

Certificate of Analysis

Page 1 of 14

Analytical Report: ABG27823

Eurofins Sample Number: NJ23AA8425-2

Client Account Number: A01610786610

Eurofins Quote Number: NSF6PH23010601

Version: 1



NATA Accreditation No: 15773

Accredited for compliance with ISO/IEC 17025 - Testing

WILO France_t_a_WILO SE 80 Bd de l'Industrie - CS 90527 53005 Laval Cedex FR

Eurofins Sample Number NJ23AA8425-2

Original Received Date: 13-Jul-2023

Description: Stratos PICO-Z 25/0, 5-8

Product Range:

Stratos PICO-Z 20/0, 5-4, Stratos PICO-Z 20/0, 5-6; Stratos PICO-Z 20/0, 5-8; Stratos PICO-Z 25/0, 5-4; Stratos PICO-Z 25/0, 5-6; Stratos PICO-Z 25/0, 5-8; Stratos PICO-Z 30/0, 5-4;

Stratos PICO-Z 30/0, 5-6; Stratos PICO-Z 30/0, 5-8

Containers Submitted: 4 Unit(s)

Analysis

AS/NZS 4020:2018 Compliance Testing

Refer to Attachment # 1

Subcontracted Testing (if performed) is not covered under NATA Accreditation 15773.

NATA accreditation is associated with the testing methods to which the GLP report relates.

Method: AS/NZS 4020, Appendix A and in-house method TMP 191100 & TMP 191101 Analysis Date: 01-Aug-2023

Sample Compliance Assessment

NJ23AA8425-2 meets the requirement(s) for all listed test(s) where specifications were applied.

Supplemental Information

Samples were tested as received. Specifications (if) reported are as provided by the client.

Accredited for compliance with ISO/IEC 17025:2017- Testing. NATA Accreditation Number 15773.



Certificate of Analysis

Page 2 of 14

Analytical Report: ABG27823

Eurofins Sample Number: NJ23AA8425-2

Version: 1



NATA Accreditation No: 15773

Accredited for compliance with ISO/IEC 17025 - Testing

Contracted Company: Eurofins ams Laboratories (Sydney)

179 Magowar Road, Girraween, NSW 2145 Australia SampleReceiptAMS@eurofins.com

TGA Licence No: MI-2021-LI-08995-1 APVMA Licence No: 6241
Questions about this report should be directed to your project manager or the general email listed above.

1. **SAMPLE INFORMATION:**

Methodology: AS/NZS 4020, Appendix A and in-house method TMP-191100 & TMP-191101

Cross Reference No.:	Eurofins ams Laboratories Pty. Ltd., Report Reference No.: NJ23AA8425-1, test completed on 24/10/2023
Interim Reporting:	Not Applicable
Batch No./ Manufacturing Date:	2023
Product Manufacturer:	WILO SE 80 Bd de l'Industrie – CS 90527, 53005 Laval Cedex - France
Sampling Organisation:	WILO SE 80 Bd de l'Industrie – CS 90527, 53005 Laval Cedex - France
General Composition:	Refer to Section 7
Product Use:	In-Line
Product Range:	Stratos PICO-Z 20/0, 5-4, Stratos PICO-Z 20/0, 5-6; Stratos PICO-Z 20/0, 5-8; Stratos PICO-Z 25/0, 5-4; Stratos PICO-Z 25/0, 5-6; Stratos PICO-Z 25/0, 5-8; Stratos PICO-Z 30/0, 5-4; Stratos PICO-Z 30/0, 5-6; Stratos PICO-Z 30/0, 5-8
Temperature Range:	(0 - 65)°C
Previous Testing:	Not Applicable
Sample selection for tests:	As provided by the Submitting Organisation

Sample storage conditions:	Prepared and controlled as per AS/NZS 4020, Appendix A
Extracts:	Prepared as per AS/NZS 4020, Appendices C, D, F & H
	Testing is based on the recommended 'in-the-product' exposure of 1 x Stratos PICO-Z 25/0, 5-8 with a scaling factor of 0.1 (1/10) applied at $(65 \pm 2)^{\circ}$ C to cover a cold and hot water application up to ~65°C.
Testing procedure:	Tests for Organic Compounds, Growth of Aquatic Microorganisms and Mutagenic Activity, <i>Appendices D, E & G</i> , for all non-metallic wetted components with equivalent or larger surface area to volume ratios are cross-referenced to Eurofins ams Laboratories Pty. Ltd. Certificate of Analysis Report No.: NJ23AA8425-1, test completed on 24/10/2023. Refer to Section 7 for product details.
Volume retention:	~120mL

2. <u>SUMMARY OF RESULTS</u>:

APPENDIX	RESULTS
C - TASTE (CLAUSE 6.2)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
D – APPEARANCE (COLOUR AND TURBIDITY) (CLAUSE 6.3)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
D – APPEARANCE (ORGANIC COMPOUNDS) (CLAUSE 6.8)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied Cross referenced to Eurofins ams Laboratories Pty. Ltd. Certificate of Analysis Report No.: NJ23AA8425-1, test completed on 24/10/2023
E - GROWTH OF AQUATIC MICRO- ORGANISMS (CLAUSE 6.4)	PASSED at 'total immersion' exposure Cross referenced to Eurofins ams Laboratories Pty. Ltd. Certificate of Analysis Report No.: NJ23AA8425-1, test completed on 24/10/2023
F - CYTOTOXIC ACTIVITY (CLAUSE 6.5)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied
G - MUTAGENIC ACTIVITY (CLAUSE 6.6)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied Cross referenced to Eurofins ams Laboratories Pty. Ltd. Certificate of Analysis Report No.: NJ23AA8425-1, test completed on 24/10/2023
H - METALS (CLAUSE 6.7)	PASSED at 'in-the-product' exposure with a scaling factor of 0.1 (1/10) applied

Based on completion and evaluation of all tests on 20/10/2023, the product, Stratos PICO-Z 25/0, 5-8; <u>fully complied</u> with the test requirements of AS/NZS 4020:2018 to cover a cold and hot water application up to \sim 65°C, at the recommended 'in-the-product' exposure of 1 x Stratos PICO-Z 25/0, 5-8 with a scaling factor of 0.1 (1/10) applied at (65 ± 2)°C.

Testing although determined by the relevant product Standard, is generally recognised for up to 5 years by the certifying body, providing the testing procedures remain the same, and the background information on all wetted parts and the product are adequately documented. Also, the results stated in the report relate to the samples of the product submitted for testing. Any changes in the material formulation and supplier/manufacturer of all wetted items, the process of manufacture, the method of application, or the surface area-to-volume ratio in the end-use, could affect the suitability of the product for use in contact with drinking water, and re-testing may be required before this actual time frame, governed by the completion and evaluation date.

3. <u>TASTE:</u>

Methodology: AS/NZS 4020, *Appendix C* and in-house method TMP-191130.

Exposure: 'in-the-product'; 1 x Stratos PICO-Z 25/0, 5-8

Extraction temperature: $(65 \pm 2)^{\circ}$ C Scaling factor: 0.1 (1/10) Number of Panellists: 5

No. of samples for Chlorine-free extract: 1 No. of samples for Chlorinated extract: 1

Description	Extract	Test Water	Taste	Taste Description	Test Dilution
			(+ / –)	(No. of tasters)	*(Taste
					intensity)
Test Blank	First 24h	Chlorine-free	NA	NA	NA
	Final 9-day	Chlorine-free	_	_	_
Sample	First 24h	Chlorine-free	NA	NA	NA
	Final 9-day	Chlorine-free	_	_	_
Test Blank	First 24h	Chlorinated	NA	NA	NA
	Final 9-day	Chlorinated	_	_	_
Sample	First 24h	Chlorinated	NA	NA	NA
	Final 9-day	Chlorinated	_	_	_

+ Taste detected - No taste detected NA Not applicable

AS/NZS 4020 test requirement: Minimum of 4 tasters with no discernible taste at the first 1/2 dilution.

Figure in brackets is the number of panellists detecting a taste at this dilution.

<u>Note</u>

- 1. Tasters are given a 14-point scale to describe its intensity, with minimum of 1 as extremely weak, and maximum of >14 as extremely strong. An average of all tasters represents taste intensity.
- 2. First extract becomes final extract.

EVALUATION:

On the basis of these results the samples of this product referred to in this report <u>have complied</u> with the test requirements of AS/NZS 4020:2018, Taste; *Appendix C*.

4. <u>APPEARANCE: COLOUR AND TURBIDITY</u>

Methodology: AS/NZS 4020, Appendix D and in-house methods TMP-191140 and TMP-191106.

Exposure: 'in-the-product'; 1 x Stratos PICO-Z 25/0, 5-8

Extraction temperature: $(65 \pm 2)^{\circ}$ C Scaling factor: 0.1 (1/10)

No. of samples tested: 1

	Haze	COLOUR: en Units HU)	b) TURE Nephelometric (NT	Turbidity Units		
	First 24h	Final 9-day	First 24h	Final 9-day		
Sample Extract pH (9-day) = 5.65	NA	<2	NA	0.07		
Test Blank pH (9-day) = 5.97	NA	<2	NA	0.06		
FINAL RESULT	NA	<2	NA	0.01		
AS/NZS 4020 Test sample requirements		≤ 5	≤0.5			

< = less than \leq = less than or equal to NA Not applicable First extract becomes final extract

For test a), test extractions were performed by Eurofins | ams. The test extracts were subsequently subcontracted to Eurofins | Environment Testing for assessment (NATA Accreditation No. 1261), Report No. 1016635-W-V2. In-house Method based on APHA 2120 B.

EVALUATION:

On the basis of these results the samples of this product referred to in this report <u>have complied</u> with the test requirements of AS/NZS 4020:2018, Appearance (Colour & Turbidity); *Appendix D*.

5. <u>CYTOTOXIC ACTIVITY:</u>

Methodology: AS/NZS 4020, *Appendix F* and in-house method TMP-191160.

Exposure: 'in-the-product'; 1 x Stratos PICO-Z 25/0, 5-8

Extraction temperature: $(65 \pm 2)^{\circ}$ C Scaling factor: 0.1 (1/10)

Extracts: 24h, 48h & 72h No. of samples tested: 1

The test sample extracts from the product, as well as the test blank (test water) were used to prepare a nutrient growth medium, subsequently utilised to grow a monkey kidney cell line (VERO ATCC CCL 81).

Microscopic Examination	Test Sample Extract (24h, 48h and 72h)	Test Blank (24h, 48h and 72h)
Cell Morphology:	Satisfactory	Satisfactory
Monolayer: Confluence/Healthy Growth as ~%	100%	100%

NA = Not applicable

Cytotoxicity was detected with Zinc Sulphate, used as a positive control and analysed at 0.4mM of Zinc. Water for Irrigation was included with the test blank as negative control.

AS/NZS 4020 test sample requirements: 1) Non-cytotoxic response- confluent monolayer similar to test blank.

2) Cytotoxic response- irregularly shaped cells & cell death similar to positive control 0.4mM Zinc Sulphate.

EVALUATION:

On the basis of these results the samples of this product referred to in this report <u>have complied</u> with the test requirements of AS/NZS 4020:2018, Cytotoxic Activity; *Appendix F*.

6. METALS:

Methodology: AS/NZS 4020, Appendix H and in-house methods TMP-191180 and TMP-191230.

Exposure: 'in-the-product'; 1 x Stratos PICO-Z 25/0, 5-8

Extraction temperature: $(65 \pm 2)^{\circ}$ C Scaling factor: 0.1 (1/10) Extracts: 9-day

No. of samples for I: 1 No. of samples for II: 1

Troi or camp			·			1	
Element	AS/NZS 4020: Maximum Allowable Concentration mg/L (ppm)	Limit of Reporting mg/L (ppm)	Test Blank mg/L (ppm)	Sample Extract I mg/L (ppm)	Sample Extract II mg/L (ppm)	FINAL RESULT I mg/L (ppm)	FINAL RESULT II mg/L (ppm)
Aluminium ¹ (Al)	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony ¹ (Sb)	0.003	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic ¹ (As)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Barium ¹ (Ba)	0.7	0.001	<0.001	0.001	0.002	0.001	0.002
Boron ¹ (B)	1.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium ¹ (Cd)	0.002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Chromium ¹ (Cr)	0.05	0.001	<0.001	0.001	0.001	0.001	0.001
Copper ¹ (Cu)	2	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron ¹ (Fe)	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead ¹ (Pb)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese ¹ (Mn)	0.1	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury ¹ (Hg)	0.001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum ¹ (Mo)	0.05	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel ¹ (Ni)	0.02	0.001	<0.001	<0.001	0.001	<0.001	0.001
Selenium ¹ (Se)	0.01	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver ¹ (Ag)	0.1	0.001	<0.001	<0.001	<0.001	<0.001	<0.001

< = less than mg/L = milligram per litre 1 = ICPMS – In-house Method Code: LTM-MET 3040 First extract becomes final extract. NA = Not applicable

Test extractions were performed by Eurofins ams Laboratories Pty. Ltd. The test extracts were subsequently subcontracted to Eurofins | Environment Testing for assessment (NATA Accreditation No. 1261), Report No. 1016635-W-V2. In-house Method based on US EPA Method 3010A & US EPA Method 6020B.

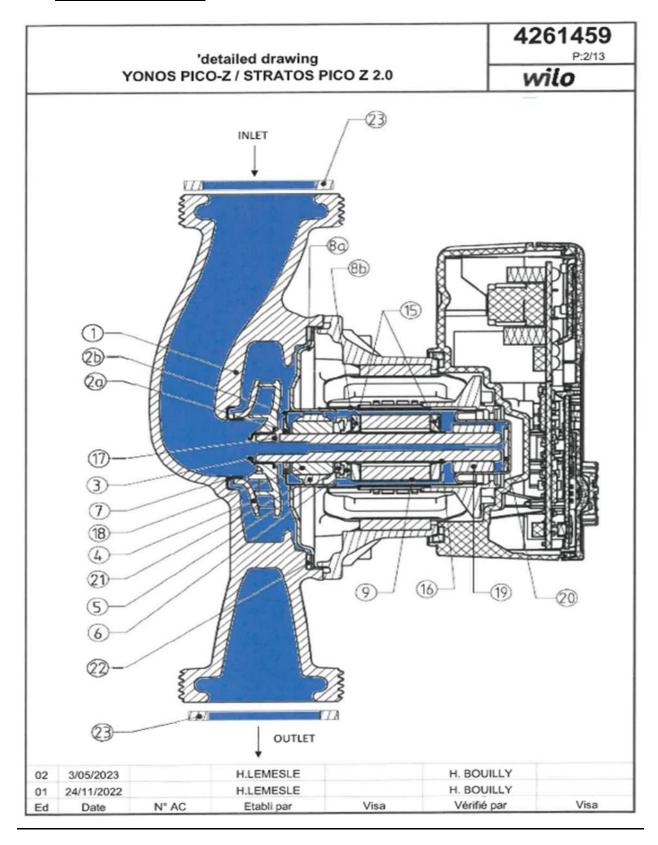
EVALUATION:

On the basis of these results the samples of this product referred to in this report <u>have complied</u> with the test requirements of AS/NZS 4020:2018, Metals; Appendix H.

7.I. PHOTOS OF TEST SAMPLE:



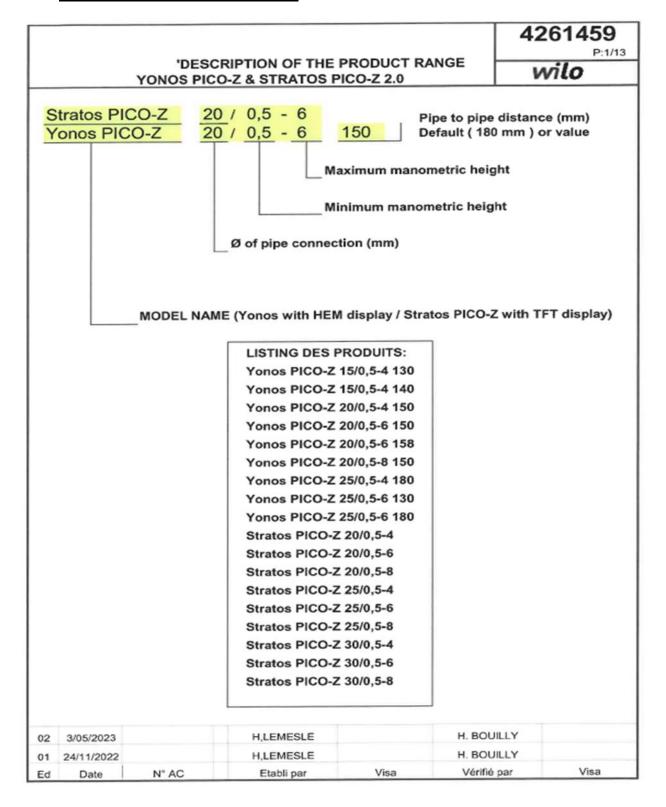
7.II. TECHNICAL DRAWING:



7.III. BILL OF MATERIAL (BOM):

0	0	L	INDICE TECHNIQUE	Technical Index					Approvals	_		Г	
_	2	0	DESIGNATION DES CO	COMPOSANTS for:									
00.00.20	03.05.23	Seque. M	Stratos PICO-Z	0-2 25/0,5-8	PART N°	Material de	Material designation as per nom or standard	IGI6326 KLM	SARW	ACS	Supplier	sed supplier	Water-Whash nm) soehus
	_	-	CORPS-USINE-ECM-D25-180-SS	MACHINED PUMP CASING	4245758	Stainless steel GX2	GX2CrNIMo19-11-2+AT(14409+AT)				Dongying Yicheng Predision Metal Co	£	23400
		g	BAGUE FLOTTANTE	PLOATING RING	4171502	POM-C Acetal Ultrar	Aostal Utraform - S2320 003 AQUA AT UN	9900	0046	0046	FAIVELAY	8	720
		2b	SUPPORT BAGUE FLOTTANTE	ALOATING RING SUPPORT	4200431	Stainless steel	X6Cr17 (1.4016)				METALIS	n	1350
		es	INSERT DE ROUE	MPELLER INSERT	4240916	Stainless steel	X20N/19-11 (1.4305)				PRESSPART	9V	395
	_	*	ROUE D48,5	MPELLER D48,5	4249615	PPO-GF30	E1630PW73701	9800	900	90038	CELSPA.	8	9405
	H.L	19	GRAIN DE BUTEE	THRUST BEARING	2084259	CERAMIC AI203	RAPALLIGHT	1 200	0021		RAUSCHERT Gmbh	84	650
	EMESL	9	SUPPORT BUTEE	THRUST BEARING SUPPORT	4210054	EPDM 80 SHORE	EP DM 07098-80	£100	0043	£#00	TUMEDELS.P.A.	E8	1140
	E	7	BAGUE JOINT ROUE	SUCTION RING	4089039	Stainless steel	X5CrNf18-10 (1.4301)				TURNING PRECISION	12	1130
		.ee	FLASQUE TUBE PORTEUR	CARTRIDGE ENDSHELD	4178842	Stairless steel	XSCrNi18-10 (1.4301)				LEMAN INDUSTRIE	-	4540
	l	2	CHEMISE TUBE PORTEUR	CARTRIDGE CAN	4189618	Stainless steel	X2Cr NIMo17-12-2 (1.4404)				PRESSPART	98	3925
		80	PALIER TUBE PORTEUR	CARTRIDGE BACK BEARING	4190876	Stainless steel	X2CrN18-9 (1.4307)				PRESSPART	9V	800
		6	CHEMISE ROTOR	RO TOR SLEEVE	4147460	Stainless steel	X2CrN118.9 (1.4307) or X2CrN119.11 (1.4306)				PRESSPART	AB	2810
		15	JOUE ROTOR	RO TOR END RING	4210053	Stainless steel	X2Chi18-9 (1.4307) or X5Chi18-10 (1.4301)				SAXONIA-FRANKE AG	Α2	740
	BLE (9	CHEMSEARBRE	RO TOR SHAFT SLEEVE	4210050	Stainless steel	X2CrN18-9 (1.4307)				PRESSPART	9V	09
		11	ARBRE ROTOR	ROTOR SHAFT	4244943	CERAMIC AI203	HILOX 961 BROWN	0024	0024		MORGAN ADVANCED CERAMICS	>	2340
		18	COUSSINET AVANT	FRONT BEARING	4178834 Or	Resin impregnated carbon graphite 3% Carbon graphite	rbon graphite 3% HT 204 HPC835	2000	00007	00007	EUROCARBO	_	910
		9	COUSSINET ARRERE	BACK BEARWG	4178835 Or	Resin impregnated carbon graphite 3% Carbon graphite	thon graphite 3% HT 204 HPC835	7000	00007	0000 0039	EUROCARBO	_	920
		20	BAGUE DE FRICTION	PRICTION PLATE	4200003	ACIER INOX	X2CM118-9 (1.4301)				METALIS	0	240
		21	SUPPORT PALIER AVANT	FRONT BEARING SUPPORT	423 5696	Bass	CuZn40Pb2 (CW617N)				EREDI BAITELLI	20	830
		22	JOINT DE CORPS	PUMP GASKET	4008336	EPDM 70 SHORE	7EP 1197	†000	9000	9000	Le Joint Français	œ	470
		23	JOINT PLAT RU	P.AT GASKET	4239723	EPDM 80 SHORE	EPDM 07096-80	0043	0043	0043	TUMEDELS.P.A.	88	400
								l/S	cm2	Surface	Surface of all water whashed materials	als	57175
			Stratos PICO-Z 25/0,5-8					82	cm2	Surface	Surface of organic materials		16955
						No.	Volume: 139 mL			RATIO S2/S1	251		0.297
	۱	Į										1	

7.IV. DESCRIPTION OF PRODUCT RANGE:



7.V. METALLURGICAL TEST REPORT:



UNIVERSAL SCIENTIFIC LABORATORY PTY LTD

ABN 76 093 281 764

UNIT 12, 65 MARIGOLD STREET, REVESBY NSW 2212, AUSTRALIA PO BOX 49, MILPERRA NSW 2214, AUSTRALIA TELEPHONE: +61(2) 9771 5592 • FACSIMILE: +61(2) 9771 2482 EMAIL: info@usl.com.au WEBSITE: www.usl.com.au

ANALYSIS REPORT

ORIGIN: AMS LABORATORIES P/L

DESCRIPTION: Housing of "Wilo" Recirculating Pump.

ORDER NO: 7903

ALLOY CODE A351 CF8M

COLOUR CODE

REPORT NO: 23/2904

REPORT DATE 12 /10/23

LOG BOOK NO: 230362 HEAT NO:

Sample No.

UNITS W/W %

	С	s	Р	Si	Mn	Cr	Ni	Cu	Мо	٧	Ti
#1	.03	<.01	.02	.61	.78	18.9	9.9	.32	2.2	.06	.01
						SPEC	IFICAT	ION LI	MITS		
MAX:	.08	.040	.040	-	1.50	21.0	12.0		3.0		
MIN:						18.0	9.0		2.0		
						ANALY	TICAL	TECHN	IQUE(S)		
Method	P016	P016	E353	M100	M100	M100	M100	M100	M100	M100	M100

MU= Measurement Uncertainty

REMARKS:

MU

WIL NJ23AA8425-1/-2

This analysis was performed at:

12, 65 Marigold St., Revesby

To the best knowledge of the company the results on this report are correct. however no legal responsibility will be accepted for or arising from their use. Samples were tested as received unless stated otherwise. The report shall not be reproduced unless in full. Measurement uncertainty data are available on request.

WILLIAM TING

AUTHORISING OFFICER

N.a.



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