

NMR PIPETECTOR Installation Report, in UK

Anti-Corrosion Application, Office Victoria, located in London

NMR Corporation

< Installation Purpose and Result >

Office Victoria is located next to the Thistle Westminster Hotel in London and its property is managed by Land Securities that is the UK's leading property company.

For the protection of the hot water pipe work, one NMR Pipetector (PT-50DS) was installed onto the domestic hot water cylinder that has a galvanized flow pipe of 2 inch on January 5 in 2007.

24 days after the installation of NMR Pipetector, the average value of Fe content of the domestic hot water considerably decreased from **1.93mg/l** (highest value is 1.97mg/l and lowest is 1.89mg/l) (before the installation of NMR Pipetector) to **<0.007mg/l**, **<0.007mg/l** 35 days after installation, and **0.01mg/l** (highest is 0.015mg/l and lowest is <0.007mg/l) 150 days after the installation.

All the values of Fe content in water after the installation are much lower than the British Government Standard for Drinking Water of 0.2mg/l. It means that new forming of corrosion (FeO(OH)) inside of the pipe work was immediately terminated, and the existing corrosion is now being changed into magnetite(Fe₃O₄) which is not dissolved into the water and protects the inside of the pipe from corrosion.

< Installation Summary >

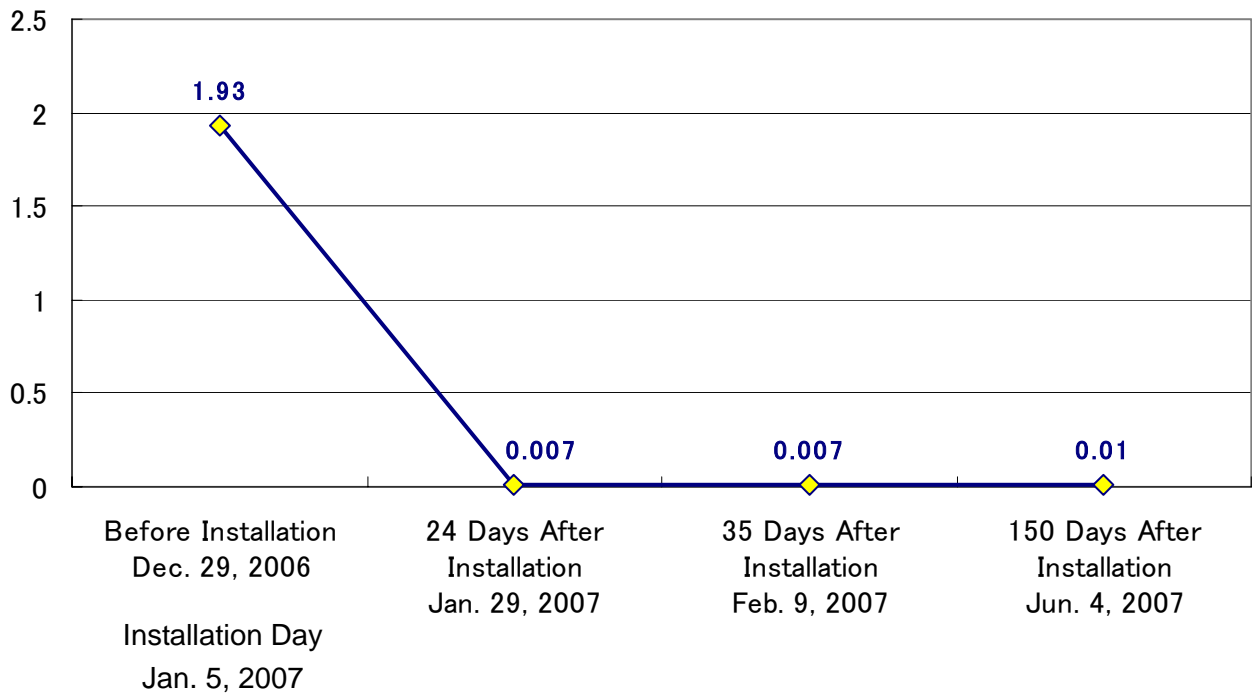
Name of Building :Address	Office Victoria Located next to Thistle Westminster Hotel at Buckingham Palace Road, London SW1W 0QT	
Building Summary	Office building	
Installation Place	Domestic hot water cylinder that is flow pipe to supply the office's domestic hot water.	
Installation Day	January 5 in 2007	
Installation Place Number of installed NMR PIPETECTOR	2 inch hot water flow pipe (SGP)	PT-50DS×1 unit

<Fe content in hot water (mg/l)>

	Before Installation Dec. 29, 2006	Installation Day Jan. 5, 2007	24 Days After Installation Jan. 29, 2007	35 Days After Installation Feb. 9, 2007	150 Days After Installation Jun. 4, 2007	The British Government Standard for Drinking Water
Fe Content in Water (mg/l)	1.97 (8 th floor)		<0.007 (4 th floor)	<0.007 (5 th floor)	<0.007 (4 th floor)	0.2 mg/l
	1.89 (3 rd floor)		<0.007 (4 th floor)	<0.007 (6 th floor)	<0.007 (4 th floor)	
					0.012 (7 th floor)	
					0.015 (7 th floor)	
Average of Fe Content in Water (mg/l)	1.93		<0.007	<0.007	0.01	

Fe Content in Water(mg/l)

Office Victoria
Change of Fe content in water(mg/l)



Certificate of Analysis



STL

1314
0887
1510
1510

Sample **6** Laboratory Number : **832175** Issue **1**
of **9** Report Number : **BR/390964/2006**

Sample Source : **Cambridge Water Company**
Sample Point Description : **Cambridgeshire Water Company**
Sample Description : **OFFICE VICTORIA 3RD FLOOR**

Sample Date : **29 December 2006** Sample Received : **29 December 2006** Analysis Complete : **05 January 2007**

Iron, Total as Fe	1890	ug/l	200	B	SBC44
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Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, G = Analysed at STL Coventry, H = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted
For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella, ND=Not detected in volume of sample filtered. US = Insufficient sample

Certificate of Analysis



STL

1314
0887
1510
1510

Sample **5** Laboratory Number : **832174** Issue **1**
of **9** Report Number : **BR/390964/2006**

Sample Source : **Cambridge Water Company**
Sample Point Description : **Cambridgeshire Water Company**
Sample Description : **OFFICE VICTORIA 8TH FLOOR**

Sample Date : **29 December 2006** Sample Received : **29 December 2006** Analysis Complete : **05 January 2007**

Iron, Total as Fe	1970	ug/l	200	B	SBC44
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Before Installation

Certificate of Analysis



24 Days After Installation



1314
0897
1229
1510

Sample 5 Laboratory Number: 870347
of 6 Report Number: BR/402724/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: LAKE VIEW COURT 4 FLOOR OFFICES
Sample Date: 29 January 2007 Sample Received: 29 January 2007 Analysis Complete: 02 February 2007

1314
0897
1229
1510

Sample 6 Laboratory Number: 870350
of 6 Report Number: BR/402724/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: LAKE VIEW COURT 7TH FLOOR OFFICES HOT WATER
Sample Date: 29 January 2007 Sample Received: 29 January 2007 Analysis Complete: 02 February 2007

Test Description	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44

Test Description	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. IS = Insufficient sample

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. IS = Insufficient sample

Signed: *T. Down* Name: T. Down Date: 02 February 2007
Title: Production Manager

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Certificate of Analysis

35 Days After Installation



1314
0897
1229
1510

Sample 3 Laboratory Number: 889711
of 6 Report Number: BR/405551/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: LVC OFFICE 6TH FLOOR LAKE VIEW OFFICE BUILDING
Sample Date: 09 February 2007 Sample Received: 09 February 2007 Analysis Complete: 13 February 2007

1314
0897
1229
1510

Sample 2 Laboratory Number: 889696
of 6 Report Number: BR/405551/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: LVC OFFICE 6TH FLOOR LAKE VIEW OFFICE BUILDING
Sample Date: 09 February 2007 Sample Received: 09 February 2007 Analysis Complete: 13 February 2007

Test Description	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44



Test Description	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. IS = Insufficient sample

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. IS = Insufficient sample

150 Days After Installation

Certificate of Analysis

1314
0997
1229
1510



Sample 1 Laboratory Number: 10007350
of 13 Report Number: BR/431327/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: lakeview office 4th floor no1
Sample Date: 04 June 2007 Sample Received: 04 June 2007 Analysis Complete: 06 June 2007

Parameter	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcom, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. US = Insufficient sample

Certificate of Analysis

1314
0997
1229
1510



Sample 2 Laboratory Number: 10007351
of 13 Report Number: BR/431327/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: lakeview office 4th floor no2
Sample Date: 04 June 2007 Sample Received: 04 June 2007 Analysis Complete: 06 June 2007

Parameter	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	<7	ug/l	200	B	SBC44

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcom, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. US = Insufficient sample

Certificate of Analysis

1314
0997
1229
1510



Sample 3 Laboratory Number: 10007352
of 13 Report Number: BR/431327/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: lakeview office 7th floor no1
Sample Date: 04 June 2007 Sample Received: 04 June 2007 Analysis Complete: 06 June 2007

Parameter	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	12	ug/l	200	B	SBC44

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Certificate of Analysis

1314
0997
1229
1510

Sample 4 Laboratory Number: 10007353
of 13 Report Number: BR/431327/2007 Issue 1

Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: lakeview office 7th floor no2
Sample Date: 04 June 2007 Sample Received: 04 June 2007 Analysis Complete: 06 June 2007

Parameter	Result	Units	Limit	Accreditation	Method
Iron, Total as Fe	15	ug/l	200	B	SBC44

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcom, L = Analysed at STL Midlands, S = Sub-contracted For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. US = Insufficient sample