

Part III

Conclusion and Proposal for the Future Exploration

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Chapter 1 Conclusion

No active mines are present in the survey area, but Nalesbitan Au-Cu high-sulfidation epithermal deposit and Tuba mesothermal vein-type deposit occur in the northwest of the area. In addition, Benit skarn-type small-scale deposit is present. For Phase-I, airborne geophysical survey has been conducted for obtaining data to evaluate the potential of possibly similar deposit. For Phase-II, the data were analysed. Geological survey and geochemical survey of stream sediments were conducted. Six areas which were Maniknik-Layaton, Susungdalaga, Katakian, Salubosogin-Yakalan, Alawihaw, and Binangkawan-Taktak, were selected as high potential and expected for the future exploration. Magasawan-Bato was selected as a sub-promising area.

For Phase-III, the geological survey and geochemical detail survey were conducted in Salubosogin-Yakalan and Binangkawan-Taktak areas, Magasawan-Bato area out of above six areas. In addition, Exciban-Larap area was also targetted. Four areas, Maniknik-Layaton, Susungdalaga, Katakian, and Alawihaw, were not included for Phase-III due to peace and order in the areas.

The main part of the survey area belongs to the northwest of central zone, one of three geologic zones in the Bicol area, that is covered mainly by the Paleocene to Pleistocene volcanics. The north and western areas belong to the northeast and southwest zones underlain by the ophiolite sequence and sedimentary rocks.

The alteration zones and a part of occurrences are associated with epithermal high-sulfidation system and low-sulfidation system gold mineralization and mesothermal and skarn-type gold (copper) mineralization. In the Exciban-Larap occurrences in the north of the area, a porphyry copper-type deposit or a mesothermal vein-type deposit are associated.

Various rock units were distinguished by analysing the data of aeromagnetic and gamma-ray spectrum. The center of volcanic activity of Pliocene was also delineated. A number of alteration zones were delineated by analysing the anomalies of the gamma-ray spectrum. Those alterations are mostly coincided with its found by the field survey. The geochemical anomalies related to the alteration zones were found by the geochemical survey and the detail geochemical survey.

The total comparison between the areas selected by Phase-II and the areas surveyed in Phase-III, on the same level, could not be made because of the difference of the accuracy.

In the areas that were selected as the promising areas in Phase-II and were not surveyed in Phase-III, the detail geochemical survey and drilling will be necessary for the future evaluation. In the areas that the survey was conducted in Phase-III, the final evaluation targetting to the Au geochemical anomalies of epithermal deposit, will be necessary. In the Exciban-Larap Occurrences, the final evaluation targetting to the anomalies of Au-Cu deposit, will be necessary in the future.

From the results of the total analysis of those data in the wide area, the following eight areas are finally selected as the promising areas for the future exploration and potential areas of existence of deposits. The areas and the types of deposit are followings.

- Katakian alteration zone----- Skarn-type or Mesothermal-vein-type
- Maniknik-Layaton alteration zone----- High-sulfidation epithermal type
- Susungdalaga area----- High-sulfidation epithermal type
- Alawihaw alteration zone----- Low-sulfidation epithermal type
- Salubosogin-Yakalan alteration zone ----- High-sulfidation epithermal type

Magasawan-Bato alteration zone----- High-sulfidation epithermal type?
Binangkawan-Taktak alteration zone----- High-sulfidation epithermal type
Exciban-Larap occurrences-----Porphyry copper-type deposit or Mesothermal vein-type deposit

Chapter 2 Proposal for the Future Exploration

From the result of three years survey, eight areas, Katakian alteration zone, Maniknik-Layaton alteration zone, Susungdalaga Area, Alawihaw alteration zone, Salubosogin-Yakalan alteration zone, Magasawan Bato alteration zone, Binangkawan-Taktak alteration zone, and Exciban-Larap occurrences, are selected as promising areas. In terms of the accuracy, substantially preliminary stage of grass-route surveyed areas based on the density of the field survey and the sampling of geochemical survey was conducted in some areas and the detail geochemical survey was conducted in other areas. In the future, it is recommended that detail geochemical survey for selecting the drilling targets should be conducted in some areas. In the areas where the detail geochemical survey was completed, geophysical survey on surface and the additional supplementary geochemical survey are recommended for deciding the drilling locations.

The recommended survey for the next stage in each promising areas are mentioned below.
(Maniknik-Layaton Alteration Zone, and Susungdalaga area)

These areas are potential of high sulfidation mineralization. In a typical high-sulfidation mineralization accompanied by vuggy silica, the gold and its related elements usually concentrate at the vuggy silica portion, the center of acidic alteration zone where acidic fluid directly ascended. However, the vuggy silica bodies do not always contain high anomalous gold values, it certainly needs the ascent of metal rich fluid on and after the leaching process. Therefore, to check the existence of the gold mineralization, detail geological mapping and geochemical work including continuous rock chip sampling and/or channel sampling at the vuggy silica bodies and silicified rocks is necessary.

Once the mineralization will be discovered, geophysical survey is effective to outline the extension of the mineralization. It is expected that ore body and argillization zone surrounding silicified rocks contains highly sulfide minerals, whereas silicified rocks around the vuggy silica, formed by the fluid descending temperature, show high to medium resistivity and contain a little sulfide minerals. Therefore, it may be possible to detect the contrast by IP survey between the both.

(Katakian Alteration Zone)

The alteration zone occurred to be accompanied by a skarn-type contact metasomatic mineralization related to plutonic bodies or mesothermal vein-type mineralization such as Tuba-type. It is recommended that the distribution of calc-silicate, quartz-vein outcrops, floats, and alteration zones should be determined by the detail mapping and geochemical work including detail stream sediments sampling. After the mineralization zones will be specified, grid soil sampling is effective for the zones.

(Alawihaw Alteration Zone)

It seems that the alteration zone was formed at a very shallow circumstance in a younger geothermal system due to the existence of sinter and active hot springs. The simultaneous detail geological mapping and rock geochemical survey are recommended to specify the further promising area, then grid soil sampling should be carried out for the purpose of deciding the drilling target. The geochemical anomalies of Hg, As and Sb as well as Au are important to study a shallow

system.

However, the geothermal condition, the existence of hot springs at $\sim 80^{\circ}\text{C}$, may interfere with the further survey due to possibly high temperature in the underground.

(Salobosogin-Yakalan Alteration Zone)

The area is potential as Nalesbitan-type high-sulfidation mineralization accompanied by silicified breccia. The silicification zone and the surroundings argillization zone crop out along the faults traversing in the center of the area. Quartz vein with sulfid minerals filling the fracture zones was observed. The silicified zone along faults shows gold anomalies by soil geochemical survey. The brecciated zone is the target for drilling. It is expected that the center of mineralization might not be exposed, and the zone might be shallower than the Nalesbitan. Geochemical work including continuous rock chip sampling and/or channel sampling every a few to 10 meters intervals should be conducted. Sampling line must to cross faults and extend to Macogon Formation which is the host rocks of Nalesbitan epithermal gold deposit. A few drillings are recommended for evaluating the existence of mineralization for the targeted to Au anomalies.

(Magasawan-Bato Alteration Zone)

In the area, Susungdalaga Volcanics are widely distributed. In the north of the area, the sedimentary rocks of Sta. Elena Formation (Upper Miocene) is limitedly distributed as the window shape. Northeast to east-north-east and north-south trending faults were observed. In the southwest of the area, the intrusion of plug is expected by the airborne survey.

The mineralization was observed along mainly east-north-east structural line and pyrite dissemination was observed in the gouge. Under geochemical survey, the gold-anomaly is widely distributed along the fault trending north-south and the east-north-east direction in silicification zones. The area might not be well eroded and the only shallow portion of geothermal alteration may be exposed. Sta. Elena Formation is located at the north of the area, therefore, Susungdalaga Volcanics may be thinner than southwest area. The gold-anomaly by soil geochemical survey situated in the southwest of the area where the intrusion of plug is inferred, may be higher potential. It is recommended that continuous rock chip sampling and/or channel sampling every a few to 10 meters intervals along northwest survey line in the gold anomalous zone, should be conducted. And a few drillings are recommended for evaluation.

(Binangkawan-Taktak Alteration zone)

In the area, northeast and northwest to west-south-west trends are dominant. Susungdalaga Formation is widely distributed in the area. In the northeast of the area, the intrusion of plug is expected under airborne survey.

The area along Taktak River is silicified, however silicification and argillization were observed in the limited zone along faults. Drussy quartz was also observed. The pocket and pyrite dissemination were observed in the silicification zone of dacitic pyroclastics. At the north side of northeast trending fault, gold-anomaly is detected under geochemical survey. Arsenopyrite was also observed. The geophysical survey such as IP or EM targetting sulfides of gold-anomaly and the below of dacitic flow within alteration zone is recommendable for determining drilling targets. One to two drillings are recommended for evaluating the existence of mineralization.

(Exciban-Larap Occurrences)

In the area, north-south trend is dominant. Eocene, Universal Formation is distributed. The area is underlain by bedding of sandstone and shale, and basalt. The faults and joints with various directions were minutely observed. The gouge with pyrite was observed. The zones are cut every a few meters. The zonation of geothermal alteration was observed and massive sulfide with

dominantly pyrite are distributed. The sulfide is associated with a small amount of chalcopyrite and chalcocite, which shows high value of Au: 19.55ppm. The phenocrysts and veinlets of quartz, chlorite and epidote were observed and veinlet of pyrite dissemination was observed. And diorite is distributed nearby. Therefore, porphyry copper-type deposit or mesothermal vein-type deposit are expected.

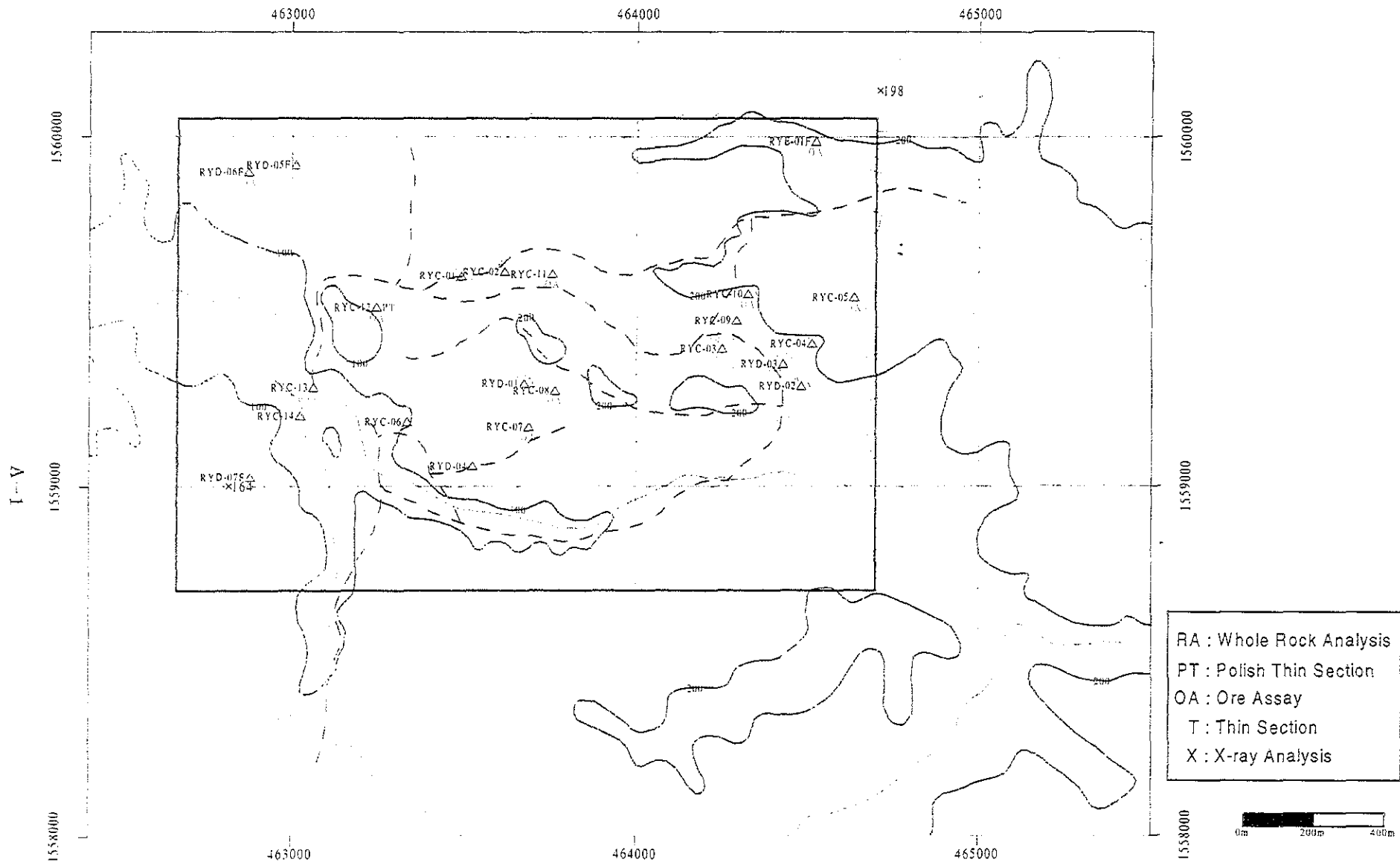
Au+Cu+Bi anomaly is detected between the window-shape silicification zone and the southern part of the silicification zone. The geophysical survey such as IP or EM targetting sulfides in the anomaly area is recommendable for determining the detail targets. A few drillings are recommended for evaluating the existence of mineralization.

For three years survey, security summits were organized with JICA, MMAJ, Counterpart, and a security consultant company for collecting information and making the security countermeasures. The information campaign for governor, city mayors, barangay captains, military, and police to be familiarized with the purpose, period, areas, organization, methods, etc. of the survey. Consequently, any accidents and/or incidents have never happened during the survey periods and the field survey has been safely completed. In the future as well, the activities of Japanese survey team could be guaranteed by taking the same measures and it could be possible to realize the cooperation requested by counterparts. It is expected that the circumstance of investment in the area could be put in order by means of the preparation of social environment, promotion of employment, environmental control, etc

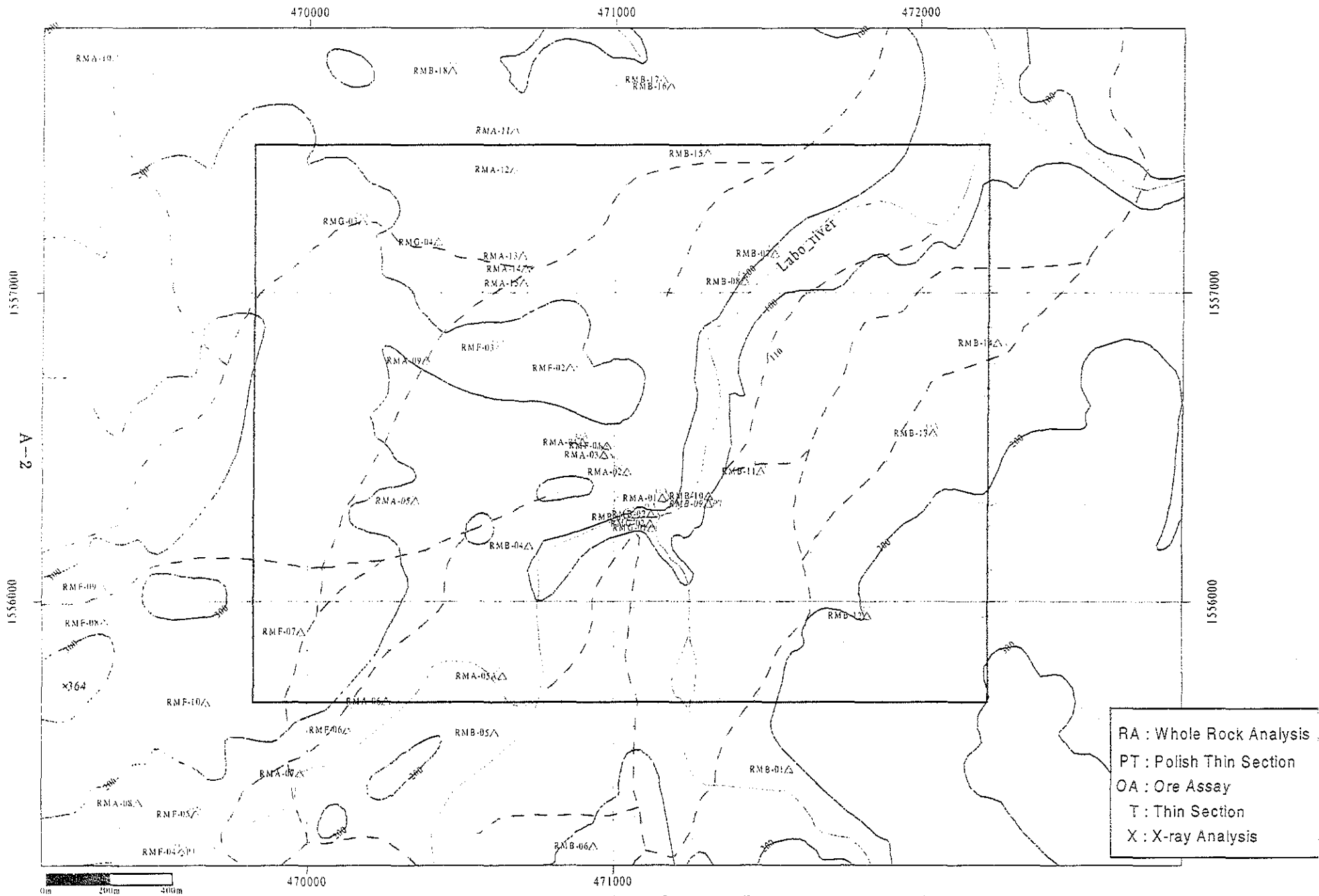
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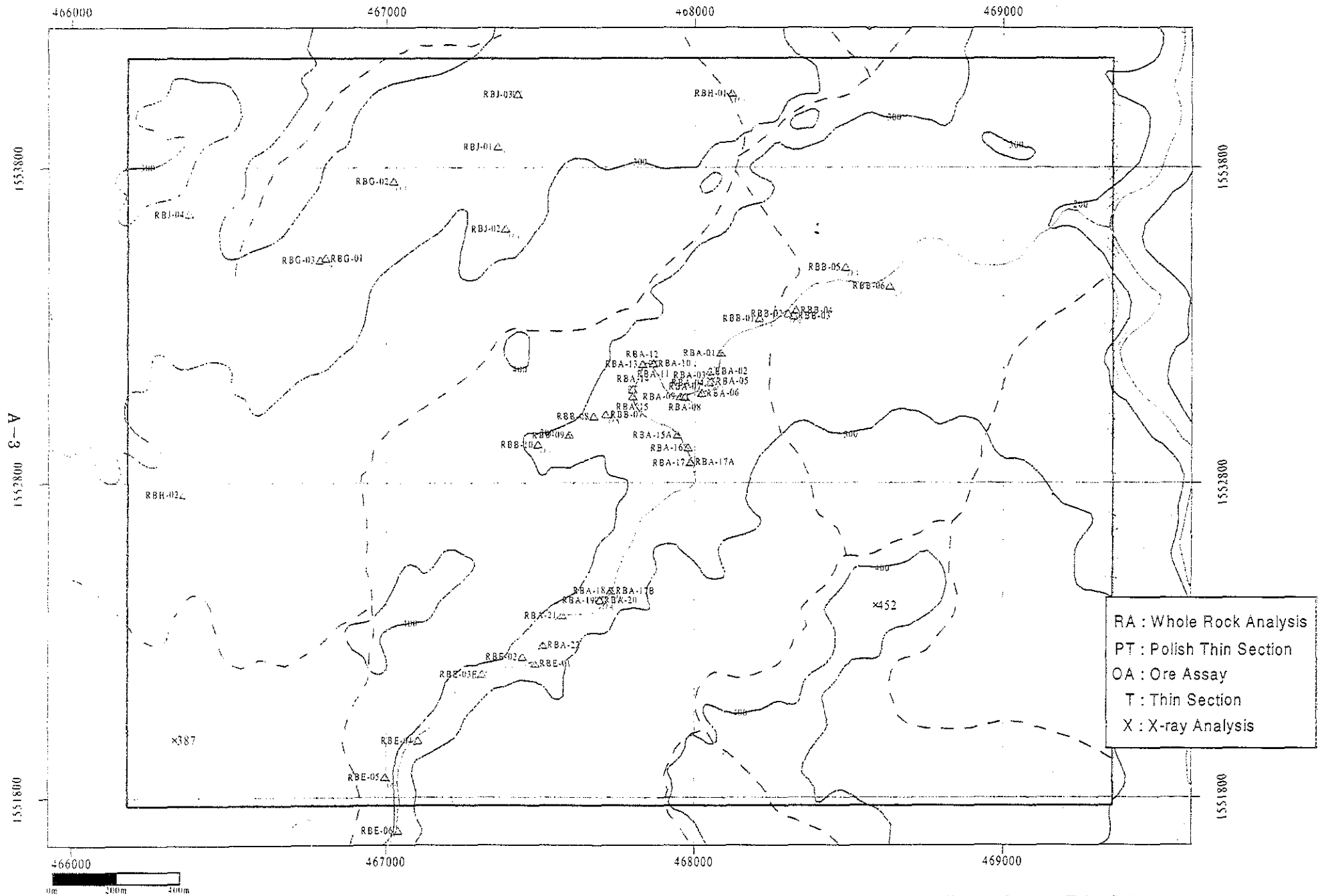
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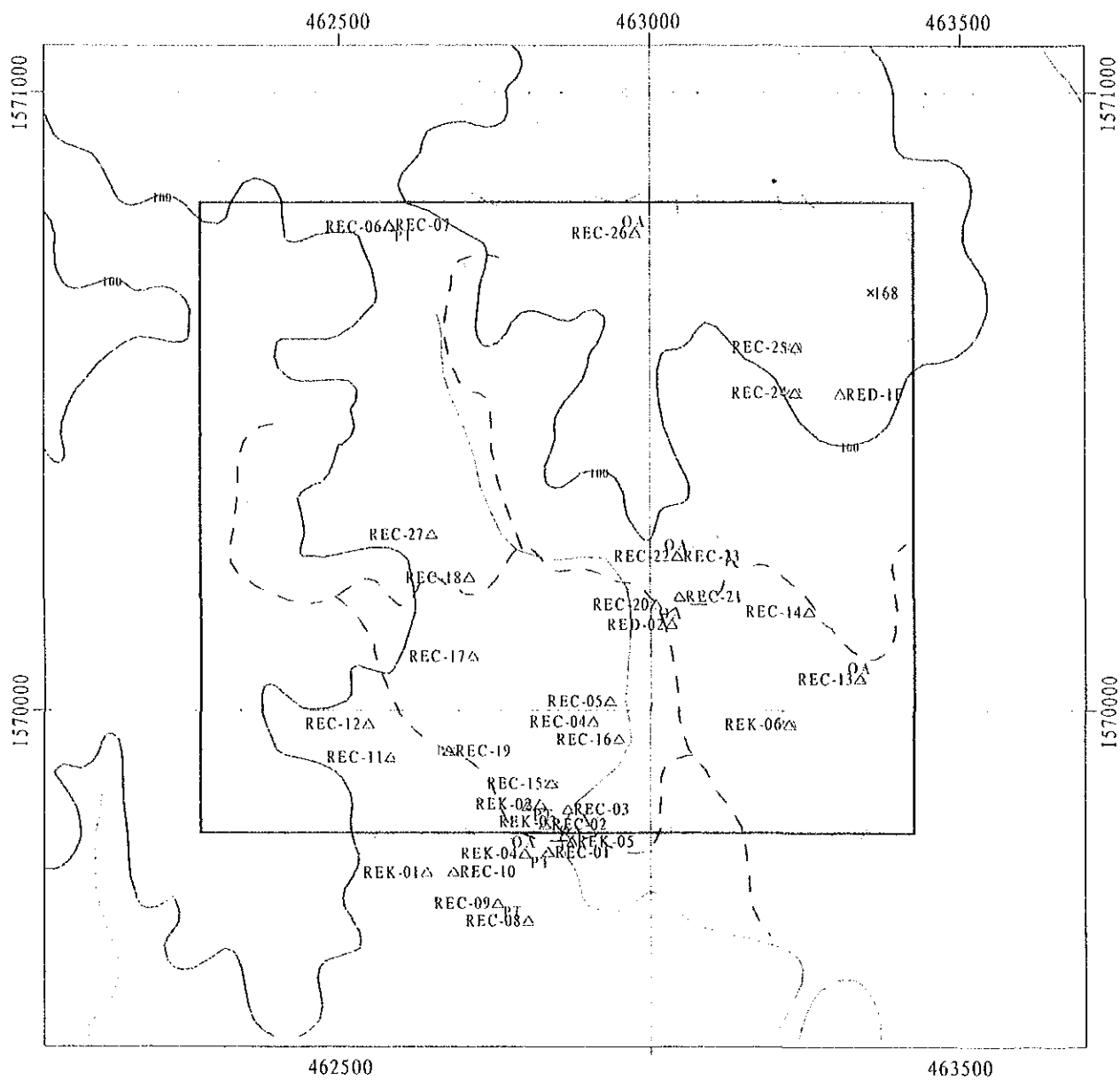
Appendix 1 Location Map of Rock Samples in the Salubosogin-Yakalan Area



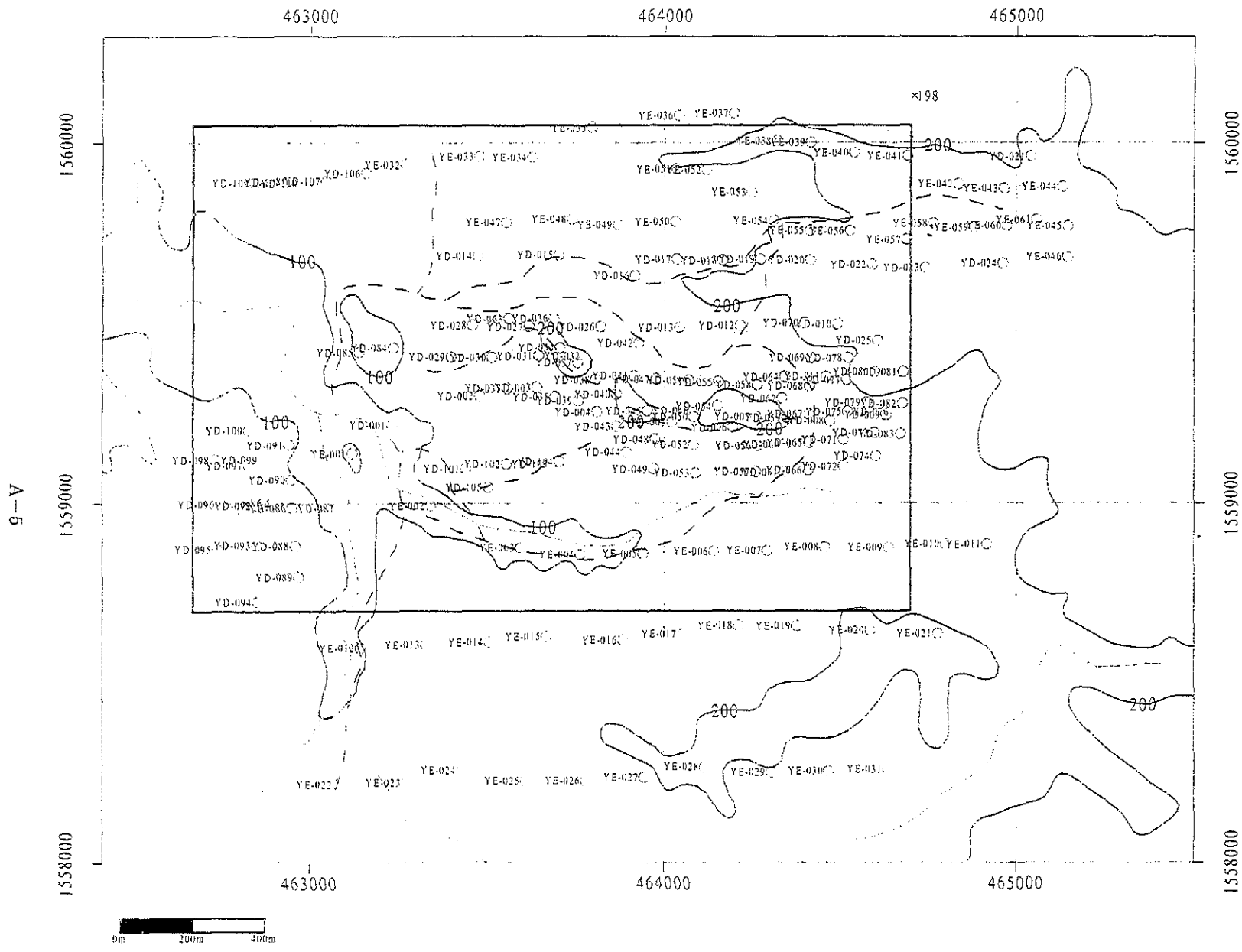
Appendix 2 Location Map of Rock Samples in the Magasawan-Bato Area



Appendix 3 Location Map of Rock Samples in the Binangkawan-Taktak Area

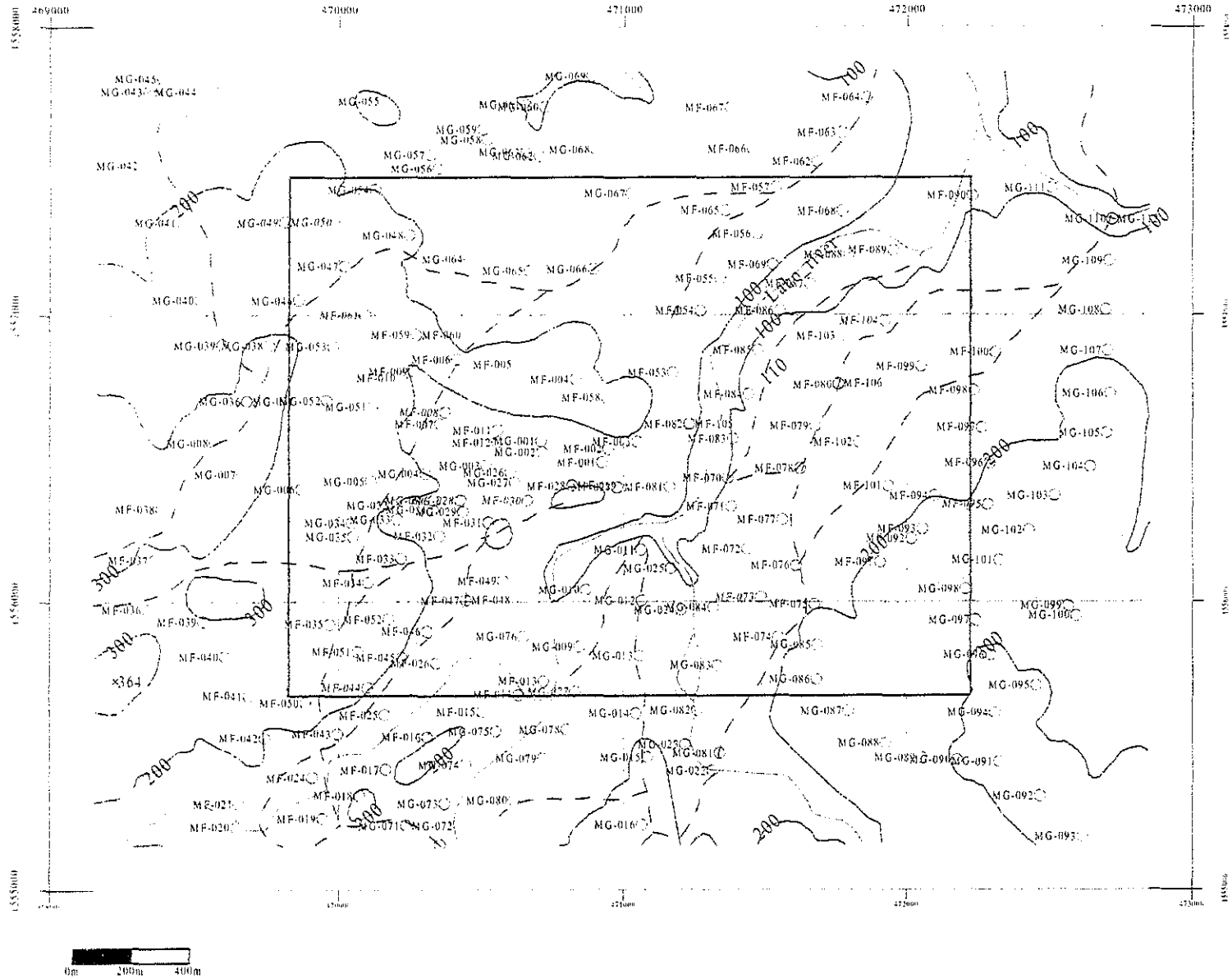


Appendix 4 Location Map of Rock Samples in the Exciban-Larap Area



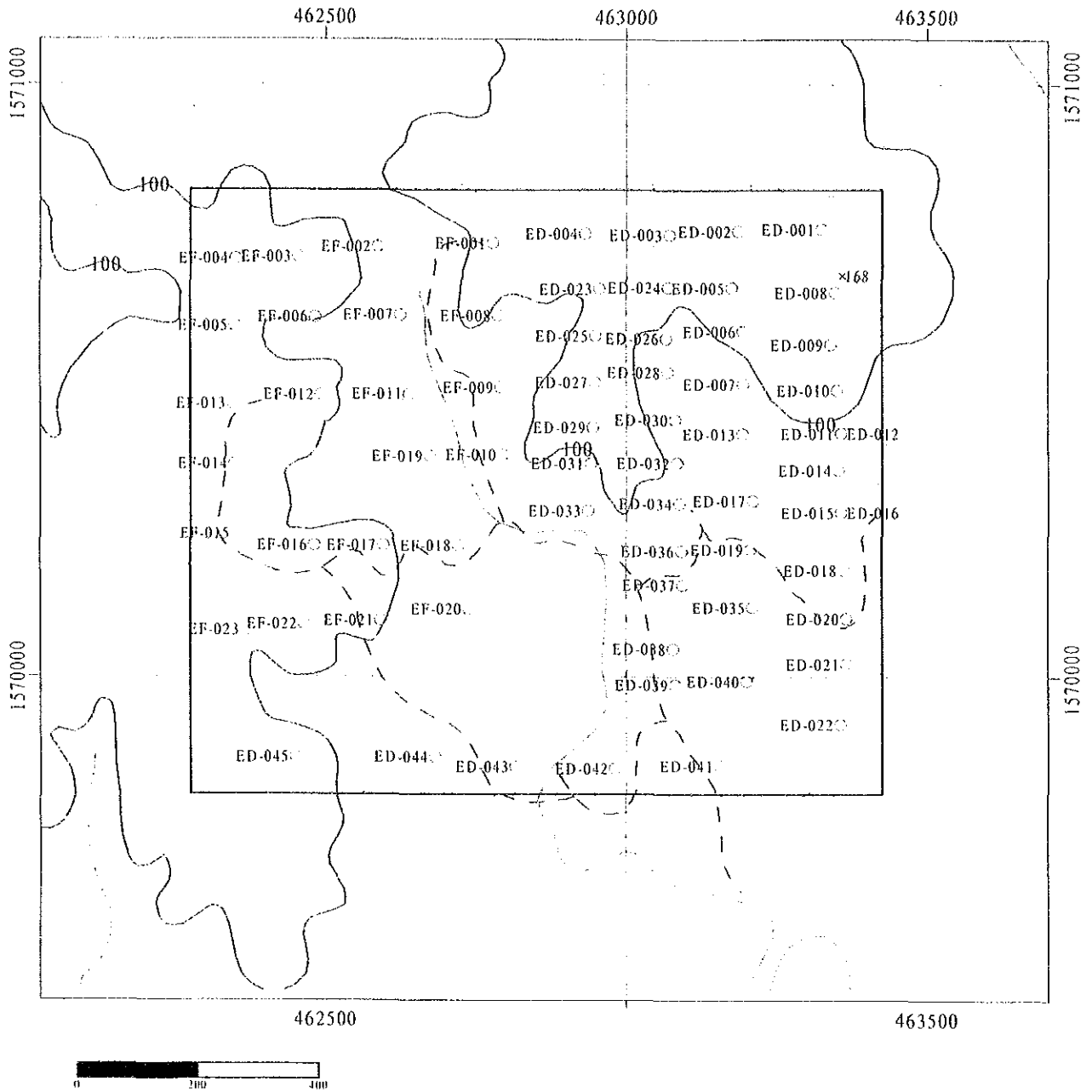
Appendix 5 Location Map of Soil Samples in the Salubosogin-Yakalan Area

1/15,000.



Appendix 6 Location Map of Soil Samples in the Magasawan-Bato Area

1/20,000.



Appendix 8 Location Map of Soil Samples in the Exciban-Larap Area 1/10,000.

Appendix 10 Microscopic Observation of Polished Thin Section

No.	Sample No.	E-UTM	N-UTM	AREA	Rock name and Texture	Rock forming minerals															Alteration minerals										Ore Minerals						Remarks	
						phenocrysts (or fragments)					groundmass (or matrix)																											
						Qz	Pl	Ho	Mf	Oth	Qz	Pl	Ho	Op	Gl	Oth	Qz	Alu	Kao	Se	Kf	Ab	Chl	Ep	All	Cor	And	Cb	Sm	Oth	Py	Mc	Cp	As	Mg	Ge		
01	RYC-12	463210	1559530	Salubosogin-Yakalan	Strongly silicified rock (meta hornblend andesite)	Δ	(⊙)	(⊙)				(⊙)	?	*	(⊙)									Δ	Ge	○	⊙	*									Vesicule is present. (Mc(Py)) vein. Mc after Py.	
02	RMB-09	471300	1556315	Magasawan-Bato	Lapilli tuff (ore)	○	(Δ)		V			⊙											○	Ge	⊙		Δ									Fragments are mainly silicified volcanic rock.		
03	RMF-04	469615	1555200	Magasawan-Bato	Strongly silicified rock (meta hornblend andesite)		(⊙)	(⊙)	(Δ)			(⊙)	?	*	(⊙)								*	Δ	Ge	⊙										Vesicule is present. Py is dazy and overgrowth.		
04	RBA-08	467975	1553075	Binangkawan-Taktak	Silicified volcanic breccia (hornblend andesitic)	Δ	(○)	(○)		HbAN (⊙)		⊙												*	Ge	⊙	*											
05	RBA-11	467870	1553170	Binangkawan-Taktak	Strongly silicified rock (meta volcanic rock)		(⊙)?	(⊙)?	(Δ)														Δ		Mus	⊙			*	?							As? Cleavage is distinct. Strong anisotropy (blue~reddish brown).	
06	RBA-14	467810	1553090	Binangkawan-Taktak	Strongly silicified rock (hornblende andesitic breccia)	*	(Δ)	(Δ)		HbAN (⊙)		⊙														Ge	⊙	⊙		*							Mc and Py are partly dendritic.	
07	RBA-19	467695	1552420	Binangkawan-Taktak	Silicified tuff	Δ	(○)		(○)															Δ	Ver, Ge	⊙												
08	RBJ-03	467270	1553925	Binangkawan-Taktak	Strongly silicified rock (Lapilli tuff?)		(○)		(Δ)	V-PM?																	Bi, Ge	Δ									Overgrowth of Py.	
09	REC-06	462580	1570740	Exciban-Larap	Tuff	Δ	(Δ)			V(Silicified)															Ge	○											Strongly deformed.	
10	REC-09	462755	1569680	Exciban-Larap	Ore	*																				○	⊙										With (Chl+Py) vein. Mc and Py are partly dendritic.	
11	REK-03	462805	1569840	Exciban-Larap	Strongly silicified rock (tuffaceous)		(○)		(Δ)	V(Silicified)		⊙															○		○								With (Oz+Py+Cb+Mus+Chl) vein.	
12	REK-04	462800	1569760	Exciban-Larap	Strongly silicified rock (tuffaceous)		(○)		(○)	V(Silicified)		⊙														Ge	○		○									With (Oz+Py+Kf+Chl) vein.

[Symbols]

⊙:abundant ○:common Δ:small amount *:rare (Δ):altered

[Rock fragments] V:volcanic rock(andesite~basalt) HbAN:hornblende andesite PM:pumice

[Minerals]

Qz:quartz Kf:kalkfeldspar Pl:plagioclase Mus:muscovite Bl:blotite Ho:hornblende Op:orthopyroxene Mf:mafic mineral(details not clear) Gl:glass Cor:cordierite And:andalusite Alu:alunite Kao:Kaolinite Se:sericite Ab:albite Chl:chlorite Ep:epidote All:allanite Cb:carbonate Op:opaque mineral Sm:smeectite Hal:halloysite Ver:vermiculite Ge:goethite(include amorphous hydrous Fe-oxide) oth:others

[Ore minerals]

Py:pyrite Mc:marcasite Cp:chalcopyrite As:arsenopyrite Mg:magnetite Ge:goethite

Appendix 11 Result of X-ray Diffraction Analysis

No.	Sample No.	E-UTM	N-UTM	Area	Qz	Kf	Pl	Cal	Cri	Alu	Py	Hm	Mc	Chl	Sm	Kao	Hal	Cor	Mix	Remark
1	RYD-01	463672	1559295	Salubosogin-Yakalan	⊙	△														Light gray, buff to cream colored, highly silicified dacite rock. Qtz grains are fine to medium
2	RYD-02	464482	1559288	Salubosogin-Yakalan	⊙												△			Silicified dacite rock, light gray to white colored sometimes showing vuggy appearance
3	RYC-10	464327	1559552	Salubosogin-Yakalan	⊙	△										△				Silicified, argillized and oxidized dacite w/ greenish gray qtz
4	RMA-01	471157	1556334	Magasawan-Bato	⊙						△					⊙				Argillized xtal tuff w/ fine py dissem. Pl xtals in a hard to friable gray matrix
5	RMA-03	470965	1556474	Magasawan-Bato	⊙					△										Highly silicified rk w/ chalcedonic qtz, parent rk is clastic in appearance, w/ sparse py dissem
6	RMA-14	470706	1557078	Magasawan-Bato	△				△						○					Altered lapilli tuff, soft and almost plastic but alteration look more like due to weathering
7	RMB-02	471122	1556284	Magasawan-Bato				⊙												Zeolite and qtz vein in dacitic breccia
8	RMB-14	472254	1556839	Magasawan-Bato	△						△					⊙				Soft clay + py zone
9	RMF-02	470853	1556756	Magasawan-Bato	⊙					⊙										Granular qtz, vuggy, some relic sulfides. Some parts are of qtz-clay composition (kaolinite?)
10	RMF-08	469348	1555932	Magasawan-Bato	⊙							△					△			Highly silicified xenolith (dacite?) in plagiophyric dacite, slightly weathered w/ reddish matrix
11	RMF-10	469673	1555676	Magasawan-Bato	⊙											○				Moderately silicified dacite, remnant pl, some qtz phenocrysts
12	RBA-01	468085	1553214	Binangkawan-Taktak	⊙		△										△		△	Slightly argillized dacitic rock with fine py dissem, py replaces fmags, pl and fmags set in grayish matrix.
13	RBA-03	468052	1553141	Binangkawan-Taktak	⊙	○														Silicified tuff, country rk to narrow qtz stringers, some py dissem.
14	RBA-06	468023	1553087	Binangkawan-Taktak	⊙	○					△						△		△	Slightly argillized and chloritized rk, bleach white w/ green tinge, w/ py dissem
15	RBA-10	467864	1553179	Binangkawan-Taktak	⊙						△			△		△			△	Chloritized volcaniclastic rk w/ fine py dissem
16	RBA-16	467978	1552912	Binangkawan-Taktak	⊙			△			△				○	△				Soft plastic xtal tuff
17	RBA-17	467985	1552864	Binangkawan-Taktak	△		△	△				△			△					Tuff w/ Fe replacement (hemalite stains)
18	RBA-17B	467729	1552458	Binangkawan-Taktak	⊙		⊙	○			△					△			△	Chloritized volcaniclastic rk w/ py dissem
19	RBA-18	467727	1552459	Binangkawan-Taktak	⊙													△	△	Gougy mat, white clay w/ limonite stains, few py dissem
20	RBB-09	467591	1552954	Binangkawan-Taktak	⊙								△			△				Argillized zone w/ dissem py, minor qtz veinlets
21	RBE-01	467481	1552226	Binangkawan-Taktak	⊙		⊙	⊙							△	△				Weathered, clay alt, chloritized? dacite.
22	RBH-01	468120	1554039	Binangkawan-Taktak	⊙						○					△	△			Argilled zone. Outcrop of heavily clay altered rk. Kaolinite? Py dissem common. Hemalite veinlets nearby clay mts.
23	REK-05	462871	1569786	Exciban-Larap	⊙	△	△				△		△	△						Pyritized gouge

[Symbols]

⊙:abundant ○:common △:small amount ·:rare

[Minerals]

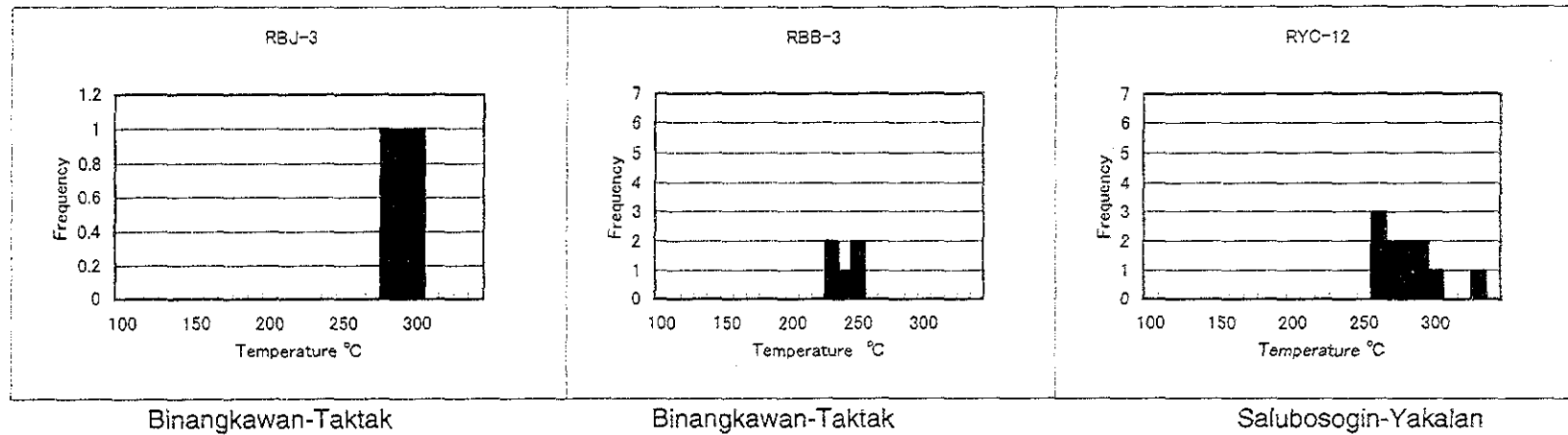
Qz:quartz Kf:potash feldspar Pl:plagioclase Cal:calcite Cri:cristbarite Alu:alunite Py:pyrite Hm:hematite
 Mc:mica minerals Chl:chlorite Sm:smectite Kao:kaolinite Hal:hallowite Cor:corrensite Mix:mixed-layer minerals (Mc/Sm)

Appendix 12 Homogenized Temperature of Fluid Inclusion

No.	sample No.	E-UTM	N-UTM	Description	Mineral	1	2	3	4	5	6	7	8	9	10	11	
1	RMG-4	470419	1557164	Magasawan-Bato	Quartz	chalcedony quartz(no fluid inclusion)											
2	RBJ-3	467422	1554036	Binangkawan-Takta	Quartz	288	294	305									
3	RBB-3	468320	1553331	Binangkawan-Takta	Quartz	235	239	248	251	252							
4	REK-2	462822	1569847	Exciban-Larap	Quartz	chalcedony quartz(no fluid inclusion)											
5	RYC-12	463245	1559514	Salubosogin-Yakala	Quartz	260	263	264	275	276	280	280	292	295	300	332	

Homogenized Temperature Unit: °C

A-12



Appendix 13 Whole Rock Analysis Data

No.	Sample No.	E-UTM	N-UTM	Discription	Zn ppm	Au ppm	Ag ppm	Cu ppm	Pb ppm	Cu %
1	RYC-05	464636.9	1559543	Outcrop	26	0.01	1.1	16	9	
2	RYC-07	463686.3	1559171	Outcrop	15	<0.01	5.7	8	7	
3	RYC-08	463761.6	1559274	Outcrop	23	0.04	5.3	36	15	
4	RYC-10	464326.5	1559552	Outcrop	18	0.01	0.2	16	2	
5	RYC-11	463754	1559610	Outcrop	16	0.02	3.4	13	3	
6	RYC-12	463245.2	1559514	Outcrop	23	<0.01	3.9	33	6	
7	RYD-06F	462877.2	1559903	Outcrop	18	0.01	0.4	3	3	
8	RYE-01F	464522.4	1559989	Float	38	0.01	3.3	4	18	
9	RMA-01	471157.2	1556334	Outcrop	830	0.03	<0.2	58	16	
10	RMA-03	470965.4	1556474	Outcrop	14	0.06	11.1	27	77	
11	RMA-04	470895.2	1556516	Outcrop	19	0.01	4.7	27	151	
12	RMB-02	471122.2	1556284	Outcrop	26	<0.01	<0.2	7	15	
13	RMB-07	471525.2	1557127	Outcrop	28	<0.01	<0.2	32	13	
14	RMB-08	471426.4	1557038	Outcrop	28	<0.01	<0.2	24	6	
15	RMB-11	471482.7	1556420	Float	17	<0.01	7.2	11	157	
16	RMB-13	472046	1556546	Outcrop	633	0.01	0.2	35	17	
17	RMB-18	470462.4	1557712	Float	15	<0.01	10.2	148	128	
18	RMF-03	470620.7	1556823	Outcrop	25	0.01	0.5	13	256	
19	RMF-04	469595.4	1555194	Outcrop	32	0.42	3.4	55	690	
20	RMF-05	469641.1	1555318	Outcrop	14	<0.01	0.9	4	31	
21	RMG-03	470172	1557230	Outcrop	25	0.07	1	29	300	
22	RBA-18	467727.1	1552459	Outcrop	31	<0.01	<0.2	11	13	
23	RBA-19	467692.9	1552428	Outcrop	26	<0.01	0.2	34	17	
24	RBA-20	467692.4	1552428	Outcrop	65	<0.01	<0.2	23	15	
25	RBB-01	468210.1	1553323	Outcrop	51	0.01	<0.2	19	8	
26	RBB-02	468302.1	1553338	Outcrop	19	0.01	1.3	7	5	
27	RBB-05	468490.6	1553487	Outcrop	31	0.12	5.9	86	8	
28	RBB-07	467710.7	1553019	Outcrop	31	<0.01	0.6	17	14	
29	RBB-10	467489.3	1552923	Outcrop	32	0.41	5.9	84	11	
30	RBE-05	466996.9	1551865	Outcrop	21	0.03	0.3	5	9	
31	RBG-02	467020.3	1553755	Float	15	0.03	<0.2	4	2	
32	RBJ-02	467384.5	1553607	Outcrop	47	<0.01	0.5	25	8	
33	RBH-01	468120.3	1554039	Outcrop	22	<0.01	<0.2	9	12	
34	REC-13	463338.1	1570053	Outcrop	77	0.01	0.5	24	5	
35	REC-22	463044.4	1570254	Outcrop	34	0.34	0.3	171	9	
36	REC-23	463043.8	1570253	Outcrop	46	0.14	0.8	204	16	
37	REC-26	462976.1	1570777	Outcrop	57	0.02	0.2	12	10	
38	RED-02	463033.9	1570142	Outcrop	44	0.62	0.4	178	7	
39	REK-04	462797.8	1569766	Outcrop	45	19.55	26.6	>10000	55	5.07
40	REK-05	462871.5	1569786	Outcrop	24	0.55	0.2	205	7	

Appendix 14 Ore Assay Data of Rock Samples

No.	Sample No.	E-UTM	N-UTM	Description	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Tb	Th	Ti	Tl	U	V	W	Y	Zn	Zr
					ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
1	RYC-01	463489	1559605	Outcrop	0.008	37.9	0.79	6	<10	220	0.33	0.1	0.08	0.03	20.3	5.1	43	1.21	20.8	2.11	2.47	0.05	0.15	0.05	0.01	0.39	12.2	0.7	0.17	99	0.36	0.01	0.14	18.7	160	26.9	25.1	<0.001	<0.01	21.2	6.1	0.6	0.4	27.6	<0.01	0.01	5	0.1	0.13	0.41	67	0.18	2.24	20	>500
2	RYC-02	463615	1559617	Outcrop	0.006	3.31	0.44	387	<10	690	0.37	0.04	0.04	0.01	23.0	1.3	43	1.92	23.1	1.2	1.24	0.06	<0.02	0.28	0.007	0.23	13.5	0.6	0.04	12	0.25	0.01	<0.05	5.2	380	11.5	15.6	<0.001	0.21	1.63	4.2	0.5	<0.2	168	<0.01	<0.01	3.3	<0.01	0.12	0.68	17	<0.05	7.47	5	>500
3	RYC-03	464250	1559594	Outcrop	0.002	0.4	0.42	137	<10	250	0.61	0.01	0.04	0.08	5.96	11.1	11	2.32	35.3	4.85	1.40	0.1	<0.02	0.21	0.005	0.14	2.9	0.8	0.04	837	0.12	<0.01	<0.05	16.1	840	4.8	12.6	<0.001	<0.01	1.72	3.3	1.1	<0.2	9.6	<0.01	0.01	3.0	<0.01	0.44	0.27	24	<0.05	1.3	32	>500
4	RYC-04	464513	1559409	Outcrop	0.002	0.09	0.23	43.4	<10	51.1	0.09	0.01	0.01	<0.01	10.15	1.7	28	1.22	9.4	0.36	0.61	<0.05	<0.02	0.56	<0.005	0.09	5.7	0.3	0.02	45	0.21	<0.01	<0.05	2.2	60	5	5.6	<0.001	0.01	4.31	2.5	0.2	<0.2	6.5	<0.01	<0.01	1.1	<0.01	0.2	0.56	6	<0.05	0.76	2	>500
5	RYD-01	463672	1559295	Outcrop	0.003	0.17	1.61	75.8	<10	200	0.16	0.08	0.01	<0.01	27	1.5	21	1.09	26	0.7	3.7	<0.05	<0.02	0.38	0.009	0.1	13.5	0.7	0.02	10	0.79	<0.01	<0.05	3.4	140	9.3	8.2	<0.001	0.01	1.58	3.9	0.4	<0.2	13	<0.01	<0.01	3.2	<0.01	0.13	0.45	16	<0.05	2.98	3	>500
6	RYD-02	464482	1559288	Outcrop	0.002	1.36	2.79	83.9	<10	59.9	0.13	0.06	0.02	0.01	10.85	0.3	14	2.82	7.1	1.4	7.62	0.08	0.15	0.28	0.011	0.03	8.4	0.3	0.01	5	3.24	<0.01	<0.05	1.4	90	10.5	4	<0.001	0.01	3.18	1.5	1	0.3	8.9	<0.01	<0.01	3.5	<0.01	0.09	0.8	23	<0.05	0.5	2	>500
7	RYD-03	464430	1559350	Outcrop	0.003	0.27	0.12	70.6	10	100	0.17	0.02	0.06	0.03	6.13	1.8	133	0.11	4.4	0.72	2.34	<0.05	<0.02	0.18	<0.005	<0.01	0.6	0.5	0.01	32	0.25	<0.01	<0.05	5.8	270	14.9	0.4	<0.001	<0.01	6.52	2	0.2	<0.2	47.2	<0.01	<0.01	<0.2	<0.01	0.07	0.21	12	0.89	1.59	4	>500
8	RYD-05F	463011	1559223	Outcrop	0.002	0.03	2.33	9.5	<10	560	0.30	0.02	0.01	0.01	31.2	5.6	30	0.81	7.1	2.68	8.38	0.1	0.28	0.07	0.02	0.1	17.5	0.7	0.04	86	0.17	<0.01	0.06	11.1	290	12.6	5.2	<0.001	<0.01	15.3	9.3	0.6	0.4	26.7	<0.01	<0.01	5.2	0.09	0.08	0.79	102	1.27	8.88	23	>500
9	RYD-07F	462683	1559028	Outcrop	0.002	0.03	2.62	1.5	<10	90.2	0.32	0.13	1.58	0.02	44.3	21.8	98	0.19	45.7	2.75	5.4	0.13	0.08	0.01	0.034	0.08	23.2	3.6	1.33	258	0.49	0.4	<0.05	119	1380	3.2	3	<0.001	<0.01	0.09	3.4	0.7	0.2	287	<0.01	<0.01	3.5	0.12	0.02	0.25	127	0.07	8.13	40	437
10	RMA-02	471042	1556418	Outcrop	0.001	<0.01	0.72	3.4	<10	270	0.35	0.05	0.4	0.29	21	8.8	50	1.21	26.9	1.48	2.55	0.09	0.08	0.02	0.008	0.3	13	2.3	0.52	765	0.28	0.1	<0.05	18.3	870	1.7	11.4	<0.001	<0.01	0.13	6.3	0.6	0.2	53.5	<0.01	<0.01	6.1	0.1	0.05	0.58	43	0.05	6.96	80	>500
11	RMA-05	470349	1556326	Outcrop	0.001	0.01	1.22	6.7	<10	65.4	0.9	0.03	0.76	0.11	91.1	23.8	101	1.19	40.4	2.64	3.38	0.14	0.23	0.01	0.023	0.1	52.2	7	0.34	94	0.18	0.07	<0.05	53.6	1690	2.3	5.3	0.001	2.45	0.5	16.2	0.7	0.5	137	<0.01	<0.01	19.2	0.03	0.14	1.15	72	<0.05	26.9	28	397
12	RMA-05A	470635	1556760	Outcrop	0.003	0.02	1.02	0.6	<10	120	0.21	0.09	0.67	0.02	30.6	10.9	73	1.38	23.3	2.07	3.4	0.11	0.3	0.01	0.023	0.18	16.1	3.6	0.55	130	0.7	0.16	<0.05	30	870	2.6	18.4	0.001	0.01	0.05	13.8	0.5	0.3	105	<0.01	<0.01	7.1	0.1	0.11	0.96	83	<0.05	9.51	25	191
13	RMA-08	469457	1555354	Outcrop	0.001	<0.01	1.4	1.5	<10	840	0.43	0.04	0.79	0.13	31.1	9.4	59	1.35	16.8	1.68	4.51	<0.05	0.33	0.02	0.008	0.26	15.4	2.1	0.5	185	0.29	0.1	<0.05	29.6	940	2.6	12.8	0.001	<0.01	0.05	3.6	0.3	0.2	238	<0.01	0.02	4.4	0.08	0.06	0.7	64	0.12	7.29	34	1.9
14	RMA-09	470382	1556781	Float	0.005	<0.01	2.67	2	<10	65	0.15	0.07	1.83	0.09	27.1	34	101	0.3	58.4	3.4	5.9	0.1	0.26	<0.01	0.013	0.06	11.3	3	3.51	598	0.54	<0.38	0.22	199	1150	2.2	2.1	<0.001	<0.01	0.05	3	0.7	0.3	237	<0.01	<0.05	1.8	0.09	0.02	0.16	142	0.1	7.23	47	5.1
15	RMA-13	470696	1557120	Outcrop	0.001	<0.01	2.79	1.2	<10	350	0.82	0.12	2.31	0.77	57.2	15.4	49	2.65	88.4	2.52	6.54	0.03	0.26	0.01	0.021	0.13	37	13.3	0.84	1530	0.12	0.02	<0.05	62.4	1000	3.4	13.9	0.001	<0.01	<0.05	9.2	1	0.4	170	<0.01	0.04	7.6	0.02	0.28	0.79	75	<0.05	33.1	145	2.4
16	RMA-15	470699	1557032	Float	0.001	0.11	3.02	0.3	<10	200	0.23	0.02	1.45	0.08	12	11.1	37	1.42	30.7	2.16	6.44	<0.05	0.34	0.01	0.012	0.1	5.7	4.7	0.22	333	0.52	0.38	<0.05	21.5	500	2.4	4.2	<0.001	<0.01	<0.05	3.6	0.4	0.3	154	<0.01	0.01	1.1	0.12	0.11	0.18	116	0.06	9.2	45	7.4
17	RMB-03	471056	1556275	Outcrop	0.001	0.07	1.1	0.5	<10	43.2	0.83	0.02	2.24	0.24	39.8	12.2	81	3.32	14.4	2.61	3.5	0.07	0.12	<0.01	0.027	0.06	16	3.2	0.3	574	0.4	0.12	<0.05	55.4	1660	1.2	4.7	<0.001	<0.01	<0.05	10.4	0.4	0.4	125	<0.01	0.01	4.3	0.13	0.04	0.54	103	0.05	10.35	142	2.9
18	RMB-05	470610	1555578	Outcrop	0.001	0.07	2.25	0.1	<10	200	0.53	0.06	1.01	0.03	25.2	12.8	44	6.55	15.6	1.63	5.01	0.1	<0.02	<0.01	0.005	0.24	11.9	213	1.85	302	0.16	0.1	<0.05	31	780	9.5	15.5	<0.001	<0.01	<0.05	2.7	0.4	0.2	121	<0.01	0.02	7	0.08	0.07	1.7	56	<0.05	3.84	20	2.8
19	RMB-06	470933	1555213	Float	0.001	0.08	3.91	0.2	<10	73.8	0.5	0.03	2.44	0.05	45.1	37	74	0.26	46.5	3.89	7.57	0.15	0.23	0.01	0.014	0.13	19.9	4	4.03	718	0.42	0.6	0.4	197	1480	1.3	6.5	<0.001	<0.01	<0.05	3.5	0.9	0.4	348	<0.01	0.04	3.3	0.23	0.02	0.31	135	0.08	10.05	54	8.3
20	RMB-12	471833	1555955	Float	0.005	0.07	3.11	0.9	<10	100	0.13	0.03	2.32	0.03	12.75	33.5	188	0.29	43.6	3.75	6.1	0.08	0.25	<0.01	0.013	0.05	5.4	4	2.21	1380	0.57	0.38	<0.05	90.4	770	1.3	2.2	<0.001	<0.01	<0.05	2.6	0.6	0.3	170	<0.01	0.02	0.6	0.16	0.02	0.08	169	0.05	7.96	44	6.5
21	RMF-09	469340	1556049	Outcrop	0.001	0.05	1.24	2	<10	200	0.53	0.02	0.54	0.01	59	11.7	84	1.16	12	2.21	3.65	0.08	0.55	<0.01																															

Appendix 15 Geochemical Data of Soil Samples in the Salubosogin-Yakalan Area(2)

Sample No	Duplication	E-UTM	N-UTM	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cs	Cu	Fe	Ga	Ge	HI	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Se	Sn	Sr	Ta	Tl	Ti	U	V	W	Y	Zn	Zr
YD-097	462829	1559167	0.001	0.24	7.96	3.8 <10	150	0.63 <0.01	0.2	0.02	68.5	19.7	201	0.19	37.5	0.68	25.8	0.19	0.06	0.1	0.068	0.01	19.8	2.9	0.15	338	0.62 <0.01	1	146	500	11.9	1.6 <0.001	0.03	0.07	33	2.1	0.7	30 <0.01	0.05	5.7	0.17	0.14	0.6	267	0.37	10.55	33	11.9		
YD-098	462735	1559123	0.001	0.06	7.11	1.7 <10	180	0.59 <0.01	0.09	0.01	60	54.4	178	0.26	40.7	7.21	21.7	0.17	<0.02	0.07	0.057	0.02	12.9	2.9	0.28	1310	0.37 <0.01	0.74	131	580	9.9	1.6 <0.001	0.04	<0.05	27.1	1.5	0.6	17.2 <0.01	0.04	3.1	0.16	0.1	0.42	241	0.15	7.41	45	6		
YD-099 copy	462735	1559123	0.001	0.04	6.18	1.7 <10	190	0.44 <0.01	0.07	0.02	56.3	52	172	0.22	39.3	7.5	21.6	0.16	<0.02	0.08	0.059	0.03	16.3	2.4	0.24	1140	0.36 <0.01	0.69	105	560	10.4	1.5 <0.001	0.04	<0.05	28.8	1.3	0.6	18.9 <0.01	0.05	3.6	0.15	0.1	0.45	254	0.11	9.75	40	6.4		
YD-100	462830	1559206	0.001	0.06	5.96	1.9 <10	130	0.53 <0.01	0.04	0.01	70.7	16.4	209	0.09	34.8	7.81	23.9	0.17	0.09	0.07	0.067	0.01	19.8	2.7	0.13	311	0.39 <0.01	0.86	100	470	10.4	0.6 <0.001	0.04	<0.05	35.1	1.8	0.7	12.7 <0.01	0.06	5.5	0.16	0.06	0.64	273	0.11	11.05	33	10.5		
YD-101	463437	1559099	<0.001	0.03	3.36	5.6 <10	27.9	0.3 <0.01	0.02	<0.01	50.2	15.4	24	0.21	20.5	3.29	12.2	0.08	0.09	0.06	0.014	0.01	24.8	1.9	0.14	361	0.31 <0.01	0.25	15.2	90	18.1	1	<0.001	0.02	0.11	10.8	0.7	0.5	3.7 <0.01	0.03	5.6	0.08	0.04	0.62	96	0.16	13.25	22	8.6	
YD-102	463551	1559111	<0.001	0.02	3.67	24.5 <10	8.8	0.28 <0.01	0.01	0.01	71.3	3.3	39	0.24	21.3	4.39	13.95	0.1	0.11	0.12	0.031	0.02	25.1	3.2	0.17	81	1.33 <0.01	0.3	7.9	130	11.8	1.1 <0.001	0.02	0.22	10.7	1.3	0.5	2.5 <0.01	0.02	7.6	0.02	0.04	2.57	101	0.13	14.25	14	11.2		
YD-103 copy	463551	1559111	<0.001	0.02	3.5	21.9 <10	11.1	0.22 <0.01	0.02	0.01	59.1	6.5	35	0.2	18.5	4.05	13.45	0.09	0.12	0.12	0.028	0.01	21.8	2.5	0.14	79	1.18 <0.01	0.31	7.8	110	12.1	1	<0.001	0.02	0.2	14.3	1.2	0.5	3.6 <0.01	0.03	7.3	0.02	0.03	2.23	95	0.22	12.15	12	10.7	
YD-104	463701	1559118	0.002	0.06	2.53	44 <10	16.5	0.14	0.09	0.01	0.01	13.55	7.4	30	0.7	4.2	4.22	10.95	0.06	<0.02	0.19	0.026	0.02	6.8	2.8	0.1	53	3.14 <0.01	0.45	4.2	210	8.4	1.9 <0.001	0.02	0.47	7	1.7	0.4	4.9 <0.01	0.09	4.1	0.01	0.04	0.9	92	15.05	2.92	7	4.8	
YD-105	463501	1559046	<0.001	0.06	3.71	2.5 <10	10.8	0.26 <0.01	0.02	<0.01	58.3	4.9	26	0.17	7	3.97	16.05	0.09	0.21	0.08	0.028	0.01	19.8	1.2	0.09	105	0.35 <0.01	0.64	11.7	130	16.2	0.6 <0.001	0.03	0.07	11.7	1.9	0.6	4.1 <0.01	0.06	5.6	0.09	0.03	0.55	122	0.59	9.34	16	14		
YD-106	463156	1559315	<0.001	0.18	2.17	59.9 <10	160	0.44 <0.01	0.02	0.02	18.85	3.1	16	5.31	6.9	4.26	7.72	0.08	<0.02	0.21	0.017	0.07	9.6	2.1	0.07	86	0.47 <0.01	0.93	7	220	13	15.1 <0.001	0.02	0.55	8.2	1.5	0.5	28.7 <0.01	0.06	4.8	0.04	0.23	0.68	128	0.92	4.49	15	3.4		
YD-107	463044	1559894	<0.001	0.06	2.21	63.8 <10	130	0.4 <0.01	0.01	0.01	31.8	4.2	17	3.16	7.2	3.8	9.79	0.07	<0.02	0.13	0.017	0.06	13.2	2.3	0.07	66	0.36 <0.01	0.67	6.7	180	12	8.8 <0.001	0.02	0.85	8.7	1.3	0.5	9.4 <0.01	0.04	5.6	0.05	0.19	0.64	114	1.8	4.37	18	3.8		
YD-108	462935	1559893	0.003	0.07	2.35	73.6 <10	59.7	0.32 <0.01	0.02	<0.01	11.95	11.6	16	3.83	16.5	4.64	10.75	0.06	<0.02	0.42	0.024	0.04	6.2	2.6	0.05	60	0.82 <0.01	1.05	3.6	180	12	6.7 <0.001	0.02	0.68	9	1.5	0.6	11.3 <0.01	0.03	5.5	0.03	0.19	0.69	114	8.13	1.53	15	5.9		
YD-109	462846	1559889	0.002	0.07	2.1	68.4 <10	180	0.2 <0.01	0.01	<0.01	14.65	1.8	10	3.5	8.7	2.99	9.2	0.05	<0.02	0.16	0.019	0.05	7.8	2.9	0.05	25	0.43 <0.01	0.5	1.5	170	12.6	6.6 <0.001	0.02	2.04	5.5	1.5	0.5	15.9 <0.01	0.04	6.4	0.01	0.13	0.56	88	1.42	1.58	6	6.4		
YD-110 copy	462846	1559889	0.002	0.06	2.24	74.4 <10	180	0.26 <0.01	0.02	0.01	15.35	3.2	10	2.72	9.6	3.05	9.31	0.05	<0.02	0.13	0.018	0.05	8.1	2.8	0.05	23	0.47 <0.01	0.47	1.8	190	13.4	5.7 <0.001	0.02	2.11	5.6	1.4	0.5	15.9 <0.01	0.03	7	0.01	0.1	0.58	86	2.39	1.67	6	7.3		
YE-001	463118	1559140	0.002	0.03	4.17	2.6 <10	270	0.83 <0.01	0.27	0.02	43.8	21.7	56	0.85	23.7	3.9	11.6	0.09	<0.02	0.04	0.021	0.04	17	6.4	0.48	810	0.28 <0.01	0.48	36	300	10.1	3.3 <0.001	0.02	0.05	11.6	0.6	0.4	105 <0.01	0.02	4.3	0.07	0.1	0.93	106	0.1	9.12	43	3.5		
YE-002	463339	1558933	0.002	0.03	4.56	12.1 <10	60	0.24 <0.01	0.01	<0.01	22.7	5.9	72	0.39	15.2	4.49	14.55	0.07	<0.02	0.5	0.027	0.01	11.1	3.3	0.25	96	0.26 <0.01	0.44	32.4	140	9	1.3 <0.001	0.02	0.29	13.8	1.3	0.6	11 <0.01	0.03	4.8	0.07	0.08	0.58	133	<0.05	5.91	23	8.3		
YE-003	463592	1558877	0.002	0.03	5.23	2 <10	31.5	0.29	0.01	0.01	69.3	5.8	50	0.13	24.4	4.03	15.55	0.11	0.35	0.05	0.028	0.01	29.1	4.5	0.2	110	0.09 <0.01	0.17	20.3	90	12.7	0.8 <0.001	0.02	0.05	18.2	1	0.5	5.3 <0.01	0.04	9	0.07	0.05	0.6	112	<0.05	15.55	22	19		
YE-004	463761	1558857	0.001	0.02	4.37	3 <10	150	0.45	0.1	0.06	0.01	46.5	13	29	0.66	17.7	2.67	11.15	0.08	<0.02	0.03	0.021	0.05	21.4	2.6	0.29	295	0.09	0.01	11	25.7	100	7	5.6 <0.001	0.01	<0.05	12.1	0.5	0.4	31.7 <0.01	0.01	8.2	0.06	0.05	0.79	87	<0.05	13.5	40	6.6
YE-005	463940	1558860	0.003	0.17	5.08	2.3 <10	89.8	0.32 <0.01	0.02	0.01	52.4	11.2	65	0.13	20.7	4.12	14.4	0.1	0.27	0.11	0.025	0.01	22.9	1.9	0.19	245	0.27 <0.01	0.46	35	120	12.9	0.7 <0.001	0.03	0.05	17.1	0.9	0.5	20 <0.01	0.02	9.4	0.12	0.11	1.04	105	0.15	13	31	15.9		
YE-006	464141	1558866	0.002	0.04	4.21	0.9 <10	100	0.38 <0.01	0.03	0.01	55.9	15.1	36	1.01	17.7	2.64	10.35	0.08	0.1	0.04	0.013	0.08	22.5	2.7	0.33	380	0.12 <0.01	0.07	22.2	80	8.6	8.8 <0.001	0.01	<0.05	11.3	0.6	0.4	15.8 <0.01	0.03	10.4	0.07	0.1	0.78	64	<0.05	13.9	37	10.6		
YE-007	464293	1558869	0.002	0.03	3.81	0.8 <10	57.2	0.26 <0.02	0.02	0.01	51.2	5.3	35	0.13	20.6	4.12	12.5	0.09	0.15	0.02	0.027	0.02	22.9	1.5	0.24	129	0.14 <0.01	0.3	15.7	120	12	1	<0.001	0.02	<0.05	16.6	0.8	0.6	21.2 <0.01	0.02	12.7	0.08	0.06	1.13	113	<0.05	14.2	20	13	
YE-008	464456	1558879	0.002	0.02	4.18	0.4 <10	59.9	0.39 <0.01	0.02	<0.01	54.7	12.7	48	0.24	22.4	4.14	12.35	0.1	0.45	0.03	0.027	0.01	21.4	2.1	0.21	357	0.08 <0.01	0.18	31	110	11.6	0.7 <0.001	0.02	<0.05	23.4	0.8	0.6	17.1 <0.01	0.03	11.7	0.12	0.08	0.97	102	<0.05	14.2	30	22.4		
YE-009	464638	1558877	0.002	0.02	5.42	0.3 <10	130	0.61 <0.01	0.09	<0.01	84.5	27.6	48	0.23	19.3	3.45	14.1	0.12	0.22	0.02	0.02	0.02	40.1	3.1	0.34	458	0.08 <0.01	0.16	41.1	120	11.3	1.3 <0.001	0.02	<0.05	17.1	0.7	0.													

Appendix 16 Geochemical Data of Soil Samples in the Magasawan-Bato Area(1)

Sample Duplication No.	E-UTM	N-UTM	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Se	Sn	Sr	Ta	Ti	Tl	U	V	W	Y	Zn	Zr				
			ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm					
MF-001	470923	1556485	0.193	0.38	4.86	872	<10	37.3	0.12	0.66	0.02	0.03	26.5	13.8	38	0.29	29.2	7.19	18.15	5.32	0.52	1.76	0.277	0.01	7.1	1.9	0.03	459	4.97	<0.01	0.55	13.5	150	954	0.5	<0.001	0.06	1.27	10.4	13.5	1.3	16.6	<0.01	9.3	5.1	0.1	1.14	1	128	1.3	1.62	25	25.2
MF-002	470945	1556532	0.002	0.02	5.8	4.9	<10	120	0.22	0.16	0.02	0.02	34.8	6.4	49	0.57	<0.2	5.51	<0.05	0.11	0.48	0.16	0.049	0.01	7	2	0.07	119	0.78	<0.01	0.57	27.8	220	14.1	0.9	<0.001	0.03	0.07	16.8	1.4	0.8	9.8	<0.01	0.06	6.7	0.12	0.14	1.07	175	<0.05	3.68	27	21.8
MF-003	471047	1556558	0.002	0.01	4.27	3.2	<10	30.7	0.17	0.08	0.01	<0.01	21.8	5.6	102	0.39	29.9	4.49	15.9	0.09	0.33	0.06	0.039	0.01	9	1.4	0.1	82	0.27	<0.01	0.5	29.2	170	9.8	0.6	<0.001	0.03	0.06	16	1	0.5	8.3	<0.01	0.04	5.3	0.11	0.07	0.63	165	<0.05	4.65	17	12.2
MF-004	470829	1556775	<0.001	<0.01	4.18	1.7	<10	25	0.12	0.06	<0.01	0.01	79.4	7.6	76	0.1	25.4	4.09	15.65	0.11	0.56	0.04	0.043	<0.01	23.9	1.6	0.1	245	0.27	<0.01	0.22	35.2	80	16.8	0.2	<0.001	0.03	0.05	18.6	1.3	0.4	2.4	<0.01	0.04	8.6	0.13	0.05	0.73	115	<0.05	9.42	16	18.2
MF-005	470627	1556826	<0.001	<0.01	5.14	1.1	<10	280	0.61	0.1	0.03	0.01	62.4	24.9	65	1.68	20.2	2.88	13.75	0.09	0.14	0.02	0.03	0.03	<0.2	5.5	0.3	724	0.16	<0.01	<0.05	57	270	7.9	1.9	<0.001	0.01	0.06	16	0.8	0.3	<0.2	<0.01	0.02	8.2	0.08	0.09	0.83	88	<0.05	13.55	32	5.1
MF-006	470412	1556845	0.001	<0.01	4.21	1.3	<10	89	0.18	0.2	0.06	0.02	39.3	9.3	74	0.33	19.7	3.19	13.7	0.07	0.17	0.02	0.033	0.01	15.9	2.1	0.14	164	0.25	<0.01	0.27	43.8	200	9.3	1.3	<0.001	0.02	0.06	16.2	0.9	0.4	18.4	<0.01	0.03	6	0.09	0.06	0.7	88	<0.05	8.19	20	6.3
MF-007	470353	1556620	0.001	0.04	4.35	2.7	<10	89.2	0.2	0.08	0.03	0.01	53	16.4	112	0.29	20.5	4.05	14.8	0.11	0.16	0.06	0.04	0.01	21.9	2.3	0.11	422	0.34	<0.01	0.97	51.9	320	8.1	0.7	0.001	0.04	0.06	17.1	1.5	0.4	13.7	<0.01	0.03	4.6	0.13	0.09	0.73	132	0.05	9.76	25	6.6
MF-008	470371	1556661	0.001	0.03	3.41	2.3	<10	36.5	0.34	0.07	0.01	0.01	18.65	8.4	53	0.23	16.6	4.32	13.8	0.08	0.33	0.04	0.036	<0.01	8.3	1.2	0.07	149	0.28	<0.01	0.67	15.2	160	7	0.4	<0.001	0.03	0.07	12	1.4	0.5	7.9	<0.01	0.04	6.1	0.08	0.04	0.8	139	<0.05	7.71	15	12.3
MF-009	470262	1556803	0.001	0.05	8.11	2.1	<10	150	0.44	0.14	0.08	0.04	35.6	12.5	13	0.35	17.1	2.71	18.1	0.09	0.31	0.08	0.036	0.03	14.4	8.2	0.22	532	0.88	0.01	1.94	10.7	370	10.4	1.5	<0.001	0.04	0.06	7.7	0.8	0.4	<0.2	<0.01	0.04	2.1	0.15	0.06	1.02	91	<0.05	9.18	40	12.7
MF-010	470219	1556782	0.001	0.08	7.75	1.9	<10	350	0.31	0.12	0.08	0.05	35.5	15.6	13	0.61	25.5	3.92	19.85	0.12	0.32	0.12	0.04	0.06	12.2	7.3	0.21	1225	0.89	0.01	1.49	10.4	480	9.3	3.6	<0.001	0.04	0.06	11.7	1.2	0.5	<0.2	<0.01	0.05	1.7	0.23	0.1	0.95	153	<0.06	12.65	64	12.6
MF-011	470557	1556598	0.001	0.08	6.84	1.4	<10	40.1	0.29	0.09	0.05	0.06	35.4	8	9	0.2	15.9	2.11	14.6	0.07	0.07	0.14	0.026	0.02	14.6	3.8	0.13	429	1.01	0.01	1.58	6.3	730	8	0.9	<0.001	0.07	0.08	3.6	1.4	0.3	10.1	<0.01	0.03	0.3	0.11	0.04	0.79	74	0.06	9.42	24	3.2
MF-012	470555	1556555	0.001	0.06	9.29	3.2	<10	130	0.38	0.21	0.03	0.04	48.4	19	17	0.95	<0.2	4.9	<0.05	0.12	0.53	0.18	0.063	0.02	11.6	6.9	0.2	837	1.44	0.01	2.33	13.8	360	13.8	2	<0.001	0.05	0.1	2.1	1.4	0.8	13.1	<0.01	0.07	3.3	0.3	0.11	1.42	177	0.09	12.8	47	2.5
MF-013	470717	1555727	0.001	0.01	5.59	1.2	<10	240	0.12	0.1	0.04	0.01	37	17.7	24	0.32	28.4	5.1	20	0.09	0.28	0.1	0.054	0.02	5.6	2	0.08	655	0.58	0.01	0.91	14.3	310	10.9	1.7	<0.001	0.03	0.07	18	1.1	0.7	<0.2	<0.01	0.04	2.7	0.21	0.07	0.73	195	<0.05	3.74	45	11.4
MF-014	470630	1555678	0.001	<0.01	4.39	1.9	<10	100	0.22	0.13	0.02	<0.01	17	5.4	36	0.31	20.8	5.41	19.2	0.08	0.37	0.18	0.053	0.01	5	1.5	0.05	158	0.65	<0.01	0.51	12.5	200	11.1	0.6	<0.001	0.03	0.06	12.9	1	0.7	9	<0.01	0.02	4.5	0.13	0.05	0.87	188	<0.05	2.49	22	15.3
MF-015	470502	1555818	0.001	<0.01	4.31	0.9	<10	100	0.2	0.11	0.02	0.01	48.2	5.3	21	0.21	20.4	3.8	14.05	0.07	0.36	0.04	0.032	0.01	<0.2	1.1	0.19	107	0.26	0.01	0.29	11	170	13.3	2	<0.001	0.02	<0.05	9.9	0.9	0.5	<0.2	<0.01	0.03	9.2	0.06	0.06	1.08	116	<0.05	12.7	23	13.6
MF-016	470309	1555531	0.001	<0.01	4.63	0.9	<10	220	0.24	0.09	0.05	0.01	27.8	8.2	16	0.27	21.8	4.61	15.55	0.05	0.49	0.06	0.048	0.02	7.5	1.3	0.05	153	0.29	0.01	0.17	8.7	200	11	1.3	<0.001	0.02	<0.05	14.3	0.8	0.7	15.5	<0.01	0.04	4.1	0.11	0.05	0.83	108	<0.05	5.86	37	17.2
MF-017	470163	1555415	0.001	<0.01	4.18	0.5	<10	74.8	0.22	0.1	0.03	0.01	36.3	4.8	27	0.21	23.3	4.45	13.9	0.06	0.4	0.07	0.04	0.01	13.7	1	0.11	130	0.24	<0.01	0.33	12.3	220	11.1	0.8	<0.001	0.03	<0.05	12.6	0.9	0.5	<0.2	<0.01	0.02	7.3	0.09	0.04	1.17	151	<0.05	8.34	22	14.8
MF-018	470072	1555327	0.001	<0.01	4.64	1.1	<10	130	0.15	0.09	0.03	<0.01	36.1	9	32	0.17	21.6	4.93	16.25	0.07	0.48	0.07	0.047	0.01	9.4	1	0.05	217	0.25	<0.01	0.19	16.1	180	11.5	0.5	<0.001	0.03	<0.05	16.7	1	0.7	11.3	<0.01	0.02	3.8	0.12	0.05	0.74	168	<0.05	8.26	32	18.5
MF-019	469943	1555246	0.002	0.02	4.03	0.8	<10	190	0.48	0.11	0.07	0.03	42.7	18.5	40	1.15	23	3.31	11.9	0.08	0.1	0.06	0.028	0.04	14.2	5.3	0.37	930	0.24	0.01	0.49	39.3	350	10.1	3.2	<0.001	0.03	0.06	9.1	1	0.4	<0.2	<0.01	0.03	2.5	0.07	0.11	0.61	98	<0.05	11.65	39	4.1
MF-020	469641	1555217	0.001	0.03	4.06	1.1	<10	210	0.46	0.08	0.19	0.03	30.9	13.5	20	0.45	19.9	2.99	11.85	0.07	0.11	0.04	0.027	0.07	12.9	2.7	0.24	558	0.42	0.01	0.68	12.9	310	10.1	5.5	<0.001	0.03	0.05	6.8	1.1	0.4	<0.2	<0.01	0.04	2.5	0.09	0.1	0.97	102	<0.05	5.9	33	4.5
MF-021	469653	1555298	0.001	0.02	3.57	1	<10	170	0.5	0.08	0.1	0.01	45.4	11.9	36	0.44	24	2.57	10.25	0.07	0.09	0.04	0.023	0.06	19.6	3.3	0.29	270	0.22	0.01	0.37	24.2	260	9.2	3.9	<0.001	0.02	<0.05	7.2	0.6	0.3	<0.2	<0.01	0.03	3	0.06	0.08	1.17	84	<0.05	9.64	33	4
MF-022	469267	1555265	0.001	0.03	7.17	1.9	<10	150	0.51																																												

Appendix 16 Geochemical Data of Soil Samples in the Magasawan-Bato Area(2)

Sample No.	Duplication	E-UTM	N-UTM	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Cu ppm	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Nb ppm	Ni ppm	P ppm	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Tc ppm	Th ppm	Ti ppm	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
MF-097		472265	1556607	0.001	0.01	3.98	1.7 <10	44.7	0.26	0.17	0.02	0.01	6.05	6.3	263	10.2	40.2	8.1	17.55	0.12	0.46	0.09	0.065	<0.01	1.4	0.7	0.04	104	0.39	<0.01	0.57	30	310	8.2	0.3	<0.001	0.02	<0.05	39	2.1	0.7	7.9	<0.01	0.05	2.7	0.2	0.05	0.54	321	<0.05	1.32	16	22	
MF-098		472238	1556738	0.001	0.04	7.43	2.9 <10	180	0.16	0.15	0.06	0.02	70.7	10.4	74	0.47	21.9	4.46	25	0.1	0.31	0.17	0.056	0.01	14.4	3.9	0.19	268	0.09	0.01	2.72	38.2	270	13.7	1.1	<0.001	0.03	<0.05	18.8	2.6	0.6	27.7	<0.01	0.06	4.3	0.17	0.06	1.04	153	<0.05	6.95	26	17.6	
MF-099		472051	1556821	0.001	0.01	4.85	3.1 <10	160	0.29	0.1	0.06	0.01	30.7	10.2	209	0.27	27.7	6.89	17.8	0.12	0.36	0.13	0.061	0.02	10.2	1.7	0.09	297	0.06	0.01	0.83	30	220	10.7	1.3	<0.001	0.02	<0.05	21	2	0.6	18.2	<0.01	0.06	6.3	0.12	0.06	1.05	232	<0.05	5.24	22	18.2	
MF-100		472312	1556871	0.001	0.02	3	0.6 <10	89.8	0.35	0.08	0.02	0.02	52.8	8.4	51	0.28	22	2.92	9.78	0.11	0.19	0.07	0.023	0.02	18	1.7	0.2	116	0.13	0.01	0.66	16.7	200	9.2	3.9	<0.001	0.02	<0.05	11.1	1.1	0.4	22.2	<0.01	0.02	6.3	0.05	0.07	1.61	102	<0.05	37.2	27	9	
MF-101		471934	1556404	0.001	0.02	5.54	4.7 <10	69.9	0.09	0.18	0.01	0.01	26.2	4.7	45	0.46	17.9	5.71	21.6	0.1	0.65	0.13	0.065	0.01	3.9	2.1	0.04	100	1.04	<0.01	1.54	16.3	160	12.2	0.6	<0.001	0.03	0.05	18	2.4	0.9	5.8	<0.01	0.06	6.4	0.17	0.06	1.02	196	<0.05	1.87	16	30.3	
MF-102		471631	1556556	0.001	0.02	4.74	2.5 <10	80.5	0.16	0.14	0.04	0.02	10.1	4.7	234	0.29	32.2	7.09	20.6	0.1	0.51	0.12	0.074	<0.01	3	1.5	0.06	145	0.7	<0.01	0.63	30	190	11.5	0.5	<0.001	0.02	<0.05	28	2.5	0.8	29.4	<0.01	0.06	4.6	0.14	0.07	0.86	283	<0.05	1.94	15	23.6	
MF-103		471771	1556928	0.001	0.01	4.56	2.2 <10	61.3	0.16	0.13	0.08	0.01	15.55	7.6	119	0.37	27.8	6.1	18.65	0.12	0.59	0.12	0.064	0.02	4.7	1.6	0.06	208	0.7	0.01	0.81	17.5	150	11.2	1.8	<0.001	0.02	<0.05	20	1.5	0.8	25.2	<0.01	0.04	5.4	0.16	0.07	0.85	236	<0.05	2.53	22	27.1	
MF-104		471922	1556979	0.001	0.01	6.48	2.2 <10	62.3	0.15	0.11	0.02	0.01	48.7	21.9	62	0.29	30	6.8	25	0.13	0.46	0.13	0.072	0.01	2.8	2.2	0.07	639	0.91	<0.01	1.16	14.5	220	13.2	1.2	<0.001	0.03	<0.05	28	1.8	1	5.0	<0.01	0.05	4.4	0.27	0.07	0.75	253	<0.05	2.05	31	23.5	
MF-105 copy		471232	1556620	0.001	0.02	6.03	1.9 <10	81.5	0.16	0.09	0.01	0.01	40.9	11.3	106	0.13	26	6.48	19.75	0.12	0.7	0.09	0.069	<0.01	3.9	2.1	0.08	271	0.85	<0.01	0.95	19	170	10.9	0.3	<0.001	0.02	<0.05	29	2.1	0.9	6.9	<0.01	0.04	4	0.25	0.06	0.65	245	<0.05	2.54	28	30.6	
MF-106 copy		471758	1556760	0.001	0.01	4.18	2.9 <10	50.9	0.13	0.12	0.01	0.01	14.3	3.3	133	0.19	25.7	6.5	19.7	0.11	0.53	0.13	0.069	<0.01	4	1.2	0.04	110	0.76	<0.01	0.74	19	180	13.7	0.4	<0.001	0.02	<0.05	26	2	0.8	5.3	<0.01	0.01	5.1	0.11	0.05	0.75	245	<0.05	2.19	14	24	
MG-001		470709	1556561	0.001	0.01	4.7	1.1 <10	200	0.36	0.04	0.04	0.01	46.2	33.7	295	0.22	42.1	7.56	17.5	0.14	0.25	0.06	0.074	0.01	8.9	1.5	0.08	627	0.29	0.01	2.38	68.5	350	7.3	0.8	<0.001	0.02	<0.05	51.6	1.7	0.7	8.8	<0.01	0.05	2.1	0.22	0.08	0.53	319	<0.05	1.15	31	13.6	
MG-002		470712	1556522	0.001	0.04	4.12	3 <10	100	0.13	0.13	0.02	0.01	35.3	6.8	59	0.38	19	4.19	17.2	0.1	0.24	0.13	0.061	0.01	9	1.7	0.05	323	0.7	0.01	2.03	23	300	13.2	0.7	<0.001	0.03	<0.05	16.1	1.8	0.6	19	<0.01	0.05	3.5	0.14	0.07	0.94	135	<0.05	3.09	16	13.3	
MG-003		470515	1556474	0.001	0.02	4.35	2.9 <10	140	0.19	0.09	0.02	0.02	31.9	9.7	54	0.57	21	4.26	16.05	0.1	0.2	0.13	0.058	0.02	8.2	1.8	0.07	430	0.49	<0.01	1.89	28.7	270	12	0.9	<0.001	0.03	<0.05	17.4	1.5	0.5	19.1	<0.01	0.04	3.4	0.15	0.08	0.92	146	<0.05	4.01	21	11.8	
MG-004		470302	1556447	0.001	0.01	6.17	1.4 <10	490	0.3	0.1	0.04	<0.01	43.7	12.9	12	0.5	20	4.3	25	0.12	0.32	0.08	0.049	0.11	11	4.3	0.1	348	0.63	0.01	1.1	10.2	180	11.5	5.1	<0.001	0.02	<0.05	18.2	1	0.7	27.8	<0.01	0.03	3.3	0.16	0.1	1.46	<0.05	9.27	31	18		
MG-005		470111	1556421	0.001	0.05	8.11	1.4 <10	300	0.52	0.09	0.05	0.04	50.7	16.8	20	0.39	22.8	3.88	19.8	0.11	0.24	0.15	0.036	0.02	19.5	5.8	1.4	867	0.99	0.01	2.62	12.2	470	10.2	1.2	<0.001	0.04	<0.05	12.1	1.4	0.6	41.8	<0.01	0.04	1.8	0.19	0.08	1.02	148	<0.05	14.9	37	13.7	
MG-006		459867	1556392	0.001	0.02	7.15	1.6 <10	540	0.3	0.1	0.04	0.01	46.6	13.2	13	0.51	24.7	4.48	25	0.11	0.44	0.08	0.047	0.09	12.6	4.7	0.09	296	0.61	0.01	0.79	11.2	180	12.1	4.1	<0.001	0.02	<0.05	19	1.3	0.7	28.6	<0.01	0.05	4	0.17	0.11	1.09	152	<0.05	10.65	33	22.3	
MG-007		469662	1556446	0.002	0.08	2.76	26 <10	68.7	0.26	0.09	0.02	0.06	19.4	5.8	19	0.78	15.2	2.31	8.09	0.07	<0.02	0.08	0.453	0.01	9.1	2	0.08	224	1.09	0.01	0.54	12.1	260	10.9	0.9	<0.001	0.02	0.06	9.3	1.2	0.4	38.1	<0.01	0.03	1.5	0.03	0.18	1.06	76	<0.05	7.41	51	3.7	
MG-008		469568	1556555	0.002	0.15	3.42	6.4 <10	120	0.41	0.1	0.35	0.08	43.1	13.9	33	1.4	15.9	2.41	9.7	0.07	0.02	0.09	0.333	0.04	15.3	6.8	2.08	991	0.3	0.01	0.63	26.4	310	21.3	3	<0.001	0.02	<0.05	6.5	1.1	0.3	93.9	<0.01	0.05	1.8	0.04	0.21	0.63	76	<0.05	10.7	85	3.1	
MG-009		470844	1556474	0.002	0.15	4.99	8.4 <10	120	0.33	0.13	0.04	0.02	17.65	8.4	37	0.76	18.6	4.32	16.25	0.1	0.13	0.13	0.049	0.02	6.7	3.2	0.15	253	0.63	0.01	1.26	19.5	270	17.2	1.5	<0.001	0.03	0.08	12.4	1.8	0.6	11.1	<0.01	0.06	3	0.12	0.16	0.85	143	<0.05	4.1	52	10.1	
MG-010		470885	1556042	0.013	0.06	5.85	<0.1 <10	22.3	0.12	0.57	0.01	0.02	15.85	2.9	20	0.62	20	4.45	1.7	0.12	0.16	0.54	0.282	0.01	7.7	1.9	0.03	96	2.64	<0.01	2.25	5.3	210	13.3	0.7	<0.001	0.04	0.23	10.4	4.8	0.8	12.8	<0.01	0.62	2.4	0.15	0.15	0.97	124	<0.05	1.94	15	14.2	
MG-011		471061	1556181	0.002	0.22	4.44	<0.1 <10	12.5	0.09	0.25	0.01	0.02	8.73	2.3	23	0.16	15.1	4.69	15.85	0.1	0.32	0.32	0.368	0.01	4.7	1.9	0.03	57	3.76	<0.01	1.67	3.3	140	14.3	0.3	<0.001	0.04	0.21	6.4	7.7	0.7	17.9	<0.01	0.18	2.8	0.11	0.08	0.68	116	<0.05	1.51	12	21	
MG-012		471064	1556005	0.003	0.07	4.09	<0.1 <10	110	0.08	0.24	0.01	0.01	8.99	2	16	0.37	17.5	3.98	15.4	0.09	0.34	0.2	0.262	0.01	6.5	1.8	0.02	55	2.33	<0.01	1.01	5.1	160	15.3	0.4	<0.001	0.03	0.08	8.7	2.4	0.7	27.												

Appendix 16 Geochemical Data of Soil Samples in the Magasawan-Bato Area(3)

Sample No.	Duplication	E-UTM	N-UTM	Au ppm	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Bc ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe ppm	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Nb ppm	Ni ppm	P ppm	Pb ppm	Rb ppm	Re ppm	S ppm	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
MG-087	471795	1555621	0.001	0.1	3.58	9 <10	240	0.95 <0.01	0.06	0.11	57.4	15.6	22	0.74	17.2	2.97	10.7	0.16 <0.02	0.09	0.037	0.05	23.1	5.9	0.23	979	0.93	0.01	0.63	15.2	300	45.5	3.4 <0.001	0.03	0.26	6	1.7	0.3	20 <0.01	0.01	0.7	0.08	0.29	1.11	115	0.08	21	50	0.7						
MG-088	471825	1555508	0.006	0.74	1.41	28.7 <10	130	0.67 <0.01	0.24	0.15	14.6	12.8	20	1.51	18.6	2.5	6.17	0.12 <0.02	0.28	0.147	0.05	6.2	1.6	0.18	851	0.99 <0.01	0.27	8.1	220	87.3	4.2 <0.001	0.02	0.24	3	2.4	0.6	61 <0.01	0.37	0.6	0.02	0.38	0.75	70	0.11	4.45	76	1							
MG-089	472059	1555456	0.001	0.12	6.44	2.6 <10	62.4	0.31 <0.01	0.05	0.06	33.2	8.3	8	0.26	16.9	2.05	14.65	0.11 <0.02	0.25	0.018	0.01	12.9	3	0.13	600	1.17	0.01	2.12	5.8	480	10.4	0.7 <0.001	0.09	0.07	4.2	2.6	0.4	11.5 <0.01	0.05 <0.2	0.1	0.13	0.95	76	<0.05	9.80	20	4							
MG-090	472176	1555449	<0.001	0.07	6.71	1.9 <10	32.7	0.57 <0.01	0.06	0.05	33.8	7.1	7	0.19	17.2	1.58	14.6	0.1 <0.02	0.13	0.008	0.01	12.8	4.4	0.16	461	0.97	0.01	2.11	5.7	670	8	0.8 <0.001	0.07 <0.05	6	1	0.4	15.6 <0.01	<0.01 <0.2	0.09	0.09	0.87	57	<0.05	7.48	25	3.8								
MG-091	472325	1555442	<0.001	0.09	4.97	1.9 <10	72	0.85 <0.01	0.1	0.2	31.6	7.6	8	0.41	15	1.87	10.65	0.12 <0.02	0.1	0.009	0.02	22.7	4.1	0.15	693	0.91	0.01	1.29	5.5	800	7.3	1.2 <0.001	0.06	0.05	3.2	1.4	0.3	15 <0.01	0.01 <0.2	0.08	0.32	0.87	69	<0.05	14.95	38	2.2							
MG-092	472470	1555322	<0.001	0.04	6.03	3 <10	140	0.62 <0.01	0.08	0.13	39.1	10.6	15	0.47	15.8	2.48	13.75	0.11 <0.02	0.11	0.017	0.02	13.9	7.5	0.25	708	0.78	0.01	1.16	11	430	10.4	1.7 <0.001	0.04	0.06	4.4	1.1	0.3	18.5 <0.01	0.02	0.2	0.08	0.14	0.87	87	<0.05	10	38	1.7						
MG-093	472617	1555182	0.001	0.07	5.16	3 <10	82.2	0.52 <0.01	0.07	0.08	35.9	11	14	0.33	16.7	2.46	12.3	0.13 <0.02	0.15	0.02	0.02	15.4	5.8	0.21	649	0.88	0.01	1.1	10.1	650	11.3	1.4 <0.001	0.05	0.07	3.1	2	0.4	15 <0.01	0.03 <0.2	0.08	0.13	0.75	93	<0.05	11.05	38	1.8							
MG-094	472311	1555614	0.001	0.05	4.66	3.4 <10	140	0.59 <0.01	0.06	0.06	34.7	10.4	14	0.51	14.6	2.45	11.05	0.13 <0.02	0.1	0.019	0.02	13.5	6	0.23	678	0.75	0.01	0.91	10.8	360	10.7	1.6 <0.001	0.04	0.07	4.6	1	0.3	20 <0.01	<0.01 <0.2	0.08	0.14	0.76	86	<0.05	10.35	38	1.4							
MG-095	472454	1555710	0.001	0.05	5.5	4 <10	220	0.49 <0.01	0.02	0.04	37.8	12.2	15	0.76	17.1	2.6	13.3	0.11 <0.02	0.07	0.026	0.03	11.2	7.1	0.26	702	0.83	0.01	0.91	13.2	360	12.2	2 <0.001	0.05	0.07	5	1.4	0.3	16.2 <0.01	0.03	0.4	0.07	0.17	0.94	82	<0.05	9.42	44	2						
MG-096	472296	1555619	0.001	0.05	3.64	3.8 <10	210	0.77 <0.01	0.05	0.07	37.4	11.9	15	0.65	18.1	2.45	9.73	0.14 <0.02	0.07	0.018	0.03	15.5	6.4	0.26	704	0.59	0.01	0.57	13	420	10.4	2.4 <0.001	0.03	0.08	3.7	1.5	0.3	20 <0.01	0.02 <0.2	0.07	0.15	0.74	91	<0.05	12.35	41	1.1							
MG-097	472245	1555935	0.001	0.03	3.74	25.1 <10	72.7	0.2 <0.01	0.01	0.01	21.9	2.6	61	0.53	11.6	3.98	18.2	0.15	0.05	0.14	0.063	0.01	3.7	1.5	0.05	63	1.2 <0.01	0.68	15.9	100	15.6	0.5 <0.001	0.04	0.13	13.5	1.8	0.5	5.2 <0.01	0.07	5.6	0.08	0.13	0.84	131	0.05	1.8	23	12.1						
MG-098	472205	1556044	<0.001	0.04	1.54	197 <10	52	0.48	0.11	0.02	80.1	5.8	36	1.25	36.1	2.39	7.03	0.15	0.13	0.04	0.029	0.03	31.2	1.8	0.1	247	0.5 <0.01	0.38	9.9	150	36.8	2.8 <0.001	0.02	0.44	9.7	1.2	0.2	7.7 <0.01	0.05	7.4	0.02	0.32	0.77	70	0.08	17.8	24	1.3						
MG-099	472568	1555985	0.001	0.05	2.54	60.4 <10	100	0.53	0.04	0.03	65.1	14.6	42	1.04	17.8	2.71	11.75	0.14	0.09	0.07	0.037	0.02	16.2	2.1	0.07	592	0.72 <0.01	0.56	18	360	17.5	2.3 <0.001	0.02	0.13	13.4	1.1	0.3	10.8 <0.01	0.03	4	0.04	0.4	0.9	78	0.08	12.5	24	1.2						
MG-100	472596	1555952	<0.001	0.04	2.76	55.2 <10	110	0.19	0.07	0.01	57.3	6.3	44	0.31	13	4.08	15.15	0.17	0.18	0.1	0.048	<0.01	8.9	0.9	0.02	228	1.25 <0.01	0.77	13.6	140	12	0.4 <0.001	0.04	0.13	20.8	1.8	0.5	7 <0.01	0.07	5.4	0.08	0.39	0.72	138	0.07	4.48	17	6.2						
MG-101	472325	1556146	0.001	0.02	3.04	14.5 <10	100	0.32	0.02	0.02	59.1	7.4	56	0.49	14.6	3.26	14.2	0.15	0.09	0.06	0.048	0.01	13.4	1.3	0.04	172	0.61 <0.01	0.53	21.6	220	16.3	0.6 <0.001	0.03	0.12	18.4	1.1	0.3	8.8 <0.01	0.05	4.7	0.05	0.19	0.79	101	0.06	7.06	13	2.7						
MG-102	472430	1556240	0.001	0.02	4.2	3.9 <10	140	0.17	0.08	0.01	0.02	21.2	6.6	33	0.68	10.7	4.35	0.16	0.18	0.12	0.048	0.01	2.3	1.1	0.03	123	1.01 <0.01	0.95	14.4	230	8.9	0.9 <0.001	0.04	0.11	16.5	1.8	0.7	7.4 <0.01	0.06	3.4	0.1	0.16	0.71	166	0.06	1.79	18	5.5						
MG-103	472518	1556369	0.001	0.02	2.67	7.8 <10	59.9	0.2	0.05	0.01	0.01	19.65	2.7	108	0.19	15.6	4.12	14.3	0.17	0.18	0.07	0.053	<0.01	3	0.7	0.02	105	0.95 <0.01	0.72	16.4	170	8.9	0.3 <0.001	0.03	0.12	20.5	1.7	0.4	5.1 <0.01	0.07	5.2	0.07	0.11	0.71	158	0.05	1.76	10	7					
MG-104	472644	1556471	0.001	0.02	3.84	2.9 <10	82	0.19	0.05	0.01	69.9	11	78	0.19	20	4.89	15.1	0.2	0.35	0.1	0.051	<0.01	10.4	1.3	0.05	230	1.25 <0.01	0.76	19	120	11.1	0.3 <0.001	0.03	0.13	29.3	1.5	0.6	7.4 <0.01	0.06	4.9	0.15	0.11	0.62	198	0.08	6.92	21	12.5						
MG-105	472701	1556587	0.001	0.01	2.37	1.6 <10	49.3	0.12	0.05	0.01	0.01	12.4	2.7	80	0.16	15.4	3.94	11.25	0.14	0.21	0.1	0.035	0.01	4.4	0.5	0.04	71	0.51 <0.01	0.45	10.9	100	7.4	0.4 <0.001	0.03	0.07	14.1	1.6	0.4	5.1 <0.01	0.06	4.2	0.07	0.08	0.65	166	<0.05	4.99	7	7.8					
MG-106	472712	1556726	0.001	0.02	3.73	2.1 <10	180	0.11	0.1	0.01	0.01	26.6	4.7	30	0.31	14.6	4.46	16.45	0.16	0.44	0.09	0.054	<0.01	2	0.9	0.03	76	0.83 <0.01	0.75	9.3	120	10.4	0.4 <0.001	0.03	0.11	19.1	1.5	0.8	11.2 <0.01	0.08	5.2	0.1	0.1	0.78	185	<0.05	1.44	14	16.3					
MG-107	472705	1556876	0.001	0.02	3.18	4.5 <10	100	0.15	0.07	0.01	0.01	20.3	2.8	37	0.46	13	4.35	16.65	0.19	0.39	0.09	0.049	<0.01	4	0.8	0.02	85	1.05 <0.01	0.64	9.8	100	10.4	0.3 <0.001	0.04	0.13	16.9	1.6	0.6	6 <0.01	0.09	6.7	0.08	0.12	0.84	166	<0.05	2.12	13	15.1					
MG-108	472698	1557018	<0.001	0.07	6.88	2.4 <10	230	0.42	0.1	0.03	0.02	38.4	13.6	10	0.58	17.4	3.36	16.9	0.17	0.36	0.1	0.041	0.02	9.2	5	0.19	733	0.95 <0.01	1.52	8.2	100	12.1	1.2 <0.001	0.04	0.11	14.1	1.4	0.8	14.8 <0.01	0.09	4	0.19	0.16	0.89	124	0.07	9.26	31	14.6					
MG-109	472710	1557186	<0.001	0.06	9.12	2.5 <10	50.2	0.43	0.06	0.04	0.02	41.5	8.7	8	0.19	18.6	2.13	18.4	0.13	0.19	0.13	0.023	0.01	10.3	4.1	0.17	578	1.29 <0.01	2.99	6.7	450	10	0.6 <0.001	0.07	0.1	8.6	1.4	0.4	8.6	0.05	0.06	1.1	0.13	0.1	1.1	77								

Appendix 17 Geochemical Data of Soil Samples in the Binangkawan-Taktak Area(3)

Sample No	Duplication	E-UTM	N-UTM	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Se	Si	Sr	Ta	Ti	Tl	Tl	U	V	W	Y	Zn	Zr		
				ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
BJ-038		466837	1552504	0.001	0.01	2	1.8 <10		12.8	0.12	0.09	0.01	<0.01	48.7	3	20	0.65	13.6	3	6.62	0.09	0.05	0.05	0.027	0.03	<0.2	2.4	0.06	75	0.63	<0.01	0.2	10.8	120	7.9	2.7	<0.001	0.01	<0.05	10.6	1.4	0.4	2.9	<0.01	0.06	10	<0.01	0.07	0.57	55	<0.05	10.45	4	1.4
BJ-039		466823	1552377	0.001	0.01	2.63	1.5 <10		42.5	0.27	<0.01	0.03	<0.01	50.8	22.4	40	0.15	22.2	3.82	11.2	0.11	0.06	0.15	0.03	0.01	<0.2	1.3	0.08	644	0.36	<0.01	0.4	33.7	210	8	0.9	<0.001	0.02	<0.05	14.6	1	0.4	8.7	<0.01	0.04	6.4	0.03	0.05	0.84	114	<0.05	15.15	26	1.4
BJ-040		466901	1552332	0.001	0.02	4.38	1.9 <10		34.1	0.26	0.03	0.01	0.01	72.3	10.4	63	0.05	34.1	4.44	16.85	0.15	0.25	0.07	0.038	<0.01	<0.2	2.8	0.19	328	0.54	<0.01	0.65	53.5	350	11	0.4	<0.001	0.02	<0.05	18.7	1.7	0.5	2.8	<0.01	0.05	7.9	0.08	0.03	0.84	119	<0.05	14.1	23	9
BJ-041		466746	1552474	0.001	0.02	2.86	3.1 <10		18.5	0.29	0.03	<0.01	<0.01	23.9	1.6	61	<0.05	21.7	4.61	16.2	0.11	0.28	0.28	0.041	<0.01	8.1	0.6	0.04	37	0.69	<0.01	0.38	12.1	210	7.2	0.2	<0.001	0.02	<0.05	17.6	1.3	0.5	2.6	<0.01	0.01	6.6	0.04	0.03	0.99	145	<0.05	3.18	6	9.2
BJ-042		466638	1552364	0.001	0.02	3.34	1.7 <10		21.3	0.17	0.07	<0.01	<0.01	47.4	3.3	29	0.14	14.4	3.41	16.4	0.1	0.33	0.05	0.035	0.01	14.5	1	0.09	50	0.57	<0.01	0.24	13.6	130	11.2	1.1	<0.001	0.03	0.05	17.7	1.4	0.6	2.8	<0.01	0.07	6.2	0.05	0.04	0.9	150	<0.05	5.8	7	10.9
BJ-043		466527	1552278	0.001	0.02	3.54	1.5 <10		12.1	0.24	0.04	<0.01	<0.01	35.8	3.7	50	0.2	15.1	4.43	15.9	0.1	0.3	0.07	0.04	0.01	11.2	0.8	0.1	90	0.62	<0.01	0.5	19.5	210	7.3	1.2	<0.001	0.03	0.05	16.9	1.8	0.6	2.2	<0.01	0.04	7.4	0.07	0.03	1.43	151	<0.05	5.48	10	11.3
BJ-044		466983	1552238	0.001	0.01	3.26	2.8 <10		18.4	0.28	0.04	<0.01	0.01	75.4	91.4	35	<0.05	22.6	5.29	13.5	0.15	0.05	0.12	0.049	<0.01	<0.2	1.1	0.03	2120	0.68	<0.01	0.24	16	390	26	0.3	<0.001	0.03	0.05	17.3	2.3	0.4	1.2	<0.01	0.05	9.5	<0.01	0.04	1.04	91	<0.05	14.25	12	1.9
BJ-045		466885	1552166	0.002	0.05	2.77	4.7 <10		22.8	0.44	0.03	<0.01	0.01	84.3	37.5	31	0.06	20.8	4.48	12.85	0.12	0.03	0.06	0.029	0.01	<0.2	3.3	0.09	647	0.59	<0.01	0.28	11.2	370	12.5	0.5	<0.001	0.02	0.07	12.1	2.1	0.4	1.2	<0.01	0.09	6.4	0.01	0.08	0.76	98	0.11	8.68	12	1.6
BJ-046		466838	1552081	0.001	0.02	3.03	1.5 <10		52.9	0.11	<0.01	0.02	0.01	55.2	21	27	0.17	18.4	2.27	10.55	0.09	0.06	0.11	0.025	0.02	<0.2	3.2	0.12	463	0.28	<0.01	0.64	33.5	190	7.9	1.1	<0.001	0.02	<0.05	11.3	1	0.3	8.8	<0.01	0.03	4.6	0.01	0.06	0.73	57	0.05	14.1	21	1.2
BJ-047		466882	1551983	0.001	0.01	2.4	1 <10		14.3	0.09	0.08	<0.01	<0.01	52	3.5	23	0.43	15.1	2.82	9.66	0.03	0.08	0.04	0.028	0.04	<0.2	2.9	0.07	41	0.48	<0.01	0.15	15.7	90	7.7	2.3	<0.001	0.01	<0.05	14.5	0.7	0.4	1.7	<0.01	0.02	10.2	0.01	0.06	1.09	80	<0.05	6.07	9	2.9
BJ-048		466943	1551842	0.001	0.02	1.91	1 <10		30.3	0.29	0.05	0.01	<0.01	26.4	3.5	16	0.54	23	3.01	6.46	0.07	0.09	0.08	0.019	0.05	10.8	2.3	0.08	88	0.44	<0.01	0.24	9.5	300	6.3	5.2	0.001	0.01	<0.05	6	1.4	0.4	1.7	<0.01	0.05	6.6	<0.01	0.15	0.71	49	0.08	2.9	8	1
BJ-049		466872	1551690	0.001	0.03	1.59	3.3 <10		15.1	0.08	0.04	0.01	0.01	16.1	1	19	0.35	10.7	2.57	5.54	0.06	0.06	0.1	0.019	0.03	9.1	2.1	0.04	26	1.81	<0.01	0.21	3	220	5.8	4.5	<0.001	0.02	<0.05	5	1.4	0.3	2.8	<0.01	0.03	4.5	<0.01	0.13	0.49	41	<0.05	2.58	2	0.8
BJ-050		467009	1552389	0.001	0.06	3.58	2.2 <10		<0.2	0.18	0.05	0.01	0.01	28.2	11.6	69	0.11	37	5.06	16.95	0.13	0.15	0.11	0.046	<0.01	10.3	2.9	0.09	297	0.65	<0.01	2.79	31.1	310	12.2	0.4	<0.001	0.03	<0.05	17.6	2.2	0.6	5.2	<0.01	0.03	5.4	0.08	0.1	1.13	168	<0.05	3.24	15	5.3
BJ-051		467136	1552496	0.001	0.03	2.59	1 <10		43.7	0.26	0.08	0.01	0.01	61	15.9	32	0.23	35.1	3.48	8.54	0.11	0.07	0.09	0.028	0.03	<0.2	4	0.31	342	0.56	<0.01	0.86	34.1	290	10.8	3	<0.001	0.01	<0.05	6.8	1.3	0.4	4	<0.01	<0.01	6.3	<0.01	0.1	0.96	70	<0.05	6.84	25	1.1
BJ-052		467290	1552553	0.001	0.03	2.06	0.8 <10		<0.2	0.16	0.07	0.02	0.02	49.7	8.1	24	0.33	13	2.6	16.6	0.09	0.08	0.06	0.018	0.03	<0.2	3.6	0.18	175	0.34	<0.01	1.04	16.1	180	9.4	5	<0.001	0.02	<0.05	5.3	1.2	0.4	4.8	<0.01	<0.01	5.2	0.01	0.11	1.14	68	0.06	12.4	11	1.3
BJ-053		467433	1552587	0.001	0.05	2.74	2.1 <10		34.5	0.15	0.06	0.01	0.01	12.05	3.6	32	0.59	12.9	3.19	9.9	0.07	0.16	0.1	0.028	0.02	4.9	5.4	0.11	89	0.64	<0.01	2.15	10.5	140	8.7	2.4	<0.001	0.02	<0.05	5.5	1.9	0.5	3.7	<0.01	0.03	4.9	0.02	0.07	0.95	99	<0.05	2.69	9	6.9
BJ-054		467576	1552587	0.002	0.02	2.45	2.2 <10		23.9	0.22	0.03	0.01	0.01	13.5	2	40	0.51	26.7	3.9	11.8	0.08	0.12	0.07	0.031	0.01	5.4	3.7	0.06	46	0.48	<0.01	0.75	8.1	180	6.4	2.6	<0.001	0.01	<0.05	8.6	1.9	0.4	2.6	<0.01	0.05	9	<0.01	0.07	1.09	106	<0.05	1.94	4	4.4
BJ-055		468010	1553724	0.001	0.02	2.88	1.8 <10		30.6	0.15	0.07	<0.01	<0.01	77.6	7.4	36	0.08	16.3	3.45	14.6	0.14	0.17	0.08	0.032	0.01	<0.2	1.6	0.15	246	0.22	<0.01	0.53	21.2	220	9.1	0.6	<0.001	0.02	<0.05	16.1	1.4	0.5	2.5	<0.01	0.05	9.4	0.03	0.06	1.48	105	<0.05	18.65	16	5.3
BJ-056		467840	1553597	0.001	0.02	1.98	2.1 <10		21.7	0.1	0.01	0.01	0.01	80.2	6.6	47	0.11	16	3.09	7.86	0.12	0.19	0.05	0.02	0.01	<0.2	2.4	0.07	135	0.27	<0.01	0.86	22.1	80	9.9	0.7	<0.001	0.01	<0.05	10	1.2	0.4	2.5	<0.01	0.04	8.6	0.03	0.05	0.92	86	<0.05	14.05	11	5.2
BJ-057 copy		467740	1553561	0.002	0.01	1.84	4.2 <10		22.4	0.11	0.02	0.01	0.01	52.8	7.2	36	2.62	19.9	2.17	4.55	0.07	0.06	0.07	0.015	0.04	16.9	4.6	0.1	192	0.5	<0.01	0.51	13.8	120	5.9	5	<0.001	0.01	<0.05	7.8	1.4	0.3	3.3	<0.01	0.05	5.8	<0.01	0.08	1.05	64	0.05	18.15	6	1.1
BJ-058		467676	1553484	0.001	0.02	1.71	3.4 <10		20.7	0.16	0.02	<0.01	<0.01	31.2	4.9	46	1.41	12.9	2.72	5.82	0.08	0.05	0.09	0.014	0.04	15.1	2.6	0.07	124	0.33	<0.01	0.59	11.7	270	4.1	5.9	<0.001	0.01	<0.05	6.6	1.5	0.3	3	<0.01	0.04									

