

except for the fragmented, argillized section, pyrite content is around 7 to 10%; magnetite is about 15 to 20% in the chloritized portion but almost totally absent in the argillized part; veinlets of anhydrite and milky quartz noted throughout the section.

216.0m to 218.4m section: Initial 1.0m (216 to 217m) portion is moderately fragmented, sheared and argillized rock barren of magnetite; this grades into a relatively solid and competent, chloritized rock that is generally magnetite rich, 10 to 15%; pyrite appears to be pervasive throughout the section and is around 10 to 15% average, it is particularly distinctive along microveinlets and fracture surfaces.

218.4m to 221.45m section: Continuous with previous section but is relatively more fragmented, magnetite is still distinct but tends to be patchy in occurrences its average content would be around 7 to 10% for the entire section; pyrite content is about 10%, milky quartz veinlets centered by pyrite crystals are particularly distinctive in this section; pyrite crystals tend to be fine grained but occasional coarse, well formed crystals are also encountered isolated in the groundmass.

221.45m to 224.25m section: Continuous with previous section; gray to greenish gray colour, fine grained; magnetite occurrence is patchy and is around 10% of the rock mass; it commonly forms clusters characterized by their very dark colour contrasting sharply with the lighter coloured groundmass; pyrite is still pervasive occurring mainly as disseminations and fracture fillings commonly enveloped by milky quartz; it is about 10% in average content.

224.35m to 227.35m section: Essentially continuous with previous section, variably chloritized rock with local argillized or silicified portions; magnetite is still observed but is generally much less pronounced than in previous section (less than 5%); milky quartz veinlets form irregular patterns in the rock mass; microveinlets/veinlets almost wholly made up of pyrite are particularly striking in this section; pyrite is 10% in average content, core sample is moderately fragmented

but relatively intact.

227.4m to 230.28m section: Light gray to gray, fine grained andesite; variably argillized and silicified; chlorite alteration appears to have waned considerably, occurring only along minor portions of the section; magnetite is almost totally absent except as minor patches within the chloritized zones; magnetite tends to correlate positively with the chlorite or porphyritic alteration; pyrite is still pervasive as veinlet fillings and disseminations (10%); milky quartz veinlets also distinct.

230.28m to 233.0m section: Continuous with previous section: Light gray to gray, fine grained andesite; variably argillized, locally intensely sheared, magnetite not observed, most probably absent in this section; milky quartz veinlets still prominent but tend to be very variable in both trend and size; pyrite content is about 10%, commonly concentrated along veinlets and fracture surfaces; core condition and recovery generally good.

233.0m to 236.18m section: Essentially continuous with previous section; alternating portions with solid and highly fragmented core samples; variably argillized with the more intensely argillized portions being more fragmented; magnetite is not observed; pyrite is around 10% in average; generally very prominent as veinlet fillings together with quartz; milky quartz veinlets are not as distinct as in the previous section.

236.15m to 238.7m section: Gray to light gray colour becoming lighter shaded at the lowest portion; generally fine grained, variably argillized and locally sheared; irregularly trending and shaped milky quartz veinlets are prominent in the upper 1 meter section becoming indistinct down section; pyrite is pervasive and would average around 12 to 15% of the rock mass; the core sample is moderately fractured but the recovery is generally good.

238.7m to 242.0m section: Buff to cream, fine to medium grained andesite(?); generally silicified and bleached;

original mafic constituents appear to have been totally altered to chlorite, magnetite and pyrite; plagioclase laths are often corroded and altered to clay; sheared surfaces shows distinct dark striations commonly dominated by magnetite and pyrite; although pyrite is pervasive in this section; it is generally less than 5% average; pinkish-orange quartz are noted as veinlets and irregular blebs within the groundmass; this gives the peculiar pinkish and orange tinge in some portions of the rock; well developed, coarsely crystalline pyrite are also within the quartz veinlets; core sample is relatively solid and intact.

242.0m.-225.05m. section: The portion 242.0m.-243.50 m. is essentially continuous with the previous section; buff to cream silicified and bleached rock with magnetite and chlorite; this grades into generally gray to greenish gray, variably argillized and chloritized andesite; the 30-40 cm. section gradational to the two portions are distinctly argillized and sheared; magnetite content ranges from 5% in the silicified portion to 10% in the argillized and chloritized portion; pyrite is less than 3% in the former and around 10% in the latter.

245.05m.-247.80m. section: Essentially continuous with the previous section; greenish gray, fine grained andesite; magnetite bearing at around 5-10%; pyrite content is 3-5%, generally limited along fracture surfaces and quartz microveinlets; milky quartz veinlets locally prominent but tend to be irregular in shape and variably trending; core sample is relatively solid and intact.

247.8m.-250.80m. Section: Continuous with previous section; greenish gray to gray, fine grained andesite; generally chloritized but less intense in the bottom 80cm. portion; magnetite content ranges from 10% in the upper portion to nil in the lowest portion possibly following the decline in the chloritized alteration intensity; pyrite in fillings of microveinlets/veinlets (1 to 3 mm. wide) are quite striking in this section ; its average content is about 5%.

250.8M.-255.0m. section: gray to light gray, fine grained to porphyritic andesite; variably argillized with the more intensely argillized portion almost wholly transformed to clay minerals; milky quartz veinlets are common as with pyrite dominated veinlets which are distinctive; pyrite occurrence tends to be patchy but are generally more pronounce along the more silicified portions of the rock mass; its average content is around 7%.

255.0m. - 258.5m. section: More of the same material as the previous section in terms of rock type and characteristics; sheared in some portions; porphyritic texture with phenocrysts of plagioclase set in a fine-grained, darker colored groundmass; variably chloritized and silicified; magnetite bearing (~5 -10%), possibly after pyroxene or hornblende; pyrite content is less than 5%; highly fragmented portions tend to coincide with the sheared sections of the rockmass.

258.5m to 262.1m section: Continuous with the previous section; gray to greenish gray color; fine-grained to slightly porphyritic texture; generally chloritized; magnetite is pervasive but tends to be patchy in occurrence, often as isolated grains or clusters of grains in the groundmass; pyrite is also ubiquitous, averaging around 5 to 7% of the rockmass; the core sample is generally solid and intact.

262.1m to 265.5m section: Gray to greenish gray, medium grained to porphyritic andesite; chloritized in portions; generally magnetite bearing (~5%) possibly replacing original mafic minerals; pyrite content is from 5 to 7%, mainly occurring as veinlets and coatings of shear or fracture surfaces; veinlets with microveinlets of milky quartz abound but no distinct preferred trend is discernible; core sample is generally solid and intact except for minor highly fragmented portions; core recovery is good.

265.5m to 269.25m section: Continuous with previous section: gray to greenish gray, porphyritic andesite; chloritized and magnetite-bearing (r 10%); milky quartz veinlets locally abundant, almost worm-like; pyrite is

still pervasive and locally prominent (r20%) but on the average is around 7 to 10% for the entire section; magnetite and chlorite replaced the original mafic minerals; pseudomorphs of these minerals after hornblende or pyroxene are occasionally noted, the core sample is generally solid and competent with only minor fracture noted.

269.25m to 273.65m section: Continuous with previous section; variably silicified, generally chloritized and magnetite bearing; porphyritic texture; original mafic constituents have been altered to chlorite plus magnetite and pyrite; milky quartz veinlets, generally less than 2 mm wide are conspicuous throughout the section; pyrite is locally abundant, especially along fracture surfaces and veinlet, but on average is less than 5% of the rock mass; rare specks of chalcopyrite are locally noted; core sample is relative solid and intact and recovery is good.

273.65m to 276.45m section: Continuous with previous section; generally porphyritic andesite, variably silicified, chloritized; magnetite after mafic minerals common, around 5 to 10%; pyrite is ubiquitous, common as microveinlets probably of younger age than milky quartz veinlets; milky quartz veinlets generally abundant, forming steep angles (>45°) with the core axis; open fractures are locally noted, commonly lined with fine pyrite crystals; pyrite is less than 5% average.

276.45m to 280.70m section: Gray to greenish gray, fine grained to porphyritic andesite; variably silicified, chloritized and locally slightly argillized, magnetite bearing especially along the more chloritized portions; pyrite is around 3%, commonly occurring as veinlet infillings and coatings of fracture surfaces; distinct patches of fine magnetite grains are noted to form small pads (1mm by 3mm) in the groundmass, the core is moderately fragmented with the argillized portion being more broken up.

280.7m to 282.4m section: Continuous with previous section; fine grained to porphyritic andesite; silicified and chloritized in portions; milky quartz

veinlets, 2 to 4mm wide and variably trending, commonly encountered, magnetite content is about 7 to 10%, occurring as discrete grains or clusters in the groundmass; pyrite is about 5%, disseminated as fine crystals and coating of fracture surfaces.

282.4m to 286.55m section: Gray to greenish gray; fine grained to porphyritic andesite; variably silicified and chloritized; abundant milky quartz veinlets, commonly forming anastomizing network with the rock; magnetite content is around 5 to 7%, irregularly distributed throughout the groundmass; pyrite is still prominent but is less than 5%; rare specks of sooty chalcocite also noted locally; core sample is moderately fractured especially along natural fissures and veinlet-rock interface.

286.55 to 289.35m section: Essentially continuous with previous section; porphyritic andesite, variably silicified and chloritized; magnetite bearing; average content about 7 to 10%; milky quartz veinlets still observed but not as prominent as in previous section; pyrite content is around 10%, mainly as disseminations and clusters in the groundmass; minor chalcopyrite also noted but is generally sporadic in occurrence; core sample is relatively solid and continuous.

289.35m to 293.75m section: Gray to greenish gray andesite; fine grained to slightly porphyritic; magnetite bearing down to 292.35m level; magnetite tends to be absent in the more argillized portion of the rock; pyrite is still persistent but is generally more prominent as veinlet infillings and coatings of fracture surfaces; it is on the average about 5% or less; well formed, coarsely crystalline pyrite grains are common especially on surface coatings; specks of chalcocite (%) are also noted together with the pyrite; milky quartz veinlets are particularly abundant in the lower argillized portion of the section.

293.75m to 296.45m section: The argillized portion continues down to 294.65 then passes on to a more silicified rock; the former tends to be crumbly and fragmented whereas the latter to more solid and massive

and is characteristically magnetite bearing; magnetite content is around 5-7%; pyrite occurs throughout the section and is around 7 to 10%; porphyritic texture recurs at the bottom 1.5m portion of the section; the core sample is generally intact with moderate fragmentation especially in the argillized section.

296.45m to 300.91m section: Continuous with previous section; variably silicified andesite with local intervening argillized portions; fine grained to porphyritic textures predominate; milky quartz veinlets are common and prominent especially in the more argillized section; magnetite is also present but is characteristically absent in the argillized portions; pyrite content varies from 5 to 20% and is generally conspicuous as veinlet fillings often associated with quartz; specks of pyrite as disseminations in the groundmass are also noted, often contiguous with magnetite grains.

APX. 17 Detailed Geologic Log, MJPP - 6

DRILL HOLE; MJPP -6

LOCATION; BRGY. LOONG, CONCEPCION ILOILO

0.0m - 3.0m section: HQ size, reddish brown color with white colored horizon moderately to highly argillized, generally crumbly and loose, remnants of minute sulfide veinlets still discernible with few remnants of quartz veinlets observed.

3.0m to 6.0m section: HQ size reddish brown color with white patchy zones, moderately to highly argillized white to buff white clay minerals well observed with remnants of quartz material, generally crumbly and loose material highly oxidized sulfide minerals observed occurring as stringers and impregnations (1%).

6.0m to 9.0m section: HQ size, reddish brown colour, moderately argillized, remnant of quartz veinlet (2-3mm) with highly oxidized pyrite observed, at 6.30m significant amount of quartz vein material well observed with prominent highly oxidized pyrite veinlets, at 7.30m level fresh pyrite crystals occurring as disseminations and patches within a moderately to highly silicified zone, pyrite (3-5%), sample taken at 8.50 m level.

9.0m to 15m section: Buff white to light gray section with fresh pyrite crystals within quartz-clay material. Amount of pyrite up to 5% in some sections. Moderately to highly argillized zone observed at 10.35m level up to 11.55m, generally crumbly and loose material. At 11.55m level, moderately silicified section with impregnations of fresh pyrite crystals occurring as disseminations. Black colored pyrite noted when oxidized. Generally uniform silicification with minor amount of clay material observed. Pyrite ranges from 1-4% in abundance.

15.0m to 18.0m section: Buff white color with light greenish tint. Generally leached and moderately silicified. Clayey material well observed along fracture planes. Remnants of mafic minerals still

observable. At 17.70m level, loose sandy material composed mainly of quartz crystal; highly leached zone with pyrite crystals occurring as impregnations on remnants of quartz crystals.

18.0m to 19.95m section: White to light brown color; loose sandy material composed mainly of remnants of quartz crystals, highly leached with some clay material. Pyrite occurring as disseminations (1-3%) 19.95m -21.0m more compact sandy material composed of quartz crystals and clay material, almost gravelly in some portions, sample taken at 20.0m level.

21.0m to 27.0m section: Light brown with buff-white patches, generally loose sandy texture composed mainly of quartz. Highly leached and argillized, presence of pyrite occurring as disseminations and patches well noted at 22.20m level highly leached zone composed mainly of clay-quartz material with lesser amount of quartz crystals. Light brown composed mainly of clay-quartz material, generally loose with disseminations of pyrite. Highly leached zone with original groundmass no longer discernible, 24.0 - 27.0m level within a highly argillized zone with quartz crystals occurring as remnants of the original material. Minute pyrite crystals occurring as specks and disseminations (1-3%).

27.0m to 33.0m section: Light brown with whitish portion and orange-brown horizons due to the oxidation of sulfide minerals, highly argillized and leached zone generally loose with some portions more compact; still within the clay-quartz zone, pyrite crystals moderately fresh (1-3%). Light brown to buff white color clay-quartz material slightly compact; Highly leached zone. At 31.45m level, prominent quartz crystals within a clay-quartz zone, is well observed almost gravelly in texture with minor pyrite crystals at 31.85m, generally loose quartz clay material observed.

33.0m to 36.0m section" Light brown to buff white color moderately loose clay-quartz material. Highly leached zone with original groundmass totally altered into clay minerals. at 34.70m level finer quartz crystal remnants was noted with some disseminations of pyrite crystals.

quartz crystals occurs as clusters of granules cemented together by clay material.

36.0m to 39.0m section: Light brown with buff white zone; highly argillized and highly leached material. Generally clay-quartz with moderate amount of oxidized pyrite crystals. Minute pyrite crystals (2%) occurs as specks. Original rock mass totally altered with remnants of quartz crystals highly prominent (40-50%)

39.0 to 42.0m section: Light brown to buff white color, loose sandy material with clayey matrix, generally clay-quartz material up to 41.75m level. at 41.75m light gray colored highly silicified andesite with pyrite crystals (2-4%). Highly broken material with clear fracture planes. Some quartz vein material with moderate amount of pyrite minerals (4%) noted.

42.0 to 48.0m section: Light gray color, highly silicified zone with prominent quartz vein material with moderate amount of pyrite crystals up to (10%). At 44.0m level light gray colored silicified andesite with pyrite disseminations, moderately silicified. Amount of sulfate minerals significantly increasing in abundance. At 44.70m level no core was recovered. Sludge made up of quartz crystals with pyrite (2-3%), light brown and sandy in texture made up of quartz crystals (70%) and clay minerals. Sludge materials up to 47.70 m level. Greenish gray, moderately weathered andesite slightly silicified with pyrite disseminations (3%) noted at the last 30 cm. section.

48.0m to 51.0m section: Greenish gray andesite, moderately silicified with minute quartz veinlets (1mm). Pyrite crystals occurs as disseminations and patches moderate amount of chloritization well observed giving a dark green color sections. Moderately fresh pyrite crystals occurs as disseminations and clusters. With minute pyrite stringers (Pyrite 3%).

51.0m to 54.0m section: Dark green to greenish gray, chloritized moderately silicified andesite, Generally fresh with pyrite disseminations and clusters. At 52.30m level sample was taken, quartz veinlet (1mm) was noted.

with some pyrite crystals present along the vicinities of the quartz veinlet.

54.0m to 57.0m section: Light gray- dark greenish gray fine grained andesite, moderate amount of silicification observed locally, quartz veinlets and microveinlets criss-crossing in some section with pyrite crystals along the periphery of the veinlets. Section generally contain pyrite (3%), highly broken and fragmented core.

57.0m to 60.0m section: Almost the same with the previous section, but with increasing amount of quartz veinlets and microveinlets. They occur as milky white to buff white criss-crossing each other with pyrite present along and within vuggy portions.

60.0m to 66.0m section: Light gray-greenish gray andesite, moderately silicified, criss-crossing quartz veinlets well-observed. An increasing degree of silicification and increase of quartz veinlets noted. Pyrite disseminations and clusters significantly increasing (4-5%). At 63.10m, moderately huge pyrite crystals occurring as clusters within quartz material. 65.0m level highly silicified andesite with quartz vein material, pyrite occurs as microveinlets, clusters and dissemination, Pyrite 4-5% (sample taken).

66.0m to 69.0m section: Light gray to greenish gray, moderately silicified with some section having more intense silification. Epidote was noted occurring as patches. Slight argillization could be observed mainly along fracture planes. Pyrite varies from (1-5%) in the whole section.

69.0m to 72m section: Moderately to highly silicified andesite with prominent quartz vein material in several sections. Pyrite occurs as disseminations and clusters and varies in amount (2-10%). Argillization is minimal with moderate amount of chlorotization.

72.0 to 75m section: Moderately to highly silicified andesite, more competent cores. Quartz vein material pervasive within the section. Some quartz showing vuggy structures, quartz occurring as clear white to milky with

a tint of orange to light and brown due to the oxidation of sulfide minerals. pyrite is pervasive ranging from 5-15%.

75.0m to 78.0m section: Greenish gray light gray, moderately strongly silicified andesite, core generally more competent, moderate amount of chloritization observed with minimal argillization, pyrite is pervasive occurring as impregnations and clusters. Very fine microveinlets of oxidized pyrite noted.

78.0m to 84.0m section: Slight to moderately silicified andesite moderately chloritized, pyrite occurs as impregnations/ disseminations ranging from (3-10%). 79.70m level minute chalcopyrite grains was noted (4%) confine only on one place occurring as specks. At level 81.80 and 82.60 minute chalcopyrite grains was observed occurring as specks, less than 1% content within the rock mass. Moderately silicified andesite with some quartz vein material observed but with no definite trend. Sample taken at 81.50m level.

84.0m to 87.0m section: Moderately silicified andesite, light gray in color with pyrite disseminations (2-10%). 86.10 - 87.0m level probably sheared zone, moderately highly crushed rock fragments with clay minerals along fracture zones. Gougy portion also noted. 86.80m level chalcopyrite grains was also observed.

87.0 to 90.0m section: Light gray with patchy portions, moderately silicified with quartz vein material observed. At 87.50 and 88.70 sample was taken, quartz vein material and highly silicified andesite, vuggy quartz structure well noted. Pyrite occurs as disseminations.

90.0m to 93.0m section: Light gray color to mottled (gray, black and buff white spots), moderately to strongly silicified, Generally fractured with moderate amount of pyrite (5=10%). 90.50 -90.62 m level specks of chalcopyrite grains were noted (1%). Magnetite microveinlets (1-2mm) was noted at 91.33m level, presence of magnetite was noted occurring as minute clusters of grains.

93.0m to 96.0m Highly crushed core, light gray, moderate-intense silica flooding, pyrite occurs generally as disseminations. Magnetite occurs as minute cluster grains with microveinlets of magnetite noted at 93.35m and 93.65m level. Magnetite grains occur as impregnations along the veinlets.

96.0 to 99.0m section: Light gray with mottled/spotty white portions due to quartz material, moderately to strongly silicified, pyrite crystal generally fresh, occurring as disseminations and varies from 5-20% in amount, magnetite varies in amount from point to point, they occur generally as minute cluster grains and impregnations. At 97.95m to 98.33 m level, highly silicified zone with quartz vein material showing vuggy structures with moderately huge pyrite crystals.

99.0m to 102.0m section: Light gray color, moderately silicified, generally magnetic, pyrite occurs as impregnations and disseminations and generally fresh. magnetite grains noted to be in clusters and impregnations. Significantly more competent core than the previous cores.

102.0m to 104.0m section: generally crushed core, generally same as the previous section, moderately magnetic with magnetite occurring as patches and clusters. 104.82m level, magnetite microveinlets was noted with some pyrite crystals present along the edge of the veinlet. (veinlet 1mm).

104.0m to 107.21m level, moderately fractured slightly sheared zone with quartz vein material, quartz veinlet (0.2 - 0.5cm thick) shows a clear white-milky white color, with some vuggy structures. Branching of quartz microveinlets was observed within the section. Pyrite occurs as impregnation, the whole section is moderately magnetic with very fine magnetite grains, calcite veinlets also noted.

107.21m - 111.80m section: generally crushed core, lightly fragmented, light to dark gray, moderately silicified with pyrite disseminations. 110.35m -110.47m

level dark gray, moderately, silicified, and highly magnetic portion. Degree of magnetization is intense with magnetite present as clusters and disseminations giving a dark gray to black color.

111.80m to 114m section: Moderate to strong magnetization was observed, light gray to dark gray color, with magnetite occurring mostly as clusters and minute disseminated grains giving a black spotty color. At 113.90m magnetite veinlets was observed along the priphery of a quartz vein zone.

114.0m to 116.40m section: Very strong magnetization was noted, dark gray to almost black color section. Huge amount of magnetite grains was observed mainly as disseminations, clusters and veinlets, quartz veinlets and stringers was also noted along the section giving a clear white and milky white color. Fresh and slightly oxidized pyrite crystals is also present. Samples was taken at 114.0m - 116.0m level.

116.0m to 120.48m Section: Slightly magnetic zone moderately crushed core and moderately silicified with pyrite crystals (3-10%). At 117.76m to 119.96m level intermittent occurrence of quartz vein material and quartz veinlets. Strong presence of magnetite was observed along this section. Magnetization increases from 118.0m going down the section. Calcite veinlets noted.

120.48, to 132m section: Presence of multidirectional quartz veinlets, criss-crossing the rockmass, slight to moderate amount of magnetization was observed, strong presence of magnetite occurs locally as clusters and patches with some occurring as veinlets along the edge of the quartz veinlets.

122.50 -126.0m section: Greenish gray to dark gray, moderate amount of magnetite was noted with locally strong presence of magnetite, at 124.65 m quartz vein material showing vuggy structure and fragments? of quartz within the rock mass giving an almost breccia like texture. Presence of irregular quartz veinlets occurs within the section.

126.0 to 132.65m section: Dark greenish gray- almost black strong presence of magnetite within the whole section. Magnetite occurs as minute dissemination and clusters giving a black tone. Microveinlets of magnetite also observed along with intermittent quartz microveinlets. Pyrite varies in amount from point to point. Dark gray colour, moderate to strong amount of magnetite observed. Slight to moderate amount of silicification is present. At 130.82-131.37m level presence of hematite/jarosite? stains and patches was observed along fracture planes. They occur as reddish brown to reddish purple. Pyrite occurs as disseminations and varies from 5 - 15%.

132.65 m to 134.49m section: Quartz vein zone showing vuggy structures, presence of argillized zone very prominent near the contact of the quartz and the rock mass (andesite). Some stains of hematite is noticeable with pyrite crystals. Moderate to strong magnetite content could be observed within the whole section.

134.49m to 137.73m section: generally quartz vein zone. Occurrence of quartz vein material in this section is relatively high giving a light gray color with milky white horizons. Vuggy structures of the quartz material is very discernable. Magnetite occurs as patches and microveinlets with pyrite occurring mostly as disseminations and microveinlets.

137.73m to 144.5m section: Moderately argillized zone with some quartz veinlets. Slightly magnetic. From 138.40 down the section strong presence of magnetite is observed with intermittent presence of quartz veinlets and microveinlets. Very fine magnetite grains in clusters gives a black color patches in the rockmass. Minute calcite microveinlets observed.

144.5m to 146.5m section: Greenish gray andesite, variably argillized and silicified in portions; chlorite alteration also distinct; rock is generally fragmented and sheared resulting in the broken up character of the core; magnetite appears to be patchy in occurrence and is generally absent in the argillized portion and in

sections with abundant quartz veinlets; pyrite is pervasive and tends to aggregate along fracture and veinlet surfaces; pyrite content is around 3%.

146.5m to 148.4m section: Light greenish gray to dark gray andesite; silicified and argillized portions show light colours which contrast sharply with the dark coloured, chloritized rock. magnetite, pyrite, and chalcopyrite are noted as patches or irregular blebs in the dark coloured section; magnetite is not found in the argillized/silicified portions; pyrite is pervasive throughout the section; cpy is very minor (1%)

148.4m to 152.0m section: Essentially continuous with previous section; mainly silicified and argillized andesite; milky quartz veinlets still prominent but are generally barren of sulphides except pyrite; magnetite is also absent in this section; rock mass is generally brittle and sheared resulting in the highly fragmented core samples recovered in some portions.

152.0m to 155.50m section: Continuous with previous section: argillized portions tend to be powdery when dry and plastic when wet; silicified portions tend to be brittle and flaky; pyrite is observed in both as discreet dissemination in the rock mass and patches in fracture and veinlet surfaces; magnetite is absent in this section.

155.0m to 158.0m section: Light greenish gray andesite; shade becoming darker downsection; silicified and argillized to varying degrees; shearing and fracturing of rock mass is quite evident from the fragmented character of the core sample; microbreccia-like structure noted in some portions with disjointed quartz veinlets interspersed with fragmented rock groundmass; pyrite still very prominent but is less than 2% of rock mass; it tends to form irregular patches along fracture surfaces.

158.0m to 161.0m section: Essentially continuous with previous section; initial half meter section is highly fragmented andesite; fragments tend to be flaky and brittle; silicification intensity is variable; magnetite

reappears at 158.5m level where it is found to be pervasive within the dark coloured bands or islands surrounded by silicified/argillized rock mass; pyrite is ubiquitous throughout the section and locally may constitute as much as 5% of the rock mass, the magnetite rich portions may contain as high as 10% magnetite content; beyond 160.5m level, magnetite again disappears.

161. 0m to 164.0m section: Highly fragmented, greenish-gray andesite; generally silicified with abundant milky quartz veinlets; locally some portions may have 50% veinlet material in the groundmass; pyrite is ubiquitous but patchy; some sections show slaty or phyllitic texture; narrow bands (45 mm)/veinlets (?) of magnetite rich material (most often quartz) are observed locally; they tend to be subparallel to some of the quartz veinlets which run concordant to the shear direction.

164. 0m to 166.5m section: Essentially continuous with previous section; sheared andesite with local bands or angular islands of magnetite-rich material; milky quartz still very prominent; occurrence of mt is quite different from previous sections wherein it occurs as patchy disseminations in the groundmass; here mt is not found in the groundmass but instead occur as distinct bands or islands within the rock mass.

166.5 to 169.5m section: Silicified andesite; quartz veinlet impregnated; locally with mt disseminations; dark coloured, fine grained and silicified portions with minor mt locally observed; the section 168.5 to 169.0m is mainly quartz vein material with pyrite content averaging around 10-15%; mt is occasionally encountered; pyrite is coarsely crystalline (1-2mm) and tends to be interstitial to quartz.

169.5m to 171.9m section: Essentially continuous with previous section; highly silicified rock with abundant quartz veinlets of variable size and trend; pyrite still pervasive but is less than 5% average, mt occurrence still patchy; dark and light coloured portions within the section may represent variable alteration patterns in the rock with argillized/silicified portions being

light coloured and chloritized/mt-rich portions being dark.

171.9m to 174.9m section: Silicified andesite; light greenish gray colour with intervening dark bands; brittle and crumbly; occasional milky qtz. veinlets; mt bearing although patchy and sporadic; pyrite locally abundant but is on the average less prominent than in previous section.

174.9m to 178.0m section: Continuous with previous section; silicified and fragmented rock mass; milky qtz. veinlets locally abundant, tend to form anastomizing networks; dark coloured bands or islands show high concentration of magnetite, 15 to 20%; pyrite is still present but is only sporadically abundant; intense fragmentation of the core may be due to the sheared character of the rock mass.

178.0m to 180.0m section: Essentially continuous with previous section; fragmented, silicified andesite; veinlets impregnated; dark coloured, mt-bearing portions also contain abundant pyrite; fracturing of the core appear most rampant along sections without much qtz. veinlet impregnation.

180.0m to 182.0m section: Continuous with previous section; degree of fragmentation of core appear very variable with some portions more competent and solid than others; silification essentially variable with sections with abundant qtz. veinlets more intensely altered; mt is still dominantly found in the dark-coloured portions; pyrite is minor.

182.0m to 185.0m section: Essentially a continuous section of mt rich, dark coloured, and fine-grained unit; from 182.6 downwards, the rock is silicified basaltic andesite (?); minute veinlets of qtz. noted criss-crossing the unit; pyrite occurs as isolated specks in the groundmass and along fracture surfaces; this section is the most prominent in terms of mt-content (20-25%).

185.0m to 187.7m section: The mt rich section

continuous down to 187.7m but intervening portions of veinlet rich, silicified rock noted to increase down section; the rock is still dark gray, fine grained basaltic andesite (?) with numerous microveinlets of quartz; pyrite is less than 2% and is limited along fracture surfaces.

187.7m to 189.8m section: Silicified andesite; highly fragmented; magnetite conspicuously absent; pyrite is prominent along veinlets and fracture surfaces; same portions appear to be almost wholly made up of vein material; degree of fragmentation is most intense at the lowest section.

189.8m to 192.7m section: Continuous with previous section; highly fragmented with only occasional solid portions; intensely silicified, almost entirely made up of vein material; magnetite noted very locally and is generally rare; pyrite still very prominent as disseminations or fissure filling; rock mass displays a mottled texture of variegated colours; veinlets of anhydrite also noted.

192.7m to 196.7m section: More of the same material in terms of rock character and type; not as intensely fragmented as previous section and core recovery and quality better; highly silicified portions tend to be brittle breaking up into generally small, angular bits; abundant cross cutting milky quartz veinlets are common throughout the section; magnetite is not detected; pyrite is well dispersed in the groundmass and along veinlets and constitutes around 3-5% of the rock mass; veinlets of anhydrite still noted in some portions.

196.7m to 198.7m section: Mainly gray to light gray, silicified and argillized andesite; generally solid core with some intervening, highly fragmented portions; anhydrite veinlets (2-7mm wide) are becoming more prominent; they tend to form subparallel networks within the argillized portions of the rock; pyrite is still present but is less than 3% average; magnetite noted along a short interval but rather limited in occurrence in this section.

198.7m to 202.7m section: Continuous with previous section; generally intact core sample with local fragmented portions; rock mass is variably argillized, silicified and chloritized in portions; anhydrite veinlets are particularly conspicuous; fracturing in the core is common along these veinlets; pyrite is less than 3%, occurring mainly along fracture surfaces and as minor disseminations; magnetite is absent throughout this section; from all indications, anhydrite depositions is later than rock alteration (silicification & argillization) and sulfide deposition (pyrite); the veinlets are characteristically barren of any sulphides.

202.7m to 205.9m section: Continuous with previous section; essentially intact core with very local fragmented portions; these appear to correspond with sections that have numerous cross-cutting anhydrite veinlets; the veinlets are variable in size and orientation and tend to separate as distinct flakes from the intruded rock mass; pyrite is patchy in distribution and on the average is less than 3%; an 8 cm portion at the bottom of the section shows pyrite making up almost 20% of the rock mass; this occurrence is rather uncommon.

205.9m to 209.4m section: Essentially continuous with previous section; anhydrite deposition is very pervasive in this section; breccia like texture is commonly observed with subangular to lath-like islands of quartz and silicified rock floating or surrounded by anhydrite vein material; minute fractures within the silicified fragments are also filled-up by anhydrite; pyrite is limited to the silicified portions and is less than 2% average; magnetite is not observed; rock mass tends to fracture or part along veinlet surfaces thus giving it a rather easy-to-fragment character.

209.4m to 211.75m section: More of the same material as in previous section; light gray andesite, silicified in portions; criss-crossed by anhydrite; generally intact core with only minor fragmentation; pyrite is present but minor in amount and limited in extent to the silicified portions; magnetite is not detected;

anhydrite veinlets generally variable in orientation and size; they are distinctly clear to white in colour and fibrous in textures, forming flake-like sections when separated from the intruded rock mass.

211.75m to 215.4m section: Continuous with previous section; variably silicified and argillized andesite dominated by anhydrite/gypsum veinlets; some portions distinctly breccia-like in texture with subangular fragments of quartz and silicified rock in anhydrite mass; highly argillized portion noted at the bottom of the section; this is mainly clay material with minor rock fragments and remnant anhydrite veinlets; pyrite is minor, whereas magnetite is absent.

215.4m to 217.9m section: Essentially continuous with previous section; generally intact section of variably silicified and argillized andesite; light gray colour; generally fine grained texture; anhydrite still very dominant; local portions with high pyrite percentage (10-15%) noted especially in the more silicified portions.

217.9m to 220.5m section: light grayish green, fine grained andesite; generally silicified and argillized in portions; abundant veinlets of anhydrite forming cross cutting networks throughout the section; fracturing in the rock tends to be along these veinlets; pyrite is locally significant as fine disseminations but is less than 5% average for the whole mass; magnetite is not detected.

220.5m to 224.6m section: Highly fragmented section especially within the initial 2 1/2 portion becoming more intact in the lower section; rock is mainly silicified and argillized with veinlets of quartz and anhydrite; anhydrite veinlets generally indistinct and noted more often along fracture surfaces; these appear to be less prominent than in previous sections; pyrite content is about 5 to 10% and is commonly observed as disseminations and veinlet material; magnetite is again absent in this section; fragmentation of the rock may be due to its inherent brittleness especially the more silicified portions.

224.6m to 226.2m section: Essentially continuous with previous section; anhydrite is less pervasive in previous section and tend to appear as isolated veinlets along the section; milky quartz veinlets are more distinct; pyrite is again well dispersed throughout the groundmass particularly along veinlets and fracture surfaces.

226.2m to 229.2m section: light gray to gray andesite; a relatively intact and solid section in terms of core character; quartz veinlets are more dominant than anhydrite veinlets; rock is generally silicified with only local argillized portions noted; pyrite is pervasive but is more abundant along portions contiguous to qtz. veinlets where the content is around 5 to 10% ; magnetite is not detected.

229.2m to 232.0m section: The initial 40cm (to 229.6m) of the section is similar to the previous section, light gray, fine-grained andesite; the rock passes on to a dark gray to almost black, fine-grained basaltic andesite (?) down section; this portion is magnetite bearing along some intervals and is generally pyrite rich (10-15%); veinlets of both quartz and anhydrite are noted; the core sample is generally fragmented with only short intervals (10-15 cm) showing solid material.

232.0m to 234.7m section: Essentially continuous with previous section; dark greenish gray to greenish black, fine grained basaltic andesite (?); generally magnetite bearing although very variable in content (1-7%); pyrite is ubiquitous but also patchy in occurrence; veinlets of quartz and anhydrite noted but the former is more dominant; this section is relatively more competent and intact than the previous section; locally sheared portions appear brittle and fragmented.

234.7m to 237.7m section: Light gray to almost buff coloured andesite; abrupt change from previous section in terms of rock colour and textures; magnetite is characteristically absent and pyrite, although present, is very minor; anhydrite veinlets again very prominent with much of the micro-fractures being filled up by this

mineral; rock is generally silicified and argillized in local portions.

237.7m to 240.18m section: Essentially continuous with the previous section; light gray colored andesite becoming darker shade down section; mainly silicified although highly argillized portions are noted; clear to white veinlets of anhydrite appear like roots cutting across the rock mass; they are variable in width and orientation, often cross cutting or mesh like; pyrite is minor in terms of abundance and occurs only as very fine disseminated crystals in the groundmass; magnetite is not detected in this section.

240.18m to 242.2m section: Dark gray to Greenish gray andesite; magnetite bearing although erratic in distribution; rock mass is relatively solid and competent resulting in an intact core sample; numerous irregularly shaped and oriented milky quartz veinlets are noted throughout the section forming distinct white bands or lines cutting across the dark coloured groundmass veinlets of anhydrite also present locally.

242.2m to 245.2m section: Greenish gray andesite; mottled colour of gray, buff and green; generally fine grained; magnetite distinctly absent in this section; pyrite is very minor in occurrence; milky quartz veinlets still prominent in some portions; anhydrite veinlets also noted but are commonly indistinct; the rock is variably silicified and argillized; core sample forms an intact and almost solid section.

245.2m to 248.2m section: Continuous with previous section, but intense fragmentation of some intervals (245.5 to 245.75 and 246.9 to 247.3) noted; preponderance of milky quartz and anhydrite veinlets still observed in this section; pyrite is common as disseminations and veinlets material, commonly with quartz; fragmented portions roughly correpond to section with numerous cross cutting veinlets of anhydrite; magnetite still not detected in this section.

248.2m to 251.2m section: Continuous with previous section in terms of rock type and character; abundant

anhydrite veinlets forming anastomizing networks in the rock; they are commonly clear to white in colour and variable in width; fragmentation of the rockmass is common where microveinlets of anhydrite form cross cutting network; the rock tends to part along the veinlets surfaces due to the inherent softness of the anhydrite; pyrite is locally abundant but is on the average less than 5%; magnetite is still not detected in this section.

251.2m to 254.4m section: Essentially a solid and competent section in the initial meter (down to 252.5), then passes on to a highly fragmented unit downsection; rock type is still fine grained andesite criss crossed by numerous anhydrite veinlets of variable size and orientation; pyrite is present at around 2-3%, commonly occurring as interstitial material in silicified rock or clusters of fine crystals adjacent to qtz. veinlets; local argillized portions noted; intense shearing is deduced from the highly fragmented character of the core; magnetite is not detected as in previous section.

254.4m to 256.5m section: Silicified, fine grained andesite with occasional anhydrite veinlets /microveinlets; highly fragmented upper half meter portion passing on to more solid although fractured rock mass; fractured portions appears slightly argillized; pyrite is minimal, limited only along some veinlet and fracture surfaces.

256.5m to 259.5m section: Shift to BQ size core sample; silicified andesite in the upper portions becoming more argillized down section; mainly solid and intact core especially along the silicified part; fracturing of the core limited along the contact of the anhydrite veinlets and host rock; veinlets of anhydrite are recovered as 2 to 5 mm wide flakes along the core sample; argillized portions tend to be crumbly & powdery when dry & plastic when wet; pyrite content is minimal almost negligible.

259.5m to 262.5m section: Essentially continuous with previous section; variably silicified and argillized rock with prominent anhydrite veinlets; core sample is locally highly fragmented especially within the more

argillized portions and sections with numerous cross cutting veinlets; as noted earlier, the core sample tend to break up or fracture along the rock-anhydrite veinlets contact; pyrite is locally appreciable in amount as veinlet material and fracture filling especially in the more silicified portions but on the average is still less than 2% of the rock mass.

262.5m to 266.17m section: Generally silicified, fine grined andesite; very local, intervening argillized portions; anhydrite veinlets and micro-veinlets still pervasive and prominent; local breccia-like features of silicified rock or quartz surrounded by anhydrite noted, pyrite occurrence is still patchy and erratic, on the average less than 1% of rock mass; magnetite is again not noted in this section; core quality and recovery is generally good.

266.17m to 269.0m section: Continuous with previous section; generally silicified andesite; variably argillized and sheared in some portions; veinlets of anhydrite still distinctive; milky quartz veinlets also observed in the lower half meter section; patches of pyrite plus magnetite characterize this lower section; the close affinity of pyrite & magnetite with the quartz veinlets could indicate coeval relationship among the three mineral; magnetite is not detected in the upper section whereas pyrite is pronounced along shear and fracture zones within the entire section.

269.0m to 273.4m section: Essentially continuous with overlying sequence; highly silicified, fine grained andesite criss-crossed by anhydrite and milky quartz veinlets; rock mass generally massive and solid with only minor portions that are fragmented or fractured; patchy occurrence of pyrite and magnetite again noted; the two minerals are locally observed to cluster about or contiguous to intersections of quartz veinlets and microveinlets; portions with abundant pyrite and some magnetite are also characteristically chloritized thus giving the rock a distinctive greenish gray tint.

273.4m to 276.4m section: Silicified andesite, generally fine grained; gray to light gray colour.

locally with patches of green-gray and pink or brown; microveinlets of quartz and veinlets of anhydrite still pervasive; microveinlets of quartz form criss crossing networks in the generally silicified groundmass and are often bounded by pyrite clusters; microveinlets almost totally made up of pyrite also noted; magnetite occurs as fine crystals interstitial to pyrite or as rare clusters in the groundmass; pyrite is around 5 to 10% in the more prolific portions; core sample is variable fragmented locally.

276.4m to 279.4m section: Silicified andesite, essentially the same characteristics as the overlying section; greenish gray to light gray colour commonly interrupted by patches of pinkish brown, greenish colour probably arose from chlorite alteration, pinkish brown mineral might be pink epidote (?); anhydrite and milky quartz veinlets/microveinlets still very distinctive; equally prominent are quartz veinlets almost wholly impregnated or centered by pyrite; magnetite is detected as minute, isolated clusters along short intervals; pyrite averages around 5% throughout the section.

279.4m to 282.4m section: Continuous with previous section; silicified andesite; variable fragmented core sample; greenish gray to light gray colour; abundance of pinkish brown mineral in the rock has waned considerably downsection; chloritization also appears patchy; crosscutting milky quartz veinlets locally abundant; pyrite dominated veinlets still prominent as in previous section; magnetite is found locally in sections with numerous milky quartz veinlets as disseminations in the groundmass.

282.4m to 285.4m section: Moderately fragmented core sample; silicified andesite; gray to dark gray colour; fine grained; milky quartz veinlets locally abundant; anhydrite veinlets less conspicuous than in previous section; pyrite is limited to portions with qtz. as fine disseminations and clusters; magnetite is not detected in this section.

285.4m to 288.4m section Essentially continuous with previous section but relatively less fragmented; gray to

light gray colour; silicified, fine grained andesite; the colour is several shades lighter than in previous section possible due to bleaching or more intense silicification; the texture is intergranular with quartz as dominant mineral; pyrite appears as fine disseminations in the groundmass and as veinlet material; anhydrite veinlets are sporadically common; magnetite is not detected.

288.4m to 291.4m section: Gray to dark gray, fine grained; silicified andesite; fragmented especially down section; distinctive vein-like pyrite inclusions within highly silicified rock noted in some portions; magnetite is invariably present with pyrite and also occurs as fine disseminations in dark coloured bands; anhydrite and milky quartz veinlets not as prominent as in earlier sections; microbreccia-like texture of quartz, anhydrite & silicified rock mix-up noted locally.

291.4m to 293.5m section: Essentially continuous with previous sections; dark gray to gray andesite; variably silicified and argillized; relatively richer in pyrite at around 7 to 10% of rock mass; pyrite prominent as patches or veinlet material along portions bounded by numerous quartz veinlets tend to run subparallel to the quartz veinlets; core sample is moderately fragmented.

293.5m to 296.5m section: Practically the same sequence as the previous section with silicified andesite encompassing pyrite rich and pyrite-poor portions or bands; pyrite & magnetite appear as patches irregularly distributed within sections with abundant quartz veinlets; the two minerals are rare in the relatively argillized or less & silicified portions; core sample generally fragmented, almost gravel-like.

296.5m to 299.5m section: Dark gray to gray, silicified andesite; very fine grained; magnetite bearing although locally it may be rare; milky quartz veinlets not as prominent as in previous section; pyrite occurrence rather patchy commonly found along veinlet and fracture surfaces; the content is generally less than 5%.

299.5m to 302.5m section: Essentially continuous with

previous section; dark gray to almost black colour; variably silicified; section almost continuously magnetite bearing; pyrite is rather sparse, encountered solely as fine disseminations along fracture or veinlet surfaces; milky quartz veinlets faintly distinctive; anhydrite veinlets commonly sporadic in occurrence.

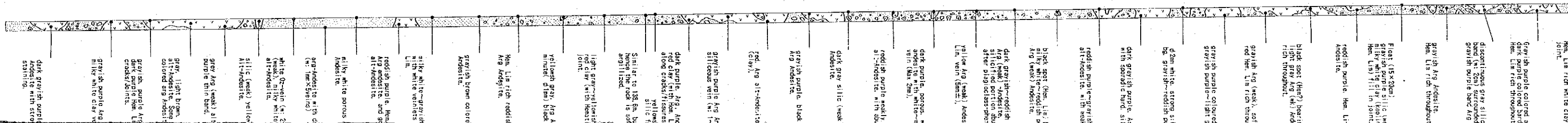
302.5m to 305.1m section: Continuous with previous section; magnetite rich sequence continues throughout this section; silicification is rather uniform throughout; pyrite occurrence still relatively rare compared to the previous sections; milky quartz veinlets noted in some portions.

Mount Upao UT-1 Trench

Cross section

Plan

West

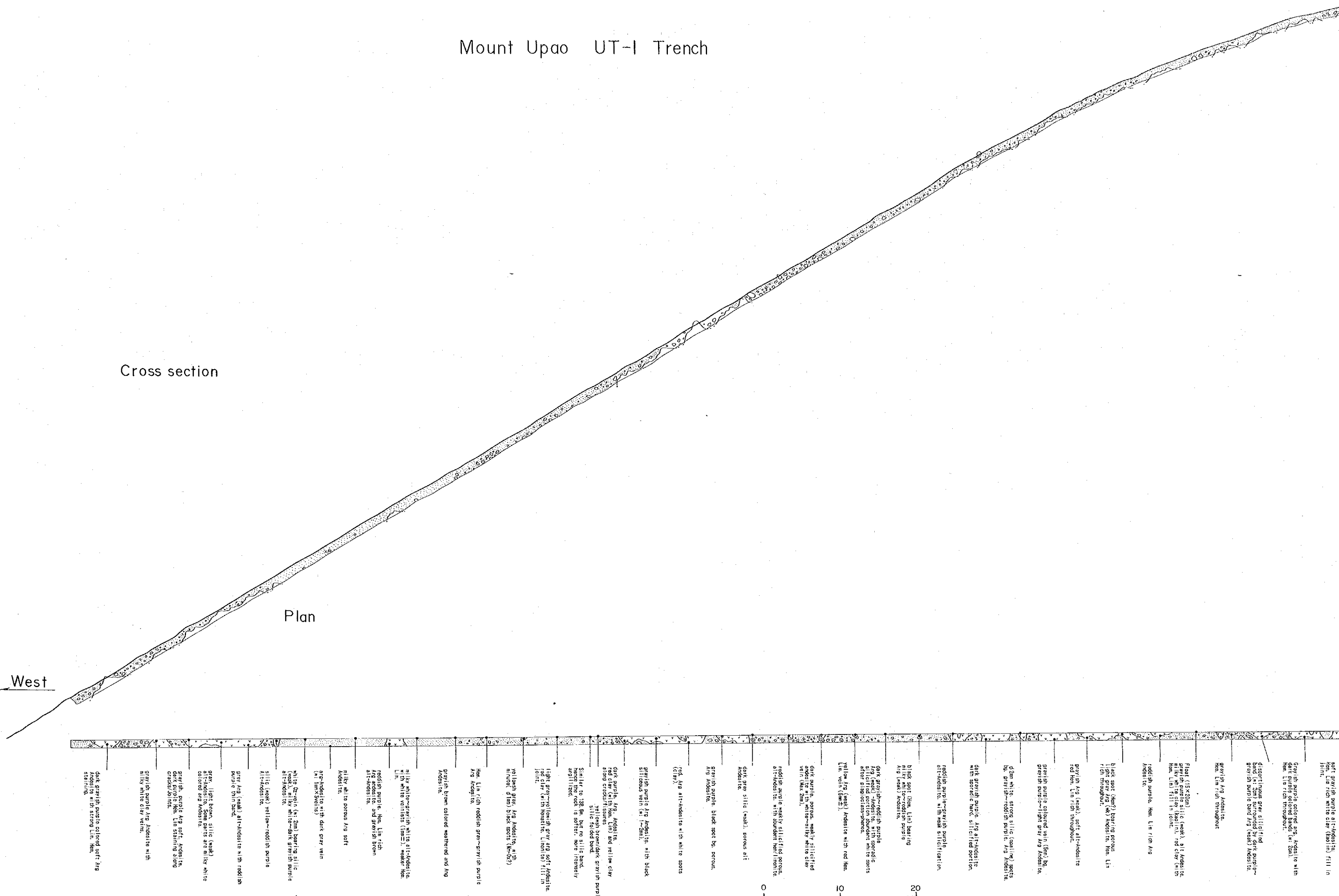


Mount Upao UT-1 Trench

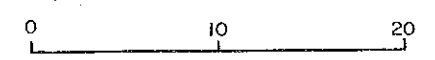
Cross section

Plan

West



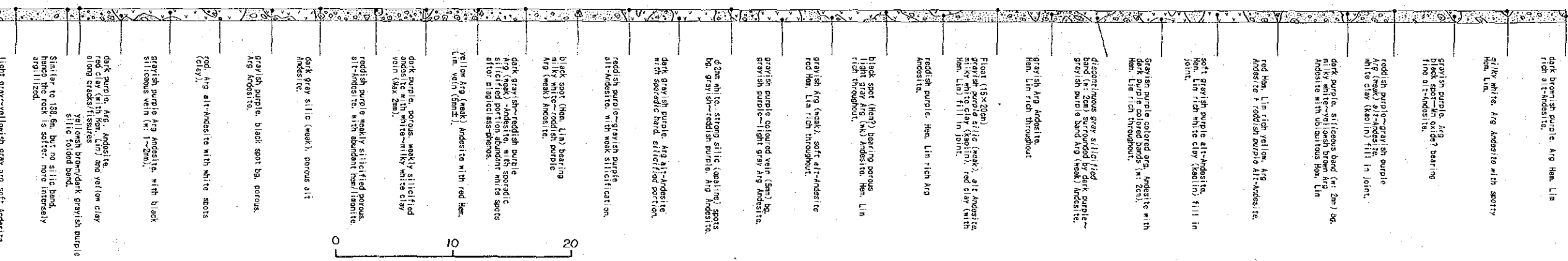
- soft grayish purple silty-Andesite. Hem. Lim rich white clay (kaolin) fill in joint.
- grayish purple colored arg. Andesite with dark purple colored bands (± 2cm). Hem. Lim rich throughout.
- discontinuous gray silicified band (± 2cm) surrounded by dark purple-grayish purple band Arg (weak). Andesite.
- grayish Arg. Andesite. Hem. Lim rich throughout.
- flat (15x20cm) silty (weak) silty-Andesite. grayish purple colored (kaolin) red clay with Hem. Lim fill in joint.
- reddish purple. Hem. Lim rich Arg Andesite.
- black spot (hard) bearing porous silty white-redish purple. Hem. Lim rich throughout.
- reddish purple. Hem. Lim rich Arg Andesite.
- grayish purple colored vein (5cm). bg. grayish purple-light gray Arg Andesite.
- 4cm white strong silic (coarse) spots bg. grayish-redish purple Arg Andesite.
- dark grayish purple Arg silty-Andesite with sporadic hard silicified portion.
- reddish purple-grayish purple silty-Andesite. with weak silicification.
- black spot (Hem. Lim) bearing silty white-redish purple Arg (weak). Andesite.
- dark grayish-redish purple Arg (weak) Andesite. with sporadic silicified portion abundant white spots after slight cooling/pressure.
- yellow Arg (weak) Andesite with red Hem. Lim vein (5cm).
- dark purple, porous, weakly silicified Andesite with white-silty white clay vein (Max 2cm).
- reddish purple weakly silicified porous silty-Andesite. with abundant hem/limonite.
- dark gray silty (weak). porous silty Andesite.
- grayish purple black spot bg. porous Arg Andesite.
- red Arg silty-Andesite with white spots (5cm).
- grayish purple Arg Andesite. with black silty-Andesite vein (± 2cm).
- dark purple Arg Andesite. red clay (with hem. Lim) and yellow clay along cracks/fissures. yellow brown/dark grayish purple silty folded band. Similar to 198 sm. but no silic band. Hence the rock is softer, more intensely argillized.
- light gray/length gray Arg soft Andesite. red clay with hem/lim. (max 5cm) fill in joint.
- yellowish gray Arg Andesite. with minute (diam) black spots (K-Or?) Hem. Lim rich reddish gray-grayish purple Arg Andesite.
- grayish brown colored weathered and Arg Andesite.
- milky white porous Arg soft Andesite.
- arg-Andesite with dark gray vein (± 1cm x 2cm).
- reddish purple. Hem. Lim rich silty-Andesite. and grayish brown silty-Andesite.
- gray, light brown, silty (weak) colored Arg Andesite. dark purple Hem. Lim staining along cracks/fissures.
- grayish purple Arg Andesite with milky white clay veins.
- dark grayish purple colored soft Arg Andesite with strong Lim. Hem. staining.



Upao UT-1 Trench



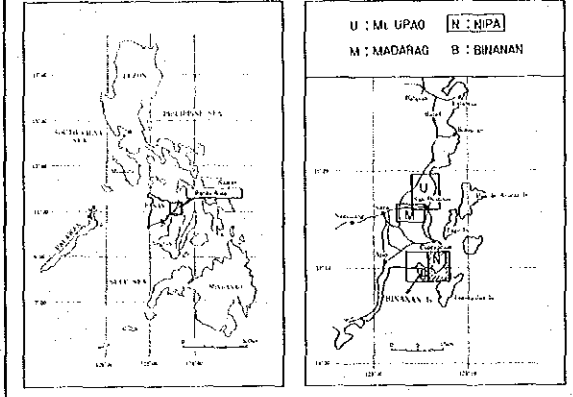
East



IN THE REPUBLIC OF THE PHILIPPINES

Geologic Map of UT-1 Trench,
Mt. Upao Area, 1992

LOCATION INDEX



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993

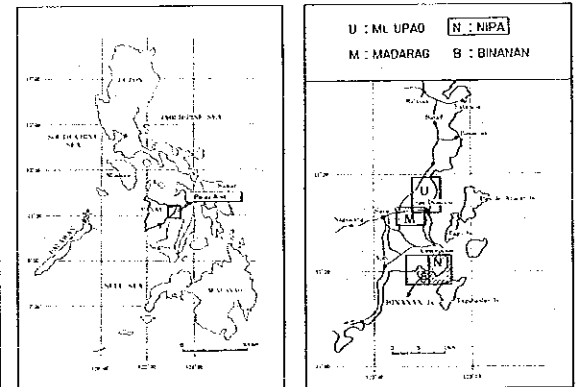
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 041m	discontinuous grey silicified band (4' zone) surrounded by dark purple-brown purple band (1' zone) and grey andesite.
23	0.2	14	1.4	22	67	1	5	5.80	45	20	2.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 045m	grayish Arg andesite. Hem. Lin rich throughout.
13	0.2	14	1.0	8	70	1	3	4.70	45	20	2.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 050m	float (15x20cm) grayish purple arg andesite. Hem. Lin fill in joint.
19	0.2	28	0.4	5	42	1	2	2.90	45	20	4.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 055m	reddish purple. Hem. Lin rich Arg andesite.
17	0.2	48	1.2	12	81	1	8	7.20	45	20	12.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 059m	black spot (Hem. Lin) bearing grayish purple arg andesite. Hem. Lin
70	0.2	38	1.2	32	8	3	8	12.30	45	40	2.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 065m	grayish Arg (weak), soft all-andesite red Hem. Lin rich throughout.
78	0.2	30	0.6	6	14	1	2	3.60	45	10	3.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 070m	grayish purple colored vein (Hem) bearing purple arg andesite. grayish purple arg andesite.
13	0.2	28	1.0	19	17	1	2	5.20	45	10	3.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 075m	d. Gem white, strong silicification. Be, grayish-reddish purple Arg andesite.
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 078m	dark grayish purple Arg all-andesite with sparse dark silicified portion.
33	0.2	42	0.8	14	4	4	2	7.10	45	20	5.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 080m	black spot (Hem. Lin) bearing grayish purple arg andesite.
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 085m	reddish purple-weakly purple all-andesite, with weak silicification.
5	0.2	26	0.6	6	9	2	2	2.70	45	20	13.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 090m	dark spot (Hem. Lin) bearing grayish purple arg andesite.
7	0.2	46	0.8	19	5	1	2	5.50	45	20	6.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 095m	dark grayish-reddish purple arg andesite. Hem. Lin rich throughout. after placetess-sponges.
4	0.2	38	0.4	8	10	2	3	7.00	45	20	7.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 100m	yellow Arg (weak) andesite with red Hem. Lin vein (Hem).
4	0.2	32	0.4	11	6	3	2	7.40	45	10	4.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 105m	dark purple, porous, weakly silicified andesite with white-milky white clay vein (Hem. Lin).
25	0.2	50	2.2	38	40	2	4	12.50	45	20	18.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 110m	reddish purple weakly silicified porous, all-andesite, with abundant hem/linite.
4	0.2	34	0.8	13	2	2	3	7.10	45	20	12.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 115m	dark gray silic (weak), porous all-andesite.
1	0.2	14	0.4	11	3	1	2	6.50	45	10	6.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 120m	grayish purple, black spot bearing Arg andesite.
3	0.2	22	1.2	10	3	4	2	5.60	45	10	12.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 125m	red, Arg all-andesite with white spots (clay).
4	0.2	38	1.0	38	5	1	3	6.40	45	20	6.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 130m	grayish purple Arg andesite, with black silicaceous vein (Hem. Lin).
5	0.2	50	1.2	36	2	1	2	8.10	45	10	1.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 135m	dark purple Arg andesite, red clay vein (Hem. Lin) and yellow clay along cracks/fissures.
4	0.2	35	1.0	20	8	1	3	6.20	45	20	6.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 138m	yellow brown/dark grayish purple silic folded band.
5	0.2	50	1.8	31	5	1	2	7.50	45	20	7.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 140m	Similar to 138. Hem. Lin silic band, hence the rock is softer, more intensely argillized.
4	0.2	70	1.0	32	4	2	2	6.80	45	30	8.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 145m	light gray-yellowish gray arg soft andesite, iron clay (rich hematite, limonite) fill in joint.
6	0.2	148	2.2	25	8	2	20	6.00	45	30	18.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 150m	yellowish gray, Arg andesite, with mineral (Hem) black spots (Hem-Ox).
5	0.2	54	0.6	34	8	3	3	10.40	45	20	10.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 155m	Hem. Lin rich reddish gray-grayish purple Arg andesite.
2	0.2	18	0.4	18	8	1	2	6.50	45	20	8.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 160m	grayish brown colored weathered and Arg andesite.
13	0.2	114	1.8	40	8	2	2	10.50	45	20	14.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 168m	milky white-grayish white all-andesite with white variscites (Hem) weaker Hem. Lin.
5	0.2	24	1.0	12	71	2	23	2.50	10	20	1.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 170m	reddish purple, Hem. Lin rich Arg andesite, and grayish brown all-andesite.
13	0.3	10	1.0	64	2	4	4	14.80	45	20	19.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 175m	milky white porous Arg soft andesite.
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 178m	gray-andesite with dark gray vein (Hem. Lin) variscites.
5	0.2	30	0.2	105	5	3	6	5.80	45	20	1.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 179m	white, grayish (Hem) bearing silic (weak), all-white-dark grayish purple all-andesite.
2	0.2	122	0.8	290	4	11	10	12.00	10	20	8.4		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 183m	silic (weak) yellow-reddish purple all-andesite.
2	0.2	26	0.8	8	4	1	3	3.20	45	20	7.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 187m	gray Arg (weak) all-andesite with reddish purple thin band.
1	0.2	70	0.5	75	12	5	22	0.30	45	20	4.0		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 191m	gray, light brown, silic (weak) all-andesite, veins are milky white colored arg andesite.
9	0.2	2	0.8	3	20	1	23	1.10	45	20	0.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 195m	grayish, purple Arg soft, andesite, creole/linite. Lin staining along
7	0.2	2	0.2	31	4	2	1	0.10	45	20	0.2		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 203m	grayish purple Arg andesite with grayish white clay veins.
15	0.2	2	0.6	51	23	1	1	2.20	45	20	7.8		
Au	Ag	As	Sb	Cu	Pb	Zn	Mn	Fe	Mg	Hg	Sr	UT-1, 212m	dark grayish purple colored soft Arg andesite with strong Hem. Lin staining.
19	0.2	24	0.6	3	3	1	2	4.70	45	20	9.0		

West

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Sample Location Map of UT-1 Trench,
Mt. Upao

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JAPAN INTERNATIONAL COOPERATION AGENCY
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FEBRUARY 1993

LEGEND

Au, Hg in ppb

Fe in Percent

Other Elements in ppm

East

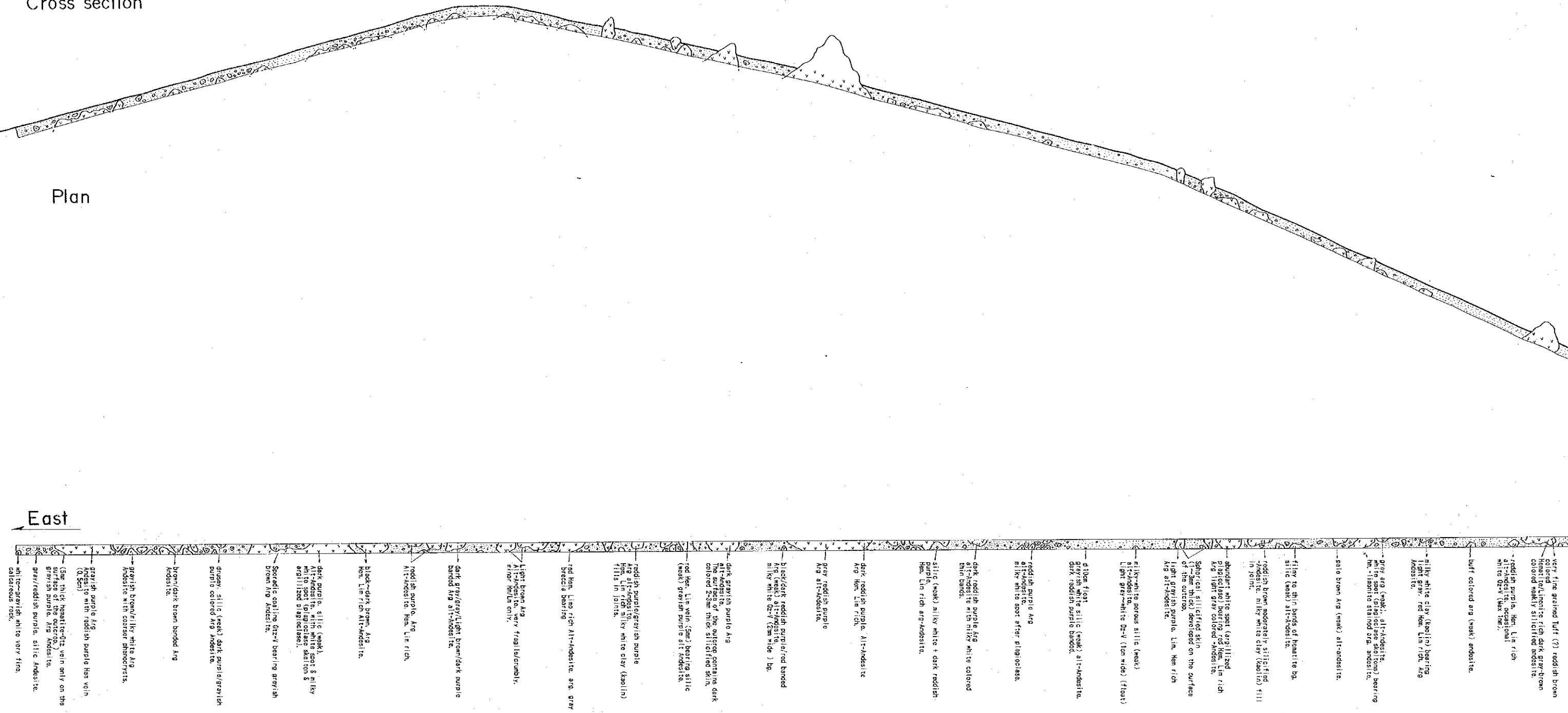
Table with columns for elements (Au, Ag, As, Sb, Sn, Cu, Pb, Zn, Ni, Mo, Fe, Mn, Hg, Sr, Ba, Pb, Zn, Ni, Mo, Fe, Mn, Hg, Sr, Ba) and rows for sample locations (e.g., UT-1.000a, UT-1.005a, UT-1.010a, UT-1.015a, UT-1.020a, UT-1.025a, UT-1.030a, UT-1.035a, UT-1.040a, UT-1.045a, UT-1.050a, UT-1.055a, UT-1.060a, UT-1.065a, UT-1.070a, UT-1.075a, UT-1.080a, UT-1.085a, UT-1.090a, UT-1.095a, UT-1.100a, UT-1.105a, UT-1.110a, UT-1.115a, UT-1.120a, UT-1.125a, UT-1.130a, UT-1.135a, UT-1.140a). Each cell contains numerical values for the elements and a descriptive text for the sample location.

Monut Upao UT-2 Trench

Cross section

Plan

East

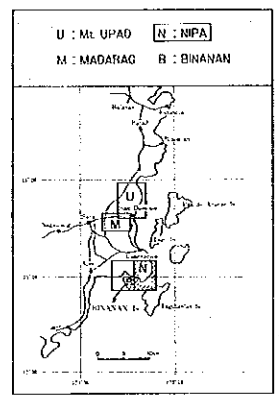
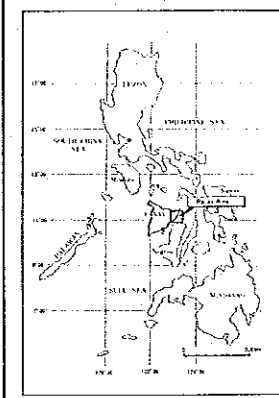


- 1. very fine grained tuff (?) reddish brown color/Lentic rich dark grey-brown colored weakly siltified andesite
- 2. reddish purple, thin, fine siltic andesite, occasional white Qz-V (Max 1mm)
- 3. buff colored arg (weak) andesite
- 4. silty white clay (kaolin) bearing light grey, red thin, fine arg andesite
- 5. grey arg (weak), alt-andesite, white spot (plagioclase siltic) bearing thin, lentic siltic arg, andesite
- 6. pale brown arg (weak) alt-andesite
- 7. silty to thin beds of massive dark siltic (weak) alt-andesite
- 8. reddish brown moderately siltified in joint, silty white clay (kaolin) fill
- 9. abundant white spot (siltic) rich arg (siltic) colored andesite
- 10. spherical siltic filled skin (thin, lentic) developed on the surface of the surface
- 11. light grey arg, thin, fine arg (weak) arg (weak) arg
- 12. siltic white arg (weak) alt-andesite, light grey-white Qz-V (thin wide) (float)
- 13. 6' to 8' feet greyish white siltic (weak) alt-andesite, dark reddish purple bands
- 14. reddish purple arg silty white spot after diagonal
- 15. dark reddish purple arg thin arg-colored thin bands
- 16. siltic (weak) silty white + dark reddish purple thin rich arg-andesite
- 17. dark reddish purple, alt-andesite arg thin, silty arg
- 18. grey reddish purple arg alt-andesite
- 19. black/dark reddish purple/red banded arg (weak) alt-andesite, silty white spot (kaolin) fills in joints
- 20. red thin, fine arg (weak) bearing siltic (weak) greyish purple alt-andesite
- 21. light brown arg alt-andesite, very fossiliferous, thin, fine arg
- 22. dark grey/grey/light brown/dark purple banded arg alt-andesite
- 23. reddish purple, arg alt-andesite, thin, fine arg
- 24. black-dark brown, arg thin, fine arg alt-andesite
- 25. dark purple, siltic (weak) arg (weak) silty white spot (plagioclase siltic) argillized in argillaceous
- 26. sporadic kaolin Qz-V bearing greyish brown arg andesite
- 27. brown/dark brown banded arg andesite
- 28. greyish brown/silty white arg andesite with scattered plagioclase, grey/reddish purple, siltic andesite, white-greyish white very fine, calcareous rock

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

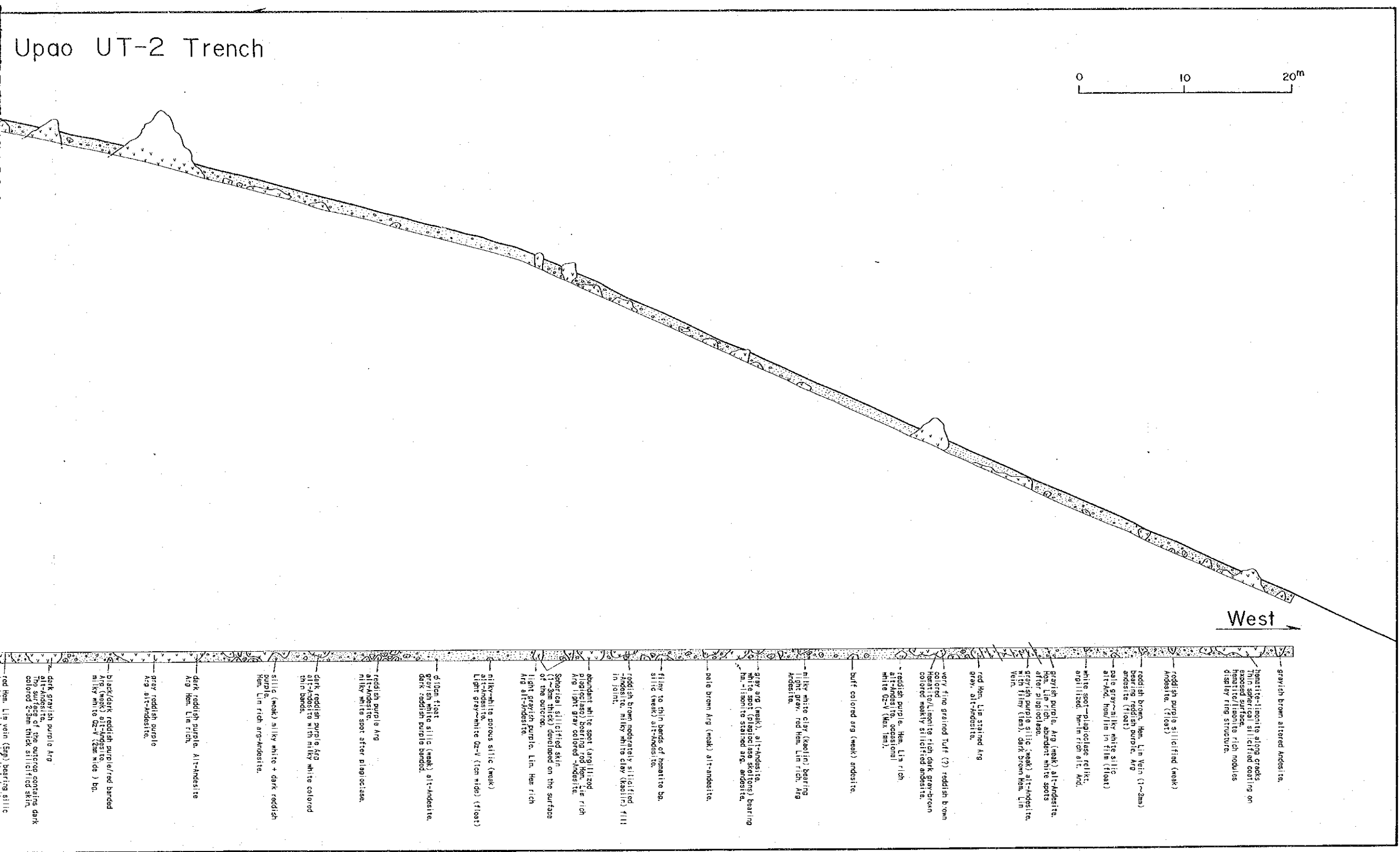
Geologic Map of UT-2 Trench,
Mt. Upao Area, 1992

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JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993



Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 032a
11	0.2	4	0.8	5	25	1	2	1.20	45	10	0.8	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 035a
35	0.2	8.0	20.0	115	35	1	1	1.80	45	10	7.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 040a
30	0.2	22	1.2	11	30	1	3	6.50	45	20	6.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 045a
120	0.2	118	2.8	10	42	1	2	4.80	45	20	8.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 050a
7	0.2	4	0.2	5	10	1	2	1.10	45	10	2.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 055a
12	0.2	100	1.0	14	15	1	1	0.50	45	10	2.8	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 060a
30	0.2	24	0.2	32	30	1	2	4.50	45	20	7.8	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 065a
4	0.2	42	0.8	9	14	1	1	3.40	10	10	5.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 068a
4	0.2	140	0.8	18	2	1	1	6.20	45	10	8.6	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 073a
23	0.2	64	1.0	64	17	1	1	2.450	45	20	3.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 078a
2	0.2	38	0.8	6	4	1	1	2.70	45	10	5.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 081a
32	0.2	100	6.0	8	3	1	2	3.90	45	20	5.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 088a
11	0.2	50	8.4	1	20	1	1	0.80	45	10	1.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 094a
55	0.2	24	1.4	4	34	1	1	4.80	45	20	7.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 100a
575	0.2	130	5.2	23	19	1	1	10.00	45	50	22.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 104a
302	0.2	94	2.0	47	13	1	1	0.50	45	30	45.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 111a
33	0.2	88	10.0	38	12	3	2	16.20	45	30	18.5	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 116a
18	0.2	4	0.8	18	37	1	2	4.10	45	20	5.6	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 120a
13	0.2	224	7.4	71	3	2	4	12.50	45	20	12.5	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 126a
10	0.2	30	1.8	17	11	1	4	8.00	45	20	9.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 130a
78	0.2	14	0.8	30	4	1	3	5.10	45	10	5.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 136a
4	0.2	28	1.0	24	20	1	3	9.00	45	10	6.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 143a
2	0.2	28	1.2	9	34	1	2	5.20	45	10	6.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 148a
43	0.2	4	0.2	197	2	1	2	3.80	45	20	5.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 155a
20	0.2	20	0.8	90	10	2	2	4.80	45	20	5.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 160a
11	0.2	8	0.8	34	63	1	3	2.80	45	20	4.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 165a
1	0.2	10	1.2	37	7	3	2	7.80	45	20	25.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 170a
15	0.2	8	1.0	82	39	128	2	5.30	15	20	6.2	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 174a
143	0.2	134	11.5	158	18	3	1	1.40	45	30	14.5	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 185a
7	0.2	10	1.2	37	7	3	2	7.80	45	20	25.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 190a
10	0.2	24	1.4	37	43	1	2	5.20	45	20	7.3	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 197a
7	0.2	8	1.2	15	22	1	2	3.40	45	30	4.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 198a
4	0.2	4	0.4	50	3	1	1	7.10	45	20	8.0	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 200a
1	0.2	12	0.8	27	9	2	1	10.80	45	10	6.4	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 201a
2	0.2	20	0.2	43	3	1	1	6.90	45	20	10.8	
Au	Hg	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Sb	UT-2, 201b
1	0.2	2	0.2	3	5	1	1	1.30	45	10	2.8	

red Han, Lie stained Arg
gray, alt-andestite.

very fine grained buff (?) reddish brown
Hematite/Limonite rich dark gray-brown
colored heavily silicified andestite.

reddish purple, Han, Lie rich
alt-andestite, occasional
white clay Han, Han.

buff colored arg (weak) andestite.

milky white clay (kaolin) bearing
light gray, red Han, Lie rich, Arg
Andestite.

gray arg (weak), alt-andestite,
white spot (sphaerocysta excretions) bearing
Han, Lie rich, buff colored arg, andestite.

pale brown Arg (weak) alt-andestite,
silic (weak) alt-andestite.

filmy to thin bands of hematite on
silic (weak) alt-andestite.

reddish brown moderately silicified
in joint, silky white clay (kaolin) fill

abundant white spot (crystallized
Arg) light gray colored andestite.

Sporelike silicified skin
of the outcrop,
light gray-white Qtz-V (see note) (float)

silky-white porous silic (weak)
alt-andestite.

6/10m float
grayish white silic (weak) alt-andestite,
dark reddish purple banded.

reddish purple Arg
alt-andestite,
silky white spot after plagioclase.

dark reddish purple Arg
alt-andestite with milky white colored
thin bands.

silic (weak) milky white + dark reddish
purple, Han, Lie rich arg-andestite.

dark reddish purple, alt-andestite
Arg Han, Lie rich.

gray reddish purple
Arg alt-andestite.

black/dark reddish purple/red banded
Arg (weak) alt-andestite,
Han, Lie rich Qtz-V (see note) ha.

dark grayish purple Arg
alt-andestite.
This surface of the outcrop contains dark
colored 2-3mm thick silicified skin.

red Han, Lie vein (see) bearing silic
(weak) grayish purple alt andestite.

reddish purple/grayish purple
Han, Lie rich arg-andestite,
Han, Lie rich silky white clay (kaolin)
fills in joints.

Light brown Arg
alt-andestite, very fea/tearcloudy,
minor Mn/Li only.

red Han, Lie vein rich alt-andestite, arg, gray
breccia bearing

dark gray/gray/light brown/dark purple
banded Arg alt-andestite.

reddish purple, Arg
alt-andestite, Han, Lie rich.

black-dark brown, Arg
Han, Lie rich alt-andestite.

dark purple, silic (weak),
alt-andestite, with white spot & silky
white spot (sphaerocysta skeleton &
small sized plagioclase).

Sporadic oval/ra Qtz-V bearing grayish
brown Arg andestite.

drusey, silic (weak) dark purple/grayish
purple colored Arg andestite.

brown/dark brown banded Arg
Andestite.

grayish brown/silky white Arg
Andestite with coarser phenocrysts.

grayish purple Arg
Andestite with reddish purple Han vein
(0.5cm)

(see) thick hematite-Qtz vein only on the
grayish purple Arg andestite.

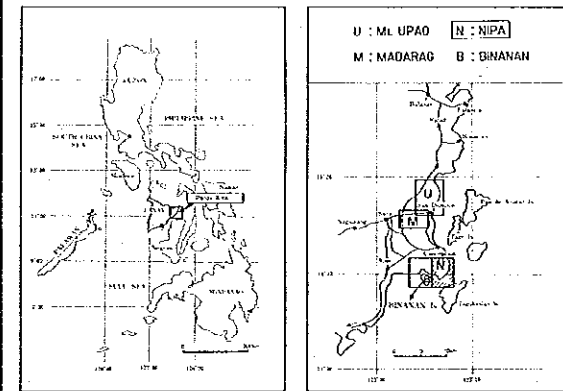
gray/redish purple, silic andestite,
white/grayish white very fine,
silky white.

East

MINERAL EXPLORATION IN PANAY AREA IN THE REPUBLIC OF THE PHILIPPINES

Sample Location Map of UT-2 Trench, Mt. Upao

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JAPAN INTERNATIONAL COOPERATION AGENCY METAL MINING AGENCY OF JAPAN BUREAU OF MINES and GEO-SCIENCES

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LEGEND

Au, Hg in ppb

Fe in Percent

Other Elements in ppm

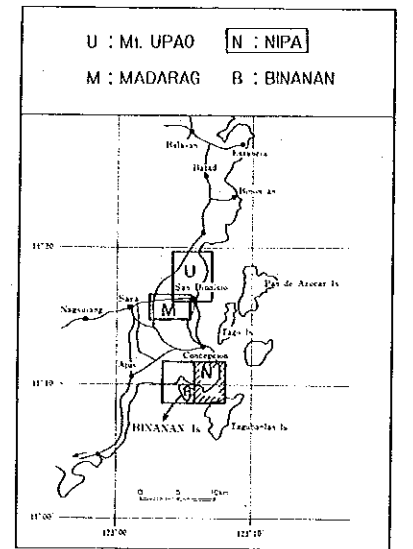
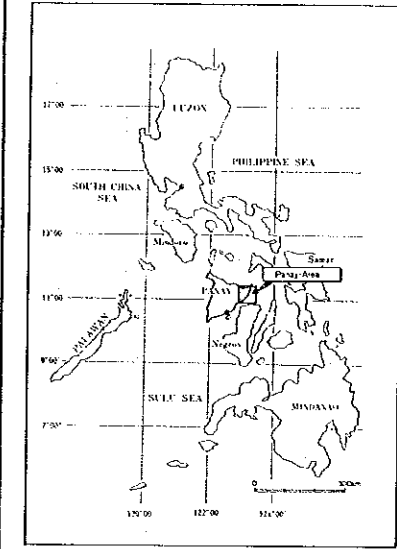
West

Table with columns for sample ID (e.g., Au 49, As 50, Sb 51), trench name (e.g., UT-2, 088, 3n), and analytical results for Au, Hg, Fe, and other elements. Includes descriptive text for various sample types like 'reddish purple arg', 'siliceous arg', and 'dark gray arg'.

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geologic Map of MT-1 Trench,
Madarag Area, 1992

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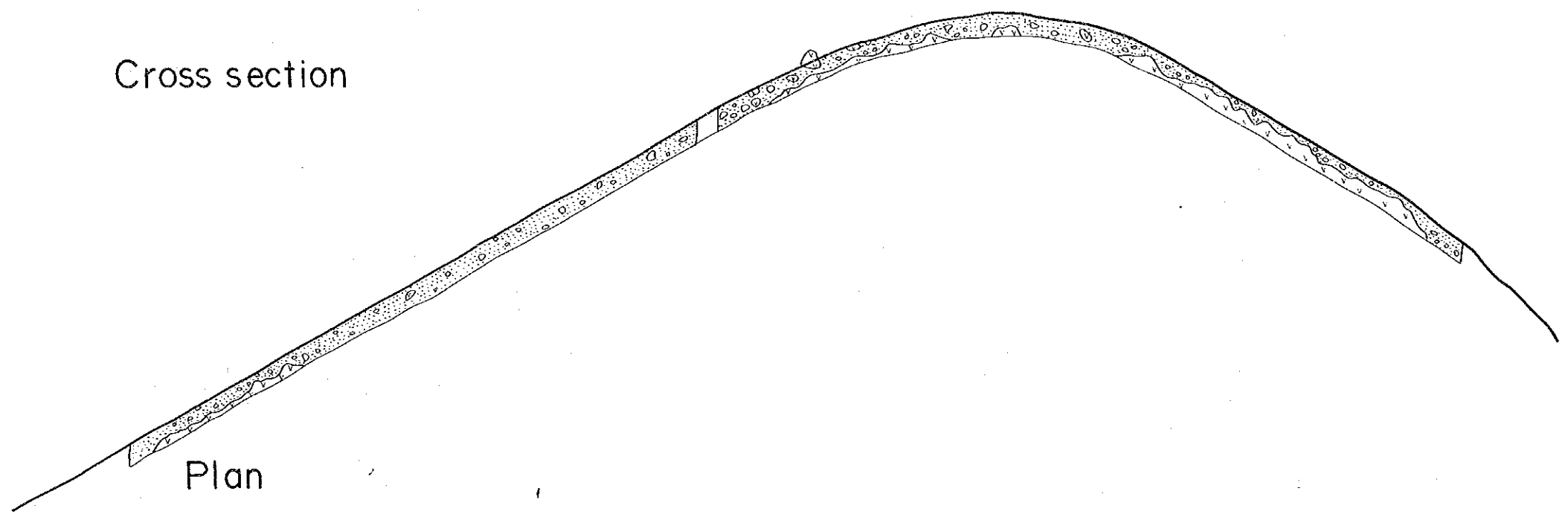


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FEBRUARY 1993

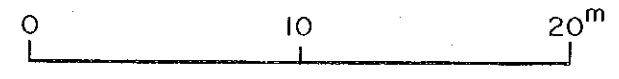
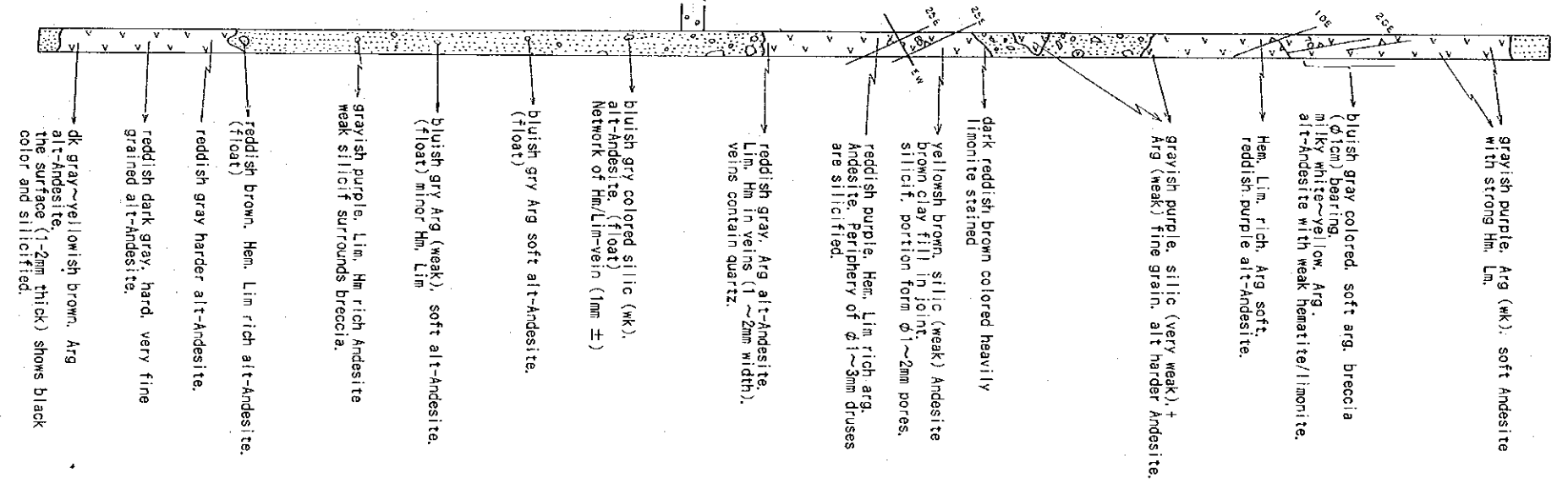
Madarag
MT-1 Trench

Cross section



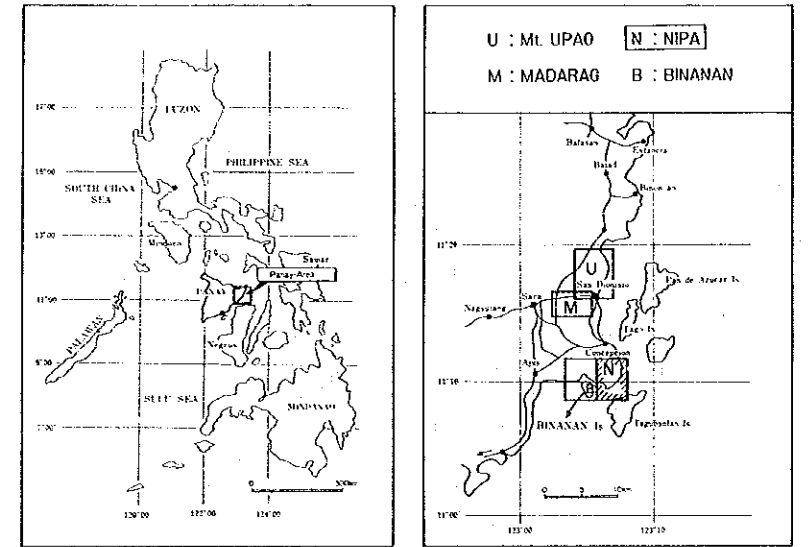
S30W

N30E



MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES
Sample Location Map of MT-1 Trench,
Madarag Area

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JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
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FEBRUARY 1993

LEGEND

Au, Hg in ppb

Fe in Percent

Other Elements in ppm

N30E

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
9	<0.2	14	0.4	16	34	2	17	4.80	<5	10	10.0

MT-1, 0.21m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
31	0.5	186	0.8	156	97	3	280	7.80	<5	10	34.0

MT-1, 0.15, 0m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
9	<0.2	12	0.6	34	143	4	28	5.00	<5	20	6.0

MT-1, 0.10m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
14	<0.2	10	0.2	46	48	6	10	6.20	<5	20	11.2

MT-1, 0.04m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
22	<0.2	36	0.8	18	60	5	63	4.50	<5	30	26.0

MT-1, 0.26m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
18	0.4	26	0.4	13	90	3	43	5.10	<5	20	27.0

MT-1, 0.39m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
12	<0.2	44	0.6	18	55	2	29	3.80	<5	10	1.8

MT-1, 0.32m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
50	0.4	64	0.4	86	197	5	55	19.09	<5	20	37.0

MT-1, 0.38m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
47	<0.2	29	0.4	31	111	3	108	8.50	<5	20	32.0

MT-1, 0.50m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
54	0.4	58	0.2	24	91	3	48	8.30	<5	20	68.0

MT-1, 0.45m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
26	0.3	14	0.2	92	112	3	133	5.00	10	20	34.0

MT-1, 0.55m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
37	<0.2	34	0.6	24	209	2	76	6.20	5	20	44.0

MT-1, 0.59m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
43	0.2	56	0.8	32	172	3	184	7.00	<5	60	53.0

MT-1, 0.65m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
333	0.5	374	6.4	79	104	3	138	6.80	<5	20	49.0

MT-1, 0.66, 5m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
25	0.3	14	0.2	14	113	3	40	5.10	<5	20	38.0

MT-1, 0.68, 3m

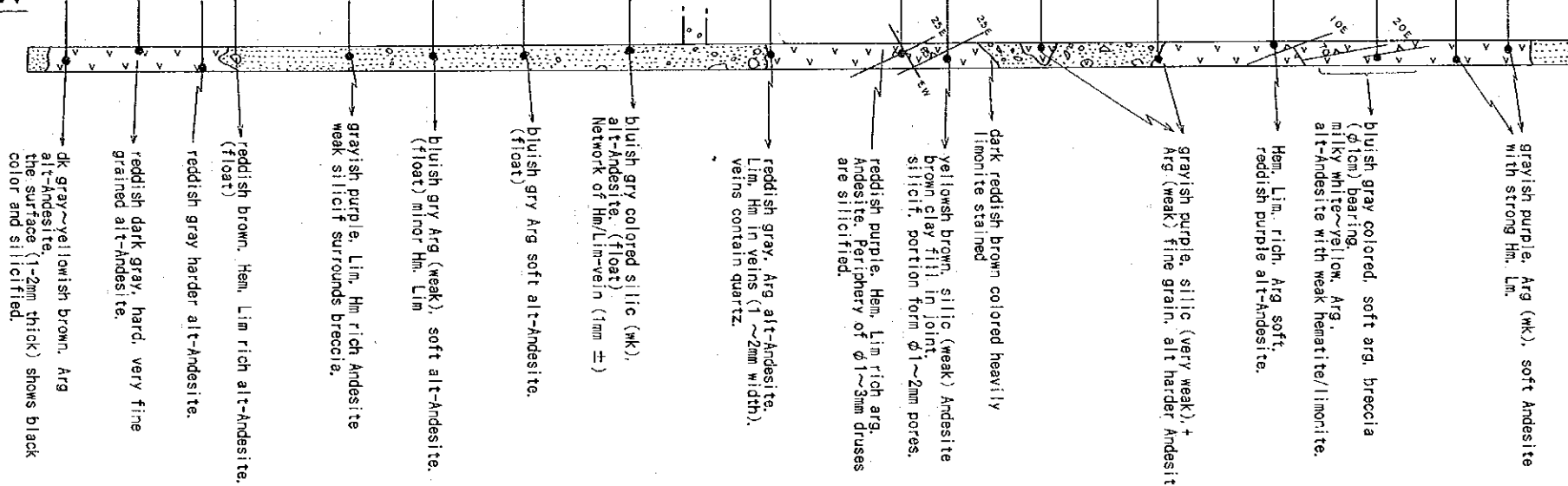
Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
97	<0.2	2	0.6	5	416	2	41	6.00	<5	10	<0.2

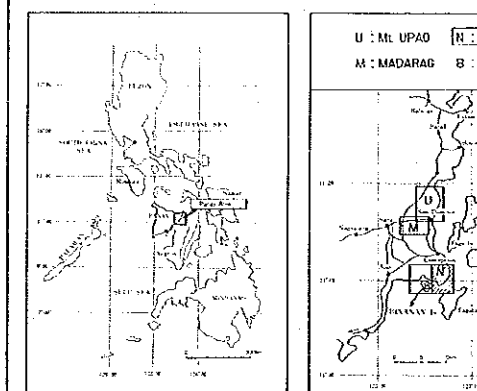
MT-1, 0.73m

Au	Ag	As	Sb	Cu	Pb	Zn	Mo	Fe	Mn	Hg	Se
36	<0.2	4	0.6	12	145	17	1.50	<5	20	<0.2	

MT-1, 0.73m

S30W





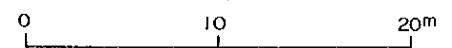
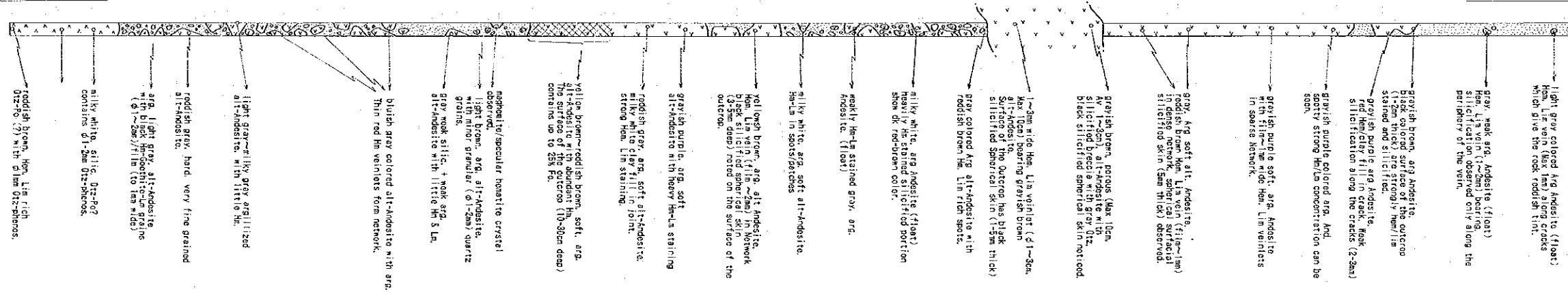
Madarag
MT-2 Trench

Cross section

Plan

N 60W

S 60E



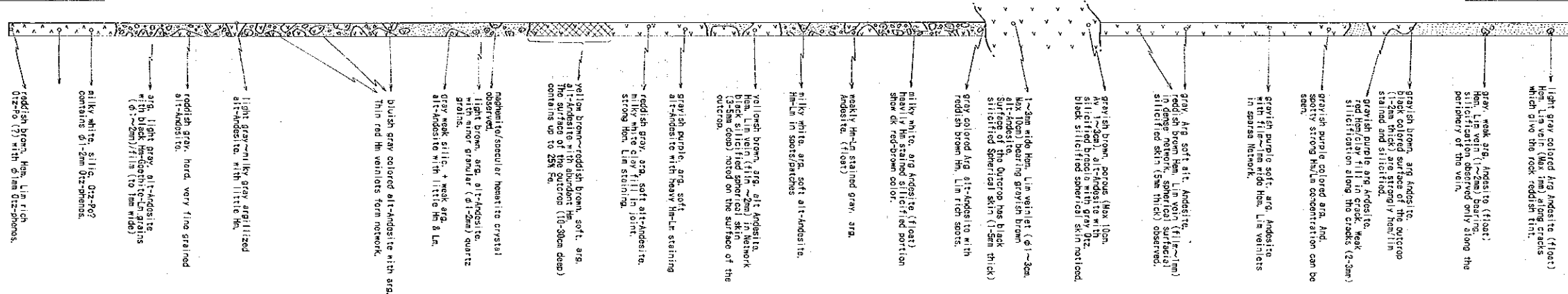
Madarag MT-2 Trench

Cross section

Plan

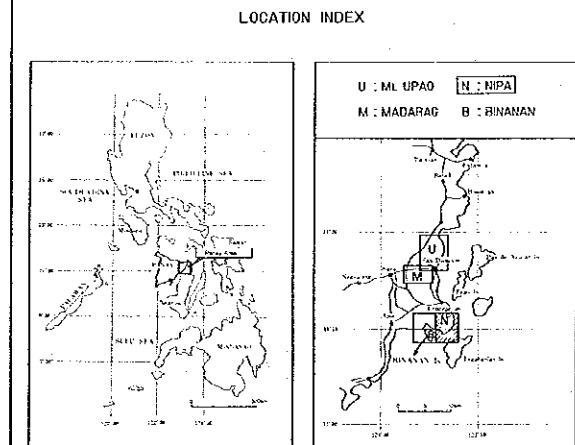
N 60W

S 60E



- light gray colored Arg andesite (float) Hem. Lim vein (Max. 1mm) along cracks which give the rock reddish tint.
- gray, weak arg. andesite (float); Hem. Lim vein (1-2cm) bearing silicification observed only along the periphery of the vein.
- grayish brown, arg. andesite, black colored surface of the outcrop (1-2cm thick) are strongly hemilitic and porous.
- grayish purple soft, arg. andesite with fine lim. Hem. Lim veinlets in sparse network.
- grayish purple colored arg. and. spotty strong H₂SO₄ concentration can be seen.
- grayish brown, porous (Max 10cm, Av. 1-2cm), alt-andesite with silicified cracks with gray arg. black silicified surface (1-5cm thick) reddish brown Hem. Lim rich spots.
- gray, Arg soft alt. andesite, reddish brown Hem. Lim vein (1.5-2cm) silicified skin (5cm thick) observed.
- grayish brown, porous (Max 10cm, Av. 1-2cm), alt-andesite with silicified cracks with gray arg. black silicified surface (1-5cm thick) reddish brown Hem. Lim rich spots.
- 1-2cm wide Hem. Lim veinlet (6-1-2cm, Max 10cm) bearing grayish brown alt-andesite. Quercosa has black silicified superficial skin (1-5cm thick) reddish brown Hem. Lim rich spots.
- milky white, arg. andesite, (float) heavily hem stained portion show dk. red-brown color.
- rocky Hem-Lim stained gray, arg. andesite, (float)
- milky white, arg. soft alt-andesite, Hem-Lim in spots/patches
- yellowish brown, arg. alt-andesite, black silicified practical skin (3-5cm deep) noted on the surface of the outcrop.
- grayish purple, arg. soft alt-andesite with heavy Hem-Lim staining
- reddish gray, arg. soft alt-andesite, strong Hem. Lim staining.
- yellow brown-reddish brown, soft, arg. andesite, black silicified practical skin (10-30cm deep) contains up to 25% Fe.
- magnetite/spinel hematite crystals observed.
- light brown, arg. alt-andesite, grayish brown, arg. (1-2cm) quartz grains.
- gray weak silice. + weak arg. alt-andesite with little H₂ & Lt.
- bluish gray colored alt-andesite with arg. thin red lim veinlets form network.
- reddish gray, hard, very fine grained alt-andesite.
- arg. light gray, alt-andesite with black magnetite-Lt grains (2-3cm/1/1s to 1cm wide)
- milky white, silice. 0.2-0.2? contains 0.1-2cm Qtz phenocr.
- reddish brown, Hem. Lim rich Qtz-Fe (?) with 0.1cm Qtz phenocr.

MINERAL EXPLORATION PL. 2-3
 IN
 PANAY AREA
 IN THE REPUBLIC OF THE PHILIPPINES
 Geologic Map of MT-2 Trench,
 Madarag Area, 1992

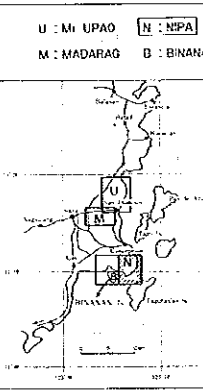
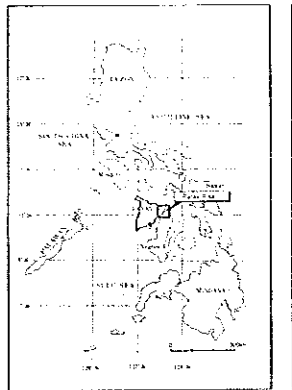


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 METAL MINING AGENCY OF JAPAN
 BUREAU OF MINES and GEO-SCIENCES
 FEBRUARY 1993

MINERAL EXPLORATION IN PANAY AREA IN THE REPUBLIC OF THE PHILIPPINES

Sample Location Map of MT-2 Trench, Madarag Area

LOCATION INDEX



U : Mt UPAO N : MPA M : MADARAG B : BINANGALAN

JAPAN INTERNATIONAL COOPERATION AGENCY METAL MINING AGENCY OF JAPAN BUREAU OF MINES and GEO-SCIENCES

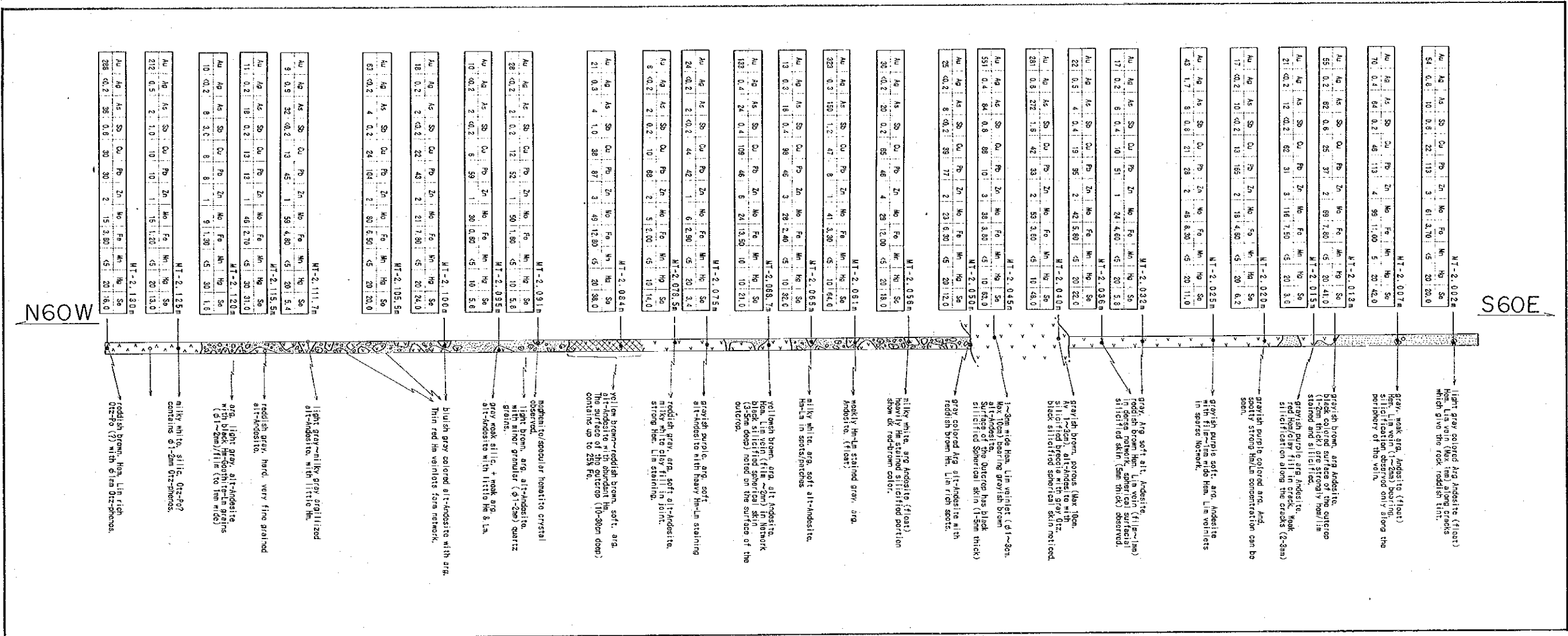
FEBRUARY 1993

LEGEND

Au, Hg in ppb

Fe in Percent

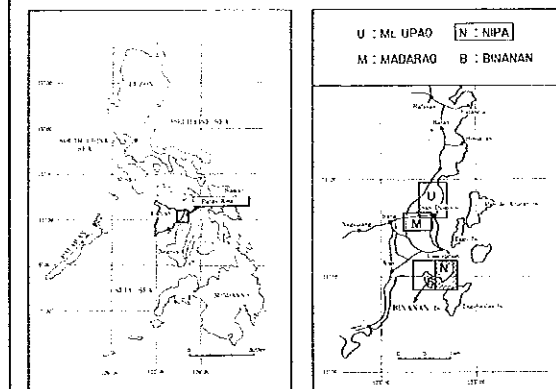
Other Elements in ppm



MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Sample Location Map of MT-2 Trench,
Madarag Area

LOCATION INDEX



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

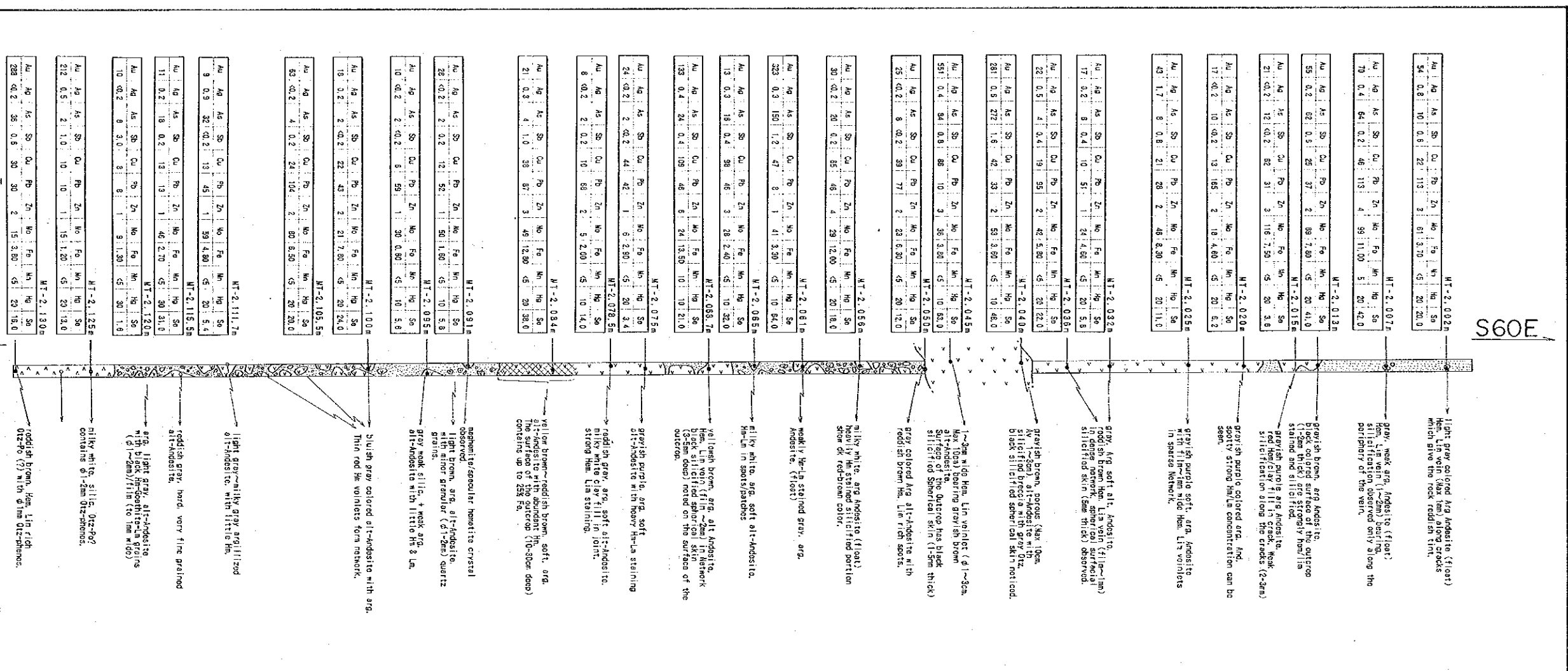
FEBRUARY 1993

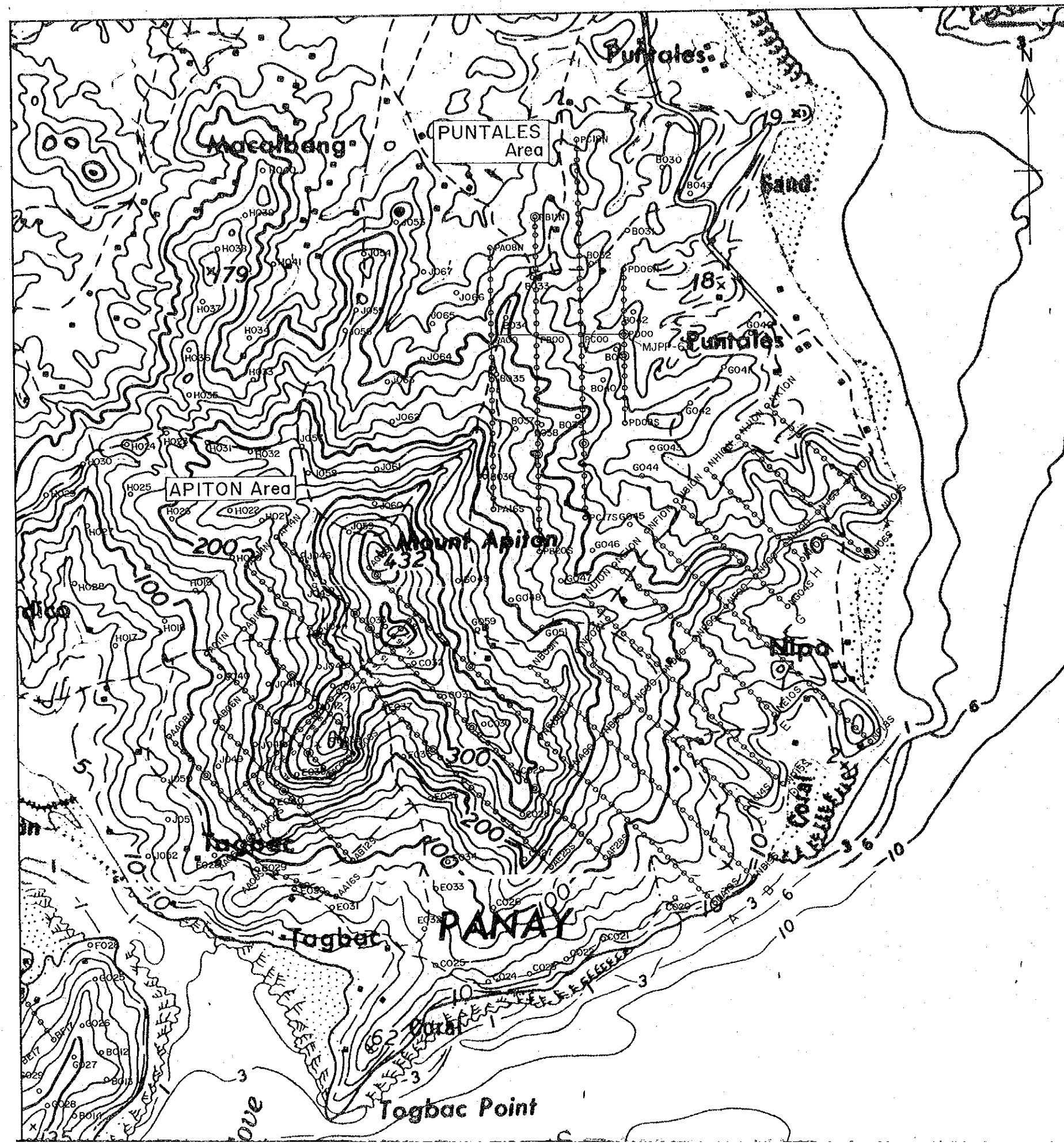
LEGEND

Au, Hg in ppb

Fe in Percent

Other Elements in ppm





PL. 3-1

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Sample Location Map, Geochemical Survey,
Nipa Area

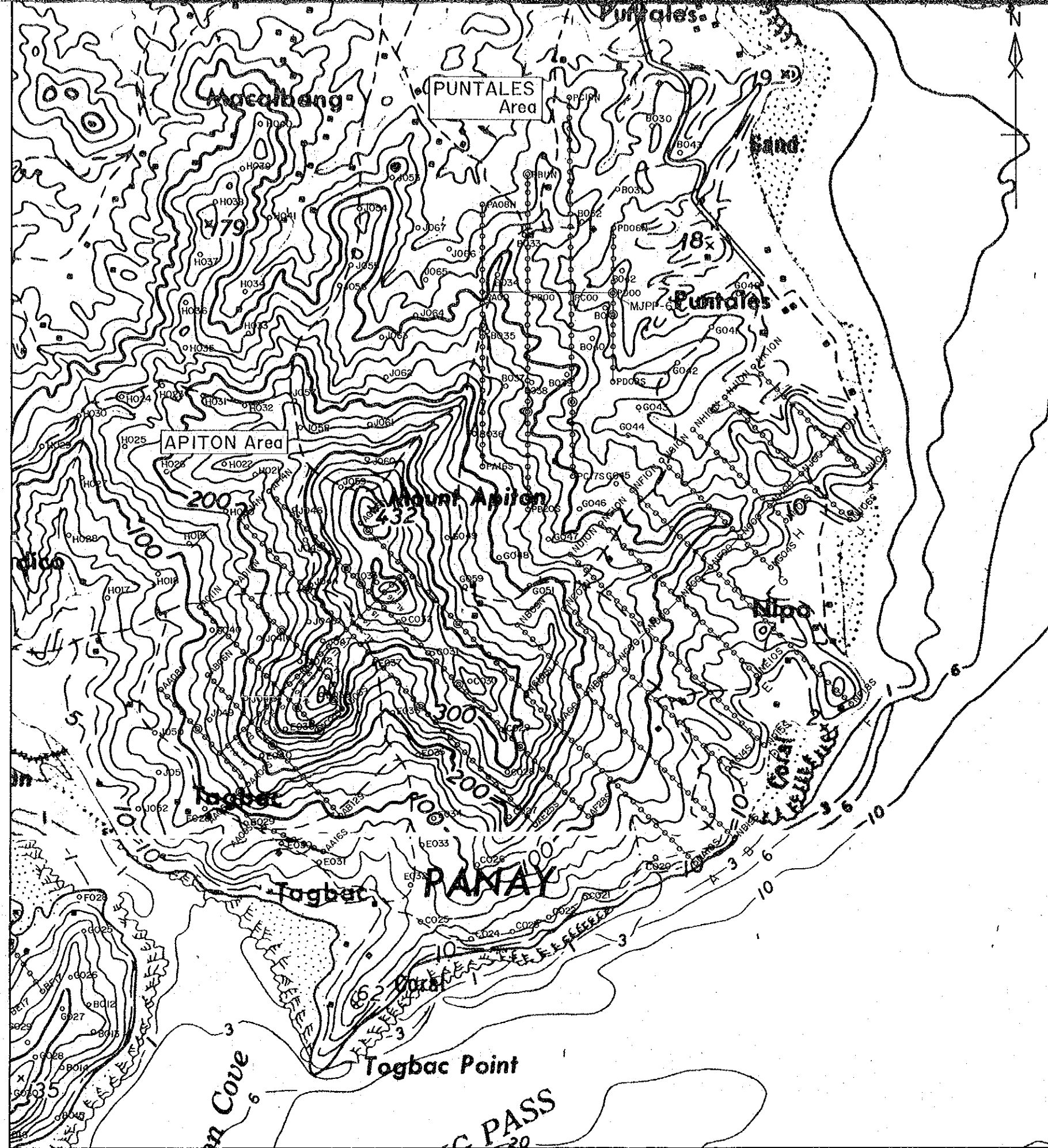
LOCATION INDEX

U : Mt. UPAO	M : NIPA
M : MADARAG	B : BINAMAN

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY, 1993

- LEGEND**
- Soil Sample
 - Rock Samples



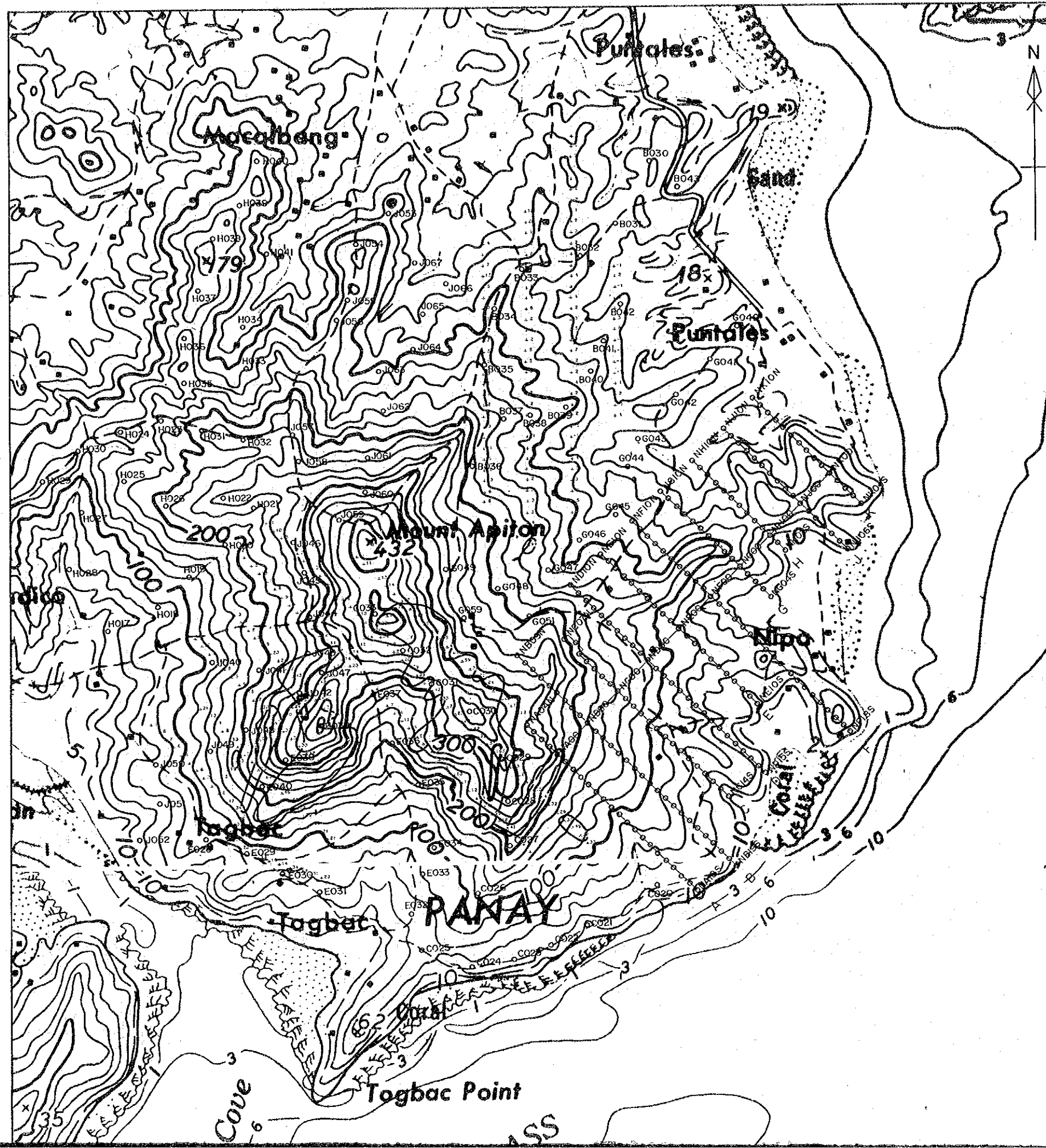
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES
Sample Location Map, Geochemical Survey,
Nipa Area

LOCATION INDEX

U : Mt. UPAD N : NIPA
M : MADARAO B : BINANAN

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES
FEBRUARY 1993

- LEGEND
- Soil Sample
 - Rock Samples

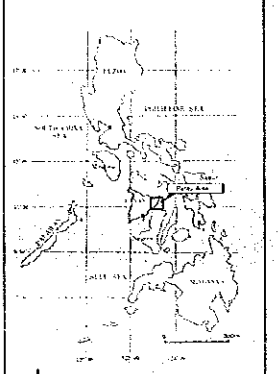
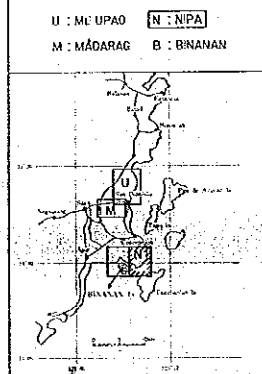


PL. 3-2

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of Au,
Nipa Area, 1992

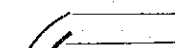
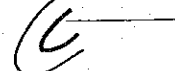
LOCATION INDEX

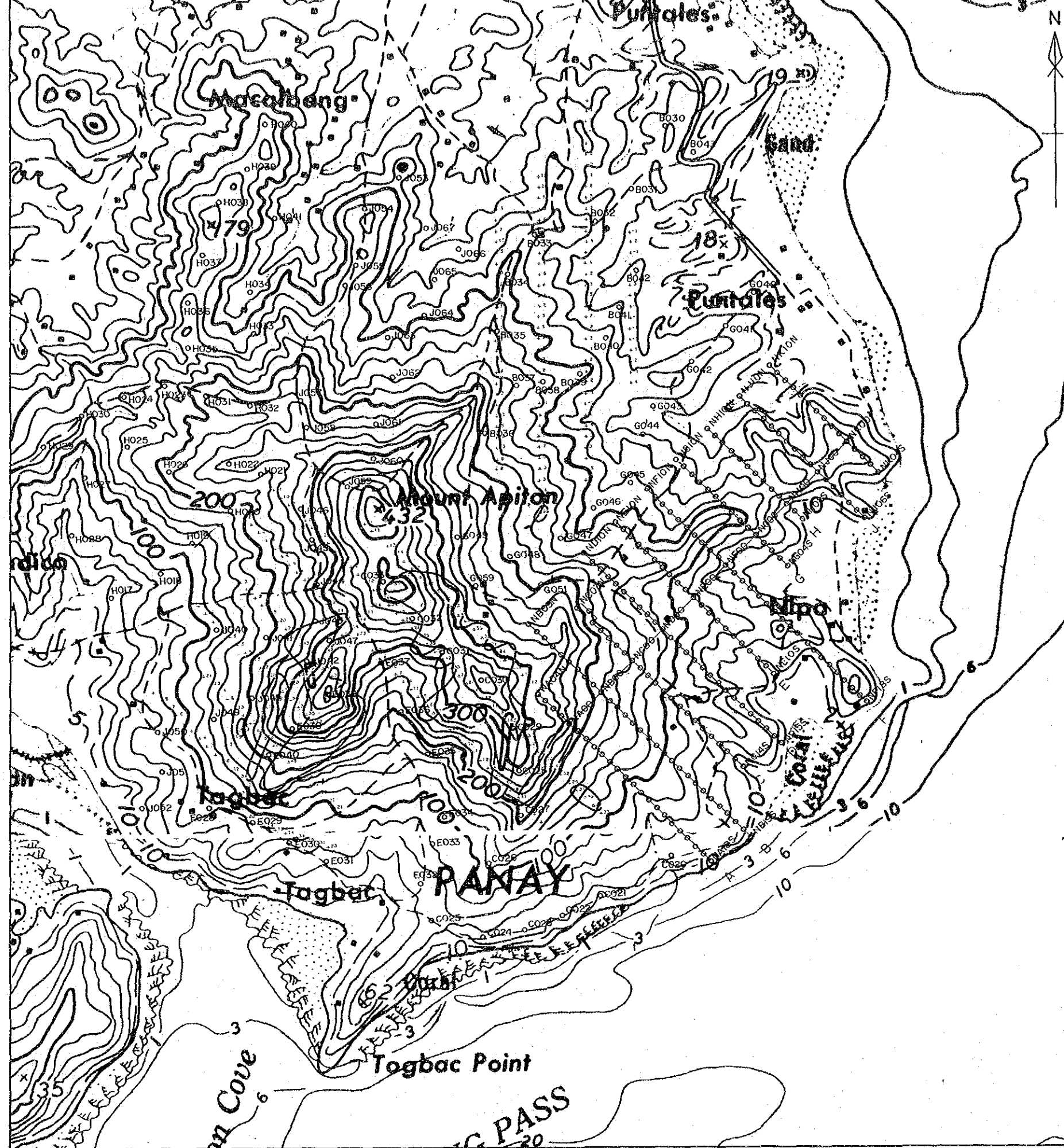



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES
FEBRUARY 1993

LEGEND

m = 11.5ppb Au
 $m + \sigma = 36.8\text{ppb Au}$
 $m + 2\sigma = 118.4\text{ppb Au}$

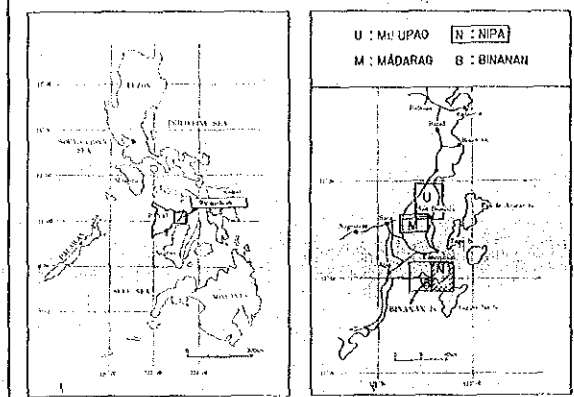
 Moderate Anomaly
 Strong Anomaly



PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of Au,
Nipa Area, 1992

LOCATION INDEX

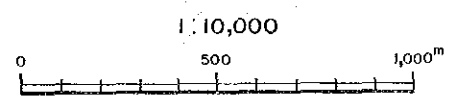
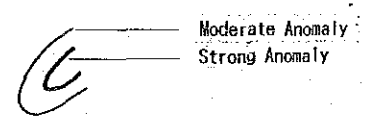


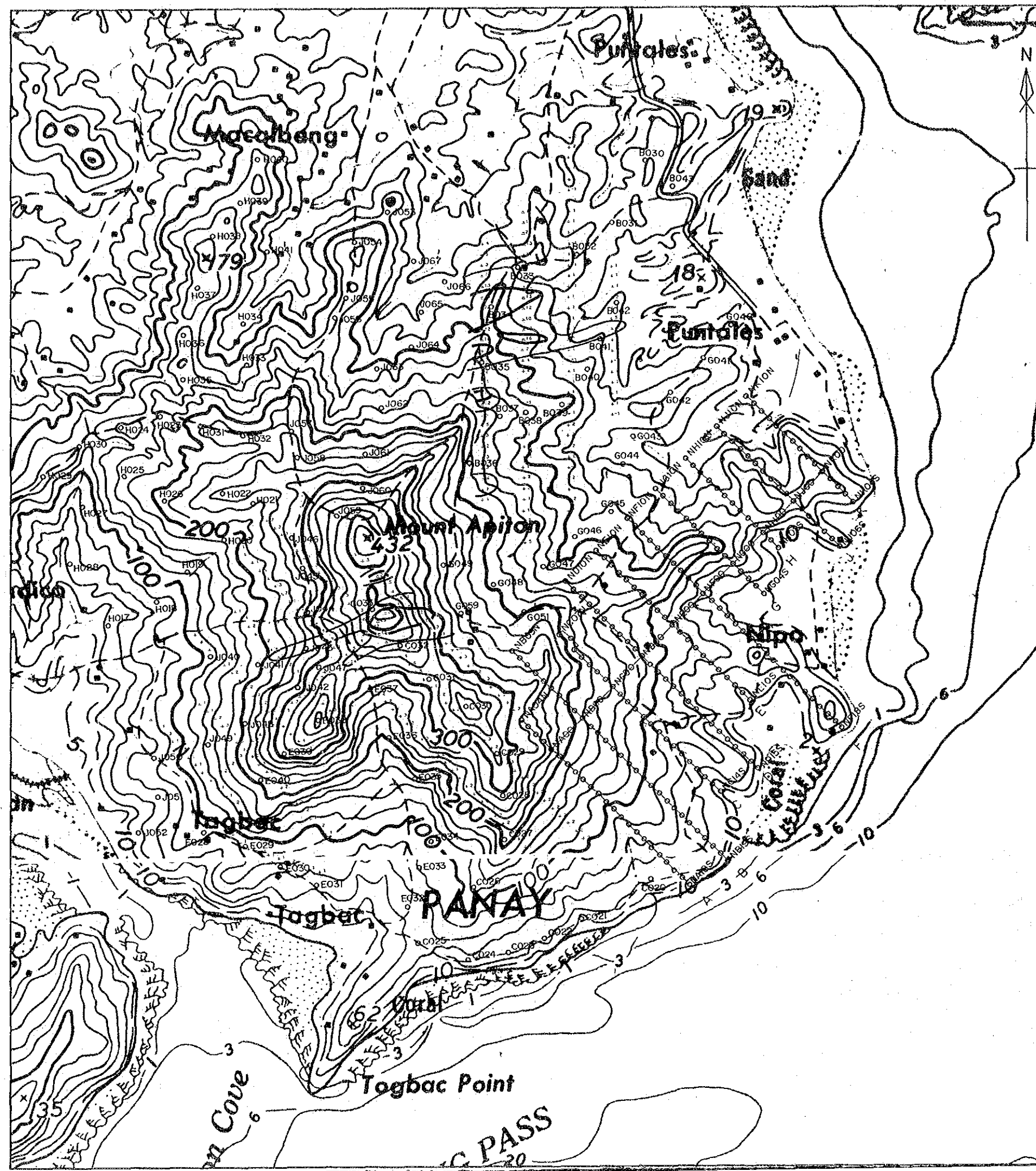
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993

LEGEND

$m = 11.5 \text{ ppb Au}$
 $m + \sigma = 36.8 \text{ ppb Au}$
 $m + 2\sigma = 118.4 \text{ ppb Au}$



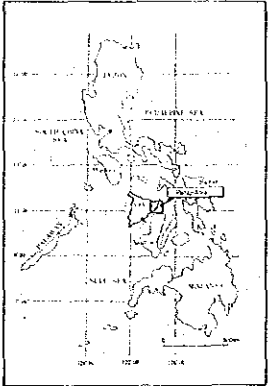


PL. 3-3

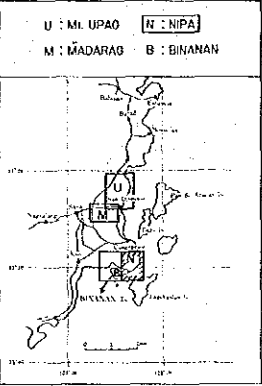
MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of No.
Nipa Area, 1992

LOCATION INDEX



U : Mt. UPAO R : NIPA
M : MADARAG B : BINAMAN



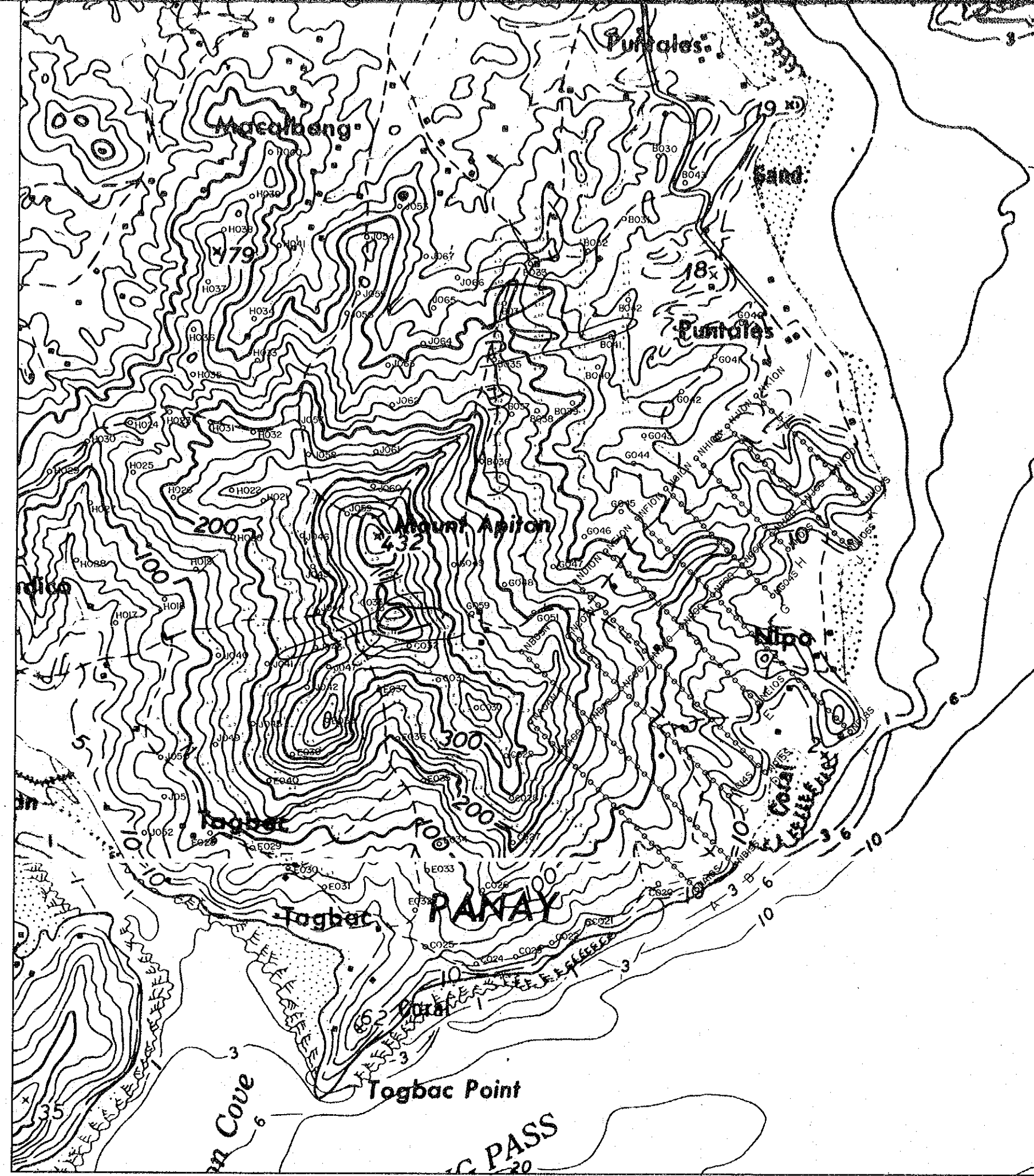
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993

LEGEND

$m = 2.7 \text{ ppm}$
 $m + \sigma = 6.3 \text{ ppm}$
 $m + 2 \sigma = 14.5 \text{ ppm}$

— Moderate Anomaly
 — Strong Anomaly



MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of Mo,
Nipa Area, 1992

LOCATION INDEX

U : M. UPAD N : NIPA
M : MADARAG B : BINAMAN

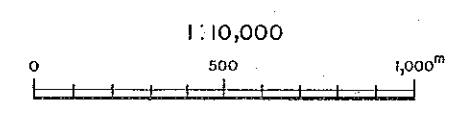
JAPAN INTERNATIONAL COOPERATION AGENCY
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BUREAU OF MINES and GEO-SCIENCES

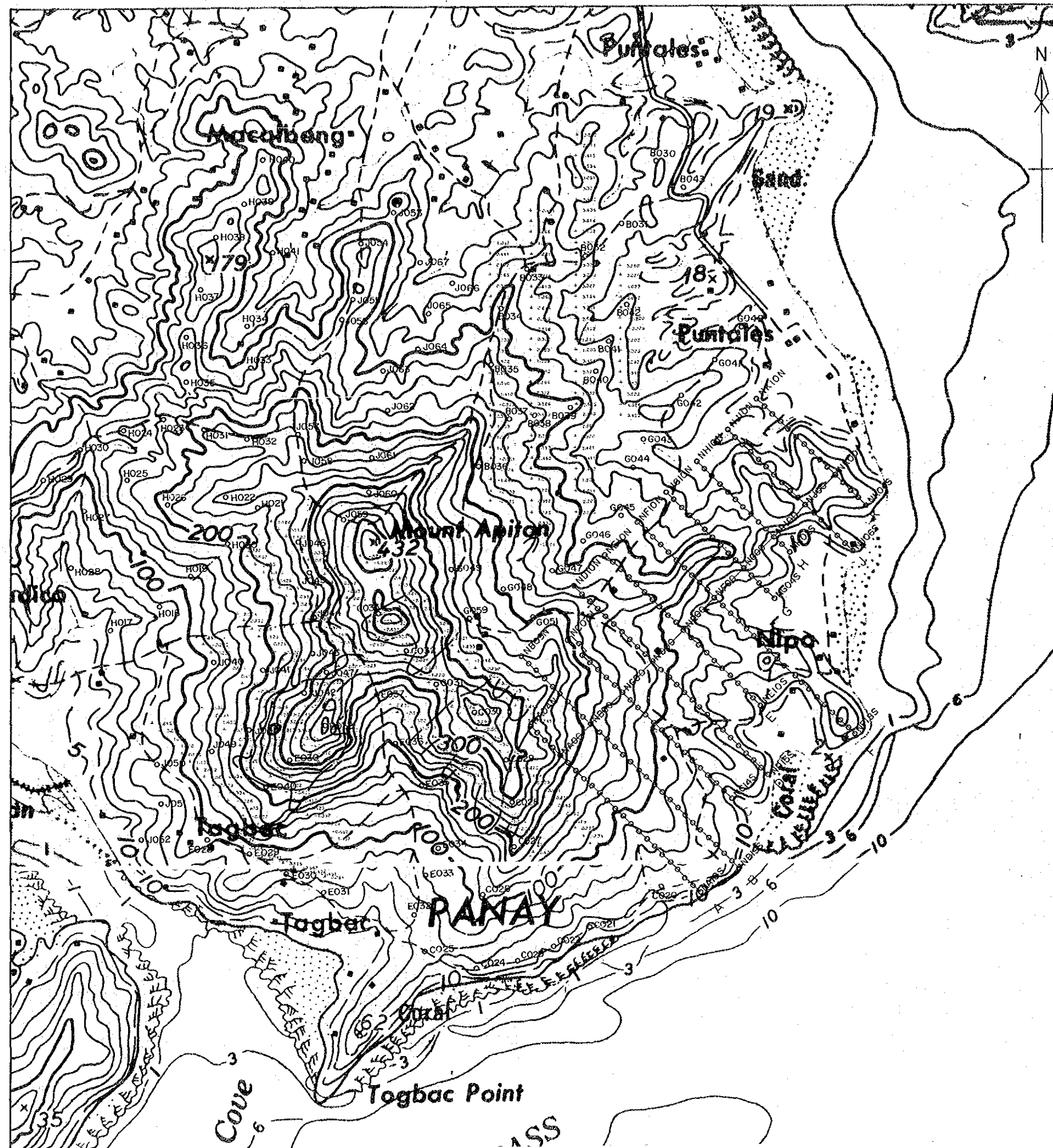
FEBRUARY 1993

LEGEND

$m = 2.7 \text{ ppm}$
 $m + \sigma = 6.3 \text{ ppm}$
 $m + 2 \sigma = 14.5 \text{ ppm}$

Moderate Anomaly
 Strong Anomaly





PL. 3-4

MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of 1st Principal
Component Score,
Nipa Area, 1992

LOCATION INDEX

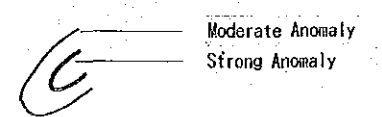
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M : MADARAG B : BINANAN

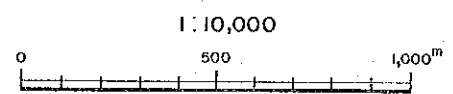
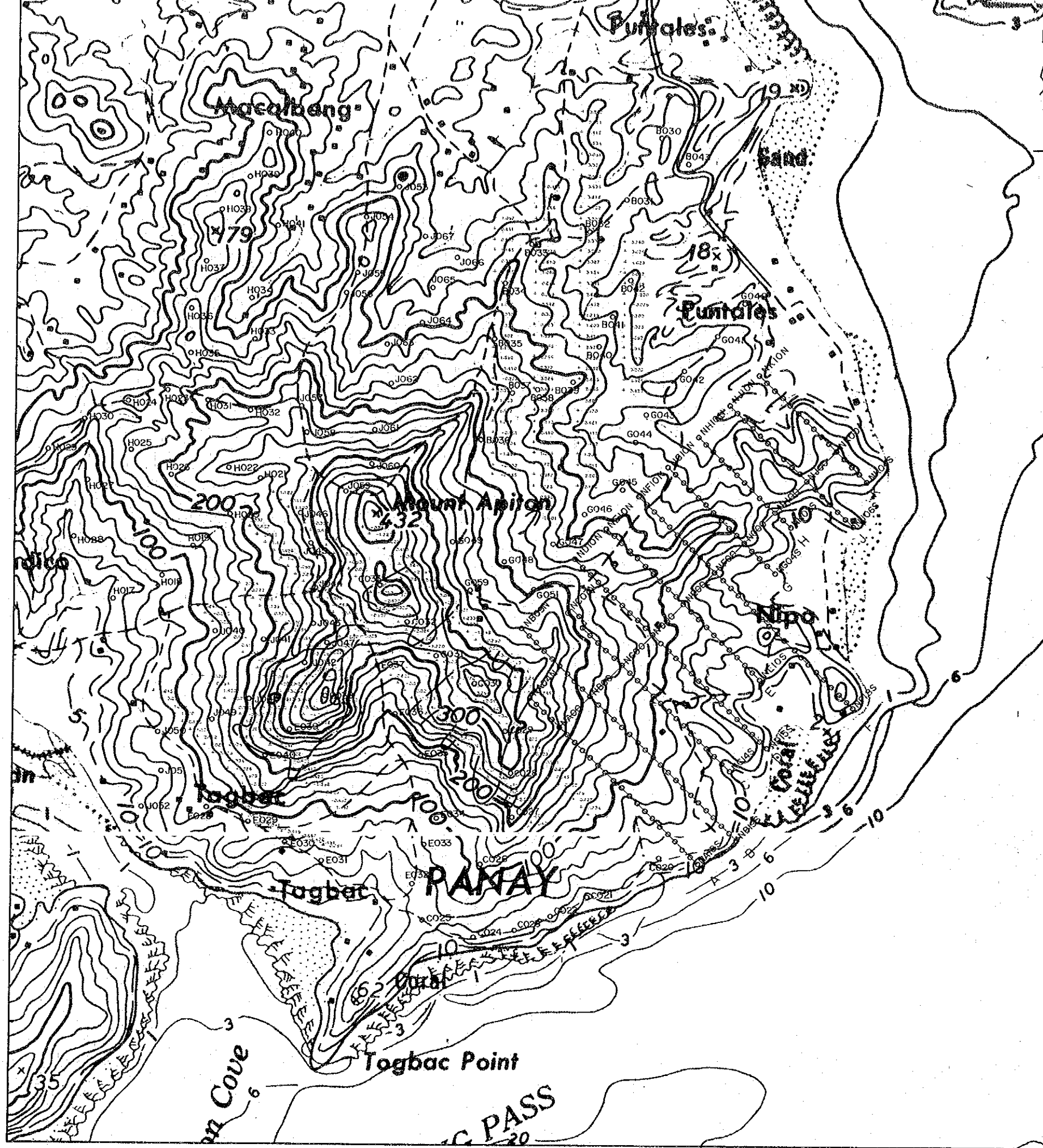
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BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993

LEGEND

P-1 : Au(70.2%), As(70.0%), Sb(65.1%),
Se(53.8%), Pb(46.9%)

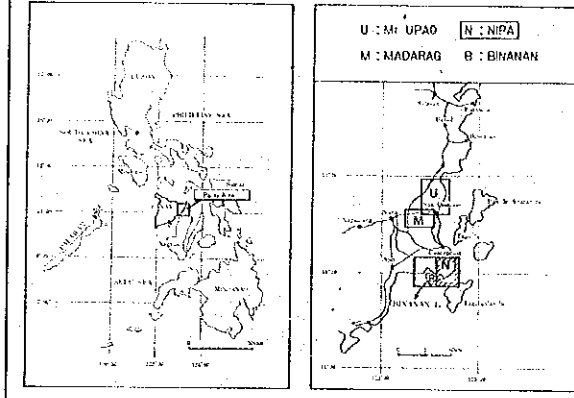




MINERAL EXPLORATION
IN
PANAY AREA
IN THE REPUBLIC OF THE PHILIPPINES

Geochemical Plot of 1st Principal
Component Score,
Nipa Area, 1992

LOCATION INDEX



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
BUREAU OF MINES and GEO-SCIENCES

FEBRUARY 1993

LEGEND

P-1 : Au(70.2%), As(70.0%), Sb(65.1%),
Se(53.8%), Pb(46.9%)

