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- (71) **Applicant (for all designated States except US):** **i2O WATER LIMITED** [GB/GB]; Epsilon House, University of Southampton Science Park, Southampton, Hampshire (GB).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** **BURROWS, Andrew** [GB/GB]; Hillside, High Street, Soberton SO32 3PN (GB).
- (74) **Agent:** **DEHNS**; St. Bride's House, 10 Salisbury Square, London EC4Y 8JD (GB).
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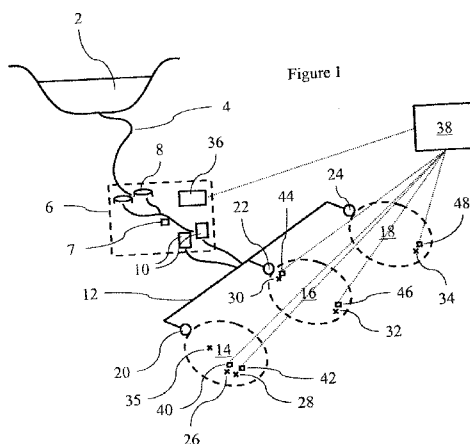
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(88) **Date of publication of the international search report:**  
10 September 2010

(54) **Title:** REGULATED SUPPLY OF TREATED WATER FOR REGIONAL SUPPLY NETWORKS



(57) **Abstract:** Water is supplied from a mains water supply station (6) to a main supply-conduit (12) which feeds a plurality of regional supply networks (14,16,18), via respective pressure reducing valves (20, 22, 24), at respective regional pressures. Each regional supply network has a boundary value for a parameter related to a property of the water, which may be water pressure or concentration of a water treatment agent. Each network has a critical point at which the value of the parameter is deemed least acceptable. Water supply characteristics in respect of each regional supply network (14,16,18) are monitored and the water supplied into the main supply conduit is processed to ensure acceptable values of the parameter are maintained at each critical point. Processing of the water may comprise controlling the output of one or more pumps arranged to pressurize the water supplied into the main supply conduit (12), or it may comprise controlling the addition of water treatment agent. Moreover, the processing of the water may be dependent on any one or more of : time, hour of the day, season, ambient air temperature.

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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2009/002963

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 03/057998 A2 (OPTIMUS WATER TECHNOLOGIES LTD [IL]; EPHRAT URI [IL]; GLEICHMAN ABRAHA) 17 July 2003 (2003-07-17) pressure reducing valves at branchings to suburbs or buildings; page 3, line 4 - line 9	1-3
X	US 6 245 224 B1 (ENOKI HIDEO [JP] ET AL) 12 June 2001 (2001-06-12)	1,4-14
Y	column 4, line 45 - column 5, line 30 column 6, line 34 - line 44 column 6, line 45 - column 7, line 17; figures 1-4	13
X	FR 2 915 755 A1 (SUEZ ENVIRONNEMENT SA [FR]) 7 November 2008 (2008-11-07)	1,4-14
Y	page 1, line 5 - line 10 page 1, line 17 - page 2, line 7 page 5, line 7 - page 6, line 38 page 2, line 12 - line 23; figures 1,2	13
X	US 2007/090059 A1 (PLUMMER ROBERT J [US] ET AL) 26 April 2007 (2007-04-26)	1,4-14
Y	paragraphs [0021], [0022], [0025], [0034], [0048], [0050]; claims 1,11,14; figure 1	13
Y	US 2004/020862 A1 (BACA ANTHONY MICHAEL [US] ET AL) 5 February 2004 (2004-02-05) paragraphs [0024], [0025], [0029], [0030], [0054], [0055]; claims 1,18,19,21	1,13
Y	US 2005/199483 A1 (KROLL DAN J [US]) 15 September 2005 (2005-09-15) paragraphs [0011], [0020], [0021], [0033]; claims 1,5	1,13
A	WO 2005/022145 A2 (PDA SECURITY SOLUTIONS INC [US]; PAGE DANIEL V [US]) 10 March 2005 (2005-03-10) paragraphs [0026] - [0029]; claims 1,4,5	1,13

# INTERNATIONAL SEARCH REPORT

International application No.  
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## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 14(completely); 7-12(partially)

a method and a controller for controlling the pressure of water that is supplied from a mains water supply station to a main supply conduit, the main supply conduit feeding the water to a plurality of regional supply networks.

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2. claims: 1, 4-6, 14(completely); 7-13(partially)

a method and a controller for controlling the addition of a treatment agent (such as a dye, a flavour enhancer or chlorine) to the water that is supplied from a mains water supply station to a main supply conduit, the main supply conduit feeding the water to a plurality of regional supply networks.

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3. claims: 1, 14(completely); 13(partially)

a method and a controller for controlling the application of an antimicrobial treatment (such as with UV light) of the water that is supplied from a mains water supply station to a main supply conduit, the main supply conduit feeding the water to a plurality of regional supply networks.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/GB2009/002963
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Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
JP 6303677	A	28-10-1994	NONE	
WO 2008114036	A1	25-09-2008	AU 2008228011 A1 CA 2681518 A1 CN 101681176 A EP 2132612 A1 GB 2461451 A US 2010126601 A1	25-09-2008 25-09-2008 24-03-2010 16-12-2009 06-01-2010 27-05-2010
US 6017193	A	25-01-2000	JP 3673066 B2 JP 11082897 A	20-07-2005 26-03-1999
WO 03057998	A2	17-07-2003	AU 2002360202 A1 BR 0215475 A CA 2469838 A1 EP 1474731 A2 JP 2005514544 T US 2005016593 A1	24-07-2003 09-11-2004 17-07-2003 10-11-2004 19-05-2005 27-01-2005
US 6245224	B1	12-06-2001	JP 3451959 B2 JP 2000084537 A	29-09-2003 28-03-2000
FR 2915755	A1	07-11-2008	EP 2145051 A2 WO 2008148952 A2 US 2010141459 A1	20-01-2010 11-12-2008 10-06-2010
US 2007090059	A1	26-04-2007	NONE	
US 2004020862	A1	05-02-2004	US 2005263444 A1	01-12-2005
US 2005199483	A1	15-09-2005	CA 2559258 A1 EP 1730078 A1 WO 2005090239 A1	29-09-2005 13-12-2006 29-09-2005
WO 2005022145	A2	10-03-2005	AT 377190 T CA 2532079 A1 CN 101076723 A DE 602004009803 T2 EP 1649278 A2	15-11-2007 10-03-2005 21-11-2007 14-08-2008 26-04-2006