Table II-3-4 Statistical parameter of rock geochemistry (49 samples)

	Geometric average	Standard deviation	M + 1/2σ	M + σ
Cl	0.06%	0.18088	0.07%	0.09%
CO2	0.06%	0.27208	0.08%	0.12%
Cu(total)	30 ppm	0.46401	52 ppm	88 ppm
Cu(soluble)	12 ppm	0.51891	21 ppm	38 ppm
SiO2	48.7 %	0.12127	56.0 %	64.4 %
FeO	0.97%	0.37524	1.49%	2.29%
Fe2O3	1.49%	0.72012	3.42%	7.84%
S	1.0 %	0.88546	2.9 %	8.0 %
SO4	0.7 %	0.55813	1.3 %	2.4 %

M : Geometric average

σ : Standard deviation (logrithm)

Table II-3-5 Matrix of the correlation coefficients of rock geochemistry (49samples)

	Cl	CO2	Cu(total)	Cu(soluble)	SiO2	FeO	Fe2O3	S	SO4
Cl	1.000000								
CO2	-0.073914	1.000000							
Cu(total)	0.003720	-0.190456	1.000000						
Cu(soluble)	-0.056366	-0.198680	0.916829	1.000000					
SiO2	-0.038580	0.272376	-0.005175	0.007531	1.000000				
FeO	-0.395539	-0.065766	0.223817	0.215141	-0.126701	1.000000			
Fe2O3	0.209292	-0.155107	0.265699	0.089808	-0.147019	-0.077094	1.000000		
S	-0.201777	-0.111123	-0.410125	-0.275615	-0.325842	0.124773	-0.468391	1.000000	
SO4	-0.137391	-0.111343	-0.256536	-0.177422	-0.162009	-0.013488	-0.277293	0.683570	1.000000

coinciding with a geochemical anomaly area of T.Cu. On the west of the Southwest Hill, there is also a geochemical anomaly area comprising 3 samples.

3. Results of powder X-ray diffraction

Powder X-ray diffraction was carried out on all 51 samples that were chemically analyzed (Table 7) in order to reveal alteration halo. According to the combinations of altered minerals, classification was done into 3 zones, acidic altered zone, weakly acidic altered zone, propylitic altered zone, and no altered zone. The combinations of minerals are shown below. To avoid complexity, kaolinite and dickite are treated together as kaolin, and alunite, natroalunite and minamiite are treated together as alunite.

*Acidic altered zone	:Quartz-kaolinite and/or alunite
*Weakly acidic altered zone	:Quartz-kaolinite and/or alunite-calcite
*Propylitic altered zone	:Chlorite-albite
*No altered zone	:Remaining amphibole, which is the rock forming mineral.

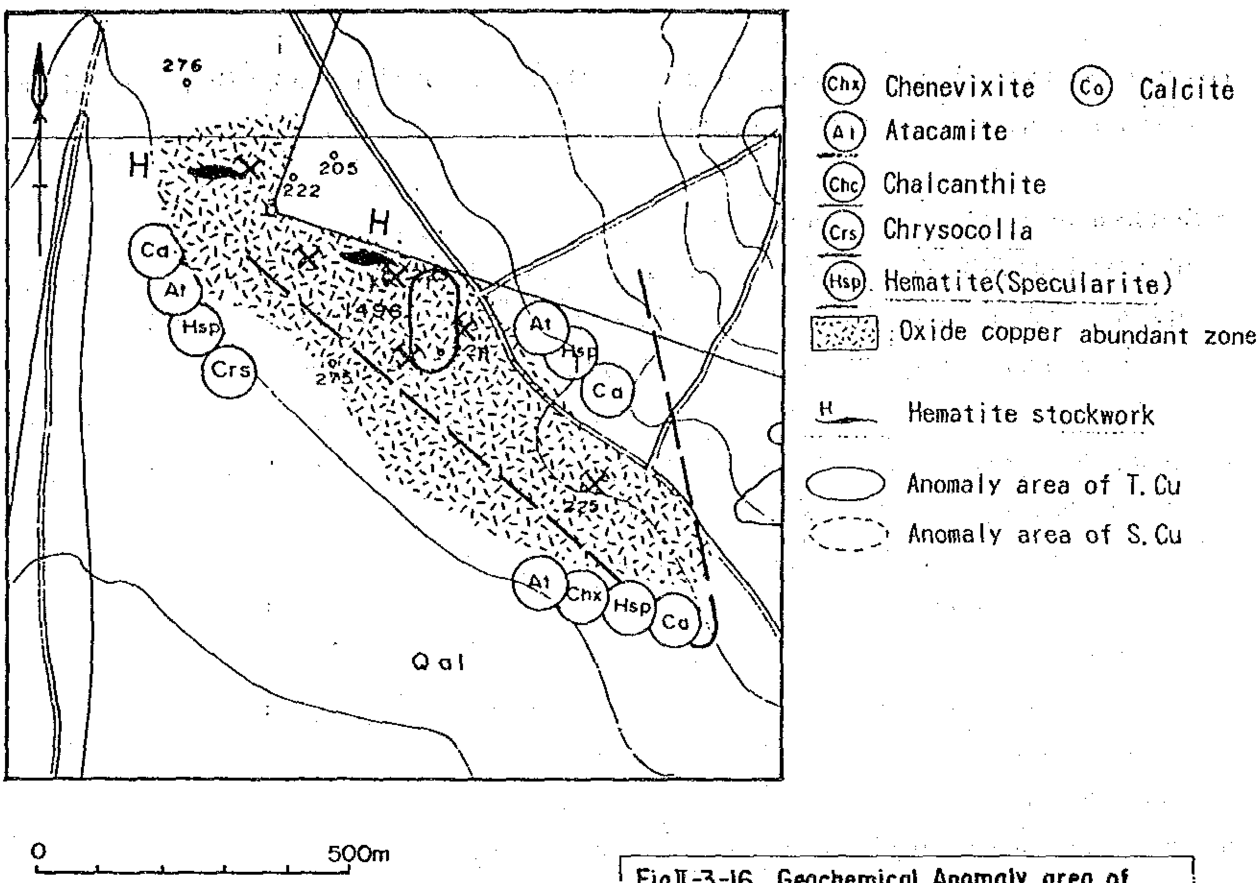
Fig. 21 shows the distribution of alteration zone. The acidic altered zones correspond to silicified rock in the field, and gypsum, anhydrite and diaspore are also present as incidental altered minerals. Hematite is also present as a metal mineral. The weakly acidic altered zones contain the same combination as the acidic altered zones with the addition of calcite; they are ranked as low temperature of acidic altered zones, and in the field correspond to silicified and Argillized rock. The propylitic altered zones correspond in the field to propylite, and also contain as incidental altered minerals sericite, calcite, kaolinite, etc; hematite is also present as a metal mineral.

3-4 Considerations

3-4-1 Geochemical Survey of Caliche

A comprehensive map of geochemical anomaly is given in Fig. 17. It is considered that the existence of geochemical anomaly area of T.Cu and S.Cu around the Pampa Mine reflect the existence of mineral deposits below the alluvium and colluvium. In particular the fact that the geochemical anomaly area of T.Cu is confined to the just vicinity of the Mine (Fig. 16), is thought to show clearly the existence of a copper mineralization.

Geochemical anomaly area of T.Cu and S.Cu occurring except the Pampa Mine are located on the eastern end of sampling line W in the Northwest District; like the area around the Pampa Mine, the geochemical anomaly area of T.Cu is included within the geochemical anomaly area of S.Cu. Thus it may be expected that a copper mineralization exists below the alluvium and colluvium on the eastern end of sampling line W. However, these geochemical anomaly areas are formed along a former river path, and the possibility exists that the copper producing the anomaly originated upstream side.



FigⅡ-3-16 Geochemical Anomaly area of T.Cu and S.Cu at Pampa Mine

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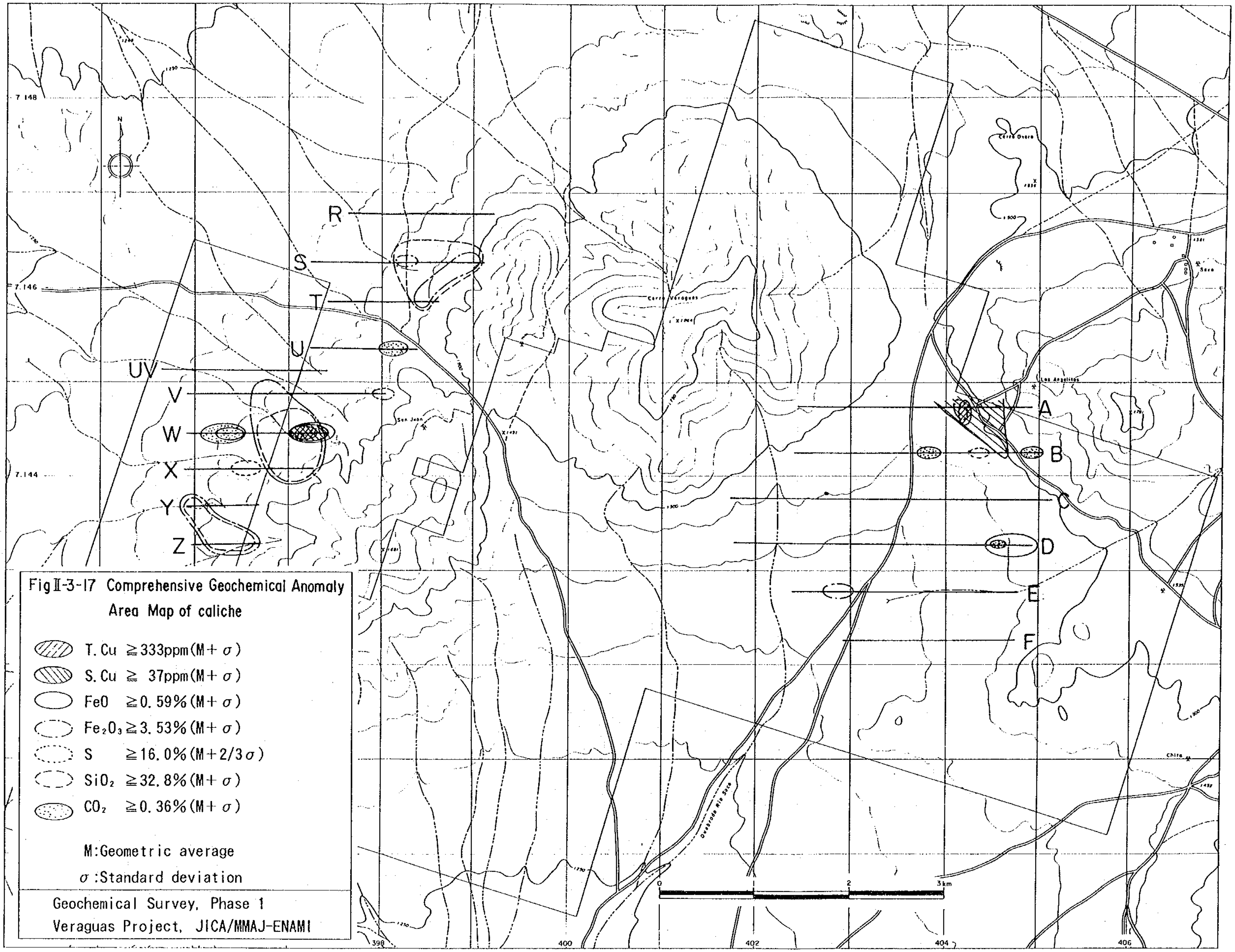

Fig Ⅱ-3-17 Comprehensive Geochemical Anomaly Area Map of caliche

- ▨ T. Cu ≧333ppm(M+σ)
- ▨ S. Cu ≧ 37ppm(M+σ)
- ○ FeO ≧0. 59%(M+σ)
- ○ Fe_2O_3≧3. 53%(M+σ)
- ○ S ≧16. 0%(M+2/3σ)
- ○ SiO_2 ≧32. 8%(M+σ)
- ○ CO_2 ≧0. 36%(M+σ)

M:Geometric average

σ:Standard deviation

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In addition, while around the Pampa Mine there is geochemical anomaly area of S, on the eastern end of sampling line W, there are geochemical anomaly areas of FeO, Fe_2O_3 and SiO_2. Existence of geochemical anomaly of SiO_2 may suggest that the expected copper mineralization differs from that of the Pampa Mine accompanied by calcite. Judging from this assemblage, presumably, expected copper deposit in the Northwest district may be associated with high silicification or vein quartz with iron minerals. On the other hand, while in the area around the Pampa Mine, which is relatively rich in hematite and specularite, geochemical anomaly area of FeO or Fe_2O_3 is not being formed, at the eastern end of sampling line W such occurrence is a characteristic feature. In the Northwest District the presence of geochemical anomaly area of SiO_2 is marked, and their distribution harmonizes well with the distribution of geochemical anomaly area of Fe_2O_3 ; from this it may be predicted that a mechanism exists whereby Fe_2O_3 accumulates and remains in caliche rich in SiO_2 .

3-4-2 Geochemical survey of rock

As is shown on the comprehensive map of geochemical anomaly area in Fig. 22, geochemical anomaly area of T.Cu occur in two locations, of which one corresponds to a geochemical anomaly area of Fe_2O_3 , and the other partly overlaps a geochemical anomaly area of FeO. However, neither of them overlaps a geochemical anomaly of S.

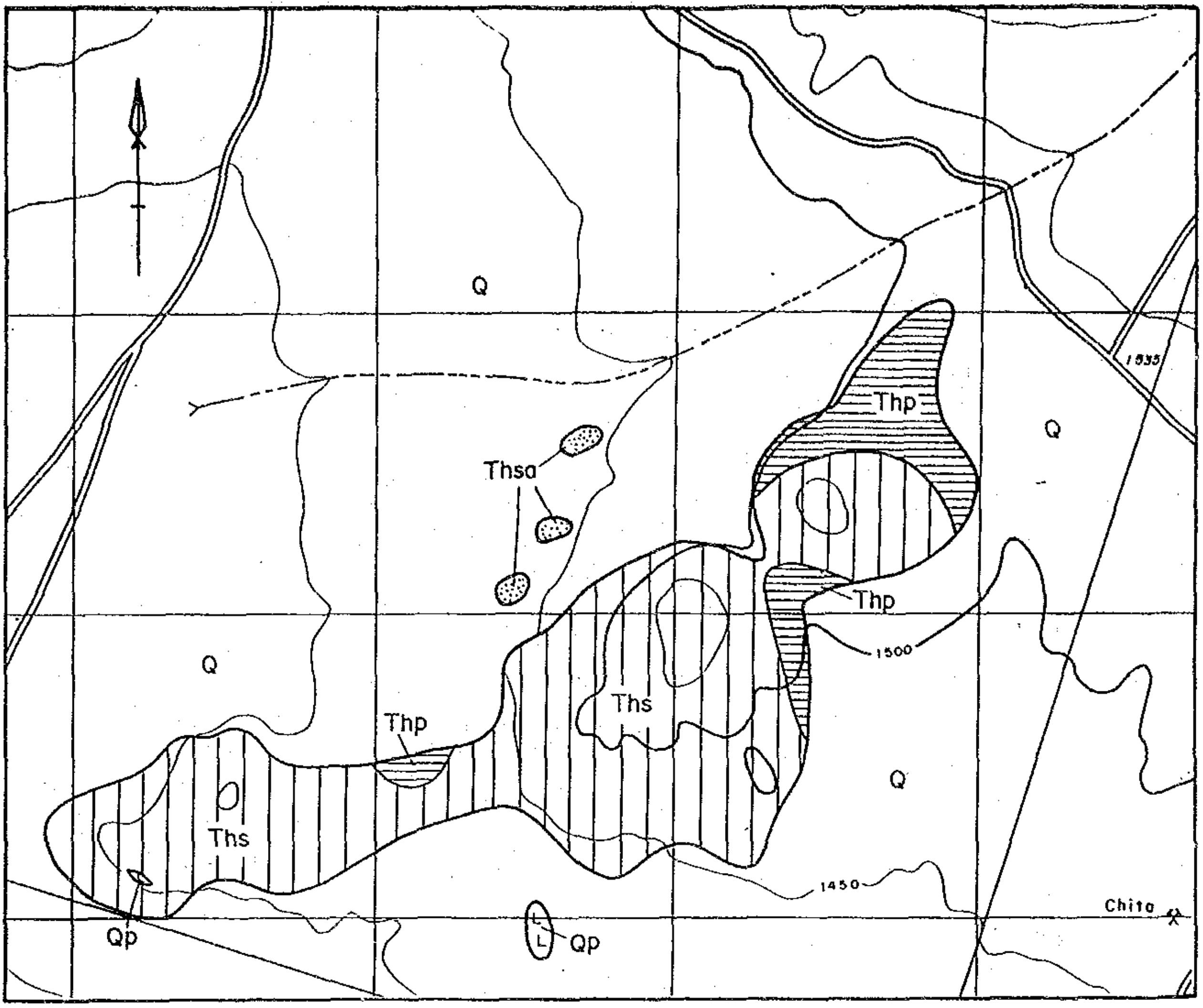
With regard to the geochemical anomaly of Fe_2O_3, since hematite is the only iron mineral detected by powder X-ray diffraction, it is considered that the anomaly is attributable to the amount of hematite present. This is supported by the fact that, as shown in Fig. 23, the geochemical anomaly area of Fe_2O_3 show up within the area of distribution of hematite. As for the origin of the hematite, it may be considered that igneous magnetite was replaced into hematite by the activity of acidic hydrothermal water. The chart of stable fields of iron minerals (Fig. 24) by Barnes and Kullerud (1961) shows that magnetite can be replaced into hematite when exposed to sulfuric acidic hydrothermal water in an oxygen rich environment. In actual fact, Hematite which determined by the nature of its streak and magnetism show euhedral shape of cubic system under microscopy. It is considered that magnetite left behind its pseudomorph of an cubic system after replacement into hematite.

The geochemical anomaly areas of FeO are accordant with the distribution of the propylitic altered zones in which hematite is also present (Fig. 23). From this it may be predicted that the action of hydrothermal water was relatively weak in the propylitic altered zone. Hence the replacement of magnetite for hematite was not completed, so that magnetite remains in amounts too minute to be detected by powder X-ray diffraction. However, this seems unlikely in view of the fact that, in spite of 2.29% or more of FeO being considered a geochemical anomaly, samples show no magnetism, and it is thought that the Fe 2+ in the chlorite that appears in the propylitic altered zones makes some contribution here. That the presence of chlorite contributes to the appearance of geochemical anomaly of FeO is considered due to the fact that while hematite is present in the acidic altered zones which account for most of the samples, Fe of the rock forming minerals was dissolved intensively. This harmonizes with the fact that, as stated in (2-1) Statistical treatment of chemical analysis values, the rocks in this district have low average values for Fe.

The distribution of samples showing values for S greater than the average value + 1/2 standard deviation, and the distribution of samples in which sulfate minerals appeared, are shown in Fig. 25. In all samples showing values for S greater than the average value + 1/2 standard deviation, alunite, gypsum and anhydrite appeared, and the concentration of S is clearly attributable to the existence of sulfate minerals.

This kind of acidic hydrothermal alteration is judged, from the lack of potassium feldspar, sericite, pyrite, etc., to be different from the type of the phyllic alteration or potassium alteration that characterize the hydrothermal alteration of porphyry copper deposits. In addition, although jarosite, a secondary mineral of pyrite, was detected in the strongly altered rock of the San Juan Mine, none whatsoever was found in the present area; this also indicates that the alteration in this district is unrelated to the mineralization.

On the basis of the above comments, the hematite was formed by replacement from magnetite: and from the fact that of the 7 samples showing geochemical anomaly of T.Cu (Fig.19), 6 samples contain hematite (Fig.23), it may be considered that the geochemical anomaly of T.Cu in this district is attributed to the assumption that some amount Cu was contained in the igneous magnetite. In addition, from the fact that the acidic hydrothermal alteration in this district is different from the type of the hydrothermal alteration occurring in porphyry copper deposits, and neither pyrite nor its secondary mineral jarosite is present, it is considered that the hydrothermal activity in this district was not accompanied by the mineralization.



FigⅡ-3-18 Geological Map of Pampa South District

LEGEND

Quaternary

☐ Q :Alluvium, colluvium

Altered Volcanics

▥ Ths :Silicified rock

▒ Thsa :Silicified and Argilized rock

▤ Thp :Propylitic rock

Intrusion

☐ Qp :Quartz porphry

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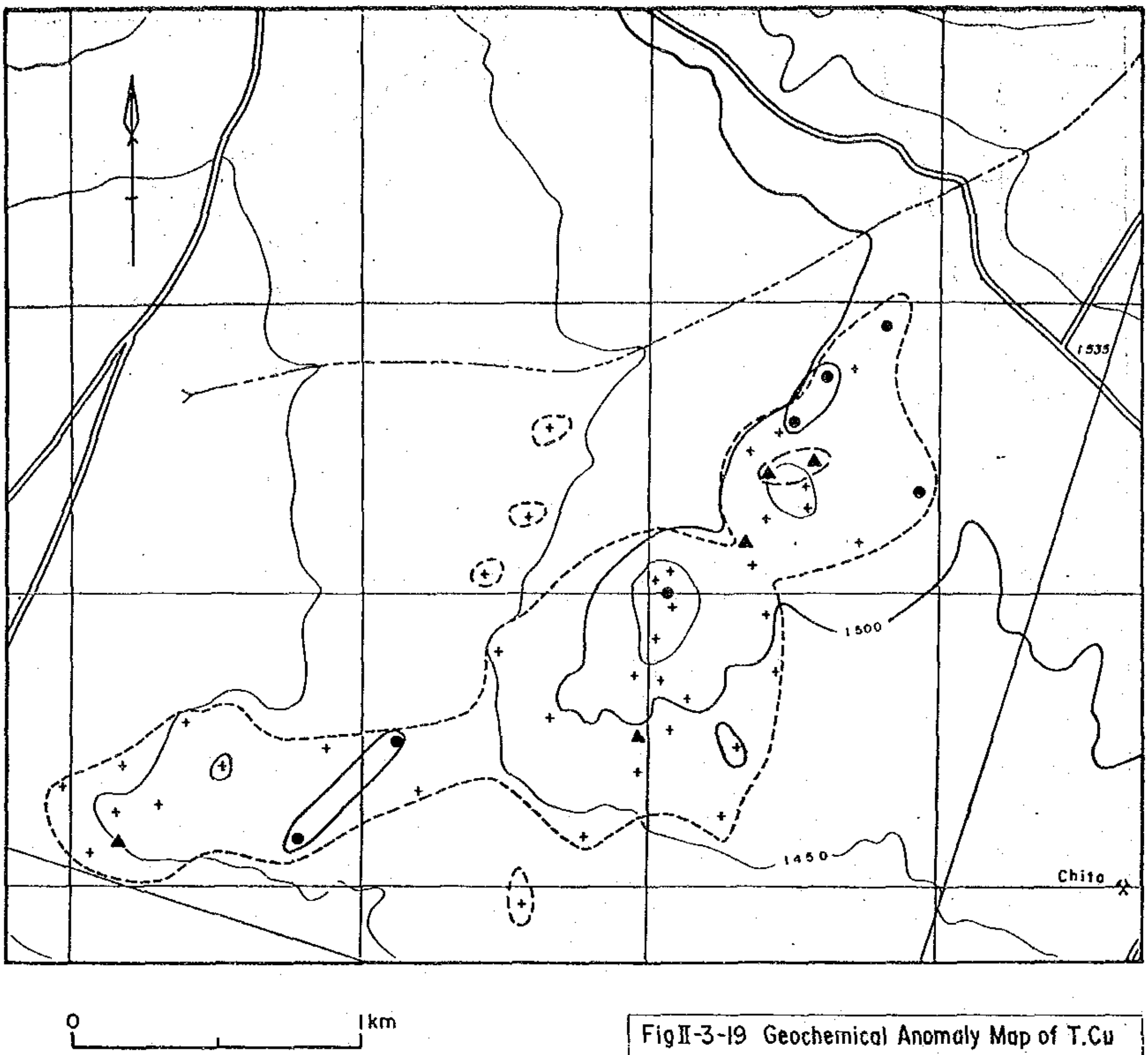

FigⅡ-3-19 Geochemical Anomaly Map of T.Cu and S in Pampa South District

+	Sampling point
--------	Outline of outcrop
●	T.Cu≧88ppm(M+σ)
▲	S ≧8.0%(M+σ)
⬭	Anomaly area of T.Cu
⬭	Anomaly area of S

M:Geometric average
σ:Standard deviation

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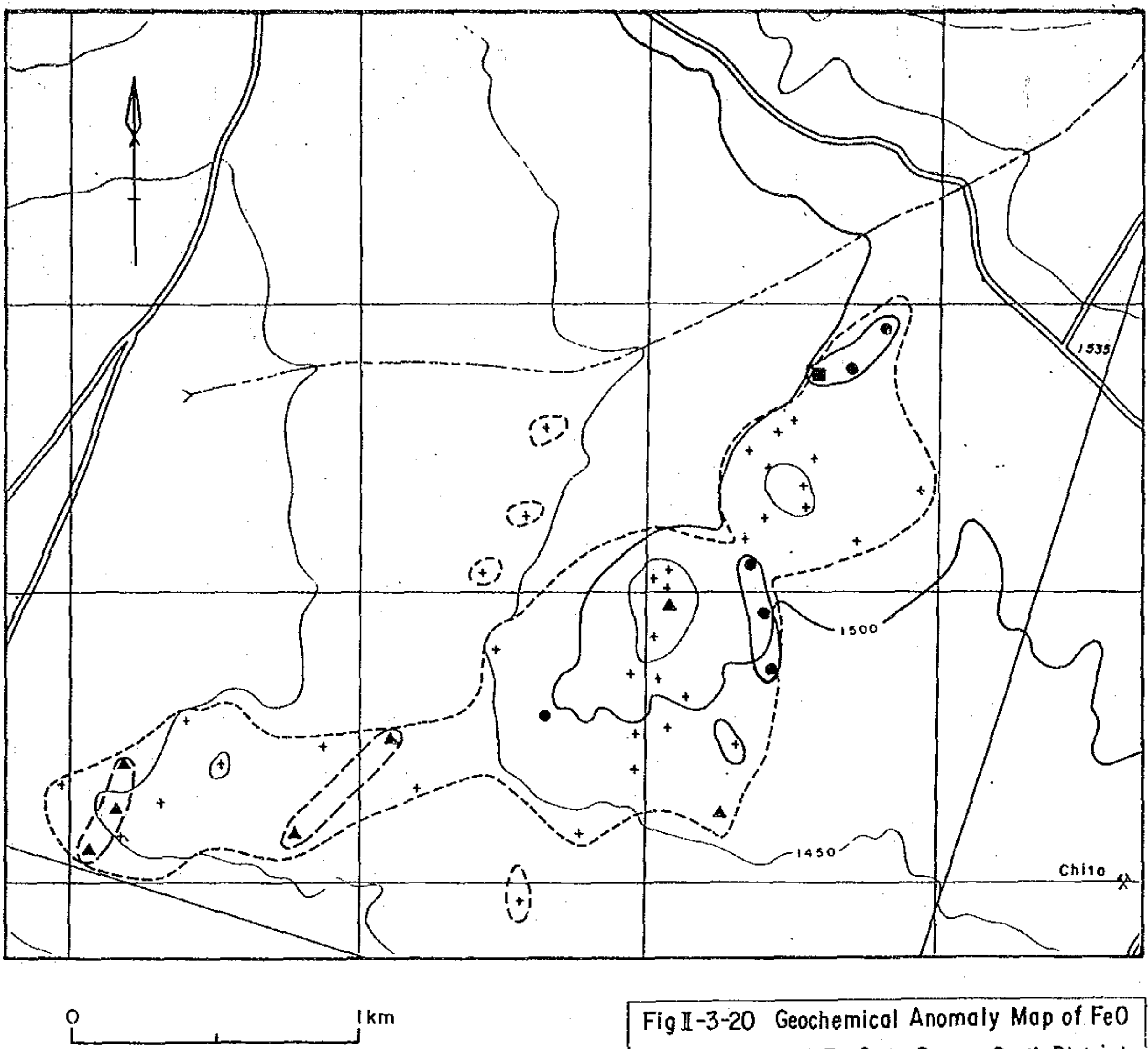

Fig II-3-20 Geochemical Anomaly Map of FeO and Fe_2O_3 in Pampa South District

+	Sampling point
--------	Outline of outcrop
●	FeO ≧2.29%(M+σ)
▲	Fe_2O_3≧7.84%(M+σ)
■	FeO and Fe_2O_3
◯	Anomaly area of FeO
◌	Anomaly area of Fe_2O_3

M:Geometric average

σ:Standard deviation

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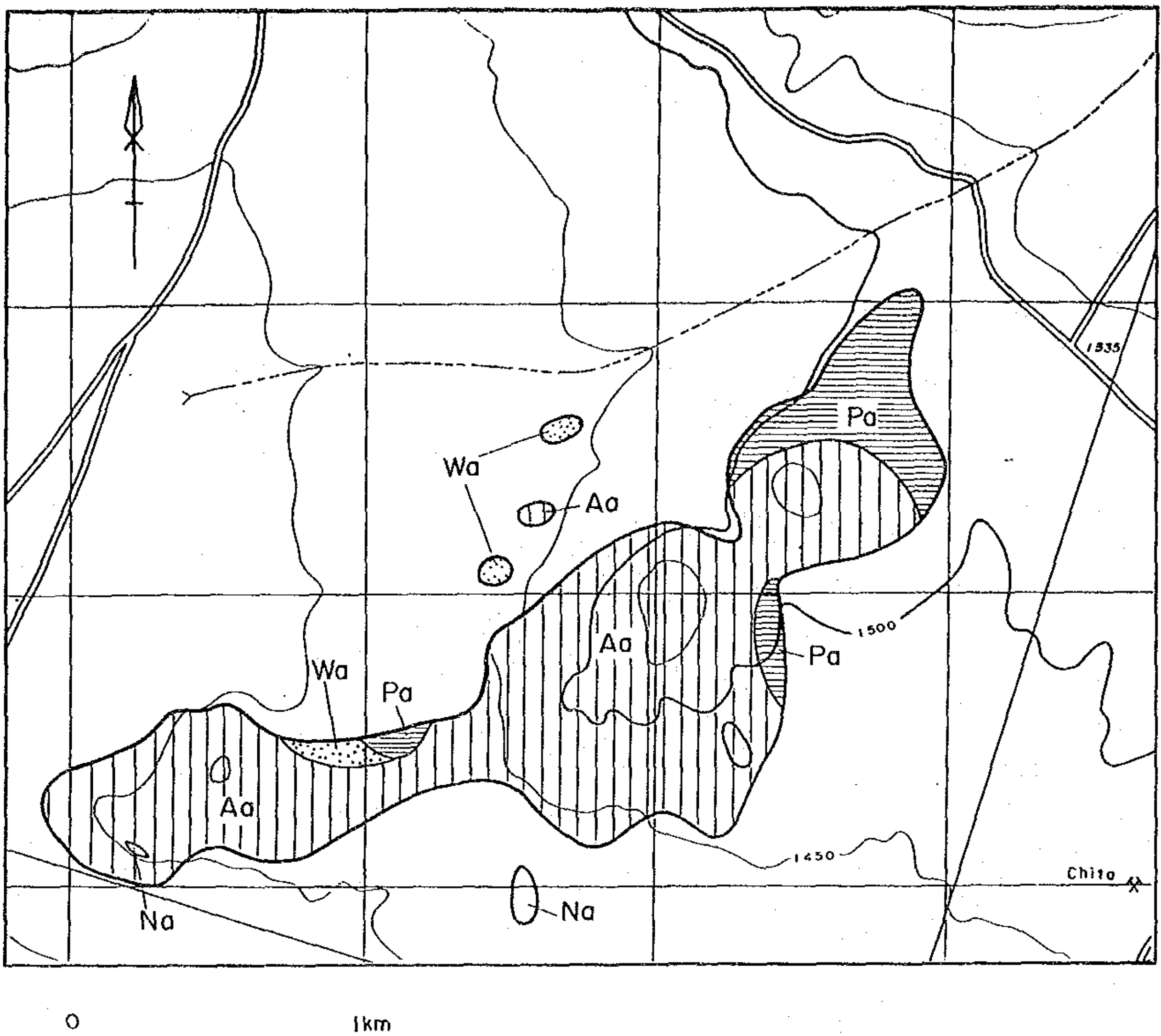

Fig II-3-21 Alteration Map of Pampa South District

▥ Aa:Acidic altered zone
░ Wa:Weakly acidic altered zone
▤ Pa:Propylitic altered zone
☐ Na:No altered zone

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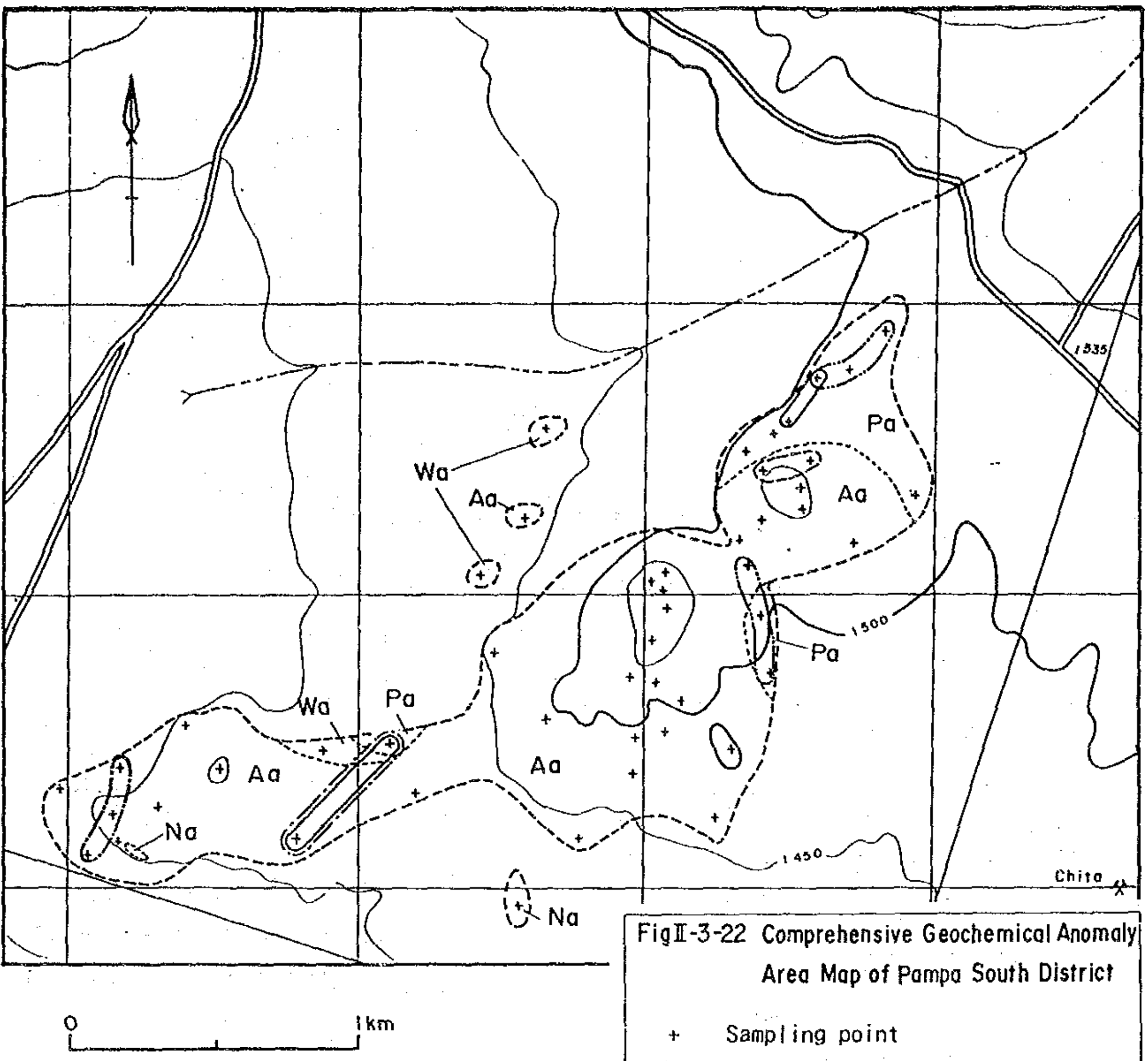

FigⅡ-3-22 Comprehensive Geochemical Anomaly Area Map of Pampa South District

\+ Sampling point

T. Cu ≧88ppm((M+ σ)

S ≧8. 0 %(M+ σ)

FeO ≧2. 29%(M+ σ)

Fe_2O_3≧7. 84%(M+ σ)

------ Alteration boundary

Aa:Acidic altered zone

Wa:Weakly acidic altered zone

Pa:Propylitic altered zone

Na:No altered zone

M:Geometric average

σ :Standard deviation

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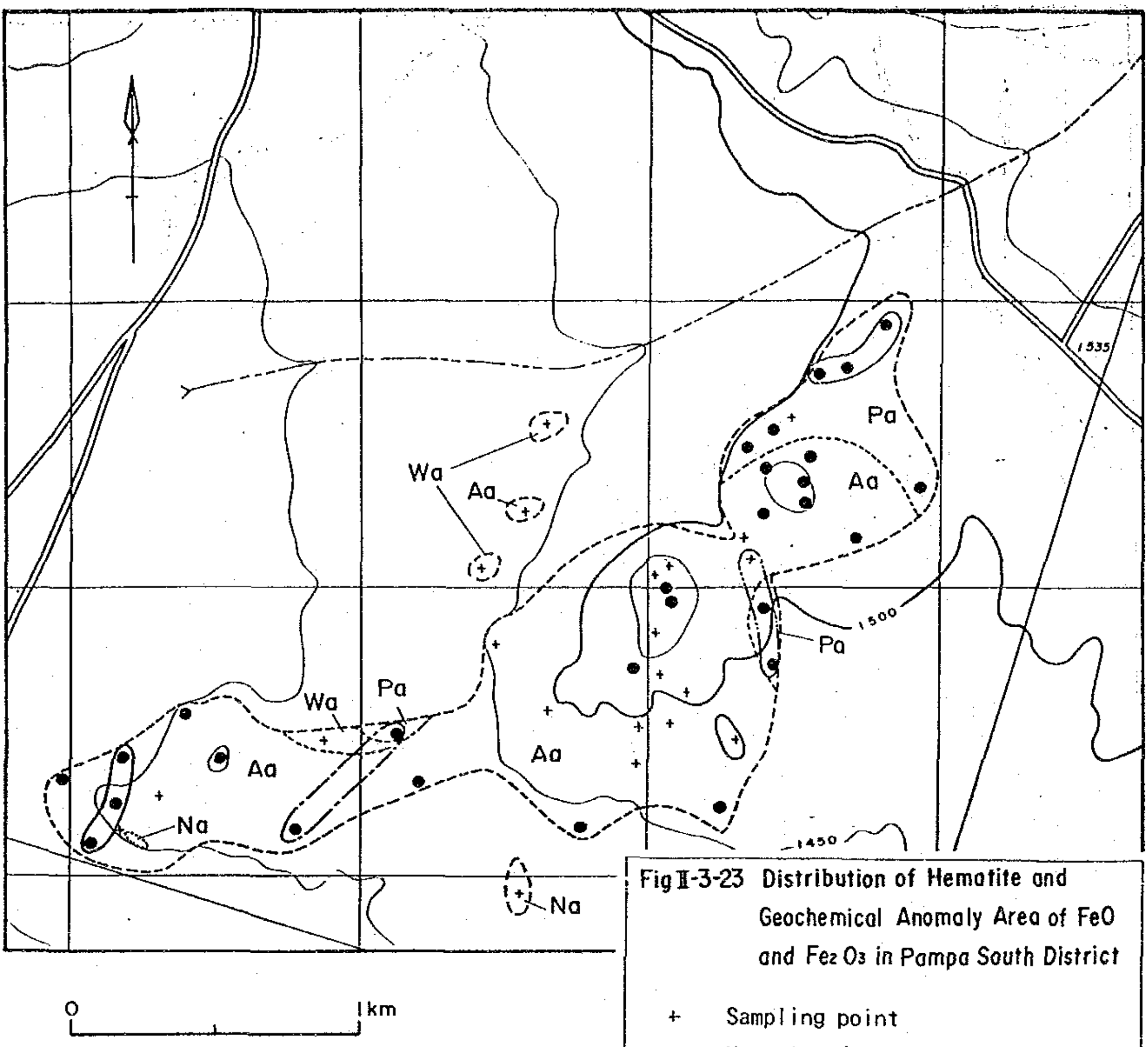

Fig Ⅱ-3-23 Distribution of Hematite and Geochemical Anomaly Area of FeO and Fe_2O_3 in Pampa South District

+	Sampling point
●	Hematite (detected by X-ray diffraction)
⬭	FeO $\geqq 2.29\%(M+\sigma)$
⬭	$Fe_2O_3 \geqq 7.84\%(M+\sigma)$
-------	Alteration boundary

Aa:Acidic altered zone
Wa:Weakly acidic altered zone
Pa:Propylitic altered zone
Na:No altered zone

M:Geometric average
σ:Standard deviation

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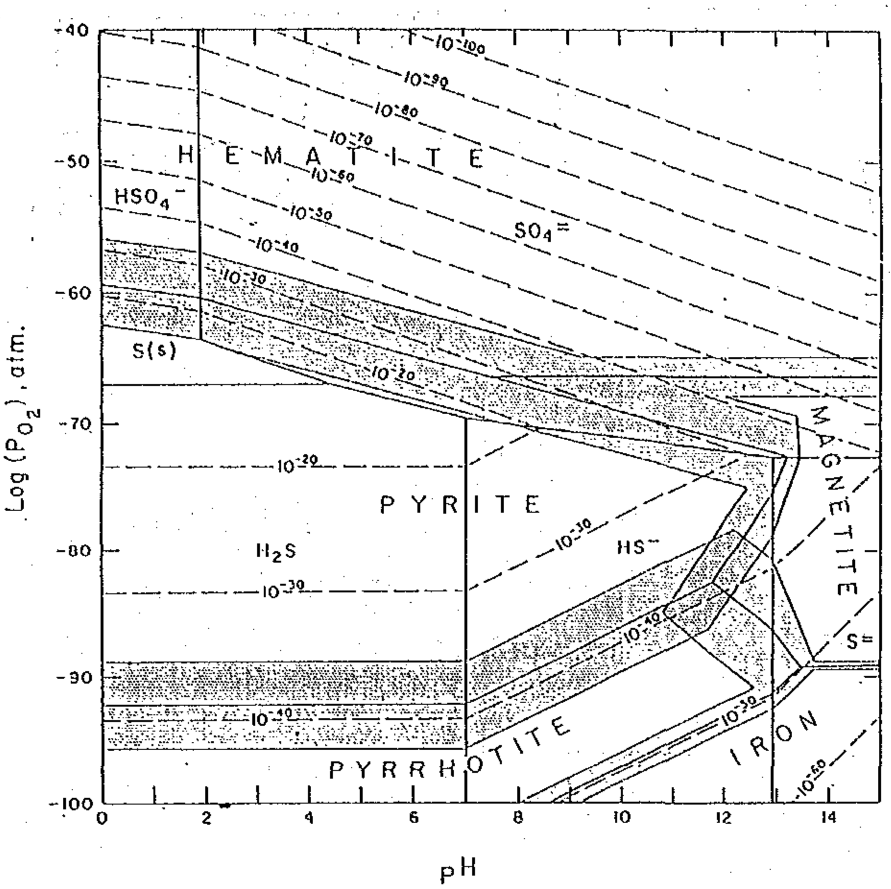
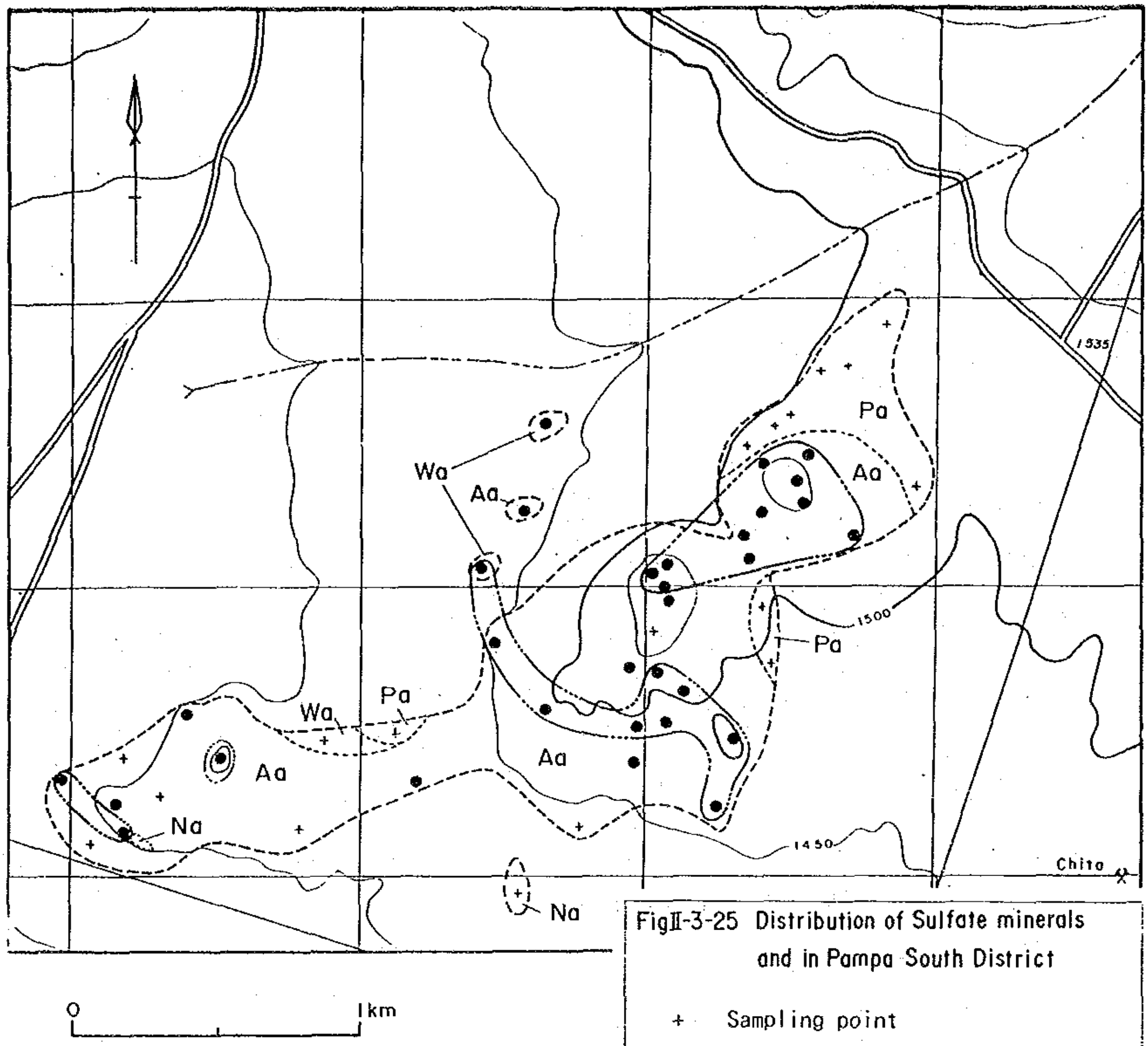


FigⅡ-3-24 Stable fields of iron minerals
by barnes and Kullerud (1961)

Equilibrium relations between iron oxides, iron sulfides, and aqueous solutions at $(\Sigma S) = 0.001$ m and 25° C. Dashed lines are contours of P_S, in atmospheres. Heavy lines bound the areas of predominance of each ion or molecule. Shaded zones indicate the uncertainty in the limits to the fields of stabilities of the various minerals.



FigII-3-25 Distribution of Sulfate minerals and in Pampa South District

- \+ Sampling point
- ● Sulfate mineral (Alunite group, gypsum, anhydrite detected by X-ray diffraction)
- S≧2.9%(M+1/2σ)
- ------- Alteration boundary
  - Aa:Acidic altered zone
  - Wa:Weakly altered zone
  - Pa:Propylitic altered zone
  - Na:No altered zone

M:Geometric average
σ:Standard deviation

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TableII-3-6 Results of the microscopic observation (Thin section)

Samples			Igneous Rock																				Pyroclastic and Sedimentary Rock																		Texture	Alteration Mineral												Remarks
			Phenocryst									Groundmass											Rock Fragment					Matrix																										
No	Number	Rock Name	Qz	Kf	Pl	Bi	Hb	Au	Hy	Ol	Op	Qz	Kf	Pl	Bi	Hb	Au	Hy	Ol	Op	Ac	G	Rf	Pm	Size (%)	Shape	Rock Name	Qz	Si	Kf	Pl	Fd	Bi	Hb	Au	Hy	Mf	Op	Pm	G		Q	Si	K	Ch	Mo	Se	Ep	Ca	Ze	Sp	Py	Fd	
1	MM-6	Diorite porphyry			◎		△						△	◎			○				·																				holo-porphy				○			·	△					with Specularite; Mafics->Chl
2	MM-8	Porphyry			◎			○						◎			△				·																				holo-porphy				○				○					with Specularite
3	MM-9	Pyroxene andesite			◎			○	△			△		○								○																			interser				△		◎		○					with Hematite
4	MM-12	Silic. lapilli tuff																					◎		15~1	Subround	Dasite											△		◎	pyrocl	◎				◎								Silicified and Argillized
5	MM-14	Altered andesite			◎			○						○						○		○																			interser	○			○	○								Silicified and Argillized
6	MM-17	Tow pyroxene andesite			◎				○					◎				○		○		△																			interser				○		·		△					Magnetite -> Martite
7	MM-19	Silicified tuff																																				·			–	◎				○			△					Silicified and Argillized
8	MM-22	Chloritized Hb. andesite			◎		○				○																														–				◎					△				Chloritized; Magnetite->Martite
9	MM-25	Silic. apha. andesite												◎						○		◎																			(hyalo)	◎				◎								with Hematite grain
10	MM-28	Silic. and. lapilli tuff																					◎		7~1	Subangul	Andesite								○	○		△		◎	pyrocl	◎				△			△					Silicified
11	YM-01	Silicified tuff																																				△		◎	–	○			○				△					Silicified
12	YM-03	Altered andesite			○				○		△			◎						△																					interser				◎	○								Magnetite -> Martite
13	YM-05	Silic. and. lapilli tuff																					○		5~1	Subround	Andesite				◎						○	△		◎	pyrocl	○			◎	◎								Silicified; Magnetite->Martite
14	YM-06	Silicified and. tuff																					◎		3~1	Subangul	Andesite				△							△			pyrocl	◎				◎								Silicified; with Hematite
15	YM-09	Silicified and. tuff																					△		<3	Subround	Andesite				○						○			◎	pyrocl	○			○	○								with Specularite
16	YM-11	Silicified and. tuff																														○					△	△			pyrocl		○			◎								Silicified; Mafics -> Chl
17	YM-14	Silicified and. tuff																					○		<1	Subround	Andesite				○						○	○		◎	pyrocl	○				◎								Magnetite -> Martite
18	YM-16	Qz-Hb-dasite	○	△	◎		○				△			○							·	◎																			hyalo						·							Magnetite -> Martite
19	YM-18	Silicified tuff																														○		○				△		◎	pyrocl	○			△		△							with Hematite
20	YM-20	Altered andesitic tuff																					○		<3	Angular	Andesite				△						△			◎	pyrocl				△	◎				○				with Iron Hydro-oxide
21	MM-18	Hematitized Hb-andesite			◎			○						○						○		◎																			hyalo				△									with Hematite

[Mineral Name]
Qz: Quartz
Si: Silica min.
Kf: Potash Fe.
Pl: Plagioclase
Fd: Feldspar
Bi: Biotite
Hb: Hornblende
Au: Augite
Hy: Hyperstheme
Ol: Olivine
Mf: Mafic min.
Op: Opaque
Ac: Accessory
G : Glass
Pm: Pumice
K : Kaolinite
Mo: Montmorillonite
Ch: Chlorite
Se: Sericite
Ep: Epidote
Ze: Zeolite
Ca: Carbonate
Sp: Sulfate
Py: Pyrite
Fd: Feldspar

[Texture]
holo : Holocrystalline
porphy : Porphyritic
poiki : Poikilitic
ophi : ophitic
subophi : subophitic
amyg : Amygdaloidal
intergra: Intergranular
interser: Intersertal
trach : Trachytic
fluid : Fluidal
spher : Spherulitic
vitric : vitric
pilotax: Pilotaxitic
perl : perlitic
hyalo : Hyalopilitic
fels : Felsic
micro : Microcrystalline
apha : Aphanitic
pyrocl : Pyroclastic
vitrocl: Vitroclastic
weld : Welded
clast : Clastic
pelit : Pelitic

[Abandance]
◎ : Abandant
○ : Common
△ : Minor
· : Rare

TableII-3-7 Results of the powder X-ray diffraction

Classification		Abbr.	Mineral Name	Chemical Formula	Sample Locality																																																												
					1 F-15	2 U-13	3 V-7	4 R-9	5 A-10	6 B-17	7 B-9	8 C-3	9 #001	10 #002	11 MZ-2	12 MZ-3	13 MH-01	14 MH-02	15 MH-03	16 MH-04	17 MH-05	18 MH-06	19 MH-07	20 MH-08	21 MH-09	22 MH-10	23 MH-11	24 MH-12	25 MH-13	26 MH-14	27 MH-15	28 MH-16	29 MH-17	30 MH-18	31 MH-19	32 MH-20	33 MH-21	34 MH-22	35 MH-23	36 MH-24	37 MH-25	38 MH-26	39 MH-27	40 MH-28	41 YH-01	42 YH-02	43 YH-03	44 YH-04	45 YH-05	46 YH-06	47 YH-07	48 YH-08	49 YH-09	50 YH-10	51 YH-11	52 YH-12	53 YH-13	54 YH-14	55 YH-15	56 YH-16	57 YH-17	58 YH-18	59 YH-19	60 YH-20	61 YH-21
Silicate	Silica	Qz	Quartz	SiO2		·	△	△	·	△			·	·	○	○	◎	◎	△	·	△	△		·	△	○	◎	○	·	○	◎	△	△	△	◎	○	○	○	○	○	○	○	○	◎	◎	○	○	◎	○	◎	◎	◎	◎	◎	◎	○	◎	○	○	△	△	◎	○	◎	○
	Clay	Chl	Chlorite	(Mg,Fe,Al)12(Fe,Al,Si)8O20(OH)16																·	·	·	·	△	·				·		·	·	·	·																															
		Dck	Dickite	Al2Si2O5(OH)4														·																	·	△	△	△		△	·	△	△		·	○	○			·		○						·	○					△	○
		Kal	Kaolinite	Al2Si2O5(OH)4																						△	·			·		·																	△				·	·											
		Pyrf	Pyrophyllite	AlSi4O10(OH)2																																						·																			○				
		Mus	Muscovite	K·Al2(Si3Al)O10(OH,F)2																	·		·		·																																								
	Other	Ab	Albite	(Na,Ca)(Al,Si)4O8			·	△	△	△	△	△	△	△						◎	○	◎	○	◎	△				○			◎	△	△																										○					
		Trm	Tremolite	Ca2(Mg)5Si8O22(OH)2																			△																																										
		Act	Actinolite	Ca2(Mg,Fe)5Si8O22(OH)2																																																				△					
		Sep	Sepiolite	Mg5Si8O20(OH)2·8H2O										△																																																			
		Heu	Heulandite	CaAl2Si7O18·6H2O												·																																																	
		Zny	Zunyite	Al3Si5O20(OH,F)18Cl																																·	·																												
Carbonate		Cal	Calcite	Ca(CO3)																·		·		·	·										·									·						·															
Sulfate		Na-Jar	Natrojarosite	(K,Na)Fe3(SO4)2(OH)6											·																																																		
		Alu	Alunite	(K)Al3(SO4)2(OH)6												·										△	△											·	△		△								△														○		
		Na-Alu	Natroalunite	(K,Na)Al3(SO4)2(OH)6													○	△	○									○		△	△					△			○					△	△	·		△		△	·						△								
		Ca-Alu	Minamiite	(K,Na,Ca)Al3(SO4)2(OH)6																																													△	·	△	△		△	·					△	
		Anh	Anhydrite	Ca(SO4)											△	△																												·								△										
		Gyp	Gypsum	Ca(SO4)·2H2O	◎	◎	△		◎	○	◎	◎	◎	○		△	△																			△		·					·				·	·						△								△			
Oxide & Hydro-oxide		Hm/Ht	Hematite	Fe2O3													·	·	△	·		·	·	·	·	·	·	·	·			·	·	·		△		·		△	·	△	·		·	·	·		·									△	·		·				△
		Dsp	Dispore	AlO(OH)																																	·							·							△														
Other		Ntr	Nitratine	NaNO3				◎																						△	·																																		
		Hal	Halite	NaCl				△																																																									

PART III CONCLUSION AND RECOMMENDATION

PART III CONCLUSION AND RECOMMENDATION

CHAPTER 1 CONCLUSION

The conclusions reached from the first phase survey are as follows.

1-1 Drilling Survey in the Veraguas Area

The survey was carried out 5 holes, with a total length of 2,053 m. The locations for the drilling holes were selected with the following points in mind.

1) Areas where ground surface surveys confirmed zones of mineralizing alteration and geochemical anomalies.
2) Areas shown by physical survey (CSAMT method) to be of low to medium resistivity, thought to correspond to zones of mineralizing alteration.

Results of the survey were as follows.

1. Geology and alteration

The rocks observed at each of the holes were made up of andesitic volcanics of the Cretaceous Aeropuerto formation, porphyry intrusive rocks and altered rocks originating from these rocks.

The andesitic volcanics are made up of porphyritic and aphanitic andesitic lava, autobrecciated lava, tuff and lapilli tuff, and form the basement of the region. These rocks have undergone silicification, kaolinization, sericitization and chloritization and the initial minerals have altered; in many places the texture of the original rock is indistinct.

The porphyry intrusive rocks are comprised of andesite- or diorite- porphyry penetrating the andesitic volcanics in dike or stock-form; to the naked eye they display sub-volcanic texture like tuff and lava, and there are places where the border with andesitic volcanics is indistinct. These rocks have phenocryst of quartz and plagioclase, but the initial minerals have altered through undergoing silicification, kaolinization, sericitization, chloritization, potassium addition and albitization.

The altered rocks were originally the rocks described above that have undergone hydrothermal alteration; they form the mass of the Cerro Veraguas and the Sierra Overa. Based on the classification of alteration zones by ENAMI (1987), they are divided into 4 zones, from the top down, intensely silicified zone, quartz-sericitized zone, siliceous argillized zone and chloritized zone.

Of these, the siliceous argillized zone and the chloritized zone are made up of quartz, sericite, gypsum, anhydrite and pyrite, as well as kaolinite and chlorite, and correspond to the phillic zone of the hydrothermal alteration classification of porphyry copper deposits according to Lowell and Guilbert (1970). In addition, the chloritized zone between 448.15-467.5m and between 478.9-493.5m at the

MJCV-4 hole is rich in albite and potassium feldspar, corresponding to the potassic zone of the same classification.

Each zone of alteration possesses a brecciated or pseudobrecciated structure, the matrix has undergone strong kaolinization and sericitization, and hematite, jarosite and limonite are developed in stockwork form, from which it may be considered that the brecciation effect was brought about at the time of hydrothermal activity.

2. Mineralization effect

The lower part of the siliceous argillized zone and the chloritized zone which were originally porphyry and part of the andesitic volcanics, correspond to the phillic zone of alteration of porphyry copper deposits; pyrite dissemination is prominent and is accompanied by sphalerite and galena as well as copper minerals such as chalcopyrite, chalcocite, covelline and cuprite.

The special features of copper mineralization understood as a result of the drilling survey are as follows.

(1) Cerro Veraguas summit district (MJCV-1 & MJCV-2):

Copper mineralization is found in the porphyry of the lower part of the siliceous argillized zone and in the chloritized zone, particularly in the border area with the andesitic volcanics and along the fracture zone within the porphyry; but since the copper grade at T.Cu 500-1100ppm is low, and is accompanied as shown in the MJCV-2 hole by the mineralization effect of small amounts of lead and zinc, it is supposed that the region is some distance from the center of the mineralization.

(2) Cerro Veraguas southern district (MJCV-3):

Copper mineralization is found in the porphyry of the chloritized zone below 300m at the MJCV-3 hole, in particular in and around the border area with the andesitic volcanics; and 10 points a total, 14m, had a T.Cu reading of 500-7000ppm. At these points the molybdenum grade is also high, with an average of 52.4ppm between 300-375 m and a maximum of 213ppm, indicating the special features of porphyry copper deposits.

(3) Sierra Overa eastern district (MJCV-4):

Copper mineralization is found in the lower part of the siliceous argillized zone and in and around the border area between the porphyry and andesitic volcanics of the chloritized zone below 206m at the MJCV-4 hole and around the potassic zone below 400m; and 7 points a total, 13m, had a T.Cu reading of 500-3200ppm. Around the potassic zone below 490 m, gold mineralization (Au 0.6-4.8ppm) is also discovered. The discovery of copper and gold mineralization in the potassic zone shows the special features of porphyry copper deposits.

(4) Sierra Overa southwest district (MJCV-5):

Between 280-292m at the MJCV-5 hole, where the porphyry and N-S fracture zone intersect, T.Cu measured 540ppm, and between 364-367m, the border area of the chloritized and siliceous argillized zones within the porphyry, 1,041ppm; from this it is surmised that the copper mineralization was controlled by changes in the alteration environment within the porphyry, and by the N-S fracture zone, a passage for hydrothermal water.

The results of the ore analysis showed the copper grade to be 7000ppm maximum, and did not lead directly to the discovery of deposits; but it was discovered that there was copper and molybdenum mineralization below 300m at the MJCV-3 hole in the Cerro Veraguas south district, and copper and gold mineralization below 400m at the MJCV-4 hole in the Sierra Overa eastern district. These instances of mineralization indicate the special features of porphyry copper deposits, and it may be expected that such deposits do exist nearby.

1-2 Geochemical Survey

179 samples of caliche were collected in the Pampa and Northwest Districts where caliche is present in the alluvium/colluvium distribution areas. In addition, 49 samples of rock were collected from the hills in the Pampa South District where altered rocks are distributed. On these samples chemical analysis for 9 components was carried out and the geochemical anomalies obtained were examined.

With regard to the caliche, in the area around the Pampa Mine deposits, which are the only known mineral deposits in the area under investigation, results showing geochemical anomaly area of T.Cu and S.Cu were obtained. This is considered a clear reflection of the presence of mineral deposits below the alluvium/colluvium. Except the area around the Pampa Mine, a geochemical anomaly area of T.Cu and S.Cu was obtained at the east end of sampling line W in the Northwest District, and the presence of copper deposits below the alluvium/colluvium is expected here too. However, this zone of geochemical anomaly lies along the course of a dry river, and it is possible that the copper deposits exist upstream side.

While geochemical anomalies of S occur in around the Pampa Mine, on the eastern end of sampling line W geochemical anomaly area of FeO, Fe_2O_3 and SiO_2 occur, and it is possible that the copper deposits which may be expected to lie on the eastern end of sampling line W are of a different type to the Pampa Mine deposits.

With regard to the rock, geochemical anomaly of T.Cu is accordant with the existence of hematite, and since the hematite is considered to have been replaced from magnetite through the action of acidic hydrothermal activity, the geochemical anomaly of T.Cu is expected as being attributable to the presence of some amount of Cu in the igneous magnetite. In addition, from the fact that the acidic hydrothermal alteration in this district is different from the type of the potassium type alteration or phyllic type alteration that characterize the hydrothermal alteration of porphyry copper deposits, and neither pyrite nor its secondary mineral jarosite is present at all, the conclusion is reached that there was no mineralization accompanying the hydrothermal activity in this district.

Table III-1-1 Summary of the mineralized zones

MJCV-1

Depth m - m	Range m	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Original Rock	Alteration Zone
194 195	1	820	520	8	<0.04	0.7	4.38	Porphyry	Siliceous argillized zone
208 209	1	910	590	9	<0.04	0.6	4.00	Porphyry	Siliceous argillized zone
291 292	1	540	400	6	<0.04	0.5	3.35	Porphyry/Andesite	Siliceous argillized zone
352 354	2	670	375	22	<0.04	0.8	4.54	Andesite/Porphyry	Chloritized zone

MJCV-2

Depth m - m	Range m	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Original Rock	Alteration Zone
160 161	1	744	305	6	<0.04	1.0	7.04	Diolitic porphyry	Siliceous argillized zone
237 239	2	897	240	18	<0.04	0.9	4.52	Ditto(Fracture zone)	Siliceous argillized zone
245 246	1	750	45	11	<0.04	<0.4	5.84	Ditto(Fracture zone)	Siliceous argillized zone
291 293	2	1100	376	7	<0.04	0.5	3.24	Ditto(Fracture zone)	Siliceous argillized zone
296 297	1	502	256	5	<0.04	0.8	4.40	Ditto(Fracture zone)	Siliceous argillized zone

MJCV-3

Depth m - m	Range m	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Original Rock	Alteration Zone
305 307	2	76	17	203	<0.04	<0.4	6.01	Andesite	Siliceous argillized zone
315 316	1	1100	804	69	<0.04	<0.4	2.58	Andesite/Porphyry	Siliceous argillized zone
321 323	2	505	252	21	<0.04	<0.4	3.23	Porphyry	Chloritized zone
326 327	1	80	53	213	<0.04	<0.4	3.15	Porphyry	Chloritized zone
332 333	1	770	396	36	<0.04	<0.4	2.68	Porphyry	Chloritized zone
336 338	2	560	198	70	<0.04	<0.4	2.36	Porphyry	Chloritized zone
346 349	3	1587	511	13	<0.04	<0.4	1.48	Porphyry/Andesite	Chloritized zone
358 359	1	86	13	206	<0.04	<0.4	4.00	Andesite	Chloritized zone
368 369	1	7000	1263	24	<0.04	<0.4	7.42	Andesite/Porphyry	Chloritized zone
369 370	1	2300	954	36	<0.04	<0.4	6.48	Porphyry	Chloritized zone
377 378	1	948	86	12	<0.04	<0.4	6.24	Porphyry	Chloritized zone
389 390	1	1400	443	16	0.07	<0.4	6.80	Porphyry	Chloritized zone
395 396	1	700	138	16	<0.04	1.3	10.24	Porphyry	Chloritized zone

MJCV-4

Depth m - m	Range m	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Original Rock	Alteration Zone
206 209	3	2167	<10	7	0.06	<0.4	3.01	Andesite/Porphyry	Siliceous argillized zone
238 239	1	1860	68	7	<0.04	<0.4	3.84	Porphyry	Siliceous argillized zone
316 317	1	506	38	20	<0.04	0.6	4.24	Andesite	Siliceous argillized zone
399 400	1	710	<10	10	<0.04	0.6	5.60	Andesite	Chloritized zone
430 433	3	675	26	11	<0.04	1.2	7.81	Andesite	Chloritized zone
437 438	1	666	16	14	<0.04	<0.4	5.68	Andesite	Chloritized zone
471 474	3	611	19	24	<0.04	<0.4	4.32	Porphyry	Chloritized zone
492 493	1	85	<10	20	4.80	<0.4	5.68	Porphyry	Chloritized zone

MJCV-5

Depth m - m	Range m	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Original Rock	Alteration Zone
280 292	12	540	127	<5	<0.04	<0.4	6.24	(Fracture Zone)	Siliceous argillized zone
364 367	3	1041	469	6	<0.04	<0.4	5.44	Diolitic porphyry	Chloritized zone

CHAPTER 2 RECOMMENDATION FOR THE PHASE II

On the basis of the results of the Phase I surveys the following recommendations are made for Phase II. The survey district for Phase II is shown in Fig. I-5-1.

2-1 Drilling Survey

The present survey did not lead directly to the discovery of deposits, but it was discovered that there was copper and molybdenum mineralization below 300m at the MJCV-3 hole in the Cerro Veraguas southern district, and copper and gold mineralization below 400m at the MJCV-4 hole in the Sierra Overa eastern district. These instances of mineralization indicate the special features of porphyry copper deposits, and it may be expected that such deposits do exist nearby. On the northern side of the Sierra Overa, some 1,500 m northwest of the MJCV-4 hole, are the San Juan deposits.

It follows that in Phase II, it would be desirable for drilling survey to be carried out in the district reaching from southern hillside of the Cerro Veraguas to the east and north of the Sierra Overa.

2-2 Geochemical Survey

With regard to the eastern end of sampling line W in the Northwest District where geochemical survey of the caliche showed geochemical anomaly area of Cu, it is advisable that a trench survey be carried out to ascertain the presence of the expected copper deposits beneath the alluvium/colluvium. However, since this geochemical anomaly lies along a dry river and the possibility exists that the copper deposits lie upstream side, it is desirable that the trench survey be carried out from the geochemical anomaly area toward its southeast part.

It is judged that there is no need to continue the survey in the area where the geochemical survey of rock was conducted.

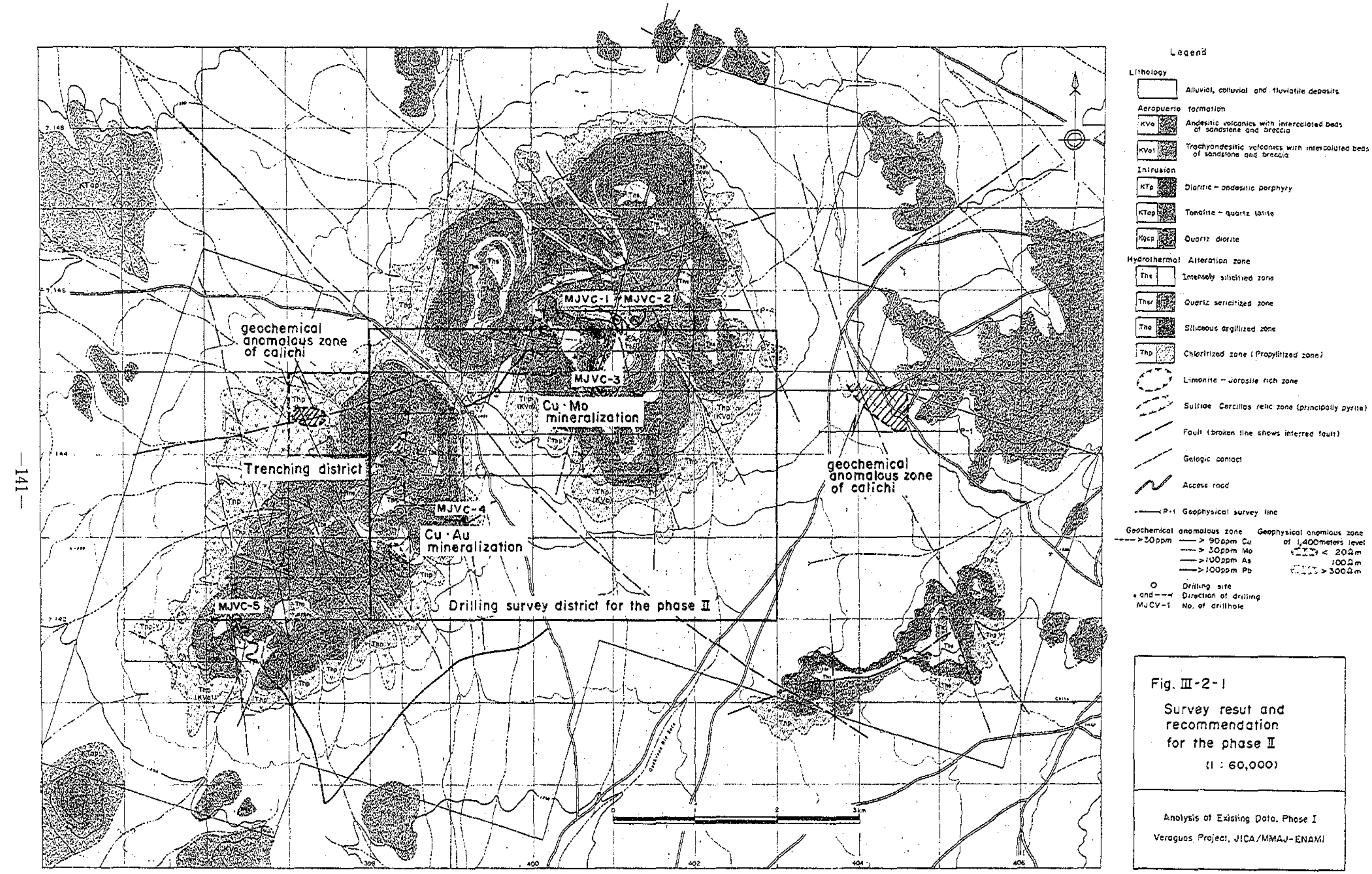


Fig. III-2-1

Survey resut and recommendation for the phase II

(1 : 60,000)

Analysis of Existing Data, Phase I

Veraguas Project, JICA/MMAJ-ENAMI

REFERNCES

REFERNCES

Veraguas Area

<Analysis of Existing Data & Drilling Survey>

1. Bell,C.M.(1982): The Lower Paleozoic Metasedimentary Basement of the Coastal Ranges of Chile between 25° 30′ and 27° S; En Revista Geologica de Chile, Numero 17.

2. Boric,r.p.,Diaz,f.f. y Maksaev,v.j.(1990):Geologia y Yacimientos Metaliferos de la Region de Antofagasta,Servicio Nacional de Geologia y Mineria-Chile, Boletin No.40.

3. Camus,F. y Duhalde,M.A.(1982): Geologia de los Yacimientos Hidrotermales de Oro en Chile;En Revista Geologia de Chile,Numero 17.

4. Delbridge,C.G.,Robertson,A. and Crozier,R.D.(1992): Mineral Industry Profiles Chile, Delbridge-Robertson Associates.

5. ENAMI(1987): Estudio Geologico-Economico Preliminar del Area de las Pertenencias Mineras Virgo 1-1213 del Distrito Minero de Sierra Overa.

6. ENAMI(1993): Evaluación Geologia Prospecto Cerro Veraguas.

7. ENAMI(1993): Estudio Geofisico Mediante CSAMT Sector Sierra Overa.

8. ENAMI(1993): Levantamiento Topografico Acceso a Sondajes Prospecto Veraguas II Region de Antofagasta Comuna Taltal,Chile.

9. JICA & MMAJ(1993): An Interm Report of Mineral Exploration in Cerro Negro, The Republic of Chile, Phase I.

10.JMEC(1993): Report on The Project Finding Survey of The Cooperative Mineral Exploration, Satellite Image Interpretation in Veraguas·Progreso area, The Republic of Chile.

11.Mercado,M.W.(1978):Hojas Chanaral y Potrerillos,Region de Atacama, Geologicos Preliminares de Chile,Escala 1:250,000 Instituto de Investigaciones Geologicas .

12.MMAJ(1972): Ore Deposits in Chile.

13.Naranjo,J.A. y Puig,A.(1984):Hojas Taltal y Chanaral,Region de Antofagasta y Atacama,Carta Geologica de Chile,Escala 1:250,000,Servicio Nacional de Geologia y Mineria.

14.Olson,S.F.(1989):The Stratigrafic and Structural Setting of the Potrerillos Porphyry Copper District,Northern Chile; En Revista Geologica de Chile, vol 16, No.1.

15.Perello,J. y Cabello,J.(1989): Porfidos Cupriferos Ricos en Oro;Una Revisión En Revista Geologica de Chile, vol 16, No.1.

16.Ulriksen,C.G.(1990):Mapa Metalogenico de Chile entre los 18° y 34° S (1:1.000.000),Servicio Nacional de Geologia y Mineria-Chile,Boletin No.42.

<Geochemical Survey>

1. Barnes,H.L. and Kullerud,G.(1961): Equilibria in sulfer-containing aqueous solution in the system Fe-S-O, and their correlation during ore deposition, Ecom.Geol.,56,648-688.

2. Erickson,R.L. and Marranzino,A.P.(1960): Geochemical prospecting for copper in the Rocky Range, Beaver Country, Utah.U.S.Geol.Survey Prof.Paper 400-B, 98-101.

3. Daily,R.A.(1933): Igneous Rocks and Depth of the Earth. McGraw-Hill, New York Reprinted by Hafner Publishing Co.,1968

Progreso Area

<Analysis of Existing Data>

1. Boric,R.P(1985): Geologia y yacimientos metalicos del Dristrito Talcuna, IV Region de Coquimbo. Revista Geológia de Chile,no.25.26,p57-58.

2. Corvaland,J.(1973): Estratigrafia del neoconiano marino de la region al sur de Copiapo, Providensia de Atacama. Revista Geológia de Chile,no.1,p13-36.

3. Hopf,S.(1990):The Agustina mine,a volcanic-hosted copper deposit in northern chile. Stratabound ore deposits in the Andes. Springer-Verlag Berlin Heidelberg. p421-434

4. Kenneth Segerstrom(1968):Geologia de las Hojas Copiapo y Ojos del Salado, Provincia de Atacama,Instituto de Investigaciones Geologicas Chile. Boletin No.24

5. Keneth Segerstrom y Carlos Ruiz Fuller(1962):Carta Geologica de Chile, Cuadrangulo Copiapo,Escala 1:50,000 Instituto de Investigaciones Geologicas Chile.

6. Segerstrom,K.(1960): Cuadrángulo Quebrada Paipote, Provincia de Atacama. Santiago,Inst. Invest. Geol.,Carta Geol. Chile, vol.2, no.1

7. Segerstrom,K. y Parker,R.L.(1959): Cuadrángulo Cerrillos, Provincia de Atacama. Santiago,Inst. Invest. Geol.,Carta Geol. Chile, vol.1, no.2

8. Segerstrom,K. y Ruiz,C.(1962): Cuadrángulo Copiapó, Provincia de Atacama. Santiago,Inst. Invest. Geol.,Carta Geol. Chile, vol.3, no.1

9. Segerstrom,K.,Thomas,H. y Tilling,R.I.(1963): Cuadrángulo Pintadas, Provincia de Atacama. Santiago,Inst. Invest. Geol.,Carta Geol. Chile, no.12

10.Tilling,R.I.(1976): El batolito andino de Copiapó, Provincia de Atacama. Geologia y Petrologia Revista Geológia de Chile,no.3,p1-24

11.ENAMI(1992): Informe Geologíco Final Proyecto de Estudios Progreso Pertenencias Progreso 1-211 Copiapo, III Rerión, Chile.

12.ENAMI(1993): Estudio Geofisico Mediante CSAMT Y Polarization Inducida. Especial Proyecto Progreso,Copiapo III Region Sector Pan,Progreso Sur Intermedio y Progresosur.

13.ENAMI(1993):Estudio Geofisico Mediante CSAMT Y Polarization Inducida Especial Proyecto Progreso,Copiapo III Region Proyecto Norte.

APPENDICES

Appendix A

Geologic column of MJCV－1 to MJCV－5

(Scale 1：200)

A－1～A－44

LEGEND OF CORE LOGGING SHEET

Rock type

⫽ ⧵	tuff
△ ⧵ ⫽ △	andesitic pyroclastics
v v	andesitic lava
+ +	porphyry

Grade of alteration

━━━━	strong - very strong
────	medium
- - - - - - -	weak - very weak

ABBREVATION

Mineral*

alu	alunite
amp	amphibole
bt	biotite
cc	chalcocite
chl	chlorite
cl	calcite
cly	clay mineral
cov	covirinite
gyp	gypsum
hm	hematite
jar	jarosite
kal	kaolinite
lm	limonite
mus	muscovite
naalu	Na-alunite
najar	Na-jarosite
plg	plagiolase
py	pyrite
qtz	quartz
ser	sericite
spec	speculerite

Alteration

alu	alunitization
k add	potasium addition
kal	kaolinitization
ser	sericitization
sil	silicification

Grade of mineralization & alteration

vst	very strong
st	strong
m	medium
wk	weak
vwk	very weak

Unit

mm	milimeter
cm	centimeter
m	meter
w	width
/	angle
°	digree

Structure/Texture

ctm	contaminated
dis	dissemination
flm	film
frct	fractured
msv	massive
net	network
pheno	phenocryst
ptc	patch
sm msv	semi massive
vlt	veinlet
vn	vein

Grain size

f.	fine
m.	medium
c.	corse
g.	grained

Sample location

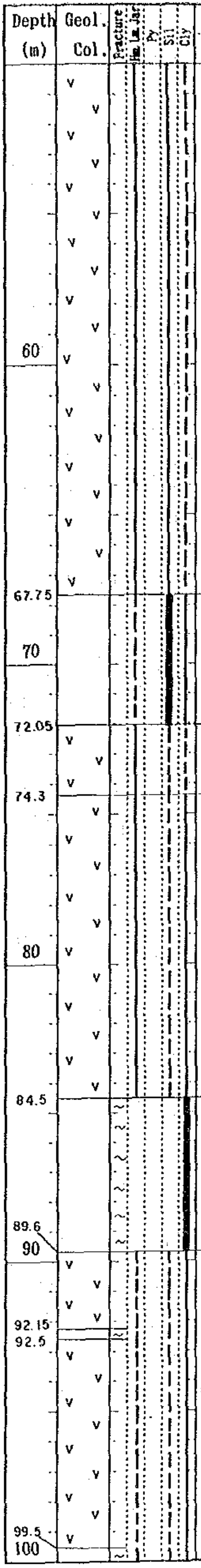
PTS:	polished thin section
FI:	fluid inclusion
XRD:	X-ray diffraction

* for more minerals, see also abbrevations in the table of X-ray diffraction tests

Veraguas, Chile **Drill# MJCV-1** (Scale 1/200) (1/9) (Depth: 0 m - 50 m)

Depth (m)	Geologic Discription			T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
	Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	Num
				8	-10	18	-0.04	-0.4	4.50	1311
	hm > lm	sil	partly bleached purplish gray	8	-10	20	-0.04	-0.4	9.00	1312
	dis	wk (-m)		8	-10	18	-0.04	-0.4	8.75	1313
			m.g. meta-andesite	9	-10	18	-0.04	-0.4	10.00	1314
				9	-10	22	-0.04	-0.4	6.75	1315
			frct zone	8	-10	16	-0.04	-0.4	4.43	1316
				6	-10	14	-0.04	-0.4	7.95	1317
				6	-10	18	-0.04	-0.4	9.55	1318
				7	-10	20	-0.04	-0.4	12.50	1319
10				9	-10	21	-0.04	-0.4	7.48	1320
10.25	hm > lm	sil wk	Ditto, m.g. andesite	7	-10	22	-0.04	-0.4	7.13	1321
	dis		compact rock	6	-10	18	-0.04	-0.4	5.63	1322
11.80				7	-10	20	-0.04	-0.4	8.13	1323
	hm > lm	sil	Ditto	7	-10	22	-0.04	-0.4	7.95	1324
	dis	wk (-m)	frct zone	7	-10	20	-0.04	-0.4	3.68	1325
				7	-10	18	-0.04	-0.4	5.33	1326
				6	-10	14	-0.04	-0.4	3.55	1327
16.8	Ditto	sil wk	Ditto	7	-10	16	-0.04	-0.4	3.55	1328
18.0				7	-10	18	-0.04	-0.4	8.38	1329
20				5	-10	17	-0.04	-0.4	3.46	1330
	hm > lm	sil wk	purplish gray - grayish white	4	-10	12	-0.04	-0.4	3.33	1331
	dis		partly bleached	3	-10	12	-0.04	-0.4	7.23	1332
		kal wk		4	-10	10	-0.04	-0.4	9.25	1333
			m.g. meta-andesite	4	-10	14	-0.04	-0.4	6.75	1334
			partly autobrecciated texture	4	-10	10	-0.04	-0.4	4.75	1335
			frct zone	5	-10	16	-0.04	-0.4	7.25	1336
26.05				3	-10	10	-0.04	-0.4	4.88	1337
26.80	hm	sil m-st	purplish grayish white - cream white	2	-10	10	-0.04	-0.4	1.95	1338
	dis wk			2	-10	10	-0.04	-0.4	1.23	1339
30	flm vwk	kal m	silicified m.g. meta-andesite	3	-10	10	-0.04	-0.4	1.25	1340
			plg pheno. -> kaolinized	5	-10	12	-0.04	-0.4	1.45	1341
		ser wk		4	-10	19	-0.04	-0.4	3.90	1342
			frct zone	3	-10	10	-0.04	-0.4	1.05	1343
				4	-10	12	-0.04	-0.4	1.58	1344
				5	-10	19	-0.04	-0.4	1.30	1345
35.0			Ditto, compact rock, partly semi-frct	5	-10	17	-0.04	-0.4	1.05	1346
				5	-10	17	-0.04	-0.4	1.38	1347
36.8			Ditto, frct zone	7	-10	19	-0.04	-0.4	1.80	1348
38.0			Ditto, compact rock, FI:XRD: 38.25	5	-10	12	-0.04	-0.4	3.30	1349
38.7 40			Ditto, frct zone qtz,n.alu,kal	4	-10	11	-0.04	-0.4	1.70	1350
			pyrf,mus	4	-10	9	-0.04	-0.4	1.03	1351
				4	-10	14	-0.04	-0.4	1.90	1352
42.0	hm dis	sil m-st	dark gray, partly grayish white	5	-10	10	-0.04	-0.4	4.00	1353
	wk-m	kal m		6	-10	17	-0.04	-0.4	4.05	1354
			silicified m.g. andesite	6	-10	16	-0.04	-0.4	2.98	1355
				5	-10	17	-0.04	-0.4	3.90	1356
			frct- semi.frct zone	5	-10	9	-0.04	-0.4	3.68	1357
				3	-10	10	-0.04	-0.4	3.45	1358
				3	-10	9	-0.04	-0.4	6.23	1359
50				6	-10	17	-0.04	-0.4	4.15	1360

Veraguas, Chile　Drill# MJCV-1　(Scale 1/200) (2/9)　(Depth: 50 m - 100 m)



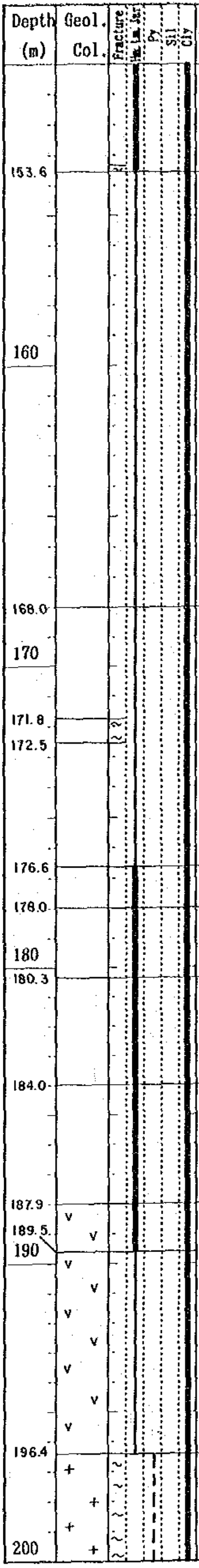
Depth (m)	Min.	Alt.	Lithology
50 - 67.75	hm > lm dis m	sil m kal wk	purplish dark gray hm dis m.g. meta-andesite semi-frct
67.75 - 72.05	hm flm wk	sil st kal m	purplish white - grayish white sil-kal meta-andesite semi-fract. (gradual boundary)
72.05 - 74.3	hm > lm dis m	sil wk kal wk	purplish gray, m.g. autobrecciated meta-andesite
74.3 - 84.5	hm > lm dis m	sil wk kal m	purplish gray hm-kal partly wk sil. m.g. meta-andesite semi-frct
84.5 - 89.6		kal vst alu wk	grayish white, kal clay powdering very frct XRD:88.0 qtz,pyrf,kal,alu
89.6 - 100	hm flm	sil wk kal m gyp netwk	purplish white - gray kal m.g. meta-andesite partly silicified compact rock partly autobrecciated texture

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
5	-10	12	-0.04	-0.4	7.10	1361
4	-10	9	-0.04	-0.4	3.33	1362
7	-10	12	-0.04	-0.4	5.43	1363
5	-10	10	-0.04	-0.4	5.58	1364
8	-10	10	-0.04	-0.4	6.50	1365
9	-10	16	-0.04	-0.4	4.50	1366
4	-10	7	-0.04	-0.4	4.85	1367
6	-10	7	-0.04	-0.4	5.43	1368
10	-10	7	-0.04	-0.4	5.68	1369
5	-10	7	-0.04	-0.4	3.53	1370
5	-10	12	-0.04	-0.4	6.90	1371
7	-10	18	-0.04	-0.4	6.58	1372
7	-10	18	-0.04	-0.4	7.33	1373
8	-10	20	-0.04	-0.4	4.30	1374
9	-10	21	-0.04	-0.4	4.08	1375
6	-10	12	-0.04	-0.4	5.38	1376
6	-10	10	-0.04	-0.4	5.28	1377
5	-10	10	-0.04	-0.4	2.78	1378
4	-10	12	-0.04	-0.4	1.38	1379
6	-10	13	-0.04	-0.4	1.68	1380
4	-10	13	-0.04	-0.4	0.88	1381
5	-10	13	-0.04	-0.4	0.80	1382
5	-10	10	-0.04	-0.4	5.15	1383
5	-10	13	-0.04	-0.4	7.25	1384
5	-10	13	-0.04	-0.4	6.43	1385
5	-10	13	-0.04	-0.4	6.43	1386
6	-10	15	-0.04	-0.4	7.23	1387
6	-10	13	-0.04	-0.4	6.60	1388
6	-10	19	-0.04	-0.4	5.68	1389
10	-10	21	-0.04	-0.4	6.50	1390
9	-10	15	-0.04	-0.4	6.78	1391
5	-10	9	-0.04	-0.4	8.75	1392
5	-10	9	-0.04	-0.4	7.80	1393
5	-10	-5	-0.04	-0.4	6.95	1394
5	-10	-5	-0.04	-0.4	6.98	1395
7	-10	12	-0.04	-0.4	7.55	1396
5	-10	5	-0.04	-0.4	6.98	1397
8	-10	7	-0.04	-0.4	6.45	1398
7	-10	17	-0.04	-0.4	5.78	1399
8	-10	17	-0.04	-0.4	4.60	1400
7	-10	10	-0.04	-0.4	4.98	1401
7	-10	10	-0.04	-0.4	4.50	1402
5	-10	5	-0.04	-0.4	3.68	1403
5	-10	9	-0.04	-0.4	4.38	1404
5	-10	-5	-0.04	-0.4	5.00	1405
5	-10	9	-0.04	-0.4	4.18	1406
5	-10	5	-0.04	-0.4	4.93	1407
6	-10	5	-0.04	-0.4	5.20	1408
5	-10	5	-0.04	-0.4	4.43	1409
8	-10	10	-0.04	-0.4	3.83	1410

Veraguas, Chile **Drill# MJCV-1** (Scale 1/200) (3/9) (Depth: 100 m - 150 m)

Depth	Geologic Discription			T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
(m)	Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	Num
	hm	sil wk	purplish gray	5	-10	5	-0.04	-0.4	1.55	1411
	flm-imp	kal wk-m	compact m.g. meta-andesite	5	-10	7	-0.04	-0.4	4.00	1412
	m	gyp netwk	partly autobrecciated texture	5	-10	-5	-0.04	-0.4	5.30	1413
				5	-10	-5	-0.04	-0.4	5.60	1414
				5	-10	-5	-0.04	-0.4	5.90	1415
			PTS: 106.00	4	-10	-5	-0.04	-0.4	5.00	1416
			Py,Cp,Lm	5	-10	-5	-0.04	-0.4	5.28	1417
				5	-10	-5	-0.04	-0.4	4.50	1418
				5	-10	-5	-0.04	-0.4	6.50	1419
110				5	-10	-5	-0.04	-0.4	6.23	1420
				7	-10	-5	-0.04	-0.4	4.93	1421
				6	-10	-5	-0.04	-0.4	4.23	1422
112.35		sil m-st	(gradual boundary)	6	-10	5	-0.04	-0.4	1.00	1423
	hm vwk	kal wk-m	weak purplish cream white	7	-10	7	-0.04	-0.4	1.05	1424
		alu wk	sil compact rock, gyp network	5	-10	9	-0.04	-0.4	1.05	1425
115.5		gyp netwk		5	-10	-5	-0.04	-0.4	1.18	1426
			purplish gray, hm-sil compact rock	6	-10	-5	-0.04	-0.4	3.20	1427
117.1		Ditto	cream white, sil compact rock	6	-10	-5	-0.04	-0.4	1.00	1428
118.0			(gradual boundary)	12	-10	-5	-0.04	-0.4	3.58	1429
120	hm imp	kal m-st	purplish gray	6	-10	6	-0.04	-0.4	5.00	1430
	m	sil wk	kal-hm compact m.g. meta-andesite	6	-10	0	-0.04	-0.4	5.05	1431
		alu wk		6	-10	-5	-0.04	-0.4	4.33	1432
		gyp netwk		6	-10	-5	-0.04	-0.4	5.38	1433
		- flm		8	-10	-5	-0.04	-0.4	4.45	1434
123.75	hm imp	kal vst	purplish grayish white	8	-10	-5	-0.04	-0.4	3.75	1435
	m-st		kal-hm clay frct zone	8	-10	-5	-0.04	-0.4	4.80	1436
				7	-10	-5	-0.04	-0.4	6.25	1437
126.6	hm imp	kal vst	purplish grayish white	9	-10	-5	-0.04	-0.4	5.95	1438
	m-st		kal-hm clay	11	-10	5	-0.04	-0.4	4.03	1439
130			semi-frct zone	8	-10	-5	-0.04	-0.4	5.72	1440
			XRD: 131.00	7	-10	10	-0.04	-0.4	1.38	1441
			qtz,hm,mus	8	-10	5	-0.04	-0.4	4.13	1442
			kal,pyrf	10	-10	7	-0.04	-0.4	4.75	1443
				9	-10	6	-0.04	-0.4	4.20	1444
134.0	hm imp	kal vst	purplish grayish white	12	-10	6	-0.04	-0.4	4.00	1445
	m-st		kal-hm clay frct zone	12	-10	6	-0.04	-0.4	3.18	1446
			powder frct	12	-10	9	-0.04	-0.4	3.25	1447
				14	10	6	-0.04	-0.4	1.25	1448
138.0	hm-		brownish gray - white, partly purplish	25	12	6	-0.04	-0.4	1.70	1449
140	jar-najar		hm-jar-na.jar contaminated	39	-10	7	-0.04	-0.4	3.00	1450
	ctm		kal clay powder frct	27	-10	-5	-0.04	-0.4	2.75	1451
	m-st			24	12	-5	-0.04	-0.4	1.30	1452
				42	-10	7	-0.04	-0.4	4.98	1453
				33	17	-5	-0.04	-0.4	5.90	1454
				38	15	6	-0.04	-0.4	1.80	1455
				142	20	8	-0.04	-0.4	9.65	1456
				58	15	6	-0.04	-0.4	2.75	1457
	hm-jar	kal vst	hm-jar contaminated rich kal clay	61	10	8	-0.04	-0.4	4.40	1458
			frct zone XRD: 148.00	82	18	10	-0.04	-0.4	5.10	1459
148.85 150			next page qtz,kal,mus	67	10	6	-0.04	-0.4	5.50	1460

Veraguas, Chile　　**Drill# MJCV-1**　　(Scale 1/200) (4/9)　　(Depth: 150 m - 200 m)



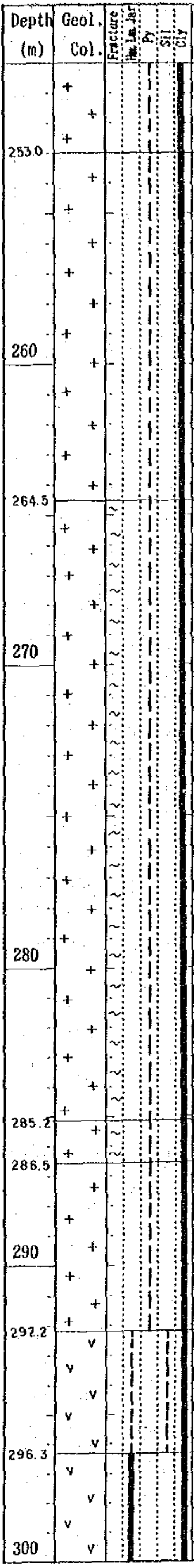
Geologic Discription		
Min.	Alt.	Lithology
hm > jar-najar ctm st	kal vst	reddish brown hm jar kal cly
		(gradual boundary)
lm- jar-najar netwk ctm	kal vst	brownish jar na.jar contami. kal clay compact XRD: 168.10 qtz,ab,kal
hm- jar-najar	kal vst	reddish brown hm jar na.jar kal clay
hm>jar st	kal vst	purplish red, hm contami. kal clay
jar-najar >hm st	kal vst	brownish, jar na.jar hm kal clay
jar-najar >> hm ctm st	kal vst	brownish, jar na.jar hm kal clay
hm > jar-najar ctm st	kal st	gyp flm (185.16-187.80)
jar-najar >hm ctm hm ctm m jar-najar wk	kal st	partly reddish brown grayish colour, kaolinized autobrecciated m.g. andesite
py dis wk	kal st	gray, kaolinized autobrecciated m.g. porphyry semi-frct

T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
ppm	ppm	ppm	ppm	ppm	%	Num
93	19	8	-0.04	-0.4	5.20	1461
112	11	4	-0.04	-0.4	5.45	1462
115	14	6	-0.04	-0.4	6.65	1463
104	16	4	-0.04	-0.4	3.65	1464
131	21	4	-0.04	-0.4	4.45	1465
113	22	4	-0.04	-0.4	6.05	1466
156	16	6	-0.04	-0.4	6.40	1467
147	26	4	-0.04	-0.4	5.70	1468
102	24	-5	-0.04	-0.4	5.85	1469
103	23	-5	-0.04	-0.4	5.65	1470
119	28	-5	-0.04	-0.4	5.50	1471
141	26	-5	-0.04	-0.4	5.70	1472
127	26	-5	-0.04	0.6	5.70	1473
201	35	8	-0.04	-0.4	4.40	1474
161	28	-5	-0.04	-0.4	4.65	1475
143	27	-5	-0.04	-0.4	5.35	1476
180	18	6	-0.04	-0.4	5.95	1477
193	26	6	-0.04	-0.4	5.35	1478
242	20	12	-0.04	-0.4	5.95	1479
177	18	10	-0.04	-0.4	5.05	1480
180	20	12	-0.04	-0.4	5.90	1481
228	20	14	-0.04	-0.4	6.55	1482
190	23	18	-0.04	-0.4	5.50	1483
179	18	6	-0.04	-0.4	5.85	1484
195	34	23	-0.04	-0.4	6.10	1485
166	22	14	-0.04	-0.4	5.20	1486
125	22	8	-0.04	-0.4	5.15	1487
136	21	6	-0.04	-0.4	6.50	1488
111	21	8	-0.04	-0.4	4.70	1489
101	21	6	-0.04	-0.4	4.95	1490
89	27	-5	-0.04	-0.4	5.30	1491
103	33	6	-0.04	-0.4	4.60	1492
87	18	8	-0.04	-0.4	5.35	1493
69	40	-5	-0.04	-0.4	4.35	1494
60	15	5	-0.04	-0.4	4.75	1495
73	17	10	-0.04	0.5	5.15	1496
83	15	-5	-0.04	-0.4	9.25	1497
110	12	-5	-0.04	-0.4	10.00	1498
91	17	-5	-0.04	-0.4	2.40	1499
120	-10	8	-0.04	-0.4	2.55	1500
98	28	10	-0.04	0.7	4.40	1501
82	-10	12	-0.04	-0.4	4.30	1502
57	15	10	-0.04	0.9	4.55	1503
126	74	6	-0.04	-0.4	4.70	1504
820	520	8	-0.04	0.7	4.38	1505
48	37	11	-0.04	1.3	3.70	1506
47	-10	13	-0.04	0.7	5.30	1507
230	43	16	-0.04	0.8	4.05	1508
136	33	13	-0.04	0.5	5.10	1509
87	48	13	-0.04	0.6	2.75	1510

Veraguas, Chile **Drill# MJCV-1** (Scale 1/200) (5/9) (Depth: 200 m - 250 m)

Depth (m)	Geol. Col.	Fracture	Hm Jar	Py	Sil	Cly	Geologic Discription: Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	+						py dis	kal st	gray, partly grayish white, kaolinazed	66	21	11	-0.04	0.8	4.30	1511
	+						wk		py dis m.g. meta-porphyry	172	44	13	-0.04	0.7	2.65	1512
	+								autobrecciated texture partly relic	193	42	11	-0.04	0.7	3.70	1513
	+								frct zone	187	42	11	-0.04	0.7	3.35	1514
	+									248	60	18	-0.04	1.4	4.30	1515
	+									106	29	18	-0.04	0.8	4.15	1516
	+									169	41	18	-0.04	-0.4	4.65	1517
	+									210	76	13	-0.04	1.1	4.10	1518
	+									910	590	9	-0.04	0.6	4.00	1519
210	+								XRD: 208.40	386	191	13	-0.04	0.4	4.45	1520
	+								qtz,ab,pyrf,kal	11	-10	11	-0.04	0.5	1.10	1521
	+									8	-10	18	-0.04	-0.4	3.65	1522
211.65	v									16	-10	13	-0.04	0.4	3.30	1523
	v						hm	kal st	purplish gray, partly grayish white	25	-10	16	-0.04	0.4	4.40	1524
	v						ctm		hm contaminated kaolinized	30	-10	18	-0.04	-0.4	3.25	1525
	v								m.g. meta-andesite	12	-10	22	-0.04	-0.4	5.45	1526
	v								autobrecciated texture partly relic	13	-10	22	-0.04	-0.4	6.65	1527
	v									19	12	24	-0.04	0.9	5.05	1528
	v									20	12	27	-0.04	-0.4	3.95	1529
220	v									14	-10	27	-0.04	-0.4	5.20	1530
								kal vst	boundary kal vst, frct boundary	89	51	11	-0.04	-0.4	3.60	1531
220.8	+									55	37	11	-0.04	0.9	4.10	1532
	+						py dis	kal m	grayish white m.g. meta-porphyry	35	24	18	-0.04	0.8	4.00	1533
	+						vwk-wk	chl wk-m	(like porphyry)	27	-10	16	-0.04	0.8	4.35	1534
	+								plg. pheno. -> kal	23	18	8	-0.04	0.8	4.60	1535
	+								magic min. -> chl	19	15	8	-0.04	0.7	4.00	1536
	+								py with chl	67	30	18	-0.04	0.7	4.80	1537
	+									30	-10	10	-0.04	2.0	2.70	1538
	+									11	-10	8	-0.04	0.5	1.20	1539
230	+									27	20	-5	-0.04	0.9	4.00	1540
	+									45	23	6	-0.04	0.4	4.50	1541
	+								PTS: 232.90	42	28	8	-0.04	-0.4	4.00	1542
	+								Py,Cp	62	18	-5	-0.04	0.5	4.40	1543
233.1	+									55	24	6	-0.04	0.4	4.25	1544
	+						py dis	kal m-st	Ditto	58	42	5	-0.04	-0.4	4.65	1545
	+						vwk	chl wk	kal st	39	14	13	-0.04	-0.4	4.35	1546
	+								frct zone	63	-10	9	-0.04	-0.4	4.20	1547
	+									95	44	11	-0.04	0.6	4.55	1548
	+									59	28	13	-0.04	0.5	4.45	1549
239.1 240										45	24	11	-0.04	-0.4	4.40	1550
	+						py dis	kal m	gray m.g. meta porphyry	53	29	13	-0.04	0.8	4.65	1551
	+						wk		plg. pheno. -> kal	48	25	9	-0.04	-0.4	4.30	1552
	+								mafic min. -> chl	60	25	9	-0.04	0.6	4.30	1553
	+								py with chl	93	28	11	-0.04	-0.4	4.00	1554
	+								xenolith or besic inclusions	90	25	14	-0.04	-0.4	4.40	1555
	+									175	18	10	-0.04	-0.4	3.90	1556
	+									137	14	12	-0.04	1.2	3.75	1557
	+									65	-10	18	-0.04	0.7	3.55	1558
	+									91	11	10	-0.04	0.5	4.00	1559
250	+									96	20	18	-0.04	0.7	3.95	1560

Veraguas, Chile　**Drill# MJCV-1**　(Scale 1/200) (6/9)　(Depth: 250 m - 300 m)



Geologic Discription		
Min.	Alt.	Lithology
		Ditto (gradual boundary)
py dis wk	kal m-st chl m	gray - white gray m.g. diorite porphyry partly autobrecciated texture relic basic inclusion semi-frct PTS: XRD: 262.70 py,cp,cv,cc qtz,ab,py,mus kal,or,diasp
py dis wk	kal m-st chl wk	Ditto frct zone
	kal vst	frct vst
py dis wk	kal st chl wk	gray - white gray m.g. diorite porphyry (gradual boundary)
hm flm wk jar wk	kal m-st sil wk-m chl vwk	purplish cream white - brownish gray sil-kal compact rock meta-andesite
hm netwk jar ctm st	kal st	brownish - purplish brown hm jar na.jar rich, kal compact clay

T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
ppm	ppm	ppm	ppm	ppm	%	Num
238	17	8	-0.04	0.6	4.30	1561
139	24	10	-0.04	0.8	4.00	1562
121	22	10	-0.04	-0.4	4.50	1563
116	16	14	-0.04	0.6	4.45	1564
91	17	13	-0.04	0.7	4.50	1565
62	-10	16	-0.04	0.8	4.20	1566
99	17	13	-0.04	0.8	4.30	1567
83	19	12	-0.04	1.2	4.15	1568
81	15	10	-0.04	-0.4	4.05	1569
101	14	6	-0.04	0.7	4.25	1570
109	26	6	-0.04	-0.4	3.45	1571
161	14	10	-0.04	-0.4	3.45	1572
187	-10	6	-0.04	-0.4	3.00	1573
196	27	12	-0.04	-0.4	3.20	1574
129	24	10	-0.04	0.5	3.85	1575
286	21	12	-0.04	-0.4	4.45	1576
104	14	16	-0.04	-0.4	4.35	1577
105	20	6	-0.04	-0.4	5.35	1578
68	11	-5	-0.04	-0.4	5.20	1579
137	48	10	-0.04	-0.4	4.05	1580
81	36	-5	-0.04	0.6	6.25	1581
181	31	-5	-0.04	1.5	5.80	1582
70	15	-5	-0.04	-0.4	4.30	1583
61	31	6	-0.04	-0.4	4.45	1584
64	32	11	-0.04	-0.4	4.70	1585
79	28	6	-0.04	-0.4	4.25	1586
110	21	6	-0.04	0.6	5.45	1587
304	52	-5	-0.04	0.8	5.50	1588
190	24	16	-0.04	1.1	6.25	1589
174	24	14	-0.04	1.1	7.20	1590
137	38	10	-0.04	1.0	6.90	1591
112	21	6	-0.04	0.8	6.35	1592
59	13	8	-0.04	-0.4	5.20	1593
58	-10	8	-0.04	-0.4	5.05	1594
52	16	5	-0.04	-0.4	4.65	1595
95	31	8	-0.04	0.5	5.10	1596
72	26	6	-0.04	0.5	4.15	1597
23	15	6	-0.04	0.4	4.10	1598
26	18	6	-0.04	0.6	4.70	1599
91	34	8	-0.04	0.6	4.55	1600
59	22	9	-0.04	0.7	4.60	1601
540	400	6	-0.04	0.5	3.35	1602
138	96	6	-0.04	0.4	2.30	1603
15	-10	9	-0.04	-0.4	5.15	1604
11	-10	13	-0.04	0.6	4.85	1605
14	-10	9	-0.04	0.7	2.40	1606
18	-10	14	-0.04	-0.4	5.50	1607
30	11	11	-0.04	-0.4	4.00	1608
27	-10	14	-0.04	-0.4	5.60	1609
32	10	14	-0.04	0.4	7.35	1610

Veraguas, Chile　**Drill# MJCV-1**　(Scale 1/200) (7/9)　(Depth: 300 m - 350 m)

Depth (m)	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	hm flm-	kal vst	purplish brownish gray - white gray	36	16	11	-0.04	-0.4	8.30	1611
	netwk		hm jar na.jar kal compact clay	23	-10	7	-0.04	-0.4	5.05	1612
	jar-najar		autobrecciated m.g. meta-andesite	12	-10	11	-0.04	-0.4	4.05	1613
	ctm		origin	17	-10	9	-0.04	-0.4	4.60	1614
	jar-najar			20	-10	8	-0.04	-0.4	4.05	1615
305.2	vst		Ditto	16	10	11	-0.04	-0.4	1.00	1616
			frct zone	19	10	16	-0.04	-0.4	1.45	1617
	hm netwk	kal vst		20	16	14	-0.04	-0.4	1.20	1618
308.0				21	13	18	-0.04	-0.4	3.25	1619
310	hm ptc-	kal m	purplish gray - partly brownish gray	22	15	16	-0.04	-0.4	2.30	1620
	dis	alu flm	autobrecciated m.g. meta-andesite	22	-10	11	-0.04	-0.4	2.55	1621
	jar ctm	wk		46	15	21	-0.04	-0.4	6.15	1622
		chl wk		47	20	7	-0.04	-0.4	5.50	1623
				42	18	18	-0.04	-0.4	4.65	1624
				79	59	10	-0.04	-0.4	6.20	1625
				54	26	7	-0.04	-0.4	8.15	1626
				72	33	7	-0.04	-0.4	6.65	1627
				83	39	9	-0.04	-0.4	5.45	1628
318.0				91	20	9	-0.04	-0.4	4.25	1629
320	jar-najar	kal st	jar na.jar hm kal clay	60	32	11	-0.04	-0.4	4.60	1630
	ctm vst	alu m	frct zone	51	23	-5	-0.04	-0.4	6.25	1631
	> hm dis			58	27	7	-0.04	-0.4	5.30	1632
				58	23	16	-0.04	-0.4	4.50	1633
				40	14	18	-0.04	-0.4	4.10	1634
324.0	hm > jar	kal st	hm jar na.jar kal clay	42	13	15	-0.04	-0.4	5.80	1635
	ctm-	alu m	frct zone	36	18	11	-0.04	-0.4	5.35	1636
	netwk			42	23	7	-0.04	-0.4	5.35	1637
	st			90	35	11	-0.04	-0.4	5.40	1638
				53	27	7	-0.04	-0.4	7.10	1639
330				36	15	11	-0.04	-0.4	2.95	1640
				47	12	21	-0.04	-0.4	4.25	1641
				32	17	9	-0.04	-0.4	4.20	1642
				41	26	7	-0.04	0.8	6.55	1643
333.0	hm dis-	kal m-wk	purplish gray	40	18	5	-0.04	0.6	6.30	1644
	flm		autobrecciated m.g. andesite	34	10	5	-0.04	0.9	6.05	1645
	partly	alu wk-m	including clasts of porphyry	35	-10	9	-0.04	-0.4	2.65	1646
	netwk			41	29	7	-0.04	-0.4	10.15	1647
				39	-10	7	-0.04	-0.4	8.30	1648
338.1				37	12	15	-0.04	-0.4	3.64	1649
340				52	25	14	-0.04	-0.4	3.52	1650
				52	18	8	-0.04	-0.4	4.80	1651
				55	20	6	-0.04	-0.4	3.28	1652
				57	20	8	-0.04	-0.4	4.16	1653
				38	10	8	-0.04	-0.4	3.08	1654
				44	10	6	-0.04	-0.4	3.68	1655
				39	20	8	-0.04	-0.4	4.64	1656
				36	10	12	-0.04	-0.4	2.36	1657
				52	15	18	-0.04	-0.4	4.72	1658
				39	15	19	-0.04	-0.4	3.44	1659
350				40	20	16	-0.04	-0.4	3.80	1660

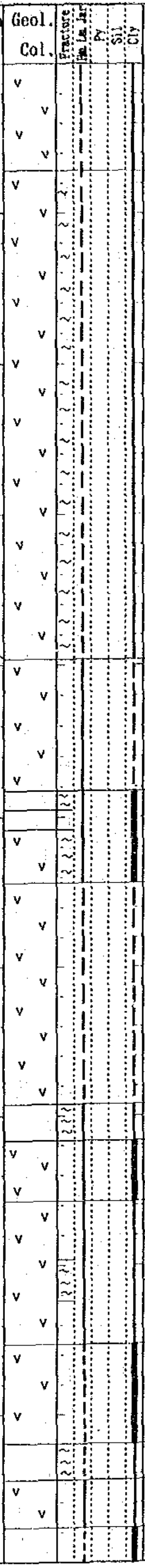
Veraguas, Chile **Drill# MJCV-1** (Scale 1/200) (8/9) (Depth: 350 m - 400 m)

Depth (m)	Geol. Col.	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	v			Ditto	63	30	22	-0.04	-0.4	8.56	1661
	v				106	65	22	-0.04	-0.4	3.20	1662
	v				608	350	22	-0.04	0.8	3.80	1663
353.5	v				732	400	22	-0.04	0.8	5.28	1664
	+	py dis-	kal m-wk	grayish white, f-m.g. porphyry	87	35	19	-0.04	-0.4	4.56	1665
	+	flm m	chl m-wk	autobreccia	102	40	17	-0.04	1.0	4.40	1666
	+		alu wk		92	30	15	-0.04	0.6	4.40	1667
	+				87	20	15	-0.04	0.8	4.24	1668
	+				178	25	9	-0.04	1.7	4.36	1669
360	+				64	20	9	-0.04	0.9	3.64	1670
360.2	+				87	20	9	-0.04	1.2	3.84	1671
	+				156	30	6	-0.04	0.6	4.36	1672
	+	py flm-	K add m	gray - cream gray	124	20	6	-0.04	0.8	4.44	1673
	+	pool			102	20	6	-0.04	0.6	4.48	1674
	+	dis	kal m-wk	autobrecciated	90	30	9	-0.04	-0.4	4.32	1675
	+		chl m-wk	f-m.g. porphyry	58	10	-5	-0.04	-0.4	4.04	1676
	+				58	15	-5	-0.04	-0.4	4.20	1677
	+			PTS: XRD: 368.00	77	15	-5	-0.04	-0.4	4.88	1678
	+			py,po,cp qtz,n,alu,py	73	18	-5	-0.04	-0.4	4.80	1679
370	+			cv,cc,sp mus,nac,dick	72	18	7	-0.04	-0.4	4.20	1680
	+			FI: 368.20	87	20	-5	-0.04	-0.4	4.96	1681
	+				93	15	-5	-0.04	-0.4	4.44	1682
372.0	+	py flm-	kal m	grayish white	80	20	7	-0.04	-0.4	4.16	1683
	+	dis	chl m	autobrecciated f-m.g. porphyry	75	12	7	-0.04	-0.4	3.92	1684
	+				66	15	-5	-0.04	-0.4	3.88	1685
	+				101	10	7	-0.04	-0.4	4.12	1686
	+				228	30	9	-0.04	-0.4	4.40	1687
	+				105	25	7	-0.04	-0.4	4.56	1688
	+				260	110	7	-0.04	-0.4	4.44	1689
380	+				148	70	-5	-0.04	1.2	1.86	1690
	v				38	15	9	-0.04	0.6	4.00	1691
	v	hm dis	kal m	purplish gray	59	20	9	-0.04	1.2	5.36	1692
	v	f-netwk	chl wk	autobrecciated f.g.	44	10	9	-0.04	2.6	6.56	1693
	v			hm disseminated kaolinized	90	40	9	-0.04	-0.4	4.08	1694
	v			porphyry andesite	53	15	9	-0.04	-0.4	4.36	1695
	v				28	-10	18	-0.04	-0.4	4.48	1696
	v			PTS: 389.50	31	-10	11	-0.04	-0.4	4.96	1697
	v			py,cp,cv,cc	300	145	9	-0.04	-0.4	5.84	1698
387.7	+	py dis	kal m	pale green,kal-chl,weakly potash added	172	90	7	-0.04	-0.4	4.48	1699
390	+	m-st	chl m-st	f-m.g. autobrecciated porphyry	132	30	-5	-0.04	1.1	4.24	1700
	+				107	40	-5	-0.04	-0.4	4.28	1701
390.5	+	py dis-	kal m	pale greenish gray kal-chl	98	40	-5	-0.04	-0.4	3.88	1702
	+	flm	chl m-st	f-m.g. autobrecciated porphyry	156	35	-5	-0.04	0.8	4.96	1703
	+				144	38	-5	-0.04	0.4	4.28	1704
	+				160	45	-5	-0.04	0.6	4.32	1705
	+			frct zone	92	25	-5	-0.04	0.4	4.68	1706
	+				64	15	-5	-0.04	0.4	4.80	1707
	+				92	20	-5	-0.04	2.4	4.72	1708
397.7	+	py dis-	chl st	semi-frct	148	30	-5	-0.04	0.4	4.80	1709
400	+	flm			80	20	-5	-0.04	-0.4	4.24	1710

Veraguas, Chile **Drill# MJCV-1** (Scale 1/200) (9/9) (Depth: 400 m - 402 m)

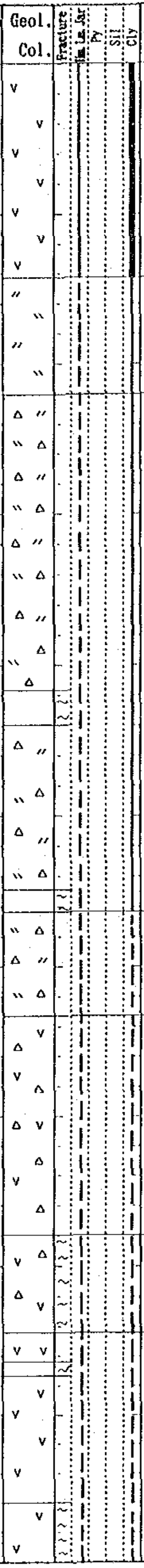
Depth	Geol.	Fracture	Hm.Lm.Jar	Py	Sil	Cly	Geologic Discription			T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
(m)	Col.						Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	Num
	+								Ditto XRD: 402.00	232	30	-5	-0.04	-0.4	3.84	1711
	+								qtz,olg,ab,chl	276	75	-5	-0.04	-0.4	3.92	1712
	402.00								(END)							
410																
420																
430																
440																
450																

Veraguas, Chile **Drill# MJCV-2** **(Scale 1/200)** (1/7) (Depth: 0 m - 50 m)



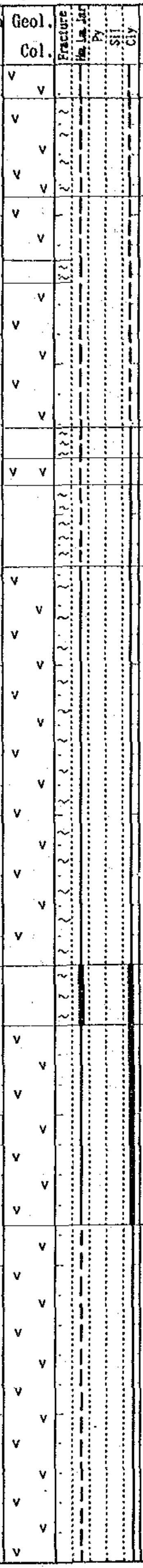
Depth (m)	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	lm-hm wk	kal m	purplish gray m.g. meta-andesite	20	-10	8	-0.04	-0.4	3.88	1713
			partly autobrecciated	16	-10	12	-0.04	-0.4	5.28	1714
			semi-frct	10	-10	-5	-0.04	-0.4	4.24	1715
				10	-10	-5	-0.04	-0.4	3.40	1716
3.5	lim-hm m	kal m	Ditto	12	-10	-5	-0.04	-0.4	2.92	1717
	flm-		frct	10	-10	-5	-0.04	-0.4	2.36	1718
	netwk		XRD: 7.00	20	-10	-5	-0.04	-0.4	7.36	1719
			kal,pyrf,hm	18	-10	8	-0.04	-0.4	9.12	1720
			n.jar,n.alu	26	-10	-5	-0.04	-0.4	1.76	1721
10				40	12	6	-0.04	-0.4	2.80	1722
				36	-10	6	-0.04	-0.4	3.62	1723
				26	-10	6	-0.04	-0.4	6.16	1724
				14	-10	6	-0.04	-0.4	7.84	1725
				16	-10	8	-0.04	-0.4	3.04	1726
				14	-10	6	-0.04	-0.4	3.68	1727
				16	-10	6	-0.04	-0.4	3.92	1728
				22	-10	8	-0.04	-0.4	4.60	1729
				42	21	8	-0.04	-0.4	4.36	1730
				20	-10	-5	-0.04	-0.4	3.68	1731
19.8				12	-10	6	-0.04	-0.4	4.72	1732
20	hm m	kal w	purplish gray - grayish white	16	-10	8	-0.04	-0.4	4.18	1733
			f.g. meta-andesite, autobrecciated	12	-10	6	-0.04	-0.4	4.24	1734
			semi-frct(21.00-21.60, 23.00-24.05)	12	-10	-5	-0.04	-0.4	3.36	1735
				34	12	8	-0.04	-0.4	5.76	1736
24.05		kal st	frct zone	22	-10	8	-0.04	-0.4	5.68	1737
24.7 25.3	hm m	kal st	compact(24.7-25.3)	40	-10	6	-0.04	-0.4	7.36	1738
	hm dis m	kal st	frct zone, f.g. meta-andesite, hm dis	42	12	-5	-0.04	-0.4	5.52	1739
27.1	hm m-st	kal wk-m		28	-10	-5	-0.04	-0.4	6.08	1740
				50	33	-5	-0.04	-0.4	5.76	1741
30	hm netwk	kal wk		36	12	-5	-0.04	-0.4	4.96	1742
	hm dis	kal wk-m	purplish gray partly bleached	42	12	6	-0.04	-0.4	5.26	1743
	wk-m		m.g. meta-andesite	28	-10	-5	-0.04	-0.4	3.64	1744
			frct(30.50-31.00) XRD: 33.80	32	-10	-5	-0.04	-0.4	3.20	1745
			(31.40-31.70) qtz,kal,pyrf	18	-10	8	-0.04	-0.4	2.08	1746
			alu,hm,alg	14	-10	6	-0.04	-0.4	5.36	1747
34.5	hm dis m	kal m	frct zone, autobrecciated meta-andesite	24	-10	-5	-0.04	-0.4	3.44	1748
35.7	hm dis m	kal m-st	partly bleached purplish gray	22	-10	6	-0.04	-0.4	6.24	1749
			autobrecciated m.g. meta-andesite	16	-10	-5	-0.04	-0.4	5.00	1750
38.7				22	-10	6	-0.04	-0.4	4.36	1751
40	hm dis m	kal m	purplish gray	22	-10	8	-0.04	-0.4	5.32	1752
			autobrecciated m.g. meta-andesite	32	-10	8	-0.04	-0.4	6.12	1753
41.2				58	18	6	-0.04	-0.4	6.56	1754
				34	-10	6	-0.04	-0.4	5.76	1755
42.6	hm-lm wk	kal st	partly brownish white gray	26	-10	6	-0.04	-0.4	3.80	1756
			autobrecciated m.g. meta-andesite	18	-10	6	-0.04	-0.4	4.52	1757
				20	-10	6	-0.04	-0.4	3.12	1758
46.0	hm wk	kal m	Ditto, frct zone	10	-10	8	-0.04	-0.4	2.48	1759
47.2				12	-10	-5	-0.04	-0.4	5.60	1760
	hm m	kal m	Ditto	14	-10	6	-0.04	-0.4	6.32	1761
48.8 50	hm wk	kal st	Ditto	20	-10	-5	-0.04	-0.4	4.96	1762

Veraguas, Chile **Drill# MJCV-2** (Scale 1/200) (2/7) (Depth: 50 m - 100 m)



Depth (m)	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	hm dis m	kal st	white gray, f-m.g. meta andesite	12	-10	-5	-0.04	-0.4	3.72	1763
			XRD: 50.00	8	-10	-5	-0.04	-0.4	2.12	1764
		ser m	qtz,kal,pyrf	6	-10	8	-0.04	-0.4	5.52	1765
			alu,py,hm,zny	4	-10	-5	-0.04	-0.4	4.28	1766
				4	-10	-5	-0.04	-0.4	6.40	1767
				6	-10	6	-0.04	-0.4	4.72	1768
				4	-10	-5	-0.04	-0.4	5.08	1769
57.1	hm dis		tuffaceous ss, f.g. sdy andesitic rock	4	-10	-5	-0.04	-0.4	6.48	1770
				6	-10	6	-0.04	-0.4	2.76	1771
60	hm flm	kal m	andesitic tuffaceous ss	4	-10	6	-0.04	-0.4	2.20	1772
			f.g. andesite combination	6	-10	6	-0.04	-0.4	5.24	1773
61.0	hm dis	kal m	XRD: 61.00	4	-10	6	-0.04	-0.4	1.48	1774
			gray - white gray qtz,pyrf,hm,py	4	-10	-5	-0.04	-0.4	3.16	1775
			andesitic kal,mus,alu,zny	4	-10	-5	-0.04	-0.4	5.60	1776
			pyroclstics	10	-10	-5	-0.04	-0.4	3.96	1777
			including porphyritic breccia	8	-10	6	-0.04	-0.4	5.04	1778
			matrix : kaolinized tuff	8	-10	-5	-0.04	-0.4	4.60	1779
				10	-10	-5	-0.04	-0.4	4.24	1780
				8	-10	6	-0.04	-0.4	5.36	1781
70				10	-10	-5	-0.04	-0.4	4.04	1782
				6	-10	-5	-0.04	-0.4	3.68	1783
70.9			frct zone(70.9-72.0)	6	-10	-5	-0.04	-0.4	4.16	1784
72.0	hm flm-	kal wk-m	purplish gray	6	-10	-5	-0.04	-0.4	4.48	1785
	dis		m.g. andesitic pyroclastics	10	-10	8	-0.04	-0.4	4.72	1786
	m		including kal-lm red coloured clasts	10	-10	6	-0.04	-0.4	6.00	1787
				12	-10	6	-0.04	-0.4	6.16	1788
				4	-10	6	-0.04	-0.4	4.12	1789
77.5	//	kal m-st	frct zone(77.5-78.2)	14	-10	-5	-0.04	-0.4	3.96	1790
78.2	hm dis st	kal wk	purplish gray - pale greenish gray	18	-10	-5	-0.04	-0.4	2.40	1791
80		ser wk	porphyritic anddsitic pyroclastics	20	-10	6	-0.04	-0.4	2.44	1792
				12	-10	-5	-0.04	-0.4	3.40	1793
			(gradual boundary)	10	-10	-5	-0.04	-0.4	5.48	1794
81.6	hm dis	kal wk	porphyritic andesite	12	-10	6	-0.04	-0.4	5.20	1795
			clasts few	18	-10	6	-0.04	-0.4	5.28	1796
			pyroclastics -> lava : gradual change	28	-10	6	-0.04	-0.4	5.12	1797
		ser wk		22	-10	8	-0.04	-0.4	5.52	1798
				22	-10	-5	-0.04	-0.4	5.44	1799
				30	-10	-5	-0.04	-0.4	5.36	1800
				26	-10	-5	-0.04	-0.4	5.36	1801
89.0		ser	Ditto, frct zone	42	-10	-5	-0.04	-0.4	5.92	1802
90		kal wk	plg -> kaolinized	16	-10	-5	-0.04	-0.4	4.92	1803
				28	-10	-5	-0.04	-0.4	5.44	1804
92.25	hm dis	kal wk	porphyritic andesite	28	-10	-5	-0.04	-0.4	5.68	1805
93.2			clast few	22	-10	-5	-0.04	-0.4	6.16	1806
93.6				20	-10	-5	-0.04	-0.4	5.44	1807
				22	-10	-5	-0.04	-0.4	5.76	1808
				18	-10	-5	-0.04	-0.4	5.12	1809
				38	-10	-5	-0.04	-0.4	5.76	1810
98.0			XRD: 98.35	26	-10	-5	-0.04	-0.4	5.84	1811
100			qtz,nac,hm,diasp	26	-10	-5	-0.04	-0.4	5.36	1812

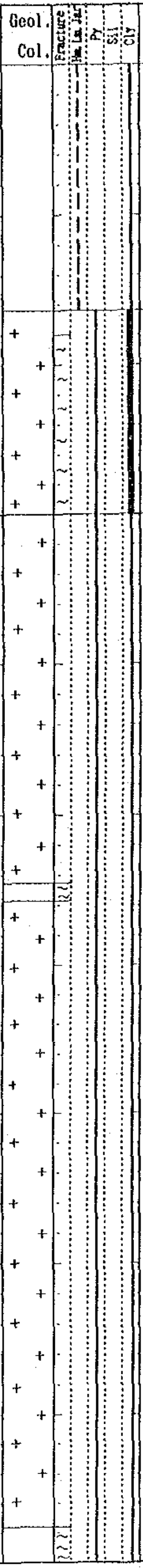
Veraguas, Chile   **Drill# MJCV-2**   (Scale 1/200) (3/7) (Depth: 100 m - 150 m)



Depth (m)	Min.	Alt.	Lithology
	hm wk-m	kal wk	porphyritic andesite
101.1	hm wk-m	kal wk	Ditto, frct zone
104.3	hm wk	kal wk	gray - partly purplish gray porphyritic andesite
106.5			
107.2			
110			
112.1	hm w	kal m	frct zone
113.1	hm w	kal m	
114.0	hm w	kal m	frct zone
116.8	hm ctm	kal m alu wk	purplish gray porphyritic andesite plg pheno -> kaolinized kal clay frct zone XRD: 125.00 qtz,hm,alu mus,kal,mic pyrf
120			
130	jar-lm >> hm	kal m-st	brownish white jar-kal clay
132.0	hm netwk dis	kal st	purplish white kal compact m.g. porphyritic andesite
138.7	hm dis dis	kal m alu wk	purplish gray - white autobrecciated m.g. meta-porphyritic andesite hm-kal wk-m plg pheno -> kaolinized
140			
150			

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
14	-10	-5	-0.04	-0.4	4.88	1813
20	-10	-5	-0.04	-0.4	4.96	1814
16	-10	-5	-0.04	-0.4	5.12	1815
20	-10	-5	-0.04	-0.4	5.60	1816
22	-10	-5	-0.04	-0.4	5.28	1817
20	-10	-5	-0.04	-0.4	5.60	1818
26	-10	-5	-0.04	-0.4	5.44	1819
26	-10	-5	-0.04	-0.4	5.68	1820
48	-10	-5	-0.04	-0.4	6.16	1821
30	-10	-5	-0.04	-0.4	6.16	1822
18	-10	-5	-0.04	-0.4	6.00	1823
20	-10	-5	-0.04	-0.4	5.04	1824
24	-10	-5	-0.04	-0.4	5.44	1825
54	-10	-5	-0.04	-0.4	5.76	1826
14	-10	-5	-0.04	-0.4	4.24	1827
18	-10	-5	-0.04	-0.4	3.32	1828
18	-10	6	-0.04	-0.4	4.44	1829
38	12	-5	-0.04	-0.4	4.48	1830
46	15	10	-0.04	-0.4	5.16	1831
60	18	-5	-0.04	-0.4	4.36	1832
58	15	6	-0.04	-0.4	4.40	1833
54	15	-5	-0.04	-0.4	4.52	1834
76	24	6	-0.04	-0.4	5.20	1835
66	18	6	-0.04	-0.4	5.08	1836
70	15	6	-0.04	-0.4	5.00	1837
69	12	6	-0.04	-0.4	4.76	1838
68	-10	6	-0.04	-0.4	4.68	1839
74	12	-5	-0.04	-0.4	4.70	1840
82	12	-5	-0.04	-0.4	4.56	1841
78	12	-5	-0.04	-0.4	4.68	1842
84	30	-5	-0.04	-0.4	5.00	1843
260	60	8	-0.04	-0.4	4.04	1844
176	58	8	-0.04	-0.4	2.20	1845
68	15	10	-0.04	-0.4	3.36	1846
61	25	7	-0.04	-0.4	5.33	1847
91	20	-5	-0.04	-0.4	5.36	1848
74	60	7	-0.04	-0.4	5.60	1849
124	25	7	-0.04	-0.4	4.72	1850
174	40	-5	-0.04	-0.4	5.28	1851
118	30	-5	-0.04	-0.4	6.48	1852
80	20	-5	-0.04	-0.4	6.96	1853
148	40	-5	-0.04	-0.4	4.88	1854
86	20	7	-0.04	-0.4	5.52	1855
36	15	7	-0.04	-0.4	2.24	1856
74	25	-5	-0.04	-0.4	6.92	1857
104	25	-5	-0.04	-0.4	3.84	1858
108	25	-5	-0.04	-0.4	5.68	1859
68	20	-5	-0.04	-0.4	7.60	1860
72	15	-5	-0.04	-0.4	7.60	1861
90	15	-5	-0.04	-0.4	6.80	1862

Veraguas, Chile **Drill# MJCV-2** **(Scale** 1/200) (4/7) (Depth: 150 m - 200 m)

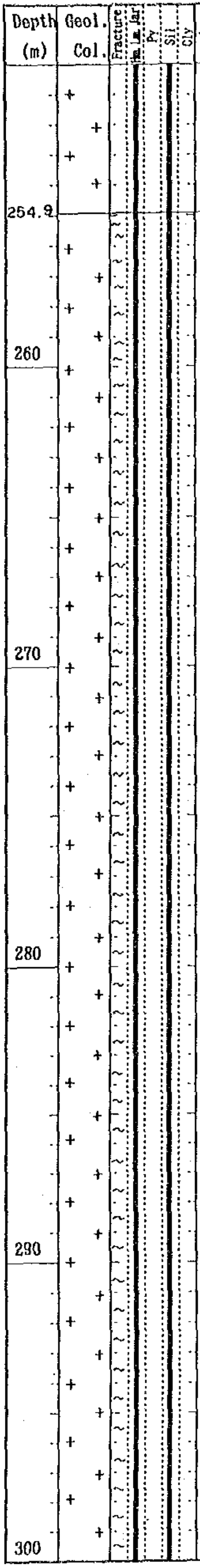


Depth (m)	Geologic Discription			T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp Num
	Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	
	hm dis	kal m	purplish gray - white	120	20	7	-0.04	-0.4	6.00	1863
			autobrecciated m.g.	162	25	-5	-0.04	-0.4	6.16	1864
			meta-porphyritic andesite	180	25	11	-0.04	-0.4	4.16	1865
			hm-kal wk-m	186	35	9	-0.04	-0.4	6.16	1866
		- 154.5-	plg pheno -> kaolinized	143	40	-5	-0.04	-0.4	5.44	1867
		kal m		136	25	-5	-0.04	0.8	4.72	1868
		gyp flm		170	30	-5	-0.04	0.8	4.04	1869
			covelinite dis(158.00)	164	30	-5	-0.04	1.5	6.56	1870
158.2	py-cv dis	chl m	pale gray diorite porphyry PTS:158.70	190	30	-5	-0.04	-0.4	4.08	1871
160			py,po,cv,sp	92	20	13	-0.04	0.8	5.36	1872
	py-cv	kal st	pale gray kaolinized	744	305	6	-0.04	1.0	7.04	1873
	dis	gyp flm	dioritic porphyry	188	40	6	-0.04	1.0	5.92	1874
			covelinite dis(158.0-165.0)	248	55	-5	-0.04	0.8	6.40	1875
			frct zone(159.0-165.0)	214	60	-5	-0.04	0.8	6.40	1876
				198	60	6	-0.04	0.6	6.00	1877
165.0				224	60	-5	-0.04	0.6	6.16	1878
	py dis	kal wk-m	pale gray m.g. autobrecciated	196	50	-5	-0.04	0.8	6.48	1879
	m		dioritic porphyry	404	75	-5	-0.04	0.6	5.12	1880
			clasts -> dark gray	160	45	-5	-0.04	0.6	5.36	1881
170			porphyritic texture	248	40	9	-0.04	1.0	5.92	1882
			plg pheno -> kaolinized	202	45	9	-0.04	0.6	5.20	1883
			PTS: 167.50	182	30	9	-0.04	0.6	5.12	1884
			py,cp,gn,sp	176	35	6	-0.04	0.4	5.20	1885
				188	35	-5	-0.04	0.4	4.80	1886
				232	43	6	-0.04	0.8	5.28	1887
				198	35	-5	-0.04	0.8	4.88	1888
				218	35	-5	-0.04	1.0	5.04	1889
177.3				374	50	-5	-0.04	1.6	4.20	1890
177.8				486	65	9	-0.04	2.6	4.40	1891
180				120	30	11	-0.04	1.2	4.32	1892
				46	10	11	-0.04	0.8	4.08	1893
				82	-10	15	-0.04	1.0	4.08	1894
				64	20	6	-0.04	0.8	4.08	1895
				76	15	9	-0.04	0.8	4.00	1896
			XRD: 185.00	50	15	9	-0.04	1.2	4.24	1897
			qtz,mus,hm	84	20	9	-0.04	1.8	4.24	1898
			py,alu,pyrf	92	25	15	-0.04	1.6	4.16	1899
			ab	86	20	11	-0.04	1.2	4.48	1900
				96	20	13	-0.04	1.2	4.16	1901
190				56	15	11	-0.04	0.6	4.24	1902
				48	10	11	-0.04	0.8	4.16	1903
				46	20	6	-0.04	1.2	4.64	1904
				58	15	9	-0.04	1.8	5.04	1905
				58	15	-5	-0.04	1.6	4.72	1906
				138	38	-5	-0.04	0.8	4.72	1907
				104	25	-5	-0.04	0.6	5.12	1908
				112	20	-5	-0.04	0.4	4.96	1909
				52	15	-5	-0.04	0.6	4.12	1910
				54	-10	-5	-0.04	0.6	5.04	1911
198.8 200			frct zone(198.80-200.00)	72	-10	-5	-0.04	0.4	5.12	1912

Veraguas, Chile　　Drill# MJCV-2　　(Scale 1/200)　(5/7)　(Depth: 200 m - 250 m)

Depth (m)	Geol. Col.	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
				PTS: 200.00 py	66	-10	-5	-0.04	0.6	5.04	1913
	+				204	15	-5	-0.04	0.8	5.04	1914
	+		kal wk-m	pale gray - grayish white	212	35	-5	-0.04	1.2	5.36	1915
	+			m.g. dioritic porphyry	166	65	-5	-0.04	1.0	5.28	1916
	+			autobrecciated texture	178	25	-5	-0.04	0.6	5.52	1917
	+	cc 206.75		clast -> dioritic porphyry	216	30	-5	-0.04	2.0	5.04	1918
	+			PTS: 206.75 py,gn,sp	148	20	13	-0.04	0.8	4.96	1919
	+			FI:PTS: 207.15 py,gn,sp	80	10	-5	-0.04	1.2	4.56	1920
	+				104	-10	-5	-0.04	5.7	4.48	1921
210	+	py dis m			116	-10	-5	-0.04	3.0	4.96	1922
	+				114	15	9	-0.04	0.6	5.04	1923
	+				60	-10	6	-0.04	0.8	4.88	1924
	+				64	-10	9	-0.04	1.7	4.72	1925
	+				64	-10	6	-0.04	1.6	4.64	1926
	+				77	15	-5	-0.04	-0.4	5.12	1927
	+				84	20	6	-0.04	-0.4	4.24	1928
	+				64	10	-5	-0.04	-0.4	4.00	1929
	+				80	15	6	-0.04	-0.4	4.64	1930
	+				50	-10	6	-0.04	-0.4	4.08	1931
220	+				92	20	6	-0.04	-0.4	4.56	1932
	+				86	15	6	-0.04	-0.4	4.32	1933
	+				102	15	6	-0.04	-0.4	4.52	1934
	+				100	15	6	-0.04	-0.4	4.32	1935
	+				78	10	9	-0.04	-0.4	4.80	1936
	+				106	13	12	-0.04	-0.4	5.04	1937
	+				158	20	24	-0.04	-0.4	4.48	1938
	+				108	30	-5	-0.04	-0.4	3.96	1939
	+				46	15	11	-0.04	-0.4	4.72	1940
	+				56	-10	17	-0.04	-0.4	4.40	1941
230	+				62	-10	11	-0.04	-0.4	4.48	1942
	+				72	-10	9	-0.04	-0.4	4.32	1943
	+			XRD: 233.00	84	10	9	-0.04	-0.4	4.64	1944
232.5	+			qtz,chl,mus	106	30	6	-0.04	-0.4	4.64	1945
233.45			kal st	kaoline clay　py,alg,mic	60	10	-5	-0.04	-0.4	4.80	1946
	+	py dis	kal m-st	white gray v.f.g. aplitic rock	105	15	6	-0.04	-0.4	5.02	1947
235.3	+				486	230	6	-0.04	-0.4	4.56	1948
	v	hm dis	kal m-st	white gray m.g.	70	15	9	-0.04	-0.4	1.96	1949
	v			autobrecciated andesite	1160	300	24	-0.04	0.8	4.80	1950
	v				634	180	11	-0.04	1.0	4.24	1951
240	v				256	30	9	-0.04	1.8	5.84	1952
240.1	v	hm netwk	kal st	purplish m.g. autobrecciated andesite	96	10	11	-0.04	1.0	4.00	1953
	v				352	20	13	-0.04	1.2	5.36	1954
242.1	v				94	15	6	-0.04	2.5	8.40	1955
242.8	v	jar-hm	kal vst	frct jar-hm-kal clay	112	10	17	-0.04	-0.4	8.00	1956
	v				410	40	13	-0.04	-0.4	5.84	1957
	v				750	45	11	-0.04	-0.4	4.56	1958
245.3	v	hm > jar		hm clasts	274	80	6	-0.04	-0.4	7.76	1959
	v	dis st			180	25	6	-0.04	-0.4	12.30	1960
	v				76	15	9	-0.04	0.6	13.80	1961
250	v				100	15	9	-0.04	8.8	16.10	1962

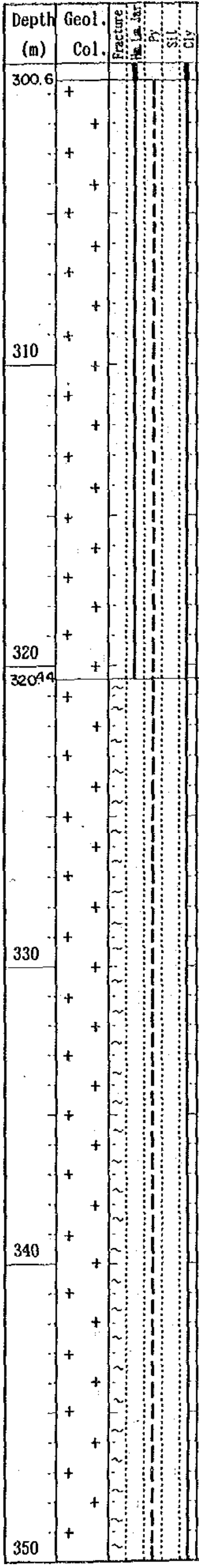
Veraguas, Chile　　Drill# MJCV-2　　(Scale 1/200)　(6/7)　(Depth:　250 m -　300 m)



Min.	Alt.	Lithology
hm > jar dis st	kal st	hm-jar-kal st m.g. autobrecciated meta-andesitic porphyry
hm - jar dis st	kal vst	hm - jar - kal clay fracture zone partly meta-andesite porphyry relic

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
54	15	11	-0.04	6.3	11.20	1963
148	20	13	-0.04	1.6	6.72	1964
54	15	9	-0.04	14.0	4.00	1965
50	10	11	-0.04	2.5	5.76	1966
250	35	22	-0.04	4.7	5.20	1967
132	32	34	-0.04	0.6	6.32	1968
41	-10	8	-0.04	0.4	5.04	1969
20	-10	10	-0.04	-0.4	5.60	1970
19	-10	6	-0.04	-0.4	5.44	1971
10	-10	-5	-0.04	-0.4	6.00	1972
20	-10	8	-0.04	-0.4	6.24	1973
22	-10	-5	-0.04	-0.4	5.12	1974
29	-10	12	-0.04	-0.4	4.56	1975
18	-10	6	-0.04	-0.4	5.36	1976
14	-10	-5	-0.04	-0.4	5.44	1977
28	-10	10	-0.04	0.8	6.00	1978
49	-10	28	-0.04	5.1	4.32	1979
15	-10	8	-0.04	0.8	3.36	1980
28	-10	12	-0.04	0.4	3.84	1981
24	-10	14	-0.04	0.8	4.64	1982
17	-10	18	-0.04	-0.4	3.32	1983
16	-10	12	-0.04	-0.4	4.88	1984
13	-10	12	-0.04	-0.4	3.52	1985
14	-10	10	-0.04	-0.4	3.12	1986
16	-10	12	-0.04	-0.4	4.56	1987
18	-10	16	-0.04	-0.4	3.52	1988
29	-10	16	-0.04	-0.4	3.12	1989
27	-10	18	-0.04	-0.4	4.32	1990
45	-10	22	-0.04	-0.4	7.52	1991
34	-10	28	-0.04	-0.4	6.96	1992
35	-10	20	-0.04	-0.4	9.76	1993
35	-10	30	-0.04	-0.4	5.68	1994
18	-10	22	-0.04	0.4	4.32	1995
10	-10	24	-0.04	0.4	1.06	1996
17	-10	28	-0.04	0.4	3.12	1997
28	-10	20	-0.04	0.4	4.80	1998
31	-10	16	-0.04	-0.4	6.68	1999
14	-10	10	-0.04	-0.4	5.04	2000
17	-10	10	-0.04	-0.4	9.28	2001
35	-10	12	-0.04	2.0	6.00	2002
16	-10	-5	-0.04	-0.4	5.28	2003
880	301	6	-0.04	0.4	2.40	2004
1320	450	8	-0.04	0.6	4.08	2005
400	194	10	-0.04	1.0	2.80	2006
178	69	10	-0.04	5.2	3.84	2007
240	100	6	-0.04	0.8	4.40	2008
502	256	-5	-0.04	0.6	5.20	2009
160	75	-5	-0.04	0.8	4.32	2010
118	-10	-5	-0.04	0.4	4.16	2011
96	-10	6	-0.04	0.6	3.68	2012

Veraguas, Chile Drill# MJCV-2 (Scale 1/200) (7/7) (Depth: 300 m - 350 m)

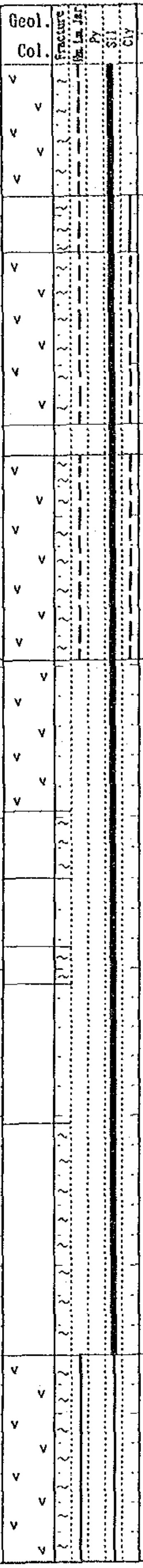


Min.	Alt.	Lithology
hm - jar dis wk-m Py dis wk	kal m	purplish gray f.g. autobrecciated andesitic porphyry
Py dis wk	kal m chl wk	pale greenish gray dioritic porphyry

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
460	169	6	-0.04	1.4	4.24	2013
4	-10	12	-0.04	0.6	4.08	2014
7	-10	10	-0.04	-0.4	6.80	2015
15	-10	8	-0.04	-0.4	4.88	2016
41	-10	8	-0.04	0.4	5.04	2017
20	-10	10	-0.04	-0.4	5.60	2018
19	-10	6	-0.04	-0.4	5.44	2019
10	-10	-5	-0.04	-0.4	6.00	2020
20	-10	8	-0.04	-0.4	6.24	2021
22	-10	-5	-0.04	-0.4	5.12	2022
29	-10	12	-0.04	-0.4	4.56	2023
18	-10	6	-0.04	-0.4	5.36	2024
14	-10	-5	-0.04	-0.4	5.44	2025
28	-10	10	-0.04	0.8	6.00	2026
49	-10	28	-0.04	5.1	4.32	2027
15	-10	8	-0.04	0.8	3.36	2028
28	-10	12	-0.04	0.4	3.84	2029
24	-10	14	-0.04	0.8	4.64	2030
17	-10	18	-0.04	-0.4	3.32	2031
16	-10	12	-0.04	-0.4	4.88	2032
13	-10	12	-0.04	-0.4	3.52	2033
14	-10	10	-0.04	-0.4	3.12	2034
16	-10	12	-0.04	-0.4	4.56	2035
18	-10	16	-0.04	-0.4	3.52	2036
29	-10	16	-0.04	-0.4	3.12	2037
27	-10	18	-0.04	-0.4	4.32	2038
45	-10	22	-0.04	-0.4	7.52	2039
34	-10	28	-0.04	-0.4	6.96	2040
35	-10	20	-0.04	-0.4	9.76	2041
35	-10	30	-0.04	-0.4	5.68	2042
18	-10	22	-0.04	0.4	4.32	2043
10	-10	24	-0.04	0.4	1.06	2044
17	-10	28	-0.04	0.4	3.12	2045
28	-10	20	-0.04	0.4	4.80	2046
31	-10	16	-0.04	-0.4	6.68	2047
14	-10	10	-0.04	-0.4	5.04	2048
17	-10	10	-0.04	-0.4	9.28	2049
35	-10	12	-0.04	2.0	6.00	2050
16	-10	-5	-0.04	-0.4	5.28	2051
41	-10	8	-0.04	0.4	5.04	2052
20	-10	10	-0.04	-0.4	5.60	2053
19	-10	6	-0.04	-0.4	5.44	2054
10	-10	-5	-0.04	-0.4	6.00	2055
20	-10	8	-0.04	-0.4	6.24	2056
22	-10	-5	-0.04	-0.4	5.12	2057
29	-10	12	-0.04	-0.4	4.56	2058
18	-10	6	-0.04	-0.4	5.36	2059
14	-10	-5	-0.04	-0.4	5.44	2060
28	-10	10	-0.04	0.8	6.00	2061
49	-10	28	-0.04	5.1	4.32	2062

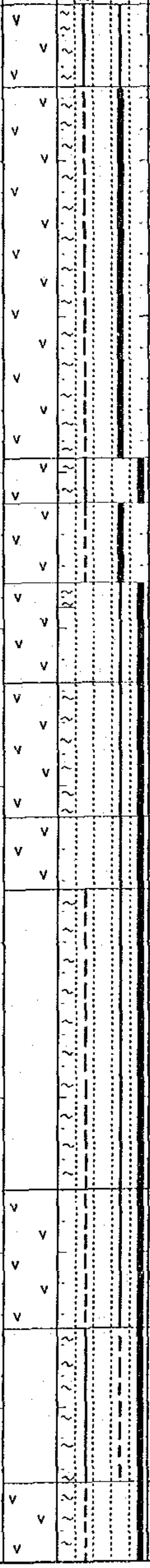
Veraguas, Chile   **Drill# MJCV-3**   (Scale 1/200) (1/9)   (Depth: 0 m - 50 m)

Depth (m)	Min.	Alt.	Lithology
	hm-lm dis-flm	sil st	weathering, purplish brown frct andesite
4.4 6.2 10	hm-lm dis- netwk	kal m	purpulish brown, partly white frct autobrecciated f-m.g. andesite
12.0	none	sil vst	white compact hard rock
13.0	hm-lm dis- netwk	sil st kal wk	
19.85 20 24.8 27.0 29.2 30 30.45 35.2 40	hm vwk	sil vst kal wk alu wk ser wk	white compact hard rock fine quartz film-network matrix silicification autobrecciated texture frct zone FI: 31.50 XRD: 32.20 qtz,alu naalu,dck (frct boundary)
43.0 50	lm>hm dis m	sil m	frct purplish brown autobrecciated andesite



T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
23	-10	10	-0.04	-0.4	6.24	510
20	-10	10	-0.04	-0.4	6.80	511
24	-10	14	-0.04	-0.4	10.40	512
22	-10	16	-0.04	-0.4	8.48	513
18	-10	12	-0.04	-0.4	3.00	514
18	-10	10	-0.04	-0.4	1.10	515
20	-10	17	-0.04	-0.4	8.16	516
22	-10	15	-0.04	-0.4	6.56	517
20	-10	13	-0.04	-0.4	7.20	518
18	-10	13	-0.04	-0.4	7.20	519
22	-10	16	-0.04	-0.4	4.60	520
22	-10	15	-0.04	-0.4	5.36	521
20	-10	11	-0.04	-0.4	4.16	522
16	-10	10	-0.04	-0.4	1.80	523
28	-10	10	-0.04	-0.4	4.72	524
20	-10	8	-0.04	-0.4	3.92	525
18	-10	8	-0.04	-0.4	2.56	526
18	-10	10	-0.04	-0.4	4.16	527
18	-10	10	-0.04	-0.4	7.12	528
14	-10	10	-0.04	-0.4	4.16	529
16	-10	10	-0.04	-0.4	0.49	530
18	-10	12	-0.04	-0.4	0.74	531
20	-10	10	-0.04	-0.4	0.58	532
18	-10	10	-0.04	-0.4	0.80	533
16	-10	10	-0.04	-0.4	0.98	534
20	-10	8	-0.04	-0.4	0.88	535
18	-10	12	-0.04	-0.4	0.78	536
18	-10	12	-0.04	-0.4	0.68	537
18	-10	12	-0.04	-0.4	0.60	538
18	-10	10	-0.04	-0.4	0.52	539
17	-10	10	-0.04	-0.4	0.76	540
16	-10	12	-0.04	-0.4	0.70	541
16	-10	12	-0.04	-0.4	0.76	542
16	-10	8	-0.04	-0.4	1.06	543
18	-10	10	-0.04	-0.4	0.92	544
18	-10	14	-0.04	-0.4	1.52	545
16	-10	10	-0.04	-0.4	1.06	546
18	-10	10	-0.04	-0.4	0.46	547
16	-10	12	-0.04	-0.4	0.76	548
16	-10	10	-0.04	-0.4	0.70	549
16	-10	10	-0.04	-0.4	0.66	550
16	-10	8	-0.04	-0.4	0.64	551
14	-10	8	-0.04	-0.4	0.80	552
12	-10	8	-0.04	-0.4	5.28	553
14	-10	10	-0.04	-0.4	8.32	554
14	-10	10	-0.04	-0.4	5.20	555
14	-10	12	-0.04	-0.4	5.76	556
14	-10	8	-0.04	-0.4	5.04	557
18	-10	12	-0.04	-0.4	6.80	558
14	-10	4	-0.04	-0.4	6.16	559

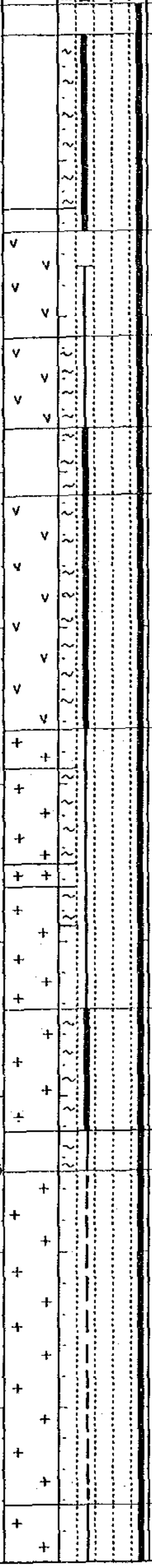
Veraguas, Chile **Drill# MJCV-3** (Scale 1/200) (2/9) (Depth: 50 m - 100 m)



Depth (m)	Min.	Alt.	Lithology
	lm>hm dis m	sil m	frct purplish brown autobrecciated andesite
52.65 60	lm-hm dis-ctm	sil vst	reddish brown frct ail-lm meta-andesite
64.5	lm	kal vst	fault clay
66.0	lm-hm dis-vlt	sil vst	partly frct sil meta-andesite
68.5 70	jar-najar lm dis	kal vst	fault clay(68.5-69.5) XRD: 69.00 brownish gray - gray qtz,kal soft kal clay, meta-andesite
71.6	lm dis	kal vst sil m-st	Ditto frct kal clay zone partly andesite texture relic
76.0	lm-hm dis	kal st sil m-st	brownish gray meta andesite
78.2 80	lm flm	kal vst sil m-st	grayish white, partly purplish gray frct zone
88.0 90	hm-lm flm	kal vst sil m-st	grayish white, compact kal clay meta andesite texture relic XRD: 92.65 qtz,kal,hm,gyp
92.5	jar-najar m	kal vst sil wk	Ditto, grayish white - brownish white frct zone jar-na.jar rich (95.3-95.7)
97.4 100		kal vst	Ditto, grayish white partly meta-andesite texture relic

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
14	-10	6	-0.04	-0.4	5.28	560
16	-10	10	-0.04	-0.4	2.64	561
22	-10	8	-0.04	-0.4	2.88	562
14	-10	6	-0.04	-0.4	1.48	563
14	-10	8	-0.04	-0.4	2.84	564
16	-10	8	-0.04	-0.4	1.08	565
14	-10	10	-0.04	-0.4	1.32	566
12	-10	10	-0.04	-0.4	3.12	567
14	-10	8	-0.04	-0.4	1.20	568
14	-10	10	-0.04	-0.4	0.92	569
18	-10	12	-0.04	-0.4	1.04	570
12	-10	8	-0.04	-0.4	0.94	571
16	-10	12	-0.04	-0.4	1.14	572
12	-10	6	-0.04	-0.4	0.72	573
14	-10	8	-0.04	-0.4	0.80	574
12	-10	6	-0.04	-0.4	0.62	575
18	-10	12	-0.04	-0.4	1.02	576
16	-10	10	-0.04	-0.4	1.32	577
30	-10	16	-0.04	-0.4	6.32	578
66	14	10	-0.04	-0.4	4.88	579
45	11	8	-0.04	-0.4	2.36	580
64	-10	6	-0.04	-0.4	2.72	581
52	-10	6	-0.04	-0.4	3.24	582
62	21	8	-0.04	-0.4	6.32	583
68	-10	8	-0.04	-0.4	4.96	584
54	-10	8	-0.04	-0.4	3.00	585
34	-10	4	-0.04	-0.4	10.4	586
34	-10	4	-0.04	-0.4	8.16	587
70	11	6	-0.04	-0.4	4.40	588
28	-10	12	-0.04	-0.4	1.70	589
48	16	9	-0.04	-0.4	1.60	590
34	-10	20	-0.04	-0.4	1.38	591
38	-10	26	-0.04	-0.4	0.72	592
84	11	18	-0.04	-0.4	1.40	593
54	-10	18	-0.04	-0.4	2.20	594
60	-10	4	-0.04	-0.4	2.40	595
50	-10	4	-0.04	-0.4	2.24	596
52	-10	4	-0.04	-0.4	1.28	597
46	-10	4	-0.04	-0.4	1.02	598
34	-10	-4	-0.04	-0.4	1.20	599
34	-10	8	-0.04	-0.4	1.90	600
44	-10	30	-0.04	-0.4	1.10	601
38	-10	28	-0.04	-0.4	1.04	602
50	-10	8	-0.04	-0.4	2.06	603
46	-10	4	-0.04	-0.4	1.56	604
76	11	6	-0.04	-0.4	2.02	605
74	-10	6	-0.04	-0.4	2.04	606
40	-10	4	-0.04	-0.4	1.94	607
34	-10	6	-0.04	-0.4	2.06	608
64	-10	6	-0.04	-0.4	1.58	609

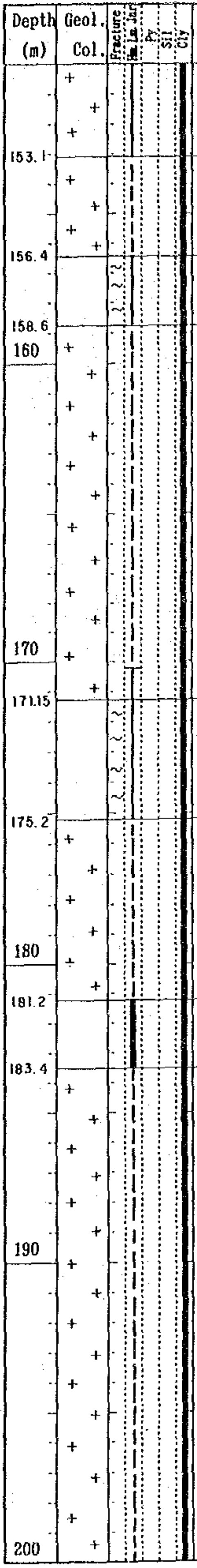
Veraguas, Chile　　**Drill# MJCV-3**　　(Scale 1/200)　(3/9)　　(Depth:　100 m -　150 m)



Depth (m)	Min.	Alt.	Lithology
		kal vst	frct zone, grayish white clay
101	hm-lm ctm	kal vst	purplish brown ~ grayish white frct clay zone
106.6	hm-lm net	kal vst	purplish brown, compact kal andesite
107.3		kal vst	white gray compact, plg pheno relic
108.4	hm-lm net jar-najar ctm	kal vst	partly frct sil-kal compact
110.65	Ditto	kal vst	frct zone, purplish gray
113.6	Ditto vst		purplish brown ~ coffee brown frct zone
115.75	hm-lm netwk jar > najar ctm	kal st-vst	purplish brown ~ grayish white meta-andesite relic kal-lm zone
123.2	hm-lm netwk	kal vst	grayish white, partly brown m.g. porphyry plg pheno -> kaolinized kal-lm zone
124.45			
127.4			
128.2			
132.2	hm-lm vst jar		hm-lm clay frct zone autobrecciated kal meta-porphyry XRD: 136.00
136.2	hm-lm net		frct　qtz,kal,gyp,hm
137.75	hm flm wk	kal vst	white - white gray, partly purplish m-c.g. meta-porphyry PTS: 141.00 py,hm,lm pseudmorph after bt,plg
148.2	hm netwk	kal vst	grayish white - purplish brown m-c.g. meta-porphyry
150			

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
65	16	-4	-0.04	-0.4	2.04	610
38	-10	4	-0.04	-0.4	2.56	611
28	-10	-4	-0.04	-0.4	2.00	612
76	-10	-4	-0.04	-0.4	3.68	613
66	32	6	-0.04	-0.4	3.84	614
46	-10	6	-0.04	-0.4	5.36	615
52	-10	6	-0.04	0.6	8.80	616
42	-10	4	-0.04	-0.4	5.84	617
56	-10	4	-0.04	-0.4	4.32	618
66	-10	4	-0.04	-0.4	6.40	619
19	-10	4	-0.04	-0.4	4.32	620
10	-10	6	-0.04	-0.4	1.84	621
9	-10	6	-0.04	-0.4	0.86	622
13	-10	-4	-0.04	-0.4	1.52	623
64	-10	10	-0.04	-0.4	4.32	624
126	32	8	-0.04	-0.4	6.72	625
14	-10	6	-0.04	-0.4	1.36	626
110	86	8	-0.04	-0.4	4.96	627
74	-10	15	-0.04	-0.4	5.04	628
118	54	13	-0.04	-0.4	7.52	629
104	16	11	-0.04	-0.4	5.24	630
56	21	8	-0.04	-0.4	5.12	631
44	-10	8	-0.04	-0.4	4.56	632
12	-10	11	-0.04	-0.4	5.52	633
8	-10	6	-0.04	-0.4	2.80	634
9	-10	4	-0.04	-0.4	5.04	635
10	-10	11	-0.04	-0.4	4.32	636
10	-10	6	-0.04	-0.4	3.36	637
22	-10	6	-0.04	-0.4	4.80	638
9	-10	4	-0.04	-0.4	5.84	639
8	-10	4	-0.04	-0.4	4.32	640
19	-10	-5	-0.04	-0.4	3.75	641
26	-10	-5	-0.04	-0.4	2.90	642
36	-10	7	-0.04	-0.4	2.97	643
14	-10	9	-0.04	-0.4	3.69	644
21	-10	11	-0.04	-0.4	5.55	645
38	-10	5	-0.04	-0.4	3.80	646
14	-10	5	-0.04	-0.4	3.21	647
12	-10	-5	-0.04	-0.4	2.28	648
20	-10	6	-0.04	-0.4	2.55	649
10	-10	6	-0.04	-0.4	2.07	650
24	-10	5	-0.04	-0.4	3.22	651
9	-10	-5	-0.04	-0.4	1.80	652
11	-10	6	-0.04	-0.4	3.89	653
13	-10	9	-0.04	-0.4	3.54	654
11	-10	6	-0.04	-0.4	2.74	655
11	-10	7	-0.04	-0.4	1.96	656
14	-10	6	-0.04	-0.4	5.26	657
13	-10	-5	-0.04	-0.4	3.64	658
10	-10	6	-0.04	-0.4	2.31	659

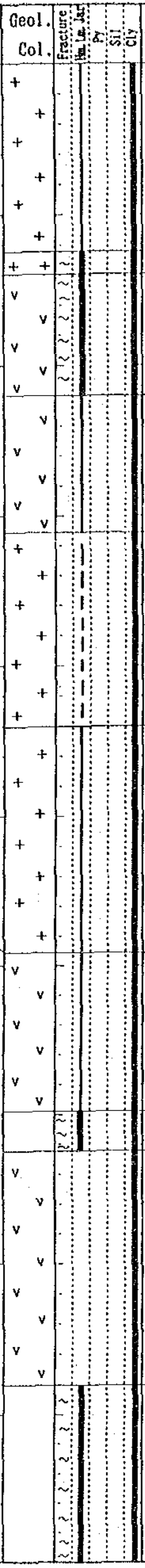
Veraguas, Chile　　**Drill# MJCV-3**　　(Scale 1/200)　(4/9)　　(Depth:　150 m -　200 m)



Depth (m)	Min.	Alt.	Lithology
150–153.1	hm flm-dis	kal vst	purplish white - white gray c-m.g. meta-porphyry
153.1–156.4			
156.4–158.6	hm netwk	kal vst	frct zone(156.4-158.6)
158.6–171.15	hm flm-dis	kal vst	purplish white - white gray c-m.g. meta-porphyry frct zone(165.8-166.0)
171.15–175.2	hm netwk	kal vst	purplish gray meta-porphyry frct zone
175.2–181.2	hm-lm vlt-netwk	kal vst	XRD: 175.20 qtz,dck,kal white - brownish white kal clay m-c.g. meta-porphyry
181.2–183.4	lm vst jar st		dark brown limonite rich clay jarocite　XRD: 182.20 qtz,gyp,or,hm
183.4–200	hm-lm dis	kal vst	purplish white m-c.g. meta-porphyry frct zone(188.9-189.25)

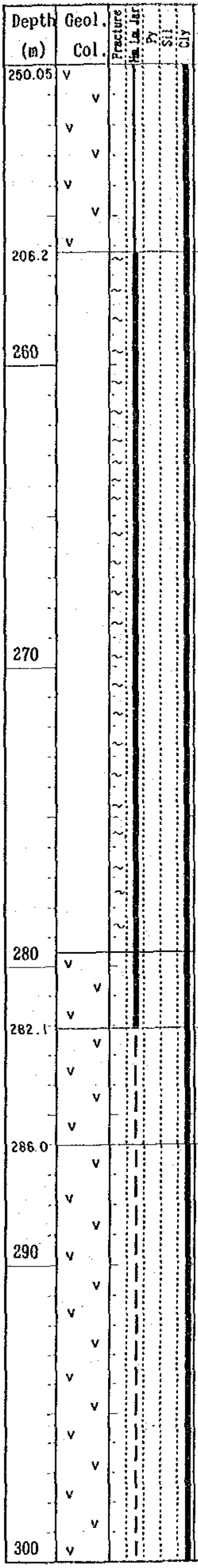
T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
10	-10	-5	-0.04	-0.4	3.82	660
10	-10	-5	-0.04	-0.4	5.29	661
11	-10	-5	-0.04	-0.4	4.54	662
13	-10	6	-0.04	-0.4	1.59	663
10	-10	12	-0.04	-0.4	3.73	664
29	-10	-5	-0.04	-0.4	5.08	665
13	-10	8	-0.04	-0.4	6.06	666
11	-10	5	-0.04	-0.4	5.26	667
11	-10	5	-0.04	-0.4	4.86	668
11	-10	5	-0.04	-0.4	4.20	669
16	-10	6	-0.04	-0.4	5.00	670
14	-10	-5	-0.04	-0.4	4.69	671
16	-10	6	-0.04	-0.4	5.13	672
13	-10	6	-0.04	-0.4	3.41	673
10	-10	9	-0.04	-0.4	3.91	674
12	-10	7	-0.04	-0.4	4.36	675
12	-10	-5	-0.04	-0.4	4.34	676
11	-10	8	-0.04	-0.4	3.05	677
15	-10	7	-0.04	-0.4	1.77	678
10	-10	-5	-0.04	-0.4	2.05	679
14	-10	6	-0.04	-0.4	5.03	680
66	22	22	-0.04	-0.4	7.27	681
30	17	17	-0.04	-0.4	5.36	682
21	-10	8	-0.04	-0.4	2.29	683
18	-10	7	-0.04	-0.4	3.61	684
16	-10	-5	-0.04	-0.4	3.10	685
15	-10	-5	-0.04	-0.4	1.74	686
16	-10	-5	-0.04	-0.4	5.11	687
16	-10	-5	-0.04	-0.4	2.40	688
18	-10	-5	-0.04	-0.4	2.95	689
15	-10	-5	-0.04	-0.4	2.87	690
18	-10	-5	-0.04	-0.4	5.27	691
17	-10	-5	-0.04	-0.4	5.81	692
19	-10	-5	-0.04	-0.4	4.35	693
18	-10	-5	-0.04	-0.4	4.60	694
19	-10	-5	-0.04	-0.4	3.94	695
17	-10	-5	-0.04	-0.4	2.74	696
15	-10	-5	-0.04	-0.4	3.06	697
19	-10	-5	-0.04	-0.4	3.69	698
15	-10	-5	-0.04	-0.4	3.36	699
17	-10	-5	-0.04	-0.4	3.10	700
21	-10	6	-0.04	-0.4	1.68	701
25	-10	6	-0.04	-0.4	2.93	702
24	-10	-5	-0.04	-0.4	3.15	703
19	-10	-5	-0.04	-0.4	4.13	704
22	-10	-5	-0.04	-0.4	2.57	705
20	-10	-5	-0.04	-0.4	2.77	706
15	-10	-5	-0.04	-0.4	1.44	707
22	-10	-5	-0.04	-0.4	3.52	708
16	-10	-5	-0.04	-0.4	3.03	709

Veraguas, Chile **Drill# MJCV-3** (Scale 1/200) (5/9) (Depth: 200 m - 250 m)



Depth (m)	Geologic Discription Min.	 Alt.	 Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	hm-lm	kal vst	purplish white, m-c.g. porphyry	16	-10	-5	-0.04	-0.4	3.18	710
	dis-flm			14	-10	8	-0.04	-0.4	1.83	711
				18	-10	-5	-0.04	-0.4	2.18	712
				19	-10	6	-0.04	-0.4	3.82	713
				17	-10	-5	-0.04	-0.4	4.71	714
				16	-10	-5	-0.04	-0.4	2.40	715
206.15				18	-10	-5	-0.04	-0.4	3.31	716
207.0	hm-lm	kal vst	hm-lm-jar rich	18	-10	6	-0.04	-0.4	3.56	717
	jar st		frct zone	27	-10	6	-0.04	-0.4	4.39	718
210			meta-andesite	26	-10	8	-0.04	-0.4	2.84	719
				27	-10	8	-0.04	-0.4	2.61	720
211.0	hm-lm	kal vst	purplish white m-c.g.	25	-10	8	-0.04	-0.4	3.33	721
	netwk		autobrecciated meta-andesite	37	16	8	-0.04	-0.4	3.89	722
				39	12	-5	-0.04	-0.4	4.94	723
				32	12	-5	-0.04	-0.4	5.75	724
215.5				26	-10	-5	-0.04	-0.4	3.68	725
				25	-10	-5	-0.04	-0.4	2.46	726
	hm-lm		purplish white, m-c.g. porphyry	29	12	-5	-0.04	-0.4	4.22	727
				27	-10	-5	-0.04	-0.4	2.56	728
220		kal vst		25	-10	5	-0.04	-0.4	1.64	729
				25	-10	5	-0.04	-0.4	2.37	730
		chl wk	PTS: 221.60	24	-10	-5	-0.04	-0.4	2.20	731
222.0			py,hm,lm	29	14	-5	-0.04	-0.4	4.00	732
	hm-lm			43	17	7	-0.04	-0.4	4.83	733
	flm-			26	-10	16	-0.04	-0.4	2.51	734
	netwk			25	-10	5	-0.04	-0.4	1.54	735
				30	10	-5	-0.04	-0.4	1.97	736
				40	15	5	-0.04	-0.4	2.52	737
				40	-10	7	-0.04	-0.4	2.74	738
229.5 230				29	12	-5	-0.04	-0.4	4.70	739
				29	12	-5	-0.04	-0.4	5.03	740
			pale greenish white	33	11	-5	-0.04	-0.4	6.10	741
			m-c.g. meta-andesite	73	11	-5	-0.04	-0.4	2.12	742
				111	10	-5	-0.04	-0.4	2.37	743
234.9				100	11	-5	-0.04	-0.4	3.83	744
	hm-lm-jar		brownish jar clay frct zone	79	15	-5	-0.04	-0.4	4.92	745
236.2				55	17	-5	-0.04	-0.4	3.36	746
				43	28	11	-0.04	-0.4	2.80	747
		kal st	purplish white - pale greenish white	68	33	7	-0.04	-0.4	3.05	748
240				73	25	7	-0.04	0.5	3.20	749
		chl m	m-c.g. meta-andesite	55	31	13	-0.04	-0.4	3.65	750
				67	26	10	-0.04	-0.4	4.23	751
				69	32	5	0.04	-0.4	5.53	752
				98	24	11	-0.04	-0.4	4.33	753
244.0				191	32	20	-0.04	-0.4	5.25	754
	hm-lm	kal st	brownish jar clay frct zone	141	25	19	-0.04	-0.4	4.50	755
	jar-najar			178	35	19	-0.04	0.5	5.93	756
	vst		XRD: 247.00	164	44	21	-0.04	-0.4	7.28	757
			qtz,hm,naalu	163	40	20	-0.04	-0.4	5.73	758
250			goe,act,mus	154	32	19	-0.04	-0.4	5.90	759

Veraguas, Chile　　Drill# MJCV-3　　(Scale 1/200)　(6/9)　　(Depth: 250 m - 300 m)

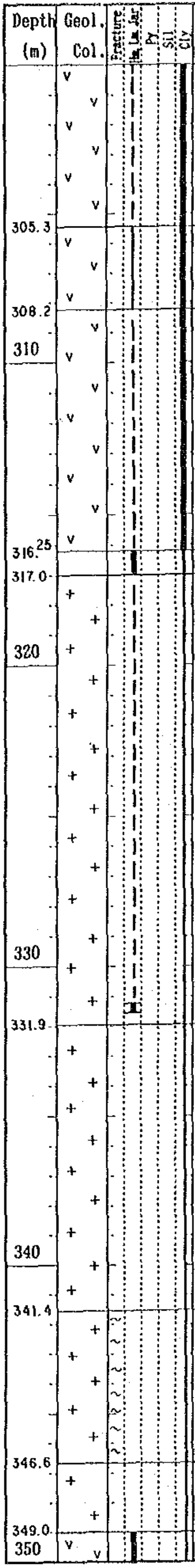


Geologic Discription

Min.	Alt.	Lithology
hm netwk	kal st chl flm wk-m	purplish gray m.g. meta-andesite
hm-lm jar-najar st	kal st-vst	hm-lm clay frct zone jarocite XRD: 273.00 qtz,dsp,hm mt,or
hm netwk	kal st chl wk	purplish - reddish brown gray partly pale green f-m.g. meta-andesite, autobrecciated
hm flm- dis	kal m-st chl wk-m	pale greenish gray, partly purplish m.g. meta-andesite (gradual boundary)
hm-lm dis- netwk	kal m-st chl wk-m	purplish pale greenish gray m.g. autobrecciated meta-andesite

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
137	40	15	0.18	-0.4	4.28	760
69	45	-5	-0.04	-0.4	3.15	761
65	35	-5	-0.04	0.5	1.73	762
81	60	-5	-0.04	-0.4	3.05	763
61	35	5	0.04	-0.4	3.78	764
69	34	14	-0.04	-0.4	4.70	765
64	36	13	-0.04	-0.4	7.40	766
69	36	5	-0.04	-0.4	5.28	767
47	28	7	-0.04	-0.4	3.03	768
69	27	5	-0.04	-0.4	3.30	769
134	28	5	-0.04	-0.4	5.05	770
140	27	6	-0.04	-0.4	2.75	771
89	24	5	-0.04	-0.4	3.85	772
153	30	13	-0.04	-0.4	4.68	773
122	68	13	-0.04	-0.4	3.25	774
74	25	17	-0.04	-0.4	2.88	775
73	25	10	-0.04	-0.4	4.98	776
56	15	8	-0.04	-0.4	5.13	777
98	37	9	-0.04	-0.4	5.20	778
136	34	7	0.06	0.5	3.30	779
92	29	15	-0.04	-0.4	4.15	780
76	25	20	-0.04	-0.4	4.35	781
113	32	8	-0.04	-0.4	3.85	782
107	27	22	-0.04	-0.4	6.88	783
115	23	12	-0.04	-0.4	4.35	784
72	16	11	-0.04	-0.4	4.73	785
62	18	13	0.10	-0.4	5.55	786
59	16	9	-0.04	-0.4	2.98	787
80	13	8	-0.04	-0.4	5.20	788
96	15	14	-0.04	-0.4	5.80	789
63	24	13	-0.04	-0.4	7.68	790
69	19	8	-0.04	-0.4	9.73	791
84	15	-5	-0.04	-0.4	2.40	792
77	19	16	-0.04	-0.4	5.80	793
56	15	16	-0.04	-0.4	3.20	794
67	17	11	-0.04	-0.4	1.85	795
51	17	21	-0.04	-0.4	5.55	796
34	14	7	-0.04	-0.4	3.13	797
57	20	9	-0.04	-0.4	1.50	798
59	13	23	-0.04	-0.4	3.16	799
55	12	14	-0.04	-0.4	4.20	800
58	13	17	-0.04	-0.4	3.88	801
49	15	15	-0.04	-0.4	4.63	802
51	12	14	-0.04	-0.4	5.48	803
51	10	13	-0.04	-0.4	3.88	804
52	16	23	-0.04	-0.4	3.85	805
66	14	12	-0.04	-0.4	4.40	806
70	-10	15	-0.04	-0.4	2.18	807
78	-10	22	-0.04	-0.4	4.05	808
83	12	15	-0.04	-0.4	1.58	809

Veraguas, Chile　　**Drill# MJCV-3**　　(Scale 1/200)　(7/9)　　(Depth:　300 m -　350 m)

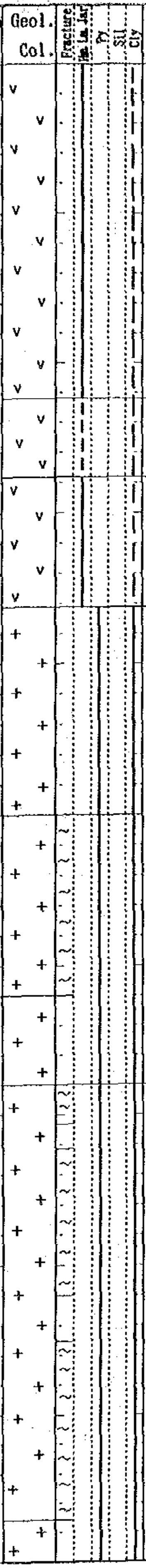


Geologic Discription

Depth (m)	Min.	Alt.	Lithology
300 – 305.3	hm flm-dis	kal m-st chl wk	pale greenish gray m.g. autobrecciated meta-andesite porphyrite(303.3-303.8)
305.3 – 308.2	hm netwk jar wk	kal m-st chl wk	purplish gray m.g. autobrecciated meta-andesite
308.2 – 316.25	hm flm-dis (netwk) jar m-st	kal m-st chl wk	purplish gray - partly cream yellow f-m.g. autobrecciated meta-andesite
		chl rich	bleached partly pale green andesite
316.25 – 317.0	hm rich		purplish autobrecciated andesite
317.0 – 331.9	hm dis-netwk jar st-m py dis wk	kal m ser wk chl wk	bleached cream yellow f-m.g. auto-pseudo brecciated meta-porphyry plg pheno -> kal-ser-jar mafics -> chl
	hm rich	chl m	bleached pale green - cream white
331.9 – 341.4	cc vwk py dis wk	kal m	autobrecciated meta-porphyry like porphyry <-> clastics chalcocite imp wk(331.9-349.0) PTS: 340.50 py,cp,cv
341.4 – 346.6	cc vwk py dis wk	chl m-st jar	frct zone
346.6 – 349.0	cc vwk py dis wk	chl m-st alu vlt	bleached pale green autobrecciated porphyry
349.0 – 350	hm st		purplish autobrecciated andesite

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
92	14	31	-0.04	-0.4	3.30	810
125	17	20	-0.04	-0.4	2.15	811
54	11	19	-0.04	-0.4	2.18	812
51	12	41	-0.04	-0.4	2.50	813
55	28	73	-0.04	-0.4	2.65	814
71	18	202	-0.04	-0.4	5.00	815
81	15	204	-0.04	-0.4	7.03	816
142	22	120	-0.04	-0.4	5.85	817
121	15	69	-0.04	-0.4	4.98	818
69	30	23	-0.04	-0.4	1.70	819
62	13	31	-0.04	-0.4	2.38	820
67	16	55	-0.04	-0.4	4.38	821
81	19	72	-0.04	-0.4	4.95	822
80	26	30	-0.04	-0.4	2.60	823
107	51	93	-0.04	-0.4	4.00	824
1100	804	69	-0.04	-0.4	2.58	825
470	350	41	-0.04	-0.4	3.78	826
109	53	80	-0.04	-0.4	2.43	827
68	37	17	-0.04	-0.4	3.90	828
105	30	78	-0.04	-0.4	2.90	829
158	70	86	-0.04	-0.4	4.60	830
500	250	15	-0.04	-0.4	3.28	831
510	253	27	-0.04	-0.4	3.18	832
114	60	36	-0.04	-0.4	2.48	833
138	59	45	-0.04	-0.4	3.40	834
74	47	44	-0.04	-0.4	1.93	835
80	53	213	-0.04	-0.4	3.15	836
156	41	96	-0.04	-0.4	3.00	837
55	17	72	-0.04	-0.4	2.24	838
62	13	54	-0.04	-0.4	3.40	839
94	24	50	-0.04	-0.4	3.61	840
112	33	64	-0.04	-0.4	6.56	841
770	396	36	-0.04	-0.4	2.68	842
486	267	20	-0.04	-0.4	2.52	843
496	233	20	-0.04	-0.4	3.40	844
370	180	24	-0.04	-0.4	3.08	845
524	233	40	-0.04	-0.4	2.52	846
596	163	100	-0.04	-0.4	2.20	847
188	60	60	-0.04	-0.4	1.96	848
106	20	20	-0.04	-0.4	2.64	849
99	15	20	-0.04	-0.4	4.00	850
154	24	20	-0.04	-0.4	4.44	851
556	92	20	-0.04	-0.4	3.84	852
354	63	12	-0.04	-0.4	3.48	853
346	55	20	-0.04	-0.4	2.88	854
222	51	20	-0.04	-0.4	3.04	855
1760	633	12	-0.04	-0.4	1.12	856
1160	320	16	-0.04	-0.4	2.04	857
1840	581	12	-0.04	-0.4	1.28	858
120	35	26	-0.04	-0.4	4.08	859

Veraguas, Chile **Drill# MJCV-3** (Scale 1/200) (8/9) (Depth: 350 m - 400 m)



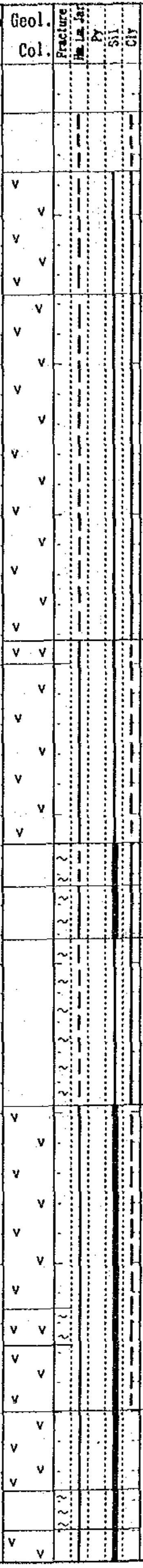
Depth (m)	Min.	Alt.	Lithology
	hm	kal wk-m	purplish gray
	flm-dis		autobrecciated meta-andesite
	m-st	chl m	
			frct zone (353.00-353.20)
	jar		(355.00-355.55)
			(356.60-357.50)
			XRD: 356.80
			qtz,naalu,alu
360			hm,chalcocite
361.2	hm wk	kal wk	bleached pale green PTS: 362.0
		chl netwk	m.g. meta-andesite py,lm
363.8	hm	chl	purplish gray
	flm-	netwk	autobrecciated meta-andesite
	netwk	m	
			FI:PTS: 368.20
368.1			py,cp,cc
370	cc+py dis	chl netwk	pale green, partly dark green
		st-vst	m.g. meta-porphyrite
	py		PTS: 371.20
	dis-flm	kal m-st	porphyritic texture py,mc,cp,cv,sp
	wk-m		plg pheno -> kal
			mafics -> chl
375.0			
			frct zone(375.0-381.0)
380	py	chl st	dark greenish gray
	dis-flm		m-c.g. meta-porphyry
381.0	wk-m	kal m	
383.9			
		chl m	XRD: 385.50
		kal m-st	pale green ~ white kal,dck,nac
			m-c.g. meta-porphyry
390			frct zone(383.90-385.50)
			(386.05-391.00)
			(392.50-398.40)
398.4			
400			

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
128	17	30	-0.04	-0.4	5.40	860
200	19	46	-0.04	-0.4	3.04	861
120	19	50	-0.04	-0.4	5.68	862
104	14	24	-0.04	-0.4	6.24	863
76	13	32	-0.04	-0.4	3.60	864
86	10	28	-0.04	-0.4	4.24	865
92	10	40	-0.04	-0.4	4.64	866
138	13	100	-0.04	-0.4	3.28	867
86	13	206	-0.04	-0.4	4.00	868
176	10	40	0.16	-0.4	6.20	869
112	10	24	-0.04	-0.4	3.00	870
98	-10	26	-0.04	-0.4	1.64	871
124	-10	54	-0.04	-0.4	1.42	872
88	-10	64	-0.04	-0.4	1.50	873
50	-10	70	-0.04	-0.4	6.00	874
24	10	14	-0.04	-0.4	4.08	875
40	-10	9	-0.04	-0.4	8.32	876
74	10	24	-0.04	-0.4	5.36	877
7000	1263	24	-0.04	-0.4	7.42	878
2300	954	36	-0.04	-0.4	6.48	879
224	86	20	-0.04	-0.4	7.52	880
84	24	16	-0.04	-0.4	8.32	881
180	48	16	-0.04	-0.4	7.04	882
160	24	8	-0.04	-0.4	7.04	883
116	38	80	-0.04	-0.4	6.40	884
154	41	12	-0.04	-0.4	6.48	885
162	38	12	-0.04	-0.4	7.68	886
948	86	12	-0.04	-0.4	6.24	887
148	41	8	-0.04	-0.4	8.08	888
192	45	8	-0.04	-0.4	8.72	889
64	27	20	-0.04	-0.4	6.72	890
110	44	8	-0.04	-0.4	7.76	891
218	58	6	-0.04	-0.4	6.24	892
270	99	10	-0.04	-0.4	6.88	893
68	19	20	-0.04	-0.4	6.64	894
232	74	14	-0.04	-0.4	5.92	895
134	36	8	-0.04	-0.4	3.08	896
138	47	4	-0.04	-0.4	4.64	897
410	131	18	-0.04	-0.4	5.04	898
1400	443	16	0.07	-0.4	6.80	899
127	30	8	-0.04	-0.4	7.20	900
62	12	10	-0.04	-0.4	6.48	901
134	36	16	-0.04	0.4	7.52	902
430	118	12	-0.04	0.8	11.20	903
406	92	12	-0.04	2.3	9.60	904
700	138	16	-0.04	1.3	10.24	905
202	40	10	-0.04	2.6	12.96	906
186	38	30	-0.04	0.8	8.00	907
70	-10	18	-0.04	-0.4	7.60	908
110	12	18	-0.04	-0.4	7.12	909

Veraguas, Chile **Drill# MJCV-3** (Scale 1/200) (9/9) (Depth: 400 m - 401 m)

Depth (m)	Geol. Col.	Fracture	Hm.Lm.Jar	Py	Sil	Cly	Geologic Discription Min.	Alt.	Lithology		T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
	+ +			│		│			Ditto	XRD: 401.00	96	20	36	-0.04	-0.4	6.96	910
	401.00								(END)	qtz,mus,nac,kal							
410																	
420																	
430																	
440																	
450																	

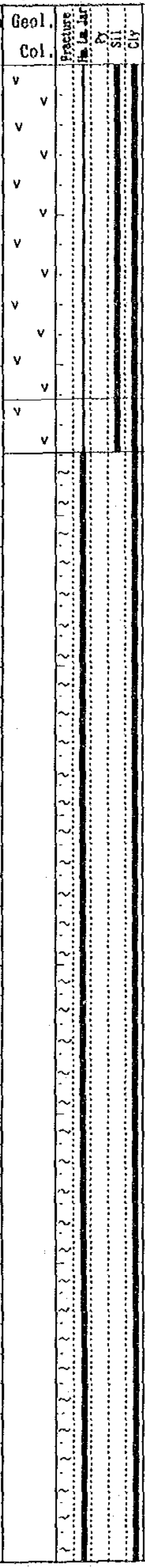
Veraguas, Chile Drill# MJCV-4 (Scale 1/200) (1/10) (Depth: 0 m - 50 m)



Depth (m)	Min.	Alt.	Lithology
1.7			TRICON -- Non core 1.7
3.5 7.65	lm flm wk vlt wk lm > hm vlt-flm	kal-alu flm wk sil m kal m-st ser wk	wethering frct reddish white reddish brown altered andesite autobrecciated(4.5-6.3m)
10 19.2	hm flm (-dis)	sil m-st kal m alu flm ser wk	brownish gray - white massive hard rock matrix -> silicificated plg pheno -> kaolinized brecciated andesite - dacite ? XRD: 16.00 qtz>alu,naalu>ser
20 25.9	hm dis (sm msv)	sil m kal wk ser wk	frct zone(19.2-20.0) dark gray - purplish gray frct zone brecciated andesite
27.3 29.1	lm > hm vlt hm dis	sil st kal m ser wk	reddish brown frct zone dark gray frct zone
30 34.7	hm dis-flm wk	sil m kal m alu wk	brownish gray, partly dark gray hm flm frct zone
40 41.3 42.65 44.8	hm netwk (lm)	sil st kal wk alu wk	reddish gay silicificated f.g. sil-hm altered andesite autobrecciated meta-andesite frct zone(41.30-42.65)
47.5 48.9 50	hm-lm netwk lm st hm-lm net	sil st jar ctm	purplish red-brown limonite f.g. autobrecciated meta-andesite frct zone purplish brown

T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
						non
20	-10	-5	-0.04	-0.4	0.32	1
42	-10	6	-0.04	-0.4	0.86	2
50	-10	10	-0.04	-0.4	0.80	3
87	-10	14	-0.04	-0.4	0.90	4
96	10	16	-0.04	-0.4	1.26	5
150	48	22	-0.04	-0.4	2.12	6
72	-10	16	-0.04	-0.4	1.60	7
73	-10	20	-0.04	-0.4	1.20	8
76	-10	16	-0.04	-0.4	2.20	9
73	-10	12	-0.04	-0.4	0.92	10
61	-10	15	-0.04	-0.4	1.00	11
49	-10	18	-0.04	-0.4	2.72	12
61	-10	18	-0.04	-0.4	2.40	13
69	-10	14	-0.04	-0.4	2.20	14
27	-10	24	-0.04	-0.4	2.16	15
80	-10	10	-0.04	-0.4	2.20	16
76	-10	14	-0.04	-0.4	2.60	17
41	-10	14	-0.04	-0.4	3.24	18
17	-10	26	-0.04	-0.4	2.96	19
18	-10	24	-0.04	-0.4	5.80	20
16	-10	18	-0.04	-0.4	5.20	21
17	-10	20	-0.04	-0.4	5.20	22
16	-10	14	-0.04	-0.4	6.16	23
20	-10	12	-0.04	-0.4	6.80	24
18	-10	14	-0.04	-0.4	5.20	25
37	-10	12	-0.04	-0.4	0.88	26
23	-10	14	-0.04	-0.4	3.16	27
14	-10	12	-0.04	-0.4	2.16	28
16	-10	14	-0.04	-0.4	1.40	29
19	-10	10	-0.04	-0.4	1.44	30
14	-10	16	-0.04	-0.4	2.72	31
20	-10	14	-0.04	-0.4	2.06	32
18	-10	12	-0.04	-0.4	0.80	33
15	-10	-5	-0.04	-0.4	2.68	34
28	-10	12	-0.04	-0.4	7.20	35
33	-10	10	-0.04	-0.4	4.40	36
45	-10	8	-0.04	-0.4	5.60	37
36	-10	17	-0.04	-0.4	6.88	38
34	-10	17	-0.04	-0.4	7.20	39
45	-10	10	-0.04	-0.4	6.40	40
68	-10	10	-0.04	-0.4	13.60	41
71	-10	11	-0.04	-0.4	10.50	42
49	-10	11	-0.04	-0.4	8.16	43
66	-10	9	-0.04	-0.4	6.56	44
56	-10	11	-0.04	-0.4	8.00	45
64	-10	13	-0.04	-0.4	6.56	46
85	-10	11	-0.04	-0.4	6.48	47
141	-10	17	-0.04	-0.4	13.40	48
292	-10	11	-0.04	-0.4	19.80	49

Veraguas, Chile   **Drill# MJCV-4**   (Scale 1/200) (2/10)   (Depth: 50 m - 100 m)

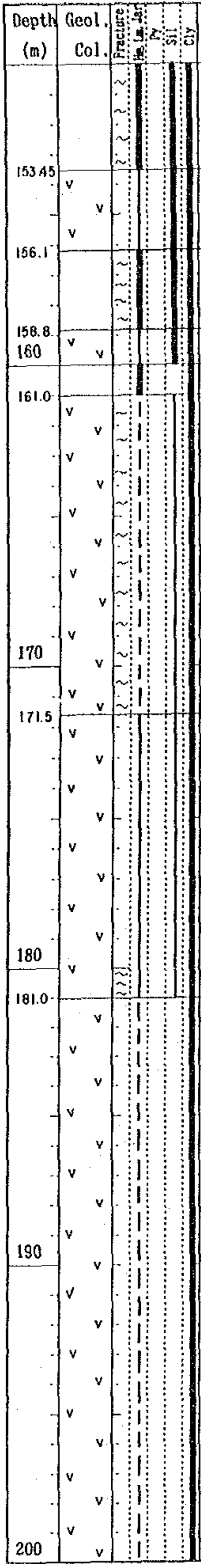


Depth (m)	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
				330	-10	9	-0.04	-0.4	15.80	50
	hm > lm	sil st	purplish brown	339	-10	9	-0.04	-0.4	13.20	51
	netwk		clayish altered f.g. andesite	114	-10	9	-0.04	-0.4	8.64	52
		ser m	autobrecciated	84	-10	6	-0.04	-0.4	6.08	53
			hydrothermal alteration	125	-10	9	-0.04	-0.4	8.80	54
	jar m	kal st	plg pheno -> kaolinized	104	-10	9	-0.04	-0.4	9.60	55
	najar m		matrix -> silicificated	93	-10	11	-0.04	-0.4	9.12	56
			XRD: 54.80	88	-10	11	-0.04	-0.4	9.12	57
			qtz>dck>hm,alu	97	-10	15	-0.04	-0.4	10.70	58
60				111	-10	19	-0.04	-0.4	13.00	59
				121	-10	17	-0.04	-0.4	13.90	60
61.1		kal st	bleached wk purplish white kaoline	227	-10	14	-0.04	-0.4	11.20	61
			autobrecciated meta-andesite	196	-10	11	-0.04	-0.4	4.88	62
62.9				150	-10	15	-0.04	-0.4	6.80	63
	lm-hm			142	-10	15	-0.04	-0.4	7.44	64
	dis-flm			106	-10	17	-0.04	-0.4	6.88	65
				44	-10	9	-0.04	-0.4	6.24	66
	jar st	kal st	frct clay zone	36	-10	11	-0.04	-0.4	6.08	67
	najar m		purplish gray - white	60	-10	24	-0.04	-0.4	5.84	68
70		alu	jar-clayish altered f.g.andesite	64	-10	9	-0.04	-0.4	4.84	69
			XRD: 70.00	68	-10	9	-0.04	-0.4	7.52	70
		ser wk	qtz>dck,hm>bt,act	48	-10	9	-0.04	-0.4	7.76	71
				90	-10	9	-0.04	-0.4	5.76	72
				66	-10	-5	-0.04	-0.4	3.68	73
				80	-10	7	-0.04	-0.4	4.32	74
				70	-10	7	-0.04	-0.4	7.92	75
				68	-10	11	-0.04	-0.4	2.00	76
				62	-10	15	-0.04	-0.4	3.12	77
				20	-10	17	-0.04	-0.4	2.76	78
80				26	-10	19	-0.04	-0.4	1.46	79
				36	-10	13	-0.04	-0.4	2.60	80
				88	-10	11	-0.04	-0.4	4.64	81
	83.6-84.2			64	-10	11	-0.04	-0.4	3.92	82
	jar st			112	-10	18	-0.04	-0.4	4.08	83
	najar st			58	-10	14	-0.04	-0.4	2.72	84
				16	-10	7	-0.04	-0.4	0.74	85
				69	-10	23	-0.04	-0.4	7.60	86
				64	-10	16	-0.04	-0.4	4.48	87
				240	-10	21	-0.04	-0.4	7.44	88
90				64	-10	16	-0.04	-0.4	3.44	89
				52	-10	16	-0.04	-0.4	2.88	90
				26	-10	21	-0.04	-0.4	1.32	91
				18	-10	16	-0.04	-0.4	0.88	92
	lm st	kal st	purplish compact clay(93.9-94.4)	28	-10	23	-0.04	-0.4	1.16	93
	lm st			58	-10	23	-0.04	-0.4	4.88	94
	lm st	kal st	purplish compact clay(95.65-96.2)	66	-10	21	-0.04	-0.4	5.36	95
				80	-10	14	-0.04	-0.4	2.56	96
	lm dis	kal st	frct clay zone	58	-10	21	-0.04	-0.4	5.68	97
				104	-10	7	-0.04	-0.4	7.36	98
100				142	-10	16	-0.04	-0.4	7.68	99

Veraguas, Chile   Drill# MJCV-4   (Scale 1/200) (3/10)   (Depth: 100 m - 150 m)

Depth (m)	Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
				120	-10	9	-0.04	-0.4	7.52	100
	lm-hm st	kal st	purplish brown frct clay zone	30	-10	7	-0.04	-0.4	1.96	101
				46	-10	11	-0.04	-0.4	2.48	102
	jar st			122	-10	7	-0.04	-0.4	8.96	103
	najar st		XRD: 105.00	118	-10	7	-0.04	-0.4	9.44	104
			qtz>hm>act,mus,kal	86	-10	9	-0.04	-0.4	6.64	105
				150	-10	9	-0.04	-0.4	6.88	106
				104	-10	7	-0.04	0.6	8.32	107
				100	-10	9	-0.04	-0.4	5.44	108
110				30	-10	5	-0.04	-0.4	3.96	109
		kal st	white gray compact kaolinized tuff like	34	-10	5	-0.04	-0.4	4.40	110
111.5				26	-10	7	-0.04	-0.4	4.32	111
	lm-hm wk	kal vst	white gray - purplish, fragment	26	-10	5	-0.04	-0.4	3.52	112
			st kaolinized f.g. meta-andesite	312	30	12	-0.04	-0.4	8.00	113
				360	29	7	-0.04	-0.4	6.00	114
115.45				126	-10	19	-0.04	-0.4	4.56	115
	lm st	kal st	frct zone	115	-10	22	-0.04	-0.4	3.72	116
	jar			34	-10	15	-0.04	-0.4	2.76	117
				76	-10	17	-0.04	-0.4	2.76	118
120				68	-10	13	-0.04	-0.4	3.52	119
	lm st	sil	sil autobrecciated meta-anesite	54	-10	13	-0.04	-0.4	2.92	120
	jar ctm			44	-10	13	-0.04	-0.4	2.64	121
122.3				64	-10	9	-0.04	-0.4	3.52	122
	lm wk	kal st	frct compact meta-andesite	52	-10	9	-0.04	-0.4	3.52	123
	jar ctm	sil m-st	white compact sil-kal meta-andesite	58	-10	11	-0.04	-0.4	3.20	124
125.75				38	-10	13	-0.04	-0.4	6.16	125
	lm st	kal vst	purplish brown clay meta-andesite	74	-10	22	-0.04	-0.4	5.56	126
	najar>jar		frct	136	-10	28	-0.04	-0.4	8.32	127
128.85				90	-10	26	-0.04	-0.4	5.60	128
130				102	-10	28	-0.04	-0.4	6.24	129
	lm wk-m	kal vst	purplish gray - white	62	-10	15	-0.04	-0.4	6.96	130
			compact kaoline clay	74	-10	13	-0.04	-0.4	5.28	131
132.6				94	-10	19	-0.04	-0.4	7.68	132
	lm vst	kal m	lm rich clay	140	-10	17	-0.04	-0.4	12.20	133
	jar vst	kal vst		188	-10	22	-0.04	-0.4	16.20	134
135.2			kal-sil clay	88	-10	30	-0.04	-0.4	10.90	135
		sil m		70	-10	17	-0.04	-0.4	11.50	136
137.4	hm-lm	sil st	purplish gray - white, silicificated	78	-10	15	-0.04	-0.4	8.48	137
	netwk	-vst	autobrecciated meta-andesite	58	-10	15	-0.04	-0.4	6.08	138
139.2 140	lm-hm net		purplish lm rich, silicificated	44	-10	22	-0.04	-0.4	11.50	139
140.8	wk-sm mvs		autobrecciated meta-andesite	68	-10	15	-0.04	-0.4	13.10	140
			XRD: 142.60	58	-10	15	-0.04	-0.4	9.76	141
	lm msv	kal m	purplish - reddish brown qtz>hm,kal	66	-10	13	-0.04	-0.4	7.52	142
	jar-najar		frct powder lm clay	88	-10	17	-0.04	-0.4	18.00	143
	vst			132	-10	15	-0.04	-0.4	21.00	144
				50	-10	9	-0.04	-0.4	13.90	145
				98	-10	19	-0.04	-0.4	13.10	146
147.25	lm netwk	sil st	autobrecciated meta-andesite	136	-10	15	-0.04	-0.4	13.80	147
		kal flm		74	-10	9	-0.04	-0.4	6.24	148
149.0 150	lm netwk		frct clay	60	-10	9	-0.04	-0.4	5.44	149

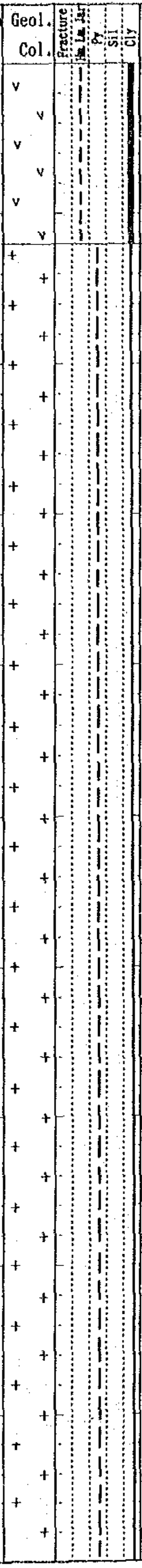
Veraguas, Chile **Drill# MJCV-4** (Scale 1/200) (4/10) (Depth: 150 m - 200 m)



Geologic Discription		
Min.	Alt.	Lithology
lm vst jar-najar st	sil st kal st	purplish - reddish brown frct clay
lm-hm netwk	sil vst kal st-m	purplish - reddish brown autobrecciated meta-andesite
lm vst	sil s kal s	purplish - reddish brown frct powder clay
		Ditto, autobrecciated meta-andesite
lm vst	kal vst	soft compact clay
lm>jar jar>najar ctm	kal vst sil m	purplish gray - brownish gray partly grayish white frct clay partly andesite texture relic XRD: 166.50 qtz>mus,or,jar>hm
lm-hm dis jar-najar ctm	kal vst sil st-m alu vlt	brownish gray - white compact clay, meta-andesite
lm-hm netwk jar wk	kal vst sil m-wk gyp vlt	purplish brown contaminated grayish white kaoline compact meta-andesite autobrecciated structure PTS: 187.00 py,lm (198.10-)

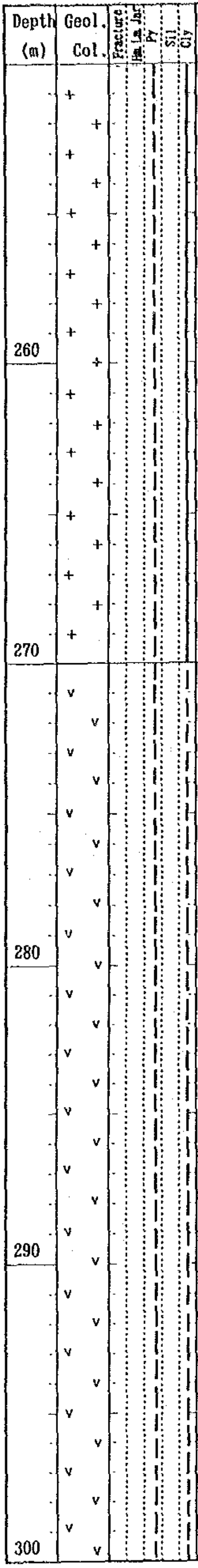
T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
ppm	ppm	ppm	ppm	ppm	%	Num
88	-10	6	-0.04	-0.4	13.10	150
62	-10	6	-0.04	-0.4	12.30	151
214	-10	9	-0.04	-0.4	22.00	152
462	77	17	-0.04	-0.4	39.00	153
184	11	13	-0.04	-0.4	22.00	154
212	-10	15	-0.04	-0.4	26.00	155
152	-10	16	-0.04	-0.4	18.80	156
132	-10	16	-0.04	-0.4	16.30	157
112	-10	28	-0.04	-0.4	13.00	158
176	-10	16	-0.04	-0.4	22.00	159
122	-10	12	-0.04	-0.4	15.30	160
148	-10	8	-0.04	-0.4	8.80	161
108	-10	10	-0.04	-0.4	5.44	162
142	-10	18	-0.04	-0.4	7.52	163
126	-10	16	-0.04	-0.4	7.84	164
150	-10	16	-0.04	-0.4	5.92	165
207	-10	16	-0.04	-0.4	8.00	166
130	-10	10	-0.04	-0.4	5.12	167
148	-10	16	-0.04	-0.4	6.56	168
154	-10	14	-0.04	-0.4	5.68	169
98	-10	14	-0.04	-0.4	8.00	170
54	-10	14	-0.04	-0.4	5.44	171
94	-10	8	-0.04	-0.4	3.52	172
88	-10	18	-0.04	-0.4	6.88	173
116	-10	10	-0.04	-0.4	4.80	174
252	-10	34	-0.04	-0.4	13.00	175
269	-10	42	-0.04	-0.4	13.10	176
170	-10	26	-0.04	-0.4	9.92	177
224	29	24	-0.04	-0.4	13.90	178
208	14	28	-0.04	-0.4	12.60	179
100	-10	14	-0.04	-0.4	3.20	180
90	-10	12	-0.04	-0.4	7.20	181
116	-10	8	-0.04	-0.4	3.12	182
86	-10	14	-0.04	-0.4	8.32	183
46	-10	10	-0.04	-0.4	2.60	184
58	-10	16	-0.04	-0.4	3.52	185
58	-10	18	-0.04	-0.4	2.88	186
46	-10	12	-0.04	-0.4	2.68	187
76	-10	10	-0.04	-0.4	5.20	188
74	-10	8	-0.04	-0.4	2.80	189
78	-10	8	-0.04	-0.4	2.84	190
66	-10	12	-0.04	-0.4	6.08	191
66	-10	8	-0.04	-0.4	2.72	192
70	-10	8	-0.04	-0.4	2.44	193
78	-10	8	-0.04	-0.4	3.92	194
50	-10	4	-0.04	-0.4	6.56	195
46	-10	16	-0.04	-0.4	7.44	196
56	-10	20	-0.04	-0.4	9.04	197
70	-10	12	-0.04	-0.4	8.24	198
62	-10	12	-0.04	-0.4	5.92	199

Veraguas, Chile **Drill# MJCV-4** (Scale 1/200) (5/10) (Depth: 200 m - 250 m)



Depth (m)	Geologic Discription Min.	Alt.	Lithology	T.Cu ppm	S.Cu ppm	Mo ppm	Au ppm	Ag ppm	T.Fe %	Samp Num
				40	-10	8	-0.04	-0.4	5.60	200
	lm-hm	kal st	autobrecciated meta-andesite	62	-10	12	-0.04	-0.4	7.68	201
	m-wk	alu wk		46	-10	16	-0.04	-0.4	5.32	202
		gyp flm		42	-10	28	-0.04	-0.4	3.76	203
		-vlt		62	-10	41	-0.04	-0.4	6.00	204
			(gradual boundary)	58	-10	10	0.18	-0.4	4.12	205
206.0				1820	-10	7	0.06	-0.4	2.20	206
	py vwk	gyp	pale greenish - grayish white	3200	-10	4	0.06	-0.4	3.52	207
	dis-	vlt-	compact f-m.g. meta-porphyry	1480	-10	10	-0.04	-0.4	3.32	208
	flm	netwk		82	-10	17	-0.04	-0.4	3.04	209
210			partly auto-pseudo	24	-10	10	-0.04	-0.4	3.08	210
		kal	brecciated structure	22	-10	7	-0.04	-0.4	2.88	211
		m-st		24	-10	7	-0.04	-0.4	2.60	212
				24	-10	7	-0.04	-0.4	3.20	213
		sil wk		28	-10	7	-0.04	-0.4	2.48	214
			PTS: 216.15	34	-10	7	-0.04	-0.4	2.92	215
		chl m	py,sp	76	-10	10	-0.04	-0.4	3.72	216
				120	-10	14	-0.04	-0.4	3.24	217
		alu wk		66	-10	10	-0.04	-0.4	3.92	218
				46	-10	10	-0.04	-0.4	3.92	219
220				42	-10	7	-0.04	-0.4	3.80	220
				48	-10	14	-0.04	-0.4	4.32	221
	py vwk	gyp	Ditto	70	-10	10	-0.04	-0.4	4.16	222
	dis-	vlt-		86	-10	14	-0.04	-0.4	4.00	223
	flm	netwk		86	18	7	-0.04	-0.4	3.80	224
				48	-10	10	-0.04	-0.4	4.08	225
		kal		34	10	10	-0.04	-0.4	3.32	226
		m-st		48	11	10	-0.04	-0.4	3.72	227
				40	18	10	-0.04	-0.4	2.68	228
		sil wk		54	14	10	-0.04	-0.4	4.00	229
230				72	18	10	-0.04	-0.4	3.92	230
		chl m		54	14	7	-0.04	-0.4	3.92	231
				20	14	7	-0.04	-0.4	3.48	232
		alu wk		32	10	7	-0.04	-0.4	3.20	233
				46	21	10	-0.04	-0.4	5.76	234
				20	-10	-5	-0.04	-0.4	4.64	235
				16	11	-5	-0.04	-0.4	4.72	236
	py vwk	gyp	Ditto	34	16	10	-0.04	-0.4	4.48	237
	dis-	vlt-		1860	68	7	-0.04	-0.4	3.84	238
	flm	netwk		40	18	-5	-0.04	-0.4	2.48	239
240				26	11	-5	-0.04	-0.4	3.04	240
		kal		22	18	-5	-0.04	-0.4	1.28	241
		m-st		28	11	-5	-0.04	-0.4	3.12	242
				32	14	13	-0.04	-0.4	2.44	243
		sil wk		152	14	7	-0.04	-0.4	2.68	244
				182	17	-5	-0.04	-0.4	3.20	245
		chl m		162	14	7	-0.04	-0.4	2.32	246
				108	89	7	-0.04	-0.4	4.48	247
		alu wk		100	36	10	-0.04	-0.4	3.80	248
250				40	21	7	-0.04	-0.4	4.00	249

Veraguas, Chile　　**Drill# MJCV-4**　　(Scale 1/200)　(6/10)　　(Depth: 250 m - 300 m)



Geologic Discription			T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	Num
			142	25	-5	-0.04	-0.4	3.08	250
py dis	gyp	pale greenish gray - white gray	50	21	-5	-0.04	-0.4	2.60	251
wk-vwk	vlt-	f-m.g. meta-andesite - porpyry	32	11	-5	-0.04	-0.4	3.00	252
	netwk		18	-10	-5	-0.04	-0.4	3.40	253
			88	14	7	-0.04	-0.4	4.16	254
	kal m-wk	partly auto-pseudo	74	14	7	-0.04	-0.4	6.32	255
		brecciated structure	28	11	-5	-0.04	-0.4	8.40	256
	sil wk		34	11	7	-0.04	-0.4	7.84	257
			54	14	7	-0.04	-0.4	7.12	258
	chl m		24	11	-5	-0.04	-0.4	7.44	259
			30	-10	-5	-0.04	-0.4	7.68	260
	gyp		32	-10	-5	-0.04	-0.4	6.32	261
			42	-10	-5	-0.04	-0.4	4.16	262
			68	-10	-5	-0.04	-0.4	4.48	263
			74	11	-5	-0.04	-0.4	4.88	264
			32	11	8	-0.04	-0.4	4.88	265
			62	-10	-5	-0.04	-0.4	3.96	266
			164	11	-5	-0.04	-0.4	4.16	267
			170	11	6	-0.04	-0.4	3.20	268
		(gradual boundary)	50	-10	10	-0.04	-0.4	3.32	269
			40	-10	6	-0.04	-0.4	1.76	270
py dis	kal wk	pale greenish gray - white gray	32	-10	8	-0.04	-0.4	2.52	271
wk	sil m-wk		20	-10	6	-0.04	-0.4	2.44	272
	chl m	f-m.g. meta-andesite	76	11	10	-0.04	-0.4	2.64	273
	gyp vlt		50	-10	12	-0.04	-0.4	2.28	274
			56	-10	12	-0.04	-0.4	1.96	275
			86	-10	10	-0.04	-0.4	1.66	276
			126	-10	16	-0.04	-0.4	2.46	277
			38	-10	12	-0.04	-0.4	1.58	278
			72	-10	12	-0.04	-0.4	1.80	279
			54	-10	10	-0.04	-0.4	1.54	280
			48	-10	16	-0.04	-0.4	2.36	281
			82	-10	16	-0.04	-0.4	2.26	282
py dis	Ditto	gyp st	52	-10	12	-0.04	-0.4	2.22	283
wk			78	-10	10	-0.04	-0.4	1.34	284
	gyp		110	-10	12	-0.04	-0.4	2.36	285
	vlt-		60	-10	14	-0.04	-0.4	3.52	286
	netwk	frct(288.6-289.00)	108	13	16	-0.04	-0.4	2.64	287
		XRD: 288.50	78	-10	12	-0.04	-0.4	4.24	288
		gyp>s,qtz,kal	56	-10	16	-0.04	-0.4	3.68	289
			80	-10	14	-0.04	-0.4	2.92	290
py with			62	-10	14	-0.04	-0.4	2.92	291
			46	-10	16	-0.04	-0.4	3.16	292
			30	-10	14	-0.04	-0.4	2.36	293
			152	-10	14	-0.04	-0.4	2.20	294
			122	13	18	-0.04	-0.4	2.96	295
			96	18	16	-0.04	-0.4	4.60	296
			46	-10	18	-0.04	-0.4	4.40	297
			180	-10	22	-0.04	-0.4	3.16	298
			36	-10	16	-0.04	-0.4	1.92	299

Veraguas, Chile Drill# MJCV-4 (Scale 1/200) (7/10) (Depth: 300 m - 350 m)

Depth	Geologic	Discription		T.Cu	S.Cu	Mo	Au	Ag	T.Fe	Samp
(m)	Min.	Alt.	Lithology	ppm	ppm	ppm	ppm	ppm	%	Num
				106	13	16	-0.04	-0.4	3.12	300
	py dis	chl m-wk	pale greenish gray - white gray	252	25	22	-0.04	-0.4	6.48	301
	wk	sil wk		78	13	18	-0.04	-0.4	2.40	302
		kal wk-m	f-m.g. autobrecciated meta-andesite	156	-10	10	-0.04	-0.4	2.88	303
				104	-10	-5	-0.04	-0.4	3.52	304
		gyp	porphyritic texture	114	-10	12	-0.04	-0.4	3.64	305
		flm		66	-10	20	-0.04	-0.4	4.08	306
		netwk		60	-10	16	-0.04	-0.4	4.72	307
		m-st		30	-10	16	-0.04	-0.4	3.84	308
				112	-10	10	-0.04	-0.4	4.00	309
310		later		222	13	10	-0.04	-0.4	3.24	310
		to chl		116	-10	16	-0.04	8.0	2.92	311
				90	-10	14	-0.04	8.0	2.80	312
				112	-10	12	-0.04	1.2	3.80	313
				126	-10	16	-0.04	-0.4	3.68	314
	py flm		py-chl flm-netwk	116	19	10	-0.04	-0.4	3.52	315
				506	38	20	-0.04	0.6	4.24	316
				156	22	14	-0.04	-0.4	3.60	317
				96	13	14	-0.04	-0.4	4.56	318
				42	13	10	-0.04	-0.4	2.84	319
320				60	-10	12	-0.04	-0.4	2.72	320
				58	-10	18	-0.04	-0.4	3.92	321
322.4	py dis			42	-10	18	-0.04	-0.4	4.80	322
323.1	m-st			38	-10	14	-0.04	-0.4	9.40	323
				42	-10	11	-0.04	-0.4	4.32	324
				40	-10	10	-0.04	-0.4	5.12	325
	py dis			52	13	12	-0.04	-0.4	4.08	326
	wk			26	-10	10	-0.04	-0.4	2.76	327
				60	16	12	-0.04	-0.4	5.04	328
				40	-10	16	-0.04	-0.4	4.08	329
330				54	16	14	-0.04	-0.4	3.76	330
331.15			(gradual boundary)	44	13	26	-0.04	-0.4	4.12	331
		chl m-st		32	-10	16	-0.04	-0.4	3.40	332
		sil wk-m	pale green f-m.g. meta-andesite	38	-10	22	-0.04	-0.4	3.80	333
		ser wk-m		34	-10	14	-0.04	-0.4	3.64	334
	py dis		XRD: 335.40	36	-10	10	-0.04	-0.4	3.52	335
	wk	gyp	qtz>anh,py,gyp	26	-10	8	-0.04	-0.4	2.92	336
		vlt-flm		34	-10	6	-0.04	-0.4	3.16	337
		wk		26	-10	6	-0.04	-0.4	3.72	338
				40	-10	6	-0.04	-0.4	3.76	339
340 340.5	sil-hm-			28	-10	12	-0.04	-0.4	4.72	340
	py dis	gyp flm		30	-10	12	-0.04	-0.4	4.68	341
			FI:PTS: 343.00	26	-10	10	-0.04	-0.4	4.28	342
	py flm-		py,cp,sp	26	-10	10	-0.04	-0.4	3.92	343
344.0	netwk			24	-10	10	-0.04	-0.4	4.24	344
				22	-10	10	-0.04	-0.4	3.92	345
				22	-10	14	-0.04	-0.4	3.56	346
				28	-10	16	-0.04	-0.4	3.80	347
				24	-10	14	-0.04	-0.4	2.88	348
				28	-10	10	-0.04	-0.4	3.20	349
350										