BETWEEN

THE BODY CORPORATE FOR URBAN QUARTER CTS 32535

AND

[INSERT]

CARETAKING AGREEMENT

OMB SOLICITORS
Level 1, 9 Seabank Lane
SOUTHPORT QLD 4215
Ph: (07) 5555 0000
Fax: (07) 5555 0055
Matter No: 1417258

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SCHEDULE 6

CARETAKING AGREEMENT

This Agreement is made on the day of 2022

PARTIES

BETWEEN: **The Body Corporate for Urban Quarter CTS 32535**
("the Body Corporate")

AND:
("the Contractor")

INTRODUCTION

A. The Body Corporate is obliged by the Act to administer, manage and control the Common Property for the benefit of the Lot Owners.

B. The Accommodation Module empowers the Body Corporate to engage a service contractor to administer, manage and control the Common Property.

C. The Contractor wishes for the Body Corporate to appoint the Contractor as its service contractor.

D. The Body Corporate agrees to engage the Contractor as its service contractor subject to the terms and conditions of this Agreement.

E. The parties have agreed to enter into this Agreement to record the arrangements between them.

IT IS NOW AGREED:

1. DEFINITIONS AND INTERPRETATION

1.1. **Definitions**

In this Agreement unless the context otherwise requires the following expressions have the following meanings:

1.1.1. **Abandoned** means a failure by the Contractor to perform the Duties and obligations contained within this Agreement for four (4) consecutive days;

1.1.2. **Accommodation Module** means the *Body Corporate and Community Management (Accommodation Module) Regulation 2020*;

1.1.3. **Act** means the *Body Corporate and Community Management Act 1997* (Qld);

1.1.4. **Agreement** means this Caretaking Agreement and all and any annexures and schedules hereto;

1.1.5. **Approved Nominee** means the nominee of the Contractor, if the Contractor is a corporation or partnership, appointed and approved pursuant to clause 8 of this Agreement;

1.1.6. **Body Corporate** means the Body Corporate for Urban Quarter CTS 32535;

1.1.7. **Business Day** means any day that trading banks are open for business in the State of Queensland;

1.1.8. **By-laws** means the by-laws for the Body Corporate;

1.1.9. **Caretaking Duties** means the duties and obligations of the Contractor pursuant to this Agreement as identified therein and comprising the following:

1.1.9.1. Attending to the tasks and duties itemised and at the frequency set out within the Maintenance Schedule;

The parties acknowledge the tasks and duties and frequency of same itemised in the Maintenance Schedule are specified for a 12-month period. This representation is intended as a guide only and to avoid doubt, the tasks, duties and frequency of same itemised in the Maintenance Schedule shall continue to apply, and at the same frequency throughout the entire term of this Agreement.

1.1.9.2. Ensuring that the compliance requirements are carried out and adhered to as itemised within the Compliance Requirements Schedule;

1.1.9.3. Ensuring that the tasks and matters contained within the Maintenance and Safety Logbook (including but not limited to the Emergency Plan) are read, understood, carried out and adhered to at the frequencies set out therein;

1.1.9.4. Ensuring that the Monthly Caretaker Report is completed and provided to the Body Corporate Representative on the first Monday of each calendar month;

1.1.10. **Commencement Date** means _____;

1.1.11. **Common Property** means the common property of the Community Titles Scheme and all improvements thereon, including but not limited

to services, fixtures, fittings and all movable property and assets of the Body Corporate located on the Common Property;

1.1.12. **Committee** means the committee of the Body Corporate (within the meaning of that term under the Act) from time to time;

1.1.13. **Community Titles Scheme** means Community Titles Scheme 32535;

1.1.14. **Compliance Requirements Schedule** means the document attached at Schedule 2;

1.1.15. **Contractors Storage Shed** means the storage shed located on the Common Property of the Body Corporate;

1.1.16. **End Date** means the expiration of the period of three (3) years from the Commencement Date.

1.1.17. **Events of Default** means those events of default defined in this Agreement;

1.1.18. **Maintenance Schedule** means the document attached within Schedule 1;

1.1.19. **GST** means the goods and services tax as provided by the *A New Tax System (Goods and Services Tax) Act 1999* as amended or replaced from time to time and includes any value added tax or other tax that may replace GST in the future;

1.1.20. **Insolvency Event** means any of the following:

1.1.20.1. an administrator or receiver or receiver or manager being appointed;

1.1.20.2. the Contractor executing a deed of company arrangement otherwise than for the purpose of an amalgamation or reconstruction;

1.1.20.3. the entry by the Contractor into a scheme of arrangement or a composition with, or assignment for the benefit of, all or any class of its creditors, or a moratorium involving any of them, otherwise than for the purpose of an amalgamation or reconstruction;

1.1.20.4. the party being insolvent within the meaning of section 95A(2) of the *Corporations Act 2001* (Cth);

1.1.20.5. the making of a winding up order, or the passing of, or attempted passing of, a resolution for winding up, except for the purposes of reconstruction or amalgamation;

1.1.20.6. anything analogous to or of a similar effect to anything described above under the law of any relevant jurisdiction.

1.1.21. **Lot** means a lot which forms part of the Community Title Scheme;

1.1.22. **Lot Occupier** means a tenant, licensee or resident of a Lot;

1.1.23. **Lot Owner** means an owner of a Lot;

1.1.24. **Maintenance and Safety Logbook** means the document attached at Schedule 3;

1.1.25. **Management Equipment** means all and any plant and equipment owned by the Body Corporate and made available to the Contractor or for its use for the sole purpose of enabling the Contractor to render the Caretaking Duties, which said plant and equipment is itemised in Schedule 6 annexed hereto, as amended by the Body Corporate from time to time to include all replacements and additional plant and equipment made available to the Contractor for its use during the Term;

1.1.26. **Monthly Caretakers Report** means the document attached at Schedule 4;

1.1.27. **Parties** mean the Body Corporate and the Contractor;

1.1.28. **Property** means the Community Titles Scheme known as “Urban Quarter” at in the State of Queensland;

1.1.29. **Related** Persons means:

1.1.29.1. in the case of a corporation – the corporation’s directors, substantial shareholders and principal staff; or

1.1.29.2. in the case of a partnership – the partners and principal staff of the partnership; or

1.1.29.3. in the case of a unit trust – the trustee or a specifically named beneficiary; or

1.1.29.4. in the case of a discretionary trust – the trustee or a specifically named beneficiary that receives income from the trust if the trustee does not make a discretionary distribution in a particular year;

1.1.30. **Remedial Action Notice** means a notice issued to the Contractor by the Body Corporate and complying with the requirements of the Accommodation Module for a Remedial Action Notice;

1.1.31. **Representative** means the person appointed by the Committee, from time to time, pursuant to clause 9 of this Agreement;

1.1.32. **Serious Offence** means an offence involving fraud, dishonesty, theft, illicit drugs, the use of or the threatened use of violence or an offence of a sexual nature; and

1.1.33. **Term** means the period of 3 (three) years from the Commencement Date, unless terminated earlier in accordance with this Agreement.

1.2. **Interpretation**

In the interpretation of this Agreement, unless the context otherwise requires:

1.2.1. a reference to the singular shall include a reference to the plural and vice versa;

1.2.2. a reference to one gender shall include a reference to the other gender;

1.2.3. a reference to a person shall include a reference to an individual, firm, association, trust, entities corporate and unincorporated, or an authority (or any two or more of them) and vice versa;

1.2.4. a reference to an Act of Parliament or section or schedule of that Act will be read as including a reference to all statutory provisions consolidating, amending or replacing the statute referred to and all regulations, rules, by-laws, proclamations, orders and other authorities pursuant to the statute;

1.2.5. where a word or phrase is given a particular meaning, other parts of speech or grammatical forms of that word or phrase have corresponding meanings;

1.2.6. a reference to a recital, clause, schedule or annexure will be construed as a reference to a recital, clause, schedule, or annexure to this Agreement;

1.2.7. a reference to a document or agreement includes a reference to that document or agreement as amended, novated, supplemented or varied;

1.2.8. headings are included for convenience only and shall not affect the interpretation of this Agreement or any schedule;

1.2.9. if any day appointed or specified by the Agreement falls on a Saturday, Sunday or public holiday in the city in which the Scheme is located, the day so appointed will be deemed to be the next day which is not such a day;

1.2.10. a reference to a Party will be construed as a reference to a Party to this Agreement and include a reference to that Party's successors, representatives, or permitted assigns; and

1.2.11. where a Party comprises two or more persons an agreement or obligation to be performed or observed by that Party binds those persons jointly and severally and a reference to that Party includes a reference to any one or more of those persons; and

1.2.12. recitals shall form the operative parts of this Agreement.

2. APPOINTMENT AND AUTHORISATION OF CONTRACTOR

2.1. For the Term, the Body Corporate appoints the Contractor to render and perform the Caretaking Duties on the terms and conditions of this Agreement.

2.2. The Contractor warrants that it will perform the Caretaking Duties in a safe, thorough and professional manner, and in accordance with all applicable laws, approvals, codes, standards, policies, procedures and guidelines.

2.3. The Contractor accepts the appointment under clause 2.1 subject to the terms and conditions of this Agreement.

2.4. The Contractor warrants that it has received legal advice on this Agreement or has had the opportunity to receive legal advice on this Agreement.

3. DURATION

3.1. This Agreement shall commence on the Commencement Date and continue until 5:00pm on the End Date unless terminated earlier under this Agreement.

4. CARETAKING DUTIES AND OBLIGATIONS

4.1. The Contractor shall, at its own cost and expense, for the duration of this Agreement:

4.1.1. perform the Caretaking Duties;

4.1.2. report to the Committee in the form set out in Schedule 4 or as directed by the Committee from time to time;

4.1.3. perform or ensure that the Caretaking Duties are performed at all reasonable times and in a manner that does not cause any unnecessary nuisance or disturbance to any Lot Owner, Lot Occupier or the Common Property;

4.1.4. be available to be contacted by Lot Owners and Lot Occupiers by mobile telephone during the hours of 7:00am to 3:00pm each day. If the Contractor is unable to, for whatever reason, receive the telephone call, the Contractor must return that telephone call within sixty -minutes;

4.1.5. obtain and maintain all approvals, permits or licences it is required to hold, so that it can lawfully carry out its obligations under this Agreement;

4.1.6. comply with the By-Laws and all and any lawful directions or requirements of the Body Corporate or a regulatory authority and all statutes, ordinances, codes or other laws;

4.1.7. supply all plant and equipment necessary for the Contractor to perform the Caretaking Duties and maintain and keep the same in good working order and condition. All such plant and equipment acquired by the Caretaker under this clause remain the property of the Caretaker;

4.1.8. maintain, service (if applicable), repair and generally keep in good and proper working order all Management Equipment of the Body Corporate;

4.1.9. provide all personnel, be they employees or sub-contractors, it deems necessary to perform its duties and obligations pursuant to this Agreement;

4.1.10. if the Caretaker damages beyond repair any of the Management Equipment due to its own negligence or incorrect use, it will be responsible to replace, at its own cost, such Management Equipment;

4.2. The Contractor must, within a reasonable time after the beginning of the Term, become familiar, and maintain that familiarity, with:

4.2.1. the By-laws of the Scheme;

4.2.2. the layout of the Common Property, if necessary and required for the Duties;

4.2.3. the location and operation of the Utility Infrastructure, as defined under the Act;

4.2.4. the matters that must be fulfilled to comply with the fire safety approval for the Complex and the fire safety regulations; and

4.2.5. the security devices and systems used in the Scheme but excluding anything of that nature located within a Lot.

4.3. The Contractor shall, at the expiration or termination of this Agreement:

4.3.1. return all consumables, and plant and equipment to the Body Corporate;

4.3.2. return all Management Equipment to the Body Corporate in good and proper working order;

4.3.3. return all property in relation to, in connection with, or otherwise associated with security, access or entry to the Body Corporate, including but not limited to:

4.3.3.1. gate keys;

4.3.3.2. security FOBS; and

4.3.3.3. any other item, property or material belonging to the Body Corporate;

4.3.4. at its own cost and expense, repair the Management Equipment to ensure it is in good and proper working order when it is returned to the Body Corporate in accordance with clause 4.3.2.

4.4. Should the Contractor not return the Management Equipment to the Body Corporate in accordance with clause 4.3, then the Body Corporate shall be entitled to recover the costs of repairing or replacing the Management Equipment from the Contractor.

5. INSURANCE

5.1. The Contractor shall, at its own cost and expense, for the duration of this Agreement;

5.1.1 Take out insurance cover with a reputable insurer against all risks that the Body Corporate may consider appropriate, up to levels of cover as required by the Body Corporate from time to time and on terms acceptable to the Body Corporate including but not limited to:

5.1.1.1. public liability insurance cover for a sum insured of not less than $20,000,000.00;

5.1.1.2. a Contractor's indemnity policy damage to personal property and loss to others for a minimum cover for each event or claim of $20,000,000.00 due to the negligent or deliberate acts of the Contractor, Approved Nominee, Related Persons, or the Contractor's officers, employees, replacements or agents; and

5.1.1.3. worker's compensation insurance as required by law.

5.2. The policies of insurance taken out by the Contractor must:

5.2.1. name the Contractor and the Body Corporate as co-insured persons;

5.2.2. include a clause enabling the Body Corporate to claim against the insurer where the Contractor is precluded from doing so for any reason;

5.2.3. include a cross liability clause enabling one (1) insured person to claim against the insurer even if the party making the claim against the insured person is also insured under the policy; and

5.2.4. provide cover for claims made in relation to the Contractor's actions during the Term for a minimum period of 6 years from the date of the supply of the Caretaking Duties under this Agreement.

5.3. The Contractor must not do or omit to do anything which may cause an increase in the Body Corporate's Insurance premium or otherwise affect the Body Corporate's rights under an insurance policy.

5.4. In relation to the insurance policies referred to in this clause, the Contractor must give the Body Corporate:

5.4.1. a copy of the policies on or before commencement of the Term;

5.4.2. satisfactory proof of the currency of the policy on demand; and

5.4.3. satisfactory proof the renewal of the policy within 2 Business Days of it being affected.

5.5. The Contractor must not do anything which:

5.5.1. might result in any policy (as well as a policy taken out by the Body Corporate) becoming void or voidable; or

5.5.2. entitles any insurer to modify the cover available or reduce the amount of money paid or payable in relation to a claim under a policy.

5.6. The Contractor must immediately notify the Body Corporate of any cancellation, change or affect to its insurance policy required under this Agreement or which affects the Body Corporate's interests under this Agreement.

6. SERVICE FEES

6.1 The Body Corporate shall pay to the Contractor, for the Term, in consideration for it rendering the Caretaking Duties the following annual Service Fees:

6.1.1 Year One: $

6.1.2 Year Two: $ and

6.1.3 Year Three: $.

6.2 For the purpose of clause 6.1, the defined terms bear the following meanings:

6.2.1 **Year One** means the period from the Commencement Date until the first anniversary of the Commencement Date;

6.2.2 **Year Two** means the period from the first anniversary of the Commencement Date until the second anniversary of the Commencement Date; and

6.2.3 **Year Three** means the period from the second anniversary of the Commencement Date until the End Date.

6.3 The Service Fee is payable in equal monthly instalments in arrears on the last Business day of each month subject to the contractor complying with clause 5.5.

6.4 The Service Fees set out in clause 6.1 are exclusive of GST.

6.5 Where GST becomes payable on the supply of the Caretaking Services and/or any other services supplied under this Agreement ('the supply'):-

6.5.1 the Body Corporate shall, at the time that it pays for the supply, pay in addition an amount equal to the GST applicable on that supply; and

6.5.2 the Body Corporate shall not be required to pay any amount of the Service Fees until such time as the Contractor issues a tax invoice in a form that enables the Body Corporate to claim an input tax credit for the GST paid.

7. EXPENDITURE BY CONTRACTOR

7.1. The Contractor may incur expenses on behalf of the Body Corporate to acquire equipment or materials authorised by this Agreement up to $200.00, or an amount otherwise approved by the Committee and notified to the Contractor in writing from time to time by the Representative or the Secretary, for any single item. Any single item of expenditure above that amount requires the prior approval of the Committee. For this section, if a series of items forms a single project, the cost of carrying out any of the items is taken to be more than $200.00, if the cost of the single project, as a whole, is more than $200.00.

7.2. The Body Corporate must reimburse the Contractor within thirty (30) days of receipt by the Body Corporate of written evidence of such expenditure if the expense has been legitimately incurred in the best interests of the Body Corporate, is not an expense that the Contractor, pursuant to this Agreement, is liable for and that the Contractor has confirmed that the Body Corporate has obtained the benefit of any discount, commission or rebate it is entitled to and that the Contractor has not received any secret commission or similar benefit. The Contractor must provide original receipts to the Body Corporate where the Contractor has received receipt of same.

7.3. If the Contractor determines that any emergency remedial or protective repair or other similar work is urgently necessary to prevent significant loss or damage to the Common Property or to prevent personal injury to or the death of any person,

the Contractor will have emergency powers to do the necessary work, up to $1,000.00 or an amount otherwise approved by the Committee and notified to the Contractor in writing from time to time by the Representative or the Secretary for any single item. Any single item of expenditure above that amount requires the prior approval of the Committee. For this section, if a series of items forms a single project, the cost of carrying out any of the items is taken to be more than $1,000.00, if the cost of the single project, as a whole, is more than $1,000.00.and:

7.3.1. appoint agents or consultants;

7.3.2. purchase goods and materials;

7.3.3. pledge the credit of the Body Corporate;

7.3.4. incur expenses and accept liabilities on behalf of the Body Corporate.

7.4. The Body Corporate shall pay to, and indemnifies, the Contractor for the costs incurred pursuant to clause 7.3 hereof on behalf of the Body Corporate.

8. CONTRACTOR'S APPROVED NOMINEE

8.1. Where the Contractor is a corporation or a partnership:

8.1.1. it must appoint a natural person as its Approved Nominee to render the Caretaking Duties for and on its behalf;

8.1.2. the Approved Nominee must be pre-approved, in writing, by the Committee;

8.1.3. the Contractor shall provide to the Committee sufficient information pertaining to the Approved Nominee to enable the Committee to assess whether the Approved Nominee is suitable and capable of performing the obligations of the Contractor under this Agreement, including but not limited to information regarding the experience, skill and character of the Approved Nominee;

8.1.4. the Committee's determination under clause 8.1.2 is final and binding.

9. BODY CORPORATE REPRESENTATIVE

9.1. The Committee shall from time to time, appoint the Representative to communicate with, give instructions to and provide periodic performance assessments to the Contractor on behalf of the Body Corporate.

9.2. Not more than one such person shall be appointed by the Body Corporate at any one time in respect of any particular area of responsibility. The Contractor acknowledges that the Committee may appoint different members of the Committee to be responsible for different Body Corporate matters. If the Representative is not able to be contacted, then the Contractor shall obtain instructions from either the Chairman or the Secretary of the Body Corporate.

10. BODY CORPORATE UNDERTAKINGS

10.1. For the duration of the Agreement, the Body Corporate shall, at its own cost and expense:-

10.1.1. supply all consumables necessary for the Contractor to perform the Caretaking Duties, including but not limited to:

10.1.2. all chemicals reasonably required to maintain any swimming pool, spa or water feature in accordance with local government regulations and ordinances;

10.1.3. all cleaning chemicals and other cleaning agents required to perform the Caretaking Duties;

10.1.4. all pesticides and other weed-killing chemicals and agents reasonably required to maintain the gardens located on the Common Property; and

10.1.5. all fertilisers, reasonably required to maintain the gardens located on the Common Property;

10.1.6. supply all replacement grass and/or plants where replacement is not due to any act or omission on the part of the Contractor. However, all grass and/or plants that are required to replace any plants or grass that die and/or require replacement, as a result of any act or omission by the Contractor, including its failure to properly care for such plants and grass in accordance with this Agreement are to be at the cost and expense of the Contractor;

10.1.7. supply and when necessary, subject to clause 4.1.10, replace at the Body Corporate's cost, all Management Equipment as identified in Schedule 6 hereof for the Contractor to perform the Caretaking Duties;

10.1.8. provide the Contractor with all information reasonably necessary to enable the Contractor to perform the Caretaking Duties, including providing documents, plans, diagrams, drawings and any other documents or plans identifying the location and character of any services or amenities installed or erected on the Common Property or any improvements on the Common Property as requested by the Contractor from time to time; and

10.1.9. do all things reasonably necessary to assist the Contractor to supervise and/or carry out the Caretaking Duties.

11. OCCUPATION AUTHORITY

11.1 In accordance with the Act and the Accommodation Module, the Body Corporate grants the Contractor an authority to exclusively occupy the Contractor’s Storage Shed, which comprise part of the Common Property, for the Term for the purpose

of enabling the Contractor to perform the Caretaking Duties and its obligations under this Agreement.

11.2 The authority referred to in clause 11.1 is given conditional upon and subject to the Contractor complying with its obligations under this Agreement.

12. LIMITATION OF LIABILITY & INDEMNITY

12.1. Neither the Body Corporate, the Lot Owners, Lot Occupiers nor any of their office holders, member, employees or agents shall be liable for any loss or damage whatsoever, whether direct, indirect, consequential or otherwise, and whether such loss or damage results from any breach of contract, tort, negligence of any degree or any other cause without limitation, including but not limited to claims for loss of profit, injury or loss of life suffered by the Contractor, the Approved Nominee, the Related Persons or its officers, employees, Replacements or agents arising, directly or indirectly, from or in connection with this Agreement and/or the performance or failure to perform, as the case may be, its obligations under this Agreement, unless the loss or damage arises directly from a wilful or negligent act or omission of the Body Corporate or its members, office holders or employees.

12.2. The Contractor hereby agrees and undertakes to indemnify and keep the Body Corporate, the Lot Owners and the Lot Occupiers, and their respective members, employees or agents indemnified against all and any loss, injury, damage, fine, liability, tax or other physical charges, penalties, legal costs on a solicitor-client/indemnity basis and claims (including loss of profits and loss) made by any person of any nature whatsoever and arising, directly or indirectly, from or in connection with:-

12.2.1. any act or omission by the Contractor, the Approved Nominee/s, the Related Persons or its officers, employees, replacements or agents ; and/or

12.2.2. the performance or failure to perform, as the case may be, the obligations of the Contractor under this Agreement.

13. ASSIGNMENT

13.1. The Contractor must obtain the prior written consent of the Body Corporate before assigning its rights under this Agreement.

13.2. The Body Corporate must not unreasonably withhold consent to an assignment if:

13.2.1. the Contractor provides information to the Body Corporate that would satisfy a reasonable person that the proposed transferee is a respectable and responsible person capable of performing the Contractor's obligations under this Agreement;

13.2.2. where the proposed transferee is a company, there will be an approved person who is:

13.2.3. a respectable and responsible person capable of performing the Contractor's obligations under this Agreement; and

13.2.4. qualified and has sufficient experience in performing the Contractor's Duties; and

13.2.5. the Contractor provides to the Body Corporate any other information that the Act stipulates the Body Corporate may have regard to in deciding whether to approve a proposed transfer.

13.3. Under this clause 13, assignment means transfer and vice versa.

13.4. In assessing the transfer application, the Committee may consider:

13.4.1. the competence, qualifications, experience and character of the proposed assignee or any entity associated with it;

13.4.2. the financial standing of the proposed assignee; and

13.4.3. the terms of the proposed assignment.

13.5. If the Body Corporate consents to an assignment of this Agreement, the Contractor, the proposed assignee and the Body Corporate must enter into a deed in which:

13.5.1. the Contractor releases the Body Corporate from any claims it may have against the Body Corporate;

13.5.2. the Contractor acknowledges that they will remain responsible for an non-performance of the Contractor's Duties prior to the date of transfer and in the event that the Body Corporate suffers loss as a result of the non-performance, the Contractor indemnify the Body Corporate from any loss or damage incurred;

13.5.3. the Body Corporate releases the Contractor from any claims it may have against them; and

13.5.4. the Body Corporate and the proposed transferee undertake to comply with the terms of this Agreement as if the transferee is the Contractor named in this Agreement.

13.6. If the Contractor is a corporation or partnership, other than one whose shares are listed on any Australian stock exchange, and it purports to make any alteration to:-

13.6.1. the composition of its board of directors; or

13.6.2. the composition of the shareholders or the beneficial ownership of a partnership, resulting in more than 50% of the shares or partnership interest giving a voting right at general meeting vesting in different hands,

then this Agreement is at an end.

13.7. If the Contractor is a partnership or is made up of more than one person, any change of the partners will result in the Agreement being at an end.

13.8. The Contractor agrees to pay all the Body Corporate's reasonable legal and administrative costs associated with consideration of the transfer application, irrespective of whether or not the transfer is approved.

14. SUBCONTRACTING

14.1. Subject to clause 14.2, the Contractor may subcontract its obligations under this Agreement to a suitable third party subcontractor, with the prior written consent of the Body Corporate.

14.2. The Body Corporate must not unreasonably withhold its consent under clause 14.1 if:

14.2.1. the Contractor provides information to the Body Corporate that would satisfy a reasonable person that the employee, subcontractor or agent is a respectable and responsible person capable of performing the Contractor's Duties under this Agreement;

14.2.2. the subcontractor proposed by the Contractor is qualified and has sufficient experience in performing the Contractor's Duties; and

14.2.3. the subcontractor has expressly agreed with the Contractor to observe and perform the Contractor's Duties to the Body Corporate under this Agreement.

14.3. The Body Corporate may rescind an approval given under clause 14.1, at any time, with or without giving notice to the Contractor.

14.4. Where the Contractor has obtained the prior written consent of the Body Corporate in accordance with clause 14.1, the Contractor:

14.4.1. must manage the performance of each subcontractor to ensure the safety, quality and timeliness of their performance to meet the requirements of this Agreement for the performance of the Duties;

14.4.2. must ensure that all sub-contracts for the Duties adequately addresses all industrial relations, safety and environmental and programming issues relevant to the completion of the Duties (including compliance with applicable Laws);

14.4.3. is not relieved from any of its obligations under this Agreement;

14.4.4. is liable and responsible for the acts and/or omissions of its subcontractors and an act and/or omission of a subcontractor that would amount to a breach of this Agreement, had they been a party

to this Agreement, will be taken to be a breach of this Agreement by the Contractor; and

14.4.5. is ultimately responsible for the management, direction and performance of each subcontractor engaged by the Contractor to ensure their performance meets the requirements of this Agreement for the performance of the Duties.

14.5. Any breach of this Agreement by any subcontractor appointed by the Contractor constitutes a breach by the Contractor.

14.6. All costs and expenses associated with the appointment of a subcontractor under this clause 14 and its performance of the Contractor's obligations under this Agreement, including but not limited to remuneration or service fees and expenses of the Replacement, shall be borne by the Contractor.

15. VARIATIONS

15.1. Any amendment or variation to this Agreement is not effective unless it is in writing and signed by the parties.

15.2. The Contractor must not vary or alter the Duties or deviate from the obligations and requirements of this Agreement except as directed or approved in writing by the Body Corporate.

16. TERMINATION BY BODY CORPORATE

16.1. The Body Corporate may terminate this Agreement by notice to the Contractor if the Contractor:

16.1.1. breaches this Agreement and does not remedy the breach within fifteen (15) days of being given a notice specifying the breach and requiring the Contractor to remedy it; or

16.1.2. is guilty of misconduct or negligence in the performance of the Contractor's Duties.

16.2. The Body Corporate may terminate this Agreement at any time without notice to the Contractor, if in the reasonable opinion of the Body Corporate:

16.2.1. the Contractor, or any of the Contractor's employees, subcontractors or agents, engages in conduct which:

16.2.1.1. is unlawful; and

16.2.1.2. is in breach of this Agreement and this breach is not capable of being remedied by the Contractor within fifteen (15) days.

16.3. The parties agree that this Agreement will be terminated and at an end immediately upon the giving of written notice if the Contractor:

16.3.1. fails to comply with its obligations outlined at clause 4;

16.3.2. transfers this Agreement without the Body Corporate's consent;

16.3.3. Abandons its obligations under this Agreement; or

16.3.4. if a natural person:

16.3.4.1. is convicted (whether or not a conviction is recorded) of an indictable offence involving either fraud or dishonestly or of an assault or an offence involving an assault;

16.3.4.2. is convicted (whether or not a conviction is recorded) on indictment of an assault or an offence involving an assault or an offence involving either fraud or dishonesty;

16.3.4.3. becomes bankrupt; or

16.3.5. if a corporation, suffers an Insolvency Event.

16.4. A decision as to whether the Contractor has failed or neglected to carry out its obligations under this Agreement shall be in the discretion of the Body Corporate which discretion must be exercised reasonably by the Committee, and consistently with the terms of this Agreement, in which event, the decision will be binding on the Contractor.

17. TERMINATION BY THE CONTRACTOR

17.1. This Agreement may be terminated by the Contractor by written notice to the Body Corporate if the Body Corporate fails and/or neglects to carry out its obligations under this Agreement, and that failure or neglect continues for a period of 30 days after receipt of the notice from the Contractor specifying the duty or duties which the Body Corporate has failed or neglected to carry out and calling upon the Body Corporate to remedy such.

18. NOTICE OF RENEWAL OR EXTENSION

18.1. The Contractor must provide the Body Corporate with written notice to the Body Corporate, confirming that the Contractor:

18.1.1. proposes to renew or extend this Agreement beyond the End Date; or

18.1.2. will <u>not</u> renew or extend this Agreement beyond the End Date.

18.2. A written notice under clause 18.1 must be given to the Body Corporate no later than 365 days prior to the End Date.

19. DISPUTES

19.1. **Determined Under the Act**

Any dispute between the Parties in respect of any matter arising under or incidental to this Agreement, shall be determined and finally settled in accordance with the dispute resolution provisions of the Act.

19.2. **Costs for Validity of a Remedial Action Notice**

If the Contractor takes legal action (including an application to the Commissioner for Body Corporate and Community Management), that seeks in any way to determine the validity of any Remedial Action Notice issued by the Body Corporate or any notice of termination of the Agreement issued by the Body Corporate to the Contractor, the Contractor must pay the Body Corporate's reasonable legal costs for making submissions in relation to and defending any such legal proceedings brought by the Contractor or any Related Person of the Contractor. The reasonable legal costs must be paid within 14 days of the Contractor being provided with an invoice for those legal costs by the Body Corporate.

19.3. **Refund of Costs**

The Body Corporate shall refund the legal costs paid by the Contractor under clause 19.2, if the Contractor obtains a decision in those legal proceedings that the Remedial Action Notice or Termination Notice (whichever the case may be) was invalid.

20. NOTICES

20.1. All notices, approvals, consents and other communications required or permitted to be given under this Agreement must be:

20.1.1. in writing;

20.1.2. in the case of the Body Corporate, sent to the Body Corporate at the Body Corporate's address, by post, facsimile or email; and

20.1.3. in the case of the Contractor, sent to, served at, or posted to, the email, postal or address for service of the Contractor notified to the Body Corporate from time to time.

20.2. This clause is in addition to the methods of service of notices set out in the *Property Law Act 1974.*

20.3. All notices and other communications required or permitted to be given under this Agreement (including a change of the Contractor's address) given by the Contractor to the Body Corporate must be personally served upon the current Secretary of the Body Corporate or alternatively tabled by the Contractor at a valid Committee Meeting.

20.4. A notice, approval, consent or other communication takes effect from the time it is received unless a later time is specified in it.

20.5. A notice sent by facsimile or email communication will be deemed to be received at the following times on production of a transmission report by the machine from which the facsimile was sent which indicates the facsimile was sent or a read receipt from the transmitter of the email:-

20.5.1. on the day of actual receipt if received between the hours of 9.00am and 4.30pm at the place of receipt; or

20.5.2. otherwise on the next following day (other than a Saturday, Sunday or public holiday in the place of receipt).

20.6. A notice sent by mail will be deemed to be received on the third day after posting.

21. COSTS

21.1. Each party must pay their own costs of and incidental to the negotiation and preparation of this Agreement, except that the Contractor must pay all duty on this Agreement.

22. NON-WAIVER

22.1. The failure of a Party at any time to require full or partial performance of any provision of this Agreement shall not affect in any way the full right of that party to require such performance subsequently.

22.2. The waiver by any Party of a breach of a provision of this Agreement shall not be deemed a waiver of all or part of that provision or of any other provision or of the right of that Party to avail itself of its rights subsequently.

22.3. Any waiver of a breach of this Agreement shall be in writing signed by the Party granting the waiver, and shall be effective only to the extent specifically set out in that waiver.

23. VARIATION

23.1. Should the Contractor or, a Related Person propose a motion to be considered at a general meeting of the Body Corporate that has the effect of varying any of the terms of this Agreement, including but not limited to the Service Fee/s payable or the Term, then the Contractor, will pay the costs of the Body Corporate in considering that motion and obtaining legal advice. The Parties agree that those costs will be fixed at $10,000.00.

23.2. Nothing in this Agreement prevents the Committee, if it believes to do so would be in the best interests of the Body Corporate, from proposing such a motion at the cost of the Body Corporate.

24. MAXIMUM 3 YEAR TERM

24.1. Notwithstanding any right the Contractor may have to request that the Body Corporate vary this Agreement, the maximum period of the term will be three (3) years.

25. SEVERANCE

25.1. If any provision of this Agreement is for any reason considered or found by a Court of competent jurisdiction or any competent Government authority to be invalid, illegal or unenforceable, or to reduce the term of this Agreement, that provision is to be severed from the remainder of the provisions of this Agreement and will be deemed never to have been part of this Agreement. The remainder of the provisions of this Agreement will remain in full force and effect unless the basic purposes of this Agreement are defeated.

26. GOVERNING LAW

26.1. This Agreement is governed by the laws of Queensland and each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of Queensland for determining any dispute in relation to this Agreement and waives any right to object to an action being brought in Queensland.

27. CONTRACTOR NOT A BODY CORPORATE MANAGER

27.1. It is not the intention of the Parties that any of the Caretaking Duties should constitute the Contractor a body corporate manager pursuant to Section 14 of the Act. If any of the Caretaking Duties in any way constitute the Contractor a body corporate manager pursuant to the Act then:

27.1.1. to the extent that all or any of the Caretaking Duties constitute the Contractor a body corporate manager, that duty or duties shall be read down or omitted so that the Contractor is not a body corporate manager;

27.1.2. the Contractor must continue to perform such duties as are required of a service contractor pursuant to the Act in exchange for the Service Fees; and

27.1.3. if, as a result of the operation of this clause, or otherwise, it proves impossible to determine the nature or extent of the Caretaking Duties, the Caretaking Duties shall be determined by an adjudicator pursuant to the dispute resolution provisions of the Act, this Agreement shall be amended accordingly (as to both duties and any consequential adjustment in Service Fees).

28. GUARANTEE AND INDEMNITY

28.1. If the Contractor is a corporation or trust, all directors, trustees and trust beneficiaries of the Contractor, as the case may be, must execute the Deed of Guarantee and Indemnity in the form annexed marked Schedule 5, on or before the date of this Agreement, failing which the Body Corporate may terminate this Agreement immediately on notice to the Contractor.

29. SCOPE OF AUTHORITY

29.1. Except as provided for in this Agreement, the Contractor shall have no authority to bind the Body Corporate in anyway whatsoever to incur any liability or debt or in any way to pledge the credit of the Body Corporate, to make or alter or discharge

any contracts, to waive any lapse or forfeiture or to institute any legal proceedings in connection with any matter relating to the business of the Body Corporate.

29.2. The Contractor shall at all times remain an independent contractor and the Contractor and its agent or employees shall at no time be deemed to be an employee of the Body Corporate.

29.3. The Body Corporate shall not be liable for any acts or omissions of the Contractor or of the Contractor's agents, employees, representatives or any other person to whom the Contractor may delegate its obligations under this Agreement.

Executed by the parties.

The Common Seal of the **Body Corporate for Urban Quarter CTS 32535** was hereunto Affixed in accordance with the Act:

Committee Member Signature	Chairperson/Secretary Signature
Print Name of Committee Member	Print Name of Chairperson/Secretary

Signed by **[INSERT]**

Witnesses Signature	Signature of **[INSERT]**
Print Full Name of Witness	Print Full Name

SCHEDULE 1

Maintenance Schedule

GENERAL DUTIES

CLEANING /GENERAL					
Line	**Item**	**Location**	**Work Description**	**Frequency**	**Remarks**
1	Litter	All Areas	Pick-up and dispose of any litter	Ongoing	
2	Lights	All Areas	Replace blown bulbs/tubes and clean insects out	Ongoing	
3	Cobwebs	All Areas	Remove cobwebs	Ongoing	
4	Insect control	All Areas	Spray	Ongoing	Annual treatment arranged by committee
5	Rubbish Bins	All Areas	Empty bins & Ash Trays	Daily	
6	Rubbish Bins	All Areas	Wash with disinfectant/cleaner	Weekly and as required	
7	Rubbish Skips	Skip area	Arrange skips to be collected by local authority	Daily	
8	Bin Rooms	Each Floor	Sweep, wash, and monitor for insects/vermin	Weekly and as required	
9		Plant Rooms	Inspect and clean	Weekly and as required	
10	Corridors, floors & stairs	All Areas	Sweep, mop	Weekly and as required	
11	Handrails	All Areas	Wipe clean	Weekly and as required	
12	Lift Interior & doors	All levels	Clean	Daily and as required	
13	Letterbox areas	All Areas	Clear away rubbish/junk mail	Daily and as required	
14	Car Parking areas	All Areas	Clean	Monthly and as required	
GROUNDS					
15	Drainage	Access Grids	Remove & clean out	Quarterly and as required	
16	Pathways, driveways, &	All Areas	Sweep and hose clean. Pressure clean if needed	Weekly and as required	
	Hard standing areas				
17	Outdoor Furniture	All Areas	Hose and scrub	Weekly or as required	
18	Insect Control	All Areas	Spray Pesticides to control harmful insects	As required	
19	Garden Areas	All plants	Water all plants not covered by irrigation system	Weekly	
20	Garden Areas	All Areas	Weed & Mulch as necessary	Monthly or as required	
21	Garden Areas & Grass	All Areas	Apply fertiliser	6 monthly or as required	
22	Garden Areas	All Areas	Check condition of soil and replenish	As required	
23	Irrigation System	All Areas	Inspect, adjust & arrange repairs if necessary	Monthly or as required	
24	Grass & Edging	All Areas	Cut grass and trim edges	Weekly or as required	3 weekly in June, July and August
25	Garden Areas	All Areas	Apply Mulch	6 monthly or as required	Require committee approval beforehand
26	Grass	All Areas	Top dress	6 monthly or as required	
27	Lawn Weed Control	All Areas	Ensure weeds are removed	As required	
28	Turf	All Areas	Replace sections of turf	As required	Require committee approval beforehand
29	Lawn Aeration	All Areas	Aerate all lawn areas	Annually	
30	Gardening Equipment	Blower/Mower/Hedger, ensure correctly functioning & arrange repairs when necessary.			
31	Trees	All Areas	Arrange for lopping	Annually	
32	Trees	All Areas	Trimming	Monthly or as required	
33	Hedges/shrubs	All Areas	Trim all hedges and shrubs	Monthly or as required	

RECREATIONAL FACILITIES					
Line	**Item**	**Location**	**Work Description**	**Frequency**	**Remarks**
34	Tennis Court		Clean and attend to repairs. Tension nets	Weekly or as required	
35	Pool/Spa	Furniture	Rearrange/tidy/clean	Daily or as required	
36	Pool/Spa	Surrounds	Clean of leaves and rubbish	Daily or as required	
37	Pool/Spa	Water	Vacuum pool/spa and clean skimmer baskets	Daily or as required	
38	Pool/Spa	Water	Check chemical levels, restore and keep records	Daily or as required	
39	Pool/Spa	Water	Take water sample to pool specialist for testing	Weekly	
40	Pool/Spa	Water	Empty and clean Filter Basket	Daily or as required	
41	Pool/Spa	Water	Check chlorinator & clean as recommended by manufacturer	Weekly or as required	
42	Pool/Spa	Tile surrounds	Sweep/hose. Inspect and arrange repairs if necessary	Weekly or as required	
43	Pool/Spa	Pumps & Motors	Check function and service	Weekly or as required	
44	Pool/Spa	Shade Sails	Inspect for damage and re-tension	Quarterly and as required	
45	Pool/Spa	Toilet/shower	Clean and maintain	Daily or as required	
46	BBQ areas	All Areas	Sweep, clean and empty bins	Daily or as required	
47	BBQ areas	All Areas	Clean plates, facings, drip trays, and splash back	Daily or as required	
48	BBQ areas	All Areas	Check gas bottles and refill as necessary	Daily or as required	
49	BBQ areas	All Areas	Ensure BBQ's are functioning with no leaks	Daily or as required	
50	BBQ areas	All Areas	Mop or hose tiles	Weekly or as required	
PROPERTY MAINTENANCE AND ADMINISTRATIVE DUTIES					
EXTERNAL AREAS					
51	External Lights	All Areas	Check function and reset timers if necessary	Monthly or as required	
52	Fencing/gates/carpark gates		Inspect and repair if necessary	Weekly or as required	
53	Ventilation	Roof	Arrange for inspection of extraction fans	Annually	Confirm with Body Corporate Committee
54	Air conditioning corrals & fixings		Arrange for inspection & repair if necessary	Annually	Confirm with Body Corporate Committee
BUILDING EXTERIOR					
55	Balustrading/hand rails	Common Areas	Inspect and arrange for repairs if necessary	Annually	
56	Painting	All Areas	Inspect and arrange touch up if necessary	Annually	Report major problems to Body Corporate
BUILDING INTERIOR					
57	Doors	Utility Doors	Inspect and repair if necessary	Quarterly	
58	Painting	Common Areas	Inspect and touch-up if necessary	Quarterly	
59	Floor Coverings	All Areas	Inspect and arrange for repair if necessary	Quarterly	
BUILDING SERVICES/OTHER					
60	Air conditioning	Lift Motor Room	Inspect and arrange for repair if necessary	Monthly	
61	Hot Water Tanks		Check systems and water are set to correct temperatures	Monthly or as required	
62	Lift Mechanicals	Lift Motor Room	Ensure service activities are being executed & any required		Refer to Otis Maintenance Schedule
			remedial work is actioned following committee approval		

Line	Item	Location	Work Description	Frequency	Remarks
63	Fire Compliance	Certificate of Classification must be displayed at all times		Ongoing	
64	Fire Compliance	Ensure Fire and Evacuation Plan is accurate and current. Review		Annually	
65	Fire Compliance	Ensure Evacuation Signs are accurate and in good condition		Annually	
66	Fire Compliance	Prepare and Lodge Occupier Statement		Annually	
67	Fire Compliance	General Evacuation Training. All regular workers within 2 days of commencing work, then annually			
68	Fire Compliance	1st Response Training. All regular workers within 30 days of commencing work. Then every 2 years			
69	Fire Compliance	An Evacuation Team must be appointed and trained for this building. Re-training must occur annually			
70	Fire Compliance	Evacuation Practice		Annually	
71	Fire Compliance	Record Keeping	All Fire Compliance Records must be kept on-site as well as a copy off-site; this includes maintenance records.	Ongoing	
72	Fire Compliance	Arrange for testing of Backflow Prevention Devices		Annually	Council to provide schedule
73	Fire Systems	Extinguishers	Arrange for testing and repairs. N.B. Must be performed by a BSA registered contractor that specialises in Fire Systems Work.	Testing Schedule provided by nominated contractor	
74	Fire Systems	Hose Reels			
75	Fire Systems	Indicator Panel			
76	Fire Systems	Detection System			
77	Fire Systems	Alarm System			
78	Fire Systems	Pump Sets			
79	Fire Systems	Hydrants			
80	Fire Systems	Emergency Lights			
81	Other Compliances	Pool Safety Certificate must be valid and displayed at the pool		Annually	
82	Other Compliances	Emergency Plan. Must have one prepared		Annually	
83	Other Compliances	First Aid Kit must be present and complete		Monthly or as required	
84	Asset Register	Review and Update		Annually	
85	Reporting	General Committee Reporting - Schedule 4		Monthly	
86	Correspondence	Open and Action		Daily	
87	Supervise Contracts	Monitor contractual arrangements and liaise with committee on action required		Ongoing	
88	Monitor Tradespeople, Removalists, etc. Ensure all trade visitors are operating as required			Ongoing	
89	Log Book administration	Maintain Trade Visitor Log Book		Ongoing	
90	Communication	Building Signage	Inspect & Repair if necessary	Ongoing	
91	Communication	Data/Comm	Inspect & Repair if necessary	Annually	
92	Security Systems	Cameras & Monitor	Inspect & arrange repair if necessary	Daily	
93	Security Systems	Recording Device	Ensure it is functioning correctly	Daily	
94	Security Systems	Arrange for digital copies of suspect events to be available to Police or Security Co.		As required	
95	Security	If a suspect event or security breach occurs, notify the relevant authorities and liaise		As required	
96	Intercom/Access System	Ensure it is functioning correctly		Daily	
97	P.V. (Solar System)	Inspect system boxes for function and arrange repair if faulty		Weekly	
98	Electrical Circuits RCD's	Arrange Electrical Contractor to test in line with AS3760, Section 91		2 yearly	
99	Electrical Circuits RCD's	Check function of RCD line according to AS3760, Section 91		6 monthly	

SCHEDULE 2

Compliance Requests Schedule

Building Fire Safety Regulations	**Requirements**
Fire and Evacuation Plan	*It is required that the Body Corporate keeps and maintains a Fire and Evacuation Plan in the format required by the below legislation.* ***Ref: Building Fire Safety Regulation 2008, section 21***
Evacuation Signage	*It is required that the Body Corporate display evacuation signs on exit paths.* ***Ref: Sections 18, 29 and 30 of the Building Fire Safety Regulation 2008***
Evacuation Signage in Units (short term letting)	*It is required that the Body Corporate display evacuation signs within units that perform short term letting (less than 3 months).* ***Ref: Sections 47 and 48 of the Building Fire Safety Regulation 2008***
Has an evacuation co-ordinator been trained and appointed	*It is required that the Body Corporate appoints and trains an evacuation coordinator.* ***Ref: Sections 17, 38, 39 and 40 of the Building Fire Safety Regulation 2008.***
Evacuation Practice	*It is required that the Body Corporate performs an annual evacuation practice.* ***Ref: Sections 43 and 44 of the Building Fire Safety Regulation 2008.***

Building Fire Safety Regulations	Requirements
Have all workers been trained in evacuation and first response training (residents do not require this training).	*It is required that the Body Corporate ensures that all workers on-site receive the required training.* ***Ref: Building Fire Safety Regulation 2008, section 17, 32, 35, 36, 37, 38, 39, 40, 43, 44, 45, 46*** • ***General Evacuation Training*** *– All regular workers, within 2 days of commencement of work then annually* • ***First Response Training*** *– All regular workers, within one month of commencement of work then every two years*
Fire Equipment Tested	*It is recommended that the Body Corporate ensure that a qualified contractor tests the fire safety installations at the property according to Australian Standards and the Queensland Development Code – MP 6.1.* ***Ref:*** • ***QDC MP 6.1*** • ***AS 1851-2012 (See extract below).*** • ***AS 2293.2***
"Annual System Condition Reports" provided by the Fire Maintenance Contractor.	*It is recommended that the Body Corporate receive from the fire safety installation testing contractor/s, copies of "Annual System Condition Reports" that assist the body corporate to complete the Occupier Statement (see below).* ***Ref: AS 1851-2005 and AS 2293.2***
Occupiers Statement Sent to QFES	*It is required that the Body Corporate prepares and lodges an annual Occupier Statement to the QFRS Community Safety Office.* ***Ref: Building Fire Safety Regulation 2008, section 55A and 55B and*** ***Queensland Development Code, Mandatory Part 6.1***

Building Fire Safety Regulations	Requirements
Fire Compliance Documents	*It is required that the Body Corporate keeps fire compliance records on site in a place safe from the effects of fire, as well as off site. This may be in an electronic form.* ***Ref: Building Fire Safety Regulation 2008, section 71, 72 and 86***
Fire exit paths checked	*It is required that the Body Corporate ensures that the evacuation routes are clear of obstructions at all times.* *The evacuation route must be a minimum of one metre wide.* *Final exits must be clear of obstructions within 2 metres.* ***Ref: Building Fire Safety Regulation 2008, section 8***

Workplace Health and Safety	Recommendation/s
Register of Contractors	*It is recommended that the Body Corporate compile a list of contractors used and ensure they are all qualified to complete the contracted work and have the appropriate registrations (e.g. QBCC licence).*
Contractors Indemnity Register	*It is recommended that the Body Corporate ensure that all contractors used have the appropriate public liability and (in some cases) professional indemnity insurances.*
Safe Working Methods Register	*It is recommended that the Body Corporate receive from contractors copies of relevant Safe Work Method Statements and keep them in a register.*
Log Book for Maintenance	*It is recommended that the Body Corporate keep a record of all maintenance reports and relevant documentation regarding contractor work performed at the site.*
Incident Reports	*It is recommended that the Body Corporate source and utilise the standard workplace incident report forms required by Workplace Health and Safety Queensland. They are available at: http://www.deir.qld.gov.au/workplace/incidents/incidents/notify/index.htm*
Emergency Plan (in the case of an emergency event – not a fire event)	*It is recommended that the Body Corporate prepare, maintain and implement an emergency plan for the property that provides for:* • *Emergency procedures* • *Testing of the emergency procedures* • *Information, training and instruction to relevant workers in relation to implementing the emergency procedures* *Legislation required that emergency plans were to be completed by 30 June 2012.* ***Ref: Queensland Work Health and Safety Regulations 2011, Section 43***
Regular risk management safety inspections.	*Annual risk assessments recommended.*

SCHEDULE 3

Maintenance and Safety Logbook

STAR BMS
BUILDING MANAGEMENT SERVICES
Innovation and Excellence in Asset Protection

MAINTENANCE & SAFETY LOG BOOK

URBAN QUARTER

Level 6, 270 Adelaide Street, Brisbane | PO Box 10093, Adelaide Street BRISBANE QLD 4000
P: 07 3252 2720 | F: 07 3252 2740 | enquiries@starbuild.com.au | www.starbuild.com.au

INDEX

1. POOL SAFETY

In this section:

- Keep a daily record of the pool and spa water testing. Use the template supplied (within the Queensland Health document supplied – page 31).

- Keep a copy of the annual pool safety certificate.

Additional pool water information is enclosed (Queensland Health document). It is strongly recommended that this document is read and understood and that recommended practices are followed.

URBAN QUARTER
POOL SAFETY REGISTER

PLEASE READ CAREFULLY **

Pool barrier must be inspected daily
Pool must be certified annually by a registered Pool Safety Inspector
Pool barrier repairs must be performed ASAP.
Pool safety certificate must be displayed.

DATE	TIME	INSPECTOR	PASS / FAIL	DEFECTS ATTENDED TO (DATE)	NAME	SIGNATURE

2. FIRE SAFETY

In this section keep:

- Record of the fire safety equipment testing including:
    - Fire hydrants and fire hose reels
    - Alarm system
    - Emergency and exit lighting
    - Pump sets

- Fire and evacuation plan
- Fire and evacuation signs
- Training records
- Evacuation practice records
- Occupier statement – see template – complete and forward to: *occupierstatement@emergency.qld.gov.au*

- Keep a copy of all the above records on site as well as a copy off site – (copies can be electronic i.e scanned).

URBAN QUARTER
FIRE EQUIPMENT MAINTENANCE AND COMPLIANCE REGISTER

PLEASE READ CAREFULLY **
All fire equiment must be serviced according to AS 1851 / QDC 6.1
Occupier statement to be completed and submitted annually.
Records of the above to be kept on site and off site at all times.

DATE	TIME	CONTRACTOR	EQUIPMENT DESCRIPTION	PASS / FAIL	DEFECTS ATTENDED TO (DATE)	NAME	SIGNATURE

3. ANCHOR POINT TESTING

In this section:

- Keep copies of the anchor point testing. Testing is to be performed annually in accordance of AS 1891.4.

4. SAFETY SWITCHES

In this section:

- Keep copies of the safety switch testing from the electrical contractor. Testing is to be performed every 2 years in accordance of AS 3760.

- Test all common property safety switches for function (press the “test” button) and fill out the following sheet every six (6) months.

URBAN QUARTER
SAFETY SWITCH REGISTER

PLEASE READ CAREFULLY **

Safety switches (common property only) are to be tested every six months.
Switches are to be tested by pressing the "test" button.
To pass, switches are to trigger instantly and automatically.
If a switch fails, contact an electrical contractor for repair.
Remember to reset the switch after the test. Check alectrical equipment following the test for function.
An electrical contractor is to test safety switches every two years.

DATE	TIME	SWITCH LOCATION	SWITCH DESCRIPTION	PASS / FAIL	NAME	SIGNATURE

5. LIFT MAINTENANCE

In this section, place copies of the lift maintenance records from the service contractor.

URBAN QUARTER
LIFT MAINTENANCE REGISTER

PLEASE READ CAREFULLY **

The lifts are to be inspected by a competant contractor as per the provisions of the service agreement.
The lifts are to be inspected daily.
All items of failure must be attended to ASAP.
All lifts that fail must be taken out of service and are not to be used until repaired or replaced.

DATE	TIME	CONTRACTOR	SERVICE DESCRIPTION	PASS / FAIL	REPAIRS ATTENDED TO (DATE)	NAME	SIGNATURE

8. BBQ MAINTENANCE

In this section, place copies of the BBQ maintenance records.

7. INCIDENT REPORTING

In this section, keep a record of ALL accidents, injuries, illnesses, incidents and "near misses" on the following form.

In addition, Workplace Health and Safety Queensland requires that serious illness or injuries are reported to them. Serious illness or injuries are defined as:

- an injury or illness requiring the person to have:
  - immediate treatment as an in-patient in a hospital
  - immediate treatment for:
    - the amputation of any part of his or her body
    - a serious head injury
    - a serious eye injury
    - a serious burn
    - the separation of his or her skin from an underlying tissue (such as degloving or scalping)
  - a spinal injury
  - the loss of a bodily function
  - serious lacerations
  - medical treatment (treatment by a doctor) within 48 hours of exposure to a substance
- any infection to which the carrying out of work is a significant contributing factor, including any infection that is reliably attributable to carrying out work:
  - with micro-organisms; or
  - that involves providing treatment or care to a person;
  - that involves contact with human blood or body substances; or
  - that involves handling or contact with animals, animal hides, skins, wool or hair, animal carcasses or animal waste products.
- the following occupational zoonoses contracted in the course of work involving the handling or contact with animals, animal hides, skins, wool or hair, animal carcasses or animal waste products:
  - Q fever
  - Anthrax
  - Leptospirosis
  - Brucellosis
  - Hendra virus
  - Avian influenza
  - Psittacosis.

If any of the above has occurred you must lodge the Incident form to whsq.aaa@justice.qld.gov.au or by fax to (07) 3247 0297.

ALL accidents, injuries, illnesses, incidents and "near misses" (including those that are not defined as serious) must be recorded and **appropriate action to limit further risks must be taken.**

URBAN QUARTER
INCIDENT FORM REGISTER

PLEASE READ CAREFULLY **
All incident forms are to be kept.
Forms are lodged at: whsq.aaa@justice.qld.gov.au or by fax to (07) 3247 0297

DATE	TIME	INCIDENT	PERSON	LODGED (Y/N)	DATE LODGED	NAME	SIGNATURE

8. PREVIOUS SAFETY REPORTS

In this section, place copies of previous safety reports.

9. EMERGENCY PLAN

In this section, leave a copy of the emergency plan for reference.

STAR BMS
BUILDING MANAGEMENT SERVICES
Innovation and Excellence in Asset Protection

EMERGENCY PLAN

Urban Quarter

Level 6, 270 Adelaide Street, Brisbane | PO Box 10093, Adelaide Street BRISBANE QLD 4000
P: 07 3252 2720 | F: 07 3252 2740 | enquiries@starbuild.com.au | www.starbuild.com.au

CONTENTS

EMERGENCY CONTACT NUMBER / DETAILS

Emergency Services (Police Fire Ambulance) - Ring 000
State Emergency Service (SES) – 132 500
Townsville Hospital – 4433 1111
Poisons Information Centre – 13 11 26
Electricity – Ergon – 13 16 70
Gas – Origin Energy – 1800 808 526
Water & Sewerage – Townsville City Council – 1300 878 001
Environment Protection Authority (DERM) – 1300 130 372

Disclaimer

Star Building Management Services and the author of this document shall be indemnified for any loss, damage, expense, whether consequential or otherwise, arising from matters resulting from the information provided. This document may not list every conceivable, potential safety item at this premises but addresses issues identified as likely to have significant consequences. The extent of this assessment is based on the assumption that the premises was designed, approved, constructed, and certified in accordance with the relevant authority requirements of the day, and every effort has been made to maintain the premises in accordance with those requirements. Also, this report is confined to emergency management only and is not a broad based health and safety report. The report was compiled without prejudice and, in the belief that no pertinent information has been withheld. Star Building Management Services and the author reserves the right to review the report in light of such information. Star building Management Services guarantees the customer that it will not release any information produced as a result of the knowledge of the property to any unrelated parties, and requests that the customer reciprocate likewise.

Amendment Register

Review Date	Changes Made	By Whom
4/2/15	Manual Created	Star BMS

This document should be reviewed on an annual basis and changed from time to time when required.

Distribution List

Date Issued	**Issued to**	**By Whom**
4/2/15	Urban Quarter	Star BMS

FUEL, CHEMICAL, HAZARDOUS SUBSTANCE SPILLAGE

CONTACT:
QLD FIRE AND RESCUE SERVICE – 000

DESCRIPTION: A chemical or other environmental incident, which has the potential to cause material or serious harm to people and/or the environment.

REMAIN CALM	Do not panic.
ASSESS	**Danger** – to people or the environment. **Potential** – for material harm (not trivial) or serious irreversible harm to people or the environment resulting from a leak, spill or escape of a substance, or circumstances in which this is likely to occur.
NOTIFY	• Building manager • Alert Environment Protection Authority or Local Government Officer. • Alert Emergency Services (Fire brigade). • Alert others who may be affected, e.g. tenants, neighbours.
CONDITIONS	Advise the exact location where the pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, the circumstances in which the incident occurred (including the cause of the incident if known), the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution.
ACTION	• Remove injured persons from immediate danger • Render first aid to any injured persons • Make the area safe [evacuate and if required, barricade area]. • Install temporary bunting or other environmental barriers to contain / slow the effect of the spill [contained in a Spill Kit]. • If safe close any valve or tap where relevant. • Select appropriate personal protective equipment from Material Safety Data Sheet information. • Remove all sources of spark, e.g. smoking or mobile telephone. • Instigate all necessary action to minimise the size, spread and any adverse effects of actual / potential environmental harm if safe to do so. • Await the arrival of emergency services in a safe location. • Building Manager to determine if the incident area needs preservation for investigation by Authorities.

GAS LEAK

CONTACT:
Origin Energy – 1800 808 526
QLD FIRE AND RESCUE SERVICE – 000

DESCRIPTION: A natural or LPG gas leak incident, which has the potential to cause material or serious harm to people and/or the environment.

REMAIN CALM	Do not panic.
ASSESS	**Danger** – to people and property. **Potential** – Fire. Explosion. Personal harm from inhalation.
NOTIFY	• Building manager • Alert Emergency Services (Fire brigade). • Alert others who may be affected, e.g. tenants, neighbours.
CONDITIONS	Advise the exact location where the leak is occurring, the nature, the estimated quantity or volume of the leak, the circumstances in which the leak occurred (including the cause of the leak if known), the action taken or proposed to be taken to deal with the leak.
ACTION	• If safe close any main valve or tap where available. • Make the area safe [evacuate and if required, barricade area]. • Remove injured persons from immediate danger • Render first aid to any injured persons • If safe, ventilate the area. • Remove all sources of spark, e.g. smoking, naked flames or mobile telephone. • Instigate all necessary action to minimise the volume and spread of the gas to confined areas. • Await the arrival of emergency services in a safe location.

VEHICLE ACCIDENT

CONTACT:
QLD POLICE AND FIRE AND RESCUE SERVICE – 000

DESCRIPTION: An accident that occurs with a vehicle(s) that has caused harm or damage to a person, another vehicle, structure.

REMAIN CALM	Do not panic.
ASSESS	**Danger** – to people and property. **Potential** – further damage or injury, fuel or liquid spill
NOTIFY	• Building manager • Alert Emergency Services (Police, Fire brigade). • Alert others who may be affected, e.g. tenants.
CONDITIONS	Advise the exact location where the vehicle accident occurred, injured persons, the nature, the estimated quantity or volume of any fuel or liquid leaks.
ACTION	• If safe turn engines off if still running. • Remove injured persons from immediate danger • Render first aid to any injured persons • Make the area safe [evacuate and if required, barricade area]. • If safe, ventilate the area if indoors. • Remove all sources of spark, e.g. smoking, naked flames or mobile telephone. • Instigate all necessary action to minimise the volume and spread of fuel or liquid leaks to confined areas. • Await the arrival of emergency services in a safe location. • Arrange for appropriate building inspection if structural damage has occurred.

SWIMMING / DIVING ACCIDENT

CONTACT:
QLD AMBULANCE SERVICE – 000

DESCRIPTION: An accident that occurs in or around the pool area that has caused injury to a person(s).

REMAIN CALM	Do not panic.
ASSESS	**Danger** – to people and property. **Potential** – further damage or injury.
NOTIFY	• Building manager • Alert Emergency Services (Ambulance service). • Alert others who may be affected, e.g. other bathers.
CONDITIONS	Advise the exact location where the injury occurred, injured persons, the nature of the injury(s).
ACTION	• Remove injured persons from immediate danger • Render first aid to any injured persons • Make the area safe [evacuate and if required, barricade area]. • Await the arrival of emergency services. • Instigate all necessary action to minimise the risk of further injury(s).

ELECTROCUTION

CONTACT:
QLD AMBULANCE SERVICE – 000

DESCRIPTION: An accident that involved or could involve electricity.

REMAIN CALM	Do not panic.
ASSESS	**Danger – electrical current still present?** **Potential** – further damage or injury.
NOTIFY	• Building manager • Alert Emergency Services (Ambulance service). • Alert others who may be affected, e.g. other tenants.
CONDITIONS	Advise the exact location where the injury occurred, injured persons, the nature of the injury(s).
ACTION	• **Isolate the source of electricity** • Remove injured persons from immediate danger • Render first aid to any injured persons • Make the area safe [evacuate and if required, barricade area]. • Await the arrival of emergency services. • Instigate all necessary action to minimise the risk of further injury(s).

HEAT WAVE

CONTACT:
QLD AMBULANCE SERVICE – 000

DESCRIPTION: A prolonged period of excessive heat, often combined with high humidity. Can impact on human and animal health. The elderly, babies, children and pregnant women are particularly at risk.

REMAIN CALM	Do not panic. Avoid strenuous activity.
ASSESS	**Danger –** How hot is it? How hot will it get? How long will it be hot for? **Potential** – Dehydration, exhaustion, in extreme cases - death.
NOTIFY	• Building manager • Alert Emergency Services (Ambulance service). • Alert others who may be affected, e.g. the elderly, those with babies, children, pregnant women.
PREPARATION	• Check with your doctor to ensure any existing medical conditions are as controlled as possible. • Plan ahead to reduce the risk of getting **heat exhaustion** or a heat related illness. • Have your air conditioner serviced (if you have one). Prepare for a power failure: • Plan for what you would do if a heatwave caused failure of electricity supply or disrupted public transport. If a power failure does occur, ensure you have a torch, fully charged telephone or mobile phone, battery operated radio and spare batteries. • Listen to your **local weather forecast** so you know if a heatwave is on the way.
PREVENTION AND ACTION	**Prevention** • Drink water regularly • Keep out of the heat – hottest part of the day • Stay cool • Monitor animals and pets **First Aid** • In an emergency – call 000 • Place a person affected in a cool place • Remove as much clothing as possible • Cover the patient in a water soaked sheet • Use fans and air conditioning if available • Visit a doctor if no improvement is observed

FLOODING

CONTACT:
EMERGENCY SERVICES – 000
STATE EMERGENCY SERVICE – 132 500

DESCRIPTION: An overflowing of a large amount of water beyond its normal confines, especially over what is normally dry land.

REMAIN CALM	Do not panic.
ASSESS	**Current Situation –** The bureau of meteorology issues flood information and warnings. – www.bom.gov.au or (07) 3239 8700 **Danger –** Some flooding may be "flash" and can happen unexpectedly. **Potential** –Damage or injury.
NOTIFY	• Alert all who may be affected, e.g. all occupiers of the building.
PREPARE	• List of important phone numbers (at the start of this document plus family etc.) • List of tenant contact numbers • Prepare an emergency kit including First aid kit Battery operated radio Torch Spare batteries • Key documents, account numbers etc in a waterproof bag. • Advise tenants to have: Medical details, prescriptions, medications Special dietary requirements prepared • Portable fuel driven pumps and piping • Ropes and personal flotation devices
ACTION	• Secure dangerous items including chemicals and fuels etc. • Close windows and doors (utilize boards if required) • Move as many vehicles, equipment etc as possible to higher ground. • Tie down moveable, buoyant outdoor items • Secure adequate supply of fresh potable water • Locate pets to a safe location • Consider if practical, sandbagging flood prone areas UPON EVACUATION • Switch off power at main switch • Close main gas valve • Close main water valve • Advise occupants of nearby evacuation centres AFTER THE FLOOD • Wait until authorities have declared the area safe

	• Wear rubber boots and gloves • Check with authorities as to the status of essential services • Only turn electricity on after it has been checked by an electrician

STORM

CONTACT:
STATE EMERGENCY SERVICE – 132 500
EMERGENCY SERVICES – 000

DESCRIPTION: A weather event that may be marked by strong wind, hail, thunder and/or lightning (a thunderstorm), heavy rain, wind transporting some substance through the atmosphere (as in a dust storm, sandstorm, etc.)

REMAIN CALM	Do not panic. Avoid outdoor activity.
ASSESS	**Danger –** How intense will the storm be? **Potential** – Extent of damage
NOTIFY	• Building manager • Alert Emergency Services. • Alert others who may be affected, e.g. residents, neighbours, other people on site.
PREPARATION	• Plan for what you would do if a storm caused failure of electricity supply or disrupted public transport. If a power failure does occur, ensure you have a torch, fully charged telephone or mobile phone, battery operated radio and spare batteries. • Listen to your **local weather forecast** so you know if a storm is on the way. • List of important phone numbers (at the start of this document plus family etc.) • List of tenant contact numbers • Prepare an emergency kit including First aid kit Battery operated radio Torch Spare batteries • Advise tenants to have the following in case of evacuation: Medical details, prescriptions, medications Special dietary requirements prepared
ACTION	• Close windows and doors (utilize tape, boards if required) • Move as many vehicles, equipment etc as possible to indoor / underground areas. • Tie down moveable outdoor items • Secure adequate supply of fresh potable water • Locate pets to a safe location • Stay indoors until storm has passed

EVACUATION

CONTACT:
EMERGENCY SERVICES (If Required)– 000

DESCRIPTION: Any event that would require the removal of people from the building.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will the removal of people expose themselves to risk? **Potential** – Extent of risks.
NOTIFY	• Building manager • Alert Emergency Services if required. • Alert others who may be affected, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• Investigate the situation. • Ensure the safe evacuation of all occupants from the building. • Account for all occupants at the assembly area. • Ensure occupants do not attempt to re-enter the building until it is safe to do so. • Meet Emergency Services and advise them of any information relevant to the emergency • Advise tenants to have the following in case of evacuation: Medical details, prescriptions, medications Special dietary requirements prepared

LOSS OF POWER / WATER

CONTACT:
ERGON (POWER)– 13 16 70
EMERGENCY SERVICES (If Required)– 000

DESCRIPTION: Loss of electricity or water supply to the building

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any people expose themselves to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY	• Building manager • Power and/or water authorities if required. • Alert others who may be affected, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• Investigate the situation. • Notify the relevant authority of the situation and provide details. • Keep residents and guests informed of the situation • Attempt to secure emergency supplies of potable water if loss of supply is likely for an extended period of time. • Attempt to secure emergency power supply if loss of supply is likely for an extended period of time. • Also notify fire brigade of power outage and the likelihood that electrically operated fire equipment (fire panel) wont be operational and seek advice

SERIOUS INJURY

CONTACT:
AMBULANCE SERVICE - 000
OTHER EMERGENCY SERVICES (If Required)– 000

DESCRIPTION: Any event that has occurred where a person has suffered a life threatening or significant injury.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any more people expose themselves to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY	• Ambulance • Other emergency services (if required) • Building manager • Qualified first aid officer • Alert others who may be affected by the situation, e.g. relatives of the injured person(s), residents, neighbours, other people on site.
PREPARATION AND ACTION	• Dial 000 to request an ambulance if necessary. • Do not move the patient unless risk of further serious injury is present • Ensure that a trained first aid officer administers first aid to the injured person and notify their family. • Secure and isolate the area to prevent anyone else from being hurt or exposed to the same risk. • Preserve the scene to assist investigation and prevention activities. • Maintain sufficient levels of communication with colleagues and family of the injured person. • Commence an internal investigation and fully engage others in the process. • Address the risks that have been identified by an OHS expert in order to prevent any similar incident form occurring in the future.

BOMB THREAT

CONTACT:
EMERGENCY SERVICES – 000

DESCRIPTION: An event where a person(s) has communicated that there is a destructive device located at the premises.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any people expose them to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY	• Emergency services – dial 000 • Building manager • Alert others who may be affected by the situation, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• If the threat is issued by telephone – attempt to keep the caller connected and complete the below bomb threat checklist. • Attract the attention of another person to assist with the following processes • If the threat is issued by written means – keep the documentation and attempt not to handle it. Place in a plastic bag if available • Alert emergency services (police) – dial 000 • If a suspicious bag or parcel is located – advise the police who will advise of and take appropriate action. Do not attempt to touch or interfere with the item. • Evacuate the premises if appropriate or if directed to by police • Mobile phones and hand held radios should not be used during any bomb threat emergency. It has been known that under certain conditions, transmissions from this type of equipment could detonate an explosive device. • Secure and isolate the area of the alleged bomb to prevent anyone else from being exposed to the risk. • Preserve the scene to assist investigation and prevention activities. • Maintain sufficient levels of communication with residents, guests and neighbours. • Assist police in the investigation and fully engage others in the process. • Only allow residents and guests to re-enter the building if the all-clear is given by police

BOMB THREAT CHECKLIST

Exact wording of threat

Sex of Caller

☐ Male ☐ Female

Question to ask

When is it going to explode (release the substance)?

What will make it explode (release the substance)?

What does it look like?

Where did you put it?

Did you put it there?

When did you put it there?

Why did you put it there?

Callers voice

Accent	☐ Asian ☐ Australian	☐ English ☐ American	☐ Arabic ☐ Indian
	Other:		
Voice	☐ Loud	☐ Soft	
	Other:		
Speech	☐ Fast	☐ Slow	
	☐ Clear	☐ Muffled	
	Other:		
Impediment	☐ Lisp	☐ Stutter	
	Other:		
Manner	☐ Calm	☐ Emotional	
	Other:		

Additional information

Threat relating to chemical, biological or radiation

What kind of substance is in it?

How much substance is in it?

How will the substance be released?

In what form is the substance (liquid, gas or powder?)

Bomb threat questions		
What type of bomb is it?		
What is in the bomb?		
Did you recognise the voice?	☐ Yes	☐ No
If Yes who do you think it was?		
Was the caller familiar with the building or workplace?	☐ Yes	☐ No
Threat language		
Well Spoken	☐ Yes	☐ No
Incoherent	☐ Yes	☐ No
Taped	☐ Yes	☐ No
Message read by caller	☐ Yes	☐ No
Abusive	☐ Yes	☐ No
Other:		
Background issues		
☐ Local Call	☐ STD	☐ Music
☐ Voices	☐ Street Noise	☐ Aircraft
☐ House Noise	☐ Machinery	
Other:		
Call taken		
Time:	Date:	
Duration of call:		
Number called:		
Recipient		
Name:		
Recipient Telephone No.		
Checklist completed by		
Name:		
Signature:	Date:	

CIVIL DISORDER

CONTACT:
EMERGENCY SERVICES – 000

DESCRIPTION: An event where groups of people are acting unlawfully and generally creating disturbance, damage and violence.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any people expose them to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY	• Emergency services – dial 000 • Building manager • Alert others who may be affected by the situation, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• Where possible, restrict access to the building by locking all doors windows gates etc. • Restrict contact between residents and those creating the disturbance • Where possible close curtains, shutters etc to restrict view into the building. • Stay away from windows, doors and exterior of the building.

PERSONAL THREAT / INTRUDER / ROBBERY

CONTACT:
EMERGENCY SERVICES – 000

DESCRIPTION: An event where a person(s) has been physically threatened or where unlawful access has been gained to the property.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any people expose them to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY (IF POSSIBLE)	• Emergency services – dial 000 • Building manager • Alert others who may be affected by the situation, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• Do exactly what you are told. • Do not volunteer any other information. • Handover whatever is requested without question and let the offender leave. • Do not panic or shout. Avoid staring and eye contact. • Do not do anything which may antagonise the offender(s). • Do not chase the offender(s). • Note sex, height, weight, eyes / hair colour, facial appearance, voice, clothing, tattoos, speech pattern, type of weapon, jewellery, what they are carrying and items touched. • Also if safe to do so note the make and colour of any vehicle used, its registration number if possible and last known direction. • Contain yourself in a secure area, by locking your office door, closing blinds and staying out of sight. • Seal off the area to preserve evidence. • Immediately report the offender's description, what they may have taken, models and serial numbers, descriptions of any distinguishing items they may have, or any other relevant details. FOR AN ARMED OFFENDER AS ABOVE, PLUS: • Where possible, alert others. • Advise people to place themselves in a secure area and if safe to do so, remain out of sight and do not make noise to attract the offender/s. • Call Emergency Services immediately, advise your name, location and phone number. • Listen for further instructions from the emergency personnel. • If anyone is injured, treat with first aid (where trained) until further assistance arrives.

THREAT / ROBBERY / INTRUDER IDENTIFICATION

Threat / Robbery / Intruder Identification Form

Fill out this form to assist the police with their investigation.
First impressions are important.
Fill out the form alone.
Do not discuss the offence with anyone else first (this may alter your observations and first impressions of what happened).

Witness Details:	**Tenant Name**
Surname:	Division / Location:
Given names:	Address:
Address:	
Post code:	Post code:
Phone (work):	
Phone (home):	
Mob:	

Details of Offence (include every detail of the offence from start to finish)

Date:	Time:
Details:	

Description of Offender

Physical		Clothing / Other
Height:	Age:	Upper body:
Weight:		Lower body:
Hair:		Shoes:
Eyes:		Glasses:
Eyebrows:		Weapon / item carried:
Race:		Other:
Skin:		
Scars / Tattoos:		
Speech:		

Vehicle Description

Make:	Licence Plate No:	Year:
Colour:	Direction of travel:	
Distinctive Features: (e.g. dents, roof racks, bull bar, colour)		

Identification completed by

Name:	Signature:	Date:

HOSTAGE SITUATION

CONTACT:
EMERGENCY SERVICES – 000

DESCRIPTION: An event where a person(s) has restricted the free movement of another person and is possibly threatening violence.

REMAIN CALM	Do not panic.
ASSESS	**Danger –** Will any people expose them to risk? **Potential** – Extent of risks. Likelihood.
NOTIFY	• Emergency services – dial 000 • Building manager • Alert others who may be affected by the situation, e.g. residents, neighbours, other people on site.
PREPARATION AND ACTION	• Where possible, restrict access to the building. • Notify all residents to stay where they are • Don't do anything that will agitate the perpetrator • Remain calm and observe their behaviour • Stay away from windows, doors and exterior of the building.

10. CARETAKER REPORTS

In this section, leave a copy of the caretaker reports for reference.

Queensland Health Swimming and Spa Pool Water Quality and Operational Guidelines (October 2004)

Communicable Diseases Unit
Public Health Services

Queensland Government
Queensland Health

Queensland Health

Swimming

and Spa Pool Water

Quality and Operational

Guidelines

October 2004

Queensland
Government
Queensland **Health**

Table of Contents

Glossary

Combined chlorine	chlorine that has combined with ammonium compounds or organic matter containing nitrogen to form chloramines.
ppm	an abbreviation for PARTS PER MILLION. The unit of measurement used in chemical testing which indicates the parts by weight in relation to one million parts by weight of water. It is essentially identical to the term milligrams per litre (mg/l).
Shock dosing	the addition to swimming and spa pool water of several times the daily dose of disinfectant. Usually carried out when excessive algal growth has occurred.
Super chlorination	the addition of two to four times the normal daily dose of chlorine to pool water to eliminate chloramines and other impurities. (Usually done overnight)
Total Alkalinity	the ability or capacity of water to resist change in pH; also known as the buffering capacity of water. Measured with a test kit and expressed as ppm. Turnover rate the period of time (usually in hours) required to circulate a volume of water equal to the swimming or spa pool capacity.

Acknowledgements

The following documents have been consulted in the preparation of this document

NSW Health - Public Swimming Pool and Spa Pool Guidelines June 1996.
Western Australia Code of Practice for the Design, Construction, Operation, Management and Maintenance of Aquatic Facilities. 2004
Pool Operator's Handbook - Department of Human Services Victoria 2000.
Department of Human Services – Standard for the Inspection and Maintenance of Swimming Pools and Spa Pools in South Australia. February 1998.
HB 241 – 2002 Water Management for Public Swimming Pools and Spas 2nd edition. Standards Australia.
Breakpoint Chlorination of Swimming Pools – ORICA Watercare.

Introduction

Australians, in particular Queenslanders, have long enjoyed recreational pursuits that involve water. The municipal pool is where a lot of young Queenslanders took their first steps in learning to swim.

Queensland, because of its position in the tropical and temperate zones, has a wide variety of climatic conditions prevailing at any one time. Due to these differing climatic conditions and water types throughout the state, pool operators need to consider local conditions when operating the facility like the climate, higher average daily temperatures, and the chemical content of the reticulated water. In tropical Queensland, the water temperature is likely to be above 26^0 C for most of the year.

The good management of swimming and spa pools ensures that patrons are not subject to health risks.

These guidelines have been developed to provide a basis for the safe operation of swimming and spa pools in Queensland. They have been developed in conjunction with representatives from Queensland Health's public health unit networks, Brisbane City Council, Public Health Sciences (Bacteriology) and the Swimming Pool and Spa Association of Queensland.

Pool operators need to undertake one of the pool operator courses available through registered training organisations (RTO's). The courses provide guidance on the types of equipment used; problems, which may arise during daily operation, basic chemistry of the pool water and are a good source of reference material. Operations manuals are a useful tool that ensures swimming and spa pool facility operators have access to information required to run the facility.

There is no specific legislation in Queensland regulating the operation of pools and spas. However, some local governments have local laws which may be relevant. A model local law on swimming pools is available from the Department of Local Government and Planning. Apart from any statutory requirements, operators of pools, especially those that are used for commercial purposes, need to be aware of their duty of care obligations to provide a safe swimming environment. Workplace, health and safety issues arise in situations where the pool is part of a workplace, and in these instances the Workplace, Health and Safety Act should be consulted. Operators should have a sound knowledge of first aid and resuscitation techniques. Various institutions such as the Royal Life Saving Society of Australia, St Johns Ambulance and the Red Cross offer life saving and/or first aid courses.

There has been a steady increase in the number of swimming pools, spa pools and specialist pools both public and private in recent years. The popularity of pools is reflected in the changing lifestyle and recreational pursuits of Queenslanders. Disinfection of swimming and spa pools focuses on the need to provide a safe water environment for public activities. The water in pools should be safe and not cause harm to the public; have a residual of disinfectant in order to cater for large amounts of micro-organisms and organic matter and should be operated in a continuous manner with minimal risk to the public.

Scope

These guidelines set out recommended water quality and operational standards for swimming and spa pools in Queensland to ensure safe bathing water is provided for users. These guidelines have been combined with the Code of Practice for the Control of *Cryptosporidium* and *Giardia* in Swimming, Leisure, Hydrotherapy and Spa Pools which was produced by Queensland Health in December 1998. There are many existing guidelines covering the design, selection and safe pool operation for swimming pools and spas including:

- HB 241-2002 Water Management for Public Swimming Pools and Spas 2nd edition
- SAA HB65-1998 Standards Australia - Residential Swimming Pools - Selection, Maintenance and Operation
- AS 2610.1-1993 Spa Pools Part 1: Public Spas
- AS 3979 - Hydrotherapy Pools
- AS 3633 - 1989 Private Swimming Pools – Water Quality
- SAA HB112-1998 Residential Spa Pools Selection, Maintenance and Operation
- Guidelines for Safe Pool Operation - The Royal Life Saving Society Australia
- Choosing Your Pool And Spa In Queensland - Swimming Pool and Spa Association of Queensland
- National Environmental Health Forum – Guidelines On Water Quality For Heated Spas – Water Series No 2
- Shade for Public Pools – Planning Sun-Safe Outdoor Environments in Queensland, Queensland Health
- Breakpoint Chlorination of Swimming Pools – ORICA WaterCare.

The Swimming and Spa Pool Water Quality and Operational Guidelines apply to:

- public swimming and spa pools
- wading and receiving pools associated with water slides
- wave pools
- hydrotherapy and therapeutic exercise pools.

The guidelines apply to pools that are open to the public and include pools located at:

- municipal and commercial sites
- schools
- hospitals
- hotels and motels
- leisure centres, health resorts, gymnasiums, clubs and resorts
- camps, caravan parks
- community health centres
- retirement villages, unit developments such as strata title or cluster title units.

They are not intended to apply to:

- private (domestic) pools and spas
- natural bodies of water.

The guidelines were not developed for regulatory purposes, nor is strict compliance intended, but may be used as a tool to assess the suitability of the water contained in a pool or spa for recreational use over an extended period of time.

Types of pools

The National Health and Medical Research Council Guidelines for Risks in Recreational Waters should be used when assessing untreated waters used for recreational purposes. These apply to all open waters, fresh and saline, as well as marine and estuarine waters.

To determine which category a swimming or spa pool falls into, the operator needs to assess the bather load and likely use, ability of the pool operating system to respond to water quality changes, level of likely environmental contamination, the climate (eg. temperature) and the health status, if known, of the bathers using the pool. The risk of the swimming or spa pool water quality being affected by a combination of these factors needs to be addressed by the operator to ensure appropriate monitoring regime of the pool takes place. Where there is an increased potential for disease transmission from the pool, increased chemical water quality monitoring requirements apply. Essentially a swimming or spa pool that has balanced water meets the chemical criteria outlined in the chemical parameter table (page 9) and should be relatively free from pathogenic organisms. Therefore the potential risk of disease transmission for the pool is negligible.

Swimming and spa pools fall into one of the following three categories.

Category 1 (high risk) swimming and spa pools require greater operator supervision and water chemistry testing than other category of swimming and spa pools. Most of the supervisory systems should be automated. It is expected that the operator or the appointed employee keep extensive records. It is recommended that pool water chemical tests are carried out five times per day and spa pools five times per day or after heavy use. A pool log, similar to the one in the back of these guidelines, should be used for recording test results (see page 30 for details). Shallow heavy use pools such as those in water playgrounds, council pools, learn to swim centres, water parks and play pools for children are considered category one pools. These pools allow public access with limited restrictions such as age without an accompanying adult. Operators of category one swimming and spa pools should have completed a training course in swimming pool plant operation and water quality.

Category 2 (medium risk) swimming or spa pools require the operator to supervise the pool during peak use periods, but a similar water chemistry testing regime for category one swimming or spa pool should apply. Water chemical tests should be carried out three times a day and it is recommended that a pool log, similar to the one in the back of these guidelines, be kept. Examples of category two pools include school, caravan park, hospital, resort and hydrotherapy pools. These pools are generally restricted to discrete users and user groups. Operators of category two swimming and spa pools should have completed a training course in swimming pool plant operation and water quality.

Category 3 (low risk) swimming or spa pools require minimum daily supervision and operator testing. Minimum records need to be kept. A record of all daily tests is advisable as there may be a turnover of residents or operators responsible for the swimming or spa pool.

Water chemical tests should be carried out twice daily or after heavy usage for both swimming and spa pools. A pool log, similar to the one in the back of these guidelines, should be used for recording test results. Examples of category three swimming and spa pools include hotels, motels, strata-titled residential units and home units. These pools are restricted to discrete users and user groups such as owner occupier residents and guests. Pools at larger unit complexes should be tested more frequently.

Category one swimming or spa pools are more likely to be contaminated with a greater diversity of disease causing organisms than low usage swimming or spa pools, because they are open to community contamination. Disease causing organisms may be introduced from many sources but are mainly associated with bathers. These organisms may be brought into a pool on the bather's skin, and through their saliva, urine and faeces. The organisms may also be introduced from dust, bird droppings, make-up or water and soil carried on bather's feet. Some of these disease causing organisms live and may even grow in pool water unless the pool water is adequately filtered, and properly and continuously disinfected.

Swimming or spa pools should be designed and operated so that the action disinfectants are effective. It is recommended all swimming and spa pools, to which these guidelines apply, be equipped with an effective water circulation system, a filtration system, and have a continuous disinfectant dosing control system. Continuous dosing does not include the use of a floating dispenser containing a disinfectant as this is often removed when the pool is in use.

Pool management plans

It is recommended that pool operators develop a pool management plan, which incorporates the principles outlined in this document. A risk management approach is proposed which provides the operator with an indication of the level of risk associated with different types of pools and complexes. The following factors should be considered:

- do you have pools with a high percentage of use by children below five years of age, people with special needs, and older or handicapped persons?
- do you have pools with a water turnover time in excess of six hours?
- do you have wading pools, spas or hydrotherapy pools?
- do you have pools with shared filtration and water circulation systems?
- do you have shallow pools that are heavily used?

If you answer "yes" to any of the above questions, you may have specific areas of high risk which could benefit from further investigation and the adoption of a risk management approach for individual pools.

Spa pools

Spa pools should be drained at least once a month to enable cleaning procedures to be undertaken. There can be a build up of acid in the spa pool and this requires an exchange of water to reduce the level. Before draining a spa pool, contact the Local Government or Environmental Protection Authority for information on approvals to discharge and dispose of waste material from the filter cleaning process. The spa may have significant levels of chemicals, which may need to be neutralised prior to discharge. The cleaning program should include the filter (often of the cartridge type) as well as the spa itself. It may also be useful to have a replacement cartridge while thorough cleaning of the cartridge takes place. Thorough cleaning includes removal of lint and foreign matter, and soaking overnight in 10 ppm chlorine or similar disinfectant. Cartridge suppliers do not have a recommended method of cleaning the cartridge other than by hosing. The operator, who is guided by the level of accumulations on the cartridge and the state of the cartridge itself, should determine the method used. All accumulations on the surface of the cartridge should be removed as matter adhering to the cartridge surface may harbour bacteria. The spa pool should be designed with a weir offtake or skimming system that will continuously take water from the pool surfaces.

Spa pool water temperature

Where spa pools are heated, the temperature must never exceed 40^0C and exposures at greater than body temperature should not exceed 20 minutes for a healthy adult. Signs should be displayed restricting bathing to 20 minutes and the temperature of the spa should be regularly checked. Temperature has an adverse effect on the killing power of disinfectants, such as chlorine, in that the disinfectant dissipates rapidly. Warmer temperatures favour bacterial growth, such as *Legionella* in filter media, which may be transmitted by aerosols in spa pools. *Pseudomonas aeruginosa* survival and growth is enhanced at temperatures exceeding 26^0C. The optimum temperature is approximately 38^0C (HB 241-2002 Water Management for Public Swimming Pools and Spas 2nd edition).

Pool plant and turnover rates

A swimming pool filter plant should be designed to have a volume turnover period (exclusive of balance tanks) of five to six hours. The turnover period is the time taken for the total pool water volume to pass through the filters and treatment plant and return to the pool. The swimming pool or spa pool design, the treatment capacity of the filters and the size of the pipework will have a significant impact on turnover rates. Irregular shaped and variable depth pools will require special attention in their design to ensure the disinfection and circulation plants are capable of achieving the appropriate levels of operation. Filtration systems should run to ensure the water is clear and water chemical levels outlined in the table are achieved prior to the use of the pool. 24-hour facilities should have continuous filter operation.

The pool plant for public pools should provide continuous dosing of disinfectant and continuous filtration while the plant is in operation. A balance tank should be considered in the design of pools where the depth exceeds one metre.

Spa pools should be connected to a filter system dedicated solely for the spa to enable a turnover rate of once every 20 minutes. Wading or children's pools should also have a separate filter system. Generally accepted turnover rates include: spa and bubble pools 20 minutes, swimming pools < 0.5 m deep 30 minutes and swimming pools > 3.0 m deep five hours. Australian Standard (AS3979) recommends a two-hour turnover rate for hydrotherapy pools.

Hydrotherapy pools

Persons who use hydrotherapy pools may have a variety of conditions that could be transmitted by the pool water if the pool is not properly maintained. They can be more difficult to maintain than other pools due to the higher water temperature. Higher temperatures decreases the life of the disinfectant and provides optimum conditions for bacterial growth. The temperature should be between 28^0C and 36^0C. The HB 241-2002 Water Management for Public Swimming Pools and Spas 2nd edition recommends an optimum temperature of 36^0C. Turnover rates for hydrotherapy pools should be less than two hours. Guidance for hydrotherapy and spa pools in health care facilities are contained in Queensland Health's Infection Control Guidelines – June 1999 and Australian Standard AS3979-1993 Hydrotherapy Pools. Australian Standard (AS3979) recommends a two-hour turnover rate for hydrotherapy pools.

Breakpoint chlorination

In swimming and spa pools the bacterial count is controlled by the addition of a disinfecting agent. When chlorine is added to contaminated water, it begins to react with organic matter and ammonia-like compounds, and is gradually expended. Ammonia-like compounds are mostly introduced through contaminated urine. The ammonia-like compounds react with chlorine to form chloramines. When all the chlorine in the water exists as chloramines this is called marginal chlorination. The chlorine in combination as chloramines is available for disinfection and is spoken of as combined available chlorine, but the speed of its action is much slower than that of chlorine in a free or uncombined form.

However, if sufficient chlorine is added such that some of the chlorine exists in the free form, the disinfection can be up to 50 times more effective than marginal chlorination. Adding sufficient chlorine can destroy the chloramine compounds present in the water. However, when the pool is in use, there will always be some chloramines in solution due to the time necessary to destroy them. This time period will depend on a number of factors, including the amount of chloramines in the water, temperature, pH and the chlorine dosage used to maintain the free residual chlorine level. While chloramines are being destroyed, additional amounts will be formed while the pool is in use from further pollution by bathers.

Continually adding sufficient amounts of chlorine at the close of the swimming session allows the chloramine content to be reduced progressively. When all chloramines have been destroyed, the tests for free chlorine and total chlorine will give the same value. When this point has been reached, breakpoint chlorination has been achieved. This is the best method of ensuring that water is free of disease producing germs.

Chlorine demand is best described as the difference between the amount of chlorine applied to the water and the chlorine residual.

Total alkalinity

The total alkalinity is expressed chemically as the equivalent amount of calcium carbonate in the water. If the recommended level of total alkalinity is not maintained, a sudden increase in the chlorine dosage rate may cause the pH of the water to fall below a safe limit and the water may become acidic.

The level of total alkalinity should be maintained between 80 and 200 mg/l.

When water is chlorinated, small amounts of acid are produced. In order to prevent the water in a swimming or spa pool becoming acidic, a total alkalinity should be maintained at all times. This is usually achieved by adding soda ash to the water.

Total dissolved solids

Total dissolved solids (TDS) are a measure of all soluble matter dissolved in pool water. Mains water often has a TDS of several hundred mg/l. All chemicals added to a pool, particularly chlorides and sulphates, increase the TDS level and a high level is an indication of chemical overload or a lack of dilution of pool water.

Salt water pools typically have a TDS level between 4000 and 7000 mg/l. For pools other than salt, a high TDS level is an indication of chemical overload of lack of dilution of pool water. As a general rule, TDS should not rise greater than 1,000 mg/l above the mains water and should not be permitted to rise to an absolute of 3,000 mg/l. Regular partial emptying of the pool and refilling lowers TDS.

Pool design

In addition to the pool design features recommended in the guidelines, the following should be considered for pools which may be more likely to be subject to faecal contamination *(eg. wading pools, hydrotherapy pools)* or are more difficult to maintain:

- isolation via separate water circulation, separate filtration and physical separation of water bodies
- filtration with a total litreage turnover each one to two hours
- filter medium with the capacity to remove particles of a micron size less that the size of *Cryptosporidium* oocysts and *Giardia* cysts (eg. *Diatomaceous earth or micro-filtration)*

Filtration[1]

The clarification and purification of pool water will not be achieved unless the water is both filtered and disinfected. Coated mesh (or element) filters and sand filters are two basic types used. The local government should be consulted regarding requirements for the discharge of backwash water

[1] sections from SAA HB112 Residential spa pools – selection, maintenance and operation, and SAA HB 65-1998 Residential swimming pools – selection, maintenance and operation.

Coated mesh (or element) filters

These can be broken into two types - diatomaceous earth and cartridge filters. Diatomaceous earth is obtained from mining the skeletons of diatoms, minute creatures that lived millions of years ago. Diatomaceous Earth filters consist of a set of pads or filter elements that are coated with diatomaceous earth before use. This layer is called the precoat and does the filtering. After the filter becomes dirty the precoat, with the sediment, is backwashed to the drain.

This is done when the pressure builds up in the filter to a figure set by the manufacturer. A fresh precoat is applied and the filter is ready for service again. After cleaning, it is crushed into various grades of fineness which form a crystalline pattern and make an ideal filtration medium.

Cartridge filters come in various sizes to suit particular volumes of water. A cartridge filter usually consists of a container, which should include an automatic pressure bypass valve, and a manual release valve, in which a replaceable cartridge of porous material such as polyester or paper is fitted and sealed. The cartridge material is formed in a concertina shape to provide the maximum surface area possible. Water flows through the filter material and the dirt remains on the cartridge. The cartridge must be removed regularly and hosed clean. Acidic compounds or other chemicals manufactured for this purpose may be used to assist in cleaning a cartridge, but a chemical company or a pool professional should be consulted. A cartridge filter cannot be backwashed. The filter material does not recover 100 percent after being cleaned.

Sand filters

The object of efficient filter design is to secure maximum reduction in suspended and colloidal matter, long runs between backwashes, effective cleaning during the backwash cycle itself and a long life of the filter medium itself. This is achieved through careful selection of the sand, design of the washing equipment and underdrainage system.

Sand filters are generally available in three separate types the open gravity filter, pressure filter and hi-rate sand filter. The gravity type of sand filter is used in some older pools, however is considered out of favour with most modern pool operators.

The high-rate sand filter is a pressure tank partly filled with one grade of sand. Tanks can be made of steel, stainless steel, fibreglass and moulded plastic. Water is diffused, softening the water flow, in the filter over the top of the sand bed and through into the underdrain in the bottom of the filter tank and returned through a centre stand-pipe in the filter to the pool. The water is forced through the sand at high speed. Larger dirt particles are left behind on the surface of the sand, and finer particles are partly mechanically flocculated, that is, after passing through the sand they combine as they have been electrically desensitised. The high-rate sand filter is considered an efficient water filtering device. Its size depends on the volume of water and the amount of use of the pool. If the sand is backwashed *regularly* it can stay in good condition although frequent inspections are recommended in any commercial or pools with a high occupant rate.

The pressure sand type of swimming pool filter uses layers of graded sands and gravel suspended over an under drainage system usually consisting of a perforated plate or pipe arrangement. The pressure type system operates on a significantly lower flow rate than hi-rate sand filters and is usually limited to 200 litres/min across the area of the filter bed.

The filtration ability of a pressure type filter can be significantly aided through the use of a flocculation agent e.g. Aluminium Sulphate (Alum). The flocculent sits atop of the filter bed and traps even fine colloidal matter before reaching the sand itself. The use of a flocculation agent in a hi-rate sand filter is not generally recommended. The reverse flow of the backwash cycle, one cell at a time will agitate the filter bed and lift the flocculent to waste along with all contaminants.

The pressure type pool filters are generally constructed from steel and are common throughout larger pool installations particularly school and municipal pool facilities.

Chemical parameters

These guidelines specify the *minimum* chemical criteria by which a swimming pool and spa pool should be operated to minimise the public health risks to bathers to acceptable levels. It is important for people responsible for pool operation to maintain their pools at a standard equal to or greater than these guidelines at all times the pool is open to the public. The level of one chemical parameter can adversely affect another eg. if the pH is too high or too low the disinfectant properties of chlorine are decreased.

Chemical Parameters Table

	Indoor Pool	Heated Indoor Pool	Outdoor Pool	Outdoor Pool	Spa
Water temperature		> 26^0C		> 26^0C	35^0 - 37^0 C ideal 40^0 C max
Free chlorine (mg/l, ppm) minimum	1.5	2	1.5	3	3
Free chlorine (mg\l ppm) with cyanuric acid	N/A	N/A	3	4	N/A
Total chlorine (mg/l, ppm)	free chlorine level + 1 (10 max)	free chlorine level + 1 (10 max)	free chlorine level + 1 (10 max)	free chlorine level + 1 (10 max)	10.0
Bromine (mg/l, ppm) minimum	3.0	4.0	3.0	4.0	4 - 6
Ozone (for chlorine level see above)	0 residual	0 residual	0 residual	0 residual	0 residual
pH	7.2 -7.8	7.2 -7.8	7.2 -7.8	7.2 -7.8	7.2 -7.8
Total alkalinity mg/l, ppm	80 - 200	80 - 200	80 - 200	80 - 200	80 - 200
Cyanuric Acid	0*	0*	30 - 50	30 - 50	0*

**As indoor pools are protected from direct sunlight, cyanuric acid must not be used as the effectiveness of chlorine is reduced.*

NOTE**:** Combined chlorine shall not exceed half the total chlorine concentration with a maximum of 1.0 ppm.

Microbiological criteria

Recommended microbiological criteria for all swimming and spa pools, covered by these guidelines are listed in the table below. Routine monitoring of the microbiological quality of the water is recommended, in particular for high risk pools, see Appendix 4. Monitoring can provide a guide to the effectiveness of a disinfection program. It is expected that the operator of a swimming or spa pool is familiar with these requirements and the adjustments that should be made to comply with the levels. It is important to note the result obtained from a microbiological water sample will be a snapshot of what was happening at the sampling time, which may be several days prior to receiving the result. The results should be compared to the bather load at the time when the sample was taken. The daily log of activity at the swimming or spa pool can be a vital tool in understanding what factors are contributing to the result obtained for the microbiological water sample.

A well maintained, monitored and managed pool will have limited risk of significant microbial contamination and potential for illness.

Microbiological Criteria Table

Type of Microorganism	Desirable Level
Heterotrophic Colony Count (HCC), 35-37^{o}C/48 hours	<100/ml
Thermotolerant (Faecal) Coliforms or *Escherichia coli*	Not detected in 100mL
Pseudomonas aeruginosa	Not detected in 100ml

All tests are normally reported as colony forming units (CFU), but other units such as most probable number (MPN) may be used.

Type of microorganism

Heterotrophic colony count (HCC)

Also known as heterotrophic plate count, standard plate count, total plate count, aerobic colony count, total viable count and total bacterial count. This is a general test that indicates whether the pool disinfectant regime is effective in controlling contamination under operational conditions. A count of <100, when the test is conducted at 35-37^{o}C for 48 hours, is regarded as satisfactory. An occasional higher count is acceptable as long as no thermotolerant coliforms or *Escherichia coli* are present and the operating conditions of the pool are satisfactory. However, a sudden rise in the HCC when it has been traditionally low should give rise to concern. If higher counts are found consistently, this suggests that operating conditions may be unsatisfactory and investigation is required.

Thermotolerant (faecal) coliforms or Escherichia coli (E. coli)

Thermotolerant coliforms and particularly *E. coli* are normal inhabitants of the intestinal tract of humans, mammals and birds where they are present in great numbers. The presence of these bacteria is an indication that faecal material has entered the pool either accidentally, from contaminated skin, or deliberately, and that there is a risk of gastric illness to bathers from the possible presence of disease causing microorganisms. It also indicates a failure of the treatment process at the time of sampling. Any count of thermotolerant coliforms or *E. coli* in 100ml is cause for concern and repeat testing is indicated.

Pseudomonas aeruginosa

The predominant source of *Pseudomonas aeruginosa* in pools is from infected humans, the surrounding environment can be a source of contamination. It is an inhabitant of drains and biofilms (slimes) and can often colonise filter media. The warm, moist environment on decks, drains, benches and floors provided by spas are ideal environments for its growth. When present in large numbers it can cause ear, eye and skin infections, and particularly folliculitis. Well operated pools should normally not contain *Pseudomonas aeruginosa*, and its presence may indicate the possible presence of other environmental disease causing microorganisms, such as *Legionella*, which is of particular concern in spa pools, where it may multiply in the warm environment provided if unchecked. If *Pseudomonas aeruginosa* is found repeat testing is recommended.

Staphylococcus aureus

Staphylococcus is often found in water when bathers are present, and is associated with flaking skin, dandruff and nasal secretions. Its distribution within the water tends to favour the surface. Chlorine sometimes cannot immediately penetrate contaminated particles. *Staphylococcus* can be further controlled by effective water removal at the surface by skimmers and spill gutters and subsequent filtration. Routine testing for *Staphylococcus aureus* is not necessary, but testing for it may be included as part of a wider investigation into the quality of the water when a link between health problems and a pool are suspected. In a well operated and maintained pool *Staphylococcus aureus* should normally not be detected in 100ml of a properly collected sample.

Giardia and cryptosporidium

Giardia and *Cryptosporidium* are pathogenic microorganisms of concern in pools which present particular problems. These are dealt with in Appendices 14, 15, 16 and 17.

Unsatisfactory microbiological test results

Prompt corrective action is required when unsatisfactory results are obtained. Resampling for microbiological testing should then be carried out to confirm the effectiveness of the corrective actions. If problems persist, it may be advisable to refrain from using the pool until they have been resolved.

Appendix 1 - Disinfectants / disinfection processes

To minimise the risk of infection to bathers, a disinfecting agent should be used that:

- is easily and safely applied to water
- is able to rapidly kill a wide range of disease-causing organisms
- is capable of simple on-site measurement of concentration in pool water.

An ideal swimming and spa pool disinfectant would produce two extremely important and distinct effects:

- a residual bactericidal effect
- an oxidation effect.

While some disinfectants can do both, others can only disinfect or oxidise. Some disinfection processes may be bactericidal for a short time but rapidly dissipate to leave the pool without residual protection. It is important to be able to measure the amount of disinfectant in the pool water or to be able to measure the disinfection power of the disinfectant/disinfection process. There is no ideal disinfectant/disinfection process as all have their relative strengths and weaknesses. Before a disinfectant or disinfectant system is installed, it is recommended that advice from a pool professional or consulting engineer be sought. Some local governments may require specific disinfection processes be used.

Disinfectants are only effective on surface contact. They will not penetrate scales and dirt layers, hence the importance of ensuring pool surfaces are clean.

Types of disinfectants

Chlorine

The disinfectant form of chlorine is 'free residual chlorine'. It is also known as 'free available chlorine' or 'free chlorine' and all terms refer to the concentration of hypochlorous acid and the hypochlorite ion in equilibrium concentration in the pool water. It is strong and safe when used properly and is still the most popular form of disinfection. There is extensive material available on the techniques of chlorination and 'breakpoint chlorination' in particular. Breakpoint chlorination means that all of the chlorine is available as free chlorine. It is good practice to attain breakpoint before the first chlorine measurements are taken each day. This is achieved by adding sufficient chlorine to burn out all the combined chlorine, so that free chlorine equals total chlorine.

The higher the pH is above seven, the less the disinfection power of free chlorine. The disinfection power of chlorine is also reduced by a low pH. The pH needs to be properly controlled in a swimming or spa pool when chlorine is used and automatic adjustment is recommended to levels between 7.2 and 7.8. The control of pH will add life to the pool pipes and filters by preventing unnecessary corrosion or scale build-ups.

The residual chlorine can also oxidise ammonia, some other organic compounds and some organic nitrogen introduced into the pool by urine or perspiration. However, free chlorine can combine with ammonia to form compounds known as chloramines, and this reduces the ability of chlorine to disinfect, particularly in indoor pools. Chloramines are also known as 'combined residual chlorine' and should be kept to a minimum as they can cause eye irritation. The addition of chlorine will oxidise the chloramines over a period of time. The Australian Standard AS3633 provides further information on this.

Chlorine is available in many forms and not all forms are appropriate for all applications. Calcium hypochlorite (powdered or granular chlorine) for example should not be used in hot spas as it may promote scaling on heat exchangers and on hot water control valves which may lead to scalding. Cyanurated chlorine (stabilised chlorine) should not be used in indoor pools. Bromine may be used as a trace disinfectant to reduce the adverse effects of chlorine.

Bromine

Bromine is a weaker disinfectant than chlorine, and to achieve similar disinfection bromine needs to be at concentrations of at least 50 to 60 per cent higher than chlorine, which is recognised, in the chemical criteria of these guidelines. Bromine reacts with nitrogenous compounds in a similar way to chlorine to produce bromamines. These do not cause the serious discomfort to bathers that chloramines can. There are fewer complaints of eye irritation and obnoxious chemical related odours when bromine is used. This makes bromine more suited to indoor pools. Bromine should never be used in conjunction with ozone as potential carcinogens may be formed.

Bromine may be used as bromochlorodimethylhydantoin (BCDMH) or alternatively as a bromide bank system with activation by chlorine. Bromine is less stable than chlorine when exposed to ultra violet light: Unlike chlorine it cannot be stabilised which make it less suitable for outdoor pools. (A stabilised chloro/bromide system may also be considered.)

As pH increases or decreases, disinfection power is lost. [However, the loss of disinfection power is less than that of chlorine over the pH range of 7.2 to 7.8.] There have been reported cases of skin rashes, contact dermatitis and sensitisation following prolonged exposure to high levels of BCDMH.

Salt-water chlorination (electrolysis)

Salt-water chlorination is the process of electrolysis of salt water. The electrodes produce chlorine and hydrogen in gaseous form at a constant rate determined by the salinity of the pool water. It is important to maintain correct salinity levels or the chlorination production rate declines. While hydrogen may be liberated as a gas, the chlorine rapidly dissolves to form 'free chlorine' and follows the usual chlorine swimming pool chemistry, except that the chloride ion may reform and be available again for conversion in electrolysis. Salt-water chlorination should operate on a continuous dosing system and a bank of electrolysis units should also be provided. As salt water chlorination does not have the ability to respond adequately to shock loadings, super-chlorinating overnight and supplementary shock dosing with granular or liquid chlorine may be required.

Shock dosing should never be done within three hours of the use of the swimming or spa pool or while people are bathing. The electrodes require periodic cleaning to function properly.

Isocyanurated chlorine compounds (stabiliser)

Isocyanurated chlorine compounds and isocyanuric acid are used to stabilise chlorine against exposure to sunlight. Chlorinated isocyanurates when dissolved in water provide free chlorine. All isocyanurated chlorine compounds (except sodium dichloroisocyanurate) when added to water tend to lower the pH by varying amounts. The use of isocyanurated chlorine is optional.

Research on outdoor pools has shown that chlorine residuals without isocyanuric acid had lost 90 per cent of the chlorine residual on a sunny day in three hours. Pools containing 25 to 50 mg/l of isocyanuric acid under the same conditions lost only 15 per cent of the chlorine residual. No considerable increase in chlorine stability occurred above 50 mg/l isocyanuric acid. Indeed, laboratory studies have confirmed the benefits of pool stabilising and have shown that no significant increase in stability occurred above 30 mg/l isocyanurate over a one hour period.

Further tests have shown that high levels of isocyanuric acid required significant increases in the level of chlorine to achieve comparable disinfection rates. Laboratory tests using distilled water demonstrated reduced killing of *Pseudomonas aeruginosa* as the concentration of isocyanurates increased. Surveys of actual swimming pools using isocyanurates have demonstrated that concentrations of isocyanuric (up to 100ml/L) had little effect on the kill rate in the presence of ammonia and nitrogen.

An excess concentration of isocyanuric acid can be reduced only by the dilution effects of rainfall or by topping up after filter backwashing. Once the desired level of isocyanuric acid has been reached in the pool (20 to 30mg/l), the pool operator may cease using isocyanurated chlorine compounds and change to other chlorine compounds. Isocyanurates must not be used under any circumstances in an indoor pool or indoor spa because of decreased rates of kill of some disease causing organisms and the increase in the delay of the kill rate.

Ozone

Ozone (O_3) is an unstable blue gas with a characteristic pungent odour. It is produced commercially from clean, cool, dry air or oxygen by the discharge of high voltage (4000 to 30,000v) electricity. Ozone may also be produced as a 'by product' by specific wavelength ultraviolet lamps. At air concentrations of 0.25 mg/l it is considered harmfuls to health, and extremely hazardous to health if the air concentration is 1.0 mg/l. Ozone should never be used in conjunction with bromine as potential carcinogens may be formed.

Ozone is a short lived, unstable but powerful oxidising and disinfection agent which does not react with porcelain or glass and disappears quickly from water. This is advantageous from the point of view that such a hazardous agent quickly disappears but disadvantageous from the point of view that no satisfactory disinfectant residual is provided in the pool itself.

Ozone may not be used as the sole disinfectant in a public swimming or spa pool but may be used as the primary oxidiser and disinfectant in conjunction with chlorine. When used with chlorine, the free chlorine level can be reduced provided mainstream ozonation is practised. The ozone is removed using a bed of activated carbon prior to the water re-entering the pool, preventing ozone from degassing in the pool.

Chlorine dioxide

Chlorine dioxide has the unique ability to break down phenolic compounds and remove phenolic tastes and odours from the water. It does not react with ammonia and has similar oxidation-reduction potential to that of chlorine. Chlorine dioxide is an extremely reactive compound. Stabilised chlorine dioxide (liquid) is recommended for use not on-site generated gas. It should be kept away from acids, organic materials, reducing agents and oxidising agents.

Alternative disinfectants

Queensland Health does not have any legislative base to approve, endorse or assess any disinfection processes. There may be several other alternate systems or processes on the market. Currently no procedures have been developed by Queensland Health, nor does Queensland Health intend to develop any procedures, to assess the competence or suitability of the systems. The Australian Pesticides and Veterinary Medicines Authority are responsible for the regulation of pesticides and veterinary medicines, which includes disinfectants. Competencies may be developed under their auspices.

Appendix 2 - Other chemicals

There is a wide range of chemicals that may need to be used in the treatment of swimming and spa pool water apart from disinfectants. Care should be taken when making any alterations to pool water chemistry. Sudden adjustments may produce misleading readings that can severely affect the overall water balance of the pool. All proprietary chemicals used in swimming or spa pool chemicals are labelled by the manufacturer. The label indicates the name of the chemical, the intended use of the chemical and hazards of the chemical. A material safety data sheet should be obtained for each chemical being used in the pool. This provides a guide to the hazards of the chemical and precautionary measures, which should be undertaken prior to its use.

Common chemicals

Soda ash - (sodium carbonate) is a strong alkaline powder or liquid which is used to quickly raise the pH of a pool. Soda ash should not be added to a pool by shock dosing but should be added slowly and gradually over an extended period. This is a hazardous chemical and should be handled with care.

Dry acid - (sodium bisulphate) is a strong acidic powder, which may used to quickly reduce pH. Dry acid should not be added to a pool by shock dosing, but should be added slowly and gradually over an extended period. This is a dangerous chemical and should be handled with care.

Hydrochloric acid - (muriatic acid) is a strong acidic liquid which may also be used to reduce pH quickly particularly when the reserve alkalinity is greater than 120 mg/l. This is a dangerous chemical and should be handled with care.

Carbon dioxide - (CO_2) is a gas which when added to water forms a weak acid (carbonic acid) and may be used to reduce pH when the reserve alkalinity is less than 120 mg/l. It is best used in an automated pH correction system.

Sodium bicarbonate - (bicarb) is a weak alkali powder which is used to raise total alkalinity. Shock dosing will not raise the pH to greater than 8.3.

Aluminium sulphate - (alum) is a flocculent, a compound used to cause suspended solids in the water to congeal into filterable masses. It is most effective when the pH is between 7.0 and 8.0.

Algicides - algae are relatively harmless to humans but they may make the pool unsightly, cause colours, promote bacterial growth, assist in the formation of chloramines and indicate poor pool maintenance. From a safety point of view, algae cause slippery pool walls, pool bottoms and walkways. Algae can be introduced into a pool in the form of airborne spores, blowing free in the air attached to dust or enveloped by raindrops. They are mainly associated with outdoor pools as they require sunlight to grow.

The most uniformly accepted algal control procedure is to maintain a free chlorine residual of between 1 to 2 mg/l or where pools are warmer than 26^{O}C, a minimum concentration of 3 mg/l.

A successful technique for algal control is to frequently superchlorinate the swimming pool to 10 mg/l particularly after windy conditions and rainfall. The use of a pool cover to prevent contamination and reduce light intensity may also be helpful. There are a range of algicides available on the market and their compatibility with the disinfectant system should be determined at the point of sale. Algicides are an adjunct to pool conditioning for winter. Rough, pitted and poorly finished surfaces within pools are ideal for algal growth and make the control and removal of algae extremely difficult. Smooth, impervious surfaces are required to minimise algal problems.

Storage of chemicals

All pool chemicals should be handled with caution. Pool operators should consult with the relevant authority for precise requirements. Advice on the correct method of disposal for pool chemicals should be sought from the Environmental Protection Agency.

Chemicals should be stored separately in original containers which should be well labelled. Chemicals should not be mixed e.g. chlorine based chemicals should never be mixed with acids as the dangerous chlorine gas may be liberated. Extreme care should be taken when handling chlorine gas. Oxidising agents such as pool disinfectants should not be in contact or stored with organic matter as spontaneous combustion may occur.

The following twelve rules should be observed.

1. Ensure all chemical containers are labelled and follow all instructions implicitly
2. Store chemicals separately from each other
3. Store chemicals in a cool, clean, dry, well ventilated, secure area. Store above ground level to minimise spills, and do not store liquid chemicals above dry chemicals
4. Wear appropriate protective impervious gloves and goggles when handling chemicals
5. Wash hands before and after handling chemicals
6. Avoid contact with chemicals on skin and eyes, and avoid breathing vapours
7. Use a separate scoop for dispensing each chemical
8. Always add the chemical to water and never add water directly to a chemical
9. Avoid spillages and clean up any spillage immediately
10. Remove chemical contaminated clothing immediately
11. When not in use keep chemical containers sealed with original closure
12. Empty containers should be washed before disposal.

In case of any poisoning contact the Poisons Information Centre on 131126.

Appendix 3 - Equipment and maintenance

To aid the control of microorganisms, including the parasites *Cryptosporidium* and *Giardia*, operators should consider all aspects to maximise the efficiency and effectiveness of existing plant and equipment.

This process revolves around the maximisation of an existing plant and does not include major capital expenditure on new equipment. All equipment should be installed and maintained in accordance with the manufacturer's specifications. Some minor plant modifications may be necessary and considerations should include the following:

Automatic chemical monitoring and addition equipment

The installation of automatic chemical monitoring and dosing systems for disinfectant and pH control is strongly recommended. This equipment is now installed in larger pools and is considered superior to manual systems.

Although not fail-safe, automatic systems are usually subject to less operator error than manually controlled systems. The equipment requires calibration at weekly intervals to achieve maximum effect.

Automatic dosing equipment will not operate correctly in unbalanced water. However, an operator with unbalanced water can still maintain reasonable disinfection rates with manual equipment.

Maintenance of balanced water is a highly desirable state. Water that is not corrosive or scaling is an advantage in maintaining the effectiveness of existing plant and equipment. There are two methods of automatic control and dosing of disinfectant. They are by the use of amperometric probes measuring disinfectant residuals or by the use of high resolution oxidation-reduction potential detection probes (ORP or redox). Automatic control may also be exerted over pH.

The amperometric method is designed to measure free available chlorine. The amperometric method may be also used to measure other disinfectants. The results obtained may be used to automatically adjust feed rates of dosing mechanisms providing a greater degree of control over disinfectant usage and compliance.

Much less is understood by pool operators about the principle of redox measurement, which measures the total disinfecting power of all oxidising disinfectant forms in the pool water, once set to the correct initial oxidation potential. The signal from the redox probe may be used to automatically dose the pool water. The required redox potential for disinfection will vary slightly between disinfecting systems and is also dependent on the basic water supply potential, which should be assessed and taken into account when the control system is initialised. Redox potentials from 700mV to 750mV are appropriate and are reflected in the chemical criteria.

Operational maintenance

Automatic dosing equipment - maintenance and calibration of the sensors used in automatic dosing systems is necessary for the efficient and effective operation of the equipment. If ozone is used, regular cleaning and maintenance of the tubes and regular replacement of the charcoal filter is necessary.

Cleaning filters

The filter cell/s is traditionally the most important piece of plant and equipment that receives the least maintenance, unless water clarity is compromised or the steel shell of the filter, if applicable, is exhibiting obvious signs of corrosion.

Two reasons for this are filter maintenance or refurbishment is expensive, and the interior of a filter and the filter media are out of sight and hence out of mind.

The filter should be backwashed when indicated by the loss of head gauges (if fitted) or a reduction in the rate of flow (with a clean strainer basket in place) if a rate of flow gauge is fitted. In the absence of loss of head and rate of flow gauges, the experienced operator should assess the filter. In some situations it may be preferable to set a strict backwash timetable every seven or 10 days, or whatever is considered necessary. As a minimum, filters should be backwashed at weekly intervals during periods of medium to high loadings. Fortnightly backwashing is acceptable in periods of extremely light bather loadings. Domestic pools may be backwashed less frequently depending upon bathing load.

Duration - it is difficult to set a filter backwash duration period. This will depend on numerous variables at each pool including flow rate, filter size, filter design, filter condition, amount of contamination etc.

As a guide, and if the backwash water outlet line is provided with a sample tap, backwash until the effluent is only slightly cloudy.

Any 'in line' filters or strainers fitted to the plant should be cleaned at a frequency recommended by the plant manufacturer. A minimum of weekly cleaning is recommended.

The main hair and line strainer fitted to protect the main pump should be cleaned regularly. Differential pressure gauge readings or a reduction in the pool flow rate could indicate this. Pool design, loading and amount of contamination will dictate frequency. The experienced operator should judge this frequency.

In a closed system *(where backwash effluent is not visible)*, backwash is recommended for a minimum of four minutes per filter cell. In a system such as this the operator must be mindful of the post backwash pressure and flow gauge readings. If the pressure level, post backwash is increasing after each backwash, then filters are probably not being adequately cleaned by the backwash. This would indicate a longer backwash is required in future.

If a reduction in the post backwash rate of flow after each backwash is observed, the filters are probably, being adequately cleaned.

Effluent —effluent should be observed during the backwash cycle *(if at all possible)* as in *duration* above.

The maintenance of filters and media should be scheduled as follows.

Filters should be opened five years after commissioning and the filter media checked for cratering and cleanliness. If any doubt exists as to the cleanliness of the upper sand layer *(ie. the presence of alum balls or mud balls),* the top 15cm (6") of sand should be removed and discarded, and then replaced with the same depth of new filter sand of the same quality and size.

Schedule this maintenance for each five years up to year 10 or year 15.

15 years from date of commissioning *(new)* the filters should be opened, all media removed and discarded, and the filter cells refurbished internally and externally.
10 years after refurbishment, the practice should be again carried out, and at 10 year intervals thereafter, until the cells are no longer viable for retention and are replaced.

Suction cleaning

It is difficult to set a standard for the frequency of suction cleaning of a pool. If visible contamination is present, the pool should be suction cleaned. Large objects (band aids, rubber bands, hair clips, grass and leaves) should be removed immediately with a leaf scoop.

Abnormal conditions in outdoor pools can necessitate suction cleaning on a much more frequent schedule. Wind driven dust can enter a pool and necessitate daily cleaning under some circumstances.

It is established industry standard to suction clean a public pool on two to three occasions per week in times of normal loadings. In periods of light loadings, once per week is considered satisfactory.

Pool inlets

Irrespective of the pool inlets being wall or floor mounted, they should be checked each shutdown period to ascertain their compliance with the construction specification.

This is most important in painted pools where the application of consecutive layers of paint over many years may have reduced the diameter of the inlets significantly. This has been known to cause reduced flow rates and therefore increase turnover times. On one extreme occasion it led to structural damage to the pool basin. Drilling out the inlets with an electric drill to remove the accumulated paint is the preferred option *(note: do not remove metal, only paint).*

Filter inlets blocked with filter gravel will reduce the potential turnover of the pool.

Pool outlets

Scum gutters, wet deck outlets and skimmer boxes all require weekly inspection. Screens should be cleaned on a daily basis.

Outlets in painted scum gutters should be checked for reduced openings due to accumulating paint layers. Any reduction in the ability of the scum gutter, wet deck outlets or skimmer box to return water to the filtration plant will result in increased turnover times.

Chemical stocks

Supplies should be checked on a regular basis (weekly is recommended) and re-ordered in advance to prevent any shortage occurring in supply. Stocks should be stored in accordance with manufacturer's recommendations and the Workplace Health and Safety Act. Stock rotation should be practised as pool chemicals have shelf lives. All chemicals should be used in strict accordance with manufacturers' recommendations.

Appropriate personal protective equipment (PPE) for the chemicals used should be readily available and used. Material safety data sheets (MSDS*)* should be on file for all chemicals stored and used. These must be readily available to all operational staff. The MSDS should be regularly updated.

Balance tank

The balance tank *(if fitted)* should be cleaned out thoroughly on an annual basis to prevent the accumulation of mud, debris and organic matter. Balance tanks that do not gravity drain to waste will require pumping out with a mobile pump.

Flat bottomed balance tanks, lacking a draining pit recess, may have to be thoroughly dried out using a wet vacuum cleaner to remove all silt and debris.

Foot valve

The foot valve *(if fitted)* should be serviced on an annual basis during the shut down period. Although the foot valve plays no part in the destruction or removal of *Cryptosporidium* oocycsts or *Giardia* cysts, its functionality will affect the willingness of the plant operator to backwash and basket change the filtration plant at the required intervals. Most operators will delay doing a basket change or backwash due to the prospect of having to manually re-prime the system and experience loss of flow incidents and resultant re-priming steps due to a faulty foot valve.

Hair and lint strainer

This should be cleaned at regular intervals. The usual indication of a partially blocked hair and lint strainer is a reduction in flow rate with no appreciable increase in filter pressure.

The filter basket housing should have any rust removed by chipping, scraping and wire brushing or with the use of an air powered needle gun. This should be performed annually. It should be repainted with a corrosion retardant paint or other surface preparation suitable for use in potable water. This should also be performed annually.

The mesh of the strainer basket should be small enough to trap contaminants that could damage the pump and are not to be deposited into the filter cells, where their removal by backwashing may not be totally effective *(ie. rubber bands, hair clips, bandaids etc).*

Main circulation pump

The main circulation pump should be subject to a careful inspection and service annually. The casing should be thoroughly inspected internally for defects and the impeller should be replaced if worn. Any seals not in a thoroughly re-usable state should be replaced.

This work should be carried out by an appropriately qualified tradesperson, fitter and turner or pump specialist.

During the operating season, the pump should be oiled or greased according to the manufacturer's specification to ensure optimum performance.

Any leaking from glands or packing that develops during the operating season should be fixed by an appropriately qualified tradesperson. Gland adjustment should not be entrusted to an unqualified person as damage to the pump can result from inappropriate adjustment.

Main circulation pump motor

The electric motor should be inspected annually by a qualified electrician. If any doubt exists about its ability to function continuously for the next swimming season, it should have a thorough overhaul.

Ideally, a spare motor of the same size and mounting requirement should be available for immediate change over in the event of a motor failure mid-season.

Uniformity of motor and mounting base requirements, as well as a universal pump, should be adopted by organisations with several complexes in their pool network.

Chlorine pump / chlorinator

The chlorine pump or chlorinator should undergo an annual service, either by a qualified tradesperson or a service representative of the manufacturer. This will minimise the unwanted occurrence of an in-season break down.

Chlorine pumps with an oil reservoir should be checked at weekly intervals.

In the event of having to replace a chlorine pump, consideration should be given to upgrading to a larger capacity output pump. With the higher superchlorination levels likely to be used to counter *Cryptosporidium* and *Giardia*, a higher capacity pump than that normally fitted may be a distinct advantage in the future.

Alum injection point and alum (commercial size installations only).

The alum injection point *(if fitted)* should be located pre-filter.
If no alum injection point is fitted, it is an acceptable alternative to add the dose directly to the balance tank. This is often the method used in smaller pool establishments.

Alum should always be used in association with sand filters. The non-use of alum risks the contamination of the filter media with minute particles of contaminant that would otherwise be trapped in the sacrificial alum flock, the finest filter media available in a sand filter.

Plant room gauges

It is difficult to maximise the effectiveness of existing plant and equipment when faulty or non-functional gauges prohibit the operator from knowing accurately what the plant is achieving.

All plant room gauges, loss of head, pressure, vacuum and rate of flow gauges *(or any other variety of gauges fitted)* should be serviced annually. Any defective gauges should be repaired or replaced.

Daily activities

Daily cleaning is strongly recommended for scum lines around the water line. Due to the pathogens, which may survive in scum lines, regular cleaning is essential. In addition an obvious scum line at water level may detract from the appearance of the cleanest and best-maintained pool, and is unlikely to meet with current customer service expectations of patrons. Older style pools lacking scum gutters, or skimmer boxes or wet deck outlets are very labour intensive in this regard, but more regular cleaning will minimise the problem.

Appendix 4 - Testing

The basic role in operating a swimming or spa pool is maintaining the water quality. Whenever a swimming or spa pool is available for use it should have chemical levels adequate to destroy any microorganisms which may contaminate the pool.

Frequency of testing (chemical)

Testing of pool water for free chlorine, total chlorine, other forms of disinfectant and pH should be carried out in line with the recommended times listed below. The times may vary depending on bather load and climatic conditions. Relevant levels should be maintained as recommended in this guideline.

Category 1 swimming and spa pool minimum recommended chemical testing requirements are:

(a) a test prior to opening in the morning
(b) a test mid morning (nominally 10.00am)
(c) a test at midday (hottest part of the day)
(d) a test mid afternoon (nominally 2.00pm)
(e) a test during the evening (nominally 6.00pm).

An additional test may be necessary should conditions in the pool change markedly, such as at a learn to swim centre or between the commencement of school swimming classes.

Category 2 swimming and spa pool minimum recommended chemical testing requirements are:

(a) a test prior to opening in the morning
(b) a test at midday (hottest part of the day)
(c) a test during the evening (nominally 6.00pm).

An additional test may be considered at a school pool after a period of heavy use.

Category 3 swimming and spa pool minimum recommended chemical testing requirements are:

(a) a test prior to opening in the morning
(b) a test late afternoon or at closing time.

All results should be recorded in the pool log book and be available for perusal as required. See Records - Appendix 6 for more detail on recommended tests and a sample pool log.

Frequency of testing (microbiological)

It is recommended that a monthly microbiological sample be taken from category 1 pools, two monthly for category 2 pools and quarterly samples for category 3 pools. Samples should be analysed by a laboratory with National Association of Testing Authorities (NATA) accreditation or equivalent for *the particular tests required*, by arrangement.

If problems arise with chemical levels, advice from a pool professional should be sought and further microbiological sampling may be recommended. Resampling for microbiological analysis should be performed immediately when unsatisfactory results are obtained. The sample should be at least 250 ml or as stipulated by the analysing laboratory (Note: microbiological samples must be collected in sterile containers containing sufficient sodium thiosulphate to provide a concentration of approximately 100mg/l in the sample.)

The results of a single sample do not give an indication of overall pool management. Ideally, the bacterial results obtained should be entered into a database together with the complementary chemical analysis so that data is obtained on pool management performance. This should be considered for all swimming and spa pools. These results should also be compared to bathing loads at the time of sampling to reflect the impact of this important pool operating parameter.

Sampling location

Generally, samples are taken as follows. Remove the cap of the sample bottle with one hand. The bottle is immersed neck down in the water to a depth of about 300mm and tilted to face horizontally away from the hand and allowed to fill. The bottle can be moved away from the sampling hand until it is sufficiently full. It is then removed and the cap is replaced. Samples should be taken in a location representing a point furthest from inlets (eg. a suction point) where users have not been swimming nearby in the previous 60 seconds.

Samples for confirming automatic control dosing should be taken from a sample tap strategically located on the return line, as close as possible to the probes in accordance with the manufacturer's instructions. As the difference between manual pool readings and automatic control measurements will vary, it is the consistency of variation that is paramount. Diverging or converging readings should be investigated.

Microbiological samples should be collected prior to complementary chemical parameter sampling. The chemical test results should be noted on the submission form for the microbiological samples. Samples must be transported chilled and delivered to the testing laboratory so that testing ideally commences within six hours of sampling. Testing that commences after 24 hours of the sample being taken cannot yield reliable results.

Testing apparatus

Suitable testing apparatus should be used to ensure accurate results. All glassware and plasticware should be thoroughly washed and rinsed after each testing session. The test methodology specified by the manufacturer of the test kit should be strictly followed. Reagents don't stay viable indefinitely and should be stored correctly and periodically replaced to ensure their effectiveness. To maintain the integrity of the test reagents, they should be stored in a cool, dry place out of direct sunlight. Fresh reagents should be sealed in foil. Liquid testing reagents should be stored in sealed containers.

Test kits using orthotolidine as a reagent to determine chlorine or bromine have been withdrawn from sale because of their carcinogenic properties. Water after testing must not be discarded into the pool. Expired or defective reagents should be disposed of in the correct manner. The local environmental protection agency should be consulted in this matter.

The following test methods are some of those able to be used.

Chlorine/bromine

- A colorimetric comparison method based on DPD reagents using standards capable of measuring to 0.2 mg/l units within the recommended disinfectant range.
- A photometric method based on DPD reagents capable of measuring to 0.2 mg/l units within the recommended disinfectant range.

pH

- A photometric method capable of measuring to 0.1 pH units.
- A pH meter.
- A colorimetric method capable of measuring to 0.2 pH units.

Total alkalinity

- Titration method using an appropriate indicator (and sodium thiosulphate where elevated chlorine concentrations are detected).

Isocyanuric acid

- Any test kit available

Clarity

- There is no test specified at this time for water clarity. Water clarity should be maintained so that sharply defined lane markings or other features on the pool bottom at its greatest depth are clearly visible from the side of the pool.

Total dissolved solids

- Electronic equipment may be used to measure the conductivity of the pool water sample. The instrument is calibrated with a standardised solution. The actual concentration of total dissolved solids is read directly from the meter. It should not exceed 1500 ppm. Salt water pools will have a level of up to 7000 ppm but is typically between 4000 and 7000 ppm.

Appendix 5 - Sample collection protocol from swimming pools for *Giardia* and *Cryptosporidium*

Introduction

This protocol sets out sample collection requirements and background laboratory analysis, transport and notification information for swimming pools. It is applicable to anyone who has a need to have swimming pool water tested for these organisms. *Giardia* and *Cryptosporidium* are parasites, which infect the gastrointestinal tract with associated diarrhoea.

Sample collection

- Please notify the Queensland Health Scientific Services Public Health Microbiology Laboratory of your intention to collect samples.
- A 10 litre sample is required.
- Sample collection is best performed at a site, which is most likely to be contaminated ie. before filtration inlet.
- Ideally, two 10 litre samples should be collected from each pool eg. deep end and shallow end, if applicable.
- Analysis is target specific, aseptic sampling techniques are not required.
- Collect sample by submersing the container below the surface of the water.
- Approx. 12ml of 10% w/v of sodium thiosulphate must be added to the 10l sample after sample collection.
- Samples can be stored at room temperature for up to two weeks.
- 10l sample containers and sodium thiosulphate can be obtained from the central specimen receipt at Queensland Health Scientific Services.
- Please deliver samples to the central specimen receipt at Queensland Health Scientific Services, 39 Kessels Road, Coopers Plains.

Laboratory analysis

- Sample processing involves filtration, elution, centrifugation, immunomagnetic separation, acid dissociation, fluorescent in-situ hybridization, immunofluorescent staining and microscopic examination.
- Sample analysis takes approximately five hours.
- To ensure same day results, the laboratory should receive samples before 10:00 am Monday to Friday. In times of extreme demand, same day results may not be available. However, every endeavour will be made to provide results within 24 to 48 hours of sample receipt.
- Results will be faxed and/or phoned to the submitting authority as soon as they are available.
- In the event of a positive isolation of *Cryptosporidium* and/or *Giardia* from a pool water sample, you are strongly encouraged to contact your nearest Queensland Public Health Unit for advice on follow-up action. The laboratory will be happy to provide you with the appropriate contact for your area.

Contacts

Senior Technical Officer
Public Health Microbiology Laboratory
Queensland Health Scientific Services
39 Kessels Road
Coopers Plains Q 4108
Phone: (07) 3274 9075
Fax: (07) 3274 9175

Supervisor
Central Specimen Receipt
Queensland Health Scientific Services
39 Kessels Road
Coopers Plains Q 4108
Phone: (07) 3274 9065
Fax: (07) 3274 9022

Appendix 6 - Records

A register or log should be used to record the results of every test performed at a swimming or spa pool. There is a wide variety of test register sheet designs, which vary according to the type of pool and disinfectants used. There is no ideal test register sheet. Each pool manager or local government should have their own test register sheet designed to meet their needs. The register or log is available for perusal by appropriate persons upon request. The records will help the operator, should problems arise on more than one occasion.

A daily register sheet is essential and should include the testing time of each pool and columns for entries such as:

- date and time
- disinfectant concentrations (and oxidation reduction potential)
- pH
- temperature (when heated)
- water clarity.

Other entries that may be made include:

- backwashing
- total dissolved solids
- chlorine usage
- cyanuric acid concentration
- hardness (calcium level)
- total alkalinity
- water meter reading
- chemical adjustments made
- admission data
- dose settings
- all maintenance required or scheduled
- chemical stocks on hand
- weather
- bathing loads
- sample results (microbiological and chemical)
- water balancing
- general remarks including significant events.

One person should be made solely responsible for pool testing and recording of results each working shift and the register sheet should include their name.

Date	disinfectant level					pH	temp	clarity	stabiliser	adjustments	bact results	admissions	maintenance	general
	time of test													
	6	10	12	2	6									
___/___/__														
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Appendix 7 - Operator qualifications

It is strongly recommended that pool operators undertake certified training in pool operation. A pool operator is the person nominated to be in charge of the pool. This should be someone dedicated on site specifically to control the pool, spa or recreational centre operations. Operators of public swimming pools and spa pools need to have a sound and demonstrable knowledge of pool operating procedures.

Pool operators should have a sound knowledge of:

- pool plant
- pool maintenance
- water chemistry
- pool disinfection requirements
- water testing
- first aid
- life saving and resuscitation techniques

For further information regarding swimming pool safety, please consult 'Safety in Swimming Pools, Guidelines for Safe Pool Operation' The Royal Life Saving Society, Qld Branch.

At the time of writing, available courses included

1. Plant Operation - Swimming Pool Course CNO455 - Open Learning Institute of TAFE. Telephone 3259 4111.

2. Swimming Pool Plant Operators Course CNREC 012 - Southbank Institute of TAFE. Telephone 137248.

An industry accredited training package is being developed through the Swimming Pool and Spa Association of Queensland Inc for swimming pool technicians. Telephone 3252 3611

Appendix 8 - Patron behaviour and faecal accident policy

Patron behaviour signage

The following signage is recommended for display for pool patrons:

- If you currently have, or have had diarrhoea in the last 14 days, you should not enter the swimming pool.
- Please use the toilet and shower using soap before entering the pool.
- Avoid swallowing/drinking the pool water.
- Wash hands thoroughly after using the toilet or changing nappies. Please use the soap provided.
- Do not allow babies, toddlers or incontinent persons to enter the water with soiled nappies or naked. Use of waterproof pants might be considered.
- Do not change nappies beside the pool or rinse off an undiapered child in the pool. Use the change room provided.
- Accidents can happen. If you or your children don't quite make it to the toilet, please tell reception immediately. Confidentiality will be respected.
- Swimming nappies must be used for children who are not toilet trained. These are available from the office.

Faecal accident/incident policy

All pools should have a faecal accident/incident policy in place. This policy should be sub-divided into the following reaction categories.

1. Loose runny stool
   - Clear the immediate area of the pool of patrons.
   - Add a coagulant to the pool area.
   - Remove obvious contamination/waste by use of the pool suction cleaner. Waste should be discarded directly into a sanitary sewer, or a container for later disposal to a sanitary sewer. Clean the suction device and dispose of washings to a sanitary sewer.
   - Shock dose the pool with chlorine dioxide or chlorine overnight.

2. Solid Stool
   - Clear the immediate area of the pool of patrons.
   - Remove the stool using a fine mesh scoop.
   - Add a disinfectant to the vicinity (one litre of sodium hypochlorite or one cup of calcium hypochlorite).

3. Employee education
   - Educate all staff with relevant information on *Cryptosporidium* and *Giardia* (refer Appendix 1 and 2)
   - Ensure all staff are capable of communicating this information in an informed and sensitive manner to patrons when required.
   - Ensure all staff are aware of the faecal accident/incident policy.

Appendix 9 - Water balancing

Pool professionals place great importance on water balancing and this view is supported, but is not a requirement of these guidelines. Maximising the effectiveness of the existing plant and equipment must be complemented by having correctly balanced water. The standard recommendation remains for monthly testing with a:

- reserve Alkalinity of 100
- calcium Hardness of 200
- pH of 7.6.

The term 'chemical water balance' means the swimming pool water is in a state of equilibrium with calcium compounds. Balanced water prolongs the life of a pool and its fittings, helps with prevent stains and improve bather comfort. If pool water does not have enough dissolved salts, it will try to obtain them by etching or eroding the pool surfaces and fittings. If the pool water has too much dissolved salts, it will try to get rid of the excess in the form of salt precipitates or deposits known as scaling.

The three major factors that operate interdependently to affect water balance are pH, total alkalinity and calcium hardness. As pH rises, salt solubility decreases and therefore, in hard waters with a high alkalinity, scaling may occur. As total alkalinity rises, the solubility of salts tends to decrease and in hard water with a high pH, scaling may occur. Calcium hardness is a measure of all the different dissolved calcium compounds found in the pool. If calcium hardness is low or too high it does not cause problems in a pool unless the water is not chemically balanced. Temperature affects the solubility of salts in a pool. Generally, a salt is less soluble in water at higher temperatures (boilers and heat exchangers) than at lower temperatures.

Determination of chemical water balance

The calcium saturation index can be used to determine chemical water balance from pH, total alkalinity and calcium hardness. In order to simplify the Index, the 'water balance chart' for temperatures of either 30^0C or 40^0C, has been devised and is attached. Other more versatile charts are available for purchase from some chemical suppliers and pool shops.

The water balance chart is divided into two scales where scale A is for water at 30^0C and scale B is for water at 40^0C. The total alkalinity scale is common to both scale A and scale B. For swimming pools scale A should be used and for spa pools use scale B.

Test the pool water for pH, total alkalinity and calcium hardness and then:

1) Plot calcium hardness on its scale first because it is the most difficult parameter to alter
2) Plot total alkalinity because it is also a stable parameter
3) Draw a line between the plots for calcium hardness and total alkalinity
4) Note the pH from the chart

5) Compare the chart pH to the measured pool pH.
   a) If the pool pH is within 0.2 of the chart pH, then the pool is balanced.
   b) If the pool pH is greater than the chart pH by more than 0.2, then the pool has a positive imbalance and could cause scaling.
   c) If the pool pH is less than the chart pH by more than o.2, then the pool has a negative imbalance and is termed corrosive.

Example

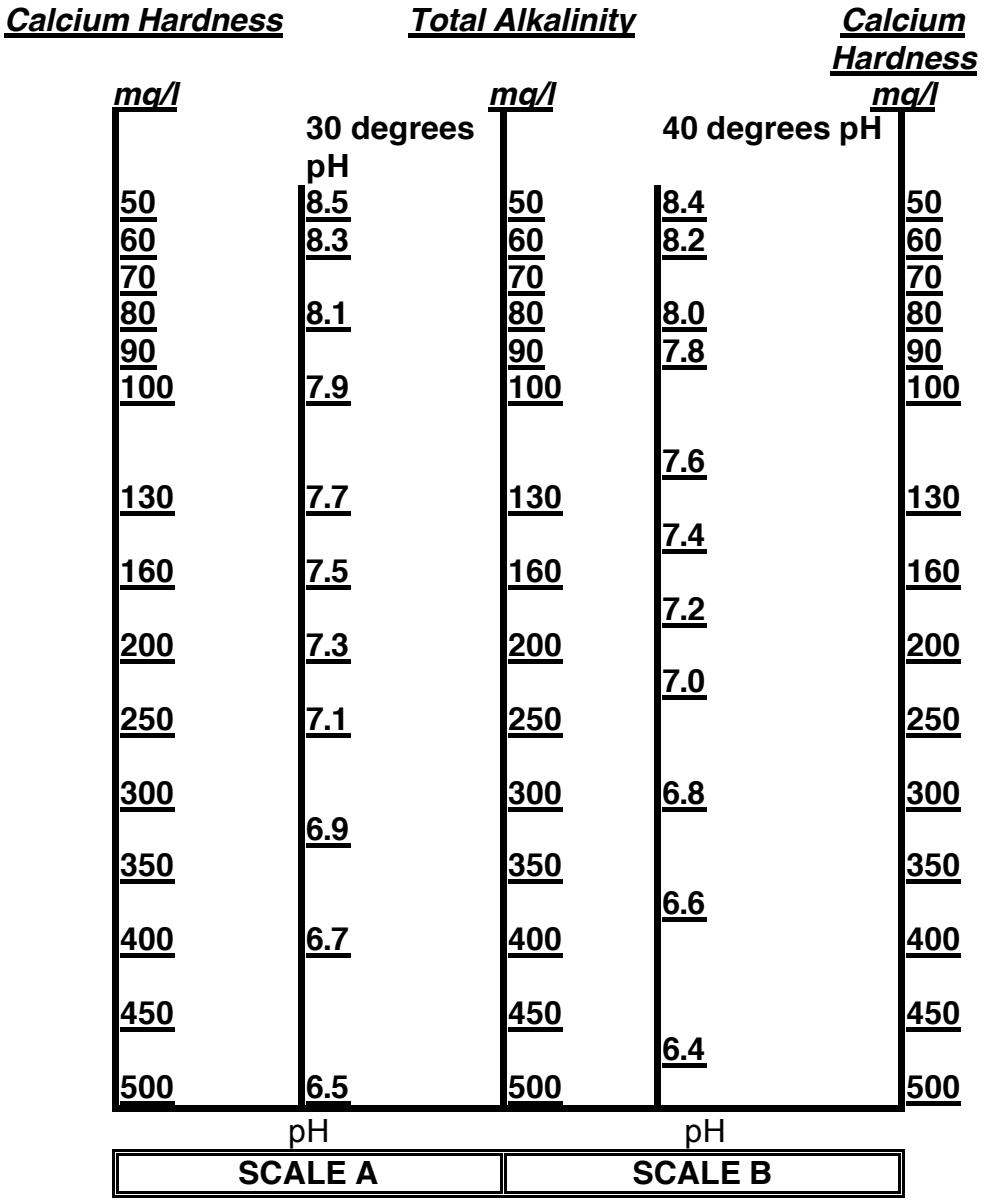
Consider a pool operated at 26^0C and testing determines the results of:

total alkalinity	: 160 mg/l
pH	: 8.0
calcium hardness	: 100 mg/l

Solution

Use scale A because the water temperature approximates 30^0C. Plot both total alkalinity and calcium hardness, draw a line between the two plots and determine that the chart pH to achieve balanced water is 7.7. The actual pool pH 8.0 is higher than the chart pH by more than 0.2. Therefore in this case the pool is likely to be causing scaling and feel 'hard' to bathers.

Water balance chart



A calcium level of 150mg/l will prevent the water etching the plumbing and heat exchanger and assist prevent calcium leaching form the grouting or concrete pool structure.

Appendix 10 - Amenities

Showers

To encourage pre-showering, an adequate number of showers should be located in the dressing room in a position by which patrons have to pass them before entering the pool area. Signs should be erected to encourage showering before swimming. The shower environment can be humid, wet and allow the proliferation of bacterium and fungi. Thorough and regular cleaning is needed to prevent this and to remove soap accumulations.

Test room/area

A separate area or room away from the chemical storage area should be provided where testing of pool water may be carried out. The test room should be provided with a sink and tap water, and adequate bench space.

First aid

First aid equipment and a sick room should be provided. A First Aid Officer (FAO) should be on duty during pool operating hours. The First Aid Officer should have a first aid certificate from a recognised training institution such as St Johns Ambulance or the Royal Life Saving Society. Signs should be erected to demonstrate resuscitation techniques.

Ventilation

Adequate ventilation for indoor pools is necessary to dilute volatile air contaminants.

Appendix 11 - Common pool problems

Problem	Reason	Solution
Chlorine odour and eye irritation	Combined chlorine level too high	Superchlorinate - increase free chlorine level to oxidise combined chlorine
Discoloured water	Various metals such as copper entering pool, eg. as corrosion product, being oxidised by chlorine	Increase pH to 7.4
Water has a dark appearance	Products from breakdown of large amounts of organic material (eg. Tannins)	Check filter operation Superchlorinate
Green water and slippery surfaces	Indicates algae growth due to inadequate chlorination	Superchlorinate
Metal fixtures corroding	Water pH too low	Increase pH to 7.4
Scaling on pool surfaces or heater	Calcium hypochlorite (powder) added directly to pool water	Dissolve first in a bucket before adding to pool or change to sodium hypochlorite (liquid)
Cloudy water	Excessive combined chlorine, or free chlorine rapidly dissipated	Superchlorinate
Cloudy water	Poor filtration	Check filter medium and backwash or clean
Cloudy water	Calcium hypochlorite added directly to water	Dissolve prior to adding
Chlorine disinfectant appears to be ineffective	Shelf-life exceeded	Check shelf-life. Note that sodium hypochlorite (liquid) has a maximum shelf-life of eight weeks whereas bromine (as BCDMH) and calcium and lithium hypochlorite (powder) have more than 12 months shelf-life. Isocyanuric acid level too low - increase to 30 to 50 ppm.

Appendix 12 - Health risks

In poorly maintained swimming and spa pools, people may be at risk from infections caused by a number of microorganisms. Some of these may be naturally present on hair or skin or in our ears, mouth, nose, intestinal and uro-genital tract. Inadequately treated pool water or surfaces (such as shower floors) may transmit infections.

Bacterial pathogens

Pseudomonas aeruginosa is the most common disease causing agent associated with waterborne disease outbreaks. It is an opportunistic pathogen and has been identified as causing eye, ear and skin infection. Its normal habitats are water, soil and vegetation but it may also be of human origin. Although relatively resistant to a range of disinfectants, chlorination of normal swimming pools should be sufficient to kill the bacterium. However, where there is water turbulence, elevated temperature and heavy bather-loads such as in spa pools, considerably greater care is needed to ensure their safe operation and the eradication of this organism.

Legionella spp. causes a serious disease of the lung known as legionnaires disease *(legionellosis)* and a less debilitating disease called pontiac fever. They are found in the natural environment, such as soil, rivers, lakes and creeks. Outbreaks have mainly been associated with air conditioning cooling systems and potable water systems *(especially hot water)* although spa pools have also been implicated. Legionellosis is caused through inhalation of contaminated aerosols.

Staphylococcus aureus are regularly isolated from swimming pools and spa pools as they are normal microflora of the skin, ear and nose. These micro-organisms can cause skin infections such as boils, carbuncles and wound infections. They are fairly resistant to disinfection but have not been shown to be a public health problem in well maintained pools.

Mycobacterium marinum causes chronic skin ulceration known as 'swimming pool granuloma' which may last up to three years if untreated.

Shigella, Salmonella and Campylobacter have been implicated as causative agents of gastrointestinal diseases but outbreaks as a result of swimming are uncommon.

Protozoan pathogens

Cryptosporidium is a protozoan parasite of about four to seven microns in diameter. It is very resistant to common disinfectants. ***Giardia*** is a minute protozoan parasite of about eight to 12 microns in diameter. It is resistant to common disinfectants though not to the same extent as *Cryptosporidium*. *Cryptosporidium* and *Giardia* may be excreted by infected humans into swimming pools through faecal accidents and may cause outbreaks of diarrhoea. A carrier state exists where humans may be infected without showing obvious symptoms.

It is more important to prevent the entry of these organisms into the pool and strategies such as requiring all bathers to wear swimming costumes at all times should be considered. For more detail see Appendix 13 Control of *Cryptosporidium* and *Giardia* in swimming pools, leisure pools, spas and hydrotherapy pools.

Naegleria fowleri is a pathogenic free-living amoeba which has been shown to cause a fatal disease called primary amoebic meningo-encephalitis. The disease is contracted by the invasion of the amoeba through the nose into the brain. In nature, the organism thrives in mineral springs, thermal bores, rivers and lakes. These waters are generally heated above 25^{O}C, which assists the parasite in its metabolism and survival.

Viral pathogens

Enteroviruses are the major causative agents of swimming pool gastroenteritis. They are most frequently found in wading pools used by infants and young children where bather hygiene is poor and water volume is small.

Adenoviruses types 3 and 4 cause pharyngo-conjunctival fever among bathers. The disease is characterised by sore throat, fever and conjunctivitis and is frequently associated with diarrhoea.

The Herpes simplex virus causes fever and an unwell feeling. It has been reported to be able to survive for long hours in warm, humid conditions and is spread by persons with cold sores.

Plantar warts are caused by a papovavirus, which may be transmitted by contact with contaminated floor surfaces.

Yeast and fungal pathogens

Large numbers of ***fungi*** can be found in indoor swimming pools. Athlete's foot or tinea pedis is caused by certain fungal pathogens (dermatophytic fungi), including *Trichophyton rubum, Trichophyton mentagrophytes* and *Epidermophyton floccosum.* These fungi have been isolated from shower stalls, floors and so forth.

The yeast, *Candida albicans,* may cause uretho-genital, skin and nail infections in individuals with normal immune defences as well as serious systemic infections in debilitated patients.

Heat illness

In natural sunlight the main forms are heat exhaustion and severe sun burn. The body has no mechanism to warn of overheating. In saunas, dehydration, heat exhaustion and fainting may occur. On entering a heated pool or sauna the skin blood vessels dilate to help lose heat and keep the body cool. The heart has to pump faster and so the heart rate increases. If there is insufficient blood going to the brain, there is a lack of oxygen and a person may feel dizzy and even faint. Deaths have resulted when alcohol has been consumed and the body subjected to heat stress.

Heat exhaustion is caused by a loss of water and electrolytes. Any sustained muscular exertion can cause this. It is relieved by rest and fluid and electrolyte (salt) replacement. Proper conditioning prior to heavy muscular exertion should be attempted. No heated swimming pool or spa pool should be operated at a temperature greater than $38^{O}C$ and exposures at greater than body temperature should not exceed 20 minutes for a healthy adult. Children and those with medical conditions (heart conditions) are particularly at risk. Medical advice should be sought for persons who are in the at risk group. A suitable warning sign could read 'Children under the age of 6 years and persons with medical conditions should not use the heated spa pool unless under supervision. Seek medical advice.'

Chemical conditions

While too little residual chlorine will allow bacteria to grow, too much chlorine, bromine or prolonged swimming, particularly in salt water, can cause conjunctivitis (eye irritation), dermatitis (skin allergy) and dry scaly skin. Some people may suffer skin sensitivity if bromine (in the form of BCDMH) is used.

Shade

The use of an outdoor swimming or spa pool complex by patrons exposes them to harmful ultra violet radiation. Guidance on shade can be obtained from *Shade for Public Pools - Guidelines for shade protection against ultraviolet radiation at outdoor public pools* published by Queensland Health.

Swimming Pool Fencing

Swimming Pool fencing is mandatory in Queensland advice and information must be sought from the Local Government or the Department of Local Government and Planning or at http://www.poolfencing.qld.gov.au/.

Appendix 13 - Potential health problems associated with spa pools

Health problems	Causative agent	Predisposing factors to infection
Follicular dermatitis	Pseudomonas aeruginosa	High numbers of micro-organisms Long exposure time High temperatures
Skin, ear and eye infections	Pseudomonas aeruginosa *Pseudomonas cepacia* *Mycobacterium marinum* Papilloma viruses *Acanthamoeba*	Injury Spa environs and materials Skin lesions from recent trauma Immune deficiency
Skin irritation	Chloramines	Inadequate dumping frequency Low chlorine disinfectant levels
Respiratory infection	Legionella, Pseudomonas spp., *Enterobacteriaceae*, free-living amoebae, adenoviruses	Aerosol dispersion of contaminated water Poor disinfection practice Immersion of the head Pre-existing respiratory disease
Genito-urinary infection	*Pseudomonas spp* *Enterobacteriaceae,* *Trichomonas, Chlamydia,* *Herpes,* yeasts and fungi	Excessive exposure to spa water Careless bather practices
Gastro-intestinal infection	*Giardia, Cryptosporidium,* bacterial enteric pathogens	Faecal pollution of water Ingestion of water.
Heat stress *(hypothermia)*	Excessive exposure	High temperature, especially above 40^0C (or above 38^0C for those at risk such as the elderly or those with heart conditions). Long exposure time Predisposition to heat stress Heart conditions

If temperature is above 40^0C there is potential for increased evaporation, bather discomfort, scaling and increased use of disinfectants.

Appendix 14 - Control of Cryptosporidium and Giardia In swimming pools, leisure pools, spas and Hydrotherapy pools

Scope

This appendix sets out the procedures recommended for a multi-barrier risk management approach for the control of *Cryptosporidium* and *Giardia* in swimming pools, leisure pools, spas and hydrotherapy pools in Queensland whether they be commercial, private or public. It provides the additional control measures to be initiated over and above those provided for in existing guidelines for the management of pools.

Disinfection

In addition to disinfection measures recommended earlier in these guidelines, operators should implement one or more of the following options for ongoing *Cryptosporidium* and *Giardia* control in pool water.

The microscopic size of *Cryptosporidium* and *Giardia* means that common sand and cartridge filters are not totally effective in removing these parasites. They are also resistant to usual pool water disinfectants (eg. chlorine, bromine) at normal operating levels. These characteristics present problems for pool operators in attempting to prevent the spread of disease in the event of the pool becoming contaminated. The following options are available for ongoing *Cryptosporidium* and *Giardia* control in pools:

- full stream ozone
- side stream ozone
- shock dose chlorine dioxide
- full stream micro-filtration
- side stream micro-filtration
- side stream diatomaceous earth filtration
- ongoing chlorine dosing
- shock dose chlorine.

Stabilised chlorine dioxide (liquid) is recommended for use in this guideline not onsite generated gas.

These options can be categorised by the treatment classification system displayed below in **Table 1**.

Table 1: Treatment Classification System

Method	Approach				Disinfection Treatment		Disinfection Type	
	Full Stream	Side Stream	On-going Residual	Shock Dose	Chemical	Physical	Inactivation	Removal
1	+				+		+	
2		+			+		+	
3				+	+		+	
4	+					+		+
5		+				+		+
6		+				+		+
7			+		+		+	
8				+	+		+	

Clarification of the terminology used in the treatment classification system is detailed below:

Approach

Full stream

This approach allows treatment by the disinfection method on the entire flow of water in the filtration cycle. This in theory allows disinfection of all water in the pool in one complete water turnover period. However, in practice it may take up to four full water turnover periods in a functioning, well designed pool with excellent circulation and mixing characteristics to achieve 99.5% treatment of the water.

Side stream

The side stream approach is an alternative to full stream. By treating a smaller percentage of the water flow, this approach hopes to provide acceptable levels of risk management while reducing costs to a level which may be commercially viable for a wider range of pool complexes.

By way of explanation of the side stream concept, if the existing chlorine and filtration system treats all pool water every four hours *(water turnover period)* and the side stream system is designed at 20% of main system capacity, then theoretically every 20 hours all water would be treated by the disinfection method. Again it should be noted that in practice it may take up to four turnover periods to achieve effective treatment of the water with full stream systems. This would require up to 20 water turnover periods for a 20% side stream system.

Ongoing residual

A method of inactivation in which a constant residual of disinfectant is maintained in the pool water at all times.

Shock dose

This approach does not offer an on-going treatment but relies on regular shock dosing of the pool water by a disinfection treatment. The theoretical time period for disinfection is therefore not related to the water turnover period of the pool, but to the interval between effective shock dosing *(ie. daily, weekly, monthly etc).*

Disinfection treatment

Chemical

This category includes all liquids, gases and solids which are added to the pool water to cause a chemical reaction which results in disinfection of the water by inactivation of *Cryptosporidium* oocysts and *Giardia* cysts.

Physical

Any method which relies on physical removal or entrapment of the *Cryptosporidium* oocysts and *Giardia* cysts.

Disinfection type

Inactivation
The result of a disinfection treatment which inactivates the *Cryptosporidium* oocysts and *Giardia* cysts causing them to become non-viable.

Removal

The result of a filtration treatment which physically removes *Cryptosporidium* oocysts and *Giardia* cysts from the pool water.

The following section discusses treatment options including effectiveness and cost. It is suggested that pool operators seek advice from industry as to specific costs for individual needs.

Full stream ozonation

Research into proven methods of disinfection for *Cryptosporidium* and *Giardia* consistently identifies ozonation as the most effective treatment. Literature suggests a contact time *(C.t)* value *(multiplication of the disinfection concentration in mg/l and the time in minutes required to inactivate a particular parasite)* for ozone of between 5 and 10 minutes. This means that *Cryptosporidium* exposed to 1mg/l of ozone for 5 to 10 minutes will result in inactivation of >99% in normal swimming pool temperatures and pH levels. If sufficient concentrations and contact time are assured, then this process should theoretically provide >99% inactivation of *Cryptosporidium* and *Giardia* in one water turnover period. Again it should be noted that in practice it may require up to four turnover periods to provide effective treatment of all of the water.

The UK Pool Water Advisory Group recommend an ozone concentration of 0.8 – 1 mg/l with a contact time of 2-3 minutes. If the temperature is above 32°C, the concentration should be increased to 1.2 mg/l – 1.5 mg/l. However, this recommendation may not be specifically targeted towards the disinfection of *Cryptosporidium* and *Giardia*, but rather a concentration used to maintain general water quality parameters. Therefore, a concentration of 1.5mg/l with a contact time of 5-10 minutes may be more appropriate to ensure >99% inactivation of *Cryptosporidium*. This process is a high capital cost option with low ongoing costs.

Side stream ozonation

The literature suggests that *Cryptosporidium* and *Giardia* exposed to 1.5mg/l for 5 to 10 minutes will result in > 99% inactivation in normal swimming pool temperatures and pH levels (C.t value of 5 - 10). The side stream approach only treats a specified percentage of the water each water turnover period and is therefore less effective than full stream ozone. The theoretical time period for inactivation is related to the water turnover period, pool design and actual circulation pattern and is dependent on the percentage of the main stream flow which is being treated. In practice, effective treatment of the water may not be achieved in less than four turnover periods in a full stream system. A side stream system needs to be adjusted proportionately. A range of 25-40% of full flow is suggested.

By treating only a percentage of the main stream flow of the pool, the side stream approach attempts to reduce the cost associated with full stream ozonation.

Shock dose chlorine dioxide

Research has identified chlorine dioxide as an effective *Cryptosporidium* and *Giardia* disinfectant agent. This research suggests a C.t value of 78 (exposure to 1.3 mg/l of chlorine dioxide for 1 hour) and results in inactivation of >90% for both parasites at normal swimming pool temperatures and pH levels.

The effectiveness of the shock dosing method as a *Cryptosporidium* and *Giardia* control option is not only reliant on the concentration and contact time of the dosing, but on the regularity of these doses. This shock dosing method should be carried out overnight due to degradation by sunlight and is recommended on a weekly basis during peak season for commercial operations. A 0.25 mg/l concentrated dose for six hours is suggested for this option.

Full stream micro-filtration

Literature suggests that an *'absolute one micron rated filter'* will remove *Cryptosporidium* oocysts and *Giardia* cysts. The cost of micro-filtration on a standard main stream water flow *(eg. 45 l/s)* is substantial.

Side stream micro-filtration

The literature suggests that an *'absolute one micron rated filter'* will remove *Cryptosporidium* oocysts and *Giardia* cysts. However, the side stream micro-filtration approach requires a greater number of water turnovers to achieve the same result as full stream micro-filtration.

Side stream diatomaceous earth filtration

Diatomaceous earth filtration has the capacity to remove particles of three to five microns in size and whilst not guaranteeing 100% removal of *Cryptosporidium* oocysts, does provide another barrier in the control of *Cryptosporidium* and *Giardia*. Costs may be influenced by the life of the filter and the amount of diatomaceous earth used.

On-going chlorine dosing

On-going chlorine dosing of pools is not necessarily an additional method of control as this may be part of best practice pool management. However, an increase in the average level of free chlorine should result in some measure of control over *Cryptosporidium* and more particularly *Giardia* which is more susceptible to disinfectants.

Research on the effectiveness of chlorine as an effective *Cryptosporidium* and *Giardia* disinfection solution conflicts. A C.t value of 7,200 for 90% inactivation has been adopted based on the consensus of the literature reviewed (exposure to 80 mg/l for 90 minutes). Increasing the average level of free chlorine above that recommended for normal pool operation (eg. 2 mg/l to 4 mg/l) should result in a reduction in the inactivation time period, but this should not be assumed to be a direct linear increase.

This is the current disinfection method used at most pools. Increasing chlorine levels to reduce the inactivation time period will produce increased costs. If it is assumed that this cost increase is linear until breakpoint chlorination is achieved, then this option can be compared with others based on existing chlorine costs (ie. increasing average chlorine levels from 2 mg/l to 4 mg/l will increase the cost of chlorine treatment).

Shock dose chlorine

It has been assumed that chlorine has a C.t value of 7,200 (exposure to 80 mg/l of chlorine for 90 minutes) to produce > 90% inactivation of *Cryptosporidium* and *Giardia* at normal pool water temperatures and pH. Using this value, concentrations and contact time can be measured for shock dosing at regular intervals.

Similar to chlorine dioxide shock dosing, the effectiveness of this option is reliant on the concentration and contact time of the dosing as well as the regularity of these doses. Shock dosing should be carried out overnight on a weekly basis during peak season for commercial operations.

A 40 mg/l concentrated dose for three hours is suggested for this option.

Following shock dosing, the water should be dechlorinated using sodium thiosulphate and the water chemistry balanced.

For commercial operators where pool water is not discarded annually, consideration should be given to the form of chlorine used for shock dosing. Advice should be sought from industry.

The costs involved include the extra chlorine required to elevate the free chlorine in the pool water to the required levels and for sodium thiosulphate to lower chlorine levels to allow use of the pool. The cost is therefore related to the chlorine shock dose level and the regularities of the doses.

Appendix 15 - Remediation processes

Pool water becomes contaminated with *Cryptosporidium* or *Giardia* when an infected person excretes the oocysts or cysts into the water. Sampling of the water for *Cryptosporidium* and *Giardia* will only provide a result for the actual volume of water sampled at a point in time and will not ensure ongoing safety from infection.

A regular program of sampling for *Cryptosporidium* and *Giardia* is **not** recommended as proper attention to pool design, maintenance and operation are the most effective measures to control the risks of disease. However, it is recognised that some pool operators may choose to carry out sampling on their own initiative at any time.

Where evidence suggests a particular pool may be associated with cases of disease, Queensland Health will undertake an investigation including sampling of the pool. Where accepted viability testing is not available, the presence of *Cryptosporidium* oocysts or *Giardia* cysts in samples obtained from a pool will lead to a recommendation for the closure of the pool by Queensland Health. Where accepted viability testing is available, the presence of viable oocysts and cysts will also lead to a similar recommendation.

Where a pool operator chooses not to act on this recommendation, Queensland Health may invoke legislative powers under the Health Act 1937 to minimise risk to public health.

Pool remediation will be required to be conducted.

The re-opening of pools closed voluntarily by the pool operator or by Queensland Health will be based on a nil viable oocyst or cyst presence in the water. If viability testing is not available, reopening will be based on no oocysts or cysts being detected.

Where pools have tested positive, the following methods of pool remediation have been proven to be successful:

Disinfection by shock dosing with chlorine

1. close the pool
2. backwash filters
3. flocculate filters with alum
4. raise the chlorine level to 90 mg/l and operate the plant in filtration mode for one water turnover period
5. ensure all pool elements are activated and therefore treated
6. steam clean all amenities in contact with the pool water
7. backwash filters
8. flocculate filters with alum
9. reduce the chlorine level if necessary to normal operating range using sodium thiosulphate
10. balance water chemistry
11. sample the pool water for *Cryptosporidium* and *Giardia*
12. *a negative test result is required for re-opening.*

Disinfection by shock dosing with chlorine dioxide

1. close the pool
2. backwash filters
3. flocculate filters with alum
4. operate the plant in filtration mode for one water turnover period
5. repeat steps 2 and 3
6. steam clean all amenities in contact with the pool water
7. chemical dose pool water with chlorine dioxide at 2.6 mg/l
8. circulate water for one turnover period
9. ensure all pool elements are activated and therefore treated
10. backwash filters
11. balance water chemistry
12. sample the pool water for *Cryptosporidium* and *Giardia*
13. a negative test result is required for re-opening.

NB This method has proved successful. However further research indicates that a lesser concentration of chlorine dioxide viz 1.25 mg/l for two hours or one water turnover period is equally effective.

Physical removal of pool water:

1. empty the pool water to a sanitary sewer following agreement with the relevant local government
2. thoroughly scrub down the pool surfaces with a commercial detergent/disinfectant
3. drain and steam clean all pipes, pumps, fittings etc
4. steam clean all amenities in contact with the pool water
5. change the filter medium
6. refill the pool and return chlorine levels to the normal operating range
7. balance water chemistry
8. sample the pool water for *Cryptosporidium* and *Giardia*
9. negative test result is required for re-opening.

The full completion of any one of the above processes should provide a satisfactory remediation of the pool. The choice of process is dependent upon the size and nature of the pool complex, and available funds and costs.

Methods for the detection and isolation of *Cryptosporidium* and *Giardia* in water

Most currently available methods for the detection of *Cryptosporidium* and *Giardia* do not have the ability to detect different species, nor do they have the ability to differentiate between viable and non-viable organisms.

A sample collection protocol from swimming pools for *giardia and cryptosporidium* can be found at Appendix 5.

The acceptability of the method used in any private sampling process will be decided by Queensland Health when assessing sample results.

Where viability testing is not available, a nil presence of C*ryptosporidium* oocysts or *Giardia* cysts is required to allow re-opening of a pool previously found to be positive. Where viability testing is carried out, a nil presence of viable organisms is required to allow re-opening.

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Appendix 16 - *Cryptosporidiosis* (Qld Health factfile)

September 2004

Cryptosporidiosis

Information for the general public

Cause:

Cryptosporidiosis is an intestinal infection caused by *Cryptosporidium parvum*, a microscopic parasite.

Symptoms & Signs:

How will it affect you? The most common symptom is diarrhoea, which is usually watery and may be profuse. Other symptoms that may occur are nausea, vomiting, fever, headache, and loss of appetite. Some people infected with *Cryptosporidium* may not develop any symptoms.

Is it serious? In people with normal immune systems the disease is generally not serious. However, people with weakened immune systems (e.g. some people receiving cancer treatment, people on steroid therapy, people with HIV/AIDS) may develop severe and long lasting illness, which may contribute to death.

How long does it last? In healthy young children the illness is self-limiting and lasts only a few days. In adults with normal immune systems the symptoms often fluctuate and commonly last several weeks. People with weakened immune systems may not be able to clear the parasite and the illness may persist.

Occurrence:

How common is it? Cryptosporidiosis occurs worldwide. Cryptosporidiosis has only been included on the list of notifiable diseases in Queensland since mid 1996. Since that time there has been an average of just over 400 reported cases in Queensland per year. Many other undetected cases are likely to occur. It does appear to be a relatively common cause of acute diarrhoea in young children. As well as infecting humans, *Cryptosporidium parvum* occurs in a variety of animals including cattle, dogs and cats. The disease tends to be more common during the warmer months.

How likely are you to be affected? Children under two years of age, close personal contacts of infected individuals, animal handlers, travellers, and men who have sex with men are particularly at risk of infection.

Natural History:

How is it spread? Cryptosporidium is shed in the faeces of infected humans and animals. It may then be transferred to humans in several ways:

- through person to person contact (especially in households and child day care centres)
- through handling of infected pets, farm animals, or their faeces
- through swallowing contaminated food or water This includes swallowing contaminated recreational water. Cryptosporidium is resistant to the usual levels of chlorine in swimming pools and may survive for several days. High doses of chlorine and cleaning of filters can remove Cryptosporidium from a contaminated pool.
- through exposure to faeces during sexual activities

How long does it take to get sick from when you catch the infection? The time from swallowing the parasite to the development of illness ranges from 1 to 12 days, but is usually about 7 days.

How long is it infectious? Cryptosporidia appear in the faeces at the onset of symptoms and may continue to be excreted in the faeces for several weeks even after symptoms have resolved. This means that the faeces can remain potentially infectious for several weeks, particularly while the person is symptomatic and during the first few weeks after the person has recovered. The infectious agent is called an “oocyst”. The oocyst can survive in a moist environment for up to 6 months.

Treatment:

What treatment is available? There is no specific treatment for cryptosporidiosis. Replacement of fluid lost through diarrhoea may be needed. Persons with severe or long lasting diarrhoea should seek medical advice.

Prevention:

How can the spread of disease be controlled? There is no vaccination to prevent cryptosporidiosis and no way of preventing the illness in people who are known to have been exposed. Some immunity appears to follow infection with Cryptosporidium but further infections in those previously infected have occurred.

As people with Cryptosporidium infection can continue excreting oocysts even after symptoms have settled, people with diarrhoea should not go swimming until 2 weeks after diarrhoea has stopped.

What can be done to prevent the disease? There are numerous precautions that can be taken to prevent the spread of Cryptosporidiosis. through handling of infected pets, farm animals, or their faeces

- Keep children with diarrhoea home from school, preschool, childcare or playgroups until at least 24 hours after diarrhoea has stopped.
- Food handlers and health care workers should remain away from work until 48 hours after diarrhoea has stopped
- through person to person contact (especially in households and child day care centres)
- Wash hands after using the toilet, changing nappies and before handling food or eating. Wash the hands of toddlers and babies after a nappy change also. Thorough handwashing is particularly important for foodhandlers and those who have had cryptosporidiosis in the last 2 weeks.
- Wash hands after contact with pets, and after cleaning up animal faeces.
- Wash hands after gardening or other direct contact with soil.
- Wash hands after contact with cattle and other farm animals.
- Do not share towels.
- Avoid drinking untreated water and inadequately filtered water, or boil it first.
- Do not eat or drink unpasteurised milk products.
- Wash fruit and vegetables before eating them.
- To protect others, people with diarrhea should not enter a swimming pool until at least 14 days after the diarrhoea has stopped.
- Swimmers should use the toilet and shower using soap before entering the pool.
- Avoid swallowing water in swimming pools or other recreational water.
- Soiled clothing should be laundered using a hot wash cycle, and be thoroughly dried. For soiled nappies use a pre-wash anti-bacterial soaking product such as NapiSan™ and follow label instructions.
- People with weakened immune systems may need to take special precautions to reduce their risk.

Additional information:

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For further information please contact your local doctor, or telephone the nearest Public Health Unit

Appendix 17 - *Giardia* - The facts

What is it?

Giardia lamblia is a parasite which affects the gastrointestinal tract of humans.

What are the symptoms?

The main symptoms are diarrhoea (with pale, greasy faeces), abdominal cramps, bloating and tiredness. Without treatment, the symptoms may last for four to six weeks. Infections often occur without causing any symptoms.

How is it spread?

People can become infected by touching faeces or anything which has been contaminated by faeces, then touching their mouth with unwashed hands. People can also become infected by consuming contaminated food or water. Sexual activity which involves hand or mouth exposure to areas contaminated by faeces can also pose a risk of infection.

Treatment

Antibiotics can cure this infection. Drinking plenty of fluids will help avoid dehydration.

What you can do to prevent the spread of the disease?

- Wash hands thoroughly with soap and water before handling food, after using the toilet and after changing nappies.
- Avoid drinking or swallowing swimming pool water, and untreated water from dams, lakes or creeks.
- If you are unsure of the safety of the water supply, drink boiled, filtered or chemically treated water. Alternatively, drink bottled or canned beverages.
- Wash fruit and vegetables that will be consumed raw.
- Avoid sexual practices which may result in hand or mouth exposure to faeces.
- If you currently have, or have had diarrhoea in the last 14 days, you should not enter a swimming pool.

For further information about *Giardia*, please contact your local doctor or public health unit.

For enquires related to the guideline please contact:

Communicable Diseases Unit Queensland Health –
Telephone (07) 3234 1155

Copies of the guideline can be downloaded from http://www.health.qld.gov.au

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FORM 3
V13.2.12

Queensland Government

ABN 13 846 673 994

Incident notification form

Work Health and Safety Act 2011
Safety in Recreational Water Activities Act 2011
Electrical Safety Act 2002

Incident details

Incident type *Please refer to the guide to work health and safety incident notification or electrical safety incident notification webpage for assistance.*

This is to notify of a: ☐ death ☐ serious injury ☐ serious illness ☐ dangerous incident ☐ serious electrical incident ☐ dangerous electrical event

Provide an explanation of the type of incident using the categories on the **guide to work health and safety incident notification or electrical safety incident notification webpage**
(e.g. a category of 'serious injury' is 'immediate treatment for serious head injury'):

Incident date, time and location

Date of incident:	Incident address:
Time of incident:	Postcode:

Describe the specific location of the incident *(e.g. aisle 3, plant operation room, tower crane the Elizabeth Street entrance side of the site.)*

Description of the incident *Please provide as much detail as possible, for instance: the events that led to the incident; the work being undertaken when the incident happened; the overall action, exposure or event that best describes the circumstances that resulted in the injury, illness, fatality or dangerous incident; the object, substance or circumstance which was directly involved in inflicting the injury, illness, death or dangerous incident; the name and type of any machinery, equipment or substance involved. Was anyone else involved? Was electricity or electrical equipment involved?*

(attach a separate piece of paper if necessary)

Did the incident involve licensed work *(e.g. high risk work, electrical work?)*

☐ No ☐ Yes Please provide details of the type of licensed work:

Is the workplace a registered major hazard facility? ☐ No ☐ Yes

Person's injury/illness and treatment details *(if required)*

Mr / Mrs / Miss / Ms
☐ ☐ ☐ ☐ *First name* *Last name*

Date of birth: / /	Contact phone number:
Residential address: Postcode:	
Occupation: *(main duties)*:	

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Person's injury/illness and treatment details *(if required)*

Relationship to the entity notifying

☐ Worker ☐ Self-employed ☐ Member of the public ☐ Labour hire worker ☐ Contractor ☐ Group training apprentice/trainee
☐ Other *(please specify)*:

Description of injury/illness *(e.g. fracture, laceration, amputation, strain, electrical shock, burn, Q fever)*

Body location *(e.g. wrist, lower back, internal organs)* **:**

Did the person receive treatment following the injury/illness?

☐ No ☐ Yes Please describe treatment received:

Where was the injured person taken for treatment *(if applicable)***?**

Details of business or undertaking notifying of the incident

Legal name of business:

Trading name of business:

ABN ACN

Business address:

Postcode:

Contact phone number: Working hours ( ) Mobile:

Business email address:

Main business activity *(e.g. furniture manufacture, domestic construction, steel warehousing, electrical installation)*

Main industry sector

☐ Accommodation and food services
☐ Agriculture, forestry and fishing
☐ Construction
☐ Electricity, gas, water and waste services
☐ Health care and social assistance
☐ Manufacturing
☐ Professional, scientific and technical services
☐ Rental, hiring and real estate services
☐ Transport, postal and warehousing
☐ Administrative and support services
☐ Arts and recreational services
☐ Education and training
☐ Financial and insurance services
☐ Information media and telecommunications
☐ Mining
☐ Public administration and safety
☐ Retail trade
☐ Wholesale trade
☐ Other services *(please specify)*.

Describe any actions taken immediately following the incident to prevent recurrence

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Describe any longer term action proposed to prevent a recurrence

Notifier's details

Mr / Mrs / Miss / Ms ☐ ☐ ☐ ☐ *First name* *Last name*	
Position at workplace:	Contact phone number:
Email:	
Is this the person that should be contacted for further information?	
☐ Yes ☐ No If no, please provide the name and contact details of the appropriate person should further information be required.	
Mr / Mrs / Miss / Ms ☐ ☐ ☐ ☐ *First name* *Last name*	
Position:	Contact phone number:

How to lodge the form

Notification must be by fastest possible means.

The options for lodgement are by email to **whsq.aaa@justice.qld.gov.au** or by fax to **(07) 3247 0297.**

NOTE: Notification to Workplace Health and Safety Queensland or the Electrical Safety Office is not a notification to WorkCover Queensland. Call 1300 369 915 if you have any questions about filling out the form. Please keep a copy of this form for your own records before submission.

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SCHEDULE 5

Deed of Guarantee and Indemnity

SCHEDULE 6

Inventory of Management Equipment

Item	Description

SCHEDULE 4

Monthly Caretaker Report

DATE _____

The principle purpose of this report is two-fold:

1. *To confirm to the body corporate tasks specified in the associated Maintenance Schedule have been completed and that any items outstanding are identified along with a commentary on progress.*

2. *To report to the body corporate items observed as needing significant repair or refurbishment and the cost of which is beyond the spending Limit of the caretaker. Recommendations of action are required.*

3. *To report to the body corporate issues of safety or compliance.*

Section 1:
It is confirmed that all the scheduled tasks of the maintenance schedule for the preceding month have been completed with the exception of the following items:

Item	Reason	Follow-up-action
e.g. Annual roof inspection	Not complete due to unseasonal heavy rain.	Rescheduled inspection with contractor to complete in week beginning 15 March 2015.

Section 2:
It is recommended that the body corporate consider the following major repair / refurbishment items:

Item	Reason	Follow-up-action
e.g. Pool surface replacement	Pool surface pebble-crete breaking down. Significant patches where surface is degraded. – See photos attached.	Body corporate to consider attached scope of works and approve caretaker to source quotes and make recommendation.

Section 3:
The following issues of safety are advised:

Item	Reason	Follow-up-action
e.g. Stairs – Building “A”	2 incidents have occurred (see attached incident reports) where people have slipped on the stairs leading to the first floor of building “A”	Body corporate to consider applying non-slip coating to stairs of all buildings. See attached scope of works and quotes. Recommend proceeding with quote from “Non-Slip Surfaces Pty Ltd” for the sum of $1,200.00 plus GST.

SCHEDULE 5

Deed of Guarantee and Indemnity

SCHEDULE 6

Inventory of Management Equipment

Items

- Mower, Honda self-propelled
- Two (2) Jerry Cans
- Whipper snipper
- Hedge trimmer
- Shovels
- Shearers
- Pruners
- Tow (2) Wheelbarrows
- Four (4) Garden hoses
- Fertiliser spreaders
- Three (3) Ladders
- Petrol pressure cleaner
- Karcher electric pressure cleaner
- Floor sweeper
- Nilfisk hard floor scrubber
- Tow (2) Extension cords
- Angle grinder
- Circular saw
- Safety harness
- Canvas lift protector
- Pool pole
- Pool hose
- Pool broom head
- Pool vacuum head
- Pool leaf scoop
- Four (4) Gas cylinders 9kg
- Tow (2) Small filing cabinets
- Assorted tools