

第 2 章 第 2 年次調査への提言

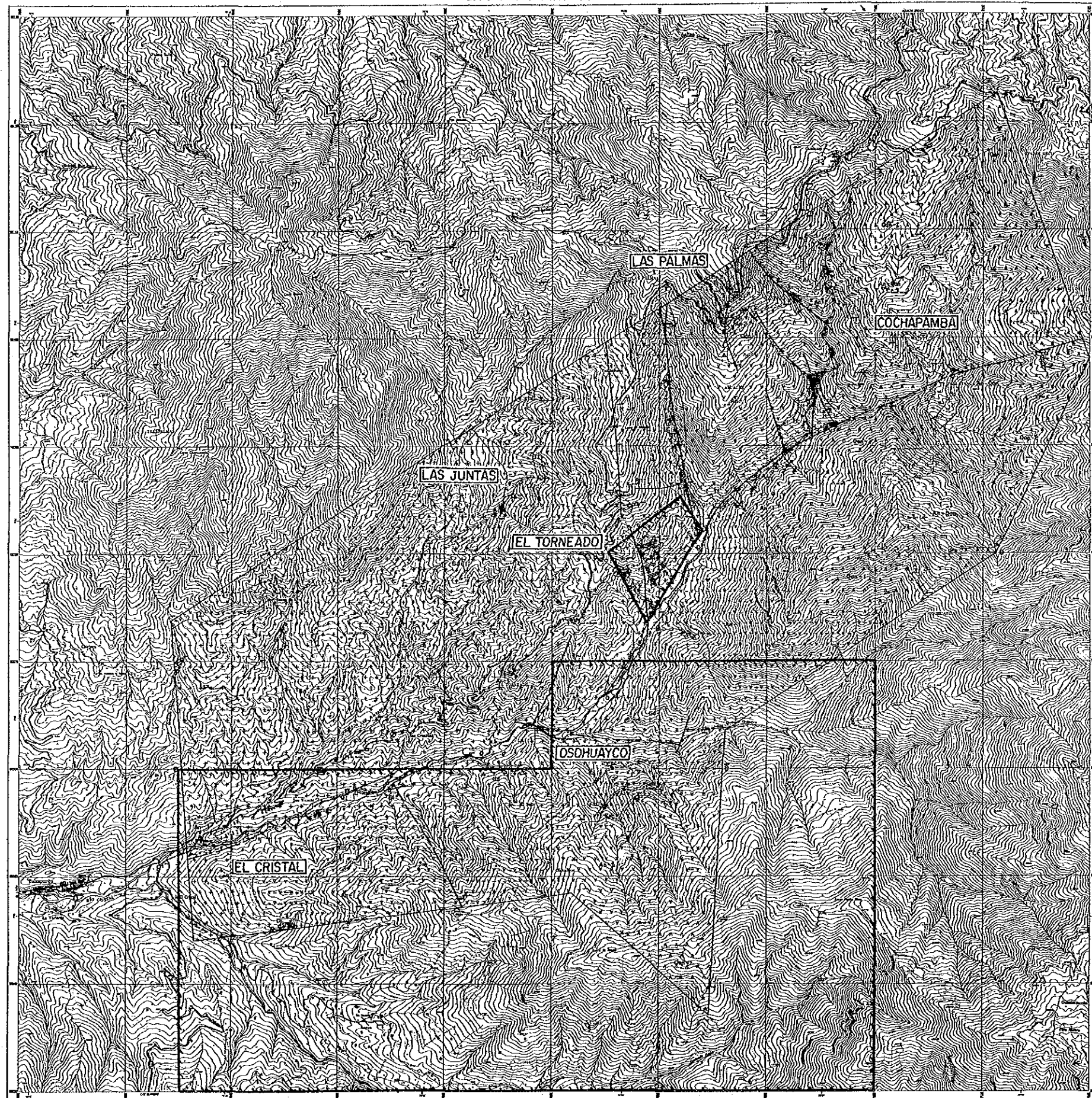
2-1 バルサパンバ地区(Fig. III-2-1)

- (1) El Torneado 鉱化帯の詳細な賦存状況把握のために、ボーリング孔を利用した物理探査(IP)及びボーリング調査
- (2) Osohuayco 鉱化帯下部の低比抵抗帯における鉱化帯富鉱部解明のための物理探査(IP 又は SIP)

2-2 その他の地区(Fig. III-2-2)

- (1) ポーフイリー-銅型鉱床が期待される Chaso Juan, Telimbela 及び Las Guardias 地区の鉱化帯の詳細な賦存状況把握のための地質精査及び物理探査(IP 又は SIP)
- (2) La Industria-Yatubi 地区の温泉型金鉱床の可能性のある南西部地区を中心とした土壤地化学探査
- (3) San Miguel 地区の銅脈型鉱化帯の賦存状況把握のための物理探査(SIP)及び温泉型金鉱床の可能性のある鉱化帯追跡のための地質精査

BALZAPAMBA



LEGEND

Quaternary	Q	Gravel, sand, clay
	Qan-2	Quartz-bq. andesite lava with its pyroclastics (II) (F Member)
	Qan-1	Alteration of andesite and quartz-bq. andesite lavas with their pyroclastics (E Member)
	An-3	Andesite lava with quartz-bq. andesite lava (D Member)
	Tf	Andesite to quartz-bq. andesite pyroclastics (C Member)
	An-2	Andesite lava (C Member)
	Qan-1	Quartz-bq. andesite lava with its pyroclastics (B Member)
Cretaceous Mesozoic Formations	An-1	Andesite lava with its pyroclastics and sediment (II), and hornfels (A Member)
	Gd	Granodiorite
	Di	Melanocratic diorite dyke
	Tr	Trachyandesite dyke
Intrusive Rocks	Ap	Apilte dyke
	Dip and strike of bedding plane	
	Geological boundary	
	Fault	
Anticlinal axis		
Synclinal axis		
Mineralized zone (Presumed)		
Vain		
Alteration zone		
Section line		
Recommended area for second year survey		



Fig. III-2-1 Recommended Area for Second Year Survey of the Balzapamba Area

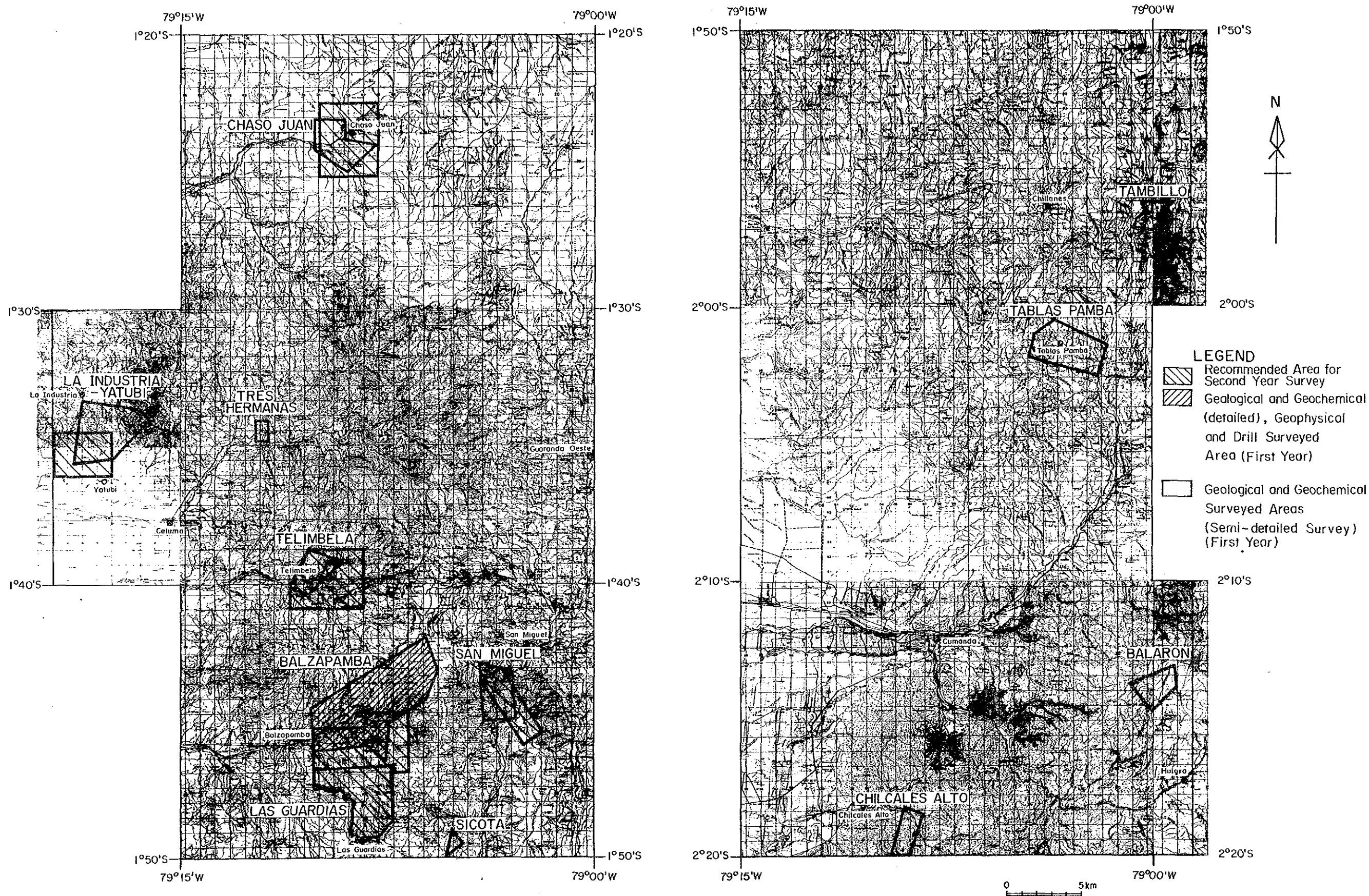


Fig. III - 2 - 2 Recommended Area for Second Year Survey of the other Areas

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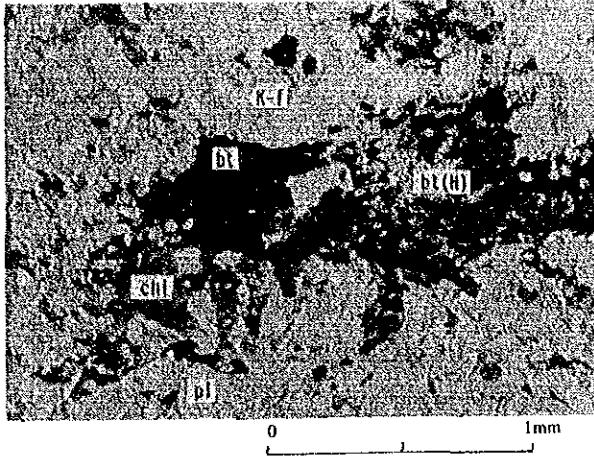
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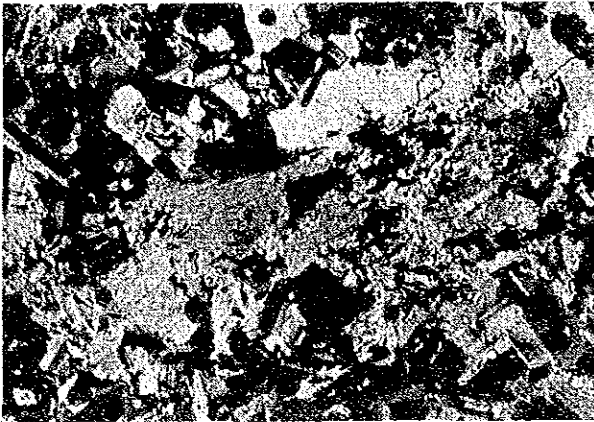
Photo A-1 Microphotograph of Thin Section (1)~(4)

Abbreviations

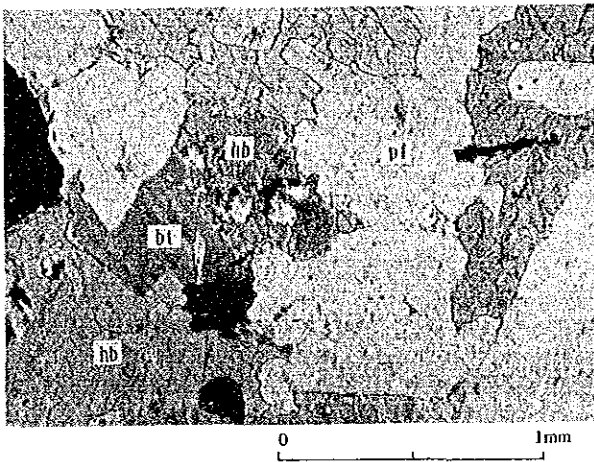
q	:	quartz
pl	:	plagioclase
K-f	:	potash felspar
bt	:	biotite
bt (H)	:	secondary biotite
hb	:	hornblende
chl	:	chlorite
epi	:	epidote



Sample No. : A1011
 Rock name : bt quartz diorite
 Location : Balzapamba
 Texture : holocrystalline, granular
 (only lower polar)



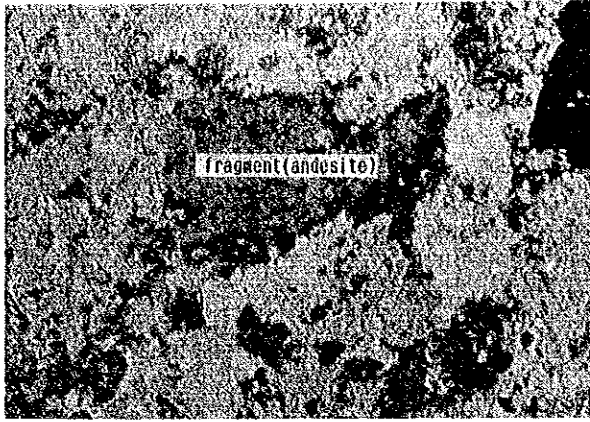
(crossed polars)



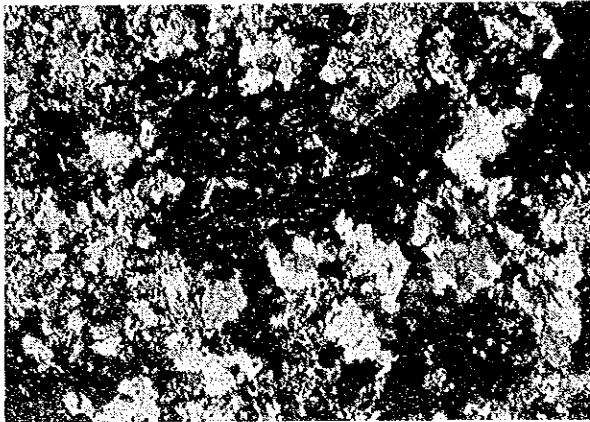
Sample No, : A1131
 Rock name : bt-hb quartz dio
 Location : Balzapamba
 Texture : holocrystalline, granular
 (only lower polar)



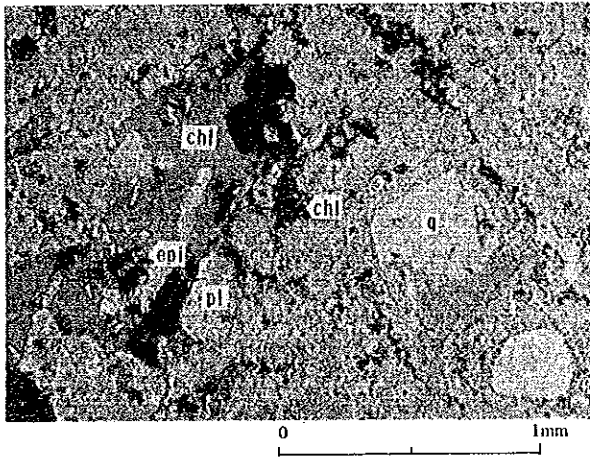
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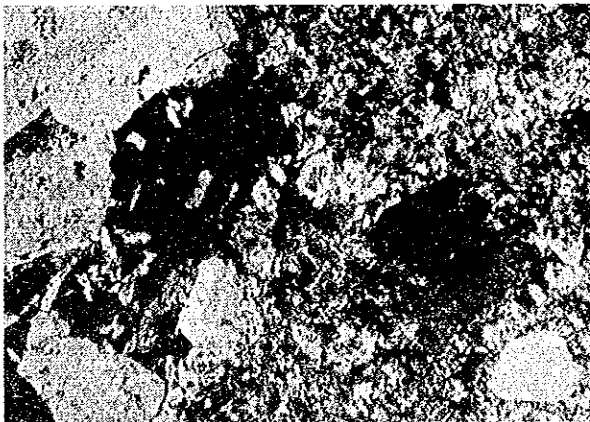
Sample No. : C1016
 Rock name : quartz-bg. andesitic lapilli tuff
 Location : Balzapamba
 Texture : clastic
 (only lower polar)



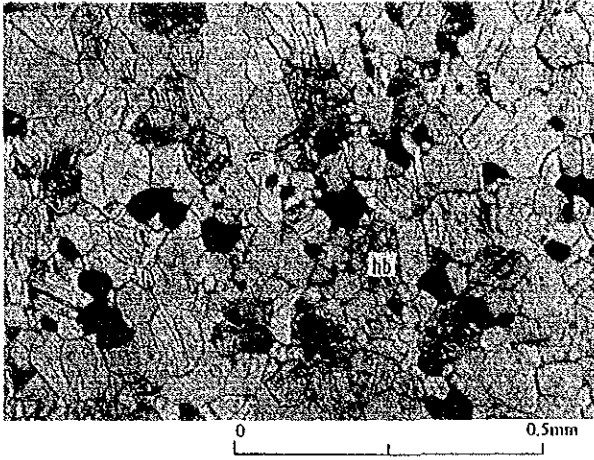
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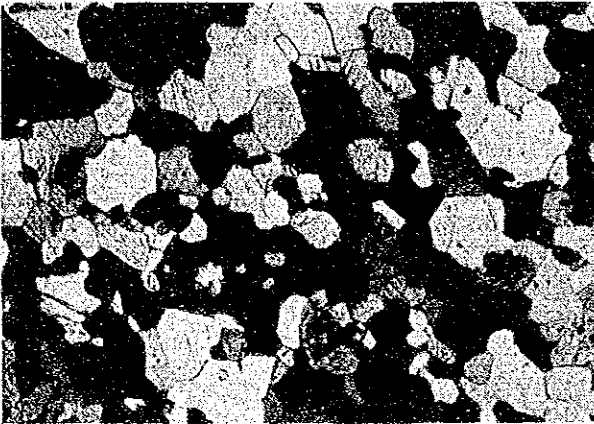
Sample No. : C1031
 Rock name : quartz-bg. andesite
 Location : Balzapamba
 Texture : porphyritic
 (only lower polar)



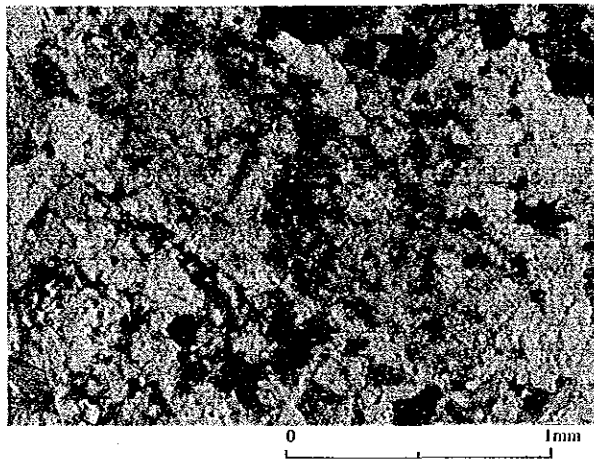
(crossed polars)



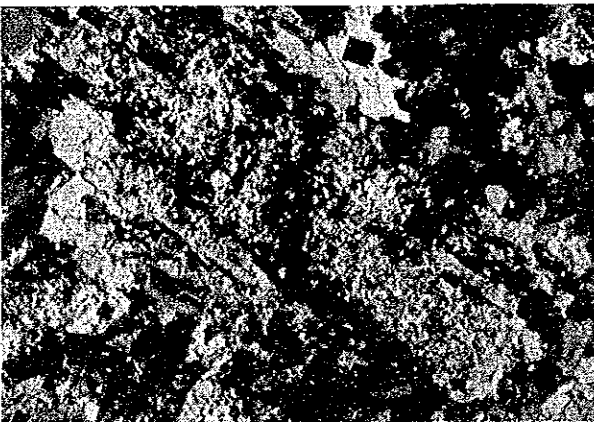
Sample No. : E1003
Rock name : andesitic hornfels
Location : Balzapamba
Texture : granoblastic
(only lower polar)



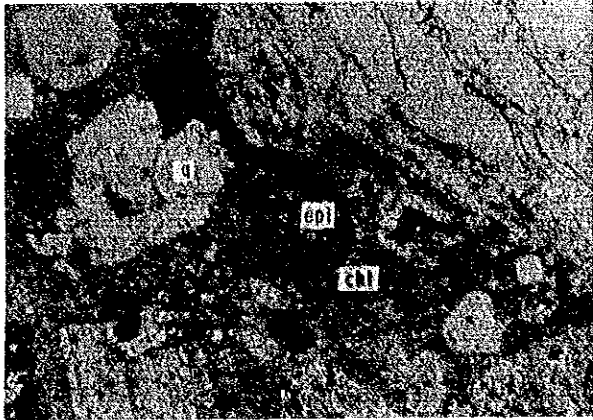
(crossed polars)



Sample No. : C1079
Rock name : bt-hb quartz diorite
Location : La Industria- Yatubi
Texture : holocrystalline, granular
(only lower polar)



(crossed polars)



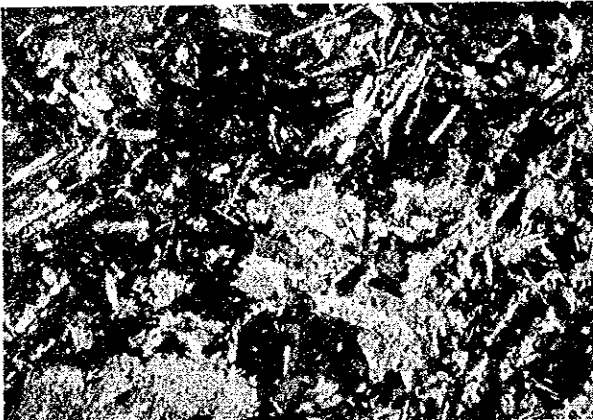
Sample No. : B1154
 Rock name : quartz porphyry
 Location : Telimbela
 Texture : porphyritic
 (only lower polar)



(crossed polars)



Sample No. : B1086
 Rock name : altered basaltic andesite
 Location : Tablas Pamba
 Texture : porphyritic
 (only lower polar)

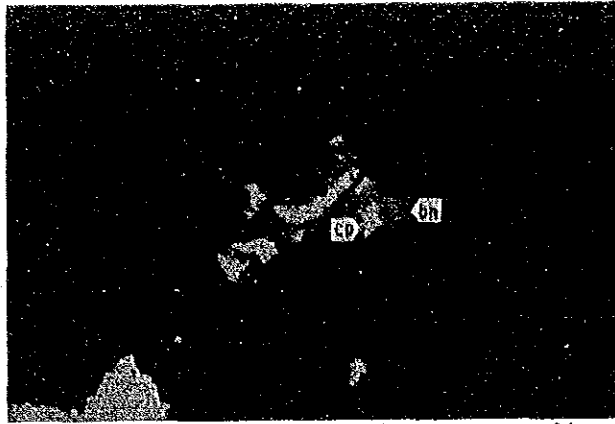


(crossed polars)

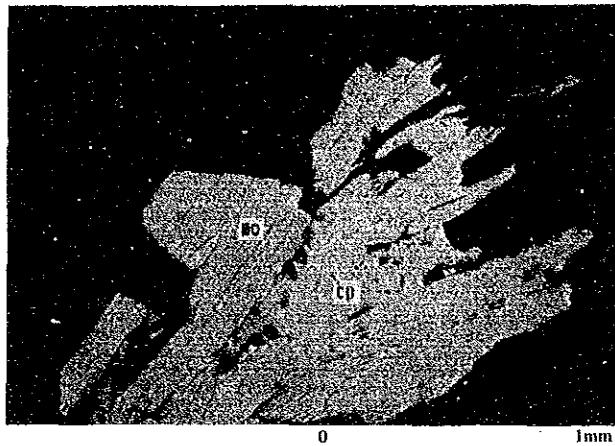
Photo A-2 Microphotograph of Polished Section (1)~(2)

Abbreviation

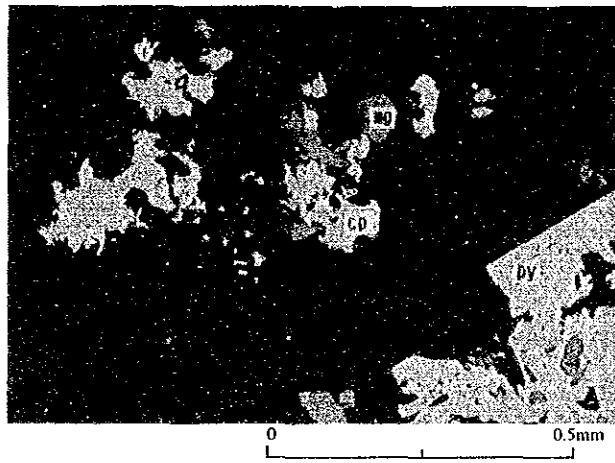
cp	:	chalcopyrite
bn	:	bornite
mo	:	molybdenite
py	:	pyrite
mg	:	magnetite
hm	:	hematite
po	:	pyrrhotite
py (H)	:	secondary pyrite



Sample No. : E1002
 Ore name : cp-bn
 quartz-grandite vein
 Location : Balzapamba
 (only lower polar)



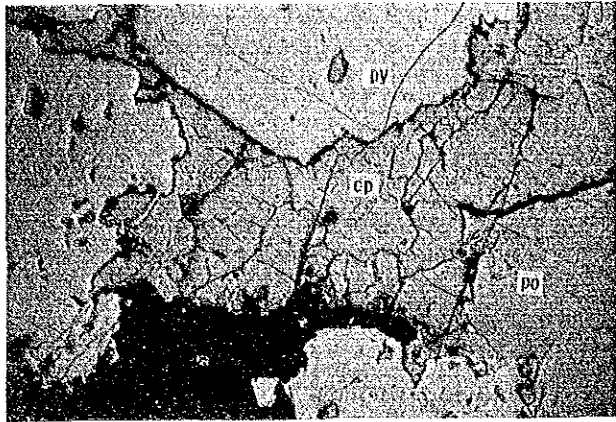
Sample No. : B1108
 Ore name : mo > cp
 quartz vein
 Location : Chaso Juan
 (only lower polar)



Sample No. : B1142
 Ore name : py-mg > cp
 vein and dissemi.
 Location : Telimbela
 (only lower polar)

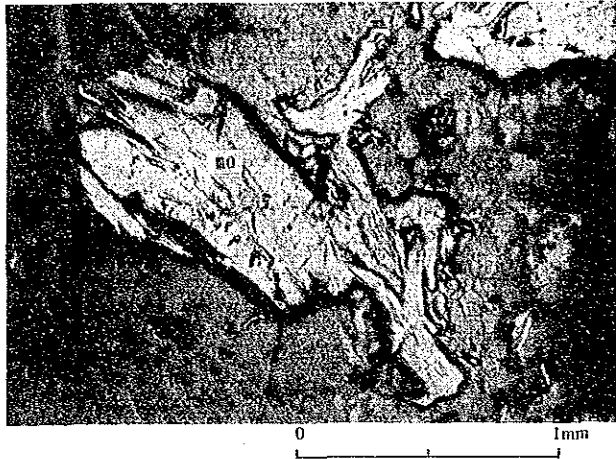


Sample No. : A1077
 Ore name : cp-py > mg-hm
 dissemi
 Location : Las Guardias
 (only lower polar)



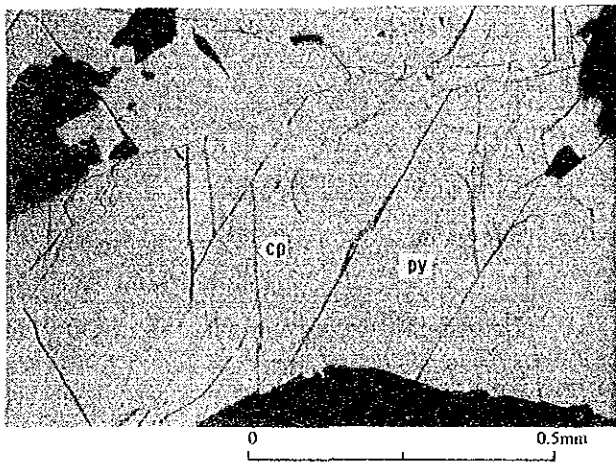
Ore name : py > po > cp > mo-sp-mg
vein and dissemi

Location : D/D MJE-1; 92.60m
(only lower polar)



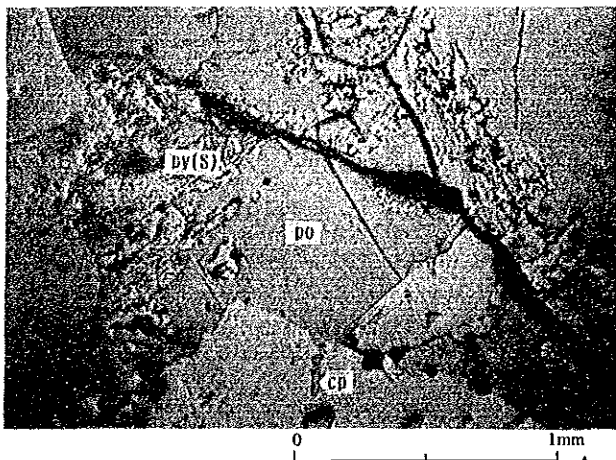
Ore name : py > mo-mg > cp-hm
vein and dissemi

Location : D/D MJE-2; 91.60m
(only lower polar)



Ore name : py > cp > sp-mg
vein and dissemi

Location : D/D MJE-2; 177.55m
(only lower polar)

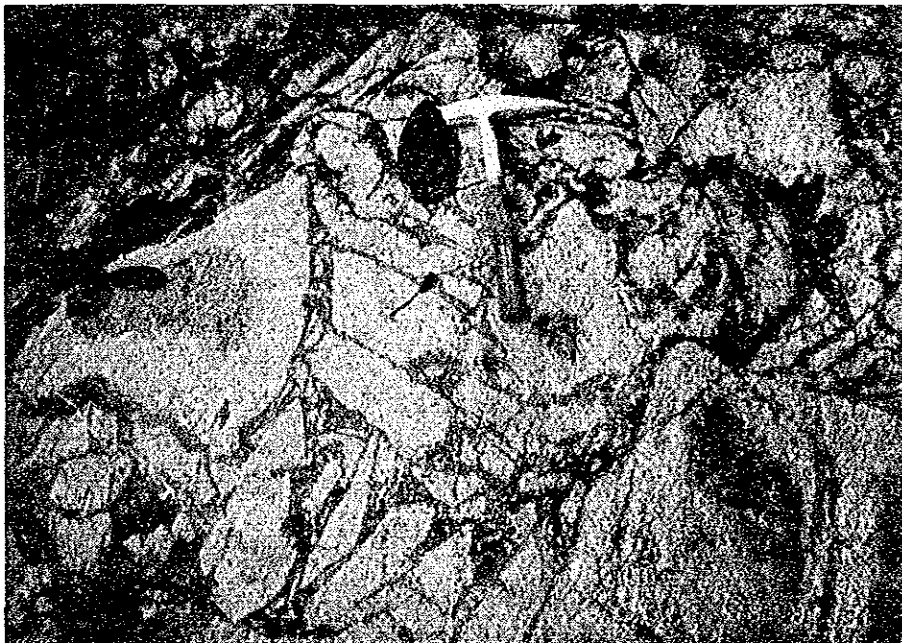


Ore name : po > cp-py > mg-hm
vein and dissemi

Location : D/D MJE-3; 235.50m
(only lower polar)



1. Early stage of the forming of network-vein :
Sulphide minerals-chlorite-secondary biotite-quartz veins cut the country rock like a form of twig. The surroundings of the veins are altered by the white-argillization.



2. Brecciated stage by the forming of network-vein :
The shape of each breccia shows the form restored it to its original state. Unaltered granodiorite remains in the central part of breccias.

Photo A-3 Development Process of Networked vein
in the El Torneado Mineralized Zone

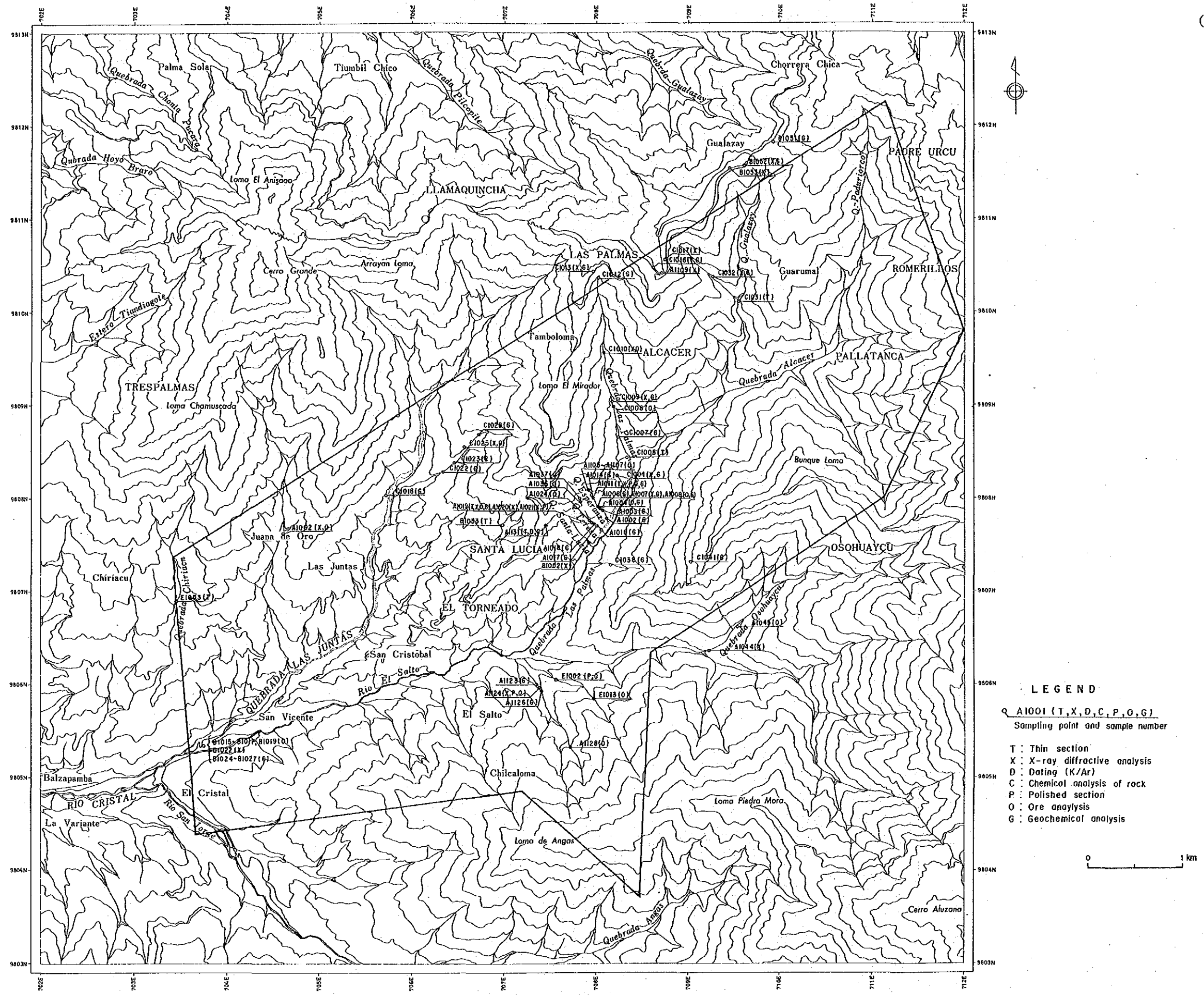
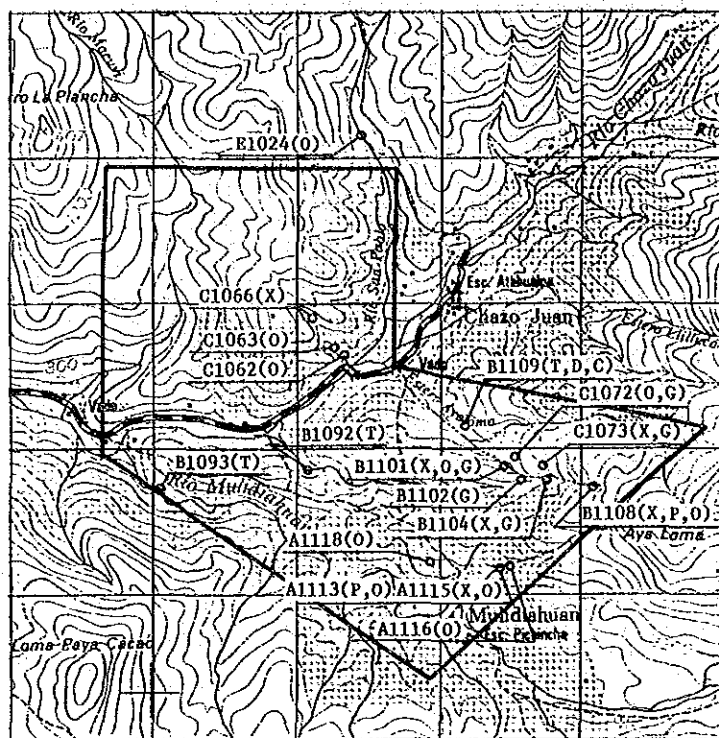
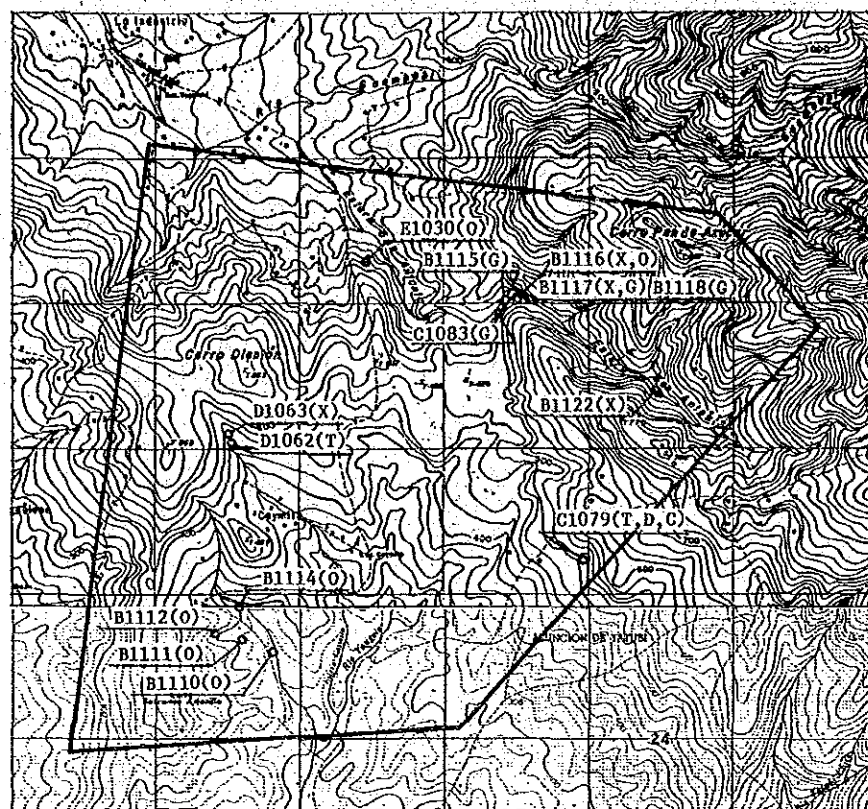


Fig. A-1 Location Map of the Samples Tested

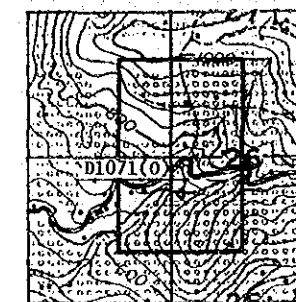
Chaso Juan



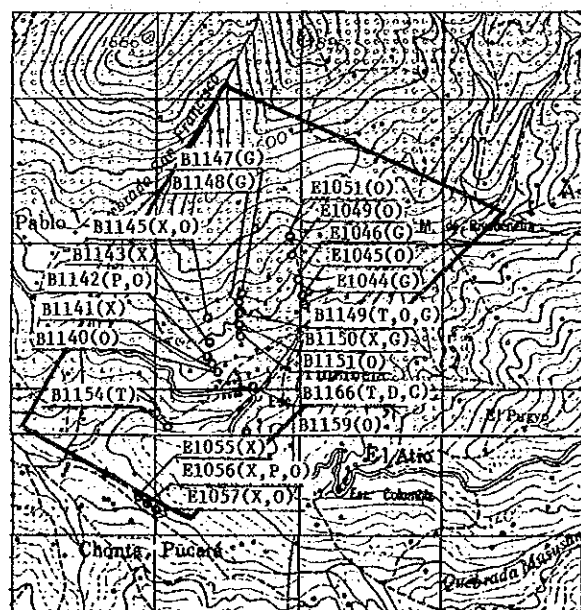
La Industria - Yatubi



Tres Hermanas



Telimbela



San Miguel



Las Guardias

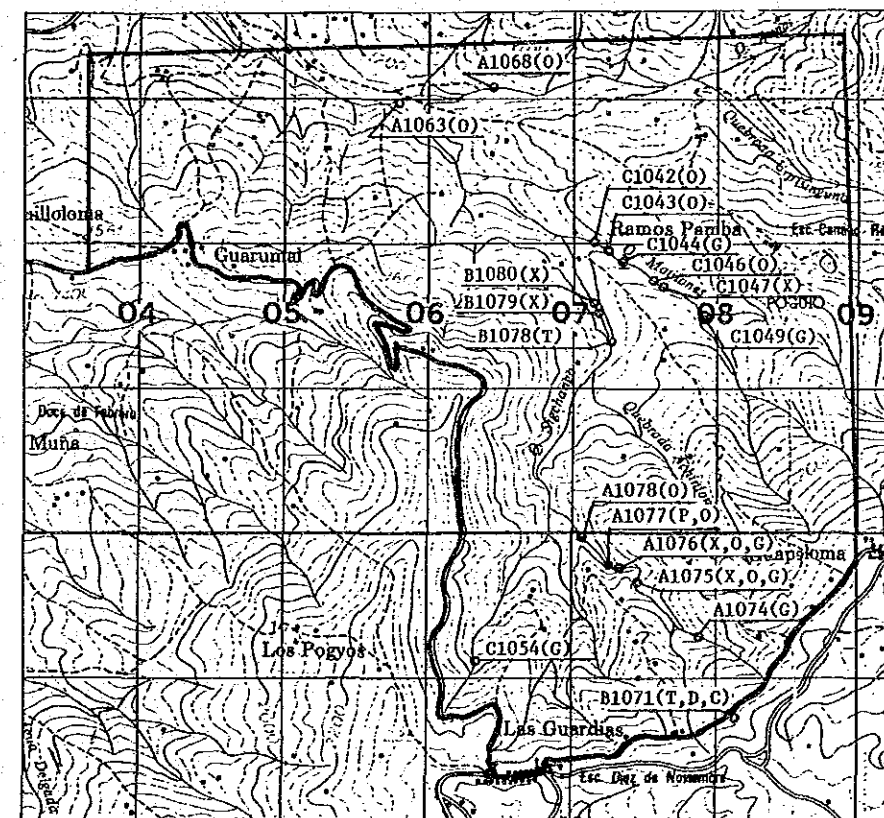
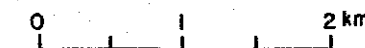
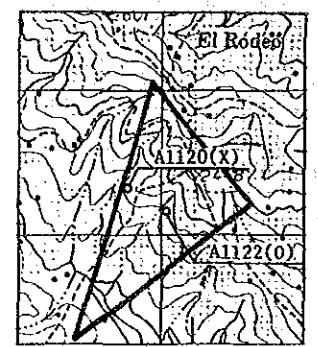


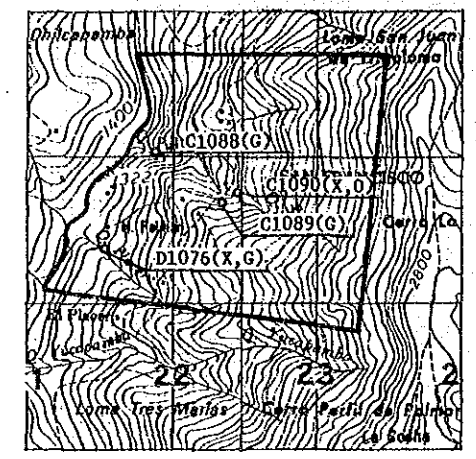
Fig. A-1 Location Map of the Samples Tested



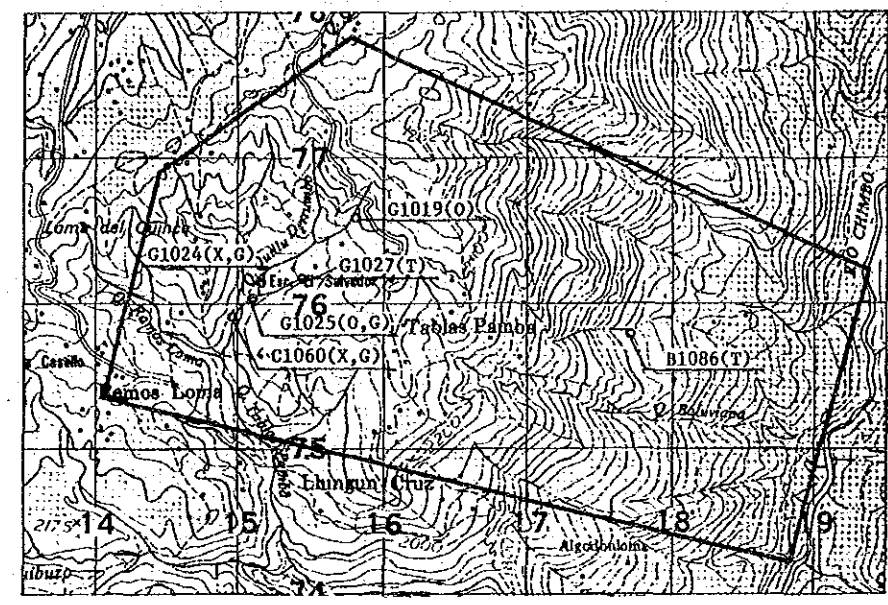
Sicota



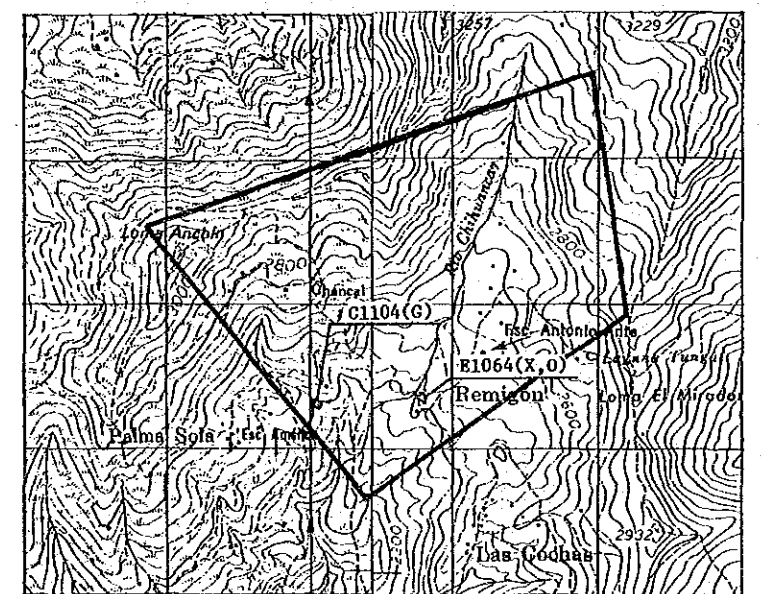
Tambillo



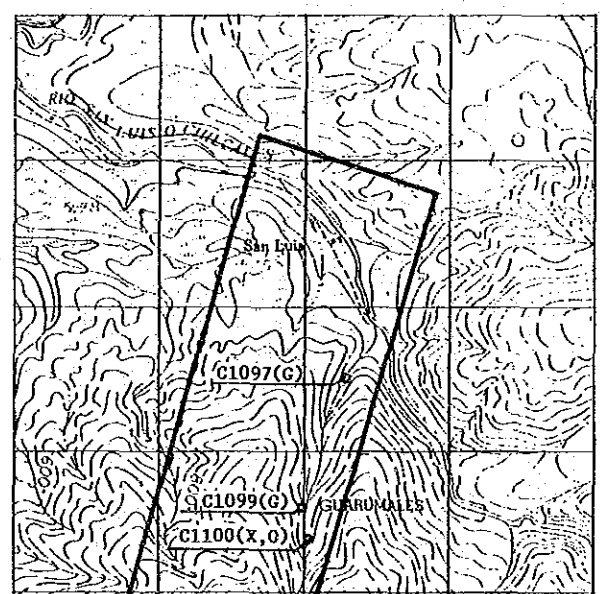
Tablas Pamba



Balaron



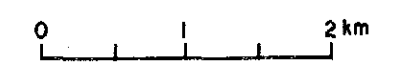
Chilcales Alto



- LEGEND**
- Q A1001 (T,X,D,P,O,G)
Sampling point and sample number
- T : Thin section
 - X : X-ray diffractive analysis
 - D : Dating (K/Ar)
 - C : Chemical analysis of rock
 - P : Polished section
 - O : Ore dnalysis
 - G : Geochemical analysis



Fig. A-1 Location Map of the Samples Tested



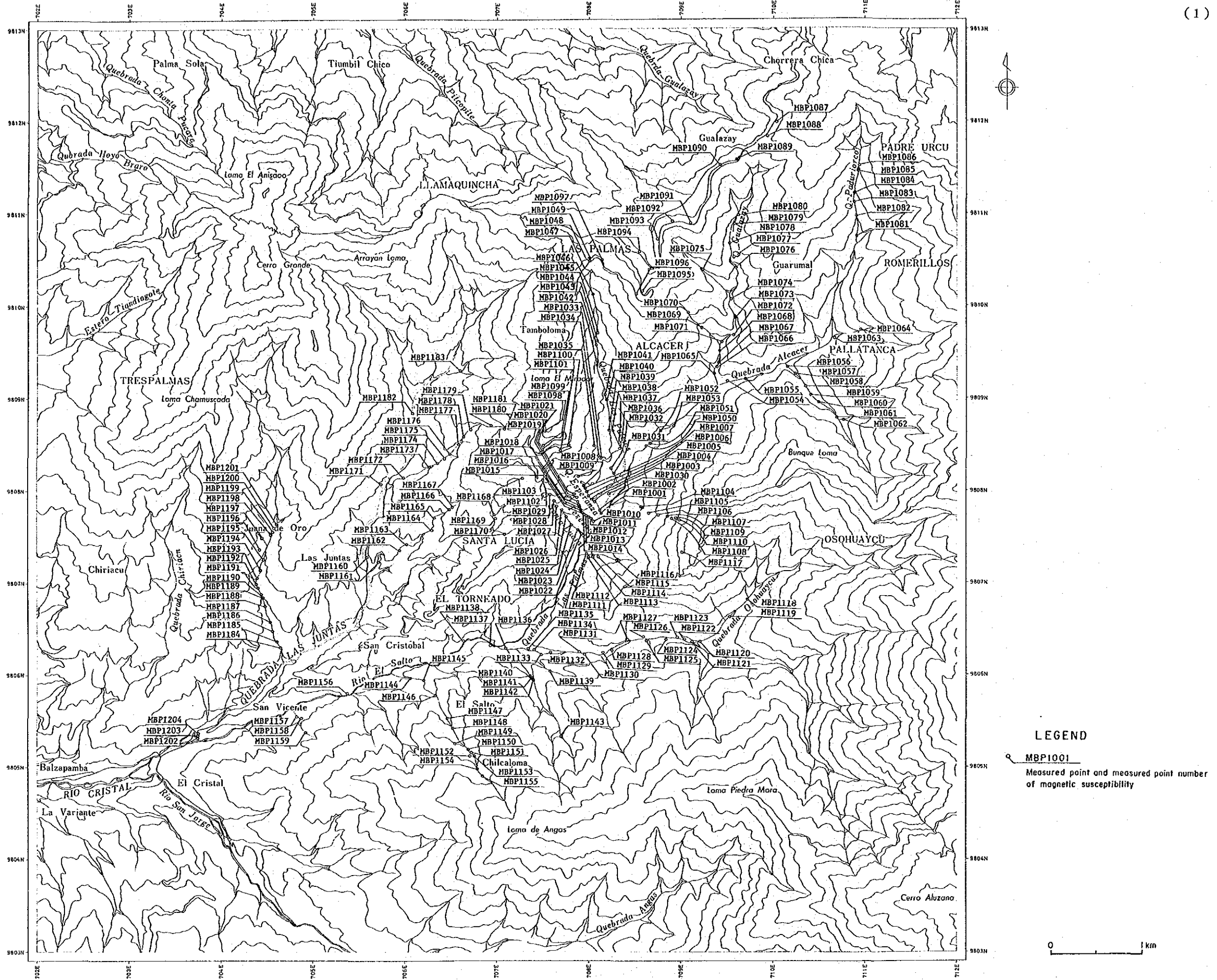
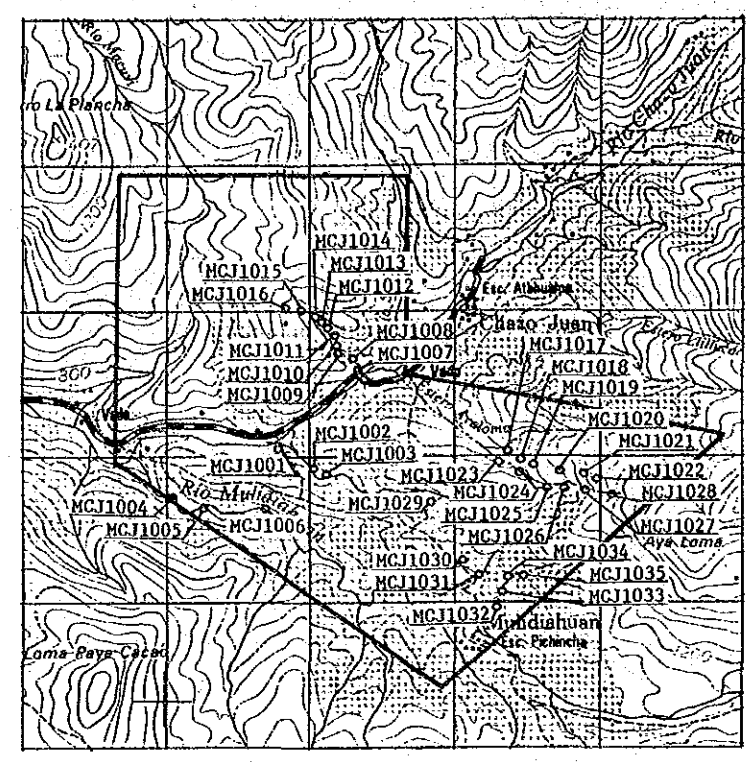
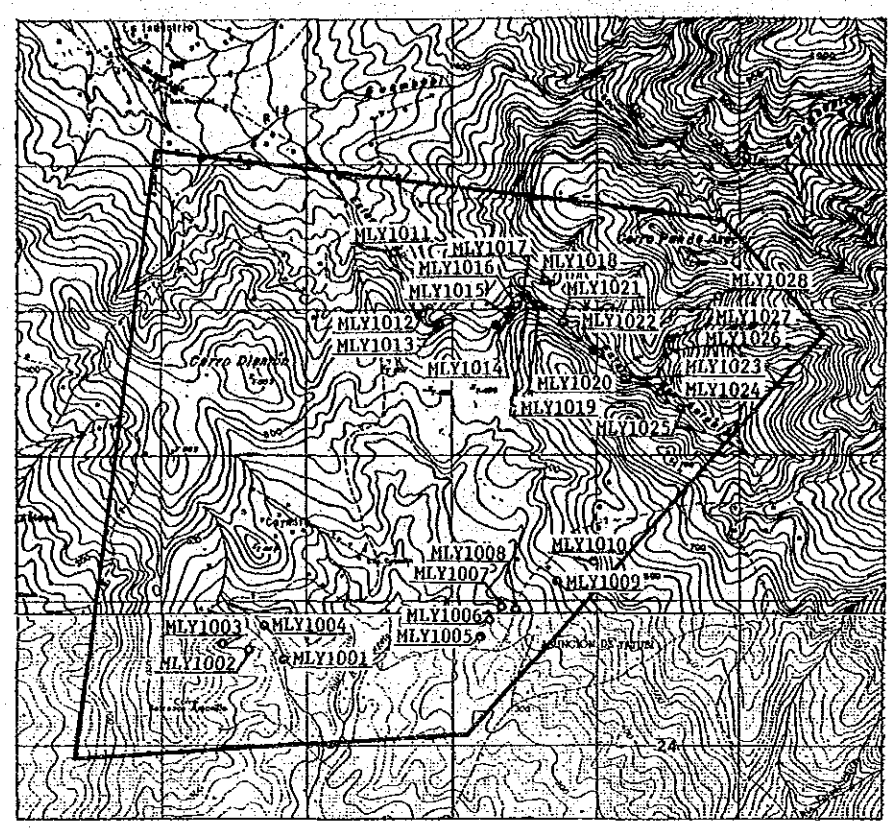


Fig. A-2 Location Map of the Measured Point of the Magnetic Susceptibility

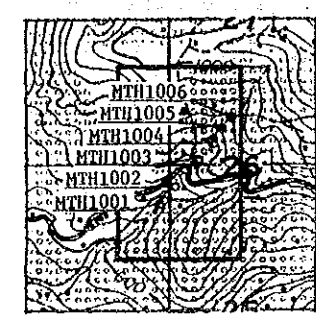
Chaso Juan



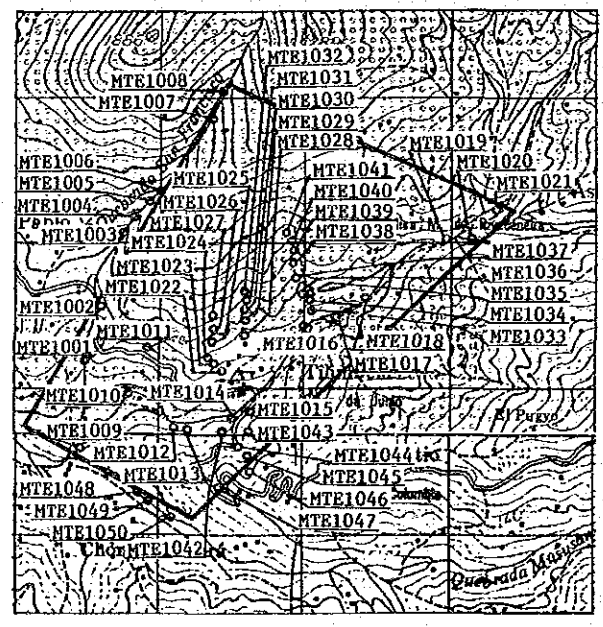
La Industria - Yatubi



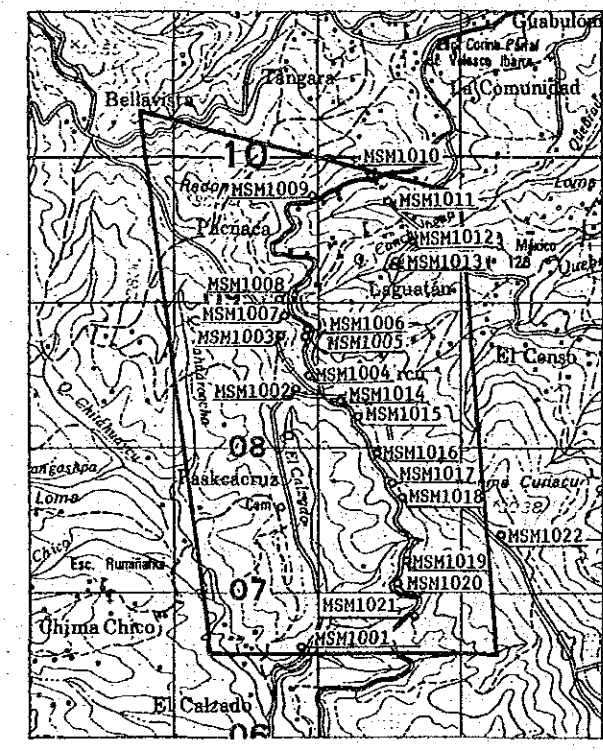
Tres Hermanas



Telimbela



San Miguel



Las Guardias

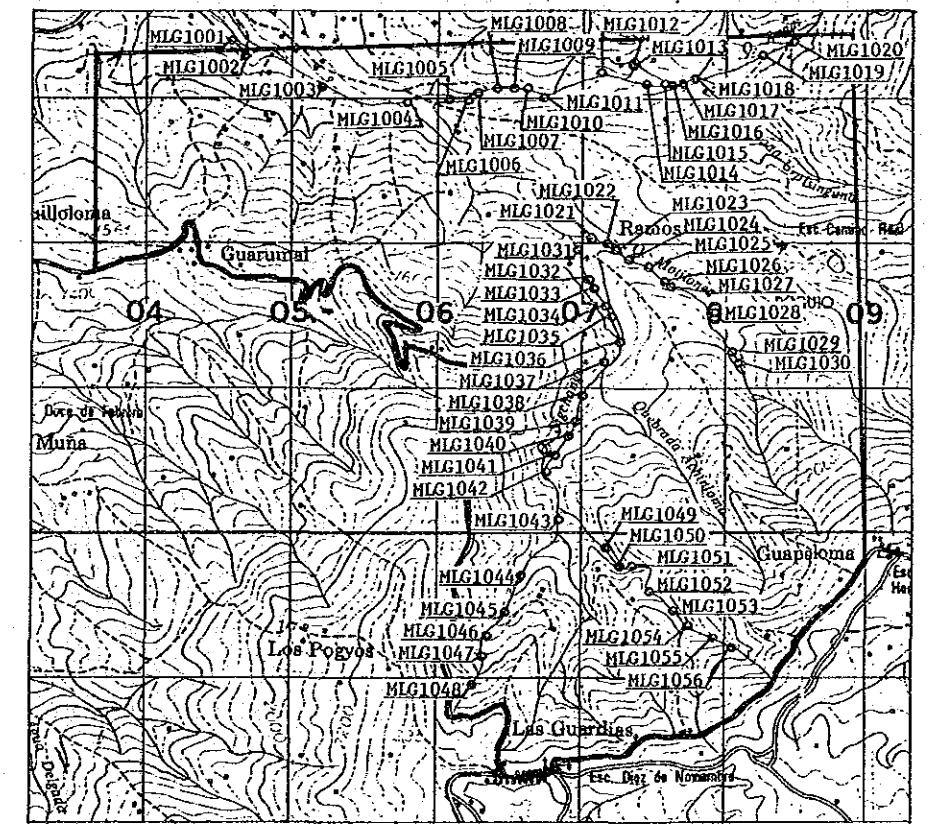
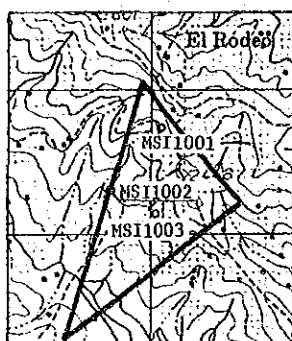
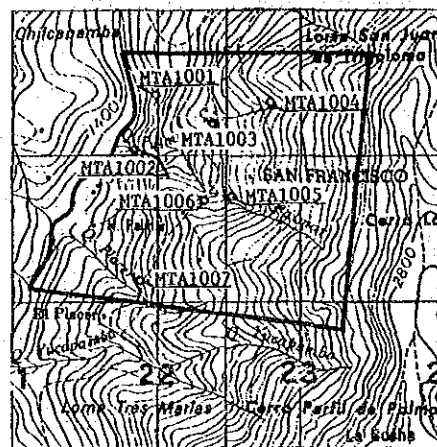


Fig. A-2 Location Map of the Measured Point of the Magnetic Susceptibility

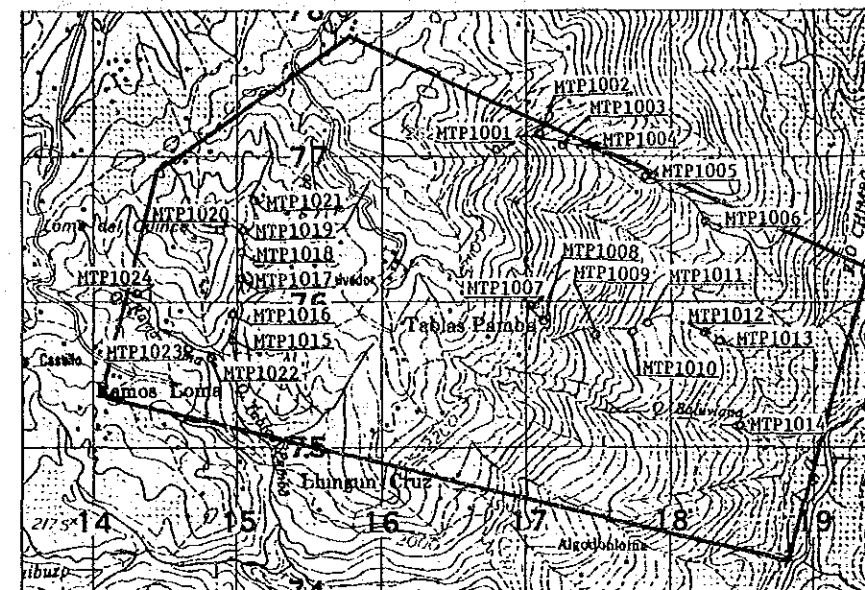
Sicota



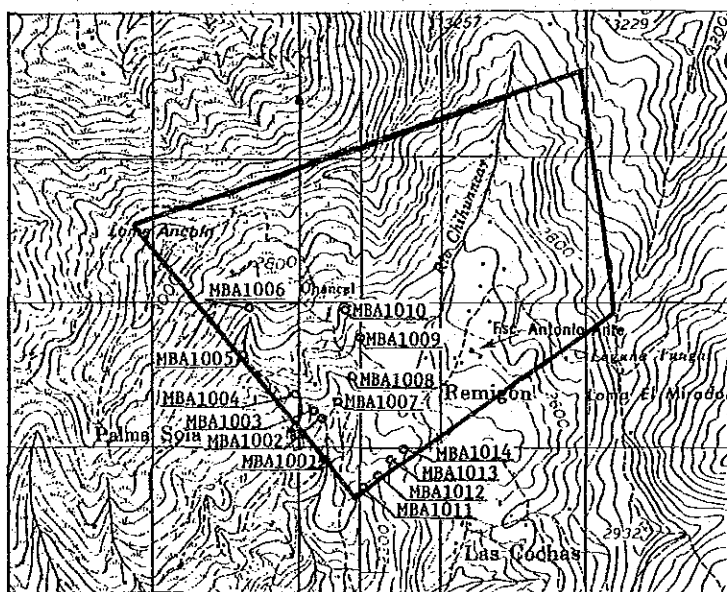
Tambillo



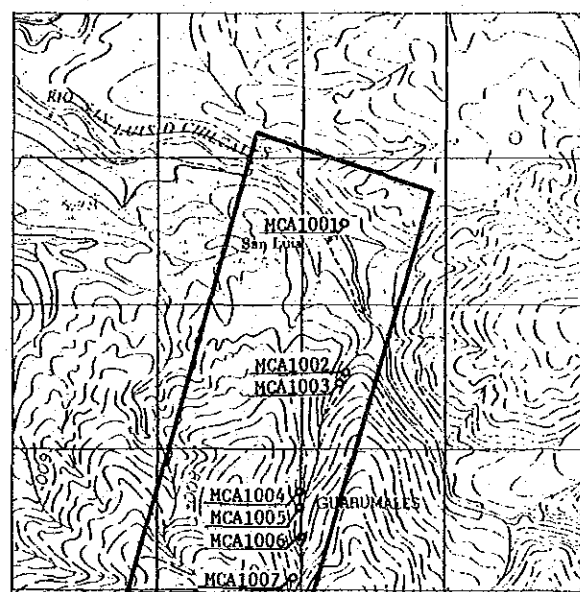
Tablas Pamba



Balaron



Chilcales Alto



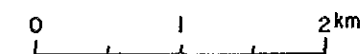
LEGEND

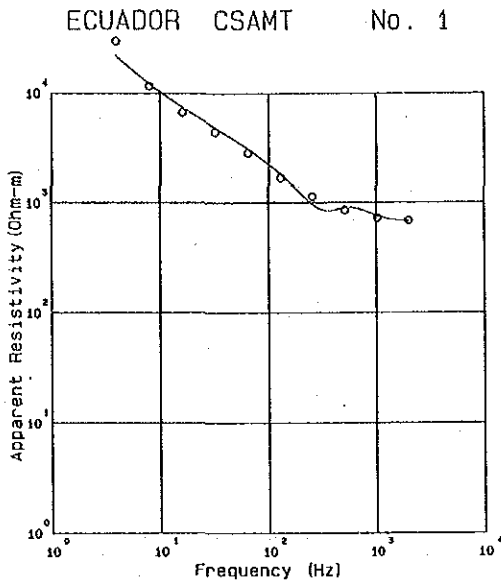
○ MBP1001

Measured point and measured point number of magnetic susceptibility

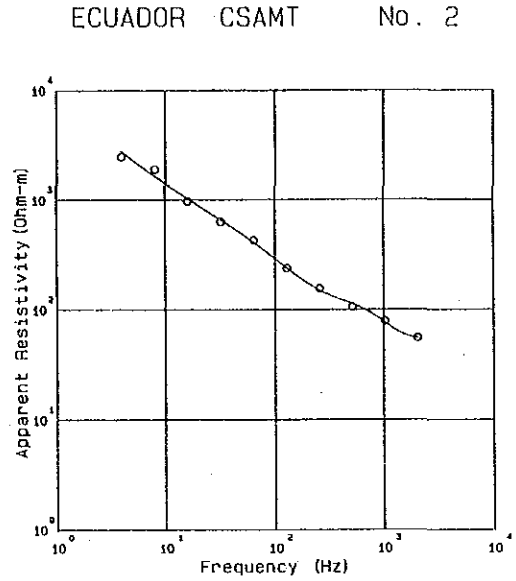


Fig. A-2 Location Map of the Measured Point of the Magnetic Susceptibility

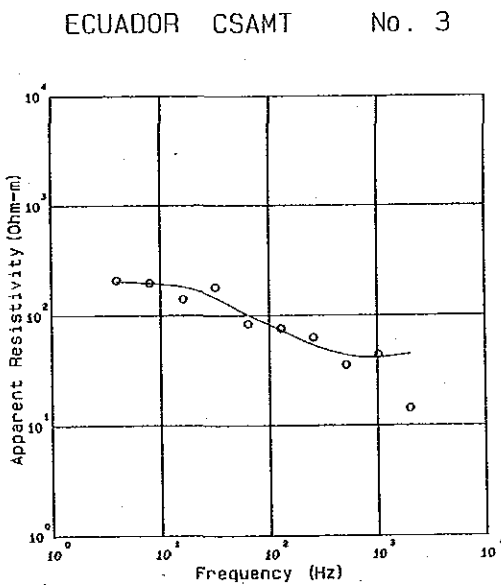




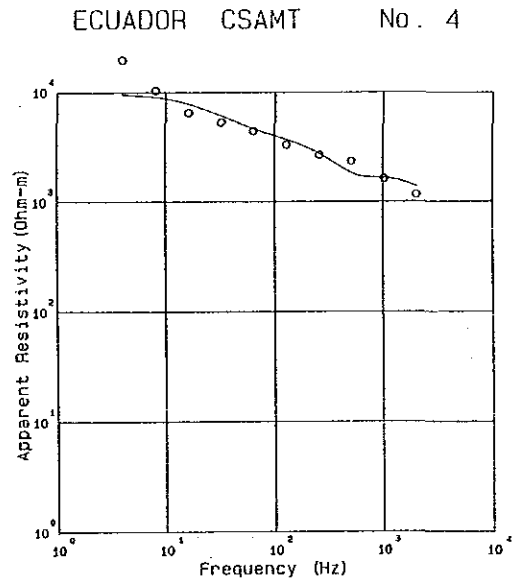
Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
2048	689	672	Rho (Ohm-m)	Thickness (a)
1024	728	761		
512	862	899		
256	1140	970		
128	1700	1839		
64	2850	3120	3197.8	Infinite
32	4440	4980		
16	6690	7490		
8	11600	12200		
4	29700	21700		



Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
2048	55.5	55.7	Rho (Ohm-m)	Thickness (a)
1024	79.5	77.0		
512	106	113		
256	156	150		
128	239	240		
64	431	413	8503.3	600.2
32	634	662		
16	981	1030	417.0	Infinite
8	1910	1850		
4	2480	2780		



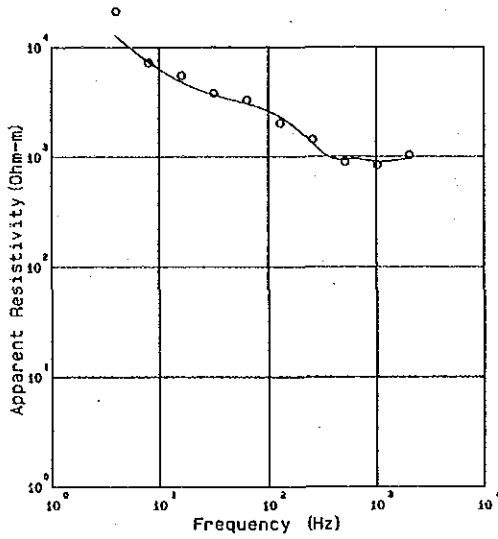
Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
2048	14.3	44.6	Rho (Ohm-m)	Thickness (a)
1024	44.5	41.6		
512	35.6	43.7		
256	63.7	54.1		
128	75.9	74.1	309.6	1119.9
64	84.6	101		
32	189	147		
16	141	184	78.8	Infinite
8	200	198		
4	211	206		



Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
2048	1170	1380	Rho (Ohm-m)	Thickness (a)
1024	1630	1660		
512	2350	1830		
256	2690	2750		
128	3330	3710	3018.3	3975.9
64	4450	4870		
32	5340	6100		
16	6530	7840	13124.9	5066.5
8	10400	9060		
4	19700	9580	1622181.0	Infinite

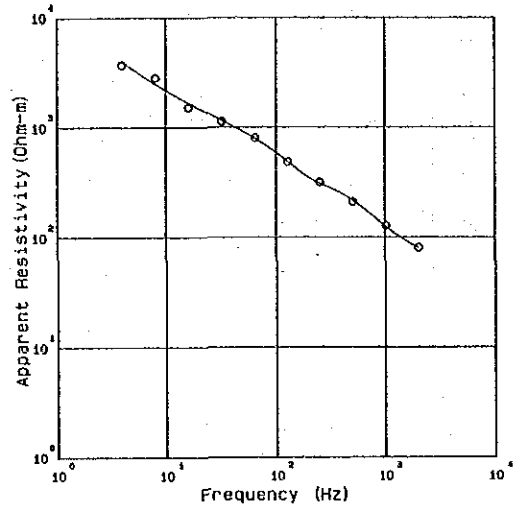
Fig. A-3 Analyzed Resistivity Curve (1)~(26)

ECUADOR CSAMT No. 5



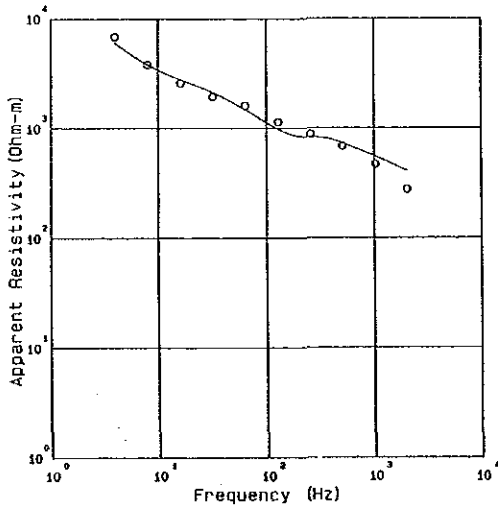
Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
			ρ_{ho} (Ohm-a)	Thickness (a)
2048	1030	955	1035.2	599.8
1024	843	901		
512	902	942	9144.6	1901.1
256	1440	1320		
128	2040	2310	271.5	Infinite
64	3310	3060		
32	3820	3570		
16	5540	4820		
8	7190	7340		
4	21200	12700		

ECUADOR CSAMT No. 6



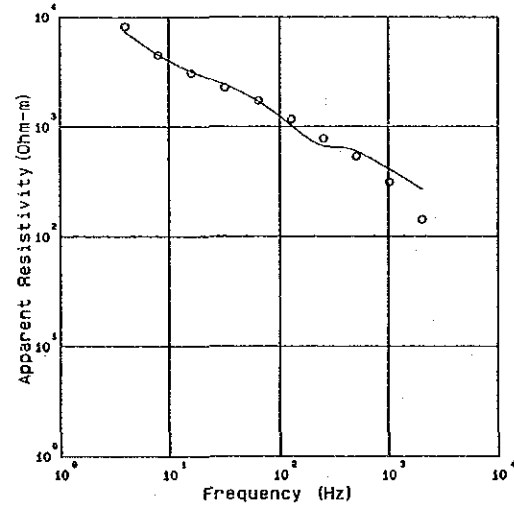
Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
			ρ_{ho} (Ohm-a)	Thickness (a)
2048	80.5	80.9	88.2	88.8
1024	127	125		
512	210	217	5706.9	1044.4
256	318	310		
128	489	492	614.0	Infinite
64	807	795		
32	1130	1150		
16	1530	1680		
8	2850	2510		
4	3730	4010		

ECUADOR CSAMT No. 7



Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
			ρ_{ho} (Ohm-a)	Thickness (a)
2048	278	407	231.8	66.5
1024	469	556		
512	688	732	1663.7	8890.4
256	887	832		
128	1140	988	11498.9	Infinite
64	1620	1490		
32	1950	2130		
16	2800	2800		
8	3830	3840		
4	6870	6060		

ECUADOR CSAMT No. 8



Freq. (Hz)	Obs. (Ohm-m)	Cal. (Ohm-m)	MODEL	
			ρ_{ho} (Ohm-a)	Thickness (a)
2048	142	268	57.0	19.8
1024	313	411		
512	538	601	1912.1	8115.9
256	781	671		
128	1170	1030	19331.0	Infinite
64	1730	1700		
32	2290	2430		
16	3090	3220		
8	4520	4570		
4	8230	7380		