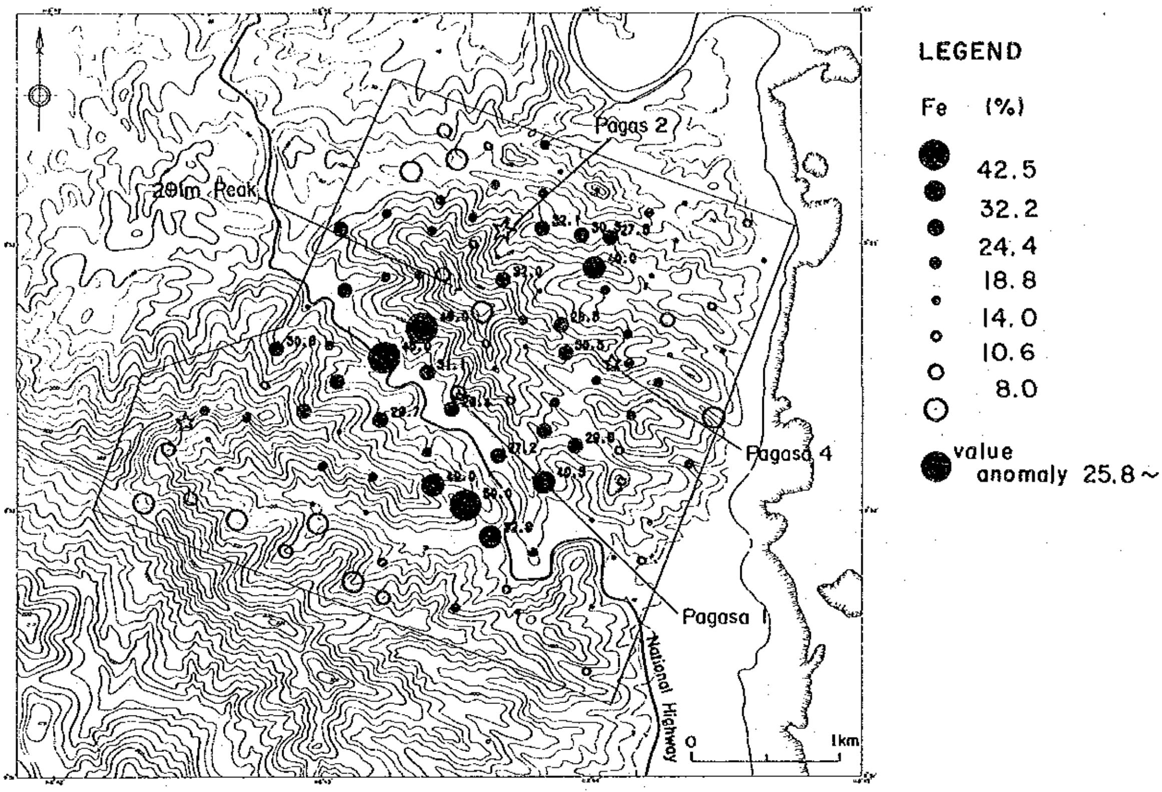


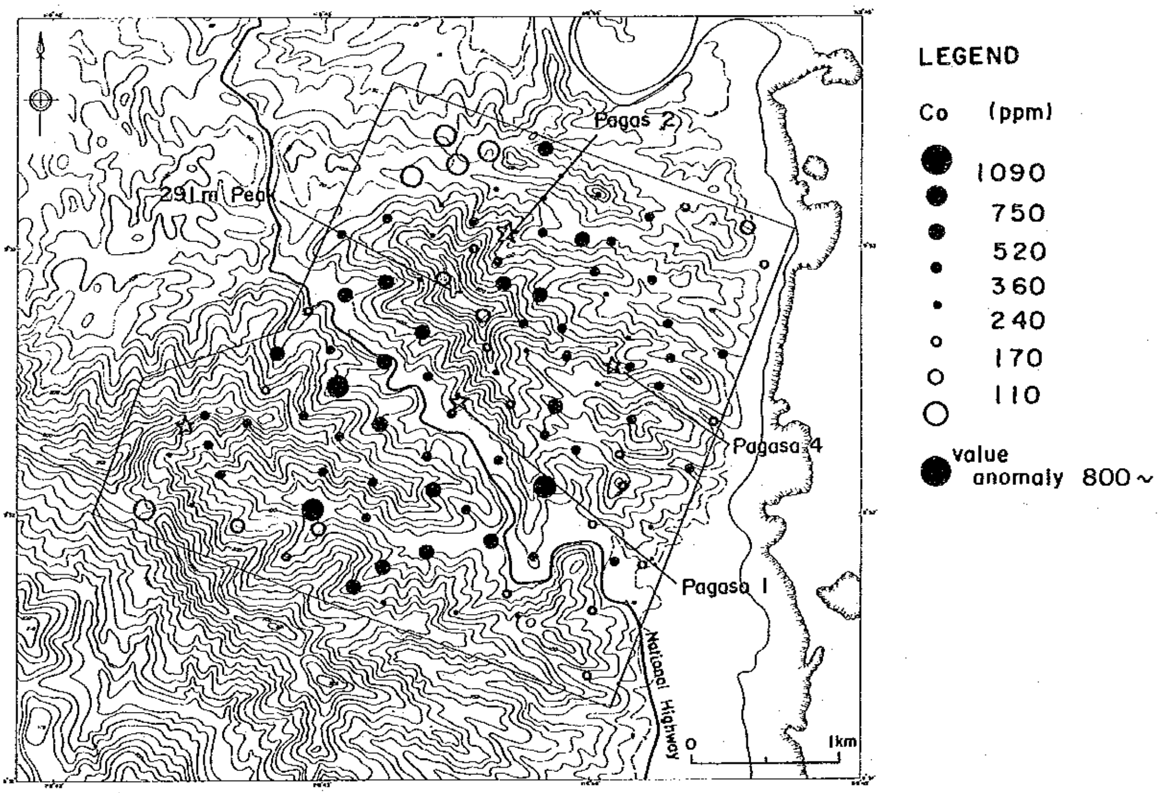


Fig. 26 Fe and Co content of soil samples in area A-3

very short. The range, median, mean value and standard deviation are shown in area A-2 soil geochemistry. Histogram and cumulative probability curve of each element are shown in Appendix 5. The content of each element is classed by mean value and standard deviation, and plotted on the element content map (Fig. 23 to Fig. 26). Anomalous values are also shown on the element content map. The geochemical pattern of each elements is as follows;

The correlation between Pt and Pd is very high; thereby they have very similar geochemical pattern each other. Anomalous zones of both elements are distributed the area from Pagasa 1 to the southern part, on the south of Pagasa 2, the area from Pagasa 2 to Pagasa 4 and west of the national highway.

The Au content is very low in this area.

The Ni, Cr, Co and Fe contents in soil are relatively high in the area distributed ultramafic rocks whereas very low in the gabbro area. No significant anomalies of Ni and Co contents are found in A-3.

The geochemical anomalies of Cr occur in Pagasa 1 vicinity, the south portion of Pagasa 2 and the opposite side of the Pagasa 1 separated by national highway. The areas of high Fe content are the ridge from the west of the Peak 291 m and the area along national highway.

1-2-4 Discussion

It appears from the soil geochemical survey that chromite deposit is only potential in this area, because nickel and cobalt content are low in soil. The dunite tectonite in area A-3 is distributed in high elevation to the east of national highway. Since almost all chromite deposits occur in dunite tectonites in Palawan, the dunite tectonite has a potential for chromite ore. Because of this, it can be stated that the areas of high chromium content in soil within this dunite body are delineated as high potential area for chromite deposits; thereby the areas around Pagasa 1 and south of Pagasa 2 are promising areas for chromite deposits.

Chapter 2 Test pitting survey

The follow-up work with test pitting survey was carried out in the area selected last year by the detailed geological survey and geochemical prospecting in area A-1 and B-1 (Fig. 6).

Two hundreds and four test pits were sunk by hand to reach to basement rock. Soil samples were collected from bottom of pit and upper 1m from the bottom in each pit. Heavy mineral in the bottom soil was also collected by panning and checked the weight. The weights of heavy mineral were shown in Appendix 7 and results of chemical analyses were shown in Appendix 8.

2-1 Area A-1

2-1-1 Pananlagan area

The objectives of test pitting survey in Pananlagan area are as follows;

1. To confirm the extension of massive chromite ore body in lower Pananlagan
2. To make clear the anomaly along the branch of the Pananlagan River
3. To confirm the extension and discovery of chromite ore body in upper Pananlagan

Profile of each pit is shown in Appendix 9.

1) Confirmation of lower Pananlagan massive chromite ore body

Small scale minings were operated by Sulu Sea Mines Corp. in this area. Massive and disseminated types' ore bodies 50 cm wide, strike N80°W and dip 60° to 80°W, occur in the weathered and brecciated dunite. The test pitting survey was operated at 2 sites (PB047 and PB048) to confirm the extension of ore bodies (Fig. 27), but extension was not recognized here.

2) Anomaly along the branch of the Pananlagan River

A remarkable geochemical anomaly was detected last year by soil geochemical prospecting. Test pits were sunk at 4 sites (PB041 to PB044) to make clear this anomaly (Fig. 6). Every pit reached to basement rock of harzburgite, and no mineralization was recognized. Chromium content of harzburgite is very low, 0.2 to 0.4 %. This area is alluvial fan formed by many small streams running from eastern slope, therefore this geochemical anomaly may be regarded as false anomaly due to secondary concentration of chromite.

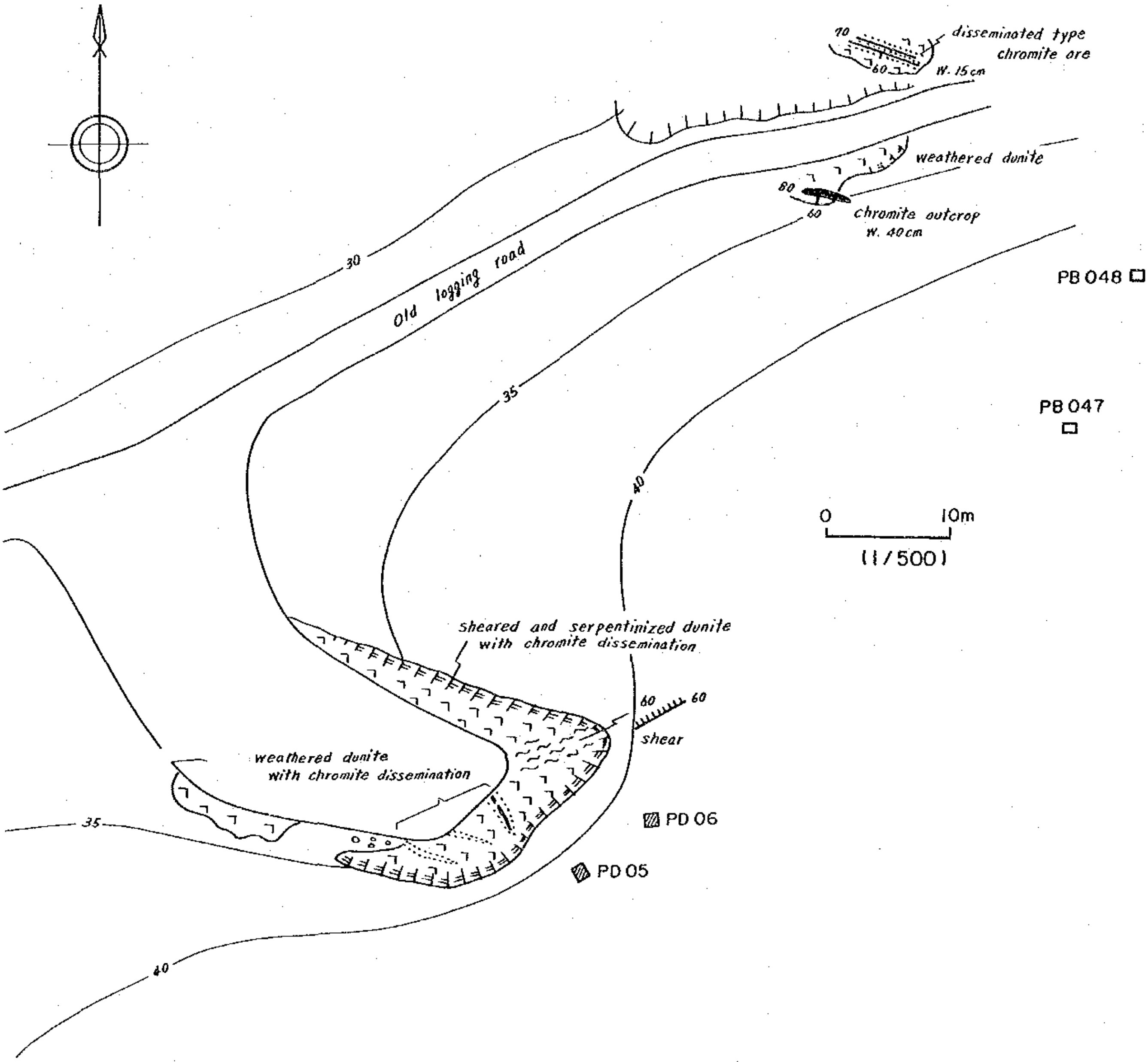


Fig. 27 Location of test pits in the Lower Pananlagan area

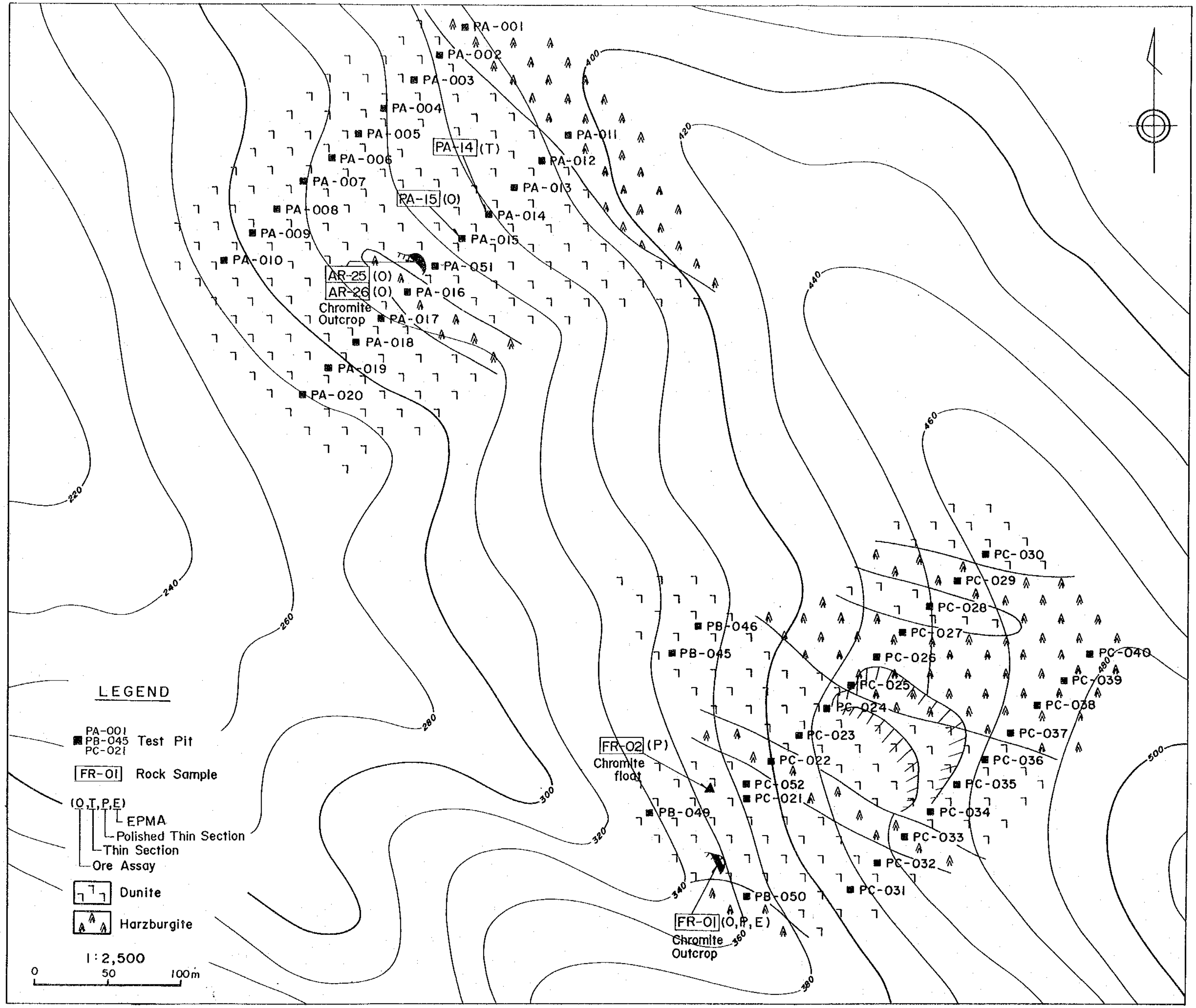


Fig. 28 Geology and location of test pits in the Upper Pananlagan area

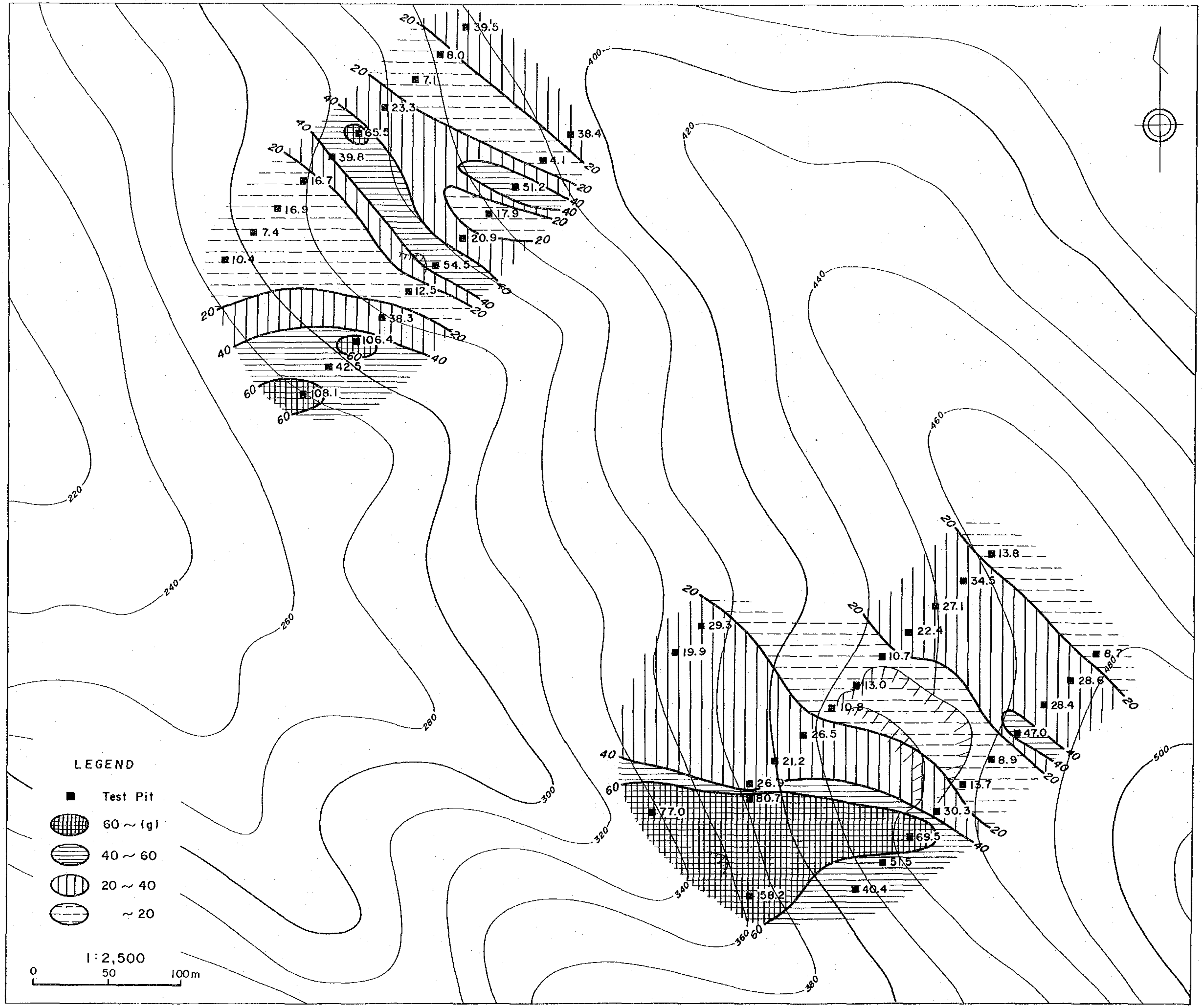
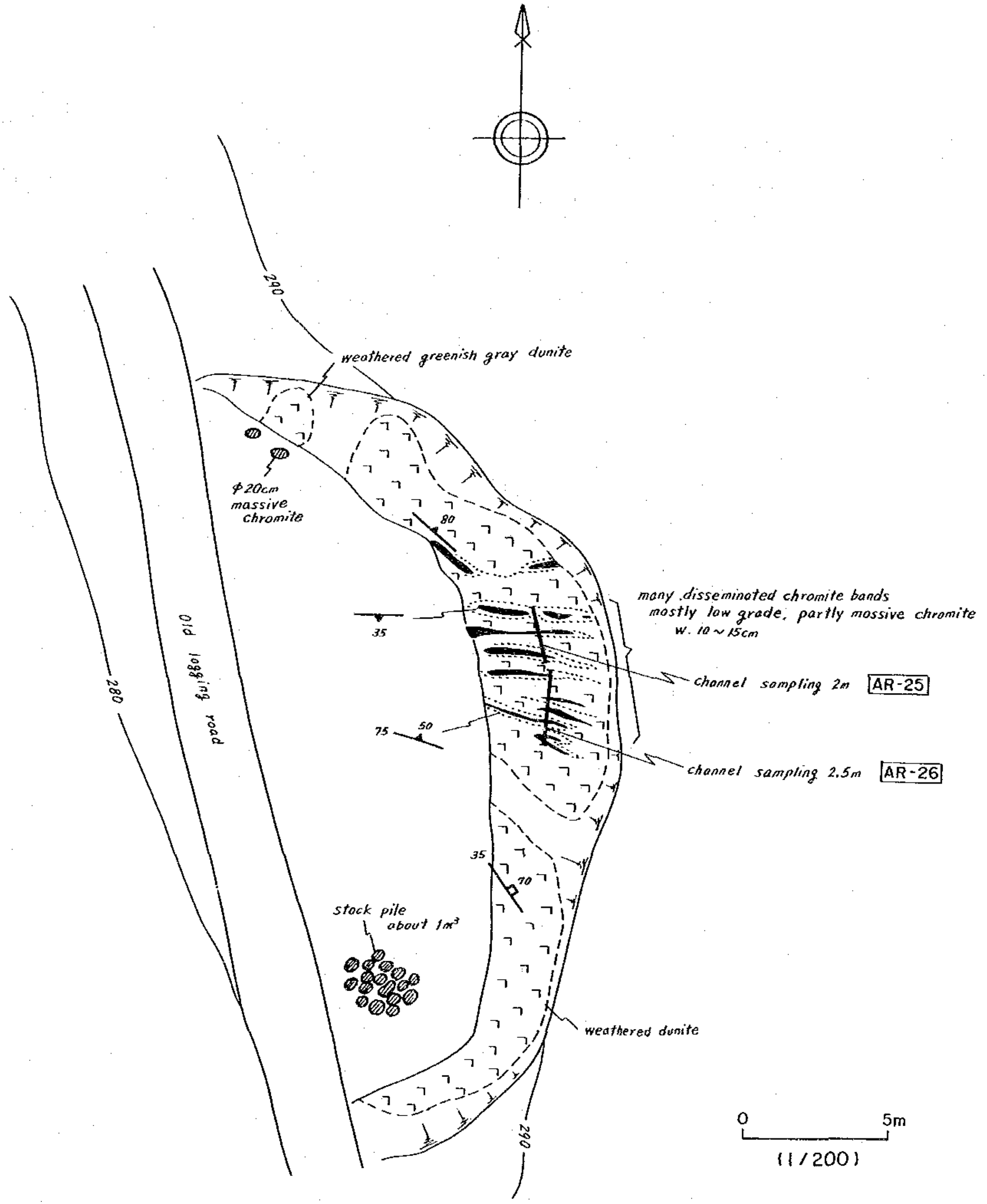


Fig. 29 Heavy mineral content in the Upper Pananlagan area



Sample No.	Cr_2O_3 (%)	Ni (%)	Fe (%)	Al_2O_3 (%)	SiO_2 (%)
AR - 25	30. 30	0. 28	10. 28	5. 10	19. 70
AR - 26	50. 70	0. 04	16. 07	8. 82	3. 59

Fig. 30 Sketch of a small old working in the Upper Pananlagan area

3) Confirmation of chromite ore deposits in upper Pananlagan area

Two old workings are recognized in the north slope of Pananlagan River. Test pits were sunk at 46 sites setting on 5 survey lines in the direction of northeast that cross general trend of dunite around the mineral showings. The spacing between survey lines was 100 meters, and the interval between pits 25 meters. Location of test pits and geology were shown in Fig. 28. The distributions of element content are shown in Appendix 10. The content map of heavy minerals in bottom soil is shown in Fig. 29, considering the direction of dunite body and chromite body.

A disseminated type ore extending in the E-W direction crops out 10 meters long in the lower old working (Fig. 30). Channel samples of 2.0 meters wide (AR-25) and 2.5 meters wide (AR-26) from this outcrop show 30.30 % and 50.70 % Cr_2O_3. This ore continues to PA051, 10 meters apart from outcrop. Another chromite band was discovered in the pit PA015, and this band is inferred to parallel with this ore body. The analysis of this chromite band shows 18.10 % Cr_2O_3.

Another old working is rather large 50 x 200 meters in scale. Though no outcrop of chromite ore was recognized in this working, residents said that massive chromite ores were mined in this old working before, but this outcrop was buried now. Several tons of massive chromite ore are stocked near the working. An outcrop of massive chromite ore was newly discovered 100 meters apart from the working, and the scale of outcrop is more than 7 meters long and 2 meters wide. The analysis of channel sample 1 meter wide (FR-01) shows 49.00% Cr_2O_3.

Dunite containing chromite is widely recognized in upper Pananlagan area, but they show low chromite content.

2-1-2 Tagkawayan area

A remarkable chromium anomaly was detected and two chromite disseminated zones about 3 meters wide were discovered last year by Phase 1 follow-up survey along the north branch of the Tagkawayan River, and fifty test pits were sunk in this survey. Five survey lines were set in the N-S direction considering the general trend of dunite striking N70°E to E-W, dipping 60° to 70°N. The spacing between lines was 100 meter, and pit interval 25 meters. Location of pits and geology are shown in Fig. 31.

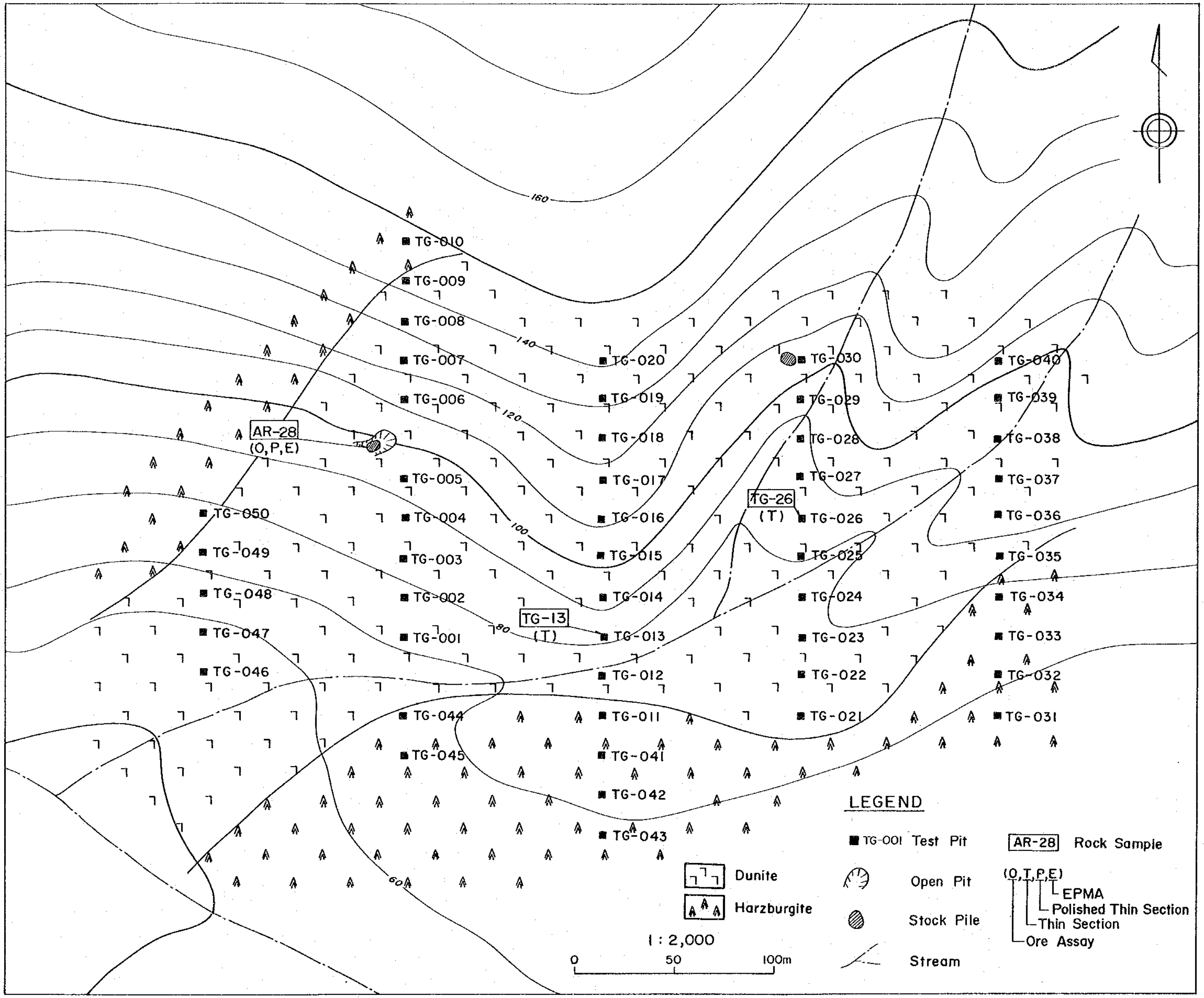


Fig. 31 Geology and location of test pits in the Tagkawayan area

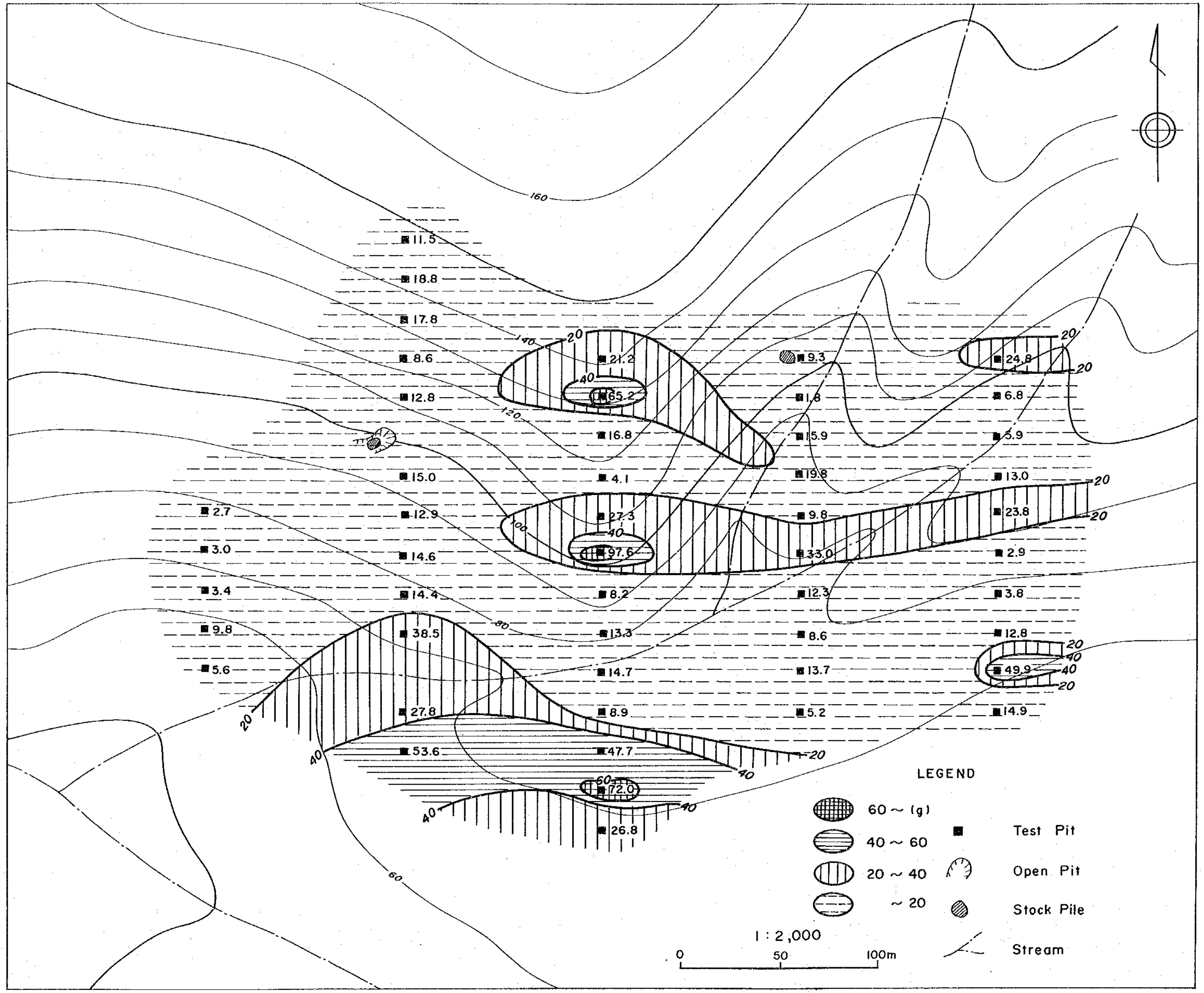


Fig. 32 Heavy mineral content in the Tagkawayan area

Profiles of every pit are shown in Appendix 11, and element distribution maps are shown in Appendix 12. The map of heavy mineral weight in the bottom soil is shown in Fig. 32 considering the general trend of dunite distribution.

A small working was found when the survey lines were cut, where several tons of massive chromite ore were stocked. The analysis of the ore from this stock (AR-28) shows 35.30 % Cr_2O_3. Another small stock of massive chromite ore is found near TG030 pit. It is inferred that small scale of prospecting was conducted before. Many floats of massive chromite ore are also scattered along small branch.

Though it was thought that this area promised to chromite deposit because of the existence of many mineral showings, the dunite in this area contains chromite little and no chromite disseminated portions and bands.

2-2 Mariwara area in area B-1

Test pitting survey was carried out at the Mariwara area in the upper stream of Marinao River northwestern portion of area B-1 (Fig. 33). This chromium anomaly area was extracted last year by Phase 1 follow-up survey. Transition zone and cumulate dunite are distributed in the area, and chromite dissemination and bands are observed in many places within this. The electron microprobe study in Phase 1 survey shows that the chromite of this dunite is high aluminum and low chromium type.

Five survey lines were set in N-S direction to crosscut the general E-W trend of dunite body. The spacing between lines was set 100 meters, and the interval between pits was generally 25 meters along the line. More pits were sunk in distance of 5 to 10 meters around the mineralized pits to confirm the extension of mineralization. Locations of pits are shown in Fig. 34, Profile of each pit in Appendix 13 and the results of chemical analyses in Appendix 14.

Though no outcrop of chromite ore was found on surface, floats of massive and leopard type ore are found in the branch of Marinao River. The analysis of this floats (FR-16) shows 30.50% Cr_2O_3.

Heavy minerals were collected from the soil of pit's bottom by panning. The distribution map of heavy mineral weight is shown in Fig. 35, considering the trend of chromite bands and dunite. It may be inferred from this map that some chromite disseminated zones exist ranging in width from 20 to 50 meters. Almost all pits reached to basement and dunite was recognized in every pit. Chromite

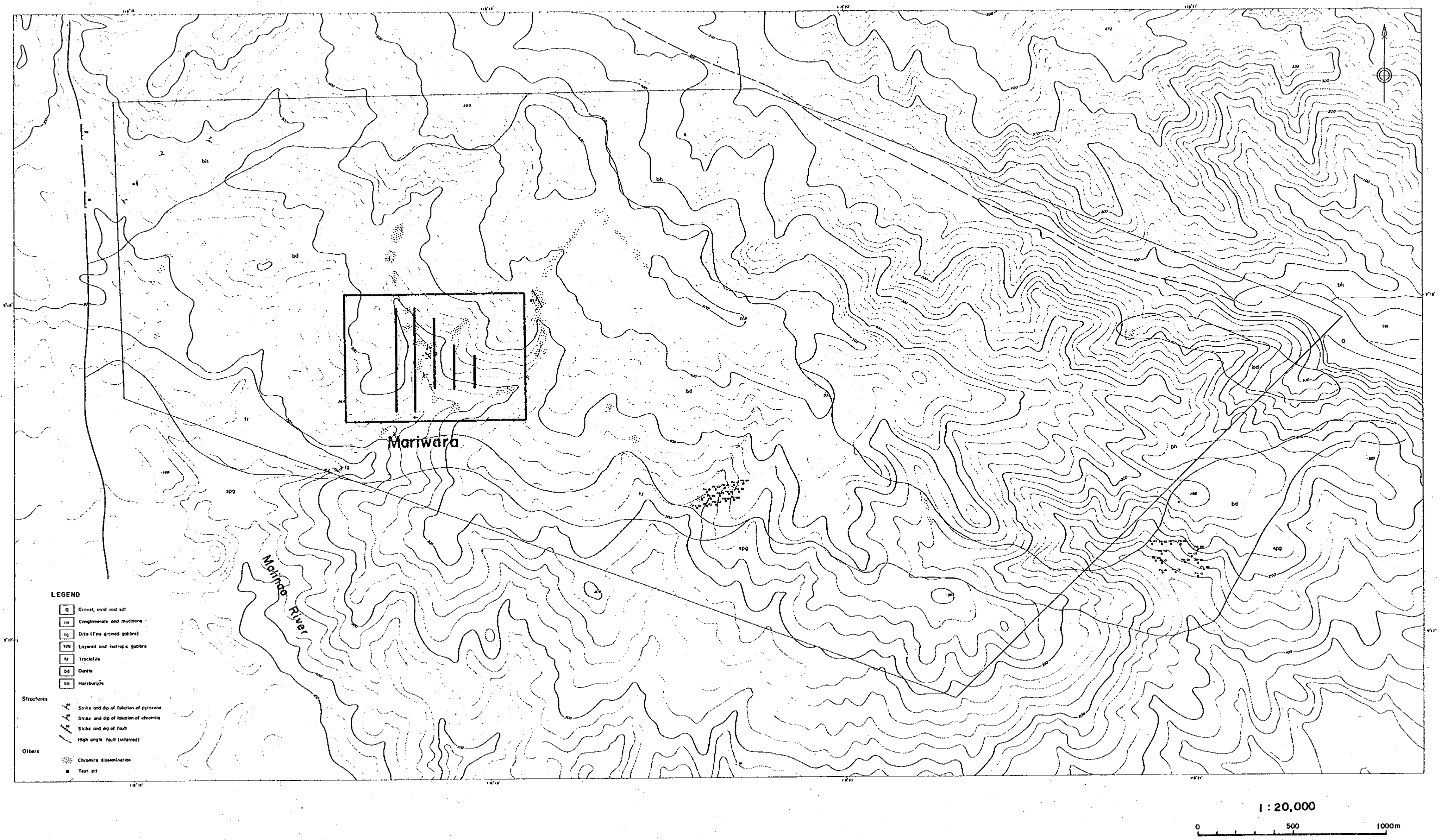


Fig. 33 Location of test pits in the area B-1

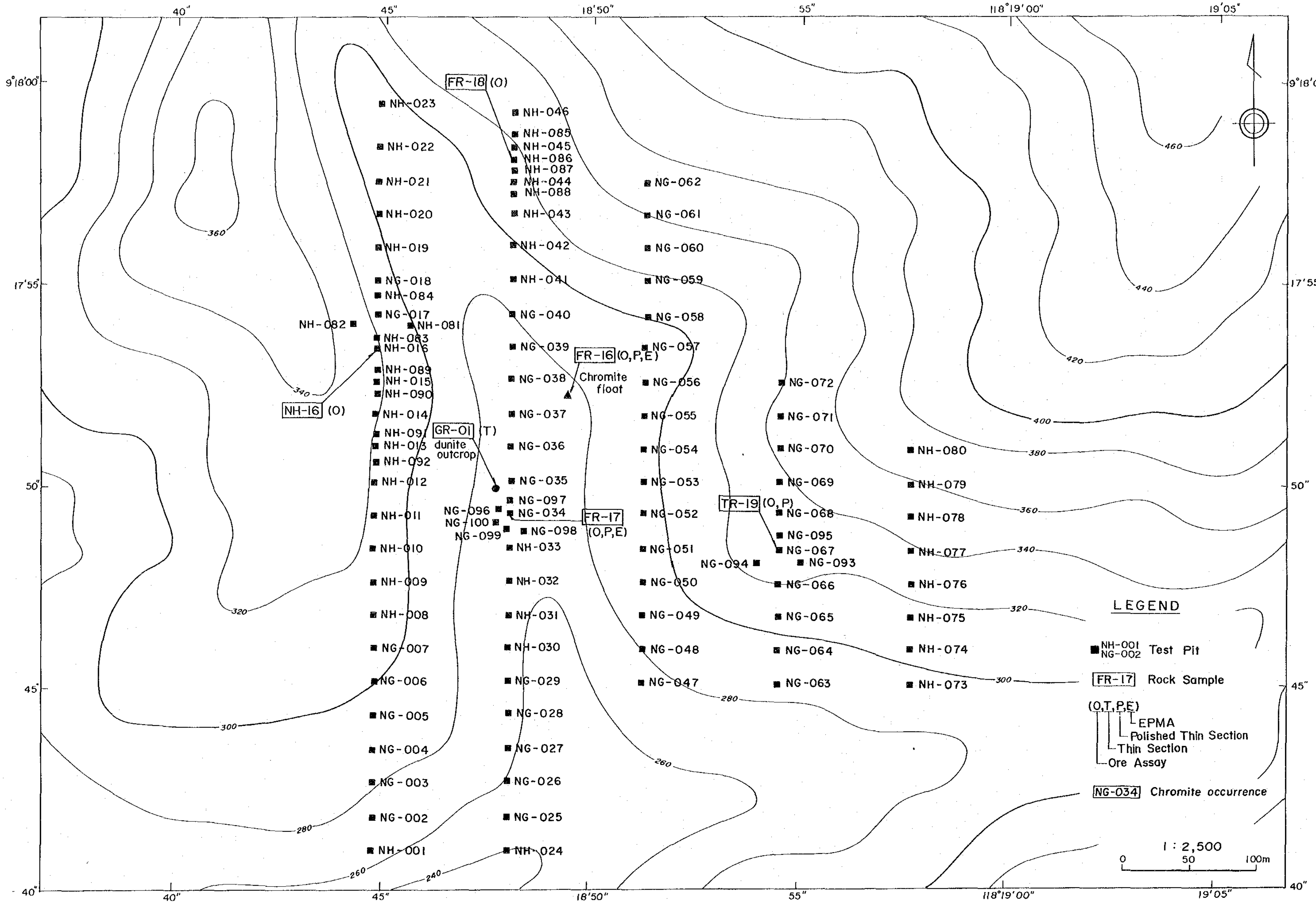


Fig. 34 Location of test pits in the Mariwara area

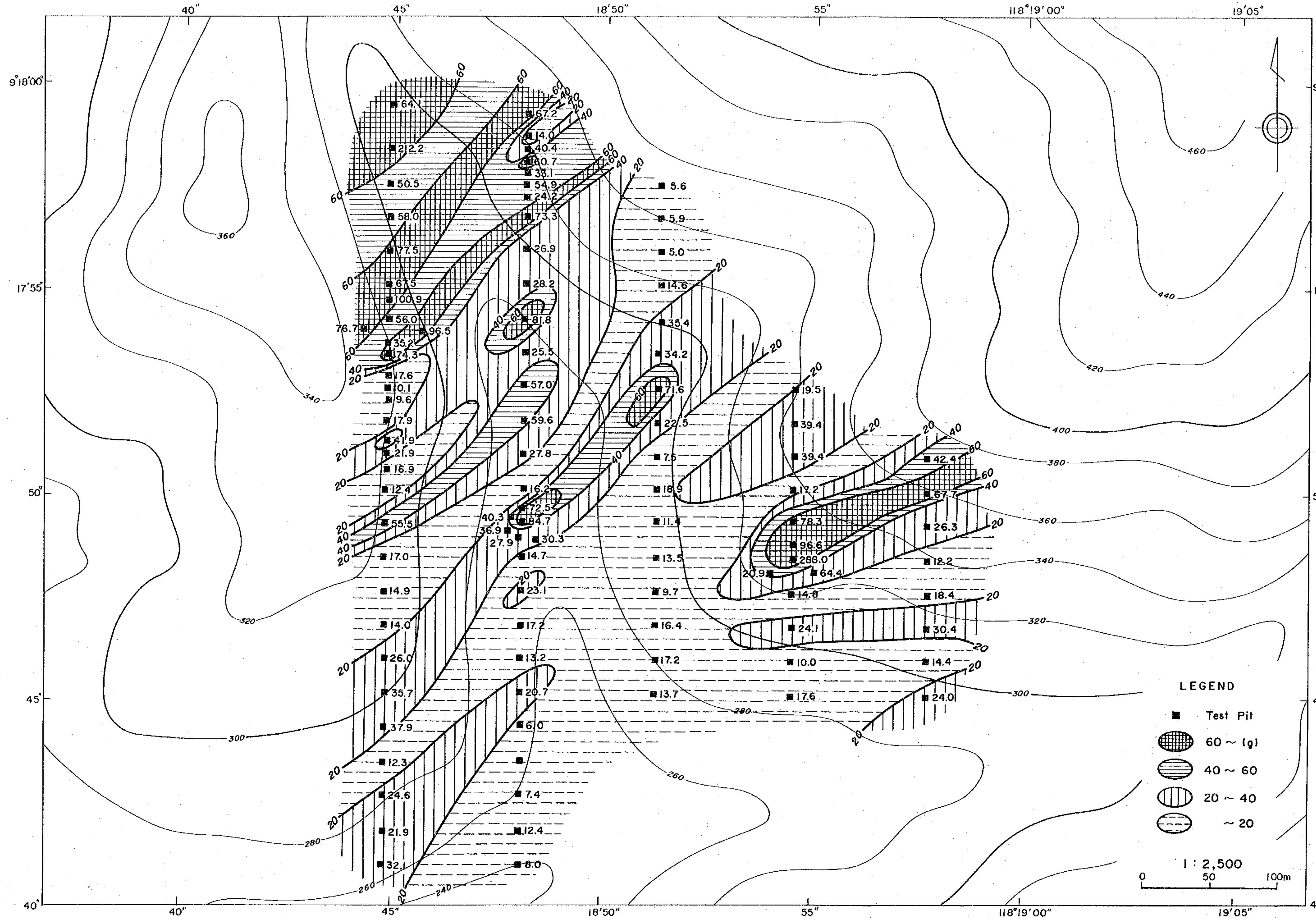


Fig. 35 Heavy mineral content in the Mariwara area

mineralization was recognized in 13 pits (Fig. 7). Sketches of important mineralization are shown in Appendix 15.

Mineralized zone from NH044 pit to NH045 pit in the north of the area consists of chromite dissemination and thin bands (Fig. 36). Channel sample was collected in width of 0.6 meter crossing chromite band in NH086 pit which is 10 meters south of NH045, and obtained 3.09 % Cr_2O_3 (FR-18).

Mineralized zone from NH014 pit to NH017 pit in the west consists of chromite dissemination and thin band (Fig.37). The mineralized dunite (NH-16) shows 4.23 % Cr_2O_3.

Massive chromite ore was found in NG034 pit within mineralized zone in the central portion of the area (Fig. 38). This ore body is 1.4 meter wide and 2 meters long, and 1.4 meter channel sample (FR-17) shows 26.70 % Cr_2O_3. Platinum related elements are also high content in this mineralized zone. Soil samples collected from the pit bottom show Pt; 1,600 ppb and Pd; 3,400 ppb for NG034 pit, Pt; 1,200 ppb and Pd; 740 ppb for NG100.

Several chromite bands ranging in width from 2 to 6 centimeters are recognized in the east. The analysis of channel sample 1.0 meter wide (FR-19) shows 17.20 % Cr_2O_3.

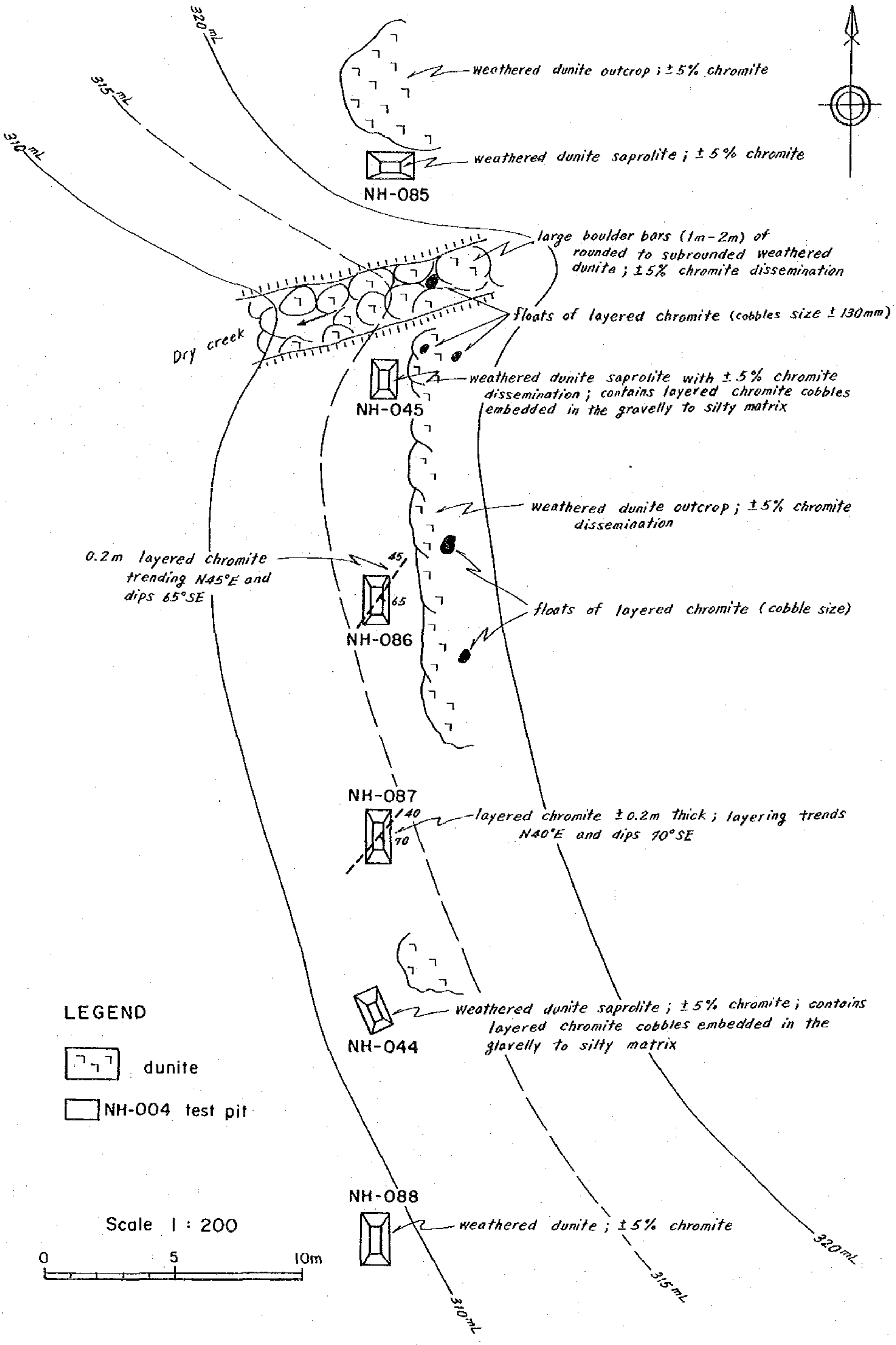
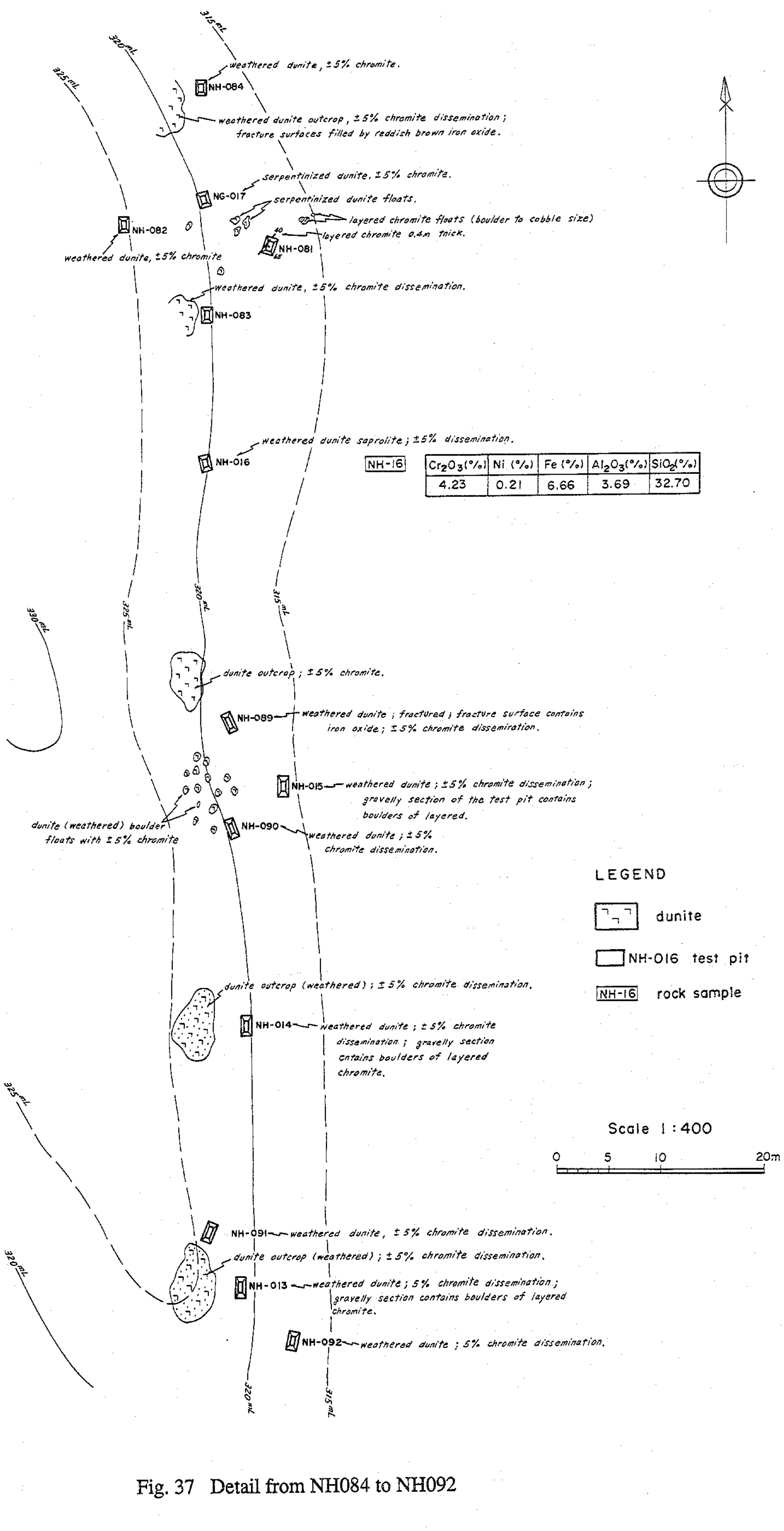


Fig. 36 Detail from NH085 to NH088



Cr_2O_3(%)	Ni (%)	Fe (%)	Al_2O_3(%)	SiO_2(%)
4.23	0.21	6.66	3.69	32.70

Fig. 37 Detail from NH084 to NH092

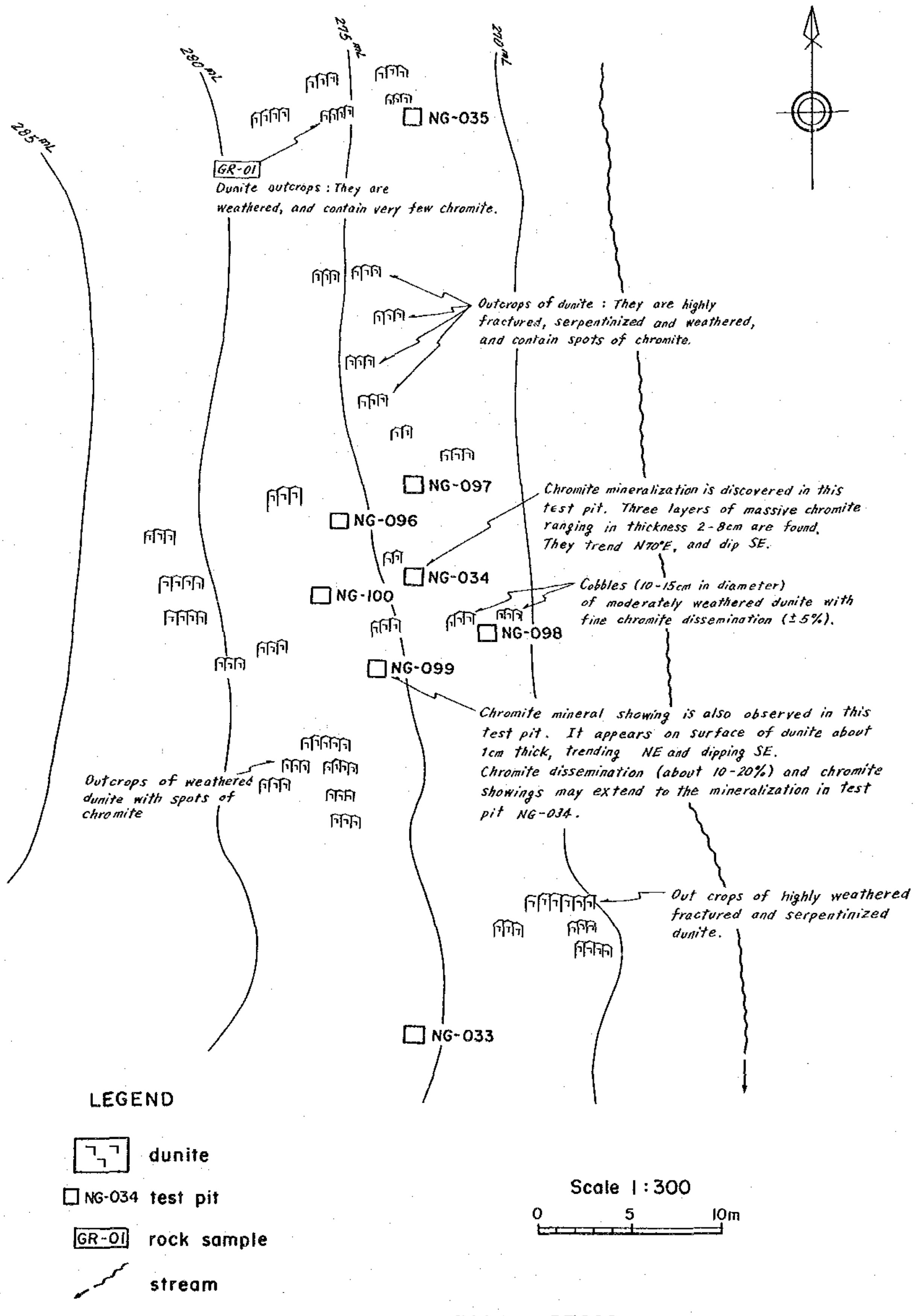


Fig. 38 Detail from NG035 to NG033

Chapter 3 Chemical composition of chromite

Chromite series is one series of spinel group minerals. The end-member of chromite is magnesiochromite ($MgCr_2O_4$) and chromite (ferrochromite, $FeCr_2O_4$). Natural chromites contain a considerable amount of Al and Fe^{3+} replacing Cr. These minerals are often called chromian spinel. Chemical composition of chromite determines directly the grade of ore, because chromite ores are economically divided into three grades due to the wide compositional variation of chromite. Chromite is also extremely sensitive to bulk composition, mineralogy and petrogenesis of the host rocks.

Chromites were analyzed with the electron microprobes for chromitites taken from representative 10 mineral showings in this survey. Thirty-two analyses and their recalculated cations on a 4-oxygen basis are presented in Table 5. Fe^{3+} and Fe^{2+} were calculated so that $R^{3+} : R^{2+} = 2 : 1$ in the spinel formula. Core and rim of each grain were analyzed to detect chemical zoning, but there is no apparent chemical zoning.

The Cr-Al-Fe^{3+} triangular plot is shown in Fig. 39, and Cr/(Al+Cr) versus Mg/(Fe^{2+}+Mg) diagram and Al_2O_3 versus Cr_2O_3 diagram in Fig. 40. Chromites from area A-2 have wide Cr/(Al+Cr) ratios of between 0.36 and 0.83. Those from area A-3 have the ratios of 0.81-0.83. Chromites from the Mariwara area have the ratios of 0.47-0.48. This variation in the Mariwara area is included in the range of area B-1 chromites (0.18-0.56) decided by the Phase 1 survey.

It is reported by Rammlmair et al. (1987) that the chromites from the chromitites occurrence in the Central Palawan ophiolite show the entire variation in major-element chemistry for alpine-type (podiform) chromitites in ophiolite complexes, and Cr/(Al+Cr) values of chromite increase from a shallow level of ophiolite complex to a deeper level, gabbro zone (0.38-0.5), cumulates and diapirs dunite of immediate gabbro lower contact (0.5-0.64), a shallower tectonite level of ophiolite complex (0.64-0.78), and a deep tectonite level (0.78-0.90). These compositional distributions and spatial separation are also found in Zambales. For example, Acoje Mine produces metallurgical-grade ore whereas the Coto district yields refractory-grade ore. In Zambales, Leblanc and Violette (1983) report that the Al-rich chromite pods are contained in the peridotite which underlie the gabbroic cumulates whereas the Cr-rich chromite pods related to deeper peridotite.

The Cr/(Al+Cr) ratios of chromites from area B-1 are lower than those from almost other areas. On the basis of geological survey, the chromitite occurrences in area B-1 are located in a cumulate dunite

Table 5 Chemical composition of chromite

Area	A−2								
Sp. No. Locality	FR-08 Maranat (Stock pile)			AR-16 Nagtabon No. 1 (Outcrop)			AR-13 Nagtabon No. 2 (Stock pile)		
point	core	mid	rim	core	mid	rim	core	rim	rim
TiO_2	0.01	0.00	0.00	0.19	0.08	0.12	0.17	0.13	0.14
Al_2O_3	37.78	37.50	36.94	16.05	15.86	13.91	9.20	8.63	8.72
Cr_2O_3	32.30	31.97	31.40	51.54	53.32	55.20	60.64	60.54	60.92
Fe_2O_3	2.66	2.64	2.76	4.93	3.09	4.35	3.47	3.18	3.78
FeO	9.66	9.53	9.66	13.08	14.57	13.10	15.37	15.14	15.25
MgO	18.76	18.62	18.21	13.96	13.04	13.91	12.01	11.80	12.03
TOTAL	101.15	100.25	98.97	99.74	99.95	100.59	100.86	99.41	100.84
Spinel formula on the basis of 4 oxygen									
Mg	0.776	0.777	0.771	0.655	0.615	0.654	0.582	0.581	0.584
Fe^{2+}	0.224	0.223	0.229	0.344	0.385	0.346	0.418	0.418	0.415
Cr	0.709	0.707	0.705	1.283	1.333	1.376	1.558	1.581	1.569
Fe^{3+}	0.056	0.056	0.059	0.117	0.074	0.103	0.085	0.079	0.093
Al	1.236	1.237	1.236	0.595	0.591	0.517	0.352	0.336	0.335
Ti	0.000	0.000	0.000	0.004	0.002	0.003	0.004	0.003	0.003
$Mg/(Mg+Fe^{2+})$	0.776	0.777	0.771	0.655	0.615	0.654	0.582	0.581	0.584
$Cr/(Cr+Al)$	0.364	0.364	0.363	0.683	0.693	0.727	0.815	0.825	0.824

Area	A−2						A−3			
Sp. No. Locality	AR-14 Nagtabon No. 3 (Stock pile)			CR-04 The eastmost of A-2 area (Stock pile)			AR-01 Pagasa 1 (Outcrop)			
point	core	mid	rim	core	mid	rim	core	mid	rim	rim
TiO_2	0.24	0.28	0.20	0.27	0.42	0.00	0.13	0.15	0.28	0.00
Al_2O_3	29.05	28.66	29.19	21.24	20.64	20.91	8.60	8.40	8.27	8.63
Cr_2O_3	41.75	40.58	41.03	49.71	48.53	49.48	60.94	62.03	60.12	59.99
Fe_2O_3	2.71	3.33	3.03	2.29	1.33	2.49	4.40	4.32	5.31	4.18
FeO	10.82	10.23	10.50	13.70	13.51	13.43	12.86	13.91	12.65	13.41
MgO	17.23	17.26	17.35	14.54	13.89	14.48	13.49	13.09	13.52	12.85
TOTAL	101.80	100.34	101.29	101.76	98.32	100.78	100.42	101.91	100.17	99.06
Spinel formula on the basis of 4 oxygen										
Mg	0.739	0.750	0.746	0.654	0.646	0.658	0.651	0.626	0.655	0.631
Fe^{2+}	0.260	0.249	0.253	0.346	0.353	0.342	0.348	0.373	0.344	0.369
Cr	0.950	0.935	0.936	1.185	1.197	1.192	1.560	1.574	1.545	1.562
Fe^{3+}	0.059	0.073	0.066	0.052	0.031	0.057	0.107	0.104	0.130	0.104
Al	0.985	0.984	0.993	0.755	0.759	0.751	0.328	0.318	0.317	0.335
Ti	0.005	0.006	0.004	0.006	0.010	0.000	0.003	0.004	0.007	0.000
$Mg/(Mg+Fe^{2+})$	0.739	0.751	0.747	0.654	0.647	0.658	0.652	0.626	0.656	0.631
$Cr/(Cr+Al)$	0.491	0.487	0.485	0.611	0.612	0.614	0.826	0.832	0.830	0.823

Fe^{2+} and Fe^{3+} calculated from total Fe using spinel stoichiometry

Table 5 Chemical composition of chromite

Area	A-3			A-1						
Sp.No. Locality	AR-03 Pagasa 4 (Outcrop)			AR-28 Tagkawayan (Stock pile)				FR-01 Upper pananlagan (Outcrop)		
point	core	mid	rim	core	mid	rim	rim	core	mid	rim
TiO_2	0.18	0.18	0.48	0.20	0.24	0.08	0.00	0.00	0.17	0.11
Al_2O_3	9.44	9.02	8.49	20.26	21.90	16.17	21.35	11.72	11.68	11.35
Cr_2O_3	60.64	59.90	61.63	47.90	47.89	53.94	47.95	57.29	55.82	55.11
Fe_2O_3	3.45	3.35	3.18	4.18	4.89	4.50	4.74	5.97	6.34	5.80
FeO	14.18	14.43	14.57	10.54	9.94	12.20	10.35	13.97	13.74	13.99
MgO	12.77	12.25	12.45	15.90	17.08	15.01	16.55	13.49	13.35	12.74
TOTAL	100.66	99.11	100.79	99.00	101.94	101.90	100.94	102.45	101.10	99.10
Spinel formula on the basis of 4 oxygen										
Mg	0.616	0.602	0.603	0.728	0.753	0.687	0.740	0.633	0.634	0.619
Fe^{2+}	0.384	0.398	0.396	0.271	0.246	0.313	0.260	0.367	0.366	0.381
Cr	1.551	1.561	1.583	1.164	1.120	1.309	1.138	1.424	1.405	1.419
Fe^{3+}	0.084	0.083	0.078	0.097	0.109	0.104	0.107	0.141	0.152	0.142
Al	0.360	0.350	0.325	0.734	0.764	0.585	0.755	0.434	0.438	0.436
Ti	0.004	0.004	0.012	0.005	0.005	0.002	0.000	0.000	0.004	0.003
$Mg/(Mg+Fe^{2+})$	0.616	0.602	0.604	0.729	0.754	0.687	0.740	0.633	0.634	0.619
$Cr/(Cr+Al)$	0.812	0.817	0.830	0.613	0.595	0.691	0.601	0.766	0.762	0.765

Area	B-1		
Sp.No. Locality	FR-17 Mariwara NG034 pit (Outcrop)		
point	core	core	core
TiO_2	0.39	0.13	0.42
Al_2O_3	30.39	31.69	31.07
Cr_2O_3	40.52	40.14	40.63
Fe_2O_3	0.87	0.61	1.27
FeO	11.48	11.74	11.67
MgO	16.63	16.77	16.94
TOTAL	100.27	101.10	102.00
Spinel formula on the basis of 4 oxygen			
Mg	0.720	0.718	0.720
Fe^{2+}	0.279	0.282	0.278
Cr	0.930	0.911	0.917
Fe^{3+}	0.019	0.013	0.027
Al	1.040	1.072	1.045
Ti	0.008	0.003	0.009
$Mg/(Mg+Fe^{2+})$	0.721	0.718	0.721
$Cr/(Cr+Al)$	0.472	0.459	0.467

Fe^{2+} and Fe^{3+} calculated from total Fe using spinel stoichiometry

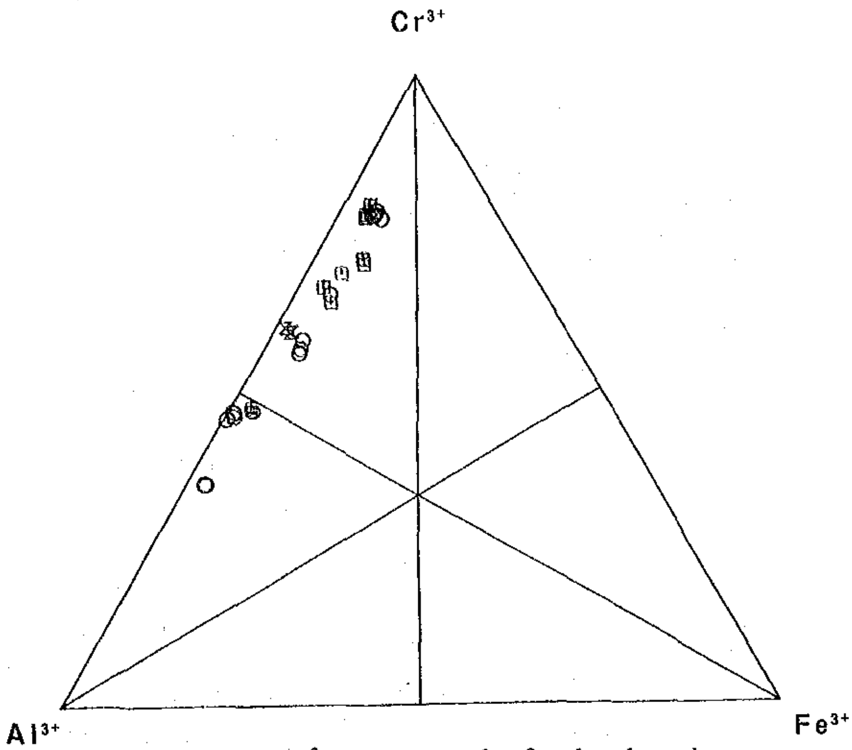


Fig. 39 Cr - Al - Fe^{3+} triangular plot for the chromites

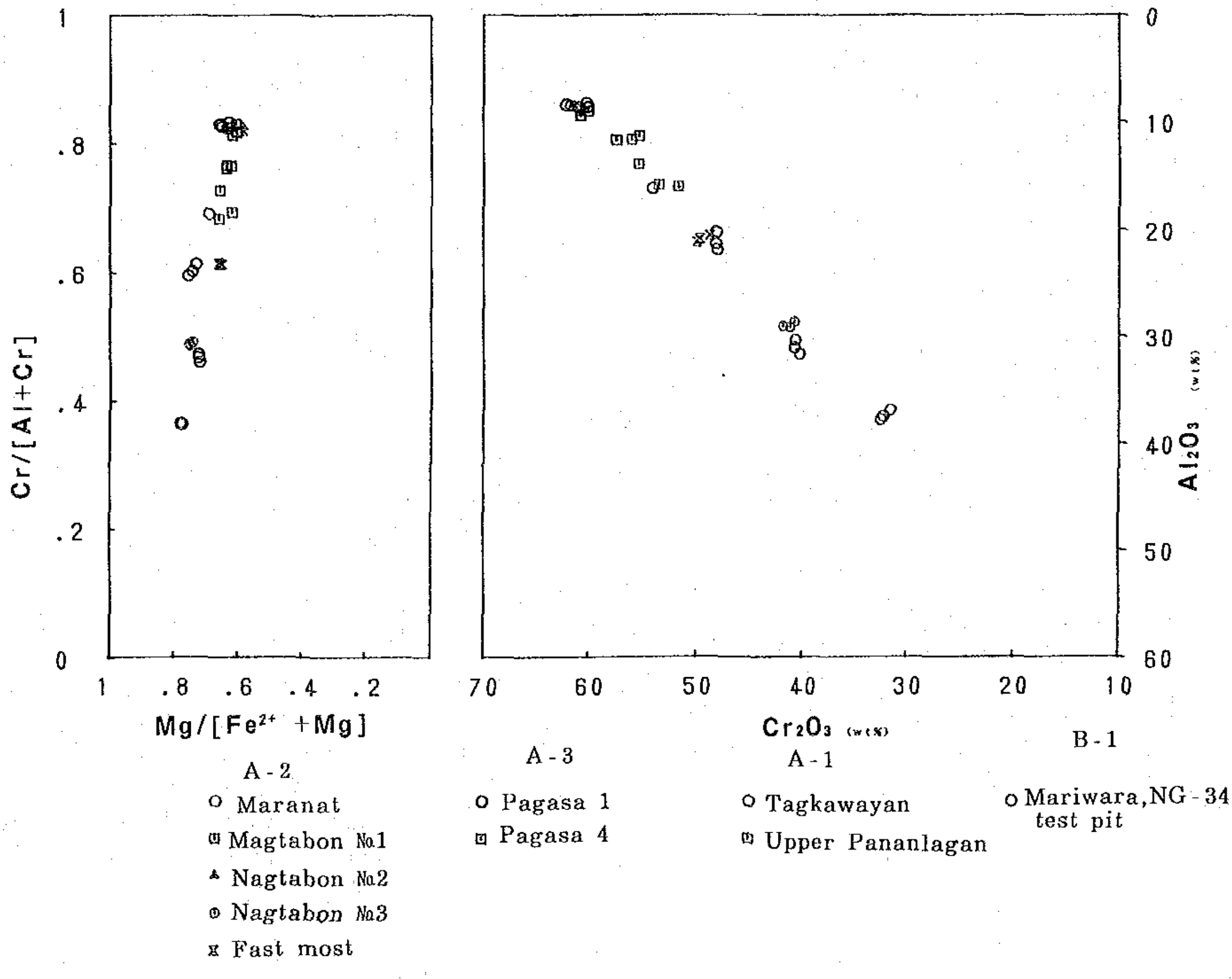


Fig. 40 Plot of Cr/(Al+Cr) versus Mg/(Fe^{2+}+Mg) and Al_2O_3 versus Cr_2O_3 weight percent for chromite

whereas other chromitite occurrences are distributed in dunite pockets in the harzburgite tectonite, therefore the chromite compositions correspond to the level in ophiolite sequence in these survey areas. The wide range of chromite compositions from mineral occurrences in area A-2 may result from the complicated geology around Nagtabon Pass.

The grade of chromite ore is inferred from the Al_2O_3-Cr_2O_3 diagram of chromite composition (Fig.40). Economically the grade of chromite ore is divided into metallurgical-grade (Cr_2O_3 > 48 %), chemical-grade (Cr_2O_3 > 45 %), and refractory-grade (Cr_2O_3 > 30 %, Cr_2O_3+Al_2O_3 > 60 %). The mineral occurrences are classified as follows;

Metallurgical-grade: Nagtabon No .1, Nagtabon No .2 (A-2), Pagasa 1, Pagasa 4 (A-3),
Upper Pananlagan (A-1)

Chemical-grade: Easternmost (A-2), Tagkawayan (A-1)

Refractory grade: Maranat, Nagtabon No .3 (A-2), Mariwara (B-1)

PART III CONCLUSION AND RECOMMENDATION

Capter 1 Conclusion

[Geological survey and geochemical prospecting in area A-2]

1) Area A-2 is mainly underlain by the nappe of ultramafic complex, consisting of harzburgite, dunite and pyroxenite.

2) Large dunite tectonites are distributed in southwest of Mt. Airey and the vicinity of Nagtabon Pass.

3) Almost chromite deposits occur in the dunite tectonite around Nagtabon Pass. Ore bodies consist of massive and disseminated types' chromite ores, which vary markedly in width. The scale of occurrences is small except the Nagtabon No. 1 deposit.

4) The disseminated type's ore is well-exposed in the Nagtabon No. 1 deposit, and massive ore was once mined. Though subsurface occurrence is not clear, the volume of 2,000 tons as chromite is estimated only from the disseminated type's ores near surface.

5) From soil geochemical prospecting, the chromium anomalies were detected scatteringly at places in the area. They don't seem to be coincide with the distribution of dunite tectonite and ore deposits. Therefore promising areas for chromite deposits could not define only by this result. An anomaly zone of platinum related elements is distributed along a small river to the north of Maranat, where some sample shows more than 100 ppb of both platinum and palladium. Nickel and iron anomalies overlap the area in the north of Bacungan, south of Mt. Airey and north of Maranat. These areas have potential for nickeliferous laterite.

[Geological survey and geochemical prospecting in area A-3]

1) Area A-3 is mainly underlain by ultramafic complex, consisting of harzburgite, dunite and pyroxenite.

2) Dunite tectonite is distributed around 291m peak in the central portion of the area. Pagasa 1, 2 and 4 deposit are located in this dunite tectonite.

3) Many massive and disseminated ores crop out in Pagasa 1 deposit. The mineralized zone covers at least 150 x 150 meters. Though it is difficult to estimate the volume of ore only by surface survey, 40 to 60 thousand tons of chromite is thought to be estimated.

4) The disseminated and massive chromite ore bodies occur in Pagasa 2 and 4 deposits. Massive chromite ore body usually does not extend so much and vary markedly in width.

5) As the results of soil geochemical prospecting, chromium anomalies are recognized in the area south of Pagasa 1 and south of Pagasa 2, and these areas are thought to be promising for chromite deposit. The anomalies of platinum related elements are distributed in the area south of Pagasa 1, from Pagasa 2 to Pagasa 4, and west of national highway.

[Test pitting survey in area A-1]

1) Extension of massive chromite ore body in lower Pananlagan was not confirmed by this survey.

2) Test pits revealed that geochemical anomaly along the branch of the Pananlagan River was a false anomaly by secondary concentration of chromite.

3) Extension of disseminated chromite ore body at lower old working in upper Pananlagan is confirmed to extend to the pit 10 meters apart. Another chromite band parallel to this ore body was also recognized in another pit.

4) Outcrop of massive chromite ore was newly discovered near the upper old working in upper Pananlagan. The ore body strikes N45°W, dips 40°NE, and extends more than 7 meters in length and 2 meters in width. The analysis shows 49.00% Cr_2O_3. No other ore body was found around this area.

5) Two small old workings were found in Tagkawayan area, and the analysis of a stock shows 35.30% Cr_2O_3. The dunite is almost barren in this area. No other mineral showing was found.

[Test pitting survey in area B-1]

1) Chromite mineralization was recognized at 13 pits in the Mariwara area.

2) Massive chromite was discovered at NG034 pit in the central portion of the area. The analysis of this ore shows 26.70% Cr_2O_3. Contents of platinum related elements are also high around this pit. The bottom samples of pit show Pt; 1,600 ppb, Pd; 3,400 ppb at NG034 and Pt 1,200 ppb, Pd 740 ppb at NG100.

3) Other mineralized zones consist of disseminated chromite and thin chromite band, but the grade is low.

4) Floats of massive chromite ore and leopard type nodular ore were found in the branch of Marinao River. The analysis shows 30.50% Cr_2O_3.

Chapter 2 Recommendation for Phase 3 survey

Many chromite occurrences are distributed in area A-2 and A-3. The evaluation has led that the Nagtabon No. 1 deposit in area A-2 and the Pagasa 1 deposit in area A-3 have potential for the chromite deposit. Therefore it is preferable that the further detailed exploration including drilling survey will be conducted at Pagasa 1 deposit and maybe Nagtabon No. 1 deposit to clarify the occurrence of subsurface ore body.

Several mineral showings were newly discovered through test pitting survey in area A-1 and B-1, but all of them are small in scale. Therefore further survey may not be necessary in these two areas.

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APPENDICES

Appendix 1 Microscopic observation of rock thin section

				Primary mineral									Secondary mineral									
Area	No	Sample No.	Rock name	Q	Kf	Pl	Bi	Hb	Cpx	Opx	Ol	Cr	Pl	Hb	Cpx	Opx	Sr	Se	Ch	Ba	Ca	Op
A-2	1	AR-04	gabbro			◎			◎	∘								∘				∘
	2	AR-08	mylonite	◎		◎												∘				
	3	AR-09	quartz schist	◎										∘		∘						∘
	4	BR-09	granodiorite			◎		◎														∘
	5	DR-14	harzburgite							∘	◎	∘					◎			∘		
	6	DR-18	dunite								◎	∘				·	◎		∘	∘	∘	∘
	7	DR-19	gabbro			◎		○	◎										○			·
A-3	8	BR-01	dolerite			◎		◎	◎										·			○
	9	DR-08	olivine bearing pyroxenite						◎		○						○			○		∘
	10	ER-01	mylonite	◎		◎												○	∘		·	
A-1	11	PA-14	dunite								◎	∘					◎					
	12	TG-13	dunite								◎	∘	∘		∘		◎					∘
	13	TG-27	dunite								◎	∘					◎					∘
B-1	14	GR-01	dunite								◎	∘					◎					∘

Abbreviation Q;quartz, Kf;potassium feldspar, Pl;plagioclase, Bi;biotite, Hb;hornblende, Cpx;clinopyroxene, Opx;orthopyroxene, Ol;olivine, Cr;chromite, Sr;serpentine, Se;sericite, Ch;chlorite, Ba;bastite, Ca;calcite, Op;opaque mineral

Symbols : ◎; abundant, ○; common, ∘; rare, ·; trace

Appendix 2 Microscopic observation of polished thin section

					Primary mineral			Secondary mineral								
Area	No	Sample No.	Chromitite occurrence	EPMA	Cpx	Ol	Cr	Opx	Ol	Sr	Ch	Ba	Ms	Sd	Li	Id
A-2	1	FR-08	Maranat	○		∘	◎			∘			∘			
	2	AR-16	Nagtabon No.1	○	∘	○	◎						∘			
	3	AR-13	Nagtabon No.2	○			◎	·		◎						
	4	AR-14	Nagtabon No.3	○			◎			○						
	5	AR-17	Nagtabon No.4				◎			∘						
	6	AR-15	Nagtabon No.5		∘		◎			○	·	∘				
	7	CR-04	Eastern most	○		∘	◎			◎				·		
A-3	8	AR-01	Pagasa 1	○		○	◎			◎			○			·
	9	AR-07	Pagasa 2				◎			○						
	10	AR-03	Pagasa 4	○			◎			○					∘	
A-1	11	AR-28	Tagkawayan	○		∘	◎			∘			∘			
	12	FR-01	Upper Pananlagan	○		∘	◎			∘						
	13	FR-02	Upper Pananlagan				◎		·	◎						
B-1	14	FR-19	Test pit NG067				◎		∘	◎						
	15	FR-17	Test pit NG034	○		·	◎			∘					∘	∘
	16	FR-16	Mariwara float				◎		∘	◎						

Abbreviation Cpx;clinopyroxene, Ol;olivine, Cr;chromite, Opx;orthopyroxene, Sr;serpentine, Ch;chlorite, Ba;bastite, Ms;magnesite, Sd;siderite, Li;limonite, Id;iddingsite

Symbols : ◎;abundant, ○;common, ∘;rare, ·;trace

Appendix 3 Chemical composition of ore samples

Area A-2 and A-3

No.	Area	Sp. No.	Locality	Cr_2O_3 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SiO_2 (%)	Ni (%)
1	A-2	AR-10	Maranat	26.50	17.60	13.10	14.00	0.15
2		FR-09	Nagtabon No.1	19.50	6.43	12.17	24.80	0.18
3		FR-10	Nagtabon No.1	18.10	5.87	12.20	26.90	0.22
4		FR-11	Nagtabon No.1	9.93	4.03	11.01	32.90	0.21
5		FR-12	Nagtabon No.1	14.10	5.02	10.55	30.70	0.20
6		FR-13	Nagtabon No.1	2.31	1.27	8.74	38.50	0.27
7		FR-14	Nagtabon No.1	11.60	4.34	11.38	37.00	0.29
8		AR-12	Nagtabon No.2	38.40	22.10	14.68	5.60	0.08
9		AR-13	Nagtabon No.2	37.80	22.60	14.25	3.86	0.06
10		AR-14	Nagtabon No.3	39.60	20.50	15.31	5.09	0.08
11		AR-15	Nagtabon No.5	33.50	28.00	14.60	3.72	0.10
12		AR-17	Nagtabon No.4	47.20	16.50	18.03	3.72	0.08
13		AR-18	Nagtabon No.6	31.80	18.00	13.57	9.64	0.13
14		CR-04	The eastmost	41.20	13.90	15.23	9.03	0.06
15	A-3	FR-03	Pagasa 1	16.50	2.21	12.60	29.20	0.77
16		FR-04	Pagasa 1	22.70	3.33	15.47	26.50	0.18
17		FR-05	Pagasa 1	46.80	7.22	18.64	7.46	0.08
18		FR-06	Pagasa 1	46.70	6.11	17.73	10.70	0.09
19		AR-06	Pagasa 2	49.00	7.62	17.26	7.32	0.09
20		AR-07	Pagasa 2	51.30	9.30	20.10	3.51	0.06
21		BR-07	Pagasa 2	46.60	17.10	18.51	2.73	0.05
22		FR-07	Pagasa 4	30.90	4.62	16.16	22.10	0.17
23		ER-03	West	11.70	4.37	17.00	27.20	0.23

Test pit area

No.	Area	Sp. No.	Locality	Cr_2O_3 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SiO_2 (%)	Ni (%)
24	A-1	AR-25	Upper Pananlagan	30.30	5.10	14.70	19.70	0.28
25		AR-26	Upper Pananlagan	50.70	8.82	22.98	3.59	0.04
26	(Pananlagan)	FR-01	Upper Pananlagan	49.00	11.10	19.99	3.60	0.04
27		PA-15	PA015 pit	18.10	3.48	11.37	26.80	0.32
28	(Tagkawayan)	AR-28	Tagkawayan	35.30	5.84	14.03	16.10	0.23
29	B-1	FR-16	Mariwara float	30.50	14.10	14.13	12.90	0.11
30	(Mariwara)	FR-17	NG034 pit	26.70	23.90	13.50	11.10	0.21
31		FR-18	NG045 pit	3.09	6.32	9.18	38.40	0.29
32		FR-19	NG067 pit	17.20	14.50	12.51	19.70	0.38
33		NH-16	NH016 pit	4.23	3.69	9.52	32.70	0.21

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

(1)

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
1	A021	118°46.53'	9°56.64'	H	B	10	RD	<5	<2	2	5500	9000	11.6	280
2	A022	118°46.46'	9°56.72'	H	B	15	BR	10	12	2	2600	15000	11.5	410
3	A023	118°46.39'	9°56.84'	H	B	15	BR	<5	6	<2	2300	8000	8.8	140
4	A024	118°46.36'	9°56.97'	H	B	20	BR	15	16	<2	2600	18000	8.1	190
5	A025	118°46.35'	9°57.07'	H	B	15	BR	5	10	<2	5800	7600	8.4	610
6	A026	118°46.33'	9°57.17'	H	B	25	BR	<5	8	2	3000	9000	7.2	320
7	A027	118°46.43'	9°56.59'	H	B	10	RD	15	10	<2	3100	9000	14.1	360
8	A028	118°46.36'	9°56.63'	H	B	10	BR	15	12	4	2900	13000	10.7	530
9	A029	118°46.28'	9°56.74'	H	B	10	BR	40	30	4	5200	18000	15.6	750
10	A030	118°43.63'	9°57.01'	H	B	10	BR	10	8	8	3100	18000	12.2	390
11	A031	118°43.67'	9°56.87'	H	B	10	BR	15	16	8	614	3100	6.9	110
12	A032	118°43.56'	9°56.86'	H	B	10	BR	15	30	20	60	1600	6.1	62
13	A033	118°43.66'	9°56.75'	H	B	15	BR	5	8	10	19	1200	7.5	44
14	A034	118°43.64'	9°56.62'	H	B	15	YE	20	30	10	28	1500	3.6	39
15	A035	118°43.50'	9°56.74'	G	B	15	YE	<5	14	16	24	1400	2.5	42
16	A036	118°43.46'	9°56.91'	H	B	15	BR	40	20	14	4700	21000	16.7	610
17	A037	118°43.45'	9°56.81'	G	B	15	YE	30	16	22	33	1400	6.4	69
18	A038	118°43.47'	9°57.01'	H	B	10	BR	20	10	4	2000	12000	7.1	160
19	A039	118°42.49'	9°56.77'	H	B	10	RD	35	8	6	5400	33000	22.4	600
20	A040	118°42.56'	9°56.83'	H	B	10	RD	60	24	6	4600	20000	45.0	410
21	A041	118°42.62'	9°56.92'	H	B	15	OR	25	16	<2	5100	22000	17.1	790
22	A042	118°42.61'	9°56.70'	H	B	10	RD	40	32	4	6100	30000	29.5	700
23	A043	118°42.79'	9°56.78'	H	B	10	RD	30	12	4	7300	14000	29.5	740
24	A044	118°42.88'	9°56.73'	H	B	10	RD	35	20	<2	6400	10000	24.2	610
25	A045	118°42.98'	9°56.77'	H	B	15	RD	20	10	2	10100	16000	43.0	680
26	A046	118°43.11'	9°56.77'	H	B	20	RD	25	26	<2	7500	23000	52.0	250
27	A047	118°43.17'	9°56.85'	H	B	15	YE	25	10	<2	4200	16000	18.2	450
28	A048	118°42.56'	9°56.59'	H	B	10	RD	25	26	6	10000	10000	16.5	480
29	A049	118°44.63'	9°56.79'	H	B	15	YE	20	6	<2	4000	23000	15.8	150
30	A050	118°44.55'	9°56.82'	H	B	15	BR	20	6	6	4500	23000	11.7	370
31	A051	118°44.52'	9°56.92'	H	B	10	BR	35	20	4	4600	19000	13.4	480
32	A052	118°44.43'	9°57.02'	H	B	10	BR	25	10	4	6400	16000	16.8	650
33	A053	118°44.41'	9°57.14'	H	B	10	BR	35	20	<4	3100	11000	9.6	360
34	A054	118°44.57'	9°57.13'	H	B	15	BR	40	16	16	5100	13000	14.6	430
35	A055	118°44.69'	9°57.06'	H	B	15	BR	30	14	8	5100	17000	16.7	560
36	A056	118°44.77'	9°56.92'	H	B	15	BR	20	14	<2	3000	30000	8.8	320
37	A057	118°39.49'	9°56.07'	H	B	15	BR	15	10	8	1200	4140	5.5	82
38	A058	118°39.38'	9°55.99'	H	B	10	BR	10	2	4	4200	16000	12.3	520
39	A059	118°39.28'	9°55.91'	H	B	15	BR	20	8	6	2000	8000	7.1	270
40	A060	118°39.22'	9°55.85'	H	B	15	BR	5	4	6	4300	15000	11.2	370
41	A061	118°39.16'	9°55.79'	D	B	15	BR	15	<2	8	3000	13000	9.4	380
42	A062	118°39.15'	9°55.71'	H	B	15	RD	10	8	<2	2700	19000	10.1	620
43	A063	118°39.17'	9°55.64'	H	B	20	BR	10	6	6	2200	15000	7.6	430
44	A064	118°39.30'	9°55.67'	S	B	15	BR	40	44	<4	291	2000	5.2	79
45	A065	118°39.44'	9°55.77'	S	B	20	RD	25	6	<2	140	1500	5.2	64
46	A066	118°39.50'	9°55.87'	Q	B	20	BR	25	6	<2	4500	13000	10.0	430
47	A067	118°39.57'	9°55.95'	H	B	20	BR	30	6	<4	2800	11000	10.5	290
48	A068	118°39.61'	9°55.98'	H	B	30	BR	30	<2	<2	6400	16000	21.6	610
49	A069	118°39.69'	9°56.03'	H	B	20	BR	<5	<2	4	1500	9000	5.1	140
50	A070	118°39.76'	9°56.10'	H	B	15	BR	25	8	<2	2100	13000	9.7	320
51	A071	118°39.09'	9°56.22'	H	B	25	RD	20	40	<2	6700	14000	27.8	670
52	A072	118°39.02'	9°56.26'	D	B	25	BR	15	14	<2	3200	14000	12.7	440
53	A073	118°38.99'	9°56.13'	D	B	25	RD	35	4	8	6200	18000	20.6	700
54	A074	118°39.00'	9°56.05'	D	B	20	BR	40	8	<4	5200	15000	17.5	560
55	A075	118°39.05'	9°56.01'	D	B	25	RD	15	12	<2	4800	20000	14.9	710
56	A076	118°39.08'	9°56.08'	D	B	15	BR	20	14	6	5700	24000	17.2	670
57	A077	118°39.12'	9°56.15'	H	B	15	BR	25	12	8	3100	27000	11.1	530
58	A078	118°39.17'	9°56.22'	H	B	15	BR	15	4	<2	4200	17000	16.0	530
59	A079	118°39.09'	9°55.92'	D	B	30	BR	25	4	<2	6400	8000	10.5	290
60	A080	118°39.16'	9°55.90'	D	B	20	BR	20	10	6	4600	18000	12.5	570
61	A081	118°39.20'	9°56.03'	D	B	20	BR	15	12	<2	1600	8000	7.4	110
62	A082	118°39.31'	9°56.06'	D	B	15	RD	25	20	18	2500	15000	8.5	420
63	A083	118°39.30'	9°56.17'	D	B	15	BR	70	40	14	2700	36000	14.5	570
64	A084	118°38.98'	9°56.39'	D	B	15	RD	20	6	6	5600	13000	18.7	420
65	A085	118°38.97'	9°56.50'	D	B	15	RD	15	<2	<2	4900	11000	12.8	280
66	A086	118°39.03'	9°56.55'	D	B	15	BR	30	15	8	5800	22000	20.9	630
67	A087	118°39.10'	9°56.66'	D	B	20	RD	70	52	58	6100	20000	24.1	570
68	A088	118°39.22'	9°56.75'	D	B	20	BR	25	18	8	6000	21000	22.1	640
69	A089	118°39.26'	9°56.87'	D	B	25	RD	10	<2	10	6200	20000	26.0	500
70	A090	118°39.35'	9°57.05'	D	B	25	RD	20	14	2	5100	54000	20.0	340

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

(2)

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
71	A091	118°39.26'	9°57.13'	P	B	20	RD	120	90	34	1500	17000	18.3	490
72	A092	118°39.15'	9°57.12'	P	B	20	RD	70	64	4	1500	9000	16.0	430
73	A093	118°39.30'	9°56.93'	D	B	25	RD	20	10	10	6100	14000	22.6	550
74	A094	118°39.13'	9°55.48'	S	B	25	RD	<5	10	15	43	1300	6.0	42
75	A095	118°39.14'	9°56.37'	H	B	20	BR	35	24	8	5800	16000	19.7	650
76	A096	118°39.15'	9°56.51'	D	B	25	BR	70	40	4	2100	12000	8.8	370
77	A097	118°39.21'	9°56.62'	D	B	25	BR	45	10	<4	2400	19000	11.3	410
78	A098	118°39.04'	9°56.41'	D	B	20	BR	<5	4	<2	2800	22000	11.2	380
79	A099	118°39.75'	9°55.96'	Q	B	20	BR	10	10	<2	2600	29000	11.3	580
80	A100	118°39.65'	9°55.90'	Q	B	20	BR	<10	50	<4	2200	11000	11.1	300
81	A101	118°39.59'	9°55.85'	Q	B	15	BR	<5	8	4	610	2800	5.6	91
82	A102	118°39.79'	9°56.69'	D	B	15	RD	75	50	<2	6300	21000	41.0	590
83	A103	118°39.92'	9°56.73'	D	B	15	RD	85	46	4	7300	23000	51.0	610
84	A104	118°40.04'	9°56.78'	D	B	15	RD	85	40	<2	6200	23000	52.0	650
85	A105	118°40.16'	9°56.84'	D	B	15	RD	30	6	<2	6800	9000	55.0	640
86	A106	118°40.26'	9°56.88'	D	B	15	RD	85	50	<2	5500	11000	23.5	470
87	A107	118°40.32'	9°56.95'	D	B	15	BR	35	14	<2	5000	10000	21.4	460
88	A108	118°39.66'	9°56.86'	P	B	15	BR	90	120	26	499	3800	9.0	140
89	A109	118°39.74'	9°56.93'	P	B	15	RD	130	130	20	1900	6900	30.1	430
90	A110	118°39.81'	9°57.04'	P	B	15	BR	20	6	12	6800	11000	24.6	500
91	A111	118°39.86'	9°57.13'	P	B	15	BR	95	52	10	1800	21000	15.0	510
92	A112	118°38.77'	9°56.84'	P	B	15	YE	25	<2	<2	2700	12000	13.2	310
93	A113	118°38.93'	9°56.90'	P	B	15	BR	60	34	4	2300	21000	13.1	270
94	A114	118°39.07'	9°56.94'	P	B	20	BR	110	78	20	2200	14000	16.9	360
95	A115	118°39.19'	9°57.03'	D	B	15	RD	60	28	8	2300	14000	18.2	340
96	A116	118°39.14'	9°56.85'	D	B	20	RD	20	6	10	6700	15000	25.0	520
97	A117	118°38.63'	9°56.96'	P	B	20	RD	25	12	6	6600	21000	33.0	470
98	A118	118°38.60'	9°57.06'	P	B	20	RD	35	34	<2	4200	20000	53.0	470
99	B016	118°45.59'	9°56.87'	H	B	15	RD	15	14	6	4900	28000	11.6	320
100	B017	118°45.47'	9°56.88'	H	B	15	RD	25	6	<2	4800	13000	10.6	410
101	B018	118°45.46'	9°56.99'	H	B	15	RD	25	22	<2	5900	23000	19.5	400
102	B019	118°45.43'	9°57.08'	H	B	15	RD	15	12	<2	5000	18000	14.0	460
103	B020	118°45.30'	9°57.05'	H	B	15	BR	15	12	4	5000	16000	14.2	370
104	B021	118°45.28'	9°57.18'	H	B	15	RD	15	<2	<2	5800	18000	16.5	470
105	B022	118°45.18'	9°57.19'	H	B	15	RD	25	14	<2	4900	22000	15.8	390
106	B023	118°45.07'	9°57.10'	H	B	15	RD	<5	<2	<2	2200	27000	10.3	58
107	B024	118°45.01'	9°57.01'	H	B	15	RD	60	30	4	1400	23000	11.3	180
108	B025	118°45.09'	9°56.92'	H	B	15	RD	<30	24	30	1700	8000	14.1	250
109	B026	118°45.20'	9°56.86'	H	B	15	BR	25	14	<2	5000	25000	21.3	370
110	B027	118°45.19'	9°56.75'	H	B	15	BR	10	10	4	54	1500	5.8	65
111	B028	118°45.31'	9°56.82'	H	B	15	BR	<30	<12	<12	1100	5000	7.5	180
112	B029	118°42.41'	9°55.97'	H	B	15	RD	15	4	<2	3100	26000	11.6	370
113	B030	118°42.34'	9°56.16'	H	B	15	RD	10	<2	<2	2900	32000	11.7	240
114	B031	118°42.34'	9°56.23'	H	B	15	RD	<5	<2	<2	5300	24000	18.3	470
115	B032	118°42.28'	9°56.08'	H	B	15	RD	20	10	<2	6000	23000	26.4	830
116	B033	118°42.00'	9°56.10'	H	B	15	BR	30	10	4	5000	8500	11.2	320
117	B034	118°42.07'	9°56.02'	H	B	15	BR	30	8	<2	4400	13000	14.5	470
118	B035	118°41.95'	9°55.97'	H	B	15	BR	35	<2	<2	5200	14000	17.2	520
119	B036	118°42.07'	9°55.91'	H	B	15	RD	35	<2	4	6200	25000	21.2	770
120	B037	118°42.00'	9°55.78'	H	B	15	RD	40	36	<2	6200	21000	50.0	520
121	B038	118°41.94'	9°55.86'	H	B	15	BR	20	<2	2	2100	21000	8.8	110
122	B039	118°42.23'	9°55.95'	H	B	15	BR	20	10	<2	5100	38000	20.7	150
123	B040	118°41.64'	9°56.01'	H	B	15	BR	20	8	8	2800	38000	19.7	190
124	B041	118°41.55'	9°56.03'	H	B	25	BR	15	10	2	3100	10000	10.7	350
125	B042	118°41.48'	9°56.07'	H	B	25	BR	20	16	6	5100	10000	14.3	450
126	B043	118°41.39'	9°56.05'	H	B	25	BR	20	6	4	3100	5600	7.7	260
127	B044	118°41.36'	9°56.14'	H	B	15	BR	15	12	10	4600	10000	11.3	310
128	B045	118°41.30'	9°56.23'	H	B	25	RD	30	26	4	5100	2000	7.5	160
129	B046	118°41.23'	9°56.30'	H	B	15	BR	45	48	20	2600	3300	7.4	160
130	B047	118°41.10'	9°56.36'	H	B	15	BR	40	34	12	6000	12000	48.0	720
131	B048	118°40.96'	9°56.38'	H	B	15	RD	65	38	10	5500	19000	50.0	1250
132	B049	118°40.83'	9°56.40'	H	B	15	RD	55	58	6	3200	11000	57.0	370
133	B050	118°40.75'	9°56.49'	H	B	15	RD	110	130	30	3100	11000	48.0	1170
134	B051	118°40.58'	9°56.55'	H	B	15	RD	65	64	6	5600	13000	55.0	840
135	B052	118°40.46'	9°56.59'	D	B	15	RD	50	40	8	7300	14000	50.0	610
136	B053	118°40.51'	9°56.69'	D	B	15	RD	35	18	<2	5500	13000	30.9	780
137	B054	118°40.61'	9°56.67'	H	B	15	RD	36	44	10	3200	14000	57.0	340
138	B055	118°40.75'	9°56.68'	H	B	25	RD	55	60	10	3200	21000	50.0	240
139	B056	118°40.85'	9°56.61'	H	B	15	RD	75	54	8	4100	18000	53.0	300
140	B057	118°40.93'	9°56.56'	H	B	15	RD	50	54	4	2900	14000	51.0	440

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
141	B058	118°41.77'	9°56.16'	H	B	25	BR	<5	8	4	2300	11000	7.5	160
142	B059	118°41.75'	9°56.27'	H	B	25	BR	15	18	8	5200	17000	17.7	650
143	B060	118°41.76'	9°56.38'	H	B	25	BR	20	<2	<2	5200	17000	16.7	660
144	B061	118°41.93'	9°56.16'	H	B	25	BR	15	6	4	3000	8000	9.0	210
145	B062	118°41.81'	9°56.04'	H	B	25	BR	25	14	8	4000	17000	14.1	500
146	B063	118°41.85'	9°55.89'	H	B	25	BR	30	20	4	4300	19000	11.4	500
147	B064	118°41.73'	9°55.96'	H	B	25	BR	65	56	14	7600	18000	43.0	510
148	B065	118°41.73'	9°55.84'	H	B	25	BR	5	<2	<2	396	13000	15.5	71
149	B066	118°41.47'	9°55.92'	H	B	25	BR	20	10	<2	4200	9500	11.4	390
150	B067	118°40.77'	9°55.97'	H	B	25	BR	5	<2	<2	2900	5200	7.7	280
151	B068	118°40.97'	9°56.00'	H	B	25	BR	25	16	24	3200	16000	11.5	500
152	B069	118°40.80'	9°56.09'	H	B	25	BR	30	24	36	3200	7700	12.1	330
153	B070	118°40.71'	9°56.17'	H	B	25	BR	90	46	14	2900	27000	11.4	410
154	B071	118°40.56'	9°56.12'	H	B	25	BR	35	10	8	2900	7500	11.6	390
155	B072	118°40.42'	9°56.04'	H	B	25	BR	20	14	12	2400	6000	8.2	300
156	C016	118°46.70'	9°57.09'	H	B	35	BR	20	<2	4	3900	22000	15.2	320
157	C017	118°46.58'	9°57.18'	H	B	30	BR	20	10	<2	3400	11000	12.1	390
158	C018	118°46.88'	9°56.91'	H	B	30	BR	25	<2	4	6000	17000	20.2	560
159	C019	118°46.75'	9°56.91'	D	B	25	BR	20	16	<2	4700	10000	18.4	230
160	C020	118°46.67'	9°57.02'	D	B	35	BR	20	6	<2	5600	3000	12.4	200
161	C021	118°46.52'	9°57.08'	D	B	25	BR	20	<2	10	5100	3400	11.7	180
162	C022	118°46.74'	9°56.76'	H	B	30	BR	25	10	<2	5700	18000	19.8	580
163	C023	118°46.66'	9°56.71'	H	B	35	BR	30	<2	2	5400	13000	19.1	500
164	C024	118°46.84'	9°57.10'	H	B	30	BR	25	6	<2	5100	12000	18.1	510
165	C025	118°46.86'	9°57.19'	H	B	25	BR	20	6	<2	4900	7650	16.3	260
166	C026	118°46.81'	9°56.85'	D	B	25	BR	25	4	4	5800	14000	13.2	550
167	C027	118°43.44'	9°57.16'	H	B	35	BR	20	8	2	6300	12000	17.5	300
168	C028	118°43.42'	9°57.08'	H	B	30	BR	30	10	<2	8200	20000	26.3	460
169	C029	118°43.31'	9°57.04'	H	B	35	RD	40	14	<2	7800	32000	29.0	540
170	C030	118°43.10'	9°57.05'	H	B	30	RD	35	16	<2	8600	25000	31.0	560
171	C031	118°42.98'	9°57.05'	H	B	30	RD	25	<2	<2	12000	26000	24.9	520
172	C032	118°43.19'	9°57.07'	H	B	30	BR	35	2	<2	15000	20000	34.0	590
173	C033	118°43.12'	9°57.17'	H	B	25	BR	40	24	<2	8400	16000	35.0	590
174	C034	118°42.37'	9°56.69'	H	B	25	RD	60	48	6	5900	33000	37.0	570
175	C035	118°42.39'	9°56.86'	H	B	30	RD	40	38	<2	5900	23000	37.0	540
176	C036	118°42.37'	9°56.97'	H	B	30	BR	20	10	<2	7100	24000	31.7	600
177	C037	118°42.38'	9°57.07'	H	B	25	BR	30	26	2	7300	24000	24.8	330
178	C038	118°42.48'	9°57.07'	H	B	25	BR	35	4	<2	7600	19000	30.3	730
179	C039	118°42.28'	9°56.44'	H	B	30	BR	10	<2	4	6000	16000	19.8	900
180	C040	118°42.21'	9°56.36'	H	B	30	BR	15	10	6	8100	5500	16.8	790
181	C041	118°42.14'	9°56.35'	H	B	15	RD	4	10	2	3300	12000	12.8	250
182	C042	118°42.32'	9°56.57'	H	B	15	BR	25	10	<2	5500	21000	27.6	510
183	C051	118°42.18'	9°56.85'	H	B	25	RD	30	28	4	6800	16000	44.0	840
184	C052	118°42.10'	9°56.94'	H	B	25	BR	35	12	<2	12000	16000	31.0	680
185	C053	118°42.06'	9°57.03'	H	B	20	BR	45	4	6	5600	24000	18.4	590
186	C054	118°42.03'	9°57.12'	H	B	20	BR	60	28	22	5200	16000	40.0	310
187	C055	118°41.96'	9°57.17'	H	B	25	BR	50	34	22	7400	15000	45.0	660
188	C056	118°41.81'	9°57.22'	H	B	25	BR	70	10	12	6400	11000	40.0	350
189	C057	118°42.29'	9°56.64'	H	B	25	BR	120	40	4	5600	35000	38.0	550
190	C058	118°42.20'	9°56.56'	H	B	25	BR	50	26	4	6700	40000	31.0	590
191	C059	118°41.49'	9°57.01'	H	B	25	BR	120	56	6	6900	19000	39.0	600
192	C060	118°41.36'	9°56.96'	H	B	25	BR	55	22	12	13000	18000	33.0	700
193	C061	118°41.26'	9°56.91'	H	B	25	BR	65	46	10	14000	14000	34.0	620
194	C062	118°41.17'	9°56.85'	H	B	25	BR	30	24	10	6400	15000	44.0	1640
195	C063	118°41.60'	9°57.04'	H	B	20	BR	30	12	4	6200	13000	42.0	440
196	C064	118°41.56'	9°57.16'	H	B	25	RD	40	22	10	6400	23000	38.0	500
197	C065	118°41.69'	9°57.13'	H	B	20	BR	45	22	10	7100	17000	42.0	560
198	C066	118°41.81'	9°57.06'	H	B	20	BR	50	26	20	8400	16000	39.0	720
199	C067	118°41.55'	9°56.87'	H	B	25	BR	55	26	10	6800	29000	35.0	600
200	C068	118°41.53'	9°56.74'	H	B	20	BR	25	14	4	7400	8700	21.4	370
201	C069	118°41.45'	9°56.68'	H	B	25	BR	35	10	14	13000	14000	36.0	720
202	C070	118°41.36'	9°56.61'	H	B	25	BR	45	20	6	7400	14000	27.0	630
203	C071	118°41.64'	9°56.90'	H	B	20	BR	70	56	24	6400	40000	32.0	520
204	C072	118°41.92'	9°56.67'	H	B	25	BR	60	32	36	5700	23000	37.0	380
205	C073	118°42.10'	9°56.61'	H	B	25	BR	10	4	10	5300	22000	38.0	330
206	C074	118°41.99'	9°56.58'	H	B	25	BR	10	<2	10	5800	19000	19.5	350
207	C075	118°39.76'	9°56.61'	D	B	25	BR	90	62	14	8200	17000	49.0	690
208	C076	118°39.86'	9°56.62'	D	B	15	BR	130	72	<4	12000	17000	41.0	830
209	C077	118°39.96'	9°56.61'	D	B	10	BR	65	26	6	7400	17000	41.0	700
210	C078	118°40.09'	9°56.63'	D	B	25	BR	50	22	10	8600	14000	44.0	670

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
211	C079	118°40.22'	9°56.64'	D	B	25	BR	10	4	6	7000	31000	33.0	650
212	C080	118°40.33'	9°56.64'	D	B	10	BR	10	6	12	4600	67000	19.0	580
213	C081	118°39.61'	9°56.56'	H	B	15	BR	90	62	34	503	2150	10.7	210
214	C082	118°39.64'	9°56.94'	P	B	20	RD	110	88	40	1100	3850	13.1	290
215	C083	118°39.63'	9°57.05'	P	B	25	BR	80	42	10	1400	3100	17.5	270
216	C084	118°39.69'	9°57.14'	P	B	15	RD	65	34	10	1600	7900	19.8	320
217	C085	118°38.57'	9°56.67'	P	B	15	BR	40	40	8	2300	3300	20.7	390
218	C086	118°38.64'	9°56.60'	P	B	15	BR	60	44	12	4400	9500	21.1	440
219	C087	118°38.65'	9°56.68'	P	B	20	BR	140	70	20	5200	20000	26.7	560
220	C088	118°38.77'	9°56.68'	P	B	20	RD	140	90	14	7400	17000	38.0	720
221	C089	118°38.87'	9°56.64'	D	B	20	RD	100	60	24	6300	16000	27.3	650
222	C090	118°38.64'	9°56.48'	P	B	15	RD	50	20	<2	5400	17000	22.3	620
223	C091	118°38.73'	9°56.48'	P	B	15	RD	55	20	2	5200	24000	25.8	590
224	C092	118°38.83'	9°56.48'	P	B	25	RD	55	32	6	7500	13000	33.0	680
225	C093	118°38.68'	9°56.38'	P	B	15	BR	60	30	8	4400	13000	22.3	490
226	C094	118°38.66'	9°55.81'	H	B	25	BR	15	<2	6	3200	10000	13.5	260
227	C095	118°38.77'	9°55.74'	H	B	25	RD	40	20	8	6200	13000	24.1	600
228	C096	118°38.63'	9°55.71'	H	B	25	RD	40	12	26	5100	13000	18.5	640
229	C097	118°38.65'	9°55.58'	H	B	25	BR	5	6	14	3500	14000	15.6	230
230	C098	118°38.69'	9°55.43'	H	B	25	BR	20	10	26	4300	10400	14.4	290
231	C099	118°38.71'	9°55.48'	H	B	25	RD	45	14	12	7600	21000	26.8	1090
232	C100	118°38.82'	9°55.43'	H	B	25	RD	20	8	<2	5000	16000	19.8	470
233	C101	118°38.93'	9°55.38'	H	B	25	RD	25	8	16	3900	8200	16.8	370
234	D017	118°46.18'	9°56.93'	H	B	25	BR	10	8	8	6000	13000	18.4	550
235	D018	118°46.26'	9°57.00'	H	B	30	BR	10	6	6	6600	3300	13.9	240
236	D019	118°46.14'	9°57.04'	H	B	30	BR	10	18	14	6200	1400	11.9	240
237	D020	118°46.04'	9°57.00'	H	B	30	BR	15	14	6	5200	2200	10.7	102
238	D021	118°46.18'	9°56.81'	H	B	30	BR	25	10	10	3700	6200	11.6	170
239	D022	118°46.07'	9°56.80'	H	B	40	BR	<5	12	16	5300	14000	21.9	230
240	D023	118°45.96'	9°56.80'	H	B	30	BR	25	16	18	6000	7200	18.1	390
241	D024	118°45.95'	9°56.90'	H	B	30	BR	20	12	10	4100	5000	15.7	300
242	D025	118°45.86'	9°56.80'	H	B	30	BR	10	8	26	3800	12000	13.5	210
243	D026	118°45.78'	9°56.77'	H	B	30	BR	25	16	16	6200	11000	18.1	420
244	D027	118°43.84'	9°57.01'	H	B	30	RD	35	16	18	7200	12000	27.8	560
245	D028	118°43.77'	9°57.08'	H	B	25	RD	25	8	2	6100	18000	20.0	440
246	D029	118°43.77'	9°57.17'	H	B	25	BR	15	6	14	4100	3600	11.0	270
247	D030	118°43.79'	9°56.95'	H	B	30	BR	5	4	6	4900	10000	16.8	360
248	D031	118°43.88'	9°56.84'	H	B	25	BR	20	6	10	6500	17000	22.0	960
249	D032	118°43.81'	9°56.75'	H	B	30	BR	10	6	2	6000	19000	21.5	340
250	D033	118°43.96'	9°56.92'	H	B	25	BR	15	4	<2	5500	14000	18.7	400
251	D034	118°42.70'	9°56.15'	H	B	40	BR	40	14	4	6200	24000	19.7	410
252	D035	118°42.72'	9°56.23'	H	B	35	BR	30	14	6	5900	29000	19.8	420
253	D036	118°42.67'	9°56.29'	H	B	35	RD	65	38	6	5200	28000	25.0	480
254	D037	118°42.61'	9°56.36'	H	B	35	RD	40	16	4	3800	25000	16.9	350
255	D038	118°42.68'	9°56.42'	H	B	35	OR	<5	<2	8	36	300	12.4	34
256	D039	118°42.91'	9°56.46'	H	B	30	OR	5	<2	10	31	490	6.8	30
257	D040	118°43.03'	9°56.45'	H	B	35	OR	<5	2	4	13	300	11.1	19
258	D041	118°43.04'	9°56.66'	H	B	35	OR	5	<2	10	13	200	10.8	38
259	D042	118°42.92'	9°56.58'	H	B	30	OR	<5	<2	6	20	300	14.6	76
260	D043	118°42.77'	9°56.48'	H	B	30	OR	<5	2	4	79	300	8.1	43
261	D052	118°44.55'	9°56.75'	H	B	20	BR	160	260	28	3400	13000	27.4	420
262	D053	118°44.45'	9°56.67'	H	B	30	OR	20	22	10	215	1300	14.3	57
263	D054	118°44.36'	9°56.60'	H	B	30	BR	10	6	16	56	300	12.4	49
264	D055	118°44.24'	9°56.55'	H	B	30	BR	<5	4	8	33	300	9.6	44
265	D056	118°44.12'	9°56.51'	H	B	35	OR	<5	<2	6	28	200	17.5	62
266	D057	118°44.00'	9°56.48'	H	B	35	BR	<5	<2	<2	34	200	13.8	66
267	D058	118°43.88'	9°56.48'	H	B	30	GR	15	22	8	87	400	7.6	45
268	D059	118°43.80'	9°56.54'	H	B	30	BR	10	12	<2	48	300	10.6	47
269	D060	118°43.73'	9°56.61'	H	B	30	BR	55	56	26	59	400	5.6	50
270	D061	118°41.69'	9°56.09'	H	B	30	BR	25	22	16	6700	17000	21.4	490
271	D062	118°41.61'	9°56.17'	H	B	25	RD	45	24	6	7400	24000	30.2	520
272	D063	118°41.48'	9°56.18'	H	B	20	BR	15	12	<2	4600	23000	16.9	490
273	D064	118°41.55'	9°56.27'	H	B	30	RD	35	26	<2	7300	7400	25.4	530
274	D065	118°41.49'	9°56.38'	H	B	30	RD	30	14	<2	6300	18000	25.9	550
275	D066	118°41.39'	9°56.46'	H	B	30	RD	25	16	<2	7800	14000	32.0	450
276	D067	118°41.27'	9°56.47'	H	B	30	RD	55	32	8	14000	13000	37.0	440
277	D068	118°41.10'	9°56.51'	H	B	35	RD	70	38	8	13000	12000	52.0	650
278	D069	118°41.01'	9°56.56'	H	B	30	RD	70	22	<2	7300	16000	32.0	520
279	D070	118°40.97'	9°56.60'	H	B	35	RD	140	80	8	5200	25000	39.0	610
280	D071	118°40.91'	9°56.67'	H	B	30	RD	95	62	12	5500	15000	38.0	840

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
281	D072	118°40.82'	9°56.78'	H	B	30	RD	90	54	18	6600	13000	39.0	510
282	D073	118°40.72'	9°56.86'	H	B	35	BR	95	72	10	4500	23000	45.0	620
283	D074	118°40.61'	9°56.92'	H	B	30	RD	90	82	4	4900	33000	44.0	510
284	D075	118°40.53'	9°56.96'	H	B	30	RD	200	200	46	3100	12000	43.0	180
285	D076	118°40.67'	9°57.03'	H	B	30	RD	140	150	28	4000	16000	46.0	360
286	D077	118°40.78'	9°56.96'	H	B	30	RD	70	50	8	5000	13000	39.0	370
287	D078	118°40.88'	9°56.90'	H	B	30	RD	290	240	52	4100	15000	39.0	630
288	D079	118°40.98'	9°56.84'	H	B	30	RD	65	38	<2	4100	20000	44.0	440
289	D080	118°41.07'	9°56.78'	H	B	30	RD	60	42	<2	5000	14000	39.0	640
290	D081	118°41.15'	9°56.71'	H	B	30	BR	95	58	<2	5200	18000	39.0	560
291	D082	118°41.46'	9°55.78'	H	B	25	BR	10	4	<2	1800	7000	11.8	310
292	D083	118°40.38'	9°56.21'	H	B	25	BR	40	26	<2	8200	16000	29.9	720
293	D084	118°40.44'	9°56.32'	H	B	25	BR	65	28	<2	5400	14000	32.0	530
294	D085	118°40.44'	9°56.42'	H	B	20	BR	70	44	<2	5000	25000	28.5	580
295	D086	118°40.10'	9°56.25'	H	B	25	BR	10	4	<2	3300	22000	14.6	180
296	D087	118°40.21'	9°56.32'	H	B	20	BR	40	12	<2	7500	17000	17.0	320
297	D088	118°39.75'	9°56.76'	H	B	30	OR	240	240	66	1800	6500	28.4	300
298	D089	118°39.83'	9°56.83'	H	B	20	BR	120	100	54	1000	3100	14.1	320
299	D090	118°39.88'	9°56.91'	D	B	30	RD	90	52	<2	7200	13000	46.0	810
300	D091	118°39.96'	9°57.00'	D	B	30	RD	100	44	8	7900	16000	44.0	710
301	D092	118°39.63'	9°56.75'	P	B	25	RD	200	220	60	2100	10000	33.0	470
302	D093	118°39.52'	9°56.75'	H	B	25	BR	85	110	48	484	1900	16.8	240
303	D094	118°39.45'	9°56.84'	H	B	25	BR	200	180	44	507	1700	16.5	220
304	D095	118°39.44'	9°56.96'	H	B	25	BR	80	110	6	1600	3800	18.7	370
305	D096	118°39.46'	9°57.09'	H	B	30	RD	120	66	6	5900	30000	35.0	680
306	D097	118°39.52'	9°56.66'	H	B	30	BR	85	120	20	1200	11000	20.9	300
307	D098	118°39.64'	9°56.63'	H	B	25	RD	120	110	26	2400	16000	26.1	380
308	D099	118°38.78'	9°56.13'	P	B	30	BR	25	4	<2	4900	22000	15.8	550
309	D100	118°38.89'	9°55.83'	H	B	30	BR	20	10	4	4600	11000	17.5	370
310	D101	118°39.00'	9°55.88'	D	B	30	BR	30	14	4	4600	12000	15.8	370
311	D102	118°38.80'	9°55.93'	H	B	25	BR	10	4	2	1300	2000	5.4	93
312	D103	118°38.88'	9°55.73'	H	B	25	BR	15	12	8	6200	13000	19.7	580
313	D104	118°38.86'	9°55.63'	H	B	25	RD	25	8	10	6600	11000	19.0	650
314	D105	118°38.92'	9°55.56'	H	B	30	BR	15	2	10	5500	11000	20.1	450
315	D106	118°39.01'	9°55.60'	H	B	30	BR	25	8	10	6200	13000	20.6	410
316	D107	118°38.15'	9°55.84'	H	B	25	BR	40	24	6	1800	4600	18.4	350
317	D108	118°38.36'	9°55.79'	H	B	20	BR	20	12	10	3300	5200	14.7	300
318	D109	118°38.45'	9°55.59'	H	B	20	BR	15	6	10	3800	5600	16.1	330
319	D110	118°38.48'	9°55.37'	H	B	20	BR	25	6	12	5400	12000	19.1	470
320	D111	118°38.59'	9°55.19'	H	B	25	OR	10	6	12	2800	7580	17.6	220
321	D112	118°38.35'	9°55.97'	H	B	30	BR	10	10	6	4000	14000	16.2	340
322	D113	118°38.29'	9°55.37'	H	B	25	BR	20	10	4	5500	22000	19.0	530
323	D114	118°38.37'	9°55.30'	H	B	25	BR	20	2	2	4700	13000	16.4	370
324	D115	118°38.45'	9°55.25'	H	B	30	BR	15	10	<2	4200	11000	17.2	330
325	D116	118°38.53'	9°55.18'	H	B	35	BR	20	10	<2	5700	7010	19.2	400
326	D117	118°38.59'	9°55.08'	H	B	30	BR	5	<2	<2	447	860	7.7	100
327	D118	118°38.31'	9°54.94'	D	B	30	RD	30	16	4	9000	10000	22.0	640
328	D119	118°38.25'	9°55.04'	D	B	25	BR	15	6	4	4900	11000	18.6	400
329	D120	118°38.22'	9°55.14'	D	B	25	OR	10	12	8	7800	12000	27.6	520
330	D121	118°38.22'	9°55.27'	H	B	25	OR	120	10	<2	7000	19000	23.5	630
331	D122	118°38.26'	9°55.47'	H	B	30	BR	<5	<2	<2	1800	3090	9.3	170
332	D123	118°37.60'	9°55.28'	D	B	25	BR	20	6	2	7100	11000	15.3	520
333	D124	118°37.70'	9°55.32'	D	B	30	BR	5	12	<2	4300	6080	16.5	300
334	D125	118°37.53'	9°55.16'	H	B	25	OR	15	8	<2	8300	21000	33.0	730
335	D126	118°37.44'	9°55.11'	H	B	35	BR	<5	4	2	4700	21000	16.8	380
336	D127	118°37.48'	9°54.99'	H	B	25	BR	10	12	4	5500	12000	18.2	400
337	D128	118°37.48'	9°54.87'	H	B	25	OR	25	10	<2	6100	8160	17.3	620
338	D129	118°37.50'	9°54.76'	D	B	30	OR	30	10	<2	6800	17000	23.5	610
339	D130	118°37.56'	9°54.65'	D	B	25	RD	20	8	2	7200	21000	24.6	690
340	D131	118°37.64'	9°54.55'	D	B	25	RD	25	10	<2	8100	17000	31.3	670
341	E016	118°45.71'	9°56.91'	H	B	30	BR	30	<4	32	5800	11000	18.1	350
342	E017	118°45.77'	9°56.95'	H	B	15	BR	40	18	12	5900	13000	18.3	750
343	E018	118°45.92'	9°57.02'	H	B	20	BR	40	16	14	4000	17000	17.8	610
344	E019	118°45.93'	9°57.12'	D	B	25	BR	50	40	32	4100	11000	15.8	550
345	E020	118°45.94'	9°57.25'	D	B	25	BR	20	14	4	5400	15000	18.1	470
346	E021	118°45.61'	9°56.78'	H	B	30	BR	25	4	<2	5400	20000	15.4	340
347	E022	118°45.68'	9°56.72'	H	B	25	BR	25	12	16	6500	16000	20.0	470
348	E023	118°45.60'	9°56.66'	H	B	15	BR	15	8	<2	5600	24000	20.0	320
349	E024	118°45.59'	9°56.53'	H	B	25	BR	<5	<2	4	52	760	6.4	44
350	E025	118°44.09'	9°57.02'	H	B	15	BR	10	<2	4	6000	8750	14.4	270

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
351	E026	118°44.04'	9°57.11'	H	B	20	BL	10	6	2	7000	3450	11.7	280
352	E027	118°44.03'	9°57.18'	H	B	15	BR	35	16	4	5700	15000	17.8	470
353	E028	118°44.05'	9°56.86'	D	B	15	BR	25	4	<2	7700	27000	18.8	1620
354	E029	118°44.21'	9°56.78'	H	B	15	BR	65	74	10	1400	4180	11.6	240
355	E030	118°44.34'	9°56.75'	H	B	15	BR	35	4	<2	7000	27000	18.8	380
356	E031	118°44.43'	9°56.77'	H	B	15	YE	15	18	<2	141	19000	8.2	30
357	E032	118°42.56'	9°56.24'	D	B	15	RD	40	28	4	4100	35000	24.7	450
358	E033	118°42.61'	9°56.11'	D	B	15	BR	35	12	<2	3600	20000	28.8	490
359	E034	118°42.49'	9°56.33'	D	B	15	RD	30	25	8	5900	18000	31.4	400
360	E035	118°42.46'	9°56.44'	D	B	35	RD	15	14	6	6300	18000	40.0	610
361	E036	118°42.29'	9°56.29'	H	B	25	YE	35	20	<2	4000	24000	18.3	350
362	E037	118°42.23'	9°56.23'	H	B	15	YE	25	8	<2	7300	10000	19.2	420
363	E046	118°43.64'	9°56.37'	G	B	15	BR	60	46	22	144	16000	4.4	67
364	E047	118°43.63'	9°56.53'	H	B	15	YE	20	<2	42	50	620	3.5	19
365	E048	118°43.36'	9°56.53'	H	B	15	YE	40	24	22	82	1300	4.5	40
366	E049	118°43.23'	9°56.63'	H	B	20	OR	15	18	<2	369	5710	14.4	150
367	E050	118°43.23'	9°56.75'	H	B	15	BR	15	<2	<2	4300	6750	11.6	290
368	E051	118°43.35'	9°56.39'	G	B	15	OR	5	12	6	80	970	7.5	10
369	E052	118°42.24'	9°56.74'	H	B	15	RD	25	12	<2	6300	16000	41.0	520
370	E053	118°42.12'	9°56.72'	H	B	15	BR	30	10	<2	5900	17000	20.1	590
371	E054	118°41.99'	9°56.77'	H	B	10	RD	30	12	14	15000	16000	28.6	620
372	E055	118°41.68'	9°57.00'	H	B	25	RD	70	54	20	6700	16000	43.0	510
373	E056	118°41.89'	9°56.97'	H	B	25	RD	45	28	<6	5300	17000	44.0	210
374	E057	118°41.82'	9°56.94'	H	B	25	RD	40	36	12	6800	17000	38.0	730
375	E058	118°41.46'	9°57.11'	H	B	25	RD	85	64	24	6500	17000	44.0	610
376	E059	118°41.28'	9°57.18'	H	B	25	RD	70	48	14	7300	15000	38.0	640
377	E060	118°41.17'	9°57.21'	H	B	15	RD	85	36	12	6700	19000	28.8	520
378	E061	118°41.06'	9°57.16'	H	B	20	RD	45	20	8	15000	15000	32.5	610
379	E062	118°40.96'	9°57.12'	H	B	20	RD	75	46	6	7300	16000	43.0	750
380	E063	118°40.83'	9°57.10'	H	B	25	RD	120	76	<12	8200	12000	36.0	660
381	E064	118°40.70'	9°57.12'	H	B	25	RD	75	36	10	7700	14000	38.0	600
382	E065	118°41.86'	9°56.77'	H	B	15	RD	45	30	2	5800	23000	35.0	690
383	E066	118°41.75'	9°56.73'	H	B	20	RD	60	36	<2	5100	43000	36.0	380
384	E067	118°41.64'	9°56.71'	H	B	15	RD	40	36	<2	4600	24000	36.0	210
385	E068	118°41.55'	9°56.61'	H	B	15	BR	40	20	<2	6700	22000	22.6	790
386	E069	118°41.51'	9°56.52'	H	B	15	BR	45	18	<2	5500	20000	24.3	660
387	E070	118°41.91'	9°56.49'	H	B	20	YE	10	12	16	6800	17000	18.9	470
388	E071	118°41.87'	9°56.41'	H	B	15	YE	20	16	16	5400	18000	23.0	490
389	E072	118°41.83'	9°56.34'	H	B	15	BR	15	12	4	4300	13000	17.7	400
390	E073	118°39.85'	9°56.33'	H	B	15	BR	35	22	<2	2300	11000	15.9	430
391	E074	118°39.97'	9°56.39'	H	B	15	BR	120	50	12	4000	20000	17.7	510
392	E075	118°40.08'	9°56.43'	D	B	15	BR	110	26	16	4200	100000	22.8	670
393	E076	118°40.19'	9°56.47'	D	B	15	BR	60	60	12	2800	27000	25.7	660
394	E077	118°39.89'	9°56.47'	D	B	20	BR	30	20	4	14000	33000	34.0	820
395	E078	118°39.76'	9°56.41'	H	B	25	RD	65	60	<4	8000	13000	43.0	1110
396	E079	118°39.48'	9°56.48'	H	B	15	YE	100	76	12	2000	14000	19.4	400
397	E080	118°39.40'	9°56.51'	H	B	10	BR	120	74	12	468	4080	6.2	220
398	E081	118°39.45'	9°56.34'	H	B	35	BR	15	10	8	5700	10000	40.6	970
399	E082	118°39.56'	9°56.40'	H	B	25	BR	110	50	4	5600	12000	34.0	580
400	E083	118°38.80'	9°56.11'	P	B	20	BR	60	26	6	6500	17000	24.3	650
401	E084	118°38.82'	9°56.04'	H	B	20	BR	50	24	4	6100	21000	26.2	750
402	E085	118°38.91'	9°56.20'	P	B	20	RD	40	10	10	7100	13000	22.4	470
403	E086	118°38.87'	9°56.28'	P	B	20	BR	36	4	2	7200	19000	25.0	630
404	E087	118°39.30'	9°56.33'	H	B	20	BR	110	68	2	8400	21000	21.1	570
405	E088	118°39.27'	9°56.45'	H	B	25	YE	25	30	14	4600	28000	21.9	560
406	E089	118°39.29'	9°56.56'	H	B	20	BR	30	6	6	5200	8610	17.6	330
407	E090	118°39.31'	9°56.67'	H	B	15	BR	30	18	12	6200	40000	28.8	590
408	E091	118°38.91'	9°56.11'	H	B	20	BR	65	40	18	3200	15000	21.6	440
409	E092	118°38.25'	9°55.87'	H	B	10	BR	75	54	8	1097	6570	16.1	280
410	E093	118°38.41'	9°55.69'	H	B	20	BR	30	8	2	4900	15000	19.4	480
411	E094	118°38.46'	9°55.47'	H	B	15	BR	15	2	<2	884	3010	8.9	130
412	E095	118°38.54'	9°55.29'	H	B	25	BR	20	<2	2	4000	11000	21.0	480
413	E096	118°38.53'	9°55.86'	H	B	20	BR	25	<2	6	5400	31000	19.7	570
414	E097	118°37.95'	9°55.71'	H	B	20	BR	180	120	30	2700	16000	29.5	590
415	E098	118°37.78'	9°55.65'	H	B	20	YE	20	8	<2	845	3950	13.0	100
416	E099	118°37.73'	9°55.58'	H	B	25	BR	50	12	4	5000	31000	29.1	580
417	E100	118°37.72'	9°55.42'	H	B	20	BR	140	84	4	4100	18000	19.8	450
418	E101	118°37.84'	9°55.40'	H	B	15	BR	35	20	2	4800	15000	17.9	440
419	E102	118°37.92'	9°55.31'	D	B	25	RD	25	10	<2	6600	13000	28.0	670
420	E103	118°38.01'	9°55.22'	D	B	15	BR	<5	4	<2	4000	13000	13.9	430

Appendix 4 Chemical analyses of geochemical soil samples in area A-2

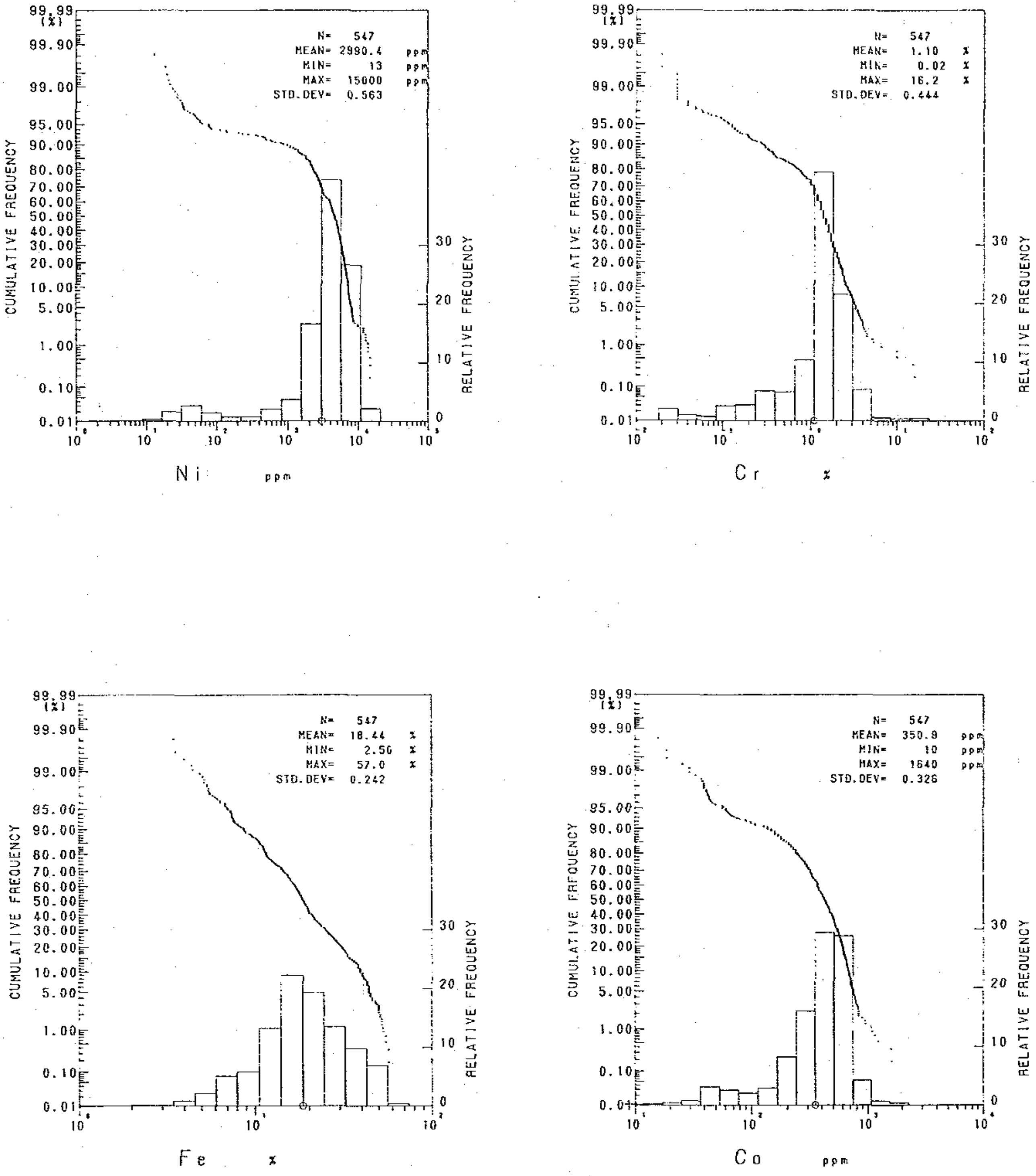
(7)

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
421	E104	118°38.05'	9°55.11'	D	B	15	BR	25	2	<2	4300	15000	18.2	580
422	E105	118°38.22'	9°55.59'	H	B	25	BR	25	20	<2	5300	13000	18.7	510
423	E106	118°38.13'	9°55.75'	H	B	20	BR	25	16	8	5700	10000	19.0	610
424	E107	118°37.68'	9°55.17'	H	B	20	BR	15	8	6	6600	13000	17.5	490
425	E108	118°37.89'	9°55.19'	H	B	20	RD	20	<2	12	6500	15000	27.2	680
426	E109	118°37.80'	9°55.14'	H	B	15	RD	25	16	4	5600	15000	26.9	660
427	E110	118°37.68'	9°55.09'	H	B	15	BR	20	8	6	5400	36000	22.2	530
428	E111	118°37.75'	9°54.98'	H	B	15	BR	15	4	4	4000	15000	15.5	570
429	E112	118°37.82'	9°54.88'	H	B	20	BR	25	16	<2	7800	20000	27.9	780
430	E113	118°37.90'	9°54.76'	H	B	20	BR	15	10	12	4700	11000	17.8	440
431	E114	118°37.93'	9°54.63'	D	B	20	RD	30	14	<2	8500	15000	32.5	620
432	F001	118°44.15'	9°56.36'	H	B	20	BR	10	<2	<2	22	980	5.5	26
433	F002	118°44.36'	9°56.42'	H	B	25	BR	<5	<2	<2	26	1040	14.0	58
434	F003	118°44.58'	9°56.55'	H	B	35	BR	10	<2	<2	115	1190	6.8	63
435	F004	118°44.78'	9°56.58'	H	B	25	RD	10	<2	<2	64	1080	10.3	73
436	F005	118°44.87'	9°56.57'	H	B	30	RD	10	<2	<2	86	1150	11.3	91
437	F006	118°44.86'	9°56.66'	H	B	35	RD	70	140	8	586	12000	31.6	240
438	F007	118°44.80'	9°56.76'	H	B	25	BR	25	10	4	3000	45000	9.8	390
439	F008	118°44.86'	9°56.83'	H	B	30	BR	20	4	8	3400	33000	16.5	270
440	F009	118°45.48'	9°56.65'	H	B	25	BR	100	110	16	1400	6460	16.1	290
441	F010	118°45.48'	9°56.57'	H	B	20	BR	50	26	12	809	3790	15.2	290
442	F011	118°45.35'	9°56.59'	H	C	15	BL	20	8	8	2900	5690	18.7	330
443	F012	118°45.41'	9°56.76'	H	B	25	BR	<30	<12	30	678	4020	10.6	230

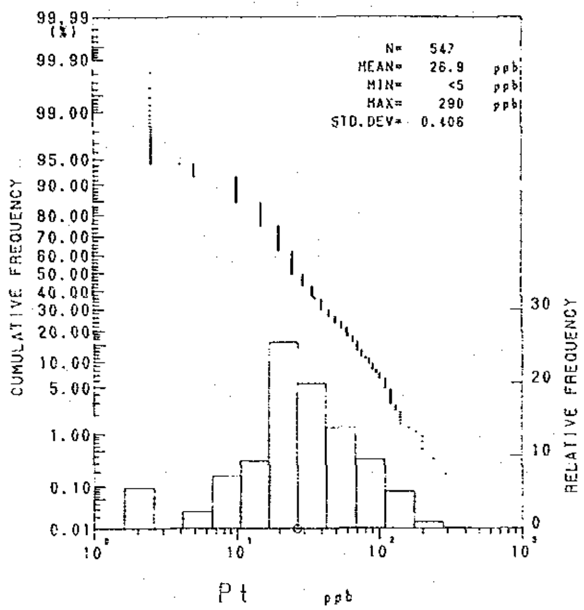
Abbreviation

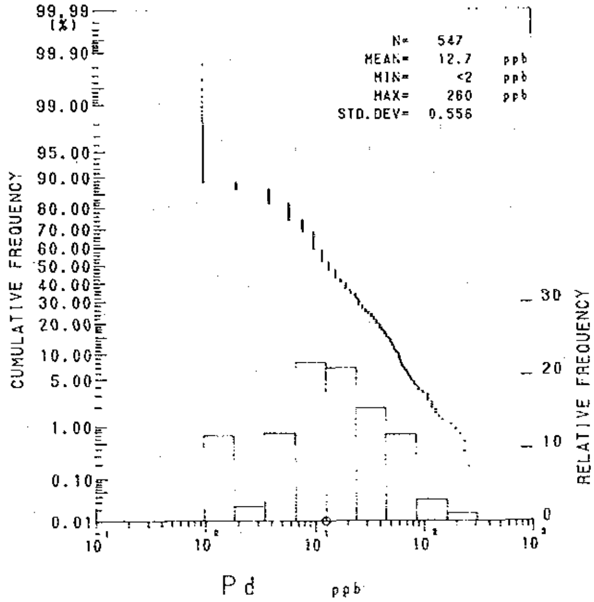
Geology: D;dunite, H;harzburgite, P;pyroxenite

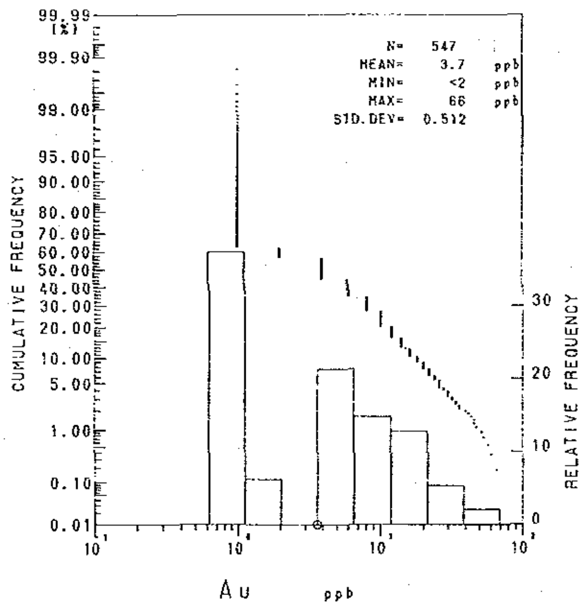
Color: BL;black, BR;brown, OR;orange, RD;red, YE;yellow



Appendix 5 Cumulative probability plots and histograms of soil samples in area A-2 and A-3







Appendix 5 Cumulative probability plots and histograms of soil samples in area A-2 and A-3

Appendix 6 Chemical analyses of geochemical soil samples in area A-3

(1)

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
1	A001	118°43.78'	9°51.84'	H	B	25	BR	55	36	4	2600	11000	23.5	460
2	A002	118°43.83'	9°52.10'	H	B	10	OR	75	38	<2	6200	29000	40.3	780
3	A003	118°43.83'	9°52.30'	H	B	15	OR	75	60	<2	2200	8000	25.7	440
4	A004	118°43.87'	9°52.40'	D	B	15	BR	25	6	<2	2900	162000	23.5	660
5	A005	118°43.95'	9°52.24'	H	B	20	OR	<30	<12	<12	3000	29000	29.6	510
6	A006	118°43.65'	9°52.21'	H	B	15	BR	30	14	<2	2800	14000	27.2	420
7	A007	118°43.39'	9°52.22'	H	B	15	BR	55	22	<2	2000	19000	19.5	500
8	A008	118°43.48'	9°52.38'	D	B	15	YE	25	34	22	2300	10000	26.4	390
9	A009	118°43.51'	9°52.44'	D	B	15	BR	75	24	<6	2400	52000	9.8	260
10	A010	118°43.64'	9°52.54'	D	B	20	BR	25	24	<4	2100	18000	18.0	340
11	A011	118°43.70'	9°52.41'	D	B	20	OR	60	98	<2	1300	2400	12.0	180
12	A012	118°44.46'	9°52.35'	H	B	20	BR	35	14	2	2500	3700	7.7	230
13	A013	118°44.26'	9°52.48'	D	B	15	BR	45	46	<4	2100	12000	19.8	410
14	A014	118°44.16'	9°52.35'	D	B	15	BR	80	42	6	2200	11000	23.2	440
15	A015	118°44.03'	9°52.49'	D	B	15	YE	35	42	2	2300	13000	19.0	310
16	A016	118°43.76'	9°52.61'	D	B	20	BR	25	20	<2	2100	12000	15.4	250
17	A017	118°43.60'	9°52.75'	D	B	15	BL	45	38	<2	241	2800	4.9	160
18	A018	118°43.61'	9°52.63'	D	B	1	OR	15	12	<2	2200	1970	11.9	220
19	A019	118°43.75'	9°52.72'	D	B	10	BR	35	32	<2	2100	15000	23.3	450
20	A020	118°43.91'	9°52.59'	D	B	10	BR	55	38	6	3100	17000	30.5	490
21	B001	118°43.22'	9°51.80'	H	B	15	BR	20	16	<2	4300	17000	12.4	560
22	B002	118°43.12'	9°51.73'	H	B	15	BR	<60	<24	<24	2400	16000	7.8	550
23	B003	118°43.23'	9°51.67'	H	B	15	BR	10	10	<2	2700	6400	9.0	310
24	B004	118°43.39'	9°51.86'	H	B	15	RD	45	26	<2	4400	155000	18.3	570
25	B005	118°43.53'	9°52.02'	H	B	15	BR	45	20	<2	5600	45000	50.0	510
26	B006	118°43.41'	9°52.09'	D	B	15	RD	35	20	<2	4200	26000	40.0	580
27	B007	118°43.63'	9°51.90'	H	B	15	BR	25	16	<2	2700	42000	32.9	550
28	B008	118°44.08'	9°53.03'	D	B	15	BR	20	14	<2	2600	23000	27.5	460
29	B009	118°43.98'	9°53.04'	H	B	15	BR	100	44	<2	4300	37000	30.3	600
30	B010	118°43.82'	9°53.06'	H	B	15	BR	50	28	<2	4000	35000	32.1	490
31	B011	118°43.66'	9°52.95'	H	B	15	RD	45	22	6	2500	41000	17.4	360
32	B012	118°43.57'	9°53.00'	D	B	15	RD	10	12	<2	2300	2020	11.4	170
33	B013	118°43.57'	9°53.10'	D	B	15	BR	60	52	<4	2200	17000	19.5	380
34	B014	118°43.65'	9°53.23'	H	B	15	BR	25	10	4	2600	39000	18.8	320
35	B015	118°43.83'	9°53.19'	H	B	15	BR	50	54	6	2500	23000	20.0	320
36	C001	118°42.98'	9°51.95'	H	B	25	BR	10	<2	8	1900	3400	7.8	130
37	C002	118°42.86'	9°51.85'	H	B	30	BR	25	12	<2	3200	2900	8.0	180
38	C003	118°42.68'	9°51.96'	H	B	30	BR	10	<2	<2	1400	2300	7.4	160
39	C004	118°42.50'	9°52.04'	H	B	25	BR	25	4	<2	4100	4800	8.7	300
40	C005	118°42.61'	9°52.16'	H	B	30	BR	20	<2	<2	4800	11000	15.1	470
41	C006	118°42.42'	9°52.23'	H	B	30	BR	20	<2	<2	2900	4600	9.7	250
42	C007	118°42.33'	9°52.03'	H	B	30	BR	5	<2	<2	80	500	5.4	43
43	C008	118°44.45'	9°52.76'	H	B	30	BR	20	<2	<2	3200	5200	11.1	260
44	C009	118°44.49'	9°52.60'	H	B	25	BR	20	<2	<2	4800	10000	15.3	460
45	C010	118°44.29'	9°52.71'	H	B	30	BR	35	16	<2	2700	14000	10.4	380
46	C011	118°44.23'	9°52.88'	H	B	35	RD	35	12	<2	4900	10000	17.3	380
47	C012	118°44.06'	9°52.83'	D	B	30	RD	55	66	<2	3100	11000	19.8	290
48	C013	118°44.02'	9°52.91'	D	B	35	RD	35	26	<2	4500	10000	40.0	470
49	C014	118°44.37'	9°52.17'	H	B	35	BR	25	2	<2	6100	15000	18.8	500
50	C015	118°44.11'	9°52.22'	H	B	30	BR	15	6	<2	3900	3700	12.4	190
51	C043	118°43.46'	9°53.43'	G	B	25	BR	35	<2	4	40	400	10.3	40
52	C044	118°43.62'	9°53.37'	G	B	25	RD	10	8	8	34	300	13.5	46
53	C045	118°43.51'	9°53.32'	G	B	20	BR	20	<2	6	60	700	6.8	40
54	C046	118°43.44'	9°53.17'	D	B	20	BR	40	26	2	3100	12000	23.0	330
55	C047	118°43.41'	9°53.05'	D	B	20	RD	30	30	4	3400	13000	19.8	320
56	C048	118°43.34'	9°53.28'	G	B	25	BR	20	6	12	21	600	4.0	16
57	C049	118°43.08'	9°53.06'	D	B	25	BR	60	62	10	2100	11000	25.8	360
58	C050	118°43.25'	9°53.12'	D	B	25	RD	45	40	12	3900	30000	21.5	390
59	D001	118°43.72'	9°51.61'	H	B	25	BR	20	10	14	4400	4400	15.4	260
60	D002	118°43.68'	9°51.70'	H	B	25	BR	70	60	18	1100	2500	12.7	240
61	D003	118°43.49'	9°51.63'	H	B	30	BR	75	70	14	2800	7200	22.5	340
62	D004	118°44.01'	9°51.96'	H	B	40	BR	20	14	<2	2800	16000	15.8	170
63	D005	118°44.09'	9°51.82'	H	B	20	BR	20	6	<2	3800	12000	14.1	360
64	D006	118°44.19'	9°51.81'	H	B	20	BR	20	6	<2	5200	3900	12.9	240
65	D007	118°44.01'	9°51.63'	H	B	30	BR	50	22	6	3900	18000	16.7	200
66	D008	118°43.99'	9°51.39'	H	B	30	BR	75	<2	8	2800	11000	10.8	200
67	D009	118°44.64'	9°52.94'	H	B	30	BR	25	12	<2	2600	11000	15.9	220
68	D010	118°44.58'	9°53.08'	H	B	35	BR	20	8	<2	5900	2100	11.0	140
69	D011	118°44.36'	9°53.15'	H	B	35	BR	15	6	<2	5200	4000	15.6	230
70	D012	118°44.23'	9°53.12'	H	B	30	BR	25	10	<2	5700	14000	19.1	460

Appendix 6 Chemical analyses of geochemical soil samples in area A-3

(2)

No.	Sample No.	Longitude	Latitude	Geology	Horizon	Depth cm	Color	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
71	D013	118°44.32'	9°53.01'	H	B	40	BR	<15	16	<2	2600	20000	17.3	260
72	D014	118°44.03'	9°53.21'	H	B	35	BR	15	6	<2	2700	11000	16.4	250
73	D015	118°43.84'	9°53.38'	H	B	35	BR	25	10	2	5500	21000	19.8	530
74	D016	118°43.89'	9°53.27'	H	B	30	BR	15	4	2	5700	6500	17.6	310
75	D044	118°42.95'	9°52.77'	P	B	25	BR	55	68	18	1800	6700	15.3	220
76	D045	118°42.83'	9°52.61'	D	B	30	BR	40	16	4	6700	31000	30.6	690
77	D046	118°42.79'	9°52.47'	D	B	25	BR	70	42	<2	1800	2700	12.9	190
78	D047	118°43.09'	9°52.83'	D	B	30	BR	50	28	<2	4000	16000	25.2	540
79	D048	118°43.24'	9°52.88'	D	B	20	BR	30	18	<2	3500	22000	23.6	550
80	D049	118°43.37'	9°52.88'	D	B	30	BR	45	28	2	1800	8200	21.4	310
81	D050	118°43.45'	9°52.89'	D	B	20	BL	30	38	4	1000	3760	8.9	150
82	D051	118°43.03'	9°52.62'	H	B	20	BR	35	20	<2	3200	18000	21.4	370
83	E001	118°43.16'	9°51.99'	H	B	25	BR	20	14	4	5000	11000	17.6	370
84	E002	118°43.19'	9°52.13'	H	B	25	BR	40	28	14	5100	17000	20.3	430
85	E003	118°43.00'	9°52.17'	H	B	20	BR	25	8	<2	3700	20000	20.8	380
86	E004	118°42.96'	9°52.02'	H	B	15	BR	35	<2	4	3900	21000	16.4	750
87	E005	118°42.72'	9°52.35'	D	B	15	BR	25	20	<2	3100	19000	23.3	420
88	E006	118°42.57'	9°52.27'	D	B	20	BR	15	<2	<2	3800	13000	15.3	370
89	E007	118°42.56'	9°52.38'	D	B	15	BR	30	25	46	2800	16000	19.2	410
90	E008	118°44.30'	9°52.58'	D	B	20	BR	30	2	<2	4400	13000	14.7	410
91	E009	118°44.15'	9°52.55'	D	B	15	BR	30	<2	<2	4500	32000	21.8	490
92	E010	118°44.15'	9°52.66'	D	B	15	BR	25	24	<2	2700	9000	18.9	320
93	E011	118°43.90'	9°52.70'	D	B	15	BR	60	34	8	3500	15000	28.5	460
94	E012	118°43.81'	9°52.83'	D	B	20	BR	20	<2	<2	3100	100000	17.1	550
95	E013	118°43.68'	9°52.87'	D	B	20	BR	40	16	2	4600	19000	32.0	620
96	E014	118°44.12'	9°52.11'	H	B	15	BR	25	18	2	4500	14000	11.8	240
97	E015	118°44.22'	9°51.95'	H	B	25	BR	20	10	10	4100	14000	15.1	330
98	E038	118°43.24'	9°52.58'	H	B	35	RD	110	82	<2	5500	17000	45.0	580
99	E039	118°43.38'	9°52.69'	H	B	35	RD	20	2	<2	6400	13000	46.0	690
100	E040	118°43.06'	9°52.49'	H	B	20	BR	110	50	<2	4500	24000	25.1	760
101	E041	118°42.93'	9°52.37'	H	B	25	BR	110	64	16	2800	23000	25.7	420
102	E042	118°43.06'	9°52.30'	P	B	15	BR	100	60	22	3000	7750	18.1	380
103	E043	118°43.39'	9°52.52'	H	B	15	RD	40	18	<2	3600	17000	31.1	510
104	E044	118°43.22'	9°52.34'	H	B	25	RD	130	52	<2	5600	20000	29.7	540

Abbreviation

Geology: D; dunite, H;harzburgite, G;gabbro, P;pyroxenite rich dunite, Q;quartz schist, S;Sulu Sea Mine Formation

Color: BL;black, BR;brown, OR;orange, RD;red, YE;yellow

Appendix 7 Weight of heavy mineral from soil at the test pit bottom

Pananlagan area (Area A-1)

No.	Pit No.	Weight g/kg(soil)
1	PA001	39.5
2	PA002	8.0
3	PA003	7.1
4	PA004	23.3
5	PA005	65.5
6	PA006	39.8
7	PA007	16.2
8	PA008	16.9
9	PA009	7.4
10	PA010	10.4
11	PA011	38.4
12	PA012	4.1
13	PA013	51.3
14	PA014	17.9
15	PA015	20.9
16	PA016	12.5
17	PA017	38.3
18	PA018	106.4
19	PA019	42.5
20	PA020	108.1
21	PC021	80.7
22	PC022	21.2
23	PC023	26.5
24	PC024	10.8
25	PC025	13.0
26	PC026	10.7
27	PC027	22.4
28	PC028	27.1
29	PC029	34.5
30	PC030	13.8
31	PC031	40.4
32	PC032	51.5
33	PC033	69.5
34	PC034	30.3
35	PC035	13.7
36	PC036	8.9
37	PC037	47.0
38	PC038	28.4
39	PC039	23.6
40	PC040	8.7
41	PB041	9.6
42	PB042	13.0
43	PB043	17.4
44	PB044	15.8
45	PB045	19.9
46	PB046	29.3
47	PB047	8.0
48	PB048	16.5
49	PB049	78.0
50	PB050	158.2
51	PA051	54.5
52	PC052	26.9

Tagkawayan area (Area A-1)

No.	Pit No.	Weight g/kg(soil)
1	TG001	38.5
2	TG002	14.4
3	TG003	14.0
4	TG004	12.9
5	TG005	15.0
6	TG006	12.8
7	TG007	8.6
8	TG008	17.8
9	TG009	18.8
10	TG010	11.5
11	TG011	8.9
12	TG012	14.7
13	TG013	13.3
14	TG014	8.2
15	TG015	97.6
16	TG016	27.3
17	TG017	4.1
18	TG018	16.8
19	TG019	65.2
20	TG020	21.2
21	TG021	5.2
22	TG022	13.7
23	TG023	8.6
24	TG024	12.3
25	TG025	33.0
26	TG026	9.8
27	TG027	19.8
28	TG028	15.9
29	TG029	1.8
30	TG030	9.3
31	TG031	14.9
32	TG032	49.9
33	TG033	12.8
34	TG034	3.8
35	TG035	2.9
36	TG036	23.8
37	TG037	13.0
38	TG038	5.9
39	TG039	6.8
40	TG040	24.8
41	TG041	47.7
42	TG042	72.0
43	TG043	26.8
44	TG044	27.8
45	TG045	53.6
46	TG046	5.6
47	TG047	9.8
48	TG048	3.4
49	TG049	3.0
50	TG050	2.7

Mariwara area (Area B-1)

No.	Pit No.	Weight g/kg(soil)
1	NH001	32.1
2	NG002	21.9
3	NG003	24.6
4	NG004	12.3
5	NG005	37.9
6	NG006	35.7
7	NG007	26.0
8	NH008	14.0
9	NH009	14.9
10	NH010	17.0
11	NH011	55.5
12	NH012	12.4
13	NH013	21.9
14	NH014	17.9
15	NH015	10.1
16	NH016	74.3
17	NG017	56.0
18	NG018	67.5
19	NH019	77.5
20	NH020	58.0
21	NH021	50.5
22	NH022	212.2
23	NH023	64.1
24	NH024	8.0
25	NG025	12.4
26	NG026	7.4
27	NG027	0.0
28	NG028	6.0
29	NG029	20.7
30	NH030	13.2
31	NH031	17.2
32	NH032	23.1
33	NH033	14.7
34	NG034	84.7
35	NG035	16.2
36	NG036	27.8
37	NG037	59.6
38	NG038	57.0
39	NG039	25.5
40	NG040	81.8
41	NH041	28.2
42	NH042	26.9
43	NH043	73.3
44	NH044	54.9
45	NH045	40.4
46	NH046	67.2
47	NG047	13.7
48	NG048	17.2
49	NG049	16.4
50	NG050	9.7

Mariwara area (Area A-1)

No.	Pit No.	Weight g/kg(soil)
51	NG051	13.5
52	NG052	11.4
53	NG053	18.9
54	NG054	7.5
55	NG055	22.5
56	NG056	71.6
57	NG057	34.2
58	NG058	35.4
59	NG059	14.6
60	NG060	5.0
61	NG061	5.9
62	NG062	5.6
63	NG063	17.6
64	NG064	10.0
65	NG065	24.1
66	NG066	14.8
67	NG067	288.0
68	NG068	78.3
69	NG069	17.2
70	NG070	39.4
71	NG071	39.4
72	NG072	19.5
73	NH073	24.0
74	NH074	14.4
75	NH075	30.4
76	NH076	18.4
77	NH077	12.2
78	NH078	26.3
79	NH079	67.7
80	NH080	42.4
81	NH081	96.5
82	NH082	76.7
83	NH083	35.2
84	NH084	100.9
85	NH085	14.0
86	NH086	60.7
87	NH087	33.1
88	NH088	24.2
89	NH089	17.6
90	NH090	9.6
91	NH091	41.9
92	NH092	16.9
93	NG093	64.4
94	NG094	20.9
95	NG095	96.6
96	NG096	40.3
97	NG097	72.5
98	NG098	30.3
99	NG099	27.9
100	NG100	36.9

Appendix 8 Chemical analyses of test pit samples

Pananlagan area (Area A-1) (1)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
1	PA001-1	55	28	4	7600	3980	18.6	310
2	PA001-2	50	20	6	7100	4930	22.1	360
3	PA002-1	20	24	<2	5100	2730	14.4	250
4	PA002-2	25	20	10	7200	3830	17.0	260
5	PA003-1	20	8	12	3700	3560	14.5	300
6	PA003-2	15	2	10	2600	2250	9.6	160
7	PA004-1	25	6	10	7100	4810	25.6	430
8	PA004-2	30	12	8	7200	7250	27.0	500
9	PA005-1	25	14	12	12000	10000	34.0	720
10	PA005-2	20	10	8	12000	12000	37.0	760
11	PA006-1	15	<2	4	14000	10000	17.1	460
12	PA006-2	15	<2	10	16000	16000	29.9	630
13	PA007-1	55	2	<2	7300	4100	10.9	330
14	PA007-2	10	<2	12	6800	5190	10.8	310
15	PA008-1	<5	<2	<2	4500	1300	9.1	270
16	PA008-2	10	<2	<2	4700	1930	8.0	270
17	PA009-1	15	8	2	4200	2750	11.6	200
18	PA009-2	10	<2	6	3000	1600	7.9	85
19	PA010-1	<5	10	8	6600	1960	12.2	400
20	PA010-2	5	<2	4	6400	2370	11.5	310
21	PA011-1	25	14	6	8400	4210	20.7	360
22	PA011-2	35	18	4	7200	7670	24.7	380
23	PA012-1	10	4	<2	2800	1520	10.9	140
24	PA012-2	10	8	<2	3800	2400	16.0	250
25	PA013-1	10	<2	2	12000	5720	23.1	490
26	PA013-2	10	8	<2	7600	8270	31.5	550
27	PA014-1	5	10	<2	7100	4380	15.1	420
28	PA014-2	15	6	<2	8400	12000	27.3	630
29	PA015-1	5	<2	6	5800	7620	12.1	290
30	PA015-2	15	<2	12	7600	6320	12.7	290
31	PA016-1	10	10	<2	6000	3470	13.6	340
32	PA016-2	15	6	<2	7900	7190	19.2	400
33	PA017-1	20	4	<2	3100	5870	15.8	190
34	PA017-2	<5	<2	<2	3000	4500	17.1	180
35	PA018-1	25	8	<2	22000	7290	25.1	630
36	PA018-2	30	20	<2	19000	11000	35.0	700
37	PA019-1	15	<2	<2	12000	4390	20.5	480
38	PA019-2	20	2	<2	18000	4850	25.0	580
39	PA020-1	10	16	10	16000	10000	31.1	680
40	PA020-2	30	12	12	17000	15000	38.0	790
41	PC021-1	40	30	10	7900	9100	33.0	510
42	PC021-2	60	54	<2	6900	11000	36.0	500
43	PC022-1	55	28	16	6800	5250	21.8	420
44	PC022-2	50	22	2	12000	9700	30.1	450
45	PC023-1	40	30	<2	7100	5990	20.2	360
46	PC023-2	35	24	<2	7900	7800	23.5	380
47	PC024-1	40	32	<2	4500	5790	15.8	250
48	PC024-2	40	34	<2	4800	8670	18.0	350
49	PC025-1	40	42	<2	4800	3140	22.3	380
50	PC025-2	25	36	<2	4200	2460	17.8	270
51	PC026-1	50	66	<2	5100	3780	17.5	350
52	PC026-2	40	44	8	6100	2500	21.4	410
53	PC027-1	50	48	90	6700	4700	21.7	430
54	PC027-2	55	38	14	6300	5400	25.1	410
55	PC028-1	45	18	4	5000	3800	20.7	360
56	PC028-2	45	32	12	5400	4300	23.5	380
57	PC029-1	35	28	6	7300	5700	31.4	440
58	PC029-2	55	38	<2	7000	6400	28.2	390
59	PC030-1	40	30	16	6500	3900	22.5	370
60	PC030-2	35	24	10	6700	3400	26.2	370

Appendix 8 Chemical analyses of test pit samples

Pananlagan area (Area A-1) (2)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
61	PC031-1	30	18	14	5800	4900	22.7	380
62	PC031-2	35	18	14	6800	5000	25.1	400
63	PC032-1	45	30	6	7200	5300	20.9	380
64	PC032-2	50	56	8	6500	4400	19.6	360
65	PC033-1	45	30	4	6800	8400	19.6	390
66	PC033-2	45	36	<2	6600	8400	19.6	370
67	PC034-1	30	30	4	5800	3800	19.0	340
68	PC034-2	20	28	<2	5500	3600	19.2	310
69	PC035-1	15	38	8	4600	1900	16.1	360
70	PC035-2	25	40	10	6300	2800	19.4	370
71	PC036-1	10	30	8	10000	2500	14.9	340
72	PC036-2	25	36	10	10700	3200	19.8	390
73	PC037-1	40	40	10	10600	4700	28.0	470
74	PC037-2	80	54	2	9100	6200	31.6	470
75	PC038-1	40	38	4	7900	4800	21.0	370
76	PC038-2	25	32	12	8500	4300	24.0	390
77	PC039-1	40	52	10	7900	7000	25.1	420
78	PC039-2	50	54	12	8200	8100	32.0	440
79	PC040-1	50	36	<2	6800	7300	20.5	390
80	PC040-2	50	36	10	6900	9400	21.9	420
81	PB041-1	10	16	<2	3600	1900	12.5	280
82	PB041-2	10	10	4	4000	2700	12.2	310
83	PB042-1	40	34	8	6700	3900	16.1	330
84	PB042-2	46	44	10	6300	4100	16.4	370
85	PB043-1	25	26	8	4700	3400	13.0	300
86	PB043-2	50	60	18	4600	5400	14.5	310
87	PB044-1	30	16	6	4200	4900	13.5	340
88	PB044-2	50	40	4	6200	4900	17.0	520
89	PB045-1	30	20	14	7400	3700	20.2	380
90	PB045-2	25	26	12	7600	3900	18.8	340
91	PB046-1	30	32	10	9400	3500	25.3	510
92	PB046-2	50	46	45	10100	5700	32.0	630
93	PB047-1	10	16	18	4400	1400	12.4	290
94	PB047-2	25	12	10	5300	2400	13.2	310
95	PB048-1	45	68	12	4100	2200	11.9	270
96	PB048-2	25	42	30	3500	2700	11.1	149
97	PB049-1	30	14	8	6300	6000	28.3	400
98	PB049-2	40	10	6	6800	6400	29.3	480
99	PB050-1	30	14	<2	5000	14000	19.1	340
100	PB050-2	35	6	16	4900	24000	18.7	340
101	PA051-1	15	<2	<2	6200	8540	15.9	430
102	PA051-2	<5	16	<2	5700	6570	13.5	320
103	PC052-1	45	26	12	7100	8200	30.5	430
104	PC052-2	45	48	4	6900	9900	32.4	450

Tagkawayan area (Area A-1)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
105	TG001-1	30	44	<2	4600	1800	17.3	310
106	TG001-2	25	18	<2	5500	3100	19.6	300
107	TG002-1	20	26	4	6000	2600	15.8	310
108	TG002-2	20	6	<2	5900	3200	15.4	310
109	TG003-1	40	46	54	8200	2300	14.7	360
110	TG003-2	50	32	20	8700	4300	17.1	400
111	TG004-1	20	10	<2	6800	3700	15.5	350
112	TG004-2	55	48	<2	6100	5000	17.9	360
113	TG005-1	25	4	<2	6300	3400	15.9	340
114	TG005-2	30	40	4	6500	3200	16.4	350
115	TG006-1	25	14	6	5800	4400	17.9	350
116	TG006-2	25	14	6	5700	4500	17.7	340

Appendix 8 Chemical analyses of test pit samples

Tagkawayan area (Area A-1) (3)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
117	TG007-1	15	22	<2	3800	2600	11.1	230
118	TG007-2	15	6	12	4400	3800	11.9	150
119	TG008-1	20	26	6	4700	1700	14.1	290
120	TG008-2	40	40	12	3600	2300	13.6	250
121	TG009-1	20	<2	4	5500	6300	20.7	390
122	TG009-2	25	4	<2	5600	7200	21.5	430
123	TG010-1	<5	<2	<2	3700	2700	12.9	240
124	TG010-2	<5	8	<2	4100	3400	14.6	280
125	TG011-1	80	80	12	2300	2400	15.1	290
126	TG011-2	20	24	10	5400	3900	18.6	320
127	TG012-1	150	100	10	4400	2600	18.1	350
128	TG012-2	120	100	8	4300	4900	20.4	360
129	TG013-1	180	170	12	5300	2900	15.0	330
130	TG013-2	190	190	12	5500	3500	16.0	360
131	TG014-1	45	36	<2	5300	3400	17.9	360
132	TG014-2	30	34	4	3800	2400	15.2	300
133	TG015-1	55	38	6	6500	9800	32.0	820
134	TG015-2	60	30	4	6800	5900	32.6	1050
135	TG016-1	40	12	2	6600	3300	20.6	440
136	TG016-2	40	24	4	6800	3700	25.8	570
137	TG017-1	30	12	6	7400	2200	17.9	880
138	TG017-2	25	<2	6	7100	5100	21.7	1210
139	TG018-1	50	36	4	6600	2800	18.6	620
140	TG018-2	30	22	4	6900	5300	26.9	980
141	TG019-1	15	<2	6	6700	5500	17.2	710
142	TG019-2	45	<2	2	12000	6800	17.0	1330
143	TG020-1	20	22	<2	5300	4500	16.9	350
144	TG020-2	40	22	<2	5700	6800	20.1	470
145	TG021-1	30	44	6	5100	1400	15.0	340
146	TG021-2	35	42	<2	5200	1500	16.4	340
147	TG022-1	25	26	<2	5400	600	17.4	330
148	TG022-2	35	44	<2	5600	2200	22.7	410
149	TG023-1	40	88	8	4300	2200	17.0	270
150	TG023-2	50	72	12	4900	8900	26.7	570
151	TG024-1	70	76	14	4800	4100	22.2	380
152	TG024-2	75	78	8	5100	6200	24.8	420
153	TG025-1	75	52	4	7400	4400	20.0	440
154	TG025-2	70	42	10	7500	7900	28.0	670
155	TG026-1	25	28	8	6900	2000	18.5	360
156	TG026-2	60	42	6	6100	2600	18.2	280
157	TG027-1	40	28	4	8400	5300	22.7	940
158	TG027-2	50	50	6	7000	8900	30.1	700
159	TG028-1	25	26	6	8700	5900	21.8	470
160	TG028-2	30	46	2	8300	11000	32.3	600
161	TG029-1	40	40	4	7500	12000	31.0	750
162	TG029-2	30	24	4	6500	14000	32.0	560
163	TG030-1	10	26	4	9500	2000	14.4	310
164	TG030-2	10	12	6	8100	2500	15.8	320
165	TG031-1	70	54	<2	7800	2600	18.2	510
166	TG031-2	110	90	10	6300	7500	32.0	700
167	TG032-1	120	130	14	5100	3100	19.5	350
168	TG032-2	120	110	12	5100	4600	23.1	410
169	TG033-1	35	92	6	5000	4700	19.6	290
170	TG033-2	35	56	4	5200	5600	19.4	300
171	TG034-1	220	170	10	3400	3000	16.5	154
172	TG034-2	200	190	10	3800	3000	17.9	260
173	TG035-1	90	100	28	3400	5500	9.1	105
174	TG035-2	170	160	32	4200	7700	16.4	280
175	TG036-1	60	50	<2	6600	4100	21.8	380
176	TG036-2	95	80	<2	6200	4300	28.6	550
177	TG037-1	35	12	<2	8600	2700	19.7	480
178	TG037-2	35	48	<2	9100	4300	23.4	660

Appendix 8 Chemical analyses of test pit samples

Tagkawayan area (Area A-1)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
179	TG038-1	15	12	<2	3000	2300	14.8	350
180	TG038-2	20	22	10	2800	1000	14.4	210
181	TG039-1	20	38	<2	3200	800	16.2	144
182	TG039-2	20	34	<2	3400	1000	17.5	138
183	TG040-1	110	68	8	5900	3900	19.9	410
184	TG040-2	120	50	6	5700	4600	23.0	450
185	TG041-1	35	38	6	3900	3200	24.4	380
186	TG041-2	30	36	6	3800	3700	24.6	340
187	TG042-1	30	32	12	4300	8900	18.7	350
188	TG042-2	45	34	4	3700	7800	17.7	510
189	TG043-1	40	28	14	5500	5800	18.0	206
190	TG043-2	75	100	20	2400	2700	13.5	176
191	TG044-1	30	44	6	3900	7300	21.0	360
192	TG044-2	55	50	<2	3900	9000	20.9	450
193	TG045-1	25	32	4	4800	8100	19.7	290
194	TG045-2	55	36	<2	4300	11000	21.3	460
195	TG046-1	30	34	6	5100	4800	18.7	260
196	TG046-2	35	26	<2	5200	6800	18.7	300
197	TG047-1	25	36	12	5000	4500	15.3	280
198	TG047-2	35	38	4	5500	3100	16.6	310
199	TG048-1	35	38	2	6000	6000	14.2	310
200	TG048-2	30	24	<2	6400	3300	13.5	260
201	TG049-1	35	26	4	5900	2000	14.2	370
202	TG049-2	30	14	4	6200	3300	14.1	330
203	TG050-1	45	64	<2	4300	2100	15.7	220
204	TG050-2	35	32	4	3400	2500	14.1	154

Mariwara area (Area B-1)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
205	NH001-1	10	18	6	5400	5000	15.6	300
206	NH001-2	<5	30	<2	5400	6900	17.1	300
207	NG002-1	<5	16	6	4800	1700	14.0	280
208	NG002-2	<5	16	6	5600	2800	16.2	250
209	NG003-1	<5	12	10	4700	2300	15.7	310
210	NG003-2	<5	14	<2	4800	2400	16.5	290
211	NG004-1	<5	18	10	5300	2400	15.7	250
212	NG004-2	<5	16	8	5200	2800	15.3	240
213	NG005-1	54	80	50	1700	8100	17.5	240
214	NG005-2	15	16	<2	7900	14000	25.1	480
215	NG006-1	10	12	<2	11100	4600	16.1	330
216	NG006-2	20	46	<2	9100	13000	38.0	670
217	NG007-1	15	24	<2	8300	4100	24.2	510
218	NG007-2	20	38	4	8500	12000	32.0	700
219	NH008-1	5	14	12	9600	3300	19.4	410
220	NH008-2	10	18	4	9600	5400	22.7	490
221	NH009-1	<5	8	10	19000	4600	14.1	390
222	NH009-2	15	18	4	11600	14000	28.4	720
223	NH010-1	<30	<12	<12	12900	3900	13.6	310
224	NH010-2	20	12	10	12300	8200	23.1	460
225	NH011-1	20	12	10	10700	5900	16.5	480
226	NH011-2	15	8	10	11100	7400	17.2	440
227	NH012-1	10	6	6	5400	2900	12.4	230
228	NH012-2	10	4	4	5400	5000	15.1	230
229	NH013-1	<5	8	8	7100	5400	17.7	320
230	NH013-2	20	10	24	6700	13000	23.1	400
231	NH014-1	10	6	6	6000	4500	16.8	330
232	NH014-2	<5	<2	<2	6100	2700	16.7	250
233	NH015-1	<5	2	<2	3400	2800	11.4	240

Appendix 8 Chemical analyses of test pit samples

Mariwara area (Area B-1) (5)

No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
234	NH015-2	<5	6	<2	3700	2900	12.5	230
235	NH016-1	<5	4	<2	4400	16000	16.4	360
236	NH016-2	<5	2	2	4500	7800	15.5	320
237	NG017-1	110	20	<4	4100	27000	17.2	430
238	NG017-2	75	10	<6	4000	34000	17.0	440
239	NG018-1	40	<12	<12	10100	12000	17.7	290
240	NG018-2	40	20	16	9900	24000	21.3	390
241	NH019-1	15	8	6	8000	5500	17.6	350
242	NH019-2	25	12	<2	8500	23000	31.0	600
243	NH020-1	15	<2	<2	7300	25000	23.8	530
244	NH020-2	20	10	4	7800	21000	25.7	480
245	NH021-1	30	12	6	8400	6900	17.7	310
246	NH021-2	10	6	<2	7900	7900	18.1	310
247	NH022-1	<5	8	<2	8000	26000	31.0	600
248	NH022-2	5	8	6	8300	20000	28.4	560
249	NH023-1	<5	8	<2	7300	6900	19.8	370
250	NH023-2	<5	6	<2	10000	8500	24.8	450
251	NH024-1	<5	14	4	3100	1700	10.6	280
252	NH024-2	10	12	<2	3000	1500	10.7	220
253	NG025-1	20	14	14	4700	2900	18.9	310
254	NG025-2	<60	24	50	5400	4800	20.4	340
255	NG026-1	65	36	12	7400	2400	18.4	370
256	NG026-2	70	<12	<12	8400	2500	15.2	330
257	NG027-1	<30	18	22	4400	1100	10.9	290
258	NG027-2	<10	12	8	5500	1900	12.3	260
259	NG028-1	<60	<24	<24	4200	2600	10.2	186
260	NG028-2	<10	12	8	5400	1900	10.8	174
261	NG029-1	15	14	<2	7500	4700	20.5	280
262	NG029-2	10	18	4	7600	5500	21.9	290
263	NH030-1	10	6	<2	6900	3100	15.4	260
264	NH030-2	10	4	<2	7800	7300	18.9	340
265	NH031-1	15	6	<2	8200	4300	18.0	320
266	NH031-2	<5	8	<2	8500	6800	18.3	310
267	NH032-1	10	<2	<2	5800	3800	15.8	260
268	NH032-2	15	16	<2	6400	9000	21.1	320
269	NH033-1	45	8	10	4000	4600	11.8	220
270	NH033-2	10	12	10	4900	6400	13.3	230
271	NG034-1	1600	3400	50	6400	17000	15.5	310
272	NG034-2	220	110	10	6300	6900	16.8	310
273	NG035-1	10	<2	<2	4300	2300	13.8	240
274	NG035-2	15	2	<2	4700	2800	13.5	250
275	NG036-1	15	4	<2	4200	6500	10.4	165
276	NG036-2	20	4	<2	4300	7400	10.5	163
277	NG037-1	10	6	4	7400	11000	17.6	280
278	NG037-2	20	10	10	6800	16000	18.8	290
279	NG038-1	30	12	<2	8900	14000	17.7	350
280	NG038-2	35	10	<2	9400	19000	18.7	360
281	NG039-1	10	4	6	6500	5400	17.6	230
282	NG039-2	10	4	<2	6300	9100	17.1	230
283	NG040-1	15	6	<2	5400	5700	18.3	240
284	NG040-2	20	8	16	5500	10000	16.3	300
285	NH041-1	15	6	<2	7300	5400	14.0	200
286	NH041-2	20	4	<2	6800	13000	18.1	310
287	NH042-1	15	4	<2	5300	4500	13.1	260
288	NH042-2	<5	6	<2	6600	14000	18.8	400
289	NH043-1	40	4	<2	6700	6100	14.4	250
290	NH043-2	30	4	<2	7500	8500	18.4	310
291	NH044-1	55	8	<2	3700	6500	10.0	200
292	NH044-2	50	6	<2	5400	8200	12.6	210
293	NH045-1	85	8	<2	5700	13000	11.8	164
294	NH045-2	25	6	<2	6500	4700	11.4	172
295	NH046-1	5	2	<2	4300	11000	16.1	330

Appendix 8 Chemical analyses of test pit samples

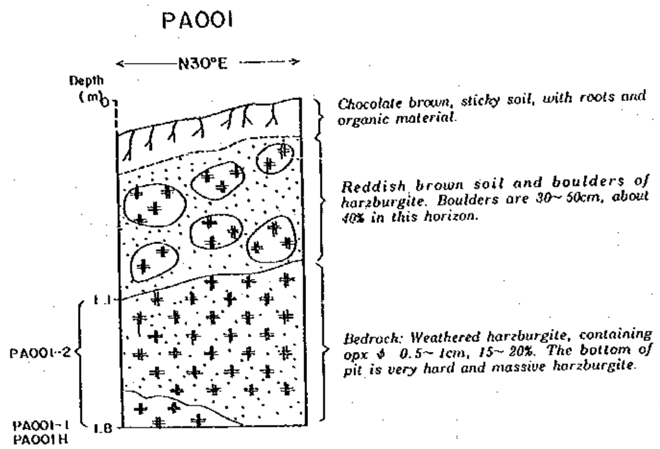
Mariwara area (Area B-1) (6)

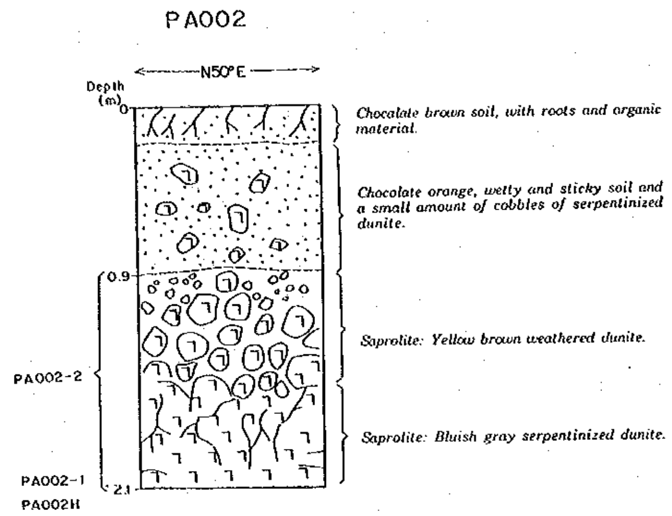
No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
296	NH046-2	15	4	<2	6000	15000	18.1	380
297	NG047-1	5	14	14	3400	3100	9.8	197
298	NG047-2	5	10	8	3700	3900	9.8	210
299	NG048-1	5	12	10	5000	2900	13.4	169
300	NG048-2	10	12	14	5700	4900	15.2	240
301	NG049-1	10	14	14	5800	2100	13.9	230
302	NG049-2	<5	10	16	7400	2900	19.0	290
303	NG050-1	<5	8	10	6000	2500	16.9	260
304	NG050-2	10	6	6	5700	5600	16.9	250
305	NG051-1	<5	8	12	3800	3600	13.3	260
306	NG051-2	20	6	10	3700	4900	12.9	260
307	NG052-1	10	4	4	3800	3400	11.0	270
308	NG052-2	5	6	8	4900	3200	12.6	300
309	NG053-1	15	4	8	4400	1700	13.2	290
310	NG053-2	10	10	8	5900	3600	15.1	310
311	NG054-1	15	6	<4	3500	2500	12.9	230
312	NG054-2	<5	6	<4	3900	3200	13.5	230
313	NG055-1	15	12	16	6400	5600	12.1	330
314	NG055-2	20	12	12	6500	7000	13.7	270
315	NG056-1	25	16	16	8500	14000	17.7	350
316	NG056-2	15	10	<4	7000	19000	17.2	350
317	NG057-1	15	8	<4	8000	7000	16.2	300
318	NG057-2	15	10	2	8600	14000	18.3	340
319	NG058-1	10	4	<2	9500	8900	16.7	310
320	NG058-2	15	12	6	9000	16000	19.6	360
321	NG059-1	15	8	6	7400	3500	12.6	280
322	NG059-2	15	10	<2	7400	4400	14.1	270
323	NG060-1	15	4	<2	5800	2500	11.2	230
324	NG060-2	15	8	<2	4000	1400	9.9	168
325	NG061-1	<5	12	8	3000	1000	7.2	105
326	NG061-2	<5	12	10	3100	900	8.2	101
327	NG062-1	10	16	14	2700	1800	7.8	180
328	NG062-2	15	18	8	1300	1100	3.8	51
329	NG063-1	10	10	6	6100	4800	15.4	300
330	NG063-2	<5	12	12	6300	4500	15.8	300
331	NG064-1	5	16	8	3500	1100	13.3	153
332	NG064-2	<5	12	8	4500	1100	16.2	210
333	NG065-1	10	12	10	4700	3500	14.4	240
334	NG065-2	10	12	8	4000	2900	14.3	220
335	NG066-1	10	10	8	5600	4000	13.9	260
336	NG066-2	10	10	8	5200	5000	15.0	230
337	NG067-1	15	10	4	5200	38000	18.4	460
338	NG067-2	15	10	8	6100	28000	19.9	430
339	NG068-1	10	14	14	8900	24000	27.2	550
340	NG068-2	15	14	6	7100	32000	31.0	610
341	NG069-1	20	14	6	7400	3500	15.6	290
342	NG069-2	15	14	<2	6400	5100	17.7	320
343	NG070-1	25	18	<2	8000	6000	21.0	260
344	NG070-2	20	16	<2	7700	5700	17.8	320
345	NG071-1	5	10	<2	6500	4800	18.4	340
346	NG071-2	15	16	<2	4300	2600	13.3	200
347	NG072-1	5	4	<2	6600	4100	15.9	300
348	NG072-2	<5	4	<2	7500	4800	14.2	310
349	NH073-1	10	8	2	5300	4900	15.4	240
350	NH073-2	5	8	6	4900	6500	14.9	220
351	NH074-1	10	<2	<2	4100	10000	8.5	113
352	NH074-2	5	4	6	4300	9900	11.5	200
353	NH075-1	10	10	<2	4300	3900	13.3	260
354	NH075-2	10	14	2	4100	9200	11.3	185
355	NH076-1	10	4	4	2800	7400	7.7	166
356	NH076-2	10	6	<2	4000	9200	12.1	230
357	NH077-1	10	6	<2	6000	8000	18.1	270

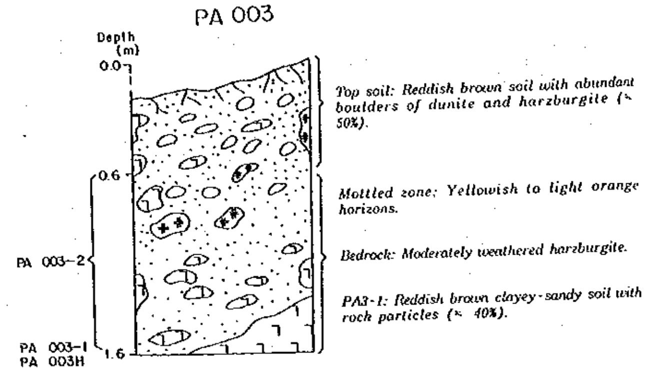
Appendix 8 Chemical analyses of test pit samples

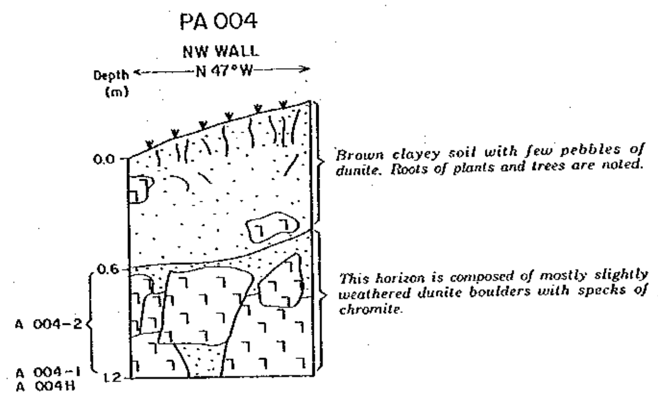
Mariwara area (Area B-1) (7)

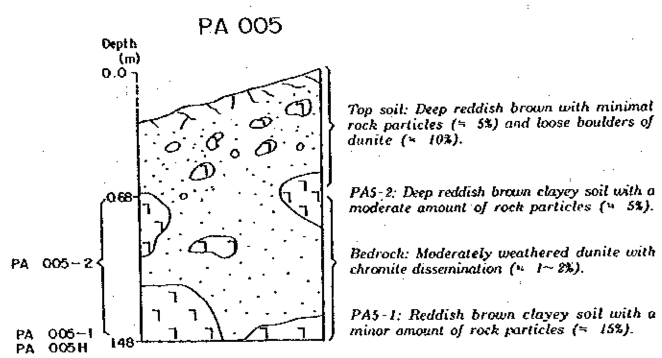
No.	Sample No.	Pt ppb	Pd ppb	Au ppb	Ni ppm	Cr ppm	Fe %	Co ppm
358	NH077-2	10	6	<2	6500	11000	18.4	280
359	NH078-1	5	4	8	6500	5800	16.8	280
360	NH078-2	10	8	12	6100	6700	17.5	280
361	NH079-1	15	12	4	10000	17000	43.0	890
362	NH079-2	20	6	10	9700	20000	40.0	820
363	NH080-1	10	12	2	10300	19000	30.0	560
364	NH080-2	20	12	2	10300	32000	36.0	740
365	NH081-1	65	14	10	4600	17000	15.0	250
366	NH081-2	60	12	6	4800	29000	19.3	390
367	NH082-1	15	10	12	6800	19000	21.9	380
368	NH082-2	10	4	6	6300	24000	24.1	430
369	NH083-1	20	6	4	4500	5600	13.7	240
370	NH083-2	15	6	<2	5000	12000	16.1	270
371	NH084-1	80	22	4	7900	21000	23.7	450
372	NH084-2	85	22	6	8200	21000	25.3	490
373	NH085-1	10	<2	<2	7600	2800	14.9	260
374	NH085-2	30	6	<2	6800	6200	15.7	250
375	NH086-1	75	12	<2	4700	17000	12.2	167
376	NH086-2	70	12	<2	6100	12000	16.3	220
377	NH087-1	75	8	<2	6000	23000	18.4	360
378	NH087-2	60	8	<2	5600	14000	16.3	250
379	NH088-1	55	6	2	5700	5500	14.3	230
380	NH088-2	75	6	<2	6800	6800	15.1	240
381	NH089-1	<5	<2	2	3200	3400	10.3	220
382	NH089-2	<5	2	4	3500	4700	12.3	210
383	NH090-1	15	8	14	3800	6300	15.3	220
384	NH090-2	15	6	4	4900	10000	19.9	370
385	NH091-1	<5	4	6	8300	6500	17.7	360
386	NH091-2	10	6	6	8300	10000	24.9	460
387	NH092-1	10	8	10	4500	10000	17.6	260
388	NH092-2	5	2	10	5300	10000	16.4	250
389	NG093-1	10	8	<2	7200	15000	16.2	300
390	NG093-2	15	6	<2	6700	33000	22.1	430
391	NG094-1	15	6	4	6300	6400	16.9	250
392	NG094-2	20	8	<2	6200	21000	21.1	360
393	NG095-1	15	6	<2	6800	21000	18.1	360
394	NG095-2	<5	4	<2	7600	7200	15.6	290
395	NG096-1	<5	6	<2	5400	8600	15.7	280
396	NG096-2	<5	6	<2	5400	7800	15.7	310
397	NG097-1	5	32	<2	7200	6800	17.3	410
398	NG097-2	5	12	<2	6600	7700	17.2	390
399	NG098-1	25	32	<2	4900	3200	13.4	230
400	NG098-2	95	58	<2	5000	5200	13.9	240
401	NG099-1	60	34	<2	4700	1900	11.6	220
402	NG099-2	65	26	<2	4300	4000	11.1	200
403	NG100-1	1200	740	4	5700	4400	13.9	270
404	NG100-2	140	200	2	5600	19000	18.0	380

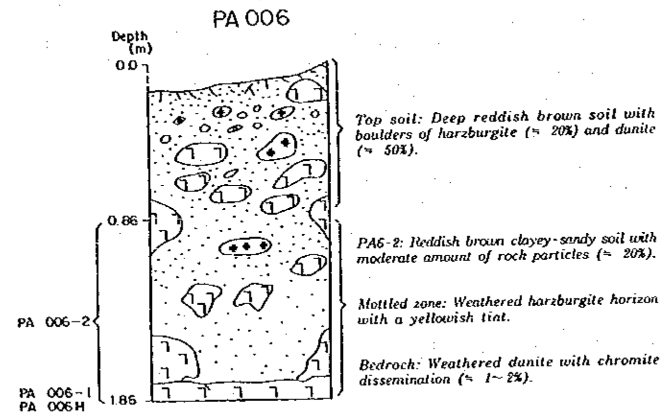


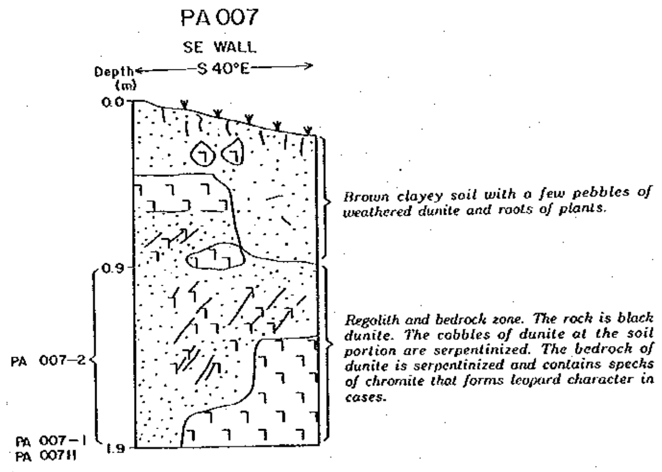


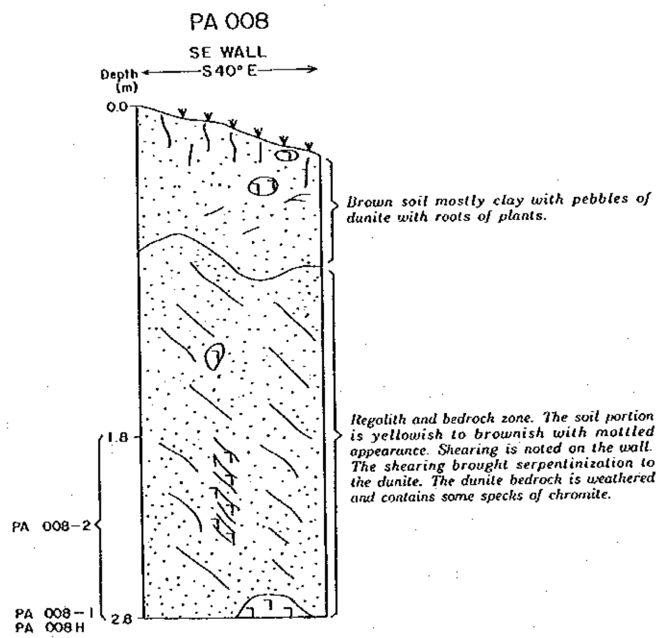


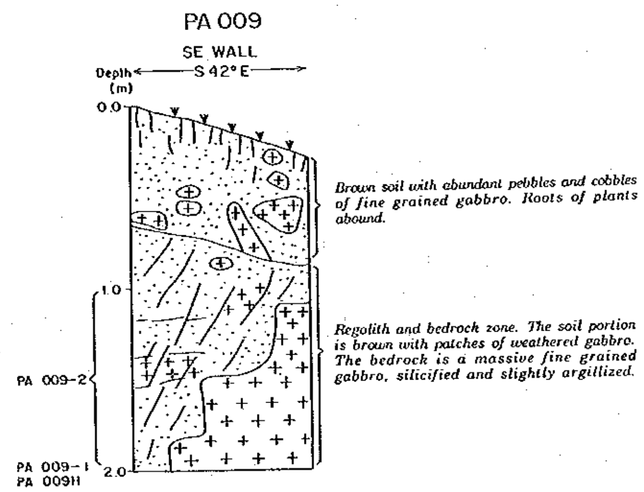




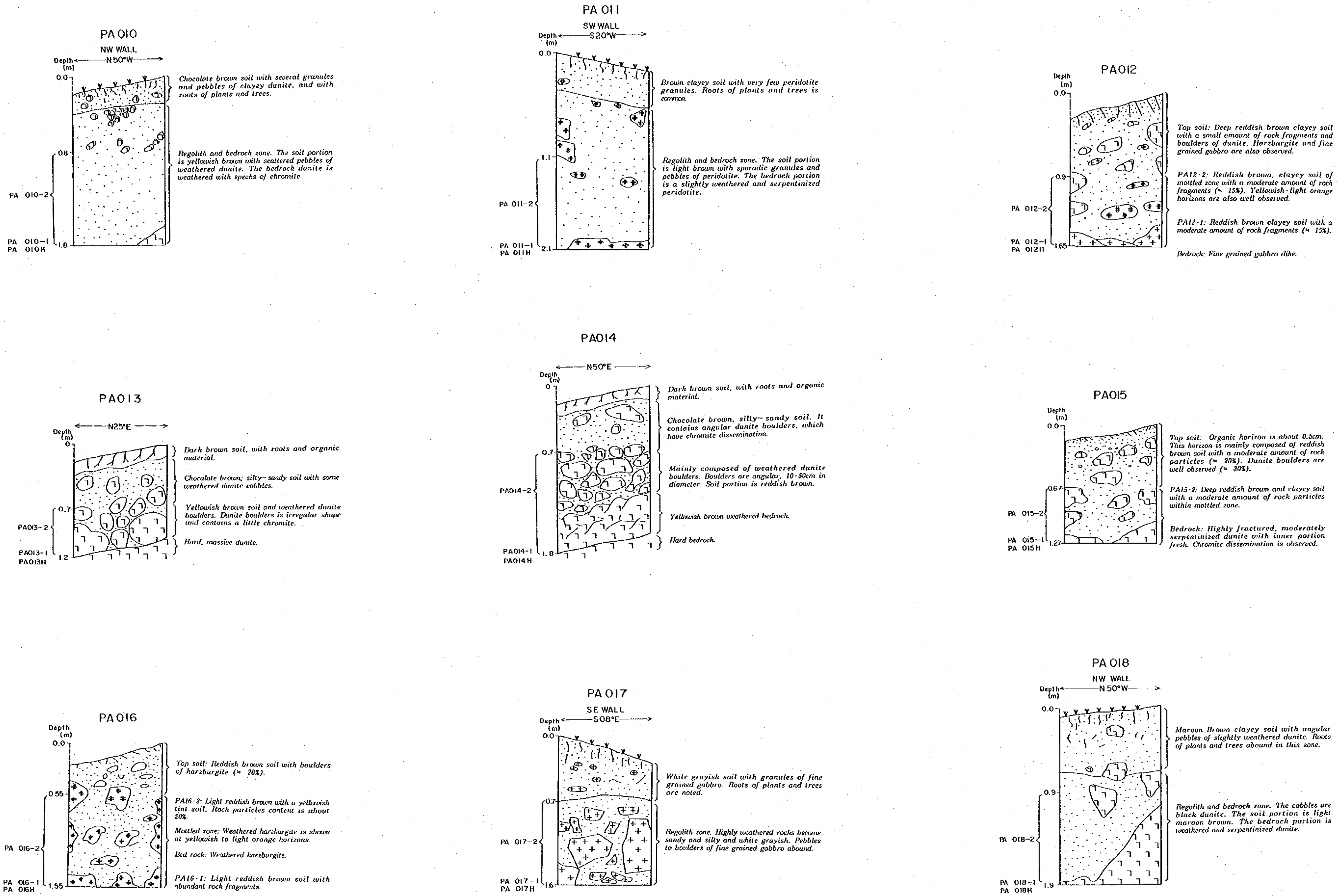




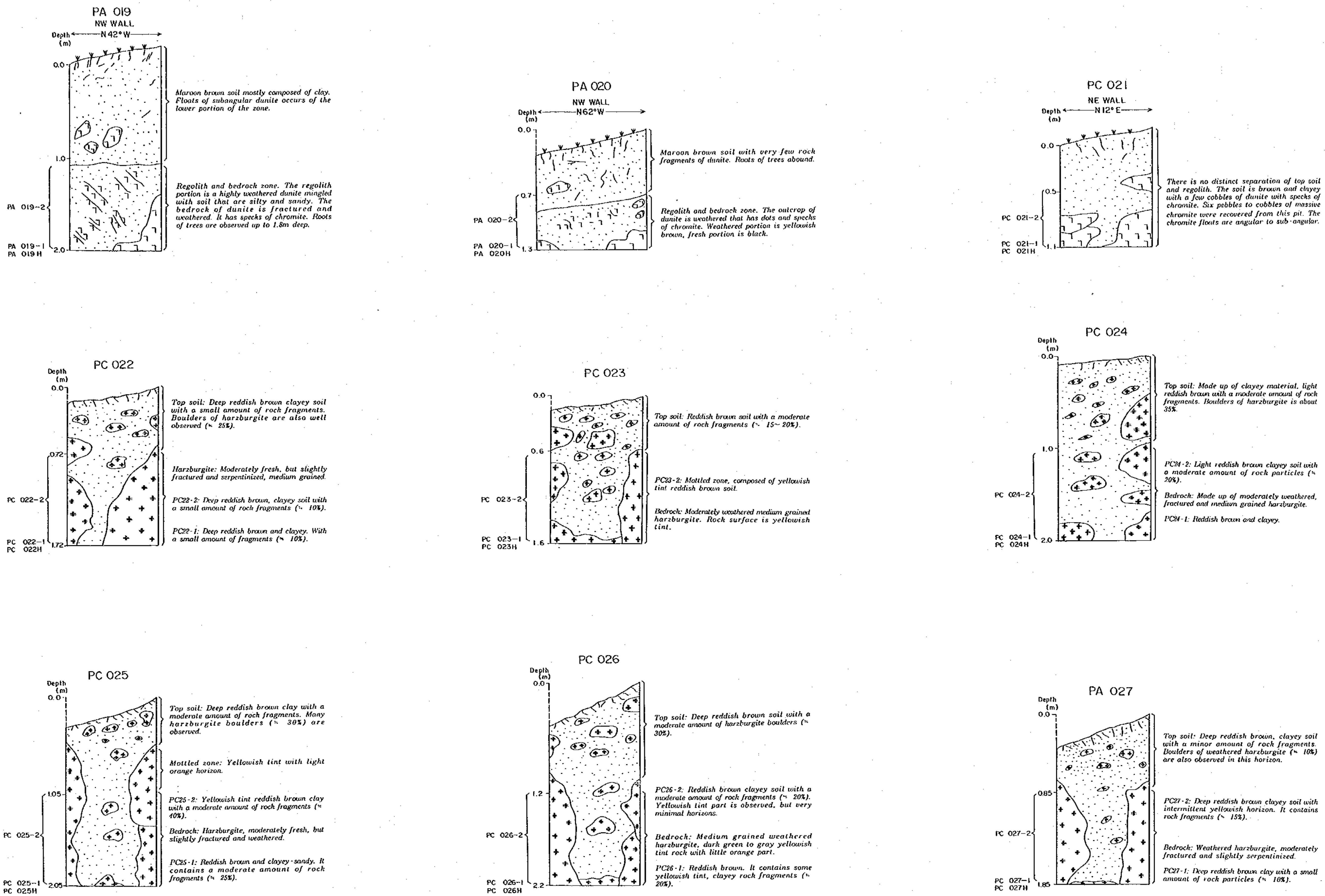




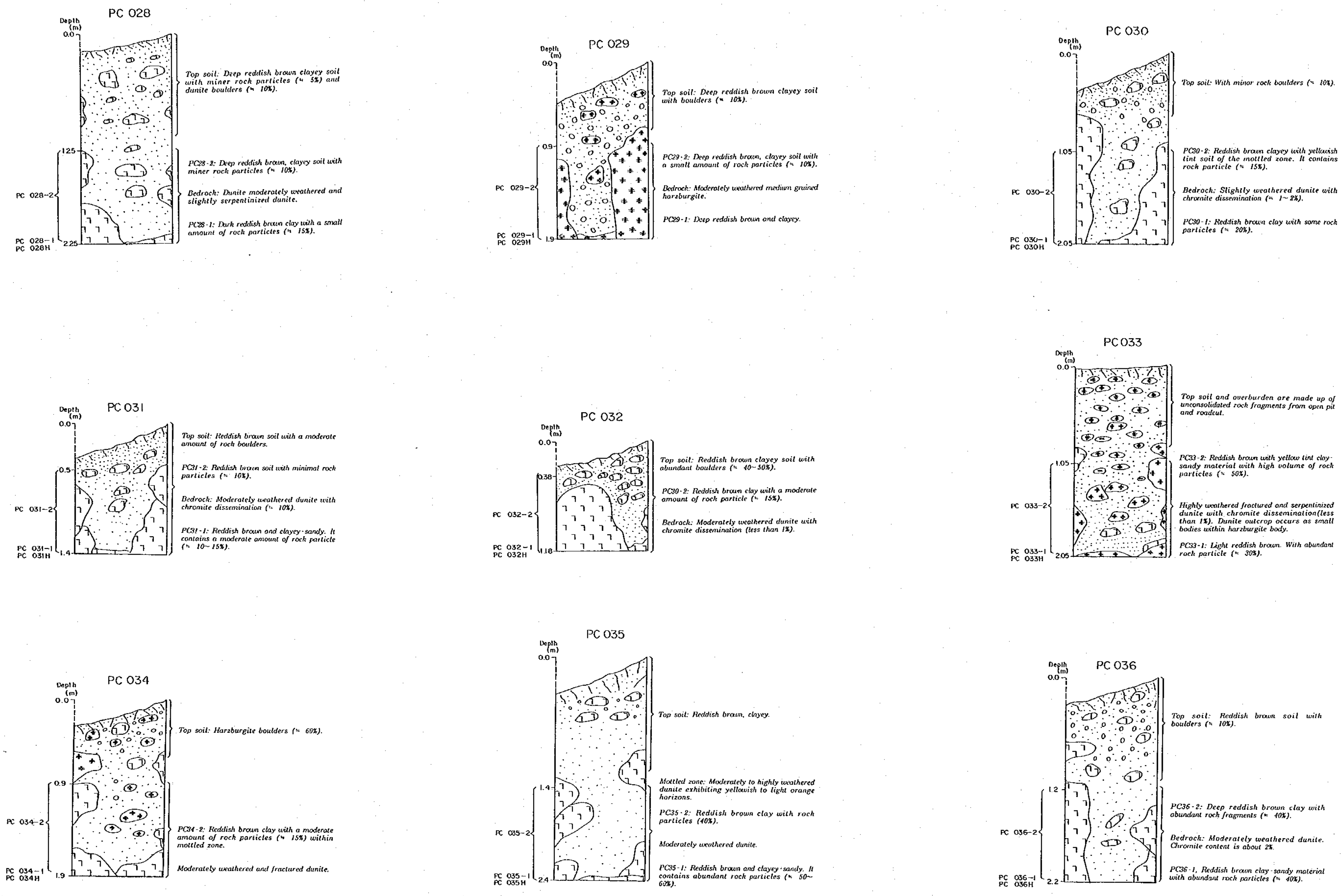
Appendix 9 Profile of test pits in the Pananlagan area



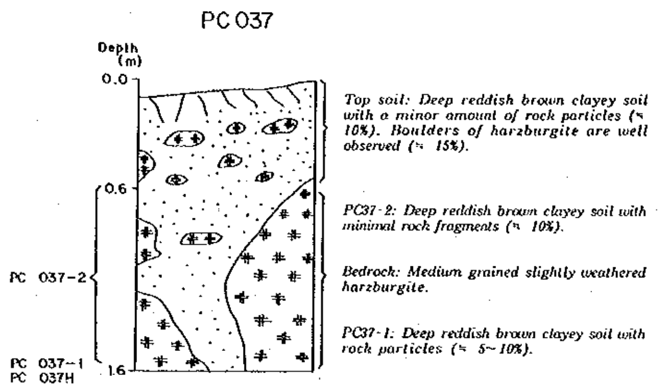
Appendix 9 Profile of test pits in the Pananlagan area

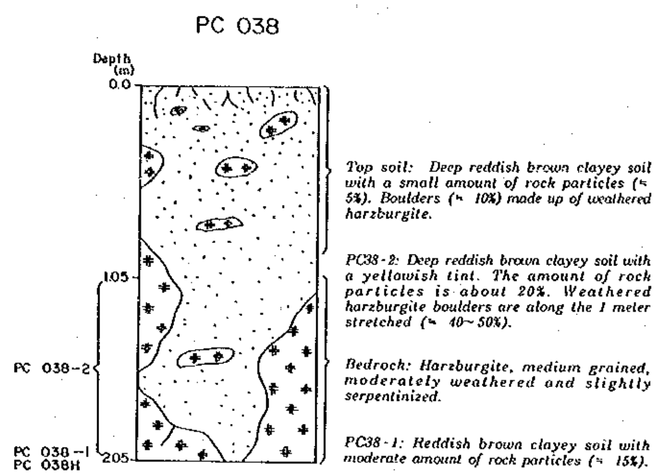


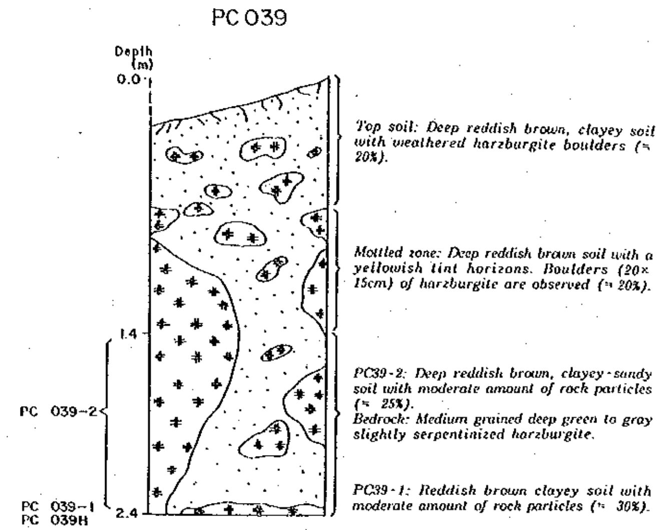
Appendix 9 Profile of test pits in the Pananlagan area

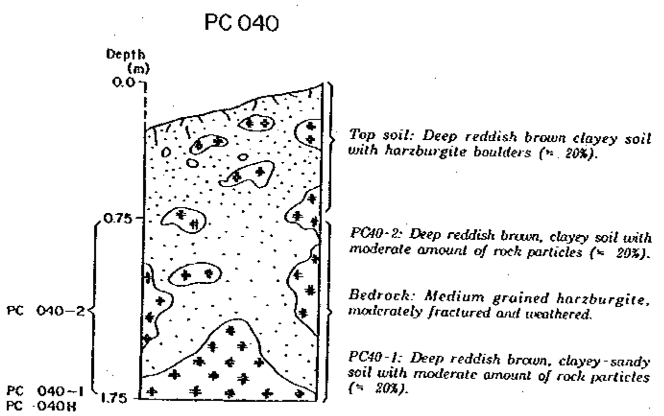


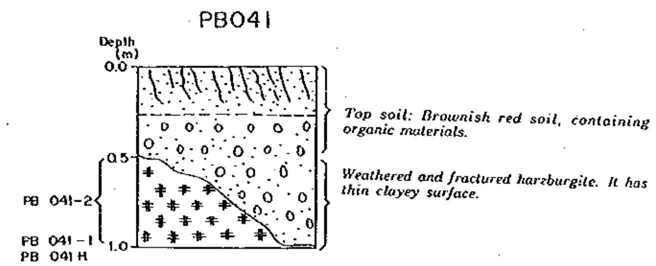
Appendix 9 Profile of test pits in the Pananlagan area

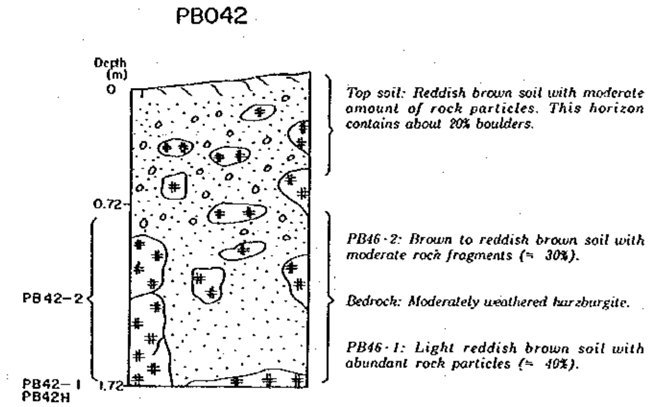


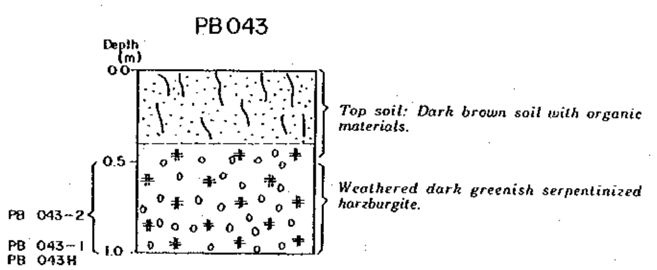


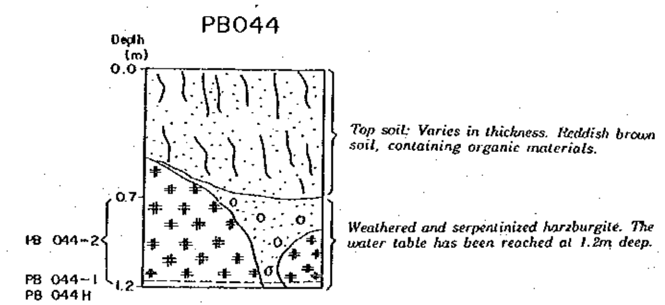


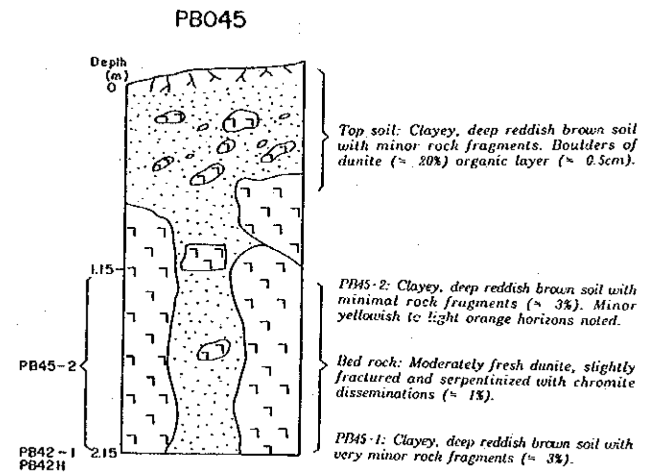




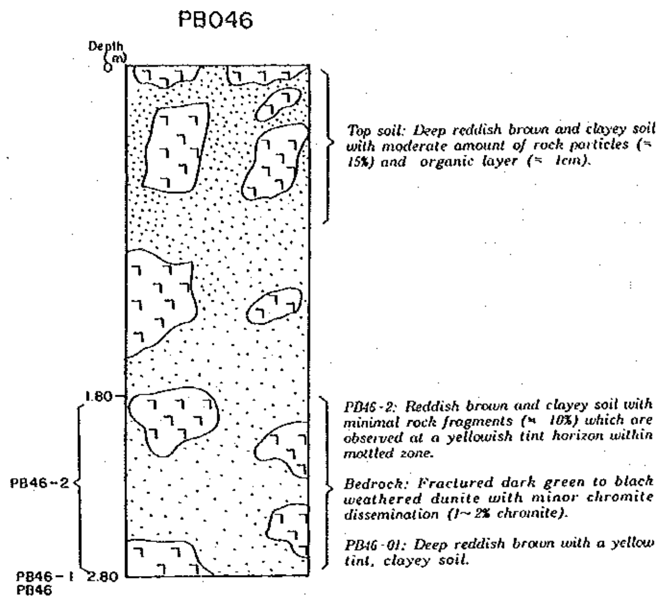


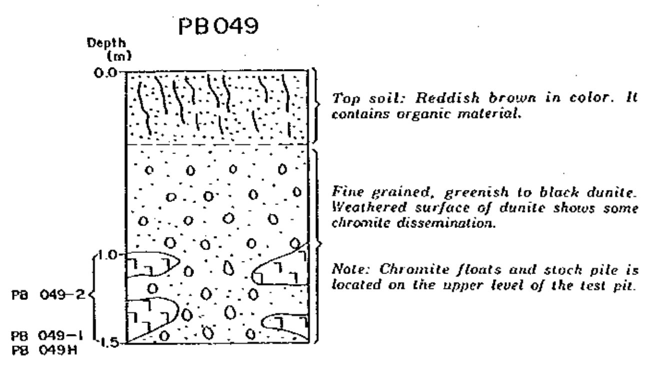


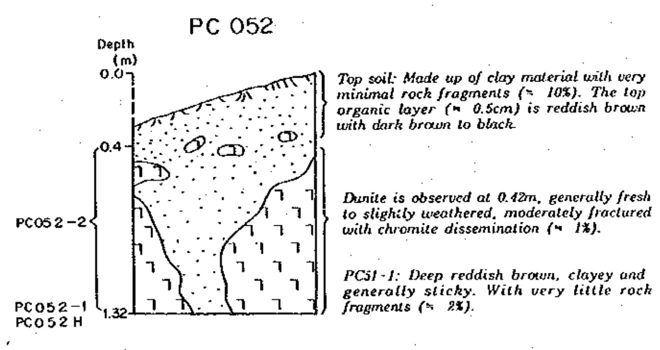


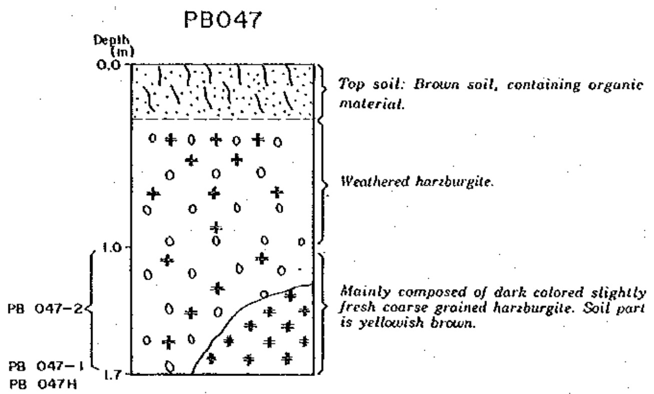


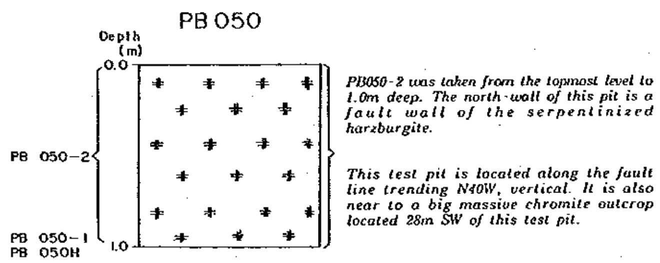
Appendix 9 Profile of test pits in the Pananlagan area

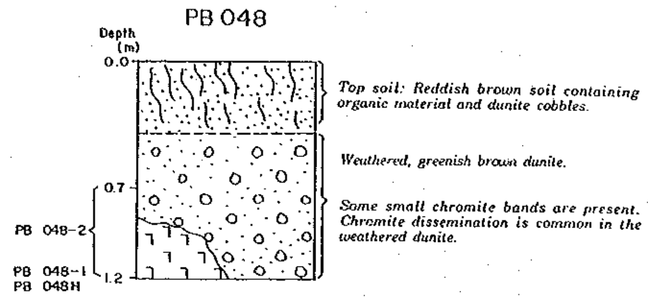


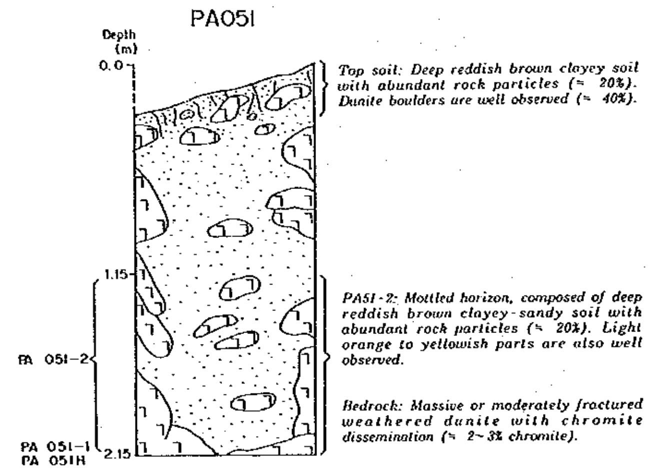








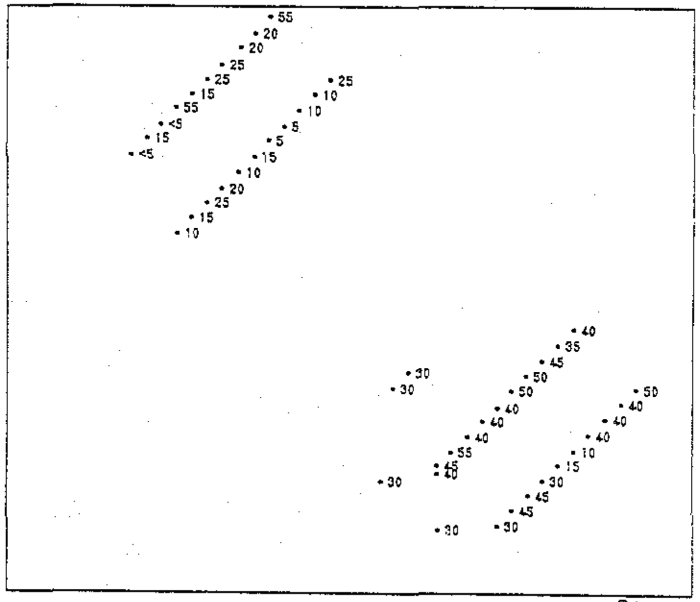


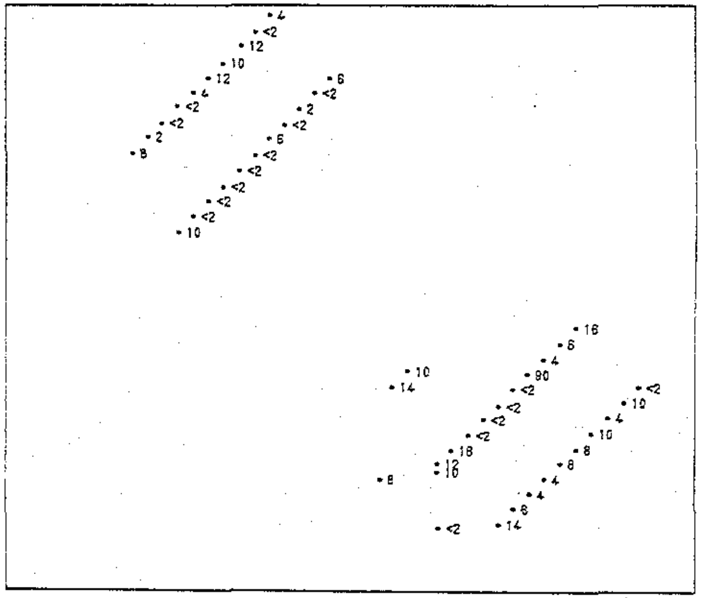


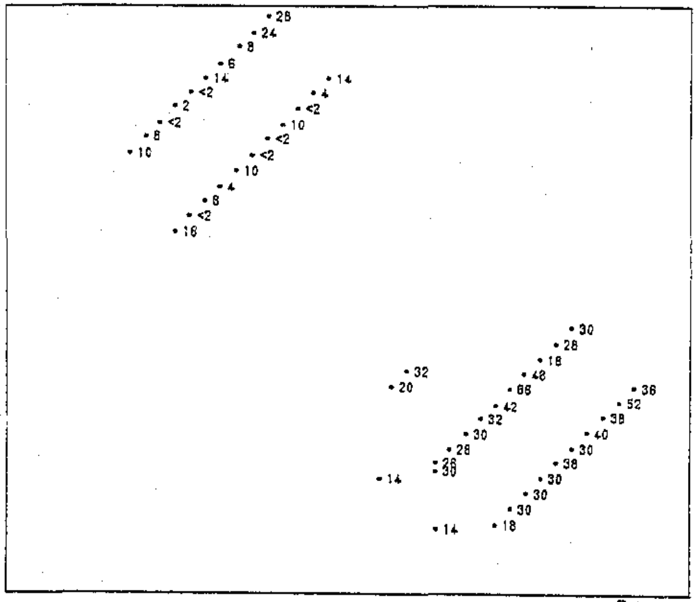
Appendix 9 Profile of test pits in the Pananlagan area

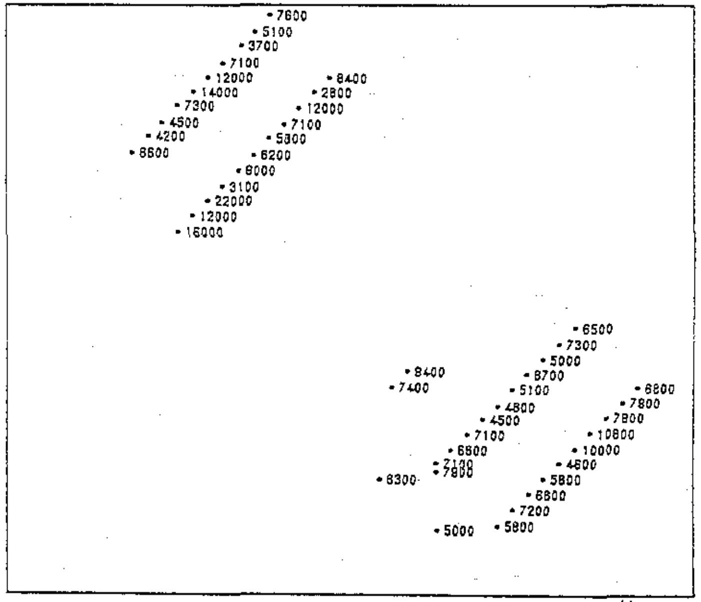
Appendix 10　Element content in the Upper Pananlagan area

(1)





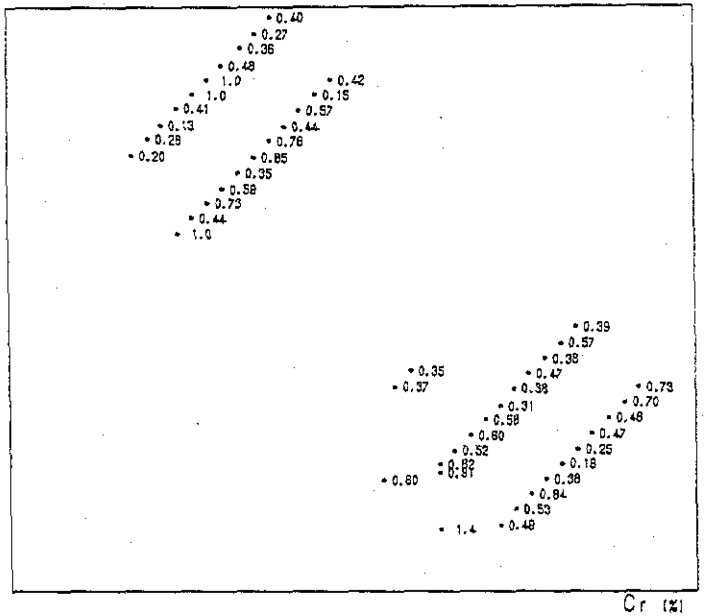


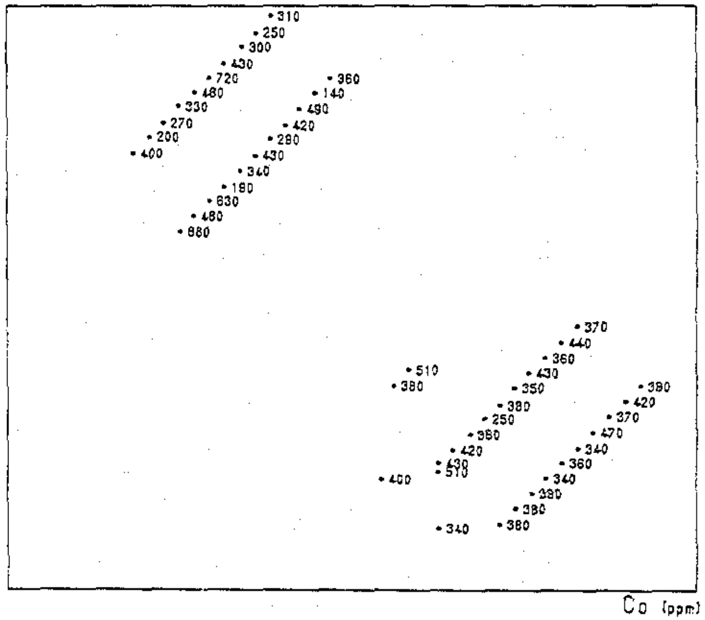


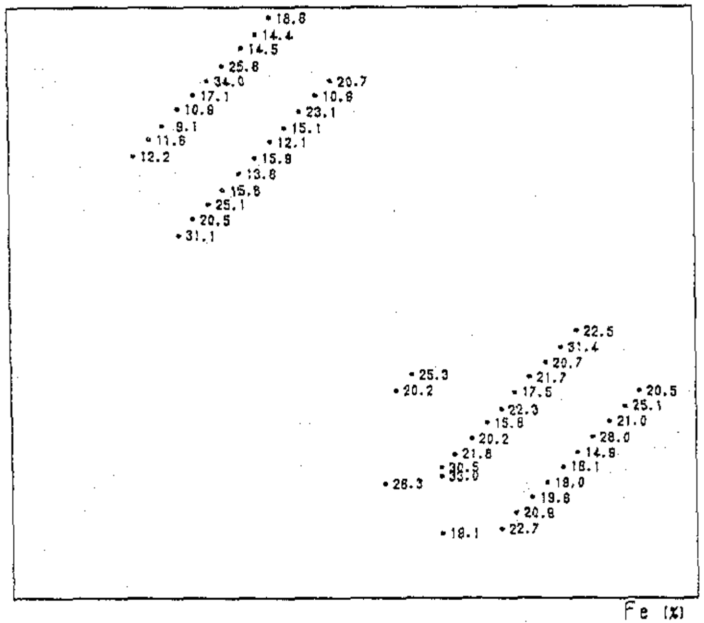
(Sample at the bottom of test pit)

Appendix 10 Element content in the Upper Pananlagan area

(2)



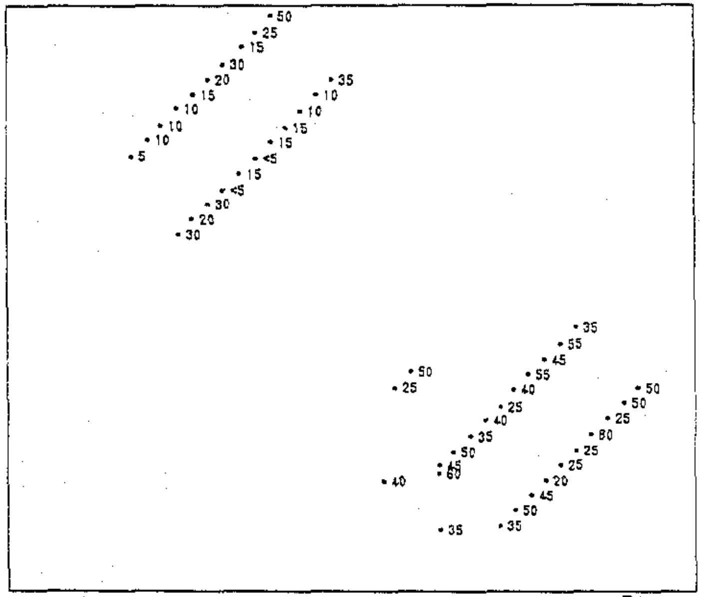




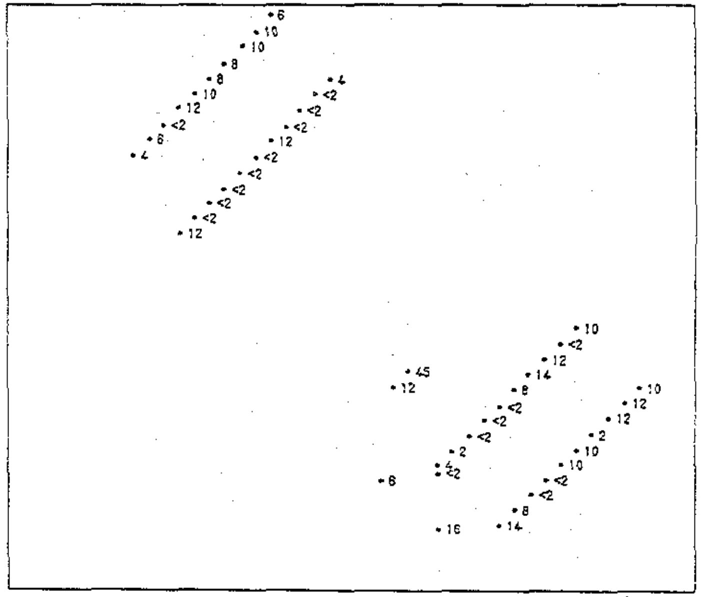
(Sample at the bottom of test pit)

Appendix 10 Element content in the Upper Pananlagan area

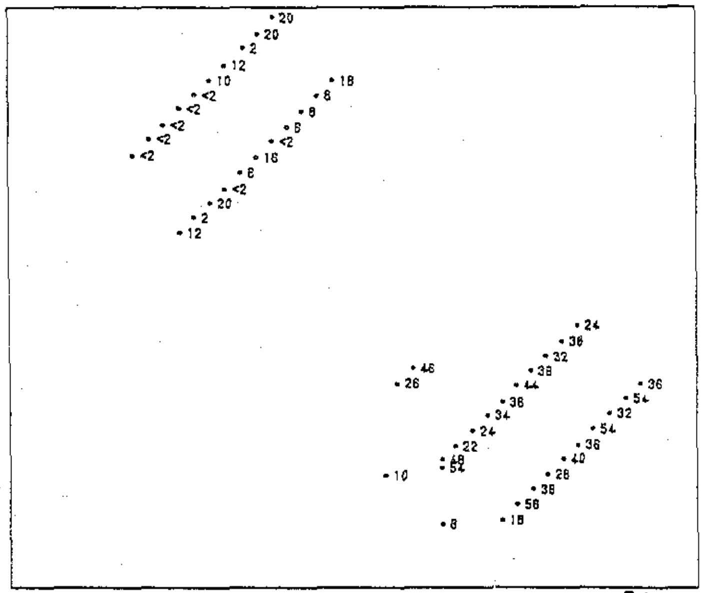
(3)



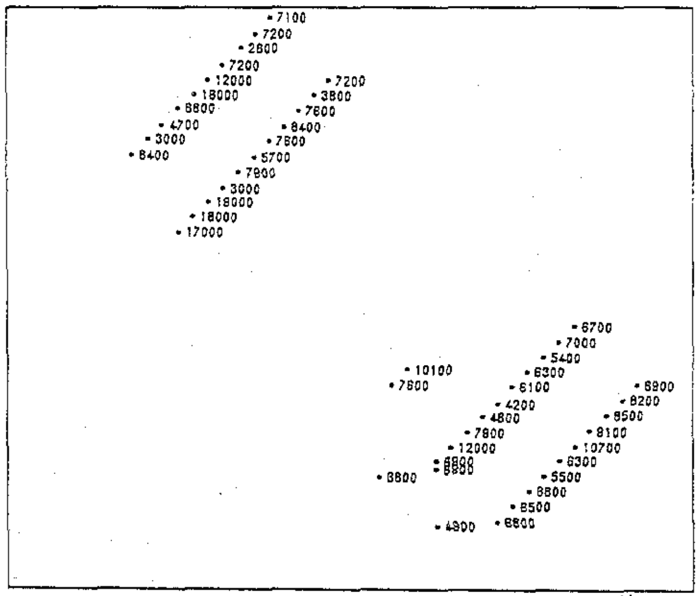
Pt (ppb)



Au (ppb)



Pd (ppb)

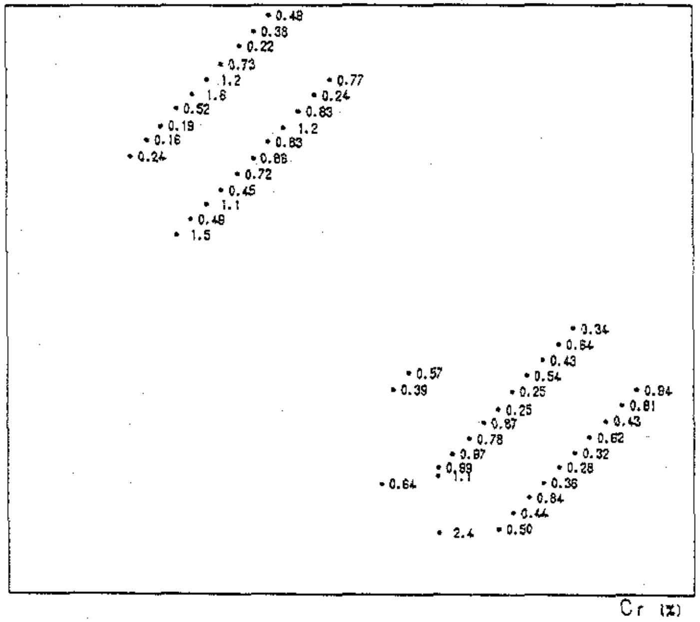


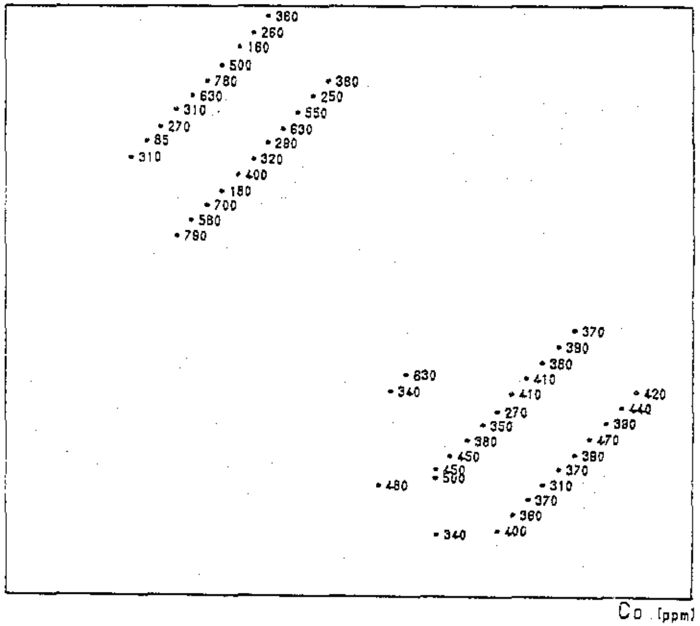
Ni (ppm)

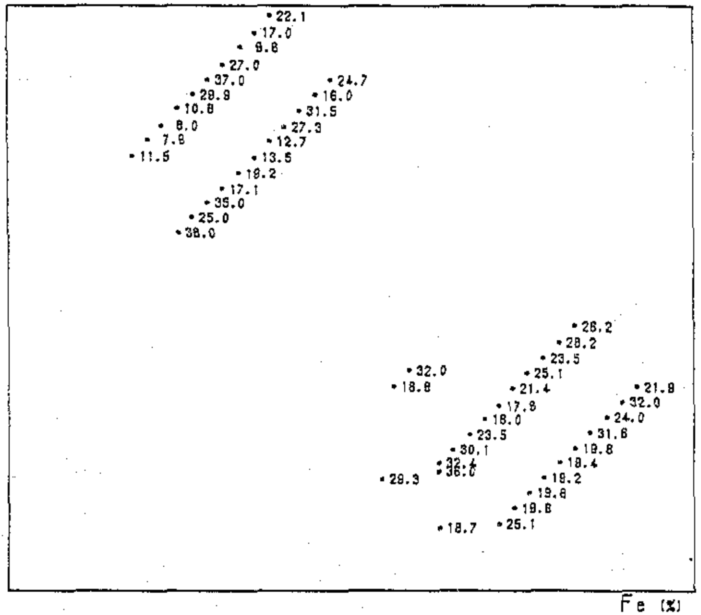
(One meter channel sample from the bottom to upper portion)

Appendix 10 Element content in the Upper Pananlagan area

(4)

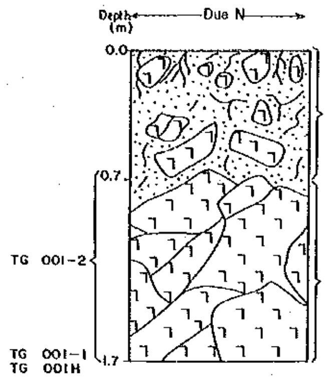






(One meter channel sample from the bottom to upper portion)

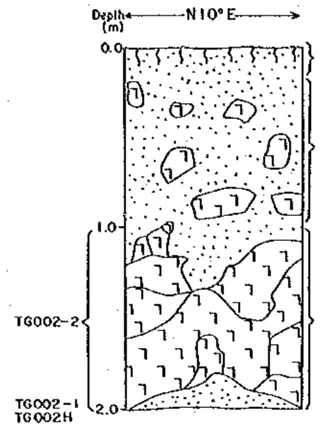
TG 001



Dark reddish brown soil: Sandy and silty, moist and loose soil, with an abundance of plant root. This layer contains pebbles and cobbles (32-250mm) of fresh to weathered dunite.

Bedrock: Fractured dunite. Fracture surface contains iron oxide and yellowish to brown soil. Soil is generally loose, moist, and sandy to silty.

TG 002

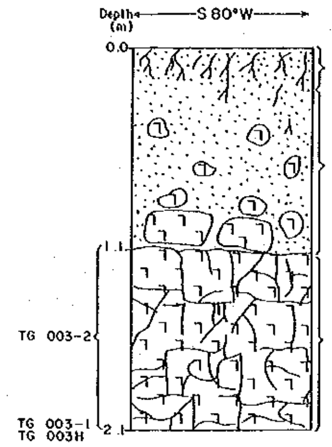


Thin layer of reddish brown soil: Sandy to silty, loose and dry soil, rich in roots of plants.

Yellowish brown soil layer: Sandy and silty soil, with angular cobbles and boulders of dunite.

Bedrock: Moderately weathered, serpentinized, massive and hard dunite stained by iron or manganese. The bottom portion tends to break into small angular pieces. Fresh rock portion shows very little chromite dissemination.

TG 003

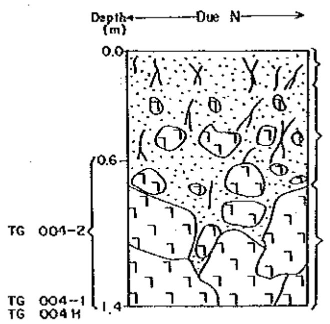


Dark reddish brown soil containing undecomposed organic debris.

Gravelly section: A minimal amount of cobbles and boulders (61-500mm) of weathered dunite are embedded in sandy to silty matrix. Matrix is generally reddish brown in color, loose and moist, and contains a few plant roots.

Saprolite: Weathered and fractured dunite. Dunite is yellowish to orange brown.

TG 004

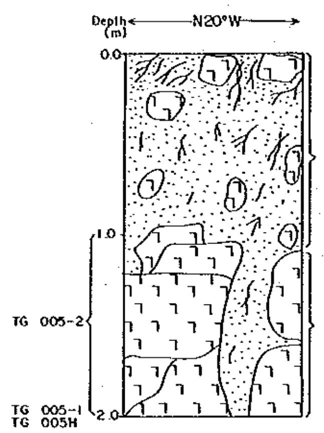


Dark reddish brown top soil: Sandy and silty, loose and moist soil containing a small amount of organic debris.

Gravelly section: Cobbles (64-250mm) of dunite are embedded in sandy to silty matrix. Matrix is reddish brown, moist and loose, and contains a small amount of plant roots.

Bedrock: Fractured dunite. Fractures are filled with ferruginous material and serpentinized soil. Soil is generally orange brown, moist, and sticky.

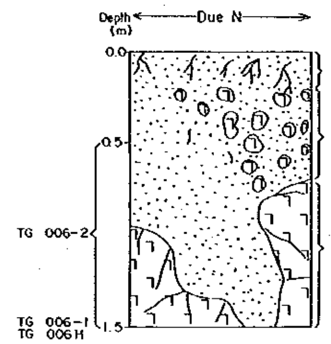
TG 005



Gravelly section: Pebbles and cobbles (32-130mm) of dunite are embedded in sandy to silty matrix. Matrix is generally reddish brown, moist and loose, contains an abundance of root at the topmost layer and a minimal amount at the lower horizon.

Bedrock: Fractured and serpentinized dunite. Fracture surface contains reddish brown iron oxide, white magnesite, and serpentine fibers. Soil in the fractures is generally brown, loose and moist, and contains a small amount of plant roots.

TG 006

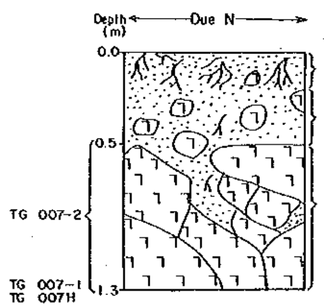


Reddish brown soil cover: Sandy to silty, moist and loose soil, with an abundance of root.

Gravelly section: Angular to subrounded pebbles and cobbles (32-130mm) of weathered dunite are embedded in sandy to silty matrix. Soil is generally yellow ocher in color, loose and moist, contains a few plant roots.

Bedrock is composed of fractured dunite. Fracture surface contains iron oxide. Soil is generally orange brown, loose, moist, and sandy to silty.

TG 007

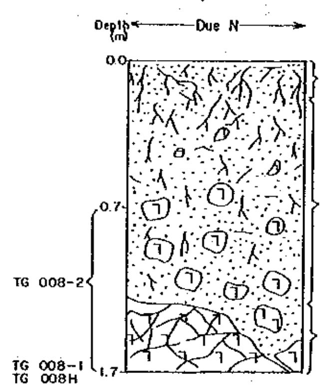


Dark reddish brown top soil: Sandy to silty, dry and loose soil, with an abundance of plant root.

Gravelly section: Cobbles (130-250mm) of weathered or fresh dunite are embedded in gritty to silty matrix. Soil is orange brown in color, generally loose and moist, and contains a few plant roots.

Bedrock consists of fractured dunite. Fracture surface contains iron oxide material. Soil portion is generally yellow ocher in color, moist and loose, contains a few roots.

TG 008

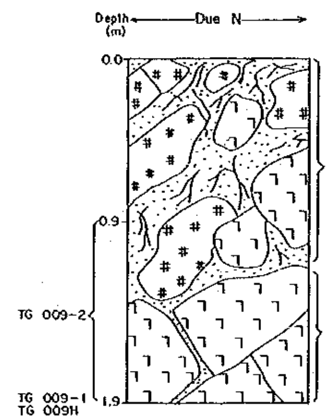


Reddish brown soil cover: Sandy to silty, moist and loose soil with an abundance of plant root.

Gravelly section: Angular to subrounded pebbles and cobbles (32-250mm) of weathered dunite are embedded in gritty to silty matrix. Soil is generally orange brown, moist and loose, contains a minimal amount of root.

Brown to orange brown saprolite: Weathered and highly fractured dunite. Fracture surface contains reddish to orange brown iron oxide.

TG 009

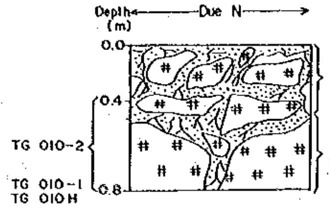


Gravelly section: Angular to subrounded cobbles and boulders (6-100cm) of dunite and harzburgite are embedded in gritty to silty matrix. Matrix is generally dark reddish brown, moist and loose, and contains plant roots.

Bedrock consists of fractured dunite. Fracture surface contains reddish brown iron oxide. Soil is generally reddish brown, moist and loose.

Appendix 11 Profile of test pits in the Tagkawayan area

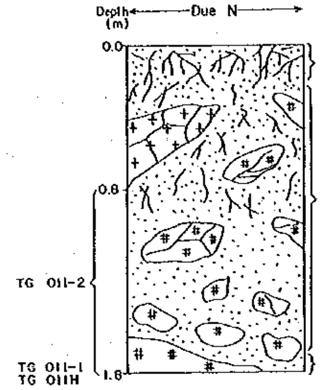
TG 010



Gravelly section: Angular cobbles and boulders (6-100cm) of weathered harzburgite are embedded in sandy to silty matrix. Soil is generally orange brown, dry and loose, and contains a small amount of plant roots.

Bedrock consists of fractured harzburgite. Fracture surface contains iron oxide. Soil is orange brow, moist and loose.

TG 011

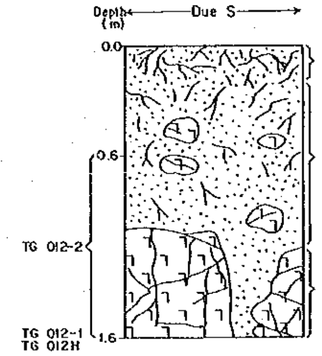


Reddish brown soil cover: Moist, sandy to silty soil, contains largely decomposed loose leaves.

Gravelly section: Cobbles and boulders (64-500mm) of weathered harzburgite and fresh fine grained gabbro are embedded in sandy to silty matrix. Matrix is yellow ocher in color, loose and moist, and contains a minor amount of plant roots.

Saprolite: Reddish to orange brown weathered harzburgite.

TG 012

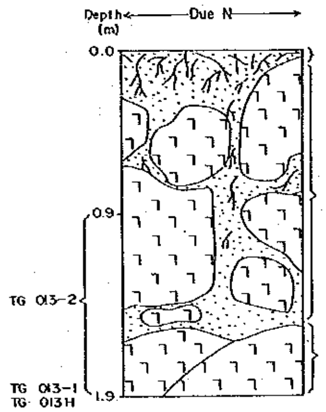


Dark reddish brown top soil: Sandy to silty, moist and loose soil, with an abundance of roots.

Gravelly section: Cobbles (64-250mm) of weathered dunite are embedded in sandy to silty matrix. Matrix is yellowish brown, moist and loose, and contains a minimal amount of plant roots.

Saprolite: Weathered and fractured dunite. Fracture surface contains iron oxide.

TG 013

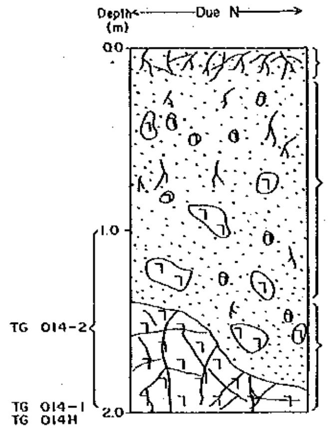


Dark reddish brown soil cover: Sandy and silty, loose and dry soil, with an abundance of roots.

Gravelly section: Angular to subrounded cobbles and boulders (6-100cm) of dunite are embedded in sandy to silty matrix. Soil is orange brown, moist and loose, and contains a small amount of plant roots.

Bedrock: Fractured dunite. Fracture surface contains iron oxide.

TG 014

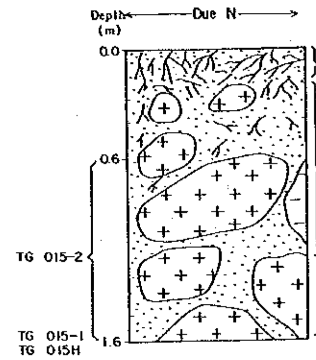


Dark reddish brown top soil: Sandy to silty, dry and loose soil, with an abundance of root.

Gravelly section: Angular to subrounded pebbles and cobbles (16-130mm) of weathered dunite are embedded in gritty to silty matrix. Soil is reddish brown, loose and moist. A small amount of plant roots is still present in soil.

Saprolite: Weathered and intensely fractured dunite. Saprolite is generally brown in color.

TG 015

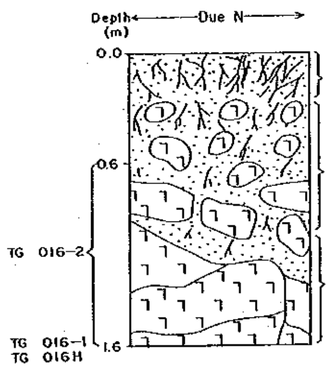


Dark reddish brown top soil: Sandy to silt, loose and moist soil, with an abundance of root.

Gravelly section: Angular to subrounded cobbles and boulders (6-100cm) of fine grained gabbro are embedded to sandy to silty matrix. Matrix is reddish brown, loose and moist. A small amount of plant roots is still present.

Bedrock consists of fine grained gabbro. Fracture surface contains reddish brown iron oxide. Soil filling fracture is generally reddish brown, sandy to silty, loose and moist.

TG 016

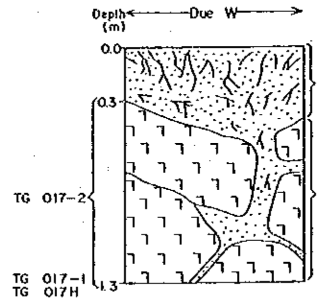


Dark reddish brown soil cover: Sandy to silty, moist and loose soil, with an abundance of roots.

Gravelly section: Angular to subrounded pebbles and cobbles (32-130mm) moderately weathered dunite are embedded in sandy to silty matrix. Matrix is orange brown and contains a small amount of plant roots.

Bedrock: Fractured dunite. Fracture surface contains iron oxide. Soil filling fracture is yellowish brown, moist, loose, and sandy to silty.

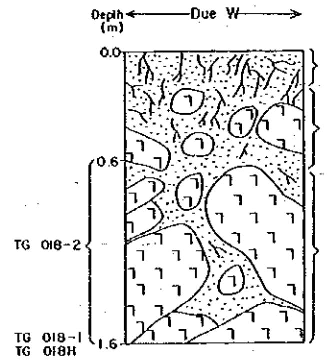
TG 017



Reddish brown soil cover: Sandy to silty, moist and loose soil, with an abundance of plant roots.

Bedrock is composed of fractured dunite. Fracture surface contains ferruginous material. Soil is generally orange brown, moist and loose.

TG 018



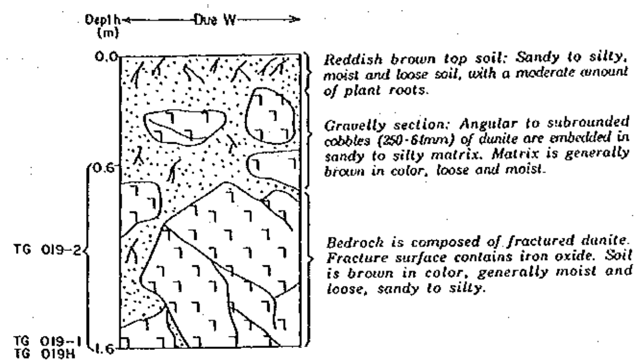
Reddish brown top soil: Sandy to silty, loose and dry soil, with an abundance of plant roots.

Gravelly section: Subrounded cobbles (250-64mm) of dunite are embedded in sandy to silty matrix. Soil is orange brown, moist, and loose, and contains a small amount of plant roots.

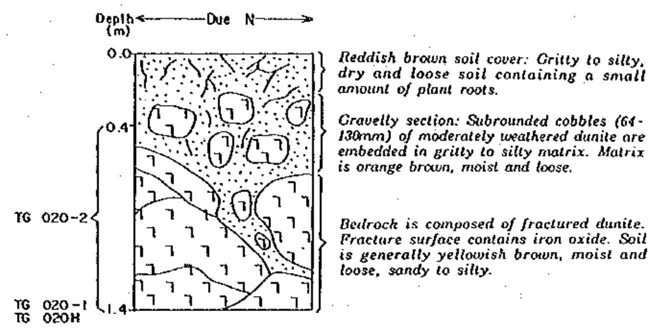
Dunite bedrock: Weathered surface contains iron oxide. Soil filling fractures is yellowish brown, sandy to silty, moist, and loose.

Appendix 11 Profile of test pits in the Tagkawayan area

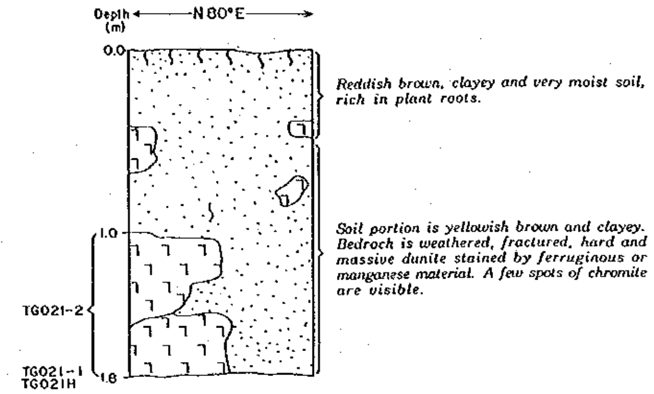
TG 019



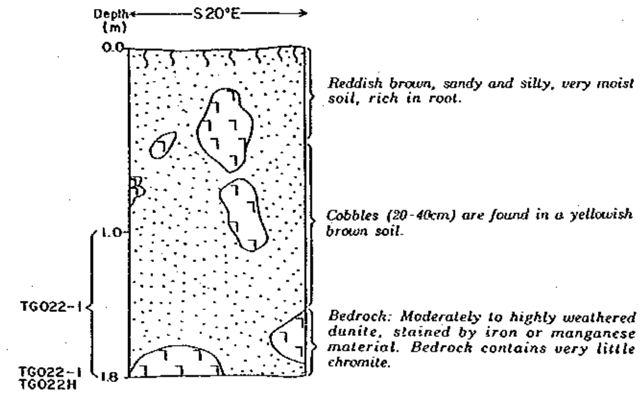
TG 020



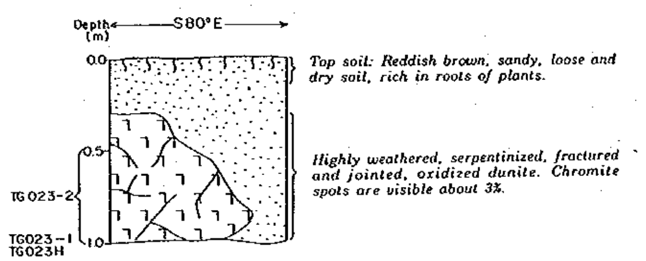
TG 021



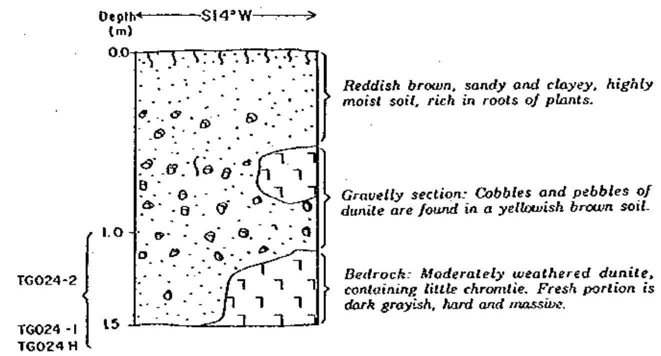
TG 022



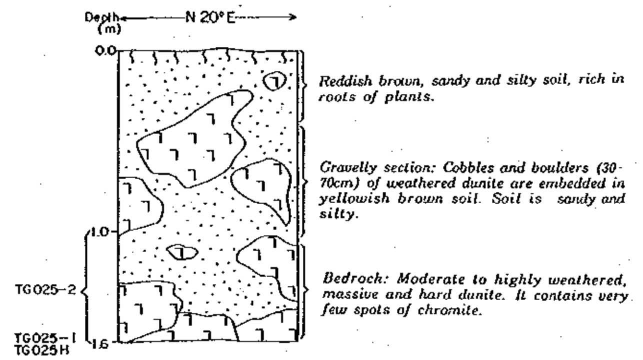
TG 023



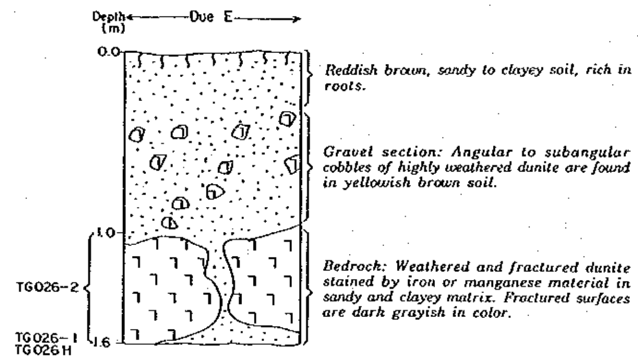
TG 024



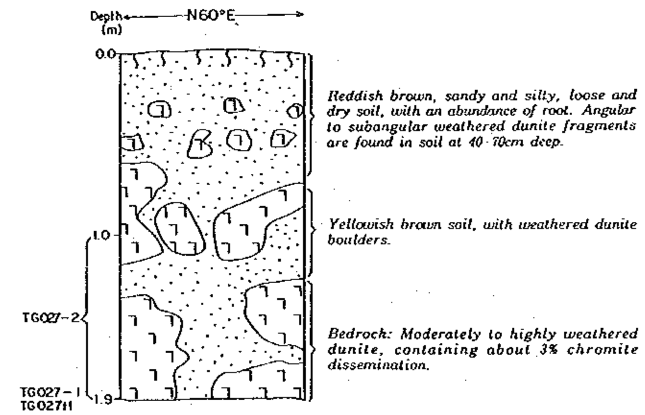
TG 025



TG 026

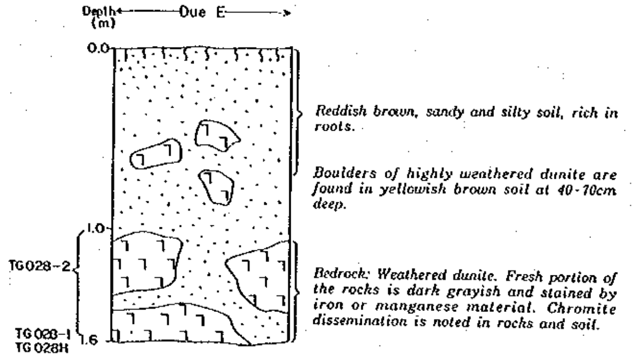


TG 027

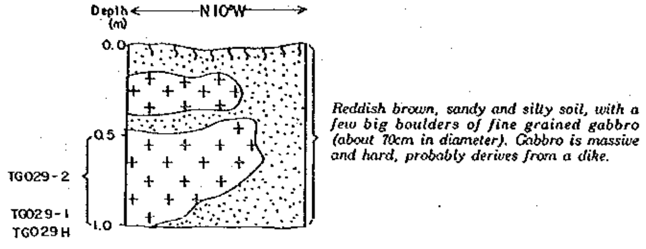


Appendix 11 Profile of test pits in the Tagkawayan area

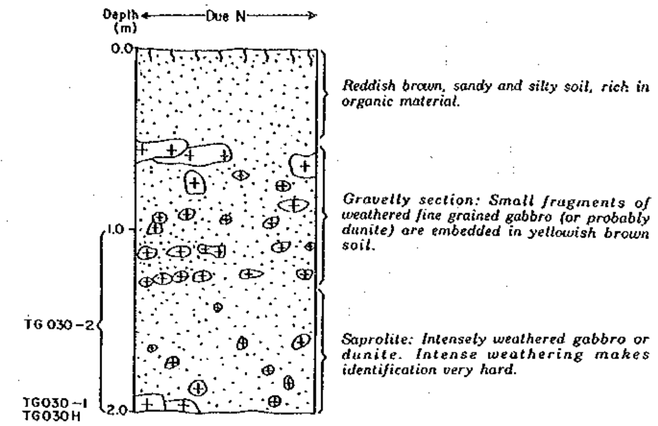
TG 028



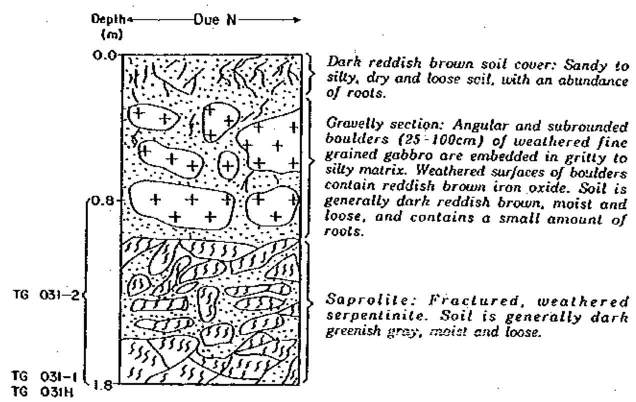
TG 029



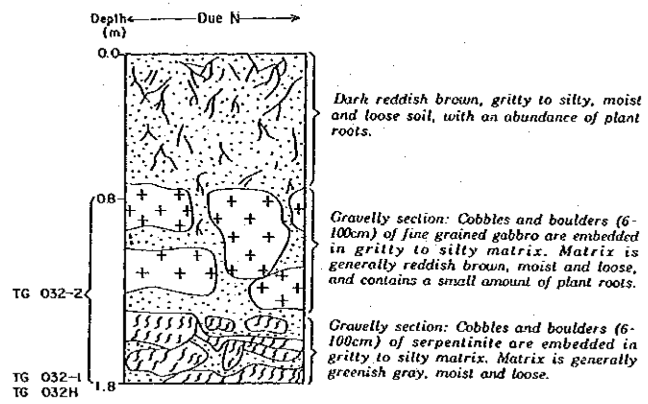
TG 030



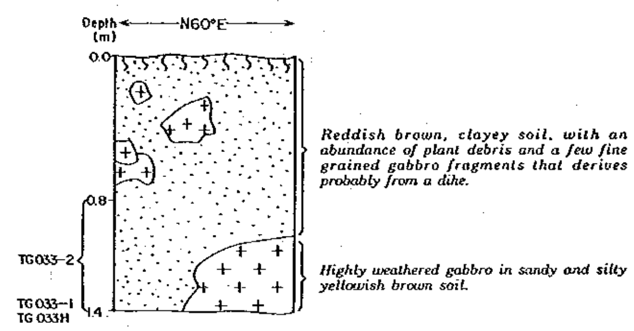
TG 031



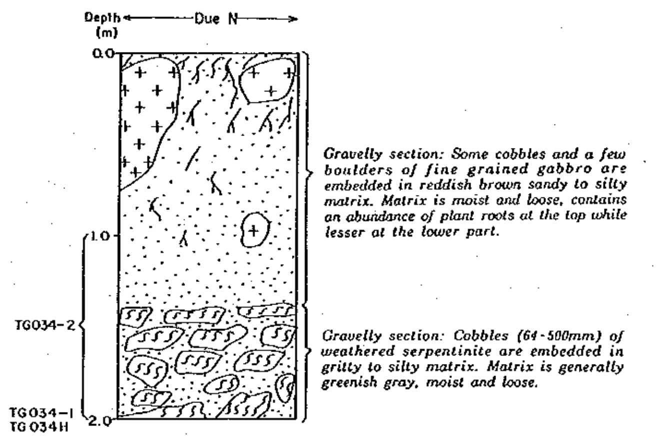
TG 032



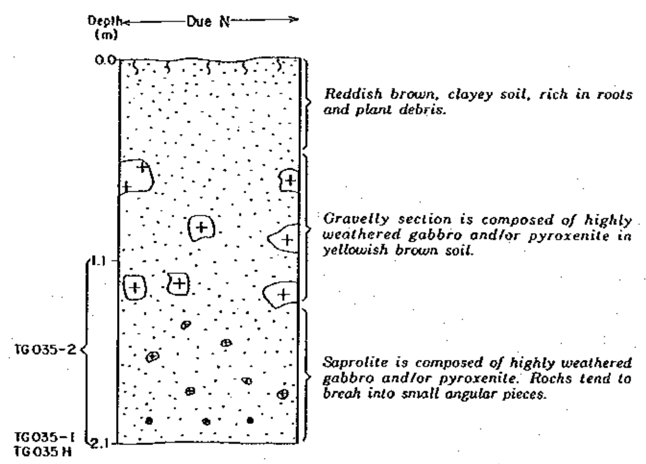
TG 033



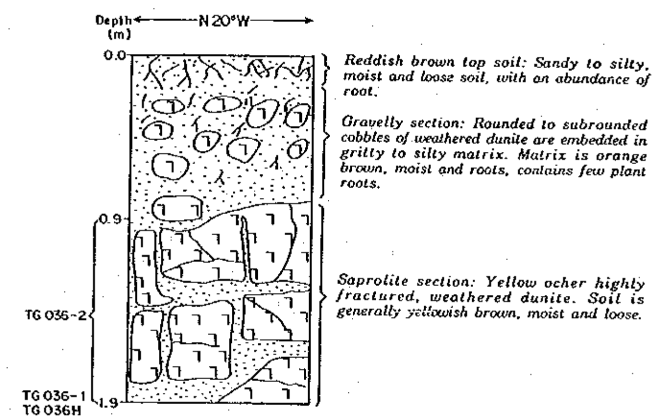
TG 034



TG 035

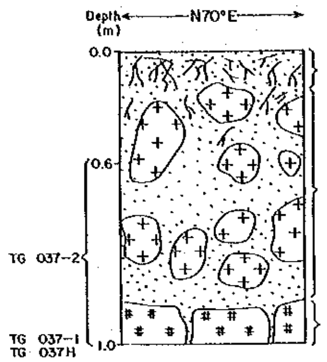


TG 036



Appendix 11 Profile of test pits in the Tagkawayan area

TG 037

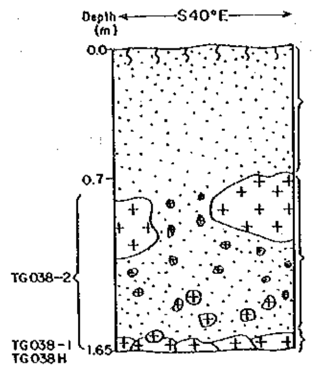


Vandyke brown soil cover: Sandy to silty, loose and dry soil, with an abundance of roots.

Gravelly section: Rounded to subrounded cobbles (64-500mm) of fine grained gabbro are embedded in gritty to silty matrix. Matrix is generally reddish brown, loose and moist, and contains a few plant roots.

Saprolite: Weathered harzburgite. Fracture is filled with yellowish brown soil, and fracture surfaces contain iron oxide.

TG 038

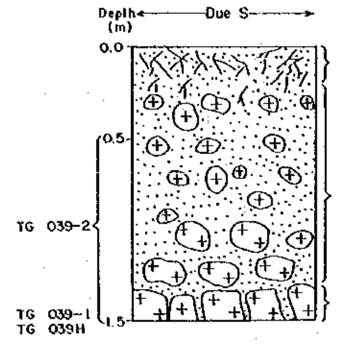


Reddish brown clayey soil, rich in roots of plants.

Gravel section is composed of angular to subangular fragments of weathered fine grained gabbro stained by iron or manganese material, and sandy to silty matrix.

Moderately to highly weathered fine grained gabbro, tending to break into small angular pieces.

TG 039

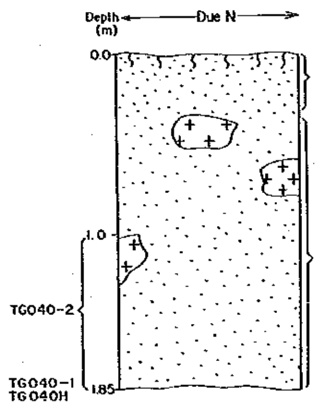


Reddish brown soil: Sandy to silty, moist and loose soil, with an abundance of plant remains.

Gravelly section: Angular to subrounded cobbles (64-130mm) of weathered and/or fresh fine grained gabbro are embedded in gritty to silty matrix. Matrix is generally orange brown, contains a few plant roots.

Bedrock: Fractured fine grained gabbro. Fracture surfaces contains reddish brown iron oxide.

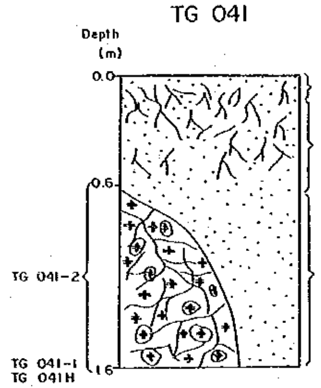
TG 040



Reddish brown, clayey to sandy soil, rich in roots of plants.

This layer is composed of about 70% soil material and 30% rock fragments. Soil is yellowish brown, sandy and silty. Fragments are composed of moderately weathered fine grained gabbro.

TG 041

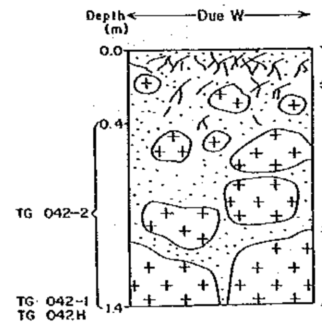


Dark reddish brown, sandy to silty, dry and loose soil, with an abundance of plant roots.

Reddish brown, gritty to silty, moist and loose soil, with few plant roots.

Saprolite: Spheroidally weathered to intensely weathered serpentinized harzburgite. Fracture surfaces contain reddish to orange brown iron oxide.

TG 042

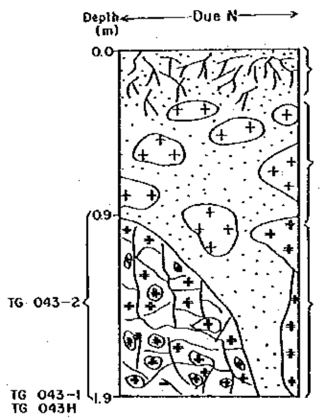


Dark reddish brown soil cover: Sandy to silty, moist and loose soil, with an abundance of roots.

Gravelly section: Angular to subrounded cobbles and boulders (64-500mm) of weathered to fresh fine grained gabbro are embedded in gritty to silty matrix. Matrix is generally reddish brown, moist and loose.

Bedrock consists of fine grained gabbro. Fracture and bedrock surface are stained by yellow brown iron oxide. Yellowish brown soil fills fracture, and is moist and sticky.

TG 043

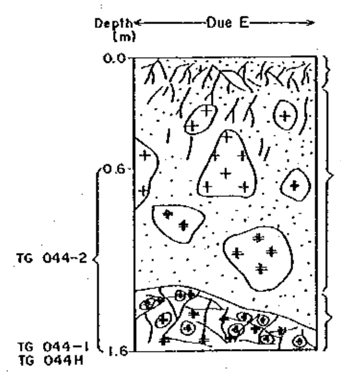


Reddish brown top soil: Sandy to silty, moist and loose soil, with an abundance of roots.

Gravelly section: Cobbles and boulders (64-500mm) of fine grained gabbro and harzburgite are embedded in pebbly to silty matrix. Matrix is generally reddish brown, and silty part moist and loose.

Saprolite: Spheroidal weathering is found in highly fractured serpentinized harzburgite. Fracture surfaces contain yellowish to orange brown iron oxide.

TG 044

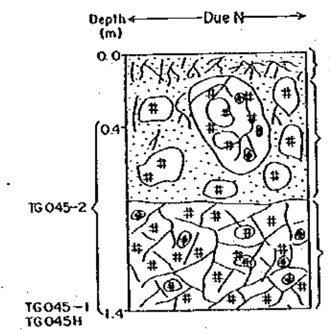


Dark reddish brown, sandy to silty, moist and loose soil, with an abundance of roots.

Gravelly section: Cobbles and boulders (64-500mm) of weathered harzburgite and fine grained gabbro are embedded in pebbly to silty matrix. Matrix is loose and moist, orange brown soil at the top and brown at the bottom.

Saprolite: Spheroidally weathered, high fractured serpentinized harzburgite. saprolite is generally greenish gray. Fracture network is filled with black material.

TG 045

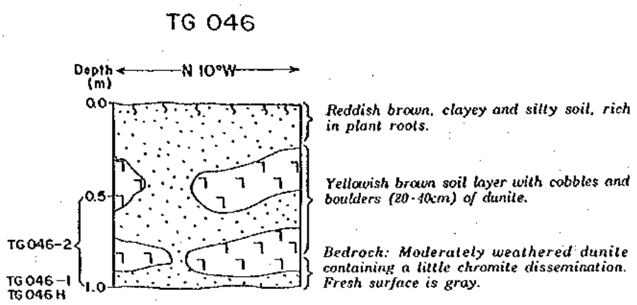


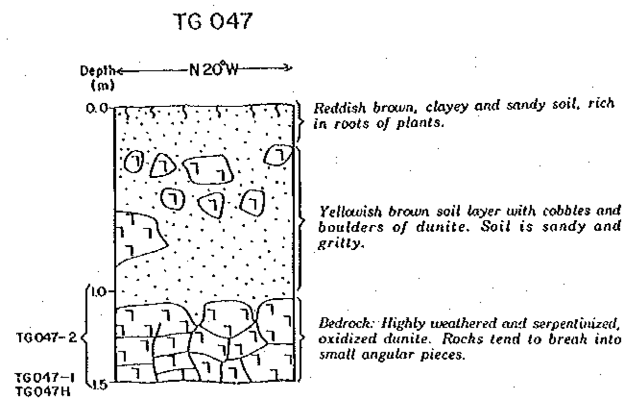
Dark reddish brown, sandy to silty, moist and loose soil, with an abundance of roots.

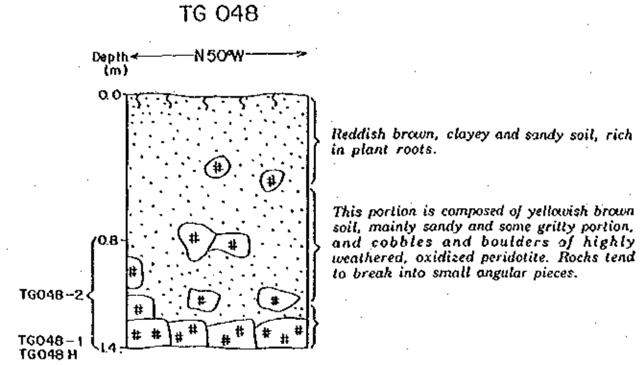
Gravelly section: Cobbles and boulders (6-100cm) of weathered harzburgite are enbedded in pebbly to silty matrix. Spheroidal weathering is seen on the boulders.

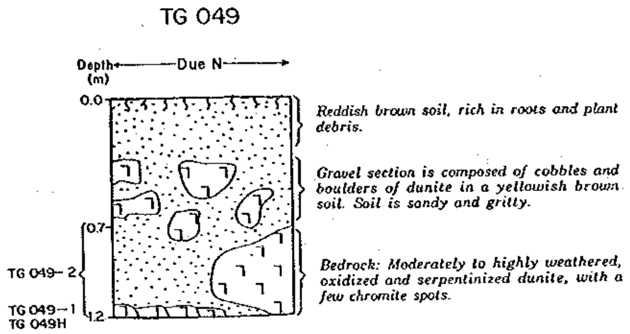
Saprolite is mainly composed of weathered harzburgite. Matrix is generally brown. Network of fractures contains black material.

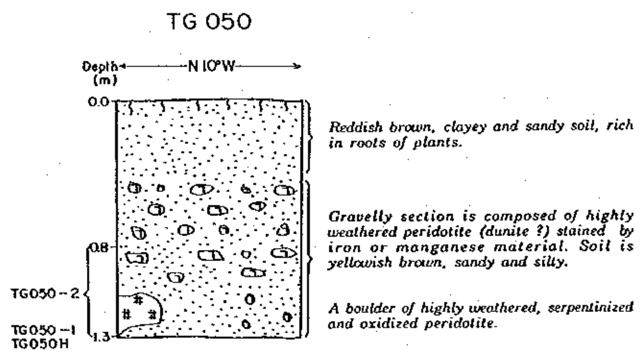
Appendix 11 Profile of test pits in the Tagkawayan area







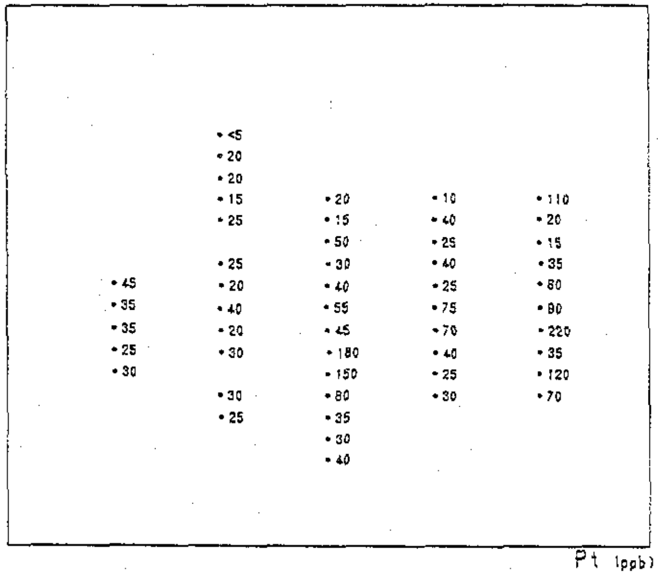


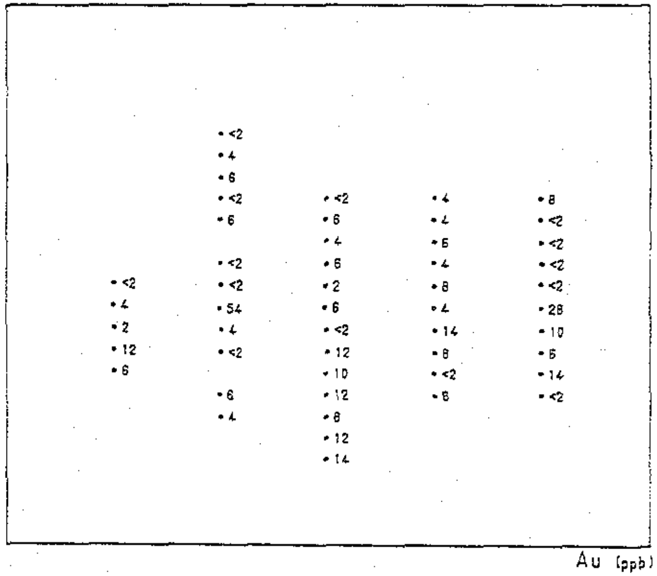


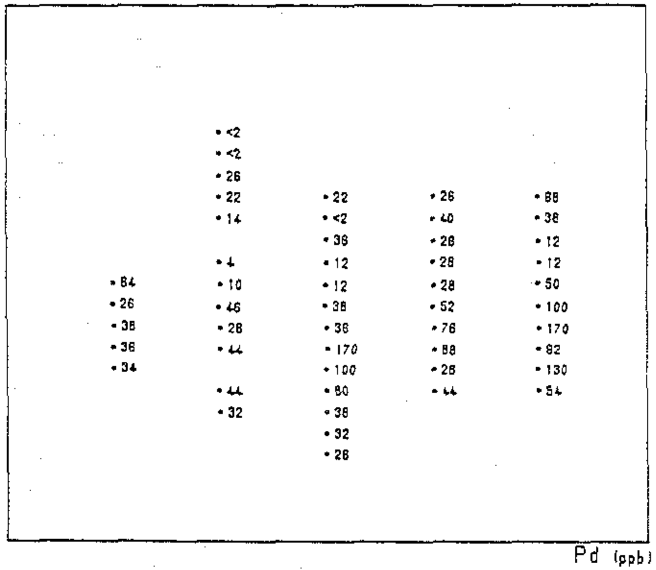
Appendix 11 Profile of test pits in the Tagkawayan area

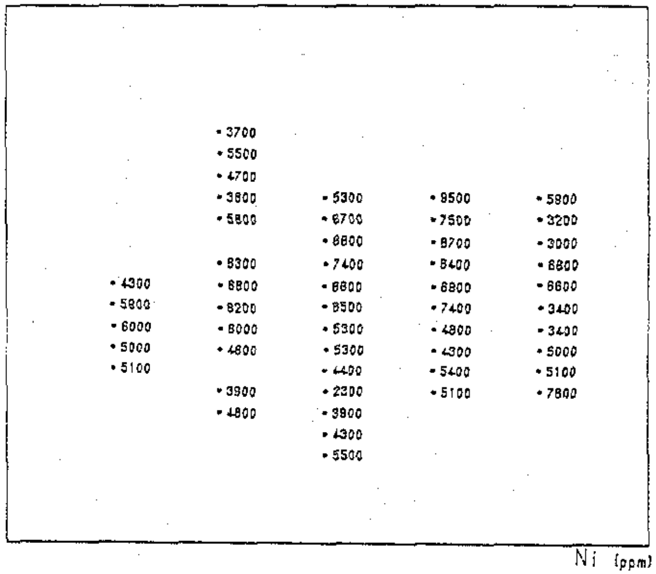
Appendix 12 Element content in the Tagkawayan area

(1)





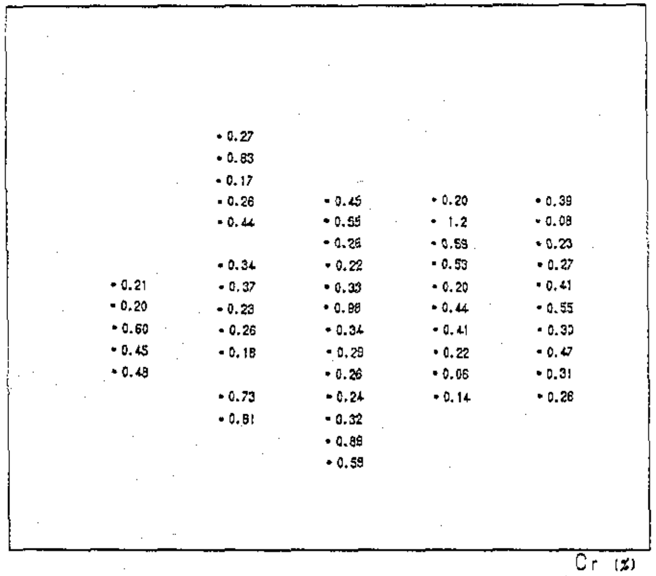


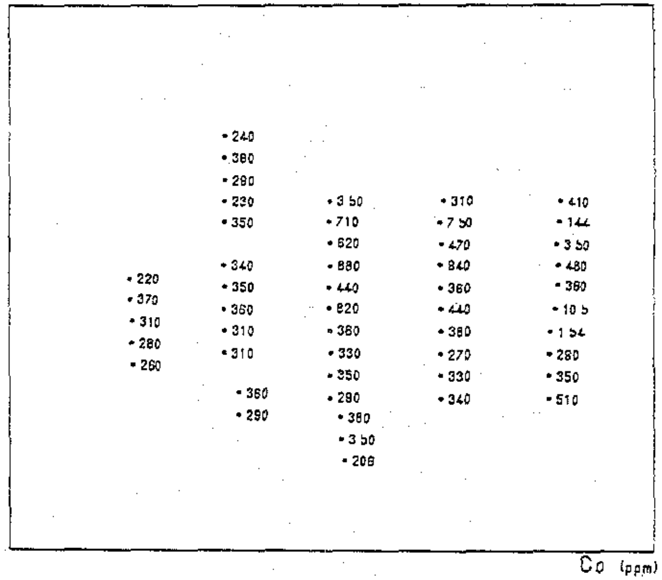


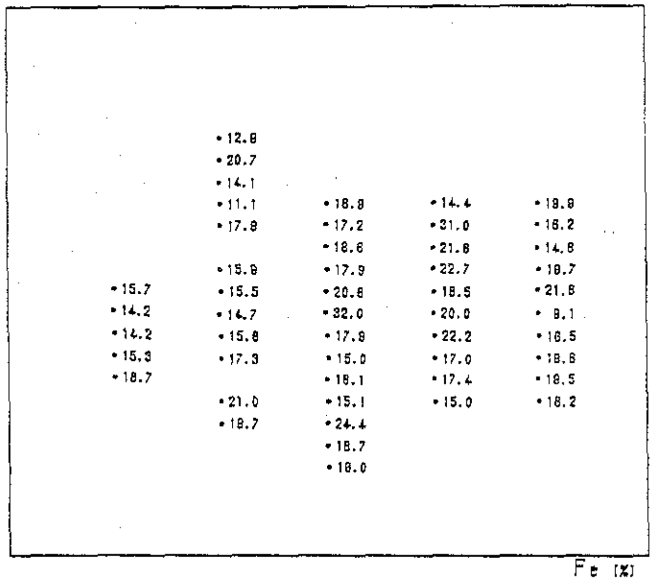
(Sample at the bottom of test pit)

Appendix 12 Element content in the Tagkawayan area

(2)



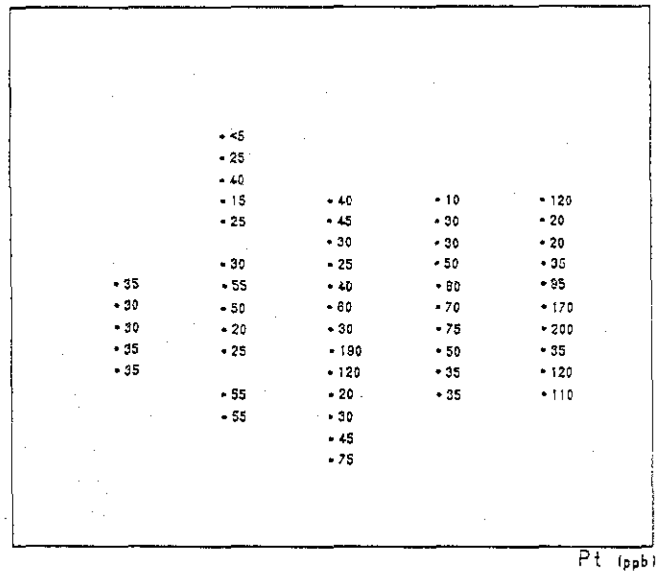


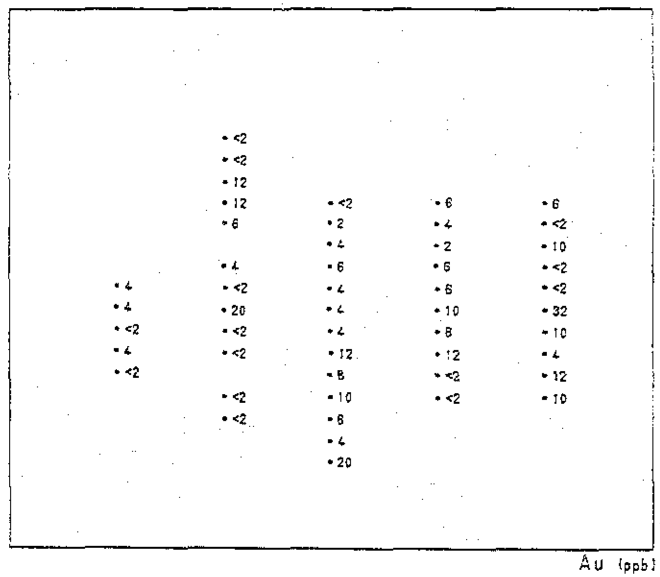


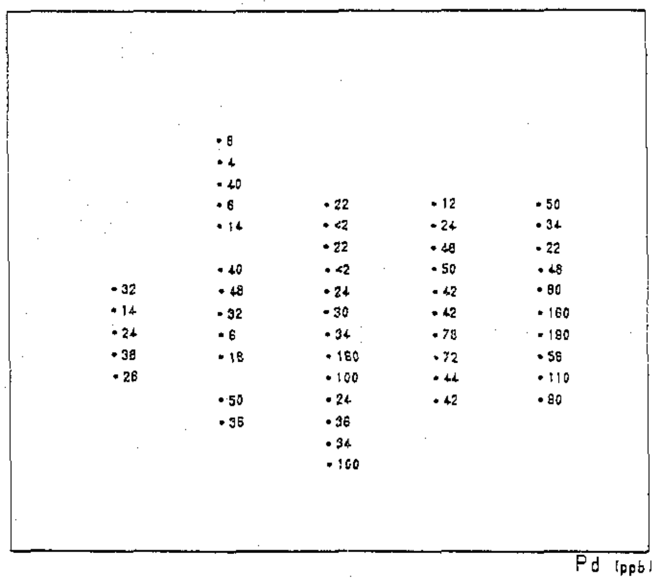
(Sample at the bottom of test pit)

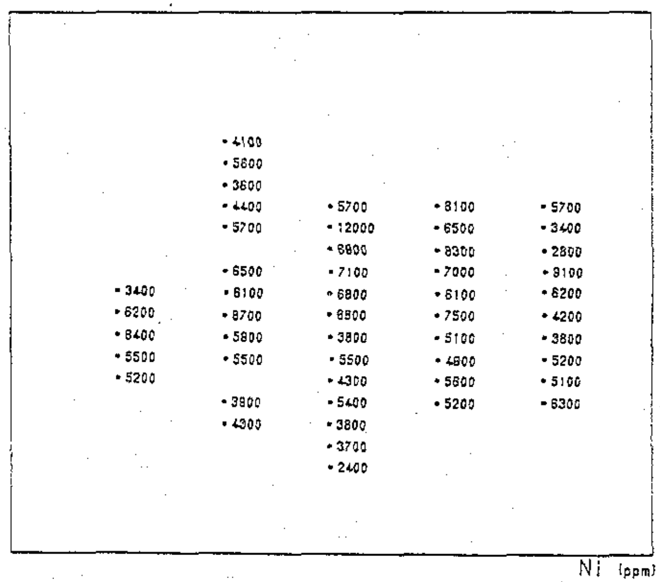
Appendix 12 Element content in the Tagkawayan area

(3)





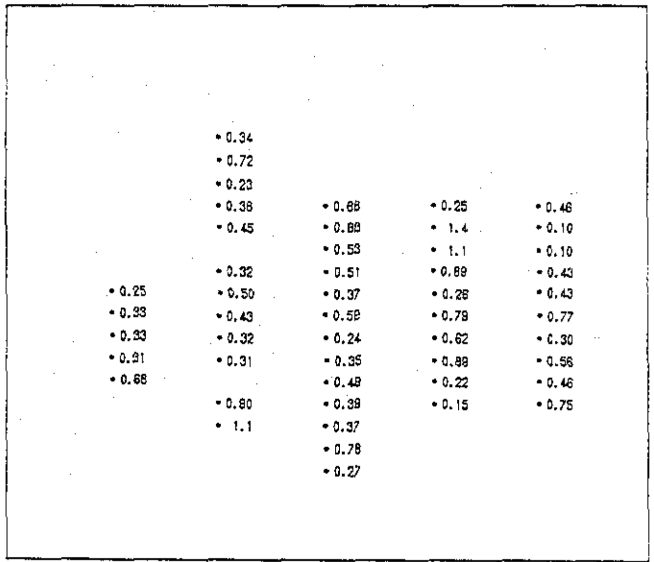


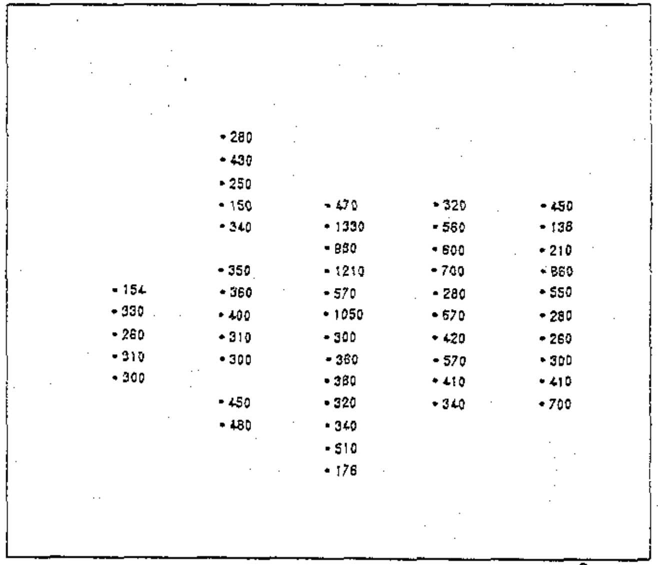


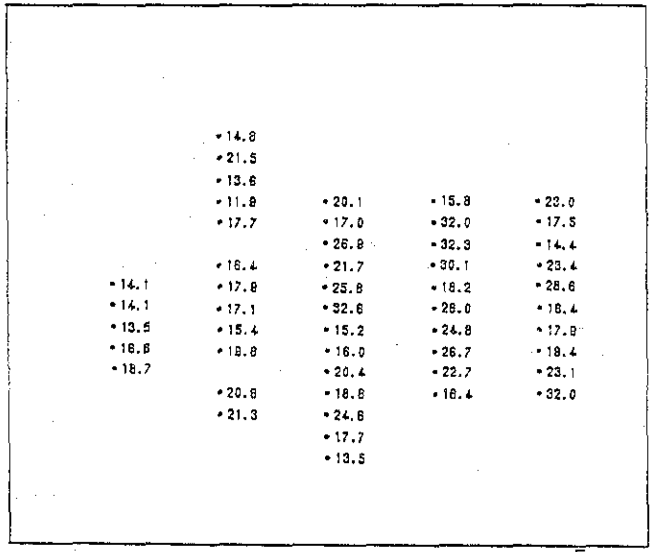
(One meter channel sample from the bottom to upper portion)

Appendix 12 Element content in the Tagkawayan area

(4)

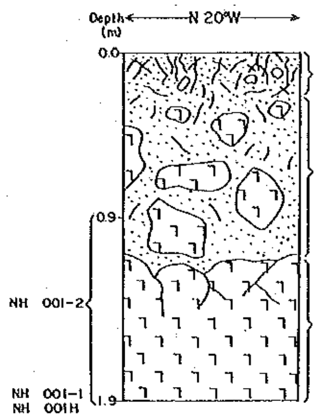






(One meter channel sample from the bottom to upper portion)

NH 001

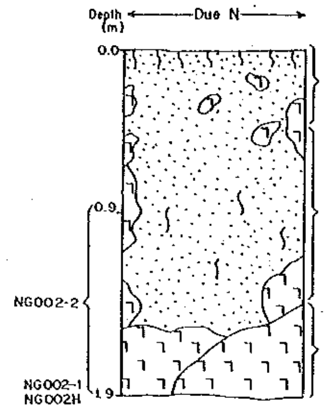


Reddish-brown soil: Generally gritty to silty, dry and loose soil with cobbles and abundant plant.

Gravelly section: Soil is loose and moist, fairly easy to disintegrate. Large cobbles and small boulders (13cm~ 270cm) of weathered serpentinized dunite are found in a sandy to silty matrix. Soil material ranges from reddish brown at the top and yellowish brown at the bottom of the profile. A small amount of plant roots are still present. Chromite dissemination is also found in the soil.

Saprolite zone: Highly weathered, fractured and serpentinized dunite with a minor amount of chromite (± 5%). Fractured surface contains iron oxide that turn the weathered rock to distinct reddish brown.

NG 002

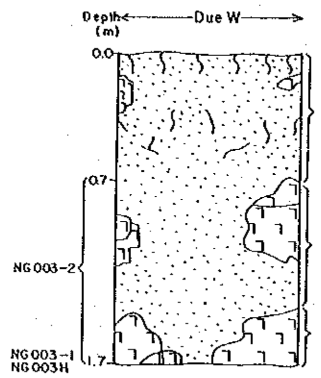


Dark brown, dry and sandy to silty soil, containing rock fragments of dunite.

This horizon exhibits the change of color from dark brown to yellowish brown, and contains boulders of weathered and serpentinized dunite. Roots and plant debris are still present.

Saprolite: Moderately to highly weathered dunite, notably serpentinized. Spots of chromite are present.

NG 003

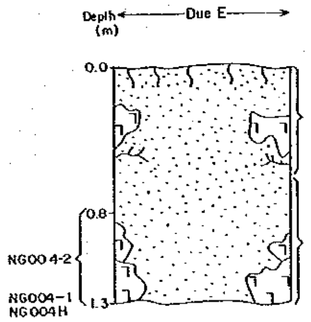


Thick section of dark brown soil probably due in part to decay of roots and other plant debris. The soil is sandy to silty and clayey in portion.

Yellowish brown soil with highly weathered and serpentinized dunite boulders.

Saprolite: Weathered bedrock of dunite. A relatively massive portion of dunite is also observed.

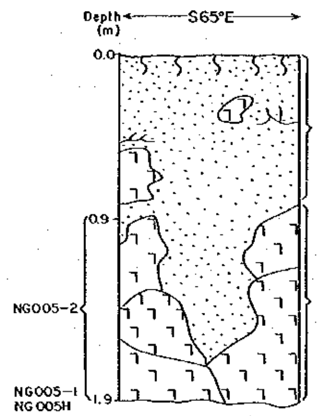
NG 004



Dark brown, dry and loose soil with abundant roots and plants debris and a small amount of rock debris.

Yellowish brown, generally loose and easy disintegrated soil with highly weathered dunite boulders, which surface is distinct dark gray due to intense serpentinization. Bedrock was not found due to a big boulder at the bottom.

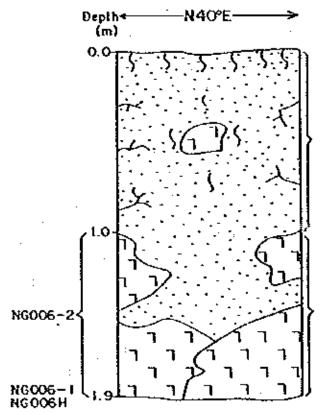
NG 005



Dark brown, sandy and silty, relatively dry and easy disintegrated soil with abundant plant and organic debris and occasional dunite floats.

Yellowish brown soil and rocks. Dunite is relatively massive, moderately weathered and serpentinized. It disintegrates into angular rock fragments, and is hard to break down. Spots of 2~ 5% chromite were observed in rock and sandy soil.

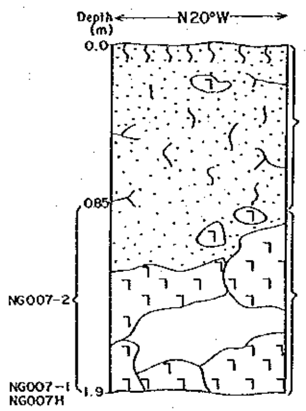
NG 006



Composed of dark reddish brown sandy to silty material and cobbles (6~ 8cm) of relatively weathered dunite. Roots and plant debris are abundant in the soil.

Saprolite: Highly serpentinized, weathered, relatively massive, jointed and fractured dunite. Fractured surface is generally stained with iron oxide. Spots of chromite (± 5%) are present in the rock.

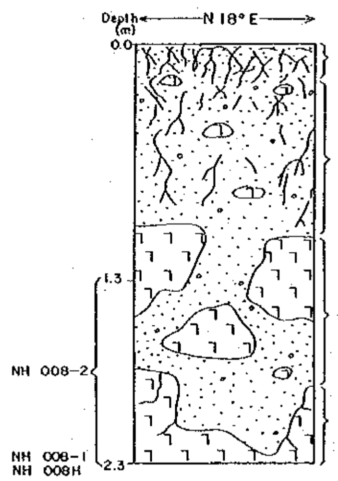
NG 007



Layer of dark reddish brown sandy and silty soil with cobbles (15-20cm) of slightly weathered and serpentinized dunite. Roots and plants debris is abundant in soil.

Highly weathered massive dunite undergone intense serpentinization is at the bottom. Light brown soil has some spots of chromite.

NH 008



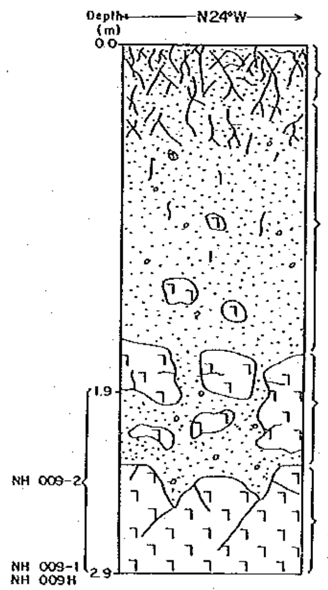
Dark reddish brown top soil: Generally sandy to silty, moist and loose soil. It contains abundant organic materials.

Reddish brown sandy soil with occasional subrounded, brown colored, cobbles-pebbles of weathered dunite. Chromite grain (± 5%) were also noted in the weathered rock fragments. Soil is loose and moist, resulting in a generally crumbly and porous texture, and contains minimal amount of plant roots and chromite sand.

Gravelly section: Small cobbles and small boulders (64~ 500mm) of brown weathered angular to subrounded dunite with chromite disseminations (± 5%) embedded in a sandy to silty matrix. Soil is yellowish brown, generally loose and moist, fairly easy to disintegrated. It contains chromite sands.

Saprolite horizon: Weathered and fractured dunite which contains iron oxide. Ferruginous sections appear as red brown to light yellowish brown streaks or lenses. Generally saprolite zone contains ± 5% chromite.

NH 009



Dark reddish brown soil top: Sandy to silty, dry and loose soil with abundant plant roots.

Generally the soil is loose and moist, and the color of soil changes reddish brown at the top of the section down to yellowish brown at the bottom. A small amount of plant roots still present in the whole section. Chromite grain (± 1%) also present in the soil. Occasionally dunite pebbles and cobbles with ± 5% chromite are embedded in a sandy to silty matrix.

Gravelly layer: It consists of angular boulders and cobbles of weathered dunite with ± 5% chromite, and sandy to silty matrix. The matrix also contains a varying amount of chromite (± 1%). The soil is yellowish brown and moist.

Saprolite: It consists of fractured, weathered and serpentinized dunite. The fractured surface contains reddish brown ferruginous material which makes the saprolite zone a reddish brown color. This zone contains about ± 5% chromite.

Appendix 13 Profile of test pits in the Mariwara area