ASSESSMENT REPORT
GEOLOGICAL-GEOCHEMICAL REPORT
LOON 4,5 & 6 CLAIMS
MAMIN RIVER AREA
GRAHAM ISLAND, QUEEN CHARLOTTE ISLANDS
PRINCE RUPERT M.D.
103 F 9W

CO-ORDINATES: 53 32'30"N; 130 18'30"W - approximate centre of claims area.

OWNER OF CLAIMS: JOHN T. MORTON
Vancouver, B.C.

OPERATOR: SUNATCO DEVELOPMENT CORPORATION
7th Floor, 609 Granville Street
Vancouver, B.C.

CONSULTANT: HAROLD M. JONES, P.Eng.
G.A. Noel & Asssociates Inc.

AUTHOR: HAROLD M. JONES, P.Eng.

Date Submitted: December 14, 1982

LIST OF ILLUSTRATIONS

SUMMARY

Between November 16 - 25, 1982, a crew of one geologist and four field assistants from G.A. Noel and Associates Inc., conducted geological mapping and geochemical soil surveys on the Loon 4, 5 and 6 claims. These claims are owned by Sunatco Development Corporation, 7th Floor, 609 Granville Street, Vancouver, B.C.

Three grids totalling approximately 15km were laid out and soil sampled. A total of 443 samples were collected.

Geology was mapped on the grids and along logging roads on the claims.

Geology was found to consist entirely of basalt flows, basalt breccia and minor tuffs. All appear to be moderately flat lying to gentle dipping.

Samples were assayed for gold, silver, arsenic, mercury, antimony, tungsten and zinc. This selection of elements, except for zinc, was chosen because at Consolidated Cinola Mines, they were very indicative of their mineralized zone.

Assay results from all grids were low in all elements. Gold, antimony and tungsten were below the detection limit of the laboratory instruments. Only mercury assays showed sufficient variations for contouring of values. Weak mercury anomalies are present on all grids. It is not known if these anomalies are significant or represent the normal dispersion pattern for Masset Fm basalts. Additional soil sampling is recommended to determine the mercury background and variations beyond the limit of present sampling and to close out several anomalies.

INTRODUCTION

At the request of Sunatco Development Corporation, G.A. Noel and Associates Inc. conducted a geological-geochemical exploration program on the company's Loon 4, 5 and 6 claims, located on Graham Island, Queen Charlotte Islands, approximately 17 km southwest of Port Clements. The work was conducted from November 16 - 25, 1982, by a crew consisting of one geologist and four field assistants. During this period grids were laid out and soil sampled.

Geology was mapped along grid lines and on some of the main logging roads. The above work completed the major part of stage 1 as recommended in the report by the writer dated January 15, 1982.

Location and Access 53^{O} 33'40" N; 132^{O} 19'45" W-to centre of Loon 5 and 6 claims
53^{O} 31'30" N; 132^{O} 17'15" W-to centre of Loon 4 claim

The Loon claims are located in the Queen Charlotte Islands on Graham Island approximately 18 km southwest of Port Clements and 800 km northwest of Vancouver (Figure 1).

The claims are not contiguous. Loon 4 claim is located approximately 5 km east-northeast of Pam Lake while Loon 5 and 6, which are contiguous, are located 6 km due north of the same lake (see Figure 2).

The Queen Charlotte Islands are serviced by regular airline service to Sandspit from Vancouver and Prince Rupert. Access from Sandspit to the property is via a ferry to Queen Charlotte City, then by 55 km of paved highway to

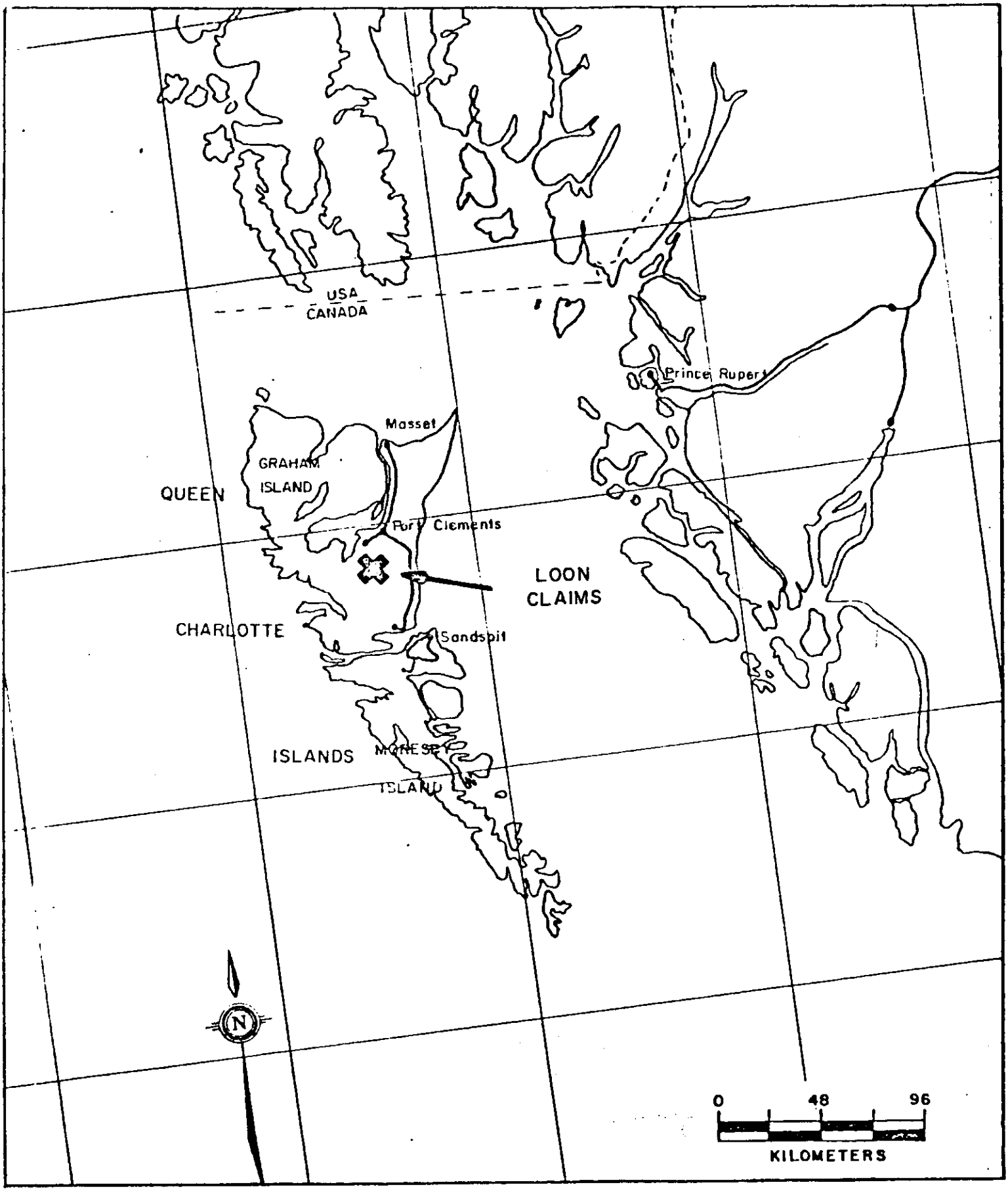

FIGURE 1

LOCATION MAP

LOON 4, 5, & 6 CLAIMS
Graham Island
Queen Charlotte Islands
Skeena M.D.
Scale 1:2,400,000 (approx.)

December 14,1982

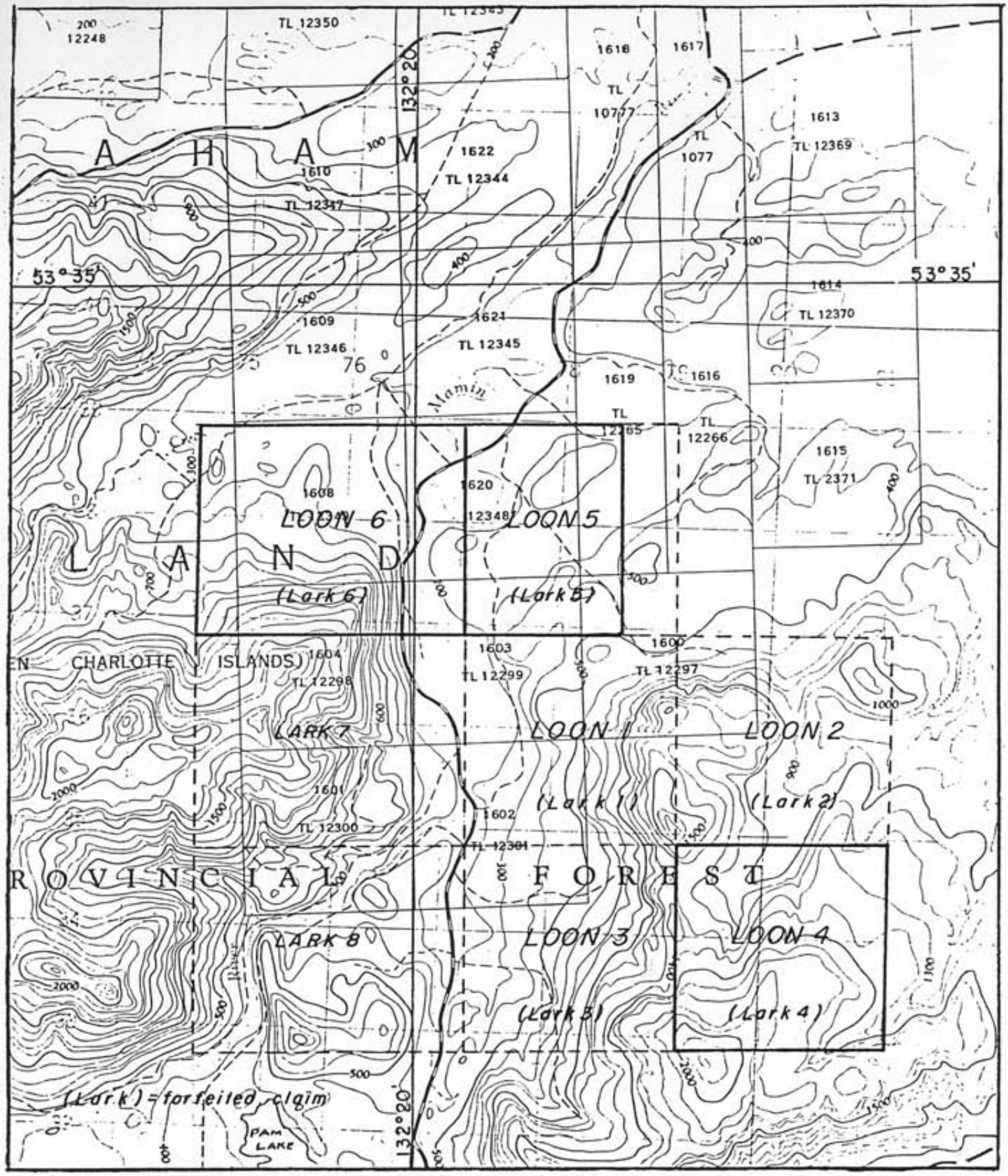

FIGURE 2

CLAIM MAP

LOON 4, 5 & 6 CLAIMS
Port Clements Area
Queen Charlotte Islands
Skeena M.D.

December 14th, 1982

Scale 1:50,000

Port Clements. From Port Clements, good gravel logging roads may be taken for 20 - 24 km southwesterly to the claims. Numerous old logging roads provide access within the claim area.

Topography and Vegetation

The claims are situated near the eastern edge of the Skidegate Plateau which is characterized by relatively rugged topography. To the east of the plateau are the relatively flat and low Queen Charlotte Lowlands.

Elevations within the Loon 4-6 claims range from approximately 100 metres in the valleys to the mountain tops at 600 metres. Loon 4 and 5 are within the more rugged terrain while Loon 5 is in the more subdued lowlands-type terrain.

Vegetation on the claims includes stands of mature cedar, fir and spruce and logged over areas now covered with thin to dense second growth of the above trees. Underbrush is light.

Property

The property consists of three claims which may be summarized as follows:

claim name	record no	no. of units	expiry date
Loon 4	3330 (12)	16	Dec. 11,1982
Loon 5	3331 (12)	12	Dec. 11,1982
Loon 6	3332 (12)	20	Dec. 11,1982

Only Loon 5 and 6 are contiguous. (See Figure 2)

The claims are owned by John T. Morton of Vancouver but have been transferred via an unregistered bill-of-sale to Sunatco Development Corporation, 7th Floor Stock Exchange Tower, 609 Granville Street, Vancouver, B.C.

This report is being submitted to the Gold Commissioner for Assessment Work credits. This will advance the claims expiry date to December 11, 1985.

History

The ground now covered by the Loon 4, 5 and 6 claims was formerly a part of the same area covered by the eight claim Lark group, which was explored during 1979-1981 as a joint venture between Gold Cup Resources Ltd., Avance International Inc., Sunatco Development Corporation, Susie Mining Exploration Ltd., Amberhill Mining and Exploration Ltd., and Rockefeller Investment Corporation. Their work included reconnaissance geochemical soil sampling and mapping and an airborne magnetometer -VLF EM survey. The latter survey recorded a number of magnetic lows, some of which were coincident with inferred faults. Several EM conductors were also recorded. While results of the above work warranted further exploration, financing problems prevented any follow-up work. The claims lapsed in 1981 due to a failure by the participants to file their assessment work in a manner acceptable to the Gold Commissioner.

The claims were re-staked on December 11, 1981 as the Loon claims. The writer was requested by Sunatco Development Corporation to review all the available literature on the Lark claims and to prepare a report on the Loon 4, 5, and 6 claims. The writer, in his report dated January 15, 1982, recommended geological-geochemical surveys over selected parts of each claim. The surveys were conducted between November 16-25, 1982 and are documented in this report.

GEOLOGY

General Geology

The general area about the Loon claims is underlain by three main rock units: Haida Formation of Late Cretaceous age; Masset Formation of Paleocene-Eocene age and Skonun Formation of Middle Miocene age.

A summary of these Formations is as follows:

Haida Fm. - It is divided into two distinct members - a lower sandstone member and an upper shale member. The members are variable in thickness but at the location of the type section they are 820m and 325m thick respectively.

The sandstone member includes grey to grey-green medium to coarse grained sandstone and fine to medium grained grey sandstones. They are interbedded on scales from fine interbeds to coarse beds.

The shale member is composed primarily of grey silty shales and very fine siltstones. A minor group of variable coarser fragmental rocks occur within the member.

Masset Fm. - It is a very thick accumulation of volcanic flows and pyroclastic rocks primarily composed of basalt, basaltic andesite and sodic rhyolite. Characteristic units are thin flows of columnar basalt, basalt breccias, thick sodic rhyolite ash flow tuffs, and welded tuff breccias and breccias mixed with basalt and rhyolite clasts. Certain basic and acidic intrusions are intimitely connected with the flow rocks and are included in the formation.

Skonun Fm. - It is composed of marine and non-marine sands, sandstone, shale, lignite stringers, and conglomerates. Most of the formation is composed of arenaceous rocks with much less shales and siltstones. Conglomerates are not abundant in the formation but pebbly sandstones and granule conglomerates are not uncommon.

Carbonaceous deposits are common and vary from a tough fibrous or woody lignite to black shiny coal.

The above rock formations are cut by the Sandspit fault system, a regional structure traceable and/or inferred for approximately 60km southeast to 80km northwest of the claims area. This fault system separates the two main physiographic provinces of the area, Queen Charlotte Lowlands on the east and the Skidegate Plateau to the west. The fault zone strikes N37^{O}W. and is thought to represent a large vertical movement (Sutherland Brown, 1968).

Local Geology

Rock exposures are reasonably abundent on Loon 6 claim as prominent cliff edges and as exposures in road cuts and rock quarries. On Loon 4 very few outcrops are present within the mapped area. Most are restricted to quarries used for road ballast. On Loon 5 the terrain is almost flat and is entirely drift covered.

All areas mapped on Loon 4, 5 and 6 are underlain by Masset Fm. volcanic flows and pyroclastics. These include: dark gray to black, fine grained dense columnar basalt; similar basalt but with numerous vesicles; medium grained dark gray basalt with numerous feldspar amygules; tuffs; & basalt breccias. These latter rocks are widespread in the claims

area. They commonly are composed of rounded basalt fragments 2cm to 20cm in diameter with an occassional coarser fragment. However, a few exposures of breccia were composed of very coarse basalt fragments 50cm to 100cm in diameter. While most basaltic rocks are dark gray to brown-black, one breccia is bright red, with gray and green angular and rounded fragments in a hematite-rich fine grained matrix. Zeolites are present in some breccias.

No rhyolitic rocks or intrusives were seen.

Bedding is not well exposed in the pyroclastic rocks. A few contacts seen between coarse and fine breccias were flat or gently dipping.

Geology of each claim area is shown on figures 3 and 8.

FIELD WORK

Field work conducted on each claim was similar. A baseline was laid out which was well marked by cutting and flagging. The baseline was marked with orange flagging; the stations with lime green flagging upon which was marked the line numbers.

Upon completion of the baseline, grid lines were laid out perpendicular to the baseline. Lines were well marked with similar coloured flagging as that used on the baseline. Soil samples were collected simultaneously with the laying out of the grid lines.

Geology was mapped along grid lines and roads in each claim area.

Geochemical Surveys

Soil samples were collected from each station using a mattock, or in some instances, a shovel. Samples were taken from the "B" horizon but at some stations this horizon either was not present due to shallow bedrock or was too deeply buried beneath the organic layer. At these sites "A" horizon meterial was collected. All grids had swampy sections in which no soil sample could be obtained. In these instances N.S. is recorded on the maps at those sample sites.

Sample depths ranged from 10cm to 50cm, depending on the depth of the organic layer. In virgin forest areas the surface was built up with decaying logs, needles, etc., consequently, the depth to the "B" horizon was considerable.

Three grids were laid out. They were:

Grid 1 - located on Loon 6 claim. It consisted of a baseline 1000 metres long striking N60^{o}E. Grid lines were laid out at 150m intervals along the baseline. Each line was run 390m N30W and 390m S30E from the baseline. Lines were numbered as Line 1-10, with line numbers increasing to the southwest. A total of 228 samples were collected at 30m intervals along each line.

Grid 2 - located on Loon 4. It consisted of a baseline 750 metres long striking N45^{o}E. Grid lines were laid out at 125m intervals along the baseline. Each line was run 210m N45W and 330m S45E from the baseline. Lines were numbered Line 11-17, with line numbers increasing to the northeast. A total of 107 samples were collected at 30m intervals along each line.

Grid 3 - located on Loon 5 claim. It consisted of a baseline 900 metres long striking N30E. Grid lines were laid out at 150m intervals along the baseline. Each line was run 240m N60W and 240m S60E from the baseline. Lines were numbered Line 18-24, with line numbers increasing to the northeast. A total of 108 samples were collected at 30m intervals along each line.

All samples were placed in Kraft paper soil envelopes upon which was marked the line number and station number. Samples were packed in boxes and shipped to Acme Analytical Laboratories in Vancouver for analysis of gold, silver, arsenic, antimony, tungsten, zinc and mercury by geochemical assay techniques (see appendix I for assay procedures).

Geological Surveys

Geology was mapped along grid lines and logging roads on a scale of 1:5000. As mentioned earlier, outcrop was reasonably abundant on grid 1, sparse on grid 2 and absent on grid 3. However, at least on Loon 4 & 6, additional geological data was obtained from road cuts and quarries.

RESULTS

Geochemical Surveys

All assay data was plotted on maps on a scale of 1:5000. These results are shown on figures 4,5,6,7,9,10,11,and 12.

A statistical study was done of the assay results. This study indicates the following values to be of interest:

Silver	> 0.3 ppm
Mercury	> 200 ppb
Arsenic	> 20 ppm
Zinc	> 80 ppm

Gold, antimony and tungsten were present in uniformly very low amounts which were below the detection limit of each element, namely 3 ppb gold, 2 ppm antimony and 2 ppm tungsten. For this reason these assays were not plotted but accompany the report as part of the values on the assay certificate in Appendix I.

Grid 1 - Loon 6 claim.

Only mercury and silver assays show many values above background. A number of weak, lenticular, east northeast trending mercury anomalies are present, most of which are located on the northwest side of the baseline. Fairly abundant outcrop is present in this general area which is all basalt, basalt breccia and minor tuffs. There is no obvious explanation for these anomalies but they may(?) represent mercury leaking through fractures or faults in the basaltic rocks.

Silver assays show a scattering of small, weak anomalies over the southwestern half of the grid. A series of one-station anomalies from lines 6 thru 10 at 9S-10S develop a narrow sinuous anomaly also trending east northeast. This anomaly is located in virgin forest with little or no outcrop.

Arsenic and zinc assays are very low and show only several one-station spot anomalies.

Grid 2 - Loon 4 claim.

All assay values from this grid are very low. Mercury assays show a number of scattered, small weak anomalies and one weak northeast trending anomaly.

Silver assays also show a number of scattered, small, weak anomalies and one small but definitely anomalous one. The latter is at the edge of the road on line 11 and may be contaminated by logging activity.

The sampled area is almost devoid of outcrop. However, the little seen on the grid and on the various logging roads is all basalt breccia with lesser columnar basalt.

None of the anomalies on this grid appear to reflect a mineralized structure.

Grid 3 - Loon 5 claim.

Assay values from this grid are also low in all elements. Mercury assays show a broad north northeast trending anomalous zone in the southwestern part of the grid. This coincides with slightly higher topography and may(?) reflect less overburden.

Several small lenticular anomalies lie to the southeast of the baseline and follow the same trend as the larger area. Also, at line 18,8S is a one sample anomaly which assayed 800ppb mercury, the highest assay recorded from the entire program. This anomaly is open to the east and south and should be delineated by additional sampling.

One high arsenic assay was obtained from the sample at line 23,5N. It assayed 105ppm As. It is suspected as being

either a mineralized erratic or an assaying error. A weak arsenic anomaly, partially developed, is located at line 24,5S to 6S. It is open to the north.

All other elements returned very low assays.

The entire grid and adjoining area is devoid of outcrop so no geological information is available to help interpret the geochemical results.

From a review of the soil sampler's field notes it was observed that in many of the swampy areas, where organic soils were deep, the field crew was successful in obtaining good soil samples from root pads of windblown trees. It was also observed that very few of the anomalous assays were obtained from organic soils. In almost all cases the samples consisted of rich orange-brown to red-brown well developed soils.

CONCLUSIONS

It is concluded from limited geological data that Loon 4,5&6 claims are probably underlain entirely by basalt flows, breccias and minor tuffs. There is no evidence from outcrop or float that other rock types are present.

Geochemical assays, other than mercury, are very low throughout the areas sampled. It is not known whether mercury values represent a leakage along faults and fractures through the basalts from an underlying mineralized horizon or represent the normal pattern for this element over Masset Fm. basalts.

It is concluded that while results are not encouraging, further geochemical surveys should be conducted in the

claims area to determine if the weak mercury anomalies are truly significant or represent normal dispersion patterns. Additional sampling should also be conducted to delimit the high mercury anomaly on Loon 5 claim.

RECOMMENDATION

It is recommended that additional soil sampling be conducted on Loon 5 claim to close out the anomalies to the southwest and southeast of the present grid. Some lines should also be extended to the northwest.

In addition to the above, reconnaissance soil sampling should be conducted along some of the roads on the various claims. This sampling will explore areas beyond the grids as well as provide a better understanding of the geochemical response over the Masset Fm. basalts.

Respectfully submitted

Harold M. Jones

HAROLD M. JONES, P.Eng.

REFERENCES

Champigney, N. and Sinclair, A.J. (1980): Progress Report on the Specogna (Babe) Gold Deposit; Min. of Energy, Mines and Pet. Resources Paper 1980-81, pp158-170.

Champigney, N. (1981): A Geological Evaluation of the Cinola (Specogna) Gold Deposit, Queen Charlotte Islands, B.C.; thesis for masters degree, U.B.C.

Elwell, J.P. (1980): Progress Report on Lark Claims; private report for Avance International dated July 9, 1980.

Elwell, J.P. (1980): Letter Report to Sunatco Development Corporation re: Exploration on Lark 2,3,4,5,6; private report dated September 24, 1980.

Elwell, J.P. (1981): Reconnaissance Geochemical Report on the Lark 1-8 Claims, Graham Island, Queen Charlotte Islands, Skeena M.D.; report for Avance International Inc.

Jones, H.M. (1982): Report on the Loon 4-6 Claims, Port Clements Area, Graham Island, Queen Charlotte Islands, Skeena M.D.; 103F9W for Sunatco Development Corp.

Sutherland Brown, A. (1968): Geology of the Queen Charlotte Islands, B.C.; Bull.No.54, B.C. Dept. of Mines and Pet. Resources.

Timmins, W.G. (1981): Geophysical Report on the Mamin River Airborne Project, 1981, Graham Island, Queen Charlotte Islands, Skeena M.D.

CERTIFICATE

I, Harold M. Jones, of the City of Vancouver, British Colubia, do hereby certify that:

1. I am a consulting geological engineer with G.A. Noel & Associates, Inc., 622 - 510 West Hastings Street, Vancouver, B.C.
2. I am a graduate of the University of British Columbia in Geological Engineering, 1956.

3. I have been practicing my profession as a geological engineer for 25 years.

4. I am a member of the Association of Professional Engineers of British Columbia, Registration No. 4681.

5. I conducted geological mapping and supervised soil sampling surveys on the Loon 4, 5 & 6 during the period November 16-25, 1982. I have also reviewed all the data listed under "References".

6. I have no interest, nor do I expect to receive any interest, direct or indirect in Sunatco Development Corporation.

7. Sunatco Development Corporation is hereby given permission to reproduce this report, or any part of it, for financing purposes; provided, however, that no portion may be used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

DATED at VANCOUVER, B.C. this 14th day of December, 1982.

Harold M. Jones

HAROLD M. JONES, P.Eng.

APPENDIX I

STATEMENT OF COSTS

STATEMENT OF EXPENSES

Wages:		
H.M. Jones, P.Eng. - 10 days @ $300/day	$3,000	
C. Beachy - 8 days @ $150/day	1,200	
R. Standbridge - 8 days @ $150/day	1,200	
M. McKillop - 10 days @ $150/day	1,500	
S. Standbridge -8 days @150/day	1,200	$ 8,100.00
Room & Board:		
trailer rental - 9 days @25/day	225.00	
meals - $15/man/day-2men 10 days	300.00	525.00
Vehicle:		
4 x 4 truck -Tilden Rental	726.01	
gas	105.00	867.01
Field Equipment:		
axes, mattock, flagging hip chain thread, etc.		408.90
Assays:		
443 soil samples @ $11.25/sample		4,983.75
Travel:		
Airfare 2 men @ 282.95	565.90	
taxis, ferries, etc.	29.25	595.15
Report and Map Preparation:		
Report , maps	1,800	
Drafting	350	
Secretarial	150	2,300.00
Total		$ 17,779.80

APPENDIX II

LABORATORY PROCEDURES, FREQUENCY DISTRIBUTION CURVES, ASSAY CERTIFICATE

ACME ANALYTICAL LABORATORIES LTD.
Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone : 253 - 3158

GEOCHEMICAL LABORATORY METHODOLOGY - 1981

SAMPLE PREPARATION

1. Soil samples are dried at 60°C and sieved to -80 mesh.

2. Rock samples are pulverized to -100 mesh.

Geochemical Analysis for Ag*, Bi*, Cd*, Co, Cu, Fe, Mn, Mo, Ni, Pb, Sb*, V, Zn

0.5 gram samples are digested hot dilute aqua regia in a boiling water bath and diluted to 10 ml with dimineralized water.

All the above elements are determined in the acid solution by Atomic Absorption.

* demotes background correction.

Geochemical Analysis for Au

10.0 gram samples that have been ignited overnite at 600°C are digested with hot dilute aqua regia, and the clear solution obtained is extracted with Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction (Detection Limit = 5 ppb direct AA and 1 ppb graphite AA.)

Geochemical Analysis for Au, Pd, Pt, Rh

10.0 - 30.0 gram samples are subjected to Fire assay preconcentration techniques to produce silver beads.

The silver beads are dissolved and Au, Pd, Pt, and Rh are determined in the solution by Atomic Absorption.

Geochemical Analysis for As

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml.

As is determined in the solution by Graphite Furnace Atomic Absorption.

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Telephone : 253 - 3158

Multi Element Analysis by ICP

Digestion of Sample

0.5 gram samples are digested with hot aqua regia for one hour and the sample is diluted to 10 ml. The diluted sample is aspirated by ICP and the analytical results are printed by Telex, either in percent or ppm as shown.

Please Note : This digestion is partial for Al, Ca, La, Mg, P Ti, W and very little Ba is dissolved.

Report Format

HO/22N 385ØW
EGC

BURN # 1 GE16 15:46 3FEB1981

IS
1357

MO	CU	PB	ZN	AG	NI	CO	MN	FE%	AS
3.92	41.5	9.ØØ	136	.332	15.3	5.7Ø	312	3.167	5.73
U	IS	TH	IS	CD	SB	BI	V	CA%	P%
4.11	.371	.424	1Ø73	.96Ø	1.94	4.51	52.7	1.1Ø7	.2Ø6
LA	IN	MG%	BA%	TI%	B	AL%	IS	IS	W
22.1	3.5Ø	.2589	.Ø184	.ØØ14	-.Ø5	1.72Ø	Ø	3.Ø6	.276

*O/M1
EGC

BURN # 1 GE16 15:48 3FEB1981

1358

.563	29.3	34.6	171	.154	33.4	11.5	794	2.536	8.77
3.57	.Ø44	2.79	765	1.Ø8	.635	4.25	54.8	.6452	.1Ø9
6.42	2.88	.6ØØ8	.Ø252	.Ø753	-.37	1.944	Ø	2.32	-.61

Code :

HO, *O, EGC	Computer Intructions.
/22N 3850 W	Sample Number.
/M1	ACME Geochem standard for quality control.
15:46 3FEB1981	Time and Date of Analysis.
BURN # 1 GE16	Geochem Computer Program.
IS	Internal Standard.

ACME ANALYTICAL LABORATORIES LTD.
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852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone : 253 - 3158

Geochemical Analysis of Hg

Digestion

A .50 gram sample is digested with aqua regia and diluted with 20% HCl.

Determination

Hg in the solution is determinated by cold vapour AA using F & J Scientific Hg assembly. An aliquot is added to stannous chloride-hydrochloric acid solution. The reduced Hg is swept out of the solution and passed into the Hg cell where it determined by AA.

Oxalic Acid Leach of Rock, Soil & Silt Samples

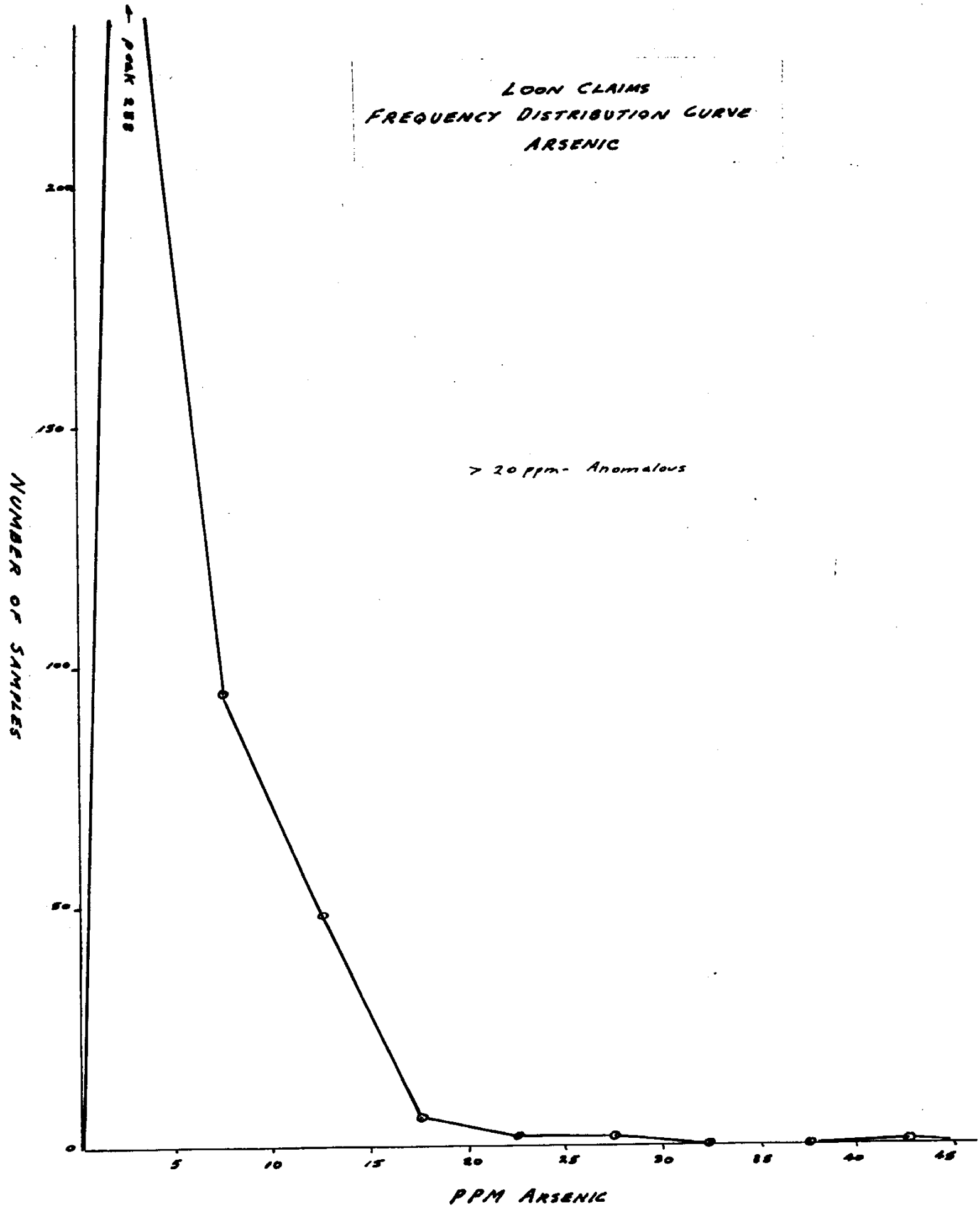
A .50 gram sample is digested hot with 10 mls 5% oxalic acid solution. The oxalic acid will dissolve Fe and Mn from their oxided of M - 1 fraction (but not from magnetite & ilmenite) limonites and clays. The following metals are analysed by atomic absorption : Cu, Zn, Pb, Ni, Mo, Fe & Mn.

Cold HCl Acid Extraction

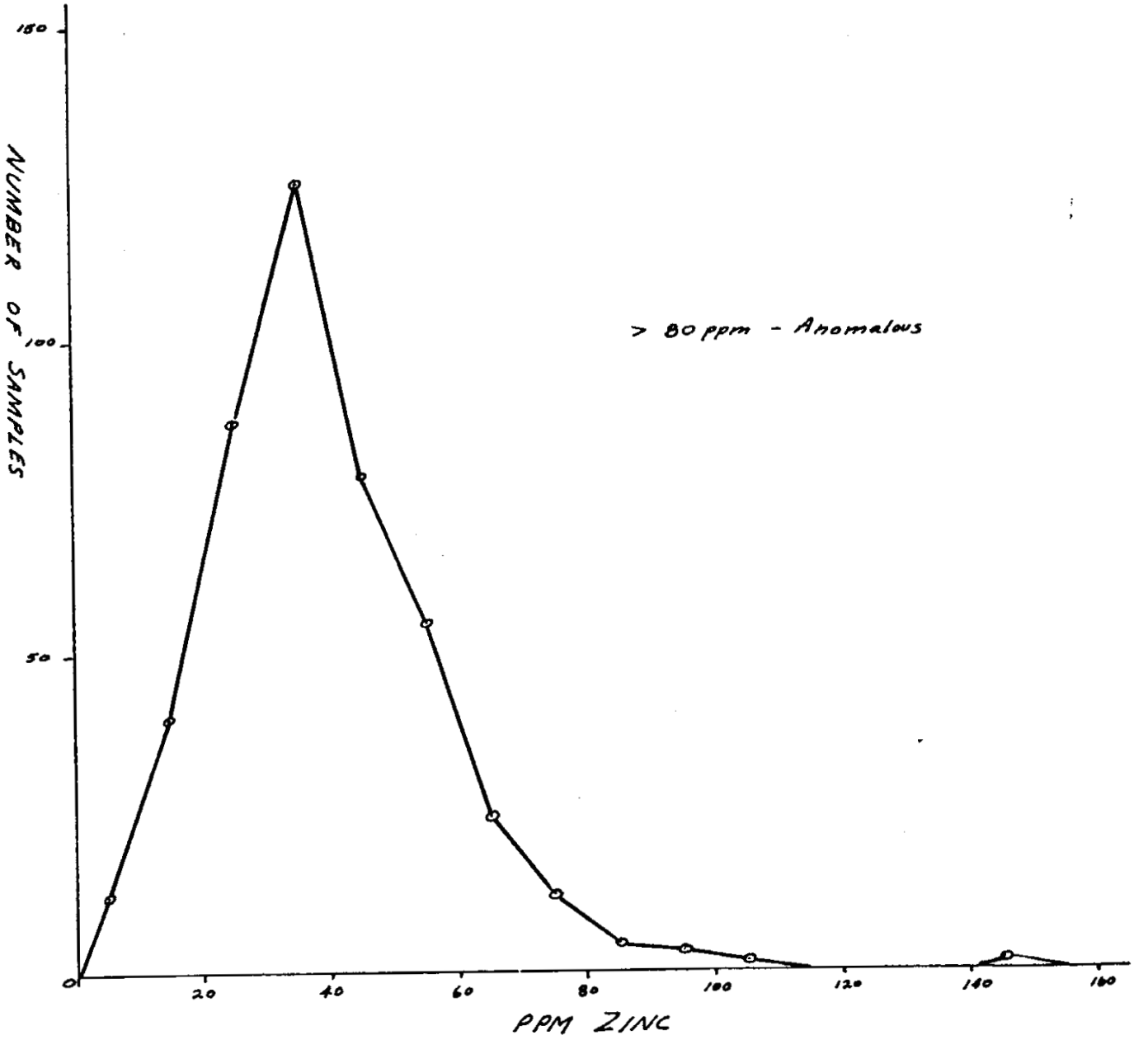
A .50 gram sample is leached with 10 ml 5% HCl solution at room temperature for 2 hours with ocasional shaking. Copper is dissolved from the organic and surface layers of clay fractions.

EDTA Extraction

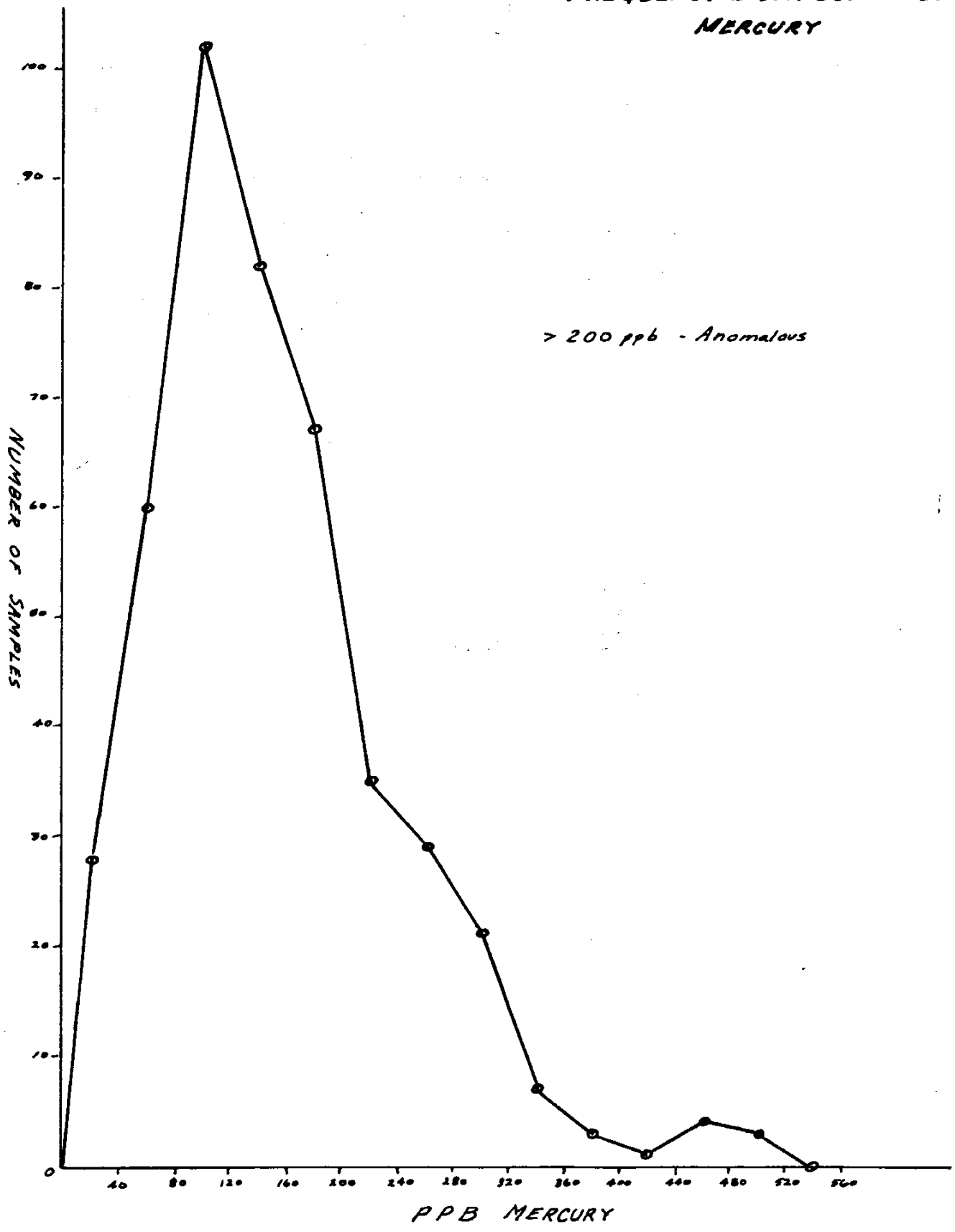
A .50 gram sample is leached at room temperature for 4 hours with 10 mls of 2.5% EDTA solution.


LOON CLAIMS
FREQUENCY DISTRIBUTION CURVE
ARSENIC
> 20 ppm - Anomalous
PEAK 288
200
150
100
50
0
NUMBER OF SAMPLES
5
10
15
20
25
30
35
40
45
PPM ARSENIC

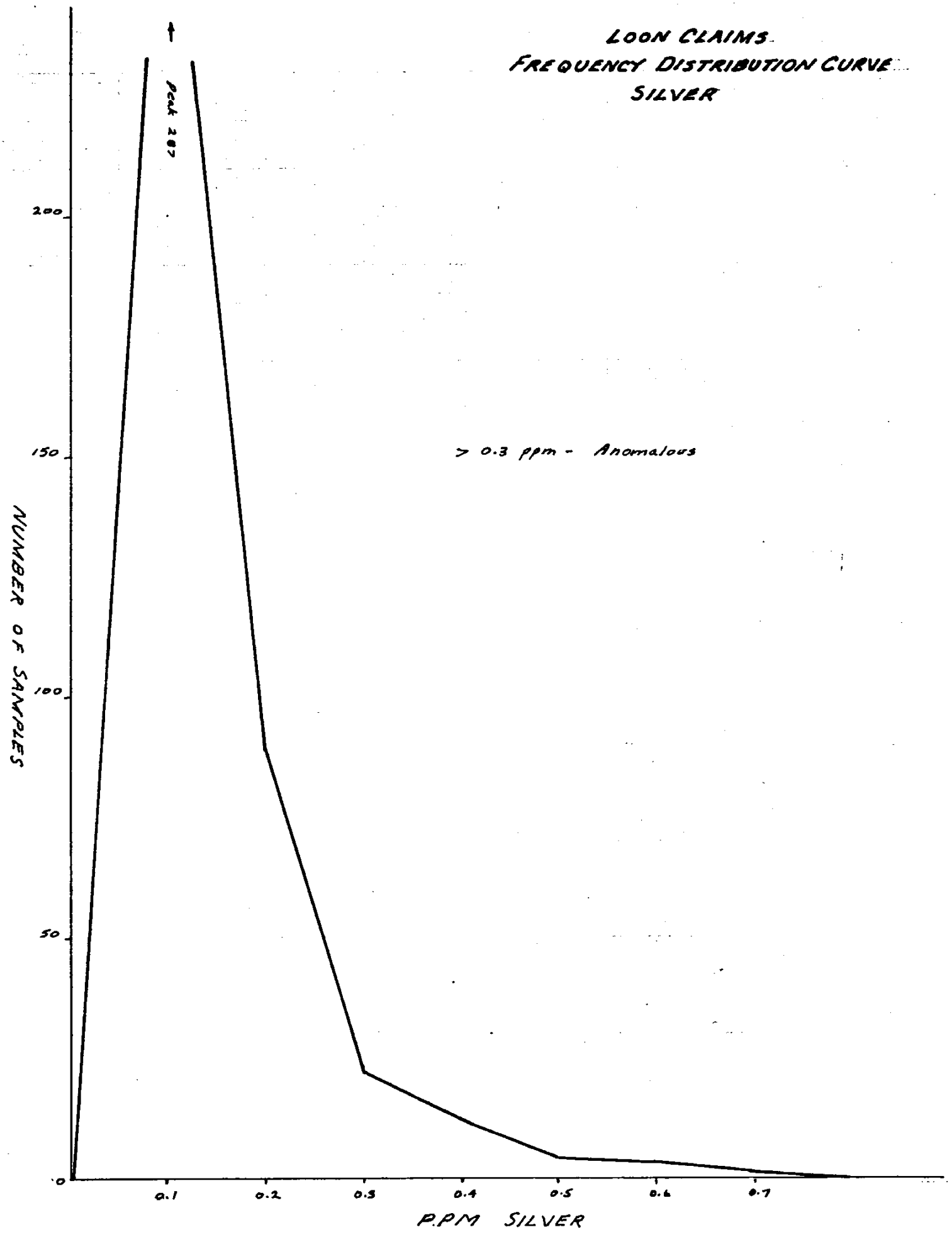
LOON CLAIMS
FREQUENCY DISTRIBUTION CURVE
ZINC



LOON CLAIMS
FREQUENCY DISTRIBUTION CURVE
MERCURY



LOON CLAIMS
FREQUENCY DISTRIBUTION CURVE
SILVER



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ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,W,Ba,Si,Sr,Cr AND B. Au DETECTION 3 ppb.
AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE. HG* ANALYSIS BY FLAMELESS AA FROM .500 GRAM SAMPLE. SAMPLE TYPE - SOIL

DATE RECEIVED NOV 26 1982 DATE REPORTS MAILED Dec 3/82 ASSAYER D. Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

G.A. NOEL ASSOCIATES FILE # 82-1583

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
1 BL	21	.2	2	2	2	5	210
1 1S	22	.1	2	2	2	5	110
1 2S	20	.1	3	2	2	5	160
1 3S	44	.1	2	2	2	5	110
1 4S	22	.1	2	2	2	5	300
1 5S	25	.1	2	2	2	5	250
1 6S	38	.1	5	2	2	5	140
1 7S	42	.1	2	2	2	5	150
1 8S	51	.1	6	2	2	5	180
1 9S	53	.1	4	2	3	5	130
1 1N	13	.1	2	2	2	5	80
1 2N	46	.1	2	2	2	5	100
1 3N	17	.1	6	2	2	5	480
1 4N	25	.1	7	2	2	5	470
1 5N	49	.1	2	2	2	5	110
1 6N	24	.1	2	2	2	5	260
1 7N	25	.1	2	2	2	5	120
1 11N	25	.1	3	2	2	5	160
1 12N	6	.1	2	2	2	5	30
1 13N	5	.1	2	2	2	5	80
2 BL	24	.1	11	2	2	5	140
2 1S	28	.2	7	2	2	5	70
2 2S	13	.1	6	2	2	5	100
2 3S	20	.1	2	2	2	5	60
2 10S	25	.1	2	2	2	5	80
2 11S	38	.1	5	2	2	5	30
2 13S	27	.1	2	2	2	5	240
STD A-1	175	.3	7	2	2	5	55
2 1N	34	.1	13	2	2	5	300
2 2N	24	.1	12	2	2	5	160
2 3N	38	.1	9	2	2	5	150
2 4N	26	.1	4	2	2	5	110
2 5N	16	.1	2	2	2	5	70
2 7N	38	.1	4	2	2	5	110
2 8N	42	.1	8	2	2	5	100
2 9N	35	.1	9	2	2	5	140
2 10N	47	.1	2	2	2	5	150
2 11N	36	.1	6	2	2	5	190

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
2 12N	35	.1	5	2	2	5	230
2 13N	33	.1	2	2	2	5	130
3 BL	35	.1	2	2	2	5	100
3 1S	29	.1	2	2	2	5	150
3 2S	47	.1	2	2	2	5	70
3 3S	29	.1	2	2	2	5	130
3 4S	27	.1	2	2	2	5	160
3 5S	56	.1	2	2	2	5	10
3 6S	40	.1	2	2	2	5	100
3 7S	14	.1	2	2	2	5	80
3 8S	35	.1	2	2	2	5	50
3 9S	45	.1	4	2	2	5	40
3 10S	53	.1	5	2	2	5	100
3 11S	30	.1	2	2	2	5	200
3 12S	27	.1	2	2	2	5	90
3 13S	33	.1	2	2	2	5	170
3 1N	72	.1	3	4	2	5	30
3 2N	21	.1	2	2	2	5	230
3 3N	30	.1	2	2	2	5	120
3 4N	26	.1	2	2	2	5	170
3 5N	28	.1	2	2	2	5	190
3 6N	38	.1	2	2	2	5	160
3 7N	30	.1	2	2	2	5	80
3 8N	33	.1	2	2	2	5	20
3 9N	27	.1	3	2	2	5	170
3 10N	28	.1	2	2	2	5	20
3 11N	34	.1	3	2	2	5	280
3 12N	34	.1	2	2	2	5	220
3 13N	34	.1	4	2	2	5	200
STD A-1	171	.1	9	2	2	5	50
4 BL	32	.1	2	2	2	5	110
4 1S	18	.1	3	2	2	5	140
4 2S	39	.1	7	2	2	5	180
4 3S	45	.1	2	2	2	5	170
4 4S	39	.1	2	2	2	5	80
4 5S	29	.1	2	2	2	5	160
4 6S	30	.1	2	2	2	5	180
4 7S	20	.1	2	2	2	5	85

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
4 8S	34	.1	2	2	2	5	50
4 9S	42	.1	2	2	2	5	30
4 10S	45	.1	2	2	2	5	40
4 11S	79	.1	2	2	2	5	60
4 12S	46	.1	3	2	2	5	100
4 13S	14	.1	2	2	2	5	130
4 1N	26	.1	2	2	2	5	180
4 2N	25	.1	8	2	2	5	190
4 3N	44	.1	2	2	2	5	30
4 4N	42	.1	9	2	2	5	80
4 5N	28	.1	6	2	2	5	160
4 6N	25	.1	6	2	2	5	100
4 7N	53	.1	2	2	2	5	180
4 8N	40	.1	7	2	2	5	140
4 9N	31	.1	3	2	2	5	150
4 10N	13	.1	2	2	2	5	160
4 11N	33	.1	2	2	2	5	210
4 12N	44	.1	2	2	2	5	80
4 13N	22	.1	6	2	2	5	180
5 BL	30	.1	3	2	2	5	180
5 1S	30	.1	2	2	2	5	270
5 2S	31	.1	2	2	2	5	120
5 3S	40	.1	2	2	2	5	80
5 4S	18	.1	2	2	2	5	180
5 5S	51	.1	11	2	2	5	210
5 6S	20	.1	2	2	2	5	180
5 7S	24	.1	4	2	2	5	150
5 8S	23	.1	3	2	2	5	70
5 9S	35	.1	2	2	2	5	120
5 10S	25	.1	2	2	2	5	180
5 11S	34	.1	2	2	2	5	70
STD A-1	174	.2	8	2	2	5	55
5 1N	35	.1	8	2	2	5	220
5 2N	22	.1	23	2	2	5	300
5 3N	31	.1	16	2	2	5	500
5 4N	38	.1	13	2	2	5	160
5 5N	34	.1	12	2	2	5	180
5 6N	39	.1	6	2	2	5	70

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
5 7N	37	.4	10	2	2	5	120
5 8N	37	.1	12	2	2	5	170
5 9N	30	.1	11	2	2	5	180
5 10N	46	.1	10	2	2	5	180
5 12N	26	.2	28	2	2	5	300
5 13N	26	.2	26	2	2	5	200
6 BL	74	.1	10	2	2	5	30
6 1S	37	.1	12	2	2	5	230
6 2S	27	.1	10	2	2	5	240
6 3S	38	.2	12	2	2	5	110
6 4S	81	.3	13	2	2	5	60
6 5S	56	.5	17	2	2	5	110
6 6S	20	.1	15	2	2	5	260
6 7S	39	.2	4	2	2	5	90
6 8S	36	.2	12	2	2	5	200
6 10S	26	.6	14	2	2	5	120
6 11S	23	.2	15	2	2	5	140
6 13S	41	.1	4	2	2	5	60
6 1N	24	.1	11	2	2	5	460
6 4N	35	.2	11	2	2	5	320
6 5N	32	.2	7	2	2	5	260
6 7N	22	.4	9	2	2	5	70
6 8N	28	.1	9	2	2	5	200
6 9N	32	.1	9	2	2	5	250
6 11N	21	.1	2	2	2	5	30
6 12N	56	.5	17	2	2	5	230
7 BL	9	.1	2	2	2	5	120
7 5S	37	.3	2	2	2	5	110
7 6S	34	.2	5	2	2	5	80
7 7S	39	.1	4	2	2	5	110
7 8S	22	.2	5	2	2	5	140
7 9S	31	.1	7	2	2	5	160
7 10S	30	.4	13	2	2	5	200
7 11S	22	.2	3	2	2	5	140
7 12S	27	.2	7	2	2	5	100
7 13S	26	.2	7	2	2	5	260
STD A-1	171	.4	11	2	2	5	55

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
7 1N	26	.4	9	2	2	5	260
7 2N	38	.4	7	2	2	5	110
7 3N	63	.1	8	2	2	5	80
7 4N	59	.3	3	2	2	5	110
7 5N	43	.1	16	2	2	5	150
7 6N	37	.2	12	2	2	5	200
7 7N	60	.1	8	2	2	5	160
7 8N	32	.1	8	2	2	5	360
7 9N	87	.1	8	2	2	5	40
7 10N	18	.4	2	2	2	5	40
7 11N	31	.2	11	2	2	5	210
7 12N	11	.1	2	2	2	5	200
7 13N	65	.1	4	2	2	5	90
8 BL	6	.1	2	2	2	5	50
8 1S	61	.1	2	2	2	5	30
8 3S	26	.1	4	2	2	5	280
8 4S	31	.2	7	2	2	5	160
8 5S	27	.1	4	2	2	5	130
8 6S	35	.1	15	2	2	5	200
8 7S	44	.2	6	2	2	5	130
8 8S	44	.2	3	2	2	5	100
8 9S	24	.3	5	2	2	5	150
8 10S	27	.2	2	2	2	5	170
8 11S	23	.2	6	2	2	5	210
8 12S	35	.2	5	2	2	5	80
8 13S	33	.2	6	2	2	5	110
8 1N	28	.1	6	2	2	5	250
8 2N	33	.2	9	2	2	5	160
8 3N	30	.2	7	2	2	5	130
8 4N	20	.1	3	2	2	5	100
8 5N	35	.1	4	3	2	5	180
8 6N	28	.2	7	2	2	5	170
8 7N	15	.1	3	2	2	5	180
8 8N	36	.1	2	2	2	5	80
8 9N	41	.1	3	2	2	5	90
8 10N	40	.1	13	2	2	5	80
8 11N	40	.1	7	2	2	5	45
8 12N	40	.1	10	2	2	5	110
STD A-1/AU	174	.3	12	2	2	480	55

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
8 13N	47	.2	5	2	2	5	100
9 BL	39	.1	4	2	2	5	300
9 1S	57	.1	8	2	2	5	60
9 2S	64	.4	3	2	2	5	110
9 4S	63	.1	8	2	2	5	120
9 5S	61	.1	9	2	2	5	20
9 6S	12	.2	2	2	2	5	90
9 7S	30	.2	14	2	2	5	200
9 8S	58	.1	2	2	2	5	120
9 9S	36	.3	9	2	2	5	230
9 10S	33	.1	10	2	2	5	200
9 11S	42	.1	11	2	2	5	110
9 12S	33	.1	3	2	2	5	170
9 13S	38	.1	4	2	2	5	240
STD A-1	169	.3	11	2	2	5	50
9 1N	28	.1	2	2	2	5	400
9 2N	34	.1	3	2	2	5	300
9 5N	32	.2	10	2	2	5	270
9 7N	51	.1	9	2	2	5	240
9 9N	40	.1	10	2	2	5	160
9 11N	144	.5	10	2	2	5	110
9 12N	45	.1	11	2	2	5	210
9 13N	72	.1	11	2	2	5	90
10 BL	54	.1	4	2	2	5	130
10 1S	34	.1	3	2	2	5	120
10 3S	66	.1	7	2	2	5	100
10 4S	34	.1	9	2	2	5	220
10 5S	42	.1	3	2	2	5	230
10 6S	38	.1	11	2	2	5	360
10 8S	43	.1	9	2	2	5	60
10 10S	55	.3	10	2	2	5	90
10 11S	35	.2	7	2	2	5	290
10 12S	36	.1	4	2	2	5	30
10 13S	51	.2	2	2	2	5	150
10 1N	94	.2	3	2	2	5	30
10 3N	37	.1	5	2	2	5	240
10 4N	24	.1	12	2	2	5	260

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
10 5N	42	.3	15	2	2	5	220
10 7N	50	.2	4	2	2	5	260
10 8N	41	.2	10	2	2	5	190
10 9N	51	.2	8	2	2	5	230
10 10N	45	.2	6	2	2	5	280
10 12N	37	.2	7	2	2	5	200
10 13N	49	.2	12	2	2	5	190
11 BL	61	.1	6	2	2	5	180
11 1S	56	.2	10	2	2	5	120
11 2S	51	.2	4	2	2	5	120
11 3S	60	.1	10	2	2	5	110
11 4S	50	.1	2	2	2	5	110
11 5S	47	.2	6	2	2	5	260
11 6S	56	.1	4	2	2	5	100
11 7S	60	.2	2	2	2	5	80
11 8S	79	.1	3	2	2	5	30
11 9S	76	.2	2	2	2	5	40
11 1N	67	.1	4	2	2	5	100
11 2N	58	.2	7	2	2	5	120
11 3N	62	.1	5	2	2	5	120
11 4N	83	.5	4	2	2	5	130
11 5N	50	.7	4	2	2	5	250
11 6N	58	.2	2	2	2	5	90
11 7N	53	.3	2	2	2	5	140
STD A-1	175	.3	8	2	2	5	55
12 BL	46	.1	4	2	2	5	180
12 1S	51	.1	5	2	2	5	140
12 2S	40	.2	6	2	2	5	150
12 3S	57	.1	4	2	2	5	120
12 4S	60	.1	2	2	2	5	60
12 6S	68	.1	2	2	2	5	90
12 7S	26	.1	2	2	2	5	70
12 8S	30	.1	4	2	2	5	100
12 10S	13	.2	5	2	2	5	80
12 1N	32	.1	2	2	2	5	60
12 2N	53	.1	4	2	2	5	180
12 3N	34	.4	4	2	2	5	260

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
12 4N	53	.2	2	2	2	5	130
12 6N	54	.3	2	2	2	5	220
12 7N	51	.3	2	2	2	5	110
13 BL	51	.2	2	2	2	5	180
13 1S	41	.3	3	2	2	5	130
13 3S	47	.1	2	2	2	5	120
13 4S	7	.1	2	2	2	5	80
13 5S	47	.1	2	2	2	5	140
13 6S	13	.3	2	2	2	5	150
13 7S	18	.2	2	2	2	5	120
13 8S	43	.1	2	2	2	5	60
13 9S	45	.1	2	2	2	5	70
13 10S	58	.2	5	2	2	5	40
13 11S	17	.3	2	2	2	5	200
STD A-1	173	.4	11	2	2	5	50
13 1N	70	.2	2	2	2	5	130
13 2N	40	.1	2	2	2	5	180
13 3N	52	.1	4	2	2	5	310
13 4N	58	.1	2	2	2	5	110
13 6N	56	.1	2	2	2	5	140
13 7N	64	.2	2	2	2	5	20
13 A	25	.2	2	2	2	5	180
14 BL	40	.3	2	2	2	5	140
14 1S	62	.1	4	2	2	5	20
14 2S	72	.2	2	2	2	5	100
14 3S	51	.3	2	2	2	5	150
14 4S	43	.6	3	2	2	5	300
14 6S	44	.2	2	2	2	5	120
14 7S	16	.2	2	2	2	5	320
14 8S	33	.2	2	2	2	5	120
14 9S	20	.2	2	2	2	5	80
14 10S	17	.1	2	2	2	5	90
14 11S	72	.2	2	2	2	5	60
14 1N	46	.1	2	2	2	5	160
14 2N	54	.1	2	2	2	5	50
14 3N	56	.1	2	2	2	5	330
14 4N	21	.1	2	2	2	5	120
14 5N	65	.1	2	2	2	5	130

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
15 BL	18	.1	2	2	2	5	80
15 1S	45	.1	2	2	2	5	40
15 2S	62	.1	3	2	2	5	110
15 3S	45	.1	2	2	2	5	160
15 4S	43	.1	2	2	2	5	220
15 5S	50	.1	2	2	2	5	65
15 6S	67	.1	2	2	2	5	40
15 7S	28	.1	2	2	2	5	110
15 8S	44	.1	2	2	2	5	75
15 9S	68	.1	2	2	2	5	100
15 10S	64	.2	5	2	2	5	160
15 11S	49	.4	6	2	2	5	170
15 1N	46	.1	5	2	2	5	60
15 3N	51	.1	2	2	2	5	230
15 4N	58	.1	2	2	2	5	65
15 5N	49	.1	2	2	2	5	150
15 6N	51	.1	2	2	2	5	160
15 7N	71	.2	3	2	2	5	290
STD A-1	177	.2	7	2	2	5	50
16 4S	46	.2	2	2	2	5	130
16 7S	67	.1	2	2	2	5	20
16 9S	57	.1	2	2	2	5	120
16 10S	48	.2	2	2	2	5	100
16 11S	50	.1	2	2	2	5	140
16 2N	56	.1	2	2	2	5	60
16 4N	73	.3	4	2	2	5	110
16 5N	39	.1	2	2	2	5	190
17 3S	63	.1	2	2	2	5	50
17 4S	51	.2	3	2	2	5	100
17 5S	94	.1	2	2	2	5	60
17 6S	71	.3	4	2	2	5	65
17 7S	73	.1	2	2	2	5	60
17 8S	59	.1	3	2	2	5	110
17 9S	62	.1	2	2	2	5	130
17 10S	43	.2	2	2	2	5	170
17 11S	66	.1	2	2	2	5	90

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
17 1N	45	.1	2	2	2	5	100
17 2N	34	.2	2	2	2	5	110
17 3N	55	.3	2	3	2	5	280
17 4N	28	.2	2	2	2	5	160
17 5N	42	.1	5	2	2	5	170
17 6N	28	.1	6	2	2	5	200
18 BL	54	.1	3	2	2	5	100
18 1S	25	.3	6	2	2	5	330
18 2S	5	.1	2	2	2	5	220
18 3S	42	.1	4	2	2	5	230
18 6S	34	.1	2	2	2	5	85
18 7S	39	.2	3	2	2	5	240
18 8S	17	.1	6	2	2	5	800
18 1N	19	.2	2	2	2	5	150
18 2N	34	.1	3	2	2	5	260
18 3N	39	.1	5	2	2	5	160
18 4N	31	.1	4	2	2	5	210
18 5N	41	.1	2	2	2	5	420
18 6N	35	.1	2	2	2	5	270
18 7N	35	.1	2	2	2	5	320
18 8N	28	.1	3	2	2	5	300
19 BL	32	.1	2	2	2	5	360
19 1S	37	.1	5	2	2	5	220
19 2S	39	.1	6	2	2	5	330
19 3S	37	.1	8	2	2	5	320
19 4S	46	.1	3	2	2	5	300
19 5S	34	.1	2	2	2	5	80
19 6S	40	.1	3	2	2	5	120
19 8S	19	.1	2	2	2	5	100
STD A-1	175	.4	13	2	2	5	55
19 1N	36	.1	5	2	2	5	280
19 2N	40	.1	2	2	2	10	500
19 3N	44	.1	4	2	2	5	160
19 4N	31	.1	2	2	2	5	290
19 5N	33	.1	4	2	2	5	280
19 6N	36	.1	2	2	2	5	240
19 7N	31	.1	4	2	2	5	280

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
19 8N	56	.2	2	2	2	5	160
20 BL	40	.2	16	4	2	5	460
20 1S	28	.1	8	2	2	5	200
20 2S	32	.1	13	2	2	5	110
20 3S	41	.2	5	4	2	5	50
20 4S	27	.1	13	2	2	5	130
20 5S	18	.2	9	2	2	5	160
20 6S	57	.2	12	4	2	5	170
20 7S	32	.2	15	2	2	5	380
20 8S	45	.1	5	2	2	5	150
STD A-1	179	.4	12	2	2	5	55
20 1N	40	.2	10	2	2	5	160
20 2N	33	.2	5	3	2	5	200
20 3N	32	.1	13	2	2	5	280
20 5N	45	.1	12	2	2	5	130
20 6N	40	.1	11	2	2	5	280
20 7N	42	.1	13	2	2	5	260
20 8N	49	.1	12	2	2	5	180
21 BL	25	.1	2	2	2	5	50
21 1S	55	.1	9	2	2	5	100
21 2S	56	.1	7	3	2	5	120
21 3S	85	.6	10	2	2	5	120
21 4S	11	.1	2	2	2	5	110
21 5S	40	.1	15	2	2	5	320
21 6S	57	.1	6	3	2	5	90
21 7S	58	.1	9	2	2	5	320
21 8S	20	.2	7	3	2	5	180
21 1N	30	.1	2	2	2	5	310
21 2N	36	.1	13	2	2	5	190
21 3N	42	.1	10	2	2	5	270
21 4N	42	.1	11	2	2	5	200
21 5N	37	.1	5	2	2	5	400
21 6N	21	.1	3	2	2	5	100
21 7N	44	.2	11	2	2	5	240
21 8N	25	.1	16	2	2	5	40
22 BL	16	.1	2	2	2	5	100

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
22 2S	32	.1	3	2	2	5	100
22 3S	35	.1	4	2	2	5	170
22 4S	11	.1	3	2	2	5	160
22 5S	42	.1	3	2	2	5	360
22 6S	38	.1	4	2	2	5	190
22 7S	33	.2	4	2	2	5	300
22 1N	37	.1	7	2	2	5	160
22 2N	43	.1	6	2	2	5	100
22 3N	26	.1	2	2	2	5	180
22 4N	31	.1	6	2	2	5	110
22 5N	32	.1	10	2	2	5	100
22 6N	31	.1	9	2	2	5	230
22 7N	7	.1	7	2	2	5	200
22 8N	96	.1	5	2	2	5	280
23 1S	16	.1	3	2	2	5	80
23 2S	11	.1	3	2	2	5	120
23 3S	4	.1	3	2	2	5	130
23 6S	5	.1	17	2	2	5	120
23 7S	18	.2	3	2	2	5	110
23 8S	67	.1	7	2	2	5	140
22 1N	7	.1	2	2	2	5	70
22 2N	4	.1	2	2	2	5	100
22 3N	4	.1	2	2	2	5	60
22 4N	18	.1	8	2	2	5	80
22 5N	31	.1	105	2	2	5	40
22 7N	25	.1	5	2	2	5	140
22 8N	38	.1	9	2	2	5	170
24 BL	47	.1	2	2	2	5	140
24 1S	47	.1	4	2	2	5	160
24 2S	63	.1	2	2	2	5	40
24 4S	39	.1	2	2	2	5	160
24 5S	26	.1	47	2	2	5	170
24 6S	33	.1	24	2	2	5	170
24 7S	29	.1	6	2	2	5	120
24 8S	18	.1	14	2	2	5	210
STD A-1/AU/HG	173	.3	11	2	2	500	55

SAMPLE #	ZN ppm	AG ppm	AS ppm	SB ppm	W ppm	Au* ppb	Hg* ppb
24 1N	40	.1	12	2	2	5	240
24 2N	47	.1	13	2	2	5	420
24 3N	40	.1	11	2	2	5	160
24 4N	41	.1	2	2	2	5	180
24 5N	42	.1	5	2	2	5	130
24 6N	43	.1	2	2	2	5	120
24 7N	49	.1	2	2	2	5	85
24 8N	49	.1	2	2	2	5	140

CLAIM BOUNDARY

Port Clements
Approx 24 Km

Old Mamin River Mainline

New Mamin River Mainline

Mamin River

Branch 9

Branch 8

Powder magazine

6m deep

3m deep

Large wind falls

Large windfalls

all large windfalls

windfalls

Logged area thick second growth very wet due to beaver dams

Logged area, very thick second growth

large windfalls

mature forest, large timber deep organic cover no o/c

Logged area thick second growth

slickensides

3m orange-brown pyroclastic dark basalt

LOON 6

LOON 5

LOON 6 LOON 5

LCP

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10

L18 L19 L20 L21 L22 L23 L24

13N 12N 10N 8N 6N 4N 2N BL 2S 4S 6S 8S 10S 12S 13S

8N 6N 4N 2N BL 2S 4S 6S 8S

N

LEGEND

MASSET FM – Basalt, basalt breccia, vesicular and amygdaloidal basalt, minor tuff

SYMBOLS

- Outcrop
- Fracture
- Bedding
- Fault
- Stream
- Logging road
- Edge of mature forest

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

Metres 100 50 0 100 200 300 Metres

H. M. JONES — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

GEOLOGY MAP

LOON 5 & 6 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M. D.
103 F 9 W

Scale: 1:5,000	Date: December 1982	Fig. No. 3
By: H.M.Jones, P.Eng		

CLAIM BOUNDARY

L 1 L 2 L 3 L 4 L 5 L 6 L 7 L 8 L 9 L 10

13N 12N 10N 8N 6N 4N 2N BL 2S 4S 6S 8S 10S 12S 13S

8N 6N 4N 2N BL 2S 4S 6S 8S L 24 L 23 L 22 L 21 L 20 L 19 L 18

Port Clements
Approx 24 Km

Old Mamin River Mainline

New Mamin River Mainline

Mamin River

Branch 9

Branch 8

LOON 6

LOON 5

LOON 6 LOON 5
LCP

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

Metres 100 50 0 100 200 300 Metres

LEGEND

- LOGGING ROAD
- SOIL SAMPLE LOCATION
- RIVER, CREEK
- 0-200 ppb (BACKGROUND)
- 200-300 ppb POSSIBLY ANOMALOUS
- >300 ppb DEFINITLY ANOMALOUS

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

MERCURY IN SOILS

LOON 5 & 6 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M. D.
103 F 9 W

Scale: 1:5,000	Date: December 1982	Fig. No. 4
By: H.M. Jones, P. Eng.		

CLAIM BOUNDARY

L 1 L 2 L 3 L 4 L 5 L 6 L 7 L 8 L 9 L 10

13N 12N 10N 8N 6N 4N 2N BL 2S 4S 6S 8S 10S 12S 13S

L O O N 6

Branch 9

Old Mamin River Mainline

Mamin River

Port Clements
Approx 24 Km

New Mamin River Mainline

Branch 8

8N 6N 4N 2N BL 2S 4S 6S

L 24 L 23 L 22 L 21 L 20 L 19 L 18

L O O N 5

LOON 6 LOON 5
LCP

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

Metres 100 50 0 100 200 300 Metres

LEGEND

- LOGGING ROAD
- SOIL SAMPLE LOCATION
- RIVER, CREEK
- 20–40 ppm POSSIBLY ANOMALOUS
- >40 ppm DEFINITLY ANOMALOUS

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

ARSENIC IN SOILS

LOON 5 & 6 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F 9 W

Scale: 1:5,000	Date: December 1982	Fig. No. 5
By: H.M. Jones, P.Eng.		

CLAIM BOUNDARY

LOON 6

LOON 5

Old Mamin River Mainline

New Mamin River Mainline

Mamin River

Branch 9

Branch 8

Port Clements Approx 24 Km

CLIFFS

LOON 6 LOON 5

LCP

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10

13N 12N 10N 8N 6N 4N 2N BL 2S 4S 6S 8S 10S 12S 13S

8N 6N 4N 2N BL 2S 4S 6S 8S

L18 L19 L20 L21 L22 L23 L24

LEGEND

- LOGGING ROAD
- SOIL SAMPLE LOCATION
- RIVER, CREEK
- >0.3 ppm ANOMALOUS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

Metres 100 50 0 100 200 300 Metres

PROFESSIONAL ENGINEER H. M. JONES

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

SILVER IN SOILS

LOON 5 & 6 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND

QUEEN CHARLOTTE ISLANDS

SKEENA M. D.

103 F 9 W

Scale: 1:5,000	Date: December 1982	Fig. No. 6
By: H.M. Jones, P.Eng.		

CLAIM BOUNDARY

LOON 6

LOON 5

Old Mamin River Mainline

New Mamin River Mainline

Mamin River

Port Clements Approx 24 Km

Branch 9

Branch 8

CLIFFS

L 1 L 2 L 3 L 4 L 5 L 6 L 7 L 8 L 9 L 10

13N 12N 10N 8N 6N 4N 2N BL 2S 4S 6S 8S 10S 12S 13S

6N 4N 2N BL 2S 4S 6S 8S

L 24 L 23 L 22 L 21 L 20 L 19 L 18

LOON 6 LOON 5

LCP

N

LEGEND

LOGGING ROAD

SOIL SAMPLE LOCATION

RIVER, CREEK

>80 ppm ANOMALOUS

Metres 100 50 0 100 200 300 Metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

PROFESSIONAL ENGINEER H. M. JONES BRITISH COLUMBIA

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

ZINC IN SOILS

LOON 5 & 6 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND

QUEEN CHARLOTTE ISLANDS

SKEENA M.D.

103F 9W

Scale: 1:5,000	Date: December 1982	Fig. No. 7
By: H.M. Jones, P.Eng.		

Very steep slopes with cliffs

QUARRY
Walls 5-10m high
bx, frags commonly 15-30cm, few much coarser

QUARRY
Walls 10m high
all basalt bx

Approx. location L.C.P. and Claim Boundary Post not seen

L.C.P. LOON 4

Mature Forest approx. limits

Logging slash Young second growth

BRANCH 8 ~ Mac Blo Logging road

basalt cliffs

To 'MAMIN RIVER' Mainline Road 1 Km

Logging slash Young second growth

Many logging skid roads along ridge

Branch 11 Mac Blo Logging Road

LOON 4

QUARRY - bx

Logging slash Young second growth

Logging slash Young second growth

QUARRY
bx, frags. 1cm - 5cm

QUARRY
bx

bx, frags ±3 cm

L.17

L.16

L.15

L.14

L.13

L.12

L.11

Mature Forest approx. limits

8N.
6N.
4N.
2N.
BL.
2S.
4S.
6S.
8S.
10S.
11S.

QUARRY
coarse bx.

coarse basalt bx, frags 60-100 cm dia.

coarse basalt bx

red volc. bx, frags 5-10 cm

2m bed finely laminated tuffs, coarse bx

dry

dry

vesicular basalt

QUARRY
coarse basalt bx overlain by fine gr. basalt

LEGEND

- LOGGING ROAD
- STREAM
- LIMIT OF LOGGING
- MASSET FM. - basalt, basalt breccia, minor tuffs
- OUTCROP
- CONTACT, DIRECTION & DIP

Metres 100 50 0 100 200 300 Metres

GEOLOGICAL BRANCH ASSESSMENT REPORT

10,901

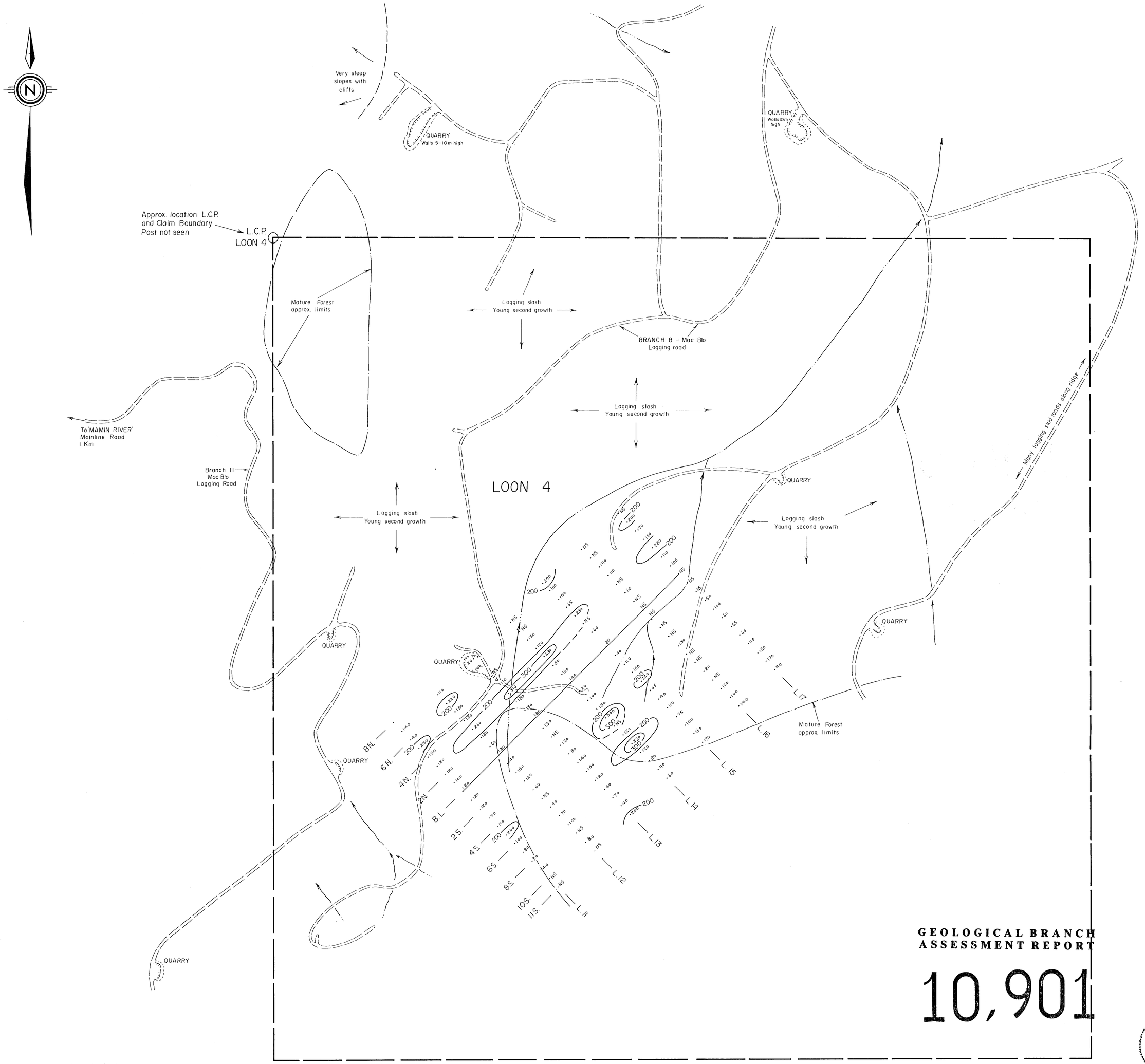
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA H. M. JONES

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

GEOLOGY MAP
LOON 4 CLAIM
MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F/9W

Scale: 1:5,000	Date: December 1982	Fig. No. 8
By: H.M. Jones, P.Eng.		



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

LEGEND

- LOGGING ROAD
- STREAM
- LIMIT OF LOGGING
- ·80 SAMPLE LOCATION
- 0-200 ppb (BACKGROUND)
- 200-300 ppb POSSIBLY ANOMALOUS
- >300 ppb DEFINITLY ANOMALOUS

Metres 100 50 0 100 200 300 Metres

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. M. JONES

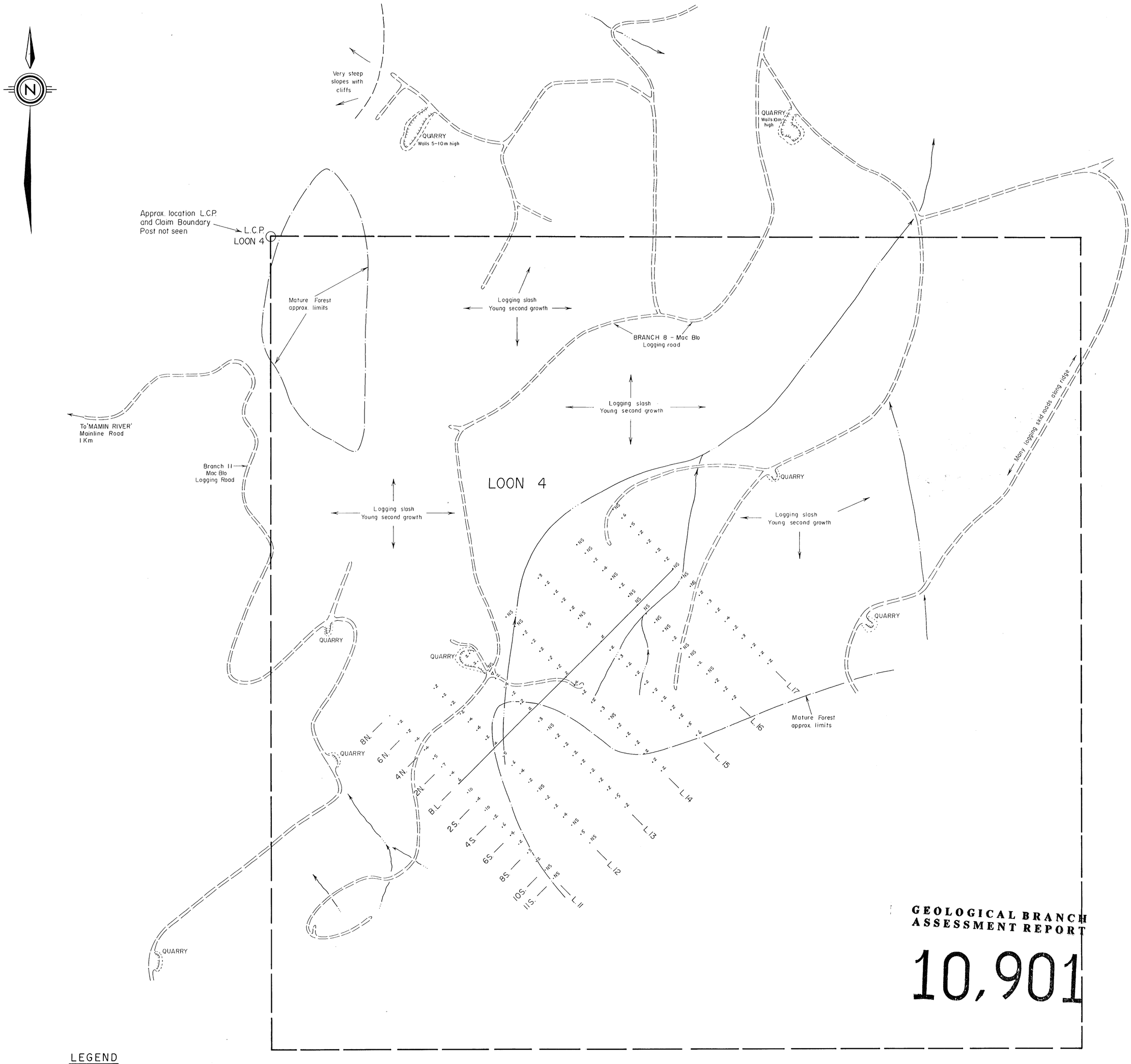
SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

MERCURY IN SOILS
LOON 4 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F/9W

Scale: 1:5,000	Date: December 1982	Fig. No. 9
By: H.M. Jones, P.Eng.		



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. M. JONES

LEGEND

- LOGGING ROAD
- STREAM
- LIMIT OF LOGGING
- ·5 SAMPLE LOCATION NO ANOMALOUS SAMPLES

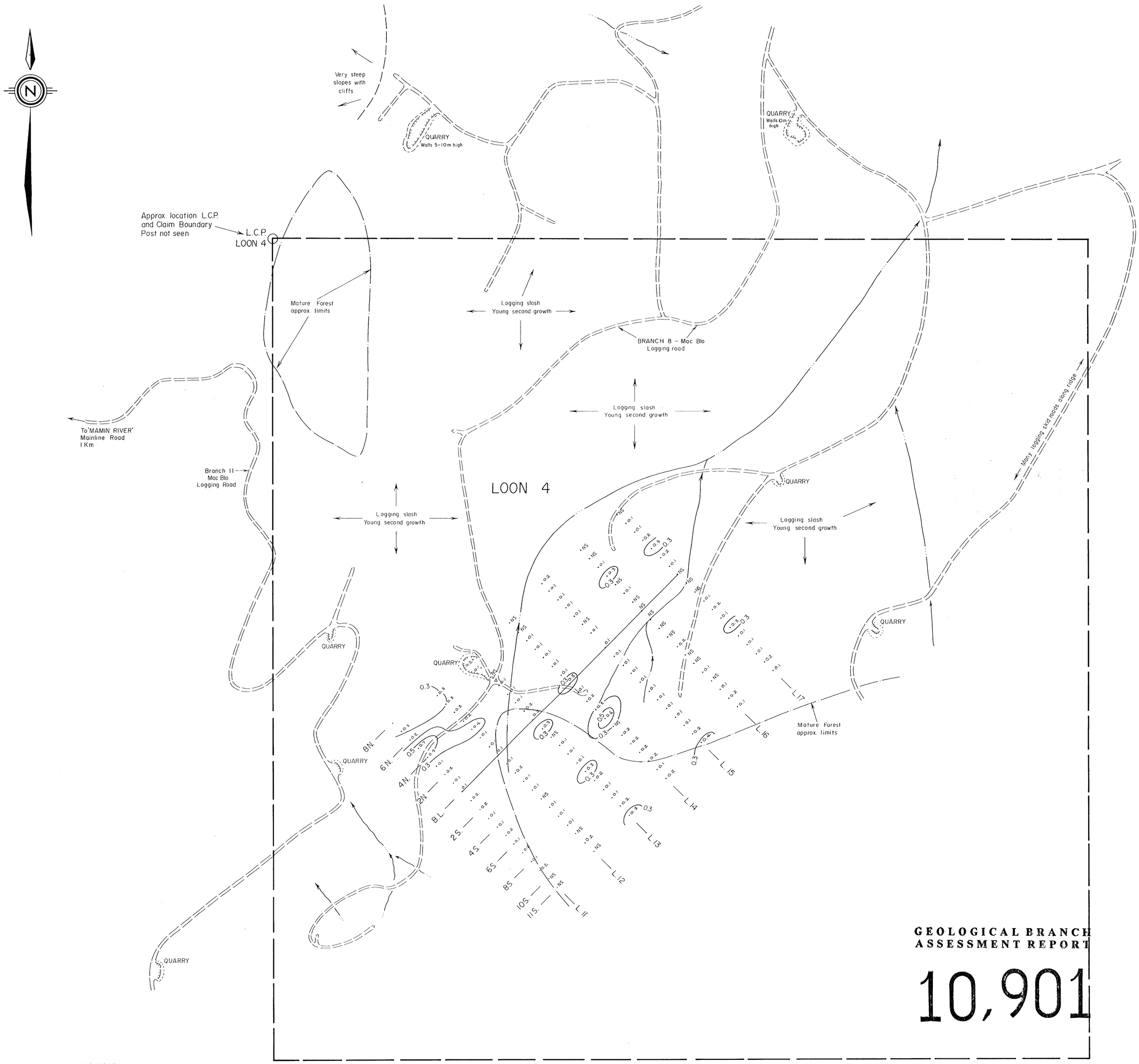
Metres 100 50 0 100 200 300 Metres

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

ARSENIC IN SOILS
LOON 4 CLAIM
MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F/9W

Scale: 1:5,000	Date: December 1982	Fig. No. 10
By: H.M. Jones, P.Eng.		



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

LEGEND

- LOGGING ROAD
- STREAM
- LIMIT OF LOGGING
- 0.3 ppm ANOMALOUS
- 0.3-0.5 ppm DEFINITLY ANOMALOUS

Metres 100 50 0 100 200 300 Metres

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. M. JONES

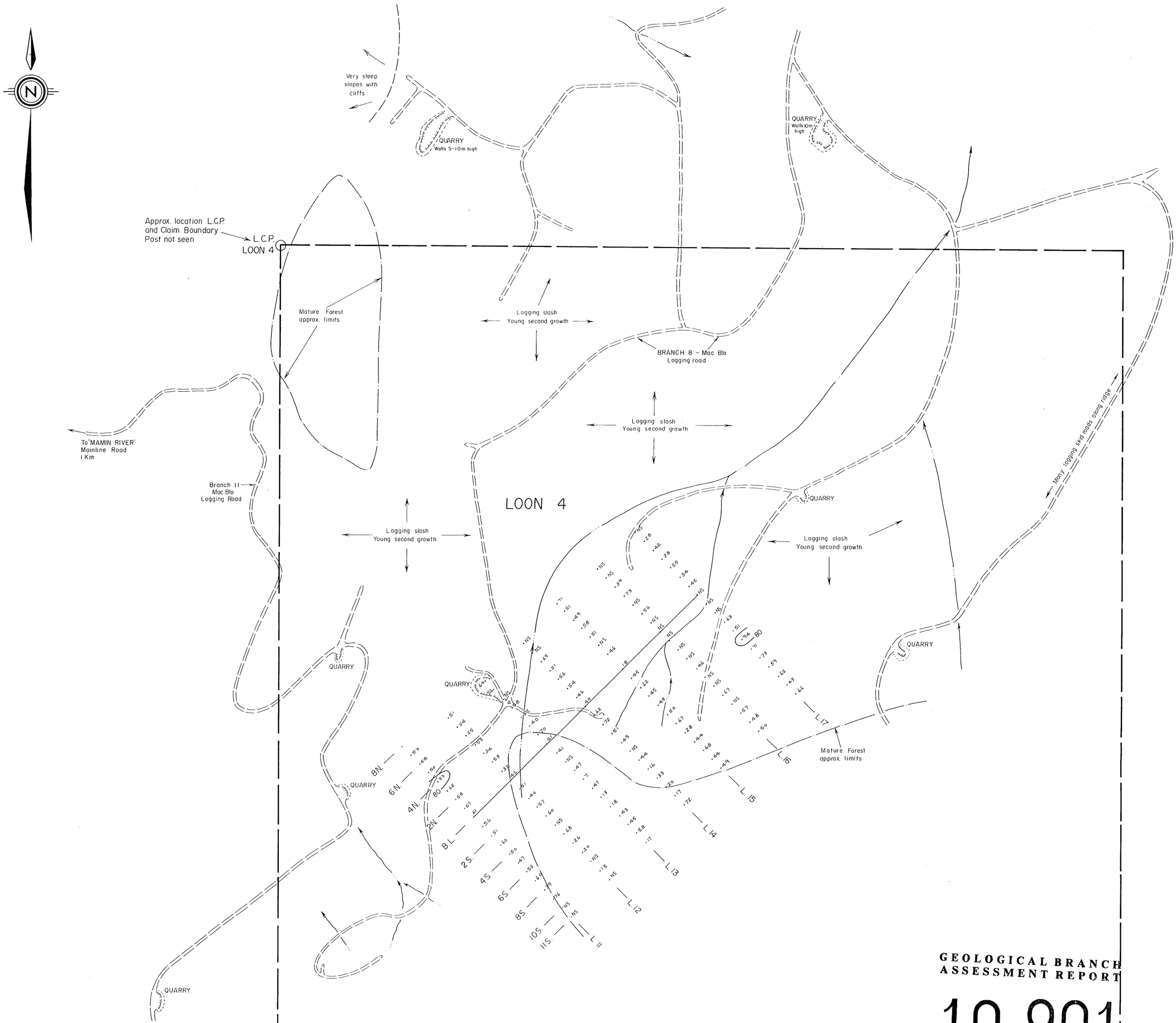
SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

SILVER IN SOILS
LOON 4 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F/9W

Scale: 1:5,000	Date: December 1982	Fig. No. 11
By: H.M. Jones, P.Eng.		



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,901

H. M. JONES
BRITISH COLUMBIA
ENGINEER

LEGEND

- LOGGING ROAD
- STREAM
- LIMIT OF LOGGING
- >80ppm ANOMALOUS

Metres 100 50 0 100 200 300 Metres

SUNATCO DEVELOPMENT CORP.

G. A. NOEL & ASSOCIATES INC. VANCOUVER, B.C.

ZINC IN SOILS
LOON 4 CLAIM

MAMIN RIVER AREA, GRAHAM ISLAND
QUEEN CHARLOTTE ISLANDS
SKEENA M.D.
103 F/9W

Scale: 1:5,000	Date: December 1982	Fig. No. 12
By: H.M. Jones, P.Eng.		