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SUMMARY REPORT ON THE HYDROPATH  
WATER CONDITIONER DEVICE  
(Project No: WO5223A05)

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SUMMARY

There has been an increase in the distinct problem related to scale blockage of heat exchangers on some has fired instantaneous water heaters and combination boilers. This is primarily due to more combination boilers being installed.

Customer Services Division (HQ) therefore requested WHRS to evaluate a selection of water conditioning and automatic chemical dosing devices, in order to establish their effectiveness in protecting appliances from scaling and identify the potential benefits to British Gas resulting from reduced service and maintenance.

This report is a summary of the evaluation and performance of the Hydropath HP 18 water conditioning device. In tests on the WHRS test rig this unit has performed significantly better than the majority of other non chemical devices tested. It has been demonstrated that the device has the potential to extend the time for a hot water heat exchanger to block to 263 weeks. This is compared with 99 weeks for the best of the other water conditioning devices and 40 weeks if no conditioning is used.

If adopted in only the most severe cases of scaling problems ie (normally 1%) of boilers, the potential savings in servicing to BG should be not less than £72.5m in the first 5 years.

TABLE 1

SUMMARY OF PERFORMANCE DEVICES TESTED

DEVICE	CYCLES TO BLOCKAGES	BETTERMENT NUMBER b/a	LIFE TO BLOCKAGE (WEEKS)	COST £
CONTROLS	1697 (a)	1.00	40.40	No device
HDL	1580 (b)	0.93	37.60	82.65 exc vat
AQUADIAL	1589 (b)	0.94	37.80	31.00 exc vat
WIZARD	1712 (b)	1.01	40.80	49.99 exc vat
POLAR	1999 (b)	1.18	47.60	151.23 exc vat
MAGNAFLO DESCALAMATIC	4176 (b)	2.46	99.40	232.14 inc vat
SCALEMASTER	1856 (b)	1.09	44.20	65.50 exc vat
SCALEWATCHER	3411 (b)	2.01	81.20	180.00 exc vat
HYDROMAG	3397 (b)	2.00	80.90	400.00 exc vat
HYDROPATH HP18 (PREPRODUCTION UNIT)	11425 (b)	6.50	263	100.00 inc vat
REPEAT TEST HYFROPATH HP18 (SAME UNIT AS ABOVE CONTINUING ON TEST)	8625 (b)	5.08	205	100.00 inc vat
HYDROPATH  (PRODUCTION UNIT REPEAT TEST HYDROPATH)	5256 (b)	3.10	125	100.00 inc vat

**British Gas Research & Technology Division**  
**Vertaling test uitslag prestatie van fysische anti-kalk apparaten**

Opwarming en afkoelen cycli van boilerketel gevoed met hard water

<u>Apparaat</u>	Cycli tot blokkering	Prestatie verhouding tot controle unit	Overeenkomstige bedrijfstijd tot blokkering in	Investeringsprijs in euro ex. B.T.W.
<b>Controle zonder apparaat</b>	<b>1697</b>	<b>1</b>	<b>40,4</b>	<b>Geen apparaat</b>
<b>HDL</b>	<b>1580</b>	<b>0,93</b>	<b>37,6</b>	<b>124</b>
<b>AQUADIAL</b>	<b>1589</b>	<b>0,94</b>	<b>37,8</b>	<b>46,50</b>
<b>WIZARD</b>	<b>1712</b>	<b>1,01</b>	<b>40,8</b>	<b>75</b>
<b>POLAR</b>	<b>1999</b>	<b>1,18</b>	<b>47,6</b>	<b>226,50</b>
<b>MAGNOFLOW DESCALAMATIC</b>	<b>4176</b>	<b>2,46</b>	<b>99,4</b>	<b>348</b>
<b>SCALEMASTER</b>	<b>1856</b>	<b>1,09</b>	<b>44,2</b>	<b>98,25</b>
<b>SCALEWATCHER</b>	<b>3411</b>	<b>2,01</b>	<b>81,2</b>	<b>270</b>
<b>HYDROMAG</b>	<b>3397</b>	<b>2,0</b>	<b>80,9</b>	<b>600</b>
<b>HYDROFLOW HP 18</b>	<b>11425</b>	<b>6,5</b>	<b>263</b>	<b>180</b>
<b>Herhaalde test HP18:</b>				
<b>Zelfde unit als boven</b>	<b>8625</b>	<b>5,08</b>	<b>205</b>	<b>180</b>
<b>HYDROFLOW productieunit</b>	<b>5256</b>	<b>3,1</b>	<b>125</b>	<b>180</b>