

Official Scientific Report of NMR PIPETECTOR Installation

Anti-Corrosion Application, Shepperton Studios, located in London



NMR CORPORATION

* Installation Purpose and result

Shepperton Studio is a film studio with a long history dates back to 1931. One of the original buildings that was once a luxury hotel for film stars and now being used as offices, has a problem of internal corrosion in the old galvanized pipe works, and the film studios did not want to have pipe replacement because this building is listed as grade II buildings, and pipe replacement might cause major problem for building's structure.

For the protection of domestic hot water pipe work, NMR Pipetector was installed. One unit of PT30-DS was installed onto the domestic hot water pipe work.

After the installation of the NMR Pipetector, the Fe content in sample water decreased dramatically from **20mg/l** to **0.37mg/l** at the Gents hot tap, **14.5 mg/l** to **0.39 mg/l** at the Kitchen Hot Tap, **0.34 mg/l** to **0.12 mg/l** at the Disabled Hot Tap in just 10 weeks.

It means that the corrosion (FeO(OH)) inside of the pipe work was terminated and reduced to magnetite (Fe_3O_4) which is not dissolved into the water.

* Installation Summary

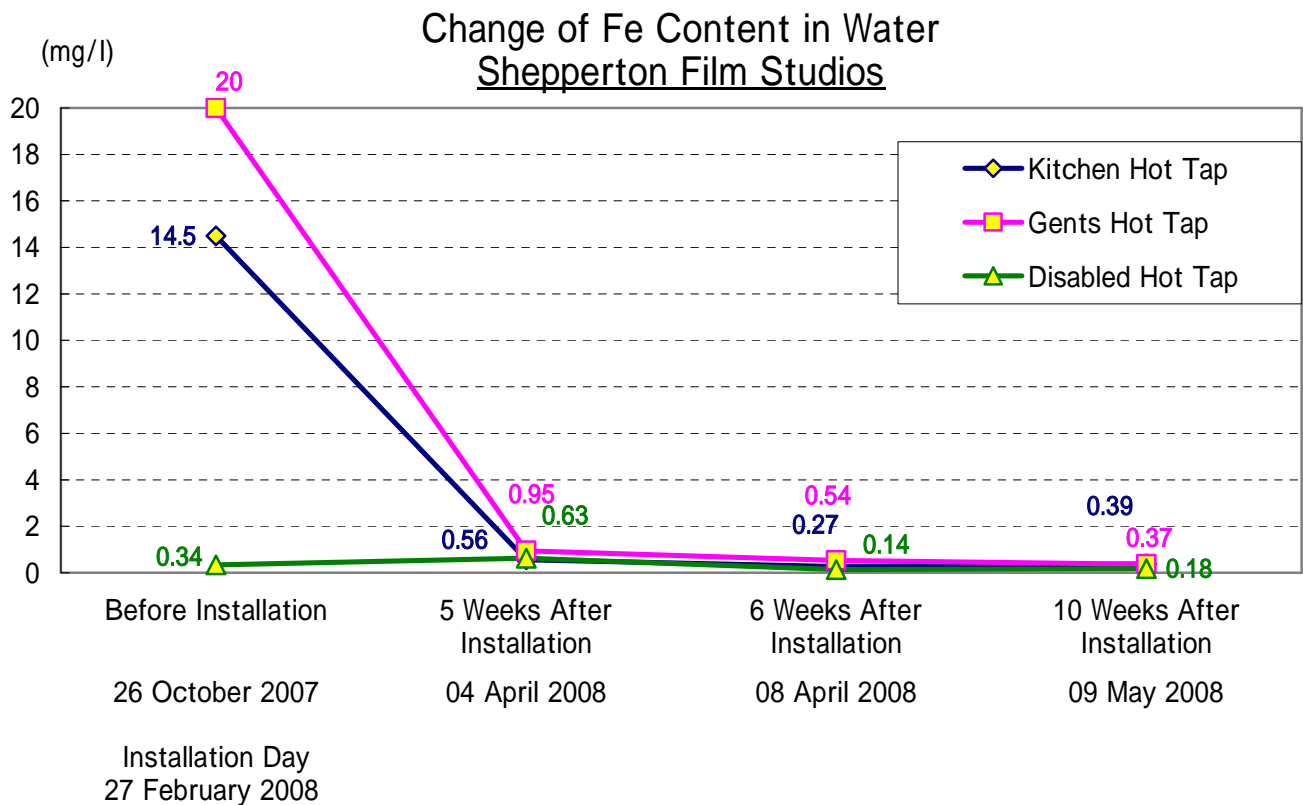
Name of Building: Address	Shepperton Studios, London, Surrey, United Kingdom	
Building Summary	Film Studio	
Installation Day	27 th February, 2008	
Installation Place: Number of installed NMR PIPETECTOR	Hot water header pipe	One unit of PT30-DS

***Fe content in hot water**


	26 October 2007 Before Installation	Installation Day 27 February 2008	04 April 2008 5 Weeks After Installation	08 April 2008 6 Weeks After Installation	09 May 2008 10 Weeks After Installation
Kitchen Hot Tap	14.5 mg/l		0.56 mg/l	0.27 mg/l	0.39 mg/l
Gents Hot Tap	20 mg/l		0.95 mg/l	0.54 mg/l	0.37 mg/l
Disabled Hot Tap	0.34 mg/l		0.63 mg/l	0.14 mg/l	0.18 mg/l

(Sample water was first water in the morning from the tap which was not used for at least 8 hours.)

***Fe content in hot water (mg/l)**



Before Installation

Certificate of Analysis  **SEVERN TRENT STL**

Report Number: BRD/465255/2007 Issue 1
Laboratory Number 10236261 Sample 2 of 4


Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: Shepperton studios ladies hot tap

Sample Date: 23 October 2007 Sample Received 23 October 2007 Analysis Complete: 26 October 2007

Iron, Total as Fe	132	ug/l	200	Y	Bri	5BC44
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Analyst Comments for 10236261: No Analyst Comment

UKAS Code: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCHS/STL, B = Sub-Contracted
List of S1 = ST, Bridgend, Cw = ST, County, M2 = ST, Midlands, Res = ST, Reading, Run = ST, Runcom.
For Monitoring Requirements 0 or Nil/not Detected. For Legality Nil/not Detected in volume of sample tested. 0/nil/not/blank sample

Certificate of Analysis  **SEVERN TRENT STL**

Report Number: BRD/465255/2007 Issue 1
Laboratory Number 10236263 Sample 4 of 4


Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: Shepperton studios disabled hot tap

Sample Date: 23 October 2007 Sample Received 23 October 2007 Analysis Complete: 26 October 2007

Iron, Total as Fe	340	ug/l	200	Y	Bri	5BC44
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Analyst Comments for 10236263: No Analyst Comment

UKAS Code: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCHS/STL, B = Sub-Contracted
List of S1 = ST, Bridgend, Cw = ST, County, M2 = ST, Midlands, Res = ST, Reading, Run = ST, Runcom.
For Monitoring Requirements 0 or Nil/not Detected. For Legality Nil/not Detected in volume of sample tested. 0/nil/not/blank sample

Certificate of Analysis  **SEVERN TRENT STL**

Report Number: BRD/465255/2007 Issue 1
Laboratory Number 10236262 Sample 3 of 4


Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: Shepperton studios gents hot tap

Sample Date: 23 October 2007 Sample Received 23 October 2007 Analysis Complete: 26 October 2007

Iron, Total as Fe	20000	ug/l	200	V	Bri	5BC44
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Analyst Comments for 10236262: No Analyst Comment

UKAS Code: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCHS/STL, B = Sub-Contracted
List of S1 = ST, Bridgend, Cw = ST, County, M2 = ST, Midlands, Res = ST, Reading, Run = ST, Runcom.
For Monitoring Requirements 0 or Nil/not Detected. For Legality Nil/not Detected in volume of sample tested. 0/nil/not/blank sample

Certificate of Analysis  **SEVERN TRENT STL**

Report Number: BRD/465255/2007 Issue 1
Laboratory Number 10236264 Sample 1 of 4


Sample Source: Cambridge Water Company
Sample Point Description: Cambridgeshire Water Company
Sample Description: Shepperton studios kitchen hot tap

Sample Date: 23 October 2007 Sample Received 23 October 2007 Analysis Complete: 26 October 2007

Iron, Total as Fe	14500	ug/l	200	V	Bri	5BC44
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Analyst Comments for 10236264: No Analyst Comment

UKAS Code: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCHS/STL, B = Sub-Contracted
List of S1 = ST, Bridgend, Cw = ST, County, M2 = ST, Midlands, Res = ST, Reading, Run = ST, Runcom.
For Monitoring Requirements 0 or Nil/not Detected. For Legality Nil/not Detected in volume of sample tested. 0/nil/not/blank sample

Signed:  Name: T. Down Date: 26 October 2007
Title: Production Manager

Shepperton Studios 3-6(080728)

5 weeks after Installation

Certificate of Analysis



**SEVERN
TRENT** STL

Report Number: BRD/505436/2008 Issue 1
 Laboratory Number: 10502638 Sample 4 of 6
 Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: SFS DOMESTIC HOT
 Sample Date: 04 April 2008 Sample Received: 04 April 2008 Analysis Complete: 09 April 2008

Test Description	Result	Unit	Limit	Accreditation	Method
Iron, Total as Fe	11400	ug/l	200	Y Bri	SBC44

Analyst Comments for 10502638: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Res = STL Reading, Run = STL Runsom.
 For Microbiological determinands 0 or ND/Not Detected, For Legionella ND/Not Detected in volume of sample filtered. IS=Insufficient sample

Certificate of Analysis



**SEVERN
TRENT** STL

Report Number: BRD/505436/2008 Issue 1
 Laboratory Number: 10502639 Sample 5 of 6
 Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: SFS 1ST FLOOR CLEANERS
 Sample Date: 04 April 2008 Sample Received: 04 April 2008 Analysis Complete: 09 April 2008

Test Description	Result	Unit	Limit	Accreditation	Method
Iron, Total as Fe	630	ug/l	200	Y Bri	SBC44

Analyst Comments for 10502639: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Res = STL Reading, Run = STL Runsom.
 For Microbiological determinands 0 or ND/Not Detected, For Legionella ND/Not Detected in volume of sample filtered. IS=Insufficient sample

Certificate of Analysis



**SEVERN
TRENT** STL

Report Number: BRD/505436/2008 Issue 1
 Laboratory Number: 10502640 Sample 6 of 6
 Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: SFS GROUND FLOOR GENTS
 Sample Date: 04 April 2008 Sample Received: 04 April 2008 Analysis Complete: 09 April 2008

Test Description	Result	Unit	Limit	Accreditation	Method
Iron, Total as Fe	950	ug/l	200	Y Bri	SBC44

Analyst Comments for 10502640: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Res = STL Reading, Run = STL Runsom.
 For Microbiological determinands 0 or ND/Not Detected, For Legionella ND/Not Detected in volume of sample filtered. IS=Insufficient sample

Signed: *R. Robins* Name: R. Robins Date: 09 April 2008
 Title: Team Leader

Certificate of Analysis



**SEVERN
TRENT** STL


Report Number: BRD/505436/2008 Issue 1
 Laboratory Number: 10502637 Sample 3 of 6
 Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: SFS GROUND FLOOR KITCHEN
 Sample Date: 04 April 2008 Sample Received: 04 April 2008 Analysis Complete: 09 April 2008

Test Description	Result	Unit	Limit	Accreditation	Method
Iron, Total as Fe	515	ug/l	200	Y Bri	SBC44

Analyst Comments for 10502637: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Res = STL Reading, Run = STL Runsom.
 For Microbiological determinands 0 or ND/Not Detected, For Legionella ND/Not Detected in volume of sample filtered. IS=Insufficient sample

6 weeks after Installation

Certificate of Analysis



SEVERN TRENT STL

Report Number: **BRD/506194/2008** Issue 1
 Laboratory Number: **10508303** Sample 5 of 9


Sample Source: **Cambridge Water Company**
 Sample Point Description: **Cambridgeshire Water Company**
 Sample Description: **Old House 1st Floor Cleaners Zink**

Sample Date: **08 April 2008** Sample Received **08 April 2008** Analysis Complete: **15 April 2008**

Parameter	Result	Units	Limit	Acceptance	Notes
Iron, Total as Fe	135	ug/l	200	Y	Bri SBC44

Analyst Comments for 10508303: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL, Bridgend, Cov = STL, Coventry, Mid = STL, Midlands, Rea = STL, Reading, Run = STL, Runcom.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, US=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: **BRD/506194/2008** Issue 1
 Laboratory Number: **10508294** Sample 4 of 9


Sample Source: **Cambridge Water Company**
 Sample Point Description: **Cambridgeshire Water Company**
 Sample Description: **Old House Bathroom**

Sample Date: **08 April 2008** Sample Received **08 April 2008** Analysis Complete: **15 April 2008**

Parameter	Result	Units	Limit	Acceptance	Notes
Iron, Total as Fe	266	ug/l	200	Y	Bri SBC44

Analyst Comments for 10508294: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL, Bridgend, Cov = STL, Coventry, Mid = STL, Midlands, Rea = STL, Reading, Run = STL, Runcom.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, US=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: **BRD/506194/2008** Issue 1
 Laboratory Number: **10508293** Sample 3 of 9


Sample Source: **Cambridge Water Company**
 Sample Point Description: **Cambridgeshire Water Company**
 Sample Description: **Old House Ground Floor Kitchen**

Sample Date: **08 April 2008** Sample Received **08 April 2008** Analysis Complete: **15 April 2008**

Parameter	Result	Units	Limit	Acceptance	Notes
Iron, Total as Fe	265	ug/l	200	Y	Bri SBC44

Analyst Comments for 10508293: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL, Bridgend, Cov = STL, Coventry, Mid = STL, Midlands, Rea = STL, Reading, Run = STL, Runcom.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, US=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: **BRD/506194/2008** Issue 1
 Laboratory Number: **10508291** Sample 2 of 9

Sample Source: **Cambridge Water Company**
 Sample Point Description: **Cambridgeshire Water Company**
 Sample Description: **Old House Ground Floor Gents**

Sample Date: **08 April 2008** Sample Received **08 April 2008** Analysis Complete: **15 April 2008**


Parameter	Result	Units	Limit	Acceptance	Notes
Iron, Total as Fe	541	ug/l	200	Y	Bri SBC44

Analyst Comments for 10508291: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
 Analysed at: Br = STL, Bridgend, Cov = STL, Coventry, Mid = STL, Midlands, Rea = STL, Reading, Run = STL, Runcom.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, US=Insufficient sample

Shepperton Studios 5-6(080728)

10 weeks after Installation

Certificate of Analysis



SEVERN TRENT STL

Report Number: BRD/514300/2008 Issue 1
 Laboratory Number 10561570 Sample 1 of 7


Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: Old House Ground Floor Gents

Sample Date: 09 May 2008 Sample Received 09 May 2008 Analysis Complete: 15 May 2008

Test Description	Result	Units	Limits	Accreditation	Method
Iron, Total as Fe	370	ug/l	200	Y Bri	SBC44

Analyst Comments for 10561570: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCBRTS, S = Sub-contracted.
 Analyzed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample tested. IS=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: BRD/514300/2008 Issue 1
 Laboratory Number 10561571 Sample 2 of 7


Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: Old House Top Floor Kitchen

Sample Date: 09 May 2008 Sample Received 09 May 2008 Analysis Complete: 15 May 2008

Test Description	Result	Units	Limits	Accreditation	Method
Iron, Total as Fe	386	ug/l	200	Y Bri	SBC44

Analyst Comments for 10561571: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCBRTS, S = Sub-contracted.
 Analyzed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample tested. IS=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: BRD/514300/2008 Issue 1
 Laboratory Number 10561574 Sample 5 of 7


Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: Old House First Floor Cleaners

Sample Date: 09 May 2008 Sample Received 09 May 2008 Analysis Complete: 15 May 2008

Test Description	Result	Units	Limits	Accreditation	Method
Iron, Total as Fe	117	ug/l	200	Y Bri	SBC44

Analyst Comments for 10561574: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCBRTS, S = Sub-contracted.
 Analyzed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample tested. IS=Insufficient sample

Certificate of Analysis



SEVERN TRENT STL

Report Number: BRD/514300/2008 Issue 1
 Laboratory Number 10561573 Sample 4 of 7

Sample Source: Cambridge Water Company
 Sample Point Description: Cambridgeshire Water Company
 Sample Description: Old House RM 922 Bathroom

Sample Date: 09 May 2008 Sample Received 09 May 2008 Analysis Complete: 15 May 2008

Test Description	Result	Units	Limits	Accreditation	Method
Iron, Total as Fe	8080	ug/l	200	Y Bri	SBC44

Analyst Comments for 10561573: No Analyst Comment
 Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCBRTS, S = Sub-contracted.
 Analyzed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
 For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample tested. IS=Insufficient sample