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GOLD RECONNAISSANCE IN THE ARCHEAN ASHUANIPI COMPLEX OF WESTERN LABRADOR

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ABSTRACT

A regional-scale gold-reconnaissance investigation in the Archean Ashuanipi Complex of western Labrador has revealed the presence of low-level mineralization. Approximately three quarters of the complex was examined after discovery in Quebec by the Ministére de l'Energie et des Ressources du Québec of significant gold mineralization 70 km northwest of Schefferville in similar Archean rocks. Gold values obtained during this study on samples of both bedrock and boulders range from less than 1 ppb to 760 ppb, and background values are unusually high, commonly in the order of 15 to 30 ppb. Six samples of bedrock containing gold in excess of 100 ppb were obtained, and gave values between 110 and 430 ppb.

INTRODUCTION

The Archean Superior structural province, where exposed in western Labrador, comprises a sequence of previously little-divided crystalline rocks referred to as the Ashuanipi Complex (Frarey, 1961; Fahrig, 1967). The part of the complex examined during 1986 is shown in Figure 1. Parts of the complex have been mapped by Stevenson (1963, 1964), Baragar (1967), Fahrig (1967) and Rivers *et al.* (1985a,b), at scales ranging from '1 inch to 4 miles' to '1 inch to 1 mile'. During the summer of 1986, the northern half of the complex was remapped by John Percival of the Geological Survey of Canada at 1:50,000 scale and reproduced at 1:250,000 scale (Figure 2).

The Ashuanipi gold-reconnaissance project was initiated for three reasons. Firstly, a significant gold showing was recently discovered in Archean rocks 70 km northwest of Schefferville by the Ministére de l'Energie et des Ressources du Québec (Lapointe, 1986). Secondly, recently plotted and contoured data from a regional lake sediment geochemistry program, carried out jointly by the Geological Survey of Canada and Newfoundland Department of Mines and Energy (Geological Survey of Canada, 1982a,b), have revealed a number of areas preferentially enriched in several gold-related elements. Thirdly, Superior province rocks have proven Cu, Pb, Zn, Ag, Au mineralization elsewhere in Québec and Ontario.

The approach used in the present gold-reconnaissance study was first to select, on a priority basis, regional target areas with respect to single or multiple lake sediment anomalies in the gold-sympathetic trace elements As, Hg, Ag, Mo, Cd, Co, Zn and Cu. A field examination of bedrock was then carried out at and around the chosen anomalies, using a combination of helicopter reconnaissance and ground traversing. Bedrock and boulders observed or suspected to be

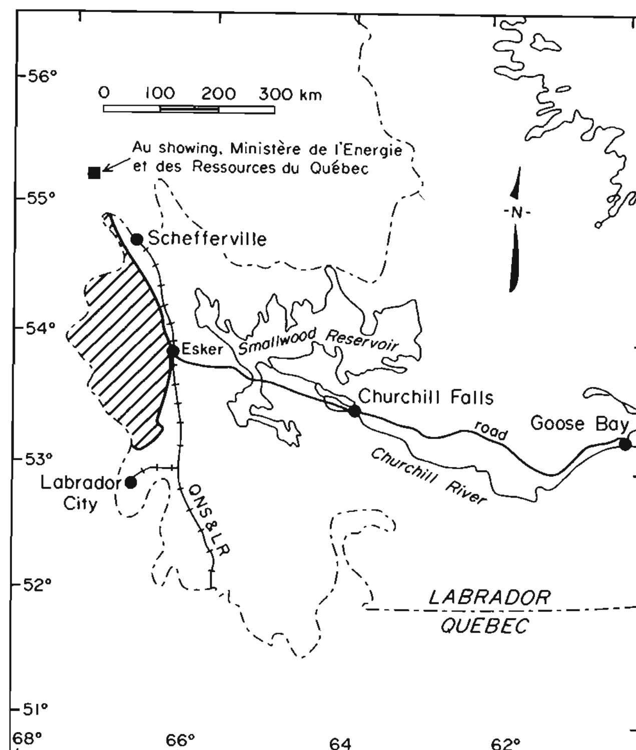
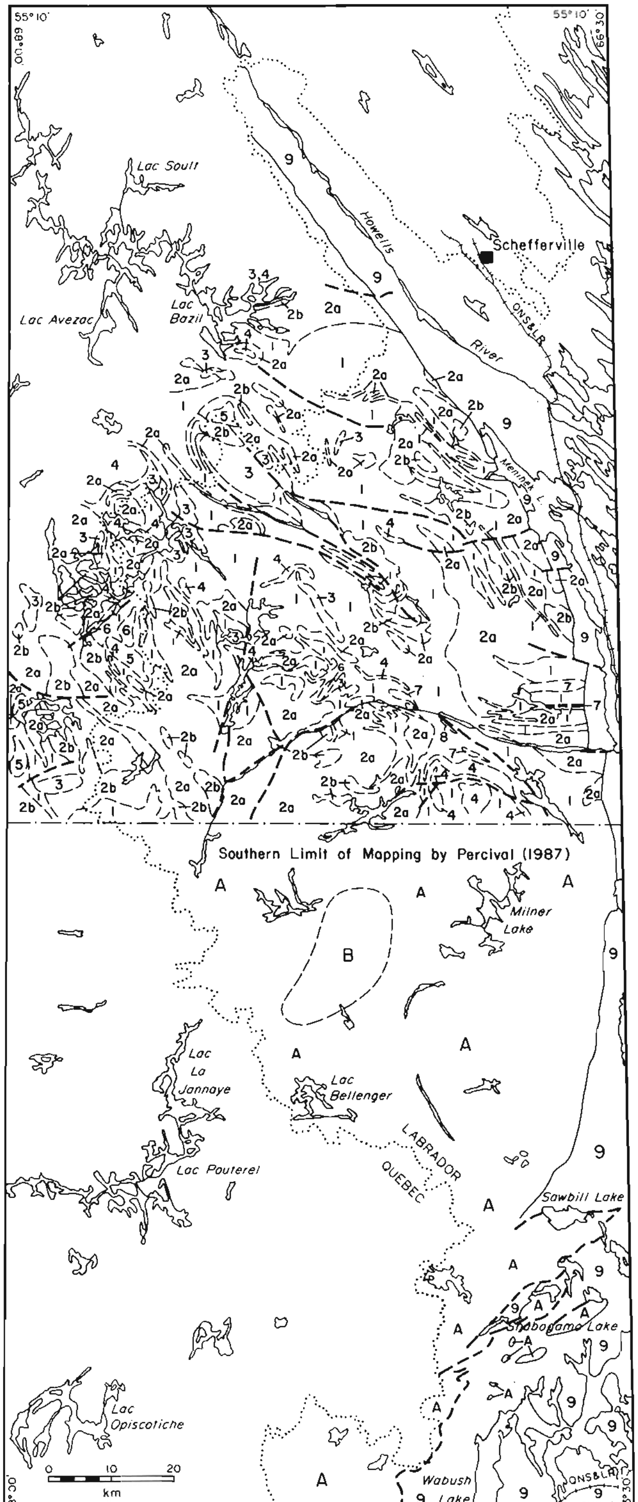


Figure 1: *Location map for that part of the Ashuanipi Complex (hatched lines) of western Labrador examined during 1986.*

mineralized were sampled, and some limited detailed geological mapping was carried out where required. All of the Ashuanipi Complex between Wabush Lake and Schefferville was given a cursory examination, but it is



LEGEND

PROTEROZOIC (APHEBIAN)

9 *Undifferentiated rocks of the Kaniapiskau Supergroup*

ARCHEAN

ASHUANIPI METAMORPHIC COMPLEX

8 *Pyroxenite*

7 *Mafic gneiss (after possible greenstone)*

6 *Diorite, quartz diorite, mafic tonalite*

5 *Syenite, monzonite*

4 *Granite, leucogranite, pegmatite, granodiorite*

3 *Tonalite*

2 *Diatexite:* 2a, *homogeneous to inhomogeneous garnet–orthopyroxene–biotite diatexite;* 2b, *homogeneous to inhomogeneous orthopyroxene–biotite diatexite*

1 *Garnet–orthopyroxene–biotite metatexite with probable metasedimentary protolith (paragneiss) and orthopyroxene–biotite metatexite with tonalite protolith*

B *Granite, quartz monzonite*

A *Undifferentiated Ashuanipi Complex rocks comprising banded ferromagnesian and granitoid gneisses, typically migmatitic and orthopyroxene-bearing, variably retrogressed in the vicinity of the Grenville Front*

SYMBOLS

– – – – *Fault*

——— *Unconformity*

NOTE: Geology around and north of the McPhadyen River is taken entirely from Percival (1987)

Figure 2: *Geology of the Ashuanipi Complex taken from Percival (1987) and Rivers et al. (1985).*

emphasized that much more detailed lake sediment geochemistry and ground follow-up around some of the anomalous areas would be required to pinpoint the source of the mineralization.

GENERAL GEOLOGY

The geology of the Ashuanipi Complex is illustrated in Figure 2. Its southern half has not been mapped in detail, and constitutes two general regional units (after Stevenson, 1964). Unit A is undifferentiated Ashuanipi Complex comprising banded ferromagnesian and granitoid gneisses, typically migmatitic and orthopyroxene bearing. The rocks are variably retrogressed in the vicinity of the Grenville Front. Unit B comprises undivided granite and quartz monzonite.

The northern half of the complex was mapped recently by J.A. Percival of the Geological Survey of Canada—the geology shown around and north of the McPhadyen River (Figure 2) was compiled wholly from Percival (1987). Percival has divided the complex into fourteen units, seven of which have been combined into three for the purposes of compilation. Percival has listed groups of rocks (i.e., granitoids, diatexites, metatexites, etc.) in approximate chronological order; however, for presentation in this report, they have been regrouped by lithotype.

Three of Percival's units have been combined as Unit 1 (Figure 2) in this report. Garnet—orthopyroxene—biotite metatexite is a migmatitic, fine to medium grained, gray-green gneissic rock containing 10 to 40 percent leucosome fraction on a 1- to 10-mm scale. The rock contains rare sillimanite as well as primary layering, and is thought to have a metasedimentary protolith. Orthopyroxene—biotite metatexite is foliated to gneissic, migmatitic, fine to medium grained and gray-green. It contains up to 40 percent leucosome layers on a 1- to 10-mm scale, which locally contain garnet. Rare garnet may also be present as porphyroblasts, and the unit contains minor orthopyroxene-bearing diorite, gabbro and pyroxenite. Orthopyroxene—biotite metatexite is thought to have had a protolith of tonalite. Also included within Unit 1 is a subunit defined by Percival (1987) to consist of interlayers of garnet—orthopyroxene—biotite metatexite and orthopyroxene—biotite metatexite.

Garnet—orthopyroxene—biotite diatexite (subunit 2a, Figure 2) is homogeneous (contains up to 25 percent metatexite inclusions) to inhomogeneous (contains 25 to 50 percent metatexite inclusions), and consists of massive to foliated, generally layered, coarse grained, green-gray rocks containing variable proportions of garnet, orthopyroxene and biotite. Orthopyroxene—biotite diatexite (subunit 2b) is similarly homogeneous or inhomogeneous, but contains variable proportions of orthopyroxene, biotite and magnetite, and only rare garnet.

Gray-green tonalite (Unit 3) is massive to strongly foliated, homogeneous and medium grained, containing variable proportions of biotite, orthopyroxene, clinopyroxene and magnetite.

Unit 4 comprises granite, leucogranite, pegmatite and granodiorite. These pink or white rocks are massive to weakly foliated, homogeneous and medium grained to pegmatitic, containing variable proportions of biotite, orthopyroxene, magnetite and garnet. Granodiorite usually contains clinopyroxene as well as biotite.

Leucocratic syenite—monzonite (Unit 5) is massive to flow foliated and coarse grained, containing biotite, hornblende, green pyroxene, magnetite and nepheline.

Diorite, quartz diorite and mafic tonalite have been grouped together as Unit 6. These dark-green rocks are massive to foliated, homogeneous and medium grained, and have a mineralogy comprising variable proportions of orthopyroxene, clinopyroxene, biotite, magnetite and quartz.

Dark-green mafic gneiss (Unit 7) is layered and fine to medium grained, containing variable proportions of orthopyroxene, clinopyroxene, hornblende, plagioclase and quartz. The layering is commonly irregular due to modal variation in mafic-mineral content and the occurrence of minor leucosome layers.

Dark-green to black pyroxenite (Unit 8) is massive and fine to medium grained, consisting mainly of clinopyroxene and orthopyroxene. It usually occurs in pods and/or layers less than 100 m wide.

Unit 9 encompasses sedimentary, volcanic and metamorphic rocks of the Kaniapiskau Supergroup, which lies unconformably upon the crystalline rocks of the Ashuanipi igneous—metamorphic terrane. The rocks in Figure 2 that abut directly against the eastern part of the complex belong mainly to the Wishart, Ruth Lake and Sokoman formations of the Knob Lake Group. The Wishart Formation consists mainly of feldspathic quartzite and minor amounts of chert, arkose, graywacke and slate. It is the lowest unit found along the Archean—Proterozoic unconformity shown on Figure 2. The Ruth Lake and Sokoman formations lie conformably above the Wishart Formation, and comprise iron formation associated with carbonaceous to ferruginous shale, slate and minor chert.

REGIONAL LAKE SEDIMENT GEOCHEMISTRY

The Geological Survey of Canada has carried out a regional lake sediment sampling program (Geological Survey of Canada, 1982a,b), which in part covers rocks belonging to the Ashuanipi Complex. A suite of gold-sympathetic elements, comprising As, Hg, Cd, Cu, Pb, Mo, Ag, Zn and Co, was selected from the analytical results, and contoured diagrams of the raw data were constructed by P. Davenport of the Newfoundland Department of Mines and Energy. These, together with data from aeromagnetic maps of the complex, were used to define a number of target areas for ground examination. Plots of four of the more definitive elements (Hg, As, Ag and Cu) are illustrated in Figures 3 to 6, and resultant target areas, on a priority basis of 1 to 7, are illustrated in Figure 7.

Several low-level mercury anomalies occur around Howell's Lake in the northern part of the map area, as well as northwest of Shabogamo Lake in the southern part

(Figure 3). The two anomalies in the extreme northern part of the map area near the Quebec–Labrador border also have variable but enriched contents of As, Ag, Cd, Mo, Cu, Zn, Co and V. In general, lakes with high mercury content also tend to be high in arsenic (Figure 4) and silver (Figure 5). Copper (Figure 6) apparently does not correlate with the three previously mentioned elements. When the copper distribution is compared with the geology map (Figure 2), this element is found to be present in higher amounts within areas of mafic gneiss and pyroxenite, which are possible relicts of original greenstone.

RESULTS OF REGIONAL BEDROCK–BOULDER SAMPLING

Although seven target areas for ground follow-up of lake sediment geochemical analyses were delineated, time and logistical constraints did not permit examination of anomalous Areas 5 and 7. Due to the enrichment of the Au-sympathetic elements Hg, As, Ag and Cd, generally within the northern part of the Ashuanipi Complex, proportionately more time was spent on ground follow-up in Areas 1 and 2.

Samples of obvious sulfide and suspected gold mineralization (small numbers in Figure 7) were collected from both bedrock and boulders. These were crushed to gravel size in the field and submitted for analyses of Au, As, Sb, Hg, Cd, Co, Cu, Zn, Mo, Bi, Ag, Ga, Pb and Tl, values of which are listed in Appendix I. Appendix II lists additional data. Overall, values for Au range from less than 1 ppb to a maximum of 760 ppb, those for As from 1 ppm to 6600 ppm, and for Ag less than 0.1 ppm to 2.2 ppm. For the other elements, the minimum and maximum values respectively are Sb (0.1 and 0.7 ppm), Hg (10 and 70 ppb), Cd (less than 0.1 and 1.8 ppm), Co (7 and 262 ppm), Cu (7 and 1505 ppm), Zn (26 and 765 ppm), Mo (1 and 414 ppm), Bi (0.1 and 4.5 ppm), Ga (1 and 19 ppm), Pb (1 and 35 ppb) and Tl (0.1 and 1.6 ppm).

Two areas of bedrock Au mineralization were defined. The first is in an outcrop of garnet-bearing metatexite (paragneiss after graywacke?) located on a hill above a lake, the bottom sediments of which have significant contents of Hg, Ag, Cd, Mo, Cu, Zn and Co. The lake is located in Area 1, near Locality 24 (Figure 7). Fourteen bedrock samples were collected at Locality 24 (Appendix I), with associated sulfide minerals including variable proportions of generally finely disseminated pyrite and suspected arsenopyrite or pyrrhotite. Gold values in bedrock at this locality range from a low of 8 ppb to a high of 410 ppb, and one sample assayed 1600 ppm As. There is no obvious positive correlation between Au and As, the sample containing 1600 ppm As having only 8 ppb Au. In addition, none of the fourteen samples are particularly enriched in any of the other gold-sympathetic elements, and no other obvious positive correlations exist between enriched-Au content and that of other elements.

The second principal area of bedrock Au mineralization (Locality 41, Figure 7) occurs within mafic gneiss found by Percival (1987). Five bedrock samples and one angular, frost-heaved boulder (of identical lithology to the underlying mafic bedrock) were collected (Appendix I). Sulfide mineralization includes both disseminated and stringer forms of pyrite, pyrrhotite, suspected arsenopyrite and minor chalcopyrite. In the bedrock samples, gold values range from 65 ppb to 430 ppb and a sample of frost-heaved boulder assayed 759 ppb. Again, no positive correlation between Au and As exists, with As values ranging from 3 ppm to 19 ppm, the highest gold value obtained being from the sample with the lowest arsenic content. The bedrock sample containing 430 ppb Au assayed 1100 ppm Cu, and with respect to analyses of other samples contains somewhat enriched Bi (1.1 ppm), Hg (70 ppb) and Ag (1.3 ppm). As at Locality 24, there appears to be no obvious positive correlation in elements both within and between any of the other samples. One other bedrock sample contained an anomalously high gold value of 110 ppb. This was collected from metatexite (paragneiss) at Locality 15 (Figure 7) that is particularly rich in smokey-quartz layers. This sample is relatively enriched (with respect to other samples) in Bi (4.5 ppm), Cd (1.5 ppm), Ag (2.2 ppm), As (300 ppm) and Cu (393 ppm). Although their gold values are low, two other bedrock samples collected from this locality yielded relatively high values respectively of bismuth (1.1 and 0.8 ppm) and arsenic (170 and 4900 ppm).

Several anomalously high gold values occur in boulders of various rock types from widespread localities. A mafic boulder containing disseminated pyrite and suspected arsenopyrite mineralization was found at Locality 28 (Figure 7), just east of the mineralized-bedrock Locality 24. Analysis of this boulder gives a gold value of 120 ppb and an arsenic value of 400 ppm. A second mineralized boulder found at this locality has no gold but contains 0.9 ppm Bi. In addition, a large, well rounded, mineralized, mafic to ultramafic boulder was discovered at Locality 7 (Figure 7). It contains chalcopyrite, molybdenite and possible arsenopyrite. The gold value obtained from analysis of a sample of this boulder is 160 ppb. This sample also contains relatively high values of Cu (949 ppm), Zn (362 ppm), Mo (205 ppm), Co (255 ppm) and Ag (0.8 ppm). A bedrock source for either of the two previously mentioned mafic boulders was not found during the course of this study.

Disseminated sulfide mineralization, usually in bedrock and/or boulders of garnet–orthopyroxene–biotite metatexite is widespread, especially north of the McPhadyen River. Few of the samples, however, contain gold in more than minor amounts (i.e., up to 60 ppb), and for the most part, contain only small amounts of other gold-sympathetic elements. A sulfide-bearing mineralized zone up to 50 m wide, extending for a strike length of about 500 m, occurs at Locality 19 (Figure 7). Although some parts of this zone contain massive pyrite, pyrrhotite, an unidentified silver-gray sulfide along with stringer chalcopyrite, the greater proportion of the mineralization is disseminated. Unfortunately, analyses of samples of massive sulfides from the central part of this zone so far indicate no significant Au mineralization, and only slightly enriched (relative to other samples) contents of Ag (maximum 0.8 ppm) and Bi (maximum 1.5 ppm).

CONCLUSIONS AND RECOMMENDATIONS

A cursory examination of Appendix I suggests that, overall, there is no obvious positive correlation between gold and any of the other elements analysed (including As).

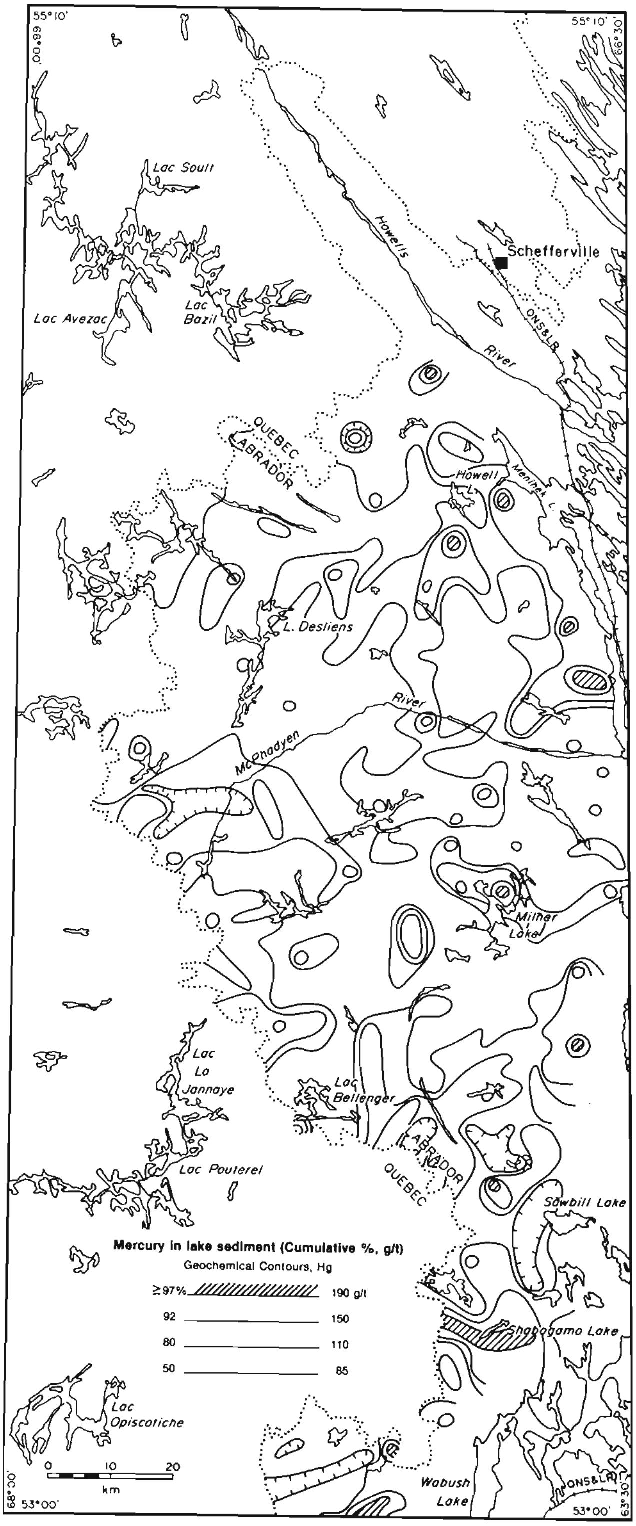


Figure 3: *Contoured diagram of mercury content in lake sediments from the Ashuanipi Complex.*

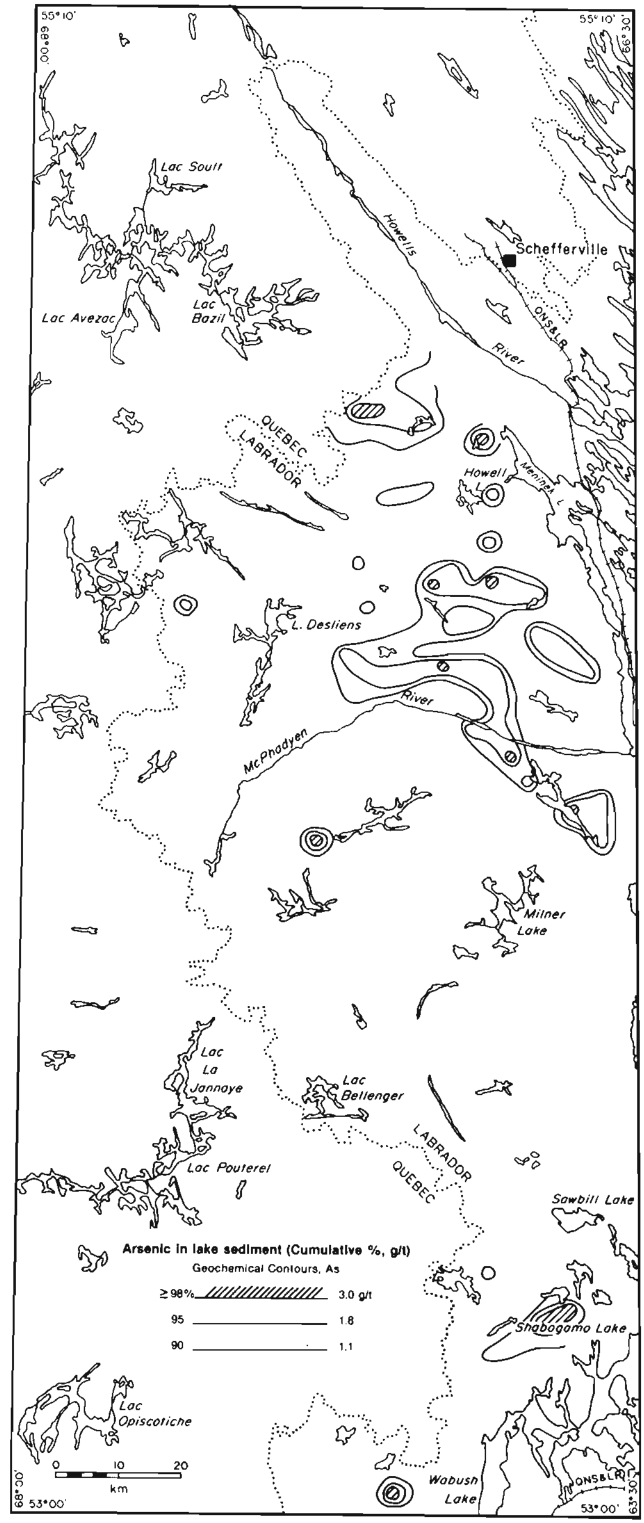


Figure 4: *Contoured diagram of arsenic content in lake sediments from the Ashuanipi Complex.*

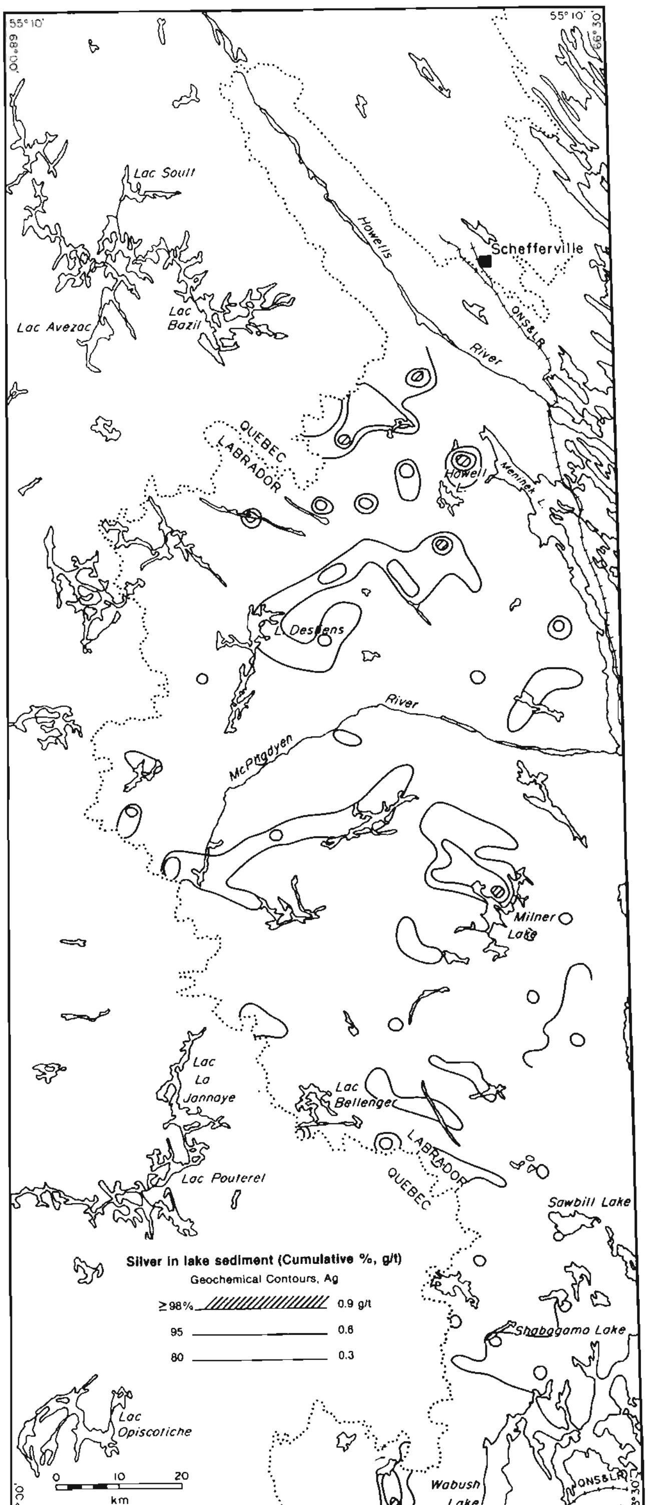


Figure 5: *Contoured diagram of silver content in lake sediments from the Ashuanipi Complex.*

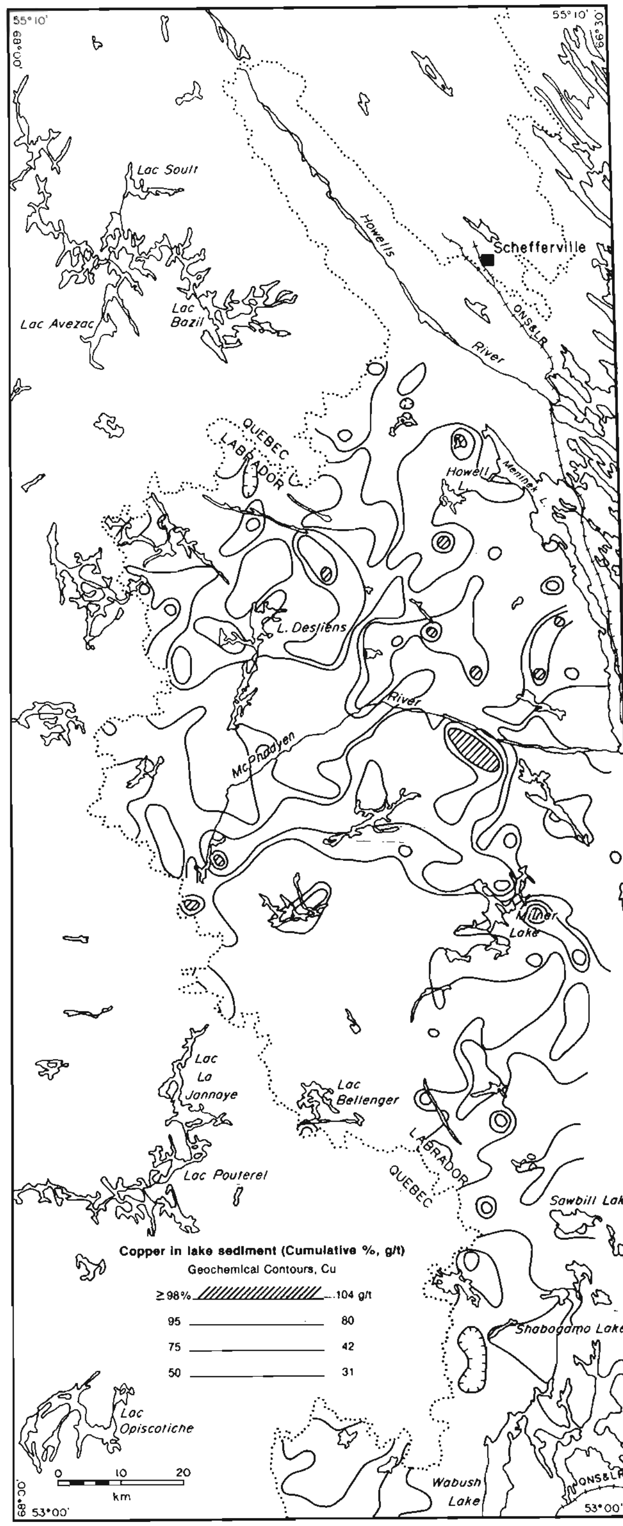


Figure 6: *Contoured diagram of copper content in lake sediments from the Ashuanipi Complex.*

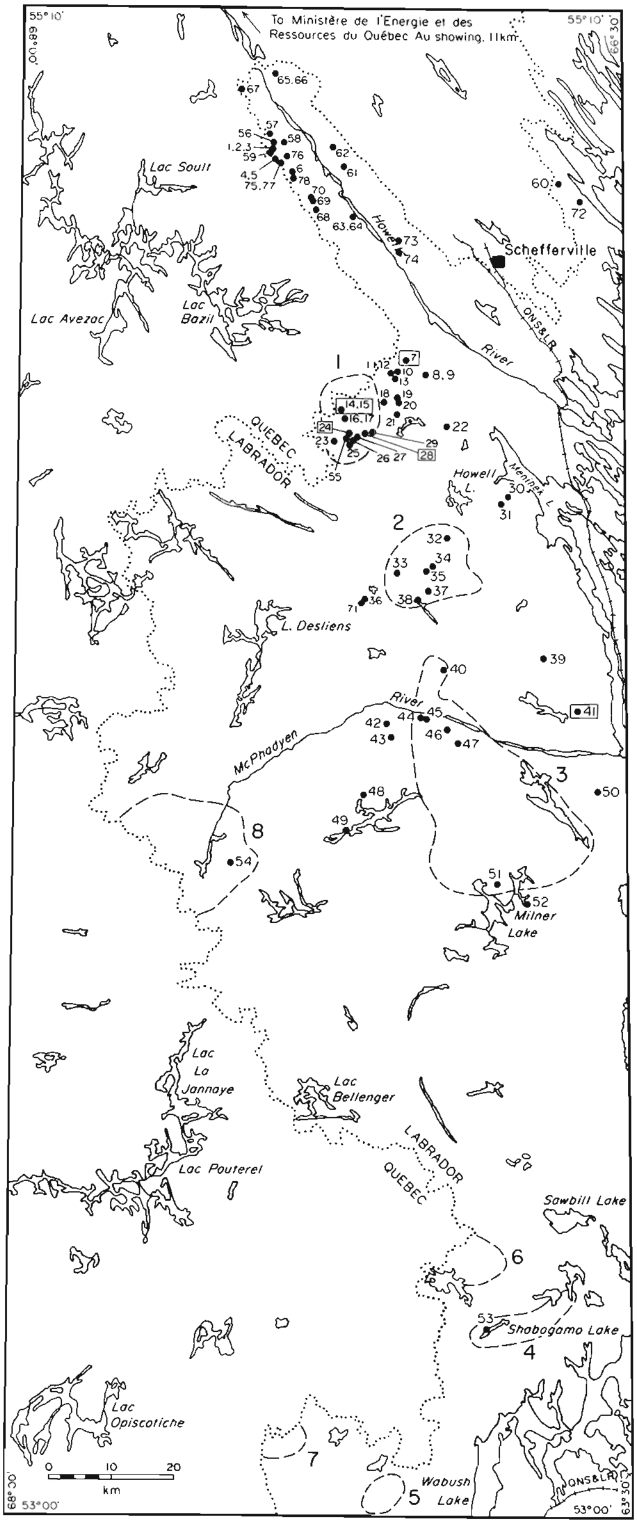


Figure 7: *Sampling sites for both bedrock and boulders. Dashed lines denote boundaries of main target areas; bold numbers denote priority of target areas.*

However, to test the validity of this observation, a more rigourous statistical treatment of the data is required, utilizing, for example, correlation-coefficient matrices. This will be done as soon as the data of Appendix 1 has been computerized.

Background gold values for approximately half of the samples collected exceed 10 ppb, which is a higher value, in general, than would normally be expected from the rock types present. The uniformly high metamorphic grade and difficultly in determining protolithic composition of bedrock throughout the complex is not encouraging regarding gold mineralization, but the presence of gold in greater-than-background amounts is proven. In common with gold mineralization elsewhere, that in the Ashuanipi Complex is irregular and erratic, e.g., values from samples collected as closely as one-half metre apart vary by several orders of magnitude. Although the sampling was not exceedingly detailed, this situation seemed to occur even along and across discrete mineralized zones. Proven gold mineralization has been found within similar amphibolite- to granulite-grade rocks northwest of Schefferville (now a joint venture property of VIOR-MAZARIN Québec, Ltee.); however, there a specific association with suspected Archean banded iron formation exists. One sample only of magnetite-rich rock, which may represent iron formation, was found along the Quebec–Labrador border at Locality 6 (Figure 7).

In conclusion, although gold values and those of gold-sympathetic elements from mineralized areas examined within the Ashuanipi Complex are not exceedingly high, the results of the initial reconnaissance study suggest that a more detailed examination of selected areas of the complex may be warranted. In particular, more detailed investigation is required of mineralization associated with mafic gneiss at Locality 41, north of the mouth of the McPhadyen River, and with paragneiss in the region of Locality 24, within the northwestern part of the complex.

ACKNOWLEDGEMENTS

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APPENDIX I

Trace-element values obtained for bedrock and boulder samples collected from the Ashuanipi Complex

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
1	Boulder of biotite–garnet metagraywacke	23J/14W	603900	6091700	0.2	63	92	1	8	0.1	0.2	50	30	14	<0.1	3	9	0.2	-
2	As above	23J/14W	603900	6091700	0.1	79	86	1	2	0.2	0.2	16	20	14	<0.1	2	16	0.3	-
3	As above	23J/14W	603900	6091700	0.2	265	72	1	17	0.1	0.1	1	20	2	0.1	9	19	0.3	-
4	As above	23J/14W	604380	6090000	0.1	159	37	1	1	0.1	0.1	7	40	30	<0.1	4	12	0.2	-
5	As above	23J/14W	604380	6090000	0.1	93	120	1	12	0.1	0.1	2	40	nd	0.3	8	40	0.2	-
6	Banded magnetite-bearing iron formation(?); bedrock	23J/14W	607320	6088300	0.1	43	-	1	1	0.2	0.2	12	40	39	0.1	1	-	0.1	-
7a	Boulder mineralized with chalcopyrite, pyrite pyrrhotite, molybdenite and arsenopyrite(?); mafic in composition	23J/11	626400	6058650	0.4	949	362	1	18	0.1	0.1	3	20	160	<0.1	205	255	0.8	-
7b	Garnet–biotite quartzo-feldspathic paragneiss, mineralized with disseminated pyrite; bedrock	23J/11	626390	6058780	0.3	42	57	1	16	0.1	0.1	2	20	nd	<0.1	4	16	<0.1	-
7c	As above	23J/11	626400	6058700	0.5	45	86	1	14	0.1	0.1	2	40	nd	<0.1	4	19	<0.1	-
7d	As above	23J/11	626430	6058700	0.4	67	215	1	14	0.1	0.1	4	20	1	0.4	3	39	0.2	-
7e	As above	23J/11	626420	6058750	1.6	74	630	4	9	0.6	0.1	22	40	8	1.8	216	26	0.2	-
8	As above	23J/10W	629780	6056820	0.5	27	44	2	10	0.1	0.2	2	20	4	<0.1	3	16	0.1	-
9a	As above	23J/10W	629800	6056750	0.4	97	77	1	15	0.1	0.1	2	20	nd	<0.1	3	24	0.1	-
9b	As above	23J/10W	629800	6056750	0.4	61	82	1	10	0.1	0.1	1	20	nd	<0.1	3	21	0.1	-
10	Biotite–hypersthene rock, mineralized with pyrite and arsenopyrite(?); bedrock	23J/11	624900	6056900	0.1	258	-	1	19	0.3	0.1	2	30	5	0.1	2	-	0.1	-
11	Biotite–garnet quartzofeld-spathic paragneiss; bedrock	23J/11	623950	6056610	0.1	590	-	1	18	0.1	0.2	3	60	33	0.1	5	-	0.3	-
12	As above	23J/11	623800	6056420	0.4	105	-	1	18	0.1	0.1	3	50	nd	0.1	2	-	0.1	-
13	Boulder of mafic rock, mineralized with pyrite, chalcopyrite and pyrrhotite	23J/11	624520	6056080	0.1	156	-	1	4	0.3	0.2	6	40	6	0.1	3	-	0.2	-
14a	Mafic to intermediate volcanic rock or fine grained dike, mineralized with pyrite and arsenopyrite(?); bedrock	23J/11	616050	6050690	0.1	45	-	1	1	0.6	0.1	6	40	2	0.1	1	-	0.2	-

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
14b	As above	23J/11	616050	6050690	0.1	204	-	1	1	1.1	0.1	350	50	10	0.5	1	-	0.9	-
14c	As above	23J/11	616050	6050690	0.1	67	-	1	1	0.8	0.1	35	20	4	0.1	1	-	2.1	-
14d	Mineralized quartz vein along contact between above mafic rock and quartzofeldspathic paragneiss; bedrock	23J/11	616050	6050690	0.1	7	-	1	1	0.3	0.1	9	20	4	0.1	1	-	0.1	-
15a	Mafic sulfide-rich rock from gossan with associated smokey-quartz layers; bedrock	23J/11	616200	6050650	0.1	393	-	1	1	4.5	0.4	300	50	110	1.5	2	-	2.2	-
15b	Pyrite-bearing smokey-quartz-rich rock from gossan; bedrock	23J/11	616200	6050650	0.3	65	-	1	1	1.1	0.4	170	50	nd	0.1	1	-	0.2	-
15c	As above	23J/11	616200	6050650	0.1	69	-	1	1	0.8	0.7	4900	30	6	0.1	1	-	0.5	-
16	Biotite–garnet paragneiss, mineralized with pyrite, pyrrhotite and arsenopyrite(?); bedrock	23J/11	616600	6049180	0.7	*80*	*182*	1	13	0.1	0.1	250	40	nd	*0.2*	*5*	*28*	*0.1*	-
17a	Disseminated pyrite, pyrrhotite and arsenopyrite(?) mineralization in quartzofeldspathic paragneiss; bedrock	23J/11	616690	6049000	0.4	*147*	*70*	1	13	0.1	0.1	2	20	10	*nd*	*11*	*31*	*0.2*	-
17b	As above	23J/11	616690	6049000	0.4	*189*	*70*	1	12	0.1	0.1	5	20	18	*nd*	*13*	*40*	*0.3*	-
17c	As above	23J/11	616610	6049050	0.6	*81*	*110*	1	15	0.1	0.1	2	30	20	*nd*	*6*	*23*	*nd*	-
17d	As above	23J/11	616610	6049050	0.4	*110*	*70*	1	16	0.1	0.1	2	30	nd	*nd*	*7*	*20*	*0.1*	-
18a	Boulder of biotite–garnet quartzofeldspathic paragneiss, mineralized with pyrite and pyrrhotite	23J/11	622700	6051900	0.2	104	-	1	1	0.9	0.3	12	50	32	0.1	2	-	0.1	-
18b	Boulder of paragneiss, mineralized with pyrite, pyrrhotite and arsenopyrite (?)	23J/11	622750	6051980	0.3	38	-	1	1	1.3	0.2	6600	30	18	0.1	2	-	0.1	-
19a	Massive sulfide zone in biotite–garnet quartzofeldspathic paragneiss containing pyrite, pyrrhotite, chalcopyrite and arsenopyrite(?); bedrock	23J/11	624750	6052720	0.2	*51*	*147*	1	10	0.7	0.1	6	10	nd	*0.3*	*5*	*16*	*0.2*	*46*

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
19b	As above	23J/11	624750	6052720	0.1	*246*	*164*	1	3	0.5	0.1	6	20	nd	*nd*	*4*	*35*	*0.8*	*75*
19c	As above	23J/11	625210	6052710	0.2	*151*	*146*	1	1	1.5	0.1	45	10	1	*0.3*	*3*	*31*	*0.8*	*94*
20	Pyrite–pyrrhotite–arsenopyrite(?) mineralization in quartz-rich mafic rock from biotite–garnet quartzofeldspathic paragneiss; bedrock	23J/11	625200	6052320	0.1	*255*	*324*	1	5	0.1	0.1	2	20	30	*nd*	*8*	*98*	*0.2*	-
21a	Stringer-mineralized, pyrite-, pyrrhotite-, arsenopyrite(?)-rich mafic rock in biotite–garnet quartzofeldspathic paragneiss; bedrock	23J/11	625000	6050100	0.1	*423*	*360*	1	1	0.2	0.1	1	10	49	*nd*	*17*	*135*	*0.2*	-
21b	Disseminated pyrrhotite–arsenopyrite(?) mineralization in biotite–garnet quartzofeldspathic paragneiss; bedrock	23J/11	625000	6050100	0.1	*59*	*160*	1	16	0.1	0.1	1	10	nd	*0.1*	*5*	*39*	*nd*	-
22	Boulder of rusty, mineralized paragneiss	23J/10W	633020	6048320	0.1	600	-	1	13	0.3	0.2	1	30	4	0.1	7	-	0.3	-
23	Disseminated to stringer mineralization in metagraywacke containing pyrrhotite and arsenopyrite(?); bedrock	23J/11	615200	6045100	0.1	*79*	*210*	1	4	0.2	0.1	720	10	19	*0.3*	*3*	*60*	*nd*	-
24a	Boulder of biotite–garnet quartzofeldspathic paragneiss, mineralized with finely disseminated pyrite and arsenopyrite(?)	23J/11	617650	6046550	0.1	*116*	*148*	1	4	0.2	0.1	60	20	2	*0.3*	*2*	*55*	*0.2*	-
24b	As above	23J/11	617650	6046550	0.2	*56*	*62*	7	12	0.1	0.1	1	20	3	*nd*	*3*	*13*	*0.2*	-
24c	As above	23J/11	617790	6046600	0.1	*20*	*68*	1	15	0.1	0.1	2	20	5	*nd*	*3*	*13*	*nd*	-
24d	Biotite–garnet quartzofeldspathic paragneiss, mineralized with pyrite and arsenopyrite(?); bedrock	23J/11	617800	6046850	0.7	*32*	*70*	2	17	0.1	0.1	1	20	8	*nd*	*5*	*16*	*nd*	-
24e	As above	23J/11	617800	6046850	0.4	*80*	*99*	1	17	0.1	0.1	1	20	39	*nd*	*6*	*27*	*0.1*	-

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
24f	As above	23J/11	617800	6046850	0.3	*35*	*49*	1	15	0.1	0.1	1	30	19	*nd*	*4*	*13*	*0.2*	-
24g	As above	23J/11	617800	6046850	0.1	*71*	*50*	8	14	0.1	0.1	9	20	13	*0.1*	*3*	*12*	*0.1*	-
24h	As above	23J/11	617800	6046850	0.3	*81*	*88*	1	18	0.1	0.1	1	20	33	*nd*	*7*	*21*	*0.1*	-
24i	Disseminated pyrite–arsenopyrite(?) mineralization in quartzofeldspathic paragneiss; bedrock	23J/11	617800	6046700	0.4	*169*	*145*	1	16	0.1	0.1	4	30	31	*nd*	*42*	*31*	*0.2*	-
24j	As above	23J/11	617800	6046700	0.6	*135*	*84*	3	18	0.1	0.1	10	30	270	*nd*	*13*	*19*	*0.1*	-
24k	As above	23J/11	617800	6046700	0.6	*165*	*168*	35	12	0.1	0.1	9	30	48	*nd*	*27*	*31*	*0.3*	-
24l	As above	23J/11	617800	6046700	0.5	*61*	*125*	28	16	0.1	0.1	12	40	25	*nd*	*5*	*17*	*0.2*	-
24m	As above	23J/11	617800	6046700	0.3	*63*	*124*	10	15	0.1	0.1	12	20	36	*0.1*	*5*	*18*	*0.1*	-
24n	As above	23J/11	617710	6046700	0.2	*179*	*93*	1	17	0.1	0.1	2	20	410	*nd*	*9*	*42*	*0.2*	-
24o	As above	23J/11	617810	6046910	0.6	*41*	*320*	1	7	0.1	0.1	1600	30	8	*0.5*	*25*	*58*	*0.2*	-
24p	As above	23J/11	617480	6046900	0.2	*60*	*46*	1	14	0.1	0.1	2	30	37	*nd*	*4*	*13*	*0.1*	-
24q	Rusty, disseminated pyrite mineralization in quartzofeldspathic paragneiss; bedrock	23J/11	617710	6046700	0.5	112	-	1	16	0.2	0.1	3	30	44	0.1	2	-	0.1	-
25	Disseminated pyrite–arsenopyrite(?) mineralization in massive ultrabasic rock; bedrock	23J/11	617700	6045000	0.1	*149*	*75*	1	4	1.0	0.1	55	10	11	*nd*	*3*	*77*	*0.2*	-
26	Boulder of gray, weathered siliceous graywacke, mineralized with arsenopyrite(?)	23J/11	618180	6045680	0.3	*216*	*111*	1	16	0.1	0.1	3000	10	13	*0.1*	*3*	*16*	*0.3*	-
27a	Boulder of quartzofeldspathic paragneiss	23J/11	618700	6046450	0.1	*184*	*135*	1	16	0.1	0.1	6	20	19	*nd*	*13*	*33*	*0.1*	-
27b	Boulder of quartzofeldspathic paragneiss, mineralized with pyrite, pyrrhotite and arsenopyrite(?)	23J/11	618910	6046300	0.2	*78*	*417*	1	9	0.3	0.1	360	20	nd	*0.6*	*3*	*17*	*0.5*	-
28a	Boulder of mafic rock, mineralized with pyrite and arsenopyrite(?)	23J/11	619990	6046750	0.1	*195*	*129*	1	10	0.2	0.1	400	10	120	*0.2*	*4*	*47*	*0.3*	-
28b	As above	23J/11	619990	6046750	0.2	*90*	*74*	1	8	0.9	0.1	4	10	nd	*0.2*	*4*	*36*	*0.2*	-
29	Boulder of metagraywacke, mineralized with pyrite	23J/11	621280	6047050	0.3	*150*	*73*	11	10	0.1	0.1	4	10	9	*nd*	*19*	*30*	*0.3*	-

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
30	Disseminated pyrite mineralization in biotite–garnet quartzofeldspathic paragneiss; bedrock	23J/7W	643230	6037150	0.3	*168*	*92*	1	16	0.1	0.1	2	50	1	*nd*	*9*	*34*	*nd*	-
31	Frost-heaved block of massive, siliceous, quartzo-feldspathic paragneiss; bedrock	23J/7W	641900	6036400	0.1	*109*	*57*	1	12	0.1	0.1	1	40	nd	*0.1*	*3*	*13*	*0.2*	-
32	Biotite–garnet quartzofeldspathic paragneiss containing disseminated sulfide mineralization; bedrock	23J/7W	633550	6030600	0.6	*41*	*106*	1	13	0.1	0.1	1	20	2	*0.2*	*3*	*18*	*0.1*	-
33a	Boulder of quartz-rich mafic rock, mineralized with pyrite and magnetite	23J/6E	625720	6024600	0.1	320	-	1	2	0.2	0.1	5	20	12	0.1	4	-	0.7	-
33b	Boulder of metagreywacke, mineralized with pyrite and pyrrhotite	23J/6E	625900	6024820	0.8	297	-	1	16	0.1	0.1	3	30	nd	0.1	5	-	0.2	-
34	Biotite–garnet quartzofeldspathic paragneiss containing disseminated pyrite, pyrrhotite and chalcopyrite; bedrock	23J/7W	631500	6025800	0.2	*187*	*72*	1	13	0.1	0.1	1	20	1	*nd*	*17*	*25*	*0.1*	-
35	As above	23J/7W	630380	6025100	0.7	*179*	*132*	1	13	0.1	0.1	1	10	1	*0.1*	*16*	*23*	*0.1*	-
36	Mafic rock from within biotite–garnet quartzo-feldspathic paragneiss, mineralized with pyrite and pyrrhotite; bedrock	23J/6E	620620	6020120	0.2	*70*	*140*	1	13	0.1	0.1	46	20	18	*nd*	*4*	*24*	*0.2*	-
37a	Boulder of quartzofeldspathic paragneiss, mineralized with disseminated pyrite, pyrrhotite and graphite	23J/7W	630910	6022080	0.7	*70*	*90*	1	15	0.1	0.1	1	10	nd	*nd*	*5*	*14*	*0.2*	-
37b	Boulder of quartzofeldspathic paragneiss, mineralized with disseminated to stringer pyrite, specular hematite and graphite	23J/7W	630590	6022030	0.2	*108*	*21*	5	10	0.2	0.1	2	10	1	*nd*	*11*	*17*	*0.3*	-
38a	Biotite–garnet quartzofeldspathic paragneiss containing finely disseminated pyrite and pyrrhotite(?); bedrock	23J/6E	629120	6020780	0.5	*61*	*100*	1	16	0.1	0.1	2	20	7	*0.1*	*5*	*22*	*0.1*	-

APPENDIX I (*Continued*)

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
38b	As above	23J/6E	629120	6020420	0.7	*83*	*128*	1	15	0.1	0.1	1	20	nd	*0.2*	*8*	*29*	*0.2*	-
39a	Boulder of biotite–garnet quartzofeldspathic paragneiss, mineralized with pyrite, pyrrhotite and graphite	23J/2E	649650	6011350	0.7	*251*	*80*	1	16	0.1	0.1	2	20	9	*0.1*	*414*	*37*	*0.2*	-
39b	Boulder of quartzofeldspathic paragneiss from frost heave	23J/2E	649550	6011800	0.7	*175*	*162*	7	13	0.1	0.1	20	20	42	*0.6*	*6*	*25*	*0.3*	-
39c	Biotite–garnet quartzofeldspathic paragneiss; bedrock	23J/2E	649690	6012000	0.5	*85*	*76*	6	12	0.1	0.1	2	20	nd	*nd*	*25*	*24*	*0.2*	-
39d	As above	23J/2E	649580	6011430	0.5	*63*	*64*	1	13	0.1	0.1	3	20	nd	*0.1*	*3*	*23*	*0.2*	-
40a	Boulder of paragneiss, mineralized with disseminated pyrite and pyrrhotite	23J/2W	633500	6009150	0.5	*61*	*53*	1	14	0.1	0.1	2	20	1	*nd*	*4*	*18*	*nd*	-
40b	Disseminated pyrite–pyrrhotite–graphite mineralization in paragneiss; bedrock	23J/2W	633500	6009150	0.1	*19*	*45*	1	12	0.1	0.1	2	20	1	*nd*	*3*	*11*	*nd*	-
40c	Boulder of fine grained intermediate rock, mineralized with disseminated pyrite, pyrrhotite, chalcopyrite and graphite	23J/2W	633510	6009150	1.2	*450*	*603*	1	13	0.1	0.1	2	30	nd	*1.5*	*5*	*43*	*0.4*	-
40d	As above	23J/2W	633510	6009150	1.6	*572*	*581*	1	14	0.2	0.1	3	30	nd	*0.6*	*6*	*48*	*0.5*	-
40e	As above	23J/2W	633510	6009150	1.3	*559*	*479*	1	13	0.2	0.1	3	30	nd	*0.7*	*4*	*42*	*0.6*	-
41a	Mafic metavolcanic or dike rock containing disseminated to stringer pyrite, pyrrhotite and arsenopyrite (?); bedrock	23J/2E	655420	6003320	0.7	*281*	*765*	1	12	0.3	0.1	19	30	65	*0.3*	*4*	*40*	*0.4*	-
41b	Siliceous metabasic rock associated with above sample and mineralized with pyrite and pyrrhotite; bedrock	23J/2E	655320	6003120	0.3	*119*	*51*	1	10	0.1	0.1	17	20	330	*nd*	*5*	*10*	*0.2*	-
41c	Metabasic rock containing disseminated pyrite and pyrrhotite; bedrock	23J/2E	655420	6003320	0.1	1100	-	1	1	1.1	0.1	9	70	426	0.1	10	-	1.3	-

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
41d	As above	23J/2E	655210	6003090	0.2	73	-	7	10	0.5	0.2	7	60	197	0.1	8	-	0.5	-
41e	Angular boulder of mafic rock in frost heave, mineralized with dissemimated pyrite, pyrrhotite and chalcopyrite	23J/2E	655150	6003200	0.1	88	-	1	19	0.2	0.1	3	40	759	0.1	2	-	0.1	-
41f	Siliceous metabasic rock, mineralized with disseminated pyrite and pyrrhotite; bedrock	23J/2E	655320	6003120	0.1	224	-	3	19	0.3	0.6	19	60	76	0.1	8	-	0.5	-
42a	Sample from a vein of disseminated to massive pyrite, pyrrhotite, chalcopyrite and molybdenite in a quartzofeldspathic paragneiss host; bedrock	23J/3E	624920	6000680	0.1	*992*	*59*	1	12	0.1	0.1	1	10	8	*nd*	*13*	*219*	*0.8*	-
42b	As above	23J/3E	624920	6000680	0.1	*1207*	*51*	1	11	0.1	0.1	1	10	12	*0.2*	*27*	*262*	*1.0*	-
42c	As above	23J/3E	624920	6000680	0.1	*891*	*54*	1	13	0.1	0.1	1	10	1	*nd*	*24*	*126*	*0.7*	-
43	Boulder of mafic volcanic or mafic dike rock, mineralized with pyrrhotite and arsenopyrite(?)	23J/3E	625700	5998620	0.1	*1505*	*75*	11	8	0.1	0.1	3	10	16	*0.1*	*9*	*88*	*0.7*	-
44	Amphibolite to granulite mafic rock after mafic volcanic(?) rock, mineralized with stringer pyrrhotite, chalcopyrite and pyrite; bedrock	23J/3E	630300	6001600	0.1	*64*	*176*	1	10	0.1	0.1	1	20	3	*0.3*	*5*	*35*	*nd*	-
45a	Boulder of mafic gabbroic (?) rock, mineralized with disseminated sulfides	23J/2W	631250	6001200	0.8	*352*	*234*	1	12	0.1	0.1	2	20	12	*nd*	*8*	*72*	*nd*	-
45b	As above	23J/2W	631250	6001200	0.4	*683*	*233*	1	14	0.1	0.1	2	30	33	*nd*	*17*	*99*	*0.5*	-
45c	As above	23J/2W	631250	6001200	0.2	*75*	*101*	1	5	0.1	0.1	3	20	nd	*nd*	*2*	*41*	*0.1*	-
46a	Siliceous felsic gneiss containing disseminated chalcopyrite, bornite(?) and molybdenite(?); bedrock	23J/2W	634620	5999700	-	*487*	*100*	-	-	-	-	-	-	9	*0.2*	*6*	*19*	*0.3*	-

APPENDIX I *(Continued)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
46b	Angular boulder of gneiss from mudboil containing disseminated sulfides, including graphite	23J/2W	634620	5999700	0.4	*219*	*94*	1	13	0.1	0.1	2	20	nd	*0.1*	*4*	*17*	*0.1*	-
46c	Quartzofeldspathic paragneiss containing disseminated to stringer sulfide mineralization; bedrock	23J/2W	634620	5999700	0.1	*176*	*81*	1	15	0.1	0.1	3	50	nd	*nd*	*10*	*25*	*0.1*	-
47a	Siliceous zone in intermediate to felsic quartzofeldspathic paragneiss containing disseminated chalcopyrite, pyrrhotite and bornite(?); bedrock	23J/2W	636300	5997500	0.1	*169*	*82*	1	14	0.1	0.1	3	20	11	*nd*	*7*	*30*	*0.2*	-
47b	As above	23J/2W	636320	5997650	0.1	*44*	*65*	1	13	0.2	0.1	2	20	35	*nd*	*23*	*13*	*0.2*	-
48	Boulder of sandstone, mineralized with disseminated pyrrhotite and arsenopyrite (?)	23J/3E	621550	5989000	0.4	*113*	*26*	6	11	0.1	0.1	2	10	3	*0.7*	*7*	*13*	*0.3*	-
49a	Biotite–garnet quartzofeldspathic paragneiss containing disseminated pyrite mineralization; bedrock	23G/14E	619280	5983980	0.1	*14*	*32*	1	4	0.1	0.1	1	20	nd	*nd*	*1*	*7*	*nd*	-
49b	Boulder of mafic rock, mineralized with pyrite, pyrrhotite and arsenopyrite (?)	23G/14E	619280	5983980	0.1	*619*	*109*	1	1	0.1	0.1	1	20	15	*nd*	*4*	*76*	*0.9*	-
50	Rock taken from contact zone between biotite–garnet quartzofeldspathic paragneiss structurally overlain by layered gabbro; contains disseminated to stringer chalcopyrite, pyrite and pyrrhotite; bedrock	23J/2E	658580	5990520	0.1	*86*	*291*	1	12	0.1	0.1	32	20	2	*0.7*	*4*	*46*	*0.1*	-
51a	Boulder of siliceous metagreywacke from mudboil containing pyrite and arsenopyrite(?)	23G/15	642980	5975190	0.1	*82*	*27*	1	13	0.1	0.2	2	30	nd	*0.1*	*4*	*19*	*0.3*	-

APPENDIX I *(Concluded)*

Sample Number	Sample Descriptions	NTS	Easting	Northing	Tl	Cu	Zn	Pb	Ga	Bi	Sb	As	Hg	Au	Cd	Mo	Co	Ag	Ni
51b	Boulder of mafic metavolcanic rock containing chalcopyrite, pyrite and arsenopyrite(?)	23G/15	643100	5975100	0.4	*188*	*58*	1	14	0.1	0.1	2	30	nd	*0.1*	*3*	*29*	*0.3*	-
52	Quartzofeldspathic paragneiss containing disseminated pyrite and pyrrhotite; bedrock	23G/15	647750	5972050	0.2	*58*	*89*	1	8	0.1	0.1	1	20	20	*nd*	*4*	*31*	*nd*	-
53	Boulder containing sulfide mineralization	23G/7	643380	5904650	0.1	*304*	*189*	1	13	0.1	0.1	1	20	nd	*0.2*	*3*	*47*	*0.2*	-
54	Boulder of coarse grained granitoid rock, mineralized with disseminated pyrite and pyrrhotite	23G/14W	599700	5977800	0.4	*352*	*69*	1	8	0.1	0.1	1	10	4	*nd*	*6*	*33*	*0.2*	-
55	Boulder containing disseminated pyrite and pyrrhotite	23J/11	617000	6046100	0.2	104	-	1	13	0.2	0.2	3	90	12	0.1	1	-	0.1	-

NOTES: 1) Au and Hg are given in ppb, all other element values are in ppm.

2) nd indicates concentration of element less than 0.1 or below detection limit.

3) Number in italics indicates analysis by the laboratories of the Mineral Development Division, Newfoundland Department of Mines and Energy; all other analyses by Chemex Labs Ltd., Vancouver, B.C.

APPENDIX II*

Analytical results of rock samples collected from western Labrador. The following analytical results are from samples collected from the Howell's River area of western Labrador during the 1986 field season. The Cu, Zn, Pb, Ni, Mo and Ag analyses were performed by the Department of Mines and Energy laboratory, Howley Building, St. John's, using atomic absorption spectrometry. The Au analyses were performed by Chemex Labs Ltd., Vancouver, B.C., using neutron activation analysis. The analyses have not been verified; however, control samples and duplicate sample splits are within the tolerance ranges (Butler, 1980). Samples 4742206 and 4742216-4742218 were not collected primarily for Au analysis. Sample pair 4742203 and 4742210 and sample pair 4742223 and 4742230 are duplicate splits. As shown in Table 2, their analytical results are similar. The sample sites are plotted on Figure 7, which accompanies this report. The UTM coordinates have been included in the listing to facilitate personal plotting of sample locations.

Reference

Butler, A.J.
1980: Lake sediment geology, Lloyd's River area, Southwest Newfoundland. *In* Current Research. Newfoundland Department of Mines and Energy, Mineral Development Division, Report 80-1, pages 230-235.

Table 1 (Appendix II). Sample description

SAMPLES	DESCRIPTION
4742201-2	Float from Archean Ashuanipi Complex
4742203-4	Outcrop from Archean Ashuanipi Complex
4742206	Outcrop of shale containing minor pyrite mineralization from the Iron Arm area, Labrador Trough
4742208	Outcrop of shale containing minor pyrite mineralization from the Howell's River area, Labrador Trough
4742209	Outcrop of shale containing minor pyrite mineralization from the Howell's River area, Labrador Trough
4742210	Split of sample 4742203
4742211	Outcrop of shale containing minor pyrite mineralization from the Howell's River area, Labrador Trough
4742212	Outcrop of shale containing minor pyrite mineralization from the Howell's River area, Labrador Trough
4742213	Float, iron formation from the Boundary Lake area, Labrador Trough
4742214	Float, mineralized quartzite(?) from the Boundary Lake area, Labrador Trough
4742215	Outcrop from the Archean Ashuanipi Complex
4742216-19	Outcrop of shale from the Howell's River area, Labrador Trough
4742221	Float, mineralized shale from Iron Arm area, Labrador Trough
4742222-23	Outcrop of shale from Howell's River area, Labrador Trough
4742224-27	Outcrop from Archean Ashuanipi Complex
4742230	Split of sample 4742223

*Compiled by Jim Butler, Newfoundland Department of Mines and Energy.

Table 2 (Appendix II). Listing of Au samples from western Labrador (collected in 1986 by J. Butler)

NO.	SAMPLE NO.	NTS	EAST	NORTH	Au(ppb)	Cu(ppm)	Zn(ppm)	Pb(ppm)	Ni(ppm)	Mo(ppm)	Ag(ppm)
56	4742201	23J14	604525	6090250	6	20	58	17	11	8	0.2
57	4742202	23J14	604000	6091675	11	148	98	11	82	7	0.3
58	4742203	23J14	604100	6090175	127	133	131	<1	34	4	0.5
59	4742204	23J14	605100	6090450	10	610	110	<1	56	5	0.7
60	4742206	23J14	648450	6087425	7	61	45	25	26	10	0.2
61	4742208	23J14	615850	6088800	<1	5	8	<1	<1	1	<0.1
62	4742209	23J14	613975	6093225	<1	3	20	<1	<1	<1	<0.1
	4742210	23J14	604100	6090175	107	142	128	<1	34	4	0.5
63	4742211	23J14	617300	6081625	4	36	42	14	28	9	0.5
64	4742212	23J14	617300	6081675	2	28	58	17	35	10	0.1
65	4742213	20O03	603925	6104225	<1	3	8	<1	1	2	<0.1
66	4742214	20O03	603925	6104225	<1	10	24	<1	<1	<1	<0.1
67	4742215	20O03	598800	6100400	4	302	139	<1	6	9	0.8
68	4742216	23J14	613050	6085125	<1	10	9	<1	<1	<1	<0.1
69	4742217	23J14	612775	6085625	<1	20	12	<1	<1	1	<0.1
70	4742218	23J14	612625	6085775	<1	13	36	<1	7	2	<0.1
71	4742219	23J06	620700	6019800	356	193	62	3	373	27	0.2
72	4742221	23J15	652500	6084325	14	56	91	26	51	48	0.7
73	4742222	23J14	622875	6077825	1	45	136	19	32	5	<0.1
74	4742223	23J14	622550	6077050	9	54	50	25	30	4	0.2
75	4742224	23J14	605650	6088775	4000	667	55	<1	81	6	0.8
76	4742225	23J14	606450	6089050	6	90	84	27	66	11	0.3
77	4742226	23J14	605900	6088500	2	134	66	49	65	7	0.2
78	4742227	23J14	607175	6086725	339	148	64	<1	44	2	0.2
	4742230	23J14	622550	6077050	<1	58	50	26	30	5	0.1