	51	NA	ND	62	69	51
171	43000	ND	260	0.8	NA	ND	5000	100	14	41	39000	9	9300	340	ND	46	NA	ND	62	70	40
172	29000	6	210	0.64	2.4	ND	6200	77	14	46	40000	10	10000	570	1.5	42	6.1	ND	66	76	61
173	23000	6	140	0.54	1.8	ND	6000	66	16	63	37000	8	9200	530	ND	50	6.2	ND	51	67	44
174	35000	ND	320	0.9	NA	ND	7200	110	17	50	41000	12	14000	590	ND	57	NA	ND	67	72	65
175	20000	ND	80	ND	NA	ND	3400	57	8	25	22000	5	4300	180	ND	29	NA	ND	31	42	22
176	21000	ND	110	ND	NA	ND	4400	59	12	27	33000	8	9400	400	ND	32	NA	ND	47	61	44
177	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
178	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
179	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
180	17000	ND	120	ND	NA	ND	7000	52	8	20	22000	5	5700	320	ND	26	NA	ND	67	48	29
181	30000	ND	260	0.7	NA	ND	6900	87	16	42	36000	10	12000	470	ND	54	NA	ND	62	64	52
182	13000	ND	75	ND	3.5	ND	4500	50	8	24	16000	4	3500	260	ND	38	5.7	ND	34	33	21
183	17000	ND	100	ND	NA	ND	6100	58	10	24	26000	6	6400	350	ND	36	NA	ND	54	53	31
184	12000	ND	55	ND	NA	ND	3800	37	6	13	16000	4	3900	180	ND	26	NA	ND	44	35	12
185	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
186	7700	ND	21	ND	NA	ND	1400	56	8	17	13000	4	3200	120	ND	41	NA	ND	12	24	20
187	20000	ND	130	ND	NA	ND	10000	66	9	26	27000	5	8200	380	ND	34	NA	ND	68	52	33
188	45000	10	390	0.96	NA	ND	5900	120	18	57	44000	13	13000	530	2.4	66	NA	ND	61	76	60
189	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
190	20000	10	110	ND	NA	ND	6700	51	10	42	28000	8	6100	380	ND	29	NA	ND	60	58	40
191	13000	ND	41	ND	NA	ND	39000	52	8	16	20000	5	18000	330	3.1	32	NA	ND	55	37	27
192	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
193	13000	ND	71	ND	NA	ND	3200	44	7	18	22000	4	4700	210	ND	22	NA	ND	36	40	21
194	14000	ND	56	ND	NA	ND	3900	42	6	22	14000	4	3500	140	ND	25	NA	ND	40	35	15
195	21000	ND	150	ND	NA	ND	6600	62	11	3	29000	6	8400	370	ND	38	NA	ND	77	54	41
196	21000	ND	150	ND	NA	ND	8400	68	11	24	29000	6	8800	420	ND	38	NA	ND	74	56	37
197	21000	ND	110	ND	NA	ND	4100	52	7	17	22000	5	5600	240	ND	25	NA	ND	48	47	26
198	11000	ND	57	ND	NA	ND	3500	36	7	17	17000	3	3900	200	ND	24	NA	ND	39	34	16
199	18000	ND	140	ND	NA	ND	5500	62	11	29	26000	6	7600	330	ND	38	NA	ND	60	50	38
200	13000	ND	75	ND	NA	ND	6700	54	9	23	22000	4	5600	280	ND	33	NA	ND	49	46	24

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
201	36000	ND	230	0.7	NA	ND	6500	100	14	45	40000	10	13000	550	ND	51	NA	ND	62	72	58	
202	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
203	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
204	13000	ND	67	ND	NA	ND	3600	44	8	23	20000	5	4600	230	ND	24	NA	ND	36	41	24	
205	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
206	24000	ND	200	0.52	NA	ND	7700	85	12	20	34000	7	9500	470	ND	52	NA	ND	72	62	37	
207	21000	ND	93	ND	2.3	ND	7000	79	9	26	29000	5	7200	300	ND	40	5.6	ND	64	57	31	
208	20000	ND	73	ND	NA	ND	40000	64	10	23	26000	6	22000	340	ND	36	NA	ND	64	49	39	
209	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
210	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
211	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
212	34000	ND	240	0.83	NA	ND	6800	95	12	38	38000	9	11000	470	ND	44	NA	ND	62	71	53	
214	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
215	7200	ND	28	ND	NA	ND	1700	29	5	15	13000	5	3100	120	ND	16	NA	ND	17	26	15	
216	26000	ND	140	ND	4	ND	5200	75	12	24	34000	7	8900	410	1.5	40	5.8	ND	57	61	44	
217	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
218	13000	ND	49	ND	NA	ND	1300	62	8	11	20000	5	2600	210	ND	41	NA	ND	14	42	38	
219	6900	ND	22	ND	NA	ND	4600	26	3	4.9	9600	3	1900	120	ND	15	NA	ND	40	23	12	
220	18000	ND	70	ND	NA	ND	1600	51	10	21	22000	6	5900	240	ND	36	NA	ND	20	40	33	
221	6500	ND	28	ND	NA	ND	2200	21	4	3.7	10000	2	2500	120	ND	13	NA	ND	22	22	11	
222	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
223	7200	ND	38	ND	NA	ND	1600	25	7	14	13000	3	4000	190	ND	26	NA	ND	17	20	17	
224	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
225	15000	ND	24	ND	NA	ND	1900	27	3	9.1	16000	7	1300	110	ND	21	NA	ND	24	36	18	
226	11000	ND	24	ND	NA	ND	1600	31	6	22	15000	4	2200	120	ND	25	NA	ND	19	29	17	
227	16000	ND	22	ND	NA	ND	1200	29	4	6.5	14000	6	1400	85	ND	24	NA	ND	16	34	24	
228	14000	ND	76	ND	6.8	ND	3100	56	10	13	19000	5	5100	210	ND	44	5.3	ND	38	37	19	
229	15000	ND	22	ND	NA	ND	2000	35	5	7.4	14000	4	2400	120	ND	22	NA	ND	22	29	18	
230	13000	ND	27	ND	NA	ND	1500	32	4	13	14000	5	1600	89	ND	22	NA	ND	18	33	21	
231	12000	ND	60	ND	NA	ND	2800	28	7	12	14000	3	2900	150	ND	25	NA	ND	40	30	12	
232	5500	ND	24	ND	NA	ND	1600	20	4	11	10000	3	2200	120	ND	23	NA	ND	16	22	12	
233	11000	ND	55	ND	3.4	ND	2700	29	6	9.9	14000	3	2700	180	ND	20	4.2	ND	33	32	14	
234	7500	ND	40	ND	NA	ND	2700	22	5	11	11000	3	2500	150	ND	18	NA	ND	35	24	12	

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
235	9000	ND	38	ND	NA	ND	2200	29	5	12	14000	3	2900	160	ND	24	NA	ND	26	30	17
236	10000	ND	31	ND	7.4	ND	1000	24	5	59	13000	3	1800	110	ND	22	4.6	ND	12	27	14
237	10000	ND	36	ND	NA	ND	1500	28	5	14	12000	4	3200	120	ND	24	NA	2	18	20	18
238	14000	ND	30	ND	NA	ND	1800	35	5	13	15000	5	2300	120	ND	23	NA	ND	20	31	29
239	5300	ND	24	ND	NA	ND	1900	22	6	8.8	11000	2	2600	140	ND	20	NA	ND	20	24	9.9
240	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
241	10000	ND	56	ND	NA	ND	2100	32	6	16	14000	3	3300	180	ND	23	NA	ND	29	29	17
242	5200	ND	30	ND	NA	ND	2600	28	4	17	11000	2	2300	170	ND	18	NA	ND	18	24	12
243	8800	ND	41	ND	NA	ND	1800	28	7	9.3	12000	3	4400	130	ND	23	NA	ND	20	20	17
244	12000	ND	62	ND	NA	ND	2300	30	3	8.1	12000	2	3000	140	ND	14	NA	ND	28	27	13
245	4600	ND	13	ND	NA	ND	1400	22	4	12	9800	2	2300	110	ND	19	NA	ND	11	21	10
246	6400	ND	31	ND	NA	ND	1800	15	3	9.1	6400	3	1500	74	ND	26	NA	ND	26	18	8
247	5300	ND	25	ND	NA	ND	1400	17	5	6.5	8200	2	2200	100	ND	18	NA	ND	16	16	8.6
248	11000	ND	59	ND	NA	ND	1800	29	4	60	13000	4	2300	130	ND	24	NA	ND	24	28	14
249	9300	ND	54	ND	1.4	ND	3800	37	6	19	16000	4	3600	230	ND	26	6.1	ND	38	33	16
250	17000	ND	120	ND	1.1	ND	17000	60	10	24	23000	6	11000	410	ND	35	7	ND	58	49	31
251	14000	ND	60	ND	NA	ND	3900	50	9	32	19000	7	3800	200	ND	44	NA	ND	45	42	27
252	12000	ND	67	ND	NA	ND	2700	35	5	16	15000	2	3200	190	ND	16	NA	ND	33	33	14
253	18000	6	68	ND	NA	ND	4000	52	10	31	25000	8	5900	320	1.9	36	NA	ND	45	54	34
254	26000	13	150	0.53	NA	ND	4100	84	14	76	39000	14	8100	680	ND	77	NA	ND	47	76	54
255	11000	ND	63	ND	NA	ND	3400	44	6	19	16000	4	3700	230	ND	27	NA	ND	32	34	22
256	6100	ND	27	ND	NA	ND	13000	26	4	16	12000	2	7600	220	ND	15	NA	2	31	26	14
257	3000	ND	39	ND	NA	ND	1600	32	2	11	2100	6	410	23	ND	52	NA	1	14	6.7	8.6
258	28000	ND	190	0.5	NA	ND	8500	72	11	34	27000	6	7900	310	ND	39	NA	ND	67	55	31
259	14000	ND	100	ND	1	ND	23000	47	9	22	21000	5	14000	340	ND	33	6.7	ND	54	41	28
260	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
261	9600	ND	54	ND	2.5	ND	3800	41	6	24	15000	5	3200	240	ND	28	6	ND	39	33	18
262	6400	ND	31	ND	NA	ND	1500	20	3	8.3	11000	1	2300	83	ND	12	NA	ND	16	23	9.2
263	20000	5	80	ND	NA	ND	4100	44	7	30	23000	6	3300	230	ND	56	NA	ND	52	47	34
264	31000	ND	200	0.61	NA	ND	6300	100	14	39	38000	10	12000	520	ND	66	NA	ND	56	71	47
265	31000	ND	220	0.62	2.5	ND	3900	99	15	63	36000	9	10000	420	ND	77	5.9	ND	52	64	45
266	23000	6	33	ND	NA	ND	2200	48	4	62	26000	8	2100	120	ND	27	NA	1	27	47	31
267	21000	ND	160	ND	NA	ND	5900	67	11	36	29000	8	8400	420	ND	38	NA	ND	66	54	30

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
268	28000	ND	190	0.5	NA	ND	5500	72	10	29	28000	7	7300	360	ND	43	NA	ND	65	52	35
269	21000	ND	79	ND	NA	ND	6400	60	38	150	78000	10	11000	640	ND	127	NA	ND	40	220	160
270	21000	ND	95	ND	2.5	ND	2600	62	9	59	26000	6	6300	290	ND	49	4.6	ND	36	49	30
271	30000	ND	240	0.67	NA	ND	6400	90	17	44	36000	10	11000	520	ND	56	NA	ND	64	64	53
272	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
273	15000	ND	69	ND	1.5	ND	2700	41	4	15	16000	4	2100	110	ND	19	4.4	ND	38	34	12
274	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
275	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
276	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
277	9100	ND	63	ND	NA	ND	18000	40	7	16	16000	4	11000	260	ND	27	NA	ND	37	34	19
278	17000	ND	120	ND	NA	ND	5400	67	9	27	23000	4	5400	360	ND	39	NA	ND	59	44	26
279	9600	ND	55	ND	NA	ND	3000	38	6	12	14000	3	2700	200	ND	25	NA	ND	34	35	15
280	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
281	18000	ND	120	ND	NA	ND	3900	60	10	24	22000	7	5900	320	ND	45	NA	ND	45	45	21
282	19000	ND	120	ND	NA	ND	5800	70	11	29	26000	6	6800	390	ND	39	NA	ND	56	50	31
283	39000	ND	230	0.57	NA	ND	4600	95	16	86	31000	7	8100	270	ND	91	NA	ND	51	62	63
284	16000	ND	74	ND	NA	ND	3600	44	6	60	17000	6	3900	200	ND	45	NA	ND	45	39	18
285	30000	ND	240	0.62	NA	ND	5300	92	16	51	39000	9	12000	550	ND	60	NA	ND	57	64	54
286	28000	ND	170	0.5	NA	ND	3600	70	11	35	29000	6	6400	300	ND	48	NA	ND	52	55	32
287	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
288	20000	ND	160	ND	NA	ND	5000	67	10	35	27000	7	7300	340	ND	44	NA	ND	54	48	33
289	9200	ND	34	ND	NA	ND	4300	36	6	14	14000	3	3500	190	ND	16	NA	ND	41	35	13
290	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
291	14000	98	98	ND	NA	ND	8300	53	10	270	14000	8	3500	160	ND	163	NA	ND	50	35	30
292	23000	ND	150	ND	NA	ND	6800	98	12	30	30000	7	9200	400	ND	57	NA	ND	67	54	38
293	21000	ND	160	ND	2.1	ND	21000	81	12	41	28000	7	14000	460	ND	53	7.8	ND	67	54	44
294	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
295	27000	ND	210	0.58	3.7	ND	6600	84	16	61	35000	11	11000	510	ND	74	6.3	ND	65	59	50
296	19000	ND	130	ND	NA	ND	5300	69	8	33	22000	5	6000	250	ND	47	NA	ND	50	44	26
297	19000	ND	160	ND	NA	ND	5000	66	11	62	25000	9	7000	310	ND	76	NA	ND	55	48	33
298	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
299	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
300	15000	ND	47	ND	NA	ND	5100	49	9	25	20000	4	4800	230	ND	39	NA	ND	41	44	21

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
301	21000	ND	160	ND	NA	ND	4900	78	12	40	28000	8	7200	390	ND	59	NA	ND	53	52	44
302	29000	6	260	0.69	NA	ND	5200	100	17	74	37000	14	11000	490	ND	87	NA	ND	53	63	48
303	44000	ND	320	0.82	NA	ND	5600	110	14	47	40000	8	9500	470	ND	68	NA	ND	55	72	53
304	23000	ND	170	ND	NA	ND	5500	77	12	52	32000	8	9200	370	ND	57	NA	ND	50	55	42
305	7900	6	30	ND	NA	ND	3800	36	5	16	13000	3	3000	230	ND	22	NA	ND	33	29	13
306	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
307	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
308	35000	ND	240	0.79	NA	ND	6600	110	14	52	39000	10	13000	530	ND	65	NA	ND	63	71	56
309	11000	ND	42	ND	NA	ND	40000	44	7	6.8	18000	4	17000	340	ND	28	NA	ND	57	35	20
310	28000	ND	250	0.59	NA	ND	6700	75	14	41	33000	9	11000	530	ND	55	NA	ND	64	60	52
311	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
312	26000	ND	200	0.6	NA	ND	6100	79	11	31	29000	7	7900	360	ND	43	NA	ND	71	58	33
313	19000	ND	150	ND	NA	ND	4600	67	8	34	25000	6	6700	260	ND	45	NA	ND	51	46	27
314	7800	ND	31	ND	NA	ND	3000	32	6	4.2	13000	3	2900	150	ND	25	NA	ND	30	29	7.2
315	26000	ND	220	0.63	NA	ND	5600	85	13	40	35000	9	9900	420	ND	56	NA	ND	65	64	52
316	17000	ND	90	ND	NA	ND	10000	70	10	24	26000	6	9200	610	ND	42	NA	ND	61	53	36
317	10000	ND	49	ND	NA	ND	3800	32	5	14	15000	4	2900	190	ND	23	NA	ND	45	32	16
318	48000	ND	310	0.95	NA	ND	6900	120	17	55	46000	12	15000	520	ND	66	NA	ND	66	78	66
319	9400	ND	46	ND	NA	ND	3900	75	9	20	17000	4	4600	260	ND	39	NA	ND	26	37	18
320	19000	ND	150	ND	NA	ND	6300	69	11	20	29000	7	8500	410	ND	43	NA	ND	62	56	38
321	17000	ND	88	ND	1.3	ND	4700	56	11	30	27000	8	6800	330	ND	33	5.2	ND	43	53	35
322	46000	ND	350	1.1	NA	ND	9100	110	17	36	48000	11	17000	640	ND	62	NA	ND	67	90	80
323	25000	ND	170	0.6	NA	ND	7400	78	11	25	32000	6	8100	400	ND	38	NA	ND	64	62	42
324	28000	ND	210	0.63	NA	ND	6400	90	14	25	36000	8	11000	500	ND	60	NA	ND	51	66	57
325	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
326	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
327	33000	ND	270	0.81	NA	ND	7500	91	16	36	45000	11	14000	620	ND	59	NA	ND	63	81	73
328	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
329	20000	6	150	0.52	1.3	ND	5600	60	13	47	35000	10	9300	630	ND	40	6.3	ND	57	68	67
330	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
331	5200	ND	20	ND	NA	ND	3300	23	4	7.4	10000	2	3000	140	ND	14	NA	ND	22	22	18
332	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
333	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g	
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25	
334	17000	ND	61	ND	NA	ND	6500	53	10	18	22000	9	6300	350	ND	33	NA	ND	50	46	29	
335	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
336	19000	ND	79	ND	NA	ND	4200	56	7	22	21000	6	4200	230	ND	30	NA	ND	54	43	27	
337	21000	ND	100	ND	NA	ND	6000	77	11	28	28000	7	7700	430	1.5	39	NA	ND	67	56	35	
338	9700	ND	30	ND	3.6	ND	3900	29	6	10	12000	5	3900	170	ND	28	5.7	ND	39	25	22	
339	18000	ND	97	ND	NA	ND	5000	48	8	19	21000	4	5300	230	ND	25	NA	ND	47	42	19	
340	13000	ND	35	ND	NA	ND	4500	40	8	8	16000	2	3700	260	ND	20	NA	ND	40	34	17	
341	19000	ND	36	ND	NA	ND	2700	41	5	13	27000	8	1900	120	ND	18	NA	ND	35	85	20	
342	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
343	26000	ND	100	ND	NA	ND	6200	80	13	24	33000	9	6500	270	ND	51	NA	ND	56	56	55	
344	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
345	15000	ND	40	ND	NA	ND	2800	37	7	13	14000	6	2100	150	ND	20	NA	1	35	32	20	
346	13000	ND	90	ND	NA	ND	2900	35	5	12	15000	4	2800	150	ND	15	NA	ND	49	33	11	
347	17000	ND	40	ND	NA	ND	1600	69	4	8.6	19000	7	1000	82	2	34	NA	ND	25	48	27	
348	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
349	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
350	16000	ND	41	ND	NA	ND	2400	38	9	13	18000	6	2700	140	ND	30	NA	ND	29	36	23	
351	12000	ND	18	ND	NA	ND	1700	32	6	6.8	13000	4	2100	120	ND	20	NA	ND	20	28	14	
352	16000	ND	58	ND	NA	ND	2000	55	9	13	19000	5	2900	150	ND	36	NA	ND	26	39	22	
353	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
354	24000	ND	170	0.5	NA	ND	4100	81	14	30	31000	8	8500	410	ND	53	NA	ND	57	54	44	
355	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
356	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
357	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
358	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
359	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
360	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
361	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
362	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
389	10000	ND	34	ND	NA	ND	2100	93	8	20	18000	4	3600	180	1.6	59	NA	ND	23	34	20	
392	33000	ND	230	0.8	NA	ND	8800	98	10	32	40000	8	11000	470	ND	36	NA	ND	74	75	55	
500	26000	ND	170	0.6	NA	ND	8800	81	15	38	33000	8	9200	430	ND	44	NA	ND	64	64	60	
501	16000	ND	120	ND	NA	ND	6900	58	9	26	24000	5	6900	320	ND	33	NA	ND	60	47	28	

Appendix II. D

Site Number	Aluminum µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	C TOC	Cadmium µg/g	Calcium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Magnesium µg/g	Manganese µg/g	Molybdenum µg/g	Nickel µg/g	pH	Selenium µg/g	Strontium µg/g	Vanadium µg/g	Zinc µg/g
Required Minimum Detection Limit	100	5	20	5		0.8	50	10	20	20	100	50	50	1.5	20	20		1	20	20	25
502	29000	ND	230	0.7	NA	ND	7000	91	14	39	38000	9	12000	550	ND	51	NA	ND	66	70	58
503	5400	ND	25	ND	NA	ND	2000	21	4	ND	10000	2	2000	130	ND	15	NA	ND	22	22	10
504	5300	ND	33	ND	NA	ND	2400	21	4	5.8	8500	2	2100	140	ND	23	NA	ND	24	22	8.3
505	34000	ND	260	0.7	NA	ND	6300	95	16	52	39000	11	12000	490	ND	61	NA	ND	68	67	55
507	19000	ND	84	ND	NA	ND	4600	58	11	26	29000	8	6500	380	ND	38	NA	ND	39	52	37
508	7300	ND	18	ND	NA	ND	3600	34	3	6.8	14000	3	2200	180	ND	13	NA	ND	39	35	7.1
517	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note: Abbreviations: NA, not analysed; ND, not detected; NS, no sample