SOUTH-WEST CHEMICAL SERVICES

Specialising in Environmental & bore monitoring, water, soil analysis, bacteriological testing,
Iron & Manganese Removal, Chemical, Environmental & Consultancy Services.
Mr Peter Hutchison, 19 Frances Road, Gelorup, WA...6230
Telephone & Fax: 9795 9821 Mobile: 0402 572 849
Email: hutchison_p2@optusnet.com.au

Client Name:	**Quantum Filtration Medium**	Job No: 040120
Address:	Leschenault Drive, North Shore, Bunbury, WA 6230	
Tel No:	97214044 Fax No: 97214046	Mob: -
Email:	factory@iinet.net.au	
Date Received:	15th January 2004	Lab No: 1628
Report date:	30th January 2004	
Sample Source:	North bore water sample taken from Bunbury Power Station site, Bunbury,WA	
Sample Use:	Filtration trial	
Test Method:	Samples submitted by client are analysed on as received basis.	
	Analysis performed in accordance with MPL WILAB 5.0, 6.0 and 8.0	
	Analysis performed by NATA Laboratory MPL Laboratories.	
	NATA Laboratory Accreditation Number: 2220.	

SEE ATTACHED REPORT

Peter Hutchison
Consultant
Analytical Chemist
BSc. Chemistry

30th January 2004

CERTIFICATE OF ANALYSIS

Chemical Water Analysis

		DETECT LIMIT	RECOMM. MAXIMUM	UNIT	Bore (Raw) water (Untreated)	Bore water plus Arsenic (no floc)	Bore water plus Arsenic plus Ferric Chloride floc	Top surface of settled tank water after 12.75hr	Settled water taken from lower tap after 12.75hr	Bore water plus Arsenic plus Ferric Chloride floc through DMI 65 Sample 1. (Treated)	Bore water plus Arsenic plus Ferric Chloride floc through DMI 65 Sample 2. after an hour throughput (Treated)	Bore water plus Arsenic (no floc) through DMI 65 (Treated)
	Sample ID				1	2	3	4	5	F2	F3	F4
1.	Conductivity	1 +	N/S	µS/m	690	690	700	710	740	720	710	720
2.	TDS (Calculated)	1 +	1000	mg/L	440	440	450	450	480	460	460	460
3.	pH	+	6.5 to 8.5		7.55	7.35	6.8	7.1	7.4	7.55	7.45	7.6
4.	Sodium	5	180	mg/L	85	85	85	80	90	90	90	85
5.	Iron	0.01	0.3	mg/L	0.92	0.90	16	1.2	1.2	0.03	0.06	0.07
6.	Manganese	0.01	0.1	mg/L	0.06	0.06	0.16	0.16	0.16	<0.01	<0.01	<0.01
7.	Chloride	1	250	mg/L	120	130	130	130	130	130	130	140
8.	Zinc	0.01	3	mg/L	<0.01	<0.01	0.16	0.10	<0.01	<0.01	<0.01	<0.01
9.	Arsenic	1	7	µg/L	<1	78	77	20	21	<1	<1	<1

The Recommended Maximums are taken from "Australian Drinking Water Guidelines" published by NHMRC and ARMC 1996 (* refers to updated value September 2001)

N/S = No Specified Maximum given

+ = indicates sample received outside holding time recommended by AS/NZ 5667.1.:1998

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Test Method:	Samples submitted by client are analysed on as received basis. Analysis performed in accordance with MPL WILAB 5.0, 6.0 and 8.0 Analysis performed by NATA Laboratory MPL Laboratories.		

COMMENTS ON ANALYSIS

Chemical Water Analysis

The analysis results (including Arsenic) for water samples are attached.
9 parameters were tested.

Analysis was performed in accordance to NATA certification.

Results were compared to values taken from "Australian Drinking Water Guidelines" published by NHMRC and ARMC 1996 (* refers to updated value September 2001)

All analysed results for the "filtered" water samples were within "Australian Drinking Water Guidelines".

Results appear to indicate that:-

1. Adding Ferric Chloride only to the bore water, reduced values of Arsenic from 78 µg/L to 20 µg/L.
   The DMI 65 Sand Media reduced the remaining 20 µg/L Arsenic to an undetectable level of less than 1 µg/L.

2. 78 µg/L Arsenic in water can be removed to values of less than 1 µg/L when filtered through the DMI 65 Sand Media, whether the water has been pre-treated with Ferric Chloride flocculating agent or not.

3. 16 mg/L Iron in water was reduced to 1.2 mg/L by using Ferric Chloride as a flocculant. Water containing 1.2 mg/L Iron when passed through the DMI 65 Sand Media reduced the iron to between 0.03 and 0.06 mg/L.

4. The Manganese value was not reduced by the Ferric Chloride treatment.

   Water containing 0.16 mg/L Manganese when passed through the DMI 65 Sand Media reduced the value to an undetectable level of less than 0.01mg/L.

If we can be of any further assistance regarding analysis interpretation or any other chemical matter, please do not hesitate to contact South West Chemical Services on 9795 9821.

Peter Hutchison
Consultant Analytical Chemist
BSc. (Chemistry)

30th January 2004