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(3rd. Draft by
P.Fozzard-13/8/86)

UNITED NATIONS REVOLVING FUND FOR NATURAL RESOURCES EXPLORATION

GUYANA

MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS BASE METALS AND GOLD

FINAL REPORT

Prepared for the Government of Guyana

New York, June 1986

CONTENTS

Page

NOTE: THE BOUNDARIES AND NAMES ON THE ILLUSTRATIVE MATERIAL AS WELL AS IN THE TEXT DO NOT IMPLY OFFICIAL ENDORSEMENT OR ACCEPTANCE BY THE UNITED NATIONS.

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXES

ABBREVIATIONS AND UNITS

AEM	Airborne Electromagnetic Survey
a.s.l.	Above sea level (height)
Bathel	Pan of about 10 litres
EM	Electromagnetic Method
GGMC	Guyana Geology and Mines Commission
IP	Induced Polarization
MAG	Magnetic Survey
PEM	Pulse Electromagnetic Method
ppb	Parts per billion
ppm	Parts per million = 1g/Tonne = 1000 ppb
REE	Rare Earth Elements
REO	Rare Earth Oxides
SS	Stream Sediments (samples)
Tonne or (T)	1000 kg = 2,204.6 lbs.
VLF	Very Low Frequency Method

NOTE

ANALYTICAL CERTIFICATES

Due to the bulky content of the Analytical Certificates they have been omitted from this report and are deposited with the Guyana Geology and Mines Commission in Georgetown, Guyana, where they are available for inspection.

SUMMARY

Exploration work in two areas of Guyana was undertaken by the United Nations Revolving Fund for Natural Resources Exploration from April 1980 till August 1983.

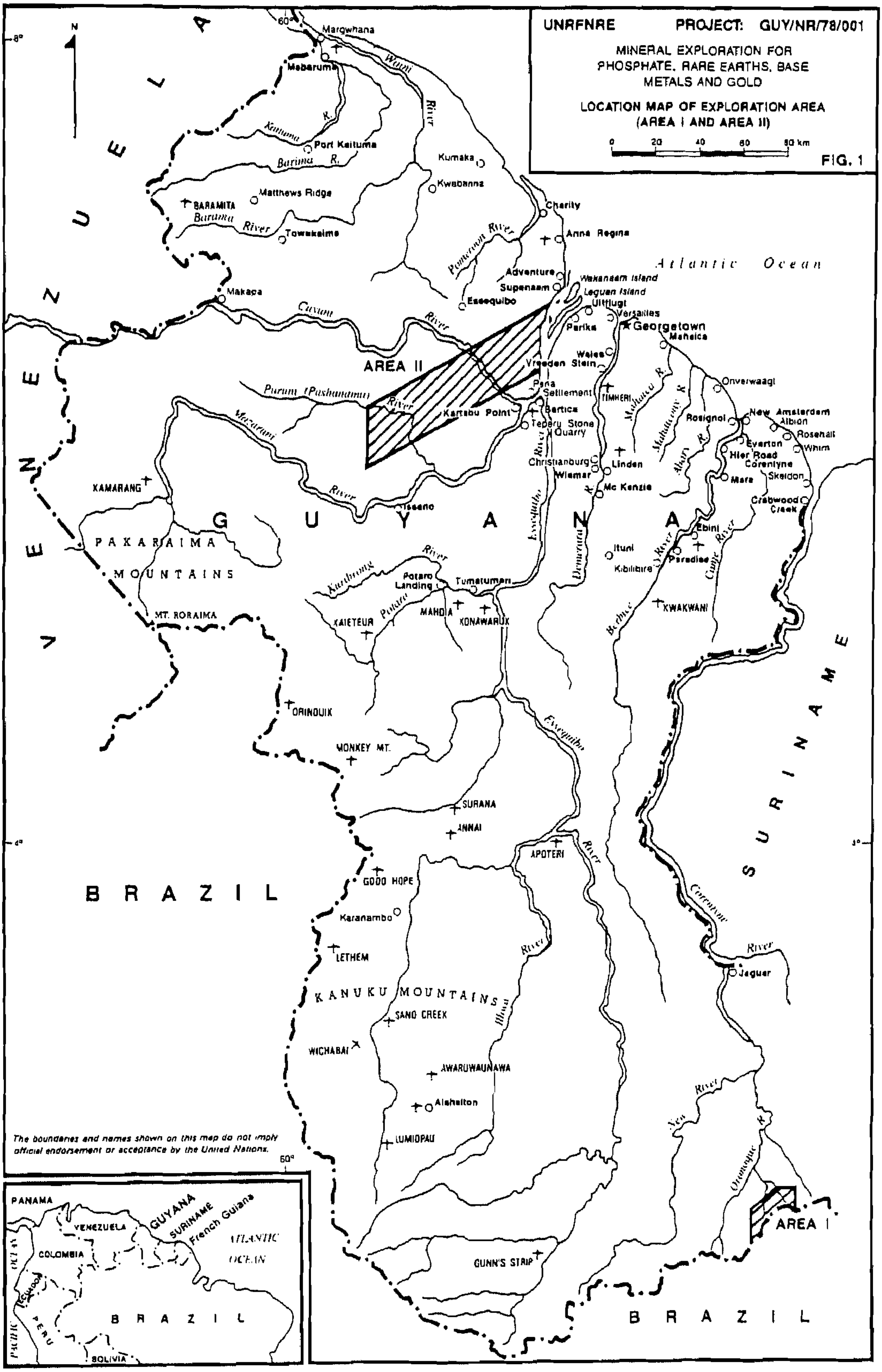
In Area I (250 sq.km.), Muri Mountains, the minerals sought comprised niobium, rare earths, phosphate and limestone, associated with a suspected carbonatite. Field work and diamond drilling followed by chemical, mineralogical and metallurgical investigations failed to indicate any of the minerals to be present in economically exploitable quantities.

Area II (2700 sq.km.), Eastern Cuyuni, was explored for base metals and gold. Results of airborne electromagnetic surveys flown by previous UNDP-financed projects were extensively utilized to plan geophysical ground follow-up work in the search for drill targets. Geochemical surveys were carried out on both regional and detailed scales. Five geophysical anomalies were drilled but proved to be caused by carbonaceous formations rather than base metal sulphides which were found in trace quantities only. Numerous other conductors were not drilled. However, no geochemical evidence has been obtained to indicate that these anomalies represent base-metal sulphide concentrations of potential economic significance.

The main gold mineralized zone of the old Peter's Mine can be traced southwards by geophysics and soil geochemistry beyond the Excluded Area for some 8 km. However, economic potential for gold in this extension zone was not proved.

Interesting anomalous gold values were detected in stream-sediment, panned stream-sediment concentrates and soils at eleven different areas within the Puruni Block sector and at one locality in the Cuyuni block sector, both within Project Area II. Except for the Million Mount and Jubilee Creek areas (Puruni Block) anomalous gold values are, however, sporadic. The anomalous gold values obtained in the Chinese Creek area (Puruni Block) appear to be spatially and probably generically related to the old Peter's Mine mineralized system. Follow-up gold exploration work is recommended for some of these areas.

Despite these gold showings which may be of interest, no Reported Minerals or Reported Mineral Deposits as defined by the Agreement between the U.N. Revolving Fund and the Government of Guyana can claim to have been found by the project in either Area I or Area II of the Exploration Area. Results of the Minimum Work did not justify âdditional work for the definition of ore-deposits as none were found.


UNRFNRE PROJECT: GUY/NR/78/001
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD
LOCATION MAP OF EXPLORATION AREA (AREA I AND AREA II)
0 20 40 60 80 km
FIG. 1
VENEZUELA
GUYANA
BRAZIL
SURINAME
Atlantic Ocean
AREA II
AREA I
Georgetown
PAKARAIMA MOUNTAINS
KANUKU MOUNTAINS
MT. RORAIMA
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PANAMA
VENEZUELA
GUYANA
SURINAME
French Guiana
COLOMBIA
ATLANTIC OCEAN
PERU
BOLIVIA
BRAZIL

1. INTRODUCTION

On 24 July 1980 the Government of Guyana (hereinafter called "the Government") and the United Nations Revolving Fund for Natural Resources Exploration (hereinafter called "the Fund") signed a Project Agreement (hereinafter called "the Agreement") to explore for minerals in two separate areas. The first area located in the extreme southeast of Guyana, comprises part of the Muri Mountains and was designated Area I. The second, situated in northern Guyana, is known as the Eastern Cuyuni Greenstone Belt and was designated Area II (Fig. 1). The Agreement became effective on 25 September 1980.

No Reported Minerals or Reported Mineral Deposits, as defined in the Agreement, could be identified within Areas I and II. Consequently, the provisions of Article IV of this Agreement in respect of the "replenishment contribution" do not apply.

In carrying out the programme, the project expenditure greatly exceeded the amount of US$650,000 equivalent which was required to be spent in carrying out the Minimum Work programme. Total expenditure at the termination of field work was appoximately two and one half million dollars (US).

This Final Report is submitted pursuant to Section 3.05 of the Agreement and describes the work carried out and the results achieved in Areas I and II. Much additional data is supplied in memoranda, notes and special reports written by project staff. That information and a large number of maps, laboratory data and other illustrative material are listed in Annexes 3 and 4 and have been deposited with the Guyana Geology and Mines Commission (G.G.M.C.)*.

2. GENERAL INFORMATION

2.1 DESCRIPTION OF EXPLORATION AREA; AREA I - MURI MOUNTAINS

Area I (Fig. 2), about 530 km south of Georgetown, is dominated by the Muri Mountains which form a range trending southwest close to the Brazilian border between longitudes 57°15'W and 57°30'W. The mountains, as well as the rolling granite plain around them, are uninhabited and heavily forested. The range is roughly 24 km long and up to 7 km wide; the altitude reaches 750 m above sea level, from a base level of about 240 m. It consists mainly of ridges, but includes, in the northeast, the conical mountain known as Twareitau**, some 5 km in diameter, with a thick laterite cap dipping gently to the southeast. The 250 sq.km. of Area I includes the Muri Mountains and surrounding plains.

Access to the area is only by river, or by helicopter. The nearest airstrip is at Camp Jaguar, some 190 km down the Muri, Oronoque and New rivers, or about 145 km in a straight line north from Twareitau. Thereafter, however, supplies must be taken as far as navigable up the East Muri River; a

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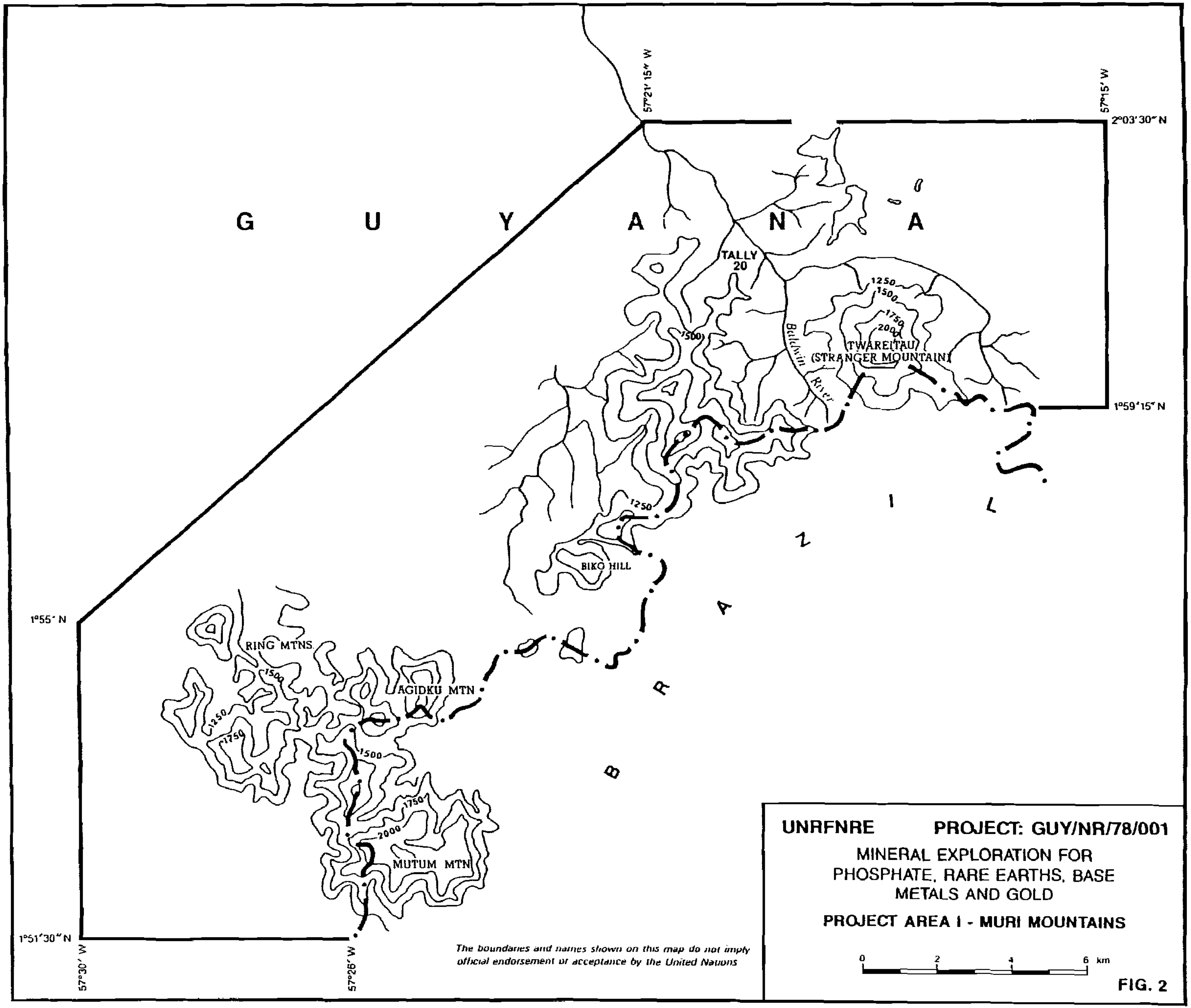
* To avoid possible confusion the initials G.G.M.C. have been used when referring to the Guyana Geology and Mines Commission and to predecessor organizations.

** Twareitu Mtn. is also known as Stranger Mtn.



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MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

PROJECT AREA I - MURI MOUNTAINS

FIG. 2

journey of 5 to 6 days. However numerous formidable rapids and falls render the entire journey very hazardous. Logistical support by this method becomes impossible when large amounts of exploration equipment and supplies are required. Float planes can also land on the Oronoque River at the confluence with the Muri River. Motorized canoes can get within a few miles of the Twareitau Mountain via the East Muri River which drains the area from the north.

Annual rainfall at Twareitau is estimated at 300 cm which falls chiefly during two rainy seasons, the longer lasting from May to the end of August, the other, less well defined, for three or four weeks during the December to February period. Temperatures vary within the 24-28°C range with relative humidity up to 100 percent. Vegetation is dense tropical rain forest forming part of the Amazon forest. Both lateritization and deep leaching of the soil are widespread.

2.2 DESCRIPTION OF EXPLORATION AREA; AREA II - EASTERN CUYUNI

Area II (Fig. 3) forms a parallelogram of 100 km (ENE direction) by 27 km (SSW direction). Georgetown is approximately 50 km west of the nearest point on the eastern margin of the area . Various zones excluded from the project are described in Annex B (Section II, Excluded Areas) of the Agreement.

For programming and reporting convenience the area was sub-divided into four blocks, using the meridians of longitude at 59°15' West, 59°00' West, and 58°45' West to define their limits. From west to east these blocks have been designated, respectively, the Puruni, Aremu, Cuyuni and Groete Creek Blocks.

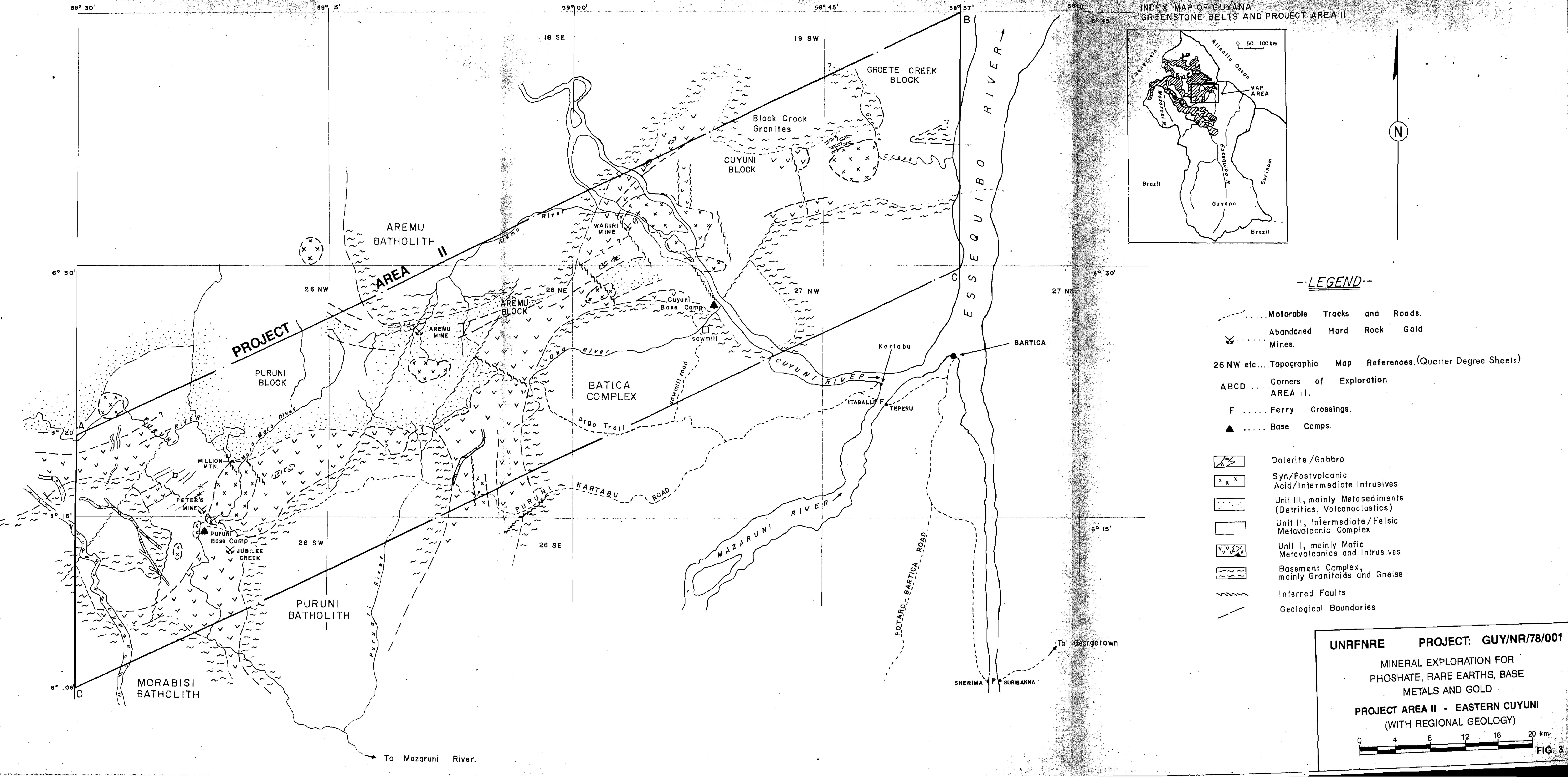
The eastern margin of the Groete Creek Block adjoins the Essequibo River and access to this is by water, usually from the township of Bartica but alternatively by crossing the Essequibo at the end of the road from Georgetown.

The Cuyuni Block is bisected by the Cuyuni River which joins the Mazaruni and Essequibo rivers close to Bartica. Access by boat is possible but time consuming due to the presence of waterfalls and rapids necessitating several portages of varying severity.

An unpaved road leads from Kartabu Point on the Cuyuni River to Peter's Mine landing on the Puruni River, tracing a sinuous course along the southern margin of the Exploration Area. It is suitable for use by 4-wheel drive vehicles only, but provides access to the Puruni Block. North-branching motorable logging tracks give access to both the Aremu and Cuyuni Blocks.

Altitudes vary from near sea level in the Groete Creek Block to 280 m a.s.l. in the Oko Mountains of the Cuyuni and Aremu Blocks. Topographic relief is influenced by the nature of the underlying rocks. The topographic highs are often due to the presence of highly siliceous or mafic rocks whilst low lying areas tend to indicate the presence of granitic rocks, or sediments.

The area is influenced by the trade winds and the temperature is fairly uniform, mostly between 24 and 31°C. Humidity varies between 75 and 100 percent and the average annual rainfall from 200 to 250 cm. It is distributed between a long wet season from April to August and a shorter season from November to January.



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MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

PROJECT AREA II - EASTERN CUYUNI (WITH REGIONAL GEOLOGY)

FIG. 3

2.3 REGIONAL GEOLOGY

The Guyana Shield consitutes part of the Pre-Cambrian South American Craton which is exposed north of the Amazon Geosyncline.

The country can be divided into two geological provinces (Wilson 1939) separated by a structural break in the form of an infilled rift valley which strikes E-W for at least 150 km in the region of latitude 4°North. South of this line granulitic biotite-garnet and charnockitic gneisses belonging to the Kanuku Group, and the metasediments of the Marudi Group, both invaded extensively by the South Savanna Granite, make up the Rupununi Assemblage. To the north of the rift valley there are metamorphosed volcano-sedimentary rocks of the Barama-Mazaruni Supergroup, gneissose granitic rocks of the Bartica Group and intrusive acid rocks of the Younger Granite Group.

In Area I, the Muri Mountains Alkaline Complex comprises two adjacent masses consisting largely of nepheline syenite which has intruded and locally fenitized rocks of the southern Guyana Granite Complex. An earlier extrusive phase is indicated by xenoliths of phonolitic rocks, and a late metasomatic episode is associated with the development of albite and pyrochlore. The topographically distinct, conical, Twareitau Mountain at the ENE end of the alkaline complex, probably consists in part of breccia and carbonatite obscured by ironstone laterite and latosols.

In Area II, the rocks are characteristic of a greenstone belt environment. They are present in typical litho-stratigraphic sequence of the lower Proterozoic Barama-Mazaruni Supergroup in the Cuyuni area. The volcanic rocks are believed to belong to magnesian tholeiitic and calc-alkaline series varying from basalts to rhyolites. The granitoid porphyritic intrusives within the Cuyuni Belt are thought to mark major centres of Pre-Cambrian volcanic activity.

2.4 PREVIOUS EXPLORATION

The first indications of an intrusive complex in the Muri Mountains were obtained from photo-geological studies carried out by the Overseas Division of the Institute of Geological Sciences, London*; using air photographs provided under a Canadian Aid Scheme in 1969, (Berrange, 1974). A re-interpretation (Johnson, 1976) later suggested the Muri Mountains to be syenitic whilst Twareitau was considered to be composed of alkali rocks and carbonatite.

Subsequently an integrated reconnaissance survey was carried out over the whole complex by the G.G.M.C. This included an airborne radiometric survey, combined radioactive and magnetic ground surveys, and stream sediment, heavy concentrate, soil, rock and laterite sampling (Barron, C.N. and Belshaw, W. 1978).

In Area II a large volume of information was collected as the result of five aerogeophysical surveys flown over the Cuyuni area between 1962 and 1972 and covering about 65 percent of Area II. The first aeromagnetic survey was flown in 1962/63. A Mark III INPUT System was employed on an airborne

* now the British Geological Survey

electromagnetic survey in 1964/65 but a magnetometer although installed was not operational over the Cuyuni area. A further airborne electromagnetic survey with a quadrative system was flown by Sherritt Gordon Mines Ltd. in 1966. A Mark V INPUT was used in 1967 to infill areas between the 1964/65 survey and had the advantage of 6 channel sampling as opposed to the 4 channel sampling previously used. This 1967 EM Survey also involved concurrent magnetic and scintillometer measurements. Finally in 1972/73 an aeromagnetic survey was flown over the part of the project area not covered in 1962/63. All the surveys were part of large programmes over sizeable regions of Guyana which extended in to the Eastern Cuyuni area. When considering the various geophysical methods separately there has been in total an average of 4 line km of geophysics recorded for every square km of the project area. This extensive airborne geophysical work must be one of the densest coverages anywhere in the world.

Of the airborne electromagnetic surveys, those flown by Canadian Aero Mineral Surveys Limited in 1964/65 (1966 Report) and financed by the United Nations revealed numerous anomalies. Many conductors extend for kilometres across many flight lines. These were interpreted as probably graphite or formational sulphide features, or a combination of both. One such long formational conductor was selected by G.G.M.C. for follow-up by way of a geochemical drainage survey west of Aremu River (Bruggman 1966), the results, however, were negative. Despite this a further follow-up was made using ground geophysics (Sampson 1966) which likewise gave disappointing results. By contrast a strong aeromagnetic anomaly 5.5 km S.W. of Matope Falls was found by Saha (1970) to extend for over 2 km and was interpreted as being caused by an iron-rich basic intrusion. According to Saha (1969), who summarized the ground geophysical follow-up to the United Nations airborne electromagnetic survey in northern Guyana, a total of 26 airborne EM anomalies had been followed up in similar fashion. Seven of these anomalies had been drilled without any discovery being made.

In the late 1820's gold was discovered in Venezuela in the western extension of the North Guyana greenstone belts. The El Callao field lies some 120 km west of the Guyana border near Matthews Ridge where it has been mined successfully since 1887.

The major gold discoveries in, then, British Guiana were almost exclusively alluvial or eluvial and made between 1880 and 1890 (Rodway 1887).

In 1863 the British Guiana Gold Company were already operating the Wariri Mine in gold bearing quartz on the south bank of the Cuyuni River and had even installed a small stamp mill. However, work stopped shortly after owing to the district being in dispute between Guyana and Venezuela. Peter's Mine, the first successful hard rock gold mine was discovered in 1904 by tracing back from alluvial workings, and operated by the British Guiana (B.G.) Gold Concessions Company Limited from 1905-1909. Average grade was about 0.8 oz Au/t. Surface diamond drillng was carried out by the Geological Survey of Guyana in 1963 when 3 of 4 holes intersected quartz veins with visible gold with grades of 4.0 to 5.0 oz /t. Several strong zones of silicification and pyritization were encountered along the projection of known veins. A considerable amount of information exists on this abandoned property and amongst other workers is described by Barron (1966) and Weissenborn (1966).

Subsurface exploration for gold by private enterprises since the turn of the century has been minimal. Most was carried out by the Anaconda Mining Company (Guyana) Limited from 1948 to 1950 at Aremu, Omai and Eagle Mountain. In looking for a large tonnage gold deposit this company bored 140 diamond drill holes totalling 72,000 feet of drilling, 15,000 feet of surface tunnels, one 400 foot shaft and 4000 feet of drifting. From 1947-49 Rupununi Gold Mines Limited (Canada) completed 53 drill holes comprising 30,000 feet of drilling at Marudi Mountain.

In the Mahdia area, Tiger River Mines Limited carried out 10,000 feet of diamond drilling at Lookout Mountain.

Six other small mining companies have carried out an aggregate of some 15,000 feet of diamond drilling.

3. EXPLORATION APPROACH

The geological models and exploration objectives are described below:

3.1 AREA I

Twareitau Mountain - The core of this conical shaped mountain about 5 km in diameter with a relative elevation of 1250 ft (380 m) and a flat "mesa" top, 300 m across, is, in all probability, a carbonatite. It was postulated that the flat mesa is a remnant of lateritic duricrust, up to 50 m thick, underlain by a weathering zone enriched in P_2O_5 to form masses of complex secondary phosphates of possible economic interest. A series of small diameter boreholes were planned to penetrate the ferruginous duricrust and to assess this postulated phosphate zone. In addition potential concentrations of rare earths were to be further tested by sampling natural caves, outcrops and soil grids.

Tally 20 - This name applies to an isolated outcrop of albitized rock about 4 km NW of Twareitau on the left bank of Muri River. This material contains Nb rich pyrochlore and was believed to indicate possibilities for finding associated uranium mineralization. It was decided to further assess this outcrop by trenching.

East Muri River - Twareitau Mountain is largely in the East Muri River catchment. Consequently, the alluvial flats downstream from Tally 20, where there is elevated radioactivity, is a natural accumulation of detrital heavy minerals, including pyrocholore. It was decided to text these alluvial flats by pitting.

3.2 AREA II

The aims of the project work in this area were the discovery of base metal sulphide and gold mineralization associated with the volcanogenic environment. The models are "Kuroko-related-type", (sensu lato), volcanogenic deposits located in the Pre-Cambrian greenstone belts of Canada and elsewhere with similar geology to the Eastern Cuyuni Greenstone Belt.

The main volcano-sedimentary units of the Cuyuni Group are (Gibbs 1979):

Unit 3 Upper metasedimetary unit containing graywackes, sandstones, conglomerates, pelites and cherts.

Unit 2 Middle metavolcanic unit with intermediate and felsic flows, tuffs, breccias, predominantly calc-alkaline in character. Also cherts, carbonaceous and limy pelites.

Unit 1 Lower mafic metavolcanic unit with basalts, dolerites and gabbros of tholeiitic character.

Using Canadian classical models Unit 2 appeared to have the greatest potential for massive, disseminated or interstitial base metal sulphides whilst Unit 1 has a theoretical potential for Cu-Ni mineralization. Unit 3 was considered to have the lowest priority.

In the Cuyuni Belt the gold deposits which have been exploited are typical Pre-Cambrian auriferous quartz vein deposits, generally steeply dipping. Most are located within several kilometres of contacts between granite and greenstone - a pattern of distribution typical also of the gold workings in Pre-Cambrian greenstone belts elsewhere. Consideration was also given to the possibility of the existence of deposits containing very fine gold, associated with sulphides but lacking associated vein quartz, e.g. exhalative gold mineralization.

4. ACTIVITIES AND RESULTS

4.1. PROJECT AREA I - MURI MOUNTAINS

4.1.1 Geology

The Muri Alkaline Complex consists of two adjacent masses of holocrystalline alkaline rocks, predominantly nepheline syenite, which have intruded and locally fenitised the surrounding rocks of the southern Guyana Granite Complex. Microsyenites, and occasional tinguaites are also present.

The country rocks consist mainly of biotite granodiorite, composed of somewhat strained quartz, microperthite, oligoclase and biotite, with occasional accessory apatite and zircon (usual granite zircon shape). The biotite, originally dark brown to light green becomes reddish brown near the Alkaline Complex, possibly related to fenitisation. A green amphibole is also present in some samples, while one sample examined carries a lavender-coloured arfvedsonite, together with amphibole, and banded amphibolite gneisses have also been encountered near the edge of the alkaline complex. One sample is a flaggy amphibolite of variable composition, suggesting derivation from a sedimentary or pyroclastic-derived sequence. It consists essentially of oriented hornblende, sodic plagioclase, quartz and opaque minerals.

The age of the granite (1805 $\pm$ 40m.y.) is taken from Berrange, 1974, and is based on several Rb/Sr whole rock determinations, as well as other data. The nepheline syenite sample from Mutum Mountain dated by Issler et al (1975) was unsuited for Rb/Sr determination, but a K/Ar determination of perthite provided an age of 1026$\pm$ 28 m.y.; likely to be a minimum age. This would be consistent with the Rb/Sr ages of other complexes along the northern edge of the Amazon Basin, which fall between 1335 and 1880 m.y. The composition of the conical, topographically discrete Twareitau mountain cannot be accurately determined because of lack of exposures. It is assumed to consist largely of nepheline syenites, but a considerable radiometric anomaly over the central, magnetite-bearing laterite cap, and over the western flank suggest the possibility of underlying sovite.

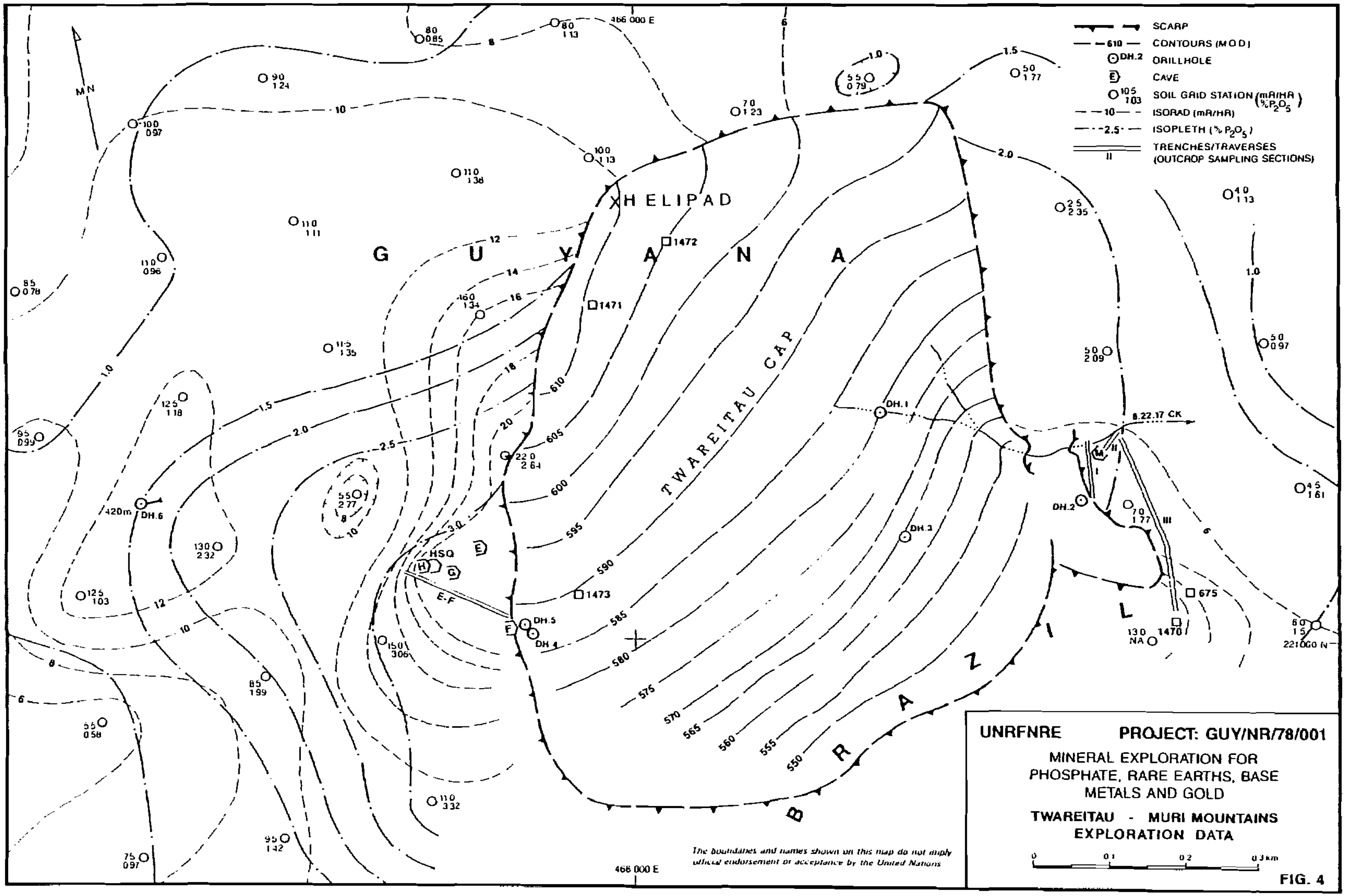
4.1.1.1 The Alkaline Complex

Rocks of the Alkaline Complex are well exposed in the lower part of the area, but are rarely found above the 500 m elevation, i.e. about half way up the slopes of Twareitau. This reflects the intense leaching above the Oronoque surface in southern Guyana.

The principal exposed rock types are undersaturated syenites, of which the commonest is a medium to coarse grained rock of hypidiomorphic granular texture. Microcline-microperthite is dominant together with nepheline, ferrohastingsite and brown or green mica. A darker, finer-grained variety with a sacchoroidal texture carries more orthoclase cryptoperthite, together with nepheline and aegirineaugite. The same accessories occur in both varieties, namely apatite, bipyramidal zircon, sphene, wöhlerite, magnetite and pyrrhotite.

Approximately equivalent chemically to the syenites are fine grained tinguaites, found throughout the Complex as black, often porphyritic rocks. They exhibit a characteristic tinguiatic groundmass texture of fine alkaline pyroxene needles together with nepheline and alkali feldspar. Phenocryst phases are nepheline and feldspar. Accessories include pectolite, cancrinite and sphene. Exposures of these rocks, sometimes as xenoliths in syenite, have been recorded in the Baldwin River at the west foot of Twareitau, and in falls in the east Muri River at the northern foot of the same mountain.

Carbonatite is believed to be present under Twareitau Mountain, which appears, morphologically, to 'intrude' the northeastern exposure of the alkaline complex. Magnetite-hematite float, rich in niobium and strontium, is found on the central laterite cap and west to southwest slopes. This quadrant of the mountain also carries a high radiometric anomaly at the base of the laterite cap, streams of pH 8 1/2, abundant secondary rare-earths phosphate, and highly anomalous strontium and lanthanum in the soils.



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MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

TWAREITAU - MURI MOUNTAINS EXPLORATION DATA

FIG. 4

Fenitization: This form of alteration affects all the major rock types - syenites and tinguaites - over areas from a few square centimetres to hundreds of hectares. It takes the form of soda metasomatism, characterized by the development of albite along grain boundaries, then gradually replacing all the major phases present until an albitite results. The altered rocks are readily recognized, being white and friable, and consisting of albite laths, often forming a felt, with aegirine-augite, carbonate (Ca, Sr) fluorite, pyrochlore, zircon, etc.

Another type of metasomatism is associated with the development of sodalite, cancrinite and calcite, but seems to be more prominent in the southwest of the Complex, though carbonated syenites have been reported north of the Muri River, north of Twareitau.

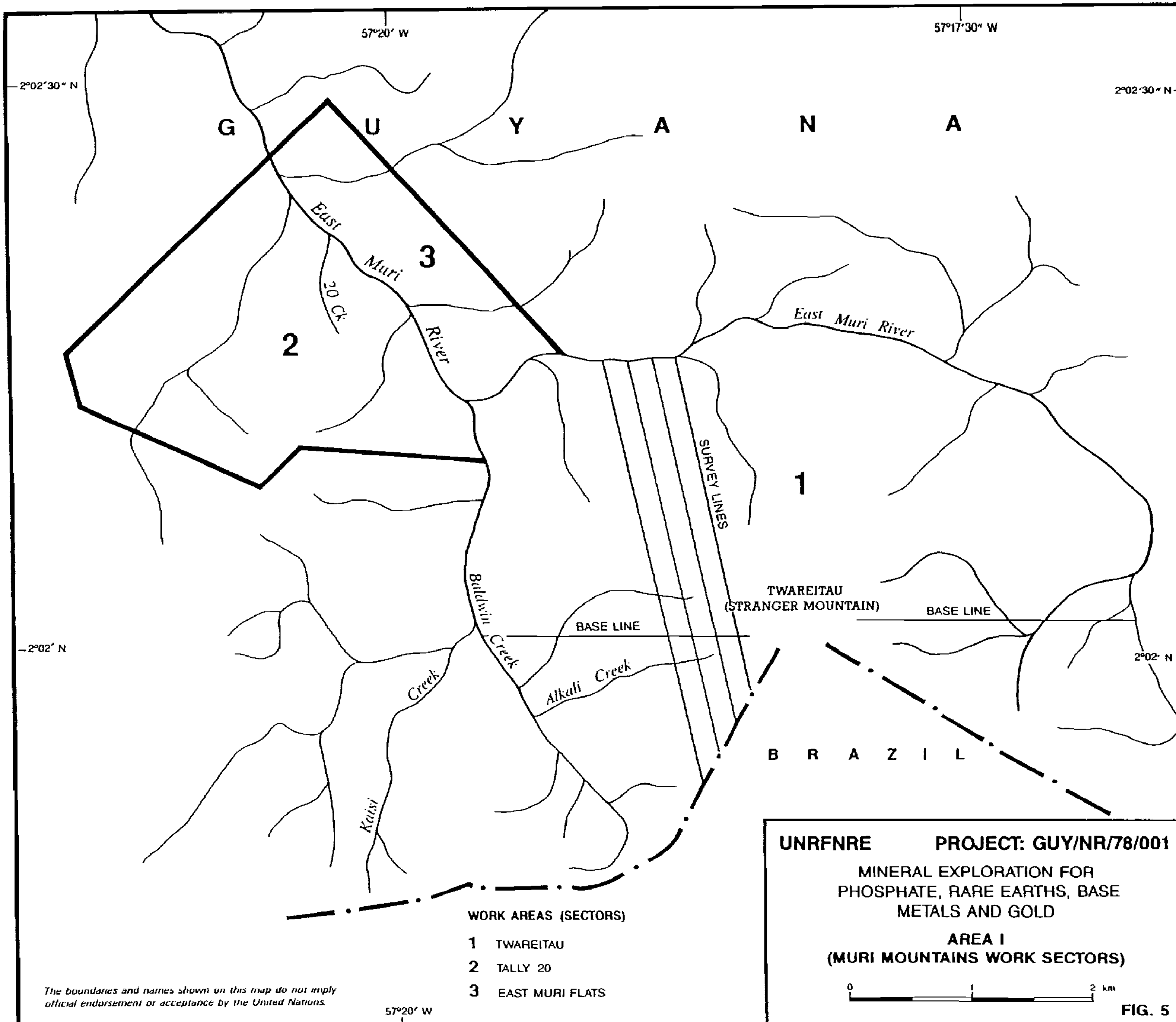
4.1.1.2 The Twareitau Cap (Clastic Formation)

This is largely a breccia of material which ranges in size from clay to sub-angular blocks many metres across and which covers the flat topped summit of Twareitau Mountain (Fig. 4). The formation varies in thickness from over 150 m in the scarps of the south-east to a metre or two in the west where it rests on phosphate rock in Cave F. This is the only locality where the base of the clastic formation is observed. The base in Cave F is some 585 m. a.s.l. while the lowest exposure of the clastic formation is at an elevation of 475 m in the southeast. In Caves G, H, and HSQ, (Fig. 4), bands of fine material with angular gravel size fragments form beds up to 20 cm thick, resting on a mass of large boulders. These beds dip from 0 to 20 degrees towards the north-northeast. Crude bedding has also been seen in the south-eastern scarp. It is not clear whether the fragment size diminishes upwards. The largest fragments have been seen in the southeast, but some up to 35 cm diameter are not uncommon in the scarp just below the helipad, and in other locations all around the cap (the southern part has not been extensively examined). The cap may represent a relic land surface preserved by faulting or doming.

Fragments of fresh tholeiitic dolerite, nepheline syenite, tinguaite and unidentified fine-grained volcanics and rounded vein quartz have been recognized in the formation. Of possibly more local derivation is the 'iron ore' and phosphate rock. The former, which has been tentatively identified as roedbergite relic from an inferred underlying carbonatite, is very abundant in some places, e.g. in the middle part of Section I (southeast scarp), as float around DDH Muri 3, in the lower part of drillhole Muri 2, and in drillholes Muri 4 and 5. Fragments of phosphate rock also occur in the formation: notable examples are two from the southeast line from the helipad (47), from Section III (Spec. 675) and the large (over 3 m diameter) rounded "boulder" at the foot of 'M' Crag (Spec. 689).

4.1.1.3 The 'Phosphate Rock'

This formation is only exposed in the scarp on the west of the Twareitau cap beneath the clastic formation. The total proved north-south length of the 'phosphate formation' is only 130 m (Caves E to F), though the high thorium anomaly associated with it extends some 400 m further north. Its proved depth, from its upper surface in Cave F to the floor of Cave H is not more than 15 m and its east west dimension (again Caves E to F) about 40 m. Using a specific gravity of 2, this indicates a total of some 150,000 tonnes assuming a solid body of these dimensions.


57°20′ W
57°17′30″ W
2°02′30″ N
2°02′30″ N
G U Y A N A
East Muri River
20 Ck
3
2
1
SURVEY LINES
TWAREITAU
(STRANGER MOUNTAIN)
BASE LINE
BASE LINE
Baldwin Creek
Alkali Creek
Creek
Kaisi
2°02′ N
2°02′ N
B R A Z I L
WORK AREAS (SECTORS)
1 TWAREITAU
2 TALLY 20
3 EAST MURI FLATS
The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.
57°20′ W
UNRFNRE
PROJECT: GUY/NR/78/001
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD
AREA I
(MURI MOUNTAINS WORK SECTORS)
0 1 2 km
FIG. 5

Allowing for 90 percent voids, only some 15,000 tonnes may be present of which only some 150 tonnes are sight-proven. The maximum P_2O_5 content indicated by chip sampling is about 5 percent. A careful study of the rest of the north, west and east scarps has resulted in the recognition of fragments of the rock in the clastic formation, but no additional outcrops; neither has it been observed in any of the drill holes.

Petrologically, the 'phosphate rock' is hard compact, fine-grained and varies in colour from cream to dark purple-red. In some places a blurred structure can be made out, in which sub-round bodies a few centimetres across, and of a cream colour, are separated by a network of similar material, but brown in colour.

Mineralogically, X-ray studies have shown that the major crystalline phase minerals in the phosphate rock are strengite and hydroalumino-phosphates such as goyazite (Sr) and florencite (REE), together with gibbsite, goethite, purpurite (Mn) and probably kaolinite. The pale cream colour of some of the specimens carrying notable amounts of iron is puzzling.

The chemical and radioactivity characteristics of the rock are set out in a later section. (Paragraph 4.1.2.1 (iv), Radioactive Anomalies.)

The phosphate rock has also been affected by lateritization, though to a much lesser extent than the overlying clastic deposit. It has a considerable amount of alumina and iron oxide (hydroxide); presence of the later could reflect the oxidation of vivianite (ferrous phosphate) possibly formed from original calcium phosphate, to strengite and hematite. Leaching may also have de-phosphatized the rock near the surface and along joints.

4.1.1.4 The East Muri River Flood Plain and Alluvium

The flood plain of the east Muri river (Fig. 5) extends at least 12 km from the foot of Twareitau. Sandy terraces above Tally 20 Creek presumably derive from an earlier erosion cycle. The river drains both granite areas with sandy soils and the Alkaline Complex, but the four pits put down to water table (1.2 and 1.5 m) were almost entirely in a very sticky clay - only the lower pits, entirely outside of the Alkaline Complex, included a 30 cm sand horizon but at different levels in each pit. Rocks are generally rare in the flood plain; those seen around Tally 20 being exceptional.

4.1.1.5 Proposed Structural Model of Twareitau

Evaluation of all data presently available from the Twareitau area appear to confirm the basic hypothesis that a carbonatite core is present under the lateritic capping of the mountain.

On the basis of drill hole and morphological evidence and from the extent and physical character of the indurated lateritic capping, it is inferred that a possible carbonatite plug of elliptical circumference of maximum horizontal dimensions 600 m x 800 m is emplaced within nepheline syenite which forms the slopes of the conical mountain.

South American carbonatites are typically deeply weathered and can display either negative or positive relief features. In the near equatorial region, the Seis Lagos (Amazonas, Brazil) carbonatite lateritic weathering zone of completely decomposed rocks extends down to 233 m and iron oxidation continues at least to 395 m depth. Massive laterite covers the inferred carbonatite at Cerro Impacto (Venezuela) and in Araxá, 20° South of the Equator (Minas Gerais, Brazil) the lateritic weathering zone reaches 200 m.

Lateritic zones of weathering formed by karstic processes will typically have random textures resulting from repeated leaching of primary constituents and precipitation of secondary minerals and shrinking and collapsing of the weathering carbonatite. The final assemblages of chemically stable mineral aggregates will tend to form heterogenous mixtures arranged in irregular zones without sharp boundaries.

Twareitau Mountain has a positive topographic relief standing almost 400 m above the foot of its erosional base. The flat summit is a gently sloping mesa of indurated laterite (duricrust). There is a break in the slope line about 200 m below the mountain top and a number of intermittent springs around the mountain are located approximately on this contour line. The steeper slope above is composed predominantly of massive blocks of indurated laterite and there is abundant evidence of cavernous phenomena. The spring line could indicate the floor of an underground drainage system of meteoric waters. The more moderate slope below is covered by a mixture of latosols and fragments of hardened laterite.

The flat duricrust capping appears to be a remnant of a fossil peneplain. Numerous caverns and hollow spaces filled with a variety of secondary weathering material, including pebble exotica, are well exposed along the steep edges of the mountain mesa and in borehole intersections. Texture and composition of the capping have been investigated to an approximate depth of 50 m.

The mass of the capping is composed of secondary minerals which form heterogenous aggregates of brecciated textures with colloform and botryoidal incrustations. They include oxides, hydrated oxides, and phosphates of iron, manganese, aluminium and rare earths such as haematite, goethite, limonite, gibbsite, psilomelane, cerianite, woehlerite, strengite, florencite, goyazite, gorceixite, crandallite and variscite. Only exceptionally resistant primary minerals such as anatase, zircon and pyrochlore have been found as minute fragments or isolated grains.

Surrounded entirely by rocks with low iron content (e.g. nepheline syenite) the ferruginous capping is probably an autochthonous formation developed over an iron-bearing carbonatite. The absence of residual magnetite in laterite samples suggests that the hypothetical carbonates in depth may include substantial amounts of ankerite and/or siderite.

The limited number of analyses appears to indicate incipient zoning expressed in higher Fe at the top and higher P_2O_5 at the bottom of the capping sequence. However, in general no evidence of any layering or stratification of mineral components or any significant trend in changing chemical composition could be identified in the first 50 m of the Twareitau capping.

Composition of the weathered zone beneath the ferruginous capping can only be a subject of speculative inference. It may be expected that the content of oxidized iron will decrease with depth and that the composition of phosphates will change. At some point secondary Ca phosphates may appear and prevail gradually downwards over the Fe-Al-RE types. It is foreseen, however, that the secondary phosphates, even at deeper levels, will be concentrated in homogeneous, horizontal layers.

4.1.2 Geochemical Exploration

The geochemical exploration programme in the Muri Mountains area included grid soil sampling, extensive systematic sampling of outcrops along profiles, in trenches, and natural caves, sampling over radiometric anomalies and alluvial pitting.

A total of 585 soil, rock and alluvial concentrate samples were collected during the 1980 field campaign and analyzed in specialized laboratories in Brazil, Canada, France and USA. 289 soil samples were analyzed for P_2O_5 by G.G.M.C. in Georgetown. Mineralogical analyses, including scanning electron microscopy, energy dispersive X-ray analysis, cathodoluminiscence, and mass spectrographic analysis were performed on selected rock samples and compiled by consultant A. Mariano (1981). Results and conclusions of this work are discussed below.

4.1.2.1 Twareitau Mountain

(i) Soils:

Soil samples were collected over a 200 x 200 m grid covering the slopes of Mt. Twareitau. Each sample averaged 1 lb in weight and was taken after removal of the organic top soil. A total of 289 samples were analyzed for P_2O_5 (Table 1). Twareitau soils are of no interest as a commercial source of either P_2O_5 or rare earths.

Table 1

Twareitau: Frequency of P_2O_5 % in Soils

P_2O_5%	No. of Samples	Frequency %
0.01 - 0.50	107	37
0.51 - 1.00	125	43
1.01 - 1.50	38	13
1.51 - 2.00	11	4
2.01 - 2.50	3	1
2.51 - 3.00	3	1
3.01 - 3.50	2	1
3.51 - 4.00	0	0
	289	100

P_2O_5 isopleths outline fairly well the Twareitau summit plateau in general and the SW phosphate caves, in particular (Fig. 4).

Samples containing over 1.25 percent P_2O_5 were further analyzed for Fe, Ce, La, Y (Table 2). The soils are enriched in RE and all are high in Fe. Niobium has not been determined in the soils as the Nb concentration of the underlying parent rocks is low.

Table 2

Twareitau, Fe, Ce, Y and La in Soils

P_2O_5%	Fe %	Ce %	Y %	La %
3.32	38.3	1.88	0.077	0.84
3.06	36.0	1.95	0.082	0.77
2.30	38.1	1.54	0.039	0.58
2.10	30.8	1.44	0.084	0.75
2.00	53.7	1.04	0.170	0.49
1.70	22.9	1.07	0.029	0.67
1.70	23.2	0.86	0.032	0.60
1.70	12.0	0.60	0.032	0.32
1.70	31.5	1.46	0.034	0.53
1.70	32.9	1.62	0.047	0.63
1.60	32.9	1.40	0.040	0.53
1.60	33.2	0.53	0.030	0.38
1.40	17.4	1.09	0.030	0.80
1.40	20.7	0.55	0.027	0.36
1.40	26.2	1.04	0.030	0.53
1.30	23.8	0.40	0.032	0.28

(ii) Phosphate caves:

The edges of the indurated laterite cap of Twareitau often stand up as cavernous cliffs or piles of block-rubble. Particularly on the SW and SE of the cap of the mountain there are several shallow caves. It is from these caves that samples with high P_2O_5 content were collected in previous prospecting campaigns.

Caves (Fig. 4) were subjected to detailed chip sampling in order to determine average P_2O_5 concentrations. Where feasible, sites with presumed high phosphate content were visually reviewed and sampled separately. Results are tabulated in Table 3.

Table 3

Twareitau - Chip Sampling of Caves: Values (in percentage)

Composites	P_2O_5	Fe	Ce	Y	La	Eu	Sm	Gd	Pr	Nd	Nb
Cave - E	2.63	44.93	1.337	0.061	0.563	< 0.005	0.065	< 0.010	0.071	0.151	0.037
Cave - F	7.5	42.5	2.365	0.102	0.920	< 0.005	0.086	< 0.010	0.139	0.309	0.042
Cave - G	2.4	26.8	1.840	0.053	0.515	< 0.005	0.024	< 0.010	0.083	0.137	0.035
Cave - H	5.5	34.4	2.020	0.122	0.783	< 0.005	0.103	0.037	0.122	0.240	0.065
Cave - HSQ	3.1	27.6	1.695	0.125	0.897	< 0.005	0.048	0.025	0.112	0.206	0.046
Ø	4.23	35.25	1.820	0.093	0.736	< 0.005	0.065	0.018	0.105	0.209	0.045
Selected phosphate composites											
Cave - E	3.1	37.1	1.820	0.079	0.715	< 0.005	0.066	< 0.010	0.109	0.206	0.049
Cave - F	13.6	40.1	2.615	0.060	0.975	< 0.005	0.069	< 0.010	0.136	0.274	0.026
Ø	8.35										

A composite sample from Cave F was analyzed in detail for RE by solvent extraction in the laboratories of Rhône-Pouleuc in France. The results were as follows:

	%
P_2O_5	7.4
REO + ThO_2	4.1
S	0.2
C	0.5

Component REO + ThO_2 was further analyzed; the major components of this fraction (REO + ThO_2 = 100%) are:

	%
La_2O_3	17.6
CeO_2	67.0
Pr_6O_{11}	3.0
Nd_2O_{11}	6.0
ThO_2	1.7
	95.3%

The mineralogical composition of rock outcrops in the caves was exhaustively investigated (A. Mariano, 1981). This study revealed that the indurated laterite constituting the wall-rocks in the caves is a heterogenous aggregate composed predominantly of Fe, Al, Mn hydroxides and oxides such as goethite, haematite gibbsite and psilomelane. Following in importance are secondary hydrous phosphates of Al, Fe, Ba, Ce, Sr with variable content of lanthanides such as strengite, florencite, gorceixite, goyazite, variscite and crandallite. Occasionally significant concentrations of cerianite were detected. Zircon and anatase occur as accessories. A few fragments (5 micron) of leached pyrochlore grains were found in samples from Cave H. Neither apatite nor magnetite were observed in any of the examined samples.

(iii) Sections and trenches:

Continuous chip/channel sampling was carried out over selected outcrop traverses and trenches (Fig. 4) on the SW and SE slopes of Twareitau in order to investigate the average composition of laterite formation around and below the level of the "Phosphate Caves". Analyses indicate a composition comparable to that of the caves and boreholes.

Location	P_2O_5	Fe	Ce	Y	La
Trench E/F	0.95	39.5	0.983	0.020	0.242
Section I	3.42	15.9	0.893	0.033	0.640
Section II	4.72	25.9	4.207	0.062	3.003
Section III	1.70	7.86	0.386	0.020	0.223

(iv) Radioactive anomalies:

Spots of high radioactivity were detected at several locations on the flat top of the cap of Twareitau (Fig. 4). Analytical results indicate that radioactivity is caused by thorium rather than uranium. The ratios compare well with those of the cave samples (Table 4).

Table 4

Twareitau - Analytical Results of High Radioactivity Samples

Sample Location	Fe %	U ppm	Th ppm	Ce %	La %	Eu ppm	Sm ppm	Nd %	Tb ppm	Dy ppm	Yb ppm	Lu ppm
1470	45.3	8.2	700	1.03	0.95	31	62	0.110	13.0	110	110	15
1471		9.5	520									
1472	36.2	7.0	200	0.55	0.42	37	92	0.098	6.7	34	11	2
1473	16.5	19.2	1.300	3.20	3.90	220	620	0.840	90.0	600	300	38
Cave F		6.1	430									
Cave G		11.0	300									
Cave H		13.5	520									
Cave HSQ		12.6	580									

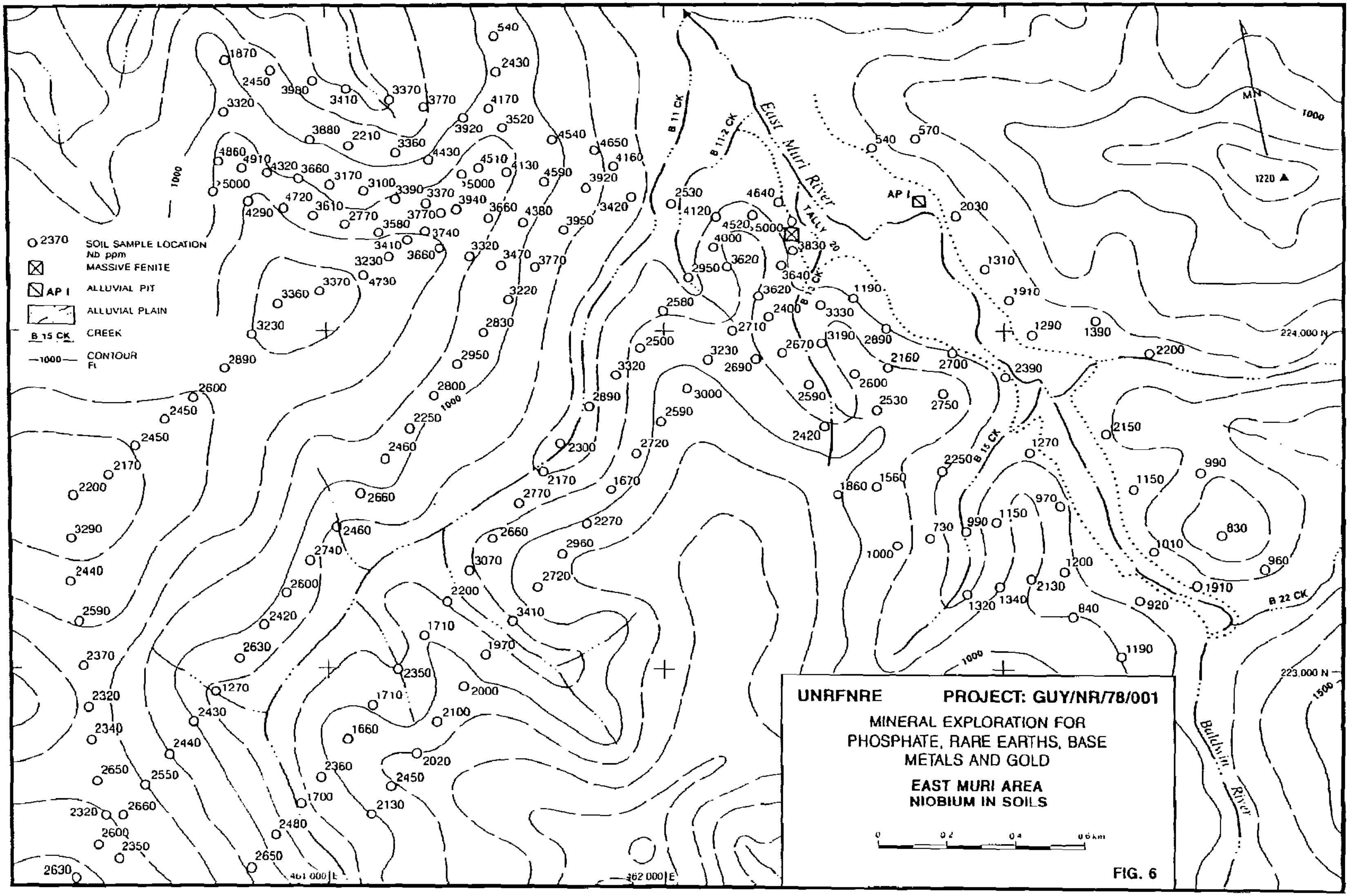
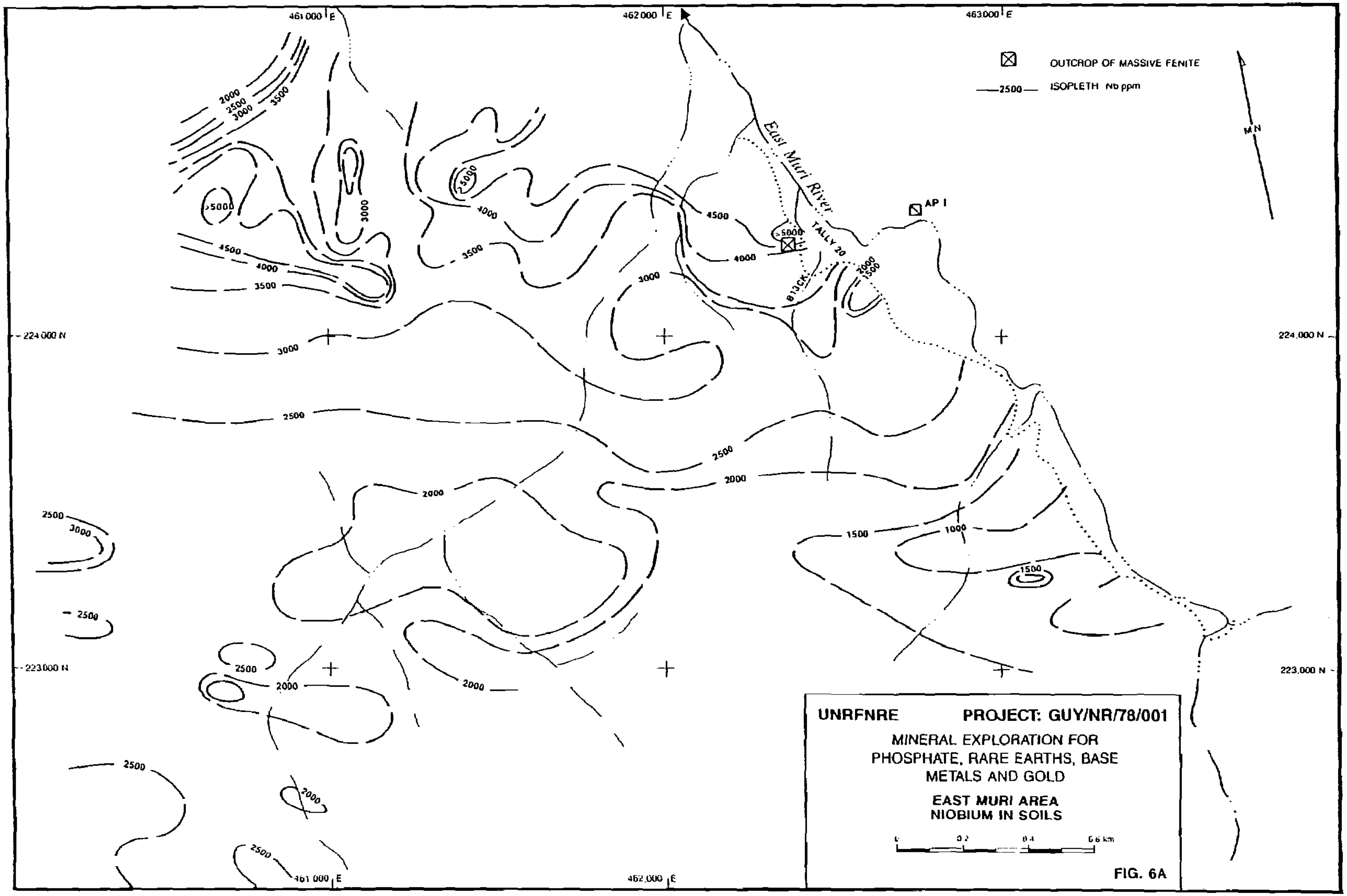

SOIL SAMPLE LOCATION Nb ppm
MASSIVE FENITE
AP I ALLUVIAL PIT
ALLUVIAL PLAIN
B 15 CK CREEK
—1000— CONTOUR Ft
East Muri River
Baldwin River
B 11 CK
B 11-2 CK
B 15 CK
B 22 CK
TALLY 20
AP I
MN
1220
224,000 N
223,000 N
461 000 E
462 000 E
UNRFNRE
PROJECT: GUY/NR/78/001
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD
EAST MURI AREA
NIOBIUM IN SOILS
0 0.2 0.4 0.6 km

FIG. 6



UNRFNRE PROJECT: GUY/NR/78/001

MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

EAST MURI AREA
NIOBIUM IN SOILS

FIG. 6A

4.1.2.2 East Muri Area

(i) Soils:

Soil samples were collected over some 7.5 km^2 along both sides of the East Muri River NW of Twareitau. Samples were analyzed for niobium and selectively for fluorine (Table 5 and Figures 6, 6A and 7).

Table 5

East Muri Area - Niobium Analyses of Soils

Range: Nb ppm	Frequency: Samples	%
1 - 500	1	0.5
501 - 1000	15	7.0
1001 - 1500	16	7.9
1501 - 2000	14	6.9
2001 - 2500	46	22.7
2501 - 3000	40	19.7
3001 - 3500	26	12.8
3501 - 4000	21	10.3
4001 - 4500	11	5.4
4501 - 5000	10	4.9
+5000	3	1.5
	Totals: 203	100.0

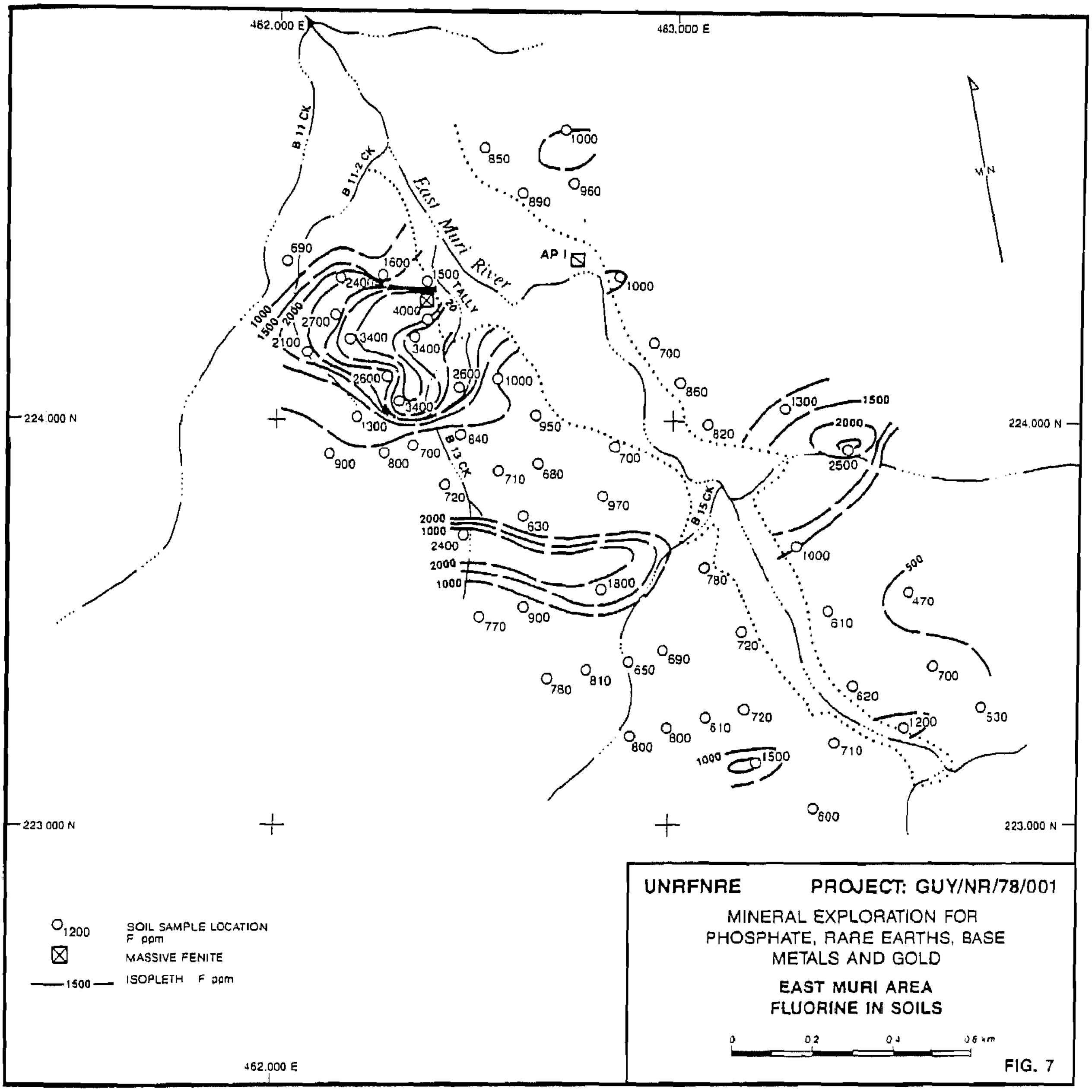
The zones of high Nb content trend E-W (105°) and include the massive fenite outcrop in Tally 20. Two zones show consistent values of more than 4000 ppm Nb. The concentration of niobium is too low to be of commercial interest.

High fluorine contents correspond well with those of niobium and exposures of massive fenites (Fig. 7). Maximum concentration of 0.4% F is closely related to the massive fenite outcrop in Tally 20.

(ii) Rocks of Fenite Zones:

A small outcrop of extensively albitized rock carrying visible fluorite was found exposed near the mouth of the Tally 20 creek (Fig. 7).

Further prospecting led to the discovery of fresh outcrops of albitized nepheline syenite extending some 850 m along the SW bank of the East Muri River. According to mineralogical investigations (Mariano, 1981) the altered rock is a product of fenitization of nepheline syenites which underlie most of the East Muri area.



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MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

EAST MURI AREA
FLUORINE IN SOILS

FIG. 7

In some areas the host rock has been intensely altered into massive fenite such as the one found at Tally 20. Major components of this rock are albite, aegirine-augite, nepheline and calcite. Mineralogical specimens selected from the Tally 20 outcrop contain up to 10 percent fluorite, 5 percent zircon and 2 percent pyrochlore by volume and also accessory apatite. Average pyrochlore crystals are generally very small (0.01-0.05 mm), and have a maximum size of 0.3 mm. Tantalum was found to partially substitute for Nb in Tally 20 pyrocholore.

A composite sample from the massive fenite outcrop at Tally 20, which is the best mineralized observed in the East Muri area, shows the following average composition:

%		ppm		ppm		ppm	
Fe	3.8	Nb	3,006	Ce	310	Eu	1.9
F	1.0	Ta	51	La	190	Tb	0.9
		U	43.4	Nd	90	Yb	4.7
		Th	25	Sm	11	Lu	0.71
						Dy	6.3

The above concentrations of are of no commercial interest.

Outcrops of fenitized nepheline syenite display irregular forms and variable textures and degrees of alteration. It is not clear, however, whether the fenitization process was structurally controlled or the occurrences are enclaves of deuteric, autometasomatic origin.

(iii) Alluvial sediments:

Four pits were excavated in the alluvial plain of the East Muri River. They were sunk mostly to the water table only and were located on the outer side of river bends. Pit I was sited on the east side of the river above the mouth of creek B11 Ck (Fig. 7). The area is underlain by granitic rocks with gneiss enclaves, alkaline rocks and superficial cover. Pit II is some 1.5 km downstream from Pit I below the mouth of B11 Ck creek which drains pyrochlore-bearing fenite areas. Pits III and IV are about 0.5 km and 2.5 km further downstream (outside the area covered by Figs. 6 and 7).

Pits I and II were sampled by collecting 2 buckets of alluvium (about 20 l) from each 1 foot depth interval down to 5 ft (1.52 m). Samples were panned and concentrated by heavy liquid separation before microscopical examination and chemical analysis.

The alluvium is composed predominantly of clay and fine sand. The accumulations are estimated to be shallow as bedrock is frequently encountered in the East Muri river.

Minerals identified in the samples from Pits I and II include the alkaline paragenesis: zircon, Nb-rutile, haematite, goethite, florencite and pyrochlore. Other minerals present in the heavy fraction are anatase, tourmaline, hornblende, sillimanite, epidote and andalusite. All samples contain sericite and muscovite. Occasionally found were magnetite, biotite, garnet, xenotime, spinel, kyanite, monazite, pyroxene and pyrite. Chemical analyses were performed on composite samples from all four pits on density fraction 2.95 g/cm^3. Quantified interpretation from Pits I and II gave the following grades:

Pit I: 11.25 g con 2.95 g/cm^3
sample volume 5 x 0.02 m^3
depth 1.5 m
Nb 0.5 g/m^3
Ta 0.035 g/m^3
U 0.016 g/m^3

Pit II: 16.24 g con 2.95 g/cm^3
sample volume 5 x 0.02 m^3
depth 1.5 m
Nb 0.35 g/m^3
Ta 0.039 g/m^3
U 0.018 g/m^3

The grades of potentially economic mineral components in the investigated sector of East Muri River alluvium are below levels of commercial interest.

4.1.3 Geophysical (Radioactivity) Surveys

Readings on the soil grids were made with an AERE Type 1592 Gamma Ray Scintillometer (Fig. 4). Highest values were recorded in: (i) the phosphate rock caves and adjacent areas (and near large boulders, e.g. in Crag M), and (ii) over certain areas (of a few hundred hectares) in the B 3/B 11 watershed, where 1976 reconnaissance soil sampling recorded high niobium. Later testing of many of the soil samples with an Urtec Type 135 Gamma Ray Spectrometer showed that those from (i) read mainly in the Th window, whereas those of (ii) carry more U. The highest Scintillometer readings in both areas exceeded 300 microroentgens/hr. Good Urtec readings also occur from DDH Muri 4 sludge. Unfortunately no sludge was recovered from the first two holes or from the possibly phosphatic lower part of Muri 3. It was suggested that radioactive gas might be responsible for (i). But the only Rn isotope with a life of over 4 seconds is Rn 222 (3.85 days) which is in the U238 decay chain, not the Th 232 chain. Consideration of ionic charge and radius indicate the ready accommodation of Th in place of Sr and REE, likewise U replacing some Nb, so that the results accord well with the mineralogy of the two areas. However, it is also possible that U (and ? Nb) might have been present in the phosphate rock, but might have been leached out as uranyl ion on oxidation leaving the solely 4-valent Thorium ion.

When the 'U' and 'Th' Urtec readings are plotted as U - Th on a frequency histogram, two populations are in evidence Th 0 - 0.75 and 0.75 - 5.6, and these correspond, with only a few exceptions, to the readings from samples in areas (i) and (ii) respectively, providing quantitative support for the correlation already mentioned above.

4.1.4 Diamond Drilling

Six boreholes (Fig. 4) were drilled in Twareitau Mountain totalling 260.44 m. Of these 5 vertical holes were located on the mountain tabletop and one inclined borehole was drilled on the western slope some 170 m below the cap. Depths of individual boreholes are as follows (Figures 8 and 8A):

DH-1	44.8 m
DH-2	51.6 m
DH-3	49.4 m
DH-4	38.4 m
DH-5	12.2 m
DH-6	64.0 m

The textural and compositional complexity of the duricrust and the small diameter hole (AX) were two main factors causing a very low core recovery, which was on average less than 15%. In addition, frequent caverns and open spaces encountered in boreholes made deeper penetration impossible.

In spite of the poor core recovery a number of rock samples from various depth intervals and the drill sludge were exhaustively investigated by chemical and mineralogical analysis. The results correlate well with those obtained from caves and other outcrops on Twareitau.

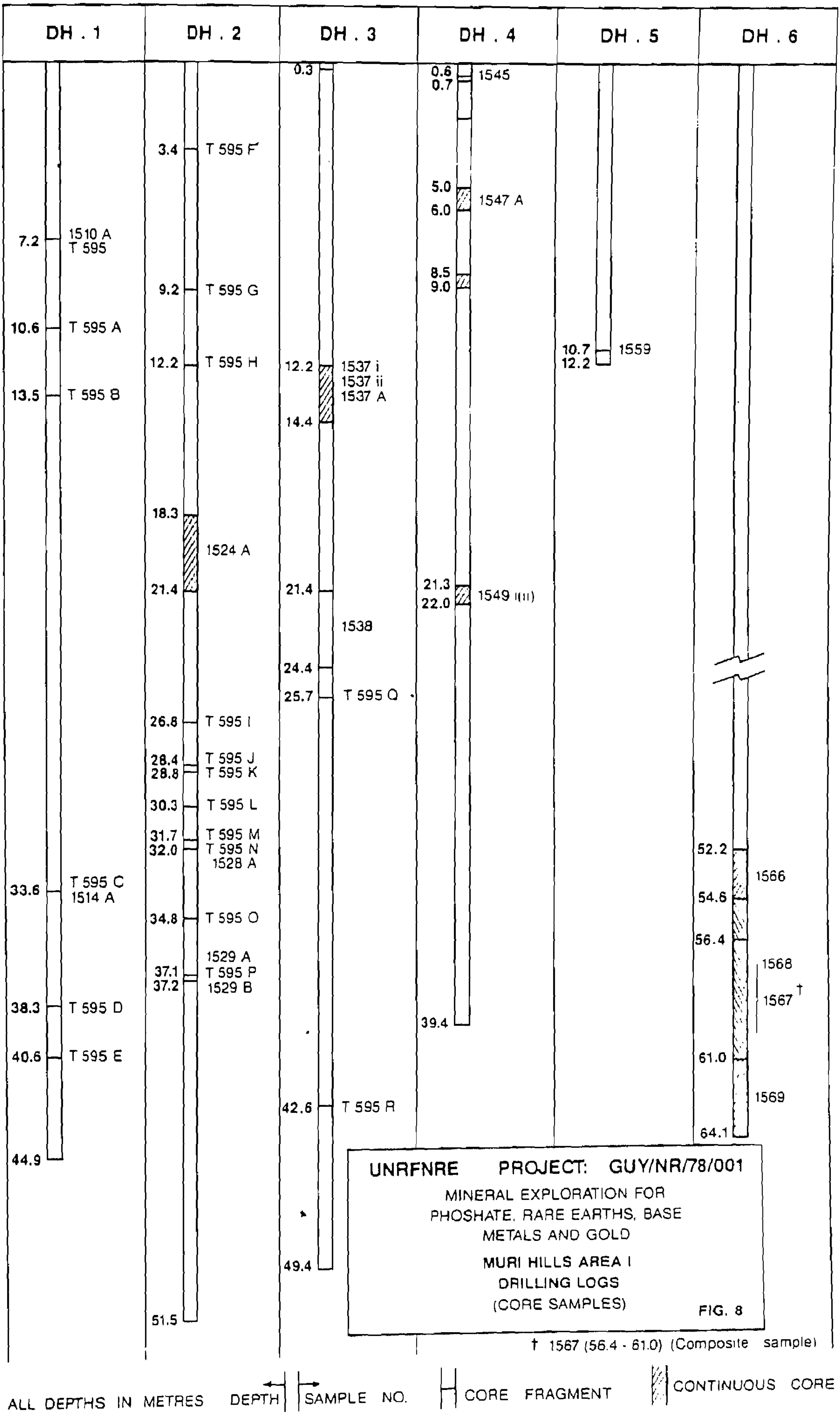
Examined core fragments are mineralogically similar to the material obtained the from caves. Iron oxides and hydrates form complex aggregates with biggsite, strengite, cerianite, goyazite, and other Al and RE phosphates. Zircon and rutile are found as occasional resistates.

Neither chemical nor mineralogical stratification, zoning or other gradual change in composition were recognized. Simple averages calculated from analyses of borehole samples are presented in Table 6. Sample locations appear on Figures 8 and 8A.

Table 6

Calculated Simple Average of Borehole Analyses (%)

Borehole	P_2O_5	Fe	Ce	Y	La	Eu	Sm	Gd	Pr	Nd	Nb
DH-1	1.25	28.3	1.58	0.033	0.385	< 0.005	0.086	< 0.01	0.033	0.053	0.045
DH-2	2.47	24.65	2.175	0.037	0.873	< 0.005	0.085	0.017	0.143	0.418	0.014
DH-3	1.10	47.62	1.331	0.034	0.617	< 0.005	0.121	0.01	0.097	0.228	0.022
DH-4	3.40	21.9	4.784	0.119	1.271	< 0.005	0.059	0.039	0.212	0.400	0.092
DH-5	3.70	47.7	2.120	0.088	1.532	< 0.005	0.121	0.041	0.205	0.549	0.039
DH-3 Sludge	2.57	32.8	1.407	0.041	0.820						
DH-4 Sludge	3.25	34.08	2.462	0.348	1.237						
ø	2.53	33.86	2.266	0.100	0.962	< 0.005	0.094	0.023	0.138	0.330	0.042



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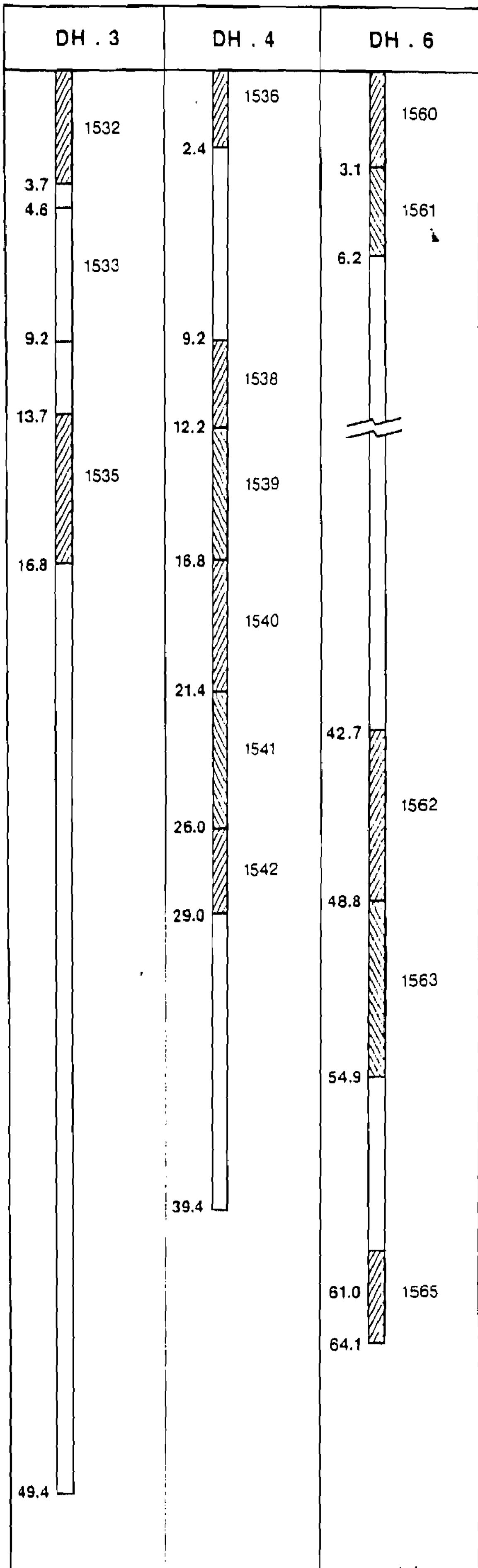
MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD
MURI HILLS AREA I
DRILLING LOGS (CORE SAMPLES)
FIG. 8



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MINERAL EXPLORATION FOR
PHOSHATE, RARE EARTHS, BASE
METALS AND GOLD

MURI HILLS AREA I
DRILLING LOGS
(SLUDGE SAMPLES)

FIG. 8 A

ALL DEPTHS IN METRES   DEPTH ← | → SAMPLE NO.   CONTINUOUS SLUDGE

4.1.5 Economic Review and Conclusions; Area I - Muri Mountains

4.1.5.1 Grades and Mineralogy

The overall objective of the project was to identify mineral resources, of commercial grade, of phosphate, niobium, rare earths and, possibly, limestone associated with the conjectured carbonatite of Twaireitau. The following is a summary of results obtained:

(i) TWAREITAU* (Laterite capping to 50 m depth)	P_2O_5	% Ce+La+Y	Nb
Caves			
Average	4.23	2.68	0.045
Selected phosphate section	8.34	3.10	0.038
Highest individual sample	13.60	3.65	0.065
Boreholes			
Average	2.53	3.33	0.042
Highest individual sample	10.80	10.80	0.082
Trenches/Traverses (outcrop sections)			
Average	3.28	3.16	NA
Highest individual sample	14.20	19.40	NA
Soils			
Average	1.00		

Mineralogical composition:

Mixed aggregates of hydrous phosphates and oxides of Fe, Al, Ba, Ce, Sr such as strengite, florencite, gorceixite, goyazite, variscite, crandallite and cerianite. Accessory zircon and anatase. No apatite or magnetite. Only rare fragments of micron size, leached pyrochlore grains.

(ii) EAST MURI		F	Nb	% Ta	U	Th
Massive fenite		1.00	0.30	0.005	0.004	0.003
Soils						
Average			0.27			
"High spots" (radiometry)			0.50			
River alluvium	g/m^3	0.5	0.035	0.016		

Mineral composition:
Fenite: Albite, aegirine-augite, nepheline, calcite, zircon, fluorite, apatite and pyrochlore (0 0.010 mm, max 0.3 mm).

* Samples/results refer to the zone investigated; from truncated capping of Twareitu mountain to a depth of 50 m.

4.1.5.2 Comparison between Twareitau and Major Carbonatite-related Producing Areas Worldwide

Typical grades and mineralogical characteristics of carbonatite-related ores of major world producers as well as recently explored occurrences considered of some relevance to the assessment of Twareitau have been assembled for easy reference below:

(i) Araxa (Brazil)

(World's leading producer)	P_2O_5 (%)	CaO (%)	Fe_2O_3 (%)
Phosphate ore			
Average grade	30.77	43.40	8.27
Minimum grade	15.00		
Recoverable ore minerals	Collophanic apatite in supergene lateritic matrix.		

Niobiferous laterite	% Nb_2O_5
Average range	1.0-12.0
Ore grade, Reserves 10M MT	5.0
140M MT	1.0-1.50
Recoverable ore minerals	Pandaite (Ba-pyrochlore-grains $\pm$1 mm) Nb concentrate contains 0.15-0.90% U_3O_8.

Rare earths	REO	%
Typical ore	CeO_2	6.28
	La_2O_3	3.80
	Nd_2O_3	1.58
	Sm_2O_3	0.19
	Pr_6O_{11}	0.40
	Y_2O_3	0.19
Recoverable ore minerals	Monazite, pandaite, apatite in supergene lateritic matrix of a variety of hydrous Fe, Al, Re oxides and phosphates.	

(ii) Saint Honore

(Canadian niobium producer)	% Nb_2O_5
Niobium ore	
Average	0.48-0.86
Ore grade, reserves 8M MT	0.70
Recoverable ore mineral	Pyrochlore, (64% Nb_2O_5 in concentrate), 0 grain size 0.6 mm, in primary carbonatite matrix.

Rare earths		Ce (%)	La (%)	Nd (%)	Pr (%)
Average	REO (4.5%):	47	20	20	5

Recoverable ore mineral: Monazite in primary cabonatite matrix.

(iii) Mountain Pass
(World's largest RE producer)

Rare earths (Ore reserves 40 MMT)		%
Run-of-mine	REO	7.0
Recoverable ore mineral	Bastnaesite (12% in ore)	
Bastnaesite average composition:		%
	Ce	49.0
	La	33.0
	Nd	13.0
	Pr	4.0
	Sm	0.5
	Gd	0.2
	Ga	0.1

4.1.5.3 Mineral Dressing and Beneficiation Aspects

Under the present state of extractive technology, only minerals amenable to separation and concentration by physical processing can be commercially extracted from carbonatite-hosted ore.

Beneficiation processing would normally include disgregation by crushing, liberation of ore minerals by milling, cleansing by screening and washing, separation by flotation, and stabilization by calcining. Resulting concentrates represent the first stage of saleable products.

Requirements for commercially viable concentration, apart from ore grade, would generally include sufficient size and liberation of individual grains or aggregates of ore minerals, physical properties favourable for flotation and low content of impurities and deleterious components.

Typical minerals amenable to commercial beneficiation from carbonatite hosted ores presently include:

(a) Phosphates: Ca-apatite, collophane (apatite). Minimum P_2O_5 content varies. About 19% is considered low grade, absolute minimum 8%.*

Hydrous Al-Ca mineral crandallite is commercially exploited in Senegal. Minimum P_2O_5 grade: 29.5%. However, this phosphate is only suitable for special pyrometallurgical processing.

(b) Niobium: Pyrochlore, fergussonite and samarskite. Concentrates are obtained by flotation. Standard commercial grade concentrates contain 65% Nb_2O_5.

(c) Rare Earths: Pyrochlore, monazite, apatite, bastnaesite, xenotime, euxinite. Some standard commercial grade concentrates:

Bastnaesite (unleached)	60% REO
Monazite	55% REO
Yttrium	60% Y_2O_3

* depending upon mining costs, co-product values, location markets, etc.

Attempts have been made already in the past to develop the technology of separation and concentration of secondary hydrated minerals from the supergene zone of carbonatites on a commercial scale. In recent years the French RE producer Rhône-Poulenc has been conducting intensive investigations of RE-bearing laterite in Araxá aimed at the recovery of supergene RE minerals. The work has not been successful.

It appears that hydrometallurgical or pyrometallurgical extractive processes would have to be applied to the total mass of the mined ore. The costs of extremely fine grinding, concentrated (hot) acid leaching and desliming or prior fusion would be prohibitive and could probably be applied only to very high grade ore.

Potentially economic components contained in the upper 50 m of Twareitau occur as intimate mixtures of mineral aggregates and in concentrations below minimum requirements. However, even in case of more favourable grades, a commercial beneficiation at present would not be feasible due to the mineralogical composition of the supergene capping.

A sample obtained selectively from Cave F (1461) - high grade by Twareitau standards - has been tested by Rhône Poulenc in France. The treatment required dissolution in perchloric/hydrofluoric acid followed by leaching in nitric/hydrochloric acid in order to extract the REO components. The concentrations of REO and P_2O_5 have been qualified as too low to be of commercial interest.

4.1.5.4 Mining Aspects

At the present state of mineral beneficiation technology the indurated laterite capping of Twareitau has to be regarded as waste material.

As indicated by drilling the duricrust capping is at least 50 m thick. However, by inference with comparable zones of weathering elsewhere it is easy to see that this waste zone in all probability continues to substantially greater depth.

Mining extraction of any mineral commodity eventually occurring at deeper levels would require either the removal of capping or underground mining. The physical nature of the indurated laterite implies stripping by drilling and blasting - a costly process. To justify such mining extraction would require the eventual ore in depth to be of a correspondingly high grade. Present results would not warrant such an undertaking.

4.1.6 Conclusions

Minimum Work objectives were based on the original hypothetical model of Twareitau which inferred that:

- Commercially extractable minerals may occur in sufficient concentrations (grade) in the upper, lateritized supergene formation or at reasonable mining depth.

- An appreciably thick, P_2O_5 - rich layer composed mainly of secondary calcium phosphate (collophane apatite) may extend underneath all or much of the summit cap of Twareitau.

- The thickness of the barren, ferrite capping could be between 5-12 m.

- Drilling of 15-25 shallow boreholes to a maximum depth of 60 m with a small drilling rig could be sufficient to identify material of possible economic potential.

The evidence, based on the results of investigations and analyses of samples from boreholes, caves, rock outcrops and soils as well as geological observations on and around Twareitau, indicates that the supergene lateritic capping extends to a depth of at least 50 m:

- Does not contain average ore grade concentrations of any of the expected potential ore minerals.

- Potential minerals containing P_2O_5, niobium and rare earths cannot be beneficiated by contemporary commercial processes.

Further:

- In the event that hypothetical, commercially usable mineral concentrations existed below the presently investigated levels, they would occur at depths far greater than originally expected.

- Mining extraction would require underground operation or costly stripping of overburden considerably thicker than envisaged.

- Occurrence of a suitable limestone resource at economically mineable depths is extremely remote and its composition/purity doubtful.

The extreme remoteness of the area, to which heavy equipment can be mobilized only by helicopter, would require considerably higher than average ore grades to justify further exploration and, eventually, development.

Due to unforeseen technical difficulties the drilling programme was curtailed by 50% and the Minimum Work work plan modified to attain the project objectives. Alternative methods of data collection were implemented to allow for approximately the same degree of interpretation.

It is evident that the continuation of shallow drilling to 50-60 m depth would have only provided similar information to that already at hand. Qualitatively new data could, of course, be obtained by exploration at greater depth. However, deeper investigations were not the objective of the Minimum Work. They would have been justified had the results of exploration work over the upper capping provided encouraging results. The data does, unfortunately, not provide any encouragement for more extensive investigations.

As a result of the comprehensive investigations described above, it is concluded that in the Muri Hills Exploration Area there is no niobium, rare earths or phosphate mineralization present in economic quantity or extractable form.

4.2 PROJECT AREA II - EASTERN CUYUNI

4.2.1 Geology

4.2.1.1 Regional Geology

Some 70,000 km^2 of northern Guyana is covered by rocks of the Barama-Mazaruni Supergroup separated by irregular areas of the Bartica granite formation. The Barama-Mazaruni rocks form three irregular greenstone belts known respectively as the Barama, Mazarumi and Cuyuni Greenstone Belts. These belts are not confined to Guyana but extend westwards into Venezuela and eastwards through Suriname, French Guiana and Brazil.

The most recent work available, carried out by Gibbs (1979) is extensively cited and quoted in this section.

The geological re-interpretation envisages the volcanic and associated sedimentary rocks as the products of an island arc environment since there is no evidence of the proximity to older continental crust. Furthermore the Barama-Mazaruni Supergroup, together with equivalent units in adjacent countries, resembles more closely Archaean greenstone belts than other Lower Proterozoic successions which typically rest unconformably on Archaen crystalline basements and include mature clastic sediments and laterally extensive shelf sediments.

Typical lithostratigraphic sections of the Supergroup consist of mafic to felsic marine volcanic rocks with interstratified tuffaceous and exhalative sediments, overlain by tuffaceous graywackes and semipelites. The reconstructed sections total some 9 km in thickness.

The volcanic rocks of the Supergroup range from basalts to rhyolites and belong to magnesian, tholeiitic and calc-alkaline series. Some ultramafic rocks may be flows or sills. Felsic volcanic rocks are particularly abundant near eruptive centres marked by the presence of coarse tuffs, breccias, thick flows and porphyritic subvolcanic stocks. The chemical compositions of the volcanic rocks show pronounced similarities to many Canadian Archaean greenstone belts.

No regional unconformities are known although locally unconformities occur within the sections. Precipitated sediments of chemical and biological origin occur in association with the volcanic sections. They include cherts and phyllites with carbon, hematite, magnetite, carbonate or manganese minerals. Carbonates and impure limestones are subordinate.

Metamorphism has affected the greenstone belts with the production of peripheral amphibolites and centrally located greenschists. Because of the synclinal structure of the belts amphibolitic basalts occur peripherally and metasedimentary phyllites in the central portions.

Hydrothermal alteration has affected some of the volcanic rocks particularly in the Central Puruni area.

The age of the volcanism is placed at about 2.25 b.y.

4.2.1.2 Detailed Geology

Project Area II was divided into four separate blocks which from west to east are (Fig. 3): Puruni (59°30'W - 59°15'W), Aremu (59°15'W - 59°00'W), Cuyuni (59°00'W - 58°45'W) and Groete Creek Block (58°45'W - 58°37'W). The project activities were concentrated on the Puruni Block (Fig. 38) and to a lesser degree on the Cuyuni Block. Exploration in the Aremu Block involved only limited regional work and no exploration was carried out in the Groete Creek Block.

In Area II, Eastern Cuyuni, the hills about 4 km west of Peter's Mine provide one of the best and most accessible exposures of the lithostratigraphic section in the area (Figs. 3 and 38). They illustrate the correlations between topography, geophysics and soil type that help to reveal and extrapolate the bedrock geology in most of the concession area, and throughout northern Guyana.

Metabasalts and metagabbros underlie the highest, most massive, laterite-capped hills. Many of these rocks are appreciably magnetic in hand specimens, and they give rise to relatively high aeromagnetic relief, which in part may be due to the terrain effect. The soils over the metabasalts are characteristically red-orange, they lack sand or silt, and they may contain ilmenite or leucoxene pseudomorphs after Fe-Ti oxides. Where the groundwater drainage is impeded, the residual soils are in many instances bleached and, in some instances, yellow or even white kaolinitic or bauxitic soils overly metabasalt. Many small airborne EM conductors, are located over the edges of the metabasalt ridges where the laterite duricrust is most intensively developed. The metabasalt and metagabbro hills contain minor siliceous interflow metasediments, and basaltic tuffs are common. Together these rocks are stratigraphically identified as Unit I.

In general Unit I gives rise to weak to moderate topographic relief. However, there are exceptions. A prominent series of hills north of the Kamowari River in the SW corner of the Area II area was considered to be possibly underlain by Unit II rock, because of its relief, its position between ridges of Unit I, and its lack of aeromagnetic relief. Several traverses were made of the Kamowari area, and they demonstrated that Unit I amphibolites account for this series of hills as well.

Unit II begins with the transition to more differentiated metavolcanic rocks, many of which are porphyritic. This transition in many instances also represents a change from predominantly tholeiitic to predominantly calcalkaline magmatic trends, but the stratigraphic distinction is made on the basis of the appearance of predominant andesites and more siliceous rocks. Pyroclastic rocks, including pumiceous varieties, are prominent in Unit II. Andesites, dacites and rhyolites, occurring as flows, as well as breccias and tuffs are exposed in the creeks on the SE edge of the hills west of Peter's Mine. They are interstratified with carbonaceous phyllites and metacherts, glassy thin-bedded tuffs, and quartzites derived from magnetitic, hematitic, pyritic, and possibly sideritic cherts. The quartzites form particularly prominent exposures along the eastern part of these hills; several of them, though only a few metres thick, form nearly continuous outcrop with steep dip-slopes. By analogy with the drill cores of Grid 3-N area, some of the poorly-exposed strata may be carbonate.

Unit II does not characteristically form high hills, and the dip-slopes of the very resistant quartzites probably have protected much of Unit II on the sides of these hills from weathering and erosion. Elsewhere in the region, Unit II typically has moderate relief. The great differences in resistance to erosion between the relatively "soft" intermediate pyroclastic rocks, carbonates and pelites, and the hard quartzites derived from metacherts and high-silica rhyolites and siliceous tuffs typically reveal the strikes in areas of Unit II. Soils are highly variable. Beta-quartz is generally visible in soils derived from dacites, rhyolites or their tuffaceous derivatives. The high silica rocks give rise to sandy or silty soils, generally with prominent float of blocky quartzite.

The quartzites are undoubtedly metamorphically recrystallized and generally weathered derivatives of several original varieties of siliceous rocks. These include:

- carbonaceous cherts, usually recognizable by their relic grey or black bands. Some of these contain carbonate as well;

- ferruginous cherts, including magnetitic, hematitic, pyritic and possibly sideritic varieties. Some of these may show spherulitic textures in thin section. These rocks are generally considered exhalative sediments, but they may also include, or be altered examples of, the following group;

- silica-rich rhyolitic flows and tuffs. These may also have spherulitic devitrification textures. Where quartz phenocrysts are present they help to distinguish these volcanic rocks from the metasedimentary ones, but there are numerous examples of either non-porphyritic or very sparsely porphyritic rhyolites in the region. Tuffaceous textures are still visible in other samples;

- manganiferous cherts, which may contain spessartine garnet, usually associated with black laterite.

The transition to Unit III is not abrupt in the Central Puruni area. Proceeding upsection from the felsic metavolcanic rocks of Unit II, there is an increasing abundance of meta-pelites and meta-greywackes, with some polymict (volcanic, chert and pelite clast) conglomerates. These are the characteristic rocks of Unit III which generally weather sufficiently readily and uniformly to produce low relief.

The majority of the INPUT airborne EM conductors in the concession area are correlated with lenses of carbonaceous metasediments in the upper part of Unit II or lower part of Unit III. In the Central Puruni area the INPUT conductors reveal the location of this stratigraphic zone, and reflect the pattern of folding and faulting. From Powis Creek in the south to Mara Mara and the Bembaru area in the north, these conductors are believed to be associated with the same stratigraphic interval.

There is a well-exposed and generally weakly deformed meta-diorite to meta-andesite unit that is apparently intruded as a sill in several parts of the Central Puruni area. This unit had previously been mapped as the Spokane Landing stock, and occurs south of the drill sites and in a similar stratigraphic position in the upper Whanamparu area. The age and stratigraphic significance of this unit are not clear; it may be a subvolcanic sill associated with the intermediate metavolcanic rocks, or it may belong to a later intrusive series.

The Million Mount Stock is actually a complex of granitoid intrusive rocks, including granodioritic and possibly dioritic phases as well as the more abundant subvolcanic quartz porphyry phase. The eastern margin of this was traversed to investigate the "possible extrusives" reported in the Arno Creek survey area, but no good evidence of any extrusive activity related to the intrusive complex was recognized. In the southeastern corner there is abundant float of metabasalt with small dikes and stringers of porphyry.

Other porphyry bodies in the Central Puruni area are not as extensive or prominent as the Million Mount stock, and most are interpreted as very shallow rhyolite domes or flows. The Powis Creek stock is in fact much smaller than suggested by earlier mapping. Abundant quartz phenocrysts in the soils of the upper Whanamparu suggest that the a body in that area is more extensive than previously mapped. A rhyolite porphyry less than 100 m thick is exposed about 1 km along strike from the drill sites in Grid 7. All of these bodies, like the Million Mount Stock itself, are locally sheared and have carbonate alteration. A large sill or dike of the Younger Basic Intrusive gabbros is present in Grid 12.

Many varieties of laterite, including spongy duricrust, concretions, and re-cemented transported lateritic conglomerates are common Area II. Where these are black, they may indicate the presence of manganiferous strata. Where they include fragments of recognizable rock types, these can be useful for tracing of stratigraphy.

4.2.2 Exploration Methods

4.2.2.1 Introduction

Principal exploration methodology used was a combination of geochemical methods (stream-sediment sampling, soil sampling, auger sampling and heavy mineral concentrate sampling) on both regional and detailed scales, ground geophysical surveys (principally Pulse EM, IP and magnetometry), diamond-drilling and geological mapping control where feasible. Apart from the work undertaken in relation to follow-up gold exploration activities, nearly all detailed geophysical work, soil sampling and drilling was executed over a series of Grids. These various Grids (Fig. 9) were largely established to cover selected airborne geophysical anomalies (Ref. Section 2.4) and where numbered (eg. Grid 7) rather than named (eg. Peter's Mine South Grid) the numbering used followed the numbering of the principal airborne geophysical anomaly (ie. AEM 7) which the grids were constructed around. Some of these project Grids contained more than more one AEM anomaly and hence, for example, AEM 11 is contained within Grid 8 along with AEM 8. (ref. also Fig. 39).

4.2.2.2 Geochemical Exploration

Sampling of stream-sediments was undertaken in an effort to locate possible base-metal and gold mineralized areas which may or may not have responded to previous airborne geophysical investigations or the project's detailed ground geophysical surveys. This stream-sediment sampling work involved the collection of samples, principally from first order creeks (eg. Ref. Fig. 30). The original objective of the regional work was to achieve a sampling density of 2 samples per km^2. However in actuality this density was approximately doubled. When active sediments were predominantly of silt size, samples weighing approximately 500 g were placed in Kraft paper bags. These were sun-dried in field camps prior to dispatch to Project HQ in Georgetown.

For specific regional gold exploration work and trial follow-up to stream-sediment sampling, two pans of sediment were taken, reduced to about 30 g of concentrate prior to bagging, drying and dispatch to Project HQ. Other sampling methodologies related to gold exploration activities are described in Section 4.2.3.3 below.

For the detailed grid soil sampling, samples were collected from the upper B horizon, dried, disaggregated and screened to -80 mesh.

4.2.2.3 Geophysical Surveys

The purpose of the geophysical ground surveys in Project Area II was to locate and delineate selected airborne anomalies. The work was carried out along grid lines which were also used for detailed geological mapping and geochemical soil sampling. In spite of some doubts about the topographic location of targets and their identification on the ground, no major difficulties were encountered.

For the ground follow-up of airborne INPUT anomalies a PULSE EM (PEM) Crone system was used. A time domain 250 watt Induced Polarization system was instrumental in outlining several zones of disseminated pyrite mineralization. VLF surveys were completed on a limited basis and were eventually abandoned due to the low order of primary signals. Routine magnetic measurements with a Scintrex MP-2 proton magnetometer over electromagnetic anomalies were discontinued due to the high noise levels noted over both volcanics and sediments. This noise is most probably due to concentrations of remobilized iron in the soils.

Both the PEM and IP systems proved to be reliable and essentially trouble free. Minor delays occurred due to oxidation of electrical contacts especially at electrode or power connections. All the electronic circuitry performed calibration-free and with minimum maintenance even after several hundred kilometres of surveying.

A comprehensive review of available (pre-project) airborne surveys and their relation to on-going follow-up ground work was made by the project in 1980 (Evans, 1980).

4.2.2.4 Diamond Drilling

Diamond drilling in Area II was performed with a Longyear 38 rig. Work was confined to the Puruni Block where principal geophysical conductors were selectively tested and the Peter's Mine South Grid where gold anomalies in soils associated with IP anomalies were tested to investigate the possibility of bedrock gold mineralization.

In Grid 7 (Fig. 10) seven holes were attempted but only four completed to planned depths (Figs. 23-25). In Grid 8 (Fig. 11) five holes were completed (Figs. 26-29) and in the Peter's Mine South Grid two holes were drilled (Figs. 12, 21A, 21B, 22).

Diamond drilling data

Location	No. of Holes	Total Depth (m)
Grid 7	7 (4 completed)	417.75*
Grid 8	5	764.15
Peter's Mine S. Grid	2	244.25
Totals	14	1426.15 (m)
Overburden drilled:		744 m
Bedrock drilled:		855 m

4.2.3 Results of Project Activities

4.2.3.1 Introduction

The results of the greater proportion of work in Area II are set out in Annex I of this report. This Annex I details the work done on the Grid areas largely for base-metals (ie. Grid 7, etc.) but also for gold (ie. Chinese Creek and Peter's Mine South Grid) in the Puruni Block of Area II as well as the limited detailed work in the Cuyuni Block. Annex II sets out the statistics of geophysical and geochemical work that was accomplished.

4.2.3.2 Exploration for Base-Metals

Results of regional geochemical surveys in the Puruni and Cuyuni Blocks (Figs. 30, 32, 33 and 35) were far from encouraging and failed to delineate areas of potential economic base-metal mineralization, either

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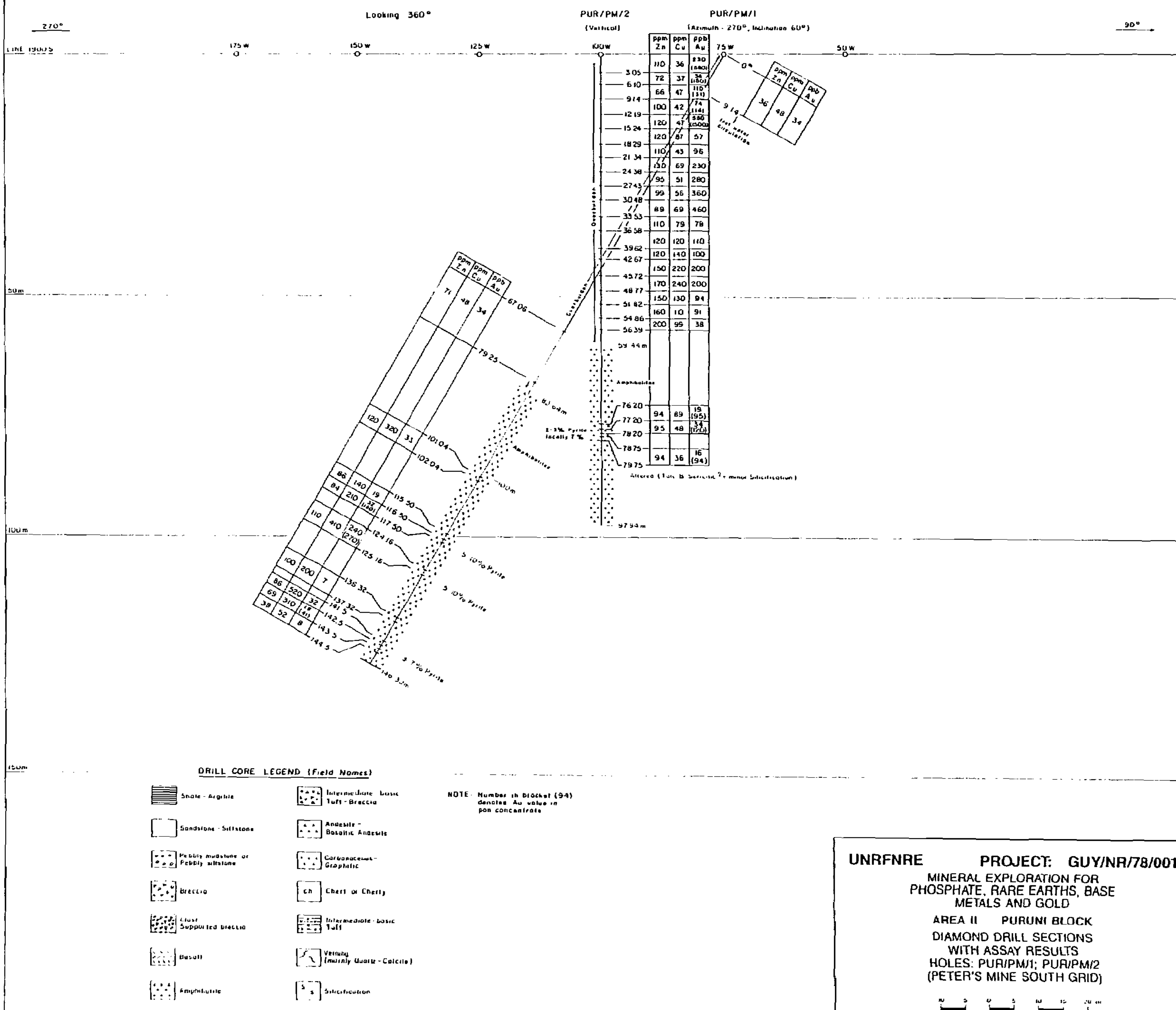
* completed holes only; additional 173 m drilled in overburden of holes not completed to depth.



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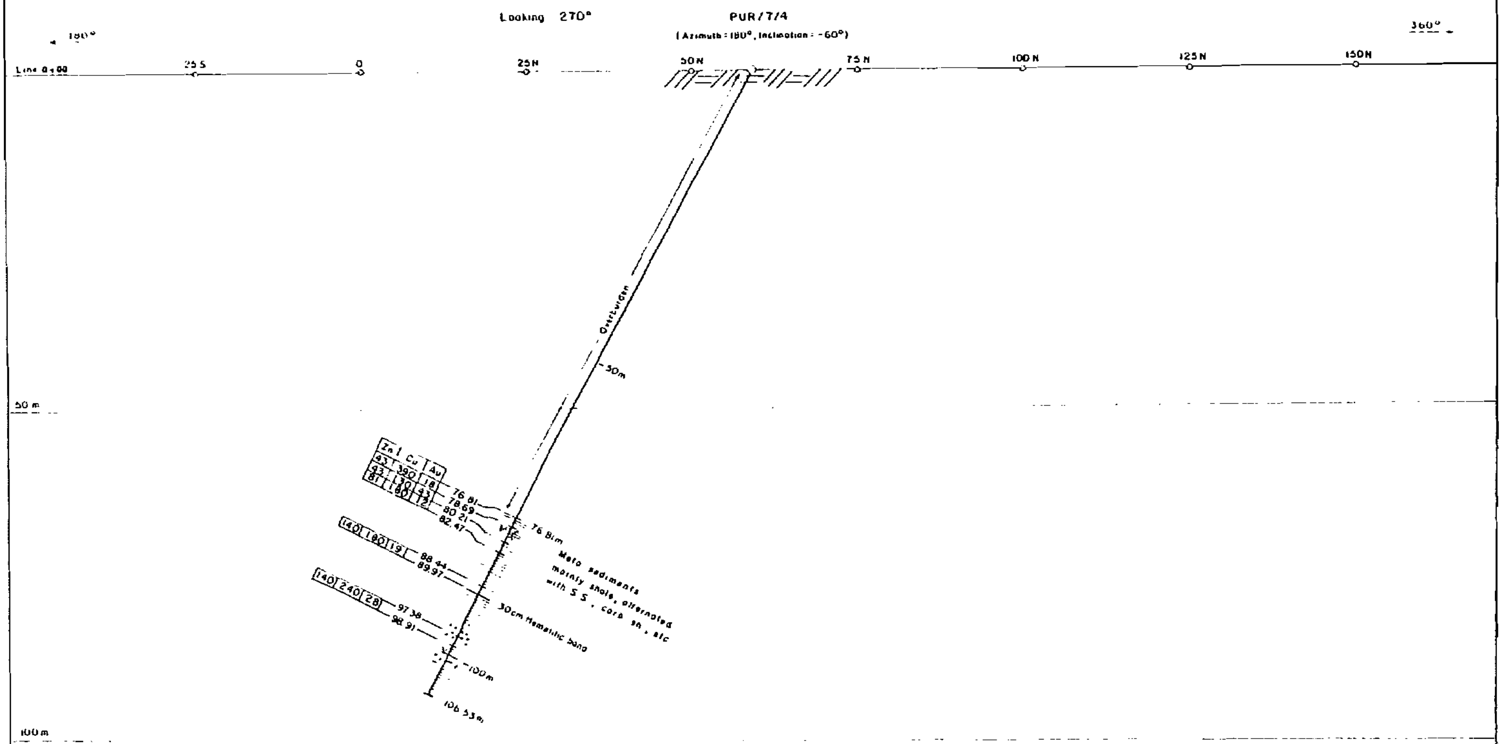
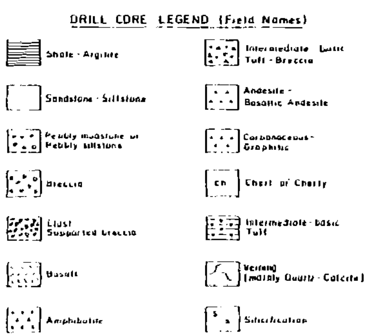
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS HOLES: PUR/PM/1; PUR/PM/2 (PETER'S MINE SOUTH GRID)

FIG. 22





UNRFNRE PROJECT: GUY/NR/78/001

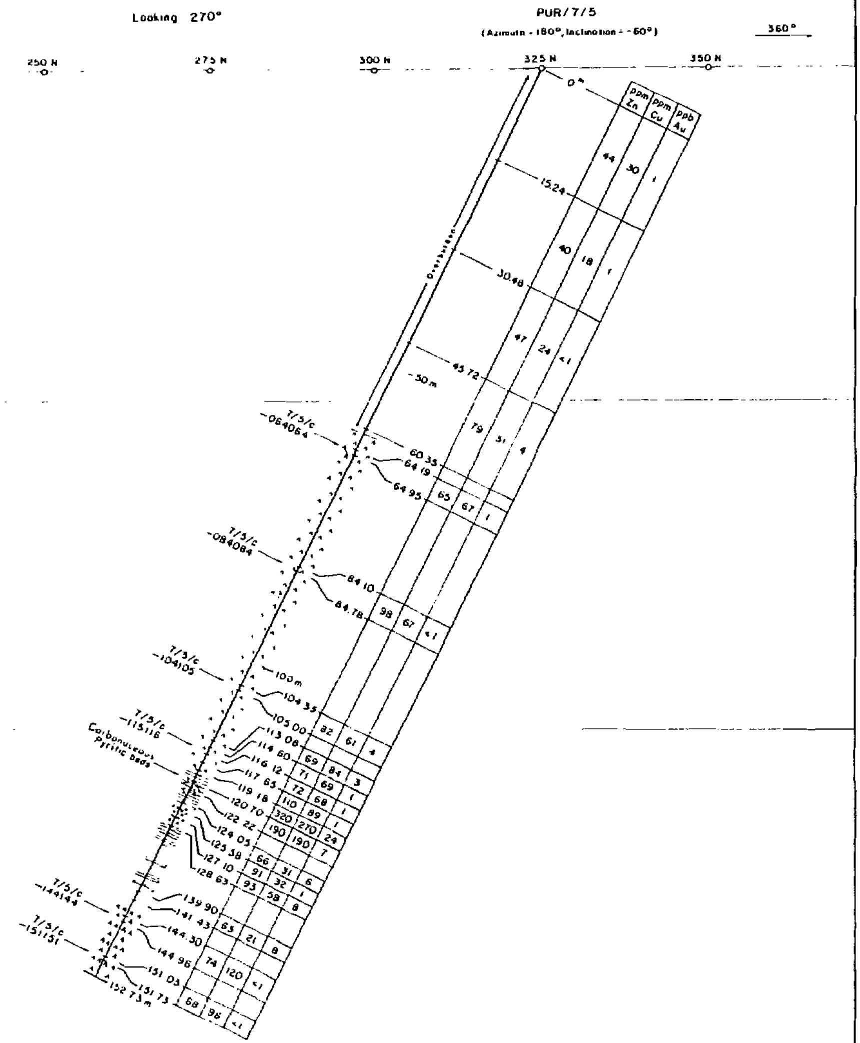
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS HOLE PUR/7/4 (GRID 7)

10 5 0 5 10 15 20 m

FIG. 23



ROCK ASSAY

Sample No	SiO	Al O	CaO	MgO	Na O	K O	Fe O	MnO	TiO	P O	EOZ	Total
T/5/c - 064064	58 7	14 6	5 64	3 80	4 44	0 49	9 19	0 12	0 89	0 16	2 08	100 0
T/5/c - 084084	53 2	14 1	5 83	4 05	4 54	0 23	11 0	0 14	1 12	0 19	5 62	100 0
T/5/c - 104105	56 2	14 6	4 23	3 50	4 88	0 39	9 96	0 09	1 03	0 19	4 62	99 7
T/5/c - 115116	54 4	16 4	3 17	3 76	3 78	1 59	10 2	0 08	1 19	0 20	4 77	99 5
T/5/c - 144144	43 7	13 4	11 4	9 16	1 27	0 14	12 5	0 18	0 44	0 05	7 62	99 8
T/5/c - 151151	42 4	13 3	11 4	10 0	1 2	0 17	12 9	0 17	0 47	0 06	7 31	99 4

DRILL CORE LEGEND (Field Names)

- Shale - Argillite
- Sandstone - Siltstone
- Pebbly Mudstone or Pebbly Siltstone
- Breccia
- Clast Supported Breccia
- Basalt
- Amphibolite
- Intermediate Basic Tuff - Breccia
- Andesite - Basaltic Andesite
- Carbonaceous - Graphitic
- Ch Chert or Cherty
- Intermediate - Basic Tuff
- Veining (mainly Quartz - Calcite)
- Silicification

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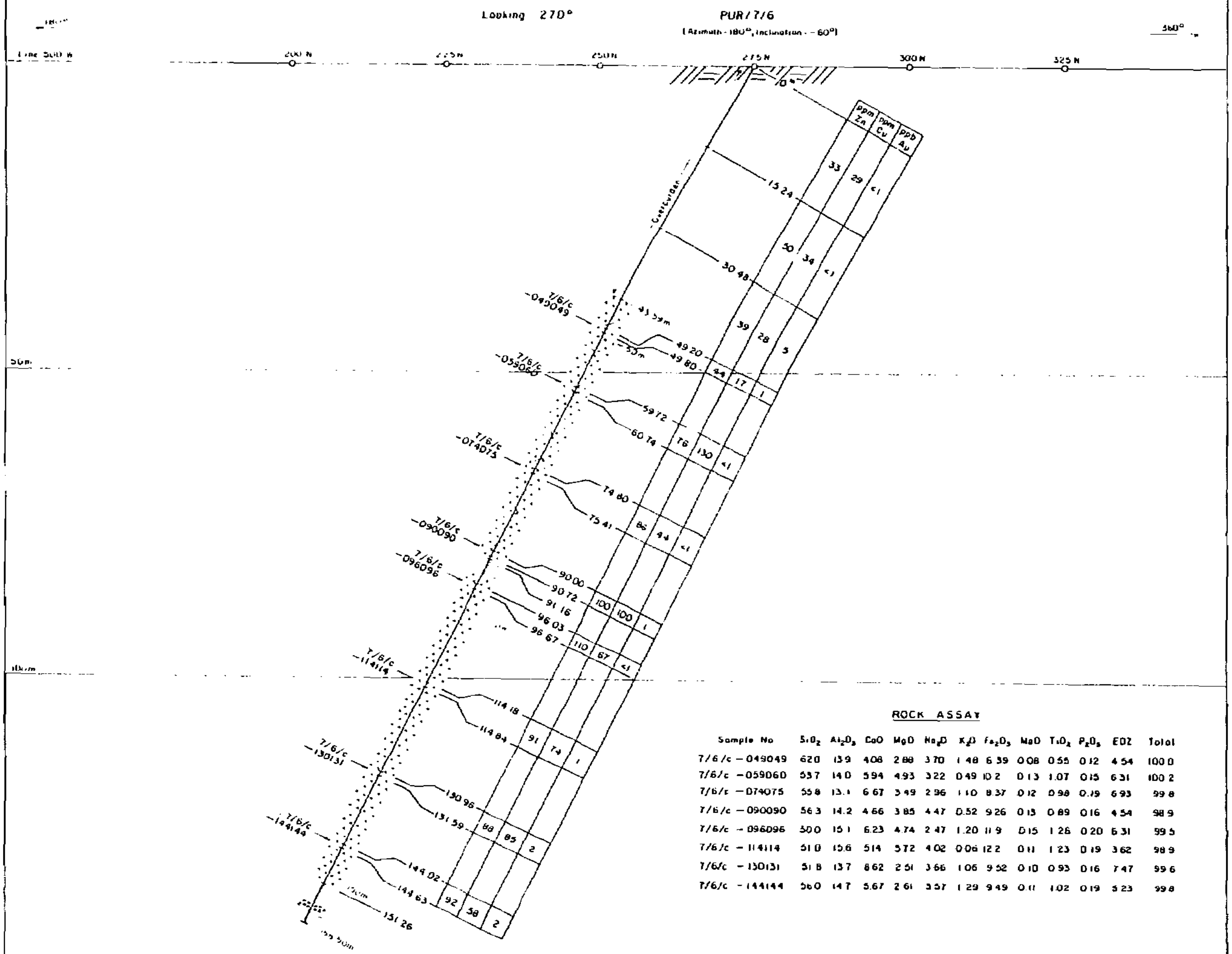
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS HOLE PUR/7/5 (GRID 7)

10 5 0 5 10 15 20 m

FIG. 24



ROCK ASSAY

Sample No	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	MnO	TiO_2	P_2O_5	EDZ	Total
7/6/c – 049049	620	139	408	288	370	148	639	008	055	012	454	1000
7/6/c – 059060	537	140	594	493	322	049	102	013	1.07	015	631	1002
7/6/c – 074075	558	13.1	667	349	296	110	8.37	012	098	0.19	693	998
7/6/c – 090090	563	14.2	466	385	447	0.52	926	013	089	016	454	989
7/6/c – 096096	500	151	6.23	4.74	247	1.20	119	015	126	020	631	995
7/6/c – 114114	510	15.6	514	572	402	006	122	011	123	019	362	989
7/6/c – 130131	518	137	862	251	366	106	952	010	093	016	747	996
7/6/c – 144144	560	147	5.67	261	357	129	949	0.11	1.02	019	523	998

DRILL CORE LEGEND (Field Names)

- Shale - Argillite
- Sandstone - Siltstone
- Pebbly mudstone or Pebbly siltstone
- Breccia
- Clast Supported breccia
- Basalt
- Amphibolite
- Intermediate - basic Tuff - Breccia
- Andesite - Basaltic Andesite
- Carbonaceous - Graphitic
- Chert or Cherty
- Intermediate - basic Tuff
- Veining (mainly Quartz - Calcite)
- Silicification

UNRFNRE **PROJECT: GUY/NR/78/001**

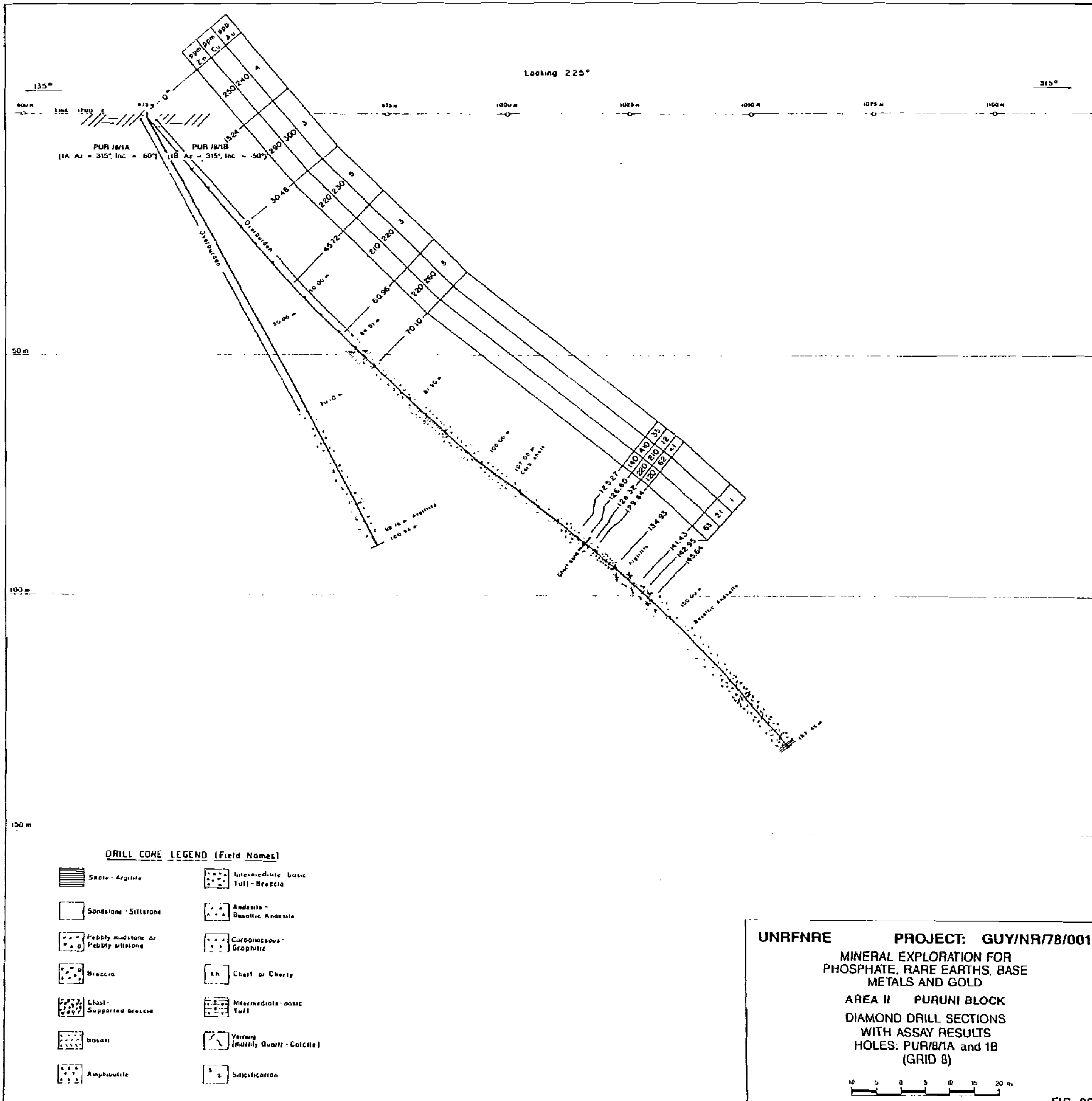
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS HOLE PUR/7/6 (GRID 7)

10 5 0 5 10 15 20 m

FIG. 25



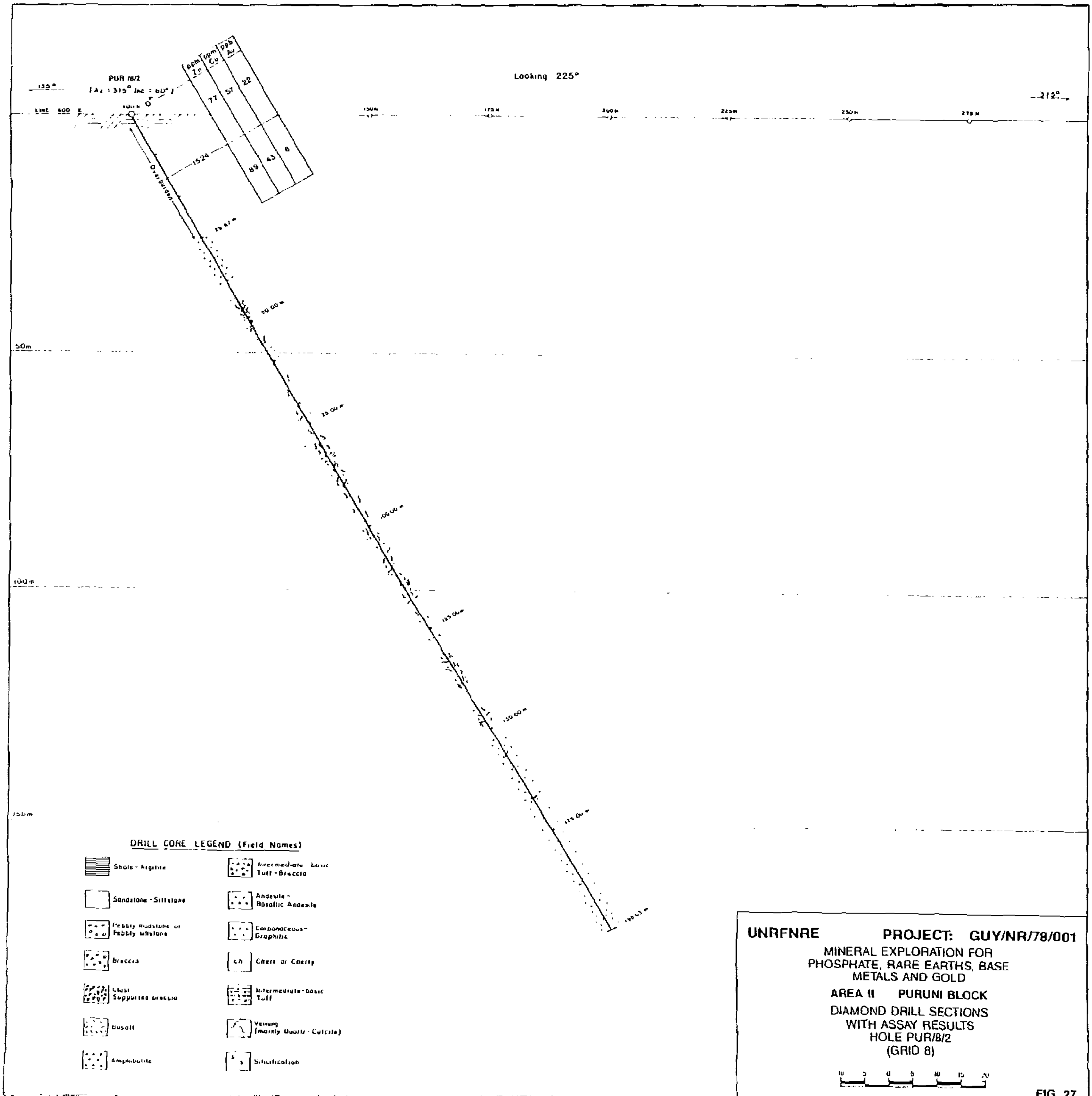
UNRFNRE **PROJECT: GUY/NR/78/001**

MINERAL EXPLORATION FOR
PHOSPHATE, RARE EARTHS, BASE
METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS
WITH ASSAY RESULTS
HOLES: PUR/8/1A and 1B
(GRID 8)

FIG. 26



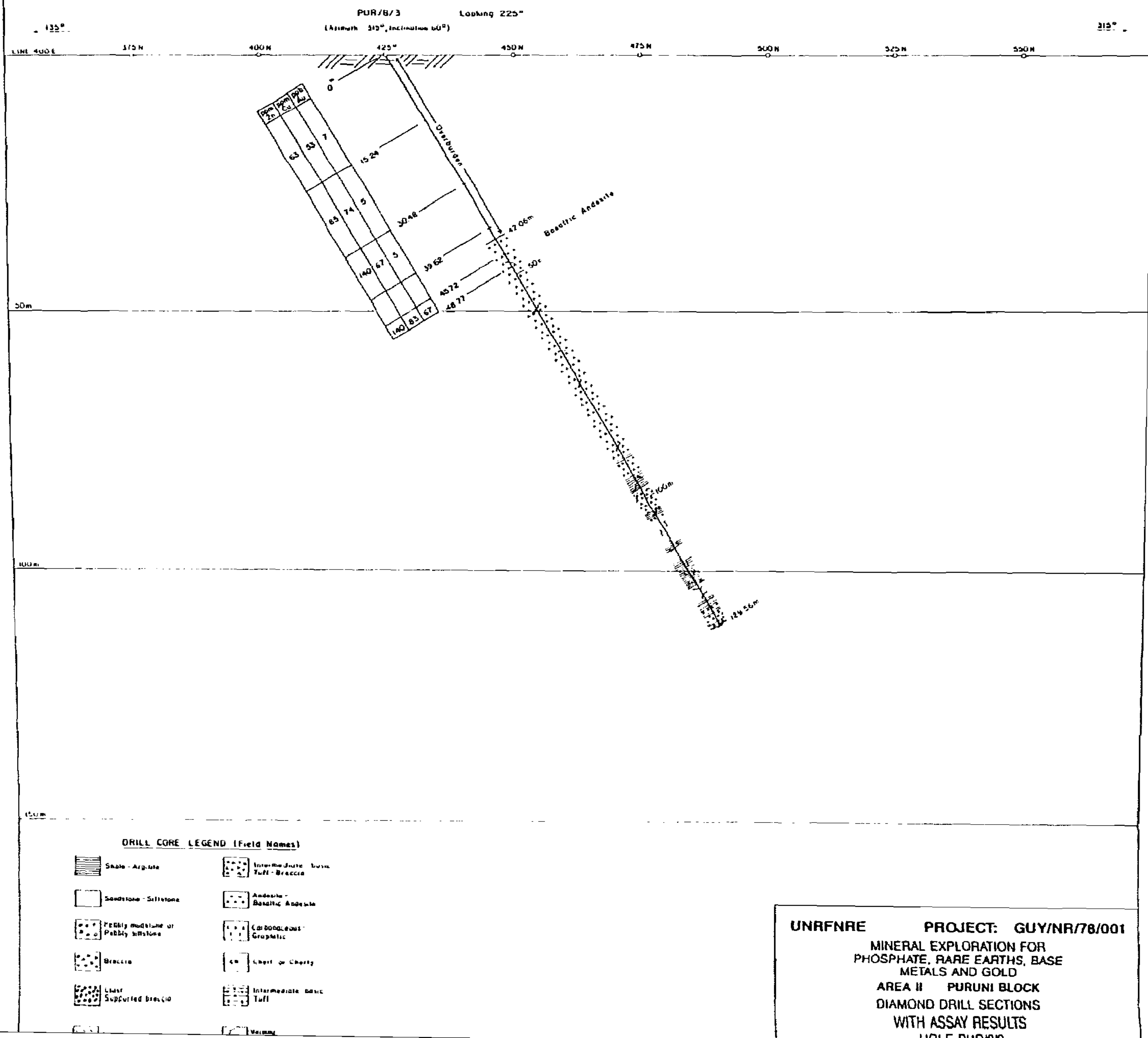
UNRFNRE PROJECT: GUY/NR/78/001

MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS HOLE PUR/8/2 (GRID 8)

FIG. 27

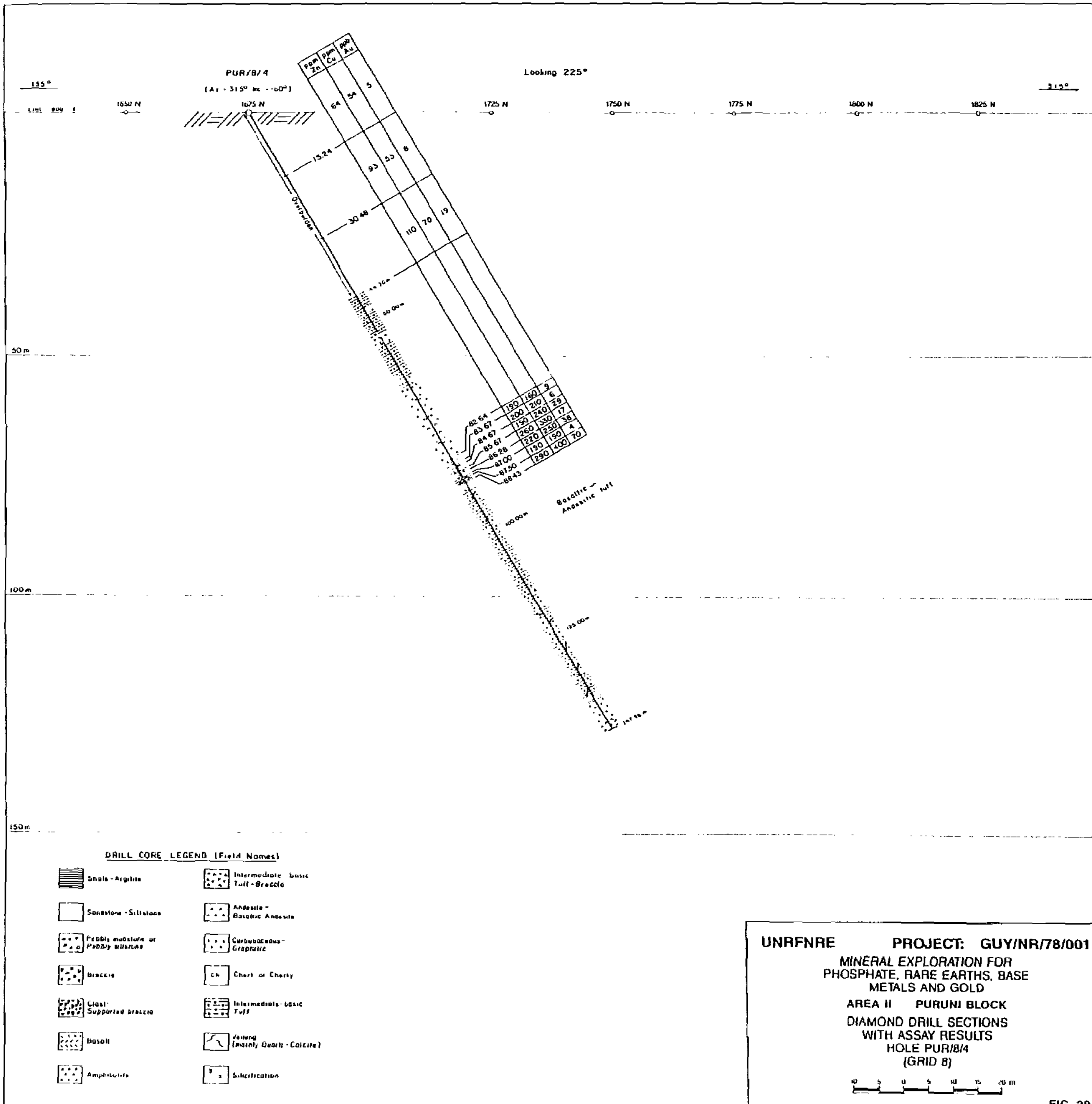


UNRFNRE PROJECT: GUY/NR/78/001

MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

DIAMOND DRILL SECTIONS WITH ASSAY RESULTS


PUR/8/4
(Az : 315° inc - -60°)
Looking 225°
135°
315°
1650 N
1675 N
1725 N
1750 N
1775 N
1800 N
1825 N
ppm Zn
ppm Cu
ppb Au
15.24
30.48
Overburden
50 m
100 m
150 m
Basaltic — Andesitic tuff
DRILL CORE LEGEND (Field Names)
Shale - Argilite
Sandstone - Siltstone
Pebbly mudstone or Pebbly siltstone
Breccia
Clast-Supported breccia
Basalt
Amphibolite
Intermediate basic Tuff - Breccia
Andesite - Basaltic Andesite
Carbonaceous - Graphitic
Chert or Cherty
Intermediate - basic Tuff
Veining (mainly Quartz - Calcite)
Silicification
UNRFNRE PROJECT: GUY/NR/78/001
MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD
AREA II PURUNI BLOCK
DIAMOND DRILL SECTIONS WITH ASSAY RESULTS
HOLE PUR/8/4
(GRID 8)
10 5 0 5 10 15 20 m
FIG. 29

associated or not with geophysical anomalies detected through previous airborne surveys and present detailed ground geophysical follow-up surveys. Generally coincident Cu/Zn elevated values in the north-west, west-central and east-central parts of the area covered by regional work in the Puruni Block (Figs. 30 and 32) are considered to be lithological 'anomalies' related to areas of more basic bedrock (or possibly areas of some disseminated sulphide mineralization of sub-economic proportions). A similar interpretation can be applied to the results of the regional geochemical stream-sediment survey over the Cuyuni Block (Figs. 33 and 35) where elevated 'anomalous' values of Cu (plus 90 ppm) and Zn (plus 150 ppm) are generally coincident but provide a fairly broad well distributed pattern only indicative of a combination of bedrock lithology and stream size; the grouping of elevated values (ie., south of Mariwa Island) being clearly associated with the less-diluted environment high in the drainage system.

Detailed soil surveys over the various grids tend to confirm the lithological association of the elevated base-metal values (ie. Grid 8, Fig. 11) where higher Cu/Zn contents coincide with the presence of more basic volcanics and Grid IIc in the Cuyuni Block (Fig. 36) where higher metal values are associated with basic amphibolites and ultramafics. A particularly negative feature is the fact that none of the located airborne geophysical anomalies and geophysical anomalies defined by detailed ground surveys are associated with anomalous base-metal values in the corresponding detailed geochemical soil-surveys. (eg. ref. Grid 8, Fig. 11)

It can be stated with some degree of confidence that the geochemical activities related to the discovery of base metals provided consistently negative results. Not one area was identified by regional or detailed sampling that was indicative of possible economic concentrations of sulphide mineralization. One coincident Cu/Zn soil anomaly with a surface extent of 1,200 m (strike) by 400 m was defined in the north-central part of Grid I in the Cuyuni Block (Fig. 19). However this soil anomaly is not associated with any significant PEM response and is also, therefore, likely to be formational in character.

The main thrust of base-metal exploration in Area II (as well as for volcanogenic-associated gold) was the ground follow-up of previously defined airborne geophysical anomalies in areas of favourable 'greenstone' geology. Indeed these were basic criteria used for the development of this project. The logical exploration sequence, employed was as follows:

a) Location of selected airborne geophysical conductors on the ground.

b) Precise location and examination/definition of these airborne conductors by ground geophysical surveys.

c) Coincident with (b) above the carrying out of geological work (where feasible) and soil geochemistry.

d) Testing selected ground geophysical conductors through drilling regardless of whether such conductors had corresponding geochemical signatures or not.

The airborne geophysical EM-INPUT survey carried out by Canadian Aero Mineral Surveys Ltd. in 1962 and 1964 detected numerous anomalies. Within the Puruni and Cuyuni Blocks of Area II, 36 INPUT anomalies were considered to warrant further investigation. Four PEM anomalies (2 in Grid 7 and 2 in Grid 8) not picked up by the airborne work were defined by ground follow-up. After initial revision and testing many of the original airborne anomalies were eliminated as not warranting further attention for a variety of reasons; spurious data (errors in sampling times) conductive overburden, other surface effects, etc. Of the 14 bedrock conductors located and defined within the Puruni Block, 5 were eventually tested by diamond drilling. In the Cuyuni Block no strong conductors were defined by follow-up ground geophysical surveys over the priority target lying north of the Oko River (Grids 1 and 5, Fig. 19) and no test drilling was carried out here. Compilation of the airborne and ground geophysical anomalies in the Puruni Block are presented on Fig. 39. This amply demonstrates the geophysical success of the project.

The detailed overview and reappraisal of geophysical work by Evans (1980) allowed the following conclusions to be drawn; a) no further airborne geophysics was necessary and b) the follow-up of most anomalies detected by airborne work would only result in the discovery of non-economic targets (at a very substantial cost).

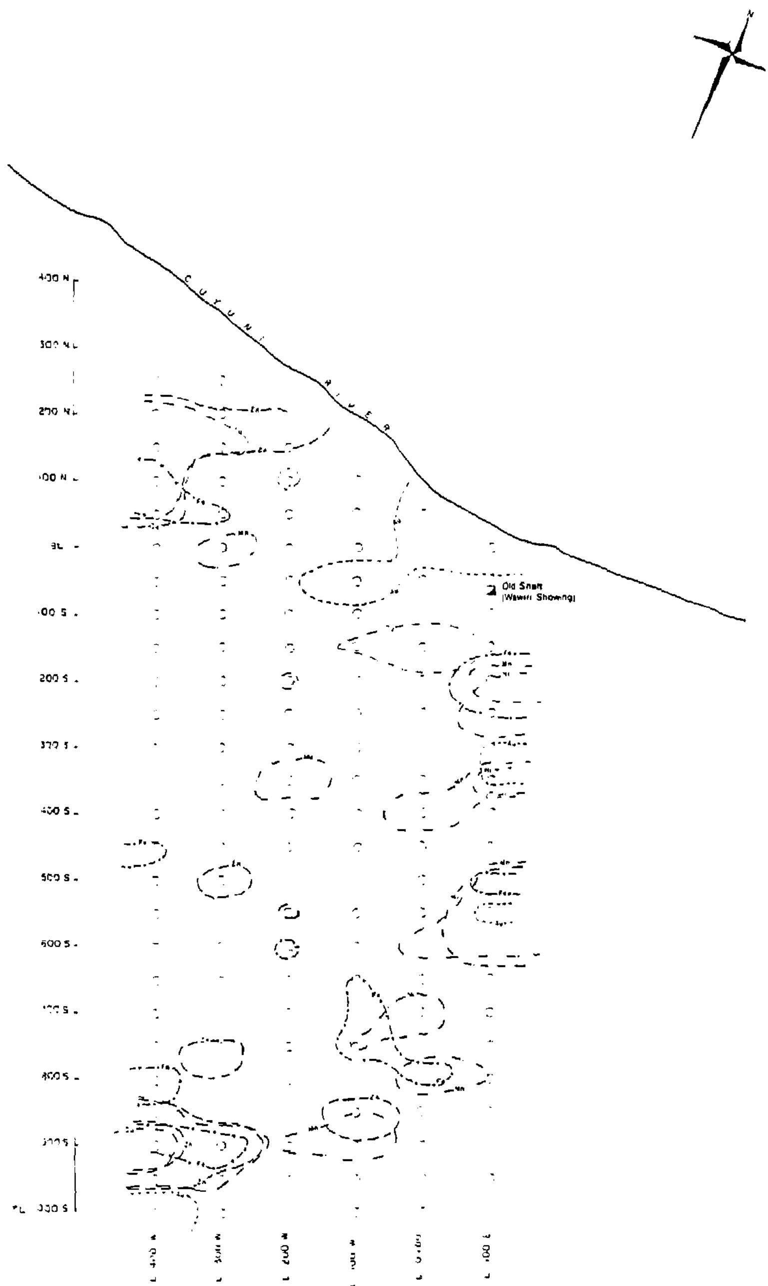
In the Puruni Block ground PEM surveys, more limited IP, some magnetic investigations and grid geochemical soil sampling was undertaken in Grid 1N (Fig. 18), Grid 3N (Fig. 13), Grid 4S (Fig. 14), Grid 6 (Fig. 15), Grid 7 (Fig. 10), Grid 8 (Fig. 11), Grid 135 (Fig. 16) and Grid 151 (Fig. 17). More limited goephysical work was carried out in Grids 1S, 2S, 5, 12, 14 and 149. Of these Grids more exhaustive work was carried out over Grids 1N, 3N, 4S, 6, 7, 8 and 151 and geophysical anomalies were tested by diamond drilling in Grids 7 and 8.

None of this work located or suggested potentially interesting base metal sulphide mineralization. Diamond drilling proved that most of the geophysical anomalies are related to carbonaceous (graphite) shale horizons with occasional banding and disseminations of pyrite, pyrrhotite and chalcopyrite. Details are set out in Annex I.

In the Cuyuni Block detailed ground investigations for base-metals were limited to Grids 1 and 5 (Fig. 19) as well as limited soil geochemical sampling over Grid IIc (Fig. 36). Detailed work in the Aremu Block was confined to limited geochemical soil sampling over the Aremu Grid (Fig. 37). Again, none of this work led to the discovery of base-metal mineralization. Details are set out in Annex I.

4.2.3.3. Exploration for Gold

All geochemical stream-sediment samples obained from regional work undertaken in the Puruni and Cuyuni Blocks were analyzed for gold (Figs. 31 and 34). This work demonstrated that gold does occur in the drainage and is reasonably ubiquitous. However no obvious anomalous patterns were defined indicative of a zone or zones of potential bedrock mineralization. Anomalous readings (above 100 ppb Au) and highly anomalous samples (above 1000 ppb Au) are generally sporadic and confined to the upper portions of the drainage.



LEGEND

GEOCHEMICAL ANOMALIES

Zn Anomaly (≥ 65 ppm)

Cu Anomaly (≥ 55 ppm)

Ni Anomaly (≥ 100 ppm)

Au Anomaly (≥ 65 ppb)

Mn Anomaly (≥ 2300 ppm)

Fe Anomaly (≥ 7

UNRFNRE **PROJECT: GUY/NR/78/001**

MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II CUYUNI BLOCK

SOIL GEOCHEMISTRY . GRID II C

100 50 0 50 100 150 200

FIG. 36

These results are interpreted as representing primary concentrated dispersion from secondary concentrations in favourable lateritic soil horizons and not primary bedrock gold mineralization of potential economic significance.

To test the results obtained from the stream-sediment work, bank soil sampling was performed in the vicinity of anomalous stream-sediment samples in the Puruni Block (Fig. 31). Results of this work were not encouraging. Only one value of more than 1000 ppb Au was obtained. No consistent patterns emerged indicative of interesting bedrock mineralization.

In the southern part of the area covered by regional geochemical work in the Puruni Block consistent gold was detected in concentrates taken from Chinese Creek. Here, over a distance of about 2.5 km stream sediment samples were taken from 25 sampling stations; an average of about one sample per 100 m of drainage. Although sporadic high values were obtained (1900 ppb from Station No. 11 and 1,500 ppb from Station No. 23) no consistent anomalous drainage train could be determined. The highest absolute value in sediments of 9,500 ppb Au (9.5 ppm) was obtained from Station No. 7 located on a small creek about 1 km upstream from the confluence of Chinese Creek with the Puruni River. This small creek drains the southern extension of the Peter's Mine South Grid and this high value would appear to be directly related to anomalous secondary gold concentrations detected in the soils from this area. Results of this detailed soil sampling work south from Peter's Mine are discussed below.

In conjunction with the detailed work on the selected grids described in Section 4.2.3.2 above, soil samples were routinely assayed for gold (Figs. 10-20) as well as for base-metals. Results of this work are also detailed in Annex 1.

Sporadic high gold values in soils obtained from Puruni Block Grids 3N (400-1,400 ppb Au) 6 (750 ppb), 7 (1500-1600 ppb), 8 (500-1,500 ppb) and Grid 151 although in the latter case follow-up auger sampling did not confirm high gold values. Generally speaking, however, these anomalous gold values are sporadic in nature and frequently are just 1 to 3 sample anomalies suggestive of patchy secondary gold enrichment in the residual laterized overburden.

Also in the Puruni Block specific exploration grids for gold investigations were established at Million Mount (Fig. 504*) Mara Mara (Fig. 813*) and Jubilee Creek (Fig. 20). The Million Mt. Grid was centred around old workings south of the Puruni River. In an area of old trenches and where prior drilling had been carried out by GGMC an area of gold values ranging up to 2,100 ppb was identified. Considerable quartz float is present apparently related to the granitic intrusives. The geological setting combined with positive soil-sampling work would probably justify follow-up activities. The Mara Mara Grid was also centred around old workings and quartz veining associated with granitic intrusives on the opposite bank of the Puruni River to the Million Mt. area and in a similar geological setting. Scattered high gold values in soils (500-3,400 ppb Au) were identified but

* Deposited with GGMC, Georgetown

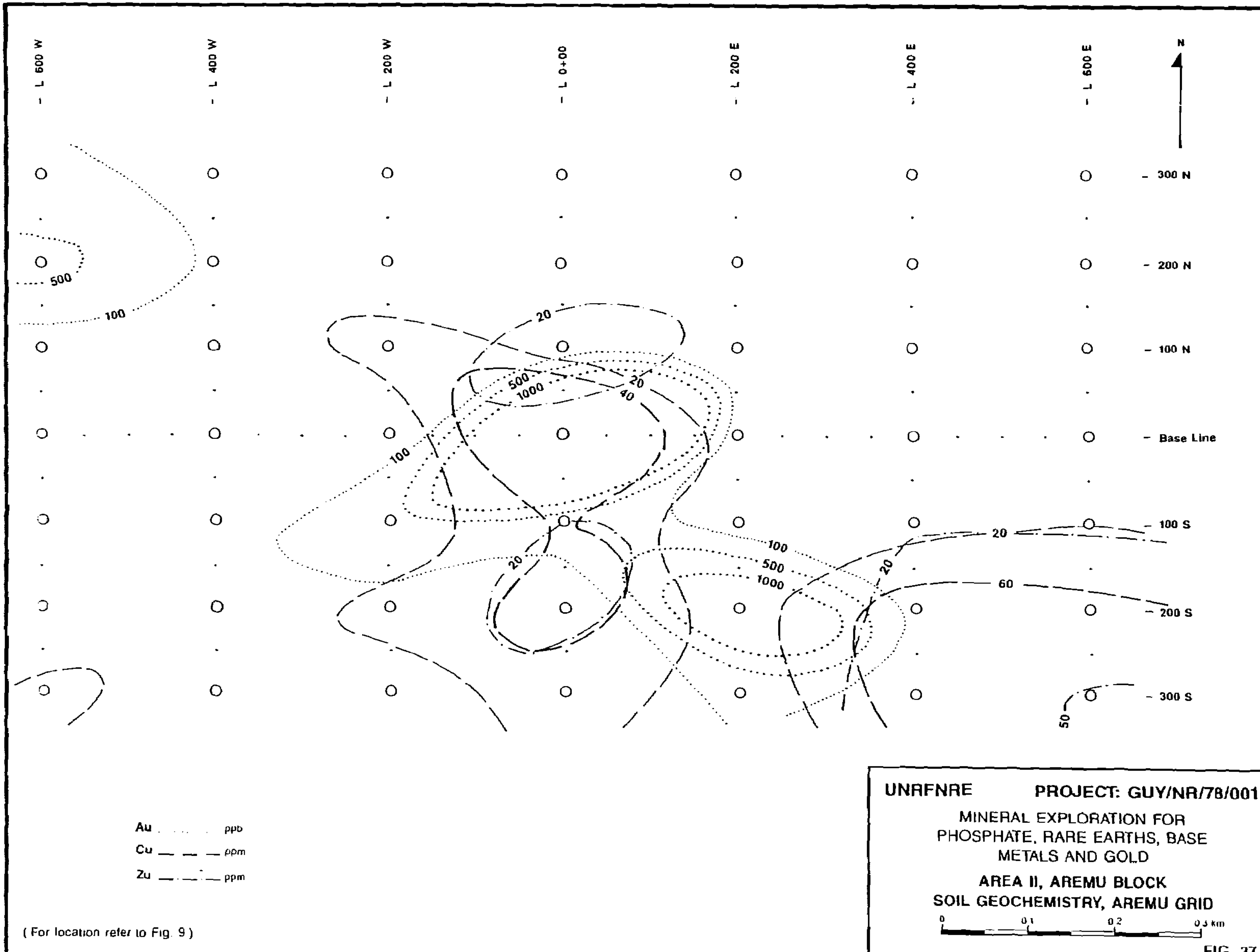
detailed sampling of quartz vein material provided consistently negative results. In the Jubilee Creek Grid, again centred around old workings, a gold soil anomaly with a surface dimension of 500 m x 100 m was outlined by a + 160 ppb isopleth containing spot values of 1,600 - 2,200 ppb Au. Some further work could be justified here initially through detailed deeper auger sampling.

Associated with the base-metal programme in the Cuyuni Block, detailed soil sampling work over Grid 1 (Fig. 19) defined a 600 m x 200 m zone outlined by the + 500 ppb isopleth within which 9 samples provided values ranging from 1,000 ppb to 4,900 ppb. Even though not marked by a geophysical signature and possibly residual or formational in nature, this zone could be initially followed up with limited deeper auger sampling. Grid IIc (Fig. 36) was established on the south bank of the Cuyuni River surrounding the old Wawiri Showing. Only one significant value (930 ppb Au) was obtained from soils near this old working.

One soil grid was established around the old Aremu Mine within the Aremu Block but only two spot samples of more than 1,000 ppb Au were obtained, actually 2000 and 9600 ppb, (Fig. 37). Gold is known to occur here in auriferous quartz veins along the Aremu/Oko shear zone. Six major veins are known; the Aremu, Power House, Lunch, Herod, Donniker and Scotland and all trend approximately E-W. It appears that the Donniker vein may be the most important. Access is extremely difficult.

By far the largest single detailed gold exploration programme was carried out along the east bank of the Puruni River over an extension of about 8 km to the south of Peter's Mine (Fig. 12) and terminating close to the confluence of Chinese Creek with the Puruni River. An initial soil sampling programme was completed over an area of about 9.5 km^2. In the northern part of the grid samples were taken at 50 m intervals along lines with a 200 m spacing and in the southern third of the grid at a 100 m spacing along lines 400 m apart although for the southernmost two lines immediately to the north of Chinese Creek the sampling interval was reduced to 50 m in an effort to locate the possible origin of gold identified in Chinese Creek. In the Peter's Mine area 14.5 km of IP test work was undertaken with a view to identifying any bedrock sulphide dissemination. This work showed that a geophysically responsive zone extended beyond the Excluded (mine) Area into the Peter's Mine South Grid. The initial soil sampling work allowed the definition of an irregular rectangular area of some 0.28 km^2 (28 ha) centred about 2.5 km to the south of Peter's Mine containing many values between 700 ppb and 1,800 ppb Au. This area was subjected to a detailed overburden auger sampling programme where holes were drilled at 25 m intervals along E-W lines with a 50 m spacing.

A powered hole digger was used for this work driving a 6" diameter auger. All stations were sampled to a 1 m depth and occasionally 1 m samples were taken to 5 m depths. Disaggregated composite soil samples of about 1 kg were screened to -80 mesh for geochemical analysis. Of the remainder of the composite samples two battels (pans) of material were weighed and panned to yield 20-30 g of concentrate which was also weighed. Soil samples and concentrates were assayed at recognized custom laboratories overseas. Results are presented on Figs. 21A (soils) and 21B (concentrates).



(For location refer to Fig. 9)

UNRFNRE PROJECT: GUY/NR/78/001

MINERAL EXPLORATION FOR PHOSPHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II, AREMU BLOCK

SOIL GEOCHEMISTRY, AREMU GRID

FIG. 37

Results of the -80 mesh soil fractions (Fig. 21A) of the augering did not fully correspond with results obtained from the preliminary work over the larger grid (Fig. 12) although highest values were obtained from a similar area to the south of the lake (Lines 2050 to 2200) with a high value of 5,600 ppb (5.6 g). This area of elevated gold values measures about 150 m (E-W) by 200 m (N-S). North from the lake (northern sector of the detailed auger grid) in the direction of Peter's Mine, results were disappointingly low (generally in the order of 40-300 ppb).

Concentrate gold values and sample weights from the detailed Peter's Mine South Grid are presented on Fig. 21B. Although, obviously, not all potentially recoverable gold was recovered by normal hand panning techniques, calculations show that values rarely exceed 0.6 g/tonne and that higher values are generally in the order of 0.1 to 0.2 g/tonne. This is several orders of magnitude lower in grade than that which would be required for any bulk mining considerations.

There is no doubt that gold is ubiquitously present in the residium of this area and that this may represent elevated country rock dissemination related to the Peter's Mine mineralization or indicate that gold-bearing stringer/vein mineralization is present in sub-outcrop.

To test hard-rock possibilities two diamond drillholes were located on Line 1900S in an area where a moderately high resistivity and chargeability anomaly was detected by geophysical IP surveys (Figs. 12, 21B and 22). Diamond drillhole PUR/PM/2 intersected the entire overburden profile from surface to 59.44 m where amphiobolite bedrock was first cut. Apart from some anomalous gold values obtained from the overburden in drillhole PUR/PM/1 (200-550 ppb Au) and minor pyritic horizons in both PUR/PM/1 and 2 with associated anomalous copper (140 ppm-520 ppm Cu) no mineralization or indications of economic bedrock mineralization were encountered. Pyritization in the area, up to 10% by volume, would satisfactorily explain the IP response.

Some follow-up work, possibly through drilling, could be considered for the area of high Au soil anomalies south of the lake centered on L2100 S (Fig. 21A). However, because of the discontinuous patchy nature of anomalous gold in the soils combined with the negative (although not definitive) results obtained from test drilling, any follow-up in the Peter's Mine South Grid area should probably only be considered in the context of a complete re-evaluation of the economic significance of the Peter's Mine excluded area. Work here could then be undertaken in conjunction with any development/exploration activities that may be instituted.

4.2.4 Summary of Results and Conclusions, Area II - Eastern Cuyuni

4.2.4.1 General

The results of combined geological, geochemical, geophysical, soil-sampling and drilling work accomplished during the course of the project have failed to confirm the association of potential base-metal sulphide or gold mineralization with the Cuyuni 'greenstone' metavolcano-sedimentary rocks. Hydrothermal alteration has affected some of these rocks in the Central Puruni (Block) Area and this is probably associated with the emplacement of the major Million Mount sub-volcanic granitoid intrusive center and associated stocks and their controlling structures in the vicinity of Peter's Mine.

The primary approach towards the discovery of volcanogenic sulphides, multi-method ground geophysics, was made more difficult by carbonaceous-graphite horizons within the metavolcano-sedimentary series. All conductors identified and tested are formational in origin. Gold exploration work accomplished in the area not related to the work on volcanogenic sulphides strongly suggests that a close association exists between gold mineralization and sub-volcanic granitoid intrusive centers. More specifically the project's work has shown that gold mineralization at Peter's Mine is more extensive than previously known even though economic implications of this finding remain unknown. Future bedrock gold exploration should be focussed upon the peripheral areas of these intrusive centers and associated apophyses and stocks. Detrital gold is fairly ubiquitous within the weathering profile and is probably patchily enriched in chemically suitable environments within the tropical laterized soils and duricrust. This gold will tend to be further concentrated by normal mechanical processes in the drainage sediments. The exploration for bedrock gold using residium sampling cannot, therefore, be carried out without precise geological and structural control. The detrital gold in the area probably has its primary origin in the epithermal systems associated with the intrusive centers and rhyolite domes although some is almost certainly associated with, and derived from, minor pyritic and exhalative horizons, including cherts, within the volcano-sedimentary greenstone sequences.

4.2.4.2 Base-metals

Regional geochemical stream-sediment surveys carried out in the Puruni and Cuyuni Blocks did not delineate areas or targets of potentially economic mineralization. Drainage copper and zinc anomalies are considered to be lithological in origin. The detailed soil surveys carried out in conjunction with ground geophysical investigations over specific grids tend to confirm the lithological origin of the elevated base-metal values. Although numerous geophysical anomalies were defined on the ground, many of these being previously detected by airborne geophysical surveys, none are associated with geochemical soil anomalies. This non-association is considered to be a particularly negative factor.

In the Puruni Block detailed investigations specifically orientated towards the discovery of base-metal sulphides were undertaken over 14 grids which involved the cutting of some 500 km of lines. Fairly exhaustive work was effected over 7 of these grids and diamond drilling was done on two (Grids 7 and 8) to test 5 priority geophysical anomalies. This test drilling (1,599 m in 14 holes) proved that most, if not all, of the strong geophysical signals are a reflection of carbonaceous (graphitic) sediments although minor pyritic banding with little associated pyrrhotite and chalcopyrite was intersected. Highest base-metal values obtained were 400 ppm Cu (0.04%) and and 300 ppm Zn (0.03%).

In the Cuyuni Block detailed base-metal exploration was carried out over 2 grids (Grids 1 and 5) to the north of the Oko River. A coincident Cu/Zn soil anomaly (+85 ppm Cu; +60 ppm) in the western part of Grid 1 with a surface area of 1.2 km by 0.5 km is not reflected by geophysics and is probably formational in origin. No drilling or other follow-up work was considered warranted.

Results of all work accomplished in project Area II-Eastern Cuyuni, failed to identify any potentially economic base-metal mineralization. It would be difficult to recommend any follow-up work. Any further approach for the discovery of volcanogenic sulphide mineralization would require the ability to locate higher level volcanic centers and associated (possibly non-formational) geophysical anomalies with associated geochemical signatures.

It is recognized that even those horizons (carbonaceous-graphites) giving rise to 'formational' geophysical conductors can be conducive to metal deposition but at present there is no discriminatory method, apart from drilling, to distinguish between barren and mineralized horizons.

4.2.4.3 Gold

The regional geochemical stream-sediment sampling programme failed to identify anomalous patterns indicative of bedrock gold mineralization. This work, however, did prove the ubiquitous presence of gold in the weathering profile. Because of this feature it is not totally implausible to conjecture that areas of bedrock gold potential could be masked by elevated gold in the residium which is not directly related to primary mineralization. To further test the significance of drainage anomalies, bank soil-sampling was done at selected sites in the Puruni Block. This work failed to pinpoint the origin of the alluvial gold.

High gold values in a tributary of the Puruni River, Chinese Creek, some 10 km to the south of Peter's Mine, prompted detailed drainage sampling work. Several values of more than 1,000 ppb Au (1 ppm) were obtained from the -80 mesh fraction of stream-sediment samples with a maximum value of 9,500 ppb (9.5 ppm). The origin of this gold is considered to be the superficial concentration of gold in the residual soils overlying a zone of sporadic mineralization extending south from Peter's Mine.

Highly anomalous gold values were obtained from soil sampling in 5 of the 14 detailed grids established in the Puruni Block in relation to the exploration for volcanogenic sulphides. Values ranged from 400 ppb to 1,600 ppb Au. However, these anomalous samples are sporadic and suggest patchy secondary gold enrichment in the residual laterized overburden rather than bedrock mineralization. Similar to the results of the base-metal programme, anomalous soil samples have no direct relationship to geophysical anomalies.

To follow-up old 'showings' in the favourable intrusive center environment within the Puruni Block, sampling was performed over three grids; Million Mount and Mara Mara (on the NE periphery of the intrusive center associated with Peter's Mine) and Jubilee Creek. At Million Mount soil values of up to more than 2,000 ppb (2 ppm) were detected. At Mara Mara scattered gold values in soils ranged from 500 ppb to 3,400 ppb Au (3.4 ppm) and at Jubilee Creek a soil gold anomaly with a surface dimension of 500 m x 100 m was defined containing spot highs of between 1,600 ppb and 2,200 ppb Au (1.6 - 2.2 ppm). Follow-up work can be recommended for all three areas although consistently negative assays on quartz vein material from the Mara Mara grid would suggest that this area maybe the least attractive of the three.

Detailed work over Grid 1 in the Cuyuni Block to the north of the Oko River which was carried out primarily for base-metal sulphides identified a soil anomaly of 600 m x 200 m containing 9 samples with values ranging from 1,000 ppb to 4,900 ppb Au (1.0 - 4.9 ppm). Some initial follow-up by auger sampling of the residual overburden could be considered. Other work in the Cuyuni Block, around the old Wawiri 'showing', and limited work in the Aremu Block around the old Aremu Mine did not provide encouraging results.

Test IP work over Peter's Mine allowed the tracing of a geophysically response structure in a southerly direction. Combined with the high gold results from Chinese Creek further to the south these results prompted the execution of an intensive soil-sampling programme over an area of 9.5 km^2. Elevated gold values allowed the selection of a 28 ha area over which detailed soil and auger sampling were carried out in this Peter's Mine South Grid centred about 2.5 km to the south of Peter's Mine. A marked soil anomaly was defined in the south-central portion of this detailed grid measuring almost 300 m in a N-S direction and 100 m wide. In this zone some 16 samples provided values of over 1,000 ppb (1 ppm) Au with a high of close to 6,000 ppb (6 ppm) Au. Auger sampling, although producing high nominal gold values in the concentrates show that overburden grades down to 1 m depths rarely exceed 0.6 g/tonne Au and are generally in the order of 0.1 to 0.2 g/tonne. These grades would not allow consideration of bulk mining. Drill testing of an IP anomaly to the north of the main overburden gold anomaly provided negative results even though narrow pyritic banding was intersected. The economic significance of elevated gold values in the residuals of this Peter's Mine South area remains unknown. The generally patchy nature of anomalous samples is not strongly encouraging. Some of the anomalies may reflect actual bedrock-stringer or disseminated mineralization associated with, or an extension of, the Peter's Mine mineralization or some may be 'false' anomalies caused by surficial enrichment in the uppermost part of the weathering profile. Further drilling could be considered but it would be wise to link any follow-up work to a much larger programme with its main objective being the reassessment of the actual Peter's Mine area.

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ANNEX 1

PROJECT AREA II - EASTERN CUYUNI

RESUME OF DETAILED GRID WORK - EXPLORATION ACTIVITIES

ANNEX 1

PROJECT AREA II - EASTERN CUYUNI
RESUME OF DETAILED GRID WORK - EXPLORATION ACTIVITIES

AREA	WORK DONE			RESULTS
A. PURUNI				
Grid - 1 N (Fig. 18)				
Geology:				- Two thirds of the western part of the grid as well as north-eastern corner are underlain by amphibolite.
Geophysics:	PEM:	7.5	km	- Few questionable PEM anomalies.
	DEEPEM:	1.75	km	- Anomalies caused by conductive overburden.
	IP:	17.0	km	- Weak anomalies coincident with weak PEM anomalies in central part of grid.
Geochemistry:	*Stream Sed.:	14	samples	- SS-791: Au up to 1100 ppb.
	*Soils:	275	"	- Some weak soil anomalies.
	Overburden (auger)	36	"	- Follow-up work by power augering was carried out on the area surrounding SS-791 but without positive results.

Conclusions and Recommendations

AEM-1N anomaly not located. Geochemical-geophysical results are insignificant. No further exploration work is recommended.

AREA	WORK DONE	RESULTS
Grid - 1S (Fig. 468)*		
Geology:		- Mainly quartzites and intermediate basic volcanics distributed in northwestern part of the grid.
Geophysics:	PEM: 11.0 km	- AEM-1S anomaly was located and defined for a distance of 8,000 m open to the west. It is 105 m wide, dipping south and lying 40-60 m deep.
	MAG: 8.75 km	- Results random and irregular.

Conclusions and Recommendations

No further work is considered justified.

AREA	WORK DONE	RESULTS
Grid - 2S (Fig. 469)*		
Geology:		- Mostly underlain by amphibolites with local metasediments.
Geophysics:	PEM: 7.5 km	- A zone of increased surface conductivity in the center of the grid gradually diminishes both to the east and the west.

Conclusions and Recommendations

Due to poor PEM response and lack of encouraging geology, no further work is recommended.

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* Deposited with the GGMC.

AREA	WORK DONE		RESULTS
Grid - 3N (Fig. 13)			
Geology:			- Underlain mainly by amphibolite with some intercalated carbonaceous argillite. Local hydrothermal alteration is recognized.
Geophysics:	PEM: DEEPEM:	30.5 km 1.55 km	- AEM-3 anomaly was located and defined over a strike length of 4 km. It is 10-25 m wide, lying 25-50 m deep, dipping towards the south in the west portion of the area and north in the east portion. AEM-4 anomaly is a weak surface response. AEM-2 was not located but is suspected to be a manifestation of the flat dipping conductor on L1800E.
	IP:	31.0 km	- Two distinct rock units indicated on either side of AEM-3 anomaly, the unit to the north being typically more resistive than that to the south.
Geochemistry:	Stream Sed.:	75 samples	- The base metal content in stream sediments, with the exception of a few higher values of Zn (120-190 ppm) and Cu (75-120 ppm) in the area of AEM-5, is insignificant. Two samples (SS-427 and 428) containing 2400 ppb and 1200 ppb Au were collected in the tributaries of Kazoom Creek.
	Soils:	992 "	- Moderate but random base metals anomalies. Several high Au values found in soils (400 ppb up to 1400 ppb) may be indicative of limited bedrock mineralization in the area around northern part of L1600W and L1400W.
	Overburden (hand auger):	30 " (10 holes)	- Results at 0'-2', 2'-4', 4'-6' depth intervals show consistently that Cu and Zn values increase with depth.

AREA	WORK DONE		RESULTS

Grid - 3N (Cont'd)

Conclusions and Recommendations

There is no spatial relationship between base metal geochemical and geophysical anomalies, and the absolute values of geochemical anomalies are insignificant for potential economic base metal deposit potentials.

The areas covered by stream sediment samples Nos. 427 and 428 (2400 ppb Au and 1200 ppb Au, respectively) and the area around L1400W-300N (700 ppb Au to 1400 ppb Au) may be of limited interest only.

Grid - 4S (Fig. 14)

AREA	WORK DONE		RESULTS
Geology:			- The area is underlain mainly by intermediate basic volcanic rocks. A porphyry stock was mapped at the southwestern part and an intermediate intrusive is located in the north central part of the grid. A N-S striking band of carbonaceous sediments (about 150-250 m wide) occurs near the centre of the grid.
Geophysics:	PEM:	9.7 km	- AEM-4S anomaly was located. It is a moderate to high conductor (7-8 channel PEM anom.) striking roughly N-S, about 1000 m long, dipping 60^{o}E averaging 20-25 m in width and lying 25-70 m deep.
	IP:	17.7 km	- Demonstrates that the AEM anomaly is characterized by high chargeability- low resistivity. Two zones of high chargeability high resistivity were located in the southwestern corner of the area.
	MAG:	3.5 km	- An irregular fluctuating response.

AREA	WORK DONE		RESULTS
Grid - 4S (Cont'd)			
Geochemistry:	Stream Sed.:	19 samples	- Two anomalies (SS-319 and 320) of 2700 ppb and 1200 ppb Au respectively were found in the SW corner of the grid.
	Drainage follow-up:	29 "	- Results of preliminary follow-up work show that gold occurs in pan concentrates but probably is not indicative of economic mineralization.
	Soils:	282 "	- In many soil samples the Zn and Ni anomalies are roughly coincident.

Conclusions and Recommendations

Geochemical and geophysical anomalies coincide fairly well with geological interpretation; e.g. AEM anomalies with the sedimentary rocks and zinc-nickel anomalies with the intermediate intrusives.

The absolute values of geochemical results are very low, except for nickel (highest = 200 ppm Ni, background 10 ppm Ni). The possibility of finding economically interesting base-metal mineralization is considered remote.

Preliminary follow-up work in the areas of samples SS-319 and 320 yielded Au values in pan concentrates.

No further work can be recommended.

AREA	WORK DONE	RESULTS
Grid - 5 (Fig. 507)*		
Geology:		- Underlain by amphibolites.
Geophysics:	PEM: 5.0 km	- Only weak near-surface conductivity was identified.
	MAG: 5.0 km	- Random and fluctuating.
		Conclusions and Recommendations
No further work is considered justified.		
Grid - 6 (Fig. 15)		
Geology:		- Northern half of the grid area is underlain by intermediate volcanic flows with pillow structures and the south half by argillaceous sediments.
Geophysics:	PEM: 13.5 km DEEPEM: 1.85 km	- AEM-6 anomaly was located and defined as a moderate to high conductive zone of 2400 m length striking 45°, dipping 60°-80° N with average width of 10-25 m situated at depth 45-75 m.
	IP: 9.0 km	- Indicate the detected anomaly is characterized by low chargeability and high resistivity suggesting a fault or weakly mineralized zone. Another small 8 channel PEM anomaly was located on L400W at 25°S at a depth of some 100 m, but this did not respond to IP.

* Deposited with the GGMC.

AREA	WORK DONE			RESULTS
Grid - 6 (Cont'd)				
Geochemistry:	Stream Sed.:	13 samples	-	Only samples SS-215 and 211 (1000 ppb Au and 420 ppb Au respectively) are worth mentioning. Other values are insignificant.
	Soils:	362 "	-	Soil sampling results show only low values (25-46 ppm Cu, 20-63 ppm Zn and 18-44 ppm Ni), the maximum values being concentrated in the northern half of the grid. Au anomalies are scattered. There are four locations with values more than 750 ppb.
	Overburden (hand auger)	36 " (12 holes)	-	Results again confirmed the tendency of Cu and Zn to increase with depth.

Conclusions and Recommendations

The geological mapping and geophysical surveys indicate that AEM-6 conductor is possibly a conductive carbonaceous shale or pyrite rich fault zone.

The presence of 1000 ppb Au in stream sediment sample No. 215 and several values more than 750 ppb Au in soil samples suggest that follow-up work (such as overburden power auger sampling) may be justified. There are, however, no strong consistent patterns indicative of important mineralization.

AREA	WORK DONE		RESULTS
Grid - 7 (Fig. 10)			
Geology:			- The area is underlain mainly by amphibolites with local intercalations of sediments whilst the central part of the grid is occupied by a band of sediments. The amphibolites appear to be mainly basaltic andesite, locally showing gneissic texture with interbanding of gabbroic and felsic elements. The sediments are mainly argillites with a fair amount of carbonaceous shale or graphite which is responsible for the conductivity. Local silicification is recognized.
Geophysics:	PEM: DEEPEM:	15.4 km 17.0 km	- AEM-7 anomaly was outlined as a moderate conductive zone about 1000 m long, striking approximately E-W, dipping steeply north in the eastern half and south in the western half of the grid. Widths range from 20 to 50 m, locally up to 200 m. A second conductor was located on L500W 240 N, striking NE-SW for about 200 m dipping steeply to the NW at a depth of 50 m-70 m. A third conductor was located across L100E and L200E just south of AEM-7. It strikes roughly N-S, dips E-W and was intercepted by diamond drillhole PUR/7/3 at a depth of 75-125 m.
	IP:	15.5 km	- An IP anomaly (high chargeability, low resistivity) was located just south of and partly overlapping and parallel to AEM-7. A similar anomaly with a relatively high chargeability and moderate resistivity is coincident with the third conductor.
	MAG:	8.0 km	- Responses are irregular and fluctuating.

AREA	WORK DONE	RESULTS
Grid - 7 (Cont'd)		
Geochemistry:	Stream Sed.: 12 samples	- Results of stream sediment sampling are disappointing.
	Soils: 129 "	- Values obtained (Cu 19, max 78; Zn 28, max 45; Ni 20, max 29 all in ppm) are clustered at the middle of the west end and the south-eastern corner of the grid covered by creek flood areas. Two Au anomalies of 1600 ppb and 1500 ppb were detected on locations L0+000 540S and L800E 250S, respectively.
	Overburden: 30 " (hand auger) (10 holes)	- Base-metal values tend to increase in depth.
Diamond Drilling:	(Figs. 23 to 25) 7 holes (590.75 m)	- Three holes were stopped in overburden due to technical difficulties. The other four intersected conductive rock formations (carbonaceous or pyritic). Only minor, thinly bedded pyritic layers in carbonaceous shale with visible chalcopyrite specks were intersected in PUR/7/5 at 119.18 m-120.70 m petering out westwards in PUR/7/6B. No interesting mineralization intersected.

Conclusions and Recommendations

AEM-7 anomaly was located on the ground but was proved to be caused by carbonaceous shale. A second conductor is also related to a carbonaceous shale but with pyritic layers and chalcopyrite specks. No anomalous base metal values were detected. Sporadic 'high' gold values in soils (1500/1600 ppb) are probably not indicative of economic mineralization.

AREA	WORK DONE		RESULTS
Grid - 8 (Fig. 11)			
Geology:			- The northern and southern sectors of the grid area are mainly underlain by amphibolites or basic-intermediate volcanic rocks with local silicification and intercalations of sedimentary rocks. The central part is occupied by sedimentary rocks which are mainly argillite with breccia conglomerate and carbonaceous shale or graphite.
Geophysics:	PEM: DEEPEM:	35.0 km 12.2 km	- Four PEM conductors were located. Zone 1 corresponds to AEM-8 anomaly, with a strike length of about 1000 m, dipping south, 10-25 m wide and lying at 50-75 m depth. Zone 2 corresponds to AEM-11 anomaly with a strike length of 1000 m, dipping south, average width 10-25 m and lying at 50 m depth. Zone 3 is a short and strong conductor on L1200E at 1025N. Characteristically 25 m wide, situated at 35 m depth, dipping south and with a strike extension of about 100 m. Zone 4 is a medium strong conductor on L600E at 150N, at 75 m depth, dipping south, ranging from 25 m to 75 m wide and about 200 m in strike length.
	IP:	52.8 km	- Best response (high chargeability and metal factor) over PEM Zone 1, and broad high chargeability-lower resistivity anomalies were located on PEM Zones 2 and 4.

AREA	WORK DONE	RESULTS
Grid - 8 (Cont'd)		
	MAG: 21.6 km	- MAG responses are irregular and fluctuating, however, generally low magnetic relief is characteristic of the middle part of the grid area, and high magnetic relief is found in northern and southern part of the grid, fairly consistent with geology.
Geochemistry:	Stream sed.: 55 samples	- Stream sediments tend to show higher Zn values (100 ppm common, max. 180 ppm) in the samples collected from the northern part of the grid. The rest average 30 ppm. Cu distribution is similar. Sample SS-519 contains 700 ppb Au, but others are insignificant.
	Soils: 1061 "	- Results of soil geochemistry include several Cu and Zn anomalies (Zn, max 100; Cu, max 72; all in ppm). These values coincide in northern and the central southern part with basic to intermediate volcanic rocks. Distribution and relation between Fe/Cu and Mn/Zn were also studied, however, no consistent relationship to other geochemical or geophysical anomalies was found.
	Overburden 36 " (hand auger) (12 holes)	- Indicate metal concentrations increasing in depth.

AREA	WORK DONE	RESULTS
Grid - 8 (Cont'd)		
Diamond Drilling:	(Figs. 26 to 29) 5 holes (764.15 m)	- One borehole was drilled on each of the PEM conductors except No. 3. All conductive zones were found to be caused by carbonaceous shale.
		Few specks of chalcopyrite in quartz-calcite veins or veinlets in basaltic-andesitic rocks were found in the lower part of PUR/8/1B, and in the upper part of PUR/8/3 boreholes.
		Rare but visible specks of chalcopyrite in quartz-calcite veinlets in graphitic argillite were found in the middle section of hole PUR/8/2.

Conclusions and Recommendations

AEM anomalies confirmed by ground PEM and two other PEM conductors were found during drilling to be caused by carbonaceous shale. Only traces of chalcopyrite were intersected in quartz-calcite veinlets. Geochemical results show low potential for finding economic base metal deposits.

Several high Au values in soil samples (ten samples with 500 ppb, Au, max 1500 ppb) scattered in the area may justify further follow-up gold exploration work but again are not considered to be strongly indicative of economic mineralization.

AREA	WORK DONE		RESULTS
Grid - 12			
Geology:			- Area is underlain by amphibolites.
Geophysics:	PEM:	9.0 km	- A weak 2-channel response was located on L300E and L60E, coinciding with a swampy area.
	MAG:	3.4 km	- Insufficient response for interpretation.
			No further work warranted.
Grid 14			
Geology:			- Basic-intermediate volcanic rocks dominate in the western half of the grid and argillaceous sediments in the eastern half.
Geophysics:	PEM: MAG:	4.65 km 3.20 km	- Ground surveys showed that an old railway track, buried by top-soil, was the cause of the AEM anomaly.
			No further work is recommended.

AREA	WORK DONE		RESULTS
Grid - 135 (Fig. 16)			
Geology:			- Almost two-thirds of the area is occupied by sedimentary rocks consisting of interbedded mudstone, siltstone and sandstone with minor conglomerate and some acidic volcanics in the north.
Geophysics:	PEM: DEEPEM:	14.5 km 3.6 km	- PEM surveys outlined an 8-channel conductor, (AEM 135) striking NE over a minimum length of 400 m, 20-25 m wide, lying at 75 m depth. A minor PEM response N of AEM 135 coincides with AEM 136 which is not a distinct conductor.
			- A second weak 4-channel conductor (AEM 134) was defined S of AEM 135.
	IP:	12.0 km	- A broad zone of moderate chargeability coincides closely with the 8-channel PEM anomaly.
Geochemistry:	Soil:	304 samples	- All geochemical values (Cu 15, max 78; Zn 24, max 53; Ni 6, max 14, all in ppm) are very low. One anomalous value of 700 ppb Au was found at L0+00 850N.

Conclusions and Recommendations

Judging from the geophysical ground surveys anomalies, AEM-134, 135 and 136 appear misplotted about 800 m to the south.

Geochemical results indicate that the area is probably underlain by sedimentary rocks. Very low metal values do not suggest base metal mineralization. No further work is justified.

AREA	WORK DONE		RESULTS
Grid - 149			
Geology:			- The area is underlain by sedimentary rocks covered by alluvium.
Geophysics:	PEM:	6.4 km	- A weak to moderate 200 m long narrow conductive zone was located dipping south (corresponding to AEM 149).
No further work is considered justified.			
Grid - 151 (Fig. 17)			
Geology:			Southeast corner of the grid is underlain by greywacke and the rest by argillaceous sediments.
Geophysics:	PEM: DEEPEM:	31.5 km 20.5 km	- AEM-151 anomaly appears to include two closely adjacent conductors, striking near N-S, 600 m long, averaging 25-50 m in width and situated 35 m deep in the central portion and at 90 m depth at both ends. The second conductor is incompletely defined although the initial survey indicates a conductor 600 m long, striking near E-W at a depth of 100 to 150 m.

AREA	WORK DONE		RESULTS
Grid - 151 (Cont'd)			
Geochemistry:	Stream sed.:	30 samples	- In stream sediment samples the values of Cu and Zn are relatively high for the Puruni area. (75-110 ppm Zn, max 160; 35-70 ppm Cu, max 94). Au range is mostly 60 ppb except at two points (300 ppb and 350 ppb in the SE corner of the grid and 3900 ppb Au at SS-729).
	Pan Conc.:	4 samples	
	Soils:	216 "	- Some moderate anomalies (40 ppm Cu, max 74; 60 ppm Zn, max 100 ppm) without relation to AEM-151 anomaly. Higher values follow creek drainage or are randomly scattered. Sample L400N 350E provided a value of 480 ppb Au .
			- Preliminary follow-up work on SS-729 yielded attractive gold values from pan concentrate samples. However, poor results were obtained from bank soil sampling.
	Overburden (auger) sampling on SS-729 in 35 holes:	70 samples	- Values for Au from power auger sampling were low. Only four samples contained over 1000 ppb Au (max 2700 ppb Au).

Conclusions and Recommendations

No further base metal exploration work is recommended due to the low level of geochemical values.

Although very high Au values were obtained from the preliminary follow-up work on SS-729, power auger sampling results around SS-729 were disappointing. The source which causes this anomaly is probably upstream. Further detailed work (stream sediment sampling, power auger sampling, etc.) may, therefore, be considered for the upstream area.

AREA	WORK DONE	RESULTS
Million MT Grid (Fig. 504)*		
Geology:		- Northern part of the grid is underlain by sedimentary rocks consisting of greywackes, and the southern part by intrusives composed of felsic rocks ranging from granite to porphyritic rhyolite.
		- Quartz veins, shears and gold anomalies were reported previously and 7 diamond drill holes were previously sunk close to an old adit. The holes reportedly intersected some minor gold mineralization at depth but no values are available.
Geophysics:	IP: 16.0 km	- Results suggest a siliceous contact or interbedded siliceous member between the sediments and granite. However, as only N=1 and 2 were measured and the area is covered by thick overburden, correlation between the geology and geophysical results (except the above mentioned contact) is lacking.
Geochemistry	Stream Sed.: 17 samples	- SS-459, the only anomalous stream sediment sample, contains 2000 ppb Au and preliminary follow-up gave interesting results in pan concentrate samples.
	Soils: 90 "	- Soil samples were analysed for Cu, Pb, Zn, Ni, W. As, Au, Fe and Mn. Average/maximum values: 6/16 ppm Zn; 2/4 ppm Ni; 4/6 ppm As; 27/470 ppm W; 167/2100 ppb Au; 15/33 ppm Mn; 31000/68000 ppm Fe . With the exception of gold, metal values are uninteresting.

* Deposited with the GGMC

AREA	WORK DONE	RESULTS
Million MT Grid (Cont'd)		
		- On line 0+00 from 350N to 700N the gold values range mostly from 500 ppb to 2100 ppb indicating a potentially interesting exploration target.

Conclusions and Recommendations

Geochemical surveys indicate interesting gold values in the areas around location SS-459 and L0+00 around 350N - 700N probably related to intrusives. Follow-up is recommended.

AREA	WORK DONE	RESULTS
Mara Mara Grid (Fig. 813)*		
Geology:		- Granite porphyry occupies the southern two thirds of the grid area. The remainder is underlain by basalt. A massive quartz vein had been previously trenched at a point 1000 ft from the mouth of the Mara Mara river. The distribution of quartz float was mapped indicating a vein about 400 m long, with a maximum width of 8 m striking N-S. Most of the vein is barren massive quartz with local rusty spots. Minor pyrite and/or chlorite and sericite can be recognized.
Geophysics:IP	a) Modified Wenner Array: 7.0 km b) Dipole-Dipole Array: 8.0 km	- Detailed surveys of the quartz vein area indicate that a vein structure dipping gently to the east lies at less than 20 m depth and has increasing conductivity to the south.

* Deposited with GGMC

AREA	WORK DONE		RESULTS
Mara Mara Grid (Cont'd)			
Geochemistry:	Stream Sed.: Rocks:	3 samples 9 "	- Results from stream sediment sampling are insignificant. Two samples collected over basaltic rock area provided 64 and 65 ppm Zn, respectively.
	Soils: (66 over vein)	195 "	- No significant soil anomalies (Cu, Pb, Zn and Ni) were detected. High Au values (500 ppb, max. 3400 ppb) are scattered in the central and southern part of the grid. Maximum Au in quartz-vein samples was 1,100 ppb.

Conclusions and Recommendations

High Au values in soils (500 ppb or more) are not considered to indicate economic mineralization.

AREA	WORK DONE		RESULTS
Jubilee Creek Grid (Fig. 20)			
Geology:			- Underlain by diorite except for a pyroxenite stock found in the north. Old shafts/adits and prior drilling by GGMC.
Geophysics:			- No work done
Geochemistry:	Soils:	124 samples	- A few elevated background values of Cu and Zn were detected in both the SE and NW corners of the grid.

AREA	WORK DONE	RESULTS
Jubilee Creek Grid (Cont'd)		
		- A zone of anomalous gold values was located extending some 100 m on either side of the base line from line 150E to 150W where values of 1600, 1800 and 2200 ppb Au were obtained.

Conclusions and Recommendations

Previous exploration data, fairly extensive old workings and some elevated gold values in soils suggest that some bedrock gold mineralization may be present. Initial follow-up maybe justified.

Chinese Creek Area (Fig. 12)		
Geology:		- Mapping indicates the area to be underlain by amphibolite.
Geochemistry:	Stream Sed.: 25 samples	- Four stream sediment samples (No's. 7, 11, 14 and 23) were found to contain between 1000 ppb and 9500 ppb Au.

Conclusions and Recommendations

Preliminary stream sediment sampling follow-up was carried out in the creek and attractive results may warrant some follow-up gold exploration even though these anomalies may represent mechanical reconcentration from elevated enriched Au in soils from Peter's Mine South Grid.

AREA	WORK DONE		RESULTS
Peter's Mine South Grid (Figs. 12, 21A and 21B)			
Geology:			- Arenaceous sediments are found in the western part of the grid area and the rest is underlain by amphibolite.
Geophysics:	IP (Excluded Area)	5.2 km	- In the Excluded Area, the IP surveys outlined, besides the extension of the main vein structure, another high resistivity zone, possibly another quartz vein, on line 7505 and 9005 at 200E stations.
	(Grid Area)	60.0 km	- A moderately high resistivity and chargeability anomaly was detected on L1900 and 2100S at 100W and 150W stations.
Geochemistry:	Soils:	638 samples	- Analytical results show 13.8 percent of the samples to contain between 100-499 ppb Au, 2.7 percent, 500-999 ppb Au and 1.9 percent 1000 ppb-3200 ppb Au. Soil samples above 100 ppb Au are concentrated in the western central part of the grid.
			- In the northern part of the original large grid (Fig. 12) samples with over 1000 ppb are aligned in a N-S direction at 100W stations and form a broad cluster on the W parts of lines 2100S and 2300S (the southern portion of the detailed grid, Fig. 21A). Soil work on the detailed grid during the auger-sampling programme defined a marked anomalous area (Lines 2050 to 2200S) of 150 m (E-W) by 200 m (N-S) with many values close to or above 1000 ppb Au with a high of 5,600 ppb.

AREA	WORK DONE	RESULTS
Peter's Mine South Extension Grid (Cont'd)		
	Overburden (auger) (up to 5 m depth, total 193 holes) 303 samples	- Results of power auger sampling conform reasonably well with the Au content in the surface soil samples whenever the values are over 500 ppb. However in some cases, there are discrepancies between the surface and deeper samples which may be due to sample representativity. Work on the concentrates obtained from the auger programme on the detailed grid (Fig. 21B) demonstrate the ubiquitous nature of gold in the overburden but with elevated values (.5/.6 g/t Au) corresponding with soil anomalies on L2000S with sporadic highs (0.15 g/t to 1.35 g/t Au) in the S and N parts of the grid.
Diamond Drilling:	2 boreholes (total 244.2 m) (Fig. 23)	- Overburden samples from PUR/PM/2 show contents of 550 ppb Au between 12.19 m - 15.24 m and 460 ppb between 30.48 m - 33.53 m. The rest of the values are insignificant. Overburden in PUR/PM/1 was not recovered due to water circulation problems. Bedrock found in boreholes is amphibolite with local silicification, chloritization, sericitization and dissemination of pyrite. Base metal values are low.

AREA	WORK DONE	RESULTS

Peter's Mine South Grid (Cont'd)

Conclusions and Recommendations

Origin of elevated gold values in soils and concentrates (oveburden) not determined. May be surficial enrichment with no underlying bedrock source or caused by gold-bearing sub-outcropping stringer/veins associated with Peter's Mine. Gold content of overburden too low to consider bulk-mining as absolute gold values recovered rarely exceed 0.5 g/tonne Au and are generally much lower.

North-south structural trends, including Peter's Mine vein zone, indicated by vein quartz outcrops, geophysical and/or geochemical anomalies are intermittently traceable southwards to the area of Chinese Creek.

Follow-up work may be considered. It would be logical for any such work to commence in the Peter's Mine (excluded area) and work out from the known to the unknown.

AREA	WORK DONE	RESULTS
B. CUYUNI		
Grids 1 and 5 (Fig. 19)		
Geology:		- The area is underlain by the Blue Mt. Formation and related rocks within intermediate felsic meta-volcanics and meta-sediments. Majority of the Input anomalies appear to be caused by carbonaceous-graphitic sediments.
Geophysics: PEM: a) On 1 b) On 5	 60.0 km 8.0 km	- Five conductive zones (2 channel anomalies) were located caused by surficial conductors (laterite). Numerous INPUT MK111 airborne anomalies questionable in origin.
Geochemistry: Soils:	1129 samples	- Results of work on Grid 1 show somewhat higher Cu-Zn background values (85 ppm Cu, max. 400 ppm; 60 ppm Zn, max. 170 ppm) than those typical for Puruni areas with elevated values concentrated in the centre and to a lesser degree in the northern sector of the grid. A coincident Cu/Zn anomaly in the western part of the N-sector over an area of 1.2 km by 0.5 km probably formational in origin. Au values are generally very low and only 1.07 percent of the samples contain values over 500 ppb Au. Most of the high Au values (Grid 1) cluster around L500W-L1000W at 100S-350N (open to south) and 300N-400N where 9 samples showed values over 1000 ppb (max 4900 ppb).

AREA	WORK DONE	RESULTS

Grid 1 and 5 (Cont'd)

Conclusions and Recommendations

Higher sporadic Zn and Cu values as well as the coincident zone centered on L3000W 850N probably reflect bedrock geology (basaltic-andesitic volcanics). There are no corresponding geophysical anomalies.

Some initial follow-up of the Au soil anomalous zone could be considered.

Grid 11c (Fig. 36)

AREA	WORK DONE	RESULTS
Geology:		- Most of the grid is underlain by fine to medium grained amphibolite and covered partly by lateritic duricrust. Leucocractic stocks are intruded in the central part and southeastern corner of the grid area. An ultrabasic body is located in the eastern sector of the area. Grid includes old Wariri gold mine (dating to 1863).
Geophysics:		- None
Geochemistry:	Stream Sed.: 4 samples Soils: 142 "	- Results of stream sediment sampling were discouraging. Soil sampling showed higher background values of Cu and Zn, which probably reflect the bedrock geology (amphibolites). High Ni values are mostly found in the eastern part of the grid in the vicinity of the ultramafics.

AREA	WORK DONE	RESULTS
Grid 11c (Cont'd)		
		- Only one significant Au value (930 ppb) was obtained near the old Wariri Mine and a few others over 100 ppb Au are scattered irregularly. Cu/Fe and Zn/Mn ratios were studied but no correlation could be found.

Conclusions and Recommendations

Absolute values of Cu and Zn are too low to make this area interesting.

The anomalous gold values are few and scattered and do not justify further follow-up.

ANNEX 2

A. <u>SUMMARY OF GEOPHYSICAL WORK IN AREA II</u>

B. <u>SUMMARY OF GEOCHEMICAL SAMPLING IN AREA II</u>

A. SUMMARY OF GEOPHYSICAL WORK IN AREA II

AIRBORNE, PRE-PROJECT SURVEY		PROJECT ACTIVITIES					
GRID	INPUT Anomaly	Line-Cutting, km.	PEM Survey, km.	DEEPEM Survey, km.	DEEPEM Tx. Loops	I.P. Survey km.	MAGNETOMETRIC Survey, km.
Puruni Block							
1-S	1-S	14.0	11.0	-	-	-	8.75
1-N	1 (plus 2)	21.8	7.5	1.75	4	17.0	-
2-S	2-S, 3-S	21.35	7.5	-	-	-	-
3-N	2, 3, 4, 5, (plus 1)	79.4	30.5	1.55	4	31.0	-
4	4-S	22.6	9.7	0.9	2	17.7	3.5
5	5-S	9.4	5.0	-	-	-	5.0
6	6	21.1	13.5	1.85	4	9.0	-
7	7	22.7	15.4	8.1	21	85.5	8.0
8	8, 9, 10, 11	43.3	35.0	12.2	39	52.8	21.6
12	12	14.5	9.0	-	-	-	3.4
14	14	9.6	4.65	-	-	-	3.2
135	134, 135, 136	22.0	14.5	3.6	8	-	-
149	149	7.9	5.15	-	-	-	-
151	151 (plus 2)	41.5	31.5	20.0	40	-	-
Peter's Mine	-	22.5	-	-	-	64.4	-
Mara Mara	-	12.0	-	-	-	21.1	-
Million Mountain	-	9.4	-	-	-	16.0	-
Sub-Totals	-	395.05	199.90	47.25	116	314.5	53.45
Cuyuni Block							
1	E8 - 5, 6, 7 E12 - 1, 4, 11, 13	110.8	60	-	-	-	-
5	E12 - 5, 9	10.8	8	-	-	-	-
Wariri (11C)	E8 - 11	-	-	-	-	-	-
Sub-Total		129.6	68	-	-	-	-
GRAND TOTAL		524.65	267.90	47.25	116	314.5	53.45

B. SUMMARY OF GEOCHEMICAL SAMPLING IN AREA II

PURUNI BLOCK GRIDS	SAMPLE TYPE */					
	SS	SL	RK	OB	BC	PC
1-N-S	-	278	-	-	-	-
2-S	-	-	-	-	-	-
3-N	-	1311	-	-	-	-
4-S	-	251	24	-	-	-
6	-	497	-	-	-	-
7	-	229	-	24	64	-
8	-	1359	-	14	-	-
135	-	304	-	-	-	-
151	-	339	-	-	-	-
Mara Mara	-	281	42	-	-	-
Million Mountain	-	80	-	-	-	-
Peter's Mine	-	387	24	29	-	-
Peter's Mine South	25	929	-	-	-	283
Jubilee Creek	-	133	-	-	-	-
Chinese Creek	35	-	-	-	-	25
Regional	1550	-	-	-	-	134
Gold follow-up	-	126	-	-	-	4
CUYUNI BLOCK GRIDS						
1	-	1133	-	-	-	-
11C	-	155	-	-	-	-
Regional	799	-	-	-	-	96
Gold follow-up	127	270	-	-	-	-
AREMU BLOCK GRIDS						
Aremu Mine	-	56	10	-	-	-
TOTALS	2536	8118	100	67	64	542

*/ SS - Stream Sediments
SL - Soils
RK - Rocks
OB - Overburden
BC - Borehole Core
PC - Panned Concentrates

ANNEX 3

LIST OF TECHNICAL REPORTS BY THE PROJECT

LIST OF TECHNICAL REPORTS BY THE PROJECT

Ally, L. (1981) — Summary Report on Geological Mapping on Peter's Mine Map Sheet. (Grids 2, 4, 7, 12 and 14)

Ally, L. (1982) — Compilation of Past Geochemical Work in Project Area II, East Cuyuni.

Ally, L. (1982) — Aremu Block Compilation.

Ally, L. (1982) — An Assessment of Aremu Gold Mine.

Barron, G.N. (1981) — Interim Report on an Expedition to the Muri Mountains, Southeast Guyana.

Crone, J.D. (1981) — Report on Geophysical Surveys to Date (June 1981) Central Puruni River Area.

Crone, J.D. (1981) — Report covering Horizontal Moving Coil and DEEPEM Surveys over Grids 1, 2-S, 4, 5, 6, 7, 8 and 12, Central Puruni.

Crone, J.D. (1982) — Report on Consulting Visit, (Geophysics) May 16-24 1982.

Descarreaux, J. (1981) — Report on a Field Visit, Guyana Project (GUY/NR/78/001), Cuyuni Area.

Evans, R.P. (1980) — A Geophysical Mission to Guyana.

Garson, M.S. (1979) — Investigation of Phosphate, Rare Earths and Niobium Mineralization at Suspected Twareitau Carbonatite, South Guyana.

Gibbs, A. (1981) — Preliminary Report concerning the Guyana Greenstone Belt Project (GUY/NR/78/001).

Gibbs, A. (1981) — Report on a Field Visit and Recommendations for the Mineral Exploration Programme in the Eastern Cuyuni Belt.

Gosselin, R. (1981) — Field Work Report, Guyana Project, GUY/NR/78/001, Peter's Mine Area, Puruni SE-1, SE-3.

Gosselin, R. (1982) — Gold Programme Outline and Field Work Report Guyana Project.

Kieley, J.W. (1981) Interim Report on Field Surveys in the Central Puruni Area from March 15 to May 15, 1981.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 8, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 6, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 151, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 1-N, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 12, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Report on the Aremu Accessibility Study and Proposed Exploration Programme in the Aremu Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 149, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 4-S, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 1-South, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 2-S, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 3-N, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 5, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grid 135, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Million Mount Grid, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of the Mara Mara Grid, Puruni Block, Eastern Cuyuni Greenstone Belt.

Kieley, J.W. (1982) Preliminary Report on the Geophysical Surveys of Grids 1 and 5, Cuyuni Block, Eastern Cuyuni Greenstone Belt.

Kieley, J.W. (1983) Addenda to preliminary Report on the Geophysical Surveys of Grid 4-S. Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1983) Revised Report on Grid 7, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1983) Terminal Report on Geophysical Surveys, Eastern Cuyuni, Greenstone Belt.

Kieley, J.W. (1983) Preliminary Report on the Geophysical Surveys of Peter's Mine Grid, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Final Report on Puruni Grid 4-S, East Cuyuni, Greenstone Belt, Guyana.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 151, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Report on Preliminary Follow-up Work on Regional Geochemical Survey, Cuyuni Block, East Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 3-N, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 6, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 7, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 1-N, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 139, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Summary Report of the Exploration Work on Grid 8, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Preliminary Report on the Geochemical Surveys on Grid 11C, Cuyuni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Report of the Exploration Work on the Mara Mara Grid Area, Puruni block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Preliminary Report on the Geochemical Surveys on the Peter's Mine South Grid, Puyuni Block, Eastern Cuyuni, Greenstone Belt.

Lu, K.I. (1983) Report on the Results of the Diamond Drilling Programme in the Puruni Area in 1982, Eastern Cuyuni, Greenstone Belt.

Mariano, A.N. (1981) Carbonatite Exploration Report on the Muri Mountains Region, Guyana.

Nichol, I. (1982) "Assessment of Geochemical Exploration Aspects of UNFNRE Project GUY/NR/78/001".

Shaw, E. (1982) Report on the Aremu Accessibility Study and Preliminary Geochemical Sampling Phase in the Aremu Block, Eastern Cuyuni, Greenstone Belt.

Tremblay, D. (1982) Field Work Report Drilling Supervision and Prospecting.

Verleun, L. (1981) Report on the Geology, Geophysics and Geochemistry of Grid 7, Puruni Block, Eastern Cuyuni, Greenstone Belt.

Verleun, L. (1982) Preliminary Report on the Geology and Geochemistry of Grid 4-S, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Preliminary Geological Report of Grid 6, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Preliminary Geological Report of Grid 6, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Preliminary Geological Report of Grid 3-N, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Preliminary Geological Report of Grid 151, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Preliminary Report on the Geology and Geochemistry of Grid 8, Puruni Block, Eastern Cuyuni Belt.

Verleun, L. (1982) Report on the Regional Geological and Geochemical Prospection in the Puruni Block, Eastern Cuyuni Belt.

ANNEX 4

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 9 - Geophysical Compilation (Progress Map as of March 1981) (Area II, Puruni Block)
Dwg. No. 12 - Magnetic Profile, Grid 14, Access Line (Area II, Puruni Block)
Dwg. No. 13 - Magnetic Profile, Grid 14, Line 0+00 (Area II, Puruni Block)
Dwg. No. 14 - Magnetic Profile, Grid 14, Line 200W (Area II, Puruni Block)
Dwg. No. 15 - Magnetic Profile, Grid 14, Line 600W (Area II, Puruni Block)
Dwg. No. 16 - Magnetic Profile, Grid 14, Line 400W (Area II, Puruni Block)
Dwg. No. 17 - Magnetic Profile, Grid 8, Access Line (Area II, Puruni Block)
Dwg. No. 19 - PEM Survey, Grid 2, Line 7+00E (Area II, Puruni Block)
Dwg. No. 20 - PEM Survey, Grid 8, Line 0 (Area II, Puruni Block)
Dwg. No. 21 - PEM Survey, Grid 2, Line 400E (Area II, Puruni Block)
Dwg. No. 22 - PEM Survey, Peter's Mine Grid, Test Line 250N (Area II, Puruni Block)
Dwg. No. 24 - Pulse EM Survey, Vert. Comp., Grid 14, Access Line (Area II, Puruni Block)
Dwg. No. 25 - DEEPEM Survey, (TX1) Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 26 - PEM Survey, Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 27 - DEEPEM Survey, (TX3) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 28 - Pulse EM Survey, Vert. Comp., Grid 14, Line 0+00 (Area II, Puruni Block)
Dwg. No. 29 - PEM Survey, Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 31 - PEM Survey, Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 32 - PEM Survey, Grid 8, Line 400W (Area II, Puruni Block)
Dwg. No. 34 - PEM Survey, Grid 8, Line 200W (Area II, Puruni Block)
Dwg. No. 35 - Magnetic Profile, Grid 8, Line 0+00 (Area II, Puruni Block)
Dwg. No. 36 - Magnetic Profile, Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 37 - Magnetic Profile, Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 38 - Magnetic Profile, Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 39 - Magnetic Profile, Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 40 - Magnetic Profile, Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 41 - Magnetic Profile, Grid 8, Line 200W (Area II, Puruni Block)
Dwg. No. 42 - PEM Survey, Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 43 - Magnetic Profile, Grid 8, Line 600W (Area II, Puruni Block)
Dwg. No. 44 - Magnetic Profile, Grid 8, Line 400W (Area II, Puruni Block)
Dwg. No. 45 - DEEPEM Survey, (TX11) Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 46 - Magnetics, Grid 1-S, Line 0+00 (Area II, Puruni Block)
Dwg. No. 47 - PEM Survey, Grid 7, Line 200E (Area II, Puruni Block)
Dwg. No. 48 - Magnetics, Grid 1-S, Line 200W (Area II, Puruni Block)
Dwg. No. 49 - PEM Survey, Grid 7, Line 0+00 (Area II, Puruni Block)
Dwg. No. 50 - Magnetics, Grid 1-S, Line 400W (Area II, Puruni Block)
Dwg. No. 51 - DEEPEM Survey, (TX10) Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 52 - Magnetics, Grid 1-S, Line 600W (Area II, Puruni Block)
Dwg. No. 53 - Magnetics, Grid 1-S, Line 800W (Area II, Puruni Block)
Dwg. No. 54 - PEM Survey, Grid 7, Line 200W (Area II, Puruni Block)
Dwg. No. 55 - Pulse EM Survey, Grid 4, Line 600N (Area II, Puruni Block)
Dwg. No. 56 - PEM Survey, Grid 7, Line 400W (Area II, Puruni Block)
Dwg. No. 57 - Pulse EM Survey, Grid 4, Line 0+00 (Area II, Puruni Block)
Dwg. No. 59 - Magnetic Profile, Grid 12, Line 0+00 (Area II, Puruni Block)
Dwg. No. 61 - Magnetic Profile, Grid 4, Line 0 (Area II, Puruni Block)
Dwg. No. 62 - Pulse EM Survey, Grid 4, Line 200N (Area II, Puruni Block)
Dwg. No. 63 - Pulse EM Survey, Grid 4, Line 400N (Area II, Puruni Block)
Dwg. No. 64 - Magnetic Profile, Grid 4, Line 200N (Area II, Puruni Block)
Dwg. No. 65 - Pulse EM Survey, Grid 14, Line 600W (Area II, Puruni Block)
Dwg. No. 66 - Magnetic Profile, Grid 12, Access Line (Area II, Puruni Block)
Dwg. No. 67 - Pulse EM Survey, Grid 14, Line 400W (Area II, Puruni Block)
Dwg. No. 68 - Pulse EM Survey, Grid 14, Line 200W (Area II, Puruni Block)
Dwg. No. 69 - Pulse EM Survey, Grid 14, Line 0+00, Repeat Run (Area II, Puruni Block)
Dwg. No. 70 - Pulse EM Survey, Grid 14, Line 200E (Area II, Puruni Block)
Dwg. No. 74 - Proposed Ground Follow-up Surveys (as of June 1981) (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 76 - Scintillometer Readings on Soil Grids (Area I, Muri Mountains)
Dwg. No. 81 - P205 Content in Soils (Area I, Muri Mountains)
Dwg. No. 83 - Location Sketch, Grid 7 (Area II, Puruni Block)
Dwg. No. 86 - Location and Access Sketch, Grid 12 (Area II, Puruni Block)
Dwg. No. 87 - Location Sketch, Grid 4, (Area II, Puruni Block)
Dwg. No. 88 - Location Sketch with Input Anomalies, Grid 7 (Area II, Puruni Block)
Dwg. No. 89 - Location and Access Sketch, Grid 12 (Area II, Puruni Block)
Dwg. No. 91 - Zn/Fe, Cu/Fe, Zn/Mn and Cu/Mn Ratio Diagrams, Stream Sediments (Area II, Puruni Block)
Dwg. No. 92 - Zn/Fe, Cu/Fe, Zn/Mn and Cu/Mn Ratio Diagrams, Soils (Area II, Puruni Block)
Dwg. No. 93 - Stream Sediment Samples, Location Map, (Area II, Central Puruni Block)
Dwg. No. 95 - Location of Soil Samples sites, Grid 7 & 8 (Area II, Puruni Block)
Dwg. No. 97 - PEM Survey, Grid 7, Line 600W (Area II, Puruni Block)
Dwg. No. 101 - DEEPEM Survey, (TX28) Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 102 - DEEPEM Survey, (TX28) Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 103 - IP Survey, Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 104 - DEEPEM Survey, (TX27) Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 105 - DEEPEM Survey, Grid 7, Line 0+00 TX2 (Area II, Puruni Block)
Dwg. No. 106 - Current Path Diagram, (TX13,14,29,32,33) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 106 - DEEPEM Survey, Grid 7, Line 100E TX 3 (Area II, Puruni Block)
Dwg. No. 107 - Current Path Diagram, (TX30,31) Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 107 - DEEPEM Survey, (TX32) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 108 - DEEPEM Survey, (TX30) Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 109 - DEEPEM Survey, (TX32) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 112 - Stream Sediments Sample Locations, Lion Mountain (Area II, Cuyuni Block)
Dwg. No. 113 - DEEPEM Survey, (TX31) Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 114 - DEEPEM Survey, (TX9) Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 115 - DEEPEM Survey, Grid 7, Line 200E TX4 (Area II, Puruni Block)
Dwg. No. 116 - DEEPEM Survey, Grid 7, Line 400E TX6 (Area II, Puruni Block)
Dwg. No. 117 - DEEPEM Survey, Grid 7, Line 0+00 TX1 (Area II, Puruni Block)
Dwg. No. 118 - DEEPEM Survey, (TX30) Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 119 - DEEPEM Survey, (TX31) Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 120 - PEM Survey, Grid 7, Line 500E (Area II, Puruni Block)
Dwg. No. 121 - PEM Survey, Grid 7, Line 300W (Area II, Puruni Block)
Dwg. No. 122 - PEM Survey, Grid 7, Line 400E (Area II, Puruni Block)
Dwg. No. 122 - PEM Survey, Grid 7, Line 400E (Area II, Puruni Block)
Dwg. No. 123 - PEM Survey, Grid 8, Line 300N (Area II, Puruni Block)
Dwg. No. 124 - Pulse EM Survey, Grid 6, Line 800E (Area II, Puruni Block)
Dwg. No. 125 - Pulse EM Survey, Grid 6, Line 1400E (Area II, Puruni Block)
Dwg. No. 126 - Pulse EM Survey, Grid 6, Line 0+00 (Area II, Puruni Block)
Dwg. No. 127 - Pulse EM Survey, Grid 6, Line 1000E (Area II, Puruni Block)
Dwg. No. 128 - PEM Survey, Grid 7, Line 600E (Area II, Puruni Block)
Dwg. No. 129 - PEM Survey, Grid 7, Line 800E (Area II, Puruni Block)
Dwg. No. 130 - Pulse EM Survey, Grid 6, Line 200E (Area II, Puruni Block)
Dwg. No. 131 - Pulse EM Survey, Grid 6, Line 400E (Area II, Puruni Block)
Dwg. No. 132 - Pulse EM Survey, Grid 6, Line 600E (Area II, Puruni Block)
Dwg. No. 133 - Pulse EM Survey, Grid 6, Line 1200E (Area II, Puruni Block)
Dwg. No. 134 - PEM Survey, Grid 7, Line 100W (Area II, Puruni Block)
Dwg. No. 135 - PEM Survey, Grid 7, Baseline (Area II, Puruni Block)
Dwg. No. 136 - PEM Survey, Grid 7, Line 300E (Area II, Puruni Block)
Dwg. No. 137 - PEM Survey, Grid 7, Line 100E (Area II, Puruni Block)
Dwg. No. 138 - Pulse EM Survey, Grid 4, Line 800N (Area II, Puruni Block)
Dwg. No. 139 - Pulse EM Survey, Grid 4, Line 200S (Area II, Puruni Block)
Dwg. No. 140 - PEM Survey, Grid 8, Line 1400E (Area II, Puruni Block)
Dwg. No. 141 - PEM Survey, Grid 8, Line 600W (Area II, Puruni Block)
Dwg. No. 142 - PEM Survey, Grid 8, Line 1000W (Area II, Puruni Block)
Dwg. No. 143 - PEM Survey, Grid 8, Line 1600E (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 144 - PEM Survey, Grid 8, Line 800W (Area II, Puruni Block)
Dwg. No. 145 - PEM Survey, Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 146 - DEEPEM Survey, (TX27) Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 147 - DEEPEM Survey, (TX29) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 148 - DEEPEM Survey,(TX5) Grid 7, Line 400E (Area II, Puruni Block)
Dwg. No. 149 - DEEPEM Survey, (TX33) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 150 - Pulse EM Survey, Grid 5, Line 0+00 (Area II, Puruni Block)
Dwg. No. 151 - Pulse EM Survey, Grid 5, Line 200E (Area II, Puruni Block)
Dwg. No. 152 - Pulse EM Survey, Grid 6, Line 1600E (Area II, Puruni Block)
Dwg. No. 153 - Pulse EM Survey, Grid 12, Line 0+00 (Area II, Puruni Block)
Dwg. No. 154 - Pulse EM Survey, Grid 5, Line 200W (Area II, Puruni Block)
Dwg. No. 155 - Pulse EM Survey, Grid 5, Line 400E (Area II, Puruni Block)
Dwg. No. 156 - PEM Survey, Grid 1-S, Line 1000W (Area II, Puruni Block)
Dwg. No. 157 - PEM Survey, Grid 1-S, Line 800W (Area II, Puruni Block)
Dwg. No. 158 - PEM Survey, Grid 1-S, Line 1200W (Area II, Puruni Block)
Dwg. No. 159 - PEM Survey, Grid 1-S, Line 200W (Area II, Puruni Block)
Dwg. No. 160 - PEM Survey, Grid 1-S, Line 400W (Area II, Puruni Block)
Dwg. No. 161 - PEM Survey, Grid 1-S, Line 600W (Area II, Puruni Block)
Dwg. No. 162 - PEM Survey, Grid 1-S, Line 0+00 (Area II, Puruni Block)
Dwg. No. 163 - Geological-Geophysical Base Map, Grid 7 (Area II, Puruni Block)
Dwg. No. 164 - Proposed Ground Follow-up (Area II, Cuyuni Block)
Dwg. No. 165 - Current Path Diagram, Grid 7, Line 0+00 TX1,2 (Area II, Puruni Block)
Dwg. No. 166 - Current Path Diagram, Grid 7, Line 100E TX10,11 (Area II, Puruni Block)
Dwg. No. 167 - Current Path Diagram, Grid 7, Line 200E TX3,4 (Area II, Puruni Block)
Dwg. No. 168 - Current Path Diagram, Grid 7, Line 400E TX5,6 (Area II, Puruni Block)
Dwg. No. 170 - Current Path Diagram, Grid 7, Line 600E TX14,15 (Area II, Puruni Block)
Dwg. No. 172 - Pulse EM Survey, Grid 12, Line 900E (Area II, Puruni Block)
Dwg. No. 174 - IP Survey, Grid 8, Line 1400E (Area II, Puruni Block)
Dwg. No. 176 - IP Survey, (N=1,2,3), Grid 7, Line 0+00 (Area II, Puruni Block)
Dwg. No. 177 - Status of Ground Surveys (as of Feb. 1982) (Area II, Puruni Block)
Dwg. No. 181 - DEEPEM Survey Vector Plots, Grid 7, Line 400E, TX5,6 (Area II, Puruni Block)
Dwg. No. 182 - DEEPEM Survey Vector Plots, Grid 7, Line 0+00 TX1,2 (Area II, Puruni Block)
Dwg. No. 183 - IP Survey, (N=1,2,3), Grid 7, Line 400E (Area II, Puruni Block)
Dwg. No. 184 - DEEPEM Survey, Grid 7, Line 400E TX17 (Area II, Puruni Block)
Dwg. No. 185 - Current Path Diagram, Grid 7, Line 300E TX7,8,9 (Area II, Puruni Block)
Dwg. No. 185 - Current Path Diagram, Grid 7, Line 300E TX7,8,9 (Area II, Puruni Block)
Dwg. No. 189 - Geophysical Base Map, Grid 3-N (Area II, Puruni Block)
Dwg. No. 190 - Current Path Diagram, Grid 7, Line 500E TX12,13 (Area II, Puruni Block)
Dwg. No. 191 - Geophysical Base Map, Grid 8 (Area II, Puruni Block)
Dwg. No. 192 - DEEPEM Survey, Grid 7, Line 100E TX11 (Area II, Puruni Block)
Dwg. No. 193 - DEEPEM Survey, Grid 7, Line 100E TX10 (Area II, Puruni Block)
Dwg. No. 195 - Current Path Diagram (TX1,2), Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 196 - Grid Locations (with Geophysical Anomalies) (Area II, Puruni Block)
Dwg. No. 197 - DEEPEM Suvey (TX3), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 198 - DEEPEM Suvey (TX1), Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 199 - DEEPEM Suvey (TX2), Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 200 - DEEPEM Suvey (TX4), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 201 - Vector Plots (TX3), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 202 - Vector Plots (TX4), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 203 - Geophysical Compilation Base Map, Grid 4S (Area II, Puruni Block)
Dwg. No. 204 - Current Path Diagram, Grid 4S, Line 200N (Area II, Puruni Block)
Dwg. No. 206 - PEM Survey, Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 207 - PEM Survey, Grid 3-N, Line 200E (Area II, Puruni Block)
Dwg. No. 208 - PEM Survey, Grid 3-N, Line 200W (Area II, Puruni Block)
Dwg. No. 209 - PEM Survey, Grid 3-N, Line 1400E (Area II, Puruni Block)
Dwg. No. 210 - PEM Survey, Grid 3-N, Line 400W (Area II, Puruni Block)

Dwg. No. 211 - PEM Survey, Grid 3-N, Line 400E (Area II, Puruni Block)
Dwg. No. 212 - PEM Survey, Grid 3-N, Line 600W (Area II, Puruni Block)
Dwg. No. 213 - PEM Survey, Grid 3-N, Line 600E (Area II, Puruni Block)
Dwg. No. 214 - PEM Survey, Grid 3-N, Line 800E (Area II, Puruni Block)
Dwg. No. 215 - PEM Survey, Grid 3-N, Line 1000E (Area II, Puruni Block)
Dwg. No. 216 - PEM Survey, Grid 3-N, Line 1200E (Area II, Puruni Block)
Dwg. No. 217 - PEM Survey, Grid 3-N, Line 1600E (Area II, Puruni Block)
Dwg. No. 218 - PEM Survey, Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 219 - PEM Survey, Grid 3-N, Line 2000E (Area II, Puruni Block)
Dwg. No. 220 - PEM Survey, Grid 3-N, Line 2200E (Area II, Puruni Block)
Dwg. No. 221 - PEM Survey, Grid 3-N, Line 2400E (Area II, Puruni Block)
Dwg. No. 222 - PEM Survey, Grid 3-N, Line 2600E (Area II, Puruni Block)
Dwg. No. 223 - PEM Survey, Grid 3-N, Line 2800E (Area II, Puruni Block)
Dwg. No. 224 - PEM Survey, Grid 3-N, Line 3000E (Area II, Puruni Block)
Dwg. No. 225 - PEM Survey, Grid 3-N, Line 3200E (Area II, Puruni Block)
Dwg. No. 226 - PEM Survey, Grid 3-N, Line 3400E (Area II, Puruni Block)
Dwg. No. 227 - IP Survey, Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 228 - IP Survey, Grid 3-N, Line 100E (Area II, Puruni Block)
Dwg. No. 229 - IP Survey, Grid 3-N, Line 100W (Area II, Puruni Block)
Dwg. No. 230 - IP Survey, Grid 3-N, Line 200E (Area II, Puruni Block)
Dwg. No. 231 - IP Survey, Grid 3-N, Line 1400E (Area II, Puruni Block)
Dwg. No. 232 - IP Survey, Grid 3-N, Line 1600E (Area II, Puruni Block)
Dwg. No. 233 - IP Survey, Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 234 - IP Survey, Grid 3-N, Line 2000E (Area II, Puruni Block)
Dwg. No. 235 - IP Survey, Grid 3-N, Line 2200E (Area II, Puruni Block)
Dwg. No. 237 - Current Path Diagram (TX3,4), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 238 - Current Path Diagram (TX3,4), Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 239 - IP Pseudosection, Grid 3-N, Line 100W (Area II, Puruni Block)
Dwg. No. 240 - IP Pseudosection, Grid 3-N, Line 1800E (Area II, Puruni Block)
Dwg. No. 241 - IP Pseudosection, Grid 3-N, Line 2200E (Area II, Puruni Block)
Dwg. No. 242 - IP Pseudosection, Grid 3-N, Line 2000E (Area II, Puruni Block)
Dwg. No. 243 - IP Pseudosection, Grid 3-N, Line 1600E (Area II, Puruni Block)
Dwg. No. 244 - IP Pseudosection, Grid 3-N, Line 200E (Area II, Puruni Block)
Dwg. No. 245 - IP Pseudosection, Grid 3-N, Line 1400E (Area II, Puruni Block)
Dwg. No. 246 - IP Pseudosection, Grid 3-N, Line 0 (Area II, Puruni Block)
Dwg. No. 248 - Vector Plots (TX1,2), Grid 3-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 249 - IP Survey, (N=1,2,3), Grid 7, Line 500E (Area II, Puruni Block)
Dwg. No. 250 - IP Survey, (N=1,2,3), Grid 7, Line 200E (Area II, Puruni Block)
Dwg. No. 251 - IP Survey, Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 252 - IP Survey, Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 253 - IP Survey, Grid 8, Line 1600E (Area II, Puruni Block)
Dwg. No. 254 - DEEPEM Survey, (TX20) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 255 - DEEPEM Survey, (TX21) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 256 - DEEPEM Survey, (TX22) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 257 - DEEPEM Survey, (TX23) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 258 - DEEPEM Survey, (TX24) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 259 - DEEPEM Survey, (TX25) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 260 - DEEPEM Survey, (TX26) Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 261 - DEEPEM Survey, (TX13) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 262 - DEEPEM Survey, (TX14) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 263 - DEEPEM Survey, (TX15) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 264 - DEEPEM Survey, (TX16) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 265 - DEEPEM Survey, (TX17) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 266 - DEEPEM Survey, (TX18) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 267 - DEEPEM Survey, (TX19) Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 268 - Current Path Diagram, Grid 1-N, Line 800W (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 269 - Current Path Diagram, Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 270 - Vector Plots, Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 271 - Vector Plots, Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 272 - DEEPEM Survey, (TX4), Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 273 - DEEPEM Survey, (TX3), Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 274 - DEEPEM Survey, (TX1), Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 275 - DEEPEM Survey, (TX2), Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 276 - PEM Survey, Grid 1-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 277 - PEM Survey, Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 278 - PEM Survey, Grid 1-N, Line 400W (Area II, Puruni Block)
Dwg. No. 279 - PEM Survey, Grid 1-N, Line 600W (Area II, Puruni Block)
Dwg. No. 280 - PEM Survey, Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 283 - IP Plan Map, (Metal Factor) Grid 3-N (Area II, Puruni Block)
Dwg. No. 284 - IP Plan Map, Grid 3-N (Area II, Puruni Block)
Dwg. No. 285 - IP Plan Map,(Chargeability) Grid 3-N (Area II, Puruni Block)
Dwg. No. 286 - IP Plan Map, (Metal Factor) Grid 3-N (Area II, Puruni Block)
Dwg. No. 287 - IP Plan Map, (Metal Factor) Grid 3-N (Area II, Puruni Block)
Dwg. No. 288 - IP Plan Map, (Chargeability) Grid 3-N (Area II, Puruni Block)
Dwg. No. 289 - IP Plan Map (Resistivity) of Grid 3-N (Area II, Puruni Block)
Dwg. No. 290 - IP Plan Map, (Resistivity) Grid 3-N (Area II, Puruni Block)
Dwg. No. 291 - IP Plan Map, (Chargeability) Grid 3-N (Area II, Puruni Block)
Dwg. No. 292 - IP Plan Map, (Chargeability) Grid 8 (Area II, Puruni Block)
Dwg. No. 293 - IP Plan Map, (Metal Factor) Grid 8 (Area II, Puruni Block)
Dwg. No. 294 - IP Plan Map, (Metal Factor) Grid 8 (Area II, Puruni Block)
Dwg. No. 295 - IP Plan Map, (Chargeability) Grid 8 (Area II, Puruni Block)
Dwg. No. 296 - IP Plan Map, (Resistivity) Grid 8 (Area II, Puruni Block)
Dwg. No. 297 - IP Plan Map, (Chargeability) Grid 8, (Area II, Puruni Block)
Dwg. No. 298 - DEEPEM Survey, Grid 151, Line 400N, TX39 (Area II, Puruni Block)
Dwg. No. 299 - DEEPEM Survey, Grid 151, Line 400E (Area II, Puruni Block)
Dwg. No. 300 - DEEPEM Survey, Grid 151, Line 200N, TX27 (Area II, Puruni Block)
Dwg. No. 301 - DEEPEM Survey, Grid 151, Line 0+00, TX28 (Area II, Puruni Block)
Dwg. No. 302 - DEEPEM Survey, Grid 151, (A), Baseline (Area II, Puruni Block)
Dwg. No. 303 - Current Path Diagram, Grid 151, Line 200N (Area II, Puruni Block)
Dwg. No. 305 - Location Sketch, Grids 6 & 7 (with Geophysical Anomalies) (Area II, Puruni Block)
Dwg. No. 306 - Current Diagram, Grid 6, Line 400W TX3,4 (Area II, Puruni Block)
Dwg. No. 307 - Current Path Diagram, Grid 6, Line 600E TX1,2 (Area II, Puruni Block)
Dwg. No. 308 - Current Path Diagram, Grid 151, Line 400N (Area II, Puruni Block)
Dwg. No. 309 - Current Path Diagram, Grid 151, Line 0+00 (Area II, Puruni Block)
Dwg. No. 310 - Current Path Diagram, Grid 151, Baseline (Area II, Puruni Block)
Dwg. No. 311 - IP Plan Map, (Resistivity) Grid 8, (Area II, Puruni Block)
Dwg. No. 312 - Location Sketch (with Geophysical Anomalies) Grid 7 & 8 (Area II, Puruni Block)
Dwg. No. 313 - IP Pseudosection, Grid 3-N, Line 100E (Area II, Puruni Block)
Dwg. No. 314 - DEEPEM Survey, Grid 151, Line 400N (Area II, Puruni Block)
Dwg. No. 315 - Geological Observation and Interpretation Map, Grid 6 (Area II, Puruni Block)
Dwg. No. 316 - Geological Observation and Interpretation Map, Grid 151 (Area II, Puruni Block)
Dwg. No. 317 - Geological Observation and Interpretation Map, Grid 8 (Area II, Puruni Block)
Dwg. No. 318 - Location Sketch, Grid 151 (with Geophysical Anomalies) (Area II, Puruni Block)
Dwg. No. 319 - Current Path Diagram, Grid 151, Line 200S (Area II, Puruni Block)
Dwg. No. 320 - Current Path Diagram, Grid 151, Line 200S (Area II, Puruni Block)
Dwg. No. 321 - Location Sketch, Grid 6 (Area II, Puruni Block)
Dwg. No. 322 - Location Sketch, Grid 151 (Area II, Puruni Block)
Dwg. No. 323 - Current Path Diagram, Grid 151, Line 600E (Area II, Puruni Block)
Dwg. No. 324 - Geological Observation and Interpretation Map, Grid 3-N (Area II, Puruni Block)
Dwg. No. 325 - Geological Observation and Interpretation Map, Grid 4 (Area II, Puruni Block)
Dwg. No. 326 - DEEPEM Survey, Grid 151, Line 200S, TX23 (Area II, Puruni Block)
Dwg. No. 327 - DEEPEM Survey, Grid 151, Line 0+00, TX24 (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 328 - DEEPEM Survey, Grid 151, Line 600S, TX35 (Area II, Puruni Block)
Dwg. No. 329 - Location Sketch, (with Geophysical Anomalies) Grid 3-N (Area II, Puruni Block)
Dwg. No. 330 - Location Sketch, Grid 12 (Area II, Puruni Block)
Dwg. No. 333 - Location Sketch, Grid 149 (Area II, Puruni Block)
Dwg. No. 334 - Location Sketch, Grid 1-S (Area II, Puruni Block)
Dwg. No. 335 - Location Sketch, Grid 8 (Area II, Puruni Block)
Dwg. No. 336 - Location Sketch, Grid 1-N (Area II, Puruni Block)
Dwg. No. 337 - Geophysical Compilation Base Map, Grid 135 (Area II, Puruni Block)
Dwg. No. 338 - Current Path Diagram, (TX27,28) Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 339 - Current Path Diagram, (TX2,3) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 340 - Current Path Diagram, Grid 151, Line 400S (Area II, Puruni Block)
Dwg. No. 341 - IP Plan Map, (Metal Factor) Grid 8 (Area II, Puruni Block)
Dwg. No. 342 - IP Plan Map, (Resistivity) Grid 8 (Area II, Puruni Block)
Dwg. No. 343 - IP Pseudosection, Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 344 - DEEPEM Survey, (TX36) Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 345 - DEEPEM Survey, (TX38) Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 346 - DEEPEM Survey, (TX4) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 347 - IP Pseudosection, Grid 8, Line 1100E (Area II, Puruni Block)
Dwg. No. 348 - IP Pseudosection, Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 349 - IP Pseudosection, Grid 8, Line 800W (Area II, Puruni Block)
Dwg. No. 350 - IP Pseudosection, Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 351 - IP Pseudosection, Grid 8, Line 1000W (Area II, Puruni Block)
Dwg. No. 352 - IP Pseudosection, Grid 8, Line 500E (Area II, Puruni Block)
Dwg. No. 353 - IP Pseudosection, Grid 6, Line 1200E (Area II, Puruni Block)
Dwg. No. 354 - IP Pseudosection, Grid 6, Line 1400E (Area II, Puruni Block)
Dwg. No. 355 - IP Pseudosection, Grid 6, Line 1600E (Area II, Puruni Block)
Dwg. No. 356 - IP Pseudosection, Grid 8, Line 1400E (Area II, Puruni Block)
Dwg. No. 357 - IP Pseudosection, Grid 8, Line 1200E (Area II, Puruni Block)
Dwg. No. 365 - IP Pseudosection, Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 366 - IP Pseudosection, Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 370 - Current Path Diagram, Grid 135, Line 400E, TX5,6 (Area II, Puruni Block)
Dwg. No. 371 - Current Path Diagram, Grid 135, Line 0+00, TX1,2 (Area II, Puruni Block)
Dwg. No. 372 - IP Pseudosection, Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 373 - IP Pseudosection, Grid 8, Line 1600E (Area II, Puruni Block)
Dwg. No. 380 - IP Pseudosection, Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 386 - DEEPEM Survey, (TX37) Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 387 - DEEPEM Survey, (TX34) Grid 8, Line 1400E (Area II, Puruni Block)
Dwg. No. 388 - DEEPEM Survey, (TX6) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 389 - DEEPEM Survey, (TX35) Grid 8, Line 1400E (Area II, Puruni Block)
Dwg. No. 390 - DEEPEM Survey, (TX5) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 391 - DEEPEM Survey, (TX2) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 392 - DEEPEM Survey, (TX39) Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 393 - DEEPEM Survey, (TX8) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 394 - DEEPEM Survey, (TX7) Grid 8, Line 400E (Area II, Puruni Block)
Dwg. No. 395 - Location Sketch (with Geophysical Anomalies) Grid 12 (Area II, Puruni Block)
Dwg. No. 396 - Location Sketch (with Geophysical Anomalies) Grid 149 (Area II, Puruni Block)
Dwg. No. 398 - Location Sketch, Grid 4 (Area II, Puruni Block)
Dwg. No. 399 - Location Sketch, Grid 135 (with Geophysical Anomalies) (Area II, Puruni Block)
Dwg. No. 400 - Location Sketch (with Geophysical Anomalies) Grid 1-N (Area II, Puruni Block)
Dwg. No. 402 - IP Pseudosection, Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 403 - IP Pseudosection, Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 404 - IP Survey, Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 405 - IP Survey, Grid 8, Line 500E (Area II, Puruni Block)
Dwg. No. 406 - IP Survey, Grid 8, Line 700E (Area II, Puruni Block)
Dwg. No. 407 - IP Survey, Grid 8, Line 800E (Area II, Puruni Block)
Dwg. No. 408 - IP Survey, Grid 8, Line 1000W (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 409 - IP Survey, Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 410 - IP Survey, Grid 8, Line 1000E (Area II, Puruni Block)
Dwg. No. 411 - IP Survey, Grid 8, Line 800W (Area II, Puruni Block)
Dwg. No. 412 - DEEPEM Survey, Grid 151, Line 600S, TX34 (Area II, Puruni Block)
Dwg. No. 413 - DEEPEM Survey, Grid 151, Line 200S, TX30 (Area II, Puruni Block)
Dwg. No. 414 - DEEPEM Survey, Grid 151, Baseline (Area II, Puruni Block)
Dwg. No. 415 - DEEPEM Survey, Grid 151, Line 200S, TX29 (Area II, Puruni Block)
Dwg. No. 416 - DEEPEM Survey, Grid 151, Baseline TX40 (Area II, Puruni Block)
Dwg. No. 417 - DEEPEM Survey, Grid 151, Line 200N, TX25 (Area II, Puruni Block)
Dwg. No. 418 - DEEPEM Survey, Grid 151, Line 400S, TX31 (Area II, Puruni Block)
Dwg. No. 419 - DEEPEM Survey, Grid 151, Line 400S, TX33 (Area II, Puruni Block)
Dwg. No. 420 - Location Sketch, Grid 7 (Area II, Puruni Block)
Dwg. No. 421 - IP Pseudosection, Grid 1-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 422 - IP Pseudosection, Grid 4, Line 200N (Area II, Puruni Block)
Dwg. No. 423 - IP Pseudosection, Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 424 - IP Pseudosection, Grid 4, Line 800N (Area II, Puruni Block)
Dwg. No. 424 - IP Survey, Grid 4, Line 800N (Area II, Puruni Block)
Dwg. No. 434 - IP Survey, Grid 4, Line 200N (Area II, Puruni Block)
Dwg. No. 435 - Pulse EM Survey, Grid 151, Line 200S (Area II, Puruni Block)
Dwg. No. 436 - Pulse EM Survey, Grid 151, Line 200N (Area II, Puruni Block)
Dwg. No. 437 - Pulse EM Survey, Grid 6, Line 400W (Area II, Puruni Block)
Dwg. No. 439 - Pulse EM Survey, Grid 6, Line 600W (Area II, Puruni Block)
Dwg. No. 440 - DEEPEM Survey, Grid 6, Line 400W TX3 (Area II, Puruni Block)
Dwg. No. 441 - DEEPEM Survey, Grid 6, Line 600E TX1 (Area II, Puruni Block)
Dwg. No. 442 - DEEPEM Survey, Grid 6, Line 400W TX4 (Area II, Puruni Block)
Dwg. No. 443 - DEEPEM Survey, Grid 6, Line 600E TX2 (Area II, Puruni Block)
Dwg. No. 444 - IP Survey, Grid 6, Line 1400E (Area II, Puruni Block)
Dwg. No. 445 - IP Survey, Grid 6, Line 1200E (Area II, Puruni Block)
Dwg. No. 446 - IP Survey, Grid 6, Line 1600E (Area II, Puruni Block)
Dwg. No. 447 - Location Sketch, Grid 135 (Area II, Puruni Block)
Dwg. No. 448 - Location Sketch, Grid 2-S (Area II, Puruni Block)
Dwg. No. 449 - Location Sketch, Grid 4-S (Area II, Puruni Block)
Dwg. No. 450 - Pulse EM Survey, Grid 149, Line 800E (Area II, Puruni Block)
Dwg. No. 451 - Pulse EM Survey, Grid 149, Line 200E (Area II, Puruni Block)
Dwg. No. 452 - Pulse EM Survey, Grid 149, Line 600E (Area II, Puruni Block)
Dwg. No. 453 - Pulse EM Survey, Grid 149, Line 400E (Area II, Puruni Block)
Dwg. No. 454 - Pulse EM Survey, Grid 149, Line 0 (Area II, Puruni Block)
Dwg. No. 455 - DEEPEM Survey, Grid 4, Line 200N, TX1 (Area II, Puruni Block)
Dwg. No. 455 - Location Sketch, Grid 5 (Area II, Puruni Block)
Dwg. No. 456 - Geophysical Base Map of Grid 149 (Area II, Puruni Block)
Dwg. No. 456 - Location Sketch, Grid 5 (Area II, Puruni Block)
Dwg. No. 457 - Geophysical Base Map of Grid 12 (Area II, Puruni Block)
Dwg. No. 457 - Location Sketch, Grid 5 (Area II, Puruni Block)
Dwg. No. 467 - IP Survey, (N=1,2,3), Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 468 - Geophysical Base Map of Grid 1-S (Area II, Puruni Block)
Dwg. No. 468 - Location Map, Input Anomaly 5 (Area II, Puruni Block)
Dwg. No. 469 - Geophysical Base Map of Grid 2-S (Area II, Puruni Block)
Dwg. No. 470 - IP Survey, (N=1,2,3), Grid 1-N, Line 200W (Area II, Puruni Block)
Dwg. No. 471 - Pulse EM Survey, Grid 6, Line 200W (Area II, Puruni Block)
Dwg. No. 472 - DEEPEM Survey, Grid 4, Line 200N, TX2 (Area II, Puruni Block)
Dwg. No. 473 - Geophysical Base Map, Grid 151 (Area II, Puruni Block)
Dwg. No. 474 - IP Survey, (N=1,2,3), Grid 1-N, Line 0+00 (Area II, Puruni Block)
Dwg. No. 475 - Geophysical Base Map of Grid 6 (Area II, Puruni Block)
Dwg. No. 476 - IP Survey, Grid 8, Line 600E (Area II, Puruni Block)
Dwg. No. 477 - Pulse EM Survey, Grid 151, Line 400N (Area II, Puruni Block)
Dwg. No. 478 - Stream Sediment Samples Location Map (Area II, Central Cuyuni)

Dwg. No. 479 - IP Pseudosection, Grid 135, Line 800E (Area II, Puruni Block)
Dwg. No. 480 - IP Pseudosection, Grid 135, Line 0+00 (Area II, Puruni Block)
Dwg. No. 481 - IP Pseudosection, Grid 135, Line 400E (Area II, Puruni Block)
Dwg. No. 481 - IP Survey, Grid 135, Line 400E (Area II, Puruni Block)
Dwg. No. 482 - IP Survey, Grid 135, Line 0+00 (Area II, Puruni Block)
Dwg. No. 484 - IP Survey, (N=1,2,3), Grid 1-N, Line 800W (Area II, Puruni Block)
Dwg. No. 485 - Pulse EM Survey, Grid 135, Line 800E (Area II, Puruni Block)
Dwg. No. 486 - Geophysical Base Map, Grid 1-N (Area II, Puruni Block)
Dwg. No. 487 - IP Survey, Grid 135, Line 800E (Area II, Puruni Block)
Dwg. No. 488 - Pulse EM Survey, Grid 135, Line 600E (Area II, Puruni Block)
Dwg. No. 489 - Pulse EM Survey, Grid 135, Line 0+00 (Area II, Puruni Block)
Dwg. No. 490 - DEEPEM Loop Layout, Grid 151 (Area II, Puruni Block)
Dwg. No. 490 - Pulse EM Survey, Grid 135, Line 1000E (Area II, Puruni Block)
Dwg. No. 492 - Pulse EM Survey, Grid 135, Line 200E (Area II, Puruni Block)
Dwg. No. 493 - DEEPEM Survey, Grid 135, Line 0+00, TX1 (Area II, Puruni Block)
Dwg. No. 494 - DEEPEM Survey, Grid 135, Line 0+00, TX1 (Area II, Puruni Block)
Dwg. No. 495 - DEEPEM Survey, Grid 135, Line 0+00, TX2 (Area II, Puruni Block)
Dwg. No. 496 - DEEPEM Survey, Grid 135, Line 400E, TX3 (Area II, Puruni Block)
Dwg. No. 497 - DEEPEM Survey, Grid 135, Line 400E, TX4 (Area II, Puruni Block)
Dwg. No. 498 - DEEPEM Survey, Grid 135, Line 400E, TX5 (Area II, Puruni Block)
Dwg. No. 499 - DEEPEM Survey, Grid 135, Line 400E, TX6 (Area II, Puruni Block)
Dwg. No. 500 - DEEPEM Survey, Grid 135, Line 600E, TX7 (Area II, Puruni Block)
Dwg. No. 501 - DEEPEM Survey, Grid 135, Line 600E, TX8 (Area II, Puruni Block)
Dwg. No. 502 - Pulse EM Survey, Grid 135, Line 400E (Area II, Puruni Block)
Dwg. No. 504 - Geological Observation Map, Million Mount Grid (Area II, Puruni Block)
Dwg. No. 505 - IP Pseudosection, Peter's Mine Grid, Line 1500S (Area II, Puruni Block)
Dwg. No. 506 - IP Pseudosection, Peter's Mine Grid, Line 1700S (Area II, Puruni Block)
Dwg. No. 506 - PEM Survey, Grid 2, Line 1800E (Area II, Puruni Block)
Dwg. No. 507 - Geophysical Base Map, Grid 5 (Area II, Puruni Block)
Dwg. No. 508 - IP Pseudosection, Peter's Mine Grid, Line 1300S (Area II, Puruni Block)
Dwg. No. 509 - IP Pseudosection, Peter's Mine Grid, Line 1100S (Area II, Puruni Block)
Dwg. No. 510 - IP Pseudosection, Peter's Mine Grid, Line 2300S (Area II, Puruni Block)
Dwg. No. 511 - IP Pseudosection, Peter's Mine Grid, Line 2100S (Area II, Puruni Block)
Dwg. No. 512 - IP Pseudosection, Peter's Mine Grid, Line 1900S (Area II, Puruni Block)
Dwg. No. 513 - IP Plan Map (Chargeability, N=1), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 514 - IP Plan Map (Chargeability, N=2), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 515 - IP Plan Map (Chargeability, N=3), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 516 - IP Plan Map (Resistivity, N=1), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 517 - IP Plan Map (Resistivity, N=2), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 518 - IP Plan Map (Resistivity, N=3), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 519 - IP Plan Map (Metal Factor, N=1), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 520 - IP Plan Map (Metal Factor, N=2), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 521 - IP Plan Map (Metal Factor, N=3), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 526 - Geological Observation Map (as of May 1982) (Area II, Puruni Block)
Dwg. No. 548 - IP Pseudosection, Peter's Mine Grid, Line 600S (Area II, Puruni Block)
Dwg. No. 549 - IP Pseudosection, Peter's Mine Grid, Line 100S (Area II, Puruni Block)
Dwg. No. 550 - Location Map of Pan Concentrate Samples (Area II, Cuyuni Block)
Dwg. No. 551 - IP Pseudosection, Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 552 - DEEPEM Survey, Grid 7, Line 300E TX7 (Area II, Puruni Block)
Dwg. No. 553 - DEEPEM Survey, Grid 7, Line 300E TX8 (Area II, Puruni Block)
Dwg. No. 554 - DEEPEM Survey, Grid 7, Line 300E TX9 (Area II, Puruni Block)
Dwg. No. 555 - DEEPEM Survey, Grid 7, Line 500E TX12 (Area II, Puruni Block)
Dwg. No. 556 - DEEPEM Survey, Grid 7, Line 500E TX13 (Area II, Puruni Block)
Dwg. No. 557 - DEEPEM Survey, Grid 7, Line 600E TX14 (Area II, Puruni Block)
Dwg. No. 558 - DEEPEM Survey, Grid 7, Line 600E TX15 (Area II, Puruni Block)
Dwg. No. 559 - DEEPEM Survey, Grid 7, Line 300E TX16 (Area II, Puruni Block)

Dwg. No. 560 – DEEPEM Survey, Grid 7, Line 200E TX18 (Area II, Puruni Block)
Dwg. No. 561 – DEEPEM Survey, Grid 7, Line 200E TX19 (Area II, Puruni Block)
Dwg. No. 562 – DEEPEM Survey, Grid 7, Line 300E TX20 (Area II, Puruni Block)
Dwg. No. 563 – DEEPEM Survey, Grid 7, Line 300E TX21 (Area II, Puruni Block)
Dwg. No. 569 – IP Pseudosection, Peter's Mine Grid, Line 400S (Area II, Puruni Block)
Dwg. No. 570 – IP Pseudosection, Peter's Mine Grid, Line 900S (Area II, Puruni Block)
Dwg. No. 571 – IP Pseudosection, Peter's Mine Grid, Line 0+00 (Area II, Puruni Block)
Dwg. No. 572 – IP Pseudosection, Peter's Mine Grid, Line 750S (Area II, Puruni Block)
Dwg. No. 576 – IP Survey, Mara Mara Grid, Line 350E (Area II, Puruni Block)
Dwg. No. 577 – IP Survey, Mara Mara Grid, Line 550E (Area II, Puruni Block)
Dwg. No. 579 – PEM Survey, Grid 1, Line 2200W (Area II, Cuyuni Block)
Dwg. No. 580 – PEM Survey, Grid 8, Line 1100E (Area II, Puruni Block)
Dwg. No. 587 – DEEPEM Survey, (TX12a) Grid 8, Line 200E (Area II, Puruni Block)
Dwg. No. 588 – DEEPEM Survey, (TX12) Grid 7, Line 200E (Area II, Puruni Block)
Dwg. No. 598 – FEM Survey, Grid 1, Line 2200W (Area II, Cuyuni Block)
Dwg. No. 599 – PEM Survey, Grid 12, Line 300E (Area II, Puruni Block)
Dwg. No. 600 – PEM Survey, Grid 12, Line 600E (Area II, Puruni Block)
Dwg. No. 601 – Quartzitic Chert and Sample Location Map, Grid 4 (Area II, Puruni Block)
Dwg. No. 602 – Quartz Vein and Sample Location Map, SS376, Grid 4, (Area II, Puruni Block)
Dwg. No. 603 – Quartz Vein and Sample Location Map, Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 604 – PEM Survey, Grid 2, Line 2000E (Area II, Puruni Block)
Dwg. No. 605 – FEM Survey, Grid 1, Line 1800W (Area II, Cuyuni Block)
Dwg. No. 607 – FEM Survey, Grid 2, Line 1450E (Area II, Puruni Block)
Dwg. No. 608 – PEM Survey, Grid 1, Line 2400W (Area II, Cuyuni Block)
Dwg. No. 609 – PEM Survey, Grid 1, Line 2800W (Area II, Cuyuni Block)
Dwg. No. 610 – PEM Survey, Grid 1, Line 2600W (Area II, Cuyuni Block)
Dwg. No. 611 – FEM Survey, Grid 1, Line 2400W (Area II, Cuyuni Block)
Dwg. No. 625 – IP Survey, (N=1,2,3), Peter's Mine Grid, Shaftline 0+00 (Area II, Puruni Block)
Dwg. No. 626 – IP Survey, (N=1,2,3), Peter's Mine Grid, Shaft Cross, 100S (Area II, Puruni Block)
Dwg. No. 627 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 628 – IP Survey, Peter's Mine Grid, Line 400S (Area II, Puruni Block)
Dwg. No. 629 – IP Survey, Peter's Mine Grid, Line 600S (Area II, Puruni Block)
Dwg. No. 630 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 750S (Area II, Puruni Block)
Dwg. No. 631 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 900S (Area II, Puruni Block)
Dwg. No. 649 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 1100S (Area II, Puruni Block)
Dwg. No. 650 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 1300S (Area II, Puruni Block)
Dwg. No. 651 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 1500S (Area II, Puruni Block)
Dwg. No. 652 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 1700S (Area II, Puruni Block)
Dwg. No. 653 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 1900S (Area II, Puruni Block)
Dwg. No. 654 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 2100S (Area II, Puruni Block)
Dwg. No. 655 – IP Survey, (N=1,2,3), Peter's Mine Grid, Line 2300S (Area II, Puruni Block)
Dwg. No. 656 – FEM Survey, Grid 6, Line 500W (Area II, Puruni Block)
Dwg. No. 657 – PEM Survey, Grid 6, Line 700W (Area II, Puruni Block)
Dwg. No. 658 – PEM Survey, Grid 6, Line 800W (Area II, Puruni Block)
Dwg. No. 659 – FEM Survey, Grid 6, Line 900W (Area II, Puruni Block)
Dwg. No. 660 – PEM Survey, Grid 7, Line 500W (Area II, Puruni Block)
Dwg. No. 661 – FEM Survey, Grid 7, Line 700W (Area II, Puruni Block)
Dwg. No. 681 – IP Pseudosection, Grid 7, Line 100W (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 682 – IP Pseudosection, Grid 7, Line 200W (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 683 – IP Pseudosection, Grid 7, Line 300W (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 684 – IP Pseudosection, Grid 7, Line 400W (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 685 – IP Pseudosection, Grid 7, Line 600W (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 686 – IP Pseudosection, Grid 7, Line 0+00 (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 687 – IP Pseudosection, Grid 7, Line 100E (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 688 – IP Pseudosection, Grid 7, Line 200E (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 689 – IP Pseudosection, Grid 7, Line 400E (modified Wenner Array) (Area II, Puruni Block)

Dwg. No. 690 - IP Pseudosection, Grid 7, Line 500E (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 691 - IP Pseudosection, Grid 7, Line 600E (modified Wenner Array) (Area II, Puruni Block)
Dwg. No. 692 - Location Sketch (with Geophysical Anomalies) Grid 1-S (Area II, Puruni Block)
Dwg. No. 693 - Geophysical Base Map, Grid 7 (Area II, Puruni Block)
Dwg. No. 695 - IP Survey, (N=1,2,3), Grid 7, Line 200E (Area II, Puruni Block)
Dwg. No. 696 - IP Survey, (N=1,2,3), Grid 7, Line 300E (Area II, Puruni Block)
Dwg. No. 697 - IP Survey, (N=1,2,3), Grid 7, Line 400E (Area II, Puruni Block)
Dwg. No. 698 - IP Survey, (N=1,2,3), Grid 7, Line 500E (Area II, Puruni Block)
Dwg. No. 699 - IP Survey, (N=1,2,3), Grid 7, Line 600E (Area II, Puruni Block)
Dwg. No. 700 - IP Survey, (N=1,2,3), Grid 7, Line 0+00 (Area II, Puruni Block)
Dwg. No. 701 - IP Survey, (N=1,2,3), Grid 7, Line 100W (Area II, Puruni Block)
Dwg. No. 702 - IP Survey, (N=1,2,3), Grid 7, Line 200W (Area II, Puruni Block)
Dwg. No. 703 - IP Survey, (N=1,2,3), Grid 7, Line 300W (Area II, Puruni Block)
Dwg. No. 704 - IP Survey, (N=1,2,3), Grid 7, Line 400W (Area II, Puruni Block)
Dwg. No. 705 - IP Survey, (N=1,2,3), Grid 7, Line 600W (Area II, Puruni Block)
Dwg. No. 706 - Current Path Diagram, Grid 7, Line 200E (Area II, Puruni Block)
Dwg. No. 708 - IP Pseudosection, Peter's Mine Grid, Line 300S (Area II, Puruni Block)
Dwg. No. 709 - IP Pseudosection, Peter's Mine Grid, Line 100S (Area II, Puruni Block)
Dwg. No. 710 - IP Pseudosection, Peter's Mine Grid, Line 600S (Area II, Puruni Block)
Dwg. No. 711 - IP Pseudosection, Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 712 - IP Pseudosection, Peter's Mine Grid, Line 50S (Area II, Puruni Block)
Dwg. No. 713 - IP Pseudosection, Peter's Mine Grid, Line 400S (Area II, Puruni Block)
Dwg. No. 714 - IP Plan Map, (N=2), Grid 7, Chargeability (Area II, Puruni Block)
Dwg. No. 715 - IP Plan Map of Grid 7, Chargeability (Area II, Puruni Block)
Dwg. No. 716 - IP Plan Map, (N=1), Grid 7, Chargeability (Area II, Puruni Block)
Dwg. No. 717 - Location Sketch (with Geophysical Anomalies) Grid 8 (Area II, Puruni Block)
Dwg. No. 718 - Location Sketch, Grid 6 (Area II, Puruni Block)
Dwg. No. 719 - Location Sketch, Grid 7 (with Geophysical Anomalies) (Area II, Puruni Block)
Dwg. No. 720 - IP Survey, Grid 4, Line 300S (Area II, Puruni Block)
Dwg. No. 721 - IP Plan Map, (N=1), Grid 7, Resistivity (Area II, Puruni Block)
Dwg. No. 722 - IP Plan Map, (N=2), Grid 7, Resistivity (Area II, Puruni Block)
Dwg. No. 723 - IP Plan Map of Grid 7, Resistivity (Area II, Puruni Block)
Dwg. No. 724 - IP Plan Map, (N=1), Grid 7, Metal Factor (Area II, Puruni Block)
Dwg. No. 725 - IP Plan Map, (N=2), Grid 7, Metal Factor (Area II, Puruni Block)
Dwg. No. 726 - IP Plan Map, (N=3), Grid 7, Metal Factor (Area II, Puruni Block)
Dwg. No. 727 - IP Profile, Mara Mara Grid Quartz Vein, Line 100S (Area II, Puruni Block)
Dwg. No. 728 - IP Profile, Mara Mara Grid Quartz Vein, Line 150S (Area II, Puruni Block)
Dwg. No. 729 - IP Profile, Mara Mara Grid Quartz Vein, Line 200S (Area II, Puruni Block)
Dwg. No. 730 - IP Profile, Mara Mara Grid Quartz Vein, Line 250S (Area II, Puruni Block)
Dwg. No. 731 - IP Profile, Mara Mara Grid Quartz Vein, Line 300S (Area II, Puruni Block)
Dwg. No. 732 - IP Survey, Grid 4, Line 200S (Area II, Puruni Block)
Dwg. No. 733 - IP Survey, Grid 4, Line 0+00 (Area II, Puruni Block)
Dwg. No. 734 - IP Survey, Grid 4, Line 400S (Area II, Puruni Block)
Dwg. No. 735 - IP Profile, Grid 4, Line 100S (Area II, Puruni Block)
Dwg. No. 736 - IP Profile, Grid 4, Line 500S (Area II, Puruni Block)
Dwg. No. 737 - IP Pseudosection, Grid 4S, Line 300S (Area II, Puruni Block)
Dwg. No. 738 - IP Profile, Million Mount Grid, Line 800W (Area II, Puruni Block)
Dwg. No. 739 - IP Profile, Million Mount Grid, Line 0+00 (Area II, Puruni Block)
Dwg. No. 740 - IP Profile, Million Mount Grid, Line 600W (Area II, Puruni Block)
Dwg. No. 746 - IP Survey, Mara Mara Grid, Line 750E (Area II, Puruni Block)
Dwg. No. 747 - IP Survey, Mara Mara Grid, Line 1150E (Area II, Puruni Block)
Dwg. No. 748 - IP Survey, Mara Mara Grid, Line 1350E (Area II, Puruni Block)
Dwg. No. 749 - IP Pseudosection, Mara Mara Grid, Line 350E (Area II, Puruni Block)
Dwg. No. 750 - Geophysical Base Map, Grids 1 & 5 (Area II, Cuyuni Block)
Dwg. No. 752 - Au Distribution in Soils, Grid 4-S (Area II, Puruni Block)
Dwg. No. 753 - Ni Distribution in Soils, Grid 4-S (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

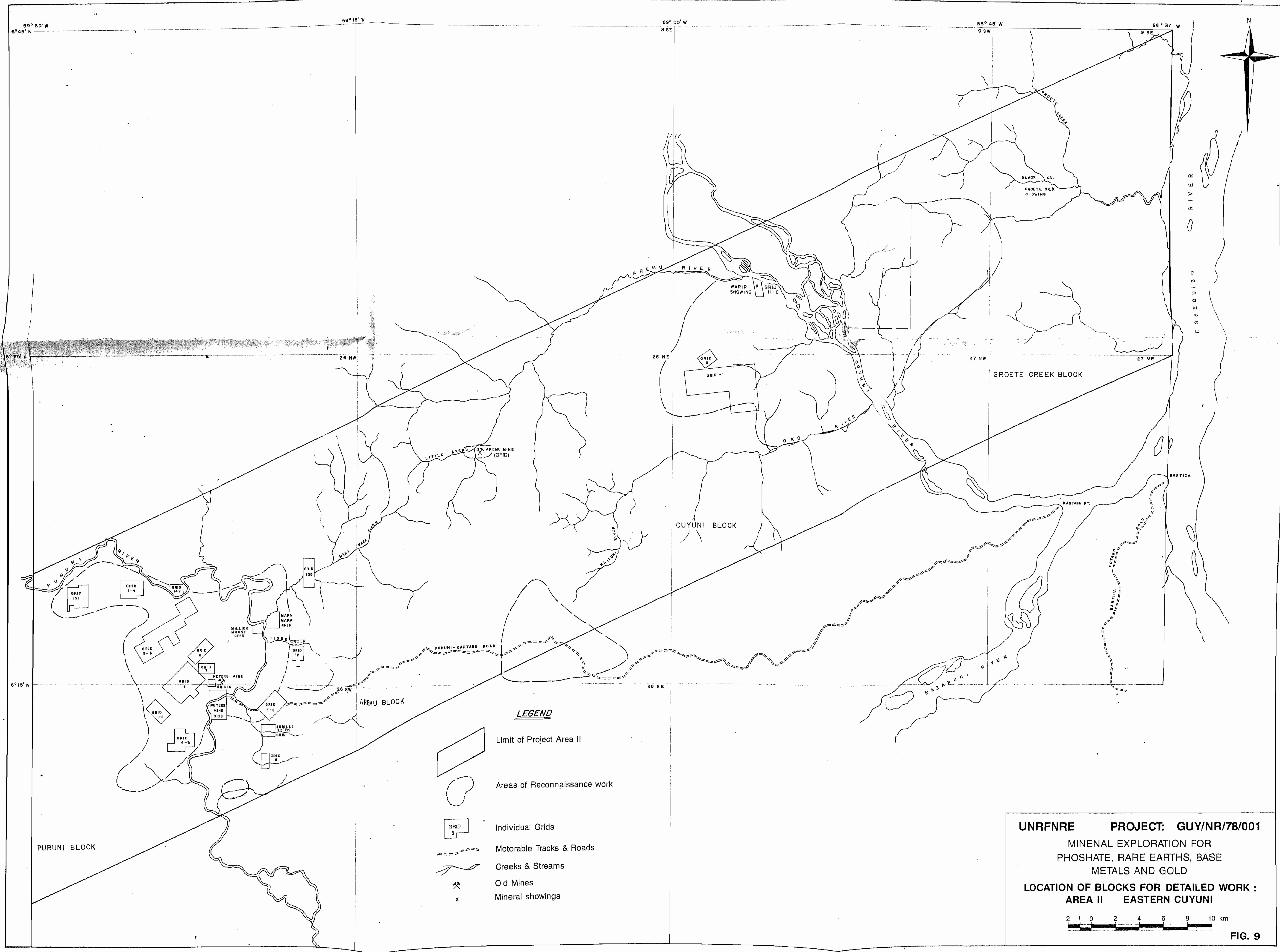
Dwg. No. 754 – Zn Distribution in Soils, Grid 4-S (Area II, Puruni Block)
Dwg. No. 755 – Cu Distribution in Soils, Grid 4-S (Area II, Puruni Block)
Dwg. No. 757 – Au Distribution in Soils, Grid 6 (Area II, Puruni Block)
Dwg. No. 758 – Ni Distribution in Soils, Grid 6 (Area II, Puruni Block)
Dwg. No. 759 – Zn Distribution in Soils, Grid 6 (Area II, Puruni Block)
Dwg. No. 760 – Cu Distribution in Soils, Grid 6 (Area II, Puruni Block)
Dwg. No. 761 – IP Profile, Million Mount Grid, Line 200W (Area II, Puruni Block)
Dwg. No. 762 – IP Profile, Million Mount Grid, Line 400W (Area II, Puruni Block)
Dwg. No. 764 – Zn Distribution in Soils, Grid 8 (Area II, Puruni Block)
Dwg. No. 765 – Cu Distribution in Soils, Grid 8 (Area II, Puruni Block)
Dwg. No. 766 – Ni Distribution in Soils, Grid 8 (Area II, Puruni Block)
Dwg. No. 767 – Au Distribution in Soils, Grid 8 (Area II, Puruni Block)
Dwg. No. 769 – Zn Distribution in Soils, Grid 135 (Area II, Puruni Block)
Dwg. No. 770 – Cu Distribution in Soils, Grid 135 (Area II, Puruni Block)
Dwg. No. 771 – Ni Distribution in Soils, Grid 135 (Area II, Puruni Block)
Dwg. No. 772 – Au Distribution in Soils, Grid 135 (Area II, Puruni Block)
Dwg. No. 774 – Zn Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 775 – Cu Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 776 – Ni Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 777 – Au Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 778 – Mn Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 779 – IP Contour Plan (N=1), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 780 – IP Contour Plan (N=2), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 781 – IP Contour Plan (N=3), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 783 – Au Distribution in Soils, Grid 7 (Area II, Puruni Block)
Dwg. No. 784 – Ni Distribution in Soils, Grid 7 (Area II, Puruni Block)
Dwg. No. 785 – Zn Distribution in Soils, Grid 7 (Area II, Puruni Block)
Dwg. No. 786 – Cu Distribution in Soils, Grid 7 (Area II, Puruni Block)
Dwg. No. 788 – Au Distribution in Soils, Grid 151 (Area II, Puruni Block)
Dwg. No. 789 – Ni Distribution in Soils, Grid 151 (Area II, Puruni Block)
Dwg. No. 790 – Zn Distribution in Soils, Grid 151 (Area II, Puruni Block)
Dwg. No. 791 – Cu Distribution in Soils, Grid 151 (Area II, Puruni Block)
Dwg. No. 792 – Pb Distribution in Soils, Grid 7 (Area II, Puruni Block)
Dwg. No. 794 – Au Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 795 – Ni Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 796 – Zn Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 799 – Cu Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 799 – Geological Base Map, Grid 7 (Area II, Puruni Block)
Dwg. No. 801 – Location Sketch, Grids 1 & 5 (Area II, Cuyuni Block)
Dwg. No. 803 – Zn/Mn x 100 Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 804 – Cu/Fe x 10,000 Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 805 – Fe x 1,000 Distribution in Soils, Grid 1-N (Area II, Puruni Block)
Dwg. No. 806 – IP Plan, Million Mount Grid, (Area II, Puruni Block)
Dwg. No. 807 – IP Plan Map, N=2, Million Mount Grid (Area II, Puruni Block)
Dwg. No. 808 – Transient EM Waveforms Diagrams
Dwg. No. 810 – Au Distribution in Soils of Grid 2-C, (Area II, Cuyuni Block)
Dwg. No. 811 – Geological Map, (after Bateson, 1965), Grid 2-C, (Area II, Cuyuni Block)
Dwg. No. 812 – Geophysical Base Map, Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 813 – Geology, Rock Geochemistry and Detailed Grid of Quartz Vein, Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 814 – Fe Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 815 – Ni Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 816 – Mn Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 817 – Pb Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 819 – Zn Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 820 – Cu Distribution in Soils, Grid 2-C, (Area II, Cuyuni Block)
Dwg. No. 821 – Fe Distribution in Soils, Grid 3-N (Area II, Puruni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 822 – Mn Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 832 – Location Map, Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 833 – Location Map, Million Mount Grid (Area II, Puruni Block)
Dwg. No. 834 – Location Sketch, Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 836 – Zn/Mn x 100 Distribution in Soils, Grid 151 (Area II, Puruni Block)
Dwg. No. 841 – Current Path Diagram, Grid 151 (Area II, Puruni Block)
Dwg. No. 841 – IP Pseudosection, Mara Mara Grid, Line 550E (Area II, Puruni Block)
Dwg. No. 842 – IP Pseudosection, Mara Mara Grid, Line 750E (Area II, Puruni Block)
Dwg. No. 843 – IP Profile, Peter's Mine Grid, Line 0+00 (Area II, Puruni Block)
Dwg. No. 844 – IP Profile, Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 845 – IP Profile, Peter's Mine Grid, Line 400S (Area II, Puruni Block)
Dwg. No. 846 – IP Profile, Peter's Mine Grid, Line 600S (Area II, Puruni Block)
Dwg. No. 847 – IP Profile, Peter's Mine Grid, Line 100S (Area II, Puruni Block)
Dwg. No. 848 – IP Profile, Peter's Mine Grid, Line 300S (Area II, Puruni Block)
Dwg. No. 849 – IP Profile, Peter's Mine Grid, Line 500S (Area II, Puruni Block)
Dwg. No. 850 – IP Profile, Peter's Mine Grid, Line 700S (Area II, Puruni Block)
Dwg. No. 851 – IP Profile, Peter's Mine Grid, Line 50S (Area II, Puruni Block)
Dwg. No. 852 – IP Profile, Peter's Mine Grid, Line 2000S (Area II, Puruni Block)
Dwg. No. 853 – IP Profile, Peter's Mine Grid, Line 100S (Area II, Puruni Block)
Dwg. No. 854 – IP Profile, Peter's Mine Grid, Line 2100S (Area II, Puruni Block)
Dwg. No. 855 – IP Profile, Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 856 – IP Profile, Peter's Mine Grid, Line 800S (Area II, Puruni Block)
Dwg. No. 857 – IP Plan Map (Chargeability/Resistivity, N=1), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 858 – IP Plan Map (Chargeability/Resistivity, N=2), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 859 – IP Plan Map (Chargeability/Resistivity, N=3), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 860 – IP Plan Map (Chargeability/Resistivity, N=4), Peter's Mine Grid (Area II, Puruni Block)
Dwg. No. 861 – IP Pseudosection, Peter's Mine Grid, Line 100S (Area II, Puruni Block)
Dwg. No. 862 – IP Pseudosection, Peter's Mine Grid, Line 2100S (Area II, Puruni Block)
Dwg. No. 863 – IP Pseudosection, Peter's Mine Grid, Line 300S (Area II, Puruni Block)
Dwg. No. 864 – IP Pseudosection, Peter's Mine Grid, Line 200S (Area II, Puruni Block)
Dwg. No. 865 – IP Pseudosection, Peter's Mine Grid, Line 2000S (Area II, Puruni Block)
Dwg. No. 866 – IP Pseudosection, Peter's Mine Grid, Line 0+00 (Area II, Puruni Block)
Dwg. No. 867 – IP Pseudosection, Peter's Mine Grid, Line 800S (Area II, Puruni Block)
Dwg. No. 868 – IP Pseudosection, Peter's Mine Grid, Line 500S (Area II, Puruni Block)
Dwg. No. 869 – IP Pseudosection, Million Mount Grid, Line 0+00 (Area II, Puruni Block)
Dwg. No. 870 – IP Pseudosection, Million Mount Grid, Line 200W (Area II, Puruni Block)
Dwg. No. 871 – IP Pseudosection, Million Mount Grid, Line 400W (Area II, Puruni Block)
Dwg. No. 873 – IP Pseudosection, Million Mount Grid, Line 800W (Area II, Puruni Block)
Dwg. No. 874 – IP Pseudosection, Million Mount Grid, Line 1000W (Area II, Puruni Block)
Dwg. No. 875 – IP Pseudosection, Million Mount Grid, Line 1200W (Area II, Puruni Block)
Dwg. No. 876 – IP Pseudosection, Grid 4-S, Line 500S (Area II, Puruni Block)
Dwg. No. 877 – IP Pseudosection, Grid 4-S, Line 0+00 (Area II, Puruni Block)
Dwg. No. 878 – IP Pseudosection, Grid 4-S, Line 100S (Area II, Puruni Block)
Dwg. No. 879 – IP Pseudosection, Mara Mara Grid Quartz Vein, Line 100S (Area II, Puruni Block)
Dwg. No. 880 – IP Pseudosection, Mara Mara Grid Quartz Vein, Line 300S (Area II, Puruni Block)
Dwg. No. 881 – IP Profile, Million Mount Grid, Line 1000W (Area II, Puruni Block)
Dwg. No. 882 – IP Profile, Million Mount Grid, Line 1200W (Area II, Puruni Block)
Dwg. No. 883 – IP Pseudosection, Peter's Mine Grid, Line 700S (Area II, Puruni Block)
Dwg. No. 884 – Zn/Mn x 100 Distribution in Soils, Grid 2-C (Area II, Cuyuni Block)
Dwg. No. 885 – Cu/Fe x 10,000 Distribution in Soils, Grid 2-C (Area II,Cuyuni Block)
Dwg. No. 886 – Cu/Fe Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 887 – PEM Survey, Grid 1, Line 3800W (Area II, Cuyuni Block)
Dwg. No. 888 – PEM Survey, Grid 1, Line 3000W (Area II, Cuyuni Block)
Dwg. No. 889 – PEM Survey, Grid 1, Line 1400W (Area II, Cuyuni Block)
Dwg. No. 890 – PEM Survey, Grid 1, Line 1800W (Area II, Cuyuni Block)
Dwg. No. 892 – PEM Survey, Grid 1, Line 1200W (Area II, Cuyuni Block)

LIST OF MAPS DEPOSITED WITH THE GUYANA GEOLOGY AND MINES COMMISSION (GGMC)

Dwg. No. 893 - FEM Survey, Grid 1, Line 3400W (Area II, Cuyuni Block)
Dwg. No. 894 - FEM Survey, Grid 1, Line 1400W (Area II, Cuyuni Block)
Dwg. No. 895 - FEM Survey, Grid 1, Line 400W (Area II, Cuyuni Block)
Dwg. No. 896 - FEM Survey, Grid 1, Line 1200W (Area II, Cuyuni Block)
Dwg. No. 897 - FEM Survey, Grid 1, Line 1600W (Area II, Cuyuni Block)
Dwg. No. 898 - FEM Survey, Grid 1, Line 2000W (Area II, Cuyuni Block)
Dwg. No. 899 - FEM Survey, Grid 1, Line 2000W (Area II, Cuyuni Block)
Dwg. No. 900 - FEM Survey, Grid 1, Line 2800W (Area II, Cuyuni Block)
Dwg. No. 901 - Zn/Mn Distribution in Soils, Grid 3-N (Area II, Puruni Block)
Dwg. No. 902 - FEM Survey, Grid 5, Line 0+00 (Area II, Cuyuni Block)
Dwg. No. 903 - FEM Survey, Grid 5, Line 200E (Area II, Cuyuni Block)
Dwg. No. 904 - FEM Survey, Grid 5, Line 400E (Area II, Cuyuni Block)
Dwg. No. 905 - FEM Survey, Grid 5, Line 600E (Area II, Cuyuni Block)
Dwg. No. 906 - FEM Survey, Grid 5, Line 800E (Area II, Cuyuni Block)
Dwg. No. 907 - FEM Survey, Grid 5, Line 1000E (Area II, Cuyuni Block)
Dwg. No. 908 - FEM Survey, Grid 5, Line 1200E (Area II, Cuyuni Block)
Dwg. No. 909 - FEM Survey, Grid 5, Line 1400E (Area II, Cuyuni Block)
Dwg. No. 911 - Au Content in Pan Concentrate Samples (Area II, Cuyuni Block)
Dwg. No. 912 - Mn Content in Stream Sediments Sample (Area II, Cuyuni Block)
Dwg. No. 916 - Location and Access Map (Area II, Cuyuni Block)
Dwg. No. 935 - Cu Distribution in Soils of Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 936 - Pb/Zn Distribution in Soils of Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 938 - Au Distribution in Soils of Mara Mara Grid (Area II, Puruni Block)
Dwg. No. 949 - Au Distribution in Soils of Jubilee Creek Grid (Area II, Puruni Block)
Dwg. No. 950 - Zn Distribution in Soils of Jubilee Creek Grid (Area II, Puruni Block)
Dwg. No. 951 - Cu Distribution in Soils of Jubilee Creek Grid (Area II, Puruni Block)
Dwg. No. 952 - Ni and Cu Distribution in Soils of Million Mount Grid (Area II, Puruni Block)
Dwg. No. 953 - Mn Distribution in Soils of Million Mount Grid (Area II, Puruni Block)
Dwg. No. 954 - Pb and Zn Distribution in Soils of Million Mount Grid (Area II, Puruni Block)
Dwg. No. 955 - As and Au Distribution in Soils of Million Mount Grid (Area II, Puruni Block)
Dwg. No. 956 - W and Fe Distribution in Soils of Million Mount Grid (Area II, Puruni Block)
Dwg. No. 960 - Au Distribution in Soils of Aremu Grid (Area II, Aremu Block)
Dwg. No. 961 - Zn Distribution in Soils of Aremu Grid (Area II, Aremu Block)
Dwg. No. 962 - Cu Distribution in Soils of Aremu Grid (Area II, Aremu Block)
Dwg. No. 963 - Au Distribution in Soils, Grid 1-C (Area II, Cuyuni Block)
Dwg. No. 965 - Cu Distribution in Soils of Grid 1-C (Area II, Cuyuni Block)
Dwg. No. 966 - Zn Distribution in Soils of Grid 1-C (Area II, Cuyuni Block)
Dwg. No. 968 - IP Plan Map of Mara Mara Grid, Apparent Resistivity-Ohm Metres, N=2 (Area II, Puruni Block)
Dwg. No. 969 - IP Plan Map of Mara Mara Grid, Apparent Chargeability-Ohm Metres, N=2 (Area II, Puruni Block)
Dwg. No. 970 - IP Plan Map of Grid 135, Apparent Resistivity-Ohm Metres, N=3 (Area II, Puruni Block)
Dwg. No. 971 - IP Plan Map of Grid 135, Apparent Chargeability-Ohm Metres, N=3 (Area II, Puruni Block)
Dwg. No. 972 - IP Plan Map of Grid 4-S, Apparent Resistivity-Ohm Metres, N=2 (Area II, Puruni Block)
Dwg. No. 973 - IP Plan Map of Grid 4-S, Apparent Chargeability-Ohm Metres, N=2 (Area II, Puruni Block SE-3)
Dwg. No. 974 - IP Plan Map of Grid 6, Apparent Resistivity-Ohm Metres, N=2 (Area II, Puruni Block, SE-3)
Dwg. No. 975 - IP Plan Map of Grid 6, Apparent Chargeability-Ohm Metres, N=2 (Area II, Puruni Block)
Dwg. No. 976 - IP Plan Map of Peter's Mine, Apparent Resistivity-Ohm Metres, N=3 (Area II, Puruni Block)
Dwg. No. 977 - IP Plan Map of Peter's Mine, Apparent Chargeability-Ohm Metres, N=3 (Area II, Puruni Block)
Dwg. No. 978 - Geological Map of Grid 3-N (Area II, Puruni Block)
Dwg. No. 979 - Geological Map of Grid 4-S (Area II, Puruni Block)
Dwg. No. 980 - Geological Map of Grid 6 (Area II, Puruni Block)
Dwg. No. 981 - Geological Map of Grid 7 (Area II, Puruni Block)
Dwg. No. 982 - Geological Map of Grid 8 (Area II, Puruni Block)
Dwg. No. 983 - Geological Map of Grid 135 (Area II, Puruni Block)
Dwg. No. 984 - Geological Map of Grid 151 (Area II, Puruni Block)
Dwg. No. 985 - Area I, Muri Mountains.

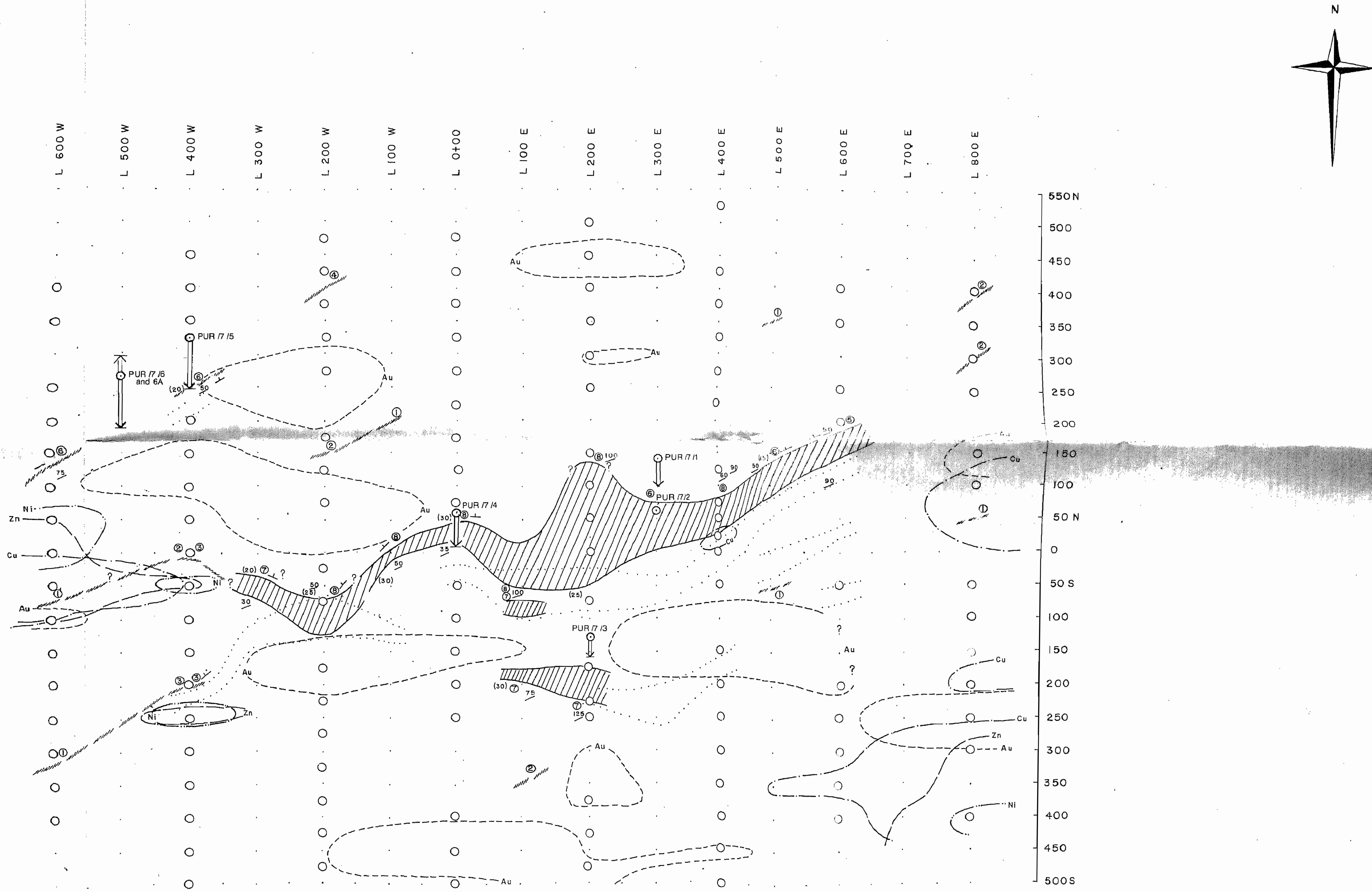


UNRFNRE PROJECT: GUY/NR/78/001

MINENAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

LOCATION OF BLOCKS FOR DETAILED WORK : AREA II EASTERN CUYUNI

FIG. 9



LEGEND

GEOCHEMICAL ANOMALIES : SOILS

- Zn Anomaly (≥ 28 ppm)
- Cu Anomaly (≥ 19 ppm)
- Ni Anomaly (≥ 20 ppm)
- Au Anomaly (≥ 30 ppb)

GEOPHYSICAL ANOMALIES

- PEM Anomalous zones
- PEM Conductor
- IP Anomalous zones
- Attitude (dip) of conductors
- (25) Apparent conductivity
- ⑧ PEM : No. of anomalous channels
- 50 Depth to top of conductors (metres)
- PUR /7 /4 Diamond drillhole

UNRFNRE PROJECT: GUY/NR/78/001

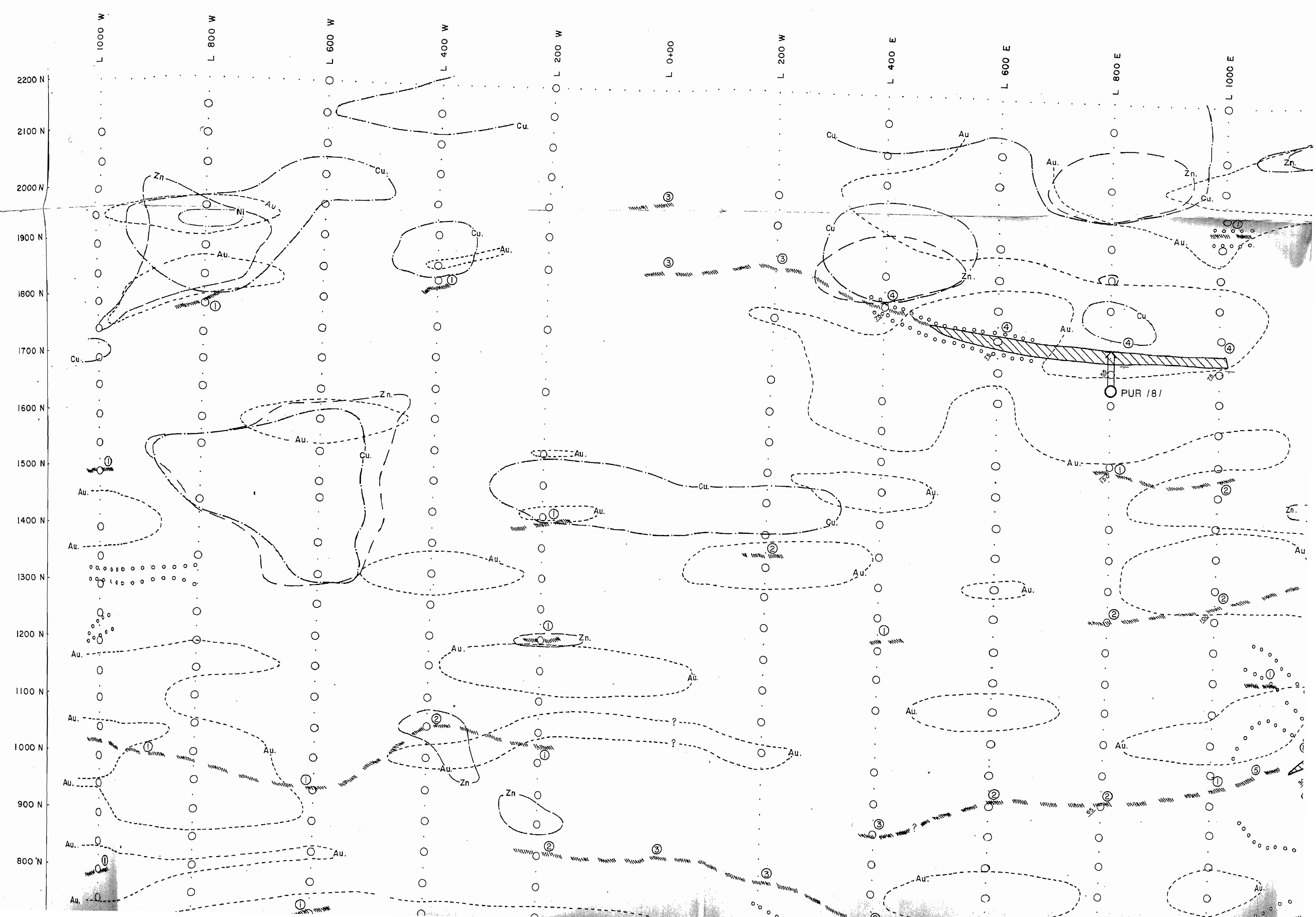
MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

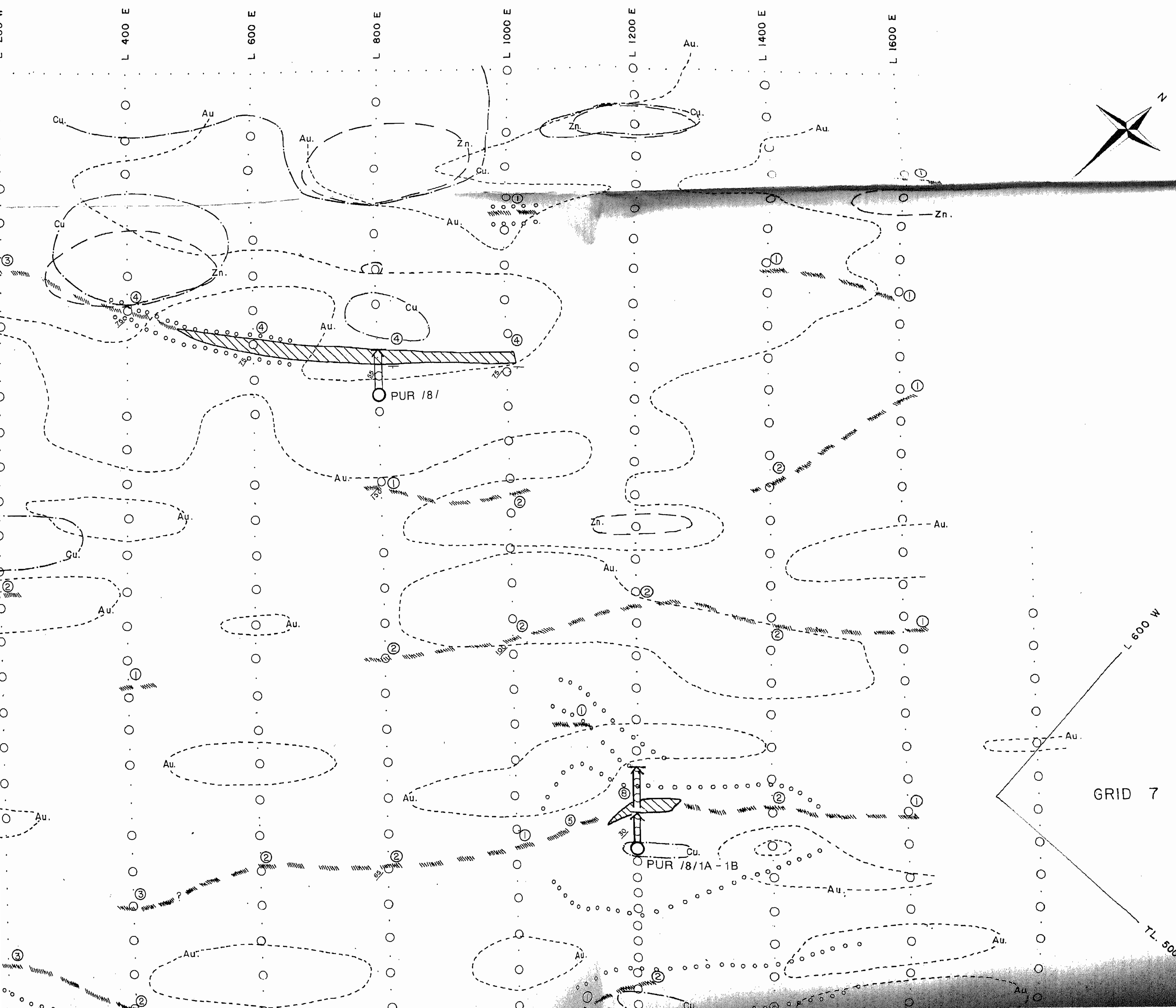
SOIL GEOCHEMISTRY AND GEOPHYSICS : GRID 7

100 50 0 50 100 150 200 m

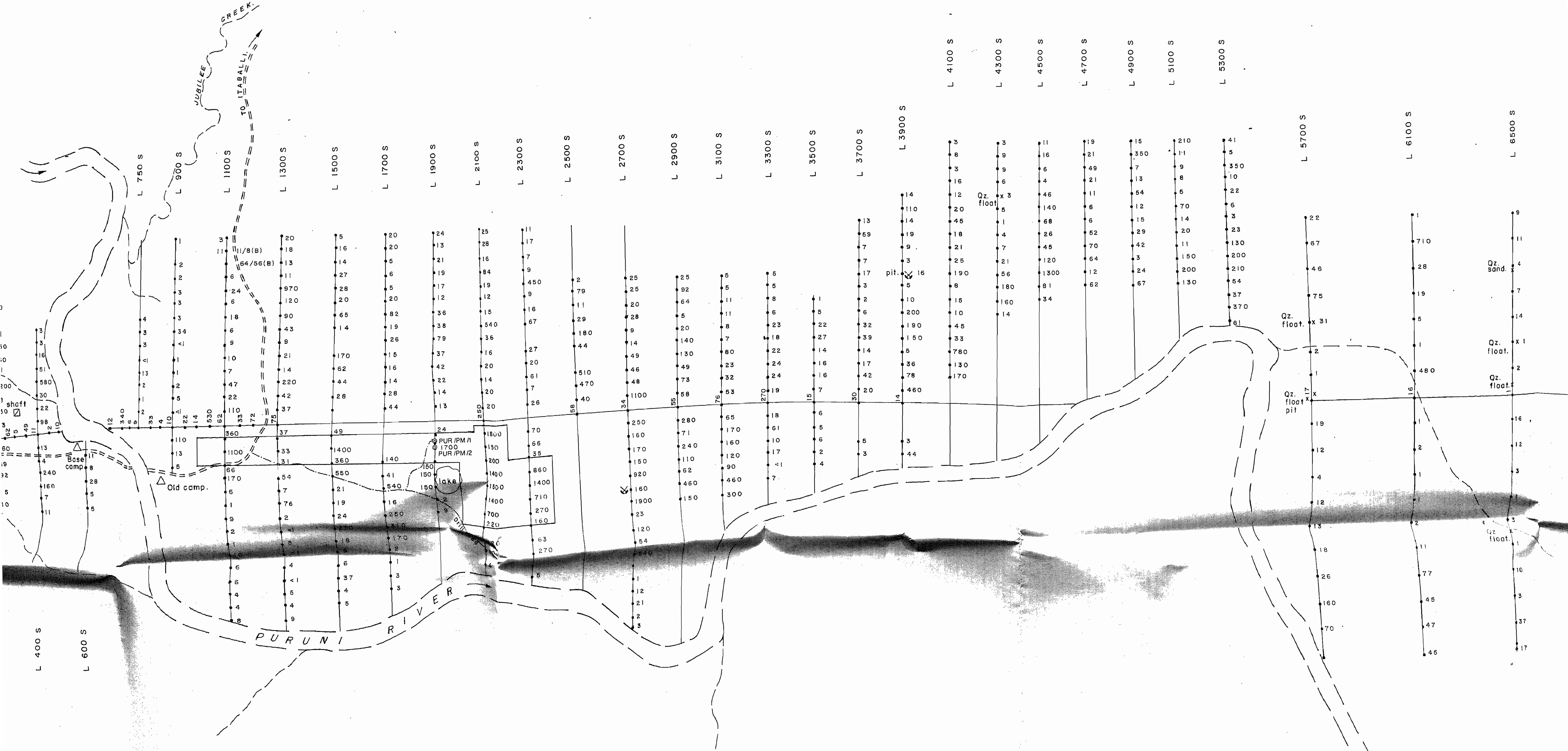
FIG. 10



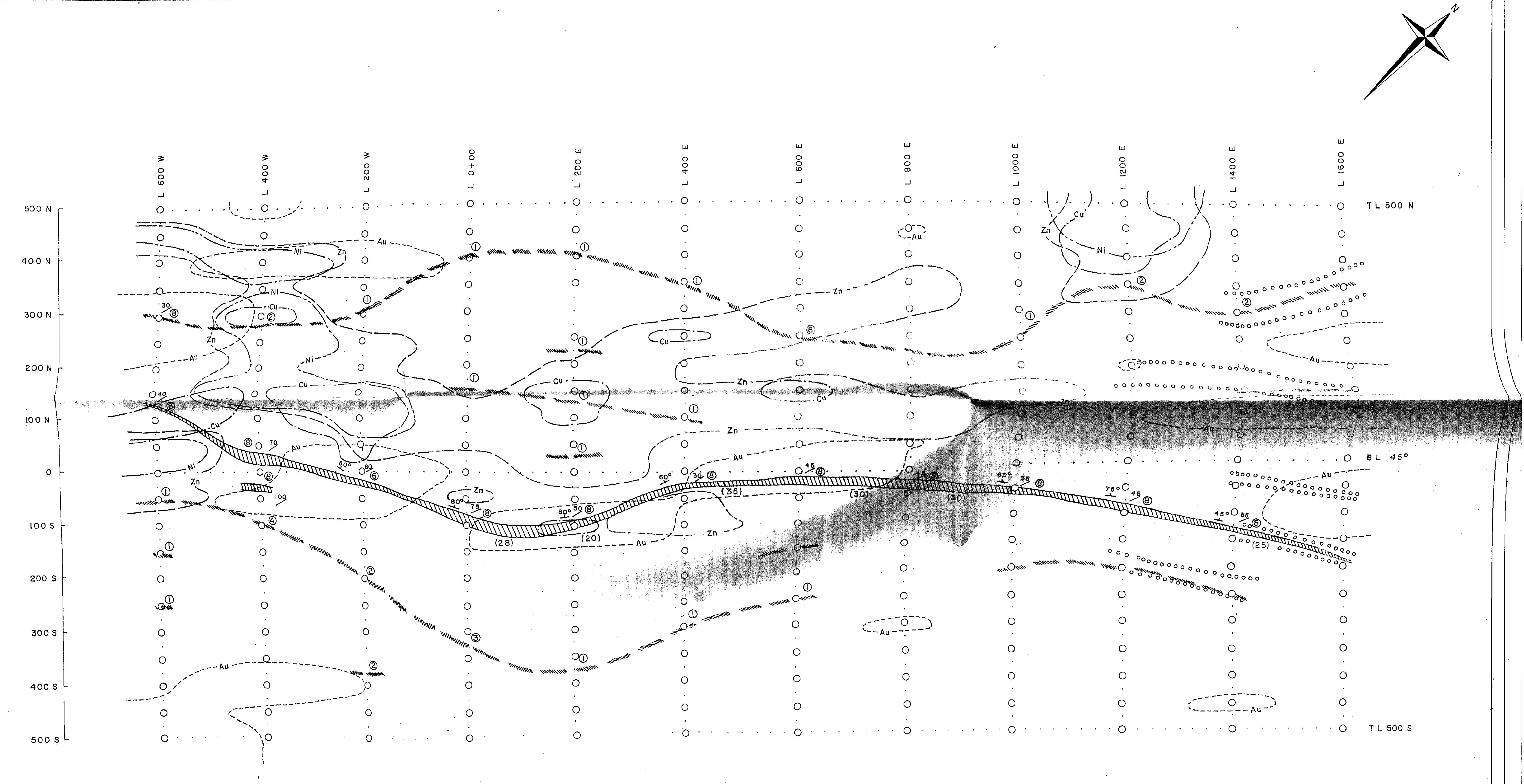
L 1000 W
L 800 W
L 600 W
L 400 W
L 200 W
L 0+00
L 200 W
L 400 E
L 600 E
L 800 E
L 1000 E
2200 N
2100 N
2000 N
1900 N
1800 N
1700 N
1600 N
1500 N
1400 N
1300 N
1200 N
1100 N
1000 N
900 N
800 N
Cu.
Zn
Ni
Au.
PUR /8/



L 400 E
L 600 E
L 800 E
L 1000 E
L 1200 E
L 1400 E
L 1600 E
N
PUR /8/
PUR /8/1A - 1B
GRID 7
L 600 W
Au.
Cu.
Zn.



JUBILEE CREEK
TO ITABALLI
PURUNI RIVER
shaft
Base camp
Old camp.
lake
PUR/PM/1
PUR/PM/2
11/8(B)
64/56(B)
pit.
Qz. float
Qz. float pit
Qz. sand.
L 400 S
L 600 S
L 750 S
L 900 S
L 1100 S
L 1300 S
L 1500 S
L 1700 S
L 1900 S
L 2100 S
L 2300 S
L 2500 S
L 2700 S
L 2900 S
L 3100 S
L 3300 S
L 3500 S
L 3700 S
L 3900 S
L 4100 S
L 4300 S
L 4500 S
L 4700 S
L 4900 S
L 5100 S
L 5300 S
L 5700 S
L 6100 S
L 6500 S



LEGEND

GEOCHEMICAL ANOMALIES

- Zn Anomaly (≥ 20 ppm)
- Au Anomaly (≥ 31 ppb)
- Cu Anomaly (≥ 25 ppm)
- Ni Anomaly (≥ 18 ppm)

GEOPHYSICAL ANOMALIES

- PEM Anomalous zones
- Minor PEM conductors
- IP anomaly
- ⑧ PEM : No. of anomalous channels
- 45° Calculated dip of conductors
- 75 Depth to top of conductors (metres)
- (45) Apparent conductivity - thickness, mhos

UNRFNRE PROJECT: GUY/NR/78/001

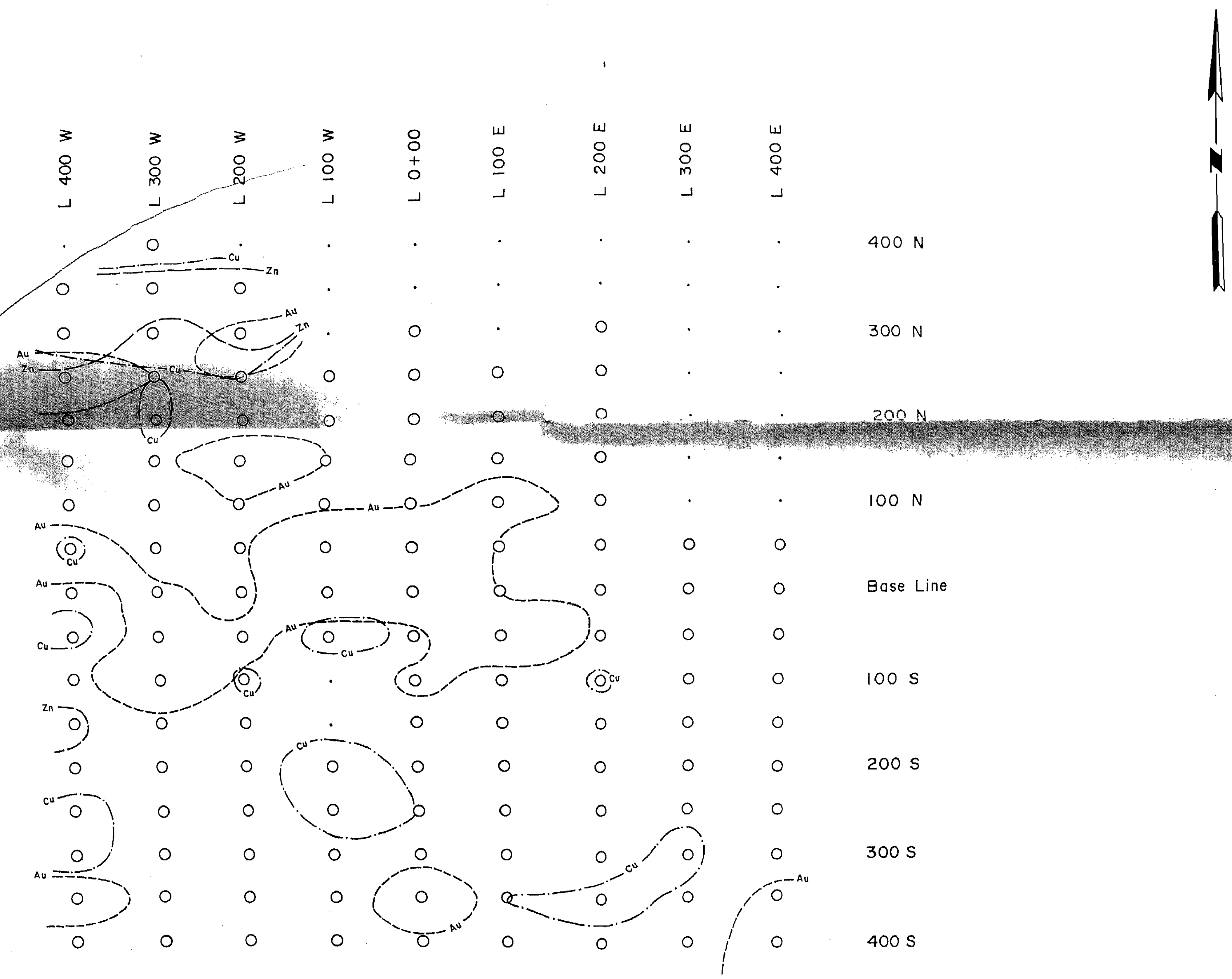
MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

SOIL GEOCHEMISTRY AND GEOPHYSICS : GRID 6

50 0 50 100 150 200 250 300 m

FIG. 15



LEGEND

GEOCHEMICAL ANOMALIES

Zn Anomaly (≥ 34 ppm)

Au Anomaly (≥ 160 ppb)

Cu Anomaly (≥ 50 ppm)

(For location refer to Fig. 9)

UNRFNRE PROJECT: GUY/NR/78/001

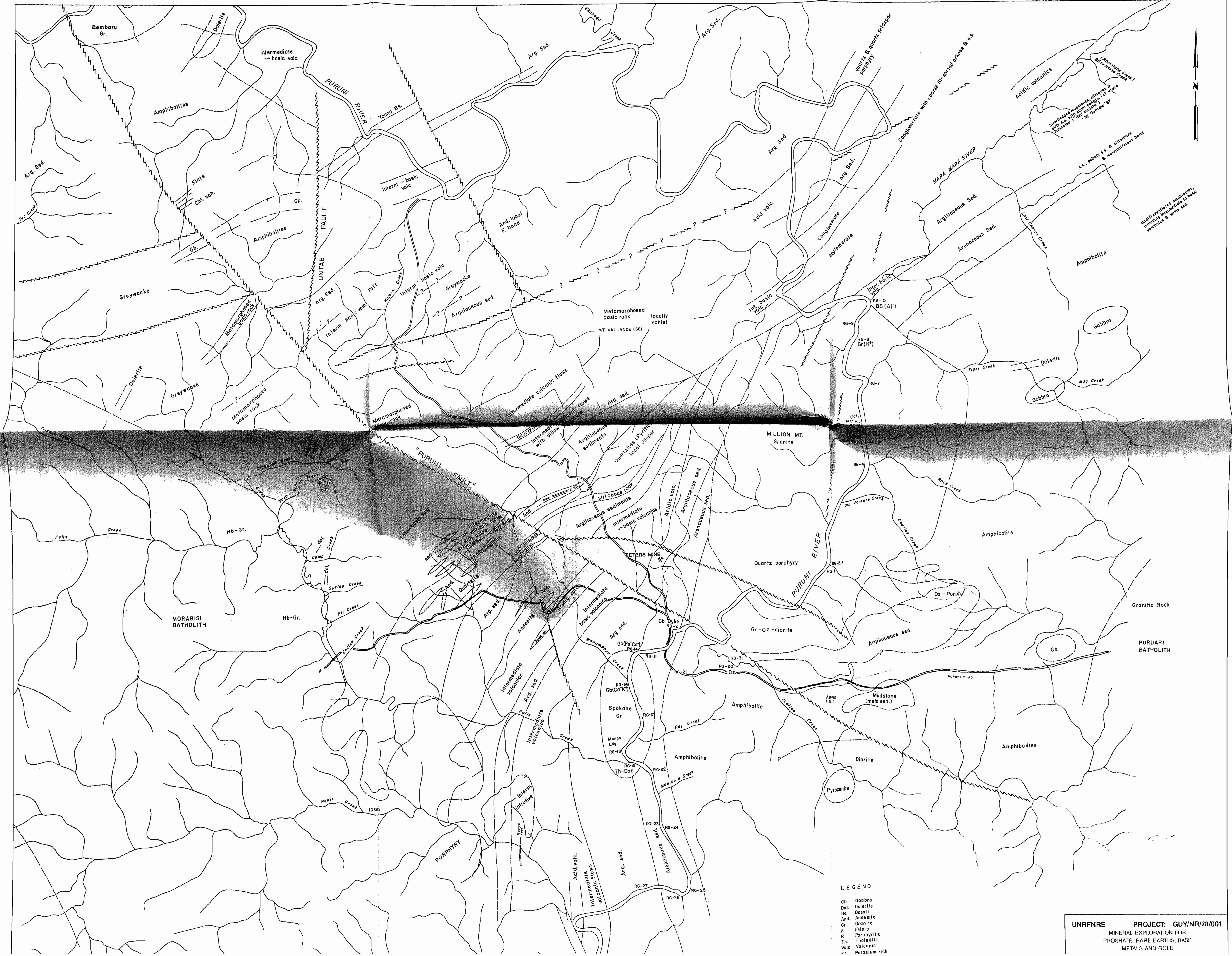
MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD

AREA II PURUNI BLOCK

SOIL GEOCHEMISTRY : JUBILEE CREEK GRID

100 50 0 50 100 150 200 m

FIG. 20


Bembaru Gr.
Dolerite
Intermediate ~ basic volc.
PURUNI RIVER
Young Bs.
Arg. Sed.
Amphibolites
Slate
Chl. sch.
Gb.
UNTAB FAULT
Interm. ~ basic volc.
And. local F. band
Greywacke
Metamorphosed basic rock
Arg. Sed.
Interm basic volc.
Argillaceous sed.
Metamorphosed basic rock
locally schist
MT. VALLANCE (68)
Intermediate volcanic flows
quartz & quartz feldspar porphyry
Conglomerate with coarse ill-sorted arkose & s.s.
Acid volc.
Conglomerate
Agglomerate
Int. basic volc.
MARA MARA RIVER
Argillaceous Sed.
Arenaceous Sed.
Acidic volcanics
Last Chance Creek
Amphibolite
Undifferentiated amphibolites, including intermediate to basic volcanics & some sed.
Two Creek
Tiger Creek
Mag Creek
Gabbro
Dolerite
BS (Al⁺)
Gr (K⁺)
RG-10
RG-9
RG-8
RG-7
RG-4
MILLION MT. Granite
"PURUNI FAULT"
Argillaceous sediments
Quartzites (Pyritic) local Jasper
siliceous rock
Argillaceous sediments
Intermediate ~ basic volcanics
Acidic volc.
Argillaceous sed.
Arenaceous sed.
PETERS MINE
Quartz porphyry
PURUNI RIVER
Rock Creek
Last Venture Creek
Charles Creek
Amphibolite
Qz.- Porph.
Granitic Rock
Falls Creek
Hb-Gr.
Camp Creek
dol.
Spring Creek
Pit Creek
MORABISI BATHOLITH
Quartzite
And.
Arg. sed.
Andesite
Acidic volc.
Intermediate basic volcanics
Arg. sed.
Gb Dyke
RG-2
Gb(Fe⁺Ca⁺)
RG-14
RG-11
Gr.-Qz.-diorite
Argillaceous sed.
Gb.
PURUARI BATHOLITH
RG-31
RG-20
RG-21
Bs.
PURUNI ROAD
ARNO HILL
Mudstone (meta sed.)
Wanamparu Creek
Gb(Ca⁺K⁺)
RG-16
Spokane Gr.
RG-17
Amphibolite
Jubilee Creek
Intermediate volcanics
Arg. sed.
Intermediate volcanics
Mango Lag.
RG-18
RG-19
Th-Doc.
RG-22
Pay Creek
Amphibolite
Manicole Creek
Diorite
Pyroxenite
Amphibolites
Interm. intrusive
Powis Creek (GSG)
PORPHYRY
Acid. volc.
Intermediate volcanic flows
Arg. sed.
Arenaceous sed.
RG-23
RG-24
RG-27
RG-26
RG-25
LEGEND
Gb. Gabbro
Dol. Dolerite
Bs Basalt
And. Andesite
Gr. Granite
F. Felsic
P. Porphyritic
Th. Tholeiitic
Volc. Volcanic
+ Potasium rich
UNRFNRE PROJECT: GUY/NR/78/001
MINERAL EXPLORATION FOR PHOSHATE, RARE EARTHS, BASE METALS AND GOLD