ANNEX 4

ANNEX 4

ソロモン諸島テンガノ湖ボーキサイト
開発計画調査

現地調査業務日程表

日 程 お よ び 業 務 内 容

日順	月	日	業　務　内　容　　( ): 日曜日
1	10	(18)	塚原・佐々木　成田発　10：00　JL 731便 → ホンコン 乗継便が機械故障で延発したのでホンコン泊。
2		19	ホンコン → ポートモレスビー　PX 911便。
3		20	ポートモレスビー → ホニアラ着 13：20　PX 031便。 在ソロモン日本大使館　表敬。 Geology Division 表敬。 Chief Geologist：Frank I. Coulson 氏。 Geologist　：Stephen Danitofea 氏。 現地調査準備、調査日程等打合。
4		21	資機材購入打合、作業内容打合。
5		22	ベースキャンプ用資機材・食料品購入。 夕刻　シドニーからパプアン・チーフ号がホニアラ着。（日本からの輸送資機材を積載）
6		23	現地調査用資機材購入。
7		24	同　上。
8		(25)	資料整理。　杉山・赤沢・秋元・近藤 東京発
9		26	輸送資機材の無税搬入手続。 レンネル島への輸送船借上日程打合。
10		27	無税搬入手続。 杉山・赤沢・秋元・近藤 ホンコン経由ポートモレスビー → ホニアラ着 13：15　PX031便。 在ソロモン黒沢臨時代理大使が出張不在のため、Geology Division に表敬。
11		28	調査団員の入国滞在許可期限が不足なため、その延長申請。 資機材無税搬入手続。
12		29	資機材通関・Geology Division へ搬入。（木枠１０コ）

日順	月	日	業　務　内　容　　( ): 日曜日
12	10	29	梱包を解体し、レンネル島向け簡易梱包の仕分け。
13		30	レンネル島向け資機材簡易梱包、その仕分け。秤量。 現地調査用資機材・食料品補足購入。
14		31	同　上。
15	11	(1)	梱包表その他資料整理。
16		2	塚原・赤沢・秋元・近藤 ホニアラ → ティンゴア（航空機）。 杉山・佐々木 ブラワ号（Bulawa）に荷載指揮・搭乗。 ホニアラ発　午後4時25分。
17		3	塚原・赤沢・秋元・近藤 ティンゴア → ラバング → テンガノ。 杉山・佐々木 Bulawa でツフンガンゴ浜着。（午後4時30分）荷降し作業。
18		4	資機材・食料品・油脂類運搬。　人夫：38名
19		5	カヌー2隻・資機材・食料品・油脂類運搬。 バージ組立て。　人夫：50名
20		6	資機材・食糧品運搬。　人夫：48名 従局点の巡回調査。 調査船およびバージ組立て。
21		7	テンガノ湖々水の水位変化観測。 従局点の位置および座標の製図。 船外機の整備。ベースキャンプ整頓。
22		(8)	調査船およびバージ組立て。 電波測位機、地層探査機、音響測深機の調整と整備。
23		9	資機材・食料品運搬。　人夫：10名 調査船およびバージ組立て。
24		10	従局点Eの測量。

日順	月	日	業　務　内　容　（）：日曜日
24	11	10	従局点CおよびDの設置。 調査船およびバージ組立て。 テンガノ村民とのミーティング。
25		11	調査船の艤装およびテスト・ラン。 バージ組立て。
26		12	バージの組立・艤装およびテスト。
27		13	湖底堆積層音波探査、音響測深調査。（L－13.1，3.1 km） 水位観測。
28		14	同　上。（L－14.1，L－14.2，L－14.3，18.2km） 水位観測。
29		(15)	同　上。（L－15.1，L－15.2，22.6 km）
30		16	同　上。（L－16.1，L－16.2，L－16.3， L－16.4，L－16.5，L－16.6，34.1 km）
31		17	同　上。（L－17.1，L－17.2，L－17.3， L－17.4，L－17.5，　28.1 km）
32		18	湖底堆積層音波探査、音響測深調査。（L－18.1，5.7 km）
33		19	同　上。（L－19.1，L－19.2，L－19.3，L－19.4，10.8 km）
34		20	測定値整理。資料整理。
35		21	同　上。
36		(22)	音響測深調査（L－22.1～L－22.9，　19.3 km）
37		23	柱状採泥　　3点，　　3試料
38		24	同　上，　　7点，　　8試料
39		25	同　上，　　7点，　　9試料
40		26	同　上，　　6点，　　8試料
41		27	同　上，　　7点，　　9試料
42		28	同　上，　　4点，　　7試料
43		(29)	同　上，　　6点，　　13試料
44		30	潜水採泥，　　8点，　　8試料 音響測深調査（L－30.1～L－30.4，　27.1 km）

日順	月	日	業　務　内　容　（）：日曜日
45	12	1	調査船およびバージの艤装解体、整理作業、資機材梱包作業。
46		2	資機材梱包作業。
47		3	資機材運搬。　（人夫80名）
48		4	資機材運搬。　（人夫37名）
49		5	ベースキャンプ撤収準備、資料整理。
50	12	(6)	塚原、赤沢、秋元、近藤 テンガノ → ラバング → ティンゴア。
51		7	塚原、赤沢、秋元、近藤 ティンゴア → ホニアラ。（航空機） トーマスE号（THOMAS E） ツフンガンゴ浜着。 杉山、佐々木　トーマスE号に荷積。 指揮・搭乗。
52		8	トーマスE号、ツフンガンゴ浜発。 午前7時。
53		9	トーマスE号、ホニアラ着　午前11時。 荷降し作業。 国際協力事業団　向井英昭氏ホニアラ着。
54		10	資機材梱包　秋元、近藤　ホニアラ発。
55		11	塚原、調査中間報告書をGeology Division F.I.コールソン氏 S. ダニトフィア氏に提出。向井英昭氏と黒沢茂氏同席。 資機材梱包。現地調査費一部の支払準備。 秋元、近藤　ナディ経由　成田着。
56		12	資料整理。
57		(13)	資料整理。
58		14	塚原、F.I.コールソン氏の要望によって、現地調査の主要結果を Geology Division の主要スタッフに報告。 資機材返送準備・発註。 在ソロモン日本大使館 表敬。

日順	月	日	業　務　内　容　　( ): 日曜日
59	12	15	塚原、杉山、赤沢、佐々木 国際協力事業団　向井英昭氏、 ホニアラ発 → ポートモレスビー　PX030便。
60		16	在パプアニューギニア日本大使館 表敬。 Interim Report　コピーを提出。 ポートモレスビー発 → ホンコン　PX910便。
61		17	ホンコン発 → 成田　JL002便。

ANNEX 5

ANNEX 5

INTERIM REPORT

ON

THE MINERAL RESOURCES DEVELOPMENT PLAN

OF

THE LAKE TENGGANO, RENNELL ISLAND, SOLOMON ISLANDS.

DECEMBER, 1981

JAPANESE SURVEY TEAM

JAPAN INTERNATIONAL COOPERATION AGENCY

CONTENTS

JAPAN INTERNATIONAL COOPERATION AGENCY
P.O. Box 216, MITSUI BLDG.,
2-1 NISHI-SHINJUKU, SHINJUKU-KU,
TOKYO 160 JAPAN.

Mr. Frank I. Coulson.
Chief Geologist,
Geology Division,
Ministry of Land, Energy
and Natural Resources,
Solomon Islands.

11th Dec. 1981

Dear Sir;

We have the pleasure to producing our interim report to you after the completion of our field survey programme of the Lake TeNggano, Solomon Is. in 1981.

Our survey works have been carried out on the Lake TeNggano, eastern Rennell Island and are composed of Sub-bottom Profiling of the Lake floor, totally 169 km traverse lines and collecting 65 samples of lake floor sediments at 48 locations.

We wish to express our sincere thanks to you and Geology Division staff, who gave us full supports and cooperations during the course of the programme works.
Thanking you, we remain ;

Yours faithfully,

N. Tsukahara

N. TSUKAHARA.
Leader of the Japanese Team
for Mineral Resources Development
Plan in the Lake TeNggano,
Rennell Island, Solomon Is. .

I. INTRODUCTION

The Japanese Survey Team by the Japan International Cooperation Agency (JICA) was involved in the geological and geophysical works during 18th Oct. 1981 to 17th Dec. 1981, to carry out Sub-bottom Profiling and collecting lake floor sediment samples of the Lake TeNggano, Rennell Island, Solomon Islands.

The survey works have been carried out by full joints and cooperations of Japanese Team and Geology Division Team, Solomon Is. .
The Teams Members are as shown below :

Japanese Team	:	N. TSUKAHARA, Team Leader, Geologist
		A. SUGIYAMA, Deputy Leader, Geologist
		Y. AKAZAWA, Surveyor
		F. AKIMOTO, Surveyor
		S. SASAKI, Oceanographer
		M. KONDO, Assist. Geophysicist
Geology Division Team, S.I.	:	F. I. COULSON, Chief Geologist
		S. DANITOFEA, Geologist
		P. DIAU,
		A. BANA
		R. ANISI,
		W. GARAEMA,
		P. ISRAEL,
		R. TAFUSELO,
		W. ZAMA,
		A. ALE,
		J. POLOSO

The survey works are composed of (1) Producing Sub-bottom Profiling of the Lake TeNggano by using sub-bottom profiler and echo-sounder loaded on the survey-catamaran and (2) Colloecting lake floor sediment samples by using piston corer loaded on the barge and also by diving into water.

The 169 km traverse lines in total for profiling, as shown in Fig. 1, were made and 65 samples were collected at 48 locations as shown in Fig. 2.

The major equipments used for the survey works are as follows.

1. One Sub-bottom Profiler.
   Made by KAIJO DENKI CO. LTD. .

Frequency : 8 kHz

2. One Echo-Sounder.
   Made by Rasa Denshi Co. Ltd. .
   Frequency : 200 kHz
3. Radio Distancemetres.
   One main and Two slaves.
4. Four Generators.
   One 1.2 KVA for Item 1, one 0.8 KVA and two 0.3 KVA for Item 3.
5. Two Car-batteries, 12 V for Item 2.
   (one for use, one for spare)
6. Piston Corer.
7. One survey-catamaran for Profiling, equipped with 35 HP outboard engine.
   (Built by connecting two Glass-Fibre canoes)
8. One barge for sampling, 6 m x 5.5 m decked, buoyed by 36 petrol-drums
9. Two accessory canoes, one Dingy and One Glass-Fibre, equipped with 10 HP outboard engines.

The general progress of the survey works is itinerated in ANNEX 1.

The Japanese Survey Team will continue to carry out laboratory works, by using chemical analysis apparatuses and X-ray powder diffractometer, to elucidate the chemical and mineralogical properties of the collected samples and also to produce various maps, which show detailed allocations of traverse lines of profiling, sampling location allocation, topographical features of the lake floor and etc., in Japan.

The estimated schedule of the present survey programme in the future is to be as follows ;

December 1981 to March 1982	: Laboratory and mapping works in Japan.
April 1982	: Draft report making in Japan.
June 1982	: Oral presentation of the report in Honiara.

II. MAJOR RESULTS

1. The whole area of the Lake TeNggano was covered by acoustic Sub-bottom Profiler and Echo-sounder as shown in Fig. 1. The 35 traverse lines, 169 km in total, as shown in Table 1, were tripped by using a survey-catamaran.

2. The 65 samples of the lake sediments were collected from 48 locations, as shown in Fig. 2, by using piston corer on a barge and also by diving in shallow water area.
The length of the inner tube, used for the present survey programme, is 2 metres long, having 59 millimetres diameter inside and 65 millimetres diameter outside.
The log sheets of the collected sediment samples are shown in ANNEX 2.
The sampling locations were selected on the bases of the results of Sub-bottom Profiling and oral informations by local people.

3. From the bases of the results by acoustic sub-bottom profiling, echo-sounding and sediment-sampling works, the lake floor sediments of the Lake TeNggano are tentatively divided into five groups as follows. (See Fig. 3)

3-1. Sediment A

It is considered that the Sediment A is widely distributed on the lake floor in the central part of the lake.
The surface of the sediment generally occurs on -28 metres to -30 metres level below lake water level, -31 metres level is the deepest in the eastern portion of the lake.
The surface level of the sediment generrally shows to be slightly shallow toward the lake shore and is on -23 metres level in the western shore of the lake.
It is estimated that it is generally 5 to 6 metres thick and 8 metres in maximum.
The records of the acoustic profiling normally show wholly tint patterns and the surface of the sediment is obscure in some place.
It mainly consists of grayish green jelly, grayish brown jelly. It

normally contains fine plant fragments, leaf or wooden fibrous fragments and is homogeneous sometimes.
It is observed in Holes 23/1, 23/2, 23/3, 24/2 and etc..
Clayey materials are not observed yet in Sediment A.

3-2. Sediment B

It is considered that the Sediment B is distributed overlieing the basin and/or sinkhole of the limestone bed and is overlain by Sediment A.
It is estimated that it is generally 1 to 3 metres thick and 4 metres in maximum.
The records of the profiling normally show fairly uniformly dark patterns and reflected patterns ocassionally.
It mainly consists of jellyish brown mud, frequently associated with accidental plant fragments.
It is observed in Holes 24/3 (lower part), 28/4 (lower part) and etc..

3-3. Sediment C

It is considered that the Sediment C is distributed in a fairly shallow-water area and directly overlies the limestone bed.
The surface level of the sediment generally occurs on -22 metres to -16 metres below water level, -20 metres in general.
It is estimated that the Sediment C is to be less than 2 metres in thickness
The records of the acoustic profiling normally show similar patterns to that of the Sediment B, which are fairly dark, however, they show tint in some place, which are similar to that of Sediment A.
It mainly consists of grayish green soft mud, associated with a lot of wooden, fibrous fragments and/or yellowish brown clay.
It is observed in Holes 26/5 (lower part), 27/6, 28/1 and etc..

3-4. Sediment D

It is considered that the Sediment D is distributed in a limited area near the lake shore.
The surface level of the sediment generally occurs on -10 metres to

-12 metres below water level.
The records of the acoustic profiling show distinct reflected dark patterns due to a large amount of fibrous wooden fragments contained in the sediment.
It consists of jellyish brown soft mud, associated with a large amount of fine, fibrous accidental wooden fragments.
It is observed in Holes 27/3 and 28/2.
It is highly important that a sticky gray clay bed, 0.55 metre thick, was intersected by Hole 28/2 between -11.15 metres to -11.70 metres below water level.

3-5. Sediment E

It is considered that almost of the known bauxitic clay occurrences in the Lake TeNggano area are distributed in the Sediment E.

The surface level of the sediment generally occurs on -2 metres to -6 metres below water level, -3.5 metres to -5 metres below in general.

It mainly consists of grayish green jelly, red jelly and brown mud. Creamy white sandy mud and pinkish brown sandy mud are also observed in near Tebaitahe, western end corner of the Lake TeNggano.
Bauxitic, gray, sticky clay beds are scatteredly observed on -3 metres to -5 metres below water level and are generally ovelain by green/red jelly, sometimes overlain by nothing, underlain by bed-rock limestone and/or brown mud.
The major occurrences of the bauxitic sticky clay bed are as follows.

occurrence	HOLE NUMBER OF PRESENT SURVEY	THICKNESS OF CLAY BED IN METRE	OVERLAIN / UNDERLAIN
NIUPANI	29/1	more than 1.2	Reddish brown jelly / unknown
do.	29/3	0.8	Red jelly / Limestone
S.D.A. SCHOOL BAY	30/1	0.2	Green gel / Limestone
do.	30/2	more than 0.2	Green/red gel / unknown

HUTUNA	30/3	0.4	Green gel / Brown mud
do.	30/4	0.5	Green gel / Brown mud
TINGOA	25/7	0.45	non / greenish brown sandy mud
do.	26/1	0.35	non / Limestone

The major bauxitic clay occurrences are observed between -2 metres to -4 metres below lake water level.
The most goodish occurrence among them is considered to be in Niupani, which is intersected by two holes, 29/1 and 29/3, some 150 metres apart, however, no clay was intersected by hole 29/2, some 350 metres apart from holes 29/1 and 29/3.
The HUTUNA clay and S.D.A. School Bay clay occur in small, pocket-like sink-holes in limestone, of which diametre is considered to be ranging 0.2 metre to 0.4 metre. Sink-holes, filled by bauxitic clay, are scattedly distributed and the extent of the clay-filled sink holes is estimated to be less than 30 metres x 30 metres on plan in HUTUNA and S.D.A. School Bay.

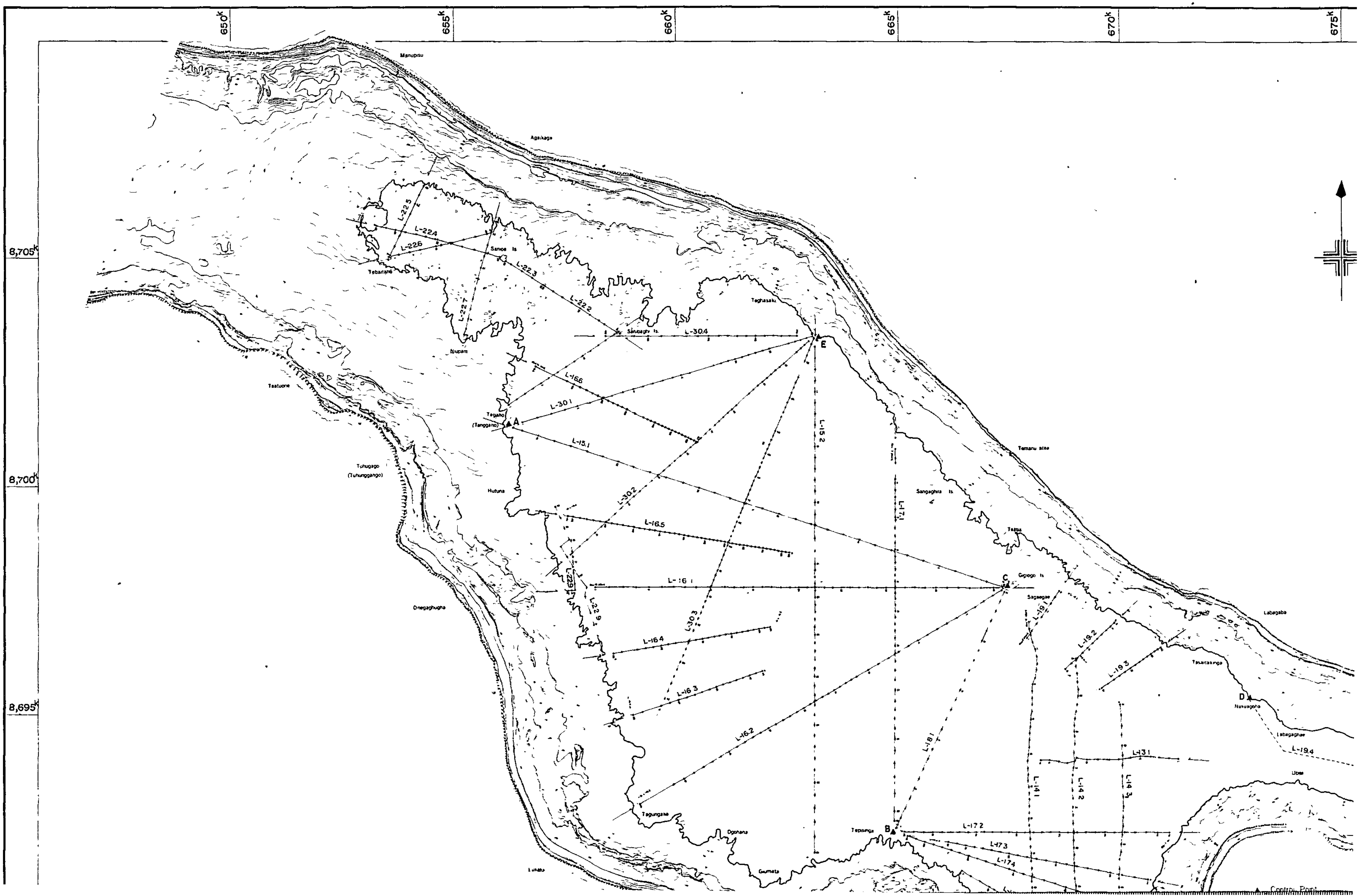
4. Bed-rock limestone of the Lake TeNggano is clearly observed by acoustic profiling. Limestone shows very distinct acoustic profiling records, yielding intense reflections, by which limestone is cleary distinguished from soft sediments.

Limestone shows frequent topographical undulations and is considered that the uppermost surface of Limestone is higher than -40 metres below lake water level at the deepest portion of the Lake TeNggano.

The lake floor area, where no sediments are observed on limestone bed, will be possibly delineated on the basis of the result of acoustic profiling.

5. Fluctuation of water level of the Lake TeNggano was observed on 7th, 13th and 14th days, November 1981, and negligibly small fluctuations were observed as shown in Table 2.

It should be concluded that the water level of the Lake TeNggano might show no fluctuation.



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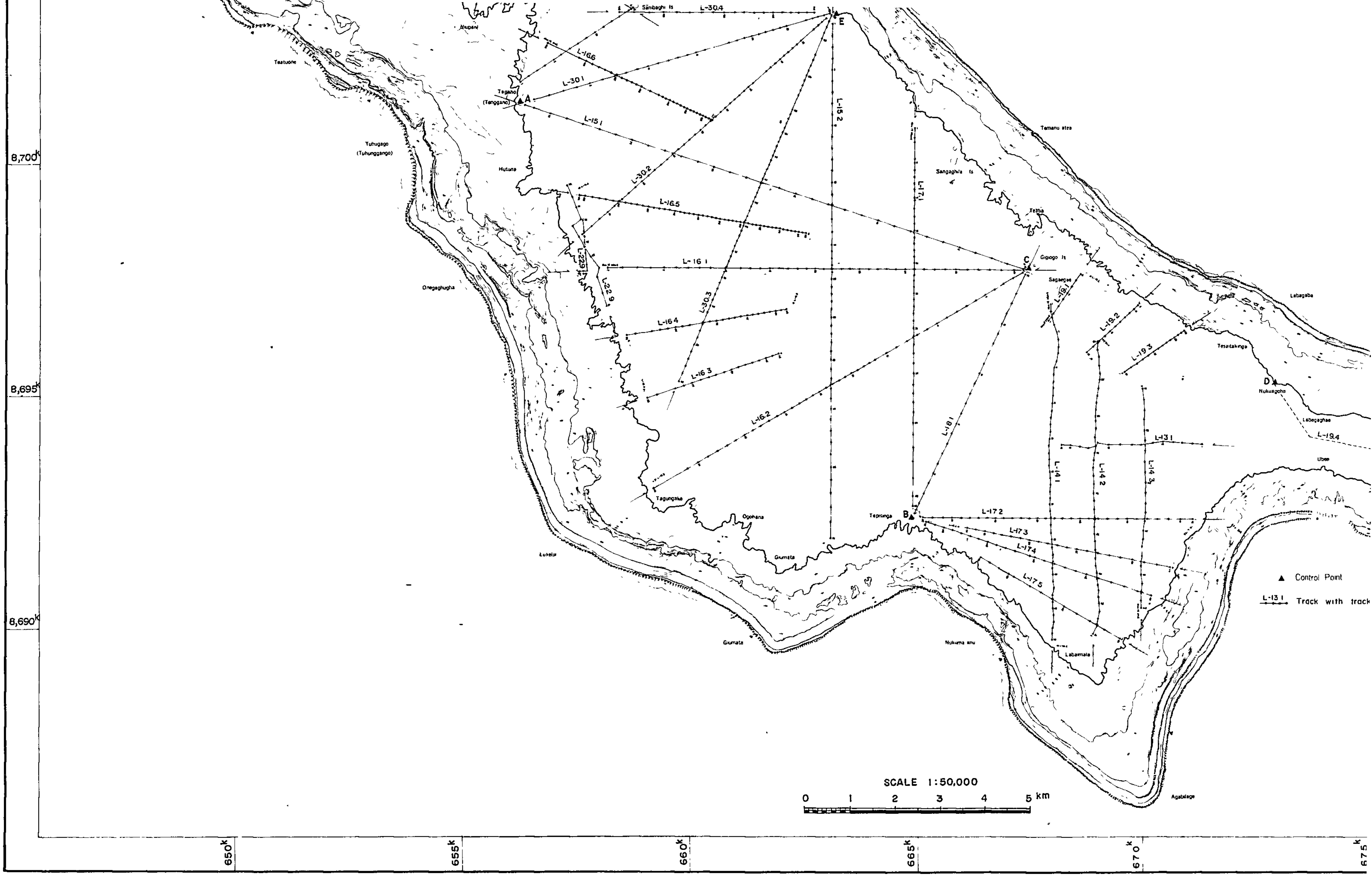

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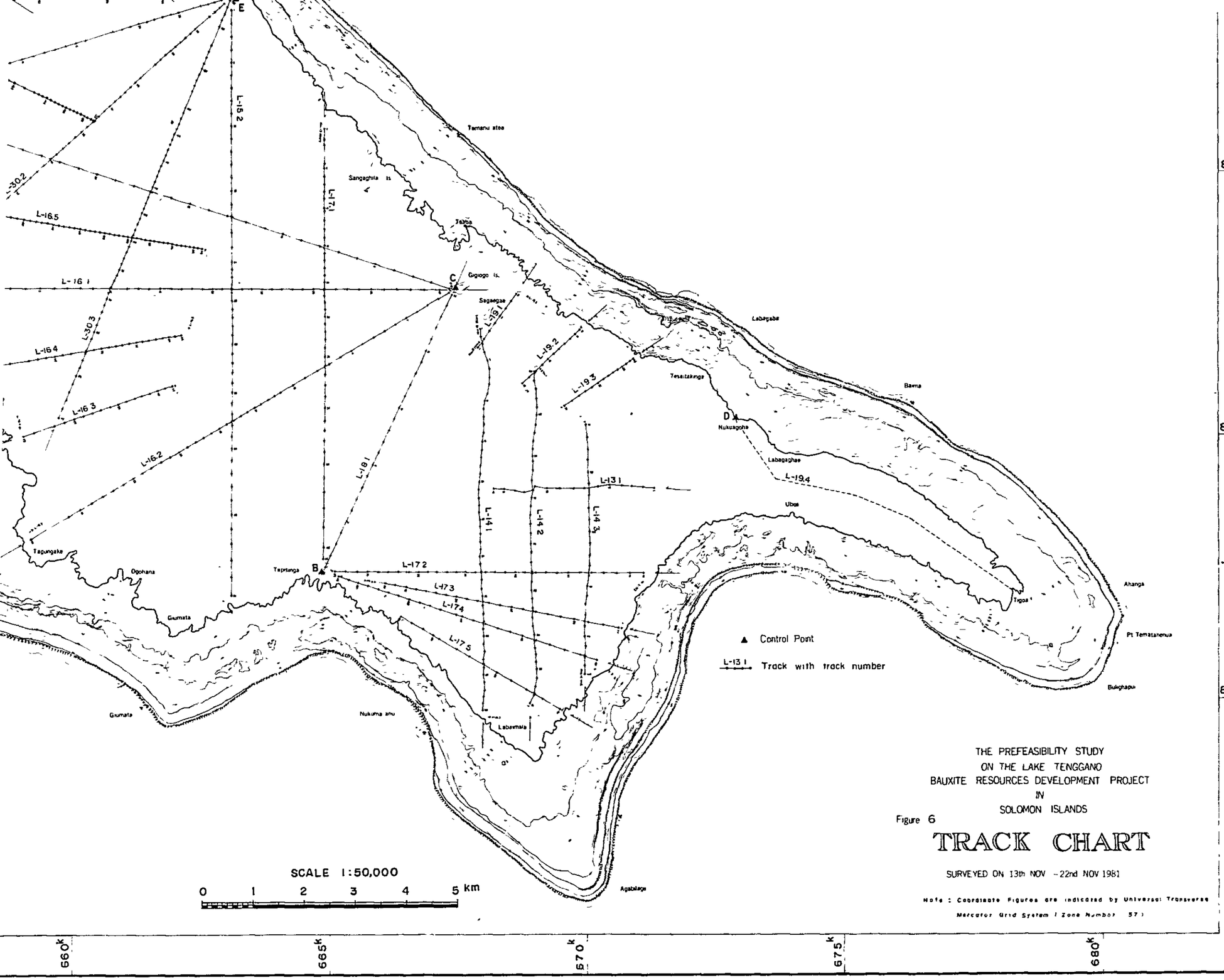


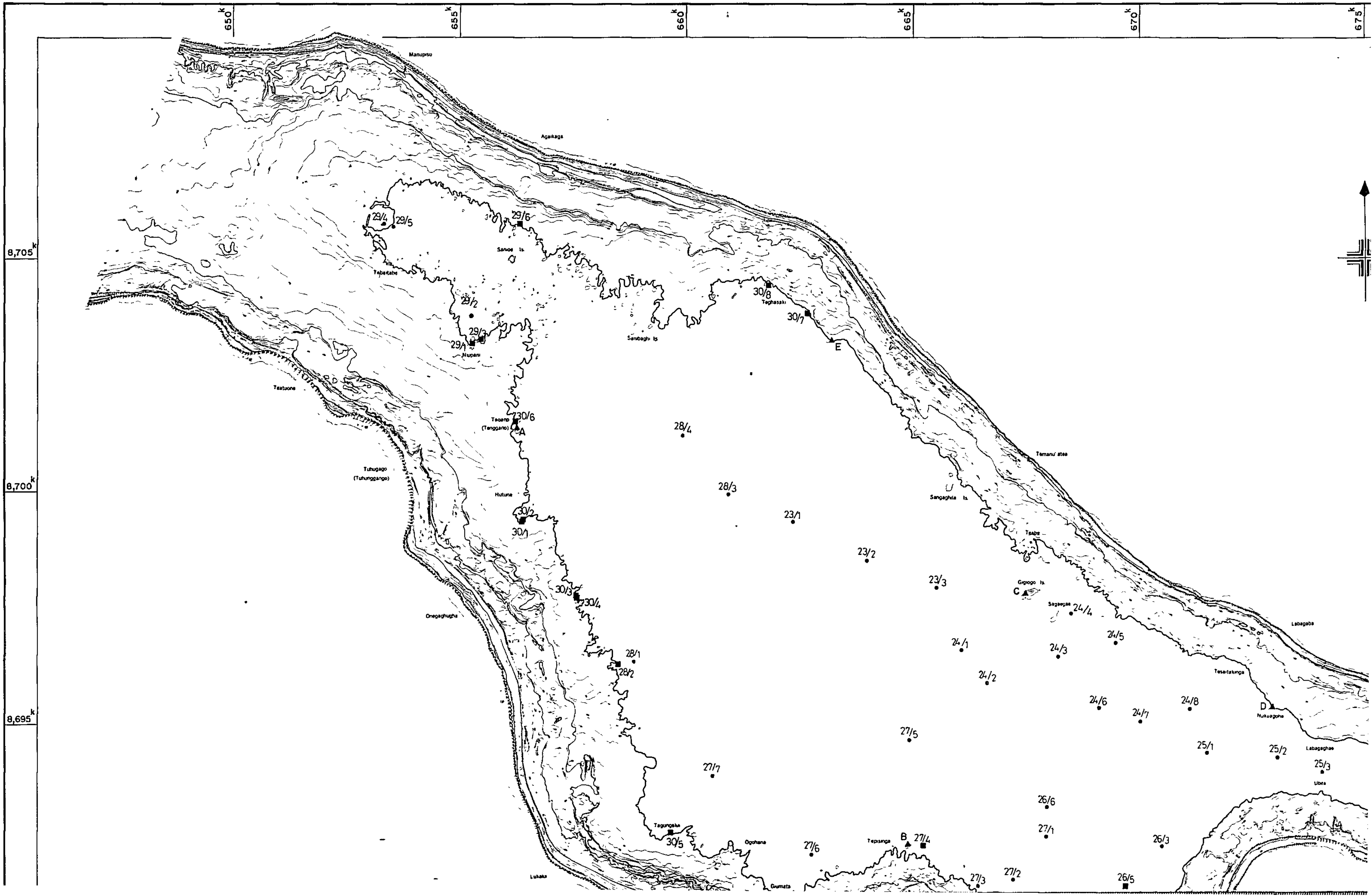
THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

Figure 6

TRACK CHART

SURVEYED ON 13th NOV - 22nd NOV 1981

Note : Coordinate Figures are indicated by Universal Transverse Mercator Grid System (Zone Number 57)



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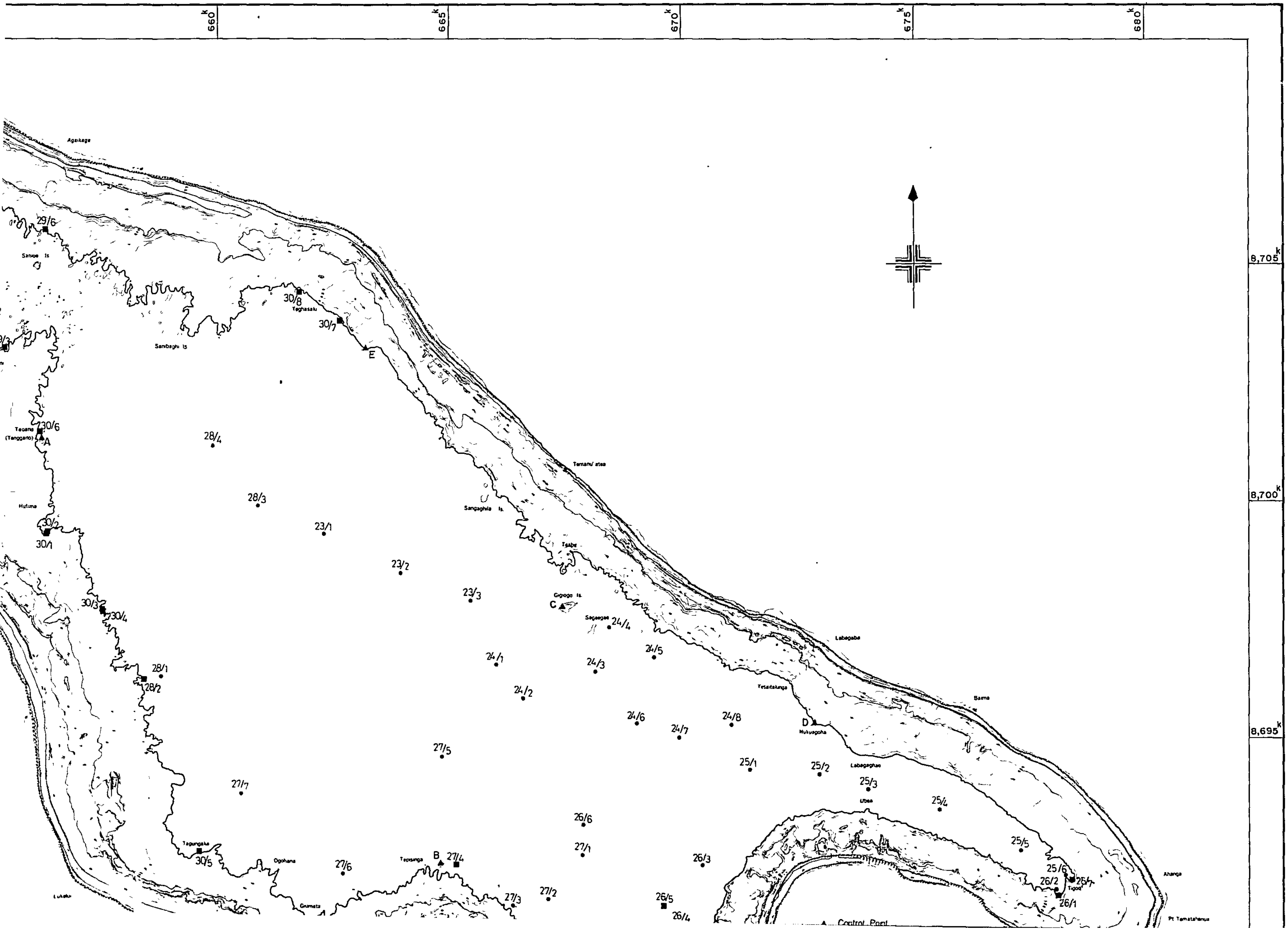
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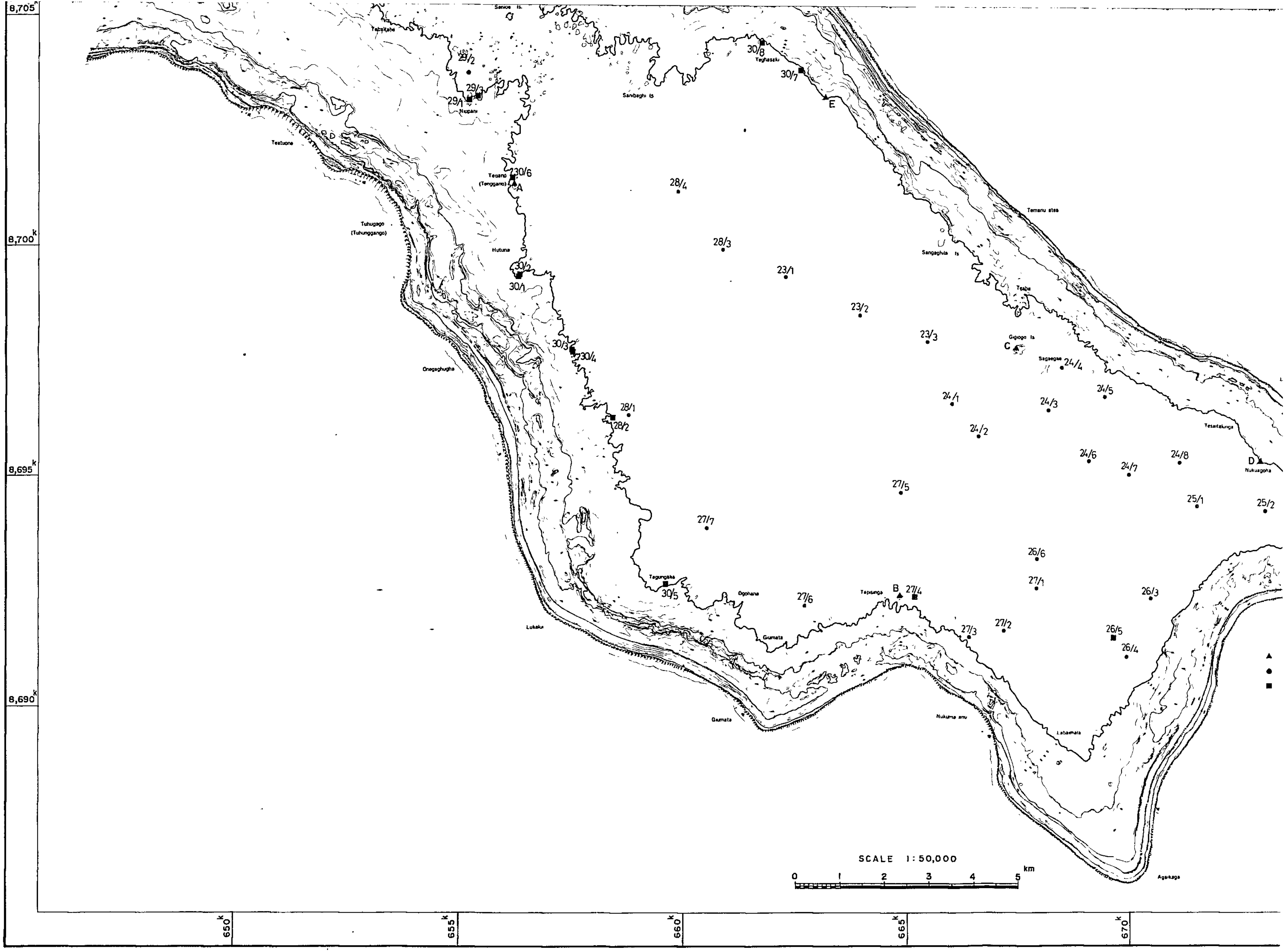
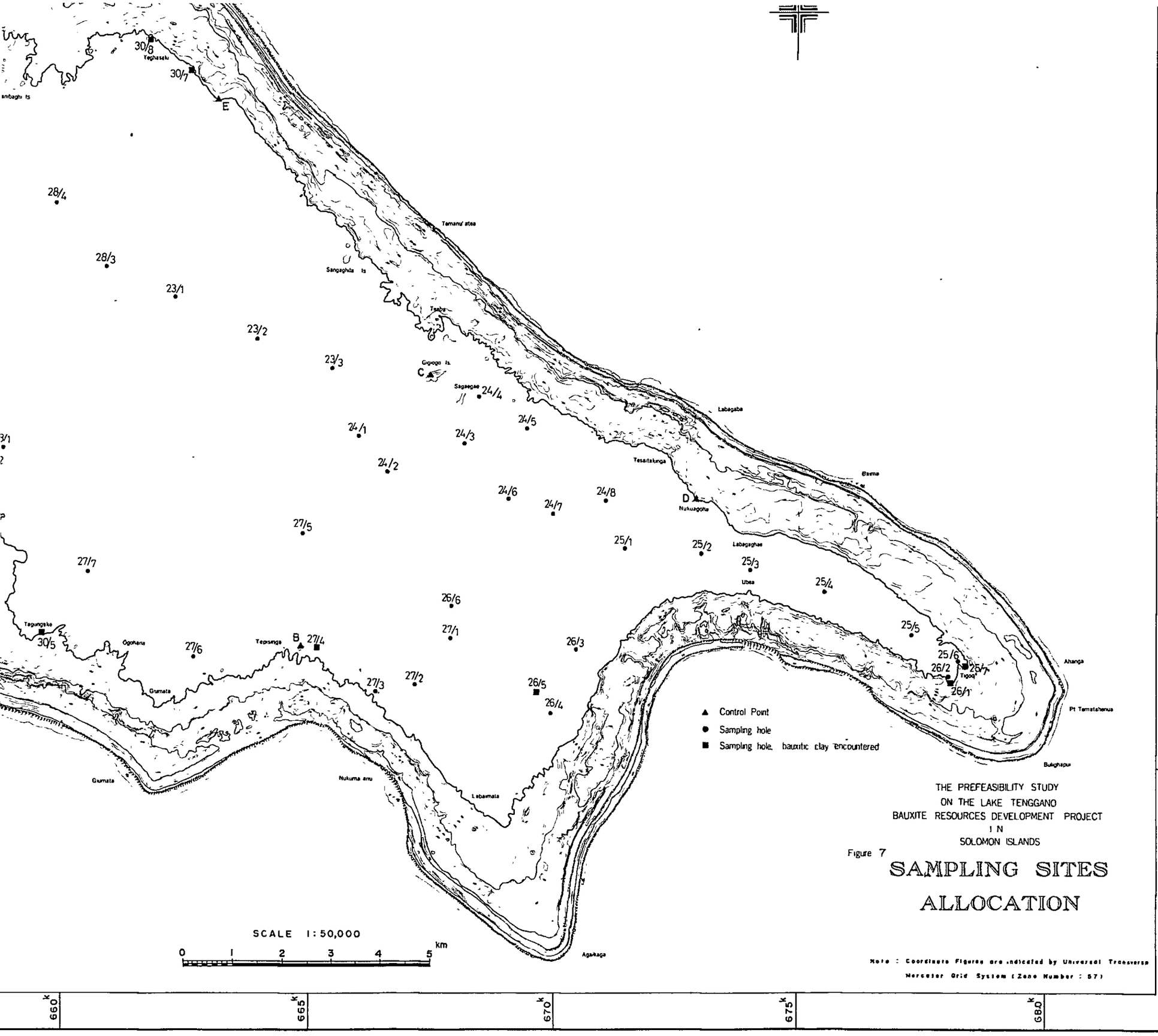
Baima
27/5
25/1
25/2
Labagaghae
25/3
Ubea
25/4
27/7
26/6
25/5
27/1
Tepisinga
B
27/4
27/6
Ogohana
30/5
26/3
25/6
26/7
26/2
Tigoa
26/1
Ahanga
27/3
27/2
26/5
26/4
Gumata
Control Point


8,705k
8,700k
8,695k
8,690k
650k
655k
660k
665k
670k
Teatuone
Tuhugago
(Tuhunggango)
Hutuna
Onegaghugha
Lukaku
Gaumata
Nukuma anu
Agakaga
Temanu atea
Sanibaghi Is
Ogohana
Nukuagoha
29/2
29/3
29/1
30/8
30/7
E
30/6
A
28/4
28/3
23/1
23/2
23/3
C
24/4
24/5
24/1
24/3
24/2
24/6
24/7
24/8
D
25/1
25/2
30/2
30/1
30/3
30/4
28/1
28/2
27/5
27/7
26/6
27/1
26/3
30/5
27/6
B
27/4
27/3
27/2
26/5
26/4
SCALE 1:50,000
0 1 2 3 4 5 km



THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

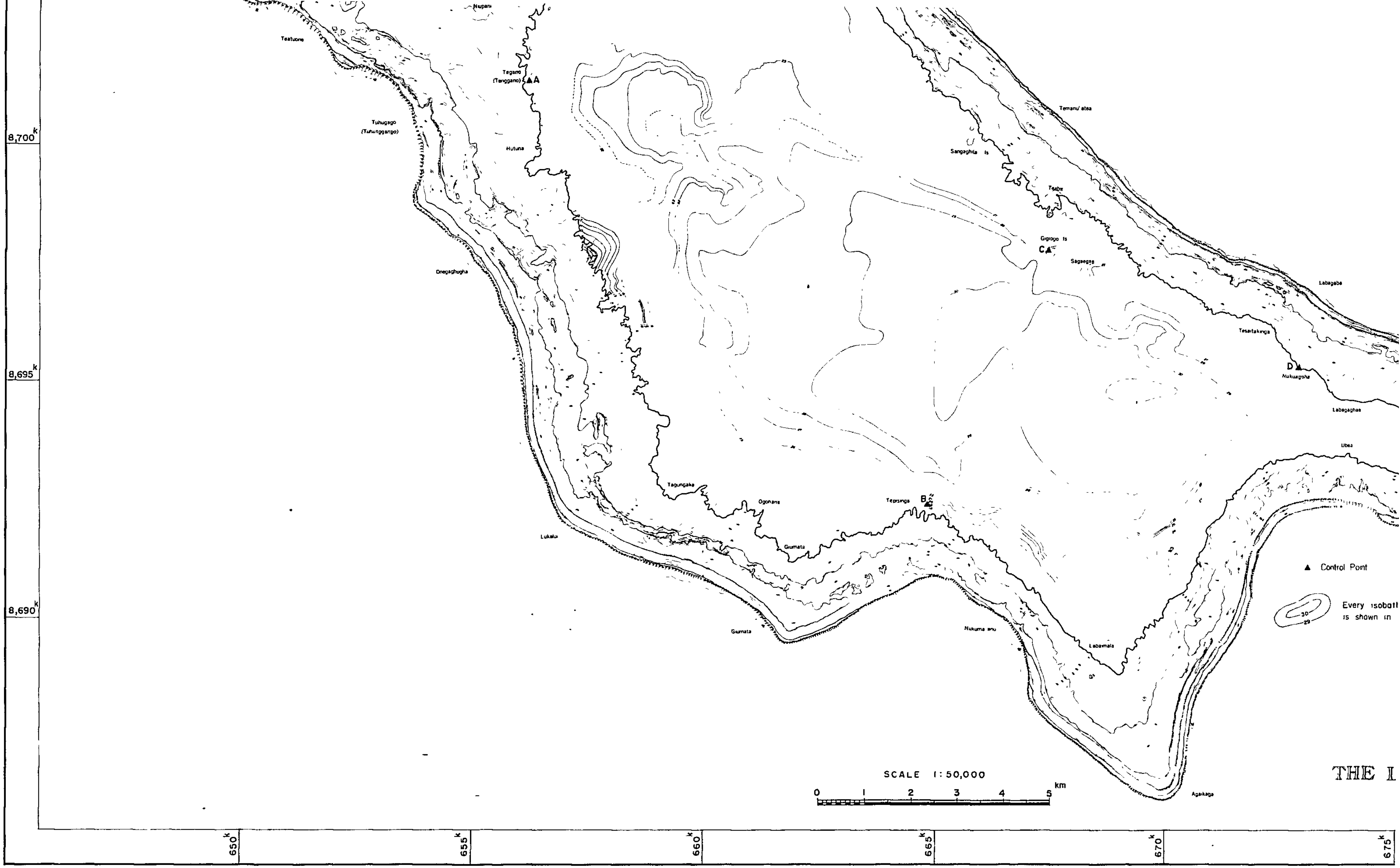
Figure 7

SAMPLING SITES ALLOCATION

Note : Coordinate Figures are indicated by Universal Transverse Mercator Grid System (Zone Number : 57)

650k
655k
660k
665k
670k
675k
8,705k
8,700k
8,695k
Manupisu
Agaikaga
Niupani
Teghasalu
Teatuone
Tegano
(Tanggano)
A
E
Tuhugago
(Tuhunggango)
Hutuna
Onegaghugha
Temanu' atea
Sangaghila Is
Taaba
Gigiogo Is
C
Sagaegae
Labagaba
Tesaitakinga
D
Nukuagoho
Labagaghae
Ubea
Grumata
B

660 K
665 K
670 K
675 K
680 K
8,705 K
8,700 K
8,695 K
gankaga
Teghasaki
Sanibaghe ts
E
Temanu' atea
Sangaghita is
Teabu
Gigiogo is
C
Segaegge
Labagaba
Tesaitakunga
Basma
D
Nukuagoha
Labagaghae
Udea
Ahanga
Tigoa'
Taqungake
Dgohuna
Teorsinga
B
Fumuta



8,700k
8,695k
8,690k
650k
655k
660k
665k
670k
675k
Hutuna
Temanu' atea
Tagungaka
Giumata
Labaumala
Agaikaga
A
B
C
D
Control Point
Every isobat
is shown in
SCALE 1:50,000
0 1 2 3 4 5 km
THE I

Temanu' atea

Sangaghila Is

Tsabre

Gigiogo Is.

C

Sagaegae

Labagaba

Tesentakenga

Baima

D

Nukuagoha

Labagaghae

Ubea

Tagungake

Ogohane

Tepsinga

B

Giumata

Ahanga

Tigoa'

Pt Tematahenua

Bulghapu

Nukuma anu

Labamata

Agaikaga

▲ Control Point

Every isobath line is shown in metre

SCALE 1:50,000

0 1 2 3 4 5 km

THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

Figure 11

ISOBATHS
OF
THE LAKE SEDIMENTS SURFACE

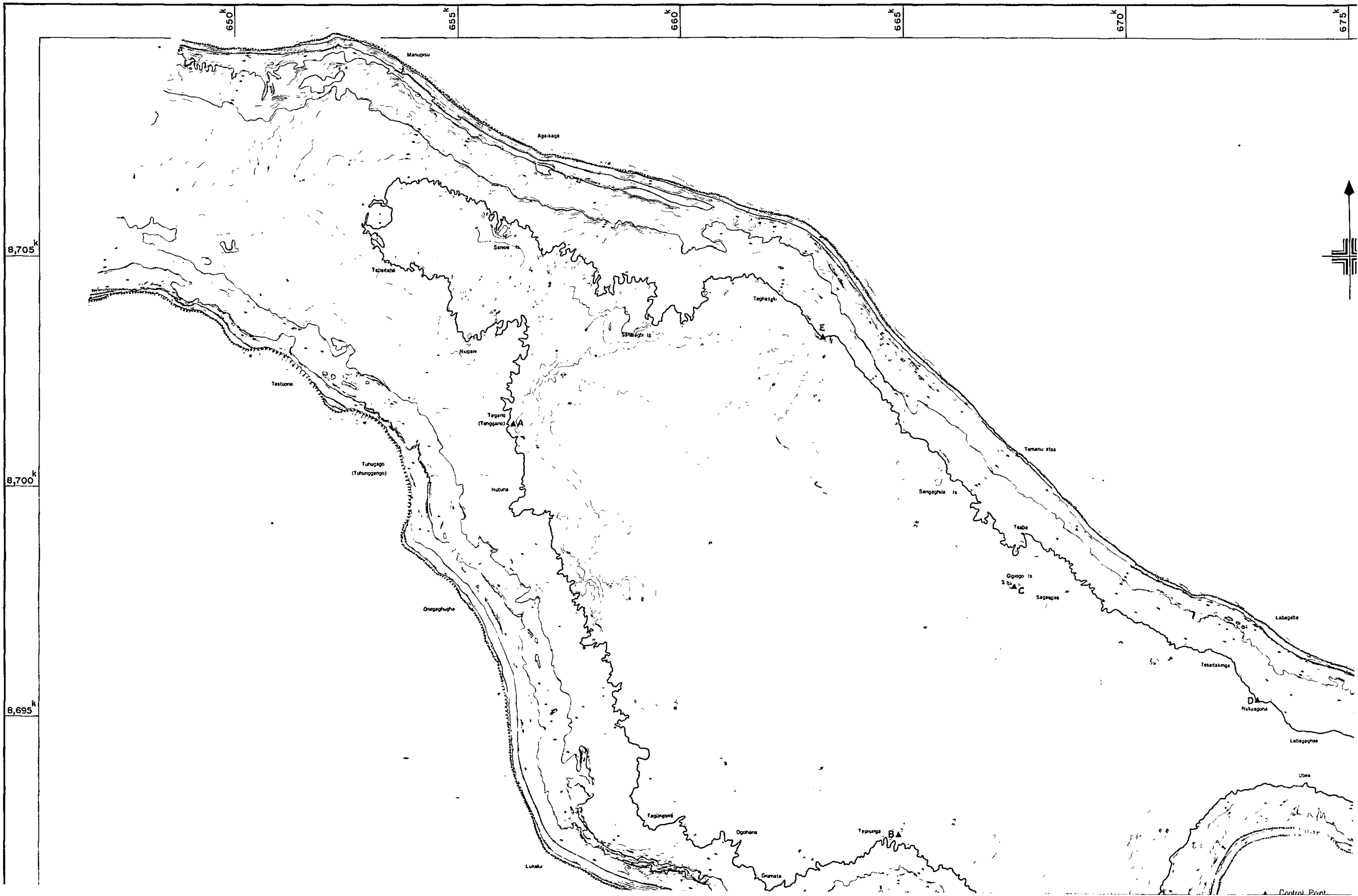
Note Coordinate Figures are indicated by Universal Transverse Mercator Grid System (Zone Number 57)

8,700K

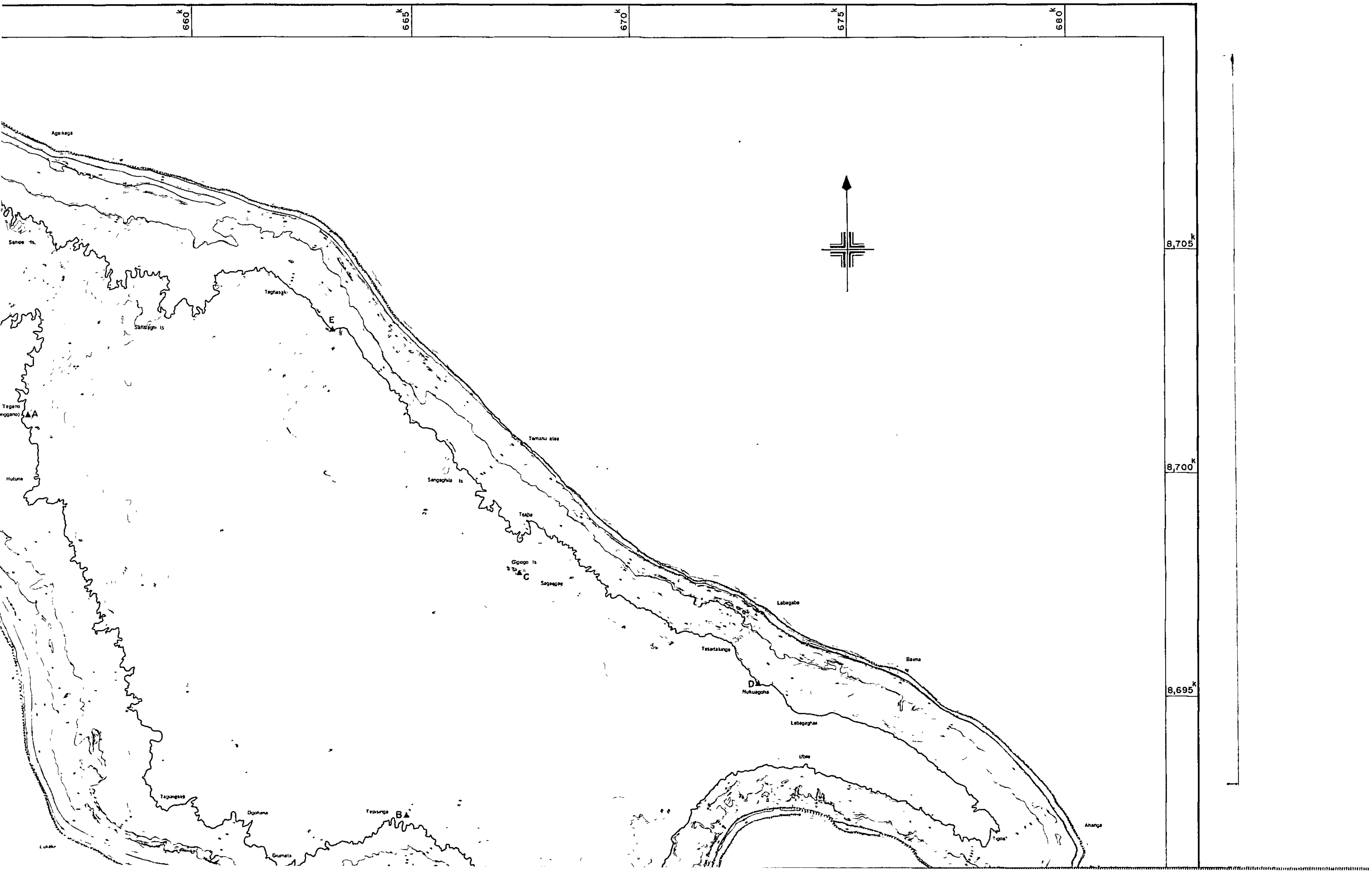
8,695K

8,690K

660K 665K 670K 675K 680K



650k
655k
660k
665k
670k
675k
8,705k
8,700k
8,695k
Manupisu
Agaikaga
Sanioe Is
Tabaitaha
Teghasaki
E
Niupani
Teatuone
Tegano
(Tenggano)
A
Tuhugago
(Tuhunggango)
Hutuna
Temanu atea
Sangaghaia Is
Teaba
Gigiogo Is
C
Sagaagae
Labagaba
Tesaitakinga
D
Nukuagoha
Labagaghae
Ubea
Onegaghugha
Tagungaki
Ogohana
Tepisinga
B
Gumata
Lukalu
Control Point



660k
665k
670k
675k
680k
8,705k
8,700k
8,695k
Teghasaki
E
A
Temanu atea
Sangaghila Is
Teaba
Gigogo Is
C
Sagaagae
Labagaba
Tesartalunga
D
Nukuagoha
Labagaghae
B

Nupani

Tesituone

Tegano
(Tenggano)

Tuhugago
(Tuhunggango)

Hutuna

Onegaghugha

Sangheghula Is

Temanu atea

Teaba

Gigiogo Is

Sageagaa

Tesaitakinga

Nukuagoha

Tagungaka

Ogohana

Tepsinga

Lukatur

Gumata

Gumata

Nukuma anu

Isaksmalu

Agaikaga

SCALE 1:50,000

0 1 2 3 4 5 km

8,700k

8,695k

8,690k

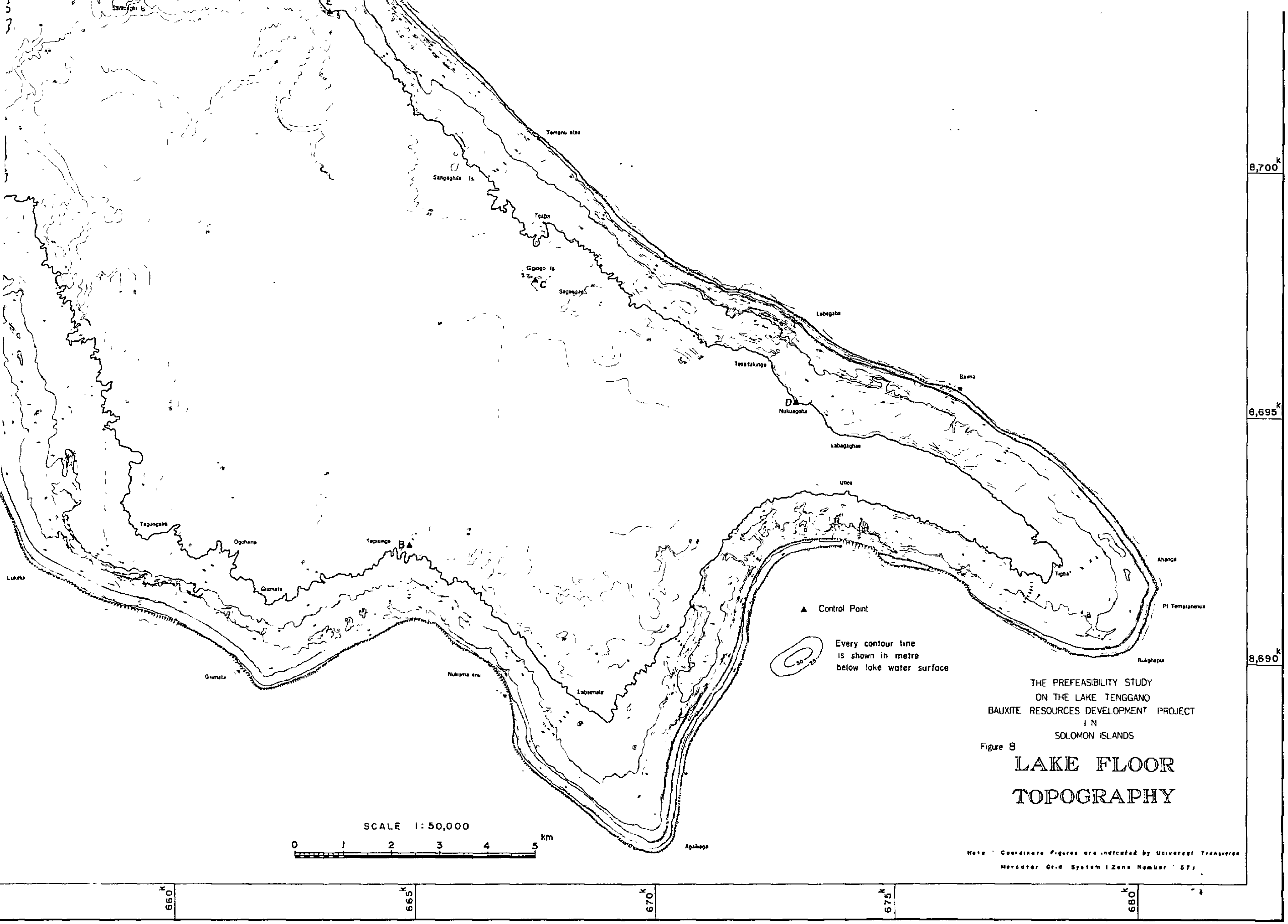
650k

655k

660k

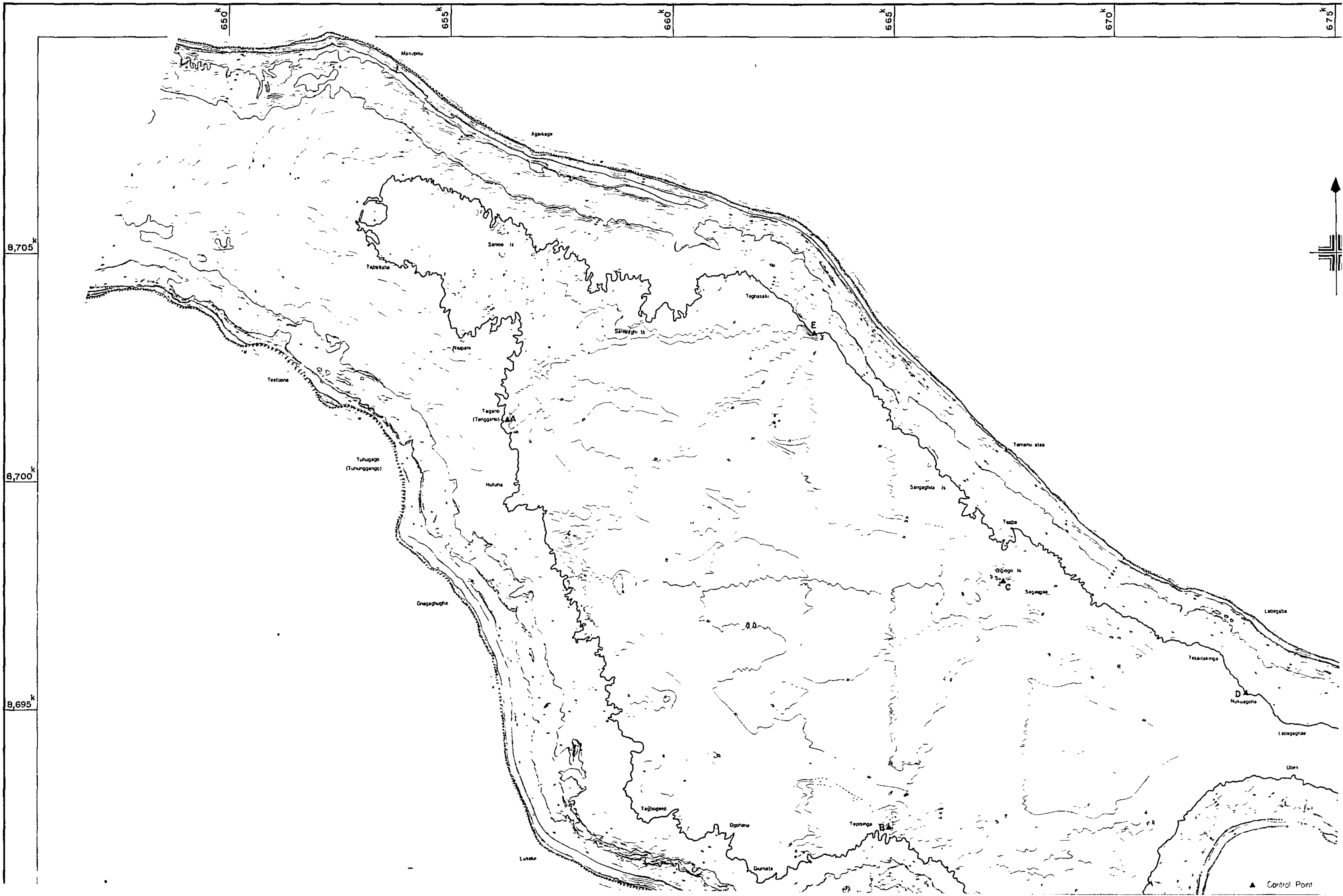
665k

670k



THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

Figure 8
LAKE FLOOR TOPOGRAPHY



650k
655k
660k
665k
670k
675k
8,705k
8,700k
8,695k
Manupisu
Agaikaga
Sanvoe Is
Tapakshe
Teghasaki
Saniaghi Is
Napani
Teatuone
Tagano
(Tenggano)
A
E
Tuhugago
(Tuhunggango)
Hutuna
Tamanu atea
Sangaghila Is
Teaba
Gigiogo Is
C
Sagaegae
Labagaba
Tasaitakinga
D
Nukuagoha
Labagaghae
Ubes
Onegaghugha
Tagbogaea
Ogohana
Tepisinga
B
Gumata
▲ Control Point

660k 665k 670k 675k 680k

8,705k

8,700k

8,695k

Agaikaga

Sanoe Is

Teghasaki

Sanbaghi Is

Nupan

Tegano (Tenggano) A

Hutuna

Temanu/ etaa

Sangaghia Is

Teabe

Ogiogo Is C

Sagaegae

Labagabe

Tesartakinga

D Nukuagoha

Basma

Labagaghae

Ubae

Tgoa

Ahanga

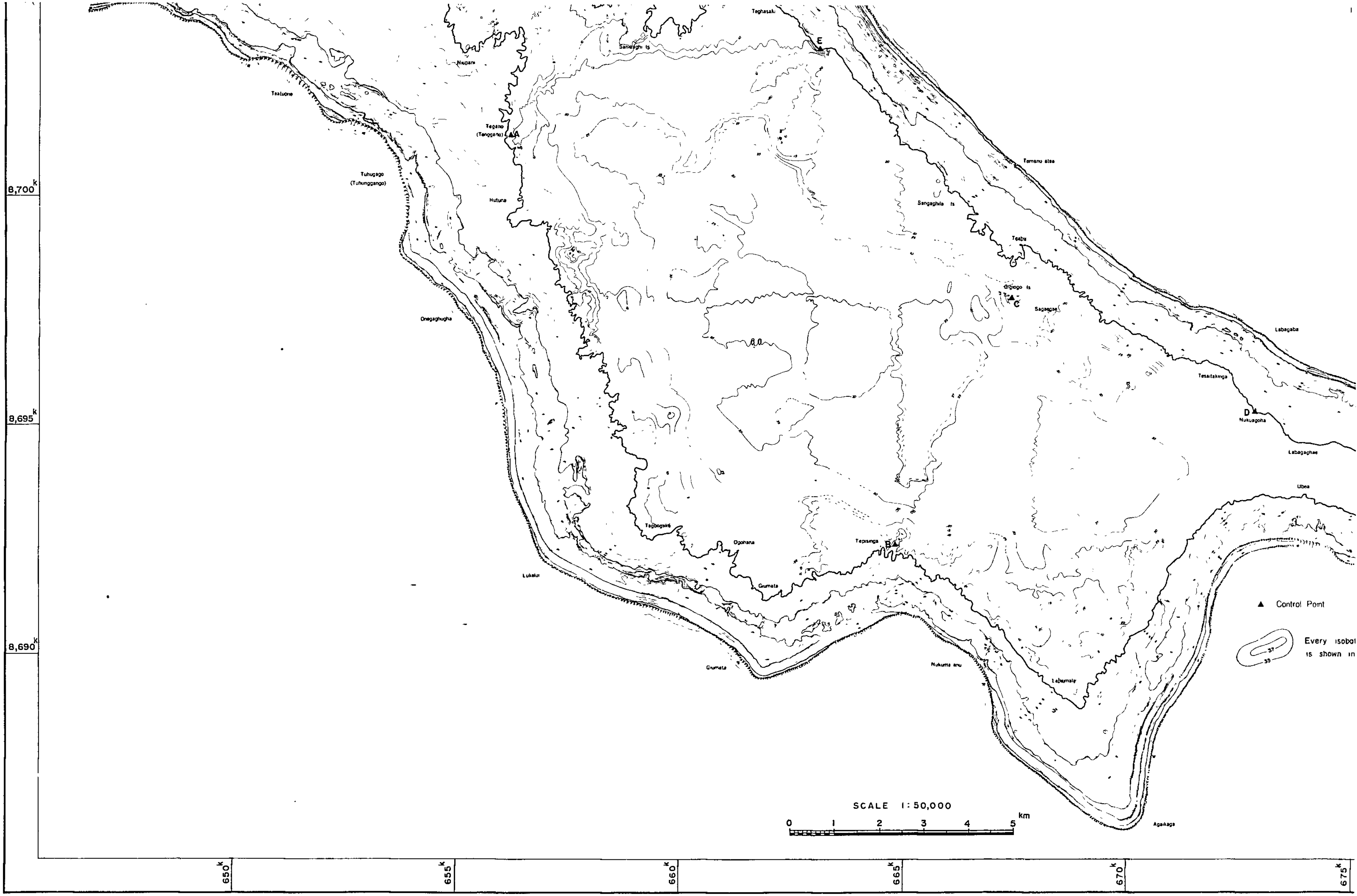
Tepbogake

Dgohana

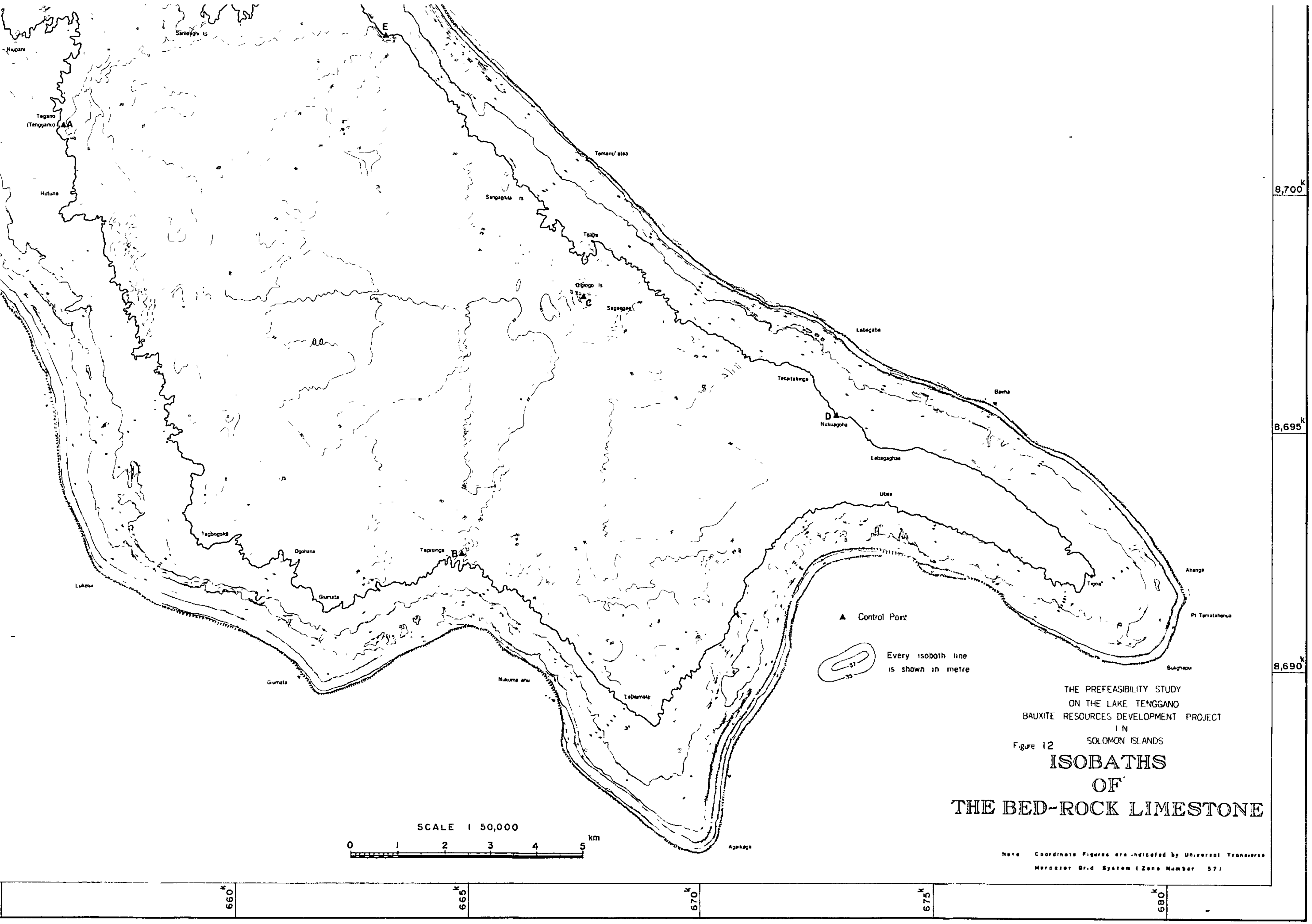
Tepsinga B

Lukalu

Grumata



Teghasalu
E
Naipani
Tealuone
Tegano
(Tenggano)
A
Tuhugago
(Tuhunggango)
Hutuna
Temanu ataa
Sangaghila Is
Teaba
C
Labagaba
Tesaitakinga
D
Nukuagoha
Labagaghae
Ubea
Onegaghugha
Ogohana
Tepisanga
B
Grumata
Lukelui
Grumata
Nukuma anu
Agaikaga
▲ Control Point
Every isobat
is shown in
SCALE 1:50,000
0 1 2 3 4 5 km
8,700k
8,695k
8,690k
650k
655k
660k
665k
670k
675k

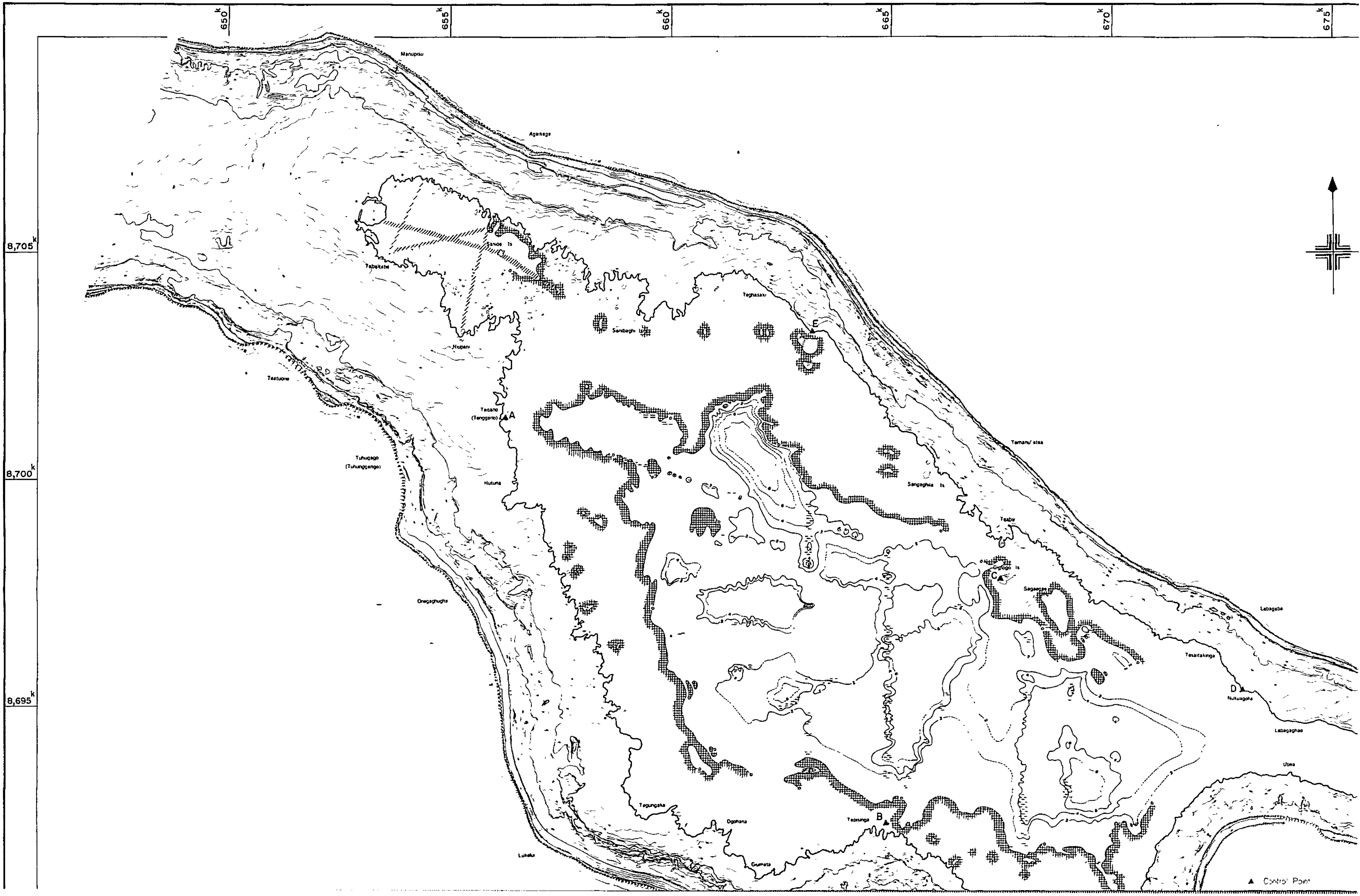


THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

Figure 12

ISOBATHS OF THE BED-ROCK LIMESTONE

Note Coordinate Figures are indicated by Universal Transverse Mercator Grid System (Zone Number 57)


650k
655k
660k
665k
670k
675k
8,705k
8,700k
8,695k
Manupisu
Sanioe Is
Teghasaku
Niupani
Teatuone
A
Tuhugago
(Tuhunggango)
Hutuna
Temanu' atea
Sangaghaia Is
Teabu
C
Sagaegae
Labagaba
Tesaitakinga
D
Nukuagoha
Labagaghae
Ubea
Onegaghugha
Tagungaka
Ogohana
B
Lukaka
Gumata
E
▲ Control Point

655k 660k 665k 670k 675k 680k

8,705k

8,700k

8,695k

Agaikaga

Sanoe Is

Nkupanu

Sanbeghe Is

Teghasaku

E

Tecano (Tenggano) A

Hutuna

Tamanu' atae

Sangaghula Is.

Tsabe

Gogoo Is

C

Segaegae

Labaçaba

Tesaitakunga

Baema

D Nukuagoha

Labagaghae

Ubea

Tagungaka

Ogohana

Tepasinga B

Lukatur

Gumata

Tgoa'

Ahanga

Pt Tematanenua

8,700 k

8,695 k

8,690 k

650 k

655 k

660 k

665 k

670 k

Nupani

Tsatuone

Tesasa (Tengganio) A

Tuhugago (Tuhunggango)

Hutuna

Onegaghugha

Tagungake

Ogohana

Tepsinga B

Lukalu

Giumata

Giumata

Nukuma anu

Labamata

Agaikaga

Tamanu' atea

Sangaghita Is.

Tsapa

Ongiogo Is.

C

Sagaogona

Tesantakinga

D

Nukuagoha

SCALE 1:50,000

0 1 2 3 4 5 km

Temanu' atea

Senggohula Is.

Tesaba

Sanbagha Is.

Sagaogha

Labagaba

Tesaitakunga

Bama

D

Nukugoha

Labagaghae

Ubes

Tegungake

Ogohana

Tepisinga

B

Grumata

Tigoa

Ahanga

Pt Tematahenua

Buligha pua

Grumata

Nukuma anu

Labaemala

Agaikaga

▲ Control Point

Sediment	E
	D
	C
	A + B
	A
Bed-rock limestone	

Every isopachous line is shown in metre

SCALE 1:50,000

0 1 2 3 4 5 km

THE PREFEASIBILITY STUDY
ON THE LAKE TENGGANO
BAUXITE RESOURCES DEVELOPMENT PROJECT
IN
SOLOMON ISLANDS

Figure 13

ISOPACHS OF THE LAKE SEDIMENTS

Note : Coordinate Figures are indicated by Universal Transverse Mercator Grid System (Zone Number : 57)

8,700k

8,695k

8,690k

660k 665k 670k 675k 680k

SURVEYED DURING 13th NOV 22nd NOV 1981

JICA