



**Melbourne
Water**

Environmental Compliance

Quarterly Report

Quarter One 2007/2008
(July, August, September)

Incidents, Initiatives and Issues

Incidents

None to report

Initiatives and Issues

Parwan Creek and Tributaries Geomorphic Overview

A geomorphic overview study has been completed for the Parwan Creek and several of its tributaries. The waterways are located in the Rowsely valley, west of Baccus Marsh. The area is within the Eocene Werribee Formation, a highly erosive and dispersive fluvial formation renowned for tunnel erosion, gulying and sheet wash. The study improved understanding of the current condition and of the active geomorphic processes in the waterways. The study also included a condition assessment of 38 historic erosion control structures constructed by the Soil Conservation Authority during the 1940s, 50s and 60s. These structures have been successful in halting headward incision within the streams, but with little or no maintenance over the past years, some of the structures are now at risk of failure. The report will be used to inform management of the waterways in this area.

Myrniong Creek Restoration Partnership

James Whyte Reserve (the "Island"), along the Myrniong River, was donated to Conservation Volunteers Australia in 2006. Conservation Volunteers Australia in partnership with Melbourne Water, Grow West and other supporters aims to rehabilitate the Island to increase biodiversity in the Myrniong Valley. The property is approximately 216 ha with 4.5 km of waterway frontage along a high priority section of the Werribee River and 4 km along Myrniong Creek.

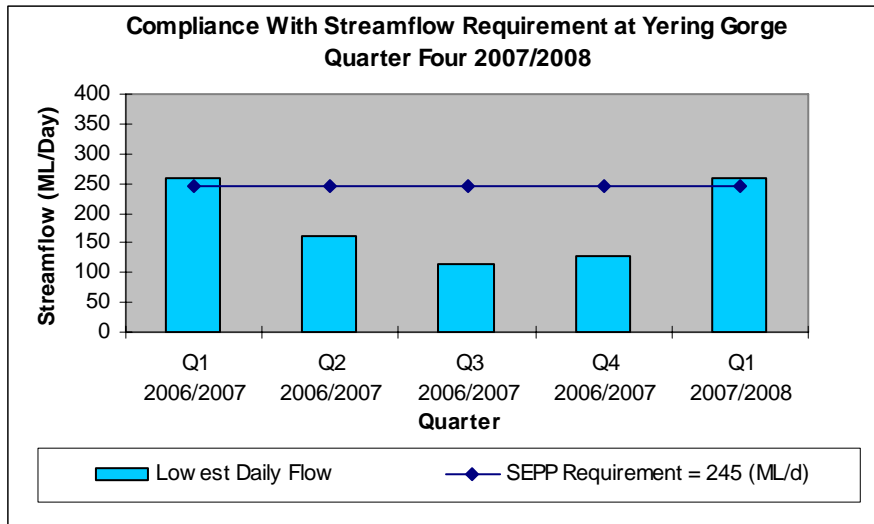
During the quarter, Melbourne Water personnel and contractors walked approximately 2.9 km of the gorge section of Myrniong Creek. This resulted in a weed control and revegetation project to improve degraded riparian zone and to protect good riparian zone.

River Health Incentives Program

The Stream Frontage Management Program has provided 60 grants totaling over \$61,500 for 6.549 km of fencing and 31 715 plants and four Corridors of Green projects in the Dandenong Creek Catchment were approved for funding in September.

Statutory Compliance

State Environment Protection Policy Requirement for Passing Flow in the Yarra River



Consistent with the Declaration of Temporary Qualification of Rights in the Melbourne Water Supply System – Yarra, dated 16 April 2007, Melbourne Water is required to continue to operate to environmental flow rules specified under Schedule F7 (Waters of the Yarra Catchment) of the Waters of Victoria State environment protection policy. The policy provides for, to the extent practicable, a flow of no less than 245 ML/day in the Yarra River downstream of the Yering Gorge diversion. The gauge at Yering Gorge below the pumping station is used to manage pumping into Sugarloaf Reservoir to ensure the minimum flow is met.

In accordance with the Yarra Drought Response Plan, when flows at Yering Gorge fall below 245 ML/day, Melbourne Water ceases filling Sugarloaf Reservoir from Yering Gorge Pumping Station. The Yarra Drought Response Plan also requires Melbourne Water to manage diversions from the Yarra by applying progressively tighter restrictions.

Yarra River monitoring by Melbourne Water has shown that when flows fall below 150 ML/day environmental conditions deteriorate due to low dissolved oxygen levels in the river. Melbourne Water is required to make releases equivalent to the combined inflows to Upper Yarra and O'Shanassy Reservoirs (up to a maximum of 80 ML/day) to attempt to maintain flows of at least 150 ML/day at Yering Gorge.

During this quarter, the minimum flow at Yering Gorge was 259 ML/day and Melbourne Water met the requirements of the Yarra Drought Response Plan.

Sewerage System Summary of Statutory Compliance by Facility

Summary of Compliance by Facility Quarter One 2007/2008

Facility	Compliance * of Samples Q1 (%)	Non-Sample Compliance**	Sewage Spills***	Odour Complaints
Eastern Treatment Plant			0	1
Western Treatment Plant			0	0
Wastewater Transfer	N/A	N/A	0	0
Total	N/A	N/A	0	0

	Compliance achieved for all parameters
	Compliance not achieved for one or more parameters.

* Compliance of samples details the compliance status for maximum/minimum/range or annual discharge parameters as indicated by the quarter's results.

**Non sample compliance covers licence breaches for issues other than discharge parameter limits Details on compliance breaches appear in following sections.

***Sewage spills include all spill types (operational failures, compliant and non-compliant less than 1:5 rainfall event spills and greater than 1:5 rainfall event spills)

Sewerage System Statutory Compliance Detail

Compliance of Samples – 1st Quarter 2007/2008

The following table shows compliance of Melbourne Water's wastewater treatment plants with parameters in EPA Victoria licences where limits are expressed as a maximum, minimum or a range.

Treatment Plant Compliance with EPA Victoria Licences by Parameter * Quarter One 2007/2008

SITE	Amm	Surf	Metals	PH	D.O.	Flow	TRC	Other#
	Max	Max	Max	Range	Min.	Max	Max	
WTP all outlets								
ETP								
Air Emissions								

	Compliance achieved
	Compliance not achieved** - See following sections for details
	Not applicable

* See Appendix One for a guide to the above parameters and Appendix Five for the location map of Western Treatment Plant Outlets.

Parameters that are less significant and rarely fail to meet the required standard.

** EPA Victoria is given an explanation for each non-compliance

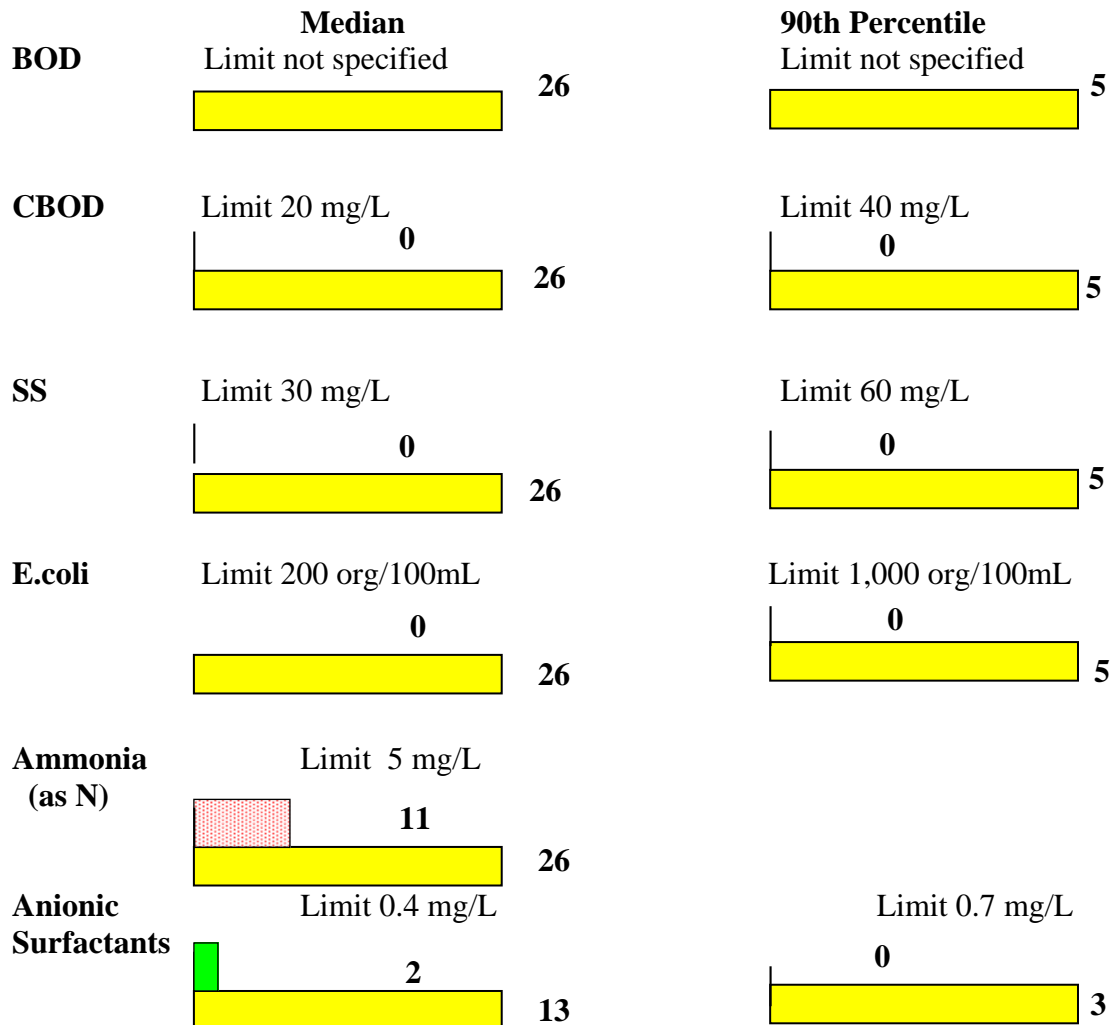
Eastern Treatment Plant

Annual Parameters

The following details Eastern Treatment Plant's performance for critical parameters. Performance with respect to other parameters is reported here only if the results exceed licence limits, in which case explanatory information is contained in the following section.

A new annual limit for ammonia of 5 mg/l (median) commenced on 1 July 2007. The annual median will be calculated using the 52 weekly results for 2007/08.

NOTE: The plant has been granted a waiver for BOD compliance by EPA Victoria on the understanding that CBOD is also monitored and CBOD limits are complied with.



	Number of sample results to date greater than the Licence Limit – exceeds the total allowance for the year (licence breach).
	Number of sample results to date greater than the Licence Limit – exceeds the allowance for the year to date.
	Number of sample results to date greater than the Licence Limit – within the allowance for the year to date.
	Number of sample results during the year allowed to exceed the Licence Limit.

General Licence Requirements

No issues

Groundwater Monitoring

Results of groundwater monitoring conducted by URS during May 2007 were received during the quarter. The monitoring included:

- Measurement of standing water levels;
- Measurement of groundwater quality in the field for: pH, temperature, dissolved oxygen, electrical conductivity and reduction/oxidation potential;
- Laboratory analysis for total dissolved solids, total organic carbon, total nitrogen, calcium, magnesium, potassium, sodium, bicarbonate, carbonate, sulphate and chloride.

Total dissolved solids measured at the Plant reference bore varied from 1,910 mg/L to 2,160 mg/L. This classifies the groundwater into State environment protection policy - Segment B. Waters in Segment B are to be protected for the following beneficial uses:

- Maintenance of Ecosystems
- Potable Mineral Water Supply
- Agriculture, Parks and Gardens
- Livestock Drinking Water
- Industrial Water Use
- Primary Contact Recreation
- Buildings and structures.

Consequently, the groundwater quality is assessed and compared against ANZECC Livestock Drinking Water Guidelines – (Livestock Drinking Water 2000); and Australian Water Quality Guidelines for the Protection of Aquatic Ecosystems – Marine Waters (ANZECC, 2000).

As the Patterson Lakes area is the receiving marine water body, the objectives used are the 95% level of protection trigger values for marine waters specified in the ANZECC guidelines.

Based on the findings of the 2007 monitoring, the following conclusions were made:

- Groundwater flow in both aquifers appears to follow the general regional gradient from north-east towards south-west, with local flow diversions associated with groundwater mounding in the areas of the effluent holding basins and in the vicinity of the Patterson River and in the shallow aquifer west of the Emergency holding basin.
- Most total dissolved solids concentrations were consistent with the previous results without indications of any particular trends developing. The rising trend in bores MW45 (east of sludge drying pan 37) and MW 68 (south of effluent holding basin 5) observed since May 2005 remain within the longer term historical fluctuations for the bores.
- Most total organic carbon concentrations were consistent with the previous monitoring round. Bore MW43 (western boundary of the site near the Patterson River) and

MW68/69 (located to the north of the Southern Effluent Holding Basin) showed an increasing trend.

- All heavy metals concentrations were within the range of the historically reported results.

The activity at the site deemed to pose the greatest risk to groundwater is dewatering and drying of digested sludge in the Sludge Drying Pans. To minimise the risk of groundwater contamination from the drying pans and associated infrastructure, Melbourne Water has an on-going program of refurbishment and upgrades of the drying pans.

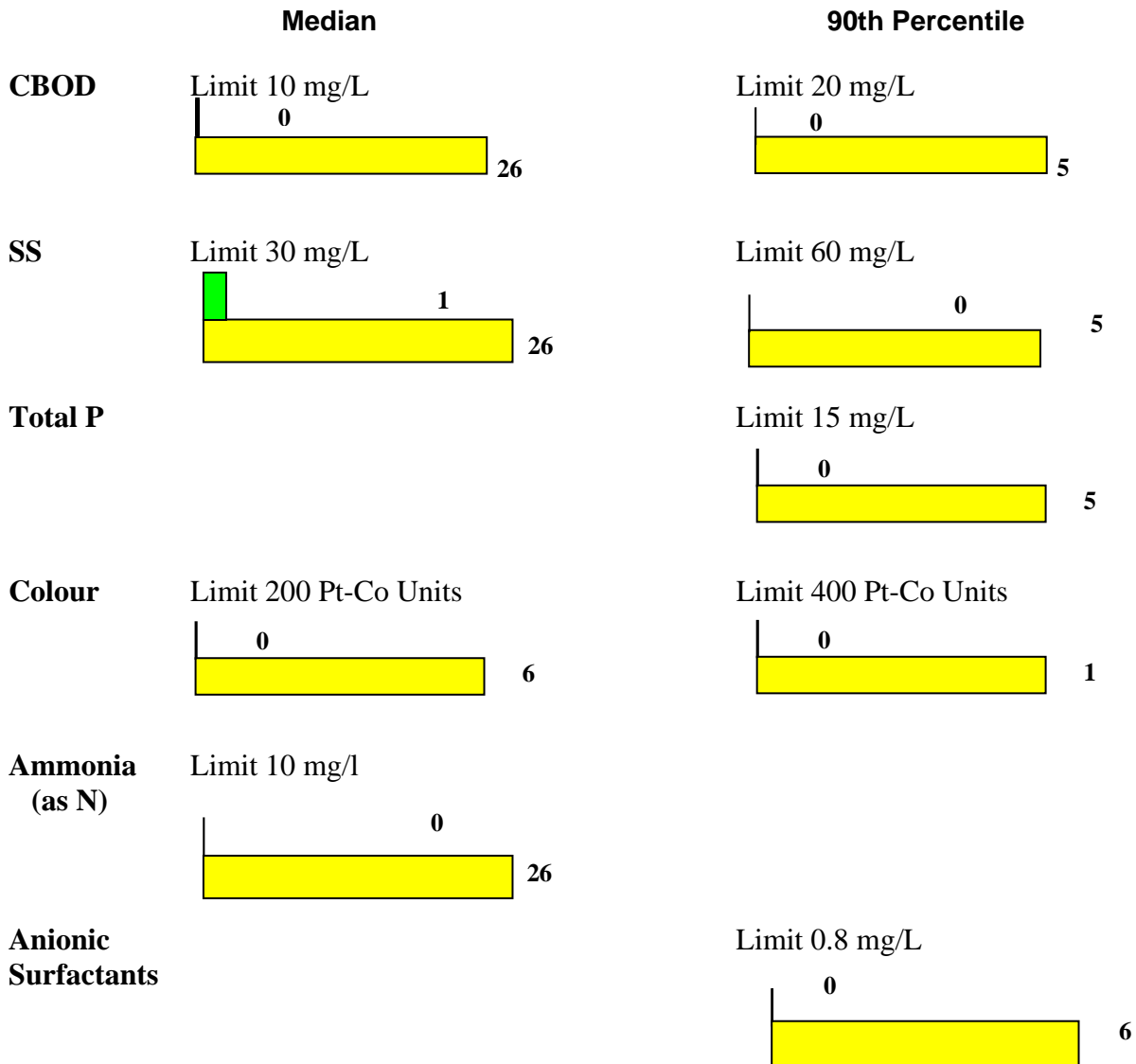
Details of Licence Non-Compliance/Parameter Exceedances

Some sample results to date for ammonia have been above the new limit of 5 mg/l due to delays in completing the Ammonia Reduction Upgrade Works. The Plant has been operating in ammonia reduction mode with 5 upgraded aeration tanks since the second week of September and successfully meeting the 5 mg/L limit. The upgrade work in the remaining sixth tank will be completed in December and it is expected that the limit will be achieved for the year. There is some risk however that wet weather events and new equipment issues may cause problems for the process. EPAV has been kept informed regarding these matters.

Western Treatment Plant

The following details Western Treatment Plant's performance for critical parameters. Performance with respect to other parameters is reported here only if the results exceed licence limits.

Annual Parameters - flow weighted average of all four licensed outlets



	Number of sample results to date greater than the Licence Limit – exceeds the total allowance for the year (licence breach).
	Number of sample results to date greater than the Licence Limit – exceeds the allowance for the year to date.
	Number of sample results to date greater than the Licence Limit – within the allowance for the year to date.
	Number of sample results during the year allowed to exceed the Licence Limit.

General Licence Requirements

No issues

Details of Licence Non-Compliance/Parameter Exceedances

No issues

Groundwater Monitoring

The groundwater monitoring program for WTP monitors levels and quality in over 80 bores across the site. Many wells have metals concentrations in excess of beneficial use criteria. The exceedances were for metals (arsenic, chromium, copper, nickel, zinc, aluminium, manganese, magnesium and iron) and for sodium, ammonia and nitrate.

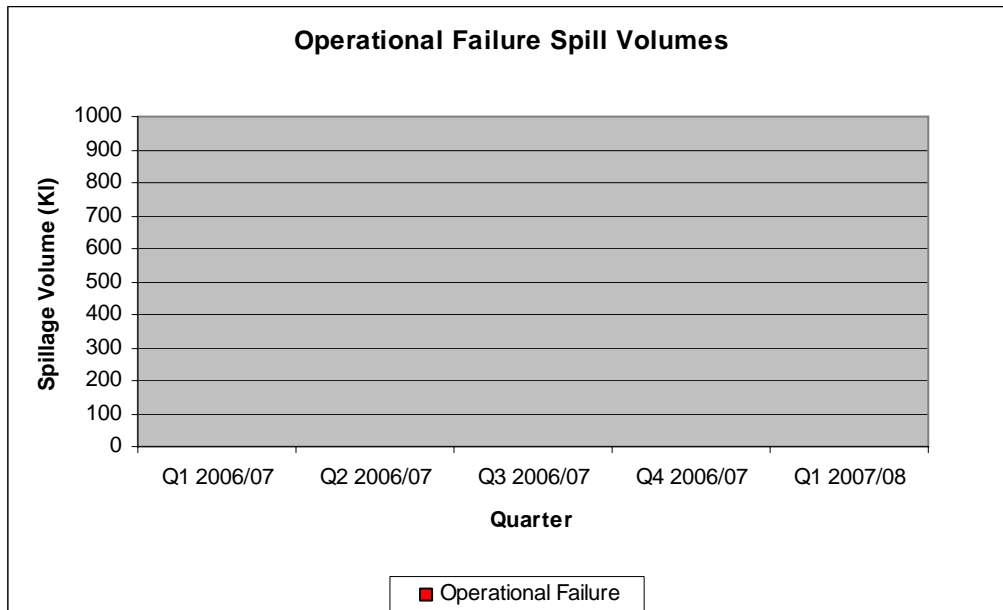
The metal concentrations are considered to be reflective of background or natural conditions and are not considered to indicate the presence of groundwater contamination caused by onsite activities.

The sodium exceedances are not considered to be of concern as the concentrations are also a reflection of background concentrations and are distributed across the site. The ammonia in the wells screened in the sediment aquifer and located along the coast indicate that the water in these wells is under reducing (anoxic) conditions, consistent with deeper groundwater systems with limited surface recharge.

Sewage Spills Summary

Number of Spills	Q1 2006/07	Q2 2006/07	Q3 2006/07	Q4 2006/07	Q1 2007/08
Number of Spills	1	0	0	0	0
Operational failure	0	0	0	0	0
<1:5 compliant	1	0	0	0	0
<1:5 non-compliant	0	0	0	0	0
>1:5	0	0	0	0	0
Significance*	Q1 2006/07	Q2 2006/07	Q3 2006/07	Q4 2006/07	Q1 2007/08
Minor (Rating 1 - 3)	1	0	0	0	0
Significant (Rating 4 – 5)	0	0	0	0	0
Not Rated	0	0	0	0	0
EPA Victoria Reporting Protocol Met	Yes	Yes	Yes	Yes	Yes

*Melbourne Water reports spills according to the Melbourne Water-EPA Victoria spill reporting protocol that is contained in Appendix Three. The rating assigned to a spill is determined by applying the potential impact rating to the incident (refer to Appendix Two). If a spill is contained on site with no damage to the environment it will be reported in this report but not included in spills publicly reported.



Spills Due to Operational Failures

There were no spills due to operational failure during the quarter.

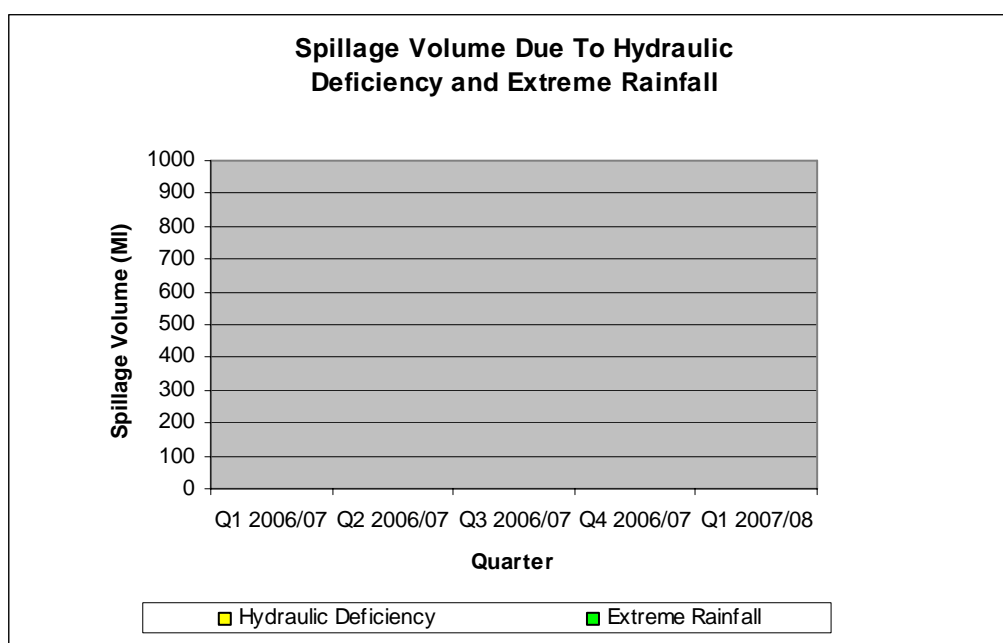
The above graph indicates the volume of sewage spilt due to equipment breakdown or human error.

Eastern Treatment Plant

There were no spills at Eastern Treatment Plant during the quarter.

Western Treatment Plant

There were no spills at Western Treatment Plant during the quarter.

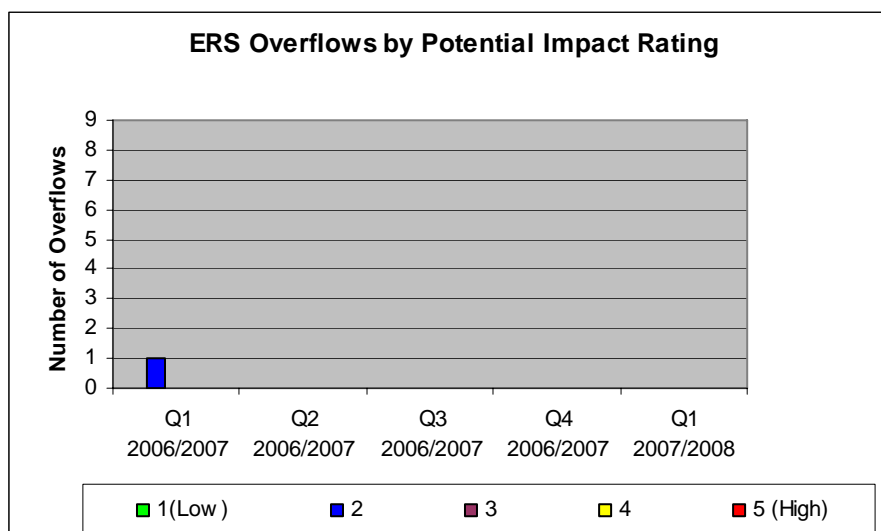
Spills Due to Rainfall Events Greater than 1:5 Year Return Frequency (Extreme Rainfall) and Hydraulic Deficiency

Hydraulic Deficiency - Spills due to insufficient pipe/pump capacity

Extreme Rainfall - Spills due to rainfall events greater than 1: 5 year return frequency

There were no spills due to hydraulic deficiency or extreme rainfall (greater than 1 in 5 event) during the quarter.

ERS Overflows

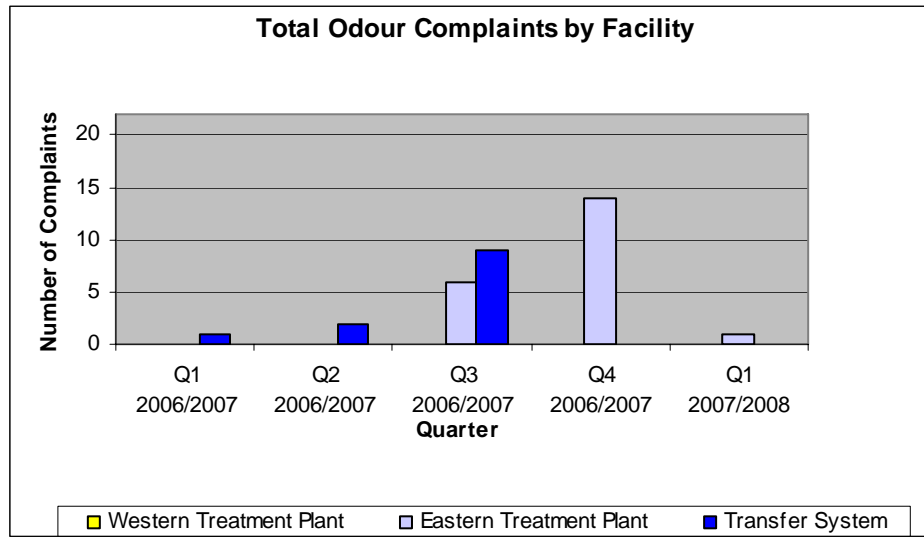


Odour Complaints

EPA Victoria regulates odour and this requires Melbourne Water to have no offensive odour attributable to its activities. New facilities have to be designed to meet this requirement and existing facilities with odour have to establish improvement programs to achieve this in agreement with EPA Victoria. Melbourne Water has an odour management strategy to ensure that treatment plant and transfer system odour performance meets regulatory requirements. This strategy has been developed with EPA Victoria agreement. This includes targeted actions for Eastern and Western Treatment Plants and the Transfer System.

Odour performance from facilities is measured through odour complaints attributable to the facility. EPA Victoria will consider an odour complaint a discharge licence breach if it is attributable to Melbourne Water and if either the relevant improvement program is not being implemented or the program is considered unsatisfactory. Odour complaints from facilities without a discharge licence could result in a requirement to develop and implement a neighbourhood improvement plan. Should odour become a significant local issue EPA Victoria could strengthen this approach and require a review of improvement strategies or issue sanctions such as penalty infringement notices.

None of the odour complaints described below are considered to be licence breaches by EPA Victoria at this time.



Eastern Treatment Plant

There was one odour complaint received during the quarter. Details are as follows:

On the 12 September 2007 a local resident reported an odour in the vicinity of Patterson Lakes. Melbourne Water staff visited the site soon after the complaint was received but was unable to detect an odour. Wind track analysis indicated that the Plant was a possible contributor to the odour detected. Possible odour sources included the foul air system discharge stacks on the C & I building that is being addressed in Stage 1 of the Plant Odour Strategy and the settled sewage channel and primary sedimentation tank area that will be addressed in Stage 2 of the Strategy. The wind track also crossed Gathercoles meat works and this may also have contributed to the odour.

Western Treatment Plant

There were no verified odour complaints received during the quarter.

Transfer System

There were no odour complaints received during the quarter.

Corporate Compliance

Melbourne Water Passing Flow Compliance in Rivers and Streams

The qualifications on environmental entitlements for the Thomson River (29 March 2007) and Yarra River (16 April 2007) remains in place until level 2 restrictions are lifted.

The table below outlines compliance with passing flow requirements at various sites. Some of these passing flows may vary due to the Yarra bulk entitlement conversion process.

Melbourne Water Passing Flow Compliance Quarter One 2007/2008

Site	Passing Flow (ML/d)	Actual Min. Flow (ML/d)	Compliance	Comments
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RESERVOIRS:

Cardinia Res. to Cardinia Ck	5	5	✓	Melbourne Water agreement with former SR&WSC
Maroondah Res. to Watts R.	1	1	✓	Melbourne Water operating rule – 1 ML/d released via ungauged outlet pipe
O'Shannassy Res. To O'Shannassy R.	4	4	✓	Melbourne Water operating rule – 4 ML/d released via ungauged outlet pipe
Silvan Res. to Olinda Ck	2	2	✓	Melbourne Water operating rule – 2 ML/d released via ungauged outlet pipe
Tarago Res to Tarago R At Scalp Ck	5	9	✓	Melbourne Water agreement with former SR&WSC
McMahons Ck Weir	2	2	✓	Melbourne Water operating rule
Thomson Res. To Thomson R: Below Dam	25	27	✓	Melbourne Water Bulk Entitlement provision for Thomson Reservoir.
At Narrows	80	71*	✓	
At Coopers Ck	216	250	✓	
Toorourrong Res. to Plenty R.	0.2	0.2	✓	Melbourne Water operating rule - 0.2 ML/d released for stock
Upper Yarra Res. to Yarra R: Upper Yarra Dam	10	10	✓	Melbourne Water operating rule since 1993. Based on past agreement with the SR&WSC 1999 SEPP requirement
At Millgrove	98	151	✓	
At Yering Gorge	245	259	✓	

WEIRS[†]:

Armstrong Ck Weir	5	5	✓	Melbourne Water operating rule
Coranderrk Ck Weir	3	3	✓	Melbourne Water operating rule – via ungauged outlet pipe
Donnelly Ck Weir	1	1	✓	Melbourne Water operating rule– via ungauged outlet pipe
Graceburn Ck Weir	3	3	✓	Melbourne Water operating rule. Reduced to 1ML/d in times of low flow and high demand from Healesville
Silver Ck Weir	1	0**	✓	Bulk Entitlement provision - 1 ML/d is released when stream flow is 4 ML/d or greater
Starvation Ck Weir	2	2	✓	Melbourne Water operating rule

Wallaby Ck Weir	1	1	✓	Bulk Entitlement provision - 1 ML/d is released when stream flow is 2 ML/d or greater
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*As per operating tolerances the 7 day rolling average were above flow requirements.

** Silver Creek Weir stream flow was less than 4 ML/D during this period. (Bulk Entitlement provision - 1 ML/d is released when stream flow is 4ML/d or greater).

Maribyrnong River Bulk Entitlement

Melbourne Water is required to manage its share of releases from Rosslynne Reservoir and water extractions from the Maribyrnong River to ensure that, as a result of diversion activities, passing flows in the river at Keilor do not fall below requirements specified in the Maribyrnong Bulk Entitlement Orders - 5 ML/day or the natural flow, whichever is the lesser. Natural flow is based on flow at Deep Creek at the Bulla gauging station.

Days when flow at Keilor was below that required	0
Compliance achieved	
Compliance non achieved	

Trade Waste Agreements

Melbourne Water's key performance indicator for trade waste has been changed as follows:

- Zero high risk non-compliant trade waste discharges to Melbourne Water's sewer system.

Changes made to the Reporting of Non-Compliant Discharges

In the past information used by Melbourne Water for reporting purposes was sourced from Retail Water Companies reporting the number of non-compliant discharges. This did not distinguish between low and high risk discharges. Changes have now been made which allow the level of risk in relation to the non-compliances to be reported.

Retail Water Companies now provide information on non-compliant discharge occurrences to Melbourne Water every month, including a summary on the risk to Melbourne Water due to the non-compliance. This risk assessment includes an evaluation of the impact that each non-compliant discharge is likely to have on OH&S, assets, Treatment Plant process, environment, recycled water, biosolids quality and biogas. Non-compliances are classified as high, moderate or insignificant risk. The risk assessment framework has been developed to ensure that appropriate management actions for each risk level are undertaken and consistently applied.

High Risk:

High risk non-compliances could strongly affect the OH&S of sewer workers, inhibit the treatment plant process affecting product compliance, significantly impact the receiving environment, breach Melbourne Water's operating license or ability to supply customers with recycled water, biogas or biosolids. "High" risk non compliances would require both Retail Water Company and Melbourne Water incident management response.

Moderate Risk:

Moderate risk non-compliances could affect the OH&S of sewer workers, inhibit the treatment plant process without affecting product compliance, impact the receiving environment that can easily be remediated, impact operating license compliance for a short period of time and/or affect Melbourne Water's ability to supply customers with recycled water, biogas and biosolids. "Moderate" risk non-compliance impacts are low due to existing Melbourne Water and Retail Water Company control measures in place. "Moderate" risk non compliances would require a follow-up report of the incident including actions taken to resolve the issue, increased monitoring and contingencies in place to prevent reoccurrence.

Insignificant Risk:

Non-compliant discharges ranked as "Insignificant" present very little or no risk to Melbourne Water. They can be easily managed through procedures and control measures in place to ensure customer takes actions to rectify issues and return to compliance.

The following table shows the number of non-compliant discharges for each retail water company (RWC), at each risk level.

	CWW	YVW	SEW
July			
Insignificant	54	23	13
Moderate	0	0	0
High	0	0	0
August			
Insignificant	52	34	19
Moderate	0	0	0
High	0	0	0
September			
Insignificant	55	29	15
Moderate	0	0	0
High	0	0	0
Total	161	86	47

Table 1 - Risk level of non-compliant discharges as reported by RWCs

The table includes non-compliant discharges that were both resolved and unresolved during each month. The graph below summarises the number of non-compliant discharges at each risk level for the previous quarter, for all retail water companies.

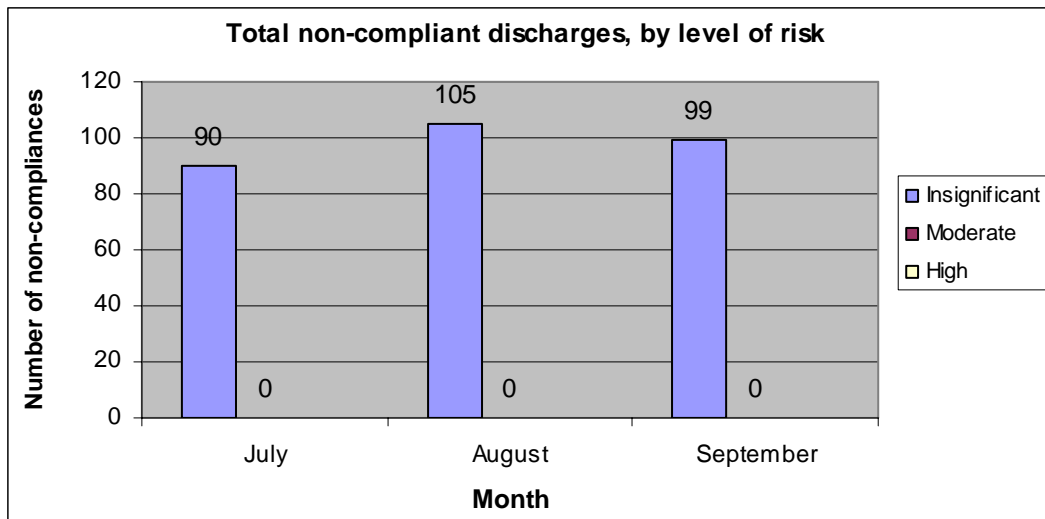


Figure 1 - Total non-compliant discharges by risk level

Water Recycling at Western and Eastern Treatment Plants

Waste minimisation, through effluent and biosolids reuse and by other means, is a licence objective for both Eastern Treatment Plant and Western Treatment Plant. Melbourne Water has established a target to recycle on average 20 % of effluent by 2010.

Eastern Treatment Plant

During the quarter approximately 45 ML of recycled water was supplied to customers along the South East Outfall and 862 ML was supplied to the Eastern Irrigation Scheme. In addition to this approximately 3341 ML of water was used onsite at the Eastern Treatment Plant.

The Eastern Irrigation Scheme now provides “Class A” recycled water from their new plant off Thompson Road supplying quality recycled water to the Sandhurst Club, Wedge Rd Reserve and other customers in the Cranbourne and Five Ways districts.

Western Treatment Plant

During the quarter approximately 1843 ML of Class A recycled water from the chlorination and UV disinfection plant was supplied to Southern Rural Water for the Werribee Irrigation District. A further 10 ML was supplied to the Werribee Tourist Precinct, incorporating both the Werribee Park Golf Club and the State Equestrian Centre. In addition to this, 4 ML was supplied to Mc Killop College, 11 ML to the Werribee Technical precinct and 11 ML to the retail water companies as part of the drought relief initiative.

Approximately 3658 ML of Class C recycled water was used on site by WAG and approximately 69 ML was used on site by other users.

Influent Total Dissolved Solid Limit

To ensure that flows into Western Treatment Plant do not have total dissolved solids levels that would compromise effluent reuse opportunities, the revised discharge licence from EPA Victoria has a future influent limit of median total dissolved solids to not exceed 1000 mg/L by 2009. This section will report on compliance with the current compliance limit of 1250 mg/L.

Influent limit of 1250 mg/L total dissolved solids			
Compliance	Not Achieved	Achieved	

Biosolids Reuse at Western and Eastern Treatment Plant

Melbourne Water has developed a biosolids management strategy that includes targets to beneficially use 100% of annual production at Eastern Treatment Plant by 2005 and Western Treatment Plant by 2010.

EPA Victoria approved the Eastern and Western Treatment Plant biosolids management plans in January 2004. These plans describe biosolids inventories, address quality and quantity issues, beneficial use options and set relevant Melbourne Water operational targets.

The Board noted the 2006 Biosolids Beneficial Use Strategy in July 2006. The Strategy outlined actions to achieve the use of clay-rich biosolids stored onsite at the Eastern Treatment Plant as structural fill in roads in the short to medium term. The strategy also outlines plans for further investigations into the potential use of Eastern Treatment Plant biosolids for land application in the longer term, subject to clarification of potential risks and liabilities. In addition, a research program for identifying future innovative options for beneficial use of biosolids from both the Eastern and Western Treatment Plants will be implemented. At Western Treatment Plant, the strategy recommends developing a business case for the potential use of biosolids as a fuel at the Blue Circle Southern Cement facility at Geelong.

Eastern Treatment Plant

During the quarter no biosolids were removed from the Eastern Treatment Plant for beneficial use.

Due to the high clay content of the Eastern Treatment Plant stockpiled biosolids, Melbourne Water is pursuing the use of biosolids as road embankment fill in the Vic Roads Deer Park bypass project. Melbourne Water has received confirmation from EPA Victoria that the project is consistent with regulatory obligations and is working with EPA Victoria to develop guidelines for using biosolids in this application. Developing these guidelines would allow biosolids structural fill projects like this to proceed under an approved Environment Improvement Plan.

Western Treatment Plant

During the quarter no biosolids were removed from the Western Treatment Plant for beneficial use.

Due to the high contaminant levels and potentially useful calorific value of the Western Treatment Plant biosolids, Melbourne Water completed a feasibility study into energy recovery. The study investigated both onsite and offsite energy recovery alternatives and found that use of biosolids as a fuel at Blue Circle Southern Cement was the preferred option.

Status Report - Meeting SEPP Targets for Melbourne's Waterways

The following information describes the physico-chemical and bacteriological condition of Melbourne's waterways during the reporting period. Objectives set out in the three relevant State environment protection policies (SEPPs) are the long-term targets for water quality. There is no specific statutory obligation on Melbourne Water to meet these targets.

The Waters of Victoria SEPP has a provision for the development of interim waterway water quality targets if there is little chance of attaining the desired quality within the ten-year time frame of the SEPP. Melbourne Water will be developing interim targets where relevant as part of the Regional River Health Strategy. Melbourne Water has adopted a long-term aim to achieve objectives for water quality in accordance with State environmental protection policies and targets set out in the Regional River Health Strategy and Waterways Water Quality Strategy.

This quarterly report uses a rolling twelve months of waterway water quality data and uses the relevant statistical measure from the particular SEPP schedule and segment a waterway falls within. The map shows SEPP segments and where monitoring points are located. The performance tables show performance against relevant SEPP objectives with red indicating a failure to meet SEPP and green indicating compliance with SEPP. The number in each cell is the result for the previous 12 months.

SEPP compliance calculations require eleven samples for most parameters. For a small number of sites in this report, a reduced number of data were available due to drought or access conditions. New monitoring sites are being added in the extended area and as data becomes available this will be included in the tables.

Waterway monitoring data from the last twelve months showed that nearly all catchments complied with their SEPP objectives for pH. Catchments varied from zero to full compliance for E.coli and turbidity. However, Waters of the Yarra Catchment waterways generally performed better in turbidity than other SEPP segments. All waterways performed poorly for dissolved oxygen and nutrient levels with no catchments complying with SEPP objectives for nitrogen or dissolved oxygen.

Waterway Water Quality

Quarter One, 2007/2008

The table below shows the water quality compliance of Greater Melbourne's waterways during the reporting period, sorted by catchment. Results indicate the percentage of samples taken in each catchment that comply with State water quality guidelines.



Definitions

DO	Dissolved oxygen
EC	Electrical conductivity
Turb	Turbidity
T-P	total phosphorus
T-N	total nitrogen
min	Minimum
max	maximum
...%tile	..th percentile
geo	geometric mean
*	This SEPP requires 5 samples at regular intervals within 30 days, however these figures have been calculated using 12 monthly readings
**	This SEPP requires a 42 day geometric mean, however these figures have been calculated using 12 monthly readings.
%sat	percentage saturation
uS/cm	micro Seimens per centimetre
NTU	nephelometric turbidity units
mg/l	milligrams per litre
org/100ml	organisms per 100 millilitres
NA	none applicable

Waters of the Yarra Catchment	DO% Min	pH Min	pH Max	E Coli Geomean	Turb 50%	TP Max	TN Max
	% sat	ph units	ph units	org/100ml	NTU	mg/l	mg/l

Rural Eastern Waters

<i>SEPP Objective</i>	<i>80</i>	<i>6</i>	<i>8.5</i>	<i>200</i>	<i>15</i>	<i>0.05</i>	<i>0.6</i>
Yarra River at McKenzie-King Drive, Millgrove	58	6.1	7.9	171.3	3	0.024	0.837
Yarra River at Don Road, Launching Place (EPA 2916)	59	5.8	8.2	173.0	6.5	0.027	1.057
Yarra River at Maroondah Hwy, Healesville (EPA 2904)	67	6.2	8.8	171.7	11	0.039	1.296
Yarra River at Spadonis Reserve, Coldstream	58	6.8	7.9	155.8	11	0.05	1.487
Little Yarra River at Corduroy Road, Yarra Junction	58	5.8	8.1	285.5	14	0.035	1.857
Woori Yallock Creek at Warburton Highway, Woori Yallock	61	5.9	7.5	149.7	18	0.35	2.02
Woori Yallock Creek at Macclesfield-Woori Yallock Road, Yellingbo	57	5.9	7.5	130.2	16	0.04	2.508
Cockatoo Creek at Tschampions Road, Macclesfield	58	5.9	8.2	34.8	23	0.058	2.099
Wandin Yallock Creek at Killara Road, Gruyere	25	6.4	7.5	85.7	9	0.069	2.747
Watts River at Healesville-Kinglake Road, Healesville	19.7	6	8.2	306.2	7.5	0.06	1.578
Steels Creek at Yarra Glen-Healesville Road, Yarra Glen	44	6.2	7.3	18.9	12	0.069	1.396
Stringybark Creek at Melba Highway, Yering	36	6.7	8.1	56.9	9.5	0.28	1.777
Watsons Creek at Henley Road, Kangaroo Road	42	7.3	8.6	35.8	2.5	0.035	1.523
Arthurs Creek at Hurstbridge-Arthurs Creek Road, Hurstbridge	29	6.7	8.3	36.4	13	0.091	2.111
Diamond Creek at Strathewan Road, Cottlesbridge	30	6.7	8.3	80.8	6	0.065	3.714

Rural Western Waters

	<i>60</i>	<i>6</i>	<i>8.5</i>	<i>200</i>	<i>25</i>	<i>0.05</i>	<i>0.6</i>
Plenty River at Kurraak Road, South Morang	33	7.1	7.9	33.7	9	0.079	1.866
Merri Creek at Summerhill Road, Craigieburn	46	7.7	8.3	38.5	5	0.14	1.335

Upper Estuary

	<i>60</i>	<i>6.5</i>	<i>8.5</i>	<i>200</i>	<i>30</i>	<i>N/A</i>	<i>N/A</i>
Yarra River at Princes Bridge, Melbourne	52	6.9	8.3	222.4	5		

Urban Waters

	<i>60</i>	<i>6</i>	<i>8.5</i>	<i>200</i>	<i>25</i>	<i>0.1</i>	<i>1</i>
Yarra River at Kangaroo Ground-Warrandyte Road, Warrandyte	58	6.8	8.6	80.2	9	0.059	2.405
Yarra River at Chandler Hwy, Kew (Replaces MY01)	45	6.9	8.9	302.8	17	0.076	1.833
Olinda Creek at MacIntyre Lane, Coldstream	44.3	7	8	276.8	12.5	0.12	5.322
Brushy Creek at Lower Homestead Road, Wonga Park	34.9	6.9	7.7	523.5	19.5	0.65	13.75
Jumping Creek at Jumping Creek Road, Wonga Park	29	6.9	8.1	118.6	7	0.076	1.131
Andersons Creek at Everard Drive, Warrandyte	10	6.8	7.9	220.8	11.5	0.56	4.771
Mullum Mullum Creek at Deep Creek Reserve, Warrandyte	39.5	6.9	8.2	304.1	19.5	0.4	4.412
Ruffey Creek at Parker Street, Templestowe	46	7.2	8.5	573.8	6.5	0.23	2.631
Koonung Creek at Bulleen Road, Bulleen	29	6.8	8.2	599.9	13	0.2	3.29
Gardiners Creek at Glenferrie Road, Hawthorn	43	6.9	9.4	295.9	6.5	0.16	2.39
Diamond Creek at Main Road, Eltham	34	6.9	8.3	375.4	23	0.14	1.659
Plenty River at Henty Road, Lower Plenty	38	6.9	8.8	385.4	19.5	0.16	1.526
Darebin Creek at Clark Road, Alphington	56	6.9	8.6	588.9	8.5	0.24	1.989
Merri Creek at Roseneath Street, Yarra Bend	58	6.9	9.1	198.1	6.5	0.18	1.741
Moonee Ponds Creek at Racecourse Road, Flemington	26	6.9	8.9	1,230.7	7	0.19	4.2

Waters of Westernport Bay and Catchment	DO% Min	pH Min	pH Max	E Coli Geomean	Turb 50%	TP Max	TN Max
	% sat	ph units	ph units	org/100ml	NTU	mg/l	mg/l

Lowlands & Phillip Island

<i>SEPP Objective</i>	<i>85</i>	<i>6.5</i>	<i>9</i>	<i>200</i>	<i>15</i>	<i>0.05</i>	<i>0.5</i>
Watsons Creek at Dandenong-Hastings Road, Somerville	21	6.7	7.6	429.6	11	1.6	291.575
Warrangine Creek at Frankston-Flinders Road, Hastings	39	6.9	7.9	268.5	7.5	0.11	4.808
Cardinia Creek at Ballarto Road, Cardinia	60	6.9	10	139.8	18	0.099	1.937
Toomuc Creek at Ballarto Road, Rythdale	28	6.7	8.1	170.8	13	0.14	2.127
Deep Creek at Ballarto Road, Rythdale	38	6.7	7.8	171.6	83.5	1.2	3.966
Bunyip River at Healesville Koo-Wee-Rup Road, Koo-Wee-Rup	57	4.3	8.5	43.7	18.5	0.35	2.5065
Yallock Outfall at South Gippsland Highway, Monomeith	64	6.7	7.9	104.8	77	0.33	10.464

Northern Hills

	<i>85</i>	<i>6.5</i>	<i>9</i>	<i>200</i>	<i>5</i>	<i>0.03</i>	<i>0.2</i>
Cardinia Creek at Chadwick Road, Upper Beaconsfield (Replaces AM089)	62	6.8	8.7	68.9	4.5	0.043	3.27
Toomuc Creek at Princes Highway, Pakenham	22	6.6	8.1	88.1	6.5	0.098	2.45
Tarago River at Morrisons Road, Labertouche	55	6.7	8.3	291.1	7	0.065	1.365
Bunyip River at North Labertouche Road, Labertouche	53	6.6	8.2	63.5	8	0.031	0.904
Bunyip River d/s Cannibal Creek, Longwarry North	57	6.8	8.2	271.3	9.5	0.042	0.994

Peninsula

	<i>80</i>	<i>6.5</i>	<i>9</i>	<i>200</i>	<i>15</i>	<i>0.05</i>	<i>0.6</i>
Merricks Creek at Bridge Street, Merricks (Beach Road)	38	6.9	8.2	170.9	6.5	0.16	3.534

South Eastern Rural

	<i>80</i>	<i>6.5</i>	<i>9</i>	<i>200</i>	<i>15</i>	<i>0.05</i>	<i>0.6</i>
Bunyip River at Little Road, Iona	58	6.8	8.2	692.2	9.5	0.1	1.015
Lang Lang River at South Gippsland Highway, Lang Lang	46	6.7	8	191.8	19	0.31	6.436
Lang Lang River upstream Drouin-Poowong Road, Athlone	17	6.7	8.1	371.5	11	0.42	5.329

Waters of Victoria	EC 75%	DO% 25%	pH 25%	pH 75%	E Coli Geomean	Turb 75%	TP 75%	TN 75%
	uS/cm	% sat	ph units	ph units	org/100ml	NTU	mg/l	mg/l

Cleared Hills & Coastal Plains Werribee/Maribyrnong

<i>SEPP Objective</i>	<i>1500</i>	<i>85</i>	<i>6.5</i>	<i>8.3</i>	<i>150</i>	<i>10</i>	<i>0.045</i>	<i>0.6</i>
Maribyrnong River at Brimbank Park Ford (upstream Taylors Creek), Kellor	2300	50	7.68	8	77.8	10.75	0.057	1.155
Maribyrnong River at Canning Street Ford, Avondale Heights (EPA 6070)	2300	57.25	7.68	8.13	115.3	17	0.068	1.269
Steele Creek at Rose Avenue, Niddrie	1220	66.25	7.68	8.13	272.5	9.25	0.050	0.607
Stony Creek at Bena Street, Yarraville	352.5	51.25	7.6	8.23	855.2	20.75	0.323	2.553
Kororoit Creek at Millbank Drive, Deer Park (Replaces EPA5509)	2162.5	49	7.4	7.83	57.6	8	0.057	0.717
Kororoit Creek at Racecourse Road Ford, Altona	33000	46	7.8	8.13	129.5	29	0.233	1.566
Skeleton Creek at Ayr Street, Laverton	5220	46.75	7.3	7.8	214.8	13	0.198	0.905
Maribyrnong River at end of Newsom St. 500m d/s of Ascot Vale MD, Ascot Vale West	45250	53	7.75	8	71.0	9.5	0.17	0.692

Cleared Hills & Coastal Plains Westernport

	<i>500</i>	<i>85</i>	<i>6.4</i>	<i>7.7</i>	<i>150</i>	<i>10</i>	<i>0.045</i>	<i>0.6</i>
Dandenong Creek at Boronia Road, Wantirna	567.5	54.75	7.28	7.65	224.7	22.5	0.11	2.192
Dandenong Creek at Stud Road, Dandenong North (EPA 5654)	391.25	60	6.9	7.8	122.0	42.25	0.085	1.213
Dandenong Creek at Pillars Crossing, Dandenong South	505	68.25	7.15	7.73	257.8	51	0.097	1.292
Corhanwarrabul Creek at Wellington Road, Rowville	550	52	6.88	7.65	195.0	31.5	0.11	1.383
Mile Creek at Cheltenham Road, Keysborough	1847.5	69	7.43	8.03	387.9	16.75	0.100	1.652
National Water Sports Centre outlet, Bangholme (EPA 5682)	30000	69.25	7.9	8.3	131.9	44.25	0.15	1.398
Hallam Main Drain at South Gippsland Highway, Hampton Park	1005	56.5	7.1	7.6	185.4	22.75	0.075	1.518
Eumemmerring Creek at Worsley Road, Bangholme	1000	69.5	7.45	7.9	192.2	29	0.145	1.572
Mordialloc Creek at Wells Road, Mordialloc	18625	56.75	7.18	7.85	250.0	33.5	0.238	1.380
Kananook Creek at Wells Street, Frankston	40500	60.5	7.58	8.05	390.9	13.5	0.14	0.970
Elster Creek at Cochrane Street, Elwood	565	55.5	7.48	8.13	1,195.4	11.25	0.100	1.494
Balcombe Creek at footbridge off Uralla Drive, Mt Martha	1575	49.5	7.2	8.03	560.6	21.25	0.093	2.103
Dunns Creek at Marine Drive, Safety Beach	6075	64	7.48	7.63	699.4	13	0.108	1.044
Chinamans Creek at Eastborne Road, Rosebud West	1125	28.75	7.2	7.7	613.6	7	0.133	1.560
Main Creek at Boneo Road, Flinders	2525	75	7.55	8.05	84.0	4.25	0.035	0.811

Forest – A

	<i>100</i>	<i>90</i>	<i>6.4</i>	<i>7.7</i>	<i>150</i>	<i>5</i>	<i>0.025</i>	<i>0.5</i>
Dandenong Creek at Sheffield Road, Doongalla Forest	160.5	75.5	6.95	7.65	69.0	11	0.035	1.239

Reporting Alert Levels for Waterway Water Quality

Water quality alert levels were agreed between EPA Victoria and Melbourne Water in 1994. Alert levels are generally well above water quality objectives specified in relevant State Environment Protection Policies, representing instances of particularly undesirable water quality. Melbourne Water is required to report all alert-level exceedances that occur within our jurisdiction to provide a means of identifying sites that often experience poor water quality and also to provide a mechanism for locating and mitigating chronic pollution problems.

From July to September 2007, a total of 107 alert-level exceedances were reported to EPA Victoria, or about 2.4 % of the total number of water quality measurements.

This compares with 73 exceedances reported in the fourth quarter last year. Exceedances were most commonly reported for oxides of nitrogen, total nitrogen, percentage of oxygen saturation and conductivity. There were 5 sites with 7 or more exceedances. The largest number of exceedances was reported in Watsons Creek at Dandenong-Hastings Road – Somerville (9) thought to be associated with the presence of upstream market gardens. Other sites with high number of exceedances were the Yallock Outfall at South Gippsland Highway (8), Andersons Creek at Everard Drive Bridge (7), Brushy Creek at Lower Homestead Road Bridge, Wonga Park (7) and Olinda Creek at Macintyre Lane, Coldstream (7). These high readings may be explained by the large numbers of unsewered properties or outputs of sewage treatment plants that are found in the catchments above these sites.

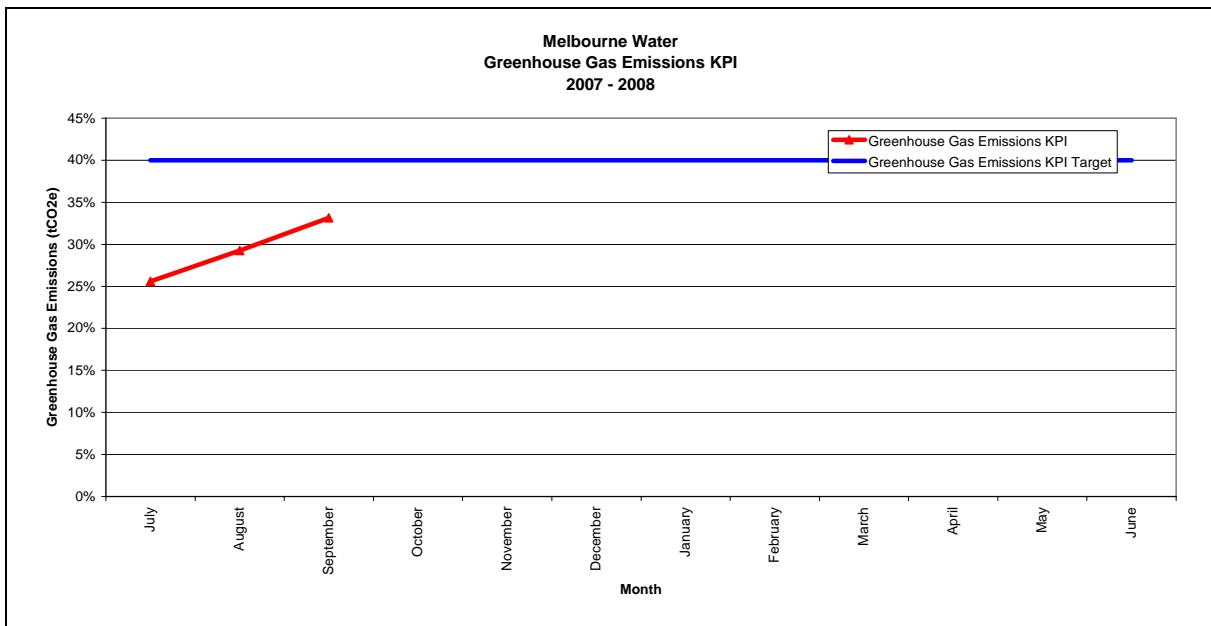
Renewable Energy and Greenhouse Gas Emissions Performance

Melbourne Water has established Key Performance Indicators for increased renewable energy and reduced greenhouse gas emissions. While there are no strict regulatory requirements for these, there are increasing soft regulatory requirements such as EPA Victoria’s discharge licence requirement to implement energy efficiency projects with pay back periods of three years or less. The Commonwealth Government is also introducing similar requirements for businesses that use more than 0.5 PJ of energy each year and Melbourne Water uses about 2 PJ.

The following graphs show performance against the two Key Performance Indicators. The definition for each is included with each graph. For information two additional charts are included showing the energy content of sewage and water and the fuel efficiency of Melbourne Water’s vehicle fleet.

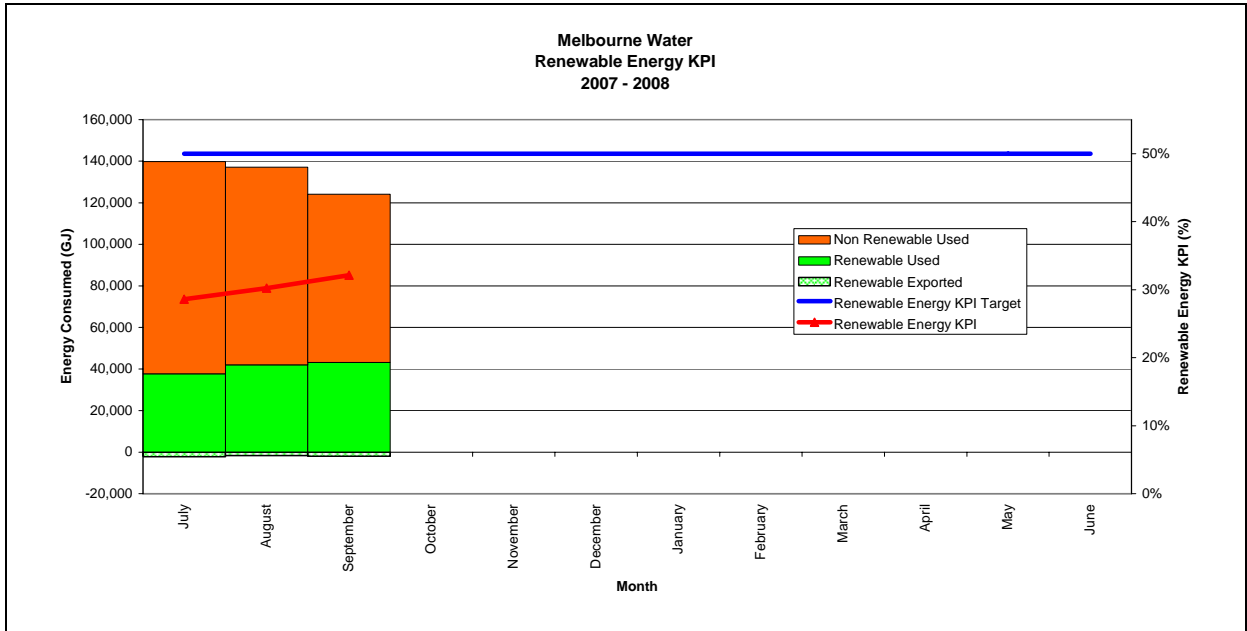
Greenhouse Emissions KPI

$$= (\text{Total Emissions 2000/01} - \text{Total Emissions 2005/06}) / \text{Total Emissions 2000/01}$$



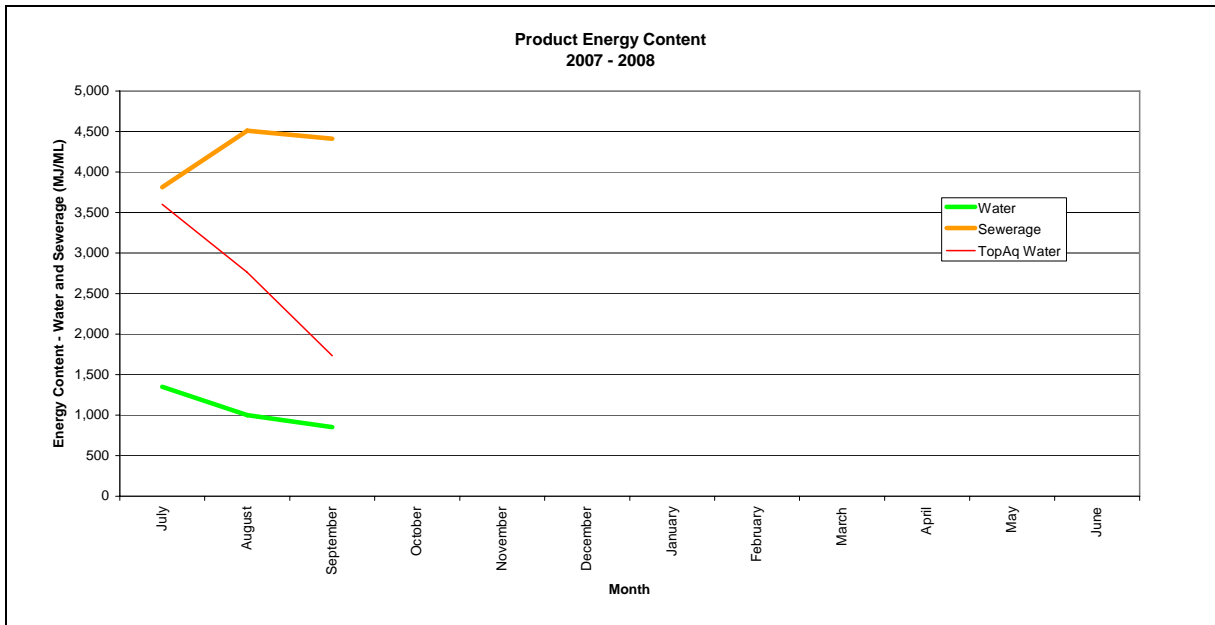
Renewable Energy KPI

= Renewable Energy Produced or Used / Total Energy used by Melbourne Water



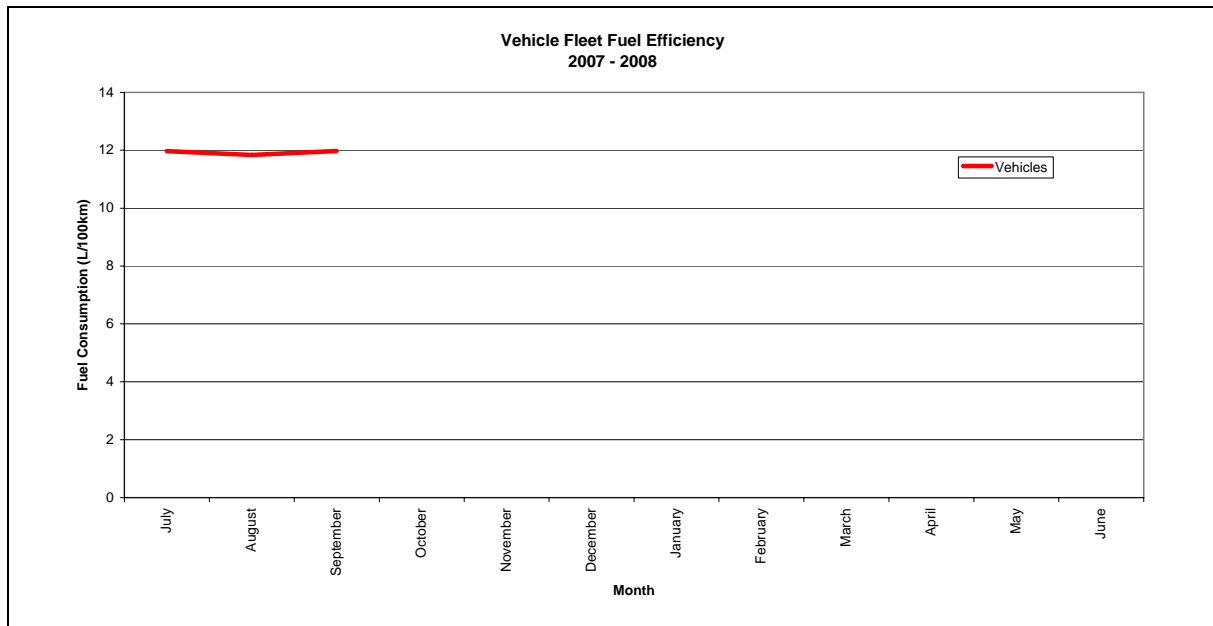
Energy content

Energy content is how much energy Melbourne Water or Earth Tech (TopAq Water) uses to produce a ML of product. Earth Tech’s line is the average energy required per ML of Class A water from ETP effluent.



Vehicle fleet efficiency

On average how much fuel is used to travel 100 kms.



Catchment Profile

Distribution and Conservation Significance of Frog Species on the Mornington Peninsula

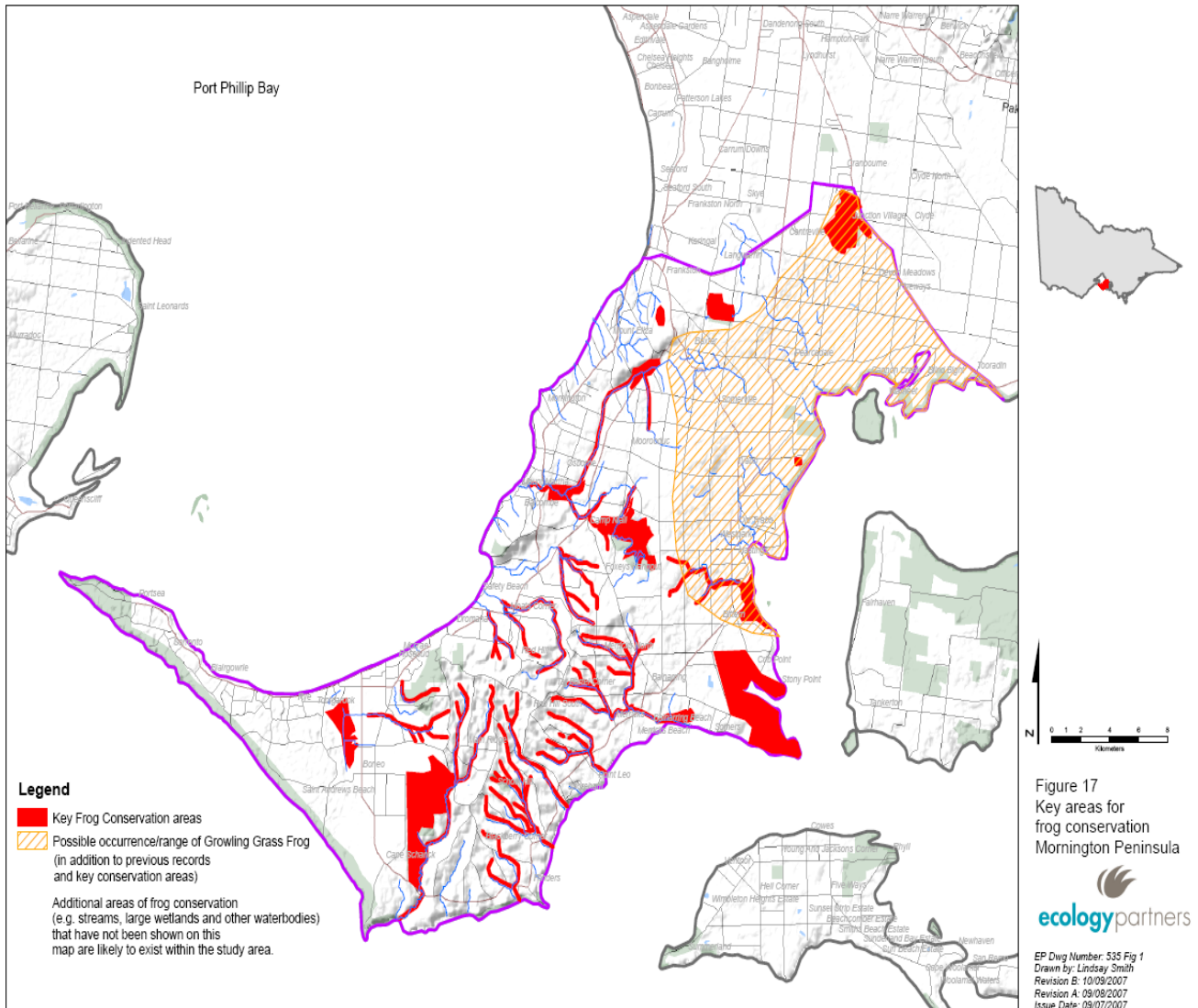
As part of the river health data collection program for the extended area, a review of frog species significance and distribution on the Mornington Peninsula was initiated. The purpose of the study was to provide Melbourne Water with information to assist with the ongoing management and future enhancement of waterways within the Mornington Peninsula.

The study area included the entire Mornington Peninsula, from Point Nepean in the south to the northern border defined by the Cranbourne-Frankston Road and South Gippsland Highway. Based on a thorough background review and ground truthing by consultants Ecology Partners, a total of 82 sites were surveyed in the study area in May and June 2007. Survey techniques such as call-playback and spotlighting were used to detect the presence of frogs, and a habitat assessment was conducted. A GPS hand held unit was used to obtain accurate locations of survey sites and frog species recorded.

Utilising a range of habitats, a total of 13 indigenous frog species were found to occur on the Mornington Peninsula. Suitable habitats included streams, permanent and ephemeral wetlands, farm dams and ponds, as well as flood-prone ditches and low-lying ground. Some of the more common frog species even utilise suburban pools and ponds.

One nationally significant species (Growling Grass Frog) and one state significant species (Southern Toadlet) was found to occur on the Peninsula. Four species were considered to be uncommon or regionally significant in the study area (Victorian Smooth Froglet, Common Spadefoot Toad, Haswell's Froglet and Peron's Tree Frog), while the remaining species are of local conservation significance.

The report produced during the quarter provided an overview of each species (including predicted distribution), a discussion of potential threats, and management recommendations for the conservation of frog species on the Mornington Peninsula. Useful maps of the distribution of frog species and key frog conservation areas are also included in the report.



Appendices

Appendix One: Guide to Terms

Parameter	Units	Explanation
BOD <i>Biochemical Oxygen Demand</i>	mg/L*	A measure of the oxygen depleting potential of waste - usually measured over a five day period.
CBOD <i>Carbonaceous Biochemical Oxygen Demand</i>	mg/L*	A measure of the oxygen depleting potential of the carbonaceous (organic) portion of the waste - usually measured over a five day period.
SS <i>Suspended Solids</i>	mg/L*	A gravimetric measure of undissolved matter, when retained on filter.
Amm <i>Ammonia</i>	mg/L*	A form of nitrogen, present in untreated sewage and many industrial wastes. Is toxic to certain fish and marine species.
Surf <i>Anionic Surfactants</i>	mg/L*	Surface active agents, associated with detergents
pH	numeric	A measure of the acidity (pH 0-7) or alkalinity (pH 7-14) of sample. Pure water is slightly acidic, due to dissolved carbon dioxide.
TRC <i>Total Residual Chlorine</i>	mg/L*	A measure of the remaining chlorine associated with the disinfection of effluent.
D.O. <i>Dissolved Oxygen</i>	mg/L*	An indication of "waterway health". Levels may deviate from saturation by pollutant depletion, or supersaturation due to algal activity.
Metals	mg/L* or µg/L#	Are an indication of contamination. Metals tested include lead, cadmium, chromium, copper, zinc, nickel and mercury.
E. coli <i>Escherichia coli</i>	no. of organism s/ 100ml	A common bacteria from the intestines of warm blooded animals. Used as an indicator of faecal contamination.
PAH's <i>Polynuclear Aromatic Hydrocarbons</i>	µg/L#	Polynuclear Aromatic Hydrocarbons are by-products of petro-chemical industries and combustion processes. Many PAH's are highly carcinogenic.
Total P or TP <i>Total Phosphorus</i>	mg/L*	Measured as phosphate after acid digestion of total sample to convert all combinations of phosphorus to phosphate.
Phenols	µg/L#	Phenols are widely used in resins, disinfectants and industrial products. Trace residuals are resistant to decomposition.
Total N or TN Total Nitrogen	mg/L*	The total amount of nitrogen comprising organic nitrogen, ammonia, nitrate and nitrite
Turb Turbidity	NTU	Cloudiness caused by materials suspended in water
EC Electrical conductivity	µS/cm	A measure of the ability to conduct an electrical current and used as an indicator of salinity
Org N <i>Organic Nitrogen</i>	mg/L*	A distinction between the inorganic nitrogen forms (ammonia, nitrite and nitrate), and the organic compounds present in food/body wastes. (proteins, amines)

* milligrams per litre of water sampled - is equivalent to parts per million

usually expressed as micrograms per litre of water sampled - is equivalent to parts per billion

Appendix Two: Details of the Environmental Impact Rating of Sewer Spillages

The development of an environmental impact rating for sewer spills includes the following factors:

- environmental quality of the receiving water;
- spill content;
- dilution of effluent in receiving water; and
- the volume of the spill.

The impact rating is based on a procedure that considers the various combinations of grade for each of the factors together and then groups them into an impact rating based on a simple model. Each possible combination of grades has been put into one of the ratings from one to five. Although this may appear to be an arbitrary process, the results represent a reasonable estimation of the potential environmental impact of a spill from a sewer.

The environmental impact rating is an indication of the potential impact of spill events, not a measure of actual impact.

Examples

An example of a significant spill achieving an impact rating of “5” occurred during Period 12 1994/95. ERS number 327 discharged 10 826 Kl of untreated sewage into the Maribyrnong River. The volume of this spill was the key determinant in the spill classification of “5”.

ERS number 327 discharged on another occasion during Period 12 1994/95 resulting in 68 Kl of sewage being discharged into the Maribyrnong River. This spill was given a rating of “2” due to the relatively minor volume of sewage discharged into the waterway and was not regarded as significant.

Appendix Three: Melbourne Water Spillage Reporting

How Melbourne Water reports sewerage system spills within Melbourne Water and to EPA Victoria is described below.

All spills, regardless of volume or content, are reported internally or to an external authority. The significance of the spill determines the reporting process.

Spills where there may be an environmental or public health hazard*

1. Immediately by phone or fax using the EPA NOTIFICATION OF SEWER SPILL form by a senior manager to EPA Victoria.
2. These spills require a SEWER SPILL NOTIFICATION FOLLOW-UP report to EPA Victoria within 21 days of the spill.
3. Subsequent written reports are provided to Melbourne Water executives (as required) and EPA Victoria (quarterly).

Where there is potential for a public health impact DHS is also notified.

All Spills (including spills of low significance)

1. Each period, a summary of all spills is included in the Business Unit's Operating Report to Board.
2. The Quarterly Board Environmental Compliance Report provides more details on all spills.
3. A Quarterly Spills Report summary of spills is forwarded to EPA Victoria.

*Hazards that require immediate follow up include where there is a:

- public health concern
- sensitive receiving environment
- large industrial or commercial waste component
- sewer spill very visible in a public area
- potential for media involvement
- sewer pipe 300mm diameter or greater
- flow >80L/min (ie: two house taps going flat out for approx hour = 5 KL)

Appendix Four: Description of the Phases of Trade Waste Agreement Restrictions

The retail water companies use a risk-ranking model as one of the tools used to manage trade waste discharged to sewer. The risk-ranking model has been developed over many years and takes into account key aspects of each customer's circumstances.

These include:

- Location of the discharge in relation to the receiving sewage treatment plant;
- Volume of trade waste discharged to sewer;
- Compliance history of the customer;
- Activities undertaken on the customer's site which generate trade waste; and
- Substances in the trade waste.

The risk-ranking model calculates a risk weighting for each customer and from this customers are allocated to one of five risk categories, with a risk ranking of 1 being the highest risk and 5 being the lowest. The risk rating determines the level of monitoring required for a company.

Retail water companies initiate a three-step management process when a customer does not comply with the conditions of their Trade Waste Agreement or Consent.

Stage 1:

When a non-compliant sample is identified, an Initial Trade Waste Notice is issued. The Notice specifies how the trade waste fails to comply and requires the customer to remedy the problem, provide written documentation explaining reasons for the non-compliance and the steps taken to ensure it will not happen again.

Stage 2:

If further samples of trade waste do not comply after the date specified in the Notice a letter is issued requiring the customer to:

- review its waste treatment processes;
- attend a meeting to discuss the cause of the non-compliance and processes to prevent a recurrence; and
- meet costs in ensuring trade waste complies with the Agreement.

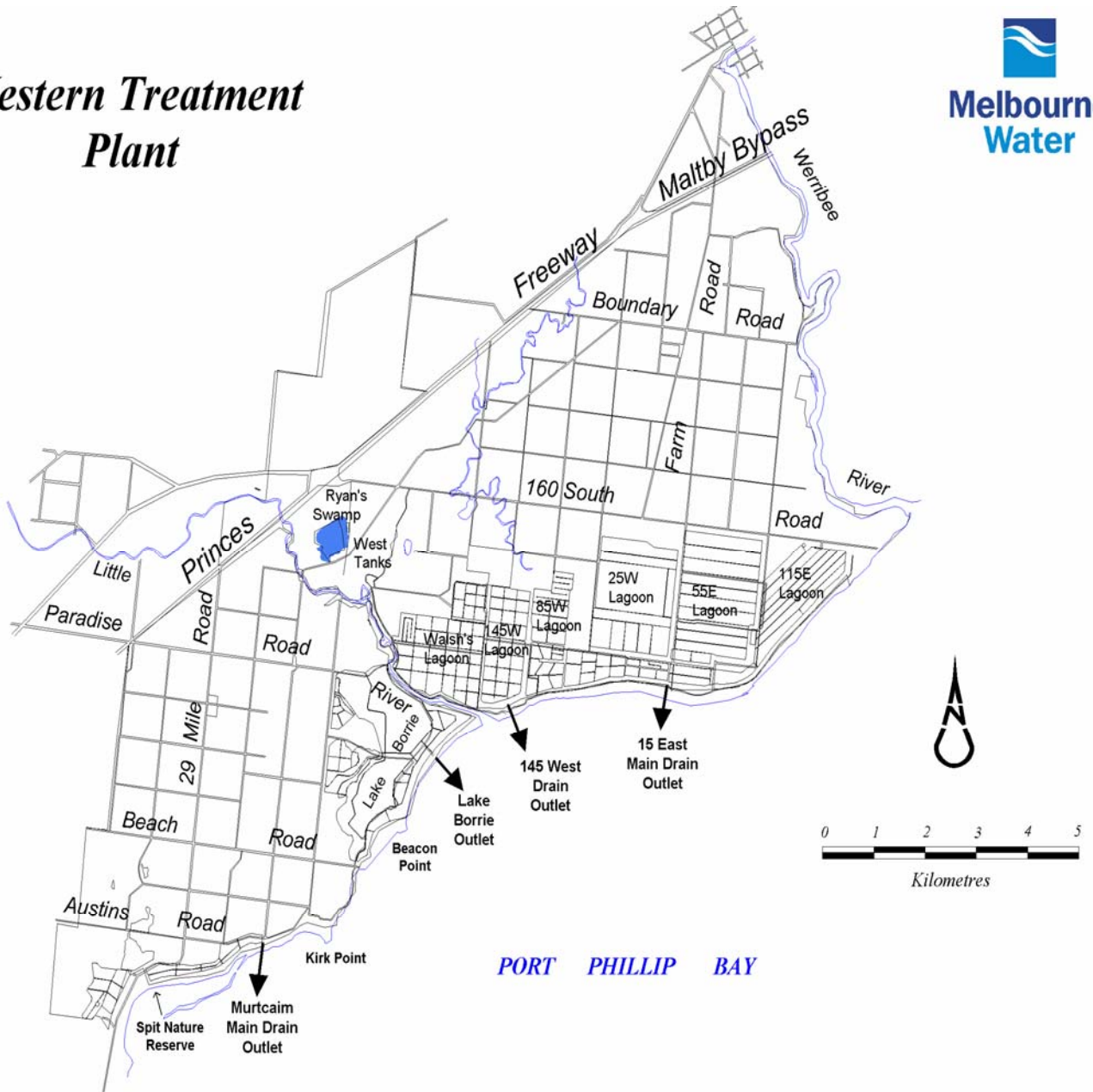
Stage 3:

Samples of trade waste will continue to be taken and analysed and no further action will be taken if the trade waste becomes compliant. However if a sample does not comply a Notice of Breach will be issued setting out a date by which the trade waste must comply with the Agreement.

If the trade waste does not comply by the set date the customer must cease discharging trade waste to the sewer immediately, the trade waste connection point will be sealed and the media may be informed. Any further discharge of waste will be liable to a fine of up to \$20,000 and up to \$8000 for each day during which waste is discharged. Before any further trade waste can be discharged, a new Agreement must be negotiated and the customer must prove it will achieve on-going compliance.

Appendix Five: Map of Western Treatment Plant Discharge Points

Western Treatment Plant



Appendix Six: Environment Protection Authority (EPA) Enforcement Policy

The Environment Protection Act (1970) establishes the Environment Protection Authority to provide for a system of administration to ensure a high standard of environmental quality. The Act allows for a range of regulatory and non-regulatory activities including implementation of State environment protection policies, environmental monitoring and community education programs.

EPA Investigations

After an incident has been reported to the EPA, authorised officers from the EPA have the power under the Environmental Protection Act (1970) to embark upon an investigation. The investigation may involve:

- entry to the premises to take samples, photographs, tests, etc
- requesting information such as files, maps and or other documents relating to the incident
- identifying the occupier of the premises
- ordering clean-up procedures
- conducting formal interviews with management or individuals associated with the incident

Enforcement Measures

After investigation of a particular incident by the EPA the following enforcement measures are available under the Environment Protection Act (1970):

- warnings
- directions by an authorised officer
- notices
- infringement notices
- prosecutions
- licence suspension or revocation
- injunctions

Mounting a Prosecution - What is considered

In brief, the following factors are taken into account when deciding upon the most appropriate enforcement measures following an incident:

- the seriousness of the offence and harm to the environment
- previous history of offences
- the prevalence of the offence in the eyes of the public
- enforcement costs for the EPA
- the precedent which may be set by not taking enforcement action
- the cooperation of the alleged offending individual or company.

Melbourne Water and EPA Victoria

Melbourne Water could be subject to formal investigation by EPA Victoria in relation to incidents such as the 1992 Epsom Road Sewer Collapse and subsequent unlicensed discharge into the Maribyrnong River.

Melbourne Water has maintains a long-term cooperative relationship with EPA Victoria, including Quarterly Liaison Meetings of senior managers. This working relationship has resulted in open and honest communication so that the interaction between Melbourne Water's environmental performance and EPA Victoria's expectations holds no surprises.

Every incident such as the overflow of untreated sewage from an Emergency Relief Structure into a waterway could be regarded as an unlicensed discharge and an offence under the Environment Protection Act (1970). Where such incidents lead to unclear regulatory requirements steps are taken so that a clear position is developed. For example EPA Victoria has clarified that releases from the sewerage system through Emergency Relief Structures are compliant if they occur during rainfall events in excess of 1 in 5 years.

Appendix Seven: Emergency Response Procedures in Melbourne Water

A critical element of Melbourne Water's risk management process is ensuring the Corporation is prepared for and can effectively respond to and recover from incidents with potential to have an impact on our stakeholders, customers, the broader community or the environment.

Melbourne Water has established PERFORM (Prompt Emergency Response for Melbourne), which outlines the responsibility all Melbourne Water people have in incident management and details how we will respond to an incident in an integrated manner. The program highlights the need for thorough planning, preparation and training as a means of ensuring the effective and efficient management of any incident.

PERFORM is more than an incident management program, it is a comprehensive risk management program which incorporates prevention, preparedness, response and recovery for any adverse incident which could affect Melbourne Water.

The aims of PERFORM are to:

- Prevent or reduce the risks of incidents occurring in Melbourne Water
- Prevent or reduce the impact and consequences of incidents on customers, local community, stakeholders, environment, service delivery, system assets and operations
- Promote and support the maintenance and control of effective incident and emergency management processes

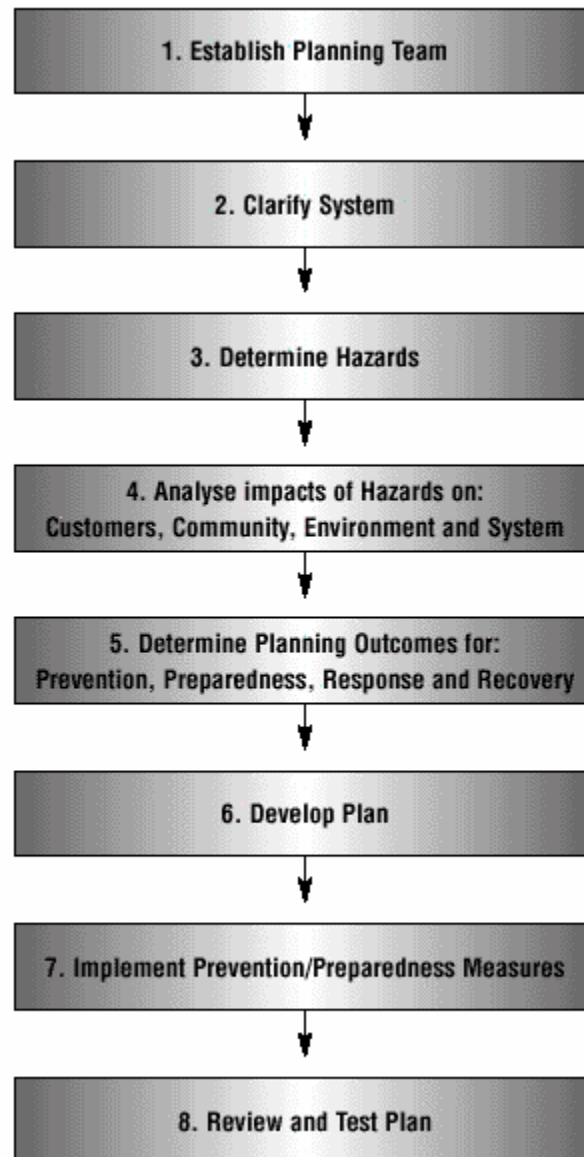
An *Incident* is any event or circumstance within our, or our customers operations that causes or is likely to cause:

- An interruption of service to customers
- A threat to our systems
- A threat to community health and safety
- A threat to the environment
- A threat to private or public property.
- The creation of the need for urgent action under statute or legislation

PERFORM incidents are categorised into five types. The following table defines the incident types and provides some examples of each type:

Category	Definition	Examples
Near Miss	A Near Miss is an unintended event that, but for the intervention of a risk control measure or human intervention, is likely to have resulted in a minor, significant or major incident, or in an emergency.	<ul style="list-style-type: none"> • Detection of a chlorine release of greater than two ppm, but less than 10 ppm at Winneke water treatment plant • Lost bush walkers in catchment area
Minor	<p>A Minor Incident is one where local work teams, under normal supervision, can effectively cope with little or no adverse effects on the Corporation, its customers and the community.</p> <p><i>Note: If the media become involved, a Minor Incident becomes a Major Incident.</i></p>	<ul style="list-style-type: none"> • Minor motor vehicle accident • Short duration computer system malfunction • Minor flooding • Vandalism in catchment area • Employee or contractor/visitor injury • Intentional access to catchment area
Significant	<p>A Significant Incident is one that can be managed at the site level but:</p> <ul style="list-style-type: none"> • May need external resourcing over and above that which is usually used by the work team; and/or • The actual or potential impact on the Corporation, its customers, the community and the environment is more widespread. <p><i>Note: If the media become involved, a Significant Incident becomes a Major Incident.</i></p>	<ul style="list-style-type: none"> • Burst main causing some property damage • General sewer stoppage with contained spill • Moderate flooding • Prolonged SCADA outage • Minor industrial actions • Asset or system failure causing property damage • Intentional damage to catchment area
Major	<p>A Major Incident is one which requires off-site co-ordination with major levels of external resourcing and support; and/or causes or has the potential to cause major impact on the Corporation, its customers, the community and the environment.</p> <p><i>Note: All incidents which involve the media are to be considered as Major Incidents</i></p>	<ul style="list-style-type: none"> • Burst main in a large shopping centre • General sewer stoppage resulting in an uncontained spill • Major or widespread flooding • Bushfire in water supply catchments (natural or intentional) • Dam failure • Major industrial action • Asset or system failure causing major property damage
Emergency	<p>An Emergency is an event which significantly impacts Melbourne Water's ability to continue its operations. It will affect Melbourne Water's:</p> <ul style="list-style-type: none"> • Operability (acceptable level of service) • Image or reputation (community, media, political) • Liability (legal, financial) 	<ul style="list-style-type: none"> • Any of the above major incidents • Fatality or multiple injuries • Loss of stakeholder support • Corporate governance/compliance issue • Occurrence of any of the five key metropolitan water industry threats

PERFORM does not only involve cleaning up after an incident. It also involves planning, training, procedure documentation and test planning. The incident management planning process is described below;



PERFORM applies to all Melbourne Water operations and business areas. Each group has generic plans to cover routine system faults for the different water supply, wastewater and drainage operations or for any other activity that has potential to have an impact on Melbourne Water's business, its customers or the community.

A contingency plan is a series of processes or procedures to prevent, prepare for, and respond to and recover from events that can be foreseen to occur that can affect our operations or service delivery. It identifies any potential problem areas, and provides options for containing and controlling such events.

Each manager is responsible for determining the probability and consequences of failure of assets, systems and work practices, as well as for preparing contingency plans to deal with any failure.