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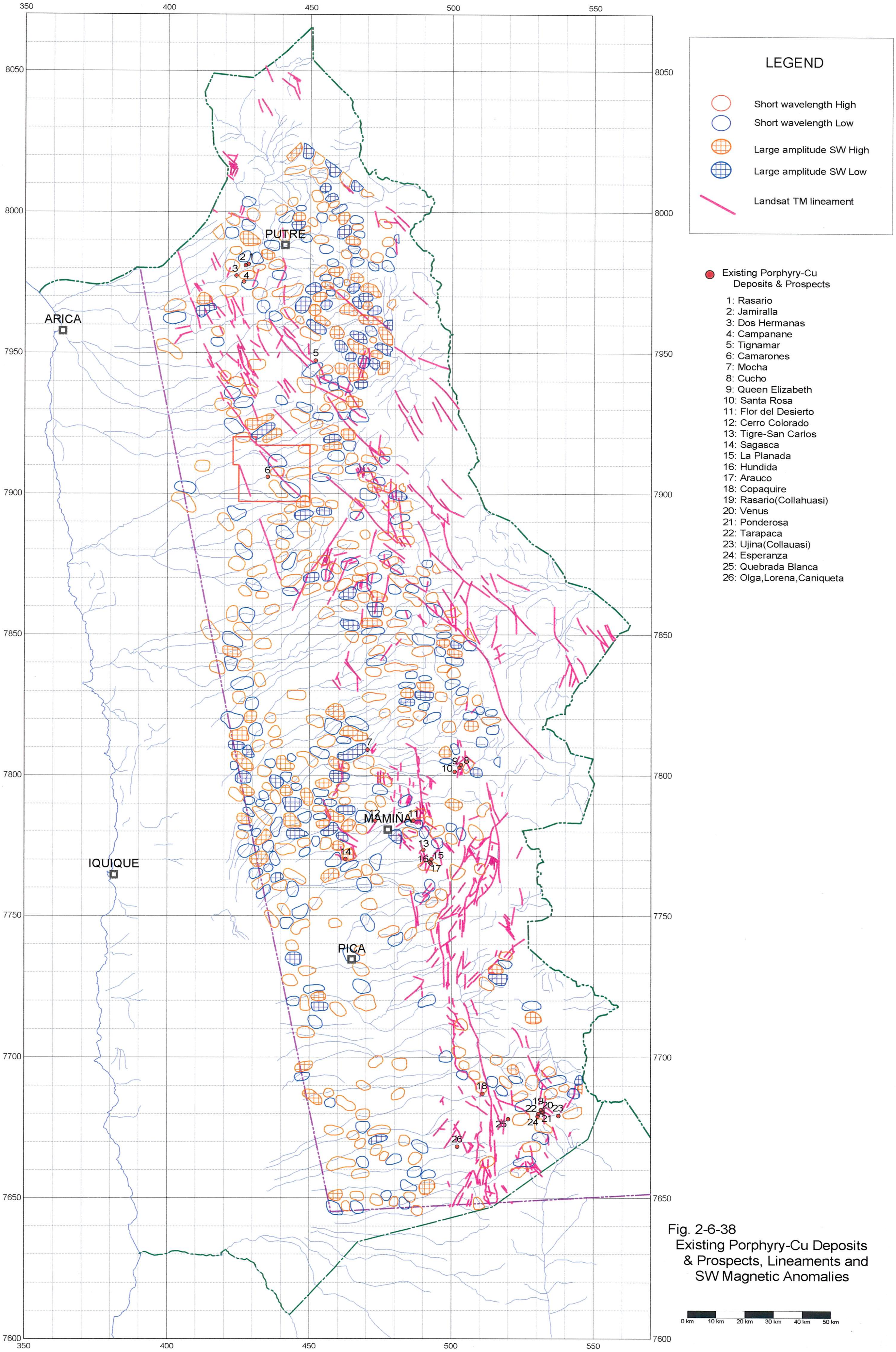


Fig. 2-6-38
Existing Porphyry-Cu Deposits & Prospects, Lineaments and SW Magnetic Anomalies

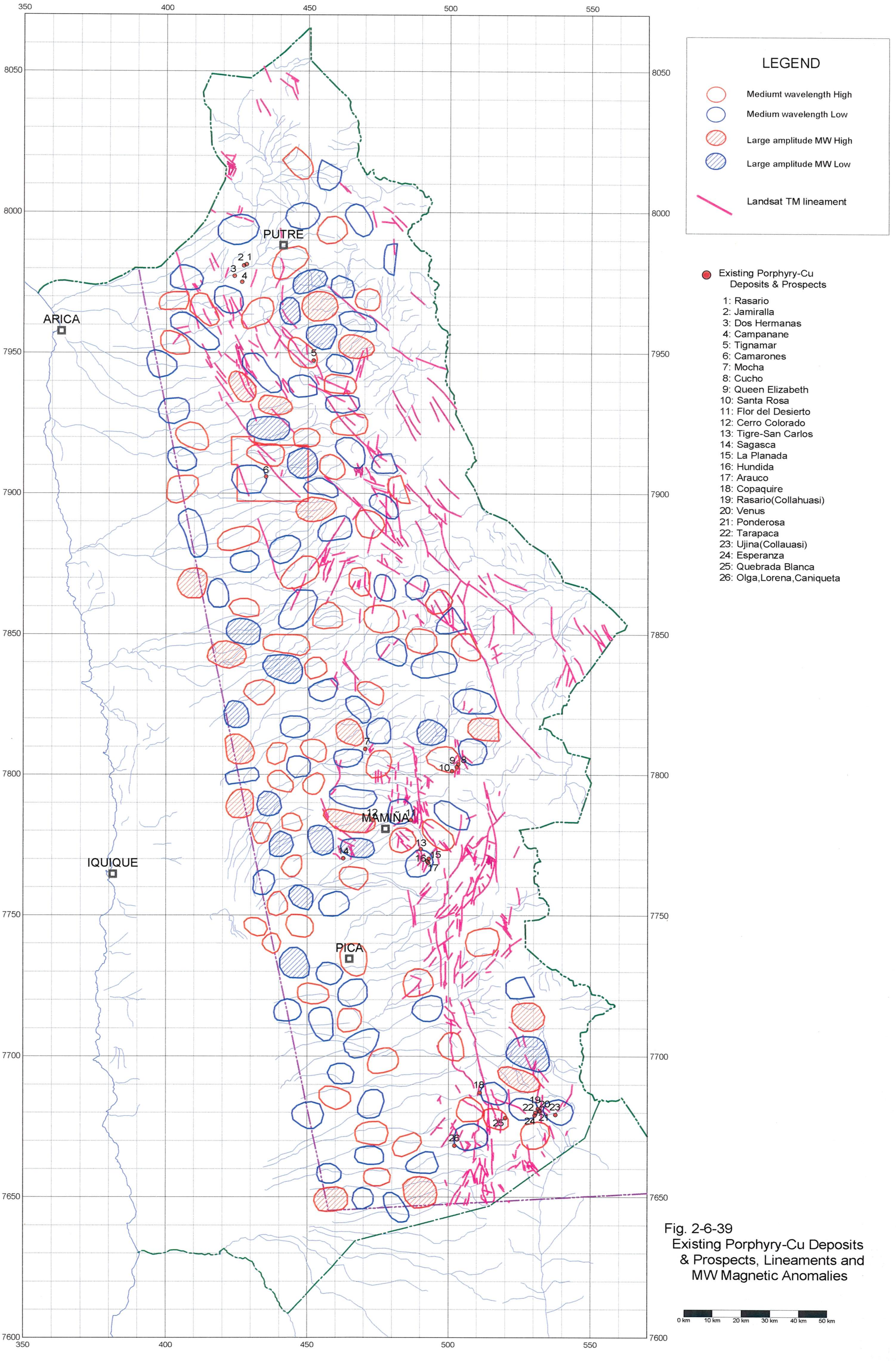
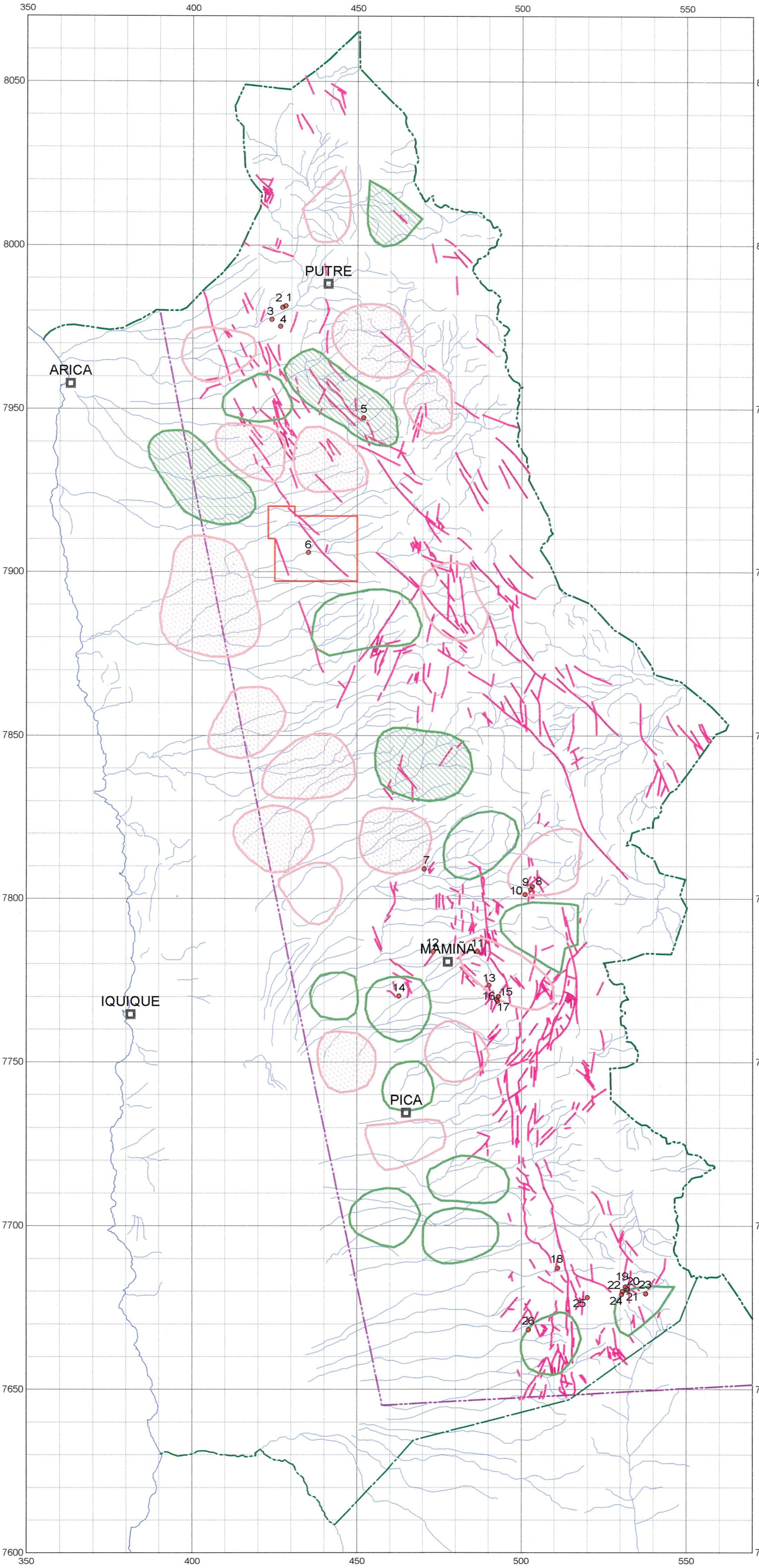
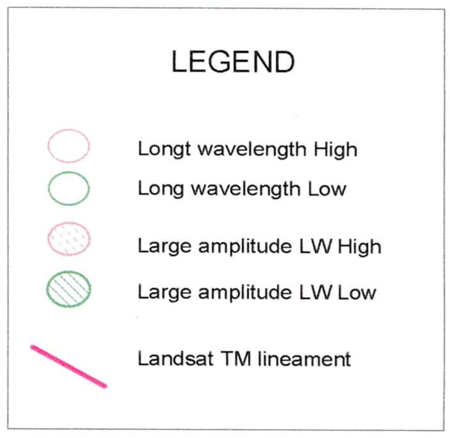


Fig. 2-6-39
Existing Porphyry-Cu Deposits & Prospects, Lineaments and MW Magnetic Anomalies





Existing Porphyry-Cu Deposits & Prospects

1: Rasario
2: Jamiralla
3: Dos Hermanas
4: Campanane
5: Tignamar
6: Camarones
7: Mocha
8: Cucho
9: Queen Elizabeth
10: Santa Rosa
11: Flor del Desierto
12: Cerro Colorado
13: Tigre-San Carlos
14: Sagasca
15: La Planada
16: Hundida
17: Arauco
18: Copaquire
19: Rasario(Collahuasi)
20: Venus
21: Ponderosa
22: Tarapaca
23: Ujina(Collauasi)
24: Esperanza
25: Quebrada Blanca
26: Olga,Lorena,Caniqueta

Fig. 2-6-40
Existing Porphyry-Cu Deposits & Prospects, Lineaments and LW Magnetic Anomalies

0 km 10 km 20 km 30 km 40 km 50 km

Table 2-6-5 Characteristic Relations between Porphyry-Cu Deposits and Magnetic Anomalies

No.	Name	Coordinate(km) Northing	Coordinate(km) Easting	Medium wavelength anomaly: Neighboring anomaly (No.)	Medium wavelength anomaly: Position/Distance(km) from Prospect/Deposit	Medium wavelength anomaly: Paleo-magnetism	Medium wavelength anomaly: Geology of anomaly area	Medium wavelength anomaly: Suscep. of Anomaly area	Short wavelength Anomaly: Neighboring anomaly (No.)	Short wavelength Anomaly: Position/Distance(km) from Prospect/Deposit	Short wavelength Anomaly: Relation with MW anomaly	Short wavelength Anomaly: Paleo-magnetism	Short wavelength Anomaly: Geology of anomaly area	Short wavelength Anomaly: Suscep. of Anomaly area	Correlation with topography	Correlation with volcano	24,475 - 24,525 nT RTP zone
1	Rosario	7981.434	428.160	-	Far (8.0km)	-	Tig,Qv	Low	L(23)	Mo (1.0km)	Far (2.5km)	-	Tig,Qv	Low	No	No	C
2	Jamiralla	7981.042	427.199	-	Far (8.0km)	-	Tig,Qv	-		Mo		-	Tig,Qv	Low			C
3	Dos Hermanas	7977.300	423.900	L(9)	Far (5.0km)	-	Tig,Kv(i)	-	H(37)	Mo (1.0km)	Far (3.5km)	-	Kgd,Tig	High	No	No	M
4	Campanane	7975.231	426.572		Far (3.0km)	-	Tig,Kv(i),Kdg	-	L(32)	M	Far (1.5km)		Tig,Qv	Low	No		M
									H(42)	Far (3.0km)	M	-	Kv(i),Tig	-	No	No	
5	Tignamar	7947.289	451.872	H(11)	Mi (1.0km)	-	,K v (s),Qv,Qvr	Low	L(55)	Mo	M	-	Kv(s),Qvr	Low	No	No	M
6	Camarones	7905.880	435.120	L(25)	M	-	Qvc,Tig,Kv(i)	Low	H(96)	Mo (1.5km)	Mo (1.0km)	-	Tig	Low	No	No	M
7	Mocha	7809.106	470.379	L(49)	Mo (1.0km)	-	Tig,Kv(i),Jm(s),Kdg	Low	L(142)	Mo (0.5km)	M	-	Tig,Qvc,Kv(i)	High	No	No	M
8,9, 10	Cucho, Queen Elizabeth, Santa rosa	7803.670	504.211	L(48)	Mo (1.5km)		Qv,Jm(s),Qvr	Low	H(204)	M	M	-	Jm(s),Tig,Qvc,Qv	High	No	No	M
				H(44)	M	-	Kgd,Qv	High									
11	Flor del Desierto	7783.848	486.599	L(54)	M	N(3.0)	Kv(i),Tig,	Low	L(171)	M	M	-	Kv(i),Kgd	-			M
									H(224)	M (0.5km)	M	-	Kv(i),Kgd	-	No	No	
12	Cerro Colorado	7783.799	473.117	H(49)	M	N	Kv(i),Qvc,Kgd,Tig	High	L(168)	Far (2.0 km)	M	-	Kv(i),Tig,Qvc	-	No	No	M
13	Tigre-San Carlos	7773.463	490.112	L(59)	M	-	Kv(i),Tig,Kgd,Qvc	Low	H(245)	Far (4.0km)	I	-	Kv(i),Kgd	-	No	No	M
15	La Planada	7770.086	492.991		Mi (1.5km)	-	Kv(i),Tig,Kgd,Qvc	Low		Mo (1.0km)		-	Kv(i),Kgd	Low			M
16	Hundida	7769.089	492.444		Mi (2.0km)	-	Kv(i),Tig,Kgd,Qvc	Low		Mi (0.5km)		-	Kv(i),Kgd	Low			M
17	Arauco	7768.622	492.700		Mi (1.5km)	-	Kv(i),Tig,Kgd,Qvc	Low		Mi (1.0km)		-	Kv(i),Kgd	Low			M
18	Copaquire	7687.116	511.023	L(73)	M	-	Jm(s),Kv(m),Kv(i)	Low	H(294)	M	M	-	Kv(i),Qcp	Low	No	No	M
19	Rosario(Collahuasi	7681.321	531.544	L(75)	Mo (0.5km)	R	Jm(s),K v (i),Kv(m)	Low	H(306)	Far (2.5km)	M	-	Kv(i),Kv(m),Kgd	Low	No	No	M
20	Venus	7680.891	532.121		M	R	Jm(s),K v (i),Kv(m)	Low		Far (3.0km)		-	Kv(i),Kv(m),Kgd	Low			M
21	Ponderosa	7680.448	532.225		Mo (0.5km)	R	Jm(s),K v (i),Kv(m)	Low		F(2.0)		-	Kv(i),Kv(m),Kgd	Low			Mo (0.5km)
22	Tarapaca	7680.008	530.768		Mi (0.5km)	R	Jm(s),K v (i),Kv(m)	Low		Far (1.5km)		-	Kv(i),Kv(m),Kgd	Low			Far (1.0km)
23	Ujina(Collahuasi)	7679.299	537.701	L(76)	C	-	Kgd,Kv(i),Tig,Qcp	Low	H(303)	Mo(0.5)	I	-	Tig,Qvc	Low	No	No	Far (2.5km)
24	Esperanza	7679.012	530.455	L(75)	M	R	Jm(s),K v (i),Kv(m)	Low	H(306)	Mo(0.5)	M	-	Kv(i),Kv(m),Kgd	Low			Mo (0.5km)
25	Quebrada Blanca	7678.106	520.079		Mo (2.5km)	R	Jm(s),K v (i),Kv(m)	Low	H(305)	Mo(1.5)	M	R	Kv(m)Kv(i)	Low	No	No	M
				H(71)	Mi (0.5km)	R	Pzg,Kv(m),Kv(i),Kgd	High			Mo (0.5km)						
26	Olga,Lorena, Caniqueta	7668.305	502.181	L(78)	M	-	Jm(s),Pzg,Pc,Kgd	-	-			-		-	No	No	M

N:Normal
R:Reverse

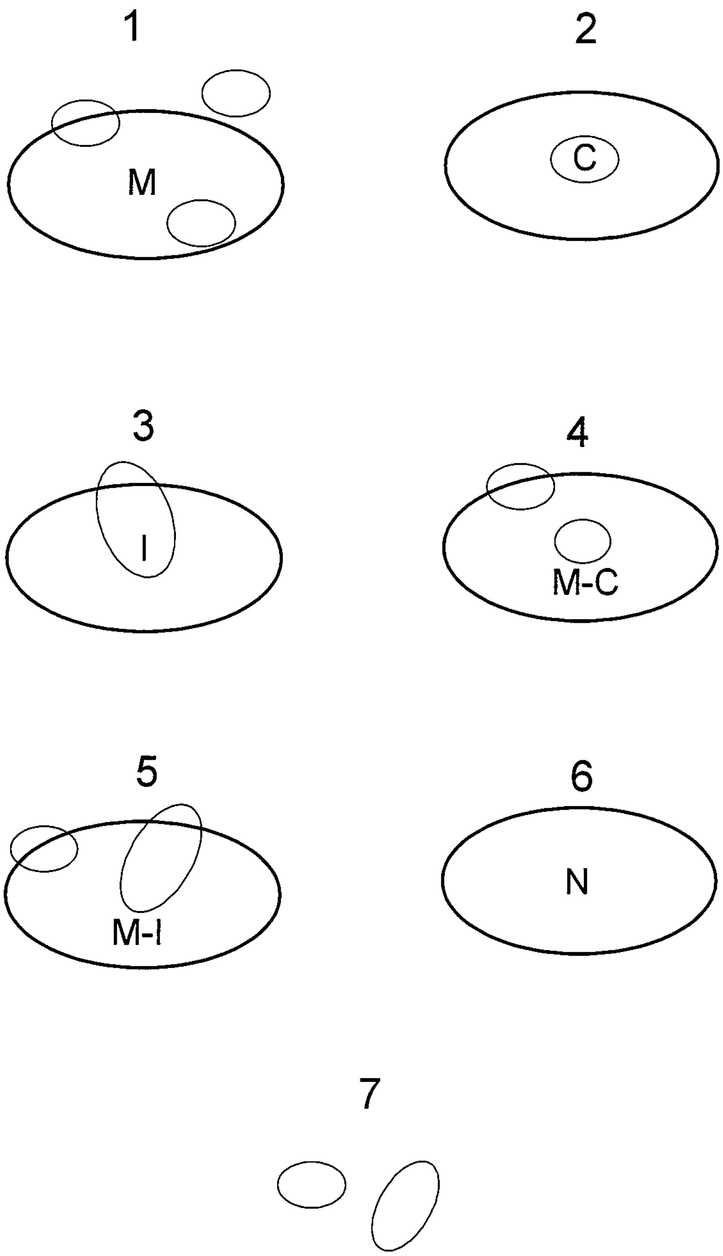


Fig. 2-6-41 Schematic relations between SW and MW Magnetic Anomalies

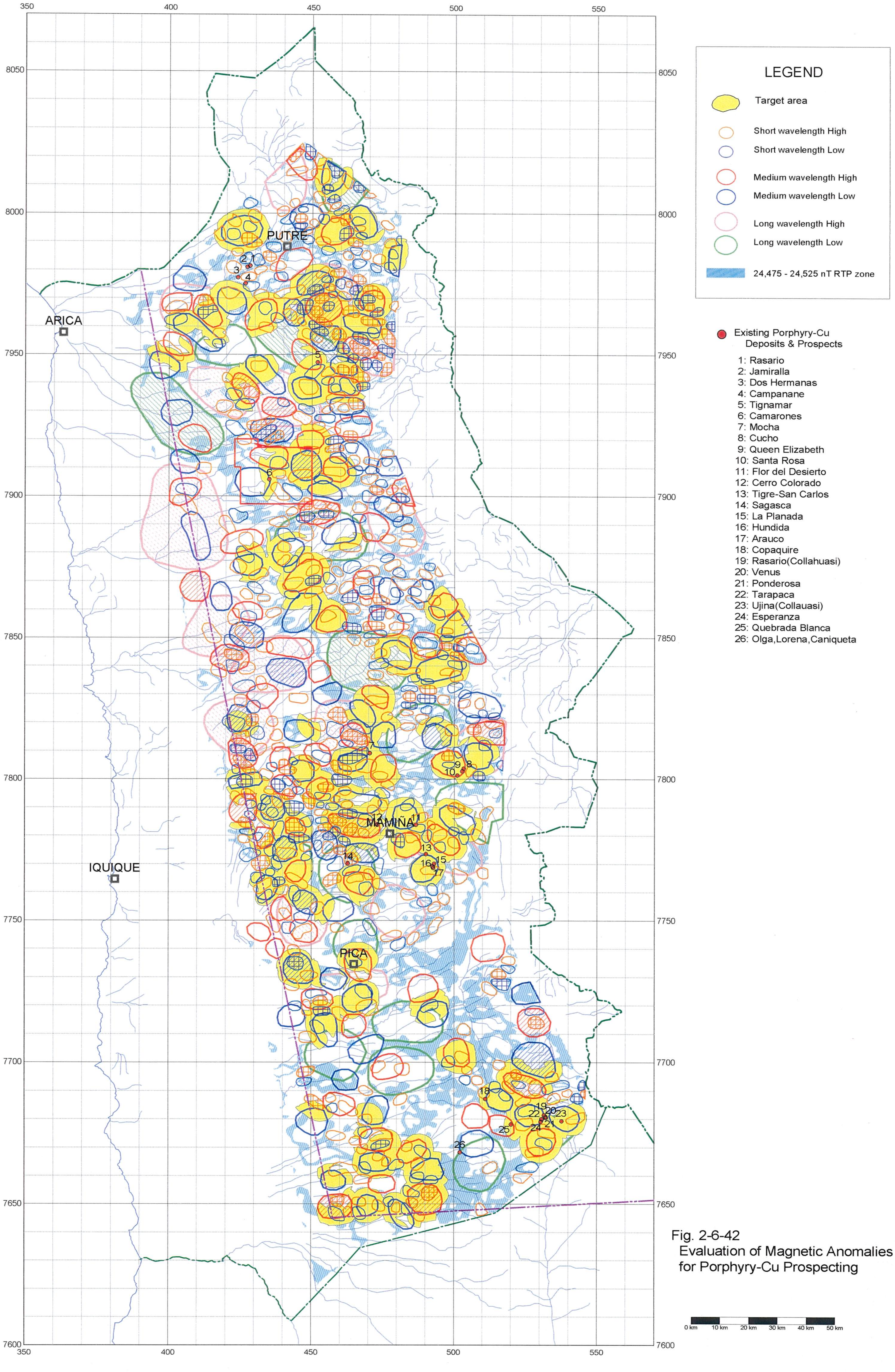


Fig. 2-6-42
Evaluation of Magnetic Anomalies for Porphyry-Cu Prospecting

PART III CONCLUSIONS AND RECOMMENDATIONS

PART III CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1 CONCLUSIONS

During the course of the three year period of fiscal 1999 to 2001 of the Region I area mineral exploration, analysis of existing data, analysis of satellite images, geological survey, geochemical exploration, gravity survey, airborne magnetic survey, re-analysis of the airborne magnetic survey results and drilling were carried out with the following conclusions.

1. Many alteration zones were extracted in Paleogene and older formation and vicinity and in Miocene-Quaternary volcanic rocks by TM image analysis. These alteration zones are aligned in the NW-SE~NNW-SSE direction in the northern part, and in N-S~NNW-SSE direction in the central to the southern parts of the survey area. The above direction of alteration zone alignment is harmonious with the prominent direction of the lineaments developed in the alteration zones.

2. Analysis of images of visible near infrared-short-wave infrared region, short-wave infrared region, and thermal infrared region was carried out and the following results were obtained. Detailed geologic structure was clarified; alteration zones consisting of sericite, kaolin, alunite, and silica were extracted at Tignamar, Palca, Queen Elizabeth, Cerro Colorado, Copaquiri, and Collahuasi areas; and sericitized zone was extracted at Mocha area.

3. Mineralization of the known deposits and mineral prospects of the survey area was classified from the analysis of existing data on geology and ore deposits. And porphyry copper-type mineralized zones and possibly closely related prospects (Mo veins, irregular Cu, Cu veins, unknown-shaped Cu, Au veins, unknown-shaped Au) were selected.

4. Many mineral prospects closely related to porphyry copper-type mineralized zones are distributed in Paleocene-early Eocene porphyry copper belt in the northern part, and in Paleocene-early Eocene and late Eocene-early Oligocene porphyry copper belts in the central to southern parts of the survey area. Epithermal mineralized zones related to Miocene-Quaternary igneous activity occur in the northern to central parts of the area and some of it is believed to overlap with the porphyry copper mineralized zones.

5. Porphyry copper mineralized zones and possibly closely related prospects occur in and near Cretaceous-Tertiary intrusive bodies (plutonic and hypabyssal rocks).

6. Porphyry copper mineralized zones occur; in the northern and central parts in Cretaceous-Tertiary intrusive bodies or in Cretaceous volcanic rocks, and in the southern part in Paleozoic sedimentary and volcanic rocks, Cretaceous volcanic rocks, Paleozoic granitic rocks, or in Cretaceous-Tertiary intrusive bodies.

7. Faults on geological maps and fractures expressed as lineaments extracted from TM images are fractures which are generally closely related to the occurrence of ore deposits and prospects. The direction of the lineaments near the deposits and prospects is diverse. The porphyry copper mineralized zones occur either in the peripheries of the zones where lineaments are developed (Cerro Colorado, Collahuassi, etc.,) or near the center of lineament concentration (Quebrada Blanca, Copaquire, etc.).

8. In the central and southern parts many mineral prospects including porphyry copper mineralized zones occur in the alteration zones or vicinity, while in the northern part many of them occur in localities where alteration zones have not been extracted.

9. Assuming that hydrothermal activity related to mineralization is effective within a range of 4km from the alteration zones and ore deposits and prospects, hydrothermal zones are generally elongated in the NNW-SSE direction, but existence of those elongated in the E-W direction intersecting the major NNW-SSE direction is inferred. The known porphyry copper mineralized zones occur in this E-W hydrothermal system. The hydrothermal zones coincide with lineament concentration in the central and southern parts, but the correlation between the two is relatively poor in the northern part, with better coincidence with the distribution of Miocene-Quaternary volcanoes.

10. The following localities were selected as promising for porphyry copper occurrence by analysis of existing data and satellite images.
    Porphyry copper-type mineral prospects and within 4km range.
    Mineral prospects possibly related to porphyry copper mineralization in Oligocene and older formations (Mo veins, irregular Cu, Cu veins, unknown-shaped Cu, Au veins, unknown-shaped Au) and alteration zones (acidic alteration zones and sericitized zones extracted by GEOSCAN image analysis and alteration zones extracted by TM image

analysis), and within 4km of the above.

11. Reconnaissance surveys were carried out at eight localities. These localities were extracted as promising for locating mineral deposit by analyses of existing data, satellite images, and other relevant information. These surveys confirmed that the localities with geologic characteristics of porphyry copper mineralization and mineral potential are; Mocha-Soledad district, La Planada district, Queen Elizabeth district, Tignamar district, Camarones district, and Diana district. Drilling in parts of the Mocha-Soledad, Tignamar, and Camarones district discovered porphyry copper-type secondary enrichment zones. Of these districts, most potential localities, from the intensity of Cu-Mo mineralization, are concluded to be the Queen Elizabeth and La Planada districts.

    In the Mocha-Soledad district, there is a possibility of porphyry copper deposit occurrence at northeastern Mocha and between eastern Mocha and Soledad aside from the deposits confirmed in the Mocha district.

    In the Tignamar district, there are alteration zones at two locations, namely in the northern and southern parts. The occurrence of porphyry-type mineralization has already been confirmed on the northern side of the northern part of the district. And although there are room for further exploration outside the drilled zones, there are negative factors regarding the further development of porphyry-type-mineralized zone such as propylitic alteration and the possibility of dominant epithermal-type mineralization. In the southern side of the northern part, there are wide occurrences of altered zones, which could not be surveyed this year, and there are rooms for further exploratory work, but the topography is rugged and the access is difficult.

    In the Camarones district, a regional hydrothermal alteration zone was confirmed between the Quebrada Camarones and the southernmost part of the survey area. This regional alteration zone is believed to have been formed by a series of hydrothermal activity from porphyry copper-type to epithermal-type activity. The location of the center of this activity, namely the porphyry copper zone, was inferred from the study of annular structure, distribution of intrusive bodies, fluid inclusion data, geochemical anomalies, high magnetic anomalies, gravity anomalies, and other relevant data. The known copper mineralization in quartz porphyry host rock could possibly be a peripheral phase of this porphyry copper mineralization.

In the Diana district, the alteration zone is similar to the Au-rich mineralization · alteration zone formed above porphyry copper deposits. Thus there is a possibility of porphyry copper deposit occurrence in subsurface zones.

12. A total of 14 areas were surveyed with the purpose of verifying promising areas extracted from the results of airborne magnetic survey analysis, and also for geological reconnaissance. Two areas, namely Chusmisa and Camiña, were extracted as having high mineral potential. These two areas show geological features characteristic to porphyry copper type mineralization. Namely; the laterally extensive occurrence of phyllic alteration, the existence of porphyry or granitic rocks associated with mineralization, and the occurrence of intrusive igneous bodies with age (65~48 Ma) similar to the porphyry copper deposits in northern Chile~Peru. But quartz vein network and Cu, Mo rock geochemical anomalies were not observed. The pyrite dissemination zone in quartz porphyry in the western alteration zone of Camiña area is similar to the "pyrite shell" of the San Manuel – Kalamazoo model of Lowell & Guilbert (1970).

13. South of Chusmisa, Paleocene-Early Eocene (65-48Ma) porphyry copper belt and Late Eocene-Early Oligocene (43-31Ma) porphyry copper belt occur parallel with border extending almost in the N-S direction, to the north of Chusmisa, however, Paleocene-Early Eocene porphyry copper belt is developed and the Late Eocene-Early Oligocene belt is intersected by Neogene-Quaternary volcanic rocks. In the area between northeast of Chusmisa and Tignamar, there is a possibility of Late Eocene-Early Oligocene porphyry copper belt hidden below Neogene-Quaternary volcanic rocks, and possibly not existing.

14. High gravity anomaly occurs in the following localities; extensive area from the eastern to southeastern and southern part of the Camarones district, western margin of the survey area, and from middle stream of Quebrada Camarones to the west of Pachica. On the other hand, low gravity anomaly occurs in; wide area from the middle stream of Quebrada Vitor to the middle stream of Quebrada Sucuna in the northern part of the survey area, southern bank of the Quebrada Camarones in the southwest, and upstream Quebrada Sucuna in the northeastern margin.

The drainage zone of the Quebrada Camarones is in high gravity zone with the exception of a part of the southwest. The low gravity anomaly zone at the middle stream of Quebrada Vitor to Quebrada Sucuna has relatively high gravity at its eastern, southern, and western border and has a clear outline.

Basement complex in the Camarones district is closely related to high gravity anomaly. This is evidenced by the high density, 2.50~2.80g/cm^3, of the rock samples. The high gravity anomalies indicate either surface exposure of the basement complex or its occurrence in shallow subsurface zones, namely either the lack or thin ignimbrite cover. On the other hand, the low gravity anomalies indicate deep basement complex and thick overlying ignimbrite. Three-dimensional two-layer modeling results show that the thickness of the ignimbrite cover is more than 500m at the extensive zone from the middle stream of Quebrada Sucuna to middle to upstream of Quebrada Vitor, and a belt on the southern bank of the upstream to middle reaches of Quebrada Camarones. It is estimated that the thickness would attain more than 1,000m in the high elevation zone in the northern to northeastern part and in the southeastern part of the survey area.

Extensive subsurface occurrence of intrusive bodies is inferred form the distribution of the high gravity anomalies and magnetic anomalies at; southern part of the survey area, near Esquiña in the central part, and east of Pachica. Parts of the intrusive bodies are exposed on the surface, and the overlying volcanic rocks are estimated to be less than 200~300m thick. These zones should be considered for future exploration. Results of analysis indicate that the basement complex occurs in shallow subsurface zones at; near Saguara in the east, downstream zone of the Quebrada Sucuna in the west, and downstream zone of the Quebrada Camarones. Notable magnetic anomalies, however, were not detected in these localities.

15. Subsurface geologic structure of the whole survey area was clarified by airborne magnetic analysis, and the northern continuity of the fault system related to mineralization was confirmed. An example would be the Domeyko Fault.

16. Magnetic susceptibility was measured for the whole area, and the results were provided for the re-analysis of the airborne magnetic survey which was carried out during the year 2000. The relation between the magnetic susceptibility and the rock species and alteration was clarified. The intrusive rocks have the highest magnetic susceptibility. The susceptibility decreases by phyllic and acidic alteration, but is not affected by propylitic alteration.

17. The remanent magnetism and magnetic susceptibility of samples mainly collected from outcrops of the vicinity of medium wavelength airborne magnetic low anomalies were measured. The polarity of the remanent magnetism of 6 localities out of 14 is estimated to be reverse. Also as low airborne magnetic anomalies occur in areas of high surface magnetic susceptibility, it is inferred that many airborne low magnetic anomaly zones with reverse magnetic polarity exist in the survey area. Reverse magnetic polarity and high magnetic susceptibility zones with low airborne magnetic anomaly possibly indicate blind igneous intrusion or solidified magma. This naturally is the case with high airborne magnetic anomaly areas.

18. Phyllic or acidic alteration zones were confirmed in 9 areas out of the 14 surveyed. These alteration or mineralized zones occur in; the periphery or vicinity of medium wavelength airborne magnetic anomaly zones, within or vicinity of intermediate magnetic intensity zones, and the periphery or vicinity of short wavelength anomaly zones. In these cases, about half of the medium wavelength anomalies are high anomalies and the other half low anomalies, but about 70% of the short wavelength anomalies are high anomalies. It can be said that magnetic anomalies occur near alteration zones, mineralized zones, and intrusive bodies, but the reverse is not necessarily true. And magnetic anomalies (overlap of the periphery of medium wavelength magnetic anomaly and intermediate magnetic intensity zones) do not necessarily indicate the existence of alteration zones, mineralized zones, or intrusive bodies in the shallow part.

19. A total of 12 holes were drilled in the overlapping zones or their vicinity of intermediate airborne magnetic intensity zones and medium wavelength magnetic anomalies. Of these, 3 holes (MJC-1, 11, 12) in the Camarones area reached the pre-Early Oligocene formations which is the porphyry copper bearing horizon. MJC-1 and MJC-11 both confirmed quartz porphyritic brecciated intrusive rocks and quartz porphyry intrusive bodies, and strong pyrite mineralization. Quartz porphyry is the host rock of the Camarones Porphyry Copper Prospect. It is highly possible that these two drill holes located porphyry copper type mineralization and alteration. MJC-12 confirmed the occurrence of quartz diorite which is believed to be the product of Early Eocene activity, and also confirmed weak pyritization.

On the other hand, the 9 holes drilled in other areas penetrated Oligocene-Miocene conglomerate or through younger units. MJC-10 in area northeast of Camiña confirmed the occurrence of pyritization and epithermal type mineralization and acidic alteration zone in Tertiary-Quaternary volcanic rocks.

20. The relation between the basement depth and medium wavelength airborne magnetic anomalies or short wavelength magnetic anomalies cannot be determined from the geology of the drill holes and the changes of magnetic susceptibility of cuttings. The distance from the surface distribution of the pre-Oligocene area to the drilling site is less than 1km and this short distance is believed to be the reason for engaging the pre-Oligocene Series in Camarones area.

21. The general trend of the magnetic susceptibility changes of the cuttings corresponds to the changes of the geology of the drill holes. Namely the susceptibility of the mafic igneous rocks are high, and the Tertiary System and Neogene-Quaternary conglomerates are higher than that of pyroclastic rocks and shallow gravel layers. Also the magnetic susceptibility of phyllic alteration zones, acidic alteration zones, and oxidized zones are relatively low and that of the propylitic alteration zones is high.

22. Frequency analysis of the airborne magnetic survey data revealed magnetic anomaly patterns characteristic to porphyry copper mineralized zones. This pattern consists of a relatively large medium wavelength magnetic anomaly, small short wavelength magnetic anomalies, and intermediate magnetic intensity zones.

    The genesis of this magnetic anomaly pattern is considered as follows. Medium wavelength magnetic anomaly was formed by batholithic complex body, which is a product of activity precursory to porphyry copper type mineralization. While short wavelength magnetic anomalies were formed by the plutonic and hypabyssal rocks including the ore deposits, and the intermediate magnetic intensity zones expresses the hydrothermal alteration zones associated with igneous intrusive activity.

23. During the process of delineating promising areas using these magnetic anomaly patterns, it is necessary to consider the following. Namely, similar magnetic anomaly patterns may appear in volcanic areas; intrusive igneous bodies may lose magnetism in large-scale alteration zones and may not be extracted as short wavelength magnetic anomalies; medium wavelength magnetic anomalies may not occur because of the interaction and mutual elimination by induction magnetism and remanent magnetism,

and medium wavelength magnetic anomalies may be formed by topography and conglomerate formations.

CHAPTER 2 RECOMMENDATIONS FOR THE FUTURE EXPLORATION

Cooperative mineral exploration carried out in the Region I Area during the past three years resulted in the acquisition airborne magnetic data, geological and geochemical data, and other information which are very relevant for mineral exploration of the area. As this area is considered to be highly prospective regarding porphyry copper deposits, it is recommended that future prospecting be carried out fully utilizing these data.

It would be desirable to take note of the following points in the future work.

1. Survey Methods

In this area, thick young volcanic rocks cover the surface and it is difficult to detect the mineral deposits lying under these rocks. Airborne magnetic survey and gravity survey were implemented in order to clarify many of the problems concerning the geology of the area. The potential and problems of these methods are as follows.

(1) Airborne magnetic survey

CODELCO has shown that high macroscopic correlation exists between the major porphyry copper deposits of northern Chile and transverse magnetic anomalies. This fully applies to the major porphyry copper deposits in the central to southern parts of Region I. But transverse magnetic anomalies are not clear in the northern part, and thus in the present survey investigation was not limited to transverse magnetic anomalies, but all magnetic anomalies were analyzed and examined. Frequency analysis was adopted in order to consider the relation between porphyry copper deposits and magnetic anomalies in the level of individual anomalies. The existence of magnetic anomaly patterns each consisting of a set of medium wavelength magnetic anomaly, short wavelength magnetic anomalies, and intermediate magnetic intensity zones was discovered characteristic to known porphyry copper mineralized zones. Pattern analysis was carried out for these magnetic anomaly sets, and the results were applied to the survey area and promising zones for mineral prospecting were extracted on this basis.

Regarding the extracted promising zones, confirmation of alteration zones, mineralized zones, and of related igneous bodies will be the next step. Two-dimensional or 3-dimensional detailed modeling using airborne magnetic data is believed to be effective for determining the existence and scale of such igneous bodies. Modeling will not necessarily provide accurate information regarding the depth of these bodies and thus application of other methods (drilling, gravity, electromagnetic methods and others) is recommended.

(2) Gravity survey

The results of gravity survey carried out during the second year are believed to be effective for understanding the geologic structure such as the thickness of ignimbrite, but since the method is expensive in terms of areal coverage, it would be necessary to limit the area of survey. Also the usefulness of magnetic data will increase significantly by carrying out joint analysis with gravity data. In the future, if gravity survey - airborne or land - can be used to cover wide area economically, this would indeed be a very effective method to apply in this area.

2. Porphyry Copper Belts

Regarding the porphyry copper belt in Region I, its continuity north of Queen Elizabeth Prospect was not clear because of insufficient radiometric age data. The age determination carried out during the present survey clarified the metallogenic province of this area, and it is anticipated that the newly acquired data would contribute to the delineation of promising areas.

3. Promising Areas

It is recommended that the following survey be carried out in the future in order to clarify the geology and mineral deposits of the promising areas extracted by the present survey.

(1) Magnetic anomaly zones extracted by re-analysis of airborne magnetic survey.
Extract surface manifestations by satellite image analysis in the magnetic anomaly zones delineated by pattern analysis.

(2) Mineralized and altered zones extracted by geological survey
Carry out further detailed geological and other relevant surveys in the seven areas extracted by geological survey, namely Mocha-Soleda, La Planada, Queen Elizabeth, Tignamar, Diana, Chusmisa, and Camiña areas.

(3) Promising areas extracted by drilling survey

Carry out further drilling for blind buried porphyry copper mineralized zones inferred to occur in the Camarones area.

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APPENDICES

AP-1 Results of Radiometric Age Determination (Phase 1, 2, 3)

Sample No.	Location	Coordinate		Rock Type	Sample Type	Potassium (K wt%)	Rad. ^{40}Ar (10^{-6}cc/g)	K-Ar Age (Ma)	Air Cont. (%)
		N	E						
Phase 1									
D-003	Soledad	7807829	472110	Quartz porphyry, moderately altered	Biotite (chloritized)	4.192	8.611	52.1 ± 2	38
A-020	Queen Elizabeth-S	7803750	504118	Andesite, highly altered	Biotite	6.444	9.614	38 ± 1.4	34
A-043	La Planada	7769958	492768	Diorite, highly altered	Biotite (chloritized)	6.934	10.375	38.1 ± 0.9	13
A-050	La Planada	7770040	493719	Quartz porphyry, highly altered	Conc.Biotite and chlorite	4.923	7.587	39.2 ± 1.7	44
C-063	La Planada	7770045	492817	Meta-dacite, highly altered	Biotite / mica	7.037	10.680	38.6 ± 1.3	39
Phase 2									
F-073	West Queen Elizabeth-SE	7800708	495609	Granodiorite, fresh	Biotite	6.927	11.249	41.3 ± 1	20
E-098	Camarones-QCFE	7906528	443991	Diorite porphyry, slightly altered, primary biotite remain	Whole rock	1.122	2.269	51.3 ± 1.7	25
G-070	Camarones-QCFE	7905141	443789	Rhyolitic tuff, fresh	Biotite	6.632	5.325	20.5 ± 0.5	26
Phase 3									
K-118	Putre N	8016753	430195	Andesite porphyry	Amphibole	0.956	0.428	11.5 ± 1.1	74
K-119	Putre N	8015730	430733	Andesite porphyry	Whole rock	1.773	0.854	12.3 ± 0.4	27
T-093	Putre W	7982502	423433	altered rock	Sericite / Musc.	4.003	6.997	44.4 ± 2	51
T-093*	Putre W	7982502	423433	altered rock	Whole rock	2.027	3.577	44.8 ± 2.7	65
T-095	Putre W	7982313	423556	Granodiorite	Biotite altered	7.338	14.474	50 ± 1.2	11
Q-164	Putre W	7981434	428160	altered rock	Sericite / Biot.	1.445	2.874	50.4 ± 2	33
Q-164	Putre W	7981434	428160	altered rock	Whole rock	2.226	4.731	53.9 ± 2.4	56
Q-165	Putre W	7981332	428151	Granodiorite	Biotite /Chlorite	6.584	13.971	53.8 ± 1.4	18
K-155	Putre W	7981042	427199	altered Granodiorite	Musc. / Ox.	6.723	13.993	52.8 ± 1.4	29
K-156	Putre W	7981042	427199	altered rock	Musc / Ser.	7.984	17.670	56 ± 1.5	21
K-138	Putre W	7975913	426340	Granodiorite	Biotite altered	7.134	15.136	53.8 ± 1.3	18
K-143	Putre W	7975231	426572	altered Granodiorite	Whole rock	4.804	10.446	55.1 ± 1.9	17
S-051	Arica NE	7974192	413054	Granodiorite	Biotite	7.244	18.205	64 ± 2	20
T-074	Putre S	7973028	445135	Diorite porphyry	Biotite	7.336	4.892	17.1 ± 0.5	29
T-068	Putre S	7972202	443451	altered Qz-porphyry	Whole rock	3.634	1.936	13.7 ± 0.7	67
T-085	Putre S	7972020	440982	Diorite porphyry	Whole rock	0.716	0.394	14.1 ± 0.6	46
T-086	Putre S	7971473	440029	altered Microdiorite	Whole rock	2.115	1.132	13.7 ± 0.5	43
S-049	Putre SW	7960308	420224	Granodiorite	Biotite	7.462	19.289	65 ± 2	16
K-113	Putre SW	7960219	419684	Granite	Biotite altered	7.106	18.137	65 ± 2	9
K-114	Arica E	7958910	416101	Granite porphyry	Biotite	6.843	18.033	67 ± 2	19
K-146	Arica E	7958405	417090	altered Granodiorite	Whole rock	1.101	2.497	57.4 ± 2.1	31
K-150	Arica E	7958379	417000	Granodiorite	Biotite / Act.	6.013	15.774	66 ± 2	41
K-148	Arica E	7958275	417102	altered Aplite	Whole rock	3.674	9.561	66 ± 2	24
K-152	Arica E	7957416	415702	Granodiorite	Biotite	7.353	19.679	68 ± 2	21
T-062	Tignamar N	7946924	451586	altered Qz-porphyry	Whole rock	2.604	1.778	17.5 ± 0.7	43
T-055	Camiña NE	7889845	467650	Andesite	Whole rock	2.613	1.057	10.4 ± 0.4	50
Q-068	Camiña	7866600	459341	Diorite porphyry	Whole rock	1.342	3.009	56.8 ± 1.9	21
S-033	Camiña	7862279	447949	Qz-porphyry, highly altered	Whole rock	3.561	8.889	63 ± 2	37
K-084	Camiña	7862141	449474	meta-diorite porphyry	Whole rock	0.797	1.829	58.1 ± 1.9	16
S-032	Camiña	7861990	448095	Qz-porphyry, weakly altered	Whole rock	3.172	7.126	56.9 ± 2	43
S-045	Camiña	7861611	448377	Diorite	Whole rock	1.041	2.421	58.8 ± 2	19
T-034	Chusmisa NE	7831898	502577	Dacite	Biotite	7.006	0.817	3 ± 0.2	74
S-019	Chusmisa	7831530	479094	Granodiorite	Biotite, Chlorite	5.353	10.116	48 ± 1.4	26
T-008	Tarapaca	7801031	452097	Granodiorite	Biotite, Chlorite	5.965	16.551	70 ± 2	19
K-016	Guavina	7790396	488986	Granodiorite	Biotite	7.324	12.851	44.6 ± 1.1	15
S-013	Mamiña SE	7779368	481013	Granite	Biotite	7.185	13.343	47.1 ± 1.3	32
K-011	Copaquiri	7679948	520917	Diorite	Biotite / Act.	7.074	89.620	300 ± 7	7
K-011*	Copaquiri	7679948	520917	Diorite	Biotite / Act.	7.074	88.894	297 ± 7	4

Analyzed by SERNAGEOMIN

AP-2 (1) Results of Microscopic Observation of Thin Sections (Phase 1)

Sample No.	Locality	Formation / Intrusive	Rock type	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration							
					MP	cpx	hb	qz	pl	kf	op	others	MP	hb	qz	pl	kf	gl	op	others	ep	chl	amp	ser	tit	carb	bio	others
B-001	Mocha	K1	dacite	porphyritic	(△)			◎	○			bio(○)	(○)		○	○	△			apa(・)・		○		◎	△	○		rutile(△)
	Pl partry into sericite. Mafic phenocrysts into chlorite and carbonate. Biotite locally into chlorite/																											
C-008	Mocha	K1	meta-volcanics													◎	○			apa(・)		・		○		◎		rut(△)
C-080	Mocha	K1	rhyodacite	porphyritic	(△)			◎				bio(○)	(△)		○	○	△		・	apa(・)		○		○	△	△		
	Biotite partly decomposed into chl. Pl partly into sericite. Mafic minerals totally into chlorite.																											
D-008	Mocha	Tgd	dacite porphyry	porphyritic	(○)			○	◎		○	bio(○)			○	◎	△				○	◎		△	△			
	Pl replaced by sericite. Epidote occurs along fractures. Mafic minerals into chlorite and epidote.																											
D-002	Soledad	Tgd	granodiorite porphyry	porphyritic	(○)				◎		△				○	○					○							tou(○), clay(○)
	Pl strongly saussuritized. Epidote vein. Mafic minerals by clay minerals.																											
D-003	Soledad	Tgd	quartz porphyry	porphyritic	(△)			○	◎		○				◎	○				bio(○)		△		○	・			
	Mafic minerals replaced into sericite, opaque minerals and chlorite.																											
D-004	Soledad	Kg	quartz diorite	sub-ophytic			○	△	○	△	○				◎	○	○		△	bio(○)		△		△				tou(△)
B-007	Soledad	K1	meta-andesite	porphyritic					○						○	○			△		△		△	○	△	○		rutile(△)
	Weakly metamorphosed producing actinolite. Pl partry into sericite.																											
C-014	Soledad	K1	meta-volcanics	breccia?											◎	○			・									tou(◎)
	Strongly replaced by tourmaline.																											
C-017	Soledad	Tgd	dacite porphyry	porphyritic				○	◎		○	bio(○)		(○)	◎	◎	△			bio(○), apa(・)	△	○			・			
	Biotite phenocryst partly decomposed into chl. Mafic minerals in matrix totally into chlorite.																											
A-011	Queen Elizabeth	K1	andesite	porphyritic					◎		△	bio(△)			◎	◎	△		・			△		△			◎	
	Pl is mostly dusty, replaced by sericite and biotite. Biotite phenocryst decomposed into fine-grained biotite nad chlorite.																											
A-017	Queen Elizabeth	K1	volcanic breccia	clastic	(○)				◎	○	○	apa(△)			◎	○	○		△			△				△		tou(◎)
	Pl partry into sericite. Fine-grained tourmaline occurs among the volcanic blocks.																											
A-025	Queen Elizabeth	Tg	granodiorite porphyry	porphyritic	(○)			△	(○)		△	zr(・)			◎	○	○		○					◎	△			goe(△),clay(○)
	Pl strongly deomposed ino dusty aggregate. Biotite into chlorite.																											
A-027	Queen Elizabeth	Tg	rhyodacite porphyry	porphyritic				○	(○)						◎	(○)			○		○	△		◎				goe(△)
	Pl is totally saussuritized, into sericite and epidote.																											
B-020	Queen Elizabeth	K1	meta-siltstone?	clastic?											◎	○	・		△					◎	△			tou(△)
	Pl partry into sericite.																											
A-035	Diana	Kg/Ti	granodiorite porphyry	porphyritic			◎		◎		○	bio(△)			○	◎	○		・		△	○		△	・			
	Pl partly into sericite. Biotite into chlorite. Dark green hornblende locally into chlorite.																											
B-027	Diana	Kg/Ti	dacite porphyry	porphyritic			△	○	◎			bio(△)		△	○	○	△		△						△		○	goe(△),clay(○)
	Biotite phenocryst totally into opaque and clay minerals.																											
B-031	Diana	Js1	meta-basalt	porphyritic	(○)				◎							◎			○		△		△	・	△		◎	
	Mafic phenocryst into amphibole. Glassy matrix into biotite and amphibole.																											
B-032	Diana	Kg/Ti	fine-grained granite	equigranular		△	○	◎	◎	○	○	bio(○)								apa(・), zir(・)		△		・				
	Clinopyroxene is strongly replaced by amphibole.. Pl locally replaced by sericite.																											
Z-003	Diana	Js1	quartzite					◎			△	zr(・)												○				goe(△)
	Sericite occurs among quartz grains.																											
A-048	La Planada	Tp	granodiorite porphyry	porphyritic					◎			bio(△)	(○)		○	◎	○		○	apa(・)	△	○		△		○	◎	
	Pl partry into sericite. Mafic minerals in matrix into chlorite.																											
A-042	La Planada	Tg	diorite	equigranular			○	◎	◎	△	△	apa(・)									△	○		△	・			goe(△)
	biotite altered into chl.																											
A-047	La Planada	Tp	quartz porphyry	porphyritic				△	◎	△		bio(△)	(○)		◎	○	○		△	bio(○)		○		△	・		◎	
	Pl partry into sericite. Mafic minerals in matrix into chlorite.																											
B-041	La Planada	Tp	dacite	porphyritic	(△)			◎	◎			bio(○)			◎	○	△			apa(・)		○		○	△			tou(○)
	biotite strongly decomposed into chlorite. Including volcanic blocks.																											
C-062	La Planada	Kmc	meta-porphyry	porphyritic					△			bio(△)			◎	○	△		△	apa(・)		△		○	△		◎	tou(△)
	Strongly replaced by biotite and sericite. Biotite partly decomposed into chlorite.																											

AP-2 (1) Results of Microscopic Observation of Thin Sections (Phase 1)

Sample No.	Locality	Formation / Intrusive	Rock type	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration							
					MP	cpx	hb	qz	pl	kf	op	others	MP	hb	qz	pl	kf	gl	op	others	ep	chl	amp	ser	tit	carb	bio	others
C-063	La Planada	Kmc	meta-dacite	porphyritic					○		○	bio(△)			◎	○	△		○	apa(･), zir(･)				○	△		◎	tou(△)
	All the minerals except for qz are strongly replaced by biotite and sericite.																											
C-065	La Planada	Kmc	meta-volcanics												◎	○			△	apa(･)				○	△		◎	tou(△)
	All the minerals except for qz are strongly replaced by biotite and sericite.																											
C-067	La Planada	Tg	diorite	equigranular	(△)			◎	◎	△	△	bio(○)								apa(･)	△	○		○	△			
	Biotite partly altered into chlorite and opaque minerals. Pl locally by sericite.																											
C-077	La Planada	Tp	quartz porphyry	porphyritic			(△)	○	◎						○	○	△		･	apa(･)		○		○	･			tou(△), goe(△)
	Hb totally replaced chlorite and tourmaline. Biotite by chlorite and sericite.																											
C-079	La Planada	Tp	quartz porphyry	porphyritic			(△)	◎	◎			bio(○)		(△)	◎	◎	△		△	bio(△), apa(･)		○		○	･			
	Mafic mineral, probably hornblende, is totally replaced by chlorite.																											

abbrev. MP=psudomorph of mafic mineral, cpx=clinopyroxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende, kf=k-feldspar
◎abundant, ○common, △small, ･rare, ( ) : totally

AP-2 (2) Results of Microscopic Observation of Thin Sections (Phase 2)

Sample No.	Locality	Formation /Intrusive	Rock type	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration							
					MP	cpx	hb	qz	pl	kf	op	other	MP	hb	qz	pl	kf	gl	op	other	ep	chl	amp	ser	tit	carb	bio	other
G-012	Chacarilla-E	Kg/Ti	diorite	ophitic		△	○	△	◎		△											○		○	△		△	smec(○) goe(△)
	Clinopyroxene and Hornblende are strongly replaced by smectite and goethite.																											
F-010	Chacarilla-W	Kg/Ti	granodiorite porphyry	porphyritic	(○)				◎		○				○	◎		◎	·			△		○		◎		
	Mafic phenocryst is decomposed into chlorite. Amygdule is replaced by carbonate and quartz. Plagioclase is replaced by sericite.																											
E-021	West Queen Elizabeth-S	Kg/Tg	andesite	porphyritic			○		◎		△			(△)		○		(◎)	△		○				△			apa(·)
	Hornblende is almost tatally decomposed. Plagioclase partly into epidote																											
F-073	West Queen Elizabeth-S	Kg/Tg	granodiorite	granular			○	○	◎	○	△	bio(○)								apa(·)		△		△	△			
	Plagioclase is locally replaced by sericite. Biotite is locally replaced by chlorite.																											
E-028	Tignamar-N	K	volcaniclastics	clastic			(△)	△	◎	○			(△)		△	○	△	(◎)	·		○	△			·	·	◎	tou(△)
	Hornblende is totally decomposed into green biotite. Matrix is also replaced by green biotite																											
F-076	Tignamar-N	kg/Kp/Tgd	granodiorite	granular			○	○	◎	○	○										○	△		△	△		○	
	Hornblende is highly replaced by green biotite. Plagioclase is replaced by epidote.																											
G-043	Tignamar-S	Ti	andesite	porphyritic			◎		◎		△			○		○		◎	△									
	Fresh andesite, but hornblende is highly oxytized.																											
E-083	Camarones-QCFW	K	volcaniclastics	clastic	(○)				◎		△		△			○		○	○		○	○			△	○		clay(○) goe(○)
	Mafic minerals replaced by clay minerals . Matrix is replaced by goethite.																											
E-087	Camarones-QCFW	A	andesite	porphyritic			(○)		◎		○				○	○		(○)	○		○			◎	△	◎		
	Mafic minerals are totally replaced by carbonate and sericite. Plagioclase strongly decomposed into sericite and epidote.																											
G-121	Camarones-QCFW	D	carbonatized dacite	porphyritic	(○)				(◎)		○				○	○		(◎)								◎	△	clay(◎)
	Mafic minerals and plagioclase are totally replaced by carbonate and clay minerals.																											
E-064	Camarones-QCW	Qp	quartz porphyry	porphyritic	(○)			○	◎	△	△	mus(△)			△	○		◎	·		△	△		○				
	Mafic mineral is totally decomposed. Crystal crots are common.																											
E-078	Camarones-QCW	K	andesite	porphyritic	(◎)				◎		△					○		(◎)	△		◎	○		○	△			
	Mafic minerals into epidote or chlorite. Plagioclase partly decomposed into sericite and chlorite.																											
F-125	Camarones-QCW	Qpb	quartz porphyry breccia pipe	clastic				○	◎	○	△				○	○	○	◎	△		○			○	△			
	Plagioclase is highly replaced by sericite.																											
F-181	Camarones-QCW	Qpb	quartz porphyry breccia pipe	clastic	○			◎	○	○	○	bio(△)			○	○	○	(◎)	○	zr (·)				○	△			
	Biotite is totally decomposed into sericite. Plagioclase is usually dusty, replaced by sericite.																											
G-058	Camarones-QCW	Qp	quartz porphyry	granophyric				◎	◎	○	○	bio(△)								apa(·)				△				goe(·)
	K-feldspar is usually dusty. Plagioclace is locally replaced by sericite.																											
G-100	Camarones-QC WC	Qd	quartz diorite	granophyric			△	◎	◎	○	○	tou(△)							·		○	○		△	△			
	Hornblende is highly decomposed into chlorite, epidote and titanite																											
G-205	Camarones-QC WC	Gd	granodiorite	granophyric			○	○	◎	○	△	bio(○)										△		△	△			tou(△)
	Hornblende and biotite are partly skeletal, replaced by chlorite.																											
E-090	Camarones-QCC	Qd	quartz diorite	ophitic			○	○	◎	○	△	bio(○)								tou(△)	△	○		△		△		
	Biotite is replaced by chlorite. Plagioclase is replaced by sericite.																											

AP-2 (2) Results of Microscopic Observation of Thin Sections (Phase 2)

Sample No.	Locality	Formation /Intrusive	Rock type	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration							
					MP	cpx	hb	qz	pl	kf	op	other	MP	hb	qz	pl	kf	gl	op	other	ep	chl	amp	ser	tit	carb	bio	other
E-119	Camarones-QCC	KT	volcaniclastics	clastic			(○)	◎	◎						○	○		(◎)	○	apa(△)	△	△		△	△			
	Hornblende phenocryst is replaced by chlorite and smectite.																											
E-126	Camarones-QCC	Di	diorite	ophitic			○	△	○		△	apa(･)							○		△		○		△	△		
	Hornblende is totally decomposed into fibrous amphibole.																											
E-128	Camarones-QCC	Qpb	quartz porphyry breccia pipe	clastic				○	◎	○	△				○	○			○			○		･				goe(△)
F-107	Camarones-QCC	Qd	quartz diorite	granular	(△)			○	○	○	○	tou(○)									△			△	△	△		
	Plagioclase is usually dusty and is replaced by sericite and carbonate.																											
F-110	Camarones-QCC	Qdb	quartz diorite breccia pipe	clastic				○	◎	○	○				○	◎	○	(○)				△		○				tou(△) goe(○)
	Plagioclase is usually dusty and is partly replaced by sericite.																											
F-196	Camarones-QCC	Dp	diorite porphyry	porphyritic to granoophyric		△	○		◎		△			○	◎	○	○		○	bio(△)	△	○		△	△			
	Clinopyroxene is strongly replaced by green amphibole. Hornblende is decomposed into chlorite and green amphibole.																											
F-114	Camarones-QC CE	K	andesite	porphyritic	(○)				◎		○	bio			○	○		(◎)			○	△	○	○	△			
	Mafic minerals are replaced by fibrous amphibole. Grass is devitrified and altered.																											
H-002	Camarones-QCE	Di	diorite	ophitic	(○)	○			◎		○												○	○				smec(◎)
	Olivine is totally replaced by smectite. Clonopyroxene is partly replaced by green amphibole. Orthopyroxene is strongly replaced by smectite.																											
H-008	Camarones-QCE	K	andesite	porphyritic	(△)				◎		○				○	○		(◎)	△		◎	○				○		smec(△)
	Mafic minerals are replaced by smectite. Plagioclase partly replaced by epidote.																											
E-069	Camarones-QCFE	Di	diorite	trachytic	○olv	◎			◎		△	bio(△)									△							smec(○) zeo?(○)
	Olivine partly replaced by smectite.																											
E-071	Camarones-QCFE	KT	dacite	porphyritic				◎	◎				○cpx		○	○	○		△	bio(△)								smec(△)
	Clinopyroxene is crystalized in a matrix																											
E-072	Camarones-QCFE	Qd	quartz diorite	ophitic	(○)			○	◎	○	△	bio(△)									○	○	○	○	△			
	Mafic minerals are totally decomposed, partly forming fibrous amphibole.																											
E-094	Camarones-QCFE	Dp	diorite porphyry	trachytic	(○)	○			◎	△	○	bio(○)	(○)		○	○	△		△	apa(△)		○	○					
	Mafic mineral is replaced by chlorite and fibrous amphibole.																											
E-097	Camarones-QCFE	Dp	diorite porphyry	ophitic	(○)	○		○	◎	△		bio(△)			○	○	△		○		△	○	○					
	Mafic mineral is decomposed by chlorite and fibrous amphibole.																											
E-099	Camarones-QCFE	Qd	quartz diorite	equigranular		○	○	◎	◎	○	○	apa(△)											○	○				
	Biotite is totally decomposed into sericite. Mafic mineral by green amphibole.																											
G-073	Camarones-QCFE	Gd	granodiorite	equigranular	(○)		○	○	◎	○	○	apa(△)									△	○	○	○	△	△		
	Mafic phenocryst is decompoed into amphibole and chlorite.																											
G-078	Camarones-QCFE	Tp	volcaniclastics	clastic				◎	△	○	△	bio(○)			○	△	○	◎	△					○				clay(○)
	Including slate.																											
E-214	Camarones-QCS	KT	volcaniclastics	clastic	(△)			○	◎	△	○				○	○		(◎)	△	zir(･)		○		○				
	Mafic phenocryst is decomposed into chlorite. Biotite is decomposed into chlorite and sericite.																											
E-222	Camarones-QCS	KT	volcaniclastics	clastic	(○)			○	◎	△	○				○	○		(◎)	△					△				smec(△)
	Biotite is decomposed into smectite and sericite. Plagioclace is partly replaced by smectite.																											

AP-2 (2) Results of Microscopic Observation of Thin Sections (Phase 2)

Sample No.	Locality	Formation /Intrusive	Rock type	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration							
					MP	cpx	hb	qz	pl	kf	op	other	MP	hb	qz	pl	kf	gl	op	other	ep	chl	amp	ser	tit	carb	bio	other
E-231	Camarones-QCS	B	basalt	porphyritic	(○)				◎		○					○		(◎)	△			○		△		○		
	Olvine is totally decompoed into chlorite or carbonate minerals.																											
H-013	Camarones-QCS	KT	volcaniclastics	clastic	(○)			◎		△		mus(○)			○	○		(◎)	△					○				smec(○)
	Mafic minerals are replaced by smectite. Biolite is decomposed into sericite and opaque minerals.																											
E-158	Camarones-SM	Qd	quartz diorite	granophyric			(○)	○	◎	○	○										○	△						tou(△) goe(○)
	Hornblende is totally decomposed into chlorite and goethite.																											
E-159	Camarones-SM	Qd	quartz diorite	granophyric			(○)	○	◎		○										○			○				goe(△)
	Plagioclase is usually dusty. Hornblende decompoed into fibrous amphibole.																											
E-177	Camarones-SM	Dp	diorite porphyry	granophyric		○	○		◎					○	○	◎	○		○	bio(○)		○		△				tou(△),apa(·)
	Clinopyroxene is surrounded by amphibole. Hornblende is decomposed into dusty amphibole aggregate.																											
F-148	Camarones-SM	Qd	quartz diorite	granophyric		△	○	○	◎	○	○										△				△		○	
	Hornblende is strongly replaced by secondary biotite.																											
G-142	Camarones-SM	Qd	quartz diorite	granophyric		○	△	○	◎	○	○	bio(△)								zr(·)		△	△					goe(△), apa(·)
	Clinopyroxene and hornblende is strongly replaced by chlorite and fibrous amphibole																											
G-147	Camarones-SM	Qd	quartz diorite	granophyric		△	○	○	◎	○	○	tou(△)												○				geo(○)
	Hornblende is highly replaced by geothite. Plagioclase is partly replaced by sericite.																											
G-160	Camarones-SM	Qdb	quartz diorite breccia pipe	clastic				◎	◎	○	△				○	○	○	◎	△	tou(○)				○				goe(△), clay(△)
	Mafic minerals are decomposed into clay and goethite.																											
E-151	Camarones-MIDS	Tw	volcaniclastics	clastic	(△)			◎	○	○	○	bio(○)			○	○		◎	△									clay(△)
	Mafic minerals are replaced by clay minerals. Biotite is highly oxydized																											
F-155	Camarones-EM	Qi	andesite	porphyritic	○	○			◎		△	opx				◎		◎	○									
	Very fresh andesite. Orthopyroxene is well preserved.																											
E-105	Camarones-NW	Qd	porphyry	granophyric					◎		△				○	○			△		◎			◎				smec(△)
	Plagioclase is strongly replaced by smectite and epidote.																											
E-108	Camarones-NW	Qd	quartz diorite	ophitic	(○)	○	○		◎		△				◎	○			○		△	○	○		△		△	
	Mafic minerals are replaced by chlorite. Hornblende replaced by green amphibole.																											

abbrev. : MP=pseudomorph of mafic minerals, cpx=clinopyroxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende, kf=K-feldspar
smec=smectite, zeo=zeolite, geo=geothite,epi=epidote, gl=glass or microcrystalline aggregate, mus=muscovite
cb.=carbonate, ser=sericite, tit=titanite, apa=apatite, clay=clay minerals, bio=biotite, tou=tourmaline:
◎=abundant, ○=common, △=small, ·=rare ( ) : totally decomposed or altered

AP-2(3) Results of Microscopic Observation of Thin Sections (Phase 3 Surface survey)

Sample No.	Locality	Rock Facies		Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration					
		Formation/Intrusive	Rock name		MP	cpx	hb	qz	pl	Kf	op	others	MP	hb	qz	pl	Kf	gl	op	others	ep	chl	amp	ser	tit	others
T-004	Copaquiri	Kv(m)	meta-andesite	porphyritic	(○)		(○)		◎						・	◎			○	apa(・)	○		◎	○	△	bio(△).tou(△)
					Mafic phenocryst totally by chlorite and secondary amphibole. Feldspar highly by sericite.																					
T-008	Tarapaca	Kgd	granodiorite	equigranular		・	△	○	◎	◎	○	bio(○)								apa(・)		△	△		△	zir(・)
					Biotite locally chloritized. K-feldspar is usually dusty.																					
T-009	Pachica	Kgd	granodiorite	subophitic	(○)	○		○	◎	○	○	bio(○)								apa(・)	○	○	△		△	zir(・)
					Mafic minerals and biotite totally by chlorite. Clinopyroxene is usually dusty.																					
T-015	Pachica	Kgd	granodiorite	subophitic		○	○	○	◎	○	○	bio(○)								apa(・)		○			・	zir(・)
					Hornblende strongly decomposed into dusty amphibole. Biotite locally by chlorite																					
T-020	Chusmisa	Kv(i)	sandstone	clastic				◎	○	○	○	frag(◎)									○	○		○	・	
					Volcanic fragments are common.																					
T-023	Chusmisa	Kv(i)	meta-volc. breccia	fine-cryatalline											◎	◎	○		△	cpx (△)		△	△			bio(○)
					probably contact metamorphosed forming biotite, clinopyroxene and amphibole.																					
T-034	Chusmisa NE	Qv	dacite	porphyritic			○	○	◎		△	bio(○)			○	○		◎								sm(△)
					fresh dacite, locally smectite.																					
T-055	Camiña NE	Qv	andesite	porphyritic	○	△			◎		△				○	○		○	△							
					fresh andesite																					
T-063	Tignamar N	Tgd	diorite porphyry	porphyritic			(○)	△	◎			bio(○)			○	○	○		△		○	△			△	bio(△)
					Hornblende is totally replaced by chlorite and epidote. Brown biotite by secondary green biotite.																					
T-068	Putre S	Tgd	Qz-porphyry	porphyritic			(△)	◎	○	○					○	○	○		△			○		○	△	
					Hornblende by aggregate of opaque minerals. Matrix by sericite and chlorite.																					
T-074	Putre S	Tgd	diorite porphyry	porphyritic to ophitic	(△)	△	○		◎		△	bio(△)			○	○	○		△	apa(・)	△	△			・	zir(・)
					Orthopyroxene is totally replaced by chlorite.																					
T-079	Chapiquiña	Pc	serpentinite								○	srp(◎)														
					originally harzburgite. preserving bastite texture.																					
T-080	Chapiquiña	Tgd	porphyry	porphyritic		(○)	○		◎		○				○	○			○		△	○	○		△	
					Hornblende and clinopyroxene strongly replaced by amphibole, epidote and chlorite. Plagioclase highly albitized.																					
T-085	Putre S	Tgd	diorite porphyry	porphyritic	(○)				◎		○		(△)		○	◎			○	bio(○)		△			△	
					Mafic phenocryst totally by aggregate of opaque minerals and biotite.																					
T-086	Putre S	Tgd	microdiorite	ophitic		○	○	△	◎		○										・	○	○		△	
					Hornblende by secondary amphibole aggregate and epidote. Clinopyroxene is usually dusty.																					
T-095	Putre W	Tgd	granodiorite	equigranular			○	◎	◎	○	○	bio(○)										△		△		
					Hornblende is loccaly fresh, mostly decomposed into biotite and chlorite.																					
Q-011	Quipisca	Kgd	microdiorite	ophitic		△	○	○	◎	△	○										△	○	○			cb(△)
					Clinopyroxene replaced by amphibole. Hornblende is highly by acicular amphibole.																					
Q-013	Quipisca	Kgd	granoporphyry	porphyritic	(○)	△	(○)	○	◎		△	bio(○)									・	△	○	・	・	
					Hornblende by acicular amphibole aggregate. Orthopyroxene by chlorite and amphibole.																					
Q-033	Chusmisa	Kc(i)	hornfels	microcrystalline		◎	△	○	◎	○	○	bio(△)														
					high-grade, contact metamorphosed.																					
Q-061	Chusmisa	Tgd	meta-porphyry	porphyritic, microcrystalline					(○)						◎	○	○		・					○		tou(◎)
					abundant tourmaline probably formed by hydrothermal event.																					
Q-068	Camiña	Tgd	diorite porphyry	porphyritic	○	○	(○)		◎		△		△	△	◎	◎			△				○			bio(○)
					Brown biotite replaced highly by green biotite. Hornblende by fibrous amphibole.																					

AP-2(3) Results of Microscopic Observation of Thin Sections (Phase 3 Surface survey)

Sample No.	Locality	Rock Facies		Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration						Remarks
		Formation/Intrusive	Rock name		MP	cpx	hb	qz	pl	Kf	op	others	MP	hb	qz	pl	Kf	gl	op	others	ep	chl	amp	ser	tit	others	
Q-072	Camiña	Kv(i)	basalt	porphyritic	(○)	○			◎		△		○			◎			○							sm(○)	Olivine and glass by smectite and opaque minerals.
Q-096	Camiña	Kv(i)	andesite	porphyritic	○	○			◎		△		△		△	◎		(○)					△			sm(○)	Orthopyroxene replaced highly by smectite and amphibole
Q-149	Putre SE	Qvr	dacite tuff	glassy			△	◎	○			bio(△)			○	○		◎									fresh tuff, containing mudstone fragments.
Q-150	Putre E	Qvr	pumiceous tuff	glassy			◎	○						△	○	○		◎	△	bio(△)							including many clastic rocks.
Q-157	Putre S	Tgd	Qz porphyry	porphyritic			(△)	◎	○	○					○	○	○		△					○			Hornblende decomposed into sericite and opaque minerals. Feldspars decomposed into sericite and dusty minerals.
Q-165	Putre W	Tgd	granodiorite	ophitic			○	○	◎	△	△	bio(○)								apa(・)		○	△		△	cb(△)	Hornblende by chlorite and carbonate minerals.
S-001	Macaya E	Kgd?	meta-diorite	subophitic		○	(○)	○	◎	△	○									apa(・)	△	○	○		△	bio(△)	Hornblende replaced by acicular amphibole. Biotite by aggregate of green biotite.
S-003	Mamiña SE	Tgd	meta-microdiorite	brecciated				○							◎	○	○		○		◎		○		○		Quartz vein. Epidote-amphibole pools are common.
S-013	Mamiña SE	Tgd	porphyry	porphyritic, subophitic		○	△		◎		△				○	○	○		○	bio(○)	△	△		△	△	zir(・)	contact metamorphosed?
S-014	Mamiña SE	Tgd	granodiorite	subophitic to equigranular		△	(○)	○	◎	△	○									apa(・)		△	○		△	bio(○)	metamorphic. Hornblende by secondary amphibole, chlorite and biotite.
S-016	Chusmisa	Tgd	meta-diorite	porphyritic			(○)		◎		△			(○)	○	○	○		△				○	△	・	bio(○)	Hornblede decomposed into secondary amphibole amd biotite.
S-017	Chusmisa	Tgd	granodiorite	graphic			(○)	○	◎	◎	○	bio(○)								tou(○)						sm(○)	Hornblende decomposed into smectite.
S-019	Chusmisa	Tgd	granodiorite	equigranular		△	○	◎	○	◎	○	bio(○)										△	○	△		zir(・)	Clinopyroxene replaced by hornblende. K-feldspar is usually dusty.
S-032	Camiña	Tgd	qz porphyry	porphyritic			(○)	◎	○	○					◎	○	◎		○		△	○		△	△		Hornblende or biotite totally by chlorite, opaque minerals and epidote.
S-034	Camiña	Tgd	meta-di-porphyry	porphyritic	(○)	○	(○)		◎		○				○	◎		(○)		apa(・)	△	○	○	△	・		Orthopyroxene by chlorite. clinopyroxene highly into secondary amphibole. Hornblende totally by amphibole.
S-038	Camiña	Kv(i)	andesite	porphyritic	(○)		○		○		○			(○)	△	◎			○		△		○			bio(○)	Orthopyroxene by chlorite, epidote and biotite. hb is oxy-hornblende. Secondary amphibole is common.
S-045	Camiña	Tgd	metadiorite	subophitic			(◎)	△	◎		○									apa(・)	○	△	◎				Hornblende is replaced by secondary green amphibole.
S-049	Putre SW	Kgd-Tgd	granodiorite	subophitic	△	○	(○)	○	◎	○	△	bio(○)								apa(・)			○			zir(・)	Hornblende decomposed into fine amphibole aggregate. Opx preserved only in feldspar crystal.
S-050	Putre SW	Kgd	granite	equigranular			(△)	○	○	◎	△	bio(△)								apa(・)	△	○			△		Hornblende totally by chlorite. Biotite locally by chlorite. K-feldspar usually dusty.
S-051	Arica NE	Tgd	granodiorite	equigranular	△	○	○	○	◎	○	○	bio(○)								apa(・)							Pyroxenes highly replaced by hornblende.
K-011	Copaquiri	Pzg	diorite	subophitic	○	△	○	○	◎	△	○	bio(○)								apa(・)				△	・	zir(・), sm(△)	Orthopyroxene is highly altered into smectite.

AP-2(3) Results of Microscopic Observation of Thin Sections (Phase 3 Surface survey)

Sample No.	Locality	Rock Facies		Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration					
		Formation/Intrusive	Rock name		MP	cpx	hb	qz	pl	Kf	op	others	MP	hb	qz	pl	Kf	gl	op	others	ep	chl	amp	ser	tit	others
K-016	Guavina	Tgd	granodiorite	equigranular, subophitic		△	○	◎	◎	◎	△	bio(○)								apa(・)				△	・	zir(・)
					Clinopyroxene is present only in hornblende.																					
K-033	Chusmisa	Kv(i)?	meta-sandstone	clastic									○		◎	◎	○		○	bio(△)						
					Among mafic minerals, orthopyroxene is predominant. Clinopyroxene is small in amount.																					
K-038	Chusmisa	Kv(i)?	meta-siltstone	fine-grained equigranular									○	△	◎	◎	○		△	bio(○)						
					contact metamorphism. Orthopyroxene is common as fine-grained crystal.																					
K-040	Chusmisa	Kv(i)?	meta-volc. breccia	clastic					○						◎	◎	○	(◎)	△	kao(△)	・			・	・	tou(○)
					Glass is devitrified. Tourmarine is radial crystal aggregate.																					
K-055	Chusmisa	Tgd	granite	equigranular	△	△	△	○	○	◎	△	bio(○)								apa(・)						sm(・),zir(・)
					Orthopyroxene is strongly altered into smectite and goethite. Clinopyroxene locally by hornblende.																					
K-056	Chusmisa	Kv(i)?	meta-basalt	porphyritic		○			◎				○			○		(◎)	○	bio(△)						goe(△)
					Clinopyroxene is fine-grained and forms pool of aggregate.																					
K-059	Chusmisa	Tgd?	meta-granite	porphyritic, microcrystalline			(○)		○						◎	◎	○		△	bio(○)				・	・	sm(○)
					contact metamorphism? Hornblende is totally altered into smectite.																					
K-061	Chusmisa	Kv(i)?	granulite	microcrystalline		◎		◎	○		△	bio(△)													△	
					high grade zone of contact metamorphism?																					
K-080	Camiña	Tgd	meta-diorite	subophitic, equigranular			(○)	◎	◎		○										△	△	○		△	cb(△)
					Hornblende decomposed into fine-grianed secondary amphibole. Plagioclase is dusty.																					
K-084	Camiña	Tgd	meta-diorite porphyry	porphyritic		○			◎		△					◎			△			・	○	△	・	bio(△)
					Secondary fine-grained clinopyroxene is common around cpx phenocryst and in groundmass.																					
K-113	Putre SW	Kgd	granite	equigranular			○	○	○	◎	△	bio(△)								zir(・)		△	△	・	・	bio(△)
					Hornblende decomposed, forming aggregate of amphibole. Green biotite forms a pool.																					
K-114	Arica E	Kgd	granite porphyry	porphyritic, equigranular	△	△	○	○	○	◎	△	bio(△)								apa(・)		・		・	・	zir(・), sm(△)
					Pyroxenes are totally surounded by hornblende.																					
K-118	Northern Putre	Tgd	andesite	porphyritic	△	○	○		◎		○		△	○		○		◎	○	bio(・)						
					Olivine occurs only in clinopyroxene crot. Hornblende is usually oxy-hornblende.																					
K-119	Northern Putre	Tgd	andesite	porphyritic	△		○		◎		○		△	○		○		◎	○							
					Hornblende is strongly oxytized. Orthopyroxene is well preserved.																					
K-128	Putre S	Tgd	meta-diorite	subophitic			(○)	○	◎	○	○										○	○	○	△	・	
					Hornblende is totally replaced by sericite, green amphibole and chlorite. Feldspar is dusty.																					
K-135	Putre W	Kv(i)?	meta-andesite	porphyritic		△	(○)		◎		△					○		(◎)	△		△	△	○		○	cb(△)
					Clinopyroxene occurs as a relict phase surrounde by amphibole. Matrix int osecondary minerals.																					
K-138	Putre W	Tgd	granodiorite	porphyritic, equigranular			○	○	◎	○	○	bio(○)								apa(・)	・	・	○	・	・	bio(○)
					Hornblende decomposed mostly into secondary amphibole. Biotite is usually forming aggregate, probably secondary.																					
K-150	Arica E	Kgd	granodiorite	subophitic		○	(○)	○	◎	○	○	bio(○)								apa(・)		△	○	・	・	zir(・)
					Hornblende is strongly replaced by secondary acicular amphibole.																					
K-152	Arica E	Kgd	granodiorite	subophitic	(△)		○	○	◎	◎	△	bio(○)								apa(・)					△	zir(・), sm(△)
					Orthopyroxene into smectite and included in hornblende.																					

abbrev. MP= mafic minerals, cpx=clinopyroxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende, kf=K-feldspar epi=epidote, tou=tourmaline
gl=glass or microcrystalline aggregate, cb.=carbonate, ser=sericite, tit=titanite, apa=apatite, sm=smectite including clay mienrals.
goe=goethite, zir=zircon, kao=kaolline
◎abundant, ○common, △small, ・rare () brancket shows totally decomposed.

AP-2(4) Results of Microscopic Observation of Thin Sections (Drilling)

Drilling Name	Sample No.	Rock Name	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration					
				MP	cpx	hb	qz	pl	Kf	op	others	MP	hb	qz	pl	Kf	gl	op	others	ep	chl	amp	ser	tit	others
MJC-1	TS1-136	meta-dacite or sandstone	porphyritic, clastic				◎							○	○			△			△		◎		goe(△)
				Matrix is highly replaced by sericite and calcednic quartz.																					
	TS1-154	meta-andesite	porphyritic					◎		○				○	○		(◎)	△			○		○	△	
				Sericite and chlorite are widespread, replacing feldspar and matrix.																					
	TS1-270	meta-andesite	porphyritic					◎		○				○	○		(◎)	○			○		○	・	
				Matrix is highly replaced by sericite and chlorite.																					
	TS1-324	meta-volc. breccia	clastic					○		○				○	○					△	○		○	△	
				including diorite blocks. Plagioclase is usually dusty.																					
	TS1-344	meta-andesite	porphyritic					○		○				○	○		(◎)				○		○	△	
				Matrix and mafic phenocrysts are altered into sericite and chlorite.																					
MJC-2	TS2-436	pumiceous tuff	clastic				○	△						△	○	・	◎		bio(△)	△			△		goe(△)
				including mudstone and sandstone blocks. Epidote is present only in a fragment.																					
MJC-3	TS3-240	volc. breccia	brecciated				◎	○		△	bio(△)			△	△		◎	・							cb(△), goe(△)
				Biotite highly altered into goethite.																					
MJC-5	TS5-344	meta-welded tuff	porphyritic				◎		○					○	○	○		△		△					
MJC-6	TS6-394	andesite	porphyritic	△	○			◎		・		△			○		◎	△							
				Fresh andesite. Plagioclase core is dusty.																					
	TS6-400	andesite	porphyritic	○	△			◎		△		△			○		◎	△							
				fresh andesite.																					
MJC-7	TS7-370	basalt	porphyritic	○	○			◎		○		△			○		◎	△							sm(○), cb(△)
				Olivine is totaly altered by smectite and carbonate minerals.																					
MJC-8	TS8-432	tuff. sandstone	clastic		△	△	◎	○	○	△							◎			△			△		cb(△), sm(△)
				Secodary minerals only in fragments. Volcanic fragments are common.																					
MJC-9	TS9-490	tuff	clastic		△	○	○	○	△	△	bio(△)			○	○		◎	△		・			△		sm(△)
				including volcanic fragments. Secondary minerals only in fragemnts.																					
MJC-10	TS10-050	basalt	porphyritic	○	○			◎		○		△			○		◎	△							sm(△)
				Olivine totally altered by smectite. Orthopyroxene locally by smectite.																					
	TS10-104	basalt	porphyritic	○	○			◎		○		△			○		◎	△							sm(△)
				Olivine totally altered by smectite. Orthopyroxene locally by smectite.																					
	TS10-248	basalt(?)	trachytic	(○)				◎		△					◎		(◎)	○							sm(○), cb(○)
				Mafic phenocrysts totally altered into smectite and carbonate minerals.																					
	TS10-344	basalt	porphyritic, trachytic	○	○			◎		○		△			○		◎	△					△		sm(△), goe(△)
				Olivine totally altered by smectite. Plagioclase core highly altered by sericite.																					
	TS10-372	basalt	porphyritic	(○)	○			◎		△		(○)			○		◎	△							cb(○)
				Mafic minerals except for cpx totally into carbonate minerals.																					
MJC-11	TS11-430	qz porphyry	porphyritic				◎		(○)		bio(△)			◎	○				tou(△)				◎		goe(△)
				K-feldspar and biotite totally by sericite.																					
	TS11-466	Qz-po. breccia	brecciated				◎	○	○	△				○	○	○		△	zir(・)				△		sm(△), tou(△)
				Mafic phenocrysts totally altered.																					
	TS11-486	porphyry	subophitic	(○)			○	◎	△	○	bio(○)									・	○		○		sm(△)
				Mafic phenocryst into smectite and opaque minerals. Plagioclase highly into sericite.																					

AP-2(4) Results of Microscopic Observation of Thin Sections (Drilling)

Drilling Name	Sample No.	Rock Name	Texture	Phenocryst or fragment								Groundmass or matrix								Metamorphic or alteration					
				MP	cpx	hb	qz	pl	Kf	op	others	MP	hb	qz	pl	Kf	gl	op	others	ep	chl	amp	ser	tit	others
MJC-11	TS11-498	meta-di-porphyry	porphyritic			(○)		◎						○	○				bio(○)		○		△	・	
				Mafic minerals into chlorite. Plagioclase highly replaced by sericite.																					
MJC-12	TS12-178	meta-porphyry	porphyritic	(○)	△	(○)		◎		△		○		△	◎	○		△		△	○	○		・	goe(△)
				Mafic minerals into sericite, secondary amphibole, chlorite and opaque minerals.																					
	TS12-200	meta-quartzdiorite	subophitic		○	(○)	△	◎	○	○	bio(△)								apa(・)			○		△	
				Mafic minerals by secondary acicular amphibole.																					
	TS12-286	meta-quartzdiorite	subophitic		○	(○)	△	◎		△									apa(・)	○	○	○		・	cb(△), tou(△)
				Hornblende decomposed into secondary amphibole. Plagioclase locally by epidote.																					
	TS12-298	meta-quartzdiorite	subophitic		○	(○)	△	◎	△	○										△	△	○	△	△	
				Hornblende replaced by secondary acicular amphibole. Plagioclase locally by sericite.																					

abbrev. MP= mafic minerals, cpx=clinopyroxene, pl=plagioclase, op=opaque minerals, qz=quartz, hb=hornblende, kf=K-feldspar epi=epidote, tou=tourmaline
gl=glass or microcrystalline aggregate, cb.=carbonate, ser=sericite, tit=titanite, apa=apatite, sm=smectite including clay mienrals.
goe=goethite, zir=zircon, kao=kaolline
◎abundant, ○common, △small, ・rare () brancket shows totally decomposed.

AP-3 (1) Results of Microscopic Observation of Polished Sections (Phase 1)

Sample No.	Locality	Ore minerals								Gangue minerals									
		Py	Cp	At	Cov	Hm	Goe	Gal	others	si	pl	kf	ser	chl	bar	tit	ana	zm	others
D-007	Mocha			○			△			○	◎		△	○					
C-004	Mocha		○	△	△		○				◎	◎	△	○					
C-007	Mocha			△			△				◎		○	○			△	•	apa(•)
A-004	Soledad	△					△			◎									
B-006	Soledad	○							CuZn(•)	△	◎			○			•		opx(△)
B-007	Soledad	△	•					•	Pyr(•)	○	◎			△			△	•	cpx(△), cal(△)
B-008	Soledad	○	•							○	◎			○		△	○		epi(△), apa(•)
B-009	Soledad	○	•					•	Pyr(•)	○	◎			△			△		cal(△)
A-010	Queen Elizabeth-S					•	△		Cry(○)	◎			○					•	cal(○), jar(○)
A-013	Queen Elizabeth-S					△			Cry(○)	○	◎	○					△		apa(•)
C-038	Queen Elizabeth-S	○	○					△	Cry(△), Mal(△)	○	○	◎					•	•	
A-036	Diana		•			△	△			◎	◎	○		△		△			apa(•)
Z-002	Diana	•					◎			◎								•	
Z-003	Diana	△	•				△		Bar(△)	◎			△					•	
Z-006	Diana						△		Bar(△)	◎	○		△					•	
Z-007	Diana		•				△		Bar(•)	◎			△				•	•	
A-048	La Planada					○			Ang(•)	○	◎	○		○					cal(○), bio(○)
C-055	La Planada	○	△		△	△			Pyr(•)	○	◎	○				△			cpx(△)
C-058	La Planada	○	△						Bor(•)	◎	○			○				•	bio(○)
C-071	La Planada								Cer(○)	◎							△	•	tou(◎)
C-073	La Planada		△		•				Cer(△)	◎	○		○	○			△	•	apa(•)

Abbr. :
Py=pyrite, Hm=hematite, Cp=chalcopyrite, Bo=Bornite, Gal=galena, At=atakamite, Goe=goethite, Cov=covellite, Ang=anglesite, Bar=barite
Cry=chrysocolla, Pyr=pyrrhotite, CuZN=hydrou CuZn mineral, Mal=malachite, Cer=cerussite, si= SiO_2 polymorphs, pl=plagioclase,
kf=K-feldspar, se=sericite, bio=biotite, bar=barite, ana=anatase, apa=apatite, ZM=zircon and monazite, cpx=clinopyroxene, cal=calcite, jar=jarosite
chl=chlorite or clay minerals, opx=orthopyroxene, epi=epidote, tou=tourmaline
◎=abundant, ○=common, △=small, •=rare

AP-3 (2) Results of Microscopic Observation of Polished Sections (Phase 2)

Sample No.	Locality	Ore minerals									Gangue minerals								
		Py	Cp	Mal	Cov	Hm/Mt	Goe	Gal	Bar	others	si	pl	kf	ser	chl	tit	ana	zm	others
G003	Eastern Chacarilla					○	△				○	◎		△	○			・	apa(△)
F009	Western Chacarilla	○							△	Siderite(◎)	△	◎			△		・	・	
F013	Western Chacarilla	◎								CuZn(・)		◎		・	△		・	・	dol(◎)
E007	West Qween Elizabeth-N	○								Sph(・)	○	◎	○						epi(△)
E022	West Qween Elizabeth-N	○						・				◎							cpx(○)
F032	West Qween Elizabeth-N	○									○	◎	○		△		・		bio(△)
F049	West Qween Elizabeth-SE					◎	◎												
F074A	West Qween Elizabeth-SE						○			Cry(○)	◎	○		△	△			・	
F075B	Tignamar-N			△			△			Cry(◎)	○	○	◎	△				△	
F078	Tignamar-N	◎								Cc(○)	◎			○				・	
E058	Camarones-QCW	◎	○								△	◎		○	◎			・	epi(△), ilm(△)
E061	Camarones-QCW	◎					○				◎	○		○	△		・	・	
E081	Camarones-QCW	△	△							Ang(○)	◎			○			△		epi(○)
E081B	Camarones-QCW	○	△							Ang(○)	◎			○			△		epi(○)
E181	Camarones-QCW	○	△								○	◎				△	・		epi(○)
E192	Camarones-QCW	○	△						△		○	◎		△	○			・	cal(△)
E192B	Camarones-QCW	○	△		・				△	Sph(・)	○	◎		△	○			△	cal(△)
E194	Camarones-QCW	○	△						△		◎	◎	○	△					apa(・)
E194B	Camarones-QCW	○	△						△	AgTe(・)	◎	◎	○	△					apa(・)
E208	Camarones-QCW	△					△				◎			○		・	・	・	
E212	Camarones-QCW	○						・			○	◎	○			△			bio(△)
F162	Camarones-QCW	○								Sph(・)	○	◎	△				△		epi(△)
F172	Camarones-QCW	○	・						・		◎	○			○		△	・	bio(○)
F176	Camarones-QCW	◎	△			△					○	◎	△		△	△		・	epi(○)
F177	Camarones-QCW	○	△		△						○	◎				・	・	・	bio(△), ilm(△)
F177B	Camarones-QCW	○	△		△	○					○	◎				・	・	・	bio(△),ilm(△)
F182	Camarones-QCW	○	・						△		◎	◎					△	・	
F182B	Camarones-QCW	○	・						△		◎	◎					△	・	
G052	Camarones-QCW	○					△			Pyr(△)	◎	○		○	○			・	
G084	Camarones-QCW					・(Mt)	・	△			◎	○	◎				・	・	epi(◎)
G173	Camarones-QCW	○									○	◎	○					・	epi(△)
G183	Camarones-QCW	○							△	CuZn(・)	◎			◎			△		
F107	Camarones-QCC	○					△		△		◎	◎	◎			・	・	・	
H006	Camarones-QCE	○									◎	◎	○					・	apa(△)
H009	Camarones-QCE	◎					△	・	○	CuZn(△)	△	◎	○		○			・	
E233	Camarones-QCS	○									◎			◎		・	・		
H019	Camarones-QCS	○								Sph(・)	◎			◎					
E171	Camarones-SM					○	△				◎	○			○		△		
E178	Camarones-SM					○	△				○	◎	○						cpx(○)
G155	Camarones-SM					○(Mt)					◎	○	◎					・	

Abbr. :

Py=pyrite, Hm=hematite, Mt=magnetite, Cp=chalcopyrite, Gal=galena, Mal=Malacite, Goe=goethite, Cov=covellite, Ang=anglesite
Cry=chrysocolla, Pyr=pyrrhotite, CuZN=hydrous CuZn mineral, Mal=malachite, Cc=chalcocite, Sph=sphalerite, Bar=barite
kf=K-feldspar, se=sericite or muscovite, bio=biotite, bar=barite, ana=anatase, zm=zircon and monazite, cpx=clinopyroxene
si=SiO_2 minerals, pl=plagioclase, chl=chlorite or clay minerals, epi=epidote, cal=calcite, dol=dolomite
◎=abundant, ○=common, △=small, ・=rare

AP-3(3) Results of Microscopic Observation of Polished Sections (Phase 3 Surface survey)

Sample No.	Locality	Ore minerals										Gangue minerals								
		Py	Cp	Cry	Aca	Mal	Ang	Cer	Hm/Mt	Bar	others	si	pl	kf	ser	chl	tit	ana	zm	others
T-005	Queen Elizabeth										Jar(○),Goe(△)	◎			○	○		△	・	
Q-139	Putre SE (Choquelimpie)	○			・							◎						・		kao(○)
Q-144	Putre SE (Choquelimpie)	○								◎		◎			△			・		kao(○)
Q-145	Putre SE (Choquelimpie)	○			・					・	Gal(・)	◎							・	kao(○)
Q-160	Putre S	○										○	◎	○		○				bio(△)
S-002	Copaquire								○			○	◎							bio(○),apa(△)
S-005	Mamiña SE	△							○			◎	○	◎		◎				epi(○),cpx(○)
S-016	Chusmisa	△							○			◎	◎	◎						hb(○)
S-021	Chusmisa			○			・	○			Ant(◎)	◎								
S-029	Camiña	○										○	◎			◎		△		hb(○),clay(△)
S-033	Camiña	△										◎	○	◎				△		
S-035	Camiña	○									Goe(△)	○	◎				・	△		clay(○)
K-124	Putre S	○								・		◎								clay(◎)
K-129	Putre S	○									Gal(・)	○	◎	◎			・	・	・	cpx(△)
K-133	Putre W (Campanane)		△	◎							Jar(○)	◎							・	tou(◎)
K-137	Putre W (Campanane)								○			△	◎		△	○	○			cal(○)
K-139	Putre W (Campanane)			◎							Goe(○)	◎							・	tou(◎)
K-147	Arica E (Halcones)			◎		○	・				Goe(◎),Chc(△)	◎								
K-149	Arica E (Halcones)			◎		△		・			Cag(・),Plu(○)	◎								
K-151	Arica E (Halcones)	◎				・	△				Chc(○),Ant(△)	◎								

abbrev. Py=pyrite,Hm=hematite,Mt–magnetite,Cp=chalcopyrite,Gal=galena, Mal=Malacite, Goe=goethite, Ang=anglesite, Aca=acanthite
Cry=chrysocolla, Mal=malachite, Chc=chalcocite, Bar=barite, Cer=cerussite, Cag=chlorargyrite, Plu=plumbojarosite, Ant=antlerite, Jar=jarrosite
kf=K–feldspar, se=sericite or muscovite, bio=biotite, bar=barite, ana=anatase, zm=zircon and monazite, cpx=clinopyroxene
si=SiO_2 minerals, pl=plagioclase, chl=chlorite, clay=clay minerals, epi=epidote, cal=calcite, kao=kaollinite, hb=hornblende
◎=abundant, ○=common, △=small, ・=rare

AP-4 (1) Resultu of X-ray Diffractive Analysis (Phase 1)

Sample No.	Locality	Qz	Pl	Kf	Tre	Drav	Mont	Ser/Mont	Chl/Mont	Chl	Ser	Ka	And	Gyp	Alu	Ja	Hem	Cal
C001	Mocha	△					◎n	△	?		△	?	△?			△		
C005	Mocha	○	○				△			△~○	△	?						△
C010	Mocha	○	○	△			△			△~○	△	?						
C011	Mocha	◎	△							△	○	?		△				
C012	Mocha	?	△			△	○											○
C019	Mocha	△	△							○	△			△				
D005	Mocha	○					△			?	△	△		○		△		
A002	Soledad	◎				△				?	△	△						
A006	Soledad	◎	△							△	△							
B003	Soledad	△	○					△			△					△		
B004	Soledad	○	◎				○	△										
B005	Soledad	◎	△				○			?	△	△						
B006	Soledad	○	○		△		△											
C022	Qween Elizabeth-N	◎															△	
C025	Qween Elizabeth-N	◎										○			△			
C029	Qween Elizabeth-N	○~◎						△				△						
C031	Qween Elizabeth-N	◎						△										
C034	Qween Elizabeth-N	◎		?				△										
C036	Qween Elizabeth-N	◎						△										
C040	Qween Elizabeth-N	◎		△			△			△	△							
D010	Qween Elizabeth-N	◎									△						△	
D012	Qween Elizabeth-N	◎						△								△		
D016	Qween Elizabeth-N	◎										?						
D020	Qween Elizabeth-N	◎													○			
D024	Qween Elizabeth-N	○		?						?	△	△						
D029	Qween Elizabeth-N	◎									△~○			△				
D035	Qween Elizabeth-N	◎		△			△	△										
B011	Qween Elizabeth-C	△	△				◎				△							
B012	Qween Elizabeth-C	△	△				○				△							
B016	Qween Elizabeth-C	◎									○							
B017	Qween Elizabeth-C	◎									◎	○						
B021	Qween Elizabeth-C	◎									◎	△						
B022	Qween Elizabeth-C	◎									◎							
A009	Qween Elizabeth-S	△~?	△	△			△	△		△		?						◎
A014	Qween Elizabeth-S	○	◎							△	○	?						
A016	Qween Elizabeth-S	◎	△	△			△			△	○							
A019	Qween Elizabeth-S	◎		○							○					△		
A022	Qween Elizabeth-S	◎									◎					△		
A024	Qween Elizabeth-S	◎	△				△			?	△	△						
A030	Diana	◎	○							○	△							
A033	Diana	◎									○							
B033	Diana	◎	△								△							
B036	Diana	○	○							?	△	△						
B037	Diana	◎								?	△~○	△				△		
B039	Diana	◎								?	◎	△						
C049	Diana	△	○								△							
D041	Diana	○	○	△							△							
A041	La Planada	?	○	△	△					?		△						
A045	La Planada	◎	△								◎							
C069	La Planada	○									○	△						

n: nontronite?

AP-4 (2) Resultu of X-ray Diffractive Analysis (Phase 2)

Sample No	Locality	Qz	Cri	Tri	Pl	Kf	Act-Tre	Epi	Stil	Laum	Mord	Mont	Ser/Mont	Chl/Mont	Chl	Ser	Ka	Pyr	Anh	Gyp	Alu	Ja	Py	Hem	Cal	Hal
F-010	Chacarilla-W	△			◎											△							△			
F-020	Chacarilla-W	◎			○												?									
F-021	Chacarilla-W	△			○											△										
F-024	Chacarilla-W	◎														○~△				△		△				
F-025	Chacarilla-W	◎											△			△				△		△				
E-002	West Queen Elizabeth-N	◎										△				△										
E-004	West Queen Elizabeth-N	◎											△													
E-011	West Queen Elizabeth-N	◎																○								
F-029	West Queen Elizabeth-N	◎														△	?									
F-033	West Queen Elizabeth-N	◎									△	△			?	?	?									
F-037	West Queen Elizabeth-N	◎														△										
F-040	West Queen Elizabeth-N	◎										△	△		△		?									
F-044	West Queen Elizabeth-N	△			○~△							?			△	△	?									
F-048	West Queen Elizabeth-N	◎										△				△						△				
E-014	West Queen Elizabeth-C	◎			△				?							○										
E-018	West Queen Elizabeth-C	◎			△											△						△				
E-023	West Queen Elizabeth-C				◎		△																			
F-051	West Queen Elizabeth-C	◎	?									△			?	△	△									
F-056	West Queen Elizabeth-C	◎										?			△		?									
F-060	West Queen Elizabeth-C	○			△		△																			
F-064	West Queen Elizabeth-C	◎			△											△										
F-067	West Queen Elizabeth-C	◎			△										△	△										
E-030	Tignamar-N	◎			△								△			?	△					△				
E-032	Tignamar-N	◎			○												?					△				
E-034	Tignamar-N	◎			◎											△	△									
F-077	Tignamar-N	◎														○							△			
F-080	Tignamar-N	◎														○										
G-035	Tignamar-N	◎			○											△										
E-037	Tignamar-S	◎				?																				
E-038	Tignamar-S	◎				?																				
E-039	Tignamar-S	◎				?																				
E-041	Tignamar-S	◎				?																				
E-043	Tignamar-S	◎																	?							
E-045	Tignamar-S	◎																			△					
E-047	Tignamar-S															△	△					△				
E-053	Tignamar-S		△									△					△									
E-055	Tignamar-S			△													△				△					
F-084	Tignamar-S	◎	△																							
F-086	Tignamar-S	△	○	△																	△					
F-088	Tignamar-S		○	△																	○					
F-090	Tignamar-S	◎																			○					
F-092	Tignamar-S																△				?					
F-093	Tignamar-S		?														△				△					
G-120	Camarones-QCFW								◎	△		△														

AP-4 (2) Resultu of X-ray Diffractive Analysis (Phase 2)

Sample No	Locality	Qz	Cri	Tri	Pl	Kf	Act-Tre	Epi	Stil	Laum	Mord	Mont	Ser/Mont	Chl/Mont	Chl	Ser	Ka	Pyr	Anh	Gyp	Alu	Ja	Py	Hem	Cal	Hal
E-062	Camarones-QCW	◎														○										
E-063	Camarones-QCW	◎														○										
E-066	Camarones-QCW	◎			◎	△																				
E-076	Camarones-QCW	○～△			○～△										△	△							?			
E-190	Camarones-QCW	◎			△											○							△			
E-199	Camarones-QCW	◎			◎～○	△									△	△										
F-124	Camarones-QCW	◎										○～△				△				△		△				
F-163	Camarones-QCW	○			△										△	△				△			?			
F-173	Camarones-QCW	△			△										△					△						△
F-183	Camarones-QCW	◎			○											△					△					
G-054	Camarones-QCW								◎			△														
G-082	Camarones-QCW	○			△			△				?			△		?									
G-085	Camarones-QCW	◎				△		△							△		?									
G-087	Camarones-QCW	△						△				△								△					○	
G-090	Camarones-QCW				△	△									△		?			△						
G-093	Camarones-QCW	○												△					△	◎						
G-106	Camarones-QCW	△			△							△			△		?								○	
G-109	Camarones-QCW	○			◎									△												
G-113	Camarones-QCW	△								△						△									◎	
G-175	Camarones-QCW	◎	?													△										
G-180	Camarones-QCW	◎														○										
E-118	Camarones-QCC	◎														△										
E-122	Camarones-QCC	◎			△	△										△										
E-130	Camarones-QCC	◎			△	△										△										
F-106	Camarones-QCC	◎			○～△	△						?			△		?			?						
F-108	Camarones-QCC	◎											△			△						△				
F-200	Camarones-QCC	◎			○～△	△									△	△	?									
F-116	Camarones-QCE	◎														○										
E-137	Camarones-QCS	◎						△									◎									
E-138	Camarones-QCS	◎															◎									
E-140	Camarones-QCS	◎															△				△					
E-143	Camarones-QCS	?															◎				△					
E-146	Camarones-QCS	◎				△							△									△				
E-215	Camarones-QCS	◎				△										△										
E-218	Camarones-QCS	◎				△										△						△				
E-221	Camarones-QCS	○														○										
E-228	Camarones-QCS	◎			○										△	△	?									
E-237	Camarones-QCS	◎				△										△										
G-123	Camarones-QCS	◎															○							△		
G-127	Camarones-QCS	◎															△				△					
G-129	Camarones-QCS	◎															◎									
G-136	Camarones-QCS	◎															△									
G-137	Camarones-QCS	◎															△									
G-190	Camarones-QCS	◎			△											△										

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AP-4 (2) Resultu of X-ray Diffractive Analysis (Phase 2)

Sample No	Locality	Qz	Cri	Tri	Pl	Kf	Act-Tre	Epi	Stil	Laum	Mord	Mont	Ser/Mont	Chl/Mont	Chl	Ser	Ka	Pyr	Anh	Gyp	Alu	Ja	Py	Hem	Cal	Hal
F-199	Camarones-QCS	◎			◎	△									△	△										
H-104	Camarones-QCS	◎														△	△									
E-155	Camarones-SM	◎～○			◎	?	△					△					△									
F-146	Camarones-SM	○～△			○	△						?			△		?									
F-153	Camarones-SM	◎			○～△	○～△						△														
G-144	Camarones-SM	◎			△							○														
G-146	Camarones-SM	◎			○	○	△																			
G-151	Camarones-SM	◎			◎	△						△				△										
G-156	Camarones-SM	◎			△											△							?			
G-162	Camarones-SM	◎			◎	○						△				△										
G-149	Camarones-SMR		△	△									△													
G-169	Camarones-CR	△	△	△									△													
E-113	Camarones-NW	◎			△	○～△										△										
E-114	Camarones-NW	△															△									△

Abbreviation

Abbreviation	
Qz	Quartz
Cri	Cristobalite
Tridy	Tridymite
Pl	Plagioclase
K-fs	K-feldspar
Act-Tre	Actinolite-Tremolite
Epi	Epidote
Stil	Stilbite
Laum	Laumontite
Mord	Mordenite
Mont	Montmorillonite
Ser/Mont	Sericite/Montmorillonite interstratified mineral
Chl/Mont	Chlorite/Montmorillonite interstratified mineral
Chl	Chlorite
Ser	Sericite
Kaol	Kaolinite
Pyrophy	Pyrophyllite
Anhyd	Anhydrite
Gyp	Gypsum
Alu	Alunite
Ja	Jarosite
Py	Pyrite
Hem	Hematite
Cal	Calcite
Hal	Halite

Amount

2θ = 40-20° (CuKα)

	Amount	
◎	abundant	> 800 cps
○	common	800-400cps
△	small	400 cps >
?		

2θ = 20-2° (CuKα)

	Amount	
◎	abundant	> 700 cps
○	common	700-300cps
△	small	300 cps >
?		

X-ray Diffractive Analysis

Abbreviation

Qz	Quartz
Pl	Plagioclase
Kf	K-feldspar
Tre	Tremolite
Drav	Dravite
Mont	Montmorillonite
Ser/Mont	Sericite/Montmorillonite interstratified mineral
Chl/Mont	Chlorite/Montmorillonite interstratified mineral
Chl	Chlorite
Ser	Sericite
Ka	Kaolinite
And	Andalusite
Gyp	Gypsum
Alu	Alunite
Ja	Jarosite
Hem	Hematite
Cal	Calcite

Amount

$2\theta > 20°$ (CuKa)

◎	abundant	> 800 cps
○	common	800–400cps
△	small	400 cps >
?		

$2\theta < 20°$ (CuKa)

◎	abundant	> 700 cps
○	common	700–300cps
△	small	300 cps >
?		

AP-4(3) Results of X-ray Diffractive Analysis (Phase 3 Surface survey)

Sample No.	Locality	Qz	Opal-CT	Crist	Pl	K-fs	Tre	Clinopt	Stilb	Mont	Ser/Mont	Minn	Chl	Ser	Kaol	And	Gyp	Alun	Ja	Cal	Goe	Py	Amor
S-022	Chusmisa	◎												○					△				
S-023	Chusmisa NE	◎			?	△					△				△								
S-027	Chusmisa	◎			◎					△				△	△								
S-028	Camiña NE														◎								?
S-031	Camiña	◎			○					△							△						
S-033	Camiña	◎			○	△-?								△									
T-011	Pachica	◎			△	△								△			△						
T-012	Pachica	○			△	△				?				?			△		△				
T-014	Pachica	◎			△									△									
T-015b	Pachica	△																		◎	△		
T-027	Chusmisa NE	◎					△								△								
T-028	Chusmisa NE	◎																					
T-029	Chusmisa NE	◎																△					
T-030	Chusmisa NE	△			○					△													
T-031	Chusmisa NE	◎																	△				
T-032	Chusmisa NE	◎																○					
T-033	Chusmisa NE	◎			△										△								
T-035	Chusmisa NE	△																					◎
T-036	Chusmisa NE																	◎					
T-038	Chusmisa NE	○			○					△				△									
T-041	Chusmisa NE	◎													○								
T-043	C.Pumiri		◎-○												△			△					
T-044	C.Pumiri									○-△									△				
T-047	C.Pumiri	△	◎-○												○			△					
T-051	C.Socora	△	○-△		△										△								
T-053	C.Pumiri									○-△					○-△								
T-058	Minimiñe			○											○-△								
T-059	Tignamar NW																	△					○
T-062	Tignamar N	◎												○									
T-070	Putre S	◎												○		?							
T-084	Chapiquiña	○			○					△				△									
T-090	Putre S	◎			○	△								△									
T-093	Putre W	◎			△	△				△				△	△								
K-005	Ujina	◎			△	△								△	△								
K-006	Ujina	◎			△	△								△	△								
K-025	Guavina	◎												△									
K-091	Camiña	○			△	△						?		△			△						
K-101	Tignamar NW	◎								△					△								
K-106	Tignamar SE	◎									△				△								
K-110	Belen	◎												△									
K-124	Putre S	◎			△					△				△	△								
K-136	Putre W (Campanane)	○			◎									△	△					△			
K-142	Putre W (Campanane)	◎												○									

AP-4(3) Results of X-ray Diffractive Analysis (Phase 3 Surface survey)

Sample No.	Locality	Qz	Opal-CT	Crist	Pl	K-fs	Tre	Clinopt	Stilb	Mont	Ser/Mont	Minn	Chl	Ser	Kaol	And	Gyp	Alun	Ja	Cal	Goe	Py	Amor
K-143	Putre W (Campanane)	◎				○								○	△								
K-145	Arica E (Halcones)	◎									△			△	△								
K-146	Arica E (Halcones)	◎				?				△					△								
K-148	Arica E (Halcones)	◎				△								○									
K-155	Putre W (Jamiralla)	◎												◎									
K-156	Putre W (Jamiralla)	◎												◎									
K-201	Cerro Colorado	◎												◎	△			△					
Q-019	Pachica	◎			△					△				△									
Q-025	Chusmisa-E	○			△					△				△	△								
Q-028	Chusmisa-E	○								○-△					○-△								
Q-041	Chusmisa NE	◎			△	◎								△									
Q-054	Chusmisa	◎												△						△			
Q-069	Camiña	△								◎-○				△									
Q-095	Camiña	◎			△					△				△			○-△						
Q-126	Tignamar SE	△	○-△												△			○-△					
Q-137	Putre SE	◎												△									
Q-157	Putre S	◎			○	△								△									
Q-164	Putre W	◎												◎									

Abbreviation

Qz	Quartz
Opal-CT	Opal-CT
Crist	Cristobalite
Pl	Plagioclase
K-fs	K-feldspar
Tre	Tremolite
Clinopt	Clinoptilolite
Stilb	Stilbite
Mont	Montmorillonite
Ser/Mont	Sericite/Montmorillonite interstratified mineral
Minn	Minnesotaite
Chl	Chlorite
Ser	Sericite
Kaol	Kaolinite
And	Andalusite
Gyp	Gypsum
Alun	Alunite
Ja	Jarosite
Cal	Calcite
Goe	Goethite
Py	Pyrite
Amor	Amorphous material

Amount

$2\theta > 20°$ (CuKa)
- ◎ abundant (> 800 cps)
- ○ common (800-400 cps)
- △ small (400 cps >)
- ?

$2\theta < 20°$ (CuKa)
- ◎ abundant (> 700 cps)
- ○ common (700-300 cps)
- △ small (300 cps >)
- ?

AP-4(4) Results of X-ray Diffractive Analysis (Drilling)

Drilling Name	Sample No.	Qz	Opal-CT	Crist	Pl	K-fs	Tre	Clinopt	Stilb	Mont	Ser/Mont	Minn	Chl	Ser	Kaol	And	Gyp	Alun	Ja	Cal	Goe	Py	Amor
MJC-1	X1-138	◎			○					△				△									
	X1-158	◎			△								○	△									
	X1-226	○			△								○										
	X1-262	△			○-△		△						△										
	X1-272	△			○								○	△									
	X1-292	○			◎								○-△	△									
	X1-320	○			○								○-△	△								△	
	X1-346	○			○	?							○	△									
MJC-5	X5-158	○	○															△					○
MJC-6	X6-124	◎												△					△				
MJC-7	X7-168	◎				?								△	△								
MJC-9	X9-490	△			△			○						△									
	X9-498	△			△	?	?	△						△									
MJC-10	X10-24									○					○								
	X10-60				△				?	○-△												△	
	X10-166	○			△					○					△							△	
	X10-328	△			△					○	△				△								
	X10-366	○			△						△		△										
MJC-11	X11-438	◎												△	△								
	X11-470	◎			△					△				△									
	X11-484	△			○		△			△			△										
	X11-498	○			○					△													
MJC-12	X12-186	△			○		△						△										
	X12-238	○-△			○		△			△				△									
	X12-270	△			○		△						△										
	X12-298	△			○		△						△	△									

Abbreviation

Qz	Quartz
Opal-CT	Opal-CT
Crist	Cristobalite
Pl	Plagioclase
K-fs	K-feldspar
Tre	Tremolite
Clinopt	Clinoptilolite
Stilb	Stilbite
Mont	Montmorillonite
Ser/Mont	Sericite/Montmorillonite interstratified mineral
Minn	Minnesotaite
Chl	Chlorite
Ser	Sericite
Kaol	Kaolinite
And	Andalusite
Gyp	Gypsum
Alun	Alunite
Ja	Jarosite
Cal	Calcite
Goe	Goethite
Py	Pyrite
Amor	Amorphous material

Amount

$2\theta > 20°$ (CuKa)

- ◎ abundant (> 800 cps)
- ○ common (800–400 cps)
- △ small (400 cps >)
- ?

$2\theta < 20°$ (CuKa)

- ◎ abundant (> 700 cps)
- ○ common (700–300 cps)
- △ small (300 cps >)
- ?

AP-5 (1) Results of Fluid Inclusion Analysis (Phase 1)

Area	Sample No.	Mineral host	Incle.ID	Disappearance Temperature(°C)		NaCl-wt%	Phase
				Bubble (Th°C)	Nacl		
Mocha	C-006	Quartz	1	272	351	42.1	Polyphase and liquid-vapor inclusions, daughter mineral: NaCl, KCl, opaque mineral = almost chalcopyrite
		Quartz	2	362	ND		
		Quartz	3	251	ND		
		Quartz	4	236	266	35.4	
		Quartz	5	240	271	35.7	
		Quartz	6	285	406	47.7	
		Quartz	7	276	404	47.5	
		Quartz	8	314	ND		
		Quartz	9	290	336	40.7	
		Quartz	10	ND	363	43.2	
		Quartz	11	ND	287	36.8	
		Quartz	12	354	408	48.0	
		Quartz	13	327	ND		
		Quartz	14	334	355	42.4	
		Quartz	15	301	378	44.7	
		Quartz	16	372	ND		
		Quartz	17	393	366	43.5	
			Average	307	349	42.3	
Mocha	C-008	Quartz	1	254	261	35.1	Polyphase and liquid-vapor inclusions, daughter mineral: NaCl, opaque mineral
		Quartz	2	260	297	37.5	
		Quartz	3	278	321	39.4	
		Quartz	4	282	320	39.3	
		Quartz	5	282	321	39.4	
		Quartz	6	287	327	39.9	
		Quartz	7	265	316	39.0	
		Quartz	8	284	ND		
		Quartz	9	271	ND		
		Quartz	10	275	331	40.3	
		Quartz	11	283	326	39.8	
		Quartz	12	275	320	39.3	
		Quartz	13	321	345	41.5	
		Quartz	14	335	355	42.4	
		Quartz	15	288	335	40.6	
		Quartz	16	349	364	43.3	
		Quartz	17	351	387	45.7	
		Quartz	18	ND	378	44.7	
			Average	291	332	40.5	
Mocha	C-020	Quartz	1	391	261	35.1	Liquid-vapor inclusion (vapor=80%-vol.) ≫ polyphase inclusion, daughter mineral: NaCl, opaque mineral
		Quartz	2	387	240	33.8	
		Quartz	3	345	315	38.9	
		Quartz	4	415	No NaCl		
		Quartz	5	417	No NaCl		
		Quartz	6	403	No NaCl		
		Quartz	7	401	No NaCl		
		Quartz	8	408	No NaCl		
		Quartz	9	411	No NaCl		
		Quartz	10	416	No NaCl		
			Average	399	272	36.0	
Queen Elizabeth-S	A-028	Quartz	1	426	No NaCl		Vapor-rich inclusion (vapor≧80%-vol.), poor
		Quartz	2	419	No NaCl		
		Quartz	3	423	No NaCl		
		Quartz	4	427	No NaCl		
			Average	424			
La Planada	A-049	Quartz	1	311	345	41.5	Polyphase and liquid-vapor inclusions, daughter mineral: NaCl, opaque mineral
		Quartz	2	323	332	40.3	
		Quartz	3	321	339	41.0	
		Quartz	4	325	ND		
		Quartz	5	335	ND		
		Quartz	6	347	ND		
		Quartz	7	330	345	41.5	
		Quartz	8	310	ND		
		Quartz	9	309	328	40.0	
		Quartz	10	ND	315	38.9	
			Average	323	334	40.5	
La Planada	C-073	Quartz	1	299	372	44.1	Polyphase and liquid-vapor inclusions, daughter mineral: NaCl, opaque mineral
		Quartz	2	343	400	47.1	
		Quartz	3	330	386	45.5	
		Quartz	4	320	285	36.7	
		Quartz	5	319	290	37.0	
		Quartz	6	283	308	38.4	
		Quartz	7	303	292	37.2	
		Quartz	8	299	293	37.2	
			Average	312	328	40.4	

ND : not determined

AP-5 (2) Results of Fluid Inclusion Analysis (phase 2)

Area	Sample No.	Mineral host	Incle.ID	Homogenization T(℃)	Ice melting T(℃)	NaCl-wt%	Phase
Tignamar-N	F-082	Quartz	1	283.1	-0.2	0.35	Liquid-vapor inclusion, boiling, max. $\phi 10 \mu m$
		Quartz	2	276.4	-0.4	0.70	
		Quartz	3	292.9			
		Quartz	4	270.9	-0.1	0.18	
		Quartz	5	305.6	-0.5	0.87	
		Quartz	6	292.9			
		Quartz	7	283.1	-0.1	0.18	
		Quartz	8	279.7			
		Quartz	9	308.8			
		Quartz	10	300.1			
		Quartz	11	291.4			
		Quartz	12	286.9	-0.1	0.18	
		Quartz	13	284.3			
		Quartz	14	302.8			
		Quartz	15	302.1	-0.1	0.18	
		Quartz	16	296.5			
		Quartz	17	289.2	-0.3	0.53	
		Quartz	18	287.3			
		Quartz	19	282.0			
		Quartz	20	285.6			
		Quartz	21	303.7			
			Average	291	-0.2	0.4	
Camarones-QCFW	G-117	Calcite	1	274.6	-0.3	0.53	Liquid-vapor and vapor-rich inclusions, poor
		Calcite	2	268.3	-0.2	0.35	
		Calcite	3	269.0			
		Calcite	4	272.9			
		Calcite	5	286.0	-0.1	0.18	
		Calcite	6	275.2			
		Calcite	7	274.0			
		Calcite	8	279.8	-0.4	0.70	
		Calcite	9	287.3			
		Calcite	10	309.2			
		Calcite	11	277.5			
		Calcite	12	264.2	-0.7	1.22	
		Calcite	13	301.1			
		Calcite	14	291.8			
		Calcite	15	294.6	-0.2	0.35	
		Calcite	16	288.3	-0.6	1.05	
		Calcite	17	276.2			
		Calcite	18	281.9			
		Calcite	19	283.4			
		Calcite	20	277.8			
		Calcite	21	291.6			
			Average	282	-0.4	0.6	
Camarones-QCW	E-080	Quartz	1	283.8	-0.5	0.87	Liquid-vapor and vapor-rich inclusions
		Quartz	2	270.0	-0.3	0.53	
		Quartz	3	287.5			
		Quartz	4	292.6			
		Quartz	5	288.4	-0.1	0.18	
		Quartz	6	289.6	-0.1	0.18	
		Quartz	7	291.4			
		Quartz	8	287.2	-0.2	0.35	
		Quartz	9	306.0			
		Quartz	10	278.5			
		Quartz	11	305.1			
		Quartz	12	304.7	-0.8	1.39	
		Quartz	13	296.4			
		Quartz	14	297.1			
		Quartz	15	291.3			
		Quartz	16	285.5	-0.4	0.70	
		Quartz	17	303.3			
		Quartz	18	280.2	-0.1	0.18	
		Quartz	19	298.8	-0.2	0.35	
		Quartz	20	307.1			
		Quartz	21	297.2			
			Average	292	-0.3	0.5	
Camarones-QCWC	G-110	Quartz	1	346.9	-0.2	0.35	Liquid-vapor inclusion, max. $\phi 5 \mu m$
		Quartz	2	348.8	-0.2	0.35	
		Quartz	3	370.6			
		Quartz	4	363.5			
		Quartz	5	370.7	-0.3	0.53	
		Quartz	6	358.4			
		Quartz	7	373.9			
		Quartz	8	352.9	-0.4	0.70	
		Quartz	9	356.7			
		Quartz	10	368.1			
		Quartz	11	362.4	-0.2	0.35	
		Quartz	12	364.0			
		Quartz	13	369.7	-0.7	1.22	
		Quartz	14	361.4			

AP-5 (2) Results of Fluid Inclusion Analysis (phase 2)

Area	Sample No.	Mineral host	Incle.ID	Homogenization T(°C)	Ice melting T(°C)	NaCl-wt%	Phase
		Quartz	15	372.0			
		Quartz	16	376.1			
		Quartz	17	367.0	-0.3	0.53	
		Quartz	18	362.3			
		Quartz	19	357.3			
		Quartz	20	361.4			
		Quartz	21	371.9			
			Average	364	-0.3	0.6	
Camarones-QCC	E-129	Quartz	1	364.7	-0.2	0.35	Vapor-rich and liquid inclusions, max. ϕ 10 μ m
		Quartz	2	368.2			
		Quartz	3	355.3	-0.3	0.53	
		Quartz	4	368.1	-0.2	0.35	
		Quartz	5	363.2			
		Quartz	6	353.8	-1.2	2.06	
		Quartz	7	361.0	-0.2	0.35	
		Quartz	8	363.0			
		Quartz	9	358.6	-0.6	1.05	
		Quartz	10	365.1			
		Quartz	11	356.7			
		Quartz	12	366.3			
		Quartz	13	361.7			
		Quartz	14	364.6			
		Quartz	15	361.9			
		Quartz	16	357.8	-0.1	0.18	
		Quartz	17	366.4			
		Quartz	18	364.2	-0.1	0.18	
		Quartz	19	360.6			
		Quartz	20	365.9			
		Quartz	21	356.2			
			Average	362	-0.4	0.6	
Camarones-QCS	E-220	Quartz	1	233.0	-0.1	0.18	Liquid-vapor and polyphase inclusions, max. ϕ 20 μ m, colorless and opaque daughter minerals
		Quartz	2	240.9	-0.1	0.18	
		Quartz	3	242.7	-0.5	0.87	
		Quartz	4	227.0			
		Quartz	5	230.1			
		Quartz	6	234.8	-0.2	0.35	
		Quartz	7	226.2			
		Quartz	8	234.7	-0.3	0.53	
		Quartz	9	237.6	-0.7	1.22	
		Quartz	10	234.1			
		Quartz	11	244.8			
		Quartz	12	235.1			
		Quartz	13	246.4			
		Quartz	14	238.3	-0.4	0.70	
		Quartz	15	239.3			
		Quartz	16	249.0	-0.1	0.18	
		Quartz	17	242.7	-0.1	0.18	
		Quartz	18	232.0			
		Quartz	19	237.4			
		Quartz	20	239.8			
		Quartz	21	229.9			
			Average	237	-0.3	0.5	
Camarones-QCS	F-134	Quartz	1	266.7			Liquid-vapor inclusion, rare, max. ϕ 10 μ m, too small to measure salinity
		Quartz	2	271.6			
		Quartz	3	258.2			
		Quartz	4	281.4			
		Quartz	5	293.6			
		Quartz	6	286.3			
		Quartz	7	274.3			
		Quartz	8	268.2			
		Quartz	9	279.4			
		Quartz	10	271.0			
		Quartz	11	281.2			
		Quartz	12	268.9			
		Quartz	13	277.0			
		Quartz	14	278.9			
		Quartz	15	282.4			
		Quartz	16	265.9			
		Quartz	17	270.3			
			Average	275			
Camarones-SM	E-170	Quartz	1	308.1	-0.2	0.35	Liquid-vapor inclusion, max. ϕ 50 μ m
		Quartz	2	312.2			
		Quartz	3	293.7	-0.7	1.22	
		Quartz	4	299.2	-0.1	0.18	
		Quartz	5	297.3			
		Quartz	6	310.4			
		Quartz	7	294.5			
		Quartz	8	295.0			
		Quartz	9	289.8			
		Quartz	10	303.3			

AP-5 (2) Results of Fluid Inclusion Analysis (phase 2)

Area	Sample No.	Mineral host	Incle.ID	Homogenization T(℃)	Ice melting T(℃)	NaCl-wt%	Phase
		Quartz	11	299.3	-0.2	0.35	
		Quartz	12	297.0			
		Quartz	13	300.1	-0.1	0.18	
		Quartz	14	312.1	-0.1	0.18	
		Quartz	15	301.0			
		Quartz	16	299.9			
		Quartz	17	291.4	-0.6	1.05	
		Quartz	18	293.5			
		Quartz	19	294.7			
		Quartz	20	292.9	-0.4	0.70	
		Quartz	21	299.2	-0.2	0.35	
			Average	299	-0.3	0.5	
Camarones-SM	F-151	Quartz	1	301.8	-0.2	0.35	Liquid-vapor and vapor-rich inclusions, max. φ10μm
		Quartz	2	308.4			
		Quartz	3	311.9	-0.1	0.18	
		Quartz	4	316.4	-0.4	0.70	
		Quartz	5	314.1			
		Quartz	6	304.1			
		Quartz	7	298.8	-0.1	0.18	
		Quartz	8	312.6			
		Quartz	9	307.2	-0.1	0.18	
		Quartz	10	302.9			
		Quartz	11	297.2			
		Quartz	12	302.4	-0.6	1.05	
		Quartz	13	318.4			
		Quartz	14	315.4			
		Quartz	15	304.8			
		Quartz	16	309.2			
		Quartz	17	307.3			
		Quartz	18	304.6	-0.3	0.53	
		Quartz	19	306.6	-0.2	0.35	
		Quartz	20	313.5	-0.2	0.35	
		Quartz	21	300.6			
			Average	308	-0.2	0.4	
Camarones-SM	G-157	Quartz	1	240.6	-0.3	0.53	Liquid-vapor and vapor-rich inclusions, rare
		Quartz	2	230.2	-0.4	0.70	
		Quartz	3	245.7	-0.3	0.53	
		Quartz	4	210.7			
		Quartz	5	215.8			
		Quartz	6	221.0	-1.0	1.73	
		Quartz	7	217.2			
		Quartz	8	224.6			
		Quartz	9	226.9	-0.1	0.18	
		Quartz	10	218.2	-0.4	0.70	
		Quartz	11	236.7			
		Quartz	12	220.3			
		Quartz	13	217.4			
		Quartz	14	230.8			
		Quartz	15	224.0	-0.5	0.87	
		Quartz	16	222.7			
		Quartz	17	225.7			
		Quartz	18	228.4			
		Quartz	19	212.5	-0.4	0.70	
		Quartz	20	235.7			
		Quartz	21	222.0			
			Average	225	-0.4	0.7	
Camarones-NW	E-112	Quartz	1	318.3	-0.8	1.39	Liquid-vapor, vapor phase =40% of inclusion, max. φ10μm
		Quartz	2	317.7			
		Quartz	3	318.3			
		Quartz	4	323.1	-0.2	0.35	
		Quartz	5	314.2			
		Quartz	6	317.1			
		Quartz	7	314.2	-0.4	0.70	
		Quartz	8	315.8	-0.5	0.87	
		Quartz	9	316.2			
		Quartz	10	324.3			
		Quartz	11	330.9	-0.1	0.18	
		Quartz	12	333.4			
		Quartz	13	330.1	-0.1	0.18	
		Quartz	14	333.2			
		Quartz	15	333.4	-0.2	0.35	
		Quartz	16	322.5			
		Quartz	17	324.9			
		Quartz	18	328.1			
		Quartz	19	327.1	-0.3	0.53	
		Quartz	20	324.0			
		Quartz	21	325.8			
			Average	323	-0.3	0.6	

AP-5(3) Results of Fluid Inclusion Analysis (Phase 3 Surface survey)

Sample No.	Locality	Mineral host	Inclusion ID	Homogenization Temp. (° C)	Ice melting Temp. (° C)	NaCl dissolution Temp. (° C)	Eq. NaCl (wt%)	Description
T-093	Putre W (Palmanilla)	Quartz	1	257.0				Polyphase and vapor-rich liquid-vapor inclusions. Daughter mineral: NaCl and chalcopyrite. Max. φ20 micron
		Quartz	2	259.6				
		Quartz	3	261.3		330.1	40.6	
		Quartz	4	262.1				
		Quartz	5	267.1		322.1	39.9	
		Quartz	6	265.9		315.1	39.4	
		Quartz	7	271.6				
		Quartz	8	243.5		309.9	38.9	
		Quartz	9	247.1				
		Quartz	10	266.8				
		Quartz	11	258.4				
		Quartz	12	263.9				
		Average		260.4		319.3	39.7	
K-005	Ujina (Collahuasi)	Quartz	1	268.9				Polyphase and liquid-vapor inclusions. Daughter mineral: NaCl, hematite?, and unknown opaque mineral. Max. φ10 micron
		Quartz	2	267.7				
		Quartz	3	260.5				
		Quartz	4	279.2				
		Quartz	5	287.8				
		Quartz	6	294.0				
		Quartz	7	271.9				
		Quartz	8	290.5				
		Quartz	9	284.3				
		Quartz	10	272.6				
		Quartz	11	277.1				
		Quartz	12	283.6				
		Quartz	13			314.2	39.3	
		Quartz	14			358.0	43.2	
		Quartz	15			324.5	40.1	
		Quartz	16			452.1	53.5	
		Average		278.2		362.2	44.0	
K-007	Trinidad	Quartz	1	204.1				Liquid-vapor inclusions. Max. φ10 micron
		Quartz	2	211.9				
		Quartz	3	233.6				
		Quartz	4	234.3				
		Quartz	5	234.3				
		Quartz	6	235.7				
		Quartz	7	236.0				
		Quartz	8		-7.0		10.5	
		Average		227.1				
K-052	Casiri	Quartz	1	222.2				Vapor-rich and liquid-rich liquid-vapor inclusions. Max. φ>100 micron
		Quartz	2	237.9				
		Quartz	3	254.2				
		Quartz	4	270.5				
		Quartz	5	271.2				
		Quartz	6	351.5				
		Quartz	7	359.8				
		Quartz	8		-0.3		0.5	
		Quartz	9		-0.2		0.4	
		Quartz	10		-0.2		0.4	
		Quartz	11		-0.2		0.4	
		Average		281.0	-0.2		0.4	

AP-5(3) Results of Fluid Inclusion Analysis (Phase 3 Surface survey)

Sample No.	Locality	Mineral host	Inclusion ID	Homogenization Temp. (° C)	Ice melting Temp. (° C)	NaCl dissolution Temp. (° C)	Eq. NaCl (wt%)	Description
K-139	Putre W (Campanane)	Quartz	1	332.4				Liquid-vapor inclusions. Max. φ 50 micron
		Quartz	2	335.9				
		Quartz	3	342.7				
		Quartz	4	346.1				
		Quartz	5	352.7				
		Quartz	6	337.3				
		Quartz	7		-24.3		>23.2	
		Quartz	8		-23.7		>23.2	
		Quartz	9		-24.1		>23.2	
		Quartz	10		-24.7		>23.2	
		Quartz	11		-24.6		>23.2	
		Quartz	12		-24.1		>23.2	
		Average		341.2	-24.3			
K-140	Putre W (Campanane)	Quartz	1	302.1				Polyphase and liquid-vapor inclusions. Daughter mineral: NaCl. Max. φ 5 micron
		Quartz	2	310.1				
		Quartz	3	325.3				
		Quartz	4			398.6	47.3	
		Average		312.5				
K-151	Arica E (Halcones)	Quartz	1	124.0				Liquid-vapor inclusions. Max. φ <10 micron
		Quartz	2	126.0				
		Quartz	3	160.1				
		Quartz	4	161.7				
		Average		143.0				
K-158	Putre W (Jamiralla)	Quartz	1	350.7				Vapor-rich polyphase inclusions. Daughter mineral: chalcopyrite? and hematite? Max. φ 30 micron
		Quartz	2	352.1				
		Quartz	3	352.7				
		Quartz	4	343.8				
		Quartz	5	345.4				
		Quartz	6	349.5				
		Quartz	7		-5.5		8.5	
		Quartz	8		-3.7		6.0	
		Quartz	9		-3.1		5.1	
		Average		349.0	-4.1		6.6	
K-201	Cerro Colorado	Quartz	1	308.5				Polyphase and vapor-rich liquid-vapor inclusions. Daughter mineral: NaCl, KCl, chalcopyrite? and hematite? Max. φ 30 micron
		Quartz	2	325.8				
		Quartz	3	334.8				
		Quartz	4	336.6				
		Quartz	5	350.9				
		Quartz	6	390.4				
		Quartz	7			327.6	40.4	
		Quartz	8			337.5	41.3	
		Quartz	9			398.1	47.2	
		Quartz	10			280.9	36.7	
		Quartz	11			346.7	42.1	
		Quartz	12			374.5	44.8	
		Quartz	13			379.2	45.2	
		Average		341.2		349.2	42.5	
Q-006	Copaquiri	Quartz	1	264.1				Liquid-vapor inclusions. Max. φ 2 micron
		Quartz	2	272.0				
		Quartz	3	260.5				
		Quartz	4	266.4				
		Quartz	5	270.3				
		Quartz	6	258.9				
		Average		265.4				

AP-5(3) Results of Fluid Inclusion Analysis (Phase 3 Surface survey)

Sample No.	Locality	Mineral host	Inclusion ID	Homogenization Temp. (° C)	Ice melting Temp. (° C)	NaCl dissolution Temp. (° C)	Eq. NaCl (wt%)	Description
Q-164	Putre W (Rosario)	Quartz	1	365.1				Liquid-vapor and minor polyphase inclusions. Daughter mineral: unknown fibriform mineral. Max. ϕ 100 micron
		Quartz	2	365.1				
		Quartz	3	365.1				
		Quartz	4	367.1				
		Quartz	5	367.5				
		Quartz	6	369.2				
		Quartz	7	369.2				
		Quartz	8	369.6				
		Quartz	9		-1.9		3.2	
		Quartz	10		-1.1		1.9	
		Quartz	11		-1.7		2.9	
		Average		367.2	-1.6		2.7	
Q-166	Putre W (Rosario)	Quartz	1	361.6				Polyphase and liquid-vapor inclusions. Daughter mineral: NaCl? Max. ϕ 40 micron
		Quartz	2	361.4				
		Quartz	3	367.6				
		Quartz	4	318.8				
		Quartz	5	324.3				
		Quartz	6	377.8				
		Quartz	7	359.7				
		Quartz	8	363.3				
		Quartz	9	372.2				
		Quartz	10	363.5				
		Quartz	11	385.6				
		Quartz	12	386.2				
		Quartz	13	388.6	-4.9		7.7	
		Quartz	14	388.7	-5.2		8.1	
		Quartz	15	385.3				
		Quartz	16	389.6	-3.2		5.3	
		Quartz	17	387.4				
		Quartz	18	387.9				
		Quartz	19	387.4				
		Quartz	20	390.3	-4.7		7.4	
		Quartz	21	402.1	-4.1		6.6	
		Average		373.8	-4.4		7.0	

AP-6 (1) Results of Ore Assaying (Phase 1)

Locality	Sample No.	Coordinate N	Coordinate E	Geology	Width (cm)	Au ppb	Ag ppm	Cu %	CuSL %	Pb ppm	Zn ppm	Mo ppm	S %
Mocha	C-003	7809346	471820	Tgd	120	9	0.4	0.271	0.091	15	67	41	1.700
Mocha	C-009	7809202	471880	K1	Grab	235	6.8	1.626	0.495	31	110	70	0.018
Soledad	A-003	7807749	471709	Qz vein	90	15	0.5	0.006	0.004	20	31	6	0.163
Queen Elizabeth-S	A-010	7803684	504060	Tg	Grab	79	1.5	1.827	1.493	38	97	200	0.338
Queen Elizabeth-S	A-012	7803750	504118	K1	Grab	6	1.2	1.641	1.224	7	134	6	0.003
Queen Elizabeth-S	A-026	7802870	503518	Qz vein	Grab	17	1.6	0.092	0.023	20	24	43	0.329
Queen Elizabeth-S	B-025	7803886	503269	K1	Grab	< 5	1.1	0.586	0.436	14	54	7	0.010
Queen Elizabeth-S	C-038	7803978	503261	K1	Grab	64	79.4	6.283	2.577	57	121	446	1.755
Queen Elizabeth-S	C-039	7803978	503261	K1	Grab	51	14.4	5.232	3.908	25	172	236	0.051
Queen Elizabeth-S	QE-001	7803657	504396	Tg	Grab	< 5	0.7	0.234	0.125	19	99	8	0.020
Queen Elizabeth-S	QE-002	7803670	504211	Tg	Grab	9	2.5	0.058	0.006	19	20	7	0.100
Queen Elizabeth-S	QE-003	7803692	504262	Tg	Grab	7	0.6	1.430	1.345	30	186	32	0.099
Diana	A-031	7792317	494590	Js1	Grab	23	0.4	0.044	0.029	122	32	70	0.199
La Planada	A-040	7769958	492768	Kmc	150	17	1.1	0.090	0.037	9	76	47	0.285
La Planada	C-055	7769887	492765	Tourmaline breccia	Grab	17	0.3	0.140	0.053	6	49	10	2.320
La Planada	C-058	7769887	492765	Tourmaline breccia	Grab	21	1.7	0.202	0.030	7	112	49	5.698
La Planada	C-066	7770201	492974	Tg	200	71	2.5	3.291	2.667	< 2	49	29	0.021
La Planada	C-070	7769856	493416	Tg	Grab	21	0.4	6.221	5.719	4	8	32	0.033
La Planada	C-072	7769856	493416	Tg	Grab	33	3.1	5.709	5.412	8	14	171	0.242
La Planada	C-074	7769856	493416	Tg	Grab	18	0.5	0.046	0.027	2	25	1951	4.832
La Planada	C-075	7770085	493768	Qef	Grab	33	0.5	3.868	3.437	10	65	103	0.051

AP-6 (2) Results of Ore Assaying (Phase 2)

Locality	Sample No.	Coordinate N	Coordinate E	Geology	Width (cm)	Au ppb	Ag ppm	Cu %	CuSL %	Pb ppm	Zn ppm	Mo ppm	S %
West Queen Elizabeth-SE	F-070	7800708	495609	Qz vein	5	161	4.9	3.599	2.831	31	118	36	0.044
Camarones-QCW	E-060	7905855	435317	Qp	200	< 5	0.3	0.440	0.416	30	78	10	2.515
Camarones-QCW	E-082	7905776	434410	Qz vein	Grab	< 5	0.9	0.043	0.007	4152	1033	4	0.986
Camarones-QCW	E-186	7905889	435315	K	Grab	11	< 0.1	0.023	0.009	20	95	3	4.605
Camarones-QCW	E-189	7905870	435308	Qp	Grab	9	< 0.1	0.010	0.005	30	19	6	1.654
Camarones-QCW	E-191	7905863	435311	Qp	30	12	< 0.1	0.044	0.013	25	39	4	1.244
Camarones-QCW	E-195	7905850	435293	Qp	Grab	11	< 0.1	0.010	0.004	39	34	6	0.630
Camarones-QCW	E-198	7905857	435226	Qp	Grab	< 5	0.7	0.036	0.018	31	47	6	1.053
Camarones-QCW	E-202	7905845	435200	Qp	Grab	< 5	0.5	0.496	0.07	26	19	7	1.235
Camarones-QCW	E-206	7905836	435153	Qp	Grab	< 5	0.6	0.028	0.018	31	28	3	0.298
Camarones-QCW	E-207	7905831	435135	Qp	100	< 5	1.5	0.234	0.206	51	30	4	0.312
Camarones-QCW	E-211	7905806	435129	K	Grab	13	0.5	0.009	0.005	23	152	5	3.331
Camarones-QCW	F-158	7905858	435246	Qp	Grab	6	0.1	0.014	0.009	11	108	3	4.121
Camarones-QCW	F-161	7906889	435529	K	Grab	6	0.3	0.073	0.047	47	156	5	6.254
Camarones-QCW	F-166	7905950	435655	K	Grab	< 5	< 0.1	0.006	0.003	12	58	3	5.409
Camarones-QCW	F-170	7905955	435819	K	Grab	33	1.0	0.448	0.354	238	131	11	6.090
Camarones-QCW	F-171	7905957	435891	K	Grab	< 5	< 0.1	0.009	0.003	21	40	190	5.230
Camarones-QCW	F-175	7905962	435723	K	Grab	19	0.6	0.090	0.03	35	91	4	3.412
Camarones-QCW	F-181	7906820	435420	Qp	Grab	< 5	0.1	0.004	< 0.001	11	8	3	0.993
Camarones-QCW	G-053	7906672	436030	K	Grab	< 5	0.1	0.002	< 0.001	5	58	< 2	1.361
Camarones-QCW	G-086	7905690	435961	K	Grab	< 5	0.1	0.025	0.02	10	78	3	0.078
Camarones-QCW	G-172	7905881	435376	K	Grab	9	0.2	0.017	0.005	16	134	< 2	2.639
Camarones-QCW	G-174	7905881	435376	Qp	Grab	20	0.6	0.080	0.03	17	95	3	4.414
Camarones-QCW	G-179	7905814	435297	Qp	Grab	6	0.4	0.047	0.033	18	54	6	0.725
Camarones-QCW	G-184	7905828	435273	Qp	Grab	< 5	0.3	0.102	0.048	19	15	3	1.747
Camarones-QCC	F-111	7905511	439064	K	Grab	14	1.5	0.763	0.682	40	115	144	0.211
Camarones-QCC	F-193	7905831	438662	Dp	Grab	< 5	< 0.1	0.003	< 0.001	7	23	8	0.538
Camarones-QCC	F-198	7905897	438376	Qd	Grab	< 5	< 0.1	0.005	< 0.001	14	18	7	1.093
Camarones-QCC	F-202	7905885	438330	Qd	Grab	< 5	0.2	0.011	0.004	41	91	6	0.363
Camarones-QCS	E-219	7903525	440060	KT	50	6	0.6	0.003	0.002	18	6	4	0.335
Camarones-QCS	E-225	7902950	440622	KT	Grab	< 5	< 0.1	0.002	< 0.001	15	58	7	1.569
Camarones-QCS	E-229	7902795	440900	Qz vein	20	< 5	< 0.1	0.002	< 0.001	8	6	5	0.042
Camarones-QCS	E-232	7902686	440870	Qz vein	10	< 5	< 0.1	0.004	< 0.001	157	14	4	4.930
Camarones-QCS	E-234	7902599	440819	Qz vein	50	< 5	< 0.1	0.001	< 0.001	9	8	9	0.074
Camarones-QCS	E-235	7902414	441078	Qz vein	Grab	< 5	< 0.1	0.001	< 0.001	27	21	< 2	1.625
Camarones-QCS	G-198	7904493	440355	KT	Grab	< 5	< 0.1	0.001	< 0.001	9	41	< 2	0.766
Camarones-QCS	G-200	7904520	440438	KT	Grab	< 5	0.2	0.002	< 0.001	15	63	4	0.740
Camarones-QCS	G-203	7904596	440540	KT	Grab	< 5	0.1	0.001	< 0.001	5	15	9	0.887
Camarones-SM	E-169	7898143	438649	Qz vein	Grab	< 5	< 0.1	0.002	< 0.001	22	46	7	0.019
Camarones-NW	F-210	7918829	426827	Qd	Grab	< 5	< 0.1	0.006	0.002	20	86	4	0.012
Camarones-NW	F-211	7918820	426881	Qd	Grab	< 5	0.1	0.002	< 0.001	12	11	8	0.012
Camarones-NW	F-213	7918800	426847	Qd	30	< 5	0.2	0.004	< 0.001	40	34	7	0.045
Camarones-NW	F-214	7918868	426775	Qd	20	< 5	< 0.1	0.003	< 0.001	11	16	3	0.022
Camarones-NW	F-216	7918846	426934	Qd	Grab	< 5	0.1	0.009	0.002	14	242	7	0.017

AP-6 (3) Results of Ore Assaying (Phase 3 surface survey)

Locality	Sample No.	Coordinate		Geology	Width (cm)	Au	Ag	Cu	CuSL	Pb	Zn	Mo	S
		N	E			ppb	ppm	%	%	ppm	ppm	ppm	%
Chusmisa	S-020	7831208	478252	Qz-Tou v.	Grab	48	26.5	0.02	0.009	10000	284	8	0.04
Chusmisa NE	S-025	7841737	509503	Qcp	Grab	< 5	<0.1	0.001	<0.001	43	41	<2	0.46
Camiña	S-029	7861804	448102	Kv(i)	Grab	< 5	0.2	0.004	0.001	30	108	5	2.62
Camiña	S-033	7862279	447949	Tgd	Grab	< 5	<0.1	0.001	<0.001	35	11	4	0.68
Camiña	S-035	7862550	447884	Tgd	Grab	< 5	<0.1	0.004	0.001	34	75	<2	5.03
Camiña	Q-077	7867125	459305	Kv(i)	Grab	< 5	2.2	3.929	3.899	16	29	<2	0.02
Camiña	Q-078	7867125	459305	Kv(i)	Grab	< 5	<0.1	0.009	0.003	9	25	<2	0.02
Putre S	Q-158	7972642	443065	Kv(s)	Grab	6	0.4	0.002	0.001	4	47	3	0.44
Putre S	Q-160	7972724	443111	Tgd	Grab	12	3.2	0.004	0.001	62	66	4	1.55
Putre W (Campanane)	Q-164	7981434	428160	Tgd	Grab	45	17.2	3.702	3.689	378	2005	13	0.02
Putre W (Campanane)	K-133	7975781	426630	Qz-tou r.	Grab	56	6.2	3.144	3.085	180	315	14	0.07
Putre W (Campanane)	K-139	7975642	426587	Qz-tou r.	Grab	16	1.8	1.22	1.187	5	22	3	0.03
Putre W (Jamiralla)	K-157	7981042	427199	Qz-tou r.	Grab	10	12.5	4.117	3.921	34	30	28	0.04
Putre W (Jamiralla)	K-158	7981042	427199	Qz-tou r.	Grab	< 5	1.1	3.361	3.129	74	17	18	0.12
Arica E	K-144	7958405	417090	Qz-ox.Cu v.	Grab	902	21.8	4.955	4.879	223	197	73	0.02
Arica E	K-147	7958405	417090	Qz-ox.Cu v.	Grab	795	27.9	1.714	1.509	80	27	18	0.02
Arica E	K-151	7958379	417000	Qz-ox.Cu v.	Grab	6445	102.5	5.895	0.881	2265	55	21	2.85
Choquelimpie	Q-138	7973938	470705	Kv(s)?	Grab	954	17	0.003	0.001	806	21	4	0.71
Choquelimpie	Q-142	7973938	470705	Kv(s)?	Grab	11400	152.6	0.192	0.013	2039	188	3	6.19
Choquelimpie	Q-143	7973938	470705	Kv(s)?	Grab	626	105.2	0.013	0.006	220	34	6	0.11
Choquelimpie	Q-145	7973938	470705	Kv(s)?	Grab	612	45.2	0.004	0.002	282	7	<2	0.89
Poroma	K-021	7803463	482145	Kv(i)	Grab	26	9.9	1.221	0.855	22	152	4	0.27
Mosquito de Oro	T-005	7804337	496482	Kgd	Grab	401	8.8	0.01	0.001	276	6	3	0.26

AP-6 (4) Results of Ore Assaying (Phase 3 drilling) (1)

Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (%)	Cu Sol.- (%)	Pb (ppm)	Zn (ppm)	Mo (ppm)	S (%)
MJC-1 136-138	<5	0.7	0.004	<0.001	44	59	8	0.10
MJC-1 138-140	<5	0.4	0.003	<0.001	16	31	6	0.32
MJC-1 140-142	<5	0.2	0.004	0.001	14	37	4	2.11
MJC-1 142-144	<5	0.5	0.002	<0.001	<2	16	4	4.75
MJC-1 144-146	<5	0.1	0.003	<0.001	<2	18	5	4.12
MJC-1 146-148	<5	0.2	0.002	<0.001	<2	18	5	4.98
MJC-1 148-150	<5	0.3	0.001	<0.001	<2	16	6	4.73
MJC-1 150-152	<5	0.3	0.002	0.001	<2	16	5	5.27
MJC-1 152-154	<5	0.1	0.002	<0.001	<2	18	3	4.65
MJC-1 154-156	7	0.2	0.027	0.001	5	69	4	4.38
MJC-1 156-158	9	0.1	0.022	0.001	<2	46	5	3.80
MJC-1 158-160	6	0.2	0.003	<0.001	14	48	6	5.54
MJC-1 160-162	5	0.6	0.005	<0.001	<2	64	6	3.54
MJC-1 162-164	<5	0.7	0.002	<0.001	<2	64	5	4.35
MJC-1 164-166	<5	0.4	0.002	<0.001	5	42	5	5.30
MJC-1 166-168	<5	0.4	0.001	<0.001	<2	45	5	5.19
MJC-1 168-170	<5	0.9	0.001	<0.001	<2	32	6	5.60
MJC-1 170-172	<5	0.4	0.004	<0.001	<2	58	6	3.55
MJC-1 172-174	<5	0.1	0.006	<0.001	<2	56	4	3.08
MJC-1 174-176	<5	0.2	0.001	<0.001	<2	80	12	6.08
MJC-1 176-178	<5	0.3	0.003	<0.001	<2	62	7	4.41
MJC-1 178-180	<5	0.2	0.002	<0.001	<2	75	7	2.35
MJC-1 180-182	<5	0.8	0.002	<0.001	<2	58	5	3.46
MJC-1 182-184	5	0.5	0.002	<0.001	<2	51	6	5.89
MJC-1 184-186	<5	0.3	0.001	<0.001	<2	48	5	5.41
MJC-1 186-188	<5	0.2	0.001	<0.001	<2	63	5	2.43
MJC-1 188-190	<5	0.2	0.001	<0.001	<2	55	5	1.96
MJC-1 190-192	<5	0.6	0.001	0.001	<2	67	6	3.49
MJC-1 192-194	<5	0.3	0.001	<0.001	<2	308	6	4.16
MJC-1 194-196	17	<0.1	0.001	<0.001	<2	79	7	4.04
MJC-1 196-198	<5	0.8	0.001	<0.001	<2	52	7	5.25
MJC-1 198-200	<5	0.3	0.002	<0.001	<2	87	10	4.11
MJC-1 200-202	<5	0.6	0.002	<0.001	5	65	7	4.61
MJC-1 202-204	<5	0.4	0.003	<0.001	21	166	3	4.25
MJC-1 204-206	<5	0.5	0.005	<0.001	15	84	4	3.81
MJC-1 206-208	<5	0.2	0.002	<0.001	5	91	2	2.79
MJC-1 208-210	<5	<0.1	0.002	<0.001	8	54	2	5.64
MJC-1 210-212	<5	0.6	0.003	<0.001	8	81	5	3.30
MJC-1 212-214	9	0.9	0.001	<0.001	17	180	4	4.36
MJC-1 214-216	<5	0.7	0.006	<0.001	8	80	3	4.10
MJC-1 216-218	6	0.6	0.026	0.001	12	100	4	2.49
MJC-1 218-220	<5	0.1	0.002	<0.001	44	275	4	6.24
MJC-1 220-222	<5	<0.1	0.003	<0.001	3	89	2	3.27
MJC-1 222-224	<5	<0.1	0.002	<0.001	9	101	5	2.99
MJC-1 224-226	<5	0.1	0.002	<0.001	9	118	6	4.54
MJC-1 226-228	<5	0.1	0.002	<0.001	4	84	3	2.19
MJC-1 228-230	6	0.3	0.002	<0.001	5	121	3	2.24
MJC-1 230-232	<5	0.2	0.002	<0.001	5	67	3	3.49
MJC-1 232-234	<5	0.7	0.002	<0.001	5	82	5	3.37
MJC-1 234-236	7	0.1	0.001	<0.001	<2	100	4	2.50
MJC-1 236-238	<5	0.2	0.002	<0.001	4	75	3	4.01
MJC-1 238-240	<5	0.4	0.002	<0.001	6	131	4	2.34
MJC-1 240-242	5	0.1	0.004	<0.001	5	66	7	5.18
MJC-1 242-244	<5	0.2	0.003	<0.001	3	77	5	3.56
MJC-1 244-246	<5	0.6	0.003	<0.001	6	70	5	3.84
MJC-1 246-248	<5	<0.1	0.002	<0.001	7	85	6	2.32
MJC-1 248-250	<5	0.3	0.002	<0.001	6	102	7	2.36
MJC-1 250-252	5	0.4	0.002	<0.001	9	125	6	1.87
MJC-1 252-254	<5	0.4	0.002	<0.001	6	111	8	3.18
MJC-1 254-256	5	0.5	0.005	0.001	7	114	6	2.35
MJC-1 256-258	7	0.5	0.008	<0.001	8	74	6	3.52
MJC-1 258-260	<5	0.6	0.006	<0.001	6	99	7	2.06
MJC-1 260-262	<5	0.9	0.006	<0.001	7	94	7	3.86
MJC-1 262-264	<5	0.5	0.006	<0.001	6	109	6	1.53
MJC-1 264-266	<5	0.7	0.002	<0.001	3	73	8	2.80
MJC-1 266-268	14	0.1	0.006	<0.001	3	84	6	3.22
MJC-1 268-270	<5	0.2	0.002	<0.001	6	68	4	4.71
MJC-1 270-272	18	0.1	0.001	<0.001	7	55	5	5.31
MJC-1 272-274	<5	<0.1	0.001	<0.001	9	59	6	4.70
MJC-1 274-276	<5	<0.1	0.001	<0.001	6	46	4	5.97
MJC-1 276-278	6	<0.1	0.001	<0.001	8	47	6	5.21
MJC-1 278-280	<5	0.7	0.001	<0.001	6	57	5	5.02
MJC-1 280-282	<5	0.1	0.001	<0.001	6	56	6	4.97
MJC-1 282-284	<5	0.3	0.001	<0.001	7	62	6	6.39
MJC-1 284-286	7	0.1	0.002	<0.001	11	104	6	3.37
MJC-1 286-288	7	0.7	0.009	0.001	8	83	5	0.86

AP-6 (4) Results of Ore Assaying (Phase 3 drilling) (2)

Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (%)	Cu Sol.- (%)	Pb (ppm)	Zn (ppm)	Mo (ppm)	S (%)
MJC-1 288-290	5	<0.1	0.005	<0.001	5	72	9	3.92
MJC-1 290-292	6	0.8	0.006	0.001	13	99	6	4.51
MJC-1 292-294	13	<0.1	0.004	0.001	7	110	5	2.53
MJC-1 294-296	<5	<0.1	0.001	<0.001	6	75	5	4.35
MJC-1 296-298	<5	0.7	0.001	0.001	5	90	6	2.75
MJC-1 298-300	<5	<0.1	0.001	<0.001	5	77	6	3.06
MJC-1 300-302	<5	0.4	0.002	<0.001	6	76	5	4.02
MJC-1 302-304	<5	0.5	0.002	<0.001	7	114	5	1.92
MJC-1 304-306	<5	0.3	0.002	<0.001	5	88	6	1.78
MJC-1 306-308	<5	0.9	0.021	0.001	14	102	4	2.61
MJC-1 308-310	<5	0.1	0.008	<0.001	11	108	5	3.52
MJC-1 310-312	<5	0.5	0.005	<0.001	9	125	5	3.21
MJC-1 312-314	5	0.7	0.013	0.001	9	82	7	5.12
MJC-1 314-316	<5	0.3	0.011	0.001	7	78	7	3.34
MJC-1 316-318	<5	0.4	0.004	<0.001	9	65	5	5.59
MJC-1 318-320	6	0.4	0.016	0.001	10	59	10	5.85
MJC-1 320-322	11	0.7	0.093	0.003	18	65	9	6.32
MJC-1 322-324	<5	0.4	0.015	0.001	9	82	5	4.14
MJC-1 324-326	<5	0.4	0.004	0.001	7	60	7	4.53
MJC-1 326-328	<5	0.8	0.004	0.001	7	76	5	1.70
MJC-1 328-330	<5	0.6	0.010	0.001	7	71	5	2.57
MJC-1 330-332	<5	0.8	0.019	0.001	9	38	6	4.69
MJC-1 332-334	<5	0.5	0.024	0.001	10	44	4	6.64
MJC-1 334-336	<5	0.2	0.015	0.001	12	45	3	6.22
MJC-1 336-338	6	0.5	0.019	0.001	13	49	5	5.82
MJC-1 338-340	<5	0.1	0.003	<0.001	6	50	4	7.11
MJC-1 340-342	<5	0.3	0.002	<0.001	6	42	3	7.95
MJC-1 342-344	<5	0.3	0.016	0.001	8	52	4	5.94
MJC-1 344-346	11	0.1	0.030	0.002	11	58	4	4.71
MJC-1 346-348	5	<0.1	0.016	0.002	9	66	4	3.62
MJC-10 136-138	<5	0.9	0.007	<0.001	18	76	6	9.48
MJC-10 138-140	6	0.8	0.011	0.002	21	96	7	4.67
MJC-11-428-430	7	0.7	0.002	0.001	9	46	4	0.15
MJC-11-430-432	<5	0.2	0.003	<0.001	34	36	6	0.52
MJC-11-432-434	<5	0.2	0.003	0.001	7	36	7	0.08
MJC-11-434-436	<5	0.2	0.002	<0.001	21	29	6	0.10
MJC-11-436-438	<5	0.8	0.001	<0.001	6	38	4	0.05
MJC-11-438-440	<5	0.8	0.002	0.001	14	37	10	0.10
MJC-11-440-442	<5	0.5	0.002	0.001	79	32	6	0.28
MJC-11-442-444	<5	0.5	0.001	<0.001	18	36	6	0.12
MJC-11-444-446	<5	<0.1	0.002	<0.001	29	32	11	0.08
MJC-11-446-448	<5	0.9	0.007	0.003	81	30	5	1.01
MJC-11-448-450	29	3.4	0.004	0.002	129	27	8	0.96
MJC-11-450-452	<5	1.1	0.001	<0.001	34	28	5	0.33
MJC-11-452-454	<5	0.9	0.002	0.001	19	31	7	0.28
MJC-11-454-456	<5	0.9	0.005	0.003	11	49	5	1.11
MJC-11-456-458	<5	0.4	0.003	0.001	14	114	4	1.06
MJC-11-458-460	<5	0.4	0.002	0.001	13	278	4	2.16
MJC-11-460-462	<5	0.2	0.002	0.001	23	117	7	1.61
MJC-11-462-464	<5	0.1	0.001	<0.001	6	93	4	1.76
MJC-11-464-466	<5	0.4	0.002	0.001	3	59	4	2.00
MJC-11-466-468	<5	0.5	0.001	0.001	5	58	3	1.70
MJC-11-468-470	<5	0.6	0.002	0.001	7	61	5	1.68
MJC-11-470-472	<5	0.5	0.001	0.001	4	53	4	2.21
MJC-11-472-474	<5	0.3	0.001	<0.001	10	63	3	1.89
MJC-11-474-476	<5	0.2	0.002	<0.001	4	61	13	1.27
MJC-11-476-478	<5	0.9	0.002	<0.001	5	107	18	2.50
MJC-11-478-480	<5	<0.1	0.003	<0.001	4	58	8	1.34
MJC-11-480-482	<5	<0.1	0.002	<0.001	12	98	11	1.36
MJC-11-482-484	<5	<0.1	0.002	<0.001	10	85	8	1.55
MJC-11-484-486	<5	<0.1	0.002	<0.001	13	90	5	1.87
MJC-11-486-488	9	<0.1	0.004	0.001	57	241	7	2.49
MJC-11-488-490	<5	<0.1	0.005	<0.001	31	178	9	2.32
MJC-11-490-492	<5	0.6	0.002	<0.001	16	92	9	1.99
MJC-11-492-494	<5	<0.1	0.001	0.001	25	98	6	1.87
MJC-11-494-496	<5	<0.1	0.001	<0.001	17	79	4	1.90
MJC-11-496-498	<5	<0.1	0.001	<0.001	18	70	<2	1.96
MJC-11-498-500	<5	<0.1	0.001	0.001	15	88	5	1.68

AP-7 Results of Geochemical Analysis of Rock samples (Drilling) (1)

Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
MJC-5 158-160	<5	<0.1	7	40	14	3	427	<2	0.025
MJC-5 178-180	<5	<0.1	8	31	11	5	251	<2	0.026
MJC-5 180-182	<5	<0.1	6	30	7	6	86	<2	0.021
MJC-5 182-184	7	<0.1	9	30	9	5	320	<2	0.053
MJC-5 184-186	6	<0.1	7	27	11	4	291	<2	0.013
MJC-6 90- 92	<5	<0.1	8	136	14	10	314	<2	0.025
MJC-6 92- 94	7	<0.1	8	136	13	6	416	<2	0.038
MJC-6 100-102	6	<0.1	14	43	16	9	634	<2	0.035
MJC-6 102-104	7	<0.1	18	83	20	11	537	<2	0.025
MJC-6 124-126	7	<0.1	11	19	17	3	582	<2	0.015
MJC-6 126-128	6	<0.1	19	24	32	6	402	<2	0.057
MJC-6 136-138	6	<0.1	18	20	36	7	242	<2	0.011
MJC-6 138-140	6	<0.1	17	15	37	3	126	<2	0.011
MJC-6 140-142	6	0.7	17	14	38	4	129	<2	<0.01
MJC-6 142-144	6	0.9	16	17	42	4	135	<2	<0.01
MJC-6 144-146	6	0.7	18	17	39	4	96	<2	0.012
MJC-7 78- 80	6	1.2	30	21	70	4	219	<2	0.013
MJC-7 98-100	6	1	19	18	54	5	272	<2	<0.01
MJC-7 132-134	7	0.7	16	204	8	4	20	<2	<0.01
MJC-7 248-250	6	0.4	91	14	124	6	6	<2	0.014
MJC-10 6-8	<5	<0.1	104	3	156	11	22	4	0.590
MJC-10 8-10	<5	<0.1	108	<2	158	8	55	3	0.321
MJC-10 10-12	<5	0.1	87	7	163	9	71	5	0.800
MJC-10 12-14	<5	0.1	183	9	182	8	5	2	0.659
MJC-10 14-16	<5	0.2	237	6	115	7	59	4	0.582
MJC-10 16-18	11	<0.1	189	5	69	7	340	4	0.063
MJC-10 18-20	8	0.4	216	5	165	7	210	<2	0.405
MJC-10 20-22	24	0.2	205	6	210	7	546	3	3.901
MJC-10 22-24	<5	0.2	115	3	48	8	559	3	4.454
MJC-10 24-26	<5	<0.1	168	<2	107	6	33	3	0.252
MJC-10 26-28	16	<0.1	213	5	151	6	19	4	0.613
MJC-10 28-30	27	0.1	185	5	163	5	63	4	0.512
MJC-10 30-32	<5	<0.1	126	6	152	5	131	2	0.754
MJC-10 32-34	105	0.3	92	4	170	4	34	4	0.841
MJC-10 34-36	8	0.1	145	5	172	4	21	2	0.538
MJC-10 36-38	<5	0.4	84	2	127	6	29	5	0.817
MJC-10 38-40	<5	<0.1	66	4	159	7	131	5	3.273
MJC-10 40-42	<5	<0.1	80	2	127	7	26	2	0.867
MJC-10 42-44	<5	<0.1	70	9	102	7	60	4	0.715
MJC-10 44-46	<5	0.1	87	3	72	4	600	<2	1.873
MJC-10 46-48	<5	<0.1	72	2	186	4	42	4	1.092
MJC-10 48-50	14	<0.1	73	3	150	4	15	3	0.258
MJC-10 50-52	<5	<0.1	77	3	153	4	27	<2	0.145
MJC-10 52-54	<5	<0.1	72	9	85	5	67	3	0.191
MJC-10 54-56	10	<0.1	67	3	138	5	158	2	0.186
MJC-10 56-58	<5	<0.1	74	4	63	5	117	2	0.509
MJC-10 58-60	<5	0.3	60	4	72	6	146	<2	0.635
MJC-10 60-62	<5	0.1	58	4	97	5	94	2	0.432
MJC-10 62-64	13	<0.1	69	8	111	4	43	<2	1.813
MJC-10 64-66	<5	<0.1	58	8	89	3	28	4	0.648
MJC-10 66-68	<5	0.1	351	8	64	8	1141	<2	17.972
MJC-10 68-70	30	0.2	64	11	22	6	808	3	1.395
MJC-10 70-72	14	0.2	83	9	17	5	996	3	0.529
MJC-10 72-74	<5	0.3	200	10	23	6	965	2	2.818
MJC-10 74-76	<5	<0.1	372	7	29	3	266	4	2.125
MJC-10 76-78	<5	0.1	413	8	33	4	160	2	3.590
MJC-10 78-80	<5	0.1	141	11	24	<2	101	2	2.046
MJC-10 80-82	<5	0.1	135	9	30	<2	127	3	3.379
MJC-10 82-84	<5	0.2	81	10	184	<2	89	<2	1.207
MJC-10 84-86	<5	<0.1	73	6	83	<2	38	2	0.332
MJC-10 86-88	<5	0.1	89	5	87	<2	31	<2	0.525
MJC-10 88-90	<5	0.2	67	7	76	3	27	<2	0.231
MJC-10 90-92	<5	<0.1	67	5	76	6	21	<2	0.225
MJC-10 92-94	<5	0.1	64	7	80	7	22	2	0.160
MJC-10 94-96	<5	<0.1	67	8	80	7	31	<2	0.190
MJC-10 96-98	<5	<0.1	64	6	72	6	41	<2	0.299
MJC-10 98-100	<5	0.1	63	7	79	6	19	<2	0.159
MJC-10 100-102	<5	<0.1	68	8	74	6	33	<2	0.243
MJC-10 102-104	<5	0.1	66	13	78	6	13	<2	0.075
MJC-10 104-106	<5	0.1	62	8	75	6	12	<2	0.043
MJC-10 106-108	<5	0.1	65	7	75	6	13	3	0.047

AP-7 Results of Geochemical Analysis of Rock samples (Drilling) (2)

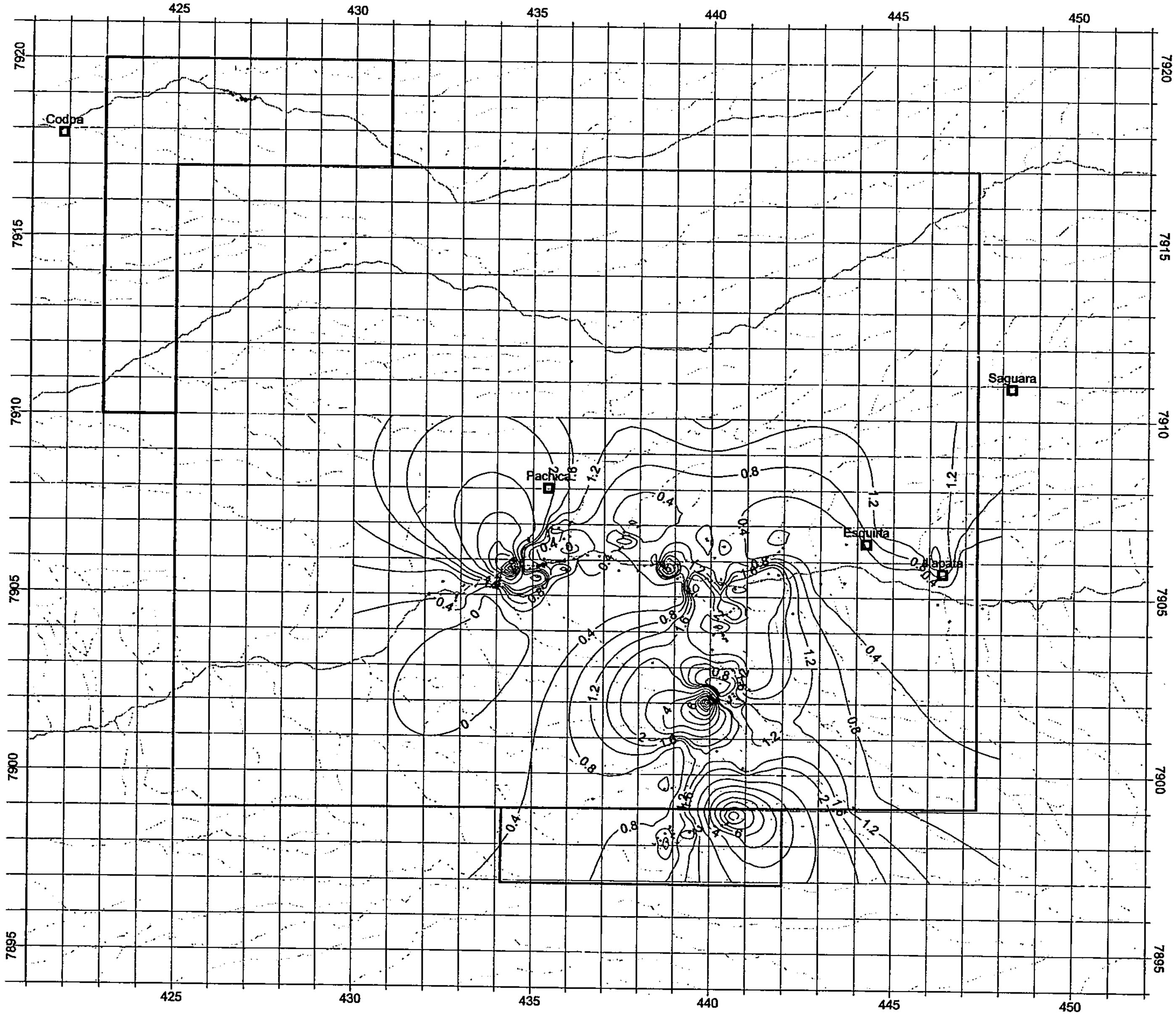
Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
MJC-10 108-110	<5	0.2	65	9	82	5	14	<2	0.057
MJC-10 110-112	<5	<0.1	70	7	82	5	11	<2	0.048
MJC-10 112-114	<5	<0.1	69	3	76	5	<5	<2	0.038
MJC-10 114-116	<5	<0.1	64	6	83	5	8	<2	0.015
MJC-10 116-118	<5	<0.1	64	4	84	5	15	<2	0.216
MJC-10 118-120	<5	<0.1	63	6	89	5	22	<2	0.317
MJC-10 120-122	<5	<0.1	52	<2	83	4	89	<2	0.568
MJC-10 122-124	<5	0.1	53	3	68	5	224	2	0.286
MJC-10 124-126	<5	<0.1	52	<2	62	3	20	2	0.223
MJC-10 126-128	<5	0.1	56	4	44	6	21	2	0.371
MJC-10 128-130	<5	<0.1	64	7	60	5	8	2	0.330
MJC-10 130-132	<5	0.1	65	7	87	5	18	<2	0.760
MJC-10 132-134	<5	0.1	64	5	65	3	17	<2	0.505
MJC-10 134-136	<5	<0.1	50	2	73	4	58	<2	0.256
MJC-10 136-138	<5	<0.1	64	2	74	7	81	2	0.642
MJC-10 138-140	<5	0.2	87	2	84	2	37	3	0.691
MJC-10 140-142	<5	0.1	46	<2	66	5	45	2	0.677
MJC-10 142-144	<5	0.3	82	2	77	<2	42	3	0.775
MJC-10 144-146	<5	0.4	42	6	73	<2	31	<2	0.405
MJC-10 146-148	<5	<0.1	45	2	72	<2	29	3	0.493
MJC-10 148-150	<5	<0.1	65	<2	73	<2	126	3	0.365
MJC-10 150-152	<5	<0.1	75	<2	89	<2	100	2	0.181
MJC-10 152-154	<5	0.3	42	<2	74	<2	45	4	0.130
MJC-10 154-156	9	0.3	35	<2	66	<2	50	3	0.160
MJC-10 156-158	<5	0.1	33	<2	64	3	36	<2	0.198
MJC-10 158-160	<5	0.4	38	<2	66	6	326	2	0.178
MJC-10 160-162	<5	<0.1	29	<2	69	3	108	2	0.111
MJC-10 162-164	<5	<0.1	29	2	70	3	169	4	0.089
MJC-10 164-166	<5	0.2	37	2	73	3	250	3	0.154
MJC-10 166-168	<5	0.1	35	<2	70	3	95	<2	0.170
MJC-10 168-170	<5	0.1	41	<2	70	3	107	2	0.154
MJC-10 170-172	<5	0.3	46	<2	73	4	146	3	0.267
MJC-10 172-174	<5	0.4	32	<2	73	4	69	2	0.228
MJC-10 174-176	<5	0.5	33	2	70	4	125	2	0.359
MJC-10 176-178	<5	<0.1	41	4	73	5	163	3	0.382
MJC-10 178-180	<5	0.5	39	5	77	6	123	<2	0.239
MJC-10 180-182	<5	0.2	39	4	73	5	164	2	0.279
MJC-10 182-184	<5	0.2	21	7	68	7	109	2	0.260
MJC-10 184-186	<5	<0.1	16	6	66	5	100	<2	0.204
MJC-10 186-188	<5	0.1	15	9	65	5	235	<2	0.195
MJC-10 188-190	<5	<0.1	16	4	59	6	280	4	0.223
MJC-10 190-192	<5	<0.1	13	8	65	5	3440	52	0.463
MJC-10 192-194	<5	<0.1	14	7	55	6	63	<2	0.217
MJC-10 194-196	<5	0.2	34	9	72	6	460	6	0.696
MJC-10 196-198	10	0.1	20	4	69	5	431	3	0.590
MJC-10 198-200	<5	0.3	39	4	66	4	130	<2	0.260
MJC-10 200-202	<5	0.3	12	8	72	6	185	3	0.112
MJC-10 202-204	<5	0.1	11	4	61	5	439	4	0.096
MJC-10 204-206	<5	<0.1	14	8	67	3	198	4	0.081
MJC-10 206-208	<5	<0.1	48	9	67	7	994	12	0.334
MJC-10 208-210	<5	0.5	48	7	77	5	482	7	0.331
MJC-10 210-212	<5	0.4	54	7	90	4	1987	24	0.376
MJC-10 212-214	<5	0.5	25	5	80	5	470	8	0.265
MJC-10 214-216	<5	<0.1	41	6	82	5	374	8	0.678
MJC-10 216-218	<5	<0.1	59	5	84	5	1019	16	1.650
MJC-10 218-220	<5	<0.1	27	7	88	4	223	5	0.531
MJC-10 220-222	<5	0.1	38	8	78	6	184	6	0.504
MJC-10 222-224	<5	0.1	41	11	82	6	266	5	0.376
MJC-10 224-226	<5	<0.1	55	10	77	5	167	<2	0.391
MJC-10 226-228	<5	<0.1	22	8	79	7	34	<2	0.089
MJC-10 228-230	<5	<0.1	18	5	73	5	27	<2	0.071
MJC-10 230-232	<5	0.4	44	6	78	5	84	<2	0.227
MJC-10 232-234	<5	<0.1	37	7	88	5	41	<2	0.125
MJC-10 234-236	<5	<0.1	27	8	82	6	31	3	0.085
MJC-10 236-238	<5	<0.1	22	7	75	5	27	<2	0.059
MJC-10 238-240	<5	<0.1	21	7	73	5	22	<2	0.084
MJC-10 240-242	<5	<0.1	34	7	78	5	28	3	0.186
MJC-10 242-244	<5	0.2	17	5	83	4	10	<2	0.047
MJC-10 244-246	<5	<0.1	20	4	92	4	9	<2	0.024
MJC-10 246-248	<5	0.3	19	7	82	4	22	<2	0.087
MJC-10 248-250	<5	<0.1	22	9	81	4	22	<2	0.056
MJC-10 250-252	<5	<0.1	21	6	80	3	18	<2	0.019
MJC-10 252-254	<5	0.1	15	6	80	3	19	2	0.030
MJC-10 254-256	<5	<0.1	15	7	80	4	16	<2	0.018

AP-7 Results of Geochemical Analysis of Rock samples (Drilling) (3)

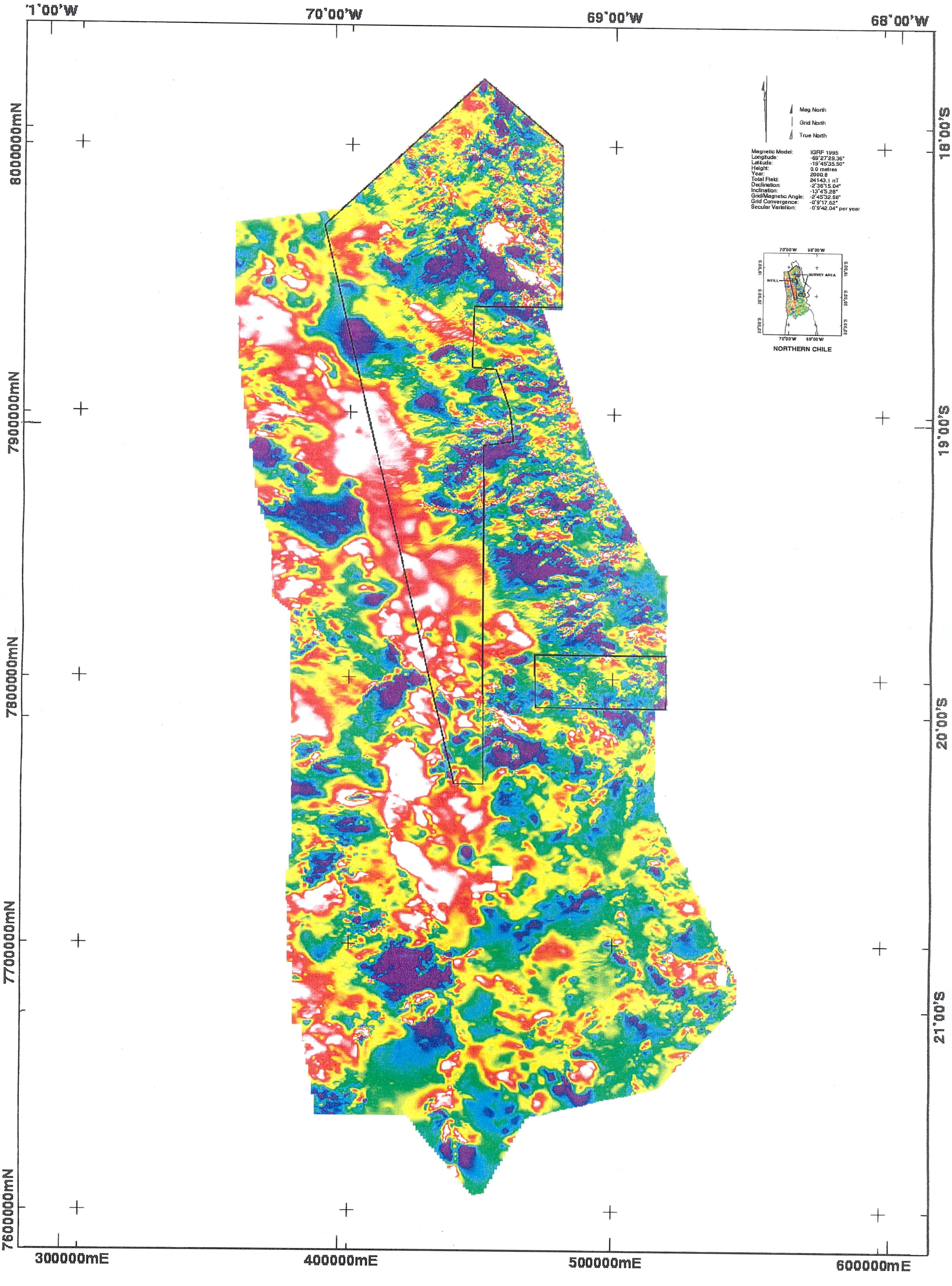
Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
MJC-10 256-258	<5	<0.1	14	9	79	4	6	2	0.014
MJC-10 258-260	<5	0.1	17	11	81	3	11	<2	0.020
MJC-10 260-262	<5	0.3	15	9	78	3	9	<2	0.018
MJC-10 262-264	<5	0.5	15	9	77	3	8	2	0.032
MJC-10 264-266	<5	0.2	17	6	84	3	12	3	0.014
MJC-10 266-268	<5	<0.1	13	10	70	4	9	2	0.023
MJC-10 268-270	<5	<0.1	15	8	80	3	7	<2	0.030
MJC-10 270-272	<5	0.2	20	3	71	5	24	<2	0.093
MJC-10 272-274	<5	<0.1	20	4	74	4	35	<2	0.064
MJC-10 274-276	<5	0.1	22	3	73	3	58	<2	0.098
MJC-10 276-278	<5	0.2	17	3	83	3	11	<2	0.022
MJC-10 278-280	<5	0.5	20	6	85	4	12	<2	0.027
MJC-10 280-282	<5	0.5	22	2	74	4	21	<2	0.081
MJC-10 282-284	<5	0.6	21	<2	74	3	24	<2	0.110
MJC-10 284-286	<5	0.3	16	3	79	3	13	<2	0.021
MJC-10 286-288	<5	<0.1	20	7	88	5	16	<2	0.049
MJC-10 288-290	<5	<0.1	24	3	78	3	26	<2	0.130
MJC-10 290-292	<5	1.1	15	<2	79	4	6	<2	0.050
MJC-10 292-294	<5	0.5	15	<2	79	3	8	<2	0.024
MJC-10 294-296	<5	0.7	15	2	75	<2	9	<2	0.064
MJC-10 296-298	<5	<0.1	16	3	80	4	11	<2	0.038
MJC-10 298-300	<5	0.2	14	4	75	<2	11	<2	0.123
MJC-10 300-302	<5	<0.1	15	<2	74	3	16	<2	0.105
MJC-10 302-304	<5	0.2	14	<2	77	<2	9	<2	0.182
MJC-10 304-306	<5	0.5	16	<2	84	4	9	<2	0.080
MJC-10 306-308	<5	0.4	18	4	81	<2	11	<2	0.107
MJC-10 308-310	<5	<0.1	16	4	81	3	9	4	0.059
MJC-10 310-312	<5	0.2	17	5	67	<2	8	3	0.188
MJC-10 312-314	<5	0.2	17	5	74	<2	11	2	0.178
MJC-10 314-316	<5	0.1	16	7	74	<2	12	3	0.130
MJC-10 316-318	<5	<0.1	17	6	75	<2	16	3	0.143
MJC-10 318-320	<5	<0.1	15	5	76	<2	18	2	0.191
MJC-10 320-322	<5	0.2	14	7	70	<2	24	<2	0.157
MJC-10 322-324	6	0.2	16	7	82	3	18	<2	0.252
MJC-10 324-326	<5	0.2	16	5	77	<2	21	3	0.254
MJC-10 326-328	<5	0.3	16	9	73	<2	18	3	0.193
MJC-10 328-330	<5	0.3	15	6	71	<2	20	2	0.134
MJC-10 330-332	<5	0.2	17	5	79	4	19	2	0.142
MJC-10 332-334	<5	<0.1	22	8	69	3	49	3	0.097
MJC-10 334-336	<5	<0.1	32	4	62	3	49	<2	0.070
MJC-10 336-338	<5	0.5	39	4	72	4	48	<2	0.126
MJC-10 338-340	<5	0.9	41	2	81	<2	38	<2	0.170
MJC-10 340-342	<5	1.3	47	6	83	<2	31	<2	0.140
MJC-10 342-344	<5	0.4	45	2	80	3	25	<2	0.082
MJC-10 344-346	<5	0.1	49	<2	80	3	18	<2	0.064
MJC-10 346-348	<5	<0.1	47	<2	86	3	11	<2	0.016
MJC-10 348-350	<5	0.3	44	<2	78	<2	39	<2	0.130
MJC-10 350-352	<5	0.5	49	2	74	<2	25	<2	0.233
MJC-10 352-354	<5	0.4	51	5	71	<2	28	<2	0.143
MJC-10 354-356	<5	0.1	51	6	65	<2	28	<2	0.152
MJC-10 356-358	<5	0.3	50	4	75	3	27	<2	0.162
MJC-10 358-360	<5	0.1	53	5	67	<2	29	<2	0.115
MJC-10 360-362	<5	0.2	51	8	69	3	26	<2	0.155
MJC-10 362-364	<5	0.3	53	14	75	<2	18	<2	0.237
MJC-10 364-366	<5	0.3	51	5	54	<2	31	<2	0.607
MJC-10 366-368	<5	0.7	52	9	80	4	18	<2	0.389
MJC-10 368-370	<5	0.2	51	6	72	6	16	<2	0.250
MJC-10 370-372	<5	0.2	58	5	71	<2	23	<2	0.569
MJC-10 372-374	<5	<0.1	57	9	88	11	30	<2	0.180
MJC-10 374-376	6	0.2	58	11	111	4	44	5	0.472
MJC-10 376-378	<5	0.2	55	11	104	4	34	4	0.269
MJC-10 378-380	<5	0.5	61	9	83	<2	86	3	0.135
MJC-10 380-382	<5	1	61	9	74	4	286	7	0.503
MJC-10 382-384	<5	0.5	77	10	75	5	150	10	0.427
MJC-10 384-386	<5	<0.1	50	9	78	<2	155	3	0.112
MJC-10 386-388	<5	0.2	57	9	81	<2	132	5	0.065
MJC-10 388-390	<5	<0.1	50	12	76	<2	163	4	0.074
MJC-10 390-392	<5	<0.1	48	11	90	<2	229	7	0.198
MJC-10 392-394	<5	0.5	53	11	87	4	205	3	0.160
MJC-12 164-166	7	1.1	77	7	106	5	7	<2	<0.01
MJC-12 166-168	8	1	69	4	102	4	<5	<2	0.019
MJC-12 168-170	7	1	81	7	88	6	<5	<2	<0.01
MJC-12 170-172	8	0.8	80	6	73	5	9	3	<0.01

AP-7 Results of Geochemical Analysis of Rock samples (Drilling) (4)

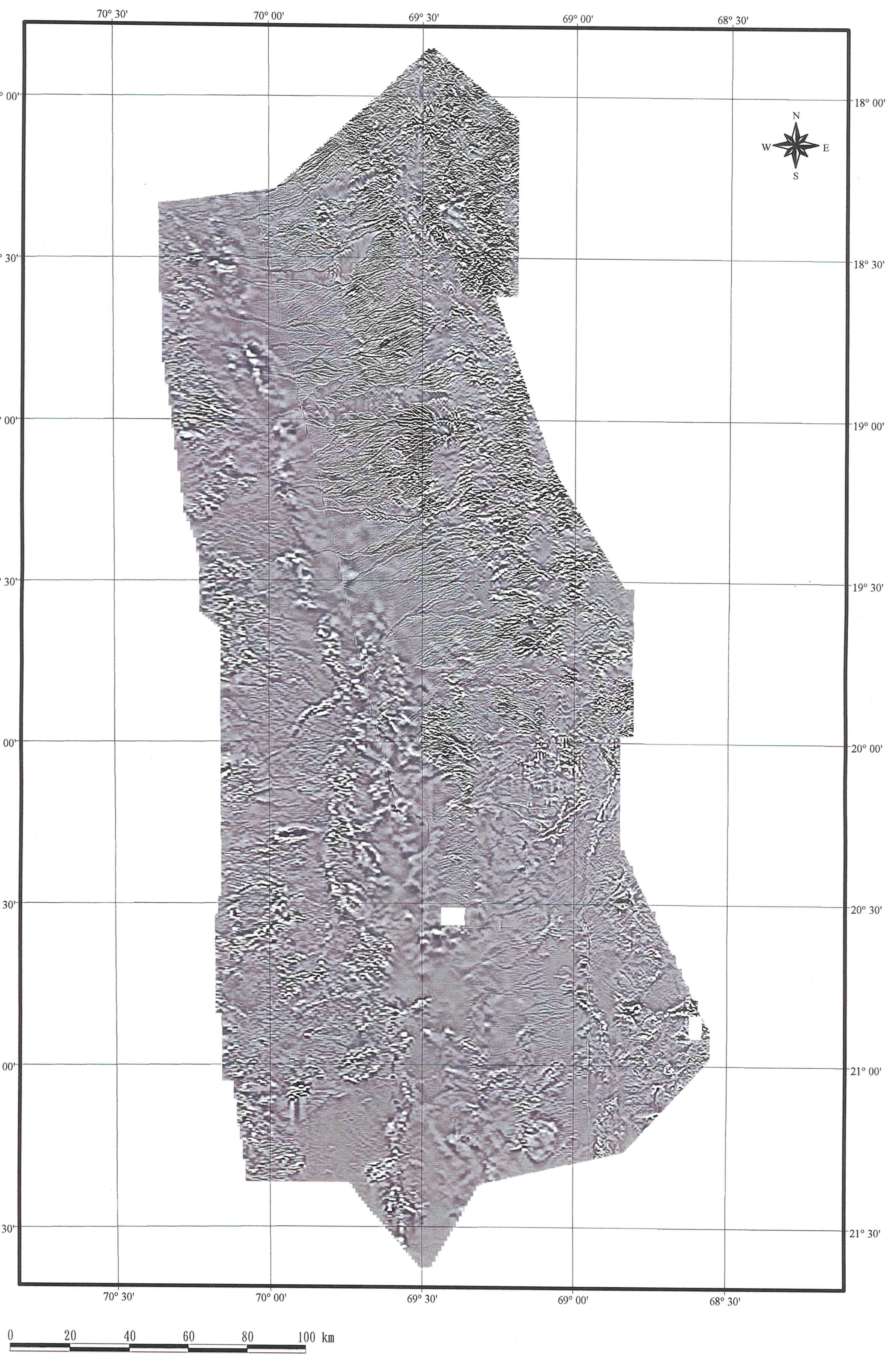
Sample No. Hole No. Depth (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Mo (ppm)	As (ppm)	Sb (ppm)	Hg (ppm)
MJC-12 172-174	<5	1	72	10	96	4	<5	<2	<0.01
MJC-12 174-176	<5	0.1	87	7	88	5	<5	<2	<0.01
MJC-12 176-178	<5	0.6	139	11	92	4	7	2	<0.01
MJC-12 178-180	<5	0.9	146	11	90	4	6	<2	<0.01
MJC-12 180-182	<5	1.2	109	11	95	4	7	<2	<0.01
MJC-12 182-184	<5	1.1	39	9	102	4	<5	<2	<0.01
MJC-12 184-186	<5	1.1	111	11	99	4	9	<2	<0.01
MJC-12 186-188	<5	0.9	79	8	96	5	7	2	<0.01
MJC-12 188-190	<5	1	113	8	91	5	<5	<2	<0.01
MJC-12 190-192	<5	0.5	63	8	115	4	<5	<2	<0.01
MJC-12 192-194	<5	0.1	103	7	98	5	<5	<2	<0.01
MJC-12 194-196	<5	<0.1	107	9	99	5	<5	<2	<0.01
MJC-12 196-198	<5	<0.1	134	9	117	5	<5	<2	0.014
MJC-12 198-200	<5	0.5	96	10	90	5	<5	<2	<0.01
MJC-12 200-202	<5	0.1	126	12	92	5	<5	<2	0.013
MJC-12 202-204	<5	0.7	109	9	85	6	<5	<2	<0.01
MJC-12 204-206	<5	0.4	109	8	86	5	<5	<2	0.014
MJC-12 206-208	<5	0.6	127	10	82	4	<5	<2	0.010
MJC-12 208-210	<5	0.6	100	10	94	6	<5	<2	0.011
MJC-12 210-212	<5	0.8	97	11	106	6	<5	<2	0.010
MJC-12 212 214	<5	0.7	133	11	98	7	<5	<2	<0.01
MJC-12 214-216	<5	0.9	131	8	83	5	<5	<2	<0.01
MJC-12 216-218	<5	1	118	10	92	7	<5	<2	<0.01
MJC-12 218-220	<5	0.9	110	8	85	4	6	<2	<0.01
MJC-12 220-222	<5	0.8	113	8	86	6	<5	<2	0.010
MJC-12 222-224	<5	0.7	120	9	84	6	<5	<2	<0.01
MJC-12 224-226	<5	0.7	129	8	84	4	<5	<2	<0.01
MJC-12 226-228	<5	0.2	107	8	84	6	<5	<2	0.017
MJC-12 228-230	<5	0.8	96	10	81	6	7	<2	<0.01
MJC-12 230-232	<5	0.8	128	10	88	4	<5	<2	<0.01
MJC-12 232-234	<5	0.8	128	11	90	4	<5	<2	<0.01
MJC-12 234-236	<5	0.8	91	9	85	5	<5	<2	<0.01
MJC-12 236-238	<5	0.9	107	9	83	5	<5	<2	<0.01
MJC-12 238-240	<5	0.9	115	7	87	3	<5	<2	<0.01
MJC-12 240-242	<5	1	110	7	87	4	<5	<2	<0.01
MJC-12 242-244	<5	<0.1	120	7	83	5	6	<2	<0.01
MJC-12 244-246	<5	0.1	108	8	89	<2	17	<2	<0.01
MJC-12 246-248	<5	0.2	109	7	108	6	<5	<2	0.013
MJC-12 248-250	<5	0.2	90	10	103	3	7	<2	0.011
MJC-12 250-252	<5	0.1	89	10	102	5	7	<2	<0.01
MJC-12 252-254	<5	0.2	81	9	94	4	9	<2	<0.01
MJC-12 254-256	<5	0.2	63	8	84	3	<5	<2	<0.01
MJC-12 256-258	<5	0.2	117	7	86	7	<5	<2	<0.01
MJC-12 258-260	<5	0.3	115	7	89	6	<5	<2	<0.01
MJC-12 260-262	<5	0.8	129	7	90	6	<5	<2	<0.01
MJC-12 262-264	<5	0.9	140	8	87	6	<5	<2	<0.01
MJC-12 264-266	<5	0.9	102	5	84	6	<5	<2	<0.01
MJC-12 266-268	<5	0.8	126	6	81	5	<5	<2	<0.01
MJC-12 268-270	<5	1	134	4	84	6	<5	<2	<0.01
MJC-12 270-272	<5	0.9	118	4	85	7	<5	<2	<0.01
MJC-12 272-274	<5	0.9	113	3	78	5	<5	<2	<0.01
MJC-12 274-276	<5	0.9	121	4	87	6	<5	<2	<0.01
MJC-12 276-278	<5	0.3	95	4	79	5	<5	<2	<0.01
MJC-12 278-280	<5	0.1	123	5	70	4	<5	<2	<0.01
MJC-12 280-282	<5	0.1	131	8	75	3	10	<2	<0.01
MJC-12 282-284	<5	0.1	106	6	71	3	<5	<2	<0.01
MJC-12 284-286	<5	<0.1	205	10	77	4	13	<2	<0.01
MJC-12 286-288	<5	0.1	133	12	72	3	8	<2	<0.01
MJC-12 288-290	<5	0.1	143	13	76	3	7	<2	<0.01
MJC-12 290-292	<5	0.3	134	11	77	4	<5	<2	<0.01
MJC-12 292-294	<5	0.2	168	5	77	3	6	<2	<0.01
MJC-12 294-296	<5	0.5	134	6	76	4	<5	<2	<0.01
MJC-12 296-298	<5	0.5	88	6	86	6	<5	<2	<0.01
MJC-12 298-300	<5	0.5	105	6	82	5	<5	<2	<0.01



AP-8 Pb/Cu Contours in the Southern Camarones Area



AP-9 Total Magnetic Intensity (Reduced to the Pole)



AP-10 First Vertical Derivative of Total Magnetic Intensity