

5. 事業事前計画表（基本設計時）

1. 案件名
ツバル国 フナフチ港改善計画
2. 要請の背景(協力の必要性・位置付け)
<p>(1) ツバル国（以下「ツ」国）は、南太平洋に点在する9つの珊瑚礁島によって構成されている。人口はわずか1万人程度でしかなく、その47%が首都フナフチに集中する。資源が乏しい「ツ」国では、水産業が唯一、持続的に開発可能な産業である。入漁料収入は、国家歳入の約10%を占めるとともに、食糧調達手段または現金収入源として、国民の約67%が何らかの形で漁業に携わっている。一方、海運業は、島嶼間の人員および物資の輸送を担い、国民の生活を根底から支える基幹産業である。こうしたことから「ツ」国政府は、国家開発戦略である「VISION 2015（1998～2015年）」において、水産および海運セクターに関し、水産資源の持続的有効利用、漁業による離島振興および安定した島嶼間輸送の確保を重点課題として設定している。</p> <p>(2) 国内航空路線を持たない「ツ」国にあっては、海上輸送が国民生活を根底から支える生命線である。2006年には政府が運用する2隻の島間連絡船が年間77回就航し、国民の島嶼間移動や生活物資の輸送を担ってきた。また、水産局の漁業支援船と併せ、離島からフナフチへ水産物を輸送し、人口の集中する首都で不足する水産物を補うとともに、離島に世帯収入の11%に相当する貴重な現金収入をもたらすなど、水産業と地域経済の振興に貢献してきた。これらの船舶およびコンテナ船等の拠点が、同国で唯一、大型船の接岸が可能なフナフチ棧橋である。</p> <p>(3) しかし同棧橋は、建設後27年を経て老朽化が進み、コンクリートの剥離、鉄筋の露出、ひび割れなどの発生で構造的に重大な問題を抱えており、崩落する危険があることから安全な荷役作業ができず、コンテナ重量が18トン以下に制限されている。また、コンテナヤードに車両が通行できるだけの余裕がないため、荷役作業は公道を迂回して行わざるを得ず、荷役効率の低下を招いている。さらに棧橋の長さが不足していることから、コンテナ船やニバンガ号の停泊時には係留索を使用する必要があり、この索が航路上に長く伸びて他の船舶の出入港を阻害している。こうした状況から、代替棧橋の建設を含むフナフチ港の改善が緊急な課題となっている。かかる状況の下、「ツ」国は、物流・経済の中心であるフナフチ港において、新棧橋の建設による港湾機能維持と既存施設の改善等を目的とした「フナフチ港改善計画」を策定し、我が国に無償資金協力を要請してきた。</p>
3. プロジェクト全体計画概要
<p>(1) プロジェクト全体計画の目標（裨益対象の範囲および規模） 目 標：フナフチ港において安全かつ円滑な陸揚げ機能が維持されるよう改善する。 （裨益対象：フナフチの漁民を含む全住民約4,500人、離島の漁民を含む全住民約5,000人）</p> <p>(2) プロジェクト全体計画の成果</p> <ol style="list-style-type: none"> 1) <u>フナフチ港の棧橋（付帯施設を含む）が整備される。</u> 2) <u>フナフチ港の保税倉庫が改修される。</u> 3) <u>フナフチ港の清水タンクが整備される。</u> 4) <u>フナフチ港の護岸を含むコンテナヤードが整備される。</u> 5) <u>フナフチ港の荷役機材が整備される。</u> 6) フナフチ港の安全が確保される。 7) 港湾施設が適切に管理・運営される。 8) 島間連絡船が適切に運航される。 9) 港湾荷役業務が適切に実施される。 <p>(3) プロジェクト全体計画の主要活動</p> <ol style="list-style-type: none"> 1) フナフチ港および船舶運営のための人員を配置する。 2) <u>港湾施設を整備する。</u>

<p>3) 荷役作業に最低限必要な機材を調達する。</p> <p>4) 荷役効率を高めるための不足機材を調達する。</p> <p>5) フナフチ港に係る施設・機材を使用して活動を実施する。</p> <p>(4) 投入（インプット）</p> <p>1) 日本側(=本案件)：無償資金協力 9.17 億円</p> <p>2) 相手国側</p> <p style="padding-left: 20px;">必要な人員</p> <p style="padding-left: 20px;">施設・機材の整備</p> <p style="padding-left: 20px;">施設・機材の運営・維持管理に係る経費</p> <p>(5) 実施体制</p> <p style="padding-left: 20px;">主管官庁：天然資源土地省水産局</p> <p style="padding-left: 20px;">実施機関：通信運輸省海運局</p>
4. 無償資金協力案件の内容
<p>(1) サイト</p> <p style="padding-left: 20px;">「ツ」国フナフチ島、フナフチ港湾地区</p> <p>(2) 概要</p> <p>1) フナフチ港湾地区における棧橋および清水タンクの建設、保税倉庫の改修、コンテナヤードの整備</p> <p>2) フナフチ港湾荷役機材の調達</p> <p>(3) 相手国負担事項</p> <p>1) 敷地の確保、既存建物の撤去、必要施設の整備</p> <p>2) 工事中仮設ヤードの確保</p> <p>(4) 概算事業費</p> <p style="padding-left: 20px;">概算事業費 9.19 億円（無償資金協力 9.17 億円、「ツ」国側 0.02 億円）</p> <p>(5) 工期</p> <p style="padding-left: 20px;">詳細設計・入札期間を含め約 20.00 ヶ月（予定）</p> <p>(6) 貧困、ジェンダー、環境及び社会面の配慮</p> <p style="padding-left: 20px;">海洋環境に配慮し浚渫等を行わない。また、潮流の乱れを極力少なくし、堆積、浸食の影響を排除するために透過性の杭式構造を採用する。</p>
5. 外部要因リスク（プロジェクト全体計画の目標の達成に関するもの）
<p>(1) 想定を越える異常気象（暴風、波、海面上昇等）がないこと。</p>
6. 過去の類似案件からの教訓
<p>既存棧橋は現地調達資材（海砂、砂利等）を使用しており、コンクリートの塩分濃度が基準を大きく上回り、老朽化を促進する一つの要因と考えられることから、計画では、塩分を含まない輸入資材を使用する計画とした。</p>
7. プロジェクト全体計画の事後評価に係わる提案

(1) プロジェクト全体計画の目標達成を示す成果目標

1) 20 フィートコンテナの重量規制の緩和

プロジェクト実施前	プロジェクト実施後
一律最大 18 トン	コンテナ毎の規格 (最大総重量約 20 ~ 30 トン)

2) 棧橋からコンテナヤードまでの 20 フィートコンテナ搬送時間の短縮

プロジェクト実施前	プロジェクト実施後
約 2 分 30 秒 / コンテナ	約 1 分 30 秒 / コンテナ

3) ニバンガ 号の係留による他の船舶の航行障害日数の短縮

プロジェクト実施前	プロジェクト実施後
9.1 日 / 月	0 日 / 月

4) 清水タンクの貯水能力の増強

プロジェクト実施前	プロジェクト実施後
150m ³	750m ³

(2) その他の成果指標

特になし。

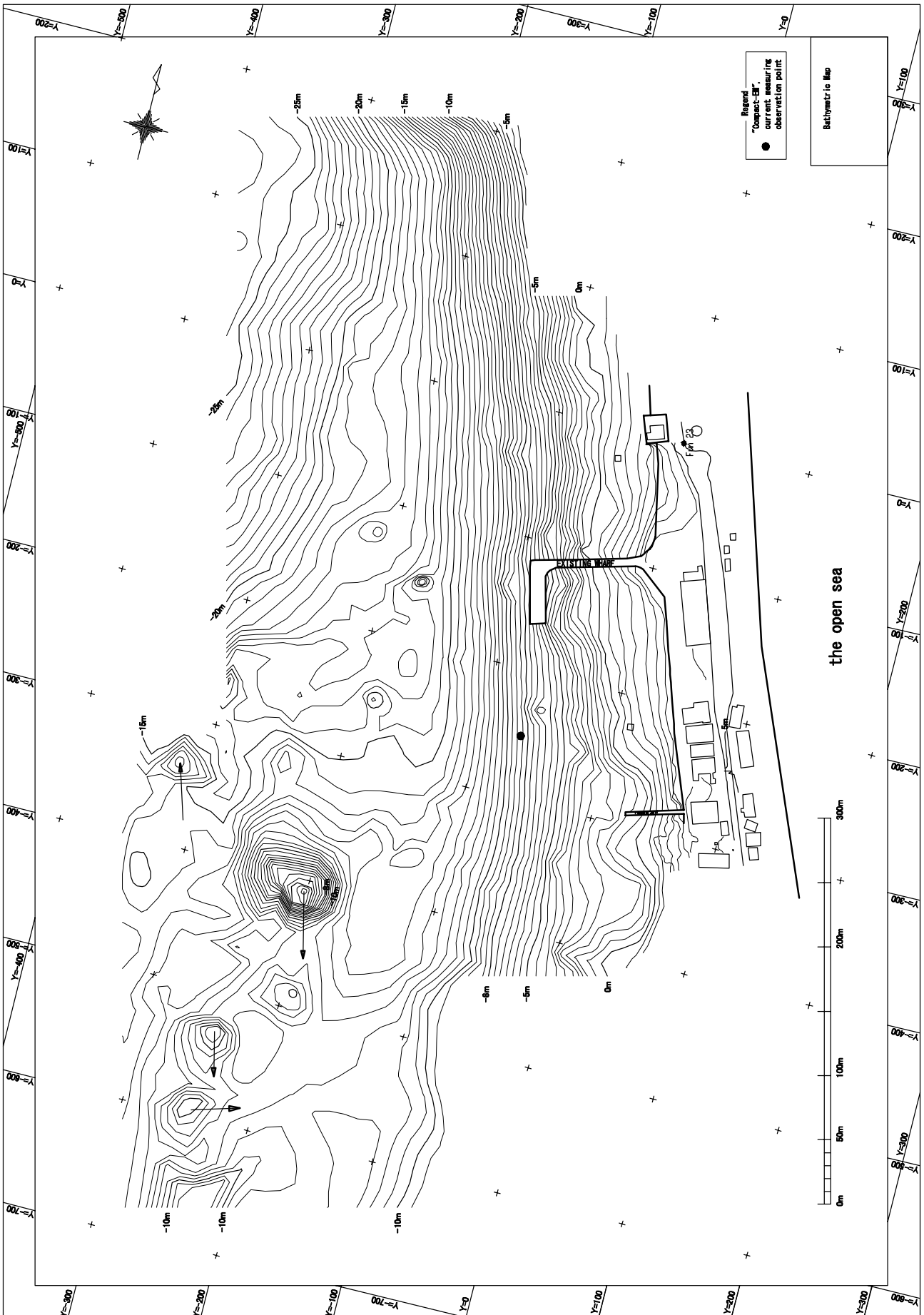
(3) 評価のタイミング

2009 年以降 (協力対象施設竣工後)

6. 参考資料 / 入手資料リスト

	資料名	発行年	発行元
1	National Building Code for Tuvalu	1990	Government of Tuvalu, AusAid
2	Bathymetric Map of Tuvalu - Funafuti Lagoon	1992	South Pacific Applied Geosciences Commission, Fiji
3	Tidal Predictions For Tuvalu, Funafuti, South Pacific Sea Level & Climate Monitoring Project	2006	AusAid (Australian Government's Overseas Aid Program)
4	Report on Deepwater Wharf Development at Funafuti, Gilbert & Ellice Islands Colony	1975	Wilton & Bell Consulting Engineers, Ministry of Overseas Development
5	Household Income and Expenditure Survey (HIES) 2004/3005	2006	Central Statistics Division, Ministry of Finance, Economic Planning & Industries
6	Tuvalu 2002 Population and Housing Census	2002	Ditto
7	The Contribution of Fisheries to the Economies of Pacific Island Countries	2002	Asian Development Bank
8	FAO Fishery Country Profile - Tuvalu	2002	Food and Agriculture Organization
9	National Strategies For Sustainable Development	2004	The Government of Tuvalu
10	Wave Climate of Tuvalu	1994	Oceanographic Company of Norway
11	Domestic Tuna Industries Development in the Pacific Islands	2003	Forum Fisheries Agency
	Community Fisheries Countries' Profile - Tuvalu	-	Secretariat of the Pacific Community
12	Economic Statistics	2006	Tuvalu Central Statistics Division
13	Tuvalu Transport Infrastructure Development Project	1996	Asian Development Bank

7-2 陸上・海底地形測量図





TONKIN & TAYLOR LTD
DRILL HOLE LOG

DRILL HOLE No: BH2
Hole Location: See site plan
SHEET 1 OF 1

PROJECT: Proposed Port Upgrade	LOCATION: Funafuti Port, Tuvalu	JOB No: 750541
CO-ORDINATES mN mE	DRILL TYPE: Helirig	HOLE STARTED: 16/12/06
DIRECTION: °	DATUM:	HOLE FINISHED: 17/12/06
ANGLE FROM HORIZ.: °	R.L. GROUND: m	DRILLED BY: Webster Drilling Ltd
	R.L. COLLAR: m	LOGGED BY: MDC CHECKED:

DESCRIPTION OF CORE										ROCK DEFECTS										
GEOLOGICAL UNIT	ROCK OR SOIL TYPE, WEATHERING, HARDNESS, STRENGTH, COLOUR, LITHOLOGICAL FEATURES (bedding, cement, foliation, mineralogy, texture, etc.):	ROCK WEATHERING	ROCK STRENGTH	PT LOAD / UCS TEST (MPa)	CORE LOSS (%)	METHOD, CORE & CASING	TEST SYMBOL	DEPTH (m)	GRAPHIC LOG	DEFECT LOG	RACTURE LOG	SIGNIFICANT JOINTS, BEDDING, CRUSHED AND SHEARED ZONES/SEAMS	DEFECT TYPE, SHAPE, ROUGHNESS, APERTURE, INFILLING, SPACING	ANGLES ARE NORMAL TO CORE AXIS	DATE / DEPTH	ROD (°)	WATER	DRILL WATER LOSS (l)	CORE BOX	RL (m)
Coral	CORAL, weak, reddish brown and black stained, porous, some voids. White / yellowish white from 0.15m.					HQ TRIPLE TUBE CORE BARREL		0							16/12/2006	22				
	CORAL, strong to very strong, white / yellowish white. CORAL, weak, white / yellowish white, porous, some voids.						1		Sample 8 (120mm long)							17				
	CORAL, strong to very strong, white / yellowish white, minor voids. CORAL, weak to moderately strong, white / yellowish white, porous, voids.						2		Sample 9 (100mm long)							23				
	CORAL, strong to very strong, white / yellowish white, slightly porous in places, minor voids.						3		Sample 10 (120mm long)							48				
	CORAL, weak to moderately strong, white / yellowish white, porous, voids.						4		Sample 11 (100mm long)							38				
	CORAL, strong to very strong, white / yellowish white.						5		Sample 12 (300mm long)							18				
	CORAL, moderately strong, white / yellowish white, porous, some voids.						6									10				
	CORAL, moderately strong, white / yellowish white, slightly porous, voids.						7									0				
							8									0				
							9									0				
						10									0					
Base of Borehole at 10.0m (target depth)																				

ROCKLG_TT 750541 GPJ 10/1/07



TONKIN & TAYLOR LTD

DRILL HOLE LOG


DRILL HOLE No: BH3
 Hole Location: See site plan
 SHEET... 1 ... OF ... 1 ...

PROJECT: Proposed Port Upgrade	LOCATION: Funafuti Port, Tuvalu	JOB No: 750541
CO-ORDINATES mN mE	DRILL TYPE: Helirig	HOLE STARTED: 12/12/06
DIRECTION: °	DATUM:	HOLE FINISHED: 15/12/06
ANGLE FROM HORIZ.: °	R.L. GROUND: m	DRILLED BY: Webster Drilling Ltd
	R.L. COLLAR: m	LOGGED BY: MDC CHECKED:

DESCRIPTION OF CORE										ROCK DEFECTS											
GEOLOGICAL UNIT	ROCK OR SOIL TYPE, WEATHERING, HARDNESS, STRENGTH, COLOUR, LITHOLOGICAL FEATURES (bedding, cement, foliation, mineralogy, texture, etc...):	ROCK WEATHERING	ROCK STRENGTH	PT LOAD / UCS TEST (MPa)	CORE LOSS / LIFT (%)	METHOD, CORE & CASING	TEST SYMBOL	DEPTH (m)	GRAPHIC LOG	DEFECT LOG	FRACTURE LOG	SIGNIFICANT JOINTS, BEDDING, CRUSHED AND SHEARED ZONES/BEAMS	DEFECT TYPE, SHAPE, ROUGHNESS, APERTURE, INFILLING, SPACING	ANGLES ARE NORMAL TO CORE AXIS	DATE / DEPTH	ROD (%)	WATER	DRILL WATER LOSS (%)	CORE BOX	RL (m)	
Coral	CORAL, moderately strong to very strong, white / yellowish white, slightly porous in layers, minor voids.					HQ TRIPLE TUBE CORE BARREL		0							13/12/06	75					
	CORAL, weak to moderately strong, white / yellowish white, voids.						1									27					
	CORAL, strong to very strong, white / yellowish white, minor voids.						2									65					
	CORAL, moderately strong to strong, white / yellowish white, voids, dark brown staining on void surfaces.						3									0					
	CORAL, moderately strong, white / yellowish white, slightly porous, voids.						4									10					
							5									10					
							6									0					
							7									0					
							8									0					
							9									0					
						10									0						
	Base of Borehole at 10.0m (target depth)						10														

ROCKLG_IT 750541.GPJ 10/1/07

室内試験結果概要 (比重、かさ比重、含水比)

 <p>GEOTECHNICS</p>	23 Morgan Street, Newmarket Auckland 1023, New Zealand		Form No.: M3					
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Page 1 of 2								
T&T CONTACT:	CJF	JOB NAME:	Funafuti	YOUR JOB NO.:	750541			
PROJECT MANAGER:	CJF	SITE:	Funafuti, Tuvalu	OUR JOB NO.:	614086.000			
				DATE:	22.01.2007			
TEST RESULTS SUMMARY								
BOREHOLE No.:	1	1	1	2	2	2	3	3
SAMPLE No.:	A	17	21	8	12	13	1	2
DEPTH (m)	Sea Bed	3.0-4.0	7.0-8.0	0.0-1.0	4.45-5.6	5.6-7.0	0.0-1.0	1.0-2.0
WATER CONTENT (%)	44.7							
ATTERBERG LIMITS	LL							
	PL							
	PI							
BULK DENSITY (t/m ³)		1.93	2.34	2.19	2.02	2.08	2.25	2.09
DRY DENSITY (t/m ³)								
SOLID DENSITY (t/m ³)	2.82	2.22	2.44	2.54	2.51	---	2.50	2.50
LABORATORY VANE (kPa)	Peak							
	Residual							
MAXIMUM DRY DENSITY (Kg/m ³)								
MINIMUM DRY DENSITY (Kg/m ³)								
ORGANIC CONTENT (%)								
ALLOPHANE CONTENT (%)								
GRADING - SIEVE (wet)	✓							
GRADING - HYDROMETER								
COMPACTION								
CBR								
ONE DIMENSIONAL CONSOLIDATION								
DIRECT SHEAR								
UNCONFINED COMP. STRENGTH		✓	✓	✓	✓	✓	✓	✓
TRIAXIAL (UU)								
TRIAXIAL (CUP / CD)								
TRIAXIAL PERMEABILITY								
PINHOLE DISPERSION								
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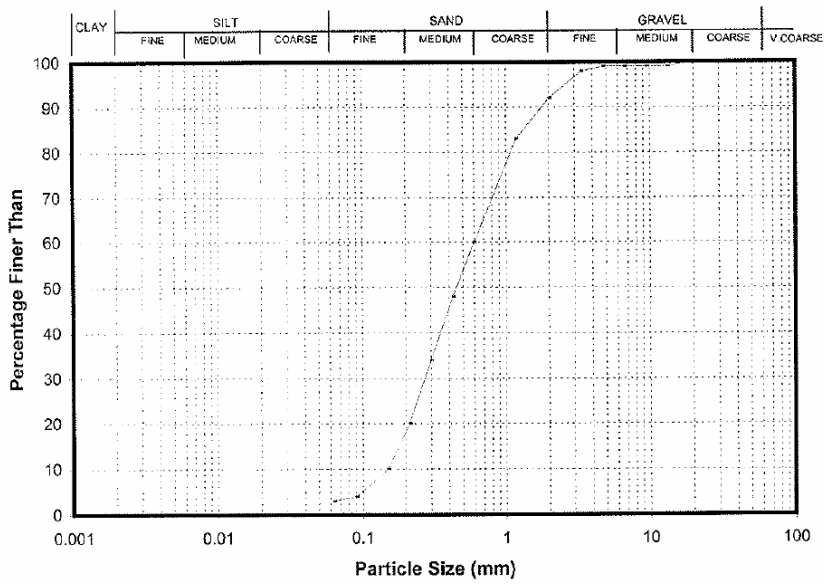
T&T CONTACT: CJF JOB NAME: Funafuti YOUR JOB NO.: 750541
PROJECT MANAGER: CJF SITE: Funafuti, Tuvalu OUR JOB NO.: 614086.000
DATE: 22.01.2007

TEST RESULTS SUMMARY

BOREHOLE No.:	4	4	4	4	4			
SAMPLE No.:	SPT1	8	24	27	28			
DEPTH (m)	1.0	Sea Bed	6.0-7.0	9.6-10.5	0.2			
WATER CONTENT (%)	26.0	28.4			34.2			
ATTERBERG LIMITS	LL							
	PL							
	PI							
BULK DENSITY (t/m ³)			2.40	2.68				
DRY DENSITY (t/m ³)								
SOLID DENSITY (t/m ³)		2.82	2.57	---	2.82			
LABORATORY VANE (kPa)	Peak							
	Residual							
MAXIMUM DRY DENSITY (Kg/m ³)								
MINIMUM DRY DENSITY (Kg/m ³)								
ORGANIC CONTENT (%)								
ALLOPHANE CONTENT (%)								
GRADING - SIEVE (wet)	✓	✓			✓			
GRADING - HYDROMETER								
COMPACTION								
CBR								
ONE DIMENSIONAL CONSOLIDATION								
DIRECT SHEAR								
UNCONFINED COMP. STRENGTH			✓					
TRIAXIAL (UU)								
TRIAXIAL (CUP / CD)								
TRIAXIAL PERMEABILITY								
PINHOLE DISPERSION								

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粒度分析試驗結果

 GEOTECHNICS	23 Morgan Street, Newmarket Auckland 1023, New Zealand	③ 粒度分析結果(1/4)	Form No.: S5																																										
	p. +64 9 356 3510 w. www.geotechnics.co.nz		Form Date: JANUARY 2004 File: Mtsieve614086.000BH1_A_Sea Bed.xls																																										
Plate No.:		Page of																																											
Site : Funafuti, Tuvalu	Your Job No.: 750541	Our Job No.: 614086.000																																											
BH No.: BH1	Sample No.: A	Depth : Sea Bed																																											
Test Method Used : NZS 4402 : 1986 Test 2.8.1 Wet Sieve																																													
PARTICLE SIZE ANALYSIS																																													
																																													
<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Sieve (mm)</th> <th>Total % Passing</th> </tr> </thead> <tbody> <tr><td>63.0</td><td>---</td></tr> <tr><td>53.0</td><td>---</td></tr> <tr><td>37.5</td><td>---</td></tr> <tr><td>26.5</td><td>---</td></tr> <tr><td>19.0</td><td>100</td></tr> <tr><td>13.2</td><td>99</td></tr> <tr><td>9.50</td><td>99</td></tr> <tr><td>6.70</td><td>99</td></tr> <tr><td>4.75</td><td>99</td></tr> <tr><td>3.35</td><td>98</td></tr> </tbody> </table>		Sieve (mm)	Total % Passing	63.0	---	53.0	---	37.5	---	26.5	---	19.0	100	13.2	99	9.50	99	6.70	99	4.75	99	3.35	98	<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Sieve (mm)</th> <th>Total % Passing</th> </tr> </thead> <tbody> <tr><td>2.00</td><td>92</td></tr> <tr><td>1.18</td><td>83</td></tr> <tr><td>0.600</td><td>60</td></tr> <tr><td>0.425</td><td>48</td></tr> <tr><td>0.300</td><td>34</td></tr> <tr><td>0.212</td><td>20</td></tr> <tr><td>0.150</td><td>10</td></tr> <tr><td>0.090</td><td>4</td></tr> <tr><td>0.063</td><td>3</td></tr> </tbody> </table>		Sieve (mm)	Total % Passing	2.00	92	1.18	83	0.600	60	0.425	48	0.300	34	0.212	20	0.150	10	0.090	4	0.063	3
Sieve (mm)	Total % Passing																																												
63.0	---																																												
53.0	---																																												
37.5	---																																												
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0.212	20																																												
0.150	10																																												
0.090	4																																												
0.063	3																																												
Sample history : As received at natural water content. Description : CORAL mixed with shell fragments. Remarks: Percentage passing the finest sieve was obtained by difference.																																													
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③ 粒度分析結果(2/4)

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Plate No.:

Site : **Funafuti, Tuvalu**

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Page of

Our Job No.: **614086.000**

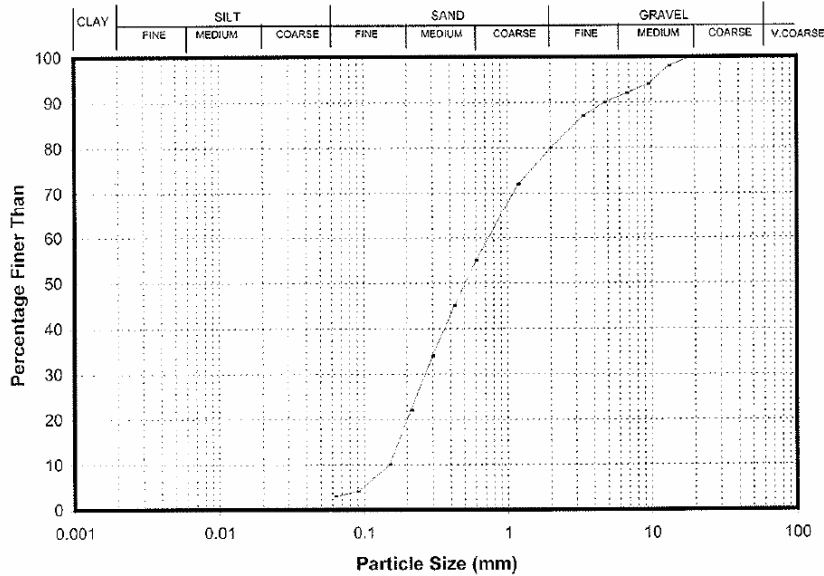
BH No.: **BH4**

Sample No.: **SPT1**

Depth : **1.0 m**

Test Method Used : NZS 4402 : 1986 Test 2.8.1 Wet Sieve

PARTICLE SIZE ANALYSIS



Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	---
19.0	100
13.2	98
9.50	94
6.70	92
4.75	90
3.35	87

Sieve (mm)	Total % Passing
2.00	80
1.18	72
0.600	55
0.425	45
0.300	34
0.212	22
0.150	10
0.090	4
0.063	3

Sample history : As received at natural water content.

Description : CORAL mixed with shell fragments.

Remarks: Percentage passing the finest sieve was obtained by difference.

Entered by : *ST*

Date : *22/01/04*

Checked by : *JMC*

Date : *22/1/04*

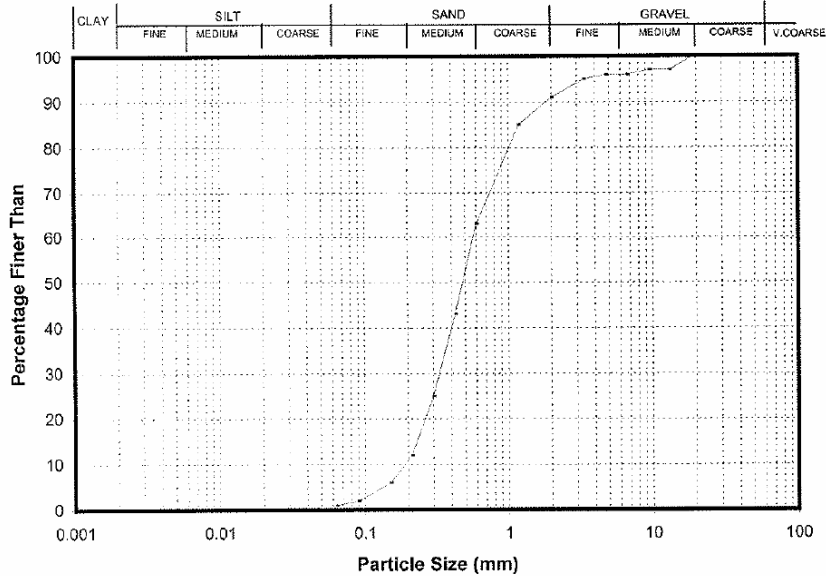


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Form No.: S5
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 File: M:\sieve\614086.000\BH4_8_Sea Bed.xls

Plate No.: _____ Page of _____
 Site : **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No.: **BH4** Sample No.: **8** Depth : **Sea Bed**
 Test Method Used : NZS 4402 : 1986 Test 2.8.1 Wet Sieve

PARTICLE SIZE ANALYSIS



Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	---
19.0	100
13.2	97
9.50	97
6.70	96
4.75	96
3.35	95

Sieve (mm)	Total % Passing
2.00	91
1.18	85
0.600	63
0.425	43
0.300	25
0.212	12
0.150	6
0.090	2
0.063	1

Sample history : As received at natural water content.

Description : CORAL mixed with shell fragments.

Remarks: Percentage passing the finest sieve was obtained by difference.

Entered by : 59 Date : 22/01/07 Checked by : JM Date : 22/1/07

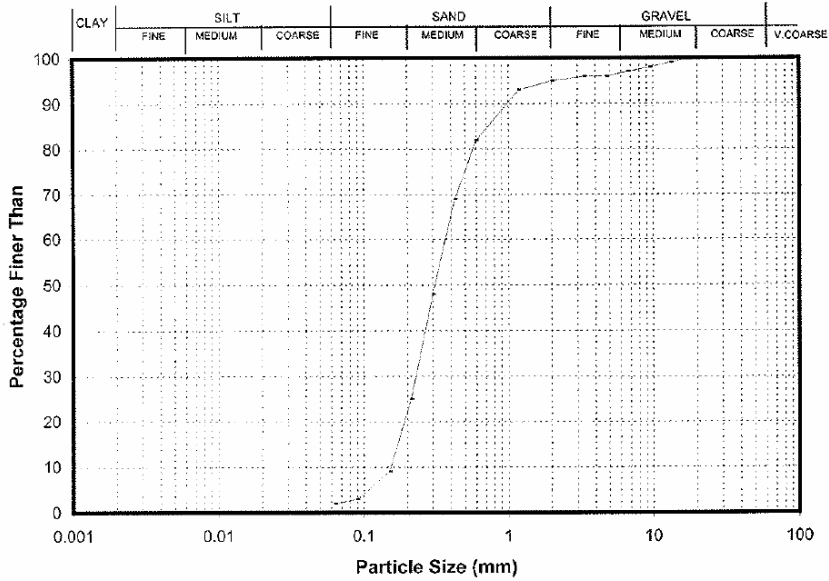


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 File: M:\sieve\614086.000\BH4_28_0.2m.xls

Plate No.:
 Site : **Funafuti, Tuvalu** Your Job No.: **750541** Page of
 BH No.: **BH4** Sample No.: **28** Our Job No.: **614086.000**
 Test Method Used : NZS 4402 : 1986 Test 2.8.1 Wet Sieve Depth : **0.2 m**

PARTICLE SIZE ANALYSIS



Sieve (mm)	Total % Passing
63.0	---
53.0	---
37.5	---
26.5	---
19.0	100
13.2	99
9.50	98
6.70	97
4.75	96
3.35	96

Sieve (mm)	Total % Passing
2.00	95
1.18	93
0.600	82
0.425	69
0.300	48
0.212	25
0.150	9
0.090	3
0.063	2


Sample history : As received at natural water content.

Description : CORAL mixed with shell fragments.

Remarks: Percentage passing the finest sieve was obtained by difference.

Entered by : ST Date : 22/01/07 Checked by : JH Date : 22/1/07

1 軸圧縮試験結果

 <p>23 Morgan Street, Newmarket Auckland 1023, New Zealand p. +64 9 356 3510 w. www.geotechnics.co.nz</p>	Form No.:	S17a	
	Form Date:	Jan-04	
	File: M:\Unconf\614086.000\BH1_17_3.0-4.0m.xls		
Plate No.:	Page of		
Site: Funafuti, Tuvalu	Your Job No.: 750541	Our Job No.: 614086.000	
BH No. 1	Sample No.: 17	Depth: 3.0-4.0 (m)	
Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil			
UNCONFINED COMPRESSIVE STRENGTH TEST			
Sample Parameters:			
Sample Height:	121.00 mm	Bulk Density:	1.91 t/m ³
Sample Diameter:	60.38 mm	Dry Density:	1.45 t/m ³
Test Height:	121.00 mm	Water Content:	32.3 %
Test H/D Ratio:	2.00		
Failure Value:			
Unconf. Compressive Strength q_u (kPa) 14390			
Mode of Failure: Shear			
Sample History: Undisturbed core trimmed at natural water content.			
Description: White, weak, CORAL			
Test Remarks: The sample was tested in a concrete machine because of high strength, therefore strain could not be measured. The UCS test results are reported to the nearest 1 kPa.			
Entered by: <i>ST</i>	Date: <i>19/1/07</i>	Checked by: <i>JAC</i> Date: <i>22/1/07</i>	



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Form No.:	S17a
Form Date:	Jan-04
File: M:\Unconfined\14096.000\BH1_21_7.0-8.0m.xls	

Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No. **1** Sample No.: **21** Depth: **7.0-8.0 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

UNCONFINED COMPRESSIVE STRENGTH TEST

Sample Parameters:

Sample Height:	100.73 mm	Bulk Density:	2.25 t/m ³
Sample Diameter:	60.95 mm	Dry Density:	2.03 t/m ³
Test Height:	100.73 mm	Water Content:	10.7 %
Test H/D Ratio:	1.65		

Failure Value:

Unconf. Compressive
Strength q_u (kPa)
15700

Mode of Failure:

Shear

Sample History:

Undisturbed core trimmed at natural water content.

Description:

White, weak, CORAL

Test Remarks:

The sample was tested in a concrete machine because of high strength, therefore strain could not be measured.
 The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.
 The presence of voids = 5mm - 15mm
The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

Entered by: SS Date: 22/1/04 Checked by: JHC Date: 22/1/04



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Form Date:	Jan-04
File: M:\Unconfn\614086.000\BH2_8_0-C-1.0m.xls	

Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No. **2** Sample No.: **8** Depth: **0.0-1.0 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

UNCONFINED COMPRESSIVE STRENGTH TEST

Sample Parameters:

Sample Height:	93.85 mm	Bulk Density:	2.15 t/m ³
Sample Diameter:	60.98 mm	Dry Density:	1.83 t/m ³
Test Height:	93.85 mm	Water Content:	17.6 %
Test H/D Ratio:	1.54		

Failure Value:

Unconf. Compressive
Strength q_u (kPa)
27910

Mode of Failure:

Shear

Sample History:

Undisturbed core trimmed at natural water content.

Description:

White, moderately strong, CORAL

Test Remarks:

The sample was tested in a concrete machine because of high strength, therefore strain could not be measured.
 The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.
The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

Entered by: ST Date: 19/1/07 Checked by: JMC Date: 22/1/07



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Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No. **2** Sample No.: **12** Depth: **4.45-5.6 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

UNCONFINED COMPRESSIVE STRENGTH TEST

Sample Parameters:

Sample Height:	123.30 mm	Bulk Density:	1.97 t/m ³
Sample Diameter:	60.68 mm	Dry Density:	1.53 t/m ³
Test Height:	123.30 mm	Water Content:	28.5 %
Test H/D Ratio:	2.03		

Failure Value:

Unconf. Compressive
Strength q_u (kPa)
22860

Mode of Failure: Shear

Sample History: Undisturbed core trimmed at natural water content.

Description: White, moderately strong, CORAL

Test Remarks: The sample was tested in a concrete machine because of high strength, therefore strain could not be measured.
The UCS test results are reported to the nearest 1 kPa.

Entered by: ST Date: 19/1/07 Checked by: JHC Date: 22/1/09

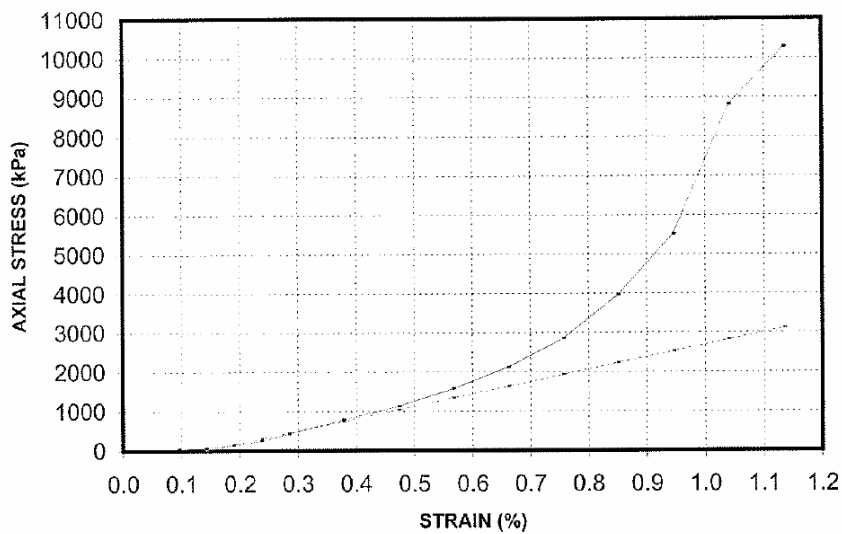


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File: M:\unconf\614086\000\BH2_13_5_6-7.0m.xls	

Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No.: **2** Sample No.: **13** Depth: **5.6-7.0 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

**UNCONFINED COMPRESSIVE STRENGTH TEST
AXIAL STRESS VS STRAIN**



Sample Parameters:

Sample Height:	105.80 mm	Bulk Density:	2.01 t/m ³
Sample Diameter:	60.60 mm	Dry Density:	1.89 t/m ³
Test Height:	105.80 mm	Water Content:	6.0 %
Test H/D Ratio:	1.75		

Failure Value:

Axial Strain (%)	Unconf. Compressive Strength q_u (kPa)	Rate of Compression (mm/min)	Modulus of Elasticity (MPa)
1.13	10283	0.16	312

Mode of Failure: Shear

Sample History: Undisturbed core trimmed at natural water content.

Description: White, weak, CORAL

Test Remarks: The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.
 The presence of voids = 5mm - 35mm
The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

Entered by: ST Date: 22/1/07 Checked by: JMC Date: 22/1/07

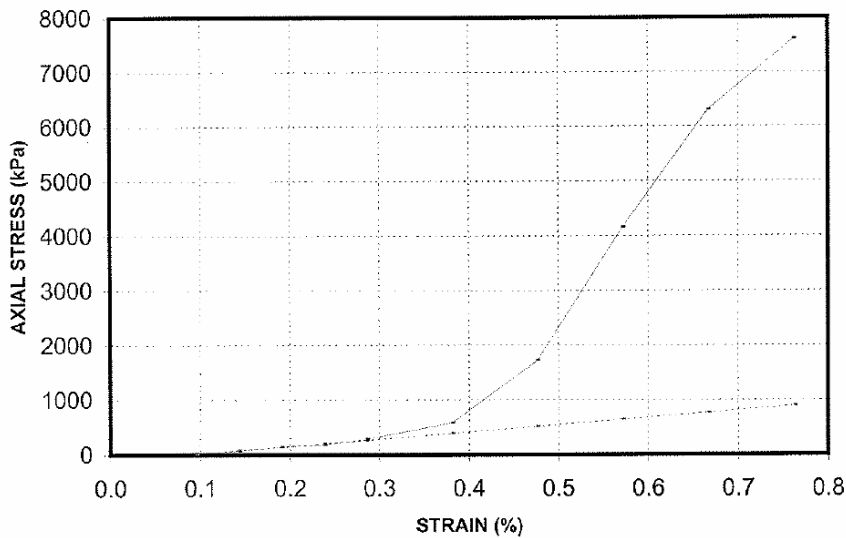


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Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No.: **3** Sample No.: **1** Depth: **0.0-1.0 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

**UNCONFINED COMPRESSIVE STRENGTH TEST
AXIAL STRESS VS STRAIN**



Sample Parameters:

Sample Height:	104.93 mm	Bulk Density:	2.17 t/m ³
Sample Diameter:	60.98 mm	Dry Density:	2.08 t/m ³
Test Height:	104.93 mm	Water Content:	4.5 %
Test H/D Ratio:	1.72		

Failure Value:

Axial Strain (%)	Unconf. Compressive Strength q_u (kPa)	Rate of Compression (mm/min)	Modulus of Elasticity (MPa)
0.76	7613	0.15	131

Mode of Failure: Shear

Sample History: Undisturbed core trimmed at natural water content.

Description: White, weak, CORAL

Test Remarks: The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.
 The presence of voids = 5mm - 15mm
The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

Entered by: SG Date: 22/1/07 Checked by: JPL Date: 22/1/07

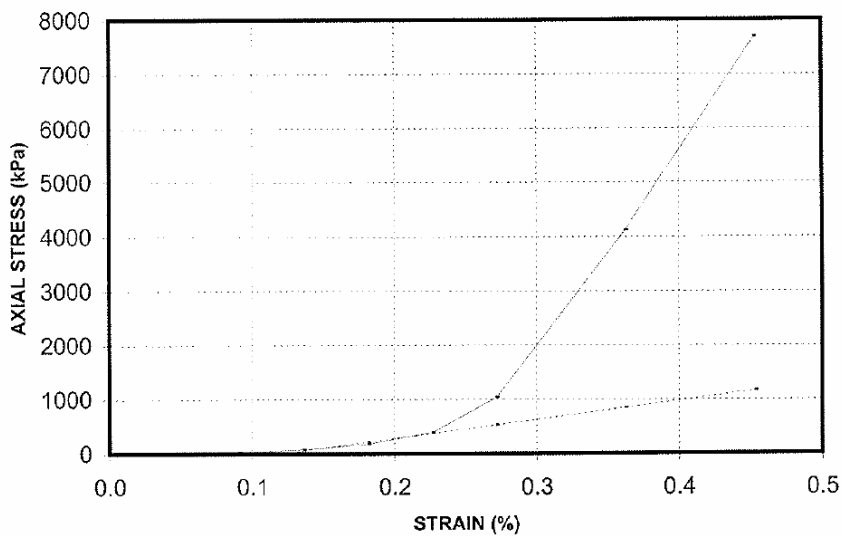


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Form No.:	S17a
Form Date:	Jan-04
File: M:\Unconf\1514285\009\BH3_2_1.0-2.0m.xls	

Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No.: **3** Sample No.: **2** Depth: **1.0-2.0 (m)**
 Test Method Used: **NZS 4402 :1986 TEST 6.3.1** Determination of the unconfined compressive strength of cohesive soil

**UNCONFINED COMPRESSIVE STRENGTH TEST
AXIAL STRESS VS STRAIN**



Sample Parameters:

Sample Height:	110.40 mm	Bulk Density:	2.04 t/m ³
Sample Diameter:	60.93 mm	Dry Density:	1.97 t/m ³
Test Height:	110.40 mm	Water Content:	4.0 %
Test H/D Ratio:	1.81		

Failure Value:

Axial Strain (%)	Unconf. Compressive Strength q_u (kPa)	Rate of Compression (mm/min)	Modulus of Elasticity (MPa)
0.45	7690	0.14	348

Mode of Failure: Shear

Sample History: Undisturbed core trimmed at natural water content.

Description: White, weak, CORAL

Test Remarks: The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.

The presence of voids = 5mm - 55mm

The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

Entered by: *SS* Date: *22/1/04* Checked by: *Jne* Date: *22/1/04*



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File: M:\Unconf\614086.000\BH_24_6.0-7.0m.xls	

Plate No.: _____ Page of _____
 Site: **Funafuti, Tuvalu** Your Job No.: **750541** Our Job No.: **614086.000**
 BH No. **4** Sample No.: **24** Depth: **6.0-7.0 (m)**
 Test Method Used: NZS 4402 :1986 TEST 6.3.1 Determination of the unconfined compressive strength of cohesive soil

UNCONFINED COMPRESSIVE STRENGTH TEST

Sample Parameters:

Sample Height:	57.18 mm	Bulk Density:	2.32 t/m ³
Sample Diameter:	60.68 mm	Dry Density:	2.26 t/m ³
Test Height:	57.18 mm	Water Content:	2.8 %
Test H/D Ratio:	0.94		

Failure Value:

Unconf. Compressive
Strength q_u (kPa)
27360

Mode of Failure: Shear

Sample History: Undisturbed core trimmed at natural water content.

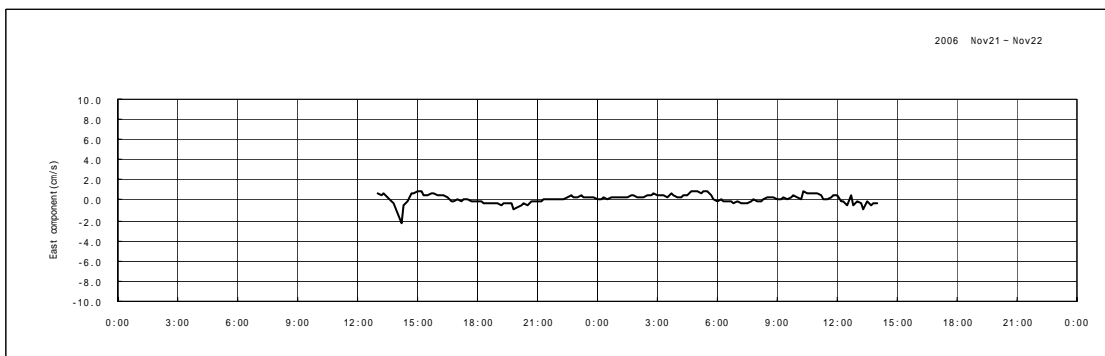
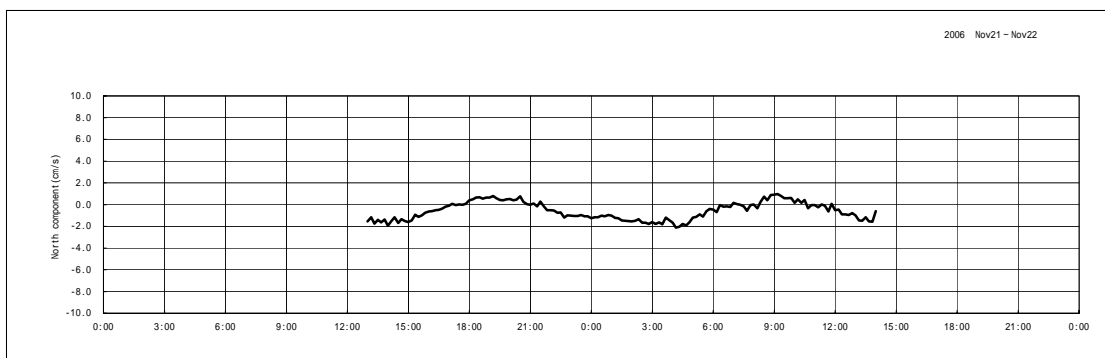
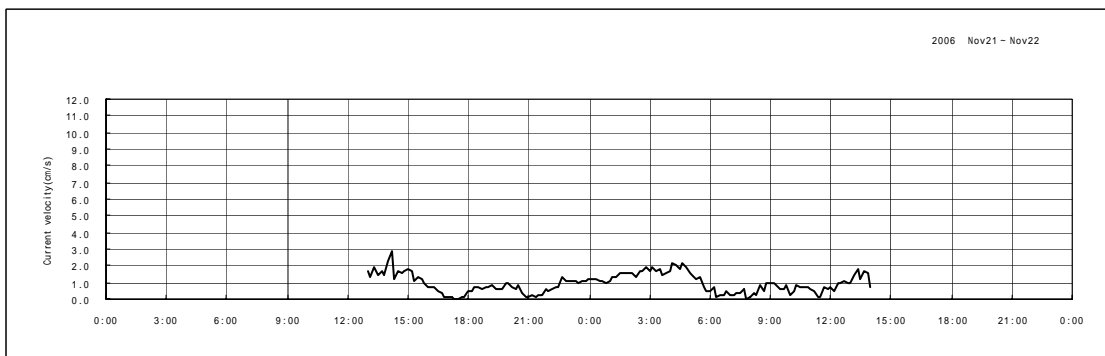
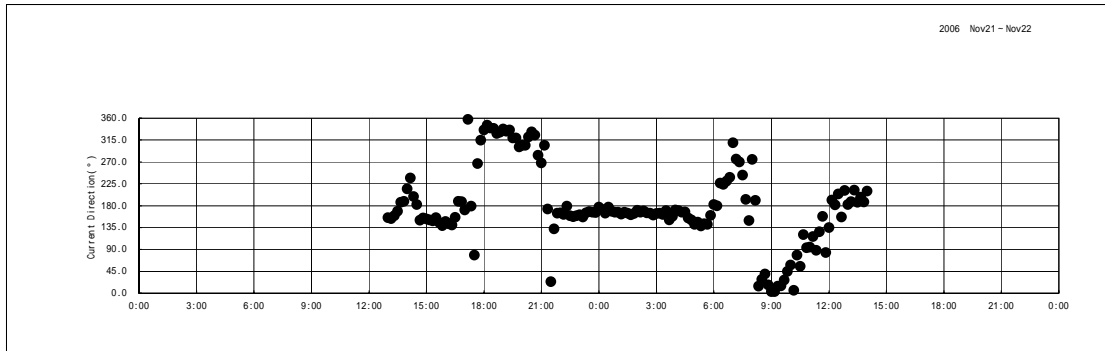
Description: White, moderately strong, CORAL

Test Remarks: The sample was tested in a concrete machine because of high strength, therefore strain could not be measured.
 The sample height to diameter ratio is less than the required 2. The strength may be lower, due to the h/d ratio. We advised the engineer and it was decided to continue with testing.
The UCS test results are reported to the nearest 1 kPa and provided as indicative only.

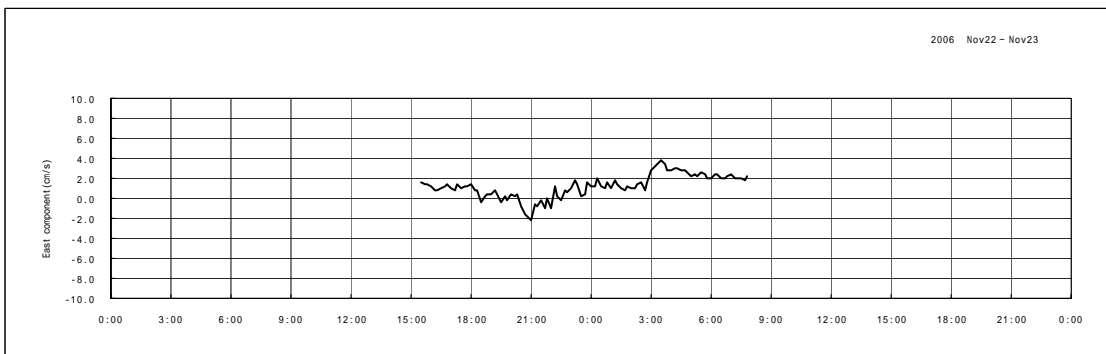
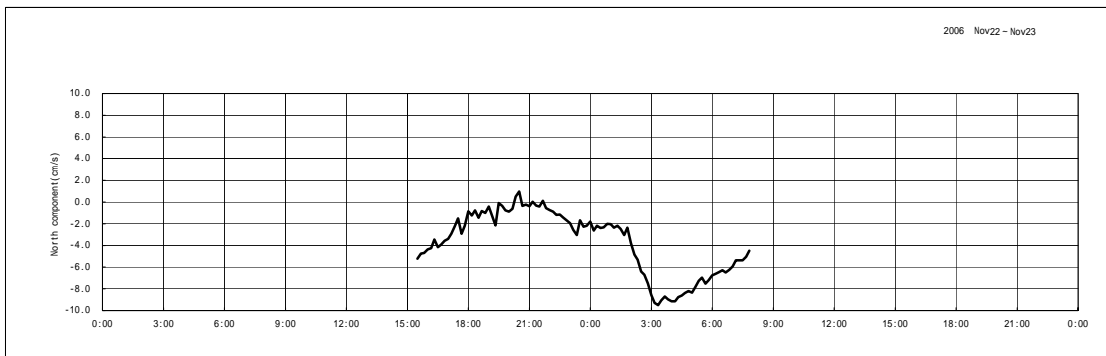
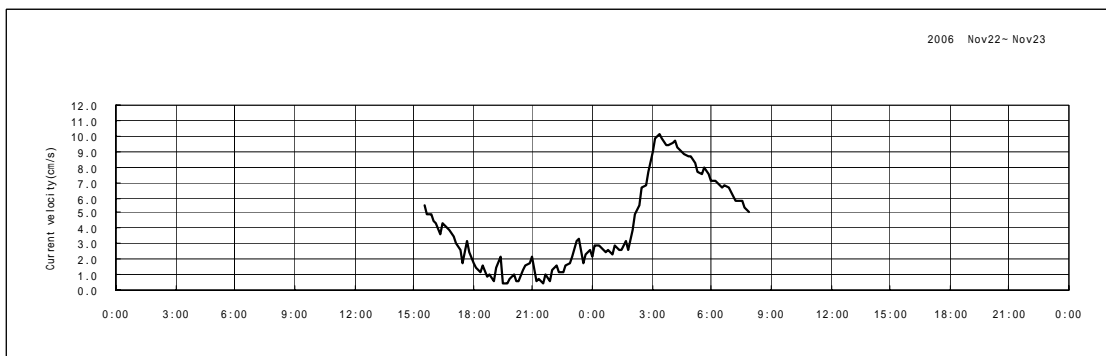
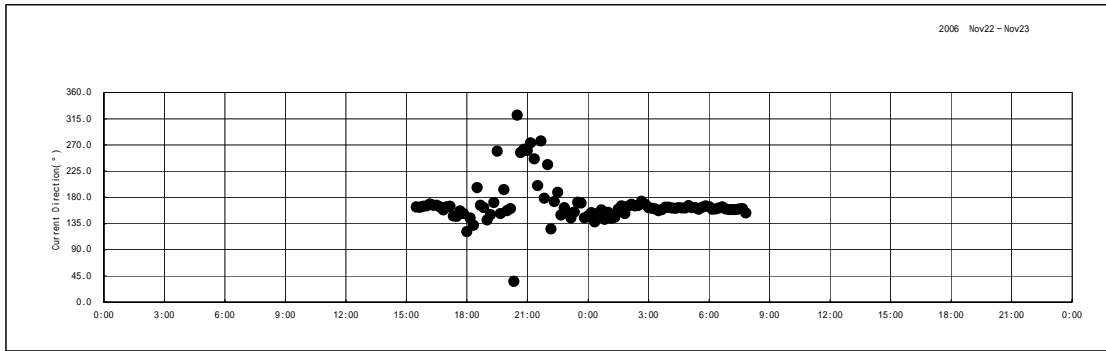
Entered by: *ST* Date: *19/1/07* Checked by: *JMC* Date: *22/1/07*

7-4 流向・流速調査結果

(1) 水深 4m (25 時間連続観測)



(2) 水深 6m (16 時間連続観測)



8. 既存棧橋の老朽度調査結果

フナフチ棧橋の平面および構造は図 A-1 に示すとおりである。

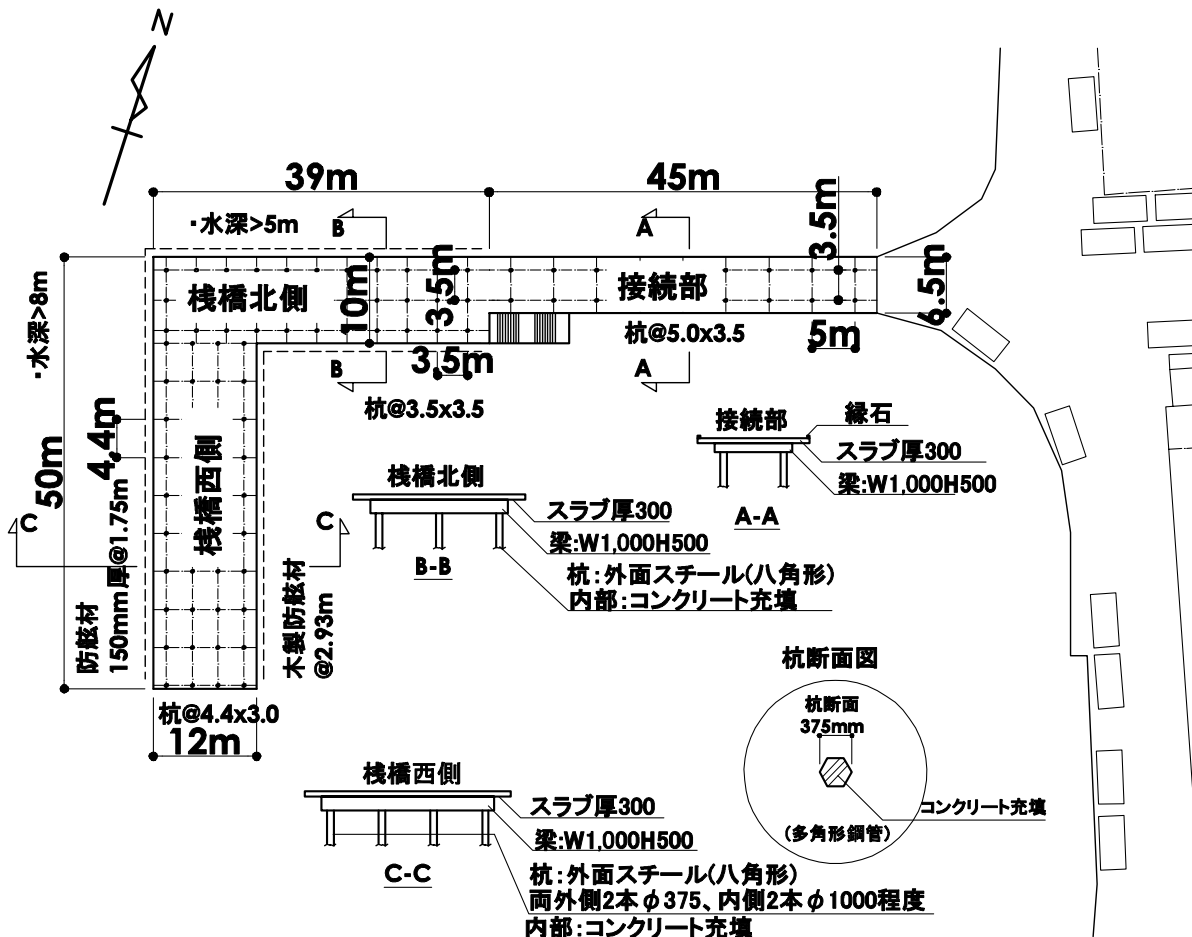


図 A-1： フナフチ棧橋の平面および構造

『港湾構造物の維持補修マニュアル』（（財）沿岸開発技術センター、平成 11 年 6 月）による棧橋式係船岸の点検項目および棧橋上部工の劣化度判定基準は以下のとおりである。

表 A-2： 棧橋式係船岸の点検項目

点検の対象変状	位置	点検項目
杭の腐食	杭	腐食状況、杭肉厚
上部工のひび割れ	上部工	ひび割れ状況（剥離・損傷）
渡板の破損・沈下	渡板	沈下、移動、損傷状況

出所：『港湾構造物の維持補修マニュアル』（（財）沿岸開発技術センター、平成 11 年 6 月）

表 A-3： 棧橋上部工の劣化度判定基準

劣化度 部材/項目	0					
鉄筋の腐食	なし	コンクリート表面に点錆がみられる	一部に錆汁がみられる	錆汁多し	浮き錆多し	浮き錆著しい
ひび割れ	なし	一部にひび割れがみられる	ひび割れやや多し	ひび割れ多し(ひび割れ幅数 mm 以上のひび割れ含む)	ひび割れ幅数 mm 以上のひび割多数	
かぶりコンクリートの剥離・剥落	なし	なし	一部に浮きがみられる	一部に剥離・剥落がみられる	剥離・剥落多し	剥離・剥落が著しい
鋼管杭	鋼管の劣化	なし	さび・ふくれが点在している。	上塗り塗料のはがれ、ひび割れが点在している。	かなり大きな錆・ふくれが点在している。	広範囲に錆やふくれが認められる。
点検による調査要否の判定	調査、補修の必要なし(点検継続)		必要に応じ調査、補修		要補修	

出所：「港湾構造物の維持補修マニュアル」(財)沿岸開発技術センター(平成1年.6月)に「鋼管の劣化」部分を追記

上記基準により既存フナフチ棧橋の劣化度検査を行った結果、ほぼすべての上部工が最悪の劣化度「V」であった。鋼管杭についても「V」と判定されることから、既存棧橋は「要補修」と判定される。

表 A4-4： 既存棧橋の劣化度判定結果

	海岸平行区間 先端部	海岸平行区間 中間部	隅角部	海岸垂直区間 隅角部隣接 幅 10m 間	海岸垂直区間 中間部	海岸垂直区間 陸上取付側
鉄筋の腐食						
ひびわれ						
剥離・剥落						
鋼管杭						

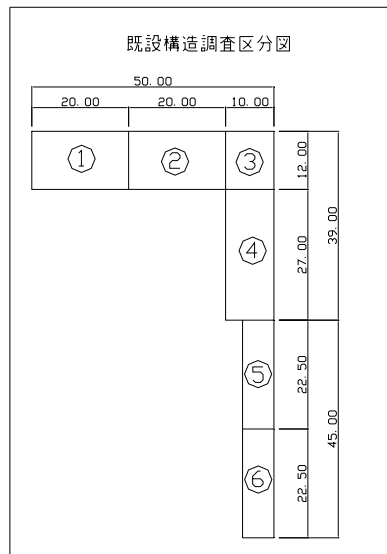


図 A-2： 劣化度検査区分図

各調査項目の詳細は次のとおりである。

1) 目視観測調査

目視観測では、特に上部構造コンクリート部分の鉄筋の腐蝕が著しく、断面欠損や部分的に部材破断に至っている箇所が多く観察された。床板下部のコンクリートは、かぶり部分が剥がれ、崩落し、内部の鉄筋が露出し、錆が著しい状況であった。コンクリート表面には著しいひびが生じ、カルシウム成分溶出による白い氷柱上の痕跡が随所に見られた。

劣化の生じている箇所は、梁の中心部、スラブの中心部あるいは周辺部であり、断面作用力の大きい箇所と一致していることから、部分的な補修による部材耐力の回復は、あまり効果が期待できないと判断する。

2) コンクリート打検調査

シュミットハンマーによるコンクリートの打検調査を行った結果、コンクリートの剥がれかかっている箇所については、打検の際に部分破壊が観察されたが、破壊・ひび割れが生じていない箇所のコンクリートについては、ハンマー打設時のコンクリート表面の変形はなく、打検時の反射音も明瞭であった。シュミットハンマーによる計測を各部位につき3カ所実施した結果、コンクリート強度は平均30~40N/mm²であり、健全な強度であることが確認された。

3) コンクリート材料試験

コンクリート表面には、主にアルカリ骨材反応に起因する細密で深いひびわれ破壊は見られなかった。また、フェノールフタレイン溶液による反応試験の結果、床板下部のコンクリート表面を2cm程度剥がした内部では発色することから、中性化(炭素化)は見られないと判断される。一方、塩分含有量については、室内分析試験の結果10.428kg/m³検出され、文献に示される腐食発錆限界値1.2kg/m³(土木学会コンクリート標準示方書「施工編」)を大きく上回ることから、内部鉄筋の腐食の一要因であると判断される。

4) 鉄筋コンクリート部調査

鉄筋は栈橋スラブ部および梁部において腐食が著しく、膨張による爆裂で、特に床板下部に被りコンクリートの剥離箇所が多数確認された。露出した鉄筋には腐食が進行しており、硬性を失って脱落している部分も確認された。

5) 鋼材部の調査

杭材には400~700程度の多角形断面の鋼管が使用されている。目視の結果、鋼

材部には腐食による穴はなく、杭頭部に腐蝕が発生するなど鋼杭の経過年数（約 27 年）相応の劣化はあるものの、表層を 5mm 程度除去すると腐食のない層が確認された。

杭頭部の錆対策等の補修は必要であるが、当面の利用に問題はないと判断される。ただし、杭頭の位置が梁部コンクリートと大きくずれている箇所が確認された。

6) 総合評価

鉄筋の腐蝕は、コンクリートに多量の塩分を含む練り混ぜ水が使用されたこと、コンクリート表面に生じた小さなひび割れから海水が浸透し、鉄筋の腐蝕速度を促進したことなどに起因するものであり、フナフチ棧橋は、経過年数（約 27 年）相当以上に劣化が進んだものと判断される。コンクリート自体は健全であるものの、補強コンクリート構造は、鉄筋とコンクリートの相互補完で機能する構造体であることから、鉄筋の劣化は致命的であり、棧橋上部構造は、崩落する危険が極めて高い状況にあると評価される。

既存棧橋は、今後さらに鉄筋の腐蝕とコンクリートの剥離が進行すると予想され、乗船客と作業員の安全を確保し、港としての機能を維持していくためには、新設せざるを得ない状況にあると判断する。

9. 島間連絡船の運航実績 (2004年～2006年)

MV MANU FOLAU			YEAR OF 2004						
VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)		
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL
1/04	12/01/2004	14/01/2004	Vaitupu/Nui/Nukufetau	73	184	257	51.100	17.410	68.510
2/04	15/01/2004	18/01/2004	Niulakita/Nukulaelae	23	62	85	9.027	7.310	16.337
3/04	20/01/2004	22/01/2004	Vaitupu only	93	86	179	47.673	6.410	54.083
4/04	27/01/2004	29/01/2004	Nanumaga/Nanumea/Niutao	41	119	160	79.187	14.710	93.897
5/04	30/01/2004	2/02/2004	Nukulaelae only	24	47	71	9.757	3.470	13.227
6/04	3/02/2004	5/02/2004	Nui/Nukufetau/Vaitupu	41	35	76	75.469	14.690	90.159
7/04	7/02/2004	8/02/2004	Vaitupu only	15	21	36	29.432	4.160	33.592
8/04	11/02/2004	14/02/2004	Vaitupu/Nui/Nukufetau	48	109	157	66.277	11.410	77.687
9/04	17/02/2004	20/02/2004	Nukulaelae/Niulakita	33	15	48	4.823	2.680	7.503
10/04	24/02/2004	27/02/2004	Nukufetau/Nui/Vaitupu	92	51	143	26.692	7.370	34.062
11/04	3/03/2004	21/03/2004	Nkll/Nklt/Suva	35	87	122	62.426	7.160	69.586
12/04	22/03/2004	23/03/2004	Nukulaelae only	28	48	76	2.611	2.540	5.151
13/04	28/03/2004	30/03/2004	Vaitupu/Nui/Nukufetau	91	21	112	39.667	6.470	46.137
14/04	7/04/2004	13/04/2004	Nanumea/Niutao/Nanumaga	58	85	143	36.796	7.110	43.906
15/04	14/04/2004	19/04/2004	Nukufetau/Vaitupu/Nui	140	24	164	160.741	9.450	170.191
16/04	20/04/2004	21/04/2004	Vaitupu only	116	36	152	5.655	5.650	11.305
17/04	21/04/2004	22/04/2004	Nukulaelae only	20	10	30	2.498	1.230	3.728
18/04	23/04/2004	24/04/2004	Vaitupu only	250	75	325	45.235	3.780	49.015
19/04	26/04/2004	29/04/2004	Nanumaga/Nanumea/Niutao	21	81	102	22.692	6.340	29.032
20/04	30/04/2004	3/05/2004	Nukufetau/Vaitupu/Nui	58	58	116	7.414	4.780	12.194
21/04	4/05/2004	6/05/2004	Nukulaelae	71	44	115	0.340	2.360	2.700
22/04	9/05/2004	10/05/2004	Vaitupu/Nukufetau	110	8	118	29.951	5.230	35.181
23/04	11/05/2004	14/05/2004	Niulakita/Nukulaelae	12	6	18	7.251	3.130	10.381
24/04	16/05/2004	21/05/2004	Vtp/Nto/Nmea/Nmga/Nui	124	96	220	51.210	12.630	63.840
25/04	24/05/2004	27/05/2004	Nkft/Vtp/Nui/Nmga/Nmea/Nmga	120	57	177	43.188	13.240	56.428
26/04	30/05/2004	31/05/2004	Nui only	31	43	74	1.767	2.270	4.037
27/04	8/06/2004	11/06/2004	Nui/Nukufetau/Vaitupu	76	68	144	103.740	14.210	117.950
28/04	22/06/2004	23/06/2004	Nui/Nto/Nmga/Nmea/Nto	56	54	110	23.481	11.140	34.621
29/04	26/06/2004	5/07/2004	Nkll/Nklt/Suva	44	33	77	62.320	9.120	71.440
30/04	7/07/2004	9/07/2004	Vaitupu/Nukufetau/Nui	89	12	101	25.168	7.140	32.308
31/04	11/07/2004	15/07/2004	Nukufetau/Nui/Vaitupu	83	25	108	29.309	6.250	35.559
32/04	18/07/2004	20/07/2004	Nukulaelae/Niulakita	48	31	79	5.664	2.480	8.144
33/04	21/07/2004	25/07/2004	Nkft/Vtp/Nui/Nkft	135	67	202	26.116	7.740	33.856
34/04	27/07/2004	31/07/2004	Niutao/Nanumaga/Nanumea	121	47	168	68.722	11.690	80.412
35/04	2/08/2004	4/08/2004	Nukulaelae only	13	21	34	6.368	3.580	9.948
36/04	9/08/2004	12/08/2004	Vaitupu/Nui/Nukufetau	129	81	210	63.753	12.690	76.443
37/04	22/08/2004	23/08/2004	Vaitupu only	220	31	251	39.761	4.980	44.741
38/04	6/09/2004	10/09/2004	Vaitupu/Nui/Nukufetau	67	36	103	31.703	7.770	39.473
39/04	10/09/2004	12/09/2004	Nukulaelae only	13	20	33	9.140	3.470	12.610
40/04	14/09/2004	30/09/2004	Nkll/Nklt/Suva	36	35	71	87.630	7.520	95.150
41/04	4/10/2004	9/10/2004	Nkft/Nui/Vtp	60	78	138	47.390	11.280	58.670
42/04	12/10/2004	17/10/2004	Nmea/Nmga/Nto/Nui/Vtp	56	37	93	51.360	13.740	65.100
43/04	20/10/2004	24/10/2004	Nmga/Nto/Nmea/Vtp	31	95	126	63.250	13.470	76.720
44/04	26/10/2004	29/10/2004	Nkft/Nui/Vtp/Nkft	32	92	124	41.380	6.740	48.120
45/04	7/11/2004	9/11/2004	Vtp/Nui/Nkft	47	50	97	49.230	11.640	60.870
46/04	12/11/2004	17/11/2004	Vtp/Nui/Nmga/Nmea/Nto/Nui	52	61	113	53.610	12.490	66.100
47/04	23/11/2004	2/12/2004	Nkll/Nklt/Suva/Nklt/Nkll	25	172	197	103.740	9.350	113.090
48/04	6/12/2004	10/12/2004	Nkft/Nui/Vtp	70	55	125	48.390	7.630	56.020
49/04	14/12/2004	18/12/2004	Niutao/Nanumaga/Nanumea	56	64	120	59.130	12.340	71.470
50/04	20/12/2004	23/12/2004	Vtp/Nui/Nkft	136	36	172	43.680	9.110	52.790
51/04	23/12/2004	25/12/2004	Nukulaelae only	28	10	38	11.230	3.140	14.370
Total	Domestic			3,491	2,819	6,310	2,074.144	403.700	2,477.844
11/04	3/03/2004	21/03/2004	Suva	109	67	176	5.380	63.250	68.630
29/04	26/06/2004	5/07/2004	Suva	34	97	131	14.290	135.270	149.560
40/04	14/09/2004	30/09/2004	Suva	41	36	77	11.250	75.360	86.610
47/04	23/11/2004	2/12/2004	Suva	78	120	198	9.350	78.160	87.510
Total	International			262	320	582	40.270	352.040	392.310
TOTAL	26/06/1905			3,753	3,139	6,892	2,114.414	755.740	2,870.154

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VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)					
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL			
1/05	5/01/2005	8/01/2005	Nanumea/Nanumaga/Niutao	97	34	131	45.360	9.350	54.710			
2/05	16/01/2005	19/01/2005	Nukufetau/Nui/Vaitupu	62	30	92	37.250	11.320	48.570			
3/05	23/01/2005	24/01/2005	Vaitupu/Nukufetau	48	19	67	35.780	7.780	43.560			
4/05	4/02/2005	21/02/2005	Nkll/Nklt/Suva	56	32	88	89.210	36.210	125.420			
5/05	23/02/2005	8/03/2005	Nmga/Nmea/Nmga/Nto/Vtp	41	21	62	45.320	11.230	56.550			
6/05	21/03/2005	25/03/2005	Nto/Nmga/Nmea	32	26	58	55.230	6.120	61.350			
7/05	27/03/2005	30/03/2005	Vtp/Nui/Nkft	68	65	133	43.120	11.690	54.810			
8/05	10/04/2005	12/04/2005	Nkft/Nui/Vtp	43	224	267	32.110	7.390	39.500			
9/05	15/04/2005	17/04/2005	Nmea/Nmag	55	26	81	41.320	4.780	46.100			
10/05	18/04/2005	21/04/2005	Nmga/Nto	32	28	60	36.510	3.480	39.990			
11/05	24/04/2005	25/04/2005	Vaitupu only	36	29	65	54.230	5.190	59.420			
12/05	26/04/2005	28/04/2005	Nkt/Nkll	41	24	65	44.360	2.690	47.050			
13/05	1/05/2005	8/05/2005	Nkll/Nklt/Suva	55	41	96	97.250	55.690	152.940			
14/05	9/05/2005	10/05/2005	Vaitupu only	287	34	321	31.210	5.470	36.680			
15/05	12/05/2005	13/05/2005	Nto/Nui	47	18	65	38.140	4.290	42.430			
16/05	16/05/2005	18/05/2005	Nkll/Nklt	32	19	51	46.120	3.470	49.590			
17/05	22/06/2005	24/06/2005	Nkft/Nui/Vtp	26	23	49	55.320	11.560	66.880			
18/05	27/06/2005	30/06/2005	Nto/Nmag/Nmea	45	21	66	47.230	9.680	56.910			
19/05	11/07/2005	13/07/2005	Vtp/Nkft/Nui/Vtp	209	28	237	63.150	7.360	70.510			
20/05	15/07/2005	16/07/2005	Vaitupu only	163	34	197	45.320	6.360	51.680			
21/05	18/07/2005	19/07/2005	Vaitupu only	48	197	245	43.250	5.390	48.640			
22/05	20/07/2005	26/07/2005	Vtp/Nkft/Nui/Vtp/Nkll/Nklt	55	32	87	41.230	11.670	52.900			
23/05	1/08/2005	4/08/2005	Nui/Vtp/Nkft	32	63	95	35.130	13.250	48.380			
24/05	5/08/2005	10/08/2005	Vtp/Nkll/Nklt	34	194	228	39.140	5.410	44.550			
25/05	17/08/2005	20/08/2005	Nmea/Nmga/Nto	56	23	79	37.410	9.260	46.670			
26/05	22/08/2005	22/08/2005	Vaitupu only	172	25	197	31.120	4.890	36.010			
27/05	23/08/2005	25/08/2005	Nkll/Nklt	49	20	69	48.520	3.570	52.090			
28/05	31/08/2005	3/09/2005	Vtp/Nui/Nkft	68	18	86	43.240	12.890	56.130			
29/05	10/09/2005	26/09/2005	Nkll/Nklt/Suva	59	68	127	112.450	39.450	151.900			
30/05	4/10/2005	4/10/2005	Vaitupu only	54	17	71	45.320	7.690	53.010			
31/05	5/10/2005	9/10/2005	Vtp/Nui/Nkft	70	30	100	32.120	11.480	43.600			
32/05	12/10/2005	14/10/2005	Nklt/Nkll	31	40	71	38.410	4.130	42.540			
33/05	16/10/2005	20/10/2005	Nto/Nmea/Nmga	54	125	179	46.740	6.280	53.020			
34/05	24/10/2005	27/10/2005	Nkft/Nui/Vtp	73	72	145	44.330	12.470	56.800			
35/05	1/11/2005	3/11/2005	Vtp/Nmea/Nmga/Nto	62	56	118	52.130	9.870	62.000			
36/05	6/11/2005	9/11/2005	Vtp/Nui/Nkft	52	59	111	35.630	7.770	43.400			
37/05	15/11/2005	19/11/2005	Nmga/Nmea/Nto	88	54	142	47.130	6.980	54.110			
38/05	21/11/2005	23/11/2005	Vtp/Nui/Nkft/Vtp	53	269	322	42.210	8.870	51.080			
39/05	27/11/2005	7/12/2005	Suva									
40/05	12/12/2005	16/12/2005	Nto/Nmga/Nmea	74	33	107	58.890	6.870	65.760			
41/05	17/12/2005	20/12/2005	Nkft/Nui/Vtp	98	21	119	79.260	12.870	92.130			
42/05	21/12/2005	24/12/2005	Nui/Nkft/Vtp	69	45	114	63.980	9.620	73.600			
43/05	28/12/2005	30/12/2005	Nkll/Nklt	38	47	85	9.540	3.660	13.200			
Total				Domestic			2,864	2,284	5,148	2,010.720	435.450	2,446.170
4/05	4/02/2005	21/02/2005	Suva	63	83	146	6.280	77.540	83.820			
13/05	1/05/2005	8/05/2005	Suva	45	64	109	9.650	67.820	77.470			
29/05	10/09/2005	26/09/2005	Suva	52	140	192	7.740	98.740	106.480			
39/05	27/11/2005	7/12/2005	Suva	48	167	215	43.510	87.240	130.750			
Total				International			208	454	662	67.180	331.340	398.520
TOTAL				2005			3,072	2,738	5,810	2,077.900	766.790	2,844.690

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VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)		
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL
1/06	4/01/2006	6/01/2006	VTP/NUI/NKFT	150	35	185	68.230	11.147	79.377
2/06	17/01/2006	21/01/2006	NMEA/NMAG/NT0/VTP	54	65	119	56.450	8.369	64.819
3/06	24/01/2006	25/01/2006	VAITUPU ONLY	52	45	97	35.450	4.631	40.081
4/06	26/01/2006	29/01/2006	NT0/NMEA/NMAGA	45	35	80	44.520	10.365	54.885
5/06	7/02/2006	20/02/2006	SUVA						
6/06	23/02/2006	25/02/2006	NKFT/VTP/NUI	44	53	97	58.260	12.345	70.605
7/06	1/03/2006	4/03/2006	NT0/NMGA/NMEA	46	47	93	45.320	9.441	54.761
8/06	9/03/2006	11/03/2006	NLKT/NKLL	48	48	96	36.250	3.452	39.702
9/06	20/03/2006	24/03/2006	VTP/NKFT/NUI/VTP	61	35	96	44.120	11.458	55.578
10/06	27/03/2006	30/03/2006	NMEA/NMAG/NT0/VTP	53	49	102	43.230	11.634	54.864
11/06	3/04/2006	6/04/2006	NKFT/NUI/VTP	58	53	111	35.840	13.412	49.252
12/06	8/04/2006	7/05/2006	NLKT/NKLL	63	47	110	41.210	2.117	43.327
13/06	14/04/2006	18/04/2006	NMGA/NT0/NMEA/NKFT	44	49	93	39.140	7.315	46.455
14/06	20/04/2006	22/04/2006	VTP/NUI/VTP	71	150	221	34.260	9.637	43.897
15/06	25/04/2006	27/04/2006	VTP/NUI/VTP/NKFT	54	48	102	33.560	11.413	44.973
16/06	6/05/2006	7/05/2006	VTP/NKFT	53	55	108	38.410	6.158	44.568
17/06	10/05/2006	13/05/2006	NT0/NMGA/NMEA	63	66	129	41.310	6.336	47.646
18/06	16/05/2006	17/05/2006	NT0/NUI	80	54	134	48.360	4.123	52.483
19/06	31/05/2006	2/06/2006	NUI/VTP/NKFT	69	57	126	53.230	12.148	65.378
20/06	3/06/2006	26/06/2006	SUVA						
21/06	30/06/2006	1/07/2006	NKLL ONLY	57	53	110	68.250	2.478	70.728
22/06	3/07/2006	6/07/2006	NME/NMGA/NT0/NUI/VTP/NKFT	68	34	102	64.140	12.369	76.509
23/06	7/07/2006	9/07/2006	NKLL/NLKT/NKLL	55	48	103	58.230	3.245	61.475
24/06	12/07/2006	16/07/2006	NKFT/VTP/NUI/NT0	57	39	96	48.630	11.784	60.414
25/06	20/07/2006	24/07/2006	NT0/NMGA/NMEA	72	49	121	50.210	6.411	56.621
26/06	24/07/2006	29/07/2006	NKLL/NLKT/NKLL	66	150	216	44.120	2.332	46.452
27/06	31/07/2006	5/08/2006	NKFT/VTP/NUI/VTP/NKFT	150	53	203	39.320	12.456	51.776
28/06	6/08/2006	8/08/2006	NKLL ONLY	56	54	110	51.450	2.419	53.869
29/06	8/08/2006	9/08/2006	VTP ONLY	63	46	109	65.450	7.459	72.909
30/06	19/08/2006	22/08/2006	NKLL/NLKT	54	48	102	53.210	3.451	56.661
31/06	23/08/2006	24/08/2006	VTP ONLY	75	55	130	71.560	7.489	79.049
32/06	29/08/2006	2/09/2006	NT0/NMEA/NMGA	65	67	132	48.510	6.413	54.923
33/06	4/09/2006	7/09/2006	NKFT/NUI/VTP/NKFT	150	150	300	53.420	13.489	66.909
34/06	15/10/2006	20/10/2006	NMEA/NMAG/NT0	56	48	104	36.520	10.632	47.152
35/06	24/10/2006	28/10/2006	NUI/VTP/NKFT	48	45	93	41.230	11.324	52.554
36/06	31/10/2006	3/11/2006	NKLL/NLKT	47	37	84	47.560	3.418	50.978
37/06	200611/7	11/11/2006	VTP/NT0/NMGA/NMEA	101	19	120	79.230	13.310	92.540
38/06	14/11/2006	18/11/2006	NKFT/VTP/NUI	60	78	138	81.230	14.230	95.460
39/06	24/11/2006	27/11/2006	VTP/NUI/NKFT	65	20	85	74.120	12.110	86.230
40/06	2/12/2006	11/12/2006	SUVA						
41/06	12/12/2006	15/12/2006	NUI/VTP/NKFT	114	65	179	92.140	6.750	98.890
42/06	17/12/2006	23/12/2006	NT0/NMGA/NMEA/NMGA/NT0	101	35	136	112.230	13.210	125.440
Total			Domestic	2,688	2,184	4,872	2,077.910	332.280	2,410.190
5/06	7/02/2006	20/02/2006	Suva	53	44	97	35.140	3.142	38.282
20/06	3/06/2006	26/06/2006	Suva	45	34	79	53.450	98.156	151.606
40/06	2/12/2006	11/12/2006	Suva	25	109	134	23.140	113.350	136.490
Total			International	123	187	310	111.730	214.648	326.378
TOTAL			2006	2,811	2,371	5,182	2,189.640	546.928	2,736.568

MV NIVAGA II

YEAR OF 2004

VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)		
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL
01/04	3/01/2004	7/01/2004	Nmea/Nmga/Nto	47	94	141	49.744	7.320	57.064
02/04	10/01/2004	11/01/2004	Vaitupu only	184	69	253	39.210	11.560	50.770
03/04	13/01/2004	18/01/2004	Vtp/Nui/Nkft	73	34	107	58.410	3.210	61.620
04/04	30/01/2004	8/02/2004	Suva						
05/04	11/02/2004	15/02/2004	Nuklae/Nkita	9	36	45	7.450	8.140	15.590
06/04	18/02/2004	24/02/2004	Nmea/Nmga/Nto	98	27	125	114.572	6.120	120.692
07/04	1/03/2004	5/03/2004	Nkft/Vtp/Nui	87	3	90	67.320	11.230	78.550
08/04	8/03/2004	12/03/2004	Vtp/Nmga/Nmea/Nto	75	17	92	92.131	15.410	107.541
09/04	14/03/2004	19/03/2004	Vtp/Nkft/Nui/Vtp/Nkft	72	27	99	82.501	9.360	91.861
10/04	21/03/2004	26/03/2004	Nto/Nmga/Nmea/Nto/Nkft	80	34	114	36.580	4.350	40.930
11/04	28/03/2004	31/03/2004	Nkita/Nklaelae	19	45	64	5.277	7.270	12.547
12/04	7/04/2004	15/04/2004	Vtp/Nkft/Nui/Nkft	85	55	140	68.740	9.150	77.890
13/04	25/04/2004	30/04/2004	Nmga/Nto/Nmea	46	28	74	72.310	8.630	80.940
14/04	10/05/2004	15/05/2004	Nkft/Nui/Vtp	96	35	131	177.680	7.410	185.090
15/04	18/05/2004	29/05/2004	Suva						
16/04	5/06/2004	11/06/2004	Nmaga/Nmea/Nto	74	10	84	3.006	58.780	61.786
17/04	19/06/2004	26/06/2004	Vtp/Nui/Nkft	52	34	86	103.729	4.360	108.089
18/04	5/07/2004	10/07/2004	Nklaelae/Nkita	53	24	77	16.640	9.140	25.780
19/04	12/07/2004	8/08/2004	Suva						
20/04	9/08/2004	12/08/2004	Nanumaga/Nanumea/Niutao	85	62	147	148.732	6.325	155.057
21/04	22/08/2004	23/08/2004	Vaitupu/Nukufetau	182	32	214	13.975	9.136	23.111
22/04	24/08/2004	27/08/2004	Nukufetau/Nui/Vaitupu	79	45	124	67.923	9.312	77.235
23/04	28/08/2004	30/08/2004	Niulakita/Nukulaelae	59	19	78	9.365	3.171	12.536
24/04	6/09/2004	9/09/2004	Nanumea/Nanumaga/Niutao	79	50	129	68.354	10.114	78.468
25/04	18/09/2004	21/09/2004	Vaitupu/Nukufetau/Nui/Vaitupu	139	181	320	74.213	12.148	86.361
26/04	22/09/2004	25/09/2004	Nanumaga/Nanumea/Niutao	66	88	154	63.714	8.451	72.165
27/04	26/09/2004	29/09/2004	Niulakita/Nukulaelae	17	23	40	14.217	3.214	17.431
28/04	4/10/2004	9/10/2004	Niutao/Nanumea/Nanumaga/Nkft	92	80	172	87.124	13.214	100.338
29/04	10/10/2004	26/10/2004	Nklaelae/Nkita/Suva	34	8	42	11.321	72.331	83.652
30/04	24/11/2004	26/11/2004	Nui/Vaitupu/Nukufetau	57	113	170	71.453	11.341	82.794
31/04	1/12/2004	5/12/2004	Nui/Nmea/Nmga/Nto	215	102	317	71.142	9.251	80.393
32/04	6/12/2004	18/12/2004	Nklae/Nikt/Suva/Nikt/Nklae	74	162	236	14.127	110.103	124.230
33/04	20/12/2004	23/12/2004	Nui/Nto/Nmga/Nmea	191	50	241	89.121	14.120	103.241
Total				2,519	1,587	4,106	1,800.081	473.671	2,273.752
4/04	30/01/2004	8/02/2004	Suva	196	19	215	14.062	9.310	23.372
15/04	18/05/2004	29/05/2004	Suva	40	11	51	37.451	87.360	124.811
19/04	12/07/2004	8/08/2004	Suva	58	63	121	63.487	102.891	166.378
29/04	10/10/2004	26/10/2004	Suva	38	43	81	13.450	87.450	100.900
32/04	6/12/2004	18/12/2004	Suva	53	169	222	8.560	87.210	95.770
Total				385	305	690	137.010	374.221	511.231
TOTAL				2,904	1,892	4,796	1,937.091	847.892	2,784.983

MV NIVAGA II

YEAR OF 2005

VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)		
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL
1/05	5/01/2005	8/01/2005	Nui/Vaitupu/Nukufetau	72	188	260	79.630	6.214	85.844
2/05	15/01/2005	18/01/2005	Nmga/Nmea/Nto/Vtp	31	107	138	56.230	7.324	63.554
3/05	20/01/2005	5/02/2005	Nklae/Nikt/Suva/Nikt/Nklae	161	115	276	53.680	98.215	151.895
4/05	18/02/2005	23/02/2005	Nui/Vaitupu/Nukufetau	132	206	338	52.230	11.241	63.471
5/05	15/03/2005	18/03/2005	Nkft/Vtp/Nui/Nkft	116	59	175	84.210	6.351	90.561
6/05	25/03/2005	2/04/2005	Nmea/Nmga/Nto	74	36	110	68.250	7.114	75.364
7/05	10/04/2005	15/04/2005	Nkft/Nui/Vtp	69	44	113	89.630	10.239	99.869
8/05	7/05/2005	10/05/2005	Nanumea/Nanumaga	125	30	155	52.360	7.214	59.574
9/05	11/05/2005	13/05/2005	Nanumaga/Niutao	179	19	198	53.630	5.124	58.754
10/05	15/05/2005	17/05/2005	Vaitupu/Nui	371	29	400	62.350	7.452	69.802
11/05	18/05/2005	19/05/2005	Nukufetau/Vaitupu	254	34	288	58.780	11.241	70.021
12/05	27/05/2005	2/06/2005	Nkft/Vtp/Nui/Nto/Nmga/Nmea/Vtp	208	99	307	64.450	13.211	77.661
13/05	4/06/2005	8/06/2005	Nkft/Nmga/Nmea/Nto/Nui/Vtp/Nkft	65	130	195	59.360	12.334	71.694
14/05	11/06/2005	14/06/2005	Niulakita/Nukulaelae	30	56	86	51.350	2.125	53.475
15/05	15/06/2005	19/06/2005	Nmga/Nmea/Niutao	55	102	157	63.540	5.451	68.991
16/05	21/06/2005	10/07/2005	Suva	42	57	99	9.123	112.114	121.237
17/05	11/07/2005	15/07/2005	Vtp/Nmga/Nmea/Nto/Vtp	196	52	248	69.230	7.125	76.355
18/05	18/07/2005	19/07/2005	Vaitupu only	4	181	185	89.320	7.123	96.443
19/05	20/07/2005	24/07/2005	Vtp/Nto/Nmga/Nmea/Vtp	45	206	251	78.930	14.523	93.453
20/05	2/08/2005	5/08/2005	Nmga/Nmea/Nto	85	57	142	56.230	8.325	64.555
21/05	6/08/2005	6/08/2005	Vaitupu only	7	192	199	51.240	5.412	56.652
22/05	14/08/2005	18/08/2005	Nkft/Vtp/Nui	128	41	169	56.980	5.174	62.154
23/05	22/08/2005	23/08/2005	Vaitupu only	191	111	302	56.430	6.325	62.755
24/05	30/08/2005	3/09/2005	Nto/Nmga/Nmea	106	68	174	68.120	5.326	73.446
25/05	6/09/2005	8/09/2005	Nkft/Nui/Vtp	67	99	166	89.230	7.129	96.359
26/05	13/09/2005	16/09/2005	Nmga/Nmea/Nto/Nkft	79	107	186	87.630	10.211	97.841
27/05	29/09/2005	1/10/2005	Suva	11	37	48	9.360	101.427	110.787
28/05	2/11/2005	6/11/2005	Nklae/Nikt	32	42	74	7.364	3.412	10.776
29/05	15/11/2005	18/11/2005	Nkft/Nui/Vtp	48	144	192	53.127	6.148	59.275
30/05	21/11/2005	23/11/2005	Nikt/Nklae	41	36	77	9.354	2.156	11.510
31/05	25/11/2005	29/11/2005	Vtp/Nto/Nmga/Nmea/Vtp	91	221	312	65.148	6.478	71.626
32/05	8/12/2005	12/12/2005	Nklae/Nikt/Suva	140	160	300	7.459	87.631	95.090
33/05	20/12/2005	23/12/2005	Nmea/Nmga/Nto	185	29	214	79.145	9.612	88.757
Total			Domestic	3,440	3,094	6,534	1,893.100	616.501	2,509.601
3/05	20/01/2005	5/02/2005	Suva	169	123	292	11.630	98.750	110.380
16/05	21/06/2005	10/07/2005	Suva	65	47	112	13.240	102.320	115.560
27/05	29/09/2005	1/10/2005	Suva	47	74	121	9.350	87.250	96.600
32/05	8/12/2005	12/12/2005	Suva	57	169	226	8.750	104.360	113.110
Total			International	338	413	751	42.970	392.680	435.650
TOTAL			2005	3,778	3,507	7,285	1,936.070	1,009.181	2,945.251

MV NIVAGA II

YEAR OF 2006

VOYAGE NO.	DATE OF		DESTINATION	PASSENGERS			CARGO (M ³)		
	DEPARTURE	ARRIVAL		OUT	IN	TOTAL	OUT	IN	TOTAL
1/06	4/01/2006	7/01/2006	Nanumaga/Nanumea/Niutao	87	48	135	68.950	12.250	81.200
2/06	17/01/2006	20/01/2006	Nukufetau/Nui/Vaitupu	78	48	126	78.520	11.140	89.660
3/06	21/01/2006	23/01/2006	Niulakita/Nukulaelae	128	69	197	105.230	12.450	117.680
4/06	24/01/2006	24/01/2006	Vaitupu only	88	48	136	86.320	8.270	94.590
5/06	25/01/2006	8/02/2006	Nukulaelae/Niulakita/Suva	86	53	139	9.871	97.140	107.011
6/06	12/02/2006	15/02/2006	Nui/Nukufetau/Vaitupu	114	68	182	83.210	7.130	90.340
7/06	20/02/2006	24/02/2006	Vaitupu/Nanumea/Nanumaga/Nto	98	49	147	88.230	6.320	94.550
8/06	1/03/2006	5/03/2006	Vaitupu/Nui/Nukufetau	86	52	138	87.140	3.140	90.280
9/06	14/03/2006	18/03/2006	Nanumaga/Nanumea/Niutao	106	54	160	96.240	9.150	105.390
10/06	20/03/2006	7/05/2006	Nukulaelae/Niulakita/Suva	87	32	119	13.420	85.640	99.060
11/06	8/05/2006	9/05/2006	Vaitupu	78	45	123	77.540	15.110	92.650
12/06	11/05/2006	14/05/2006	Nukulaelae/Niulakita	76	48	124	85.410	2.120	87.530
13/06	17/05/2006	20/05/2006	Vaitupu/Nui/Nukufetau	84	47	131	83.120	6.410	89.530
14/06	21/05/2006	29/05/2006	Suva						
15/06	4/06/2006	9/06/2006	Nmaga/Nmea/Nto/Nui/Vtp/Nkft	68	34	102	68.240	9.250	77.490
16/06	12/06/2006	16/06/2006	Nui/Vaitupu/Nukufetau	48	21	69	63.210	7.450	70.660
17/06	17/06/2006	29/06/2006	Nauru						
18/06	2/07/2006	18/07/2006	Vtp/Nkft/Nui/Nauru/Nmga/Nto/Nui	89	35	124	57.170	6.350	63.520
19/06	21/07/2006	23/07/2006	Vaitupu/Nukufetau/Nui	77	36	113	64.230	7.370	71.600
20/06	24/07/2006	25/07/2006	Nukulaelae	47	21	68	59.360	3.510	62.870
21/06	25/07/2006	6/08/2006	Nto/Nmga/Nmea/Nauru/Nmea	63	25	88	63.540	5.140	68.680
22/06	10/08/2006	20/08/2006	Suva						
23/06	23/08/2006	24/08/2006	Vaitupu	76	28	104	58.180	3.120	61.300
24/06	24/08/2006	4/09/2006	Suva						
25/06	6/09/2006	10/09/2006	Nanumaga/Nanumea/Niutao	66	28	94	66.320	9.250	75.570
26/06	12/09/2006	16/09/2006	Nukufetau/Nui/Vaitupu	74	38	112	87.250	3.540	90.790
27/06	20/09/2006	23/09/2006	Niulakita/Nukulaelae	84	45	129	103.250	12.110	115.360
28/06	27/09/2006	2/10/2006	Niutao/Nanumea/Nanumaga	169	49	218	135.000	3.240	138.240
29/06	5/10/2006	9/10/2006	Vaitupu/Nui/Nukufetau	87	36	123	96.530	9.160	105.690
30/06	11/10/2006	25/10/2006	Suva						
31/06	28/10/2006	19/11/2006	Suva						
32/06	24/11/2006	29/11/2006	Vtp/Nto/Nmga/Nmea/Vtp	64	101	165	45.130	10.360	55.490
33/06	1/12/2006	9/12/2006	Nkft/Vtp/Nui/Nto/Nmga/Nmea	212	80	292	57.410	10.330	67.740
34/06	15/12/2006	24/12/2006	Nukulaelae/Niulakita/Suva	61	35	96	65.120	8.470	73.590
35/06	27/12/2006	31/12/2006	Nkft/Vtp/Nui/Nto/Nmga/Nmea	91	55	146	56.810	12.230	69.040
Total				2,572	1,328	3,900	2,109.951	397.150	2,507.101
5/06	25/01/2006	8/02/2006	Suva	77	86	163	5.450	103.640	109.090
10/06	20/03/2006	7/05/2006	Suva	52	47	99	7.650	126.210	133.860
14/06	21/05/2006	29/05/2006	Suva	74	41	115	74.420	7.340	81.760
17/06	17/06/2006	29/06/2006	Republic of Nauru	68	35	103	64.230	8.140	72.370
18/06	2/07/2006	18/07/2006	Republic of Nauru						
21/06	25/07/2006	6/08/2006	Republic of Nauru						
22/06	10/08/2006	20/08/2006	Suva	68	29	97	67.260	11.350	78.610
24/06	24/08/2006	4/09/2006	Suva	64	86	150	67.230	10.320	77.550
30/06	11/10/2006	25/10/2006	Suva	148	56	204	116.230	2.640	118.870
31/06	28/10/2006	19/11/2006	Suva	169	41	210	145.360	11.520	156.880
Total				720	421	1,141	547.830	281.160	828.990
TOTAL				3,292	1,749	5,041	2,657.781	678.310	3,336.091

10. コンテナ船 (Southern Moana) の輸送実績 (2004 年 ~ 2006 年)

SOUTHERN MOANA			YEAR - 2004						
VOYAGE NO.	DATE OF		FROM	CONTAINERS			BREAK-BULK (M ³)		
	ARRIVAL	DEPARTURE		IN	OUT	TOTAL	IN	OUT	TOTAL
95/04	3/01/2004	4/01/2004	Auckland/Noumea/Suva/Funafuti	32	46	78	89.790	0.000	89.790
96/04	9/02/2004	10/02/2004	ditto	46	52	98	189.350	0.000	189.350
97/04	28/02/2004	29/02/2004	ditto	53	30	83	174.350	0.000	174.350
98/04	24/03/2004	25/03/2004	ditto	31	43	74	117.560	0.000	117.560
99/04	19/04/2004	20/04/2004	ditto	47	38	85	68.780	0.000	68.780
100/04	10/05/2004	11/05/2004	ditto	39	53	92	86.780	0.000	86.780
101/04	1/06/2004	2/06/2004	ditto	46	35	81	164.580	0.000	164.580
102/04	26/06/2004	27/06/2004	ditto	29	33	62	83.120	0.000	83.120
103/04	24/07/2004	25/07/2004	ditto	33	43	76	74.120	0.000	74.120
104/04	20/08/2004	21/08/2004	ditto	38	34	72	65.230	0.000	65.230
105/04	16/09/2004	17/09/2004	ditto	42	37	79	140.210	0.000	140.210
106/04	19/10/2004	20/10/2004	ditto	28	36	64	68.560	0.000	68.560
107/04	10/11/2004	11/11/2004	ditto	47	35	82	169.870	0.000	169.870
108/04	16/12/2004	17/12/2004	ditto	37	42	79	143.270	0.000	143.270
TOTAL				548	557	1,105	1,635.570	0.000	1,635.570

SOUTHERN MOANA			YEAR - 2005						
VOYAGE NO.	DATE OF		FROM	CONTAINERS			BREAK-BULK (M ³)		
	ARRIVAL	DEPARTURE		IN	OUT	TOTAL	IN	OUT	TOTAL
109/05	21/01/2005	22/01/2005	Auckland/Noumea/Suva/Funafuti	38	30	68	148.230	0.000	148.230
110/05	15/02/2005	16/02/2005	ditto	43	38	81	139.510	0.000	139.510
111/05	12/03/2005	13/03/2005	ditto	48	43	91	79.560	0.000	79.560
112/05	16/04/2005	17/04/2005	ditto	45	35	80	89.230	0.000	89.230
113/05	18/05/2005	19/05/2005	ditto	44	40	84	79.630	0.000	79.630
114/05	23/06/2005	24/06/2005	ditto	37	30	67	96.230	0.000	96.230
115/05	20/07/2006	21/07/2005	ditto	43	41	84	87.540	0.000	87.540
116/05	6/08/2005	7/08/2005	ditto	37	28	65	113.520	0.000	113.520
117/05	25/09/2005	26/09/2005	ditto	45	33	78	91.250	0.000	91.250
118/05	15/10/2005	16/10/2005	ditto	28	24	52	115.320	0.000	115.320
119/05	25/11/2005	26/11/2005	ditto	43	32	75	145.780	0.000	145.780
120/05	23/12/2005	24/12/2005	ditto	45	36	81	112.320	0.000	112.320
TOTAL				496	410	906	1,298.120	0.000	1,298.120

SOUTHERN MOANA			YEAR - 2006						
VOYAGE NO.	DATE OF		FROM	CONTAINERS			BREAK-BULK (M ³)		
	ARRIVAL	DEPARTURE		IN	OUT	TOTAL	IN	OUT	TOTAL
121/06	22/01/2006	23/01/2006	Auckland/Noumea/Suva/Funafuti	51	23	74	70.310	0.000	70.310
122/06	14/02/2006	15/02/2006	ditto	27	18	45	26.210	0.000	26.210
123/06	8/03/2006	9/03/2006	ditto	27	34	61	78.540	0.000	78.540
124/06	2/04/2006	3/04/2006	ditto	22	33	55	98.230	0.000	98.230
125/06	29/04/2006	30/04/2006	ditto	46	33	79	78.250	0.000	78.250
126/06	25/05/2006	26/05/2006	ditto	17	5	22	47.680	0.000	47.680
127/06	21/06/2006	22/06/2006	ditto	28	18	46	75.320	0.000	75.320
128/06	19/07/2006	20/07/2006	ditto	53	32	85	141.210	0.000	141.210
129/06	13/08/2006	14/08/2006	ditto	35	49	84	89.250	0.000	89.250
130/06	8/09/2006	9/09/2006	ditto	46	29	75	139.440	0.000	139.440
131/06	5/10/2006	6/10/2006	ditto	50	35	85	127.440	0.000	127.440
132/06	3/11/2006	4/11/2006	ditto	45	32	77	105.910	0.000	105.910
133/06	2/12/2006	3/12/2006	ditto	37	42	79	98.780	0.000	98.780
134/06	24/12/2006	25/12/2006	ditto	34	35	69	114.560	0.000	114.560
TOTAL				518	418	936	1,291.130	0.000	1,291.130