City of Victor Harbor Recycled Water Management Plan
For
Irrigation of Parks, Sporting Fields, Civic Centre, and Victor Harbor Cemetery

This Risk Management Plan is developed to meet the requirements for approval from the Department of Health for the use of recycled water, which is supplied from the Victor Harbor Waste Water Treatment Plant to Council Reserves, Sporting Fields, and the Victor Harbor Cemetery.

The Plan is based on the 12 elements of the **"Australian Guidelines for Water Recycling: Managing Health & Environmental Risks (Phase 1), November 2006".**

Glossary of Terms

AGWR 2006	Australian Guidelines for Water Recycling: Managing Health & Environmental Risks (Phase 1), November 2006
BOOT	Build, Own, Operate and Transfer
CCP	Critical Control Point
Council	City of Victor Harbor
DH	Department of Health
LRV	Log Reduction Value
UUVH	United Utilities Victor Harbor P/L
VHRS	Victor Harbor Reuse Scheme
VHRS-RWMP	Victor Harbor Reuse Scheme Recycled Water (Supply) Management Plan
VHWWTP	Victor Harbor Wastewater Treatment Plant
WWTP	Waste Water Treatment Plant

Framework element and components	***Activity***
Element 1	***Commitment to responsible use and management of recycled water quality***
Identify scheme owner, operator and users, and their specific responsibilities.	The operation and management of the VHWWTP and VHRS is carried by UUVH under a BOOT agreement with SA Water. SA Water is responsible for the customers supplied off the VHRS and for the distribution of recycled water to the customer supply points. Refer to VHRS-RWMP Section 2 & 3. SA Water and United Utilities Australia are competent and experienced engineering organisations capable of designing and managing recycled water schemes and wastewater treatment plants. The Council is a customer of the VHRS and has entered into a Recycled Water Supply Agreement with SA Water. The recycled water will be used at a number of Council reserves, sporting fields and the Victor Harbor Cemetery. The Council manages each site in accordance with this plan and the AGWR 2006 guidelines. Council acknowledges the importance of protecting public and environmental health, the need for implementing a preventative risk management approach, and applying control measures appropriate for the source of the recycled water and its intended use. Council commits to the responsible management, operation and use of recycled water in its Parks, Sporting Fields and the Victor Harbor Cemetery. See ***Appendix 1*** for contacts details.

Element 2	***Assessment of the recycled water system***
Scheme Details	
Provide a brief description of the recycled water scheme. Include the location of the scheme, the size of the scheme, a description of the catchment, source of water and the proposed end-uses of recycled water	A description of the VHRS is described in Section 4.2 of the VHRS-RWMP that has been produced by SA Water and supplied to the DoH. A major project has recently been completed that has constructed around 5 kilometres of recycled water distribution mains to supply community parks and sporting fields, and also to supply Investigator College (oval) and the Victor Harbor Holiday and Cabin Park (grounds). See ***Appendix 2*** for the irrigation scheme locations. An approval for SA Water to supply high quality recycled water was issued by DH on 26th November 2010. The approval indicated that the recycled water supplied from the VHRS is suitable for dual reticulation for outdoor residential use. It is also suitable for unrestricted municipal irrigation of public parks and gardens, watering of grapevines, camping grounds, roadsides and sporting facilities, including golf courses and for dust suppression.
Describe routes of exposure to humans	The main route of exposure to microbial hazards for users of recycled water from the VHRS is ingestion. This includes ingestion of residue recycled water on irrigated products by eating them; through the breathing in of droplets produced by sprays; accidently drinking from recycled water taps.
Identify potential sources of risk (based on a risk assessment) that will require control. Include risks associated with unintended uses such as cross connections.	The WWTP process provides effective barriers (activated sludge bioreactor, membrane filtration, chlorination, and UV irradiation) that exceed the Goal LRV for bacteria and protozoa. The recycled water LRV credits for virus removal derived from the Australian Guidelines as required for current and potential VHRS customers, irrigation crop type and delivery method are shown in Table 7 & 8 of the VHRS-RWMP. Refer to Section 4.1.4 and 4.1.5 of the VHRS-RWMP for additional information. Potential sources of risk (based on a risk assessment) that will require control. The risks

	associated with unintended uses include; • Treatment plant failure (mitigated by programmed maintenance, training of personnel, spare aerator, alarms on critical components including aerator, chlorinator and level sensors on all tanks, sampling and monitoring programs and emergency response procedures), • Irrigation system failure (i.e. burst pipe, leaks, irrigation outside approved areas, spray drift). Mitigated by programmed maintenance, automatic operation linked to anemometer switching, training of personnel and emergency response procedures, signage and education of users, • Cross connection with drinking water system. Mitigated by installing appropriate backflow protection devices in accordance with SA Water requirements and AS/NZS, • Exposure of the public to irrigation sprays. Risk to the general public will be mitigated by operation of the systems during night time hours. Employees and the public are instructed not to contact the recycled water. In the case that accidental contact is made employees are instructed to thoroughly wash hands or contact point with soap & water.
Use of Recycled Water	Recycled water from the VHRS will be used for municipal irrigation of various community parks and sporting fields and include; Victor Harbor Oval; Encounter Bay Recreation Ground, Civic Centre; Barker Reserve; and Victor Harbor Cemetery.
Infrastructure	Details of the City of Victor Harbor recycled water irrigation systems are shown in the **Appendix 3**. Irrigation is by pop up sprinklers in turf areas and drip irrigation in garden beds. The system at the **Victor Harbor Cemetery** provides a separate line for potable water for above ground taps. These are generally only used for filling flower vases by members of the

Infrastructure cont.	public, but as there is a possibility that these may be used for drinking this system has been kept separate from the irrigation system. Irrigation of lawn areas is carried out by pop up sprinkler systems, operated at night when the Cemetery is not in use. Garden beds are watered by drip irrigation and may be operated at any time. The irrigation system will be subject to routine operation and maintenance audits including spray irrigation function, leaking or burst pipes, and checking that water is not being delivered beyond designated irrigation areas. **The Encounter Bay Recreation Ground** has an automatic pop up sprinkler system fed from a tank and pump system. This system is operated when the fields are not in use, generally during the evening or early morning. Potable water supply is on a separate system supplying the clubrooms and toilets. **The Victor Harbor Oval** is irrigated from an automatic pop up sprinkler system. This system is operated when the fields are not in use, generally of an evening or early morning. Potable water supply is on a separate system supplying the clubrooms and toilets. **The Victor Harbor Civic Centre** is irrigated from an automated system of pop up sprinklers and drip irrigation. The lawn areas are irrigated of an evening or early morning. The drip irrigation may be operated at any time. Potable water supply is on a separate system supplying the toilet and kitchen facilities. **Barker Reserve** is irrigated from an automated system of pop up sprinklers and drip irrigation. The lawn areas are irrigated of an evening or early morning. The drip irrigation may be operated at any time. Potable water supply is on a separate system supplying the toilet and above ground taps in the car park. **<u>Marking of Pipework & Fittings</u>** Above ground components (valve boxes and sprinkler) heads will be marked purple to meet SA Water requirements.

Infrastructure cont.	**<u>Cross Connection Control</u>** Potable water is to be retained on a separate SA Water Meter and separate system to the irrigation system. There is an extremely low likelihood of cross contamination between the two systems. Where required by SA Water a backflow prevention device is fitted at the meter. The backflow meters are tested each year as part of Council's Annual Backflow Program, and a backflow audit (witnessed by SA Water) will be carried out at the irrigation sites prior to commissioning the systems over to recycled water. These audits will be carried out every 5 years to maintain validation. **<u>System Maintenance and checks</u>** The irrigation systems are maintained regularly and checked to ensure proper operation. This includes ensuring water is not being delivered beyond the designated irrigation areas. Council staff carry out routine monitoring of irrigation efficiency of operation. **<u>Irrigation Controls</u>** The irrigation systems are currently automated with either 24V Controllers connected to the mains supply or using battery operated solenoid valves and controllers. Irrigation is suspended manually during wet weather or on windy days. Irrigation is generally not carried out during the winter months, reducing any likelihood of excess reuse water moving across the surface from over irrigation during wet times. **<u>Soil Monitoring</u>** As recommended in the VHRS-RWMP regular monitoring of soil properties, including salinity and sodicity levels will be carried out. Soil sampling will occur every 2 years to determine any impacts on soil condition due to irrigation with recycled wastewater. In addition existing irrigation and fertiliser management practices will also be reviewed in order to optimise operation and to avoid unacceptable nutrient leaching.

Element 3	*Preventative measures for recycled water management*
Describe water quality objectives and why they are appropriate for intended uses, expressed in log reduction values (LRV) attributed to each particular end use. Tabulate treatment plant performance objectives, expressed in LRV attributed to specific treatment process units and/or onsite controls. Provide references to demonstrate validation of the performance claims	Recycled water quality is required to meet the AGWR 2006 for its intended use. The accepted VHWWTP treatment capability (with enhanced disinfection by chlorination) is shown in Table 9 of the VHRS-RWMP, and the LRV credits are also shown in the table below. The LRV Credit of 6.0 for virus removal approved for the VHWWTP confirms that the process performance is within the acceptable guideline levels (Table 3.8, AGWR 2006) for the proposed residential irrigation use.

VHWWTP Process	**Pathogen LRV Credit**		
	Viruses	**Protozoa**	**Bacteria**
Activated sludge process (A/S)	1.0	0.5	1.0
UF membrane filters	2.0	3.0	3.0
UV disinfection (minimum RED[1] 9mJ/cm[2)]	0.0	1.5	2.0
Chlorination (minimum C.t 30mg.min/L)	3.0	0.0	4.0
Total (A/S+UF+UV+C.t)	**6.0**	**5.0**	**10.0**
Requirement for residential garden watering (ref. AGWR 2006, Table 3.8)	*6.0*	*4.5*	*5.0*
Requirement for municipal irrigation (ref. AGWR 2006, Table 3.8)	*5.0*	*3.5*	*4.0*

[1] Reduction equivalent dose in accordance with the USEPA UV disinfection Guidelines.

Identify Critical Control Points (CCPs), critical limits and target criteria	There are a number of CCPs that have been identified for the VHWWTP, and the process controls, and the measured process parameters are monitored continuously by the plant SCADA system to verify that the treatment process is operating within design range and

	therefore producing the required recycled water quality. This system is configured to change control settings automatically to correct for changed conditions and to raise alarms if the measured process parameters move outside the control range. The process controls that can be used to correct changes in process settings and measured parameters moving outside the target ranges are listed in Section 5.2.5 Table 16 of the VHRS-RWMP.
Additional preventive measures	Additional preventive measures have been taken at the irrigation sites. These are: • Signage installed at prominent locations (at entrance to reserves and other prominent locations) indicating "RECYCLED WATER: DO NOT DRINK" • precautions to minimise public access include locked valve boxes, tap handles removed • All above ground and new pipework, valves and fittings are marked or colour coded (purple) indicating recycled water. Existing below ground pipework is not colour coded. • The drinking water supply is protected through installation where required of approved backflow protection devices. These devices will be registered with SA Water to ensure ongoing testing. An audit will be carried out prior to commissioning to ensure there are no cross connections within the system. • In compliance with the national plumbing standard (AS/NZS 3500.1 - table F1), all external hose taps are required to have a non-testable, low hazard backflow device fitted. • OH&S precautions include provision of advice to employees/users of the water on hand washing after working with recycled water and before eating, drinking and smoking

Element 4	*Operational procedures and process control*
Describe how operational performance of the recycled water system will be ensured. Describe use of alarm systems where applicable. Provide links to monitoring protocols, including sampling, testing, auditing and equipment calibration. (refer to the operation and maintenance manual)	Operational procedures covering the management of the VHRS are contained in the certified SA Water and UUVH management systems. A comprehensive O&M Manual has been produced and forms the basis of the UUVH WWTP Management and Operation System. The O & M Manual covers a range of areas including: • Process and functional description of the VH WWTP; • Unit process guidelines and standard Operating Procedures for the individual items or equipment including chemical dosing systems, screens, grit removal unit, sludge thickening, membrane filtration and bioreactors. • Laboratory manual for on-site sample testing to aid process control. • Process Controller training documents. • Mechanical and electrical equipment summary. • Mechanical and electrical equipment maintenance requirements. • Typical operations records and logs templates. • Mechanical equipment manufacturer's data sheets. • Plant commissioning report. Refer to Section 6 of the VHRS-RWMP for more detailed information. The irrigation system will be subject to routine operation and maintenance audits including spray irrigation function, leaking or burst pipes, and checking that water is not being delivered beyond designated irrigation areas. The irrigation systems are operated via an automatic control system. Systems are manually shut down during wet or very windy weather to avoid surface water or spray drift.

Element 5	***Verification of Recycled Water Quality***
Recycled water quality monitoring List the water quality parameters to be monitored, including what, where, when, how and who. Identify and document the procedures for review of monitoring data to ensure that the quality of water meets targets and complies with approval conditions. List corrective responses to non-conformance or feedback from users of recycled water.	UUVH conducts a wide range of monitoring throughout the VHRS, which covers the principal elements of monitoring under the AGWR 2006 Guidelines. These are Validation; Verification; Operational. The recycled water quality measuring and sampling program is undertaken in accordance with the VHRS-RWMP and DH approval, and is discussed in detail in Section 7 of the VHRS-RWMP. The UUVH Management and Operations System outlines the procedures for managing non-conformance and initiating corrective actions. SA Water also maintains communication with customers through Recycled Water Supply Agreements, and provides recycled water quality data to the customers on a periodic basis including notification if certain water quality parameters (e.g. salinity) exceed agreed values. Key personal within SA Water are nominated as contacts to discuss issues with customers relating to operations of the scheme.
Discharge site monitoring	Visual inspections of the irrigation systems will be carried out weekly. The irrigation system will be maintained in accordance with Council maintenance and inspection procedures.

Element 6	***Management of incidents and emergencies***
List incident and emergency protocols specific to the production and supply of recycled water. Include roles and responsibilities. Explain how incidents will be communicated to DH.	Incident management and notifications are discussed in Section 8 of the VHRS-RWMP. UUVH is required to advise SA Water of a Notifiable Incident which may include; failure to achieve treated water specification; spill of wastewater; chlorination failure. In addition the Water/Wastewater Incident Notification Protocol (Version 11) has been established between SA Water, EPA, and DoH (Cunliffe, 2009) to communicate incidents that could cause a serious risk to public health or environmental harm. Under this protocol incidents are classified into; Priority Type1, Type 1, or Type2 and require reporting requirements as shown in Table 14 of the protocol (see ***Appendix 4)***. In the event that recycled water produced at the plant is determined to be non compliant then the following procedures will be implemented; • PS2 to be automatically shut-down by the plant SCADA system if measured parameters detect 'out of spec' recycled water e.g. chlorination failure, low C.t) • Shutoff supply to customers either by remote control from SCADA or manual shutoff of customer meters. *Note: These incident management procedures for non compliant recycled water are still under developed as part of the treatment plant upgrades.* Any failures of the Council irrigation systems resulting in discharge of recycled water to locations other than designated irrigation areas will be reported to DH within 24 hours of the failure being detected.

Element 7	*Operator, Contractor and End User Awareness and Training*
Provide details on the suitability of the operators' qualifications, training and experience. Provide details on how users of recycled water will be educated	SA Water and UUVH are committed to training and raising the VHRS operators and contractors' awareness of, and participation in, the recycled water quality management and environmental protection. Policies and core activities of the UUVH and SA Water Management Systems have adopted standard procedures for communication, training and development. Current mechanisms of communication to increase employee awareness and involvement include induction programs, newsletters, notice boards, seminars, team briefings, divisional updates, meetings and other awareness programs. In addition UUVH ensures that operators and contractors have the appropriate experience, qualifications, skills and training to undertake their responsibilities. In addition UUVH encourage staff participation and involvement in decision making to establish the commitment needed to continually improve recycled water quality management. A requirement of the SA Water and customer Recycled Water Supply Agreement, and the customer specific Recycled Water (Use) Management Plans is the customers sound knowledge base from which to make effective operation decisions. This requires training in the methods and skills required to perform tasks efficiently and competently, and well as knowledge and understanding of the potential impact customers activities can have on the receiving environments. The customer is made aware of the restrictions of use of the recycled water from the VHRS, management requirements that are essential to ensure the sustainable use of recycled water, and any practice that will threaten human or environmental health. Council staff involved with recycled water will trained on the use of recycled water. Information factsheets will be produced and made available to staff and contractors as well as the general public. Signage has been placed in prominent positions to inform contractors, staff and the public that recycled water is being used for irrigation and that it is not suitable for drinking.

Element 8	*Community Involvement and Awareness*
	A comprehensive community involvement and awareness process has been undertaken since early in 2008 and included a call for registration of interest; a community forum held in March 2008; discussions with potential major customers (e.g. McCracken Golf Club); the formation of a technical working group between SA Water and the City of Victor Harbor to deliver a recycled water scheme to sporting grounds and reserves for the City. See Section 10 of the VHRS-RWMP. Other information and fact sheets are available on the internet as follows; SA Water; http://www.sawater.com.au/SAWater/WhatsNew/MajorProjects/victor_wwtp.htm http://www.sawater.com.au/SAWater/WhatsNew/MajorProjects/VH_Wastewater_Plant.htm United Utilities; http://www.unitedutilities.com.au/Projects/VictorHarborWWTP.aspx Information relating to the use of recycled water on these reserves will be placed on the Council website. Signage is installed at each site to make users aware of the use of recycled water and to advise not to contact or drink this water. Below Ground Tap Boxes will also be fitted with appropriate warning signage to highlight the use of recycled water. These taps and boxes will also be painted purple in colour. Temporary signs will be erected during testing of the irrigation systems to warn public of the use of recycled water and to avoid contact with the water (staff are to be in attendance at all times during testing and testing should not be carried out when members of the public are present). The signage maintenance is overseen by Council's Operations Manager. The Victor Harbor community and sporting clubs are strongly supportive of the use of Recycled Water on Council Reserves and sporting fields.

Element 9	***Validation***
	The South Australian DH has credited the VHRS with a LRV capability of 6 for the removal of viruses, based on the capabilities of the treatment processes which is shown above (Element 3) and discussed in Section 4.2.2 of the VHRS-RWMP. A copy of the communication of the accreditation is presented in Appendix I of the VHRS-RWMP. See also Section 11 of the VHRS-RWMP. SA Water remains committed to conducting and participating in research and development activities on recycled water quality issues, with the aim to ensure continual improvement and the ongoing capability to meet recycled water quality requirements. Currently, SA Water has in place a research and development program to improve the management of recycled water systems.
Element 10	***Documentation and Reporting***
Detail documentation and records to be kept. Detail how reporting will be undertaken (including internal and external reporting).	Under the SA Water and UUVH ISO accredited quality and environmental management systems all information pertinent to the aspects of recycled water quality management is documented. This includes procedures on such aspects as treatment unit operation, recycled water supply, recycled water quality monitoring, corrective actions, incident and emergency responses, training, research and development, community consultation, performance evaluation, audits and reviews. Monthly works deliver and operations reports are provided by UUVH to SA Water and an annual report is provided at the end of the financial year. UUVH also provides the EPA and the DH with an annual report as a requirement of their licences. In addition a monthly Operations management meeting is held between key personnel from SA Water and UUVH. See Section 12 of the VHRS-RWMP for additional information. An annual assessment of the recycled water irrigation systems will be undertaken by the City of Victor Harbor Open Space staff on an annual basis to the Manager Environment & Recreation. Incident will be reported to the DH within 24 hours of being discovered.

Element 11	***Evaluation and Audit***
Detail how the performance of the system will be evaluated and / or audited.	To maintain the ISO accredited quality and environmental management systems SA Water and UUVH are required to undertake internal audits by qualified staff and undergo external audits conducted by certified bodies. UUVH Quality Assurance Plan (UUA, 2006f) states that audits will cover the operation, maintenance, Occupational Health & Safety and environmental performance of the VHRS, cascading down throughout all suppliers, sites, persons and records. In particular the audits will evaluate systems, procedures, work instructions and practices. The audits shall identify and report deficiencies, and initiate prompt corrective action. The Quality Manager will conduct audits at a biannual frequency. Council will engage an independent auditor to undertake an assessment of the system prior to commissioning. Council will undertake an evaluation of the system on an annual basis, which will be reported together with water quality data to the Manager Environment & Recreation for analysis in the review of this plan and where appropriate further assessment.
Element 12	***Review***
Describe how the recycled water RMP will be reviewed and updated.	SA Water has established a continuous improvement and review process by senior management. Senior managers will review the Plan biannually, an action required under SA Water's Quality Systems procedures, to evaluate the effectiveness of the management system and evaluate the need for change. The process will include reviewing the current approach to recycled water quality management of the VHRS, and if decided necessary, develop action plans and commit the resources necessary to undertake and improve operational processes. This Recycled Water Management Plan will be reviewed on an annual basis (by 30 June each year) and updated as a result of any major changes or repairs to the system. The Council Manager Environment & Recreation is responsible for ensuring this occurs and will approve any changes to the RMP. The Department of Health and SA Water will be consulted prior to any upgrades or changes to the scheme (approvals sought as required) and a copy of the revised RMP will be provided to the DH and SA Water.

Appendix 1. Roles, Responsibilities and Contact Details

City of Victor Harbor

Brian Doman
Manager Environment & Recreation
Ph (08) 8551 0525 Email: bdoman@victor.sa.gov.au

Peter Wilsdon
Manager Operations
Ph (08) 8551 0710 Email pwilsdon@victor.sa.gov.au

(Management and Operation of the recycled water irrigations systems)

SA Water

Peter Murphy
Business Development Manager
Ph (08) 7424 1924 Email: peter.murphy@sawater.com.au

(Recycled Water Supply Agreements with customers of the VHRS)

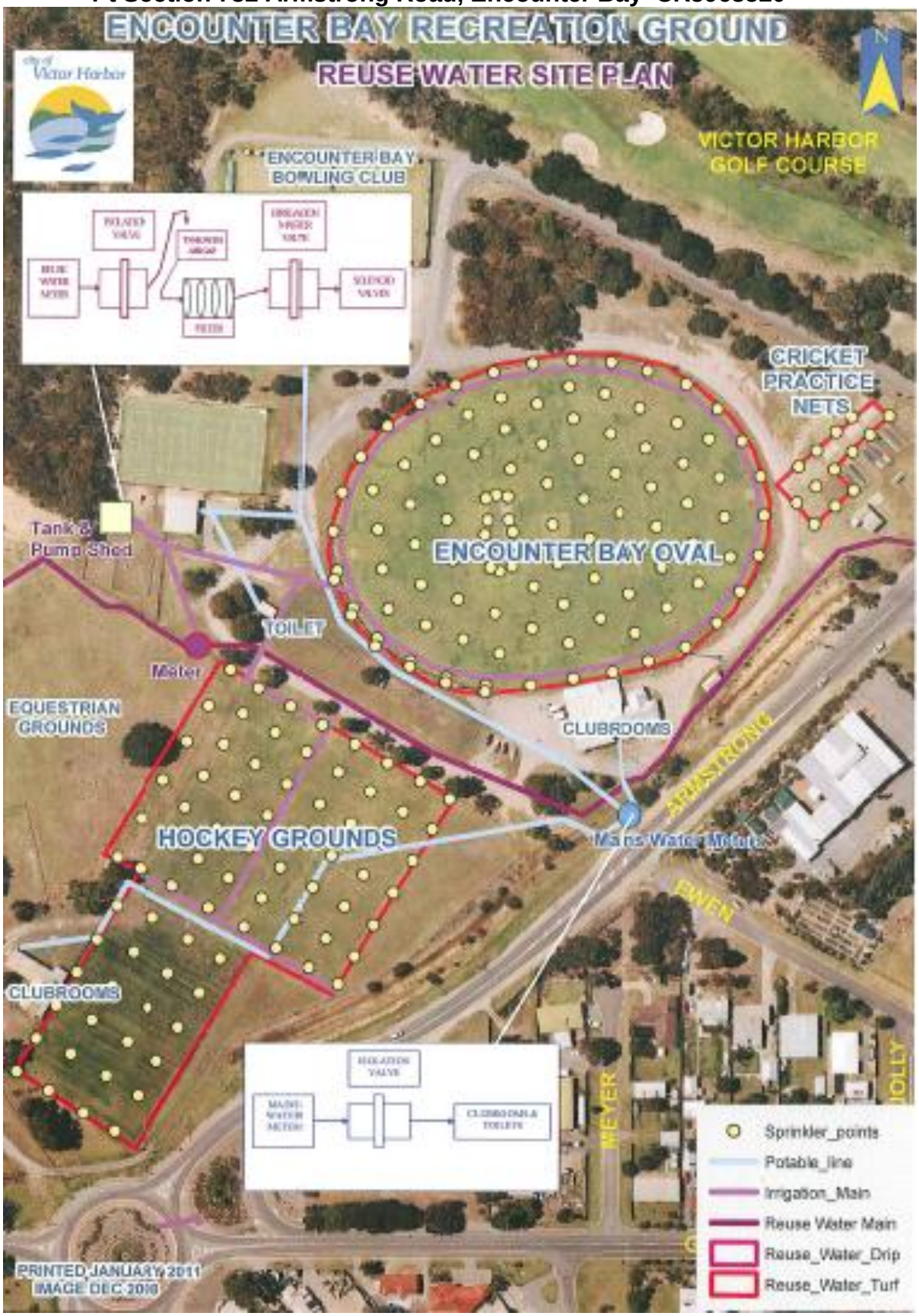
Department of Health Contact Details
Manager Wastewater Management
Health Protection, Department of Health
PO Box 6 Rundle Mall Adelaide SA 5000
Telephone: 1300 043 215
Fax: (08) 8226 7102
Email: WastewaterManagement@health.sa.gov.au

Appendix 2. Location Plans

2b – Victor Harbor Cemetery Site
Section 769, Finniss Road, Victor Harbor CR5764795

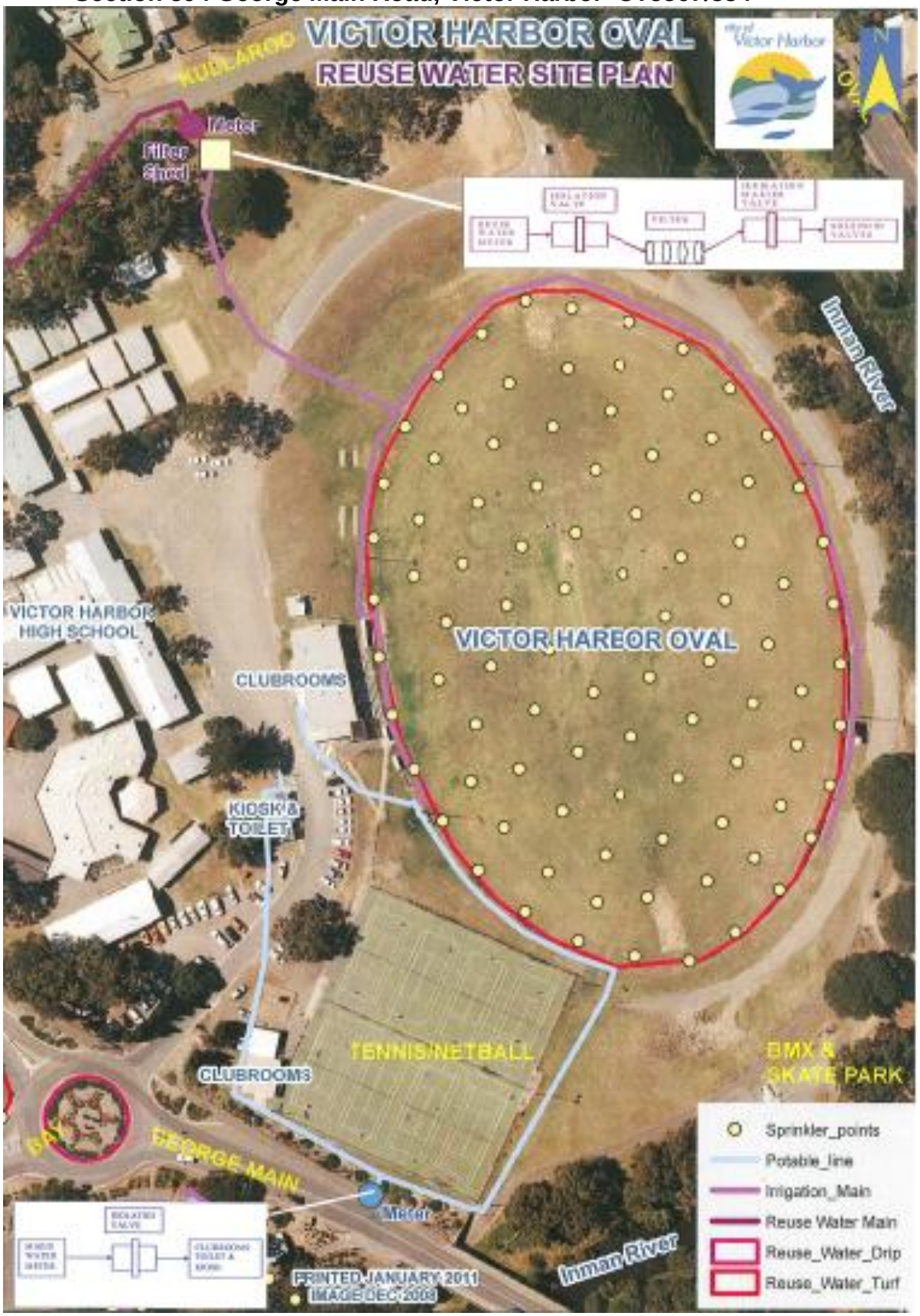
FINAL PLAN

2c – Encounter Bay Recreation Ground Site
Pt Section 732 Armstrong Road, Encounter Bay CR5968520



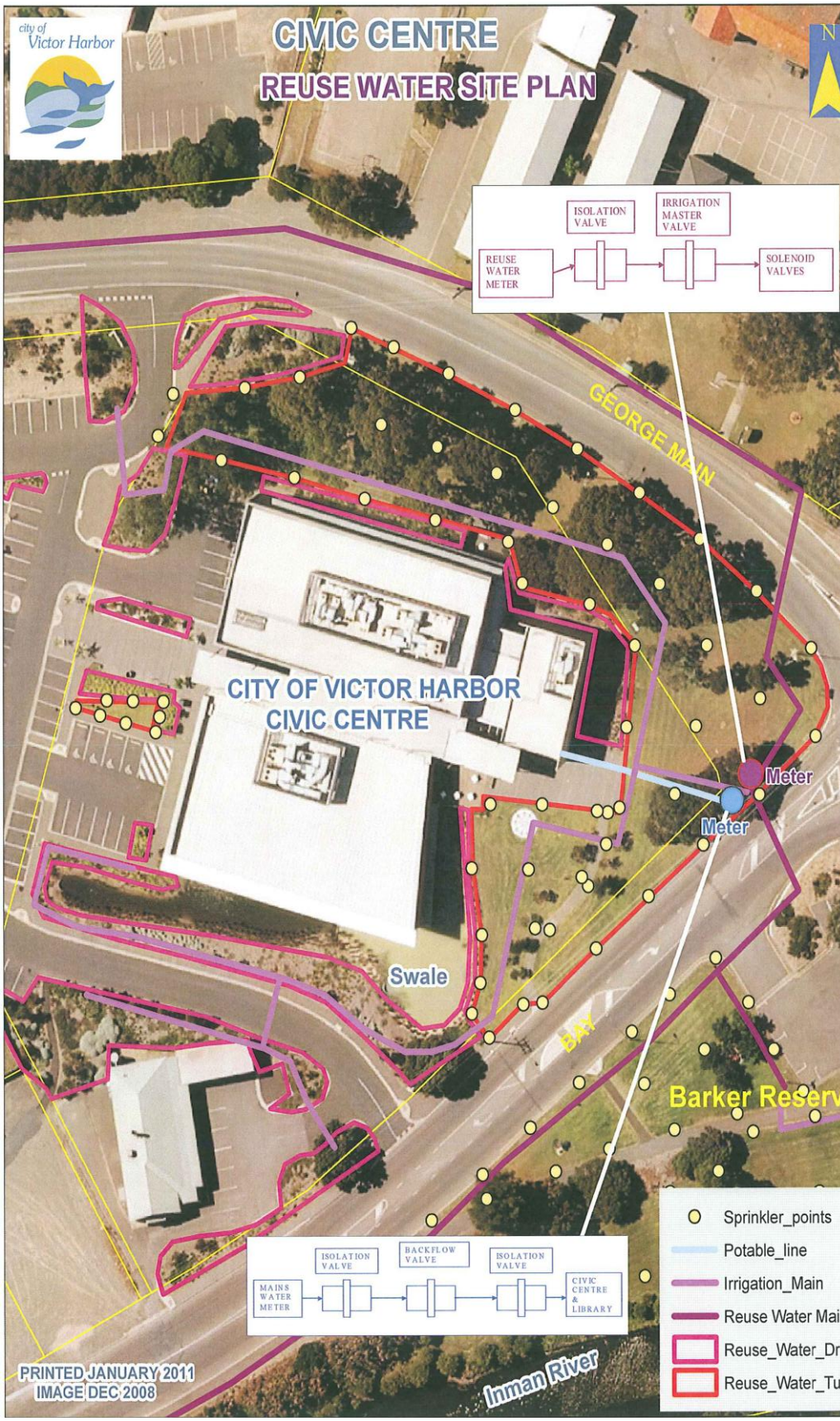
FINAL PLAN

2d – Victor Harbor Oval Site
Section 594 George Main Road, Victor Harbor CT5567/834



FINAL PLAN

2e – Victor Harbor Civic Centre
Lot 57 Bay Road Victor Harbor F20694 CT5995/488



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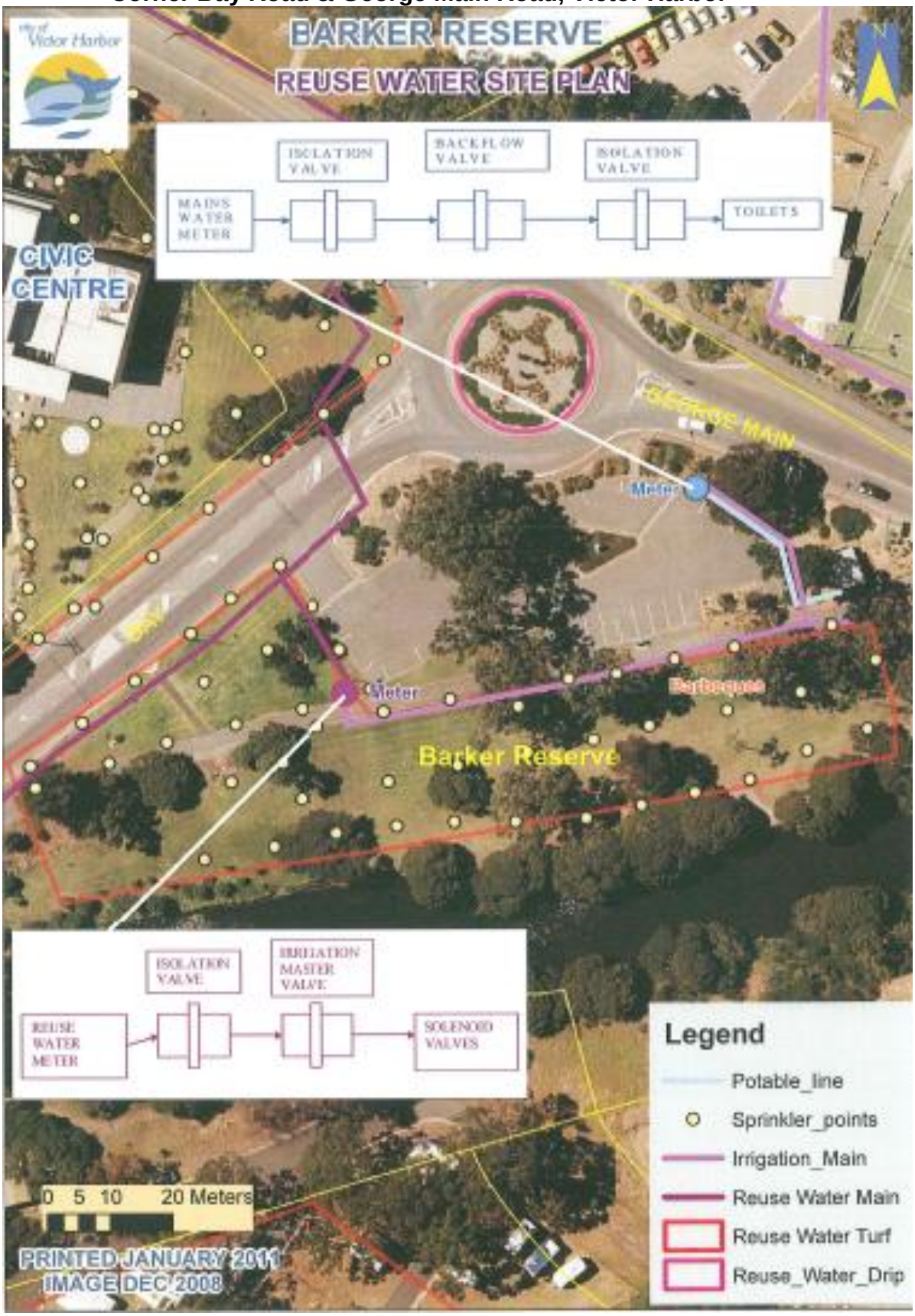
2f – Barker Reserve

Corner Bay Road & George Main Road, Victor Harbor



FINAL PLAN

TABLE 9: ***WASTEWATER NETWORKS***

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- *Water Incident Coordinator, EPA and DH immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hours by email/hard copy.*
- *NRM and LC within 3 hrs by telephone.*

Type 2 incidents are to be notified and reported to agencies as indicated below:

- *EPA for sewage discharges* immediately by telephone and within 24 hours by email/hard copy, otherwise within 24 hrs by telephone or email/hard copy.*
- *DH, LC and NRM within 24 hrs -by telephone or email/hard copy.*

PARAMETER	PRIORITY TYPE 1 CRITERIA
Sewage discharges [E]	• ≥1 Megalitre as a result of failure within wastewater networks system • Any overflow where sewage is discharged to an area with potential for high public exposure (e.g., parklands, ponds, water courses, child care centres, markets, commercial food preparations, etc) or where public access cannot be easily controlled
Sludge spills [E]	• Sludge spill of ≥ 100 Kilolitres due to failure in the sludge main

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Treated effluent discharges [E]	≥1 Megalitre as a result of failure within wastewater networks system	Where there is evidence of treated effluent discharges (< 1 Megalitre) to a natural watercourse or wetland either directly or through the local stormwater system.
Sludge spills [E]	Sludge spill of ≥ 10 Kilolitres due to failure in the sludge main	Where there is evidence of a sludge spill (< 10 Kilolitres) to a natural watercourse or wetland either directly or through the local stormwater system.
Sewage discharges [E]		• *Where there is evidence of sewage discharges (< 1 Megalitre but ≥ 10 Kilolitres) to a natural watercourse or wetland either directly or through the local stormwater system. • Where there is evidence of sewage discharges (< 10 Kilolitres) to a natural watercourse or wetland either directly or through the local stormwater system.
Odours [E]		Release of odours significantly worse than the normal range for the network

E Environmental wastewater incident

Appendix 4. Management of Incidents and Emergencies

TABLE 14: ***VICTOR HARBOR (CHLORINATED SUPPLY) SCHEME***

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- ***Water Incident Coordinator*** *and* ***DH*** *immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hours by email/hard copy.*

Type 2 incidents are to be notified and reported to agencies as indicated below:

- ***DH*** *within 24 hrs by telephone or email/hard copy.*

PARAMETER	TYPE 1 INCIDENTS	TYPE 2 INCIDENTS
Turbidity **WWTP Balancing Storage Inlet** PH **WWTP Balancing Storage Outlet** PH **After Chlorination** PH	• Average 24 hour turbidity exceeds 0.5 NTU • Maximum turbidity exceeds 1 NTU for more than 60 minutes before flow is stopped Turbidity > 2 NTU	Flow stopped due to high filtered water turbidity (other than Type 1 incident) Turbidity > 2 NTU
UV Light Disinfection PH Reclaimed wastewater	UV light fails for more than 60 continuous minutes before supply is stopped to consumers	Flow stopped due to UV failure (other than Type 1 incident)
E.coli PH	> 10 organisms per 100 mL after chlorination	> 4 organisms per 100 mL after chlorination
Chlorine Disinfection PH Reclaimed wastewater	• Chlorination fails for more than 30 minutes before flow to consumers is stopped • C.t is less than 30mg.min/L for more than 60 minutes before flow to consumers is stopped	Flow to consumers stopped due to interruption to chlorination or low C.t (other than Type 1 incident)

PH Public health wastewater incident

Appendix 4. Management of Incidents and Emergencies

Government of South Australia
SA Health

Wastewater Incident Notification Form

Wastewater Management Section
Health Protection

To: Manager Wastewater Management
Health Protection, Department of Health
PO Box 6 Rundle Mall, ADELAIDE SA 5000
Telephone 1300 043 215 Fax (08) 8226 7102
Email: WastewaterManagement@health.sa.gov.au

OFFICE USE ONLY

Objective number:

Scheme details		Phone	Fax
Operator name			
Scheme name			
Council / Owner			

Details of Incident		
Date: / /	Location of Incident:	Time:
Type of Incident:	Type 1 / Type 2 *(note: DH must be notified of Type 1 incidents immediately via telephone)*	
Description of Incident (give brief summary of what occurred):		
Root cause of incident:		
How detected:		
Description of response / corrective action taken:		
For treatment plant incidents:	Was untreated water supplied to customers: Y / N	Volume & No. customers affected
For wastewater / recycled water overflows:	Estimate of extent (area affected):	Approximate volume:

Notifications to Other Organisations (where applicable)			
	Officer name	Date	Time
Local Council			
EPA			
SA Water			
Other			

Contact details of person completing form		
Name:	Title:	Signature:
Date: / /	Mobile Ph:	Fax No:

Wastewater incidents must be reported to the Department of Health as follows:

Type 1 wastewater incidents must be reported immediately by telephone on 1300 043 215 and within 24 hours by email, facsimile or hard copy using this form

Type 2 wastewater incidents are to be reported within 24 hours by email, facsimile or hardcopy using this form