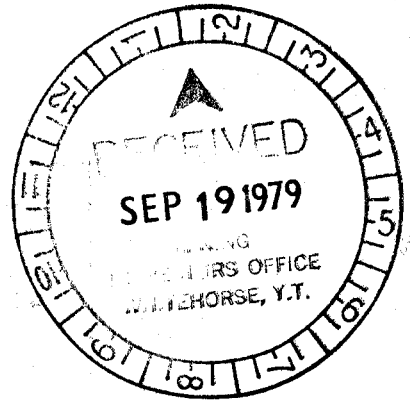




1978 AND 1979 EXPLORATION (GEOLOGICAL,
GEOCHEMICAL, GEOPHYSICAL, OVERBURDEN DRILLING)
OF THE BUR PROPERTY, YUKON TERRITORY
090499

Claims El 1-8, Jo 1-8, Sue 1-8, Kat 1-8, Nan 1-8
Jan 1-8, Den 1-8, Wen 1-8, And 1-8, Jy 1-8
Whitehorse Mining District

Geographic Coordinates
61° 22' N
139° 19' W
NTS Sheet 115 G/6



by
R. Bissonnette, M.Sc.
and
L.B. Halferdahl, Ph.D., P. Eng.
1979 09 04

Work on Property Conducted: 1978 08 28 to 1978 09 03
1979 07 10 to 1979 08 09

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090499

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 29,100.00

J A Main

OR
Geologist

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

Commissioner of Yukon Territory



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 29,100.00

J A Main

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

E. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

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SECTION 1.0

INTRODUCTION

In the spring of 1978, during an examination of the placer deposits along Burwash Creek and its tributary, Tatamagouche* Creek, in the Klauane Ranges of the western Yukon, the writer noted rusty-weathering cliffs along Burwash Creek above its confluence with Tatamagouche Creek and along part of the canyon of Tatamagouche Creek. Although Burwash Creek has had a long history of placer mining only a little attention appears to have been paid to its possibilities for lode deposits of base or precious metals. This is in spite of the fact that the Wellgreen Mine which milled about 171 000 tonnes averaging 2.05 to 2.49 per cent nickel, 1.35 to 1.45 per cent copper, 2.23 g/t platinum, and 0.073 per cent cobalt during a 16-month period in 1972-73 is only about 24 km northwesterly in the same belt of rocks. A five-man crew under the direction of the writer returned in August 1978 to conduct reconnaissance geochemical traverses, and geological mapping and sampling on some of the 80 quartz mineral claims covering the confluence of Burwash and Tatamagouche Creeks and surrounding ground, that had just been staked. A smaller crew returned to Burwash and Tatamagouche Creeks for about one month during July and August 1979 to conduct overburden drilling, a magnetometer survey, additional reconnaissance geochemical traverses, and to measure three stratigraphic sections, on a few of the claims between Burwash and Tatamagouche Creeks and elsewhere on the property. This report presents the results of the geochemical traverses, the overburden drilling, the magnetometer survey, and the geological mapping and measuring of sections. Although all the data obtained are presented, the short time between the end of the field work and the date of this report has permitted only a preliminary interpretation of these data.

Access to the confluence of Burwash and Tatamagouche Creeks is possible by four-wheel-drive vehicles only intermittently during snow-free seasons because of periodic high water in Burwash Creek with accompanying washouts of part of the rough road. Accordingly, a helicopter was required to mobilize and service the crew for all but the last few days of field work in 1978, but not needed in 1979. In both seasons the crews were accommodated in temporary camps in the valley of Burwash Creek. A contour map at a scale of 1: 5 000 with 10-metre contour intervals was previously prepared photogrammetrically for use in the field.

* Spelled Tetamagouche in older geological reports.

SECTION 2.0

CONCLUSIONS AND RECOMMENDATIONS

2.1 Conclusions

1. The rusty-weathering Volcaniclastic Member of the Station Creek Formation of the Lower Permian Skolai Group contains abundant pyrrhotite and other sulfide minerals in the canyon on Tatamagouche Creek. Similar rusty-weathering strata on Burwash Creek above the mouth of Tatamagouche Creek have been correlated with the Volcaniclastic Member, but are free or almost free of sulfide minerals.
2. Chalcopyrite was observed in a few large volcanic fragments in the Volcaniclastic Member along Tatamagouche Creek, but copper assays do not exceed 0.11 per cent there.
3. Significant numbers of anomalous lead concentrations were obtained in both geochemical-soil and overburden-drilling samples on the steep valley slopes on the west side of the canyon of Tatamagouche Creek, where the bedrock is the Volcaniclastic Member of the Station Creek Formation.
4. Although some anomalous gold concentrations were obtained in some soil samples in the same place as the anomalous lead concentrations, systematic sampling of nearby outcrops showed only three samples with as much as 0.34 g/t gold with the rest trace. Erratic high gold concentrations were obtained in a few soil and overburden-drilling samples elsewhere on the property.
5. Three anomalous and interesting zinc concentrations were obtained in soil samples at the south end of a reconnaissance geochemical traverse line south of Burwash Creek on claims Nan 7 and 8.
6. An area of high copper concentrations in soil samples is on the east side of the canyon of Tatamagouche Creek, but these are only slightly anomalous.
7. Scattered anomalous nickel concentrations in soil and overburden-drilling samples are probably related to ultrabasic or gabbroic intrusions.

8. The magnetometer survey served to outline the subcrop of a gabbro intrusion in an area where it is covered by overburden.
9. Overburden drilling of most of the same area shows that higher but mostly not anomalous concentrations of nickel, copper, zinc, lead, gold, and arsenic are spatially related to contacts of gabbro with volcanoclastic and sedimentary rocks.

2.2 Recommendations

1. Strip or trench the area on claim Wen 5 with the anomalous lead concentrations on the west side of Tatamagouche Creek.
2. Conduct more detailed geochemical surveys on claims Nan 7 and 8 south of Burwash Creek where the anomalous zinc concentrations were found. If warranted, follow this up with an electromagnetic survey.
3. Analyze the heavy minerals from some of the overburden-drilling samples.
4. As warranted by the results from recommendations 1 and 2, complete geological mapping of the property, continue to define gabbro subcrops by magnetometer surveys, and conduct more detailed geochemical surveys.

SECTION 3.0

PROPERTY

The Bur property consists of 80 quartz mineral claims in a block of 8 claims by 10 claims along Burwash and Tatamagouche Creeks in the Whitehorse Mining District as follows:

<u>Claim</u>	<u>Grant Number</u>	<u>Claim</u>	<u>Grant Number</u>
EL 1-8	YA 23529-536	JAN 1-8	YA 23569-576
JO 1-8	YA 23537-544	DEN 1-8	YA 23577-584
SUE 1-8	YA 23545-552	WEN 1-8	YA 23585-592
KAT 1-8	YA 23553-560	AND 1-8	YA 23593-600
NAN 1-8	YA 23561-568	JY 1-8	YA 23601- 08

These claims were staked from August 17 to 24, 1978 and recorded on August 28, 1978. The recorded holder of all 80 claims is Laurence B. Halferdahl, for whom the work described in this report was conducted. This work is expected to fulfill the representation work requirements for two to five years for all 80 claims, so that on its approval, the expiry date for all claims will be on or beyond August 28, 1981.

SECTION 4.0

GEOGRAPHIC SETTING

The Bur property lies along Burwash Creek and its tributary, Tatamagouche Creek, about 240 km northwesterly from Whitehorse, the capital of the Yukon Territory. Whitehorse is on the Alaska Highway, is the northern terminus of the White Pass and Yukon Railway from Skagway, a port on the Pacific coast of Alaska, and is served by regularly scheduled airline flights from major centres in Alberta, British Columbia, the Northwest Territories, and Alaska. It is the largest supply point for exploration and mining in the Yukon. The closest port to the Bur property is Haines, Alaska, which is 411 km southeasterly via the Alaska Highway to Haines Junction and thence, the Haines Road.

From Whitehorse, the Bur property may be reached by driving 303 km northwesterly along the Alaska Highway to Mile 1104, and thence about 11 km up Burwash Creek on a rough road to the mouth of Tatamagouche Creek. This road is normally free of ice and snow by about the middle

of June, but slides and washouts particularly in the lower canyon of Burwash Creek, but also perhaps in the upper canyon and possibly elsewhere, generally prevent its use by even four-wheel-drive vehicles until repairs are made after the spring runoff, and after any periods of high water later in the summer. Under favorable conditions, the Burwash-Creek road is passable for two-wheel-drive pick-up trucks and similar vehicles past the mouth of Tatamagouche Creek for a distance of perhaps 6 to 8 km farther up Burwash Creek, almost to Wade Creek. It is usually kept open by placer mining operators during the ice-free season except during periods of high water in Burwash Creek. A considerable amount of blasting in the lower canyon is required to make the Burwash-Creek road passable for wheeled vehicles at all times during ice-free months. In spite of this, the Burwash-Creek road appears to provide the shortest access to the Bur property at the lowest elevations with fewer problems caused by permafrost than other possible routes.

A branch of the Burwash-Creek road was constructed about $1\frac{1}{2}$ km up Tatamagouche Creek by placer miners, but a washout about $\frac{1}{2}$ km from Burwash Creek now prevents driving beyond it.

The northwestern part of the Bur property may be reached by a road constructed in May and June 1979 by placer miners. This road continues up Quill Creek after branching off the road to the Wellgreen Mine, crosses the pass to the upper reaches of Tatamagouche Creek, and continues down Tatamagouche Creek to just past Johnson Creek across the northern parts of claims Kat 7 and 8, and Jo 7 and 8, for a distance of about 16 km. The total distance to Mile 1112 on the Alaska Highway via this road and the previously built road up Quill Creek from the mouth of Johnson Creek is about 28 km. Less than one km separates this road from the end of the road previously built up Tatamagouche Creek from its mouth, but road construction in that part of the canyon along Tatamagouche Creek will be more difficult than in its upper reaches.

Burwash Landing at Mile 1093 on the Alaska Highway is the closest settlement, about 29 km by road from the Bur property. Its population is mostly native but seasonally may include as many as 10 or 12 non-natives, excluding tourists and transients. Good accommodation is available in the lodge there. Groceries and other supplies are best obtained in Haines

Junction about 110 km or about 156 km by road southeasterly from the property, or from Whitehorse. Supplies can be brought in by helicopter based at Haines Junction when the Burwash-Creek road is impassable, but ordering supplies by single-sideband radio is less than satisfactory because of poor or no reception from the valley of Burwash Creek. Limited supplies are available in Destruction Bay about 45 km by road from the property and even at Burwash Landing. Both places have service stations with mechanics. Burwash Landing has an airstrip about 2000 m long staffed by Ministry of Transport personnel. Starting in the spring of 1979, it is served three times a week by flights from and to Whitehorse.

Elevations on the Bur property range from about 1035 m at the lowest point on Burwash Creek to about 1685 m at the west end of the property on the mountain between Burwash and Tatamagouche Creeks. The property is crossed by the major valleys of Burwash Creek and its tributary, Tatamagouche Creek, which are 200 to 250 m deep, and by minor valleys of smaller creeks tributary to both. Valley slopes range from locally precipitous as in the lower part of Tatamagouche Creek and along and above the upper canyon of Burwash Creek to steep and moderate elsewhere. Away from the two major valleys, slopes of the upland areas are mostly moderate to gentle. Treeline is at about 1300 m with trees mostly of spruce and poplar. Locally stumps indicate previous logging and a forest fire, both many years ago, but growth since then has resulted in some spruce trees large enough to provide mine timbers. Above the treeline, the ground is covered with moss, grass, and low bushes. Both Burwash and Tatamagouche Creeks can probably provide adequate water for mining and milling purposes; the water in Tatamagouche is generally clear except when placers on it are being mined, whereas that in Burwash is generally cloudy from silt and clay from the Burwash Glacier.

Except along parts of Burwash and Tatamagouche Creeks and locally along a few smaller creeks, outcrops are almost absent, with the valley sides and uplands covered by permanently frozen overburden at depths greater than the few tens of centimetres reached by the summer thaw. Even on the moderate slopes pools of water form in places particularly on parts of the Burwash Upland south of Burwash Creek.

SECTION 5.0

PREVIOUS MAPPING AND EXPLORATION

5.1 Government Mapping

The Bur property and a large surrounding area comprising the Kluane Lake map area, was mapped geologically at a scale of 1: 253 440 by J.E. Muller (1967) of the Geological Survey of Canada in the 1950's, following prior reconnaissance surveys by officers of the Geological Survey dating back almost to 1900. References to these earlier surveys are given by Muller (1967). These earlier surveys were prompted in part by the discovery in 1904 of placer gold on Burwash Creek, which soon became and remained the best placer producer in the Kluane area, largely due to the efforts of Henry Besner from 1945 until his death in 1977. Muller established the basic stratigraphy and structure of the Paleozoic and Mesozoic rocks on the Bur property and of much of the surrounding area in the Kluane Ranges. Related work by Smith and MacKevett (1970) about 200 km to the west in the McCarthy Quadrangle in Alaska provided further details on the Paleozoic stratigraphy and defined the Skolai Group, which is correlated with all or most of the Cache Creek Group as mapped by Muller in the Kluane Ranges. Subsequent work by S.W. Campbell of Indian and Northern Affairs in 1974 and 1975, chiefly on the nickel-copper deposits of the Kluane Ranges, included a map of an area of about 260 km² surrounding Quill Creek at a scale of 1: 80 000 with Burwash Creek at its extreme south-east end. Although Campbell's was not a stratigraphic study, she used the stratigraphic names applied in the adjacent parts of Alaska for the Paleozoic and Mesozoic stratigraphic units of the Kluane Ranges. Although the Mesozoic strata had been correlated earlier by Muller with nearby Alaskan units, the use of Alaskan names, which are supported by more detailed studies, is preferred partly because it avoids the name Mush Lake Group, whose stratigraphy has been drastically revised in the Yukon subsequent to Muller's work. Campbell's map shows the Skolai Group divided into seven units, compared to four units at the type locality in Alaska. In particular she indicates two sedimentary units interbedded with or underlying the volcanoclastic unit. Her lb limestone unit may well be part of the Skolai Group, but it is not found at the type section in Alaska, where its base is not exposed, so may be stratigraphically below the Volcanic Flow Member. The stratigraphic

column adopted herein for the Burwash Creek area is in Table 5.1. Further details on the various units are given in the references previously cited.

5.2 Mining Exploration

The earliest interest in Burwash and Tatamagouche Creeks was generated by placer mining activities, but a review of these operations is beyond the scope of this report. The earliest bedrock exploration, for which no records are available to the writer, appears to be an adit, now caved, in gabbro on the south side of Tatamagouche Creek, 2 or 3 km upstream beyond claim Kat 7. It is speculated that this adit dates from prior to World War 1, but its purpose could not be ascertained from the small pile of very weathered gabbro muck excavated.

Another adit penetrates about 3 m of overburden in the north valley wall of Burwash Creek about 300 m downstream from the mouth of Tatamagouche Creek. This adit appears younger than the one upstream beyond the Bur property on Tatamagouche Creek, but its purpose is uncertain - bedrock or placer exploration.

Available geological reports refer to nickel-copper mineralization visible at low water in gabbroic rocks on the north bank of Burwash Creek about 550 m upstream from the mouth of Tatamagouche Creek. This showing is reported to have been explored by three short diamond drillholes in the early 1950's, probably at the time of the most active exploration for what later became the Wellgreen mine, but no details on these drillholes are available to the writer nor apparently to most others.

In 1966 and 1967, 60 Glen claims were staked to cover the area surrounding the mouth of Tatamagouche Creek and shortly thereafter became the property of Alice Lake Mines Ltd., N.P.L. In 1967, exploration of the Glen claims comprised

- 1) geophysical surveys at a scale of 1: 2400 (Walcott, 1967)
15 lines at an azimuth of 24° , each about 2.74 km (9000') long, spaced about 122 m (400') apart with readings at intervals of 15.2 m (50') covering an area of about 500 ha:
 - a) magnetometer survey - map contoured with isomagnetic lines, and a geological contact, inferred from the magnetic data;

TABLE 5.1

STRATIGRAPHIC COLUMN FOR THE BURWASH CREEK AREA
(modified after Muller, 1967; Smith and MacKevett, 1970;
Campbell, 1976)

Period Epoch or Group Group or Formation	Lithology
Tertiary Paleocene	LATITE, porphyritic
————— Intrusive Contact —————	
St. Clare	BASALT and ANDESITE, red-brown; massive or vesicular agglomerate, breccia, tuff
Paleocene or Eocene Amphitheatre	SANDSTONE, sand, conglomerate, gravel, shale, coal
————— Angular Unconformity —————	
Cretaceous and Later or Earlier	GRANITE, alaskite, granodiorite, diorite, related hybrid rocks
————— Intrusive Contact —————	
Upper Triassic ?	LIMESTONE and SHALE, thin-bedded, dark to black
Chitistone	LIMESTONE, massive
Nikolai	BASALT, purple and dark-green, amygdaloidal; minor interbedded limestone
————— Disconformity —————	
Permian-Triassic	INTRUSIONS, basic and ultrabasic
————— Intrusive Contact —————	
Lower Permian Skolai Group	
Hasen Creek	CHERT, thin-bedded; argillite, limestone, greywacke, conglomerate
Station Creek	
Volcaniclastic	TUFFS and AGGLOMERATES; CARBONATE, fine-grained, rusty-weathering ankerite, siderite, dolomite?, and limestone, in part siliceous or argillaceous
Volcanic Flow	VOLCANICS, intermediate to basic

- b) electromagnetic survey with a Ronka EM-16 unit with detailing of two small selected areas with a Crone electromagnetic unit - map shows ten zones of weak to moderate conductivity, many of which are inferred to correspond with contacts of ultrabasic intrusions; drilling was recommended for the two zones with greater conductivity:

anomaly A - more than 800 m long by about 20 m wide trending at an azimuth of 290°,

anomaly B - more than 730 m long by about 20 m wide trending in the same direction,

prospecting, detailed surveying, and drilling were recommended for anomaly C, which is about 250 m long;

- 2) geological evaluation (Morrison, 1967) noted the presence of pyrrhotite and chalcopyrite in pods commonly 1 x 10 cm along the contact of serpentized ultrabasic rocks with sedimentary rocks coinciding approximately with anomaly A; it included a geological plan at a scale of 1: 7200 of the area surveyed electromagnetically, but this plan was not included in the copy of the report obtained by the writer; four diamond drill-holes were recommended: three on anomaly A and one on anomaly B; prospecting and trenching were recommended for anomaly C; and
- 3) diamond drilling (Siega, 1973): two holes totalling 218½ m were drilled in 1967 to test anomaly A but the report of this drilling is not available to the writer; Lee Morrison, who wrote the report, indicated in a telephone conversation that no significant mineralization was encountered.

The Glen claims were subsequently abandoned.

In 1972, the area surrounding the mouth of Tatamagouche Creek was again staked as the 24 Mary claims for Alice Lake Mines Ltd. N.P.L. Exploration of the Mary claims comprised a geochemical survey for copper and nickel of parts of the claims mostly east of Tatamagouche Creek (Siega, 1973). Samples were collected at intervals of 30.5 m (100') along seven lines at an azimuth of 0°, each 762 m (2500') long and spaced approximately 61 m (200') apart to cover an area of about 32½ ha. The results showed partly coincident nickel and copper anomalies perhaps 100 m wide and 300 or 400 m long. Siega's report includes a geological map of parts of seven Mary claims at a scale of 1: 7200. It appears likely that this is actually a slightly modified version of Morrison's earlier map. Several grab samples across the gossan and an intrusive on Tatamagouche Creek showed 0.01 to 0.58 per cent copper, 0.01 to 0.13 per cent nickel, 0.66 to 6.6 g/t silver, and less than 0.132 g/t gold. The Mary claims were subsequently abandoned.

SECTION 6.0

GEOLOGY OF THE PROPERTY

Some outcrops along Burwash and Tatamagouche Creeks were geologically mapped in August and September 1978 at a scale of 1: 5000 (Fig. 6.1). Some additional geology was mapped in July and August 1979, but geological mapping of the following areas is not yet complete:

- 1) upstream along Burwash Creek beyond claim And 6,
- 2) downstream along Tatamagouche Creek from Johnson Creek to where outcrops are shown in the canyon of Tatamagouche Creek, and
- 3) parts of the area south of Burwash Creek downstream from the mouth of Tatamagouche Creek.

Of the units in Table 5.1 only the Paleocene latite porphyry, the Permian - Triassic gabbro, and strata of the Skolai Group have been observed on the property.

6.1 Stratigraphy

6.1.1 Station Creek Formation - Volcanic Flow Member

The Volcanic Flow Member of the Station Creek Formation is well exposed in a continuous outcrop in the upper canyon of Burwash Creek and for about 300 m above and below. As no attitudes were measured, its minimum thickness is not known with certainty, but there it probably exceeds 100 m. Neither top nor base are exposed in or adjacent to the canyon, but the lower part of the unit at the upper end of the outcrop is in intrusive contact with the latite porphyry. Other smaller exposures were mapped in the lower part of the canyon on Tatamagouche Creek from about 300 to 600 m above its mouth. The conformable contact with the overlying Volcaniclastic Member is gradational over a few metres in an outcrop just south of the mouth of Wen Creek.

The Volcanic Flow Member consists of fine-grained basic to intermediate volcanic flows, mostly dark- to medium-green but with some maroon. These rocks weather medium to brown-green or grey. In some places they contain minor amounts of fine-grained pyrite, some euhedral, and pyrrhotite. In a few places they contain minor chalcopyrite, disseminated, along the contact with the latite porphyry, or in veinlets to 1 mm wide as in one outcrop along the east side of Tatamagouche Creek. Some

layers are amygdaloidal with amygdules to 1 cm filled with calcite. A porphyritic flow was found near the top of the cliff in the upper canyon on Burwash Creek. A few layers are brecciated with one about 5 m thick along Tatamagouche Creek containing dark-green volcanic fragments mostly from $\frac{1}{2}$ to 2 cm but up to 6 cm in size in a slightly lighter-green matrix. The Member is cut by a few diabase stringers 10 to 15 cm thick in one place along Tatamagouche Creek. A calcareous to argillaceous sedimentary layer about 15 m thick with fine-grained pyrite is present along the east side of Tatamagouche Creek. Most of it is grey or green but a unit 1 m thick contains enough pyrite to be rusty. Although this sedimentary layer is part of the Volcanic Flow Member, it is marked as the Volcaniclastic Member in Fig. 6.1 to show its lithology.

Rocks similar to those in the Volcanic Flow Member are exposed at the top of the cliff in the western part of claim Wen 1 on the north side of Burwash Creek, and on both sides of Burwash Creek on claim And 8. The former is in conformable contact with the underlying sedimentary rocks. The relation of these three outcrops to the main outcrops of the Volcanic Flow Member is uncertain, but they are marked Volcanic Flow Member in Fig. 6.1 to show their lithology. They may have been fed by the basic to intermediate dykes 3 to 5 m thick that cut the sedimentary rocks nearby.

6.1.2 Station Creek Formation - Volcaniclastic Member

Most of the outcrops of the Volcaniclastic Member of the Station Creek Formation are in the canyon of Tatamagouche Creek: the rusty cliffs on the west side, near water level below and upstream from the cliffs, and others scattered nearby. The lower contact appears to be conformable with the underlying Volcanic Flow Member in an outcrop just south of the mouth of Wen Creek. A stratigraphic thickness of about 153 m was measured (Fig. 6.2 and 6.3) from an outcrop just north of Wen Creek to the top of the rusty cliffs. This interval contains some shears, and some faults, but no major faults, unless they are present in covered or highly weathered places. A second interval of about 135 m with at least two faults was measured (Fig. 6.4) along the bed of Tatamagouche Creek starting about 100 m upstream from the first. The relation between these

two measured sections is obscured by covered intervals and faulting. As these thicknesses are much less than the 600 to 750 m at and near the type section in Alaska, they probably constitute only half or less of the total thickness of the Member.

In the canyon of Tatamagouche Creek the Volcaniclastic Member consists of a sequence of agglomerates and tuffs interbedded with argillite, shale, siltstone, ankerite beds, volcanic flows, and intermediate to basic sills or dykes. Many of these units contain considerable amounts of pyrrhotite, which is chiefly responsible for the rust, and less pyrite. The units near the top of the rusty cliffs contain sulfide minerals just visible with a 20x hand lens but too fine-grained to be identified precisely in hand specimens. A few of the volcanic bombs in the agglomerate contain conspicuous chalcopyrite but only low values in copper. Systematic sampling of the measured sections shows little or no gold, the highest assays being 0.34 g/t. Further details on the Volcaniclastic Member there are shown in Fig. 6.2 to 6.4.

Other outcrops which have been correlated with the Volcaniclastic Member by their lithological similarities are on the south side of Burwash Creek on claim El 7. As suggested in the section on structure, there the strata appear to be overturned. At the base are dark-green basic to intermediate volcanics with grains 1 to 2 mm in size. To the west they are schistose in places with many carbonate veins parallel to the schistosity. Stratigraphically above is a volcaniclastic layer with rounded bombs of volcanic rocks to 50 cm in size but mostly to 30 cm in a buff to rusty-weathering matrix. The volcanic fragments include very fine grained greyish-white rhyolite with finely disseminated pyrite. The matrix is green-grey siliceous rock resembling a carbonate, possibly a siliceous ankerite. Locally it contains fine-grained disseminated pyrite. The round volcanic bombs appear characteristic of this unit. Locally it is veined with carbonate and in one place, cut by a basic sill 10 cm thick. Stratigraphically above is a siliceous-ankerite? unit free from volcanic bombs. This unit weathers green to buff and locally rusty from fine-grained disseminated pyrite. Layers are 30 to 50 cm thick, and are locally schistose. A short structurally disturbed section of the Volcaniclastic Member was measured and sampled along the north bank of Burwash Creek (Fig. 6.5). Assays showed no gold.

The strata forming the rusty-weathering cliffs along the north side of Burwash Creek on claims Wen 1 and And 8 have been tentatively correlated with the Volcaniclastic Member, even though they are free or almost free of volcanic clastics. The basis for this correlation is partly the lithological similarity with ankeritic units along Tata-magouche Creek, and partly because they do not appear to fit anywhere else in the stratigraphic section. In one outcrop on claim Wen 1 these strata conformably underlie a layer of volcanic flows, but thin volcanic flows have been reported within and above the Volcaniclastic Member in Alaska. It is possible that these strata lie below the Volcanic Flow Member. If so, they mark the base of the Skolai Group as defined in Alaska, but this is considered unlikely. Their rusty weathering appears similar to that of the Golden Horn Limestone Lentil of the Hasen Creek Member in Alaska, but very little limestone is present along Burwash Creek, and the strata mapped are not bioclastic. A minimum thickness of 70 or 80 m appears to be present in the cliffs, with neither base nor top of the unit exposed with certainty. Most of these strata weather rusty, but contain fine sulfides only in a few places: less than 1 per cent pyrrhotite, up to 2 per cent pyrite, or even minor chalcopyrite particularly near contacts with gabbro. They appear to consist mostly of fine- to very fine grained siliceous to argillaceous ankeritic sediments which are light-to dark-grey, locally medium green-grey. A few are silty or limy. A few beds of grey-weathering argillaceous limestone are intercalated locally on claim And 8.

6.1.3 Hasen Creek Formation

Outcrops of the Hasen Creek Formation were mapped in two places only: above a covered interval at the top of the rusty cliffs on Tatamagouche Creek and in the bed of Tatamagouche Creek. They consist of chert, sandstone, and limestone as shown on Fig. 6.3 and 6.4.

6.2 Intrusions

6.2.1 Gabbro

Gabbroic rocks are widely distributed throughout the property

with the chief areas of outcrop being on both sides of Burwash Creek centred about 500 and 1600 m upstream from the mouth of Tatamagouche Creek, and along Tatamagouche Creek upstream from the canyon on claim Wen 7 and continuing across the northern parts of claim Jo 8, Jo 7, Kat 8, and Kat 7. A few outcrops and abundant float suggest that much of the area in the acute angle between Burwash and Tatamagouche Creeks is underlain by gabbro. Parts of the property south of Burwash Creek are probably also underlain by gabbro. The shapes of the gabbro masses appear to be irregular.

Much of the gabbro is a black rock consisting of perhaps 65 per cent whitish feldspar interlocked with black or greenish pyroxene or its alteration products in grains from 1 to 4 mm. Most weathered surfaces are dark green to black, locally brown. In the canyon of Tatamagouche Creek, some of the weathered outcrops have an irregular banded appearance with black bands to 3 cm wide in a braided or anastomosing pattern in lighter-colored rock. In one locality there, actinolite was noted along fractures. In the outcrops along Burwash Creek serpentinization along fractures is locally common. Fine-grained pyrrhotite in amounts up to 2 or 3 per cent is locally present, except for the showing along Burwash Creek a short distance above the mouth of Tatamagouche Creek, where pyrrhotite is more abundant and chalcopyrite is also present. The gabbro contains moderate amounts of magnetite along the west side of the first mass that crosses Burwash Creek west of the mouth of Tatamagouche Creek, in the outcrops south of Burwash Creek in the southern part of claim Wen 1, and in the band of gabbro crossing Burwash Creek farther west in the southern part of claim And 1.

Much of the gabbro appears massive, but two sets of joints, one of which resembles bedding from a distance, were observed in the outcrop on Joyce Creek. A slickensided fault was observed on the south side of Tatamagouche Creek on claim Kat 8. Local shearing was observed in some of the outcrops along Burwash Creek. Contact effects of the gabbro intrusions with the sedimentary and volcanic rocks appear limited to a few metres of baking and local silicification. Xenoliths of sedimentary rocks are found within gabbro along Burwash Creek.

6.2.2 Latite Porphyry

Two masses of latite porphyry were mapped on the property. Although the name, latite porphyry, is not meant to be a precise petrographic term, but merely follows the earlier terminology of Muller (1967), field descriptions seem to fit. The largest mass extends for more than 1500 m along Burwash Creek from west of the mouth of Tatamagouche Creek to east of Elly Creek. The second mass on the northern border of claim And 6 is smaller but may be related to a larger mass, observed but not mapped, farther up Burwash Creek. This larger second mass is shown on both Muller's and Campbell's maps.

The latite porphyry weathers a conspicuous white to light buff to light grey-brown. Below its outcrops, talus slopes consist of a rubble of flaggy to blocky shapes. Fresh surfaces are light grey. The rock is massive and almost uniform in appearance in all outcrops. It consists mostly of quartz and feldspar both in the groundmass and as phenocrysts. Quartz phenocrysts are up to 5 mm in size, with feldspar phenocrysts to 10 mm but mostly 3 to 4 mm. It contains 3 to 5 per cent biotite, locally in well formed hexagonal plates as in the outcrops east of Tatamagouche Creek, and up to 2 to 3 per cent amphibole. Contact relations with the Volcanic Flow Member of the Station Creek Formation were the only ones observed: they are sheared.

6.3 Structure

Both Muller (1967) and Campbell (1976) show a major southeasterly trending syncline with Nikolai volcanic rocks in its axial region crossing Burwash Creek just northeast of the property. At Burwash Creek the southwest limb of this syncline has been faulted to bring stratigraphically lower parts of Skolai Group strata in contact with Nikolai volcanic rocks. Within a few hundred metres southwest of this fault, the strata dip in more than one direction, but in such a way that agglomeratic strata closer to Elly Creek are presently lying above rusty-weathering sedimentary rocks. If these strata are units of the Volcaniclastic Member of the Station Creek Formation and are in conformable contact farther west towards

Elly Creek with the Volcanic Flow Member of the Station Creek Formation then the stratigraphic section there is overturned. This is not an unreasonable phenomenon close to a fault whose movement is in a sense which could cause it. If correct, it implies an anticline in the Volcanic Flow Member.

The attitudes of the stratified rocks elsewhere on the property, while being reasonably constant in any one outcrop or group of nearby outcrops, appear to have been so disturbed by the intrusions of the gabbroic masses and later by the masses of latite porphyry that no overall structural pattern is evident from the data available. In addition to the stratigraphic attitudes shown in Fig. 6.1, attitudes of joints, faults, and shears are shown where the scale permits. At least one fault not shown in Fig. 6.1 was noted in the bed of Tatamagouche Creek (Fig. 6.4). Such a fault or faults may account for the horizontal displacement of about 600 m in some of the geophysical responses obtained by Walcott (1967).

SECTION 7.0

GEOCHEMICAL SURVEYS

7.1 1978 Sampling

In 1978, geochemical soil samples were collected along seven traverse lines (Fig. 7.8 and 7.9) as follows:

<u>Line</u>	<u>Length</u>	<u>Sample Interval</u>	<u>Number of Samples</u>
1	340 m	5 m	93
2	200	5	55
3	160	5	41
4	2350	50	50
5	2050	50	42
6	600	10	64
7	3250	50	66
	<u>8950 m</u>		<u>411</u>

The locations of the traverse lines and the spacing of the sample points along these lines were chosen to give reconnaissance coverage of much of the property as well as more detail in and adjoining parts of the canyon of Tatamagouche Creek. Sampling was hindered by the presence of permafrost and by a layer of whitish volcanic ash perhaps 10 to 20 cm thick just below the surface. At each sample location one or two or rarely three samples

of humus or the underlying soil horizon or both, were collected. An effort was made to exclude volcanic ash from the samples, but the descriptions in appendix 2 indicate that this was not always successful. Although the B soil horizon is generally preferred for base metals, humus has been found to be suitable for gold in some areas. For these reasons, samples of both humus and the B soil horizon were collected where feasible with one of the other being collected where collecting both was not feasible because either humus was not present or the B soil horizon was too deep in the permafrost.

7.2 1979 Sampling

In 1979, geochemical soil samples were collected along three traverse lines (Fig. 7.8 and 7.9) as follows:

<u>Line</u>	<u>Length</u>	<u>Sample Interval</u>	<u>Number of Samples</u>
7	1000 m	20 m	51
8	1000	20	51
T-1	<u>120</u>	15	<u>9</u>
	2120 m		111

The locations of traverse lines 7 and 8 were chosen to provide reconnaissance information on part of the property not covered by the 1978 sampling. Line T-1 was run up the side of the canyon of Tatamagouche Creek into the covered part above stratigraphic section T-1 (Fig. 6.2); the length of 120 m for line T-1 is the distance measured up the slope, not horizontally. In 1979 all soil samples were collected from holes dug as deep as possible into the humus, ash, and permafrost (appendix 4).

7.3 Analyses of Soil Samples

For the samples collected in 1978, the -80 mesh fractions were analyzed by standard atomic absorption techniques for nickel, copper, zinc, lead, and silver. Arsenic was determined colorimetrically. Gold was determined by standard neutron activation techniques in the -80 mesh fractions of the non-humus samples of lines 1, 2, 3, 4, and 6. For the humus samples on these same lines, gold was also determined by neutron activation techniques by means of a special briquetting method. This technique, however, did not prove very satisfactory for

these samples as volcanic ash and possibly other non-humus material in the samples seriously interfered.

For the samples collected in 1979, the -80 mesh fractions were analyzed by standard atomic absorption techniques for nickel, copper, zinc, lead, silver, and arsenic. Gold was determined by standard neutron activation techniques, also in the -80 mesh fractions.

7.4 Nickel, Copper, Zinc, Lead, Gold, Silver, and Arsenic in Soil Samples

The distributions of concentrations of nickel, copper, zinc, lead, gold, silver, and arsenic in the 1978 and 1979 soil samples are shown in Fig. 7.1 to 7.7, respectively. For convenience, the distributions of concentrations of the same seven elements in the -80 mesh fractions of the 1979 overburden-drilling samples are also shown. The statistical method of presentation is that described by Lepeltier (1969).

Insufficient time was available to analyze for correlations between and among the elements or groups of elements that were determined.

Variations of concentrations of nickel, copper, zinc, lead, gold, silver, and arsenic along traverse lines 1 to 7 (1978) and traverse lines 7, 8 and T-1 (1979) are shown in Fig. 7.10 to 7.19, respectively.

7.4.1 Nickel

All the curves for nickel (Fig. 7.1) except curve 3 show a change in slope corresponding to about one-third to two-thirds of the samples, with the change for curve 5, the humus samples, being smaller than for the curves for the four types of non-humus samples. In spite of Lepeltier's remarks it is unlikely that about one-third to two-thirds of the samples are anomalous; the changes of slope for nickel in curves 1, 2, 4, and 5 are not realistic threshold concentrations. Instead the slope changes in these four curves probably indicate samples from two populations: (1) areas underlain by gabbroic and related intrusions, and (2) areas underlain by sedimentary, volcanic, and other associated lithologies. The concentrations of 50 to 60 parts per million for the slope changes in curves 2, 4, and 5 probably reflect the smaller proportions of samples from areas underlain by gabbroic and related intrusions, compared to a concentration of 120 parts per million

for the slope change in curve 1, for which a higher proportion of the samples are from areas underlain by gabbro (Fig. 6.1, 8.1).

The concentration of 280 parts per million at the change of slope in curve 3 probably is a realistic threshold for anomalous nickel concentrations in non-humus samples. A concentration of 145 parts per million has been chosen for designating the higher nickel concentrations in humus samples in Fig. 7.8 and 7.9.

Anomalous nickel concentrations were found on three geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	190 - 215	> 200 ppm	5 m
4 (1978)	300	780	50
8 (1979)	240	545	20

Siega's (1973) survey shows an area anomalous in nickel about 50 m north of our line 3 (1978).

7.4.2 Copper

Curves 1 to 5 (Fig. 7.2) have slope changes which appear to separate the samples for each curve into two populations - gabbroic areas with higher copper concentrations and other areas - with almost one-quarter to one-half the samples in the first and the balance in the second, similar to four of the curves for nickel. Also similar to nickel, the variations in the concentrations for copper of 60 to 100 parts per million at the slope changes in the five curves are probably related to the proportion of samples for each curve underlain by gabbroic and other rocks. The threshold for anomalous concentrations of copper is placed at 350 parts per million for the non-humus samples and 200 parts per million for the humus samples (curve 5). The second change of slope for curve 5 is unexplained.

Anomalous copper concentrations were found on two geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	165 - 215	660 ppm (peak)	5 m
3 (1978)	95 - 125	440 (peak)	5
	40 - 95 (erratic)	340 (peak)	5
	125 - 160 (erratic)	520 (peak)	5

Some of these anomalous copper concentrations on line 1 coincide with anomalous nickel concentrations. Siega's (1973) survey shows high copper values in about the same place they are present on our line 3.

7.4.3 Zinc

All the curves for zinc (Fig. 7.3), except for curve 5 (humus samples) show changes of slope corresponding to about 2 to 9 per cent of the samples, percentages which are realistic proportions to be considered anomalous. The concentrations at these changes in slope range from 110 to 130 parts per million zinc; the threshold for zinc is set at 130 parts per million for the non-humus samples. The humus samples (curve 5) show a slightly steeper slope for about 60 per cent of the samples with the higher concentrations. As suggested for nickel and copper, this change in slope for the humus samples may reflect samples from two different populations. The threshold level for zinc in humus is set at 110 parts per million, but none of the humus samples contain anomalous concentrations of zinc.

Anomalous zinc concentrations were found on three geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	55	350 ppm	5 m
8 (1979)	960 - 1000	300 - 460	20
T-1 (1979)	0	510	15
	others	>130	15

The three anomalous values at the south end of line 8 are intriguing.

7.4.4 Lead

Curves 2 and 3 (Fig. 7.4) show changes of slope corresponding to about 2 to 10 per cent of the samples, percentages which are realistic proportions to be considered anomalous. Curve 1 shows a change of slope corresponding to about 30 per cent of the samples. Although 30 per cent is generally too high for an anomalous proportion, the overburden drilling was conducted in a part of the property some of which appears to have anomalous concentrations of lead. Accordingly, 30 per cent of the samples comprising curve 1 are considered anomalous. Curve 4, as expected, lies between curves 1, 2, and 3. The threshold for lead is set at 12 parts per million for the non-humus samples. The humus samples (curve 5) show a very slight change of slope corresponding to about 45 per cent of the samples. Similar to zinc, this change in slope, if significant, may reflect samples from two different populations. The threshold level for lead in humus is also set at 12 parts per million.

Anomalous lead concentrations were found on two geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	55	40 ppm	5 m
T-1 (1979)	0	52	15

Other metrages on these traverse lines show values just above the threshold.

7.4.5 Gold

All the curves for gold (Fig. 7.5), except curve 3 (1978 non-humus samples) show changes of slope corresponding to about 3 to 6 per cent of the samples, percentages which are realistic proportions to be considered anomalous. The change in slope for curve 5 (humus samples) is less than for the other curves. The concentrations at these changes in slope range from 12 to 15 parts per billion gold; the threshold for gold is set at 15 parts per billion for both non-humus and humus samples. Curve 3 shows a change of slope corresponding to about 40 per cent of the samples. However, curve 3 is based on only 32 samples so may not be statistically valid. This small number of samples was due to insufficient material left in many of the

samples after the other elements were analyzed by atomic absorption. On the other hand, 26 of the 32 samples on which curve 3 is based come from traverse line 1, so may indicate that traverse line 1 is in an area with a much higher proportion of anomalous samples.

Anomalous gold concentrations were found on three geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	85 - 90	110 - 150 ppb	5 m
4 (1978)	erratic	20	50
8 (1979)	320	27	20

Erratic values just above the threshold were found on other lines.

7.4.6 Silver

The concentrations of silver in the 280 samples collected in 1979 are as follows:

11 samples	0.2 ppm
269 samples	0.1 ppm

This small range in concentrations does not permit plotting and drawing curves for the 1979 samples as were plotted and drawn for the other metals. Accordingly curves 1, 2, and 4 are not shown for silver. Curve 5 (Fig. 7.6) for the 1978 humus samples shows a change of slope corresponding to about one per cent of the samples at a concentration of 0.4 parts per million silver. Curve 3 for the 1978 non-humus samples does not show a change in slope. The threshold for silver in both humus and non-humus samples is set at 0.4 parts per million.

Anomalous silver concentrations were found on two geochemical traverse lines:

<u>Line</u>	<u>Anomalous Metrage</u>	<u>Concentration</u>	<u>Sample Spacing</u>
1 (1978)	340	3.4 ppm	5 m
4 (1978)	1350	0.7	50

7.4.7 Arsenic

As previously noted, in the 1978 samples arsenic was determined colorimetrically, whereas in the 1979 samples it was determined by atomic absorption. Curves 1 and 2 (Fig. 7.7) for the 1979 samples show significantly lower concentrations of arsenic than curves 3 and 5 for the 1978 samples. It is obvious from the two groups of curves that determinations of arsenic by the colorimetric method cannot be compared with determinations of arsenic by atomic absorption for reasons not yet ascertained. Arsenic determinations by the two methods do, however, appear to be consistent for each method. Curves 1 and 2 show changes of slope corresponding to about 10 and 15 per cent of the samples, respectively, with the change for curve 1 (overburden-drilling samples) being very slight. The concentrations at these changes of slope are 13 and 12 parts per million arsenic, respectively; the threshold for arsenic in the 1979 samples is set at 13 parts per million. Curve 3 shows a change of slope corresponding to about 18 per cent of the samples at a concentration of 45 parts per million arsenic. Curve 5 does not show a change in slope. The threshold for arsenic in the 1978 samples is set at 45 parts per million. Only curves 2 and 3 show large slope changes possibly because the B soil horizon is a better sampling medium for arsenic than humus and the deeper samples obtained from the overburden drilling.

Erratic anomalous arsenic concentrations were found on all geochemical traverse lines except line 7 (1978). Lines 1 and 3 (both 1978) show many values just above the threshold; most samples from line T-1 (1979) are anomalous.

SECTION 8.0

1979 MAGNETOMETER SURVEY

8.1 Equipment and Methods

A proton magnetometer, model MP-2 manufactured by Scintrex Limited, was used for a survey of parts of claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7. It reads to one gamma, and readings are generally reproduceable to within 5 or 10 gammas. A line designated 1000 N was flagged and chained. Six offset lines, 2600 E to 3600 E, at intervals

of 200 m were run by compass and topofil. Two other lines more or less along 900 N and 1100 N were also flagged and chained. Readings were made at intervals of about 20 m along lines 900 N, 1000 N, and 1100 N, and at intervals of 10 m along the offset lines. Stations were re-occupied frequently to determine diurnal variations, and all readings were subsequently corrected to that at 3600 E, 1000 N.

Two other similar grids, one on each of some of the El and Den claims, were chained and flagged in preparation for other magnetometer surveys. However, in early August 1979, when attempts were made to use the same magnetometer, only invalid readings were obtained on five consecutive days. The cause of the invalid readings is not known: malfunction of the magnetometer or magnetic storms.

8.2 Results

The results of the magnetometer survey of parts of some of the Jo and Wen claims are shown in Fig. 8.1. The readings range from 55 530 to 61 027 gammas. The highest readings were obtained on outcrops of gabbro or where gabbro is covered by thin overburden as indicated in the next section on overburden drilling and sampling. The higher isomagnetic lines appear to indicate the outcrop or subcrop of small irregular gabbroic intrusions, which are probably joined at depth to the gabbroic masses previously mapped along and above the upper part of the canyon on Tatamagouche Creek, and possibly other gabbroic masses in the vicinity. Although less definite without detailed study of the rock fragments obtained in the overburden-drilling samples, the lower magnetic readings were probably obtained in areas underlain by the Volcaniclastic Member of the Station Creek Formation or the "chert-and -limestone member" of the overlying Hasen Creek Formation.

The 1979 magnetometer survey covers part of the area surveyed by P.E. Walcott in 1967. Although the zero level chosen for Walcott's survey is not known, the isomagnetic lines drawn for the area where the two surveys coincide show remarkably similar patterns.

SECTION 9.0

OVERBURDEN DRILLING AND SAMPLING

9.1 Equipment and Methods

Overburden-drilling and sampling equipment, designed and manufactured in Finland by Metallisorvaamo, was used for drilling and sampling 169 holes on claims Jo 3, Jo 4, Jo 5, Jo 6, Wen 5, and Wen 7 on part of the grid surveyed with the magnetometer. This equipment was adopted for use with a Cobra drill manufactured by Atlas Copco. Drill rods with bit and sampling tube are driven into the overburden by the Cobra. The bit and sample tube permit the cylinder of overburden within the tube to pass out one side of the tube, so that a sample, about 15 cm long, can be obtained from the last interval penetrated, without manually removing material higher up the hole from the sample tube or rods. Under favorable circumstances samples can be obtained from depths of 20 to 30 m. On the Bur property, however, depths exceeding 2 m were seldom reached because of shallow overburden, large boulders, small rock fragments which blocked the sample tube, and the permafrost.

The area selected for the overburden drilling was based on the results of the 1978 geochemical soil survey. Hindsight indicates now that the grid should probably have been moved about 200 m south. The drillholes were 10 m apart because of the possible narrow width of any mineralized zone. Most samples consisted of two sample tubes of material in order to have enough sample for possible heavy-mineral analyses. The results presented herein are preliminary only: from the -80 mesh material prepared and analyzed by atomic absorption in the usual manner for geochemical soil samples. Time has not yet permitted heavy-mineral analyses.

9.2 Results

The results of the analyses of the -80 mesh fractions are shown in Fig. 9.1 to 9.6, one for each metal analyzed except for silver. The very small variation in the silver values does not warrant a figure. Nickel concentrations much higher than elsewhere were obtained on line 3000 E more or less coinciding with high readings in the magnetometer survey. Other high nickel values are scattered on the other lines. Copper concentrations

are higher and more abundant along lines 3400 E and 3600 E and the south end of 3200 E, with other erratic high concentrations elsewhere. None of the copper concentrations are anomalous according to Fig. 7.2. The highest zinc concentrations are found on lines 3000 E and 3600 E, but none are at or much above threshold values according to Fig. 7.3. Much of line 3600 E shows anomalous concentrations of lead, with fewer anomalous concentrations on lines 3400 E and 3200 E. Gold concentrations are higher and more abundant on lines 3000 E and 3200 E with the highest concentration being 237 ppb near the south end of line 3000 E. A few high gold concentrations were found on the other lines. Higher concentrations of arsenic were found on all six lines of drillholes, but only a few are anomalous.

Although the 200-metre spacing between lines of drillholes is too great to permit easy contouring of the data for any of the six elements, the higher values appear to trend parallel with some of the isomagnetic lines of Fig. 8.1. In spite of the fact that few of the concentrations are anomalous, the pattern of the higher concentrations for most of the elements along the isomagnetic lines, which probably outline the gabbro, suggests that these six elements are enriched along contacts between gabbro and the rocks it intrudes. Some of the higher values on line 3600 E are probably due to overburden creep down the steep slopes forming the canyon of Tatamagouche Creek there. Of the six metals only lead shows enough anomalous concentrations to be of possible interest.

SECTION 10.0

MINERALIZATION


The geologic setting of the Burwash Creek area is one in which four types of economic mineral deposits may be present:

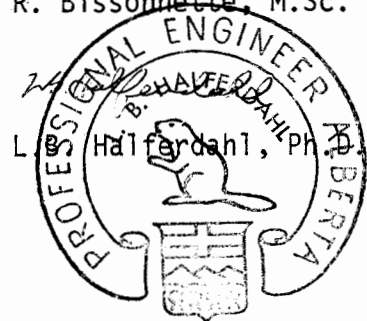
- 1) nickel-copper deposits associated with ultrabasic and possibly basic intrusions,
- 2) volcanogenic copper-lead-zinc deposits related to the Volcaniclastic Member of the Station Creek Formation,
- 3) lode gold deposits from which the placer gold in Burwash and Tatamagouche Creeks has come, and
- 4) copper deposits in the Triassic Nikolai volcanic rocks.

All but the fourth of these types of deposits are possible on the Bur property; the Nikolai volcanics lie just northeast of the property and do

not appear to extend under it even at depth. The information reported here provides no firm basis for disputing Muller's (1967) proposal that the source of the placer gold is from unconsolidated glacial deposits. The geochemical lead anomaly on the west side of the canyon of Tatamagouche Creek may well have a volcanogenic source as it is in the Volcaniclastic Member of the Station Creek Formation. This Member contains volcanic fragments with conspicuous chalcopyrite in one or two places. Such volcanogenic mineralization is one explanation for the higher copper concentrations in soil samples on the east side of the canyon of Tatamagouche Creek. The geochemical zinc anomaly on claims Nan 7 and Nan 8 south of Burwash Creek may have a similar source. All the previous bedrock exploration on what now comprises the Bur property has been aimed at copper-nickel deposits in the ultrabasic and possibly basic intrusions. Although this earlier exploration has not been successful, the scattered high nickel concentrations obtained from some places in soil and overburden samples and possibly the **higher** copper concentrations in soil samples on the east side of the canyon of Tatamagouche Creek, indicate that much still remains to be learned about the relation of nickel and copper to these intrusions on the Bur property. Of the four possible types of deposits, those with lead, zinc, and copper of likely volcanic origin seem to have the most promise.

Edmonton, Alberta
1979 09 04


R. Bissonnette, M.Sc.

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L. B. Halferdahl, Ph.D., P. Eng.

SECTION 11.0

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APPENDIX 1: CERTIFICATES OF ANALYSIS
FOR CHIP SAMPLES OF BEDROCK



BONDAR-CLEGG & CO. A.S.Y. LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5
Branch: 136B Industrial Rd., Whitehorse, Y.T.

PHONE: 237-3110

Certificate of Analysis

TO Halferdahl & Associates Ltd.,
18 - 10509 -81 Avenue
Edmonton, Alta

REPORT NO. A-48-46

DATE Sept. 11, 1978

I hereby certify that the following are the results of analyses made by us upon the herein described Rock samples

MARKED	oz/ton	%	%	%					
	Au	Cu	Pb	Zn					
1912	L0.002								
13	L0.002								
14	L0.002								
15	L0.002								
16	L0.002								
17	L0.002								
18	L0.002								
19	L0.002								
20	L0.002								
21	L0.002								
22	L0.002								
23	L0.002	0.11							
24	L0.002	0.02							
25	L0.002								
1926	L0.002	0.11	0.02	0.01					

BONDAR-CLEGG & COMPANY LTD.

NOTE:

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Steven Simpson



Certificate of Analysis

TO _____

- 2 -

REPORT NO. A-48-46

DATE

I hereby certify that the following are the results of analyses made by us upon the herein described samples

MARKED	oz/ton	%	%	%					
	Au	Cu	Pb	Zn					
1927	L0.002								
28	L0.002								
29	L0.002								
30	L0.002								
31	L0.002								
32	L0.002								
33	L0.002								
34	L0.002								
35	L0.002								
2390	L0.002								
91	L0.002								
92	L0.002								
93	L0.002								
94	L0.002								
2395	L0.002								

BONDAR-CLEGG & COMPANY LTD.

NOTE:

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Steven Simpson



764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5
Branch: 136B Industrial Rd., Whitehorse, Y.T.

PHONE: 237-3110

Certificate of Analysis

- 3 -

TO _____

REPORT NO. A-48-46

DATE

I hereby certify that the following are the results of analyses made by us upon the herein described Rock samples

MARKED	oz/ton								
	Au								
2396	L0.002								
97	L0.002								
98	L0.002								
99	L0.002								
2400	L0.002								
3499	L0.002								
3500	L0.002								

L: Denotes Less Than

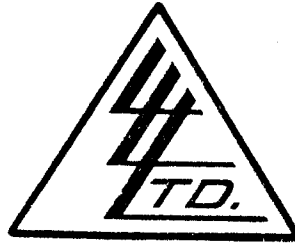
BONDAR-CLEGG & COMPANY LTD.

NOTE:

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Steven Simpson

To: HALFERDAHL & ASSOCIATES LIMITED
 18-10509-81 Avenue
 Edmonton, Alberta T6E 1X7
 ATTN: Dr. L.B. Halferdahl



File No. 17595
 Date August 27, 1979
 Samples Pulp

Certificate of
 ASSAY of
LORING LABORATORIES LTD.

Page # 1

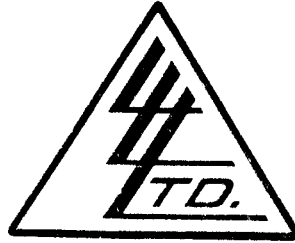
SAMPLE No.	OZ./TON GOLD
<u>"PULP SAMPLES"</u>	
2526	Trace
2527	.010
2528	Trace
2529	Trace
2530	.010
3531	Trace
2532	Trace
2534	Trace
2535	Trace
2536	Trace
2537	Trace
2538	Trace
2539	Trace
2540	Trace
2541	Trace
2542	Trace
2543	.010
2544	Trace
2545	Trace

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

admejade
 Licensed Assayer of British Columbia

To: HALFERDAHL & ASSOCIATES LIMITED
 18-10509-81 Avenue
 Edmonton, Alberta T6E 1X7
 ATTN: Dr. L. B. Halferdahl



File No. 17595
 Date August 26, 1979
 Samples Pulp

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	OZ./TON GOLD
2546	Trace
2547	Trace
2548	Trace
2549	Trace
2550	Trace
2601	Trace
2602	Trace
2603	Trace
2604	Trace
2605	Trace
2606	Trace
2607	Trace
2608	Trace
2609	Trace
2610	Trace
2611	Trace
2612	Trace
2613	Trace
2614	Trace

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.

Pulps Retained one month
 unless specific arrangements
 made in advance.

L. M. Isaac
 Licensed Assayer of British Columbia

APPENDIX 2: 1978 GEOCHEMICAL SOIL SAMPLE DESCRIPTIONS

Geochemical soil samples were collected along seven traverse lines. The first part of the sample number designates the number of the traverse line. The second part is the distance in metres from the initial sampling point on each line. Two or even three samples were collected at some sampling points. The first or only sample generally is suffixed A, with the second sample suffixed B. Soil horizons are not specifically designated because of the presence of a light-colored layer of ash at most places just below the humus and the ubiquitous permafrost at or just below this layer. In general samples described as humus are from the A_o horizon.

Sample Number	Sample Depth (cm)	Remarks
1-00A	25	medium-brown with sand and rock fragments
1-05A	15	black humus
1-05B	25	medium-brown with sand and rock fragments
1-10A	15	black humus
1-10B	25	medium-brown with sand and rock fragments
1-15A	15	light-brown sandy clay with rock fragments and minor humus
1-20A	15	light-brown sandy humus
1-25A	15	light-brown sandy humus with flecks of white volcanic ash
1-30A	15	medium-brown sandy clay with minor humus
1-35A	20	light-brown sandy humus
1-40A	5	black humus
1-45A	5	black humus
1-50A	5	black humus
1-50B	30	light-brown clay with rock fragments below volcanic ash
1-55A	5	black humus
1-55B	30	light-brown clay with rock fragments below volcanic ash
1-60A	5	black humus
1-65A	10	medium-brown humus with some volcanic ash
1-70A	5	black humus
1-70B	25	reddish-brown with sand and rock fragments (no ash layer)
1-75A	20	medium-brown with sand and few rock fragments (no humus present)
1-80A	20	medium-brown sand with clay, rock fragments, and some volcanic ash (no humus present)
1-85A	20	medium-brown with sand and rock fragments
1-90A	20	medium-brown sand with clay, rock fragments and volcanic ash
1-95A	20	light-brown with sand and rock fragments
1-100A	10	medium-brown sand with clay, rock fragments, volcanic ash
1-105A	15	black humus with some volcanic ash
1-105B	20	medium-brown clay with sand and rock fragments
1-110A	10	black humus mixed with sand
1-115A	10	black humus mixed with sand
1-120A	10	black humus mixed with sand

Sample Number	Sample Depth (cm)	Remarks
1-125A	5	sand and rock fragments
1-130A	10	black humus mixed with sand
1-135A	10	black humus mixed with sand and some volcanic ash
1-140A	5	black humus
1-145A	5	black humus
1-145B	25	light-brown clay and rock fragments
1-150A	10	black humus
1-155A	5	black humus
1-155B	20	greenish-grey clay and rock fragments in pod on one side of hole
1-155C	30	humus with some volcanic ash
1-160A	10	brown humus with some volcanic ash
1-160B	25	medium-brown sand with rock fragments and volcanic ash
1-165A	25	grey clay and rock fragments (no humus present)
1-170A	10	black humus
1-170B	20	grey sand and well rounded gravel with fine pebbles and some volcanic ash
1-175A	10	black humus
1-175B	25	grey sand and rock fragments
1-180A	10	dark-brown humus with minor volcanic ash
1-185A	10	brown humus with volcanic ash
1-185B	25	grey clay and rock fragments
1-190A	5	black humus
1-195A	5	mostly grey sand and fine rock fragments with minor black humus (not much present)
1-200A	5	black humus with grey sand and fine rock fragments
1-205A	10	black humus at water seep
1-210A	10	black humus with some volcanic ash
1-215A	10	dark-brown humus with some volcanic ash
1-220A	10	black humus
1-225A	10	black humus
1-225B	20	brown clay and rock fragments
1-230A	5	black humus
1-235A	10	black humus
1-235B	25	grey clay and rock fragments
1-240A	10	black humus
1-240B	25	grey clay and rock fragments
1-245A	25	black humus with some volcanic ash
1-250A	10	black humus
1-250B	25	grey clay and rock fragments
1-255A	20	grey clay and rock fragments (no humus present)
1-260A	10	dark-brown humus and clay with some volcanic ash
1-265A	5	black humus at water seep
1-270A	10	dark-brown humus with volcanic ash
1-275A	10	black humus
1-280A	10	black humus
1-285A	10	black humus
1-290A	5	dark-brown humus with volcanic ash
1-290B	25	grey clay and rock fragments
1-295A	5	grey clay and rock fragments (humus not present)
1-300A	10	dark-brown humus with sand and clay

Sample Number	Sample Depth (cm)	Remarks
1-300B	25	greenish-grey clay with rock fragments
1-305A	5	dark-brown humus
1-305B	25	greenish-grey clay with rock fragments
1-310A	5	dark-brown humus
1-310B	25	greenish-grey clay with rock fragments
1-315A	5	dark-brown humus
1-315B	25	greenish-grey clay with rock fragments
1-320A	5	dark-brown humus
1-320B	25	brown sand and gravel
1-325A	15	clay, sand, rock fragments, minor humus (not much present)
1-330A	15	clay, sand, rock fragments, minor humus (not much present)
1-335A	15	clay, sand, rock fragments, minor humus (not much present)
1-340A	5	dark-brown humus
1-340B	25	medium-brown clay, volcanic ash, some humus and rock fragments
2-00A	10	dark-brown humus
2-05A	15	dark-brown humus
2-10A	15	dark-brown humus
2-15A	30	humus mixed with ash
2-20A	15	black sand with rock fragments and ash
2-25A	25	dark-brown sandy humus with ash
2-30A	15	black humus
2-30B	20	black silt and rock fragments
2-35A	15	dark-brown to black humus with ash
2-40A	20	black humus with few rock fragments
2-45A	15	black to dark-brown sandy humus with fine ash
2-50A	15	brown humus
2-50B	20	black silty sand with minor ash
2-55A	15	black humus
2-55B	20	grey clay with few rock fragments
2-60A	15	black sand with few rock fragments
2-65A	10	black humus
2-65B	20	grey-black coarse sand with silt and rock fragments
2-70A	10	black humus
2-70B	25	dark-brown fine sand with minor coarse sand
2-75A	10	dark-grey clay with rock fragments
2-80A	20	humus and coarse dark-grey sand with rock fragments
2-85A	15	dark-brown to black sandy humus with minor rock fragments and ash
2-90A	20	medium-grey clay with rock fragments (humus almost absent)
2-95A	15	light-grey sand and darker-grey below, with rock fragments
2-100A	10	black humus
2-100B	15	greyish-black coarse sand with rock fragments
2-105A	10	black humus
2-105B	15	brown sand with rock fragments
2-110A	10	brown sand and rock fragments
2-110B	15	brown fine sand
2-115A	10	greyish-brown medium sand and rock fragments (humus almost absent)

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
2-120A	10	greyish sand with abundant rock fragments (humus almost absent)
2-125A	20	dark-grey sand with rock fragments
2-130A	20	brown sand and rock fragments (humus almost absent), on steep hill
2-135A	20	brown coarse sand with rock fragments (no humus present), on steep hill
2-140A	5	black humus
2-140B	25	grey clay
2-145A	15	black humus
2-145B	25	grey clay
2-150A	20	black humus
2-150B	30	grey sand with rock fragments and clay
2-155A	20	black humus
2-155B	25	grey clay with rock fragments
2-160A	10	grey humus with rock fragments
2-165A	15	black humus
2-165B	25	grey-black sand with rock fragments and ash
2-170A	10	grey-black humus with ash
2-175A	25	brown-black humus
2-180A	10	medium-brown humus with few rock fragments (on bedrock)
2-185A	25	black humus
2-190A	30	black humus
2-195A	30	black humus with few rock fragments
2-200A	15	black humus
2-200B	20	orange-brown fine silty sand with rock fragments, in dry creek
3-00A	30	black humus with few pebbles and mixed with ash
3-05A	30	black humus with ash throughout
3-10A	20	black humus mixed with white ash and rock fragments
3-15A	20	black humus with rock fragments
3-20A	20	black humus with rock fragments
3-25A	20	black humus with rock fragments common and abundant white ash
3-30A	15	black humus
3-35A	15	black humus
3-40A	15	dark-brown humus with rock fragments
3-45A	5	black humus
3-50A	10	dark-brown to black humus
3-55A	15	black humus
3-60A	30	dark-brown humus
3-65A	15	dark-brown humus
3-70A	10	black humus mixed with minor ash
3-70B	15	grey clay and sand with rock fragments
3-75A	15	black humus with minor ash
3-80A	15	dark-brown sandy humus with minor ash
3-85A	25	dark-brown sandy humus with minor ash
3-90A	15	black humus
3-95A	15	black humus
3-100A	20	dark-brown to black humus with minor ash and rock fragments

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
3-105A	15	dark-brown humus with rock fragments and minor ash
3-110A	15	dark-brown humus with rock fragments
3-115A	5	black humus with abundant rock fragments
3-115B	15	dark-brown sand with rock fragments
3-120A	10	black humus
3-120B	20	greyish-brown sand and rock fragments
3-125A	15	medium-to dark-brown humus with rock fragments
3-130A	20	medium-brown with abundant ash and few rock fragments
3-135A	10	black humus
3-135B	20	greyish-brown clay with a little sand and rock fragments
3-137A	15	brown sandy gravel with abundant ash
3-140A	15	brown humus
3-140B	30	brown grey sandy clay with rock fragments
3-145A	15	black humus
3-150A	10	greyish-brown sandy clay with rock fragments (almost no humus)
3-155A	10	black humus
3-155B	15	medium-brown sandy clay with a few rock fragments
3-160A	10	brown humus and ash
3-160B	25	grey sandy clay with rock fragments
4-00A	10	grey sandy clay with rock fragments and humus
4-50A	10	grey sandy clay with rock fragments and ash
4-100A	10	grey sandy clay with rock fragments and ash
4-150A	10	black humus and grey clay
4-200A	10	black humus
4-250A	10	black humus
4-300A	5	dark-brown humus
4-300B	25	greenish-grey clay and bedrock chips
4-350A	15	dark-brown humus with ash
4-400A	10	black humus
4-450A	15	black humus
4-500A	15	black humus
4-550A	20	black humus
4-600A	10	black humus
4-650A	15	black humus
4-700A	15	black humus
4-750A	15	black humus
4-800A	10	black humus
4-850A	10	black humus
4-900A	10	black humus
4-950A	10	black humus
4-1000A	10	dark-brown humus with ash
4-1050A	10	black humus
4-1100A	10	black humus
4-1150A	5	black humus
4-1200A	5	black humus
4-1250A	10	black humus
4-1300A	10	black humus
4-1350A	10	black humus
4-1400A	10	black humus

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
4-1450A	10	black humus
4-1500A	10	black humus
4-1550A	10	black humus
4-1550B	25	brown clay with rock fragments
4-1600A	5	black humus
4-1650A	5	black humus
4-1700A	10	black humus
4-1750A	10	black humus
4-1800A	15	light-brown sandy ash (no humus)
4-1850A	5	black humus
4-1900A	5	black humus
4-1950A	5	black humus
4-2000A	5	black humus
4-2050A	5	black humus
4-2100A	5	black humus
4-2150A	5	black humus
4-2200A	5	black humus
4-2250A	5	black humus
4-2300A	5	black humus
4-2350A	10	dark-brown humus
5-00A	5	black humus
5-50A	5	light-brown humus
5-100A	10	black humus
5-150A	10	black humus
5-200A	10	sandy ash
5-250A	10	black humus
5-300A	10	black humus (5 cm) underlain by brown clay and rock fragments
5-350A	15	black humus underlain by ash
5-400A	15	black humus underlain by ash
5-450A	15	black humus underlain by ash
5-500A	15	black humus with ash
5-550A	15	black humus with ash
5-600A	10	black humus underlain by rusty ash
5-650A	15	black humus underlain by ash
5-700A	15	black humus with 3cm ash layer and underlain by ash
5-750A	20	black humus
5-800A	20	black humus
5-850A	15	dark-brown humus
5-900A	15	dark-brown humus
5-950A	15	black humus
5-1000A	10	black humus with ash
5-1050A	10	black humus underlain by rusty ash
5-1100A	10	black humus underlain by ash
5-1150A	10	black humus underlain by ash
5-1200A	10	black humus underlain by ash
5-1250A	10	black humus
5-1300A	10	black humus
5-1350A	10	black humus

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
5-1400A	10	black humus
5-1450A	10	black humus
5-1500A	10	black humus
5-1550	10	black humus underlain by rusty ash
5-1600	10	black humus underlain by ash
5-1650	15	black humus
5-1700	15	black humus underlain by clay with rock fragments
5-1750	15	black humus underlain by ash
5-1800	15	black humus
5-1850	15	black humus
5-1900	15	black humus
5-1950	15	black humus
5-2000	10	dark-brown humus
5-2050	10	dark-brown humus
6-00	10	black humus with ash
6-10	10	brown sandy humus with ash
6-20	10	brown sandy humus with rock fragments
6-30	10	brown sandy humus overlying large rock fragments
6-40	10	brown sandy humus overlying large rock fragments
6-50	10	brown sandy humus overlying large rock fragments
6-60	10	brown humus with minor ash
6-70	8	black humus overlying ash and rock fragments
6-80	8	black humus overlying brownish ash
6-90	10	black humus with ash
6-100	15	black humus overlying ash layer and grey clay layer
6-110	15	black humus overlying brown sandy ash
6-120	15	black humus
6-130	15	black humus with ash pockets
6-140	12	black humus
6-150	12	black humus overlying white ash
6-160	12	black humus overlying white ash
6-170	12	black humus overlying white ash
6-180	20	black humus
6-190	20	black humus
6-200	20	black humus
6-210	20	black humus overlying ash
6-220	15	black humus
6-230	10	black humus overlying white ash
6-240	10	black humus overlying white ash
6-250	15	black humus overlying brown ash
6-260	10	black humus
6-270	10	black humus
6-280	10	black humus
6-290	10	black humus
6-300	6	brown humus overlying white ash
6-310	6	black humus overlying rusty ash
6-320	6	black humus overlying rusty ash
6-330	10	brown humus overlying ash
6-340	4	brown humus overlying ash and rock fragments
6-350	10	black humus with ash pocket

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
6-360	20	black humus overlying ash
6-370	15	black humus overlying ash
6-380	10	black humus
6-390A	4	black humus
6-390B	10	brownish-grey clay with rock fragments
6-400	8	black humus overlying ash
6-410	12	black humus overlying ash
6-420A	5	black humus
6-420B	20	grey clay
6-430	10	black humus overlying ash
6-440	10	black humus overlying ash
6-450	15	black humus overlying ash with few rock fragments
6-460	15	black humus with ash and rock fragments
6-470	15	black humus
6-480	10	black humus
6-490	10	black humus
6-500	5	black humus overlying brown clay with rock fragments
6-510A	4	black humus
6-510B	10	brown clay overlying rock fragments
6-520	20	black humus with minor ash overlying ash
6-530	10	black humus
6-540	4	black humus with brown clayish humus
6-550	10	black humus overlying ash
6-560	25	black humus overlying clay with rock fragments
6-570	10	black humus overlying ash
6-580	10	brown clayish humus
6-590	15	black humus overlying ash
6-600	10	dark-brown humus
7-00	10	brown sandy humus with few rock fragments
7-50	5	black humus
7-100	5	black humus
7-150	5	black humus
7-200	5	black humus
7-250	5	black humus
7-300	5	black humus
7-350	5	black humus
7-400	5	black humus
7-450	5	black humus
7-500	5	black sandy humus
7-550	5	black humus
7-600	5	black humus
7-650	5	black humus
7-700	5	black humus
7-750	5	black humus
7-800	5	black humus
7-850	5	black humus
7-900	5	black humus
7-950	5	black humus
7-1000	5	black humus

APPENDIX 2: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
7-1050	5	black humus
7-1100	5	black humus
7-1150	5	black humus
7-1200	5	black humus with ash
7-1250	10	dark-brown humus underlying small ashy layer
7-1300	10	dark-brown humus with sand and rock fragments
7-1350	5	dark-brown humus with ash
7-1400	10	dark-brown humus with brown sand and rock fragments
7-1450	10	dark-brown humus with brown sand and rock fragments
7-1500	5	dark-brown humus with ash
7-1550	10	dark-brown humus with rock fragments
7-1600	10	dark-brown humus
7-1650	10	dark-brown humus overlying ash
7-1700	10	dark-brown humus
7-1750	35	dark-brown humus
7-1800	10	dark-brown humus overlying ash
7-1850	10	dark-brown humus with ash overlying rock fragments
7-1900	10	dark-brown humus with ash
7-1950	10	dark-brown humus
7-2000	10	dark-brown humus
7-2050	5	dark-brown humus with ash pockets
7-2100	10	black humus with rock fragments
7-2150	10	black humus
7-2200	10	black humus
7-2250	5	black humus overlying ash
7-2300	10	brown humus with ash
7-2350	10	brown humus with ash
7-2400	15	dark-brown humus
7-2450	5	black humus overlying ash
7-2500	10	black humus overlying rock fragments
7-2550	10	black humus
7-2600	10	black humus overlying ash
7-2650	10	black humus overlying ash
7-2700	10	black humus
7-2750	10	black-brown humus with rock fragments
7-2800	10	black humus overlying ash
7-2850	10	black humus overlying ash
7-2900	15	black humus overlying rock fragments
7-2950	10	dark-brown humus
7-3000	10	dark-brown humus
7-3050	10	dark-brown humus overlying ash layer
7-3100	10	black humus
7-3150	10	black humus with ash
7-3200	10	black humus
7-3250	10	black humus

APPENDIX 3: CERTIFICATES OF ANALYSIS FOR
1978 GEOCHEMICAL-SOIL SAMPLES



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1500 PEMBERTON AVENUE, NORTH VANCOUVER, B.C.
PHONE 988-5315**GEOCHEMICAL LAB REPORT**

No. 48-172

Branch: 1368 Industrial Rd., Whitehorse, Y.T.

Extraction: Ag, Cu, Pb, Zn, Ni From Halferdahl

Method: A.A. Date: Sept. 8, 1978

Fraction Used: -80 Soils Analyst:

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm		REMARKS
1- 00A	0.2	130	17	80	110		
- 05A(1)	0.1	135	9	100	117		
- 05B(1)	0.1	210	10	80	128		
-05A(2)	ND	50	6	100	32		(105A mistakenly
-05B(2)	0.2	135	15	80	110		(105B labelled
-10A	0.2	90	10	90	56		
-10B	0.2	150	11	80	105		
-15A	0.1	128	10	78	95		
-20A	0.2	140	12	110	85		
-25A	0.1	110	14	90	64		
-30A	0.3	110	12	98	70		
-35A	0.3	125	11	88	78		
-40A	0.3	85	10	100	54		
-45A	0.3	38	10	67	22		
-50A	0.2	63	9	110	37		
-50B	0.2	150	14	110	95		
-55A	0.4	65	4	80	37		
-55B	0.4	165	40	350	125		
-60A	0.1	115	9	90	52		
-65A	0.2	135	11	80	76		
-70A	0.1	105	4	90	75		
-70B	0.1	145	5	70	135		
-75A	ND	150	10	70	136		
-80A	ND	155	11	88	110		
-85A	0.1	200	8	70	180		
-90A	0.1	145	4	70	120		
-95A	0.2	140	10	70	115		
-100A	0.2	210	9	90	190		
-110A	0.1	205	7	80	150		
-115A	0.2	200	2	70	130		
1 -120A	0.1	160	10	80	140		

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GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm		REMARKS
1- 325A	ND	210	8	70	105		
- 130A	0.1	260	6	75	150		
- 135A	0.1	85	10	50	50		
- 140A	0.2	92	8	50	29		
-145A	0.2	60	13	70	38		
- 145B	0.2	150	16	75	95		
- 150A	0.3	75	7	110	29		
- 155A	ND	120	8	90	48		
-155 B	0.3	220	8	70	115		
- 160A	0.2	70	4	50	38		
- 160B	ND	340	11	40	115		
- 165A	ND	660	8	40	140		
- 170A	0.3	275	5	80	100		
- 170B	ND	220	5	70	105		
- 175A	0.2	250	6	80	125		
- 175B	ND	160	8	70	105		
- 180A	0.2	255	5	80	155		
-185A	ND	210	8	70	190		
-185B	0.3	180	6	80	160		
-190A	0.2	225	6	75	205		
-195A	0.2	300	3	50	365		
-200A	0.2	340	4	60	360		
-205A	0.2	430	6	70	380		
-210A	0.4	285	5	60	300		
-215A	0.3	240	5	70	250		
-220A	0.2	150	7	70	175		
-225A	ND	75	8	65	125		
-225B	0.2	110	6	60	200		
-230A	0.1	115	8	50	180		
-235A	0.2	130	6	78	135		
235B	ND	120	3	61	205		
240A	ND	80	5	70	84		
240B	0.2	150	4	70	190		
245A	0.1	90	9	70	115		
-250A	0.1	120	5	80	110		
1 -250B	0.2	125	6	80	175		

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm	REMARKS
1 -255A	0.1	85	10	120	130	
-260	0.2	85	9	90	150	
-265	0.2	150	7	90	135	
-270	0.1	80	10	80	130	
-275	0.2	94	6	80	130	
-280	0.2	84	5	80	135	
-285	0.2	80	3	100	120	
-290A	0.2	79	3	75	90	
-290B	0.1	100	5	70	130	
-295	0.1	80	5	75	110	
-300A	0.1	83	7	75	115	
-300B	0.2	90	5	78	135	
-305A	0.2	45	5	50	38	
-305B	0.1	70	4	80	95	
-310A	ND	52	4	85	46	
-310B	0.1	70	3	60	100	
-315A	0.1	40	11	100	30	
-315B	0.3	70	8	90	85	
-320	ND	45	5	70	40	
-325	0.1	90	7	70	155	
-330	0.1	75	4	70	135	
-335	0.2	90	4	70	155	
-340A	3.4	40	5	57	50	
1 -340B	0.2	90	9	60	150	
2 -00	ND	55	10	70	38	
-05	ND	68	9	70	44	
-10	0.1	60	5	78	54	
-15	0.1	64	5	48	37	
-20	ND	63	3	53	36	
-25	ND	34	5	50	27	
-30A	0.1	55	6	100	37	
-30B	ND	70	8	80	68	
-35	0.1	40	9	90	38	
-40	0.2	60	8	90	38	
-45	0.1	70	8	90	54	
2 -50A	ND	40	5	70	41	

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm		REMARKS
2 -50B	0.2	43	8	70	42		
-55A	0.2	45	5	110	35		
-55B	0.2	66	7	85	65		
-60	ND	70	9	75	56		
-65A	0.2	50	8	70	33		
-65B	0.1	92	8	80	72		
-70A	ND	70	8	70	50		
-70B	0.2	70	6	70	72		
-75	0.1	75	10	90	79		
-80	ND	77	8	80	67		
-85	0.1	55	5	70	47		
-90	0.1	74	8	90	66		
-95	0.2	110	24	90	85		
-100A	ND	47	9	90	38		
-100B	0.1	93	6	80	70		
-105A	0.1	50	10	80	34		
-105B	0.2	95	8	90	73		
-110A	0.2	95	7	80	75		
-110B	0.2	80	4	85	79		
-115	0.3	86	5	80	77		
-120	0.3	95	6	90	74		
-125	0.2	80	6	82	67		
-130	0.2	90	8	88	69		
-135	0.2	92	8	80	70		
-140A	0.1	85	8	78	50		
-140B	0.2	87	10	110	70		
-145A	0.2	60	10	80	43		
-145B	0.4	100	8	115	72		
-150A	0.1	45	5	85	28		
-150B	0.2	65	8	70	62		
-155A	0.2	34	4	48	20		
-155B	ND	58	4	67	55		
-160	ND	50	4	90	58		
-165A	ND	65	5	89	32		
-165B	0.2	45	4	60	46		
2 -170	ND	46	10	60	27		

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm	REMARKS
2 -175	0.1	43	6	60	26	
-180	ND	77	8	110	85	
-185	ND	58	5	80	50	
-190	0.2	56	5	83	48	
-195	ND	65	5	70	45	
-200A	ND	55	4	80	48	
2 -200B	0.1	87	15	220	54	
3 -00	0.1	68	8	70	46	
-05	0.1	80	6	66	38	
-10	0.1	90	5	70	57	
-15	0.2	90	5	50	46	
-20	0.2	97	9	60	46	
-25	0.1	68	9	30	42	
-30	0.2	115	10	70	48	
-35	0.2	45	7	52	28	
-40	0.3	340	7	70	100	
-45	0.2	160	7	78	66	
-50	0.1	230	7	70	79	
-55	ND	235	8	70	82	
-60	ND	160	4	60	49	
-65	0.2	215	5	96	64	
-70A	0.2	100	4	50	39	
-70B	0.3	185	7	68	120	
-75	0.2	50	3	68	29	
-80	0.1	215	4	50	75	
-85	0.2	245	6	80	105	
-90	0.2	175	10	105	78	
-95	0.2	240	3	76	76	
-100	0.3	310	6	60	120	
-105	0.2	285	7	60	115	
-110	0.1	205	6	54	110	
-115A	ND	265	9	60	115	
-115B	0.2	360	7	50	155	
-120A	0.2	360	8	93	140	
-120B	0.2	440	6	54	175	
3 -125	0.1	340	8	70	100	

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm	REMARKS
3- 130	0.2	180	9	65	105	
-135A	0.1	46	5	50	38	
-135B	0.3	93	6	50	66	
-137	0.2	360	7	50	125	
-140A	0.1	70	9	60	52	
-140B	0.2	125	5	50	75	
-145	ND	120	5	70	72	
-150	0.2	440	4	40	245	
-155A	ND	80	5	56	65	
-155B	ND	400	5	30	205	
-160A	0.2	120	4	50	76	
3 -160B	ND	520	4	40	235	
4 -00	0.1	84	5	70	95	
-50	0.2	65	10	110	64	
-100	0.2	70	7	70	88	
-150	0.2	55	8	86	68	
-200A	0.1	45	4	100	62	
-200B	ND	160	ND	50	780	300B mistakenly labelled
-250	0.2	50	8	50	57	
-300	ND	120	6	70	250	
-350	ND	90	3	55	165	
-400	0.1	38	5	76	28	
-450	ND	75	4	80	125	
-500	0.2	90	5	71	170	
-550	0.1	55	7	80	100	
-600	0.2	70	5	70	115	
-650	ND	45	4	73	88	
-700	0.2	58	4	67	62	
-750	0.1	52	6	80	62	
-800(1)	ND	54	4	93	65	
-800(2)	0.3	65	5	90	120	850A mistakenly labelled
-900	0.1	90	16	100	120	
-950	0.1	50	10	100	54	
-1000	0.1	36	10	100	52	
-1050	0.2	52	18	85	48	
4 -1100	0.2	91	9	60	175	

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm			REMARKS
4 -1150	ND	35	11	66	37			
-1200	ND	29	18	57	28			
-1250	0.1	35	6	48	32			
-1300	0.1	57	4	90	32			
-1350	0.7	57	7	70	35			
-1400	0.1	45	10	70	27			
-1450	ND	67	4	32	40			
-1500	0.1	48	5	85	27			
-1550A	0.2	47	6	50	35			
-1550B	0.2	58	3	40	115			
-1600	0.2	36	6	80	39			
-1650	ND	29	10	60	24			
-1700	0.1	61	5	87	55			
-1750	0.2	58	2	55	69			
-1800	ND	58	4	40	88			
-1850	ND	44	3	68	48			
-1900	ND	56	6	80	68			
-1950	0.1	56	7	80	65			
-2000	ND	65	5	93	85			
-2050	ND	70	6	100	155			
-2100	ND	65	4	76	105			
2150	0.1	51	9	74	64			
-2200	ND	55	4	72	220			
-2250	ND	60	7	71	86			
-2300	0.1	40	5	43	54			
4 -2350	ND	32	4	61	61			
5 -00	0.1	58	4	50	135			
-50	0.1	35	5	87	50			
-100	0.1	50	9	100	34			
-150	ND	35	5	64	21			
-200	0.2	32	6	80	48			
-250	0.1	34	5	82	37			
-300	0.1	30	5	80	28			
-350	0.2	38	6	90	25			
-400	0.1	32	5	60	19			
5 -450	0.1	33	6	86	18			



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PHONE 988-5315

Branch: 136B Industrial Rd., Whitehorse, Y.T.

GEOCHEMICAL LAB REPORT

No. 48-184

Extraction..... Ag, Cu, Pb, Zn, Ni.....

From Halferdahl.....

Method..... A.A.A.....

Date..... Sept. 18, 1978.....

Fraction Used..... -80 Soils.....

Analyst.....

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm		REMARKS
5-1800	0.2	43	8	60	30		
-1850	0.1	29	11	48	24		
-1950	0.1	30	4	50	42		
-2000	ND	36	5	30	22		
5 -2050	ND	28	4	70	21		
6 -00	0.1	140	6	70	21		
-10	0.2	300	3	40	98		
-20	0.1	48	11	80	40		
-30	0.1	60	14	60	45		
-40	0.2	80	12	80	64		
-50	0.2	110	6	54	82		
-60	ND	43	5	50	40		
-70	0.2	33	8	60	30		
-80	0.1	43	5	26	41		
-90	0.1	89	5	48	90		
6-100	ND	87	6	40	144		
-110	0.2	100	7	32	200		
-120	0.1	70	7	60	150		
-130	0.2	76	5	50	128		
-140	0.1	76	6	51	150		
-150	0.1	58	5	23	80		
-160	0.1	56	5	40	70		
-170	0.2	29	4	30	40		
-180	0.1	70	2	40	87		
-190	0.1	76	4	32	116		
-200	ND	89	5	40	160		
-210	ND	46	4	38	70		
-220	0.1	42	4	32	68		
-230	0.2	20	5	58	30		
-240	0.1	30	5	56	40		
6 -250	0.1	35	5	58	53		

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm			REMARKS
6-260	ND	50	7	72	50			
-270	0.1	63	5	40	116			
-280	ND	100	5	31	144			
-290	ND	105	5	30	192			
-300	0.1	29	3	50	30			
-310	0.2	80	7	27	105			
-320	0.1	34	7	37	30			
-330	ND	30	5	45	23			
-340	0.1	50	5	45	90			
-350	ND	80	6	31	50			
-360	0.1	48	5	47	70			
-370	0.1	55	3	57	132			
-380	ND	53	7	50	81			
-390A	0.2	34	2	61	40			
-390B	0.1	82	8	58	82			
-400	0.1	38	7	41	34			
-410	0.1	49	5	78	70			
-420A	0.2	48	7	80	70			
-420B	0.2	91	5	56	100			
-430	0.2	58	18	68	105			
-440	0.2	50	5	33	65			
-450	0.1	50	5	81	80			
-460	ND	45	6	92	78			
-470	ND	54	6	91	77			
-480	0.1	55	5	54	84			
-490	ND	45	6	62	80			
-500	0.2	50	5	46	94			
-510A	0.1	40	6	70	70			
-510B	0.2	58	3	50	145			
-520	0.1	36	5	41	43			
-530	0.1	35	5	49	33			
-540	ND	40	5	45	81			
-550	ND	75	5	53	135			
-560	ND	45	6	38	86			
-570	0.1	55	6	82	116			
6 -580	0.1	54	12	70	70			

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm		REMARKS
6 -590	ND	35	4	38	41		
6 -600	ND	42	8	84	80		
7 -00	0.1	59	5	60	80		
7 -50	0.1	26	8	36	30		
-100	0.1	52	4	30	64		
-150	ND	80	4	40	60		
-200	ND	35	3	30	40		
-250	ND	41	4	56	40		
-300	ND	33	4	42	30		
-350	0.1	39	4	80	38		
-400	0.1	38	5	60	35		
-450	0.1	45	3	50	30		
-500	ND	50	4	50	45		
-550	ND	67	3	70	60		
-600	ND	38	5	46	32		
-650	ND	39	4	30	30		
-700	0.1	42	5	73	40		
-750	ND	46	7	74	43		
-800	0.1	42	4	50	41		
-850	0.2	71	6	61	61		
-900	0.1	69	5	60	74		
-950	ND	30	3	60	29		
-1000	ND	36	4	80	39		
-1050	0.1	87	2	45	50		
-1100	0.1	54	3	52	50		
-1150	ND	36	5	53	38		
-1200	ND	40	2	80	40		
-1250	0.1	32	7	50	30		
-1300	0.2	40	5	60	58		
-1350	ND	27	4	40	29		
-1400	0.1	37	3	65	50		
-1450	0.1	53	5	60	53		
-1500	0.2	63	4	52	52		
-1550	ND	30	3	40	40		
1600	0.1	63	6	60	61		
7-1650	ND	36	3	50	21		

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Ag* ppm	Cu ppm	Pb* ppm	Zn ppm	Ni* ppm			REMARKS
7-1700	ND	30	3	28	24			
-1750	0.2	39	8	70	36			
-1800	0.2	26	3	40	15			
-1850	ND	25	5	65	18			
-1900	ND	32	3	64	24			
-1950	ND	35	7	63	25			
-2000	ND	31	7	80	30			
-2050	ND	24	6	42	22			
-2100	0.1	24	3	36	20			
-2150	ND	53	5	78	50			
-2200	ND	51	3	68	40			
-2250	ND	60	3	40	30			
-2300	ND	70	3	40	67			
-2350	0.2	55	4	53	68			
-2400	0.2	73	3	50	56			
-2450	ND	52	5	60	30			
-2500	ND	45	4	60	50			
2550	ND	34	6	61	29			
2600	ND	25	3	42	24			
2650	0.1	23	3	45	15			
2700	ND	42	3	52	25			
2750	ND	48	3	55	79			
2800	0.1	55	3	49	39			
-2850	0.2	47	5	48	34			
-2900	0.2	53	5	61	83			
-2950	0.1	54	6	68	80			
-3000	0.2	40	5	69	48			
-3050	0.1	44	6	59	40			
-3100	0.1	50	4	51	68			
-3150	0.1	56	5	51	90			
-3200	0.1	71	5	40	105			
7-3250	ND	58	3	31	48			
5-1900	ND	34	3	66	29			
* Background Correction								
ND: Denotes Not Detected								



BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5

PHONE: 237-3110

Branch: 136B Industriail Rd., Whitehorse, Y.T.

Geochemical Lab Report

Extraction As Report No. 48-172
 Method Colorimetric From Halferdahl
 Fraction Used -80 Soils Date September 20, 19 78

SAMPLE NO.	As ppm			SAMPLE NO.	As ppm		
1-00A	53			1- 125A	46		
05A	30			130A	33		
05B	19			135A	30		
105A	16			140A	20		
105B	54			145A	24		
10A	50			145B	52		
10B	58			150A	19		
15A	51			155A	18		
20A	52			155B	20		
25A	48			155C	19		
30A	50			160A	20		
35A	40			160B	21		
40A	39			165A	18		
45A	10			170A	21		
50A	50			170B	32		
50B	78			175A	38		
55A	38			175B	47		
55B	75			180A	29		
60A	12			185A	21		
65A	31			185B	32		
70A	30			190A	31		
70B	23			195A	19		
75A	31			200A	20		
80A	37			205A	19		
85A	16			210A	20		
90A	31			215A	19		
95A	32			220A	20		
100A	19			225A	21		
110A	32			225B	22		
115A	20			230A	10		
1- 120A	19			1- 235A	42		

Report No. 48-172

BONDAR-CLEGG & COMPANY LTD.

Page No. -2-

GEOCHEMICAL LAB REPORT

SAMPLE NO.	As ppm		SAMPLE NO.	As ppm	REMARKS
1- 235B	31		2- 25A	21	
240A	28		30A	40	
240B	29		30B	29	
245A	20		35A	35	
250A	31		40A	32	
250B	40		45A	29	
255A	30		50A	40	
260A	28		50B	32	
265A	20		55A	31	
270A	18		55B	50	
275A	29		60A	35	
280A	20		65A	38	
285A	30		65B	41	
290A	21		70A	34	
290B	32		70B	16	
295A	34		75A	31	
300A	35		80A	32	
300B	30		85A	34	
305A	32		90A	40	
305B	30		95A	31	
310A	46		100A	42	
310B	14		100B	18	
315A	23		105A	39	
315B	40		105B	25	
320A	13		110A	40	
320B	30		110B	11	
325A	32		115A	16	
330A	56		120A	31	
335A	34		125A	31	
340A	28		130A	33	
1- 340B	30		135A	17	
2- 00A	42		140A	33	
05A	35		140B	41	
10A	39		145A	33	
15A	31		145B	31	
2- 20A	34		2- 150A	33	

GEOCHEMICAL LAB REPORT

SAMPLE NO.	As ppm		SAMPLE NO.	As ppm	REMARKS
2- 150B	17		3- 105A	58	
155A	18		110A	46	
155B	19		115A	30	
160A	30		115B	20	
165A	34		120A	28	
165B	19		120B	36	
170A	13		120B ^{XC}	10	
175A	30		125A	33	
180A	41		130A	35	
185A	30		135A	32	
190A	29		135B	40	
195A	57		137A	21	
200A	20		140A	38	
200B	46		140B	27	
3- 00A	28		145A	43	
05A	30		150A	14	
10A	21		155A	33	
15A	23		155B	120	
20A	37		160A	36	
25A	48		160B	12	
30A	50		4- 00A	21	
35A	32		50A	23	
40A	53		100A	17	
45A	51		150A	32	
50A	50		200A	18	
55A	63		200B	20	300B mistakenly labelled
60A	43		250A	78	
65A	50		300A	35	
70A	35		350A	43	
70B	47		400A	22	
75A	30		450A	17	
80A	39		500A	22	
85A	41		550A	15	
90A	36		600A	14	
95A	17		650A	20	
3- 100A	40		4- 700A	15	

Report No. 48-172

BONDAR-CLEGG & COMPANY LTD.

Page No. -4-

GEOCHEMICAL LAB REPORT

SAMPLE NO.	As ppm		SAMPLE NO.	As ppm	REMARKS
4- 750A	21		5- 100A	31	
800A	17		150A	32	
850A	19		200A	19	
900A	20		250A	33	
950A	20		300A	20	
1000A	40		350A	27	
1050A	20		400A	14	
1100A	31		450A	19	
1150A	20		500A	47	
1200A	11		550A	20	
1250A	22		600A	19	
1300A	21		650A	23	
1350A	19		700A	28	
1400A	22		750A	31	
1450A	24		800A	20	
1500A	32		850A	19	
1550A	36		900A	18	
1550B	22		950A	34	
1600A	28		1000A	25	
1650A	19		1050A	27	
1700A	17		1100A	24	
1750A	54		1150A	50	
1800A	23		1200A	22	
1800B	28		1250A	20	
1900A	32		1300A	17	
1950A	23		1350A	26	
2000A	20		1400A	30	
2050A	18		1450A	20	
2100A	14		1500A	40	
2150A	20		1550A	21	
2200A	12		1600A	19	
2250A	19		1650A	18	
2300A	23		1700A	21	
2350A	18		5- 1750A	40	
5- 00A	19				
50A	24				



BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5
 Branch: 136B Industrial Rd., Whitehorse, Y.T.
Geochemical Lab Report

PHONE: 237-3110

Extraction As Report No. 48-184
 Method Colorimetric From Halferdahl & Associates Ltd.
 Fraction Used - 80 soils Date October 4, 19 78

SAMPLE NO.	As ppm	SAMPLE NO.	As ppm
5 - 1800	20	6 - 250	27
1850	18	260	30
1900	16	270	10
1950	18	280	14
2000	10	290	12
5 - 2050	10	300	18
6 - 00	31	310	11
10	34	320	20
20	30	330	14
30	39	340	20
40	30	350	19
50	39	360	11
60	23	370	7
70	24	380	13
80	18	390A	16
90	20	390B	26
100	21	400	17
110	21	410	12
120	23	420A	20
130	19	420B	21
140	24	430	11
150	31	440	23
160	56	450	12
170	19	460	10
180	29	470	13
190	20	480	12
200	19	490	32
210	23	500	17
220	32	510A	20
230	19	510B	21
6 - 240	23	520	28

BONDAR-CLEGG & COMPANY LTD.

Geochemical Lab Report

Report No. 48-184Page No. 2.

SAMPLE NO.	As ppm		SAMPLE NO.	As ppm
6 - 530	13		7 - 1400	34
540	19		1450	27
550	26		1500	31
560	30		1550	23
570	16		1600	31
580	30		1650	24
590	13		1700	28
6 - 600	29		1750	38
7 - 00	27		1800	21
50	18		1850	20
100	24		1900	13
150	26		1950	15
200	17		2000	19
250	20		2050	13
300	14		2100	11
350	26		2150	18
400	19		2200	14
450	22		2250	11
500	24		2300	12
550	30		2350	20
600	29		2400	13
650	24		2450	14
700	19		2500	7
750	30		2550	14
800	23		2600	12
850	27		2650	11
900	30		2700	17
950	14		2750	18
1000	29		2800	18
1050	20		2850	15
1100	25		2900	32
1150	24		2950	18
1200	30		3000	14
1250	23		3050	20
1300	30		3100	12
7 - 1350	30		3150	16

X-RAY ASSAY LABORATORIES

A36

LIMITED

1885 LESLIE STREET

DON MILLS, ONTARIO M3B 3J4

(416) 445-5755

Certificate of Analysis

NO. 5359 PAGE 1 of 3

TO. Halferdahl & Associates Ltd.,
Attn: L.B. Halferdahl,
18, 10509-81 Avenue,
Edmonton, Alberta.
T6E 1X7

Project 1

RECEIVED June 11, 1979

INVOICE NO. 5359

SAMPLE(S) OF soil & humus SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>
1-00A	9	1-125A	50	1-235B	8
1-05A	9	1-130A	X	1-240A	X
1-05B	9	1-135A	X	1-240B	15
1-10A	X	1-140A	X	1-245A	X
1-10B	11	1-145A	X	1-250A	X
1-15A	25	1-145B	NSS	1-250B	10
1-20A	X	1-150A	6	1-255A	70
1-25A	X	1-155A	X	1-260A	9
1-30A	20	1-155B	12	1-265A	X
1-35A	8	1-155C	X	1-270A	X
1-40A	X	1-160A	X	1-275A	8
1-45A	X	1-160B	NSS	1-280A	X
1-50A	X	1-165A	12	1-285A	X
1-50B	25	1-170A	X	1-290A	X
1-55A	X	1-170B	8	1-290B	NSS
1-55B	8	1-175A	7	1-295A	NSS
1-60A	X	1-175B	7	1-300A	X
1-65A	7	1-180A	7	1-300B	X
1-70A	X	1-185A	6	1-305A	8
1-70B	9	1-185B	9	1-305B	NSS
1-75A	20	1-190A	X	1-310A	X
1-80A	NSS	1-195A	NSS	1-310B	NSS
1-85A	150	1-200A	7	1-315A	X
1-90A	110	1-205A	X	1-315B	NSS
1-95A	9	1-210A	X	1-320A	6
1-100A	NSS	1-215A	X	1-320B	NSS
1-105A	X	1-220A	13	1-325A	NSS
1-105B	7	1-225A	11	1-330A	NSS
1-110A	8	1-225B	10	1-335A	NSS
1-115A	X	1-230A	X	1-340A	X
1-120A	X	1-235A	X	1-340B	-

X-RAY ASSAY LABORATORIES LIMITED

DATE Aug 29, 1979

CERTIFIED BY 

X-RAY ASSAY LABORATORIES

A37

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 5359 PAGE 2 of 3

Halferdahl & Associates Ltd.,
Attn: L.B. Halferdahl

<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>
2-00A	X	2-130A	-	3-65A	X
2-05A	X	2-135A	NSS	3-70A	5
2-10A	NSS	2-140A	X	3-70B	9
2-15A	X	2-140B	NSS	3-75A	4
2-20A	NSS	2-145A	X	3-80A	12
2-25A	X	2-145B	NSS	3-85A	-
2-30A	X	2-150A	NSS	3-90A	9
2-30B	NSS	2-150B	-	3-95A	X
2-35A	X	2-155A	5	3-100A	8
2-40A	X	2-155B	-	3-105A	-
2-45A	NSS	2-160A	NSS	3-110A	12
2-50A	-	2-165A	X	3-115A	-
2-50B	-	2-165B	-	3-115B	NSS
2-55A	X	2-170A	X	3-120A	10
2-55B	-	2-175A	X	3-120B	NSS
2-60A	-	2-180A	NSS	3-125A	X
2-65A	X	2-185A	X	3-130A	7
2-65B	-	2-190A	X	3-135A	9
2-70A	NSS	2-195A	X	3-135B	NSS
2-70B	-	2-200A	X	3-137	NSS
2-75A	-	2-200B	NSS	3-140A	X
2-80A	X	3-00A	X	3-140B	NSS
2-85A	NSS	3-05A	X	3-145A	11
2-90A	-	3-10A	-	3-150A	NSS
2-95A	-	3-15A	-	3-155A	X
2-100A	X	3-20A	X	3-155B	NSS
2-100B	NSS	3-25A	-	3-160A	X
2-105A	-	3-30A	11	3-160B	NSS
2-105B	-	3-35A	X	4-00A	9
2-110A	X	3-40A	-	4-50A	-
2-110B	-	3-45A	9	4-100A	-
2-115A	-	3-50A	X	4-150A	X
2-120A	NSS	3-55A	7	4-200A	10
2-125A	NSS	3-60A	13	4-250A	10
				4-300B	X

X-RAY ASSAY LABORATORIES LIMITED

DATE August 29, 1979

CERTIFIED BY 

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

X-RAY ASSAY LABORATORIES

A38

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 5359

PAGE 3 of 3

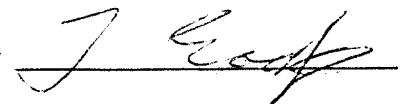
Halferdahl & Associates Ltd.
Attn: L. B. Halferdahl

<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>	<u>Sample</u>	<u>Au ppb</u>
4-300A	X	4-2150A	13	6-330	X
4-350B	NSS	4-2200A	X	6-340	X
4-400A	9	4-2250A	X	6-350	6
A-450A	23	4-2300A	X	6-360	X
4-500A	7	4-2350A	X	6-370	X
4-550A	10	6-00	20	6-380	X
4-600A	4	6-10	X	6-390A	X
4-650A	X	6-20	8	6-390B	7
4-700A	5	6-30	NSS	6-400	6
4-750A	12	6-40	X	6-410	5
4-800A	X	6-50	X	6-420A	5
4-850A	20	6-60	X	6-420B	X
4-900A	X	6-70	8	6-430	7
4-950A	X	6-80	X	6-440	X
4-1000A	X	6-90	6	6-450	X
4-1050A	X	6-100	4	6-460	X
4-1100A	X	6-110	X	6-470	X
4-1150A	22	6-120	7	6-480	X
4-1200A	X	6-130	6	6-490	X
4-1250A	9	6-140	3	6-500	6
4-1300A	X	6-150	5	6-510A	X
4-1350A	X	6-160	5	6-510B	X
4-1400A	X	6-170	X	6-520	X
4-1450A	X	6-180	6	6-530	6
4-1500A	X	6-190	7	6-540	NSS
4-1550A	10	6-200	7	6-550	X
4-1550B	NSS	6-210	X	6-560	X
4-1600A	23	6-220	X	6-570	7
4-1650A	X	6-230	X	6-580	NSS
4-1700A	X	6-240	X	6-590	8
4-1750A	X	6-250	9	6-600	9
4-1800A	5	6-260	X		
4-1850A	X	6-270	11		
4-1900A	X	6-280	X		
4-1950A	X	6-290	14		
4-2000A	11	6-300	X		
4-2050A	8	6-310	9		
4-2100A	X	6-320	X		

X-RAY ASSAY LABORATORIES LIMITED

DATE August 29, 1979

CERTIFIED BY



X-RAY ASSAY LABORATORIES

A39

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

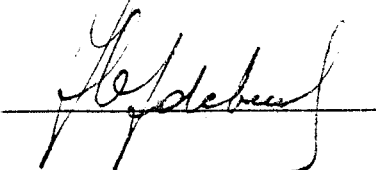
NO. 5359 PAGE 3 A

Halferdahl & Assoc. Ltd.
Attn: L. B. Halferdahl
18, 10509-81 Avenue
Edmonton, Alberta
T6E 1X7

<u>Sample</u>	<u>Au ppb</u>
2-50A	X
50B	10
65B	6
70B	6
2-75B	4
2-105A	6
2-110B	9
2-115A	7
2-155B	11
2-165B	9

X-RAY ASSAY LABORATORIES LIMITED

DATE August 31, 1979

CERTIFIED BY 

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

APPENDIX 4: 1979 GEOCHEMICAL SOIL SAMPLE DESCRIPTIONS

Sample Number	Sample Depth (cm)	Remarks
7-0	40	greyish clay with rock fragments to 1½ cm and some volcanic ash
7-20	25	greyish sandy muddy clay, frozen, with greenish rock fragments to 1 cm and white volcanic ash pockets
7-40	20	greenish-brown clay with greenish rounded rock fragments to 8 cm
7-60	35	dark-brown to black humus with volcanic ash pockets and tree remnants
7-80	25	dark-brown humus with few volcanic ash pockets and some tree remnants
7-100	20	brown humus
7-120	35	greenish-grey clay with roots, wet
7-140	20	black humus with volcanic ash
7-160	35	brownish clay
7-180	30	greenish-brown clay with roots
7-200	35	greenish-grey clay with rock fragments to 3 cm, frozen
7-220	35	greenish-grey clay with roots, partly frozen
7-240	45	dark-brown humus and greenish-grey clay
7-260	40	greenish-grey clay with angular rock fragments to 2 cm, frozen
7-280	35	greenish-grey clay with some roots
7-300	40	as above
7-320	30	black humus with volcanic ash pockets
7-340	35	greyish clay with rock fragments, frozen
7-360	30	brown sandy clay with rounded rock fragments to 7 cm, above volcanic ash
7-380	45	greenish-grey clay with rounded rock fragments
7-400	20	brown muddy clay with rock fragments to 3 cm, mixed with volcanic ash locally frozen, above frozen volcanic ash layer
7-420	25	black humus
7-440	35	greenish-grey sandy muddy clay with rock fragments to 1 cm
7-460	40	dark-brown sandy muddy clay with rock fragments to 2 cm, partly frozen
7-480	35	greenish-grey clay with rock fragments to 2 cm
7-500	40	greyish-brown clay with rock fragments to 6 cm and some volcanic ash, frozen
7-520	35	brownish-grey clay with minor volcanic ash, frozen
7-540	40	greyish-brown to rusty-brown clay
7-560	25	dark-brown permafrost
7-580	40	brown muddy clay mixed with ash, above ash layer
7-600	40	greenish-grey clay with rounded rock fragments to 1 cm, frozen
7-620	20	black humus
7-640	15	black humus with volcanic ash pockets

APPENDIX 4: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
7-660	10	as above
7-680	25	light-brown sandy clay
7-700	30	grey to rusted sandy clay with roots
7-720	15	brown humus and clay with volcanic ash
7-740	90	light-brown humus with angular rock fragments and roots
7-760	70	grey clay with rock fragments
7-780	50	light-brown clay with rock fragments to 12 cm and roots
7-800	10	brown humus with rock fragments to 10 cm
7-820	50	greyish-brown clay with rock fragments and roots
7-840	50	as above
7-860	40	brown clay with rock fragments to 15 cm and roots, some volcanic ash
7-880	50	greyish clay with rock fragments to 5 cm and some roots
7-900	60	grey clay with rock fragments to 30 cm and roots, wet
7-920	70	grey clay with rock fragments and roots
7-940	35	greyish-brown clay with rock fragments to 15 cm and roots, wet
7-960	15	brown sandy clay
7-980	5	black humus with small rock fragments, above frozen volcanic ash layer
7-1000	60	black humus with rock fragments to 7 cm, above volcanic ash layer
8-0	40	dark-grey clay with many rock fragments to 6 cm
8-20	40	dark-grey clay, locally sandy, with some rock fragments to 3 cm
8-40	25	greyish-brown clay mixed with volcanic ash, above frozen volcanic ash
8-60	20	black humus mixed with volcanic ash, above frozen volcanic ash
8-80	25	dark-brown humus mixed with volcanic ash, frozen
8-100	15	as above
8-120	25	brownish-grey clay mixed with volcanic ash
8-140	15	dark-brown humus, frozen
8-160	40	greyish-brown sandy clay mixed with minor volcanic ash
8-180	30	dark-brown clayish humus, frozen
8-200	35	brown mud with minor volcanic ash and many greenish rock fragments (fine-grained gabbro) to 15 cm
8-220	45	dark-brown muddy humus with many rock fragments (fine-grained gabbro) to 10 cm and volcanic ash
8-240	35	dark-brown sand and rock fragments (fine-grained gabbro) to 10 cm with minor clay
8-260	50	brown sandy clayish humus with rock fragments to 2 cm, above volcanic ash layer
8-280	20	black humus, above volcanic ash

APPENDIX 4: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
8-300	20	as above
8-320	25	brown sandy clay with rock fragments to 5 cm
8-340	80	brown sandy clay with rock fragments to 3 cm and minor black clayish humus, above volcanic ash
8-360	25	greenish-brown sandy clay with rock fragments to 3 cm and volcanic ash pockets
8-380	20	dark-brown humus with few volcanic ash pockets
8-400	15	dark-brown humus, above permafrost
8-420	30	dark-brown clayish humus
8-440	50	greenish-grey clay with many green rock fragments to 3 cm, partially frozen
8-460	25	greyish-brown sandy clay with few rock fragments to 1 cm, frozen
8-480	35	greyish sandy clay with rounded and angular rock fragments to 15-20 cm and minor volcanic ash
8-500	40	greyish clay with many angular rock fragments to 3 cm
8-520	10	black humus
8-540	25	brown humus, wet, above permafrost
8-560	30	dark-brown humus, above volcanic ash
8-580	20	dark-brown humus with few volcanic ash pockets, above permafrost
8-600	25	greyish sandy muddy clay with many rock fragments to 2 cm and minor volcanic ash
8-620	30	rusted-orange-brown muddy sandy clay with many rusty rock fragments to 8 cm
8-640	70	brown muddy clay with many rock fragments to 25 cm and black humus, above permafrost
8-660	10	black humus, above frozen volcanic ash
8-680	30	dark-brown humus, above permafrost
8-700	25	dark-brown clayish humus, above permafrost
8-720	20	greyish-brown clay with rusty streaks, small rock fragments and minor mixed volcanic ash
8-740	25	dark-brown humus with volcanic ash pockets, above volcanic ash layer
8-760	30	brown sandy muddy clay
8-780	20	greyish sandy clay with green rock fragments to 15 cm
8-800	15	light-greyish-brown sandy clay with rock fragments to 10 cm
8-820	30	greenish-grey sandy clay
8-840	30	light-brown sandy clay with roots
8-860	5	black humus
8-880	25	greenish-grey sandy clay
8-900	20	black humus
8-920	40	greenish-grey clay
8-940	40	as above
8-960	15	rusty-brown humus, above volcanic ash layer

APPENDIX 4: CONTINUED

Sample Number	Sample Depth (cm)	Remarks
8-980	25	black humus
8-1000	5	dark-brown humus
T-1-0	30	medium-brown clay and rock fragments
T-1-15	30	medium-brown clay and rock fragments
T-1-30	30	clay, darker-brown than previous and with fewer rock fragments
T-1-45	40	as above
T-1-60	40	as above, damp
T-1-75	40	as above, damp
T-1-90	40	as above, damp
T-1-105	50	dark-brown clay, very few rock fragments, ash layer at 20 cm
T-1-120	40	dark-brown to black clay

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLES DESCRIPTIONS

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2600 800	150 ⁰ 10 ⁰	0.70	greyish clay, dry, with many green rock fragments	open, underbrush shrubs, grass, moss
2600 810	140 ⁰ 7 ⁰	0.30	medium-brown clay, with rusty-brown rock fragments frozen in last 3 cm, no sample in 2nd run	as above
2600 820	135 ⁰ 8 ⁰	0.40	greenish-grey muddy clay, frozen with light-green rock fragments to 1 cm	as above
2600 830	120 ⁰ 5 ⁰	0.55	greyish-brown to dark-brown muddy clay, frozen	as above
		0.25	volcanic ash (discarded)	
		0.40	dark-brown muddy clay, frozen with green rock fragments to 1 cm	
2600 840	130 ⁰ 5 ⁰	0.50	dark-greyish-brown muddy clay, frozen	as above
		0.20	volcanic ash (discarded), then green rock fragments to 2 cm	
		0.40	grey sandy permafrost with many rock fragments to 1 cm	
2600 850	140 ⁰ 6 ⁰	0.15	dark-brown muddy clay, frozen, with few greenish rock fragments	as above
		0.30	very dark brown muddy clay, frozen, then medium-brown muddy clay, with rusty rock fragments locally	
2600 860	135 ⁰ 6 ⁰	0.70	light-brown clay with greenish gabbro rock fragments	as above, fine-grained gabbro at surface
2600 870	65 ⁰ 4 ⁰	0.15	dark-brown muddy clay, frozen, with gabbro rock fragments, then volcanic ash (discarded)	as above
		0.25	volcanic ash mixed with dark-brown muddy clay, frozen	
2600 880	90 ⁰ 4 ⁰	0.65	dark-brown clay, frozen, then permafrost with brown tree remnants	as above
		0.80	volcanic ash (discarded), then 4-5 cm of dark-brown muddy clay, frozen	
2600 890	135 ⁰ 6 ⁰	0.55	volcanic ash (discarded), then dark-brown muddy clay, frozen, with tree remnants and minor light-green rock fragments	open, underbrush, shrubs, moss
		0.65	volcanic ash (discarded), then grey muddy clay, frozen with few green rock fragments	

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2600 900	120 ⁰ 7 ⁰	0.45	dark-brown muddy clay, frozen, with green rock fragments	open, underbrush, shrubs, grass, moss
		0.60	dark-brown muddy clay, frozen, with tree remnants and few green rock fragments	
2600 910	105 ⁰ 7 ⁰	0.30	dark-brown muddy clay, frozen, minor volcanic ash on top, with tree remnants and rock fragments to 1½ cm	open, underbrush, shrubs, grass, moss, rock near surface
		0.40	dark-brown to greenish-grey muddy clay, frozen, with tree remnants and many rock fragments to 1-2 mm	
2600 920	120 ⁰ 8 ⁰	0.65	dark-brown muddy clay, frozen, with tree remnants	open, underbrush, shrubs, grass, moss
		0.80	dark-brown muddy clay, partly frozen, with medium- and dark-green rock fragments to 1½ cm	
2600 930	130 ⁰ 9 ⁰	0.55	orange-brown to reddish-brown clay, with rock fragments to 1½ cm	as above
		0.80	greyish-green clay, with red, green, and rusted rock fragments to 1½ cm	
2600 940	115 ⁰ 8 ⁰	0.70	creamy-white clay, then dark-brown muddy clay, frozen	open, group of spruce, underbrush, shrubs, grass, moss
		0.80	minor volcanic ash (discarded), then dark-brown muddy clay, frozen, then greyish-brown muddy clay, frozen, with greenish and reddish staining, with dark-green rock fragments to ½ cm	
2600 950	125 ⁰ 9 ⁰	0.65	dark-brown clay, then greenish rock powder and fragments, then dark-brown clay, with rock fragments, no permafrost	open, underbrush, shrubs, grass, moss
		0.75	dark-brown clay, with green rock fragments to 1 cm, last 5-10 cm frozen	
2600 960	135 ⁰ 10 ⁰	0.65	minor volcanic ash (discarded), then dark-brown muddy clay, with rock fragments, then permafrost with grey clay	as above
		0.80	dark-brown muddy clay, frozen, with tree remnants and light-green rock fragments to 1-2 mm	

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord.	Slope Azimuth Inclination	m Depth	Sample Description	Terrain
2600 970	130 ⁰ 9 ⁰	0.60 0.75	volcanic ash (discarded) dark-brown muddy clay, frozen, with minor rock fragments and some volcanic ash	as above
2600 980	120 ⁰ 7 ⁰	0.45 0.55	greenish-grey muddy clay, frozen, with green rock fragments to 1 cm greyish-brown muddy clay, frozen, with green rock fragments to 1 cm	as above
2600 990	125 ⁰ 9 ⁰	0.70 0.85	dark-brown to greyish to reddish muddy clay, frozen, with black and rusted rock fragments and sand, minor volcanic ash dark greyish-brown muddy clay, frozen, with greenish rock fragments to 1½ cm	as above
2600 1000	115 ⁰ 11 ⁰	0.35 0.55	greenish-grey clay, frozen, with black rock fragments to 1 cm greenish-grey to dark-brown muddy clay, frozen, with tree remnants and light-green rock fragments to 1 cm	as above
2600 1010	90 ⁰ 12 ⁰	0.70 0.75	greenish-grey clay, frozen, with many medium-green rock fragments to ½ cm no sample	as above
2600 1020	115 ⁰ 13 ⁰	0.40 0.60	dark-brown muddy clay, frozen, with tree remnants greyish-green sandy muddy clay, frozen, with reddish, rusty-brown and green rock fragments to 1 cm	as above
2600 1030	120 ⁰ 13 ⁰	0.35 0.50	dark-brown to greyish-brown muddy clay, frozen, with dark-green and greenish-brown rock fragments to 1 cm greenish-grey muddy clay, frozen, with black and dark-green rock fragments to 1 cm	as above
2600 1040	125 ⁰ 12 ⁰	0.90 1.00	greyish-brown muddy clay, frozen, with minor volcanic ash, tree remnants, and some green rock fragments to 1 cm permafrost with greyish clay and few rock fragments to ½ cm	as above

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2600 1050	115 ⁰ 13 ⁰	0.30	very dark brown muddy clay, frozen, with minor volcanic ash, then brown muddy clay, frozen, with green and orange-brown rock fragments to ½ cm	as above
		0.40	greyish-green muddy clay, frozen, with many creamy-green, dark-green, and black rock fragments to 1½ cm	
2600 1060	110 ⁰ 14 ⁰	0.35	dark-brown to greenish-grey muddy clay, frozen, with light-green and orange-brown rock fragments to ½ cm	as above
		0.55	dark-brown muddy clay, frozen, with dark- and light-green, and reddish rock fragments to ½ cm	
2600 1070	130 ⁰ 15 ⁰	0.45	dark-brown muddy clay, frozen, with greenish-black, black and rusted rock fragments	as above
		0.50	dark-brown sandy muddy clay, frozen, with greenish and black rock fragments to 1 cm	
2600 1080	130 ⁰ 12 ⁰	0.30	dark-greyish brown muddy clay, frozen, with greenish, rusted, and black rock fragments to ½ cm	as above
		0.40	dark-brown sandy muddy clay, with some rock fragments	
2600 1090	85 ⁰ 15 ⁰	0.60	dark-brown sandy muddy clay, frozen, with light- to medium-green rock fragments	as above
		0.70	dark-brown sandy muddy clay, moderately frozen, with greenish rock fragments to ½ cm	
2600 1100	130 ⁰ 17 ⁰	0.45	dark-brown muddy clay, frozen, with dark-, light-, and yellowish-green rock fragments to 1 cm	as above
		0.55	dark-brown to greyish sandy clay, partially frozen, with	
2800 850	130 ⁰ 7 ⁰	0.65	dark-brown clay, dry, with greenish (malachite color) rock fragments to ½ cm	open, underbrush, shrubs, grass
		0.75	dark-brown muddy clay, frozen	

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLES DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2800 860	140 ⁰ 8 ⁰	0.60 0.75	dark-brown muddy clay, frozen, with greenish rock fragments dark-brown muddy clay, frozen, with reddish and greenish rock fragments to ½ cm	open, shrubs, grass, moss
2800 870	105 ⁰ 4 ⁰	0.30 0.45	dark-brown muddy clay, with green rock fragments volcanic ash (discarded), then dark-brown muddy clay, frozen, with greenish rock fragments	as above
2800 880	150 ⁰ 4 ⁰	0.20 0.25	greenish-grey clay, frozen, with greenish rock fragments mud and volcanic ash (discarded), then dark greenish- grey muddy clay, frozen	as above
2800 890	140 ⁰ 6 ⁰	0.35 0.50	permafrost (ice), with minor greyish muddy clay volcanic ash (discarded), then permafrost (ice) with minor grey clayish material	as above
2800 900	- -	0.20 0.45	brown clay, with orange-brown rock fragments to 1 cm dark-brown muddy clay, frozen	as above
2800 910	125 ⁰ 5 ⁰	0.50 0.30	dark-brown muddy clay, frozen, with green rock fragments downhole greyish-brown muddy clay, frozen, with rock fragments (different hole)	open, few bushes, shrubs, grass, moss
2800 920	105 ⁰ 5 ⁰	0.55 0.60	humus, then volcanic ash (discarded), then greyish clay with some volcanic ash, then greyish-brown clay, with many black rock fragments to 1 cm volcanic ash (discarded), then black rock fragments	open, shrubs, grass, moss, fine-grained gabbro boulders at surface
2800 930	95 ⁰ 4 ⁰	0.50 0.55	greenish-brown to greyish clay, frozen, with rusted and greenish rock fragments to 1 cm, last 4 cm of pure ice with minor grey clay grey muddy clay, frozen, with few rock fragments	as above

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2800 940	65 ⁰ 4 ⁰	0.10 0.45	black humus, then greyish-brown muddy clay, frozen grey clay, frozen, with few greenish rock fragments	open, shrubs, grass, moss
2800 950	95 ⁰ 4 ⁰	0.60 0.75	grey clay, frozen, with lots of ice grey to greenish-grey sandy clay, frozen, with black rock fragments of ½ cm, fair amount of ice	open, little under- brush, shrubs, grass, moss
2800 960	45 ⁰ 4 ⁰	0.45 0.65	greenish sandy clay with minor volcanic ash, then brown clay with greenish sand or rock fragments, then greenish- brown sandy clay, with greenish-black fine-grained gabbro rock fragments to 1 cm sand and rock fragments to 1 cm, then permafrost with minor greyish clay	open, shrubs, grass, moss, boulders close to surface
2800 970	70 ⁰ 3 ⁰	0.45 0.65	dark-brown muddy clay, frozen dark-brown muddy clay, frozen	open, shrubs, grass, moss
2800 980	70 ⁰ 3 ⁰	0.35 0.50	dark-brown muddy clay, frozen volcanic ash (discarded), then dark-brown muddy clay, frozen	as above
2800 990	65 ⁰ 3 ⁰	0.40 0.60	dark-brown muddy clay, frozen, then minor volcanic ash, then greenish sand and rock fragments to 1 cm with some greyish clay, then permafrost with minor grey clay permafrost with minor greenish-grey clay, with brown wood remnants locally	open, few shrubs, grass, moss, pools of water
2800 1000	75 ⁰ 3 ⁰	0.40 0.55	dark-brown muddy clay, frozen minor volcanic ash, then dark-brown muddy clay, frozen	open, grass tufts, moss, pools of water
2800 1010	80 ⁰ 3 ⁰	0.65 0.75	dark-brown muddy clay, frozen, lots of ice dark-brown muddy clay, frozen, minor ash	as above
2800 1020	100 ⁰ 4 ⁰	0.30 0.45	dark-brown muddy clay, frozen, with tree remnants dark-brown muddy clay, frozen, with tree remnants	open, grass tufts, moss

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2800 1030	105 ⁰ 4 ⁰	0.45 0.50	dark-brown muddy clay, frozen dark-brown muddy clay, frozen, with tree remnants	open, shrubs, grass, moss
2800 1040	110 ⁰ 4 ⁰	0.30 0.45	dark-brown muddy clay, frozen, with tree remnants dark-brown muddy clay, frozen, minor tree remnants	open, shrubs, grass, moss
2800 1050	120 ⁰ 4 ⁰	0.40 0.55	dark-greyish-brown muddy clay, frozen, somewhat sandy dark-brown muddy clay, frozen, last 4 cm with tree remnants and ice	as above
2800 1060	120 ⁰ 4 ⁰	0.50 0.60	dark-brown to greyish-brown muddy clay, frozen with few greenish and black rock fragments to ½ cm greyish-brown sandy muddy clay, frozen, with few small rock fragments	as above
2800 1070	135 ⁰ 5 ⁰	0.40 0.50	greyish-brown muddy clay, frozen, with greenish rock fragments to 2-3 mm volcanic ash (discarded), then dark-brown muddy clay, frozen, with tree remnants	as above
2800 1080	150 ⁰ 6 ⁰	0.30 0.50	brownish-black to dark-brown muddy clay, frozen, with minor tree remnants brownish-black muddy clay, frozen, with few green and black rock fragments to 1 cm	as above
2800 1090	140 ⁰ 5 ⁰	0.40 0.55	greenish-grey sandy muddy clay, frozen, with few green rock fragments to 1 cm greenish-black to dark-brown muddy clay, frozen, with some rock fragments	as above
2800 1100	155 ⁰ 7 ⁰	0.40 0.50	brown sandy muddy clay, frozen, with many green and black rock fragments to 2-3 mm, then permafrost with greyish clay no sample	open, shrubs, grass, moss, fine-grained gabbro boulder at surface

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
2800 1110	90 ⁰ 2 ⁰	0.25	dark-brown muddy clay, frozen, with orange-brown tree remnants	open, shrubs, grass, moss
		0.35	brownish-black sandy muddy clay, frozen, with some rock fragments	
2800 1120	115 ⁰ 4 ⁰	0.55	dark-brown muddy clay, frozen	as above
		0.65	dark-brown muddy clay, frozen, then greenish-grey sandy muddy clay, with rock fragments to 1 cm	
2800 1130	135 ⁰ 5 ⁰	0.45	greyish-green sandy clay, with green rock fragments, then permafrost with clay, second sample of mud (discarded) and few rock fragments and powder	as above
2800 1140	80 ⁰ 6 ⁰	0.15	brown to greyish-brown to greenish-brown sandy muddy clay with volcanic ash on top (discarded), frozen near bottom only, on bedrock or boulder	open, shrubs, grass, moss, bedrock close to surface
		0.20	black humus (discarded), then dark-greyish-brown muddy clay, frozen, then permafrost with greyish clay (different hole)	
2800 1150	65 ⁰ 7 ⁰	0.90	dark-brown muddy clay, frozen, then greyish-green clay, with sand and green rock fragments to 1½ cm	open, shrubs, grass, moss, little mounds
		1.00	greenish-grey muddy clay, frozen, with many rock fragments to 1 cm	
3000 850	160 ⁰ 8 ⁰	0.65	greenish-brown clay, dry, with light-green rock fragments	open, underbrush, shrubs, grass
		0.75	greenish-brown clay, dry, with light-green rock fragments to 1 cm	
3000 860	105 ⁰ 5 ⁰	0.65	greenish-grey to brownish muddy clay, with many black to greenish-black rock fragments to ½ cm	open, shrubs, grass, moss
		0.70	dark-brown muddy clay with rock fragments	

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3000 870	110 ⁰ 15 ⁰	1.05	black rock fragments to ½ cm, with minor greenish-grey clay, dry, no permafrost	open, shrubs, grass, moss, pool of water
3000 880	120 ⁰ 6 ⁰	0.15	brown humus, then volcanic ash layer (discarded), then dry brown clay, then last cm of light-grey rock powder and fragments, second sample with humus and clay (volcanic ash discarded)	open, underbrush, shrubs, moss
3000 890	95 ⁰ 6 ⁰	0.90	bluish to greenish-grey to black rock powder and fragments with some clay, dry, no permafrost	open, abundant underbrush and shrubs, grass, moss
3000 900	105 ⁰ 8 ⁰	0.80	bluish-grey rock powder and fragments, dry, no permafrost	open, shrubs, grass, moss
3000 910	120 ⁰ 10 ⁰	1.10	brown clay with many rock fragments then 3-4 cm of bluish-grey rock powder and fragments	open, shrubs, grass, moss, fine-grained gabbro at surface
3000 920	120 ⁰ 10 ⁰	0.45	greenish-black clay, with some rock fragments, greenish-grey and frozen near bottom	open, few spruce, shrubs, grass, moss
		0.50	greenish-brown sandy clay, frozen, with many rock fragments	
3000 930	135 ⁰ 7 ⁰	0.50	dark-brown muddy clay, frozen	open, shrubs, grass, moss
		0.60	dark-brown muddy clay, frozen	
3000 940	135 ⁰ 5 ⁰	0.15	dark-brown humus mixed with volcanic ash, then orange-brown clayish humus with rock fragments (on bedrock or boulder)	open, grass, moss, bedrock or boulder close to surface
3000 950	145 ⁰ 5 ⁰	0.25	orange-brown sandy muddy clay, last 3-4 cm of rock fragments	open, shrubs, grass, moss, fine-grained gabbro at surface
3000 960	- 0 ⁰	0.35	dark-brown muddy clay, frozen	open, shrubs, grass, moss

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3000 970	- 0°	0.60	dark-brown muddy clay, locally greenish-grey, frozen with few rock fragments to 1 cm	as above
		0.70	dark-brown muddy clay, frozen	
3000 980	10° 2°	0.45	dark-brown muddy clay, with green and white rock fragments locally	open, grass, moss, pools of water nearby
		0.55	dark-brown muddy clay, frozen	
3000 990	15° 3°	0.40	dark-brown muddy clay, frozen, lots of ice	open, shrubs, grass, moss, water near surface
		0.50	volcanic ash (discarded), then brown muddy clay, frozen, lots of ice	
3000 1000	35° 3°	0.40	dark-brown muddy clay, frozen, minor or no rock fragments	open, shrubs, grass, moss
		0.60	volcanic ash (discarded), then dark-brown muddy clay, frozen	
3000 1010	50° 3°	0.65	greenish-brown muddy clay, frozen, with greenish rock fragments to 1-2 mm, and with tree remnants locally	as above
		0.80	dark-brown mud, fairly wet, with green rock fragments (volcanic ?) to 1 cm	
3000 1020	65° 5°	0.30	dark-brown muddy clay, frozen	as above
		0.40	no sample	
3000 1030	80° 4°	0.35	creamy-white to greenish-brown clay, frozen, with rock fragments	as above
		0.60	greenish-white rock fragments and clay, frozen, then brown clay, with few rock fragments	
3000 1040	85° 6°	0.40	dark-brown muddy clay, frozen, few rock fragments	as above
		0.45	dark-brown muddy clay, frozen, with few green and black rock fragments to ½ cm	
3000 1050	105° 6°	0.45	dark-brown muddy clay, frozen, with greenish rock fragments	open, underbrush, shrubs, grass, moss
		0.50	greenish to brownish-grey muddy clay, frozen, with few black rock fragments	

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APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3000 1060	105 ⁰ 7 ⁰	0.45	greenish to brownish-grey sandy clay, frozen, with many rock fragments to ½ cm	open, shrubs, grass, moss
		0.50	greenish-grey clay, frozen, with rock fragments	
3000 1070	85 ⁰ 8 ⁰	0.40	greyish-brown muddy clay, frozen, with few green rock fragments	open, underbrush, shrubs, moss
		0.65	dark-brown muddy clay, frozen, minor or no rock fragments	
3000 1080	105 ⁰ 9 ⁰	0.50	dark-brown muddy clay, frozen	as above
		0.70	dark-brown muddy clay, frozen, mixed with minor volcanic ash	
3000 1090	120 ⁰ 20 ⁰	1.05	brown clay, dry, with many greenish-black rock fragments to 1 cm	as above
		1.10	orange-brown and greenish-black sandy clay and rock fragments, moderately dry, close to bedrock (?)	
3000 1100	104 ⁰ 18 ⁰	0.15	dark-brown humus, then brown muddy clay with rock fragments, then greyish-green clay and rock powder and fragments, close to bedrock	open, some spruce, underbrush, shrubs
3000 1110	120 ⁰ 12 ⁰	0.20	volcanic ash (discarded), then black clay, grading downhole to brown and greenish grey or locally yellowish, with many rock fragments of various colors, with black rock fragments at bottom, close to bedrock	open, underbrush, shrubs, rock boulders or bedrock close to surface
3000 1120	65 ⁰ 7 ⁰	0.65	greyish-brown muddy clay, frozen, with few small rock fragments	open, underbrush, shrubs
		0.70	greyish-brown muddy clay and yellowish sandy clay locally, frozen, with abundant black, white and greenish rock fragments	
3000 1130	43 ⁰ 10 ⁰	0.60	dark-brown to grey clay, frozen, minor volcanic ash, with black rock fragments to 1½ cm and some green	open, underbrush, shrubs, moss
		0.65	volcanic ash layer (discarded), then dark-brown sandy muddy clay, frozen, with many black rock fragments	

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3000 1140	55 ⁰ 15 ⁰	0.15	dark-brown to greenish-brown muddy clay, frozen, with few black rock fragments	open, shrubs, moss
		0.20	brown mud, moderately wet, greenish-grey rock powder at bottom	
3000 1150	20 ⁰ 15 ⁰	0.40	dark-brown muddy clay, frozen, with many green rock fragments to 1 cm in top horizon	as above
		0.50	dark-brown muddy clay, frozen, with green and white rock fragments to 1 cm	
3200 800	145 ⁰ 8 ⁰	0.65	brown sandy clay, dry, with rounded, greenish, reddish and black rock fragments to 1 cm, and one layer of volcanic ash	open, underbrush, bedrock or rock boulders close to surface
		0.70	greyish sandy clay, dry, with rounded and angular rock fragments, minor volcanic ash and humus mixed with sample	
3200 810	125 ⁰ 6 ⁰	0.30	dark-brown humus, then 1-2 cm of volcanic ash with brown muddy clay, then light-greenish-grey sandy clay, with numerous light-grey angular rock fragments, dryer downhole	open, underbrush, moss
		0.45	greenish-grey sandy clay, then dark-brown clay with greenish rock fragments, dry	
3200 820	160 ⁰ 6 ⁰	0.65	dark-brown humus with few roots, frozen, last cm of orange-greenish rock fragments and sand mixed with some clay; second sample with no ice	open, underbrush, shrubs, moss
3200 830	100 ⁰ 7 ⁰	0.45	dark-brown humus, frozen, minor roots	as above
		0.55	dark-brown clay, frozen, with rusted rock fragments	
3200 840	110 ⁰ 8 ⁰	0.60	dark-brown clay, frozen, with greenish and rusted rock fragments	as above
		0.75	dark-brown sandy clay, frozen	

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3200 850	140 ⁰ 8 ⁰	0.60	brown sandy muddy clay with many angular rock fragments, greyer downhole with grey rock fragments at bottom	as above
		0.65	mud with grey rock fragments to 1½ cm	
3200 860	135 ⁰ 20 ⁰	0.30	dark-brown humus, then volcanic ash layer, then abundant grey angular rock fragments to 2 cm, dry	as above
		0.40	brown mud, then grey rock fragments	
3200 870	115 ⁰ 10 ⁰	0.70	brown sandy clay, moderately dry, with many angular rock fragments, greyer downhole	as above
		0.80	brown mud, then greenish-grey clay, dry, with many rock fragments throughout	
3200 880	135 ⁰ 8 ⁰	0.15	brown humus?, last cm of grey clayish material, dry	open, underbrush, visible rock, shrubs
		0.25	brown muddy clay? with ash, rock fragments, last cm grey	
3200 890	130 ⁰ 5 ⁰	0.40	brown sandy clay?, moderately wet, with very small rock fragments	open, underbrush, shrubs
		0.45	brown clay? with volcanic ash and rock fragments, last 4 cm grey	
3200 900	35 ⁰ 5 ⁰	0.35	light-brown to grey muddy clay?, frozen, with volcanic ash	as above
		0.40	grey muddy clay?, frozen, with rock fragments	
3200 910	15 ⁰ 5 ⁰	0.55	brown muddy clay?, frozen, with volcanic ash	as above
		0.60	light-brown muddy clay?, frozen, with rock fragments	
3200 920	30 ⁰ 2 ⁰	0.30	grey muddy clay?, frozen, with volcanic ash, then brown muddy clay?	as above
		0.35	grey muddy clay?, frozen, with rock fragments, brown downhole	

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination		Sample Description	Terrain
3200 930	35 ⁰	0.30	brown muddy clay?, frozen, with rock fragments and volcanic ash, greyish downhole	open, underbrush, shrubs, visible rock
	5 ⁰	0.50	brown clay, wet, with rock fragments and volcanic ash	
3200 940	40 ⁰	0.30	light brown clay, with volcanic ash layer	open, underbrush, shrubs
	5 ⁰	0.35	brown clay, with volcanic ash, last 2 cm grey	
3200 950	45 ⁰	0.10	brown clay, wet, with volcanic ash, last 2 cm greyish-white	as above
	3 ⁰	0.15	brown muddy clay, wet, loosely compacted, last 2 cm greyish-white	
3200 960	40 ⁰	0.15	brown clay, loosely compacted, with volcanic ash layer, bottom greyish-white and more compacted	as above
	1 ⁰	0.20	brown clay, with volcanic ash and rock fragments, last 1 cm grey	
3200 970	35 ⁰	0.15	brown humus? with ash, then greyish brown clay with small rock fragments	as above
	2 ⁰	0.20	dark-brown humus? with ash, loosely compacted, wet, then dark-grey clay with small rock fragments	
3200 980	35 ⁰	0.20	brown humus? with volcanic ash, loosely compacted, then light-brown clay	open, few trees, underbrush, shrubs, pools of water
	5 ⁰	0.25	greyish-brown clay, wet, with volcanic ash and small rock fragments	
3200 990	10 ⁰	0.20	brown clay, wet, with volcanic ash and fairly large rock fragments	open, underbrush, shrubs, pools of water
	7 ⁰	0.25	brown clay, moderately wet, with volcanic ash and rock fragments	
3200 1000	10 ⁰	0.25	brown clay, wet, with volcanic ash	open, small trees, underbrush, shrubs, pools of water
	9 ⁰	0.30	brown clay, wet, loosely compacted, with volcanic ash and rock fragments	

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3200 1010	25 ⁰ 8 ⁰	0.30 0.35	brown clay, wet, loosely compacted, with volcanic ash brown clay?, loosely compacted, with volcanic ash	open, underbrush, few shrubs, pools of water
3200 1020	5 ⁰ 9 ⁰	0.10 0.10	brown clay?, wet, loosely compacted, with volcanic ash layer and rock fragments brown clay, compacted, with volcanic ash and rock fragments (different hole)	open, underbrush, shrubs
3200 1030	35 ⁰ 7 ⁰	0.25 0.40	dark-brown humus, dry, with few rock fragments dark-brown humus, dry	open, shrubs, grass, moss, pools of water
3200 1040	70 ⁰ 7 ⁰	0.55 0.65	dark-brown mud, frozen same	as above
3200 1050	75 ⁰ 7 ⁰	0.30 0.45	light-grey clay, frozen, with rock fragments to 1-2 mm light-grey to greenish-grey clay, frozen, with few small greenish rock fragments and wood remnants	open, shrubs, grass, moss
3200 1060	50 ⁰ 7 ⁰	0.25 0.40	dark-brown mud, frozen, with few rock fragments to 1-2 mm greenish-grey clay, frozen, with few greenish rock fragments to 3-4 mm	as above
3200 1070	80 ⁰ 10 ⁰	0.30 0.40	grey to brown mud, frozen, with few small rock fragments dark-brown to greenish-brown mud, frozen, with rock fragments locally	open, shrubs, moss
3200 1080	85 ⁰ 10 ⁰	0.35 0.50	greenish to dark-brown clay, with green, pink, and black rock fragments, frozen downhole dark-brown to greenish muddy clay, partially frozen, with some black and greenish rock fragments	open, shrubs, grass, moss
3200 1090	315 ⁰ 8 ⁰	0.55 0.65	grey sandy clay, frozen, with many grey and some red rock fragments greenish grey muddy clay, with many greenish black rock fragments to 1 cm	open, few spruce, shrubs, grass, boulders or bedrock close to surface

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3200 1100	65 ⁰ 15 ⁰	0.40	greenish-grey sandy clay, frozen, with many pinkish and greenish rock fragments	open, medium size shrubs and spruce,
		0.50	greenish-grey to dark-brown sandy clay, frozen, with many green or pink rock fragments	moss, grass, boulders or bedrock (gabbro) close to surface
3400 900	73 ⁰ 33 ⁰	1.00	grey clay, moderately dry, with some rock fragments	moderately open,
		1.05	light-grey muddy clay, moderately dry	spruce, few boulders, moss, creep area
3400 910	75 ⁰ 31 ⁰	1.00	brown sandy clay, moderately dry, with some rock fragments, greyer downhole with more rock fragments	spruce, underbrush, many rock boulders,
		1.05	brown sandy clay, moderately wet, with rock fragments near bottom	under moss cover, creep area
3400 920	95 ⁰ 25 ⁰	0.50	brown muddy clay, moderately wet, with fragments of fine-grained gabbro? near bottom	open, little underbrush
		0.65	brown sandy clay, moderately wet, with many rock fragments	moss, near-surface boulders
3400 930	75 ⁰ 24 ⁰	0.60	greyish-brown clay, moderately wet, with many small rock fragments	open, few spruce, moss and grass
		0.85	brown sandy mud, fairly wet, with rock fragments	
3400 940	75 ⁰ 20 ⁰	0.50	brown sandy clay, fairly dry, greyer downhole, grey rock fragments at bottom, second sample of wet mud	open, underbrush, moss
3400 950	75 ⁰ 20 ⁰	0.55	brown sandy clay, moderately wet, rock fragments at bottom	open, underbrush, grass, moss
		0.70	brown sandy mud, moderately wet, with rock fragments	
3400 960	85 ⁰ 23 ⁰	1.00	brown sandy clay, moderately wet, few rock fragments	open, few spruce,
		1.05	brown mud, wet, with orange-brown rock fragments at bottom	small brushes

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3400 970	70 ⁰ 29 ⁰	0.75 0.85	dark-brown sandy clay, frozen, with rock fragments dark-brown wet mud	open, few small brushes
3400 980	78 ⁰ 28 ⁰	0.55	greyish-brown muddy clay, wet, with many rock fragments from 2-4 mm	open, few spruce, small brushes, grass, moss, rock boulders close to surface
3400 990	64 ⁰ 28 ⁰	0.75 0.90	dark-greyish-brown clay with rock fragments grey clay, frozen, with rock fragments	open, small bushes grass, moss, rock boulders under surface, across shallow 10 m wide draw from 1000N
3400 1000	60 ⁰ 24 ⁰	0.40 0.65	dark-brown sandy mud, moderately dry, with grey rock fragments in last 3 cm dark-brown sandy mud, wet (different hole)	open, underbrush, moss rock, close to surface, creep area
3400 1010	70 ⁰ 24 ⁰	0.60 0.95	dark-brown, sandy, frozen dark-brown, very sandy locally, frozen	open, underbrush, shrubs, moss, creep area
3400 1020	90 ⁰ 24 ⁰	0.45 0.90	dark-brown, moderately sandy, frozen dark-brown, sandy, frozen, with small rock fragments	open, underbrush, lots of small shrubs, moss, creep area
3400 1030	84 ⁰ 22 ⁰	1.10 1.20	dark-brown sandy clay, moderately wet, with abundant greenish rock fragments dark-brown sandy clay, moderately wet, with abundant greenish and black rock fragments	open, underbrush, shrubs, creep area
3400 1040	83 ⁰ 23 ⁰	1.00 1.10	grey sandy clay, moderately wet, with abundant rock fragments greyish-brown muddy clay, wet, with few sand and rock fragments	open, underbrush, shrubs, moss, few rock boulders, creep area
3400 1050	95 ⁰ 20 ⁰	0.65 1.00	brown mud, very wet, some rock fragments brown mud, frozen, with rock fragments	open, few trees, under- brush, shrubs, moss creep area

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APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3400 1060	90 ⁰ 22 ⁰	0.50 0.55	brown to grey clay, frozen, with rock fragments brown clay, frozen	open, underbrush, shrubs, moss, rock below surface? creep area
3400 1070	90 ⁰ 22 ⁰	1.00	dark-brown clay, moderately dry, only one sample	open, underbrush, shrubs, rock near surface?, creep area
3400 1080	90 ⁰ 22 ⁰	0.20 0.60	dark-brown sandy muddy clay, wet, more greyish downhole, to rock boulder or bedrock white volcanic ash in brownish clay, then dark-brown clay with greenish-grey rock fragments (different hole)	open, underbrush, shrubs rock boulders or bedrock close to surface, creep area
3400 1090	100 ⁰ 22 ⁰	0.95 1.00	dark-brown clay, moderately dry, more sandy, lighter and with greenish rock fragments downhole dark-brown clay, frozen, with greenish rock fragments	open, underbrush, shrubs, moss, rock boulders or bedrock close to surface? creep area
3400 1100	100 ⁰ 22 ⁰	0.85 0.95	dark-brown clay, moderately dry, with minor volcanic ash and some rusted rock fragments dark-brown clay, dry, with greenish and rusted rock fragments, and 3 cm thick layer of volcanic ash	open, underbrush, grass, moss, rock boulders close to surface, creep area
3600 900	125 ⁰ 25 ⁰	1.25 1.45	light-grey clay with few rock fragments, slightly wet brown sandy clay, wet , light grey in last cm	surface creep area, open, mossy, few bushes and trees
3600 910	110 ⁰ 22 ⁰	1.05	dark-brown compact clay with ice and rock fragments wet	as previous, few springs and puddles, large blocks of rock
3600 920	103 ⁰ 24 ⁰	1.65 1.70	dark-brown moderately wet clay with few greenish rock fragments, greyer downhole as previous with light-grey clay in last 2 cm	as previous, few springs, large blocks of rock

APPENDIX 5: 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3600 930	90 ⁰ 28 ⁰	0.90 1.40	brown dry clay with very few rock fragments grey to greenish grey compact sandy clay mixed with few light-grey rock fragments	as previous, few springs, few large blocks of rock
3600 940	80 ⁰ 20 ⁰	1.00 1.05	dark-grey wet sandy clay with few rock fragments grey sandy clay and brown mud	as pervious, no springs
3600 950	70 ⁰ 22 ⁰	1.30 1.65	dark-brown compact dry sandy clay with light-grey compact dry clay in last 4 cm, hard to penetrate greyish-brown compact dry sandy clay, hard to penetrate, easy to extract from tube	as previous, no springs
3600 960	80 ⁰ 22 ⁰	0.90	grey wet clay with minor rock fragments, hard to penetrate	as previous, no springs
3600 970	90 ⁰ 17 ⁰	0.80 1.00	greenish-grey wet clay with rock fragments grey wet sandy clay with minor rock fragments	as previous, springs and puddles
3600 980	90 ⁰ 22 ⁰	0.75	dark-brown wet clay with few rock fragments	as previous, no springs
3600 990	80 ⁰ 18 ⁰	1.35 1.55	grey wet sandy clay with minor brown rock fragments brownish grey sandy wet clay with few minor rock fragments	as previous, no springs
3600 1000	82 ⁰ 26 ⁰	1.2	greenish-grey clay, first sample barrel with rock fragments, second without	as previous, no springs
3600 1010	73 ⁰ 18 ⁰ /30 ⁰	0.95	greenish wet clay with grey rock fragments, second barrel with dry, light-grey clay or rock powder at bottom	underbrush, fairly open, creep area
3600 1020	65 ⁰ 43 ⁰	0.50	brownish-grey clay, wet, last cm grey and dry, second sample smaller of same	spruce, lots of roots, bedrock above hole

APPENDIX 5 : 1979 OVERBURDEN-DRILLING SAMPLE DESCRIPTIONS CONTINUED

Sample Coord. E N	Slope Azimuth Inclination	Depth m	Sample Description	Terrain
3600	80 ⁰	1.35	brown clay, dry, few rock fragments except near bottom	little underbrush
1030	30 ⁰	1.80	dark-brown clay, dry, few grey rock fragments near bottom	
3600	115 ⁰	1.30	greenish-grey and few rusted rock fragments up to 1 cm	shrubs, no underbrush,
1040	33 ⁰	2.00	but commonly 1 mm or less with about 25% silty material greenish-grey silty material with few greenish rock fragments up to 1 cm, dry	in draw about 6 m wide
3600	105 ⁰	3.00	rock fragments and sand size material in both samples, dry	in or beside former bouldry stream bed
1050	35 ⁰			
3600	100 ⁰	1.30	brown and grey clay	large rocks on slope, springs, and flowing water
1060	30 ⁰			
3600	108 ⁰	1.40	dark-brown clay	many springs and large boulders to 1 m here and there
1070	25 ⁰	1.70	few pebbles of greenish chloritic rock, well packed in holder	
3600	108 ⁰	1.60	brown clay, very wet	as previous
1080	25 ⁰			
3600	163 ⁰	1.00	dark-brown clay and granules of rock	large boulders
1090	25 ⁰	1.40	grey clay	
3600	157 ⁰	0.60	dark-brown clay and rock fragments, minor volcanic ash	trees and bushes
1100	24 ⁰			
3600	162 ⁰	0.60	medium-greyish-brown with gabbro? fragments	as previous
1110	22 ⁰	0.85	same as above	
3600	190 ⁰	0.70	brown clay distinct from grey clay, rock fragments	as previous
1120	18 ⁰			
3600	198 ⁰	1.70	medium-brown silt, dry, with rock fragments	light-brown soil with gopher holes, gabbro outcrop nearby
1130	35 ⁰			

APPENDIX 6: CERTIFICATES OF ANALYSIS FOR 1979
GEOCHEMICAL-SOIL SAMPLES AND OVER-
BURDEN DRILLING SAMPLES



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [REDACTED] 954-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49499
INVOICE NO. 31865
RECEIVED Aug. 9/79
ANALYSED Aug. 14/79

TO: Halferdahl & Assoc. Ltd.
Dept. 18
10509 - 81st Ave.
Edmonton, Alta. T6E 1X7

ATTN:

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
3600E 900N	192	26	84	0.1	250	7.0
910	330	68	80	0.1	400	5.5
920	230	52	86	0.1	275	8.0
930	196	24	82	0.1	300	9.0
940	200	14	82	0.1	285	6.0
950	86	48	58	0.1	165	4.0
960	136	76	92	0.1	285	6.5
970	92	10	78	0.1	180	6.0
980	88	12	96	0.1	195	9.0
990	92	16	98	0.1	116	10
1000	162	78	96	0.1	220	9.0
1010	146	58	92	0.1	390	10
1020	94	50	88	0.1	170	9.5
1030	116	22	90	0.1	210	9.0
1040	96	6	96	0.1	124	6.5
1050	110	150	102	0.1	200	8.0
1060	98	90	92	0.1	175	8.0
1070	176	154	100	0.1	355	11
1080	130	265	158	0.1	170	12
1090	104	26	94	0.1	155	9.0
1100	76	34	72	0.1	160	10
1110	144	58	102	0.1	625	7.0
1120	122	14	96	0.1	420	11
3600E 1130N	120	124	88	0.1	305	11
3400E 900N	285	44	76	0.1	710	23
910	158	12	92	0.1	360	16
920	132	8	86	0.1	285	7.0
930	106	16	80	0.1	265	6.0
940	100	10	86	0.1	300	9.0
950	98	10	80	0.1	230	9.5
960	110	10	72	0.1	270	6.0
970	156	8	68	0.1	515	7.0
980	100	1	60	0.1	355	8.0
990	110	4	80	0.1	290	11
1000	88	4	40	0.1	185	5.0
1010	144	22	70	0.1	365	5.0
1020	142	14	62	0.1	270	6.0
1030	118	18	80	0.1	265	6.5
1040	156	56	64	0.1	360	5.5
3400E 1050N	140	14	82	0.1	230	6.0



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY:

Harry Biddle



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [REDACTED] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

TO: Halferdahl & Assoc. Ltd.
Dept. 18
10509 - 81st Ave.
Edmonton, Alta. T6E 1X7

CERTIFICATE NO. 49500
INVOICE NO. 31865
RECEIVED Aug. 9/79
ANALYSED Aug. 14/79

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
3400E 1060N	138	20	76	0.1	255	6.5
1070	122	4	86	0.1	170	4.5
1080	96	4	84	0.1	175	9.5
1090	104	6	92	0.2	195	7.0
3400E 1100N	120	24	74	0.1	355	7.0
3200E 800N	90	22	68	0.1	175	4.0
810	126	38	76	0.2	175	9.5
820	144	10	86	0.1	135	6.0
830	158	6	88	0.1	125	7.5
840	90	4	66	0.1	100	7.0
850	118	1	66	0.1	290	5.5
860	100	4	84	0.1	265	6.0
870	260	1	74	0.1	630	5.5
880	64	4	112	0.1	120	10
890	78	8	86	0.1	105	10
900	112	10	88	0.1	190	10
910	132	16	100	0.1	310	5.5
920	72	6	46	0.1	110	5.5
930	124	6	94	0.1	185	7.0
940	72	18	66	0.1	115	6.5
950	30	12	36	0.1	45	2.0
960	38	6	58	0.1	65	3.0
970	78	14	100	0.1	110	7.0
980	62	8	96	0.1	110	12
990	48	16	88	0.1	100	7.0
1000	76	6	96	0.1	155	17
1010	48	4	94	0.1	80	6.5
1020	50	4	86	0.1	85	10
1030	62	6	108	0.1	100	12
1040	62	6	92	0.1	80	12
1050	54	18	84	0.1	115	9.5
1060	54	22	76	0.1	115	10
1070	56	8	84	0.1	90	6.0
1080	72	4	86	0.2	145	11
1090	108	34	90	0.1	345	9.0
3200E 1100N	56	6	76	0.1	135	6.5
3000E 850N	102	8	92	0.1	240	9.0
860	154	8	112	0.1	575	8.0
870	280	1	76	0.1	1100	2.0
3000E 880N	56	8	132	0.1	245	9.5



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CERTIFIED BY: *Hart Bille*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
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TELEPHONE: [REDACTED] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

TO: Halferdahl & Assoc. Ltd.
Dept. 18
10509 - 81st Ave.
Edmonton, Alta. T6E 1X7

CERTIFICATE NO. 49501

INVOICE NO. 31865

RECEIVED Aug. 9/79

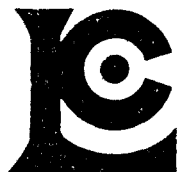
ANALYSED Aug. 14/79

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
3000E 890N	120	2	74	0.1	675	4.0
900	106	2	98	0.1	1050	4.0
910	74	6	114	0.1	425	10
920	62	6	116	0.1	185	11
930	58	8	120	0.1	180	11
940	60	8	102	0.1	160	24
950	70	8	76	0.1	335	16
960	152	8	64	0.1	255	4.5
970	114	10	78	0.1	200	9.5
980	106	6	80	0.1	125	9.5
990	46	4	82	0.1	65	16
1000	74	10	88	0.1	90	16
1010	84	6	106	0.1	165	15
1020	68	6	86	0.1	150	20
1030	82	4	76	0.1	230	6.0
1040	98	6	84	0.1	390	10
1050	62	8	94	0.1	175	6.0
1060	96	10	104	0.1	195	5.0
1070	78	6	98	0.1	175	6.0
1080	74	8	82	0.1	145	7.0
1090	148	1	80	0.1	1050	6.5
1100	98	4	78	0.1	435	7.0
1110	86	4	80	0.1	55	11
1120	86	10	92	0.1	330	6.0
1130	66	6	82	0.1	245	9.0
1140	66	4	84	0.1	630	6.0
3000E 1150N	86	6	88	0.1	295	6.0
2800E 850N	80	8	86	0.1	125	9.5
860	82	6	100	0.1	115	11
870	66	6	106	0.1	90	5.5
880	102	6	90	0.1	125	10
890	74	4	80	0.1	100	5.5
900	78	4	76	0.1	145	6.0
910	68	4	80	0.1	115	8.0
920	62	6	80	0.1	385	9.5
930	86	4	84	0.1	260	6.0
940	58	6	68	0.1	155	6.5
950	88	4	88	0.1	345	3.0
960	48	2	58	0.1	425	4.0
2800E 970N	82	8	98	0.1	240	6.0



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CERTIFIED BY: *Harry Bille*



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CANADA V7J 2C1
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AREA CODE: 604
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CERTIFICATE OF ANALYSIS

TO: Halferdahl & Assoc. Ltd.
Dept. 18
10509 - 81st Ave.
Edmonton, Alta. T6E 1X7

CERTIFICATE NO. 49502
INVOICE NO. 31865
RECEIVED Aug. 9/79
ANALYSED Aug. 14/79

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
2800E 980N	62	8	78	0.1	95	5.5
990	58	4	62	0.1	64	5.5
1000	86	8	52	0.1	34	4.5
1010	48	4	68	0.1	50	6.0
1020	82	6	96	0.1	76	11
1030	66	6	80	0.1	74	7.5
1040	72	6	86	0.1	88	3.0
1050	76	2	92	0.1	114	12
1060	66	2	70	0.1	156	4.5
1070	86	4	98	0.1	184	9.5
1080	64	2	90	0.1	128	11
1090	122	2	76	0.1	355	9.0
1100	66	2	70	0.1	260	7.5
1110	74	2	72	0.1	270	7.0
1120	48	4	76	0.1	80	5.5
1130	72	4	72	0.1	178	9.5
1140	76	1	62	0.1	340	4.5
2800E 1150N	64	4	66	0.1	142	8.0
2600E 800N	114	4	86	0.1	285	4.5
810	60	6	104	0.1	120	9.5
820	68	6	108	0.1	114	5.5
830	62	4	74	0.1	194	7.5
840	74	2	70	0.1	485	3.0
850	58	6	74	0.1	138	10
860	66	4	68	0.1	138	7.0
870	38	6	34	0.1	84	9.5
880	64	6	94	0.1	84	12
890	56	4	70	0.1	76	9.0
900	88	6	96	0.1	80	1.0
910	74	4	84	0.1	78	6.5
920	76	4	72	0.1	76	9.0
930	64	4	70	0.1	86	6.5
940	62	4	62	0.1	62	5.0
950	72	6	72	0.1	86	9.0
960	74	4	82	0.1	92	7.0
970	56	4	114	0.2	56	10
980	66	4	86	0.1	100	6.5
990	82	4	80	0.1	98	10
1000	64	2	78	0.1	96	4.5
2600E 1010N	82	4	86	0.1	88	6.5



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CERTIFIED BY: *Hart Biddle*

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NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [REDACTED] 984-0221
AREA CODE: 604
TELEX: 043-52597



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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49503

TO: Halferdahl & Assoc. Ltd.,
Dept. 18
10509 - 81st Ave.
Edmonton, Alta.
ATTN: T6E 1X7

INVOICE NO. 31865

RECEIVED August 9, 1979

ANALYSED August 14, 1979

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
2600E 1020N	58	2	78	0.1	84	6.0
1030	54	2	70	0.1	92	5.5
1040	58	4	68	0.1	72	7.0
1050	58	4	70	0.1	74	6.0
1060	66	4	70	0.1	74	12
1070	84	4	74	0.1	88	7.0
1080	50	4	72	0.1	86	6.5
1090	52	4	84	0.1	76	6.0
2600E 1100N	62	2	70	0.1	110	5.0
T1 0	94	52	510	0.1	68	11
15	72	8	166	0.1	52	36
30	64	12	124	0.1	48	23
45	128	16	128	0.2	124	56
60	104	8	144	0.1	68	22
75	68	10	144	0.1	50	19
90	96	10	150	0.1	64	25
105	50	8	94	0.1	54	15
T1 120	56	10	84	0.1	46	10
7 0	50	6	94	0.1	58	7.0
20	38	6	82	0.1	50	8.0
40	48	6	76	0.1	48	9.0
60	58	6	142	0.1	46	14
80	52	4	170	0.1	54	11
100	40	4	130	0.1	42	17
120	36	4	72	0.1	44	3.0
140	64	2	146	0.1	52	6.0
160	44	4	74	0.1	44	6.0
180	34	4	72	0.1	36	6.0
200	40	2	78	0.1	38	5.0
220	44	2	86	0.1	38	2.0
240	38	4	72	0.1	34	8.0
260	28	2	82	0.1	42	4.0
280	40	4	86	0.1	44	4.5
300	44	4	86	0.1	46	4.0
320	62	4	134	0.1	48	9.0
340	30	4	68	0.1	32	5.0
360	38	4	78	0.1	48	11
380	44	6	88	0.1	50	9.5
400	34	4	76	0.1	34	10
7 420	68	4	122	0.1	46	10



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *Hart Biddle*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [REDACTED] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49504

INVOICE NO. 31865

RECEIVED August 9, 1979

ANALYSED August 14, 1979

TO: Halferdahl & Assoc. Ltd.,
Dept. 18
10509 - 81st Ave.,
Edmonton, Alta.
ATTN: T6E 1X7

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
7 440	26	2	82	0.1	36	9.0
460	34	4	74	0.1	44	7.0
480	24	4	72	0.1	46	9.0
500	34	6	64	0.1	32	9.0
520	30	4	84	0.1	44	10
540	34	6	84	0.1	40	16
560	70	4	112	0.1	50	10
580	38	6	62	0.1	32	14
600	28	6	78	0.1	42	5.0
620	46	4	82	0.1	26	6.5
640	36	6	56	0.1	24	11
660	52	2	98	0.1	34	4.5
680	50	6	66	0.1	52	23
700	34	8	66	0.1	20	14
720	38	4	98	0.2	34	6.0
740	86	2	76	0.1	62	11
760	54	1	58	0.1	58	6.0
780	58	2	68	0.1	58	8.0
800	36	2	76	0.1	32	5.5
820	56	2	66	0.1	54	5.0
840	70	4	90	0.1	66	9.5
860	78	2	80	0.1	74	7.0
880	56	2	82	0.1	64	5.5
900	66	2	84	0.1	62	7.0
920	84	4	86	0.1	76	10
940	64	4	98	0.1	78	11
960	48	4	94	0.1	110	10
980	120	4	76	0.1	178	11
7 1000	80	6	108	0.1	182	11
8 0	68	6	100	0.1	94	9.0
20	46	4	90	0.1	62	9.0
40	36	6	96	0.1	56	9.5
60	56	6	80	0.1	40	7.0
80	44	6	112	0.1	52	5.5
100	36	4	82	0.1	36	7.0
120	36	6	94	0.1	46	10
140	50	4	66	0.2	42	7.5
160	52	4	86	0.1	48	11
180	36	4	52	0.1	34	9.0
8 200	58	2	104	0.1	172	11



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *Hart Biddle*



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [REDACTED] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Halferdahl & Assoc. Ltd.,
Dept 18
10509 - 81st Ave.,
Edmonton, Alta.
ATTN: T6E 1X7

CERTIFICATE NO. 49505

INVOICE NO. 31865

RECEIVED August 9, 1979

ANALYSED August 14, 1979

SAMPLE NO. :	PPM Cu	PPM Pb	PPM Zn	PPM Ag	PPM Ni	PPM As
8 220	76	4	90	0.1	92	9.5
240	112	1	76	0.1	545	9.0
260	46	4	82	0.1	46	10
280	56	2	78	0.1	44	9.5
300	40	4	70	0.1	30	9.5
320	44	4	86	0.1	52	10
340	74	4	102	0.1	52	11
360	34	4	94	0.1	52	10
380	42	4	58	0.1	26	7.0
400	36	4	74	0.2	26	8.0
420	64	6	80	0.1	34	11
440	96	2	80	0.1	108	6.0
460	44	2	104	0.1	98	9.5
480	70	2	84	0.1	76	5.5
500	180	2	76	0.1	152	5.0
520	174	4	88	0.1	184	19
540	84	2	92	0.1	118	7.0
560	44	4	110	0.1	48	5.0
580	52	2	106	0.1	42	9.0
600	42	2	78	0.1	88	6.0
620	36	1	82	0.1	102	25
640	64	2	80	0.1	78	9.0
660	58	2	102	0.1	66	7.0
680	48	2	92	0.1	46	6.0
700	56	2	126	0.1	54	9.0
720	56	1	92	0.2	106	9.0
740	84	2	124	0.1	84	6.0
760	122	2	124	0.1	114	6.0
780	80	2	106	0.1	114	9.0
800	98	4	102	0.2	78	9.0
820	54	2	86	0.1	76	6.0
840	34	2	106	0.1	64	8.5
860	56	2	116	0.1	82	6.0
880	52	2	88	0.1	86	7.0
900	38	2	122	0.1	90	4.5
920	52	2	76	0.2	88	6.0
940	66	1	98	0.1	110	4.5
960	42	1	300	0.1	164	17
980	48	2	430	0.1	220	7.5
8 1000	44	4	460	0.1	154	10



MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: *Hart Biddle*

CERTIFICATE OF ANALYSIS

CHEMEX LABS LTD.
212 BROOKSBANK AVENUE
NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
DEPT. 18 - 10509 - 81 AVE.
EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65889
NOVATRACK CERTIFICATE # B90054
INVOICE #
SAMPLES RECEIVED 16-AUG-79
SAMPLES ANALYZED 26-AUG-79

TTN.

ALL VALUES ARE REPORTED AS PPB

SAMPLE ID	AU
3600E 900N	< 1
3600E 910N	9
3600E 920N	6
3600E 930N	5
3600E 940N	7
3600E 950N	2
3600E 960N	3
3600E 970N	15
3600E 980N	3
3600E 990N	6
3600E 1000N	6
3600E 1010N	8
3600E 1020N	9
3600E 1030N	6
3600E 1040N	6
3600E 1050N	3
3600E 1060N	6
3600E 1070N	5
3600E 1080N	4
3600E 1090N	2
3600E 1100N	2
3600E 1110N	1
3600E 1120N	3
3600E 1130N	5
3400E 900N	16
3400E 910N	6
3400E 920N	4
3400E 930N	3
3400E 940N	4
3400E 950N	9
3400E 960N	6
3400E 970N	7
3400E 980N	5
3400E 990N	8
3400E 1000N	6
3400E 1010N	3
3400E 1020N	2
3400E 1030N	5
3400E 1040N	9
3400E 1050N	11

CERTIFIED BY *[Signature]*

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.

CERTIFICATE OF ANALYSIS

A73

CHEMEX LABS LTD.
 212 BROOKSBANK AVENUE
 NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
 DEPT. 18 - 10509 - 81 AVE.
 EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65890
 NOVATRACK CERTIFICATE # B90055
 INVOICE #
 SAMPLES RECEIVED 16-AUG-79
 SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PPB

SAMPLE ID	AU
3400E 1060N	6
3400E 1070N	9
3400E 1080N	2
3400E 1090N	5
3400E 1100N	5
3200E 800N	10
3200E 810N	8
3200E 820N	6
3200E 830N	9
3200E 840N	3
3200E 850N	5
3200E 860N	11
3200E 870N	12
3200E 880N	7
3200E 890N	4
3200E 900N	7
3200E 910N	6
3200E 920N	4
3200E 930N	18
3200E 940N	6
3200E 950N	4
3200E 960N	14
3200E 970N	11
3200E 980N	4
3200E 990N	4
3200E 1000N	3
3200E 1010N	3
3200E 1020N	6
3200E 1030N	10
3200E 1040N	10
3200E 1050N	3
3200E 1060N	2
3200E 1070N	3
3200E 1080N	3
3200E 1090N	5
3200E 1100N	5
3000E 850N	237
3000E 860N	3
3000E 870N	4
3000E 880N	9

CERTIFIED BY *ABW*

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
 A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
 SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CERTIFICATE OF ANALYSIS

A74

CHEMEX LABS LTD.
 212 BROOKSBANK AVENUE
 NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
 DEPT. 18 - 10509 - 81 AVE.
 EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65891
 NOVATRACK CERTIFICATE # B90056
 INVOICE #
 SAMPLES RECEIVED 16-AUG-79
 SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PPB

SAMPLE ID	AU
7000E 890N	5
000E 900N	7
3000E 910N	3
2000E 920N	2
000E 930N	3
5000E 940N	2
3000E 950N	3
000E 960N	12
000E 970N	4
3000E 980N	7
7000E 990N	8
000E 1000N	8
3000E 1010N	5
3000E 1020N	3
000E 1030N	3
000E 1040N	3
3000E 1050N	8
000E 1060N	7
000E 1070N	8
3000E 1080N	4
3000E 1090N	7
000E 1100N	5
3000E 1110N	6
3000E 1120N	10
000E 1130N	13
000E 1140N	8
3000E 1150N	13
2800E 850N	5
2800E 860N	2
2800E 870N	5
2800E 880N	3
2800E 890N	9
2800E 900N	3
2800E 910N	4
2800E 920N	3
2800E 930N	5
2800E 940N	5
2800E 950N	3
2800E 960N	4
2800E 970N	3

CERTIFIED BY *[Signature]*

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
 A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
 SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CERTIFICATE OF ANALYSIS

A75

CHEMEX LABS LTD.
 212 BROOKSBANK AVENUE
 NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
 DEPT. 18 - 10509 - 81 AVE.
 EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65892
 NOVATRACK CERTIFICATE # B90057
 INVOICE #
 SAMPLES RECEIVED 16-AUG-79
 SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PFB

SAMPLE ID	AU
300E 980N	8
300E 990N	9
2800E 1000N	5
2800E 1010N	6
2800E 1020N	3
2800E 1030N	2
2800E 1040N	3
2800E 1050N	15
2800E 1060N	4
2800E 1070N	6
2800E 1080N	5
2800E 1090N	6
2800E 1100N	1
2800E 1110N	3
2800E 1120N	3
2800E 1130N	12
2800E 1140N	2
2800E 1150N	4
2600E 800N	5
2600E 810N	6
2600E 820N	6
2600E 830N	5
2600E 840N	4
2600E 850N	5
2600E 860N	1
2600E 870N	1
2600E 880N	5
2600E 890N	5
2600E 900N	6
2600E 910N	9
2600E 920N	6
2600E 930N	6
2600E 940N	6
2600E 950N	4
2600E 960N	9
2600E 970N	4
2600E 980N	8
2600E 990N	7
2600E 1000N	4
2600E 1010N	4

CERTIFIED BY *H. B. Ah*

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
 A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
 SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CERTIFICATE OF ANALYSIS

A76

CHEMEX LABS LTD.
 212 BROOKSBANK AVENUE
 NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
 DEPT. 18 - 10509 - 81 AVE.
 EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65893
 NOVATRACK CERTIFICATE # B90057
 INVOICE #
 SAMPLES RECEIVED 16-AUG-79
 SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PPM

SAMPLE ID	AU
2600E 1020N	6
2600E 1030N	2
2600E 1040N	3
2600E 1050N	3
2600E 1060N	6
2600E 1070N	3
2600E 1080N	8
2600E 1090N	4
2600E 1100N	13
T1 0	6
T1 15	4
T1 30	3
T1 45	8
T1 60	5
T1 75	2
T1 90	< 1
T1 105	1
T1 120	2
7 0	4
7 20	3
7 40	5
7 60	4
7 80	6
7 100	< 1
7 120	8
7 140	6
7 160	5
7 180	4
7 200	6
7 220	5
7 240	2
7 260	2
7 280	2
7 300	12
7 320	6
7 340	4
7 360	5
7 380	5
7 400	7
7 420	6

CERTIFIED BY *ASLOW*

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
 A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
 SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CERTIFICATE OF ANALYSIS

CHEMEX LABS LTD.
212 BROOKSBANK AVENUE
NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
DEPT. 18 - 10509 - 81 AVE.
EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65894
NOVATRACK CERTIFICATE # B90058
INVOICE #
SAMPLES RECEIVED 16-AUG-79
SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PPB

SAMPLE ID	AU
440	2
460	1
7 480	5
7 500	3
520	7
7 540	4
7 560	5
580	5
600	13
7 620	4
7 640	4
660	7
7 680	12
7 700	< 1
720	1
7 740	3
7 760	5
780	2
800	2
7 820	< 1
7 840	< 1
860	< 1
7 880	2
7 900	4
920	8
940	2
7 960	3
980	3
7 1000	2
8 0	5
9 20	2
3 40	< 1
3 60	6
8 80	7
3 100	6
3 120	5
8 140	9
7 160	3
3 180	2
8 200	7

CERTIFIED BY 

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

CERTIFICATE OF ANALYSIS

A78

CHEMEX LABS LTD.
 212 BROOKSBANK AVENUE
 NORTH VANCOUVER B.C. V7J 2C1

CLIENT : HALFERDAHL & ASSOCIATES
 DEPT. 18 - 10509 - 81 AVE.
 EDMONTON, ALBERTA

CHEMEX CERTIFICATE # 65895
 NOVATRACK CERTIFICATE # B90059
 INVOICE #
 SAMPLES RECEIVED 16-AUG-79
 SAMPLES ANALYZED 26-AUG-79

ATTN.

ALL VALUES ARE REPORTED AS PFB

SAMPLE ID	A
220	5
240	4
B 260	4
R 280	8
300	6
J 320	27
B 340	3
360	5
380	3
B 400	7
420	4
440	14
B 460	10
B 480	7
500	7
J 520	10
B 540	5
560	6
580	4
B 600	6
620	7
640	5
B 660	< 1
B 680	5
700	8
J 720	10
B 740	6
760	6
780	5
B 800	4
R 820	5
840	3
B 860	< 1
B 880	10
900	4
920	6
B 940	4
960	5
980	1
B 1000	< 1

CERTIFIED BY 

ANALYSIS PERFORMED BY NOVATRACK ANALYSTS LTD.
 A SUBSIDIARY COMPANY OF CHEMEX LABS LTD.
 SPECIALIZING IN NEUTRON ACTIVATION ANALYSIS

APPENDIX 7: CLAIMS ON WHICH WORK WAS PERFORMED

<u>Name</u>	<u>Tag Numbers</u>
EI 3 - 8	YA 23531 - YA 23536
Jo 1 - 8	YA 23537 - YA 23544
Sue 1 - 8	YA 23545 - YA 23552
Kat 1 - 8	YA 23553 - YA 23560
Nan 7 - 8	YA 23567 - YA 23568
Den 1 - 6, 8	YA 23577 - YA 23582, YA 23584
Wen 1 - 7	YA 23585 - YA 23591
And 5 - 8	YA 23597 - YA 23600
Jy 1 - 8	YA 23601 - YA 23608

APPENDIX 8: QUALIFICATIONS

René Bissonnette graduated in geology from the University of Quebec in Montreal and obtained an M.Sc. also in geology from the University of Ottawa. He has had experience as a practising geologist since 1973 including summer field work and related compilation, and office work. This work has included geological mapping and sampling, geochemical surveys, lithological logging of core, and field supervision of drilling. His work on the Bur property in 1978 and 1979 was under the direction of L.B. Halferdahl, Ph.D., P. Eng.

W.G. Powell graduated in geological engineering from Queen's University in 1974, and was employed on a full-time basis by Halferdahl & Associates Ltd. from 1974 to 1976. His work during this period included geological mapping and sampling, geochemical surveys, field supervision of drilling, and office studies. His work on the Bur property in 1978 was under the direction of L.B. Halferdahl, Ph.D., P. Eng.

L.B. Halferdahl obtained degrees in geological engineering and geology from Queen's University and the John Hopkins University. He has had more than 25 years' experience as a practising engineer and geologist in research and mining exploration including consulting since 1969.

APPENDIX 9: FIELD AND OFFICE PERSONNEL

Field

R.J. Bissonnette, Geologist
12743 - 86 Street
Edmonton, Alberta
T5E 3A7

7 days in August and September 1978
30 days in July and August 1979

G.M. Halferdahl, Assistant
11539 - 73 Avenue
Edmonton, Alberta
T6G 0E2

7 days in August and September 1978

L.B. Halferdahl, Engineer
11539 - 73 Avenue
Edmonton, Alberta
T6G 0E2

6 days in August and September 1978
14 days in July and August 1979

W.G. Powell, Geologist
#206, 10620 - 79 Avenue
Edmonton, Alberta
T6E 1S1

7 days in August and September 1978

C.M.H. Russell, Assistant
250 Westridge Road
Edmonton, Alberta
T5T 1C1

30 days in July and August 1979

J.S.H. Sefton, Assistant
#102, 10505 - 78 Avenue
Edmonton, Alberta
T6E 1P3

7 days in August and September 1978

Office

R.J. Bissonnette, Geologist
address above

18 days in June and August 1979

L.B. Halferdahl, Engineer
address above

7 days in August 1979

W.D.K. McGuire, Draftsman
12743 - 86 Street
Edmonton, Alberta
T5E 3A7

160 hrs in November 1978, June, July and
August 1979

FIELD EXPENSES 1978 08 29 - 1978 09 03

Personnel

R. Bissonnette, geologist 7 days @ \$150.00	\$1050.00	
G. Halferdahl, assistant 7 days @ 65.00	455.00	
L. Halferdahl, geological engineer 6 days @ \$300.00	1800.00	
W. Powell, geologist 7 days @ 150.00	1050.00	
J. Sefton, assistant 7 days @ 95.00	665.00	
		<u>5020.00</u>

Food \$8.15/day x 34 man-days

277.10

Transportation 4 x 4 truck rental and gas

383.16

Analyses and Assays

409 samples prepared and analyzed for Ag, Cu, Pb, Zn, Ni @ \$4.50	1840.50	
412 samples analyzed for As @ \$2.50	1030.00	
196 humus samples analyzed for Au @ \$5.00	980.00	
39 soil samples analyzed for Au @ \$4.00	156.00	
37 assays for gold @ \$5.00	185.00	
3 assays for copper @ \$4.50	13.50	
1 assay for lead @ \$5.50	5.50	
1 assay for zinc @ \$5.50	5.50	
		<u>4216.00</u>

\$9896.26



FIELD EXPENSES 1979 07 10 - 1979 08 09

Personnel

R. Bissonnette, geologist 30 days @ \$150.00	\$4500.00	
L. Halferdahl, geological engineer 14 days @ \$300.00	4200.00	
C. Russell, assistant & driller 30 days @ \$60.00	1800.00	
		<u>\$10500.00</u>

Food and Accommodation \$8.76/day x 74 man-days

648.24

Transportation

4 x 4 truck rental, gas, oil, repairs	1178.14	
Air cargo on drilling equipment	559.48	
Express on samples	33.99	
		<u>1771.61</u>

Supplies oil for drill

17.75

Equipment Rental

Magnetometer	250.00	
Cobra drill	300.00	
Overburden rods, bits, adapters, jack, holder	250.00	800.00

Analyses and Assays

280 samples prepared and analyzed for Cu, Pb, Zn, Ag, Ni, As @ \$7.05	1974.00	
280 samples analyzed for Au @ \$5.00	1400.00	
38 assays for gold @ \$8.00	304.00	
		<u>3678.00</u>

\$17415.60

REPORT PREPARATION EXPENSES

Personnel

R. Bissonnette, geologist 18 days @\$150	\$ 2700.00	
L. Halferdahl, geological engineer 7 days @ \$300	2100.00	
W. McGuire, draftsman 160 hrs @\$10	1600.00	
J. Sefton, assistant 8 days @ \$95	<u>760.00</u>	
		\$7160.00

Supplies

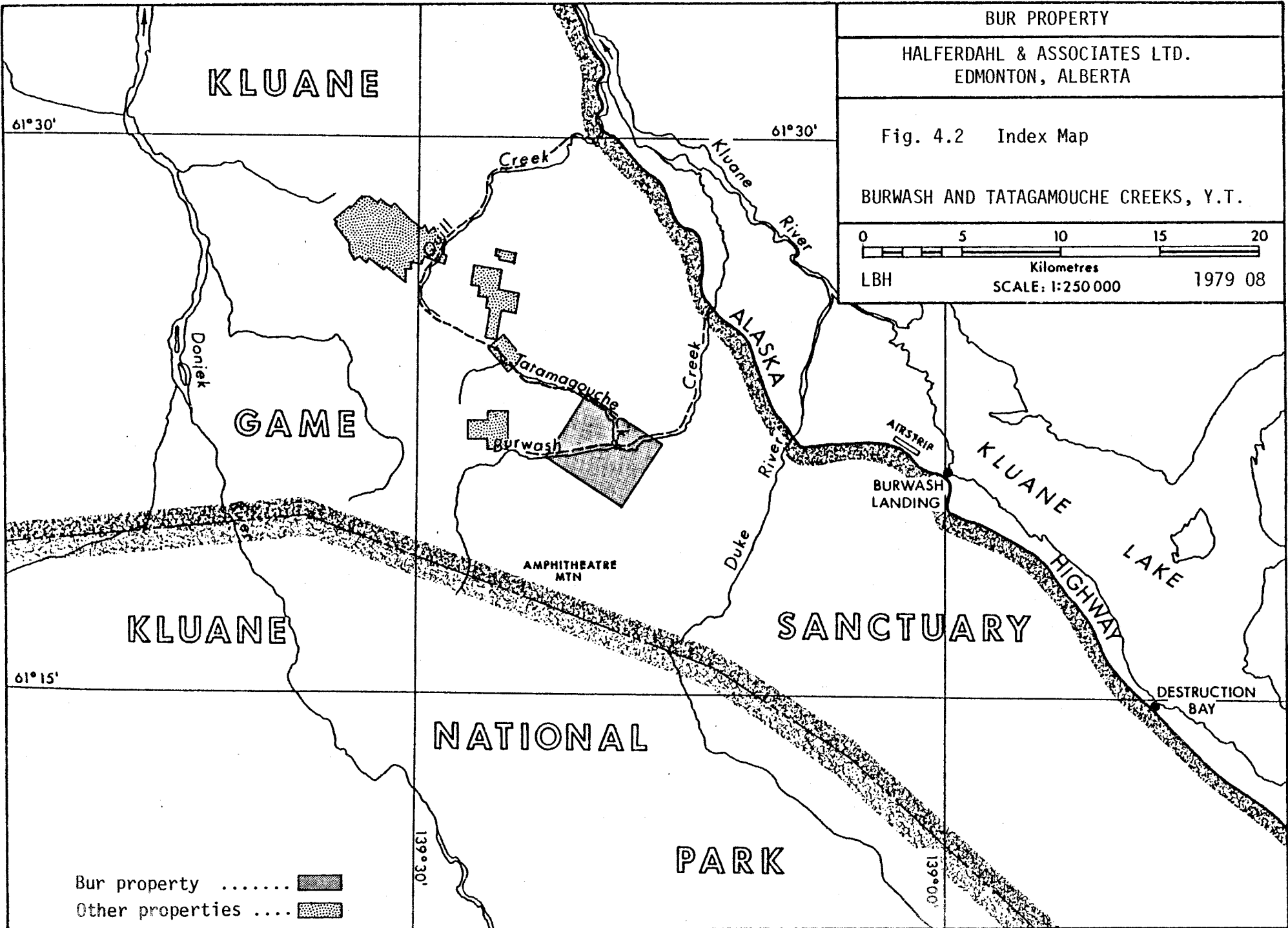
Contour maps	675.00	
Cronars, sepias, working prints	<u>441.68</u>	
		1116.68
Typing, reproduction, assembly		448.00
		<u>\$8724.68</u>

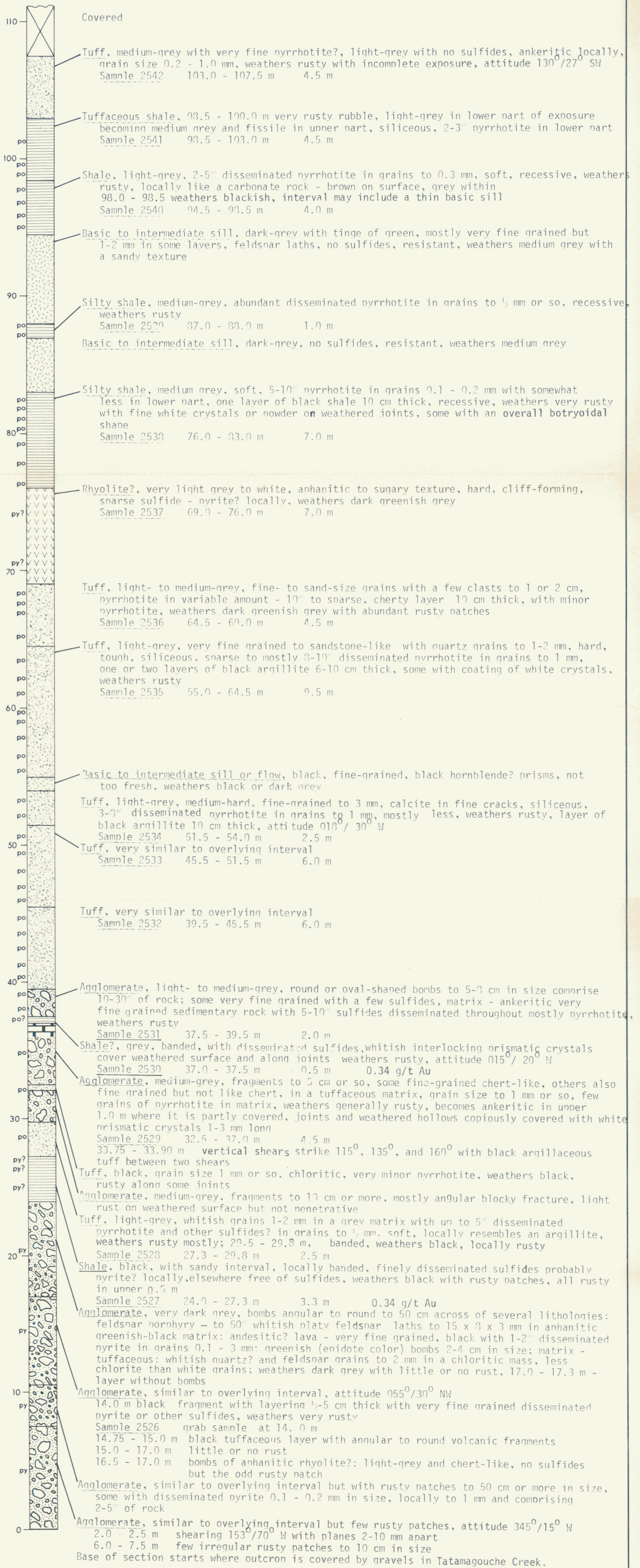
BREAKDOWN OF EXPENSES BETWEEN OVERBURDEN DRILLING
AND GEOLOGICAL AND RELATED WORK

	<u>Overburden Drilling</u>	<u>Geological, Geochemical, and Geophysical Work</u>
<u>1978 Field - Total</u>	-	\$ 9896.26
<u>1979 Field</u>		
Personnel	4860.00	5640.00
Food and Accommodation	324.12	324.12
Transportation	1182.54	589.07
Supplies	17.75	-
Equipment Rental	550.00	250.00
Analyses and Assays	2036.45	1641.55
	<u>8970.86</u>	<u>18341.00</u>
<u>Report Preparation</u>	2865.71	5858.97
	<u>\$11836.57</u>	<u>\$24199.97</u>



Fig. 1 Location Map, Bur Property, Yukon Territory





Location: west side of Tatamagouche Creek at south end of rusty cliffs starting about 15 m north of Wen Creek on claim Men 5. See Fig. 7.8.

Measured stratigraphically in metres from base of section from 1979 08 04 to 06 by L.B. Halferdahl. Stratigraphic top face upwards. Stratigraphic measurements are continued in section T-2. See Fig. 7.8 and 7.9.

Gold was determined by fire assay of rock chips at intervals from 10 to 40 cm, composited in each sample. All assays show trace gold except where other values are given.

po - pyrrhotite py - pyrite

BUR PROPERTY
HALFERDAH & ASSOCIATES LTD. EDMONTON, ALBERTA
Fig. 6.2 Stratigraphic Section T-1: West Side of Tatamagouche Creek on Claim Men 5 BURWASH AND TATAMAGOUCHE CREEKS, Y.T.
0 Metres 10 VERTICAL SCALE: 1:200 1979 08

LBH



Location: west side of Tatamagouche Creek in middle of rusty cliffs starting about 40-50 m northerly along the valley side from the top of section T-1 and stratigraphically approximately continuing from top of section T-1. See Fig. 7.8 and 7.9.

Measured stratigraphically in metres from base of section on 1979 08 06 and 07 by L.B. Halferdahl. Stratigraphic tops face upwards.

Gold was determined by fire assay of rock chips at intervals from 10 to 40 cm, composited in each sample. All assays show trace gold except where other values are given.

BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 6.3 Stratigraphic Section T-2: West Side of Tatamagouche Creek on Claim Wen 5 BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
0	10
Metres	
LBH	VERTICAL SCALE: 1:200
	1979 08



Location: east and west sides of Tatamagouche Creek starting at first outcrop in bed of Tatamagouche Creek at base of rusty cliffs, and measured upstream to covered interval below first outcrop of gabbro in the bed of Tatamagouche Creek. See Fig. 7.0 and 7.2.

Measured stratigraphically in metres from base of section without allowance for faults from 1978 08 29 to 31 by L.B. Halferdahl. Although section is faulted, most stratigraphic tops face upward.

Gold was determined by fire assay of rock chips at intervals from 10 to 30 cm, composited in each sample. All assays showed less than 0.068 g/t Au (0.002 oz/ton).

BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 6-4 Stratigraphic Section T-3: East and West Sides of Tatamagouche Creek on Claims Wen 5 and 7.	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
LBH	1979.08

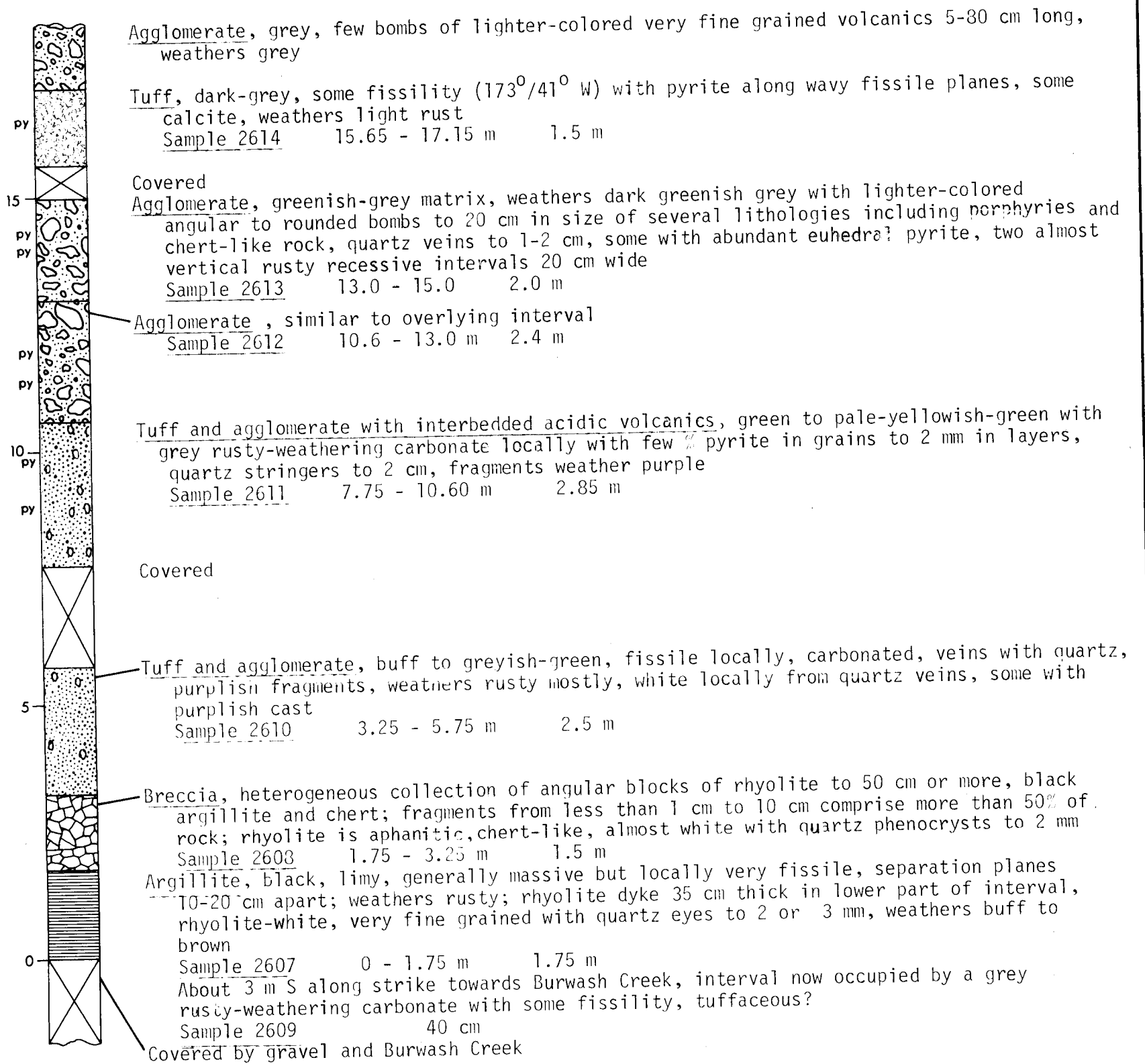


Location: east and west sides of Tatamagouche Creek starting at first outcrop in bed of Tatamagouche Creek at base of rusty cliffs, and measured upstream to covered interval below first outcrop of gabbro in the bed of Tatamagouche Creek. See Fig. 7.0 and 7.2.

Measured stratigraphically in metres from base of section without allowance for faults from 1978 08 29 to 31 by L.B. Halferdahl. Although section is faulted, most stratigraphic tops face upward.

Gold was determined by fire assay of rock chips at intervals from 10 to 30 cm, composited in each sample. All assays showed less than 0.068 g/t Au (0.002 oz/ton).

BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 6-4 Stratigraphic Section T-3: East and West Sides of Tatamagouche Creek on Claims Wen 5 and 7.	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
LBH	1979.08



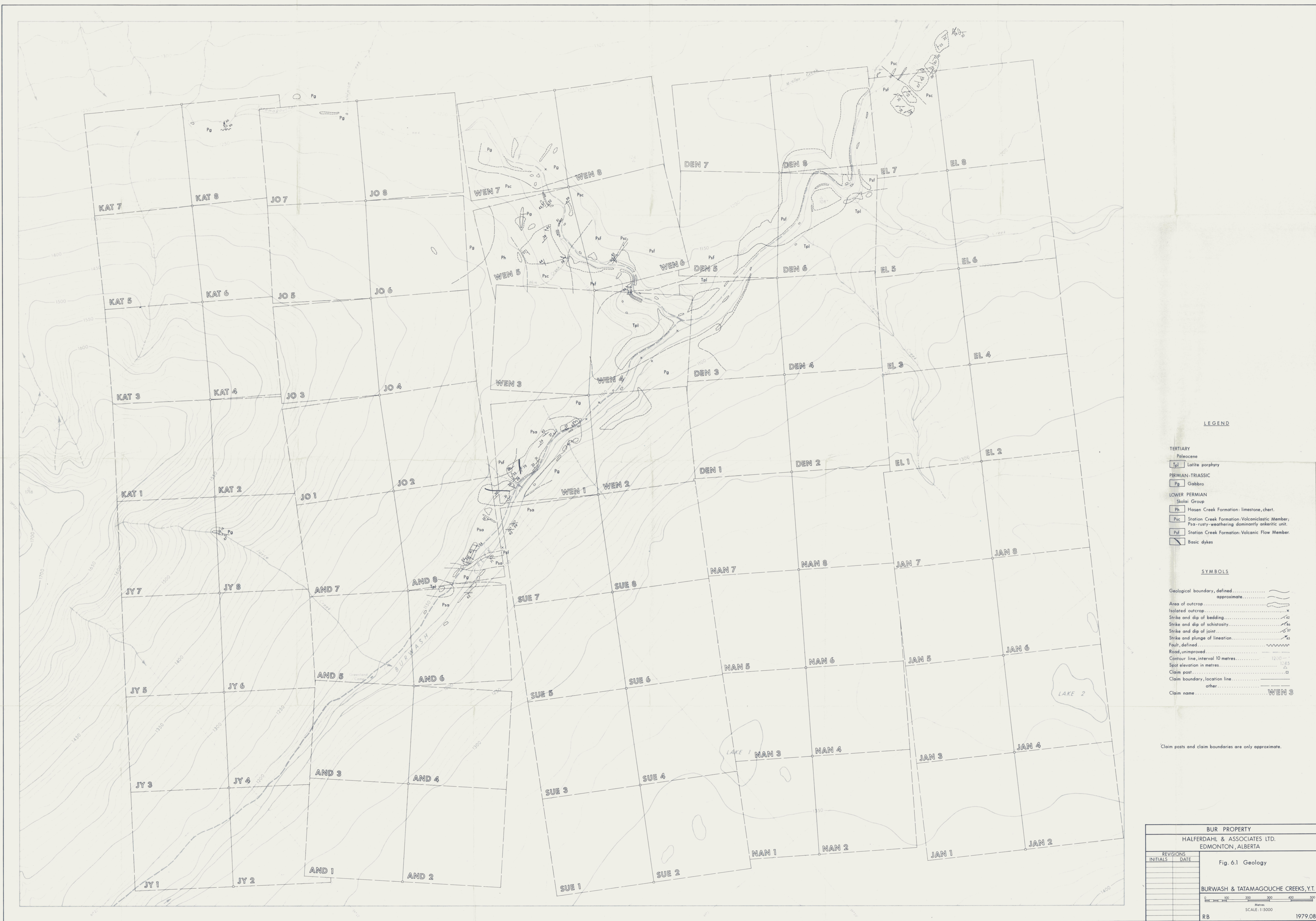
Location: north side of Burwash Creek at creek level just west of Mueller Creek. See Fig. 7.9.

Measured stratigraphically in metres from base of section on 1979 08 08 by L.B. Halferdahl. Stratigraphic tops probably face downwards.

Gold was determined by fire assay of rock chips at intervals of 5 to 30 cm, composited in each sample. All assays show trace gold.

py - pyrite

BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 6.5 Stratigraphic Section B-1: North side of Burwash Creek on Claim E1 7	
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
0	5
Metres	
LBH	SCALE: 1:100
	1979 08



LEGEND

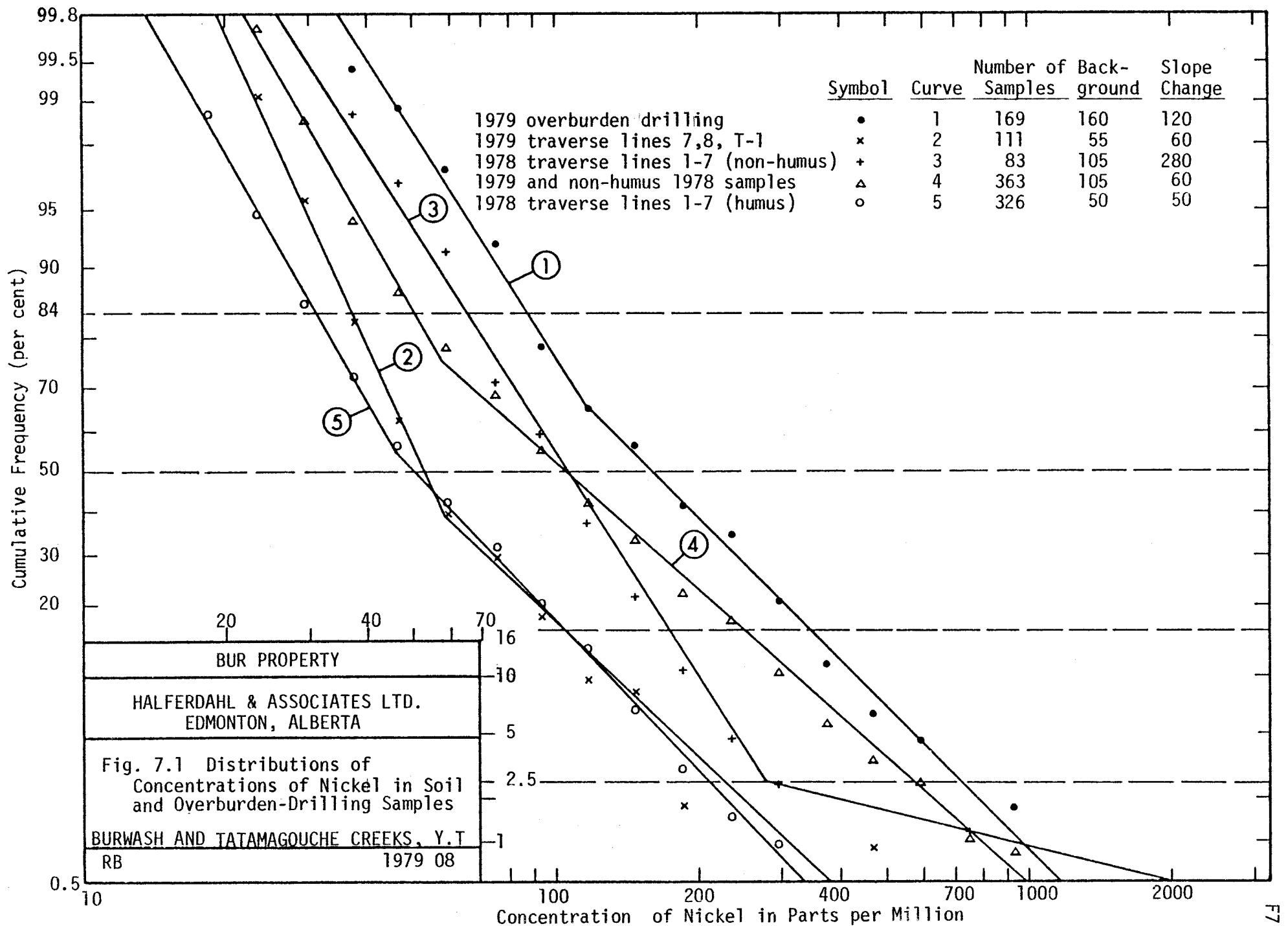
- TERTIARY**
 Paleocene
 [Tpl] Latite porphyry
- PERMIAN-TRIASSIC**
 [Pg] Gabbro
- LOWER PERMIAN**
 Skoloi Group
 [Ph] Hasen Creek Formation: limestone, chert.
 [Psc] Station Creek Formation: Volcaniclastic Member; Psa - rusty-weathering dominantly arkosic unit.
 [Ppf] Station Creek Formation: Volcanic Flow Member.
 [Basic dykes] Basic dykes

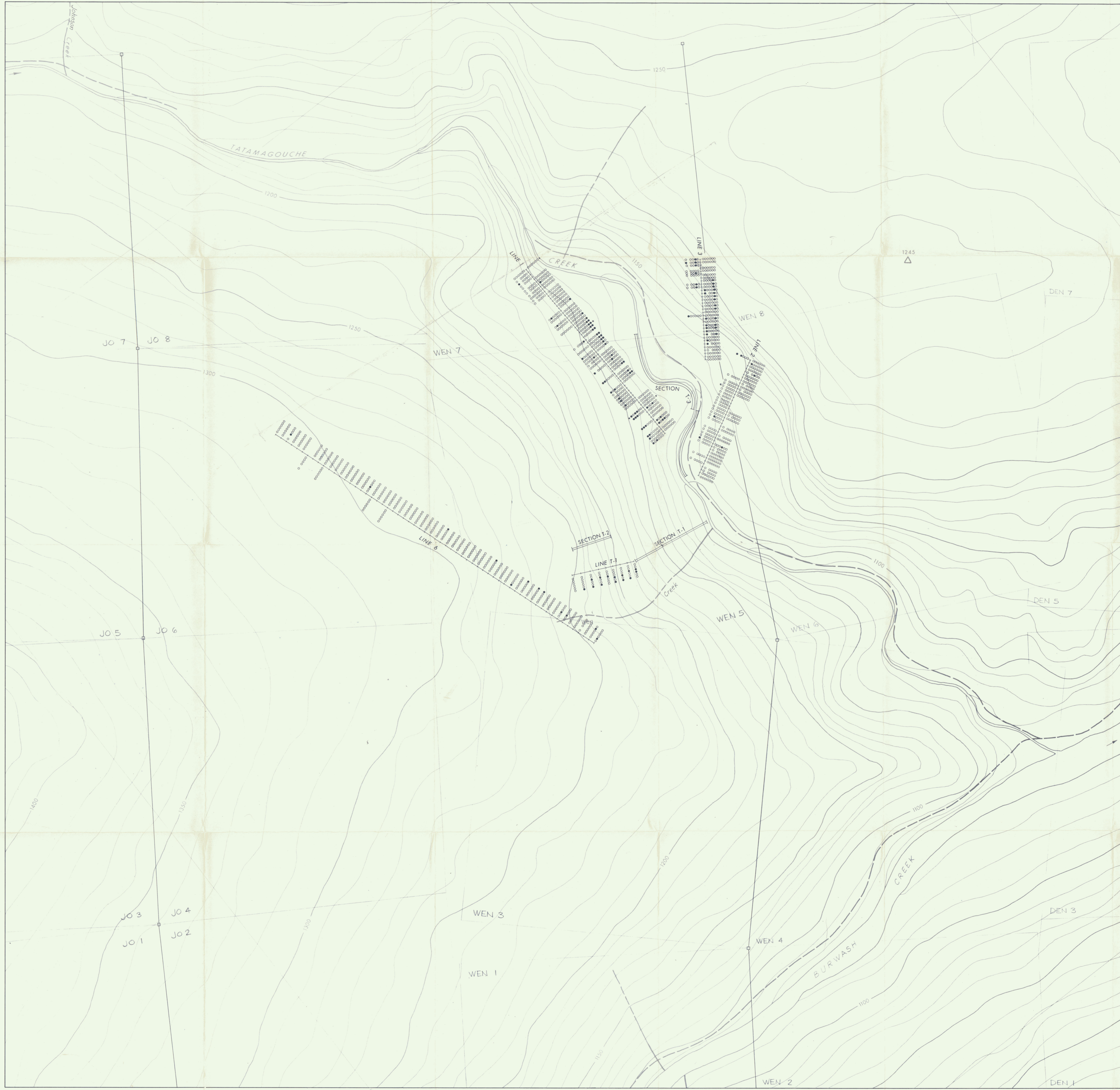
SYMBOLS

- Geological boundary, defined
 approximate
 Area of outcrop
 Isolated outcrop
 Strike and dip of bedding
 Strike and dip of schistosity
 Strike and dip of joint
 Strike and plunge of lineation
 Fault, defined
 Road, unimproved
 Contour line, interval 10 metres
 Spot elevation in metres
 Claim post
 Claim boundary, location line
 other
 Claim name WEN 3

Claim posts and claim boundaries are only approximate.

BUR PROPERTY HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 6.1 Geology	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
SCALE: 1:5000	
REVISIONS INITIALS DATE	RB
1979.08	1979.08





SYMBOLS

○	Ni	145 ppm	} Humus
●	Cu	200 ppm	
○	Zn	110 ppm	
○	Pb	12 ppm	
○	Au	15 ppb	
○	As	45 ppm	} Non-humus
○	Ni	280 ppm	
○	Cu	350 ppm	
○	Zn	130 ppm	
○	Pb	12 ppm	
○	Au	15 ppb	
○	As	45 ppm	

Silver concentrations greater than 0.4 ppm *

Claim post □

Claim boundary, location line - - - - -

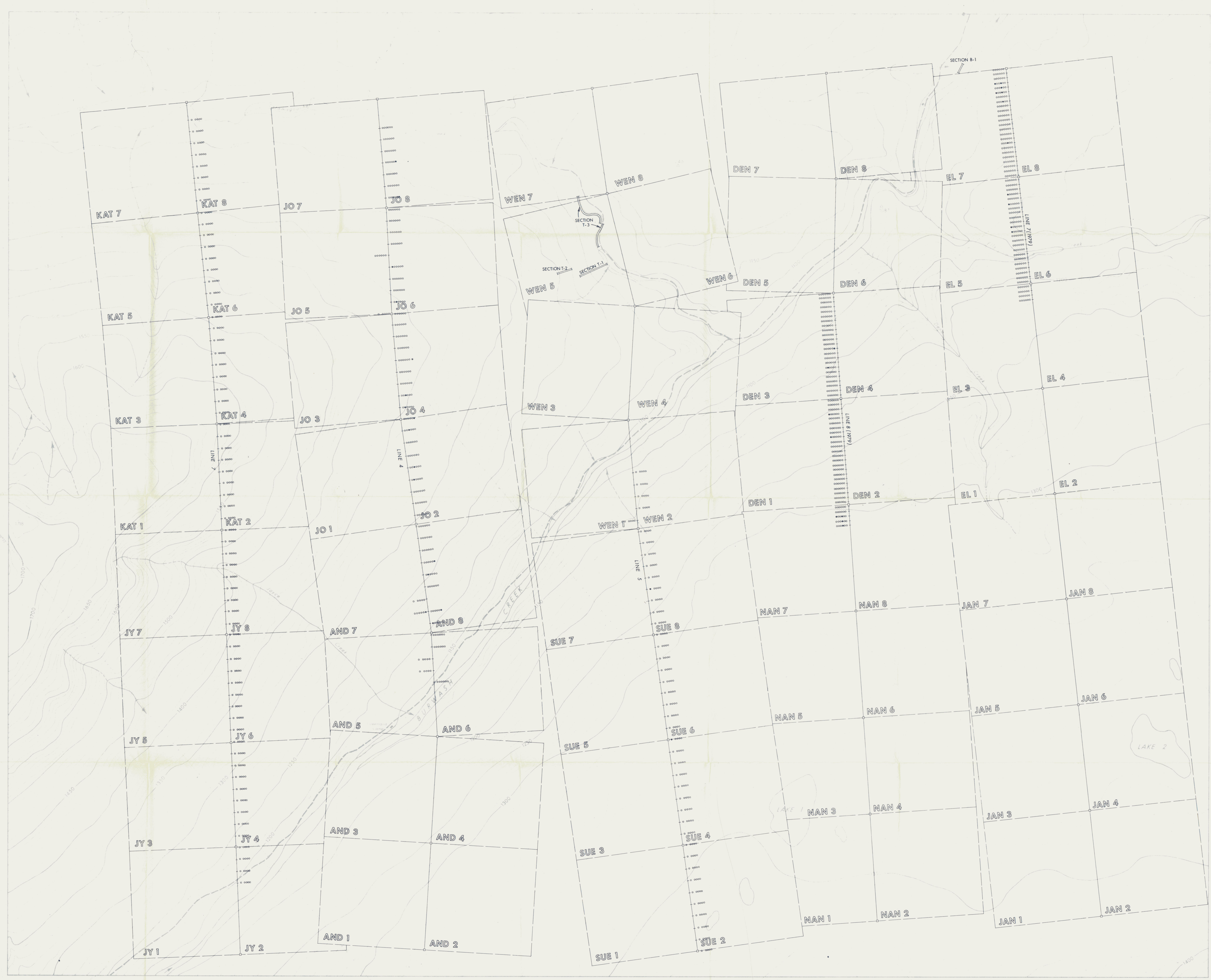
other ————

Claim name ○

Contour line, interval 10 metres ~~~~~

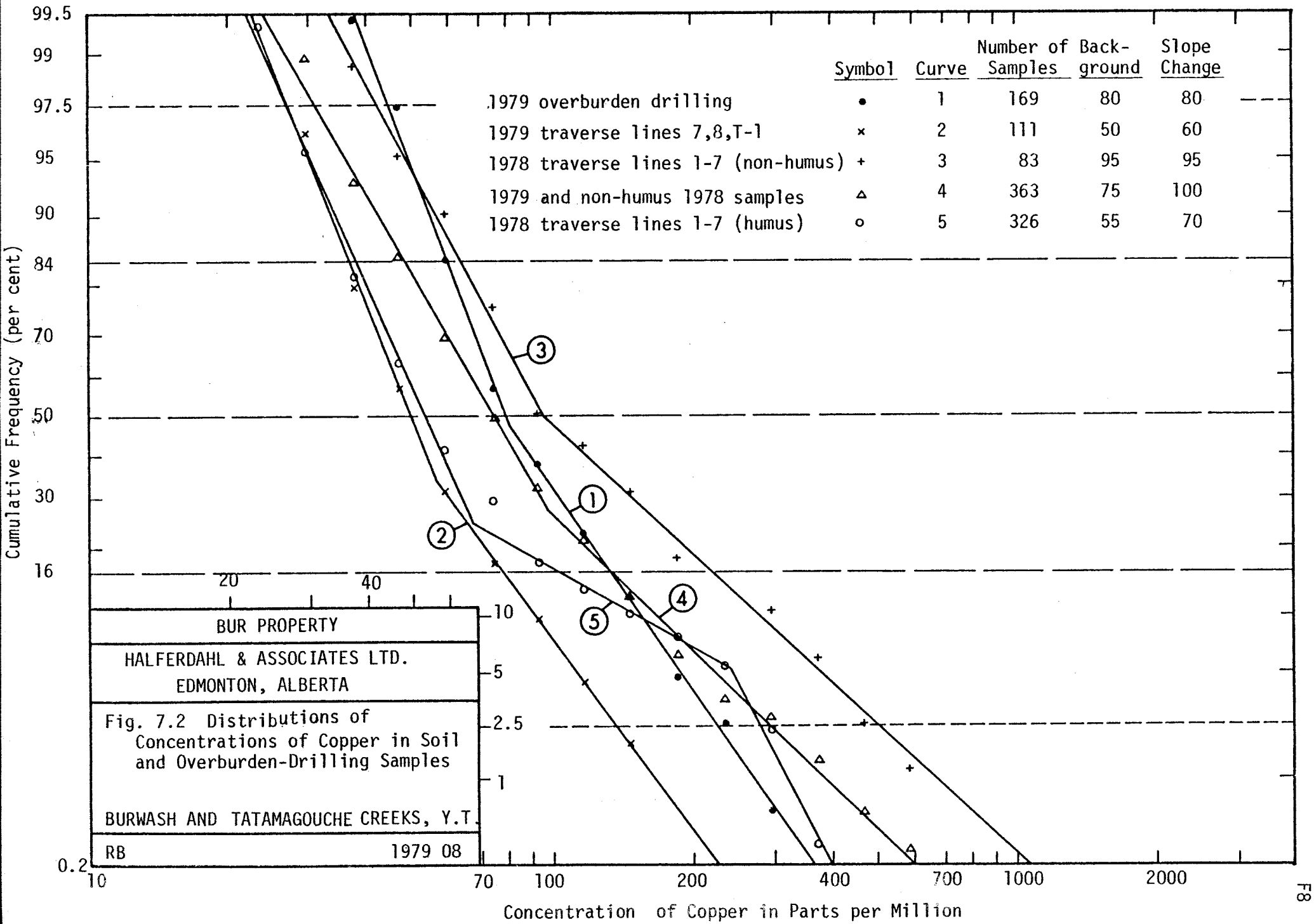
See appendix 4 for designation of humus and non-humus samples on the 1979 traverse lines.
 Claim posts and claim boundaries are only approximate.

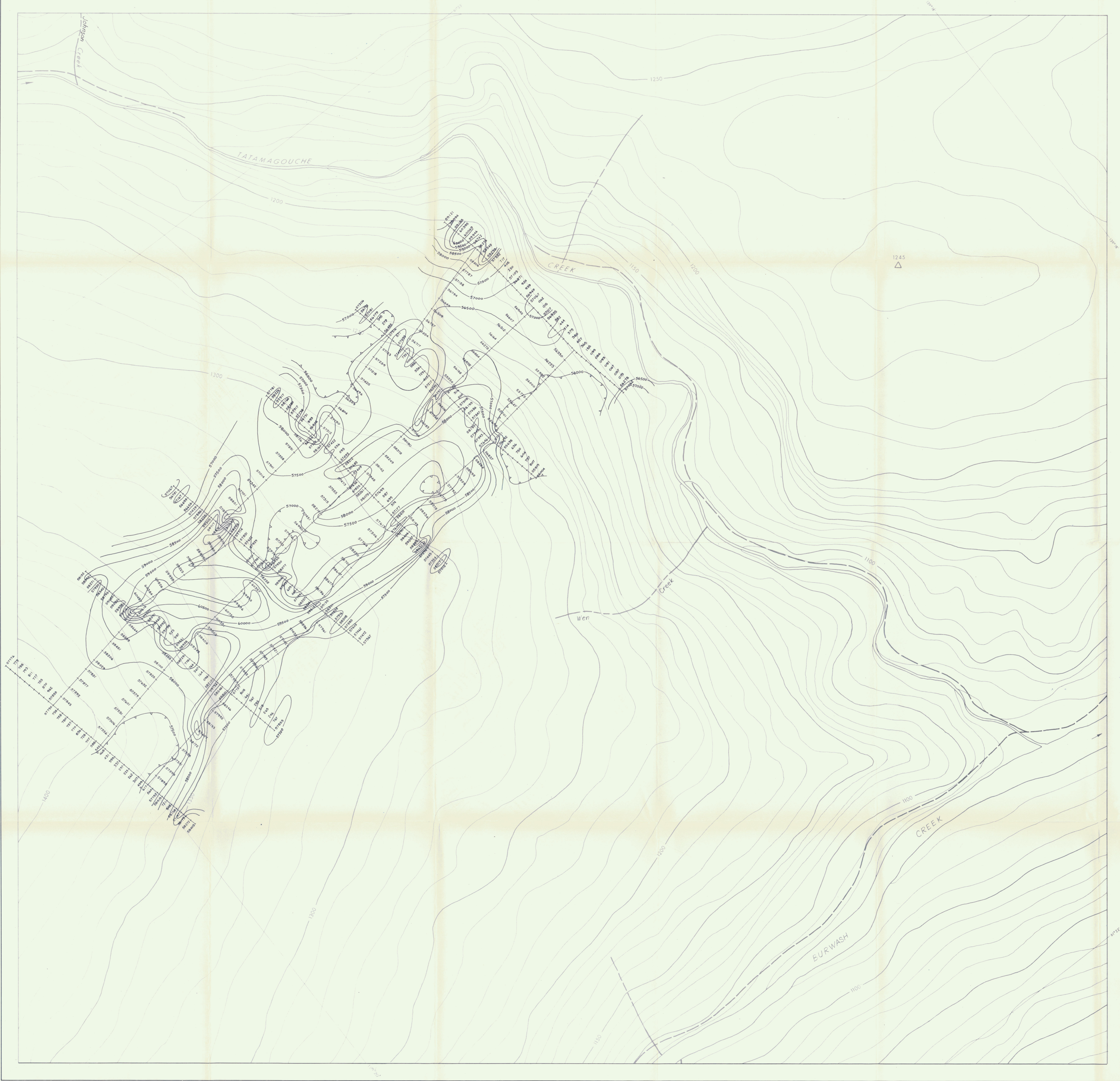
BUR PROPERTY HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.8 Traverse Lines 1, 2, 3, and 6 of 1978 and T-1 of 1979 Geochemical Surveys.	
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
RB	SCALE: 1:2000 1979.08



See Fig. 7.8 for symbols and notes.
 Claim posts and claim boundaries are only approximate.

REVISIONS		Fig. 7.9 Traverse Lines 4,5, and 7 of 1978 and 7 and 8 of 1979 Geo-chemical Surveys.
INITIALS	DATE	
		BURWASH & TATAMAGOUCHE CREEKS, Y.T.
		SCALE 1:5000
RB		1979.08





SYMBOLS

- Magnetometer reading in gammas* (Scintrex MP-2 proton magnetometer)
- Isomagnetic lines (interval 500 gammas)
- Magnetic depression
- Contour line with elevation in metres above sea level (interval 10 metres)

* For convenience, some of the repeated 55 through 59 thousands have been omitted from the readings.

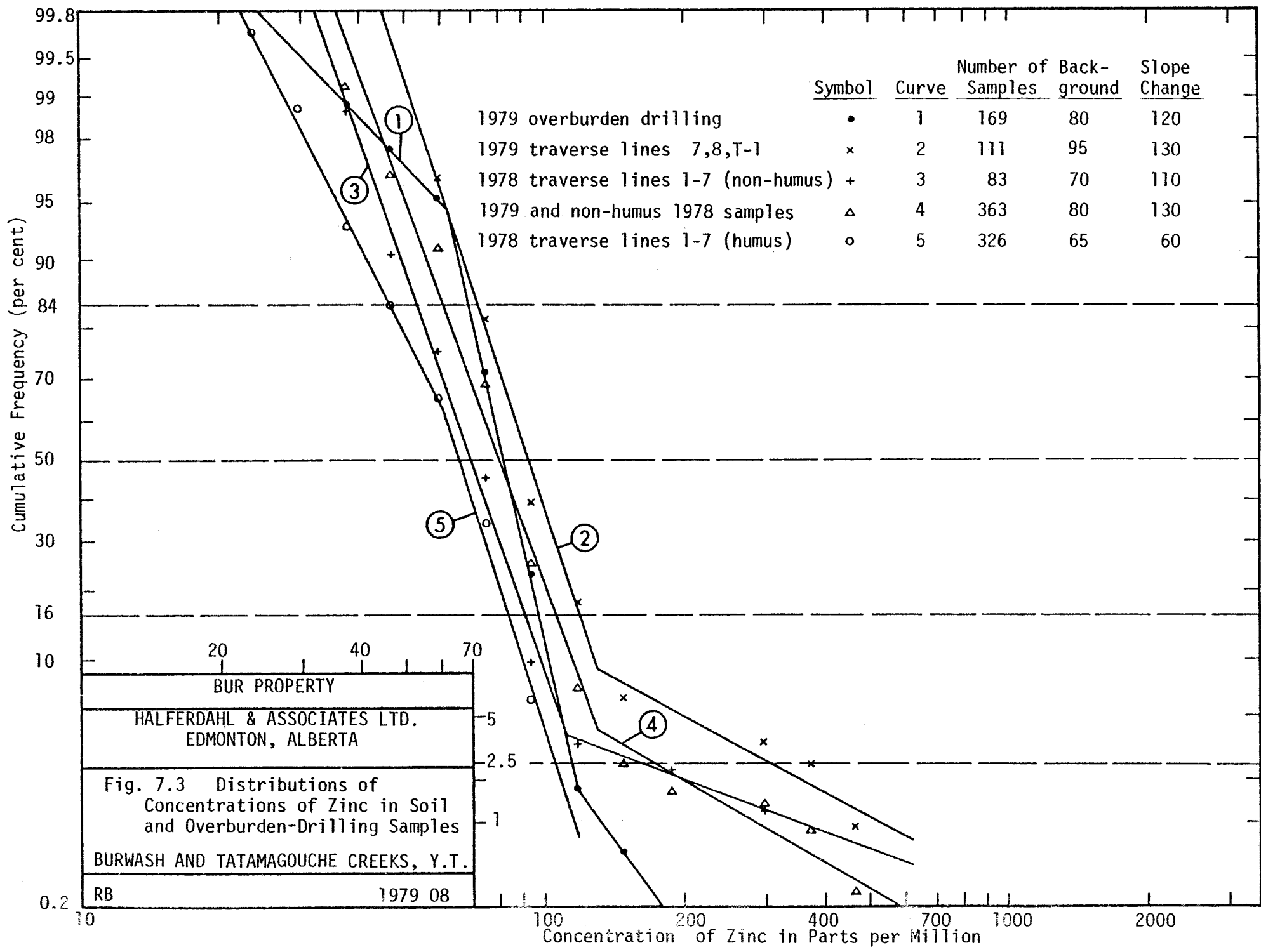
BUR PROPERTY
 HALFERDAHL & ASSOCIATES LTD.
 EDMONTON, ALBERTA

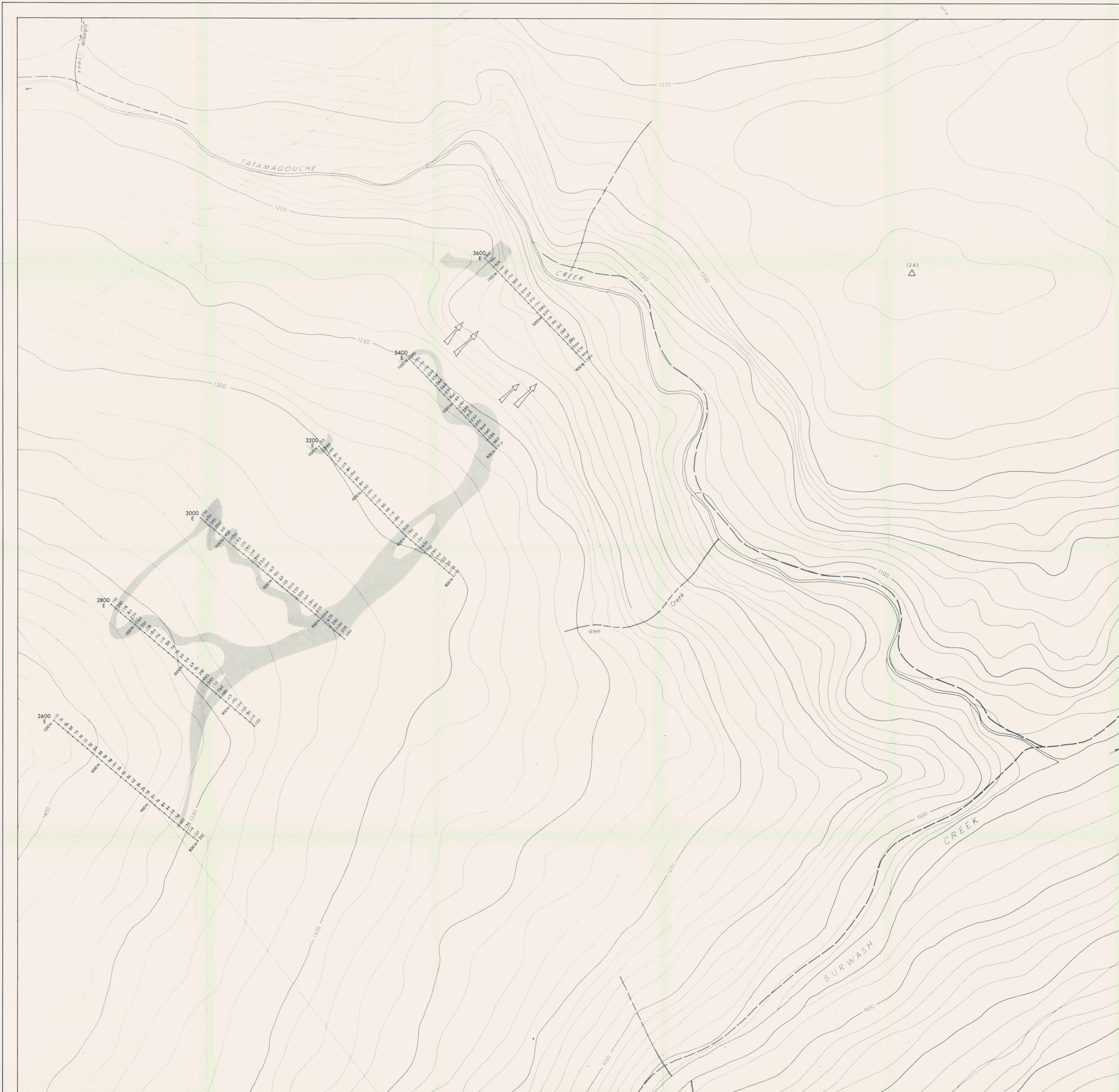
Fig. 8.1 Magnetometer Survey of Parts of
 Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5,
 and Wen 7.

BURWASH AND TATAMAGOUCHE CREEKS, Y.T.

0 50 100 150 200
 Metres
 SCALE: 1:2000

RB 1979.08



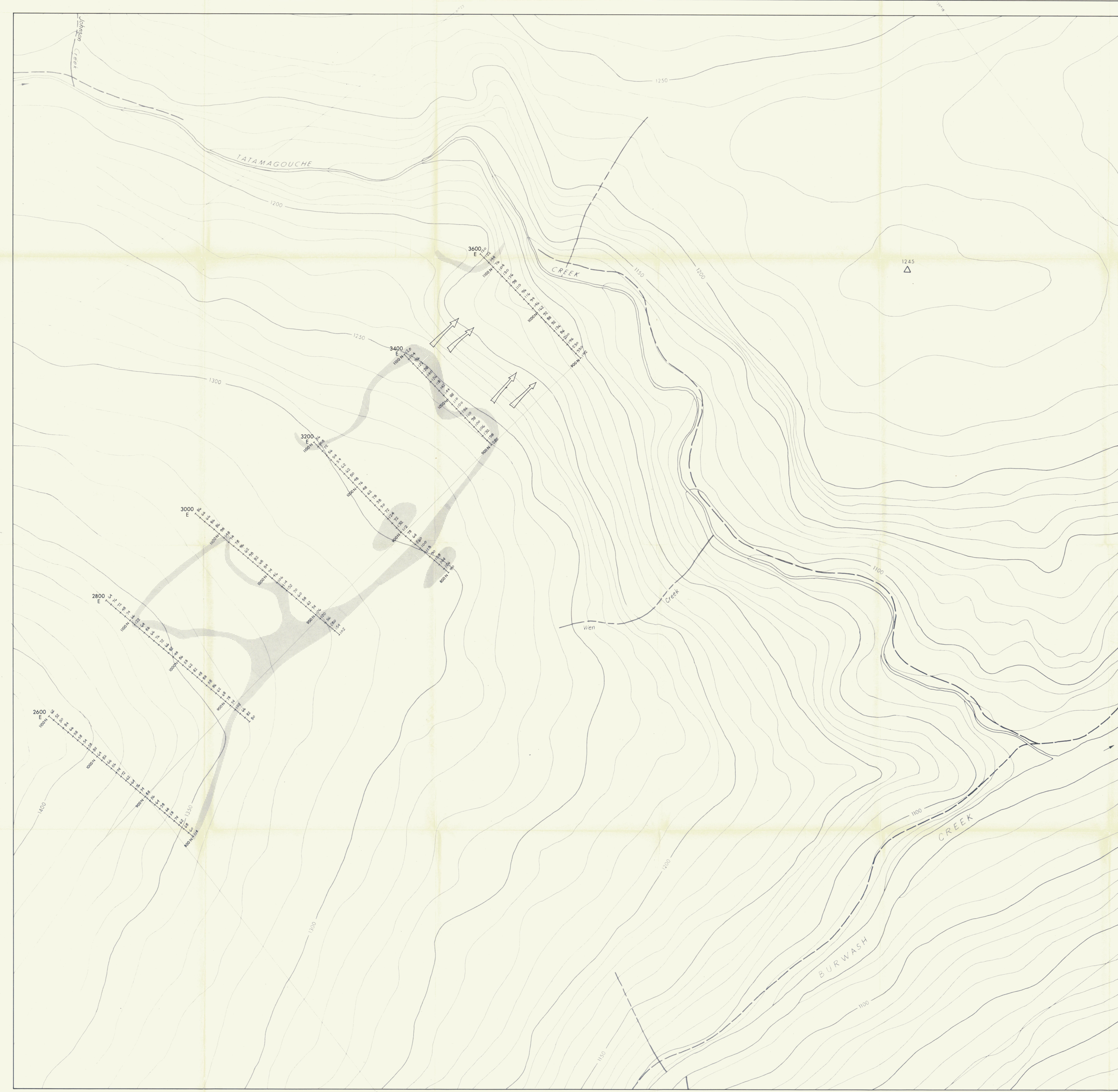


SYMBOLS

- Line of holes drilled in overburden, with location of drillhole and concentration of Nickel in parts per million
- Area with higher concentrations of nickel interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1)
- Direction of downslope creep of higher concentrations of Nickel
- Contour line with elevation in metres above sea level (interval 10 metres)

* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

BUR PROPERTY HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA
Fig. 9.1 Nickel in Overburden-Drilling Samples on Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7.
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.
SCALE: 1:2000



SYMBOLS

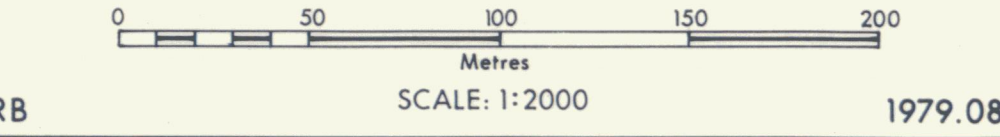
- Line of holes drilled in overburden, with location of drillhole and concentration of Copper in parts per million.....
- Area with higher concentration* of copper interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1).....
- Direction of downslope creep of higher concentrations of Copper.....
- Contour line with elevation in metres above sea level (interval 10 metres).....

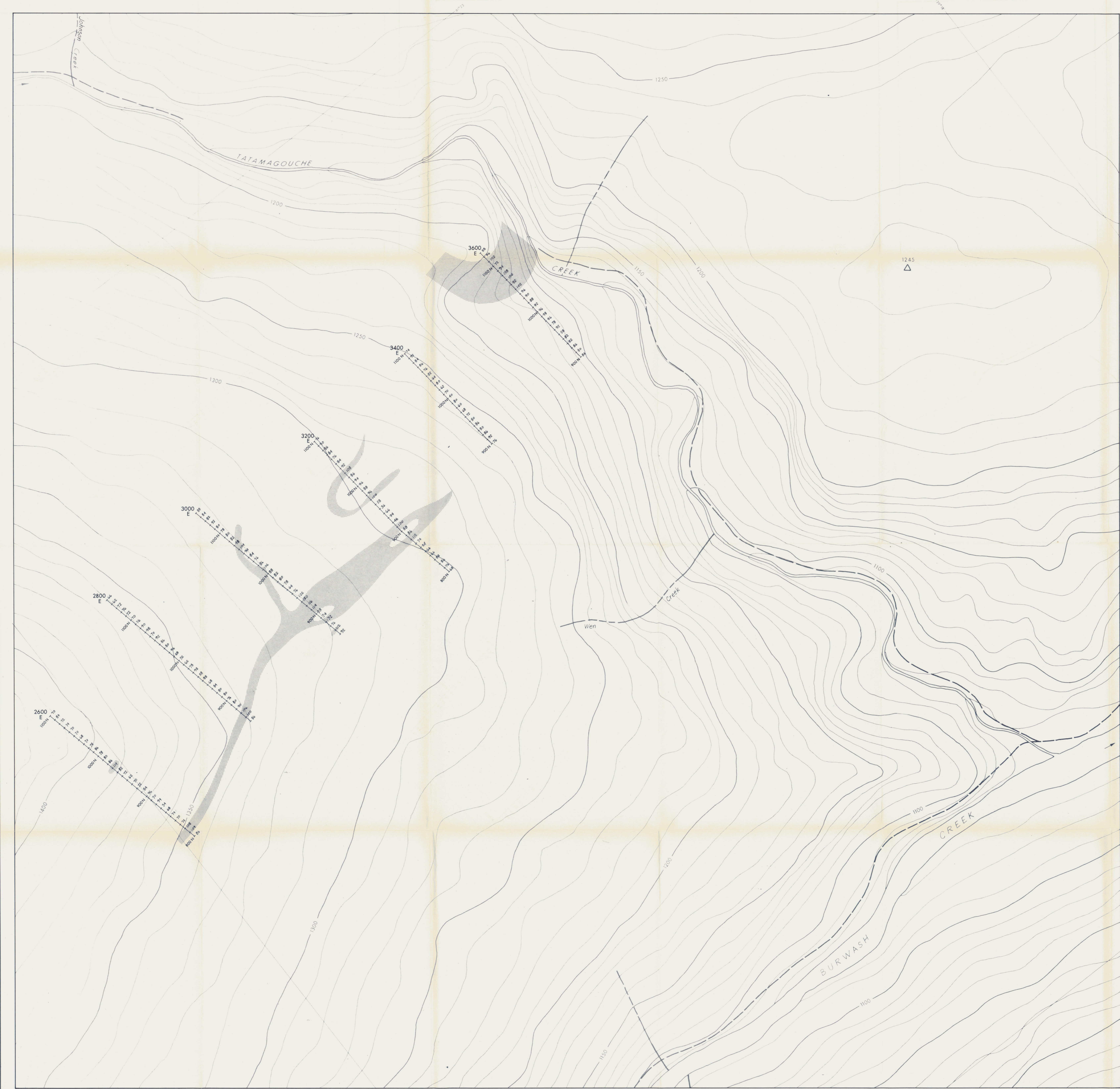
* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

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EDMONTON, ALBERTA

Fig. 9.2 Copper in Overburden-Drilling Samples on Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7.

BURWASH AND TATAMAGOUCHE CREEKS, Y.T.





SYMBOLS

Line of holes drilled in overburden, with location of drillhole and concentration of Zinc in parts per million.....

Area with higher concentrations of zinc interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1).....

Contour line with elevation in metres above sea level (interval 10 metres).....

* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

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EDMONTON, ALBERTA

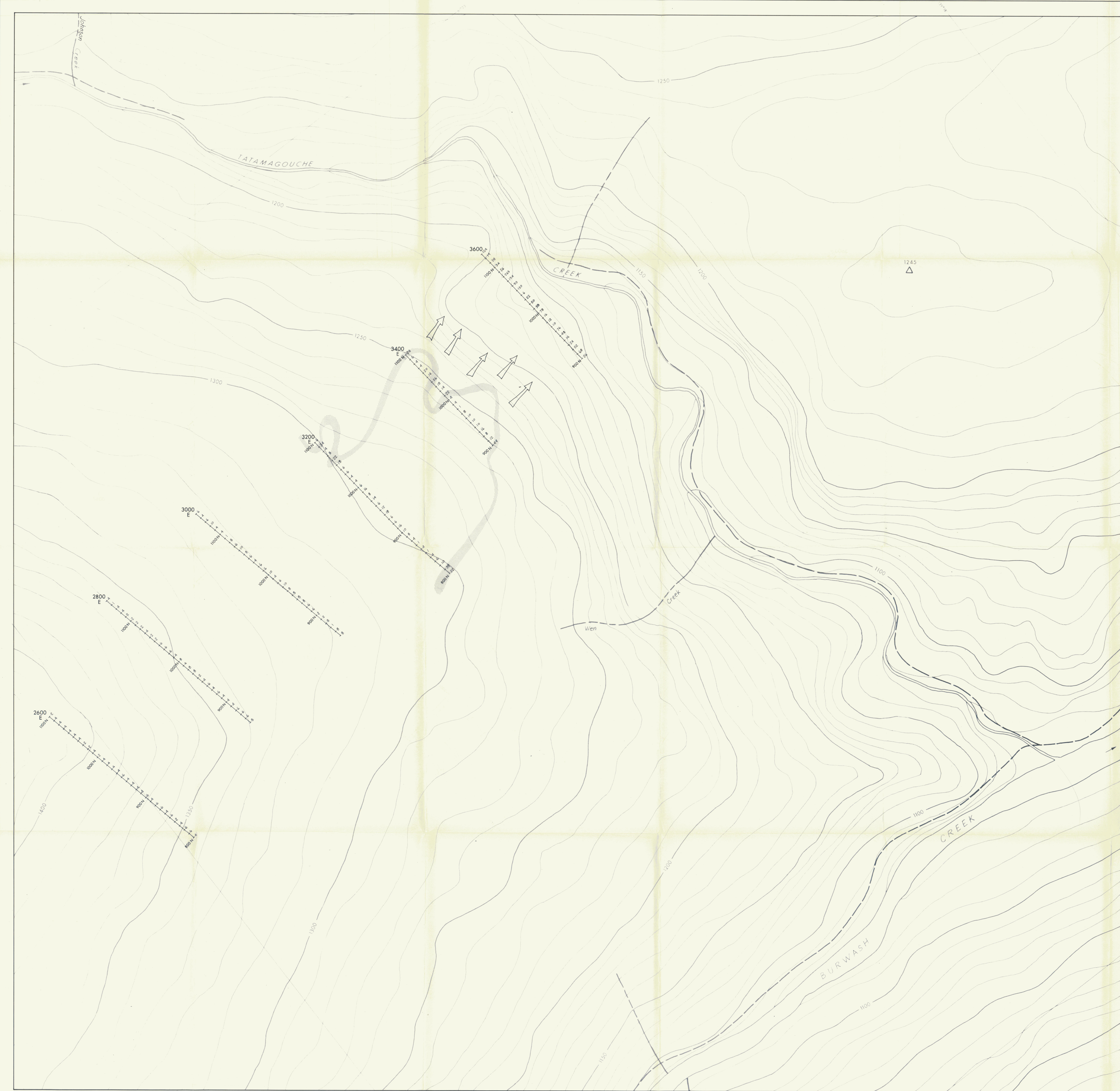
Fig. 9.3 Zinc in Overburden-Drilling Samples on Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7.

BURWASH AND TATAMAGOUCHE CREEKS, Y.T.

0 50 100 150 200
Metres

SCALE: 1:2000

RB 1979.08

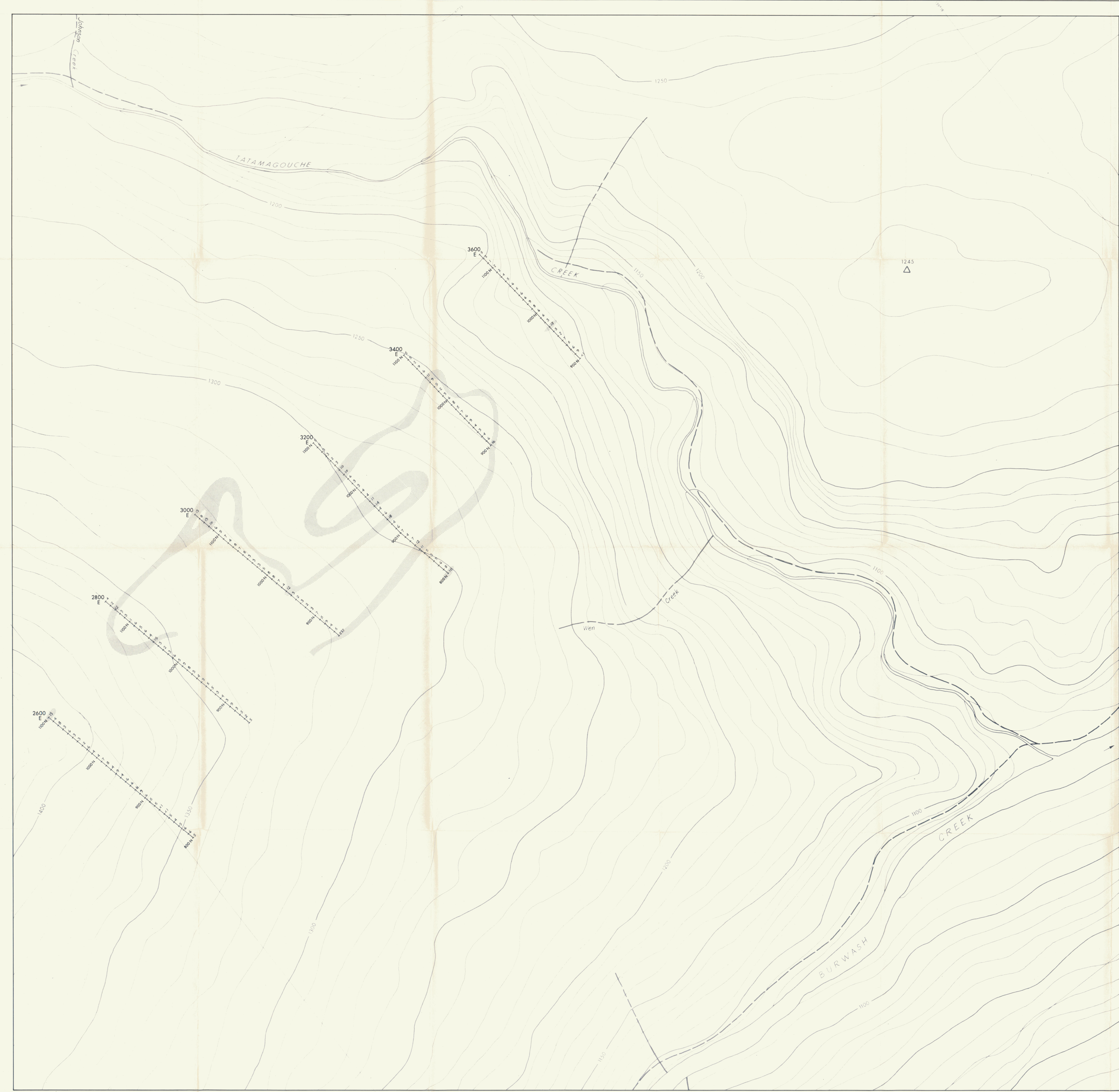


SYMBOLS

- Line of holes drilled in overburden, with location of drillhole and concentration of Lead in parts per million
- Area with higher concentrations of lead interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1)
- Direction of downslope creep of higher concentrations of Lead
- Contour line with elevation in metres above sea level (interval 10 metres)

* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

BUR PROPERTY HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA
Fig. 9.4 Lead in Overburden-Drilling Samples on Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7.
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.
SCALE: 1:2000



SYMBOLS

- Line of holes drilled in overburden, with location of drillhole and concentration of Gold in parts per billion.....
- Area with higher concentration* of gold interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1).....
- Contour line with elevation in metres above sea level (interval 10 metres).....

* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

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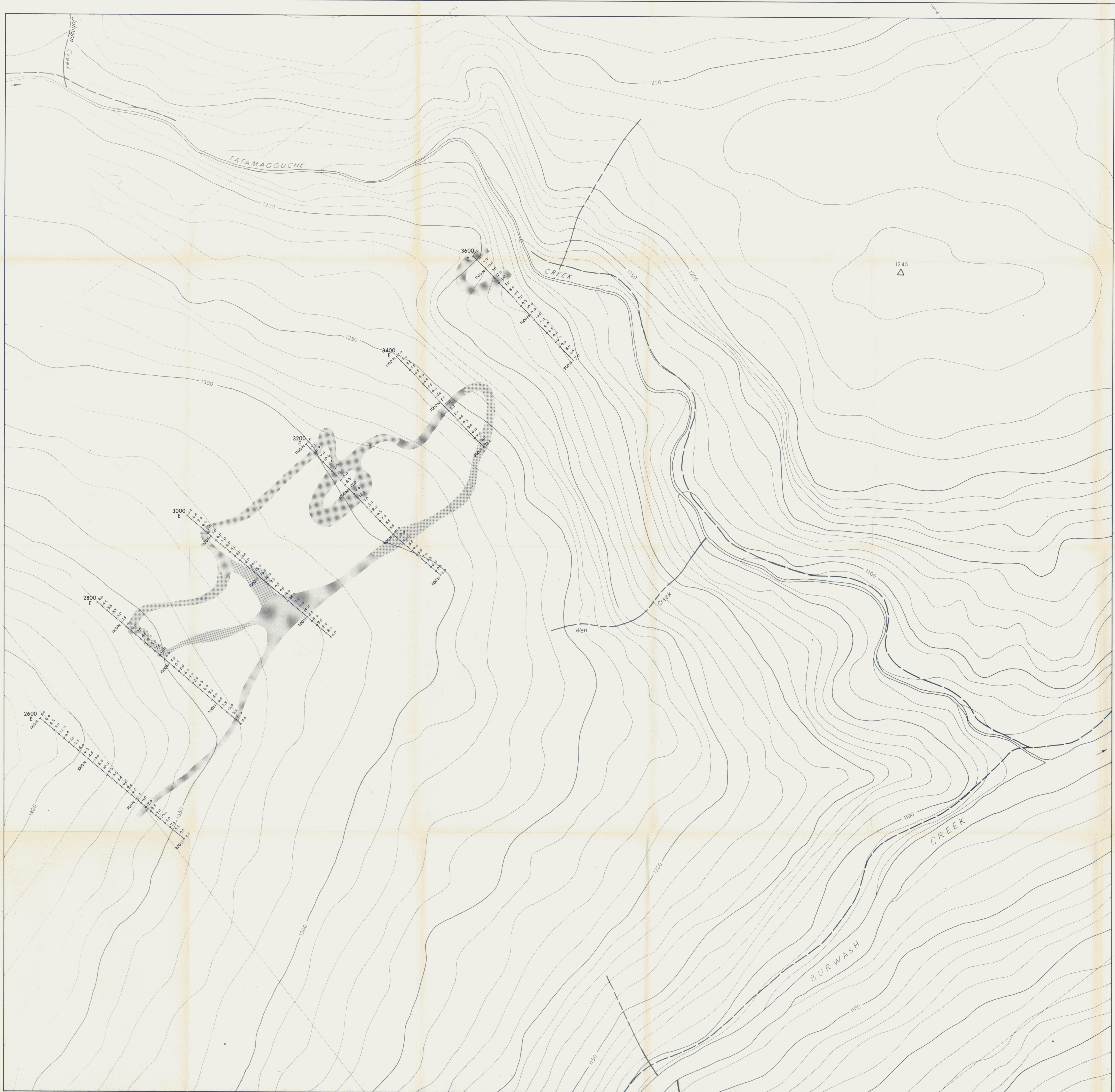
Fig. 9.5 Gold in Overburden-Drilling
Samples on Claims Jo 3, Jo 4, Jo 5,
Jo 6, Jo 8, Wen 5, and Wen 7.

BURWASH AND TATAMAGOUCHE CREEKS, Y.T.

0 50 100 150 200
Metres

SCALE: 1:2000

RB 1979.08



SYMBOLS

Line of holes drilled in overburden, with location of drillhole and concentration of Arsenic in parts per million

Area with higher concentrations* of arsenic interpolated between lines of drillholes according to the magnetometer survey (Fig. 8-1)

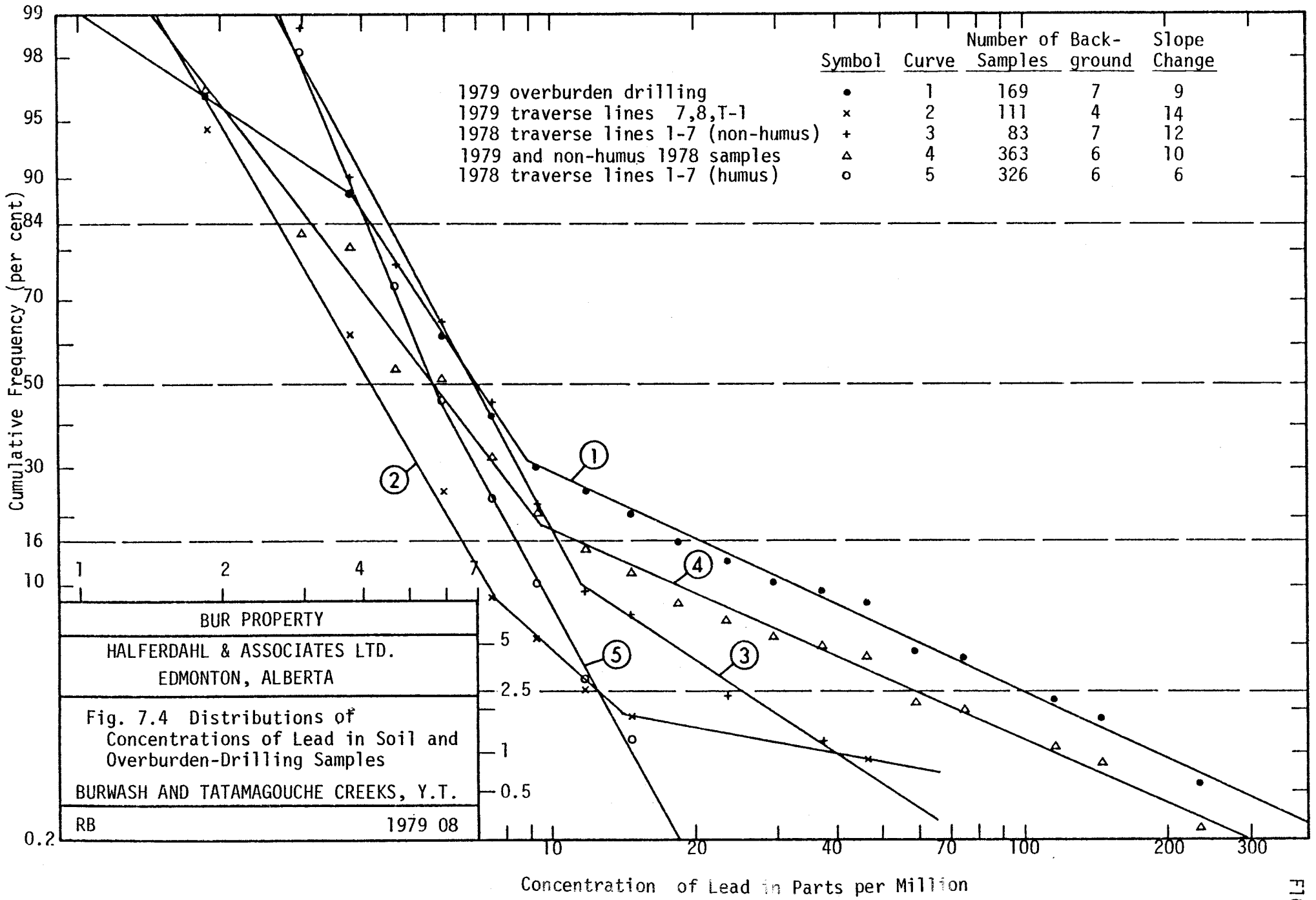
Contour line with elevation in metres above sea level (interval 10 metres)

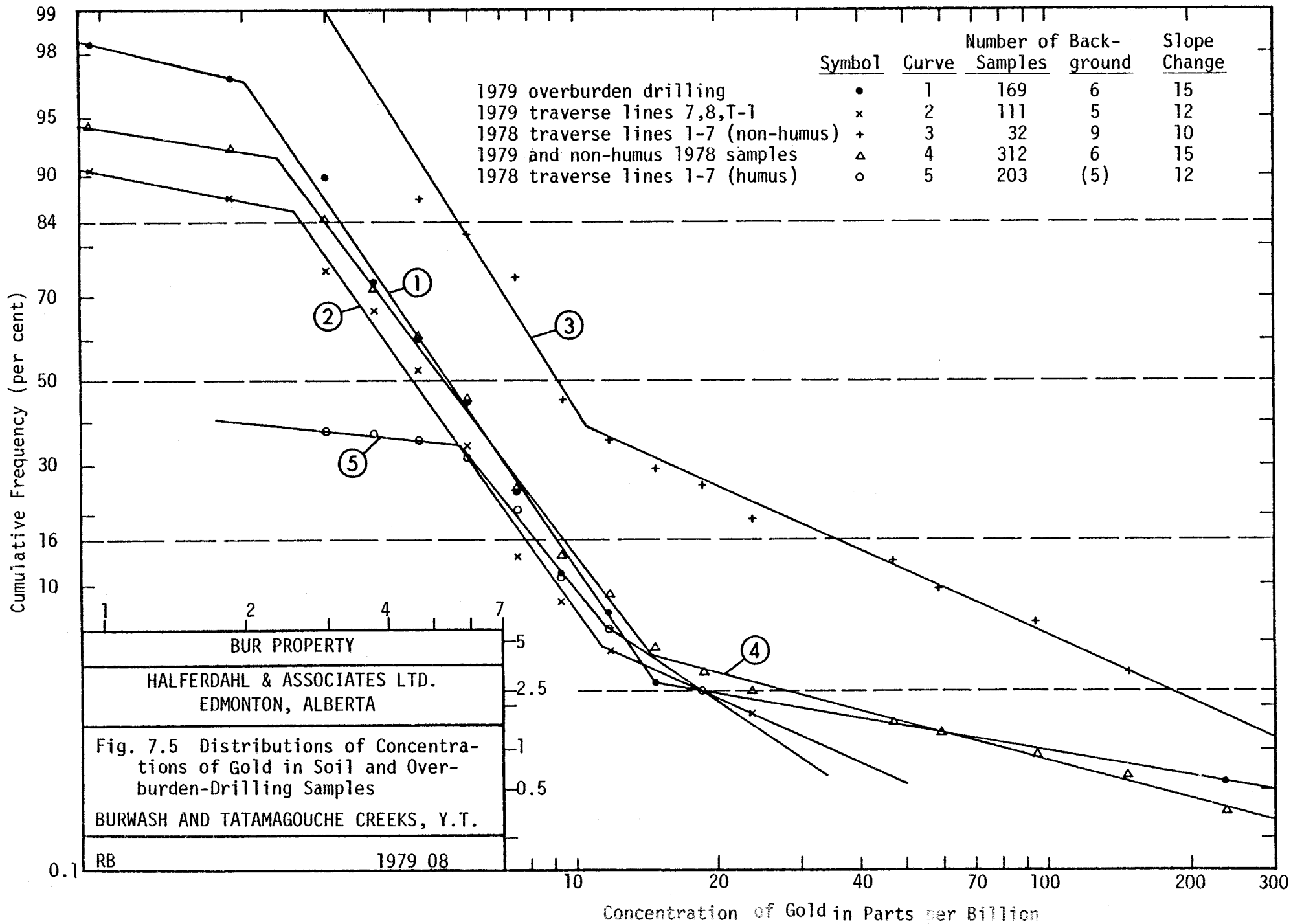
* Higher concentrations have been chosen arbitrarily as the spacing of the lines of drillholes and the erratic nature of the sampling method do not readily permit contouring of concentrations.

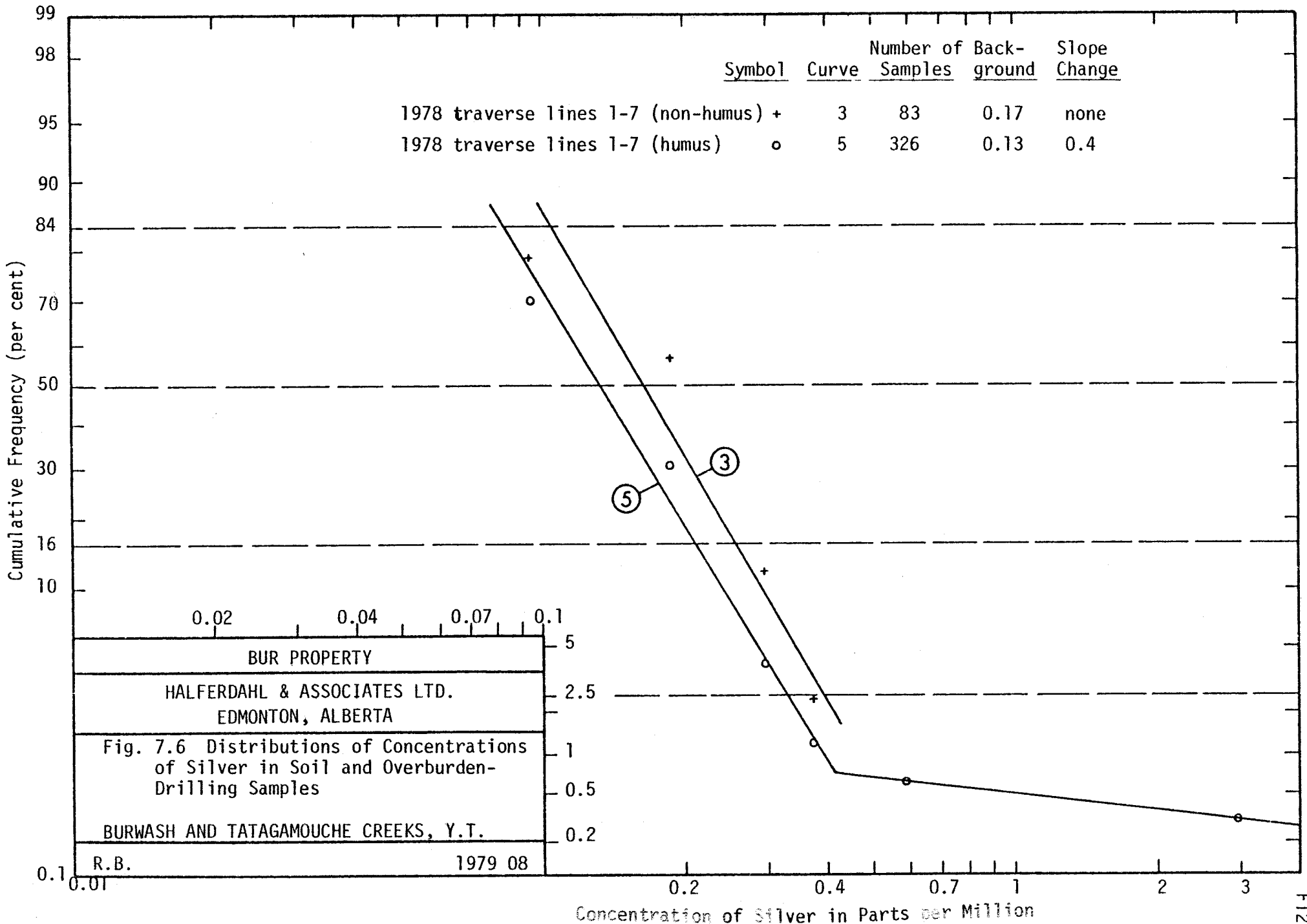
BUR PROPERTY
HALFERDAHL & ASSOCIATES LTD.
EDMONTON, ALBERTA

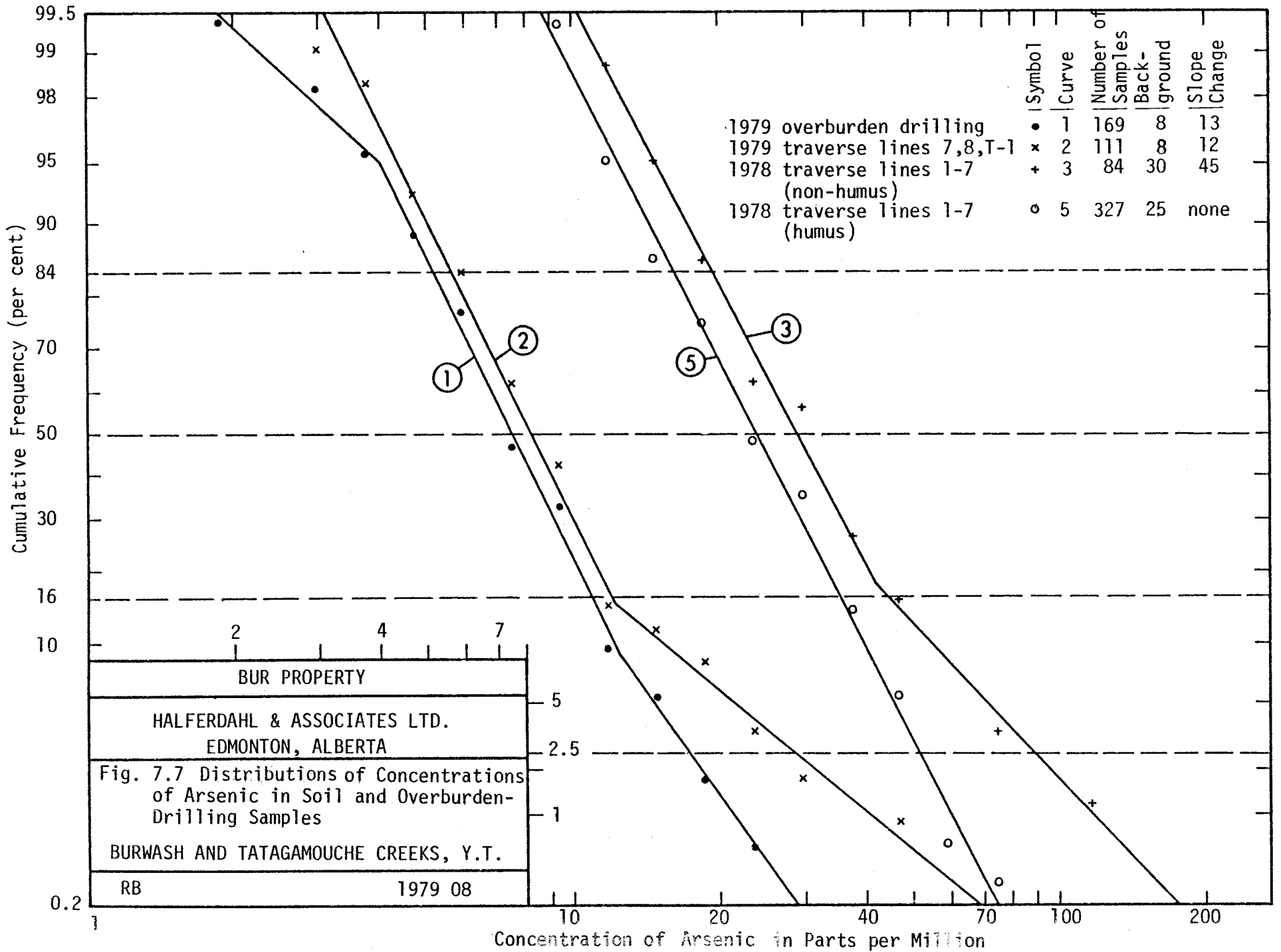
Fig. 9.6 Arsenic in Overburden-Drilling Samples on Claims Jo 3, Jo 4, Jo 5, Jo 6, Jo 8, Wen 5, and Wen 7.

BURWASH AND TATAMAGOUCHE CREEKS, Y.T.
SCALE: 1:2000
1979.08









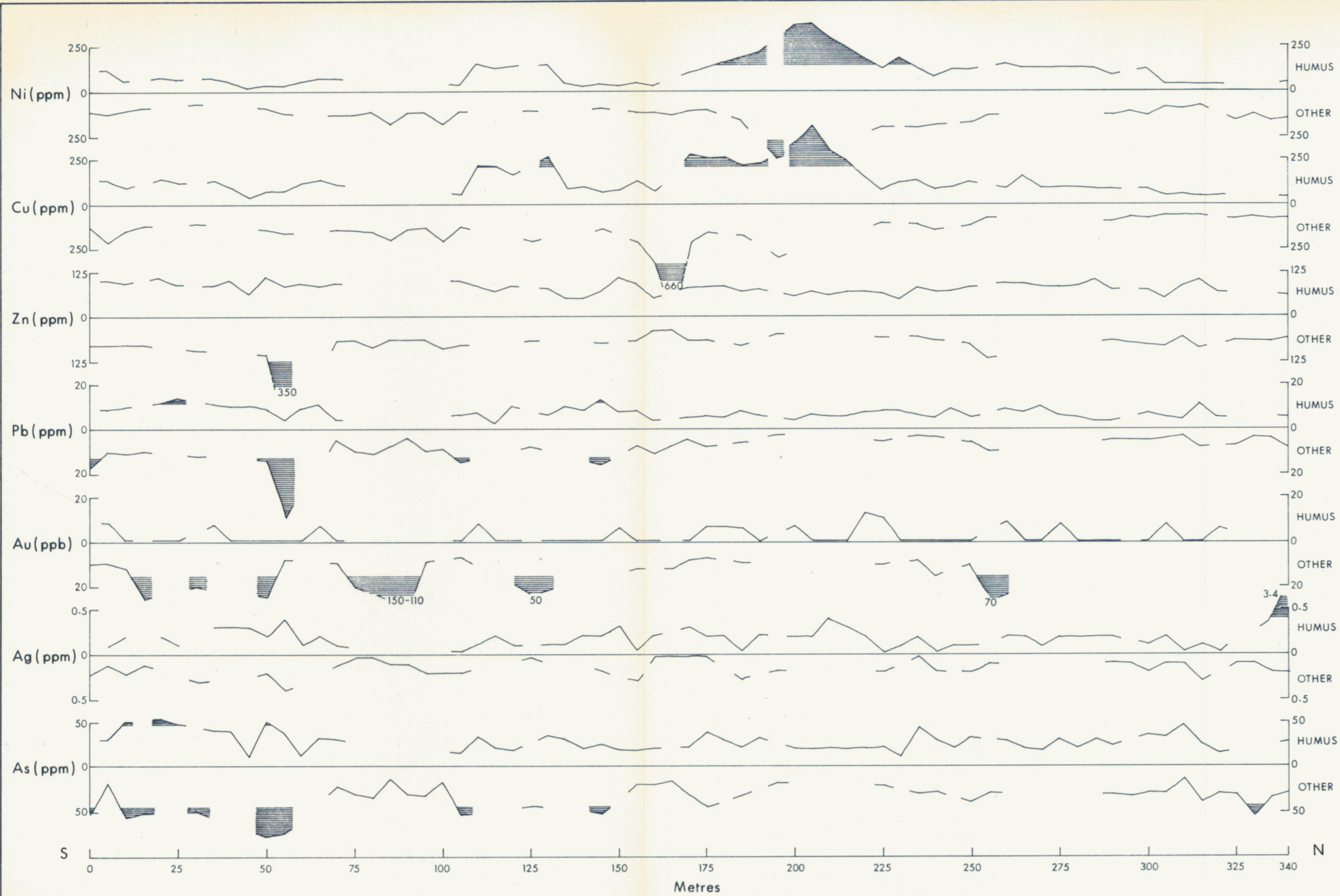
NOTES FOR FIG. 7.10 TO 7.19

Concentrations of nickel, copper, zinc, lead, gold, silver, and arsenic greater than the limits listed below have been indicated on Fig. 7.10 to 7.19 by hatching.

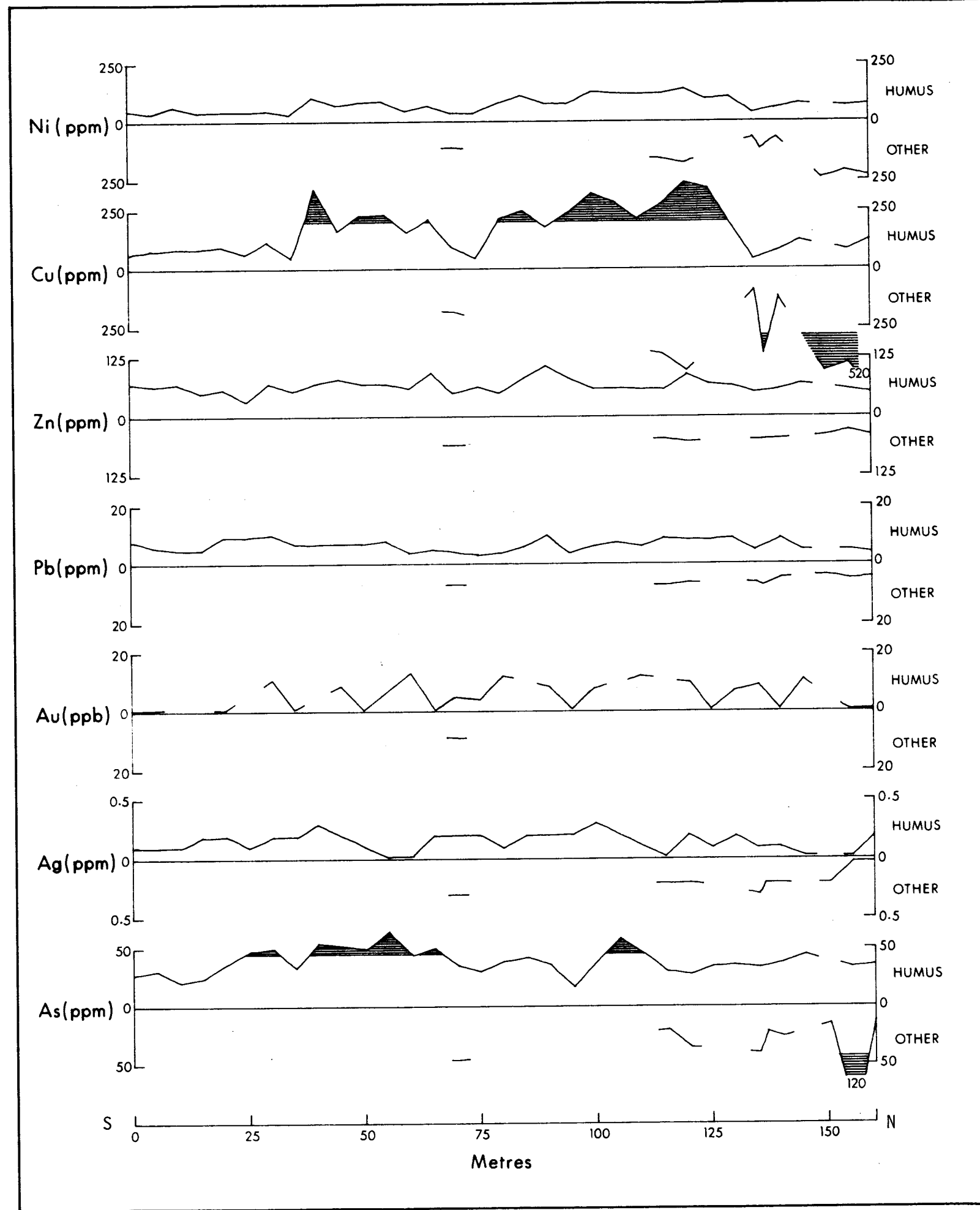
	<u>Humus</u>	<u>Other</u>
Nickel	145 ppm	280 ppm
Copper	200 ppm	350 ppm
Zinc	110 ppm	130 ppm
Lead	12 ppm	12 ppm
Gold	15 ppb	15 ppb
Silver	0.4 ppm	0.4 ppm
Arsenic 1978 Samples	45 ppm	45 ppm
1979 Samples	13 ppm	13 ppm

For most of these elements these levels may be considered thresholds of anomalous concentrations but a few have been arbitrarily chosen as explained in the text.

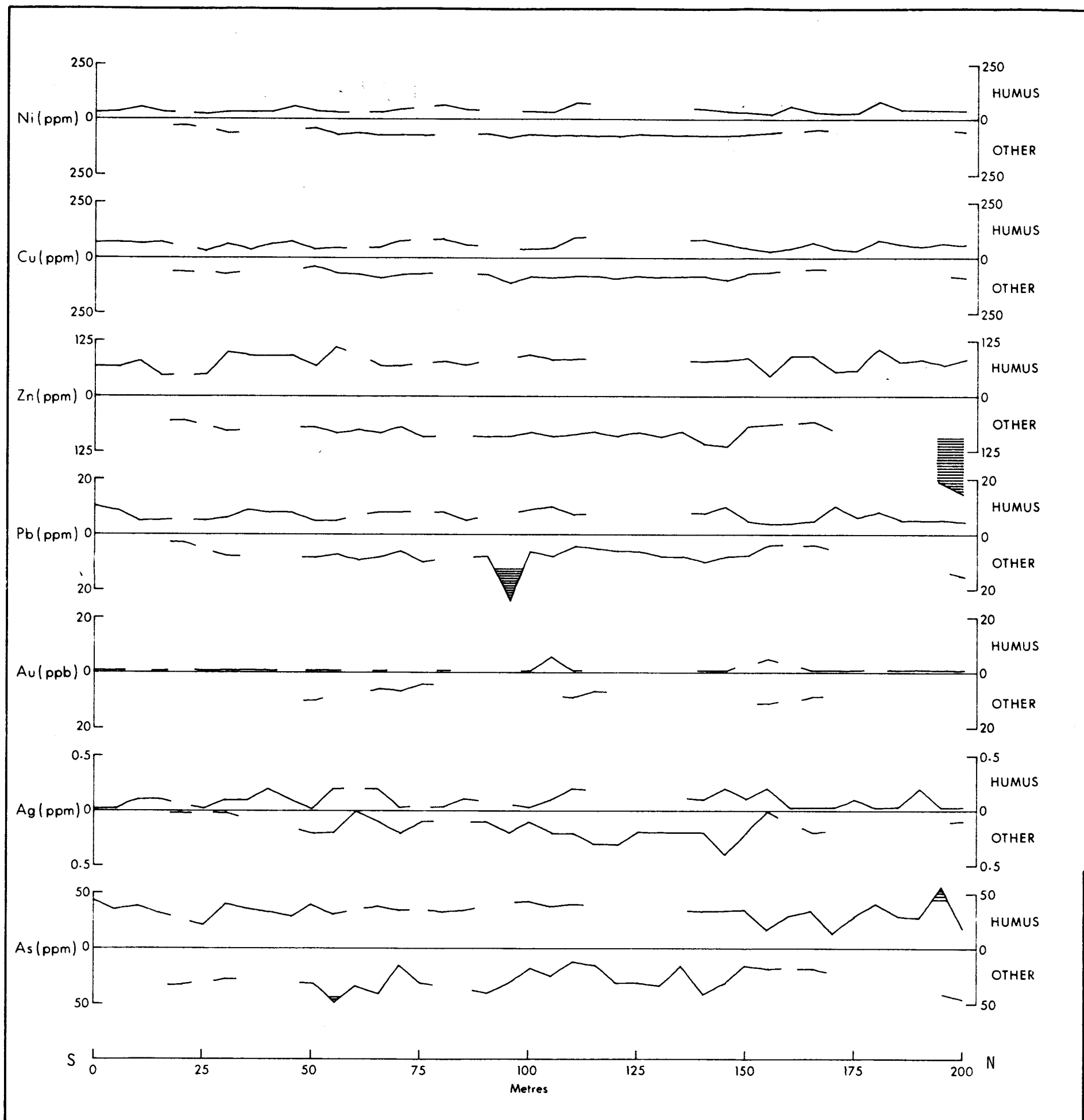
Most samples along traverse lines 1 to 6 (all 1978), data for which are shown in Fig. 7.10 to 7.15, respectively, are of humus with fewer of clay. At some sample locations both humus and clay were collected. The concentration scales increase downwards for the non-humus samples. All samples from traverse line 7 (1978), data for which are shown in Fig. 7.16, are humus. The samples from traverse lines 7,8, and T-1 (all 1979) are as described in appendix 4 without distinction between humus and clay in Fig. 7.17 to 7.19, respectively.



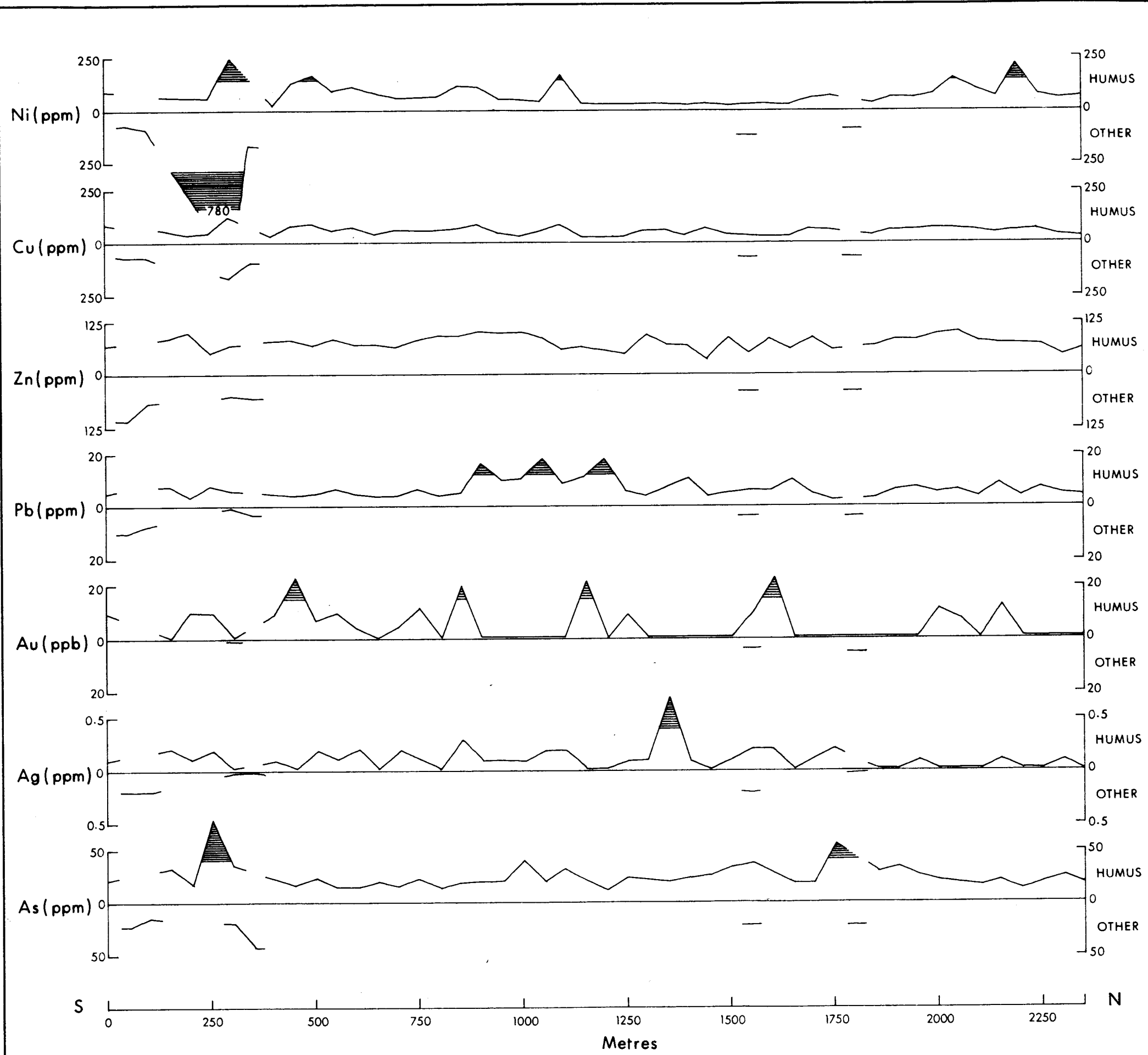
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.10 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 1 of 1978 Geochemical Survey.	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
RB	1979.08



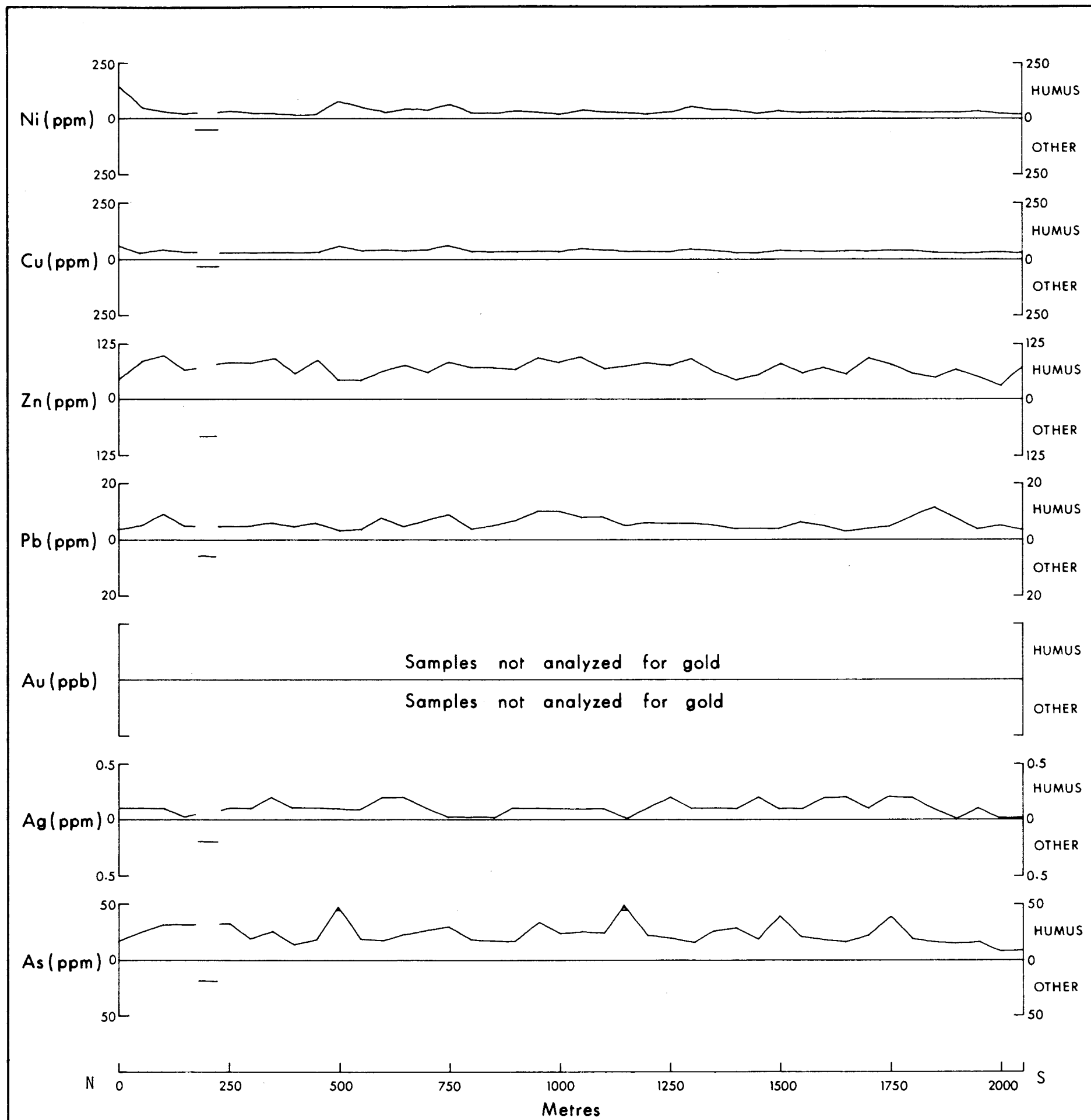
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.12 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 3 of 1978 Geochemical Survey	
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
RB	1979.08



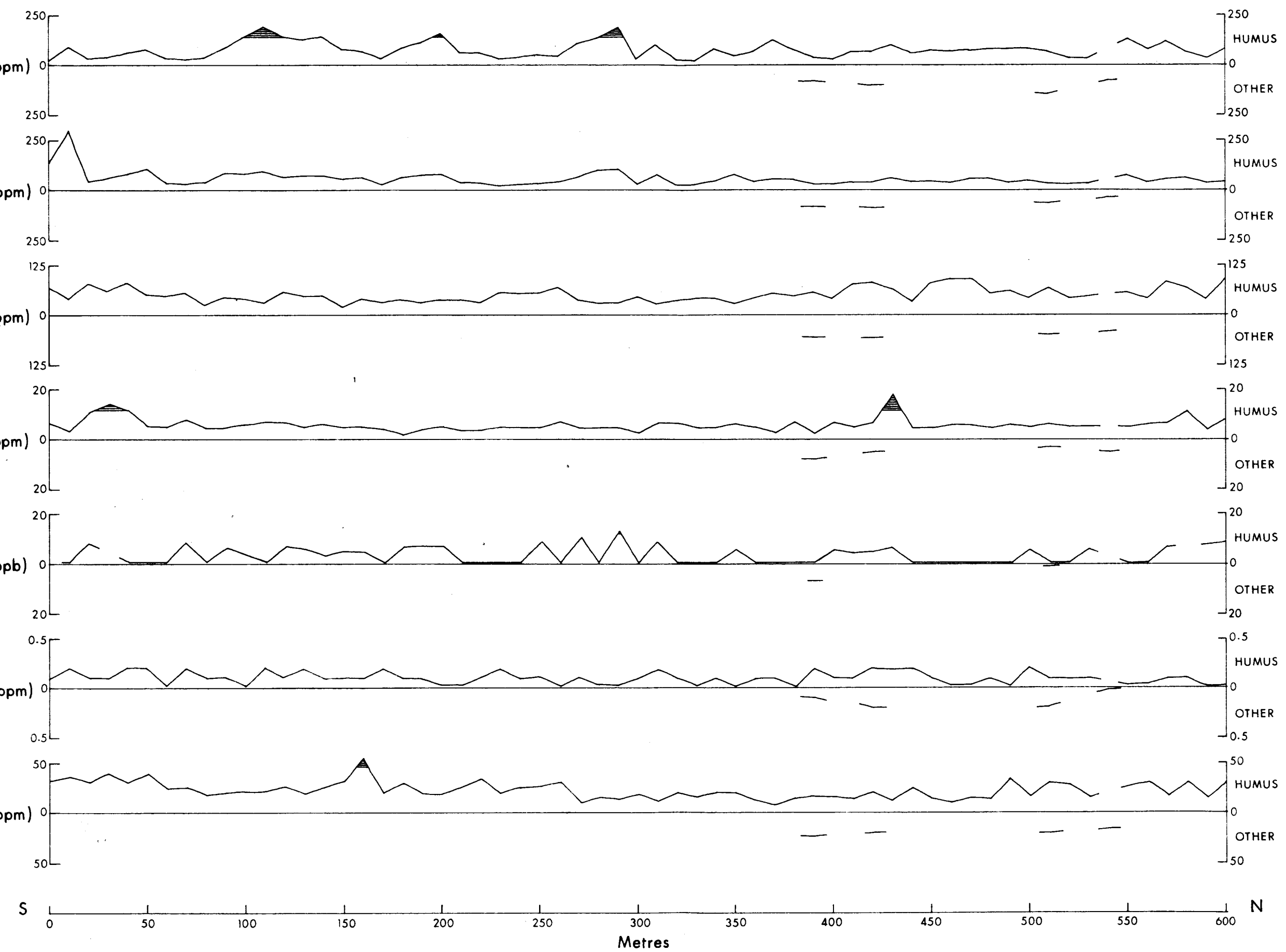
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
<p>Fig. 7.11 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 2 of 1978 Geochemical Soil Survey BURWASH AND TATAMAGOUCHE CREEKS, Y.T.</p>	
RB	1979 08



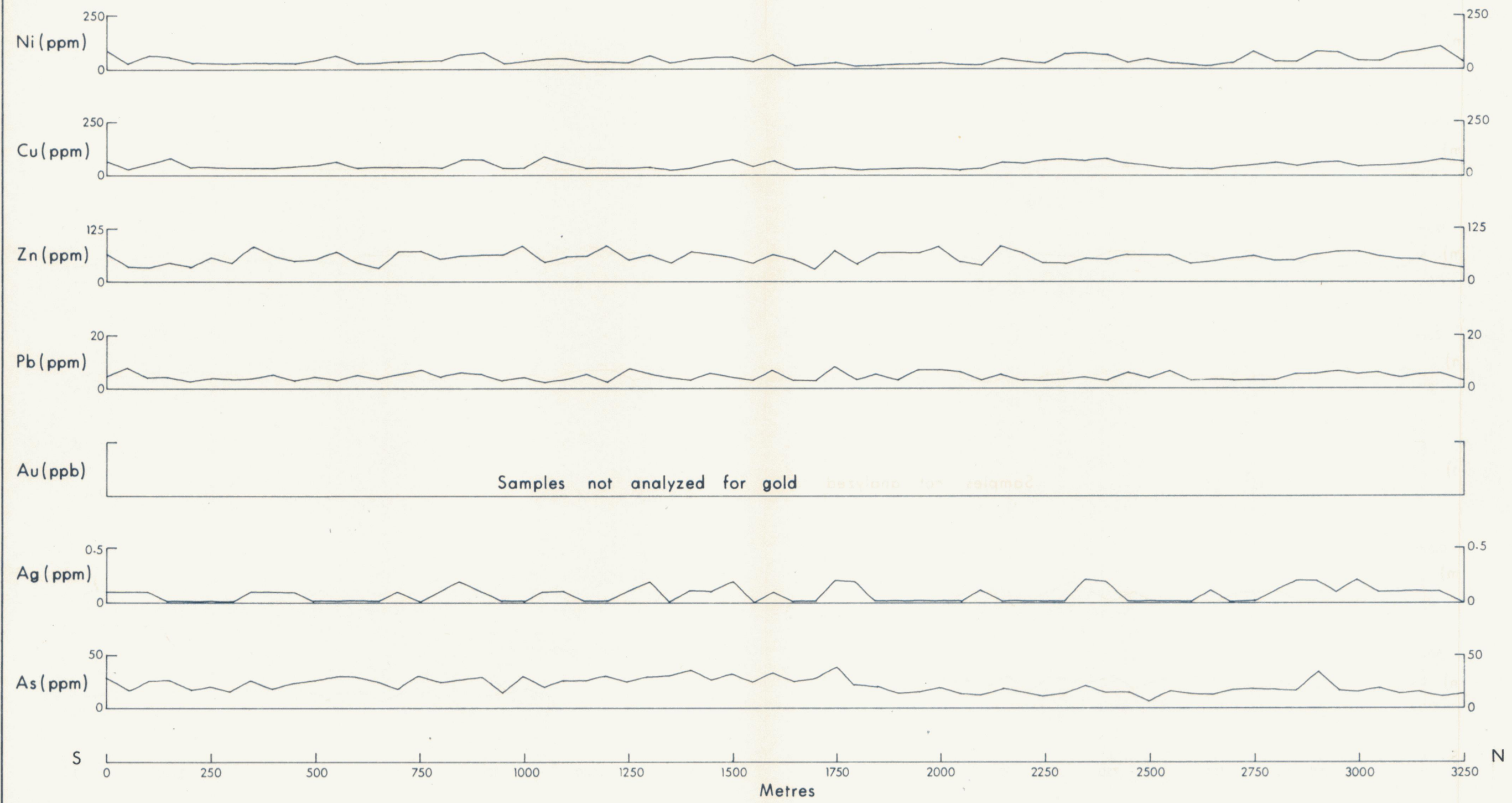
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.13 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 4 of 1978 Geochemical Survey.	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
RB	1979.08



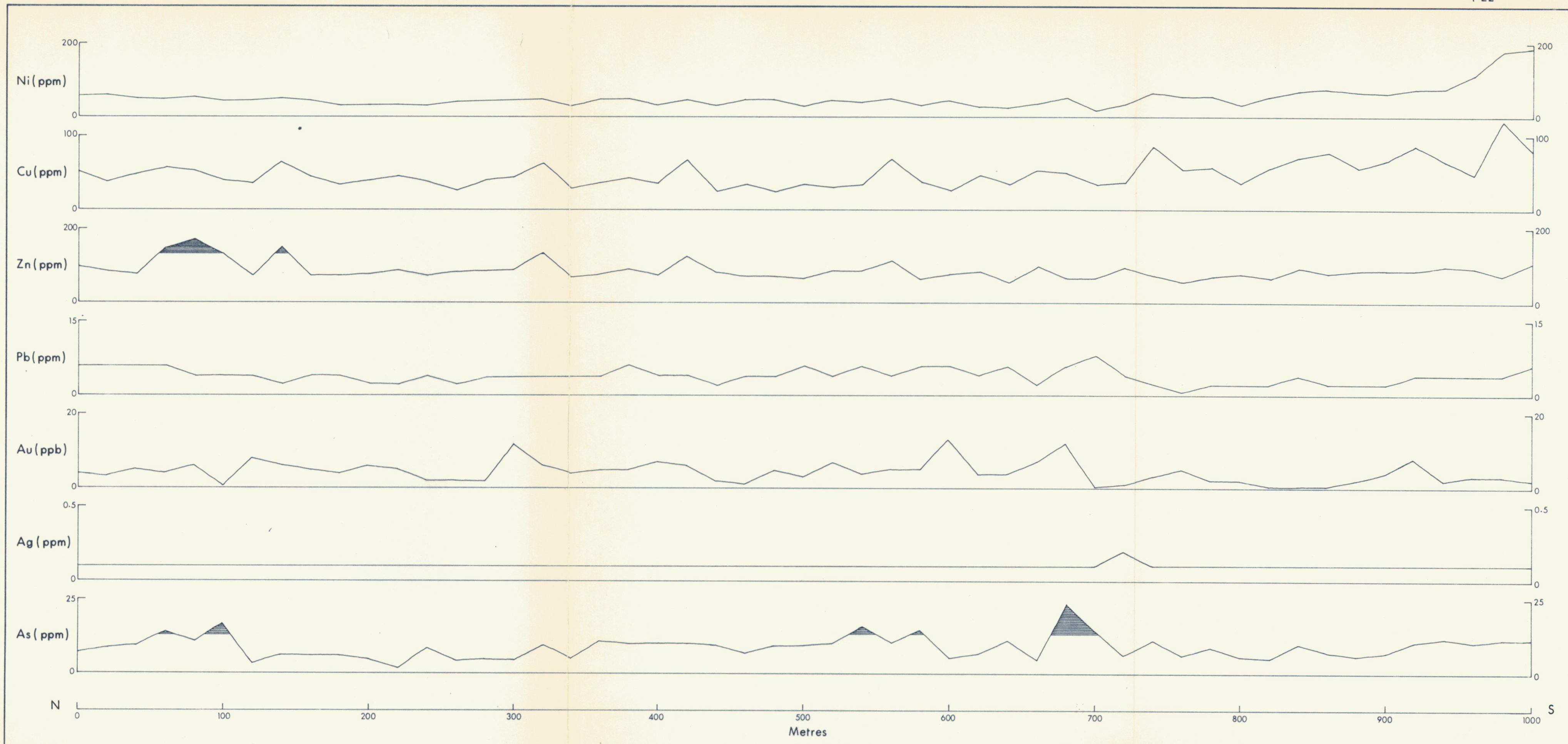
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD.	
EDMONTON, ALBERTA	
<p>Fig. 7.14 Concentrations of Ni, Cu, Zn, Pb, Ag, and As in Soils along Traverse Line 5 of 1978 Geochemical Survey</p>	
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
RB	1979 08



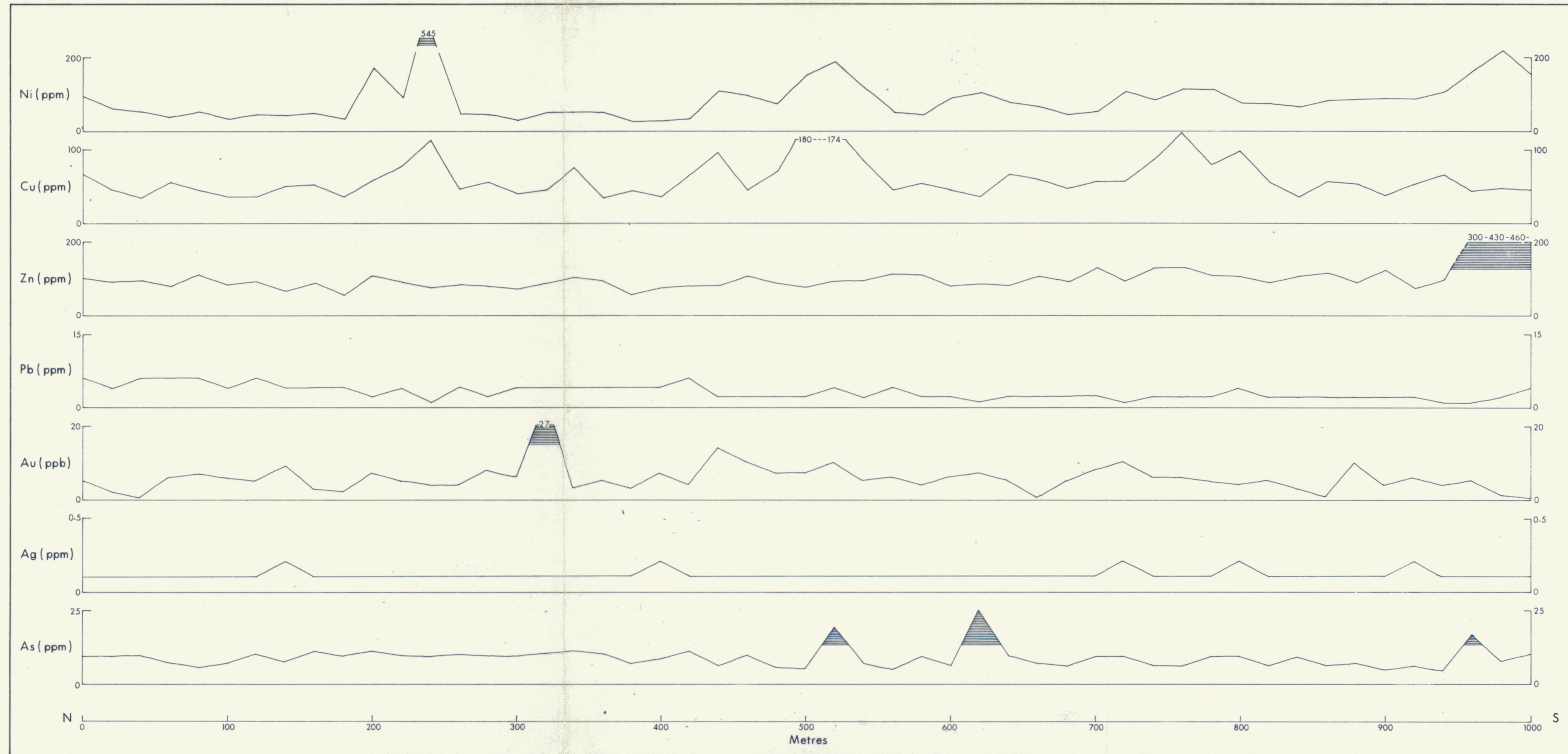
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
<p>Fig. 7.15 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 6 of 1978 Geochemical Survey.</p>	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
R.B.	1979.08



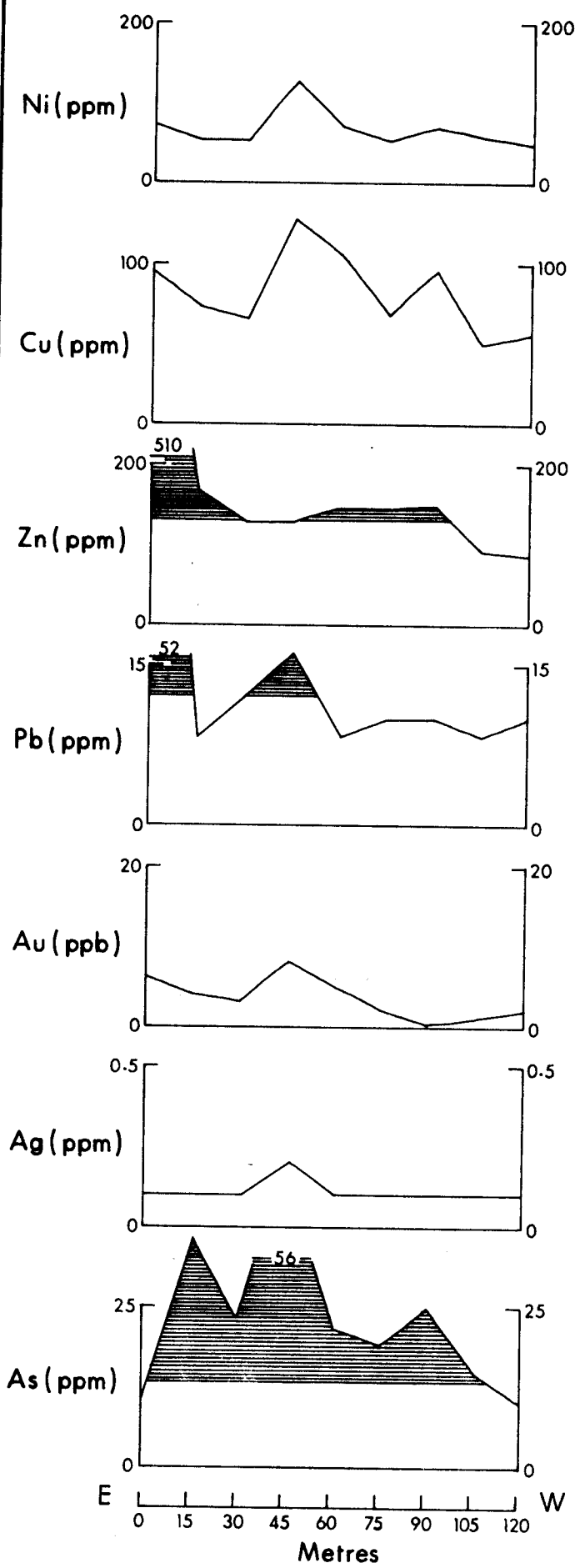
BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.16 Concentrations of Ni, Cu, Zn, Pb, Ag, and As in Soils along Traverse Line 7 of 1978 Geochemical Survey.	
BURWASH & TATAMAGOUCHE CREEKS, Y.T.	
RB	1979.08



BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.17 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line 7 of 1979 Geochemical Survey.	
BURWASH AND TATAMAGOUCHE CK., Y.T.	
RB	1979.08



BUR PROPERTY
HALFERDAHL & ASSOCIATES LTD.
EDMONTON, ALBERTA
Fig. 7.18 Concentrations of Ni, Cu, Zn,
Pb, Au, Ag, and As in Soils along
Traverse Line 8 of 1979 Geochemical
Survey.
BURWASH & TATAMAGOUCHE CREEKS, Y.T.
RB 1979.08



BUR PROPERTY	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 7.19 Concentrations of Ni, Cu, Zn, Pb, Au, Ag, and As in Soils along Traverse Line T-1 of 1979 Geochemical Survey	
BURWASH AND TATAMAGOUCHE CREEKS, Y.T.	
RB	1979 08