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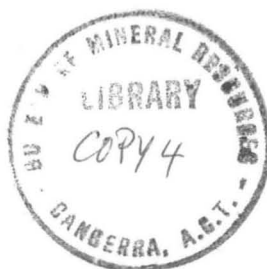
DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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Record No. 1970/74

**Results of 1961 Stream Sediment Geochemical
Survey of Fergusson and Goodenough
Islands, Papua**



by

H.L. Davies, D.J. Ives, and A.D. Haldane

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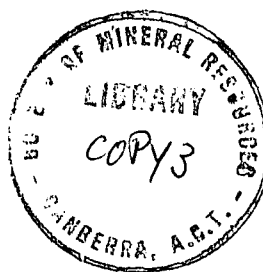


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SUMMARY

In view of the current revival of interest in the mineral potential of Fergusson and Goodenough Islands, it was thought worthwhile to reproduce in detail the results of a stream sediment sampling programme which was carried out in 1961. Most of the streams are swift-flowing and contain very little fine sediment; -80mesh samples were collected with difficulty. Base metal content of most samples is low, with the exception of one anomalous lead value and several slightly anomalous copper values. Ni, Co, and Cr values are high in areas of ultramafic rock. Tin was detected in several samples from granodiorite areas.

INTRODUCTION

In the course of the geological mapping of Fergusson and Goodenough Islands in 1961, a total of 404 samples of stream sediment -80mesh fines was collected. Results were summarized in the geological report (Davies & Ives, 1965, App.2). The purpose of this record is to make generally available the details of sample localities and individual analyses, in view of the current revival of interest in the mineral potential of the islands.

Most of the samples were collected and their localities plotted by the 1961 party's field assistant, Barry Chapman. Sieving was a tedious and time-consuming job because streams are swift flowing and contain little fine sediment. Analyses were carried out in B.M.R. laboratories, Canberra, by staff under A.D. Haldane. The method was semi-quantitative spectrographic analysis using DC arc excitation. Maximum error is ± 50 percent for 95 percent of all samples; maximum error for Cu is ± 20 percent and maximum error for Ni and Co is ± 30 percent. Values obtained by this method are for total metal content.

DISCUSSION OF RESULTS

Results are summarized in the following table:

	Ni	Co	Cu	Pb	Zn	V	Sn	Cr	(ppm)
Maximum value of 90% of the samples	200	20	10	50	0	200	10	300	
Absolute maximum	700	150	100	1000	150	400	50	10,000	

Nickel and Cobalt

Nickel and cobalt are associated elements, and were found in the sediment of streams cutting through bodies of ultramafic rocks or through fault-zones. The highest nickel and cobalt values were found in samples from Oredi Creek, close to the Oredi Fault, where minor pyrite mineralization was found. Generally areas of metamorphic and/or granodioritic rocks have negligible nickel and cobalt values. An exception to this was found in samples from Lualaba and Iagile Creeks on Goodenough Island, where nickel values ranged from 150-400 ppm, and cobalt values were constant at 20 ppm. It is thought that these values may indicate a body of mafic or ultramafic, rock upstream from the sampling localities.

Chromium

Chromium was commonly present in samples from areas of ultramafic rocks. The highest value recorded was 10,000 ppm in a sample from the Koradidia area. Chrome content of the stream sediment fines in these areas should not be considered anomalous because chromite is disseminated throughout the ultramafic rocks and chromite grains are visible in the creek wash.

Copper

Copper values were very low: almost invariably less than 20 ppm. Only two samples gave higher values. One sample from Potai Creek, Fergusson Island, contained 50 ppm Cu, and another sample from Sasoipa Creek, also on Fergusson Island, contained 100 ppm. In both these streams amphibolite containing a little sulphide was found, and the small variation in values is believed to be caused by this. The generally low copper values are due to the fact that copper is not held in the stream sediment in areas of heavy rainfall, due to the generally coarse grade of the sediments.

Lead

Lead was detected in all samples. The highest value was 1000 ppm from a sample in Auwafwo Creek, Fergusson Island; nearby samples had values ranging from 20 ppm to 200 ppm. Matau Creek, to the west, had values ranging from 20-100 ppm. These values are low in absolute terms, but may indicate the presence of some lead mineralization. No evidence of lead mineralization was found in the field.

Zinc

Zinc values less than 200 ppm are difficult to determine by optical spectrography. Values recorded below this level are of doubtful accuracy. Zinc is easily removed and held in solution, so that it is unlikely to be precipitated in swift-flowing streams.

Vanadium

Vanadium was present in all samples and values normally range up to 200 ppm. Higher values, up to 400 ppm, were found in samples taken from Potai Creek; these may be attributable to a large body of massive amphibolite exposed in the creek.

Tin

Tin is present in a few samples. The highest value recorded (50 ppm) was from a sample taken in an area where the Omara Granodiorite crops out. Other minor values were associated with the Luboda Granodiorite, and with pegmatite veining near Lake Lavu.

Molybdenum and Beryllium

Molybdenum and beryllium are present only as very rare traces.

REFERENCE

DAVIES, H.L., and IVES, D.J., 1965 - The geology of Fergusson and Goodenough Islands, Papua. Bur. Miner. Resour. Aust. Rep. 82.

TABLE OF RESULTS

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
C 1	142	150	30		10	200	-	10	10	-	H	
" 2	26/3/62	100	20		10	200	-	-	10	-	H	
" 3		100	30		10	200	-	-	10	-	H	
" 4		300	50		10	150	-	-	10	-	H	
" 5		30	10		10	150	-	-	50	-	M	
" 6		50	20		10	400	-	-	10	-	M	
" 7		10	10		10	70	-	-	50	-	L	
" 8		50	20		10	200	-	-	20	-	M	
" 9		100	30	150?	10	200	-	-	20	-	H	
" 10		50	10		10	100	-	-	20	-	M	
" 11		20	10		10	50	-	-	10	-	L	
" 12		10	10		10	70	-	-	20	-		
" 13		10	10		10	50	-	-	20	-		
" 14		10	10		10	150	-	-	10	-		
" 15		10	10		10	70	-	-	20	-		
" 16		20	10		10	100	-	-	10	-	L	
" 17		20	10		10	200	-	-	10	-	M	
" 18		20	10		10	100	-	-	20	-	M	
" 19		30	10		10	200	-	-	10	-	M	
" 20		50	10		10	150	-	-	10	-	M	
" 21		-	-		10	20	-	-	20	-	L	
" 22		100	10		10	50	-	-	10	-	M	
" 23	143	100	10		10	20	-	-	10	-		
" 24	26/3/62	50	10		10	100	-	-	10	-		
" 25		10	10		10	50	-	-	20	-		
" 26		10	10		10	50	-	-	20	-		
" 27		10	10		10	70	-	-	30	-		
" 28		10	10		10	70	-	-	10	-		
" 29		10	10		10	50	-	-	20	-		
" 30		10	10		10	50	-	-	10	-		
" 31		10	10		10	50	-	-	20	-		
" 32		10	10		10	50	-	-	20	-		
" 33		10	10		10	50	-	-	20	-		
" 34		10	10		10	50	-	-	20	-		
" 35		10	10		10	70	-	-	20	-		
" 36		10	10		10	100	-	-	20	-		
" 37		10	10		10	70	-	-	10	-		
" 38		30	10		10	150	-	-	10	-		
" 39		20	10		10	100	-	-	10	-		
" 40		10	10		10	50	-	-	10	-		
" 41		10	10		10	70	-	-	10	-		
" 42		10	10		10	70	-	-	20	-		
" 43		10	10		10	70	-	-	10	-		
" 44		10	10		10	50	-	-	10	-		

(-) indicates very low.

Zn values only entered when possible (below 200 ppm doubtful).

Chromium estimated:

H = high

M = medium

L = low

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Ba	Cr	Remarks
C 45	144	20	10		10	70	-	-	10	-	M	
" 46	27/3/62	10	10		10	70	-	-	20	-	M	
" 47		-	10		10	10	-	-	10	-	L	
" 48		-	10		10	20	-	-	10	-	L	
" 49		10	10		10	50	-	-	20	-	L	
" 50		20	10		10	100	-	-	20	-	L	
" 51		10	10		10	30	-	-	10	-	L	
" 52		10	10		10	70	-	-	10	-	L	
" 53		10	10		10	20	-	-	10	-	L	
" 54		10	10		10	50	-	-	10	-	L	
" 55		10	10		10	50	-	-	10	-	L	
" 56		30	10		10	100	-	-	10	-	M	
" 57		30	10		10	100	-	-	10	-	M	
" 58		50	10		10	100	-	-	10	-	M	
" 59		50	10		10	100	-	-	10	-	M	
" 60		50	20		10	150	-	-	10	-	M	
" 61		-	-		10	20	-	-	20	-	L	
" 62		-	-		10	20	-	-	10	-	L	
" 63		-	-		10	20	-	-	20	-	L	
" 64		-	-		10	30	-	-	20	-	L	
" 65		-	-		10	20	-	-	20	-	L	
" 66		-	-		10	20	-	-	20	-	L	
" 67	145	-	-		10	50	-	-	10	-		
" 68	28/3/62	-	-		10	70	-	-	50	-		
" 69		-	-		10	50	-	-	20	-		
" 70		-	-		10	70	-	-	1000	-		
" 71		-	-		10	70	-	-	200	-		
" 72		-	-		10	20	-	-	100	-		
" 73		-	-		10	20	-	-	100	-		
" 74		-	-		10	20	-	-	100	-		
" 75		10	-		10	50	-	-	70	-		
" 76		-	-		10	20	-	-	50	-		
" 77		-	-		10	10	-	-	20	-		
" 78		-	-		10	50	-	-	70	-		
" 79		-	-		10	20	-	-	50	-		
" 80		-	-		10	50	-	-	50	-		
" 81		-	-		10	20	-	-	100	-		
" 82		-	-		10	20	-	-	50	-		
" 83		-	-		10	30	-	-	50	-		
" 84		-	-		10	150	-	-	100	-		
" 85		-	-		10	50	-	-	50	-		
" 86		-	-		10	20	-	-	20	-		
" 87		-	-		10	70	-	-	70	-		
" 88		-	-		10	20	-	-	50	-		
" 89	146	-	-		10	20	-	-	20	-	-	
" 90	28/3/62	20	10		10	100	-	-	50	-	M	
" 91		-	10		10	100	-	-	20	-	L	

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
C 92		-	-		10	100	-	-	50	-	L	
" 93		-	-		10	150	-	-	50	-	L	
" 94		10	-		10	100	-	-	20	-	L	
" 95		10	-		10	100	-	-	50	-	L	
" 96		20	-		10	100	-	-	100	-	L	
" 97		70	10		10	100	-	-	50	-	M	
" 98		50	10		10	100	-	-	20	-	M	
" 99		70	10		10	150	-	-	50	-	M	
"100		50	10		10	100	-	-	50	-	M	
"101		-	-		10	100	-	-	30	-	L	
"102		70	20		10	150	-	-	50	-	M	
"103		150	20		10	70	-	-	70	-	M	
"104		100	30		10	200	-	-	100	-	H	
"105		70	20		10	200	-	-	100	-	H	
"106		150	20		10	100	-	-	70	-	M	
"107		200	30		10	200	-	-	50	-	H	
"108		150	20		10	100	-	-	70	-	M	
"109		150	20		10	100	-	-	70	-	M	
"110		150	20		10	100	-	-	70	-	M	
"111	147	100	10		10	100	-	-	70	-	M	
"112	30/3/62	50	10		10	70	-	-	50	-	M	
"113		70	10		10	100	-	-	70	-	M	
"114		50	10		10	70	-	-	70	-	L	
"115		20	10		10	100	-	-	70	-	L	
"116		100	20		10	100	-	-	100	-	M	
"117		-	-		10	50	-	-	10	-	L	
"118		-	10		10	100	-	-	20	-	L	
"119		-	-		10	200	-	-	10	-	L	
"120		-	-		10	50	-	-	20	-	L	
"121		-	-		10	200	-	-	10	-	L	
"122		-	-		10	150	-	-	10	-	L	
"123		-	-		10	100	-	-	20	-	L	
"124		-	-		10	70	-	-	20	-	L	
"125		400	30		10	100	-	-	70	-	M	
"126		400	70		10	50	-	-	70	-	M	
"127		50	10		10	50	-	-	10	-	L	
"128		300	20		10	70	-	-	20	-	M	
"129		150	30		10	200	-	-	20	-	M	
"130		150	50		10	200	-	-	20	-	H	
"131		200	50		10	200	-	-	10	-	H	
"132		150	20		10	200	-	-	70	-	M	
"133	148	100	20		10	200	-	-	20	-	M	
"134	30/3/62	150	20		10	200	-	-	20	-	M	
"135		100	20		10	200	-	-	50	-	M	
"136		150	20		10	200	-	-	10	-	M	
"137		100	20		10	200	-	-	10	-	M	
"138		70	30	50?	10	200	-	-	20	-	M	
"139		20	20		10	200	-	-	20	-	L	
"140		30	20		10	200	-	-	20	-	L	

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
C141		70	10		10	20	-	-	20	-	L	
"142		150	10		10	70	-	-	10	-	L	
"143		100	10		10	100	-	-	20	-	M	
"144		150	20		10	150	-	-	10	-	M	
"145		70	10		10	100	-	-	20	-	M	
"146		50	10		10	70	-	-	20	-	M	
"147		70	10		10	50	-	-	20	-	L	
"148		100	10		10	70	-	-	20	-	M	
"149		200	20		10	150	-	-	50	-	M	
"150		-	-		10	70	-	-	20	-	L	
"151		-	-		10	70	-	-	10	-	L	
"152		-	-		10	100	-	-	10	-	L	
"153		-	-		10	50	-	-	20	-	L	
"154		-	-		10	50	-	-	20	-	L	
"155	149	-	-		10	70	-	-	100	-		
"156	2/4/62	-	-		10	100	-	-	10	-		
"157		20	10		10	100	-	-	50	-	L	
"158		10	10		10	150	-	-	50	-	L	
"159		20	10		10	100	-	-	70	-	L	
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"164		10	10		10	100	-	-	200	-		
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"166		20	10		10	150	-	-	70	-		
"167		-	10		10	200	-	-	10	-		
"168		-	-		10	70	-	-	10	-		
"169		-	10		10	150	-	-	20	-		
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"177	150	-	10		10	70	-	-	20	-		
"178	3/4/62	-	10		10	150	-	-	10	-		
"179		10	10		10	100	-	-	20	-		
"180		10	10		10	100	-	-	10	-		
"181		30	10		10	100	-	-	10	-		
"182		10	10		10	100	-	-	10	-		
"183		10	10		10	150	-	-	10	-		
"184		20	10		10	150	-	-	10	-		
"185		20	10		10	150	-	-	10	-		
"186		20	10		10	200	-	-	10	-		
"187		10	10		10	100	-	-	10	-		
"188		10	10		10	200	-	-	10	-		
"189		20	10		10	150	-	-	10	-		
"190		10	10		10	150	-	-	20	-		
"191		10	10		10	150	-	-	20	-		

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
C192	151	10	10		10	100	-	-	10	-		
"193	4/4/62	10	10		10	100	-	-	150	-		
"194		10	10		10	100	-	-	10	-		
"195		10	10		10	200	-	-	10	-		
"196		100	20		20	300	-	-	100	-		
"197		70	20		10	300	-	-	100	-		
"198		70	20		20	300	-	-	100	-		
"199		50	20		10	200	-	-	50	-		
"200		50	20		10	200	-	-	70	-		
"201		50	20		10	300	-	-	70	-		
"202		50	20		10	200	-	-	50	-		
"203		50	20		10	200	-	-	70	-		
"204		50	20		10	200	-	-	50	-		
"205		10	10		10	150	-	-	20	-		
"206		10	10		10	150	-	-	10	-		
"207		10	10		10	200	-	-	20	-		
"208		10	10		10	200	-	-	70	-		
"209		10	10		10	200	-	-	50	-		
"210		10	10		20	200	-	-	20	-		
"211		10	10		10	70	-	-	10	-		
"212		10	10		10	150	-	-	10	-		
"213		10	10		10	150	-	-	20	-		
"214	152	10	10		10	200	10	-	200	-		
"215	5/4/62	10	10		10	200	-	-	200	-		
"216		-	10		10	150	-	-	50	-		
"217		-	10		10	100	-	-	20	-		
"218		10	10		10	200	-	-	20	-		
"219		10	10		10	150	-	-	70	-		
"220		10	10		20	200	-	-	10	-		
"221		10	10		10	200	-	-	10	-		
"222		10	10		10	200	-	-	10	-		
"223		10	10		10	150	-	-	20	-		
"224		10	10		10	200	-	-	20	-		
"225		10	10		10	200	-	-	20	-		
"226		10	10		10	200	-	-	20	-		
"227		-	10		10	150	-	-	20	-		
"228		-	10		10	200	-	-	20	-		
"229		-	10		10	150	-	-	20	-		
"230		-	10		10	150	-	-	50	-		
"231		10	10		10	200	-	-	20	-		
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"233		10	10		10	200	-	-	20	-		
"234		10	10		10	200	-	-	20	-		
"235		10	10		10	150	-	-	10	-		
"236	153	10	10		10	100	-	-	10	-		
"237	5/4/62	10	10		10	100	-	-	10	-		
"238		10	10		10	150	-	-	50	-		

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
C239		10	10		10	200	-	-	20	-		
"240		10	10		10	150	-	-	20	-		
"241		10	10		20	150	-	-	10	-		
"242		10	10		10	150	-	-	50	-		
"243		10	10		10	300	-	-	70	-		
"244		10	20		10	400	-	-	50	-		
"245		20	20		10	300	-	-	70	-		
"246		20	20		10	300	-	-	50	-		
"247		20	20		10	300	-	-	50	-		
"248		10	10		10	400	-	-	50	-		
"249		50	20	(50??)	50	400	10	10	70	-		
"250		30	20		10	300	-	-	50	-		
"251		-	-		10	100	-	-	70	-		
"252		-	-		10	150	-	-	50	-		
"253		-	-		10	200	-	-	50	-		
"254		-	-		10	200	-	-	20	-		
"255		10	10		10	200	-	-	20	-		
"256		20	10		10	200	-	-	100	-		
"257		10	10		10	150	-	-	20	-		
"258	154	10	10		10	150	-	-	10	-		
"259	6/4/62	10	10		10	200	-	-	10	-		
"260		10	10		10	200	-	-	10	-		
"261		10	10		10	200	-	-	10	-		
"262		20	10		10	200	-	-	10	-		
"263		10	10		10	150	-	-	10	-		
"264		50	10		10	200	-	-	200	-		
"265		300	20		10	200	-	-	10	-		
"266		150	20		10	150	-	-	10	-		
"267		150	20		20	200	-	-	10	-		
"268		400	20		20	200	-	-	10	-		
"269		150	20		20	200	-	-	10	-		
"270		300	20		20	200	-	-	10	-		
"271		50	10		10	200	-	-	10	-		
"272		20	10		10	200	-	-	10	-		
"273		50	20		10	200	-	-	10	-		
"274		70	20		10	200	-	-	10	-		
"275		70	20		10	200	-	-	10	-		
"276		100	20		10	300	20	-	10	-		
"277		70	10		10	150	-	-	10	-		
"278		10	10		10	150	-	-	10	-		
"279		10	10		10	150	-	-	50	-		
"280	155	10	10		10	150	-	-	10	-		
"281	6/4/62	10	10		10	100	-	-	10	-		
"282		10	10		10	150	-	-	10	-		
"283		10	10		10	150	-	-	10	-		
"284		20	10		10	100	-	-	10	-		
"285		20	10		10	150	-	-	10	-		
"286		50	10		10	150	-	-	20	-		

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
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C287		10	10		10	150	-	-	20	-		
"288		10	10		10	100	-	-	10	-		
"289		50	20		10	150	-	-	50	-		
"290		100	20		10	200	-	-	100	-		
"291		10	10		10	200	-	-	70	-		
"292		10	10		10	200	-	-	70	-		
"293		10	10		10	200	-	-	70	-		
"294		10	10		10	150	-	-	30	-		
"295		10	10		10	150	-	-	30	-		
"296		20	10		10	200	-	-	30	-		
"297		50	10		10	150	-	-	20	-		
"298		10	10		10	150	-	-	10	-		
"299		10	10		10	70	-	-	10	-		
"300		50	10		10	200	-	-	10	-		
"301		20	10		10	150	-	-	10	-		
"302	156	50	10		10	150	-	-	10	-		
"303	9/4/62	20	10		10	150	-	-	10	-		
"304		30	10		10	200	-	-	10	-		
D 1		10	10		10	100	-	-	10	-		
" 2		20	10		10	200	-	-	10	-		
" 3		30	10		10	200	-	-	10	-		
" 4		30	10		10	200	-	-	10	-		
" 5		50	10		10	300	-	-	150	-		
" 6		20	10		10	150	-	-	20	-		
" 7		100	20	(100?)	10	300	10	10	10	-		
" 8		20	10		10	150	50	-	50	-		
" 9		20	10		10	150	-	-	50	-		
"10		30	10		10	200	-	-	10	-		
"11		20	10		10	150	-	-	10	-		
"12		-	-		10	50	-	-	100	-		
"13		50	10		10	200	-	-	20	-		
"14		50	10		10	150	-	-	20	-		
"15		-	-		10	100	-	-	50	-		
"16		-	-		10	100	-	-	100	-		
"17		-	-		10	100	-	-	50	-		
"19		-	-		10	100	-	-	20	-		
"20		-	-		10	100	-	-	50	-		
"21	157	-	-		10	150	-	-	200	-		
"22	10/4/62	-	-		10	100	-	-	50	-		
"23		-	-		10	150	-	-	20	-		
"24		-	10		10	200	-	-	20	-		
"25		-	-		10	200	-	-	20	-		
"26		-	10		10	200	-	-	20	-		
"27		10	10		20	200	-	-	50	-		
"28		10	10		10	200	-	-	50	-		
"29		100	10		10	150	-	-	20	-		

No. 18 missing

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
D30		100	10		10	150	-	-	20	-		
"31		-	-		10	150	-	-	10	-		
"32		-	10		10	200	-	-	50	-		
"33		150	20		10	200	-	-	50	-		
"34		150	30		20	200	-	-	20	-		
"35		100	20		20	300	-	-	10	-		
"36		10	10		10	150	-	-	20	-		
"37		10	10		10	100	-	-	10	-		
												No. 38 missing
"39		10	10		10	200	-	-	100	-		
"40		-	10		10	200	-	-	100	-		
"41		-	10		10	200	-	-	20	-		
"42		50	10		10	200	-	-	20	-		
"43		-	10		10	300	-	-	70	-		
"44	158	10	10		10	100	-	-	10	-		
"45	10/4/62	10	10		10	100	-	-	10	-		
"46		10	10		10	100	-	-	10	-		
"47		10	10		10	200	-	-	20	-		
"48		50	10		10	200	-	-	10	-		
"49		20	10		10	200	-	-	10	-		
E 1		10	10		10	100	-	-	50	-		
" 2		10	10		10	150	-	-	200	-		
" 3		10	10		10	150	-	-	20	-		
" 4		70	10		10	150	-	-	20	-		
" 5		10	10		10	100	-	-	20	-		
" 6		10	10		10	150	20	-	20	-		
" 7		10	10		10	150	-	-	20	-		
" 8		10	10		10	100	-	-	30	-		
" 9		10	10		10	70	-	-	30	-		
"10		-	10		10	100	-	-	50	-		
"11		-	10		10	100	-	-	20	-		
"12		-	10		10	70	-	-	20	-		
"13		-	10		10	150	-	-	10	-		
"14		-	10		10	200	-	-	10	-		
"15		-	10		10	150	-	-	20	-		
"16		700	150		10	150	-	-	10	-		
"17	159	400	50		10	50	-	-	20	-		
"18	11/4/62	700	100		10	100	-	-	70	-		
"19		700	150		10	150	-	-	20	-		
"20		400	150		10	200	-	-	20	-		
"21		150	20		10	100	-	-	50	-		
"22		150	20		10	200	-	-	30	-		
"23		200	20		10	150	-	-	70	-		
"24		100	10		10	100	-	-	20	-		
"25		150	20		10	150	-	-	20	-		
"26		200	20		10	100	-	-	50	-		
"27		-	-		10	100	-	-	10	-		

Cr high

H
H
H
H
H
H
M
M
M
L

Sample No.	Plate No. Date	Ni	Co	Zn	Cu	V	Sn	Mo	Pb	Be	Cr	Remarks
E28		-	-		10	100	-	-	10	-	L	
"29		-	-		10	100	-	-	10	-	L	
"30		10	20		10	200	-	-	20	-	L	
"31		10	10		10	150	-	-	50	-	L	
"32		-	-		10	100	-	-	20	-	L	
"33		-	-		10	100	-	-	700	-	L	
"34		-	-		10	300	-	-	20	-	L	
"35		-	-		10	100	-	-	20	-	L	
"36		10	-		10	100	-	-	20	-	L	
"37		10	-		10	100	-	-	10	-	L	
"38		10	10		10	100	-	-	10	-	L	
"39	160	10	10		10	100	-	-	20	-		
"40	11/4/62	10	10		10	100	-	-	20	-		
"41		10	10		100	150	-	-	10	-		
"42		10	10		10	100	-	-	10	-		
"43		10	10		10	100	-	-	20	-		
"44		10	10		10	100	-	-	10	-		
												No. 45 missing
												" 46 "
												" 47 "
"48		20	30		10	300	-	-	50	-		
"49		10	10		10	200	-	-	50	-		
"50		10	20		10	200	-	-	50	-		
"51		50	30		10	300	-	-	20	-		
"52		10	10		10	100	-	-	20	-		
"53		50	30		10	300	-	-	300	-		
"54		50	30		10	200	-	10	100	-		

Limit of detection 10

2

STREAM SEDIMENT SAMPLE LOCALITIES AND GEOLOGICAL MAP OF FERGUSON ISLAND

SCALE



Geology by: H.L. Davies & D.J. Ives
Compiled by: H.L. Davies & D.J. Ives

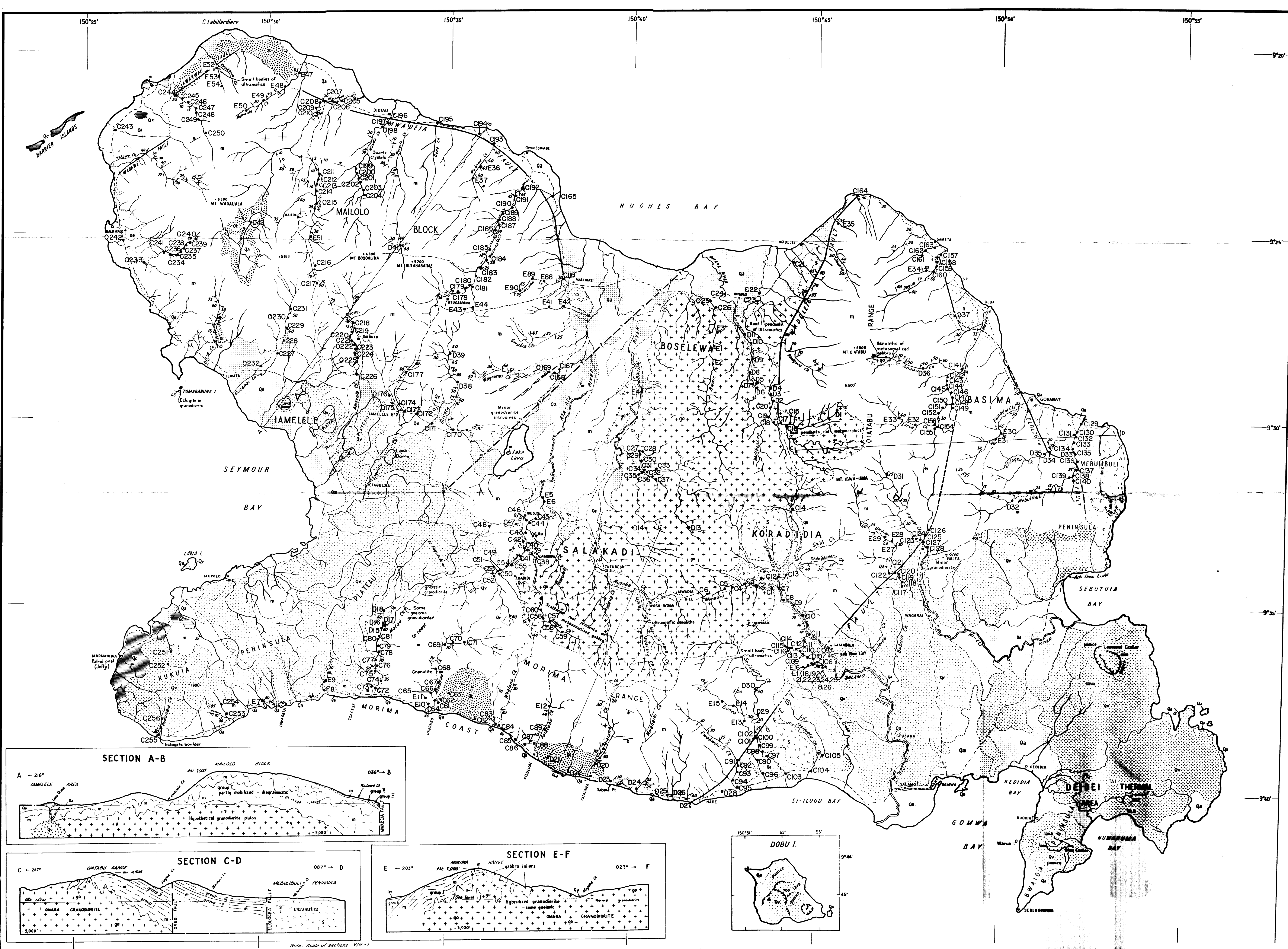
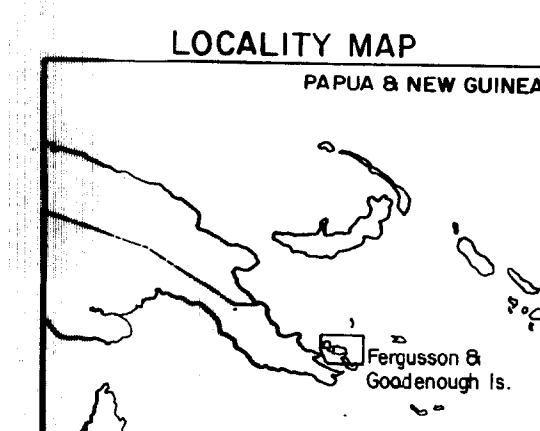
Reference QUATERNARY

- Qa Alluvium: Unconsolidated conglomerate, gravel, sand, silt
- Qb Talus: Angular boulders in clay matrix
- Qc Beach coral
- Qd Volcanics: Predominantly acid and intermediate fragmental rocks and lava with rare dolerites. Typical rock types are pumice, obsidian, and tuff. Flow-banded lava, welded ash-flow tuff.
- PALAEZOIC OR MESOZOIC
- m Metamorphic: Amphibolite facies, predominantly mica-feldspar-quartz gneiss, some mica marble, massive and layered amphibolite, rare granulite and eclogite. All intruded by acid veins including rare pegmatite.
- IGNEOUS INTRUSIVES
- g Granodiorite and feldspathic intrusives: Some trondhjemite and adamellite.
- g+fa Gabbro: Includes some trondhjemite and adamellite. Observed gabbro with many inliers and xenoliths of metamorphic gabbro.
- u Ultramafics: Dolerite, hornblende, pyroxenite, partly or completely serpentinized, some andesite and carbonatite.

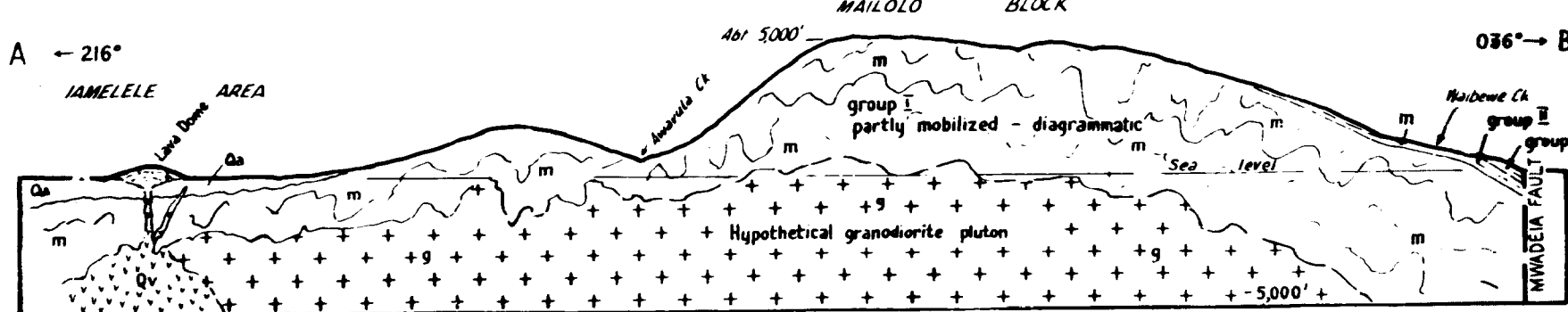
- Geological boundary, position approximate
- Inferred geological boundary
- Stroke and dip of bedding
- Horizontal bedding
- Vertical bedding
- Strike dip at 15°-45°: photo interpreted
- Strike and dip of metamorphic foliation
- Vertical metamorphic foliation
- Horizontal metamorphic foliation
- Lithiation
- Dike, showing strike and dip
- Strike and dip of joints
- Vertical joints
- Local shearing
- Fault, position accurate
- Fault, position approximate
- Fault, concealed by alluvium
- Inferred fault
- Minor mineral occurrence: Ch, chlorite, ls, limestone, py, pyrite, r, rutile
- Mineral gold workings
- Section line
- Fault track
- European settlement
- Mission
- Railway village with Government Rest House
- Spot height in feet
- Volcanic cone

NOTE:
TAB 1 - Area to the Thermal Area
TAB 2 - Marawa Thermal Area
TAB 3 - Marawa Thermal Area

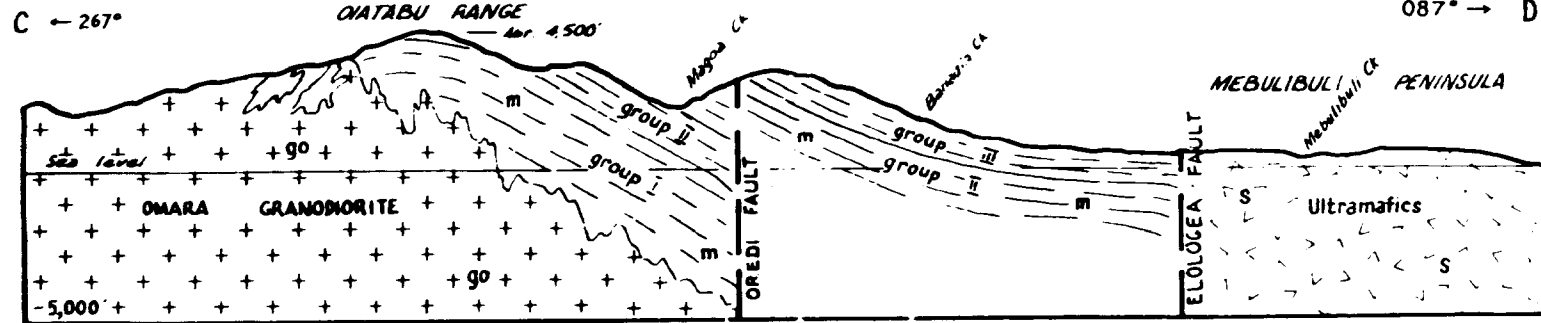
C241 Stream Sediment Fines (-80 mesh)



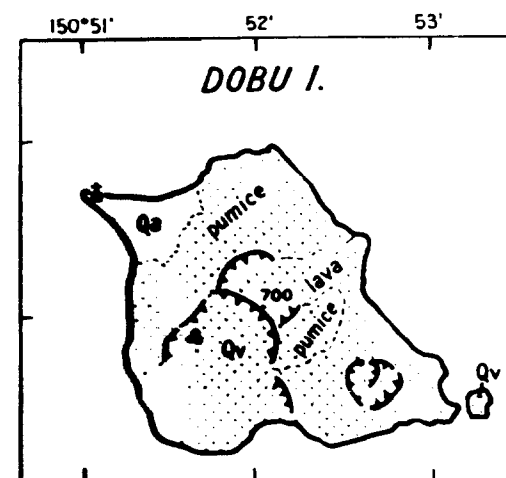
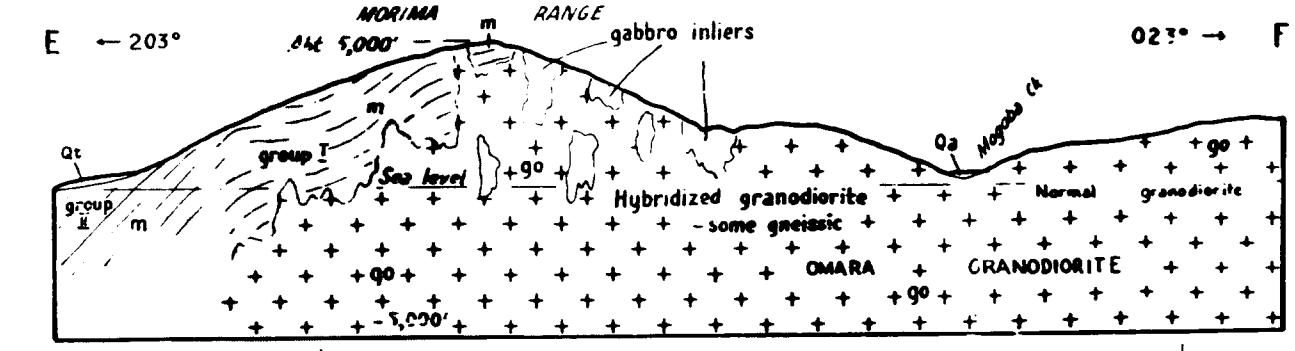
SECTION A-B



SECTION C-D



SECTION E-F



Note: Scale of sections 1/4 inch = 1 mile

STREAM SEDIMENT SAMPLE LOCALITIES AND GEOLOGICAL MAP OF GOODENOUGH ISLAND

SCALE



Geology by H.L. Davies & D.J. Ives
Compiled by H.L. Davies & D.J. Ives

Reference QUATERNARY

Qa Alluvium: Unconsolidated conglomerate, gravel, sand, silt

Qt Talus: Angular boulders in clay matrix

Qc Raised coral

Qv Volcanics: Predominantly andesitic olivine basalt, some trachyte, andesite and rare dacite

PALAEOZOIC OR MESOZOIC

m Metamorphics: Amphibolite facies, predominantly mica-feldspar-quartz gneiss, some impure marble, massive and layered amphibolite, rare granite and eclogite. All intruded by acid veins including rare pegmatite

IGNEOUS INTRUSIVES

gd Granodiorite; includes some granite and adamellite

ul Ultramafics: Dunite, harzburgite, pyroxenite, partly or completely serpentinized, some apatized and carbonated

Geological boundary, position approximate

Inferred geological boundary, position approximate

Strike and dip of bedding, Strike & dip of joint

Horizontal bedding

Vertical bedding

Strata dip less than 15° photo-interpretation

Strata dip 15°-45°

Strike and dip of metamorphic foliation

Vertical metamorphic foliation

Strike and dip of igneous foliation

Dyke, gd - granodiorite do - dolerite

Fault, position accurate

Fault, position approximate

Fault, concealed by alluvium

Inferred fault

Local shearing

Alluvial gold workings

Section line

Foot track

Road

Airstrip

European settlement

Mission

Native village with Government Rest House

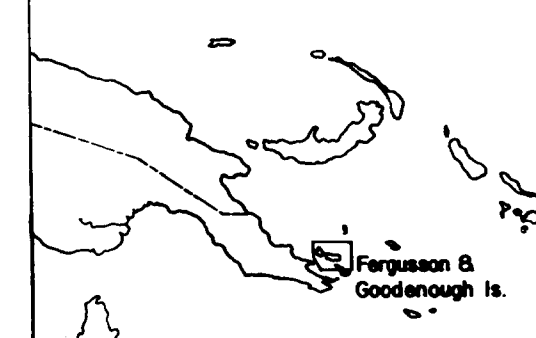
Spot height in feet

Volcanic cone

D71° Stream sediment fines (-80 mesh)

LOCALITY MAP

PAPUA & NEW GUINEA



SECTION A-B Scale 1/4" = 1 mile

GOODENOUGH BLOCK

