



***NEW FARM PARK
WATER MINING
RESEARCH & DEVELOPMENT
TRIAL REPORT***



Trial Period: July 2006 – April 2007

EXECUTIVE SUMMARY

The New Farm Park Water Mining Research and Development Project was conducted over a ten month period from July 2006 to April 2007. The project was funded through an Advanced Wastewater Treatment Technology (AWTT) grant. This grant is awarded to trial wastewater treatment technologies new to Queensland but with potential to be adopted across the State. At the time of the trial there were no reference plants in South East Queensland however the process is proven abroad, particularly in the UK and Middle East.

The aim of the project was to simulate the operation of a wastewater treatment plant to that required for water mining applications, and evaluate the performance of the Eimco Water Technologies' ReAqua Membrane BioReactor (ReAqua MBR) package treatment plant. The system incorporates Kubota flat sheet membranes that can produce Class A water which can be used for irrigation applications especially in high contact areas, such as a football field.

The plant at New Farm Park, designed by Eimco Water Technologies Pty Ltd (formerly Copa Water), is capable of producing 25 kL/day of Class A water. The MBR plant has produced more than 2 ML of water during the trial, which has been used to irrigate one hectare football field and rose gardens. At no point in the trial was the quality of the treated water compromised by plant interruptions or breakdowns. This is a feature of the ReAqua MBR treatment technology.

The plant operated as a full water mining plant and experiences were gained in the following areas:

- Extraction of wastewater
- ReAqua MBR Plant operation & maintenance
- Product water storage & irrigation

The plant performance was inhibited by the excessive salinity levels in the feed water, linked to infiltration at high tides. This affected the plant's productivity and resulted in average of only 11.3 kL/day of recycled water. Minor changes to the existing plant design lead to better operational reliability. As previously noted, the plant continued to achieve the class A water quality target.

In conclusion, after the ten-month trial period, the Eimco ReAqua MBR technology was deemed suitable for water mining purposes where there is an immediate need for class A recycled water.

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1 Project background

New Farm Park is one of the Brisbane's oldest parks. Located on the riverbank at New Farm it features rose gardens, a Jacaranda avenue, and massive curtain fig trees that form a child's playground. New Farm Park was the site of an 1846 racecourse. Brisbane City purchased the racecourse in 1913 to create a park. It covers thirty-seven acres (37) and originally included football grounds, tennis courts, basketball courts and 40,000 rose bushes of 300 different varieties. Today the community has come to enjoy the one hectare football field, the open spaces and beautiful rose bushes. Since its development for public use, it has continued to be a much loved and enjoyed park.



Figure 1. New Farm Park

Before drought and water restrictions, the average water usage for the park was approximately 113 kL/d.

Brisbane Water was successful in obtaining a grant under the Advanced Wastewater Treatment Technologies (AWTT) grant to trial a Water Mining Kit for various recycled water applications. The chosen technology Eimco's ReAqua MBR package treatment plant has a maximum treatment capacity of 25 kL/d of Class A water suitable for irrigation purposes.

New Farm Park was an ideal opportunity to present this advanced water mining technology in Australia. It provided an occasion to showcase local communities with a recycled water application and to optimise the water mining trials and publish results.

2 Project Description

The aim of the project was to simulate the operation of the demonstration plant to that expected in water mining applications and to evaluate the performance of the MBR plant over a whole membrane maintenance cycle of 6 months.

It was originally envisaged that the ReAqua MBR plant would be installed below ground. Due to constraints on plants and tree root disturbance within the park a purpose built above ground plant was manufactured by Eimco using similar design features to their smallest standard size membrane unit, the CF 75, which has a maximum treatment capacity of 25 kL/day (product water). This also presented an opportunity to display the plant to the public.

The plant was operated over varying climatic conditions from July 2006 to April 2007 (i.e. Winter, Spring to Summer).

The Eimco ReAqua MBR is a proven process abroad (particularly in the UK and Middle East), however there were no reference plants in Australia. So New Farm Park water mining project is the first of its kind in Australia to demonstrate the technology under Australian climatic and soft water conditions.

Under the AWTT grant from the State Government the project was awarded a grant as described in Table 1.

Table 1. Grant Arrangement

Applicant Contribution (EIMCO)	\$160,000
Local Government Contribution (BW)	\$ 30,000
Subsidy awarded by DLGPSR (State Govt)	\$190,000
Total Project Budget	\$380,000

3 The Process Concept

3.1 The Eimco ReAqua MBR Plant (UK)

The ReAqua MBR packaged treatment plant range has been originally developed in UK, as a below ground membrane bioreactor process that incorporates the Kubota flat sheet membranes into a compartmentalised stainless steel tank. The process has been developed for the remote treatment of wastewater to produce a high quality effluent.

The design of the EIMCO ReAqua MBR has been achieved by product standardisation along with minimising plant items, instrumentation and process control.

The ReAqua MBR Package plant as produced in the UK consists of four sections, a brief description is presented below:

- A balancing tank to ensure equalised flow and load is passed into the next stage
- A baffled primary settlement tank for the removal of gross solids. (A nitrogen removal stage is used instead at New Farm Park to ensure product water has a neutral pH with the low alkalinity wastewater).
- A membrane bioreactor stage.
- A permeate holding tank. (which in the case of New Farm Park is a separate storage tank)

3.2 The Process Description at New Farm Park

The plant is fed with screened wastewater extracted from the sewer system. The membrane bioreactor combines an activated sludge stage with solids separation, using Kubota flat sheet membrane panels, which retain biomass. Therefore final clarification of the effluent by settling is not required and clarification takes place by filtration through the membrane units. The biomass concentration in the MBR can be as high as 18,000 mg/L.

The Kubota panels are submerged in the biomass. The level of the liquid above the membranes provides the driving head to drive the effluent through the membranes for product water production. An air diffuser situated under the membranes provides both oxygen for biodegradation and the liquid cross flow velocity over the membrane surface necessary to prevent membrane fouling. By coupling the Eimco ReAqua MBR process with additional treatment such as UV disinfection and Chlorination, Class A Reuse water was achieved.

Due to the requirement not to disturb the ground or any tree roots in New Farm Park, a specially designed above ground ReAqua MBR plant was built for the trial. It retained some of the features of the modular sub-surface ReAqua plant, but process and hardware arrangements have been modified and upgraded to suit the specific requirement at New Farm Park such as close proximity of park users and housing. In addition most of the plants overseas operate on wastewater which has high levels of natural alkalinity and as such the alkalinity which is destroyed in the nitrification process is generally not of a concern. However in Brisbane and other locations in Australia most of the natural water supplies are

low in background alkalinity and as such denitrification is normally provided to recover some of the alkalinity to give a neutral pH in the product water of around 7.0.

Figure 2 shows the New Farm Park Package Plant.



Figure 2. A the New Farm Park ReAqua MBR Package Plant being lowered into place

At New Farm Park the primary settlement stage was not used and an anoxic stage was incorporated instead. This overcame the need for alkalinity addition and kept a neutral pH in the product water. It also demonstrated the ability of the plant to remove nitrogen by the denitrification process.

Over the course of the trial, minor hardware and process modifications have been made in the light of operational experience to optimise and improve the plant for this application.

Figure 3 represents the main components of the treatment process at New Farm Park

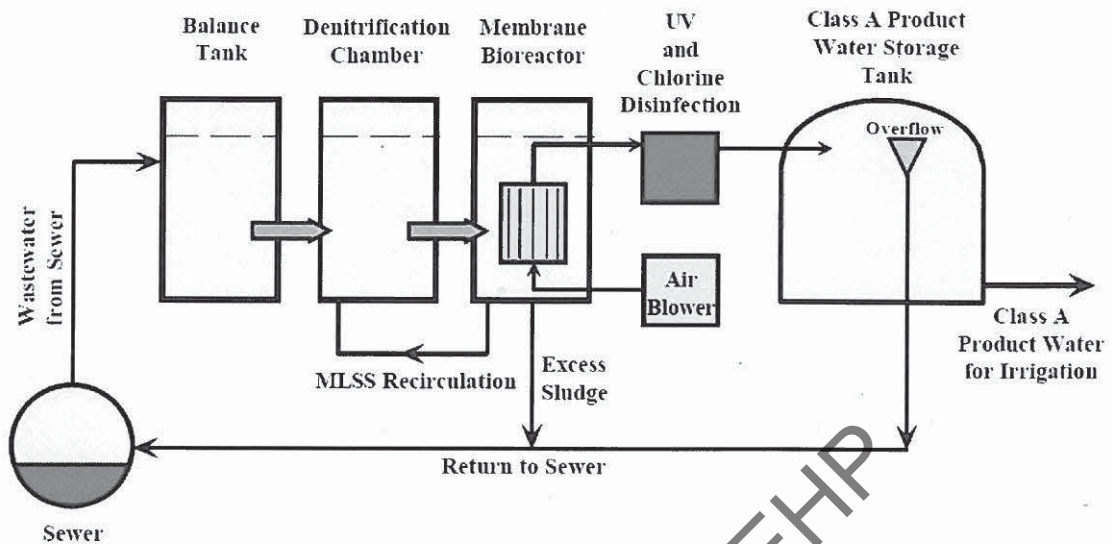


Figure 3. Main Components of the Treatment Process at New Farm Park

4 Project Layout

Figure 4 illustrates the project layout in terms of extraction of wastewater, treatment and supply of purified recycled water to irrigate the football field.

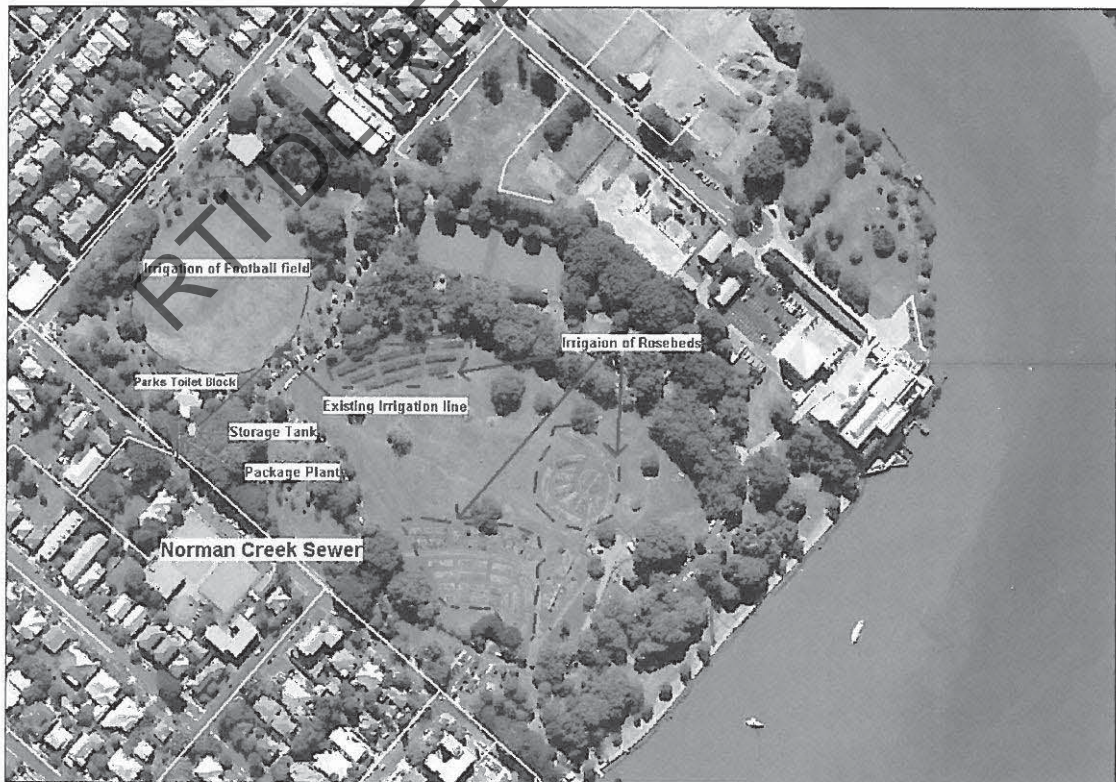


Figure 4. Water mining of Norman Creek Sewer at Brunswick Street

The key advantages of the layout were:

- Minimal civil construction cost (piping distance);
- Easy access to the sewer;
- Easy access to power;
- Ideal location for football field irrigation;

Apart from the ReAqua MBR package plant, additional infrastructure requirements included:

- A submersible pump;
- A 50m DN 125 mm PE Pressure Main from the sewer Maintenance Hole (MH) to the Treatment Plant;
- A concrete slab;
- An electric switch board & electric cables;
- A storage tank;
- An irrigation pump;
- Irrigation hookup to the sprinkler system;
- A WeatherTRAK irrigation management system.

4.1 Extraction of Wastewater / Rising Main Pump

The Norman Creek Sewer in Brunswick Street runs parallel to New Farm Park. It is 850mm diameter and 9 metres deep with an average flow of 21 ML/day.

Table 2 shows the weekend and weekday wastewater flow pattern in Normal Creek sewer at Brunswick Street, New Farm Park.

Table 2. Wastewater flow pattern

Weekend Flow		Weekday Flow	
Lowest Flow	75 L/s (6480 kL/d)	Lowest Flow	82 L/s (7084 kL/d)
Peak Flow	300 L/s (25920 kL/d)	Peak Flow	330 L/s (28512 kL/d)

Note: - Required flow for Water Mining Project: 0.29 L/s (25 kL/d) at any given time.

A 1.8 kW Grundfos submersible grinder pump is suspended in the MH and extracts wastewater at 3 L/s from the sewer and pumps it into the balance tank of the ReAqua MBR plant. The pump is equipped with a grinder system allowing the passage of solids through small diameter pipework. A level and salinity probe in the MH controls the operation of the pump along with a level switch in the balance tank of the ReAqua MBR Package plant.

The salinity probe has a control set point of 1600 uS/cm (1000 mg/l of TDS) at the inlet of the wastewater plant and deactivates the pump when the conductivity is higher than the set point.

4.2 MBR Plant

The Eimco ReAqua MBR Package plant, which has a footprint of about 5 m x 3m was located near the football field next to the public toilet block at New Farm Park. It is approximately 50 meters from the Norman Creek Sewer and close to a power pole in the Park.

4.3 Product Water Tank and Irrigation Pump

Next to the ReAqua MBR plant, a 42 kL Colourbond tank with internal liner is used to store product water. While the full capacity of the tank is 42 kL, due to the hydraulics and the inability of this tank to be located partially underground, only 26 kL could be stored.

A vertical multistage centrifugal pump next to the storage tank pumps water and provides sufficient pressure to recycle the product water through the existing irrigation sprinklers to water the football field and rose gardens. The irrigation pump automatically adjusts to a higher flow for the football field, and a lower flow for Rose Gardens. This irrigation system was physically separated from town water to eliminate the risk of an accidental cross connection.

Figures 5 and 6 show the ReAqua MBR package plant and Storage tank along with the Irrigation pump respectively.

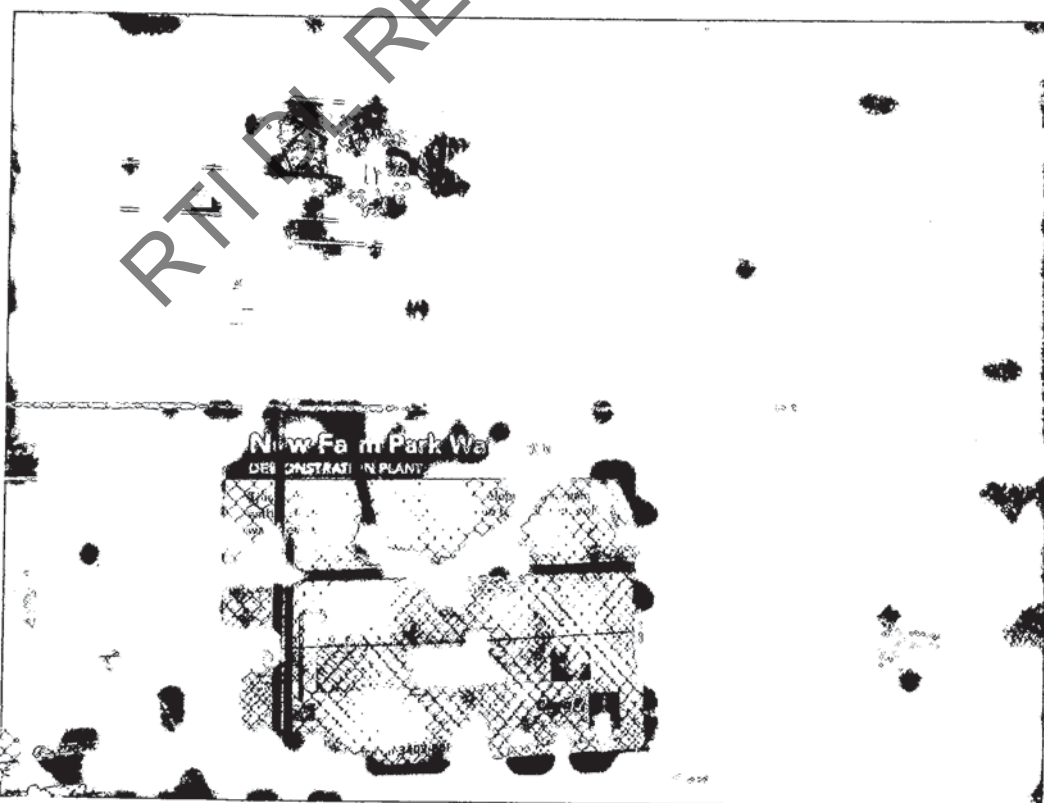


Figure 5. ReAqua MBR package treatment plant at New Farm Park.



Figure 6. Product water storage tank & irrigation pump.

5 Process Operation

5.1 Extraction & Supply of Wastewater

The operation of the wastewater pump in the nine-meter deep MH as the point of wastewater extraction ran smoothly. Every three months the submersible pump required cleaning to remove blockages like rags. Apart from cleaning there were no other issues with pumping wastewater. Initially an undersized pump was used which burnt out quickly but was replaced by a more suitable and larger sized pump.

On a permanent facility, screening upfront of the pump to avoid blockages and damage could enhance the operation of the wastewater pump.

5.2 Operation of The ReAqua MBR Plant

The operation of the ReAqua MBR plant is divided into four sections:

- Wastewater Supply / Balance Tank (BT)
- Denitrification tank (DT)
- Activated Sludge Tank (AST)/ Membrane Tank(MT) and
- Disinfection

Figure 7 shows the overall process control system.

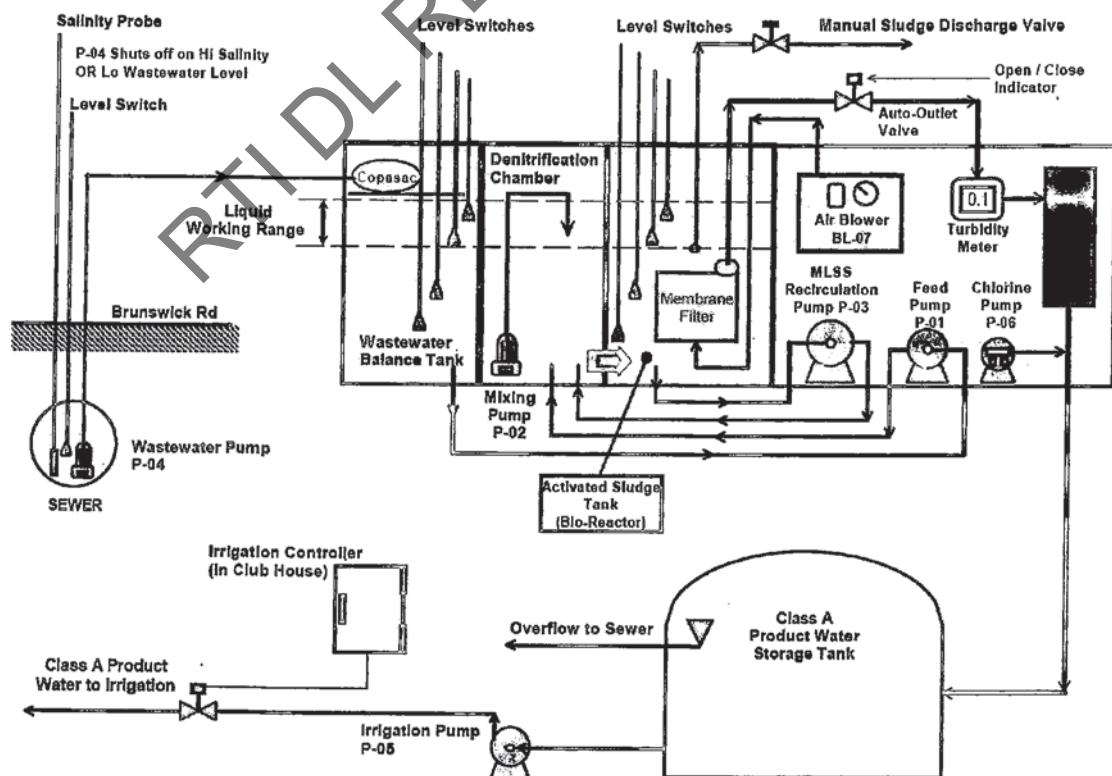


Figure 7. Schematic of the Overall Process

5.2.1 Wastewater Supply / Balance Tank

The submersible wastewater pump P-04 (see Figure 7) pumps wastewater from the Norman Creek Street Sewer on Brunswick Street to a Copasac in the Balance Tank. Screenings are manually removed from the Copasacs periodically. The pump (P-04) starts and stops in response to the level switches in the Balance Tank which are overridden by the low level switch and salinity probe in the sewer. Wastewater is not pumped from the sewer when salinity is greater than 1600 uS, or when the flow level is low in the sewer. The wastewater Balance Tank acts as a supply buffer in times when wastewater pump can not be operated due to high salinity or low flow levels in the sewer.

5.2.2 Denitrification tank

Ammonia in the wastewater is converted to nitrate by bacteria in the Activated Sludge Tank (AST). Mixed liquor which contain nitrates is recirculated into the denitrification tank (DT) where bacteria uses the oxygen from nitrate (NO_3) to oxidise some of the incoming biodegradable organic molecules (Biochemical Oxygen Demand -BOD) in the raw wastewater, thereby converting the nitrates to Nitrogen Gas and reducing some BOD within the mixed liquor of the DT. The denitrified mixed liquor from DT flows by gravity to the AST through a port close to the bottom of the tanks. A mixing pump (P-02) is used in the denitrification tank to mix the mixed liquor to ensure good contact between the mixed liquor from AST and the wastewater.

5.2.3 Activated Sludge Tank (AST)/ Membrane Tank (MT)

The mixed liquor from the DT is mixed with the mixed liquor within the AST. Air is blown between the membrane sheets by a blower. This stream of air bubbles acts to keep the membrane sheets free of sludge, mix the contents of the tank and transfer oxygen into the liquid for the bacteria to use and break down the waste material in the wastewater. Water permeates through the membrane under gravity while the solids are retained within the AST. The permeate flows by gravity through a UV unit for disinfection and is dosed with sodium hypochlorite for maintaining residual chlorine in the Product water tank. At this point the product water in the tank is ready for reuse.

5.2.4 Disinfection

Disinfection in the MBR plant takes three forms:

- Retention of organisms by the membranes
- Irradiation by ultra violet light and
- Chlorination by addition of sodium hypochlorite

This arrangement gives a degree of built in redundancy.

Membrane Pore Size-Biohydraulics

The membrane sheets are manufactured with a pore size in the range of 0.1 to 0.4 microns. In operation the membranes become covered with a dynamic layer of protein and cellular material (Biofilm). This layer further enhances the filtration effectiveness by reducing the effective pore size to less than 0.01 microns, which is in the ultra filtration particle range size.

A representation of membrane pore size and the slime layer effect can be seen in Figure 8.0

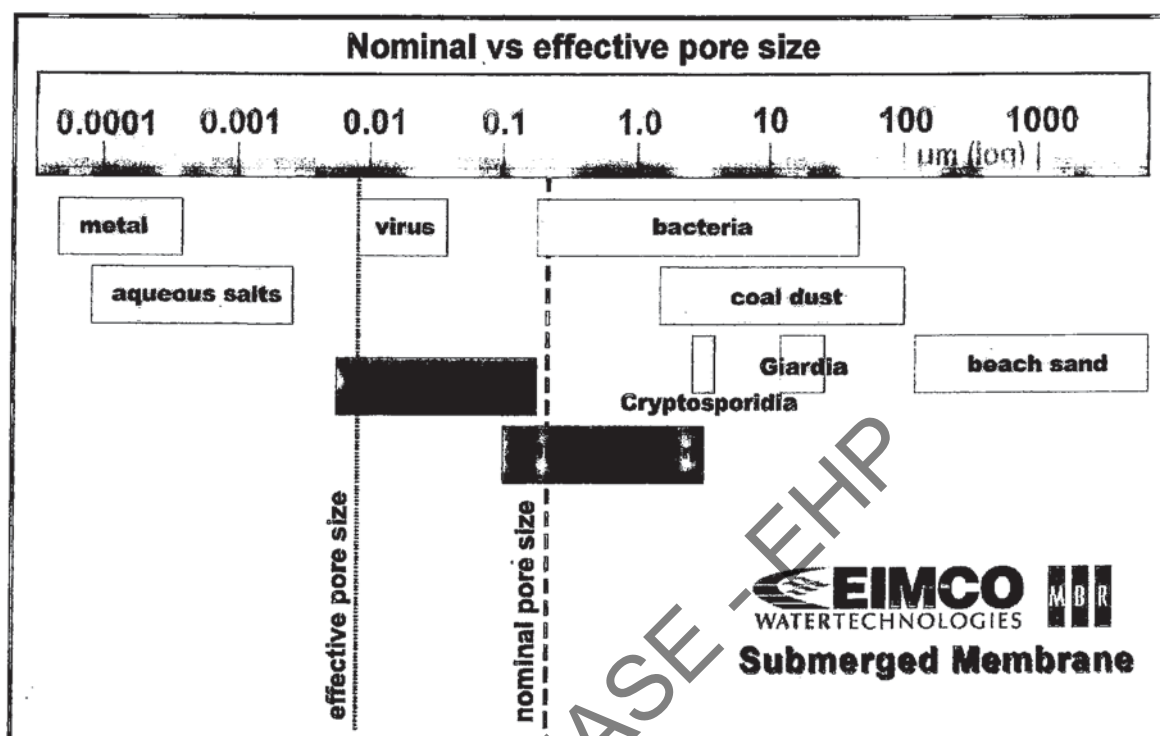


Figure 8. Flat Sheet Membrane Pore Size

Periodic cleaning of the membranes is required to remove mainly the biofilm overgrowth. The time between cleans depends on the nature of the material being treated and in the case of domestic wastewater a cleaning frequency of two times a year would be normal. The procedure is simple and relatively quick; the membranes are back flushed with a dilute solution of sodium hypochlorite, allowed to soak for around two hours, then flushed to drain to remove the expended hypochlorite solution. The process is then put back to normal operation, the whole procedure taking about three to four hours.

During normal operation, the membranes act as a very fine filter with only around 100 to 500 mm of hydraulic head, referred to as Transmembrane Pressure (TMP), being required to filter the design product water flow. Flow through the membranes is not regulated by the TMP but by the feed pump flow setting and other plant settings which are part of the process design. This mode of operation then negates any tendency for the product water flow to be influenced by variations in TMP. Towards the end of the trials in mid April 2007, a membrane clean was conducted to assess the degree of fouling that had occurred over the period of the trial. TMP was measured to be around 300 mm water gauge before cleaning and 110 mm water gauge after cleaning. This indicated that cleaning twice a year should keep the TMP within the normal expected range. Failure to clean the membranes would result in an eventual gradual decrease in product water flow and excessive TMP, subsequent cleaning though would restore the membranes to normal TMP and normal operation.

Ultra Violet Disinfection

The ultraviolet light disinfection unit is manufactured by Ultraviolet Technology of Australasia, model LC 110 rated at 110 L/minute. Flow through the unit is around 17 L/minute.

Chlorination

Sodium hypochlorite is added to the product water stream at a constant flow rate by a diaphragm chemical dosing pump. Whenever the plant product water valve is open, the chemical dosing pump starts. The pump is set to dose 3-4 mg/L of chlorine in to the product water. The residual chlorine drops to less than 1 mg/L in the product water tank before use. The UV disinfection is effective in killing pathogens but has no residual, whereas the sodium hypochlorite is both effective in killing pathogens and has a residual to suppress any biological regrowth.

6 Process Performance

Wastewater and Product water samples were collected and analysed by Brisbane Water. See Appendix 2 for monitoring program for water quality and discharge of recycled water on to the football field.

6.1 Wastewater quality analysis

Table 3 shows the wastewater sample analysis before treatment and reuse.

Table 3. Representative Example of Wastewater Analysis

Parameters	Values
pH	7.7
Conductivity (uS/cm)	1600
TDS (mg/L)	1000
Suspended Solids (mg/L)	380
BOD (mg/L)	270
Total Nitrogen N (mg/L)	86
Total Phosphorus P (mg/L)	13

The measured wastewater parameters fell within the design loads for the MBR Plant. The EPA has loading requirements for Nitrogen, Phosphorus and Dissolved Salts in the product water being applied to land, see Table 5. Nitrogen and some phosphorus are removed in the biological treatment process, the dissolved solids however are unaffected. Dissolved Salts in the wastewater and product water are the main consideration for the end user, Brisbane Parks.

An electrode measures the dissolved salts in the wastewater in the form of conductivity (μ S). If conductivity is higher than the set point, (1600 μ S) the wastewater pump is switched off. Table 4 shows statistical analysis of conductivity data present in the wastewater over a 12 week period. The 50 percentile (1612 μ S) and average (1680 μ S) conductivity values are close and can be interpreted to mean the data are well distributed around a mean. The conductivity set point is set at 1600 uS and at this level wastewater is pumped for half the

time. As the acceptable conductivity level increases, so does the percentage of the wastewater that can be pumped and reused. Figure 9 shows the wastewater conductivity data from which Table 4 is calculated.

Table 4. Summary of wastewater conductivity over a 12 week period

Statistic	Conductivity (μS)	Calculated TDS (factor, 1.6) (mg/L)
Average	1680	1050
100%	2950	1843
90%	2105	1316
80%	1939	1212
70%	1803	1127
60%	1685	1053
50%	1612	1007
Maximum	2950	1843
Minimum	172	107

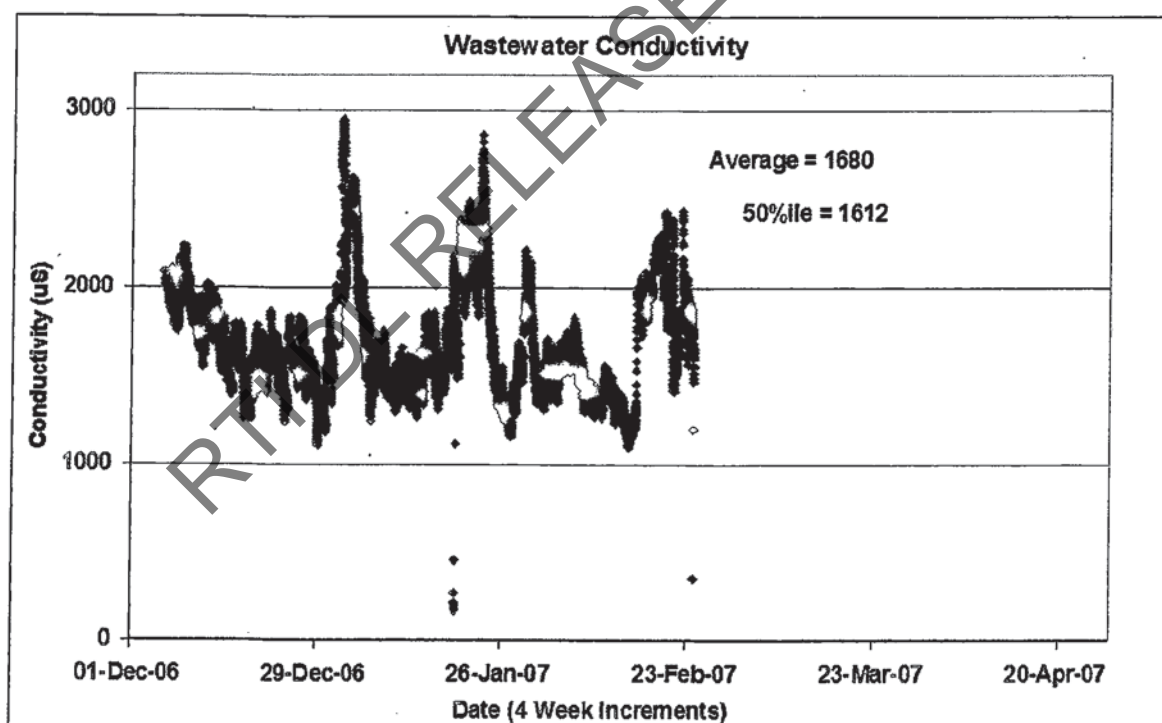


Figure 9. Wastewater conductivity over a 12 week period

Figure 10 clearly shows the conductivity levels dropping towards zero, especially after around 23rd February 2007. A closer look at this data in Figure 12, shows the conductivity levels dropping towards zero at 3 am and rising again at 7 am. However conductivity in the wastewater at around 3 am is expected to be at least 500 μS . The low levels at this time would indicate the probe is above the level of the wastewater in the MH and therefore only the conductivity of the surface slime or fibrous material attached to the electrode is being measured. The reason for the conductivity probe being out of the wastewater more frequently after about 23rd February is not known. Although it could be speculated that this is due to

reduced water use causing the wastewater level to drop, or the probe has not been returned to it's correct position after wastewater pumps cleaning or other access to the MH.

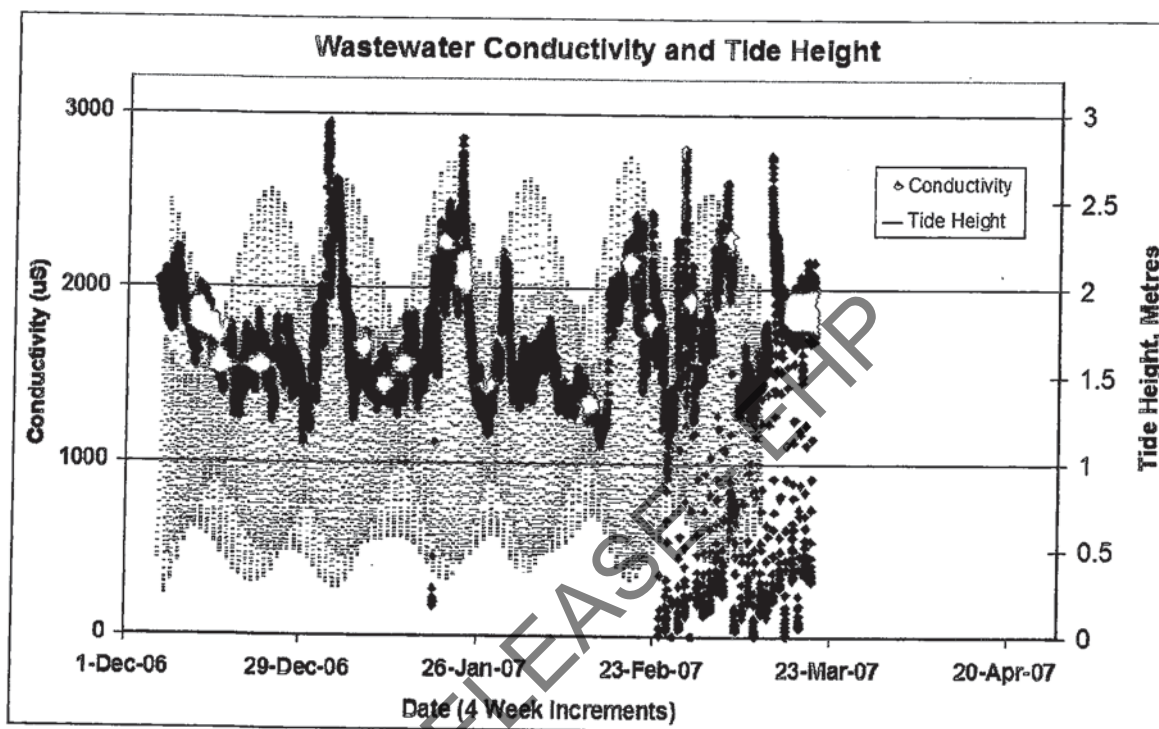


Figure 10. Wastewater Conductivity from 6th December 2006

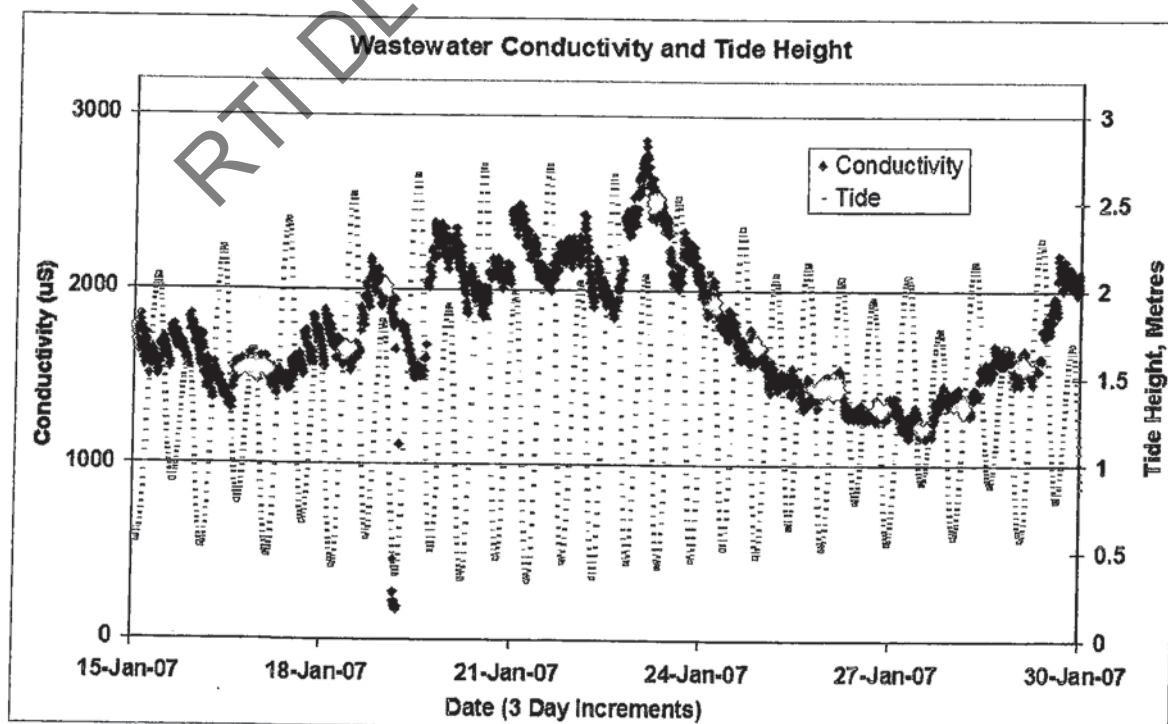


Figure 11. Wastewater Conductivity and Tide Height over two week period

Figure 11 shows the variation in wastewater conductivity with tides in the sewer main which is pumped into the mining plant for treatment purposes. There does seem to be a strong

coincidence of rise and fall in conductivity and the changes in tide height. This can be seen in both Figures 10 and 11.

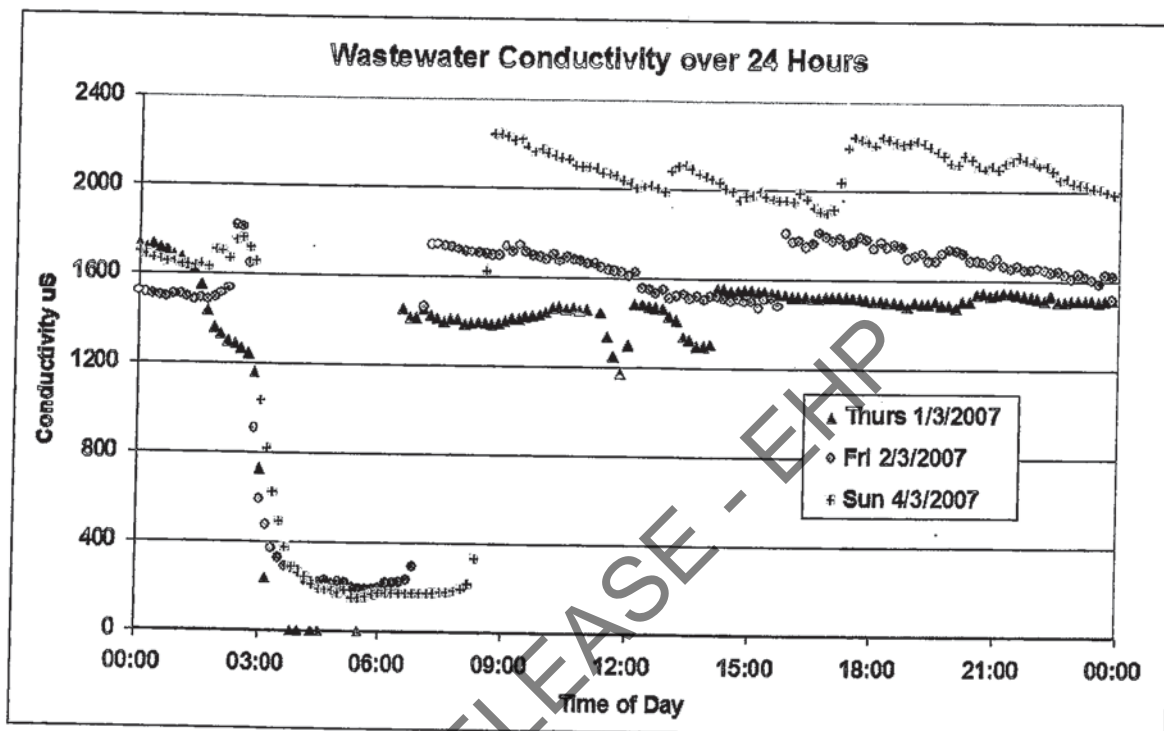


Figure 12. Wastewater Conductivity over 24 hours

The figure 12 shows variations in wastewater conductivity during weekends and weekdays. The above graph indicates that the ReAqua MBR package plant received varying wastewater conductivity over 24 hours period and it had impacted the production of recycled water.

It can be seen that the conductivity for all days shown drops towards zero around 3am. This is most probably not due to the conductivity of the wastewater decreasing, but to the liquid level in the sewer dropping below the conductivity measuring probe. There will be moisture held by slime and attached fibrous material that will continue to give some small conductivity even when the conductivity probe is not immersed.

Around 6 to 7 am for Thursday and Friday and significantly later at around 8-30 am on Sunday the wastewater flow start to increase as human activity increases, the conductivity electrode becomes immersed once again and the measured conductivity rises to a more normal level of greater than 1200 μS . The high conductivity on Sunday after 8-30 am probably reflects the lack of dilution water from business and industry as high tides for Thursday 1/3/07 were 2.5 m and 1.9m, for Friday 2/3/07 were 2.5 m and 2.1 m and Sunday 4/3/07 was similar to Friday 2/3/07. The increases in conductivity seen in the mid to late afternoon may be more due to changes in human activity than tidal level.

6.2 Product Water Analysis

The Licence Requirement for Class A Water from QLD EPA is as stated in Table 5.

Table 5. EPA Licence requirements

Monitoring Point	Quality Characteristics	Units	Release Limit
Outflow of the Wastewater Treatment Plant prior to irrigation	E.Coli (median)	cfu/100mL	<10
	BOD5 (median)	mg/L	20
	Turbidity (Median)	NTU	<2 (5) max
	Suspended Solids (median)	mg/L	5
	Total Dissolved Salts or Electrical Conductivity Median	mg/L dS/m	1000 (TDS) 1.6 (EC)
	pH		6 min 9 max
	Total Nitrogen	mg/L	15
	Total Phosphorus	mg/L	9

Table 6 shows the average analysis for the recycled water over a four month period.

Table 6. Average Value for 4 Months Recycled Water Analysis

Parameters	Unit	Measured Values	EPA Requirement
pH		7.3	6-9
Conductivity	uS/cm	960	1600
Suspended Solids	mg/L	<5	5
Escherichia Coli	cfu/100mL	<1	<10
Chloride	mg/L	190	
Total Alkalinity as CaCo3	mg/L	51	
Bicarbonate alkalinity as CaCo3	mg/L	51	
Carbonate Alkalinity as CaCo3	mg/L	<1	
Calcium (Soluble) as Ca	mg/L	26	
Magnesium (Soluble) as Mg	mg/L	21	
Sodium (Soluble) as Na	mg/L	160	
Potassium (Soluble) as K	mg/L	17	
Sodium Absorption ratio		5.5	
Residual Alkali	meg/L	<0.1	
Nitrite+Nitrate as N	mg/L	18	
Nitrite N	mg/L	0.4	
Nitrate N by FIA	mg/L	17	
Ammonia N	mg/L	8.0	
Total Nitrogen as N	mg/L	20	15
Total Phosphorus as P	mg/L	10	9

Turbidity

Turbidity is required to be less than 2 NTU for effective UV disinfection by EPA licence requirements. Output from the Turbidity Meter is recorded in the Data Logger. Over the period from 6th December 2006, the NTU values were <0.1 with the exception of maintenance or calibration checks.

Maximum flow from the MBR plant is around 0.29 L/s (25 kL/d) and this flow is reduced by low level in the sewer or high conductivity. Figure 13 shows that the flow averaged about 11.3 kL/day for the first 16 weeks. Down time due to equipment replacement on a number of occasions also contributed to these lower total volumes.

Nitrogen & Phosphorous

There were instances when the measured values were in excess of EPA requirements. This was due to plant breakdowns and mixing pump being non-operational resulting in increased concentration of MLSS and resulting in high nitrogen and phosphorous values in the product water. For the irrigation of the park, excess total nitrogen was not an issue.

Figure 13 shows the cumulative water production from the MBR plant until present and Figure 14 shows the daily water production from the MBR plant.

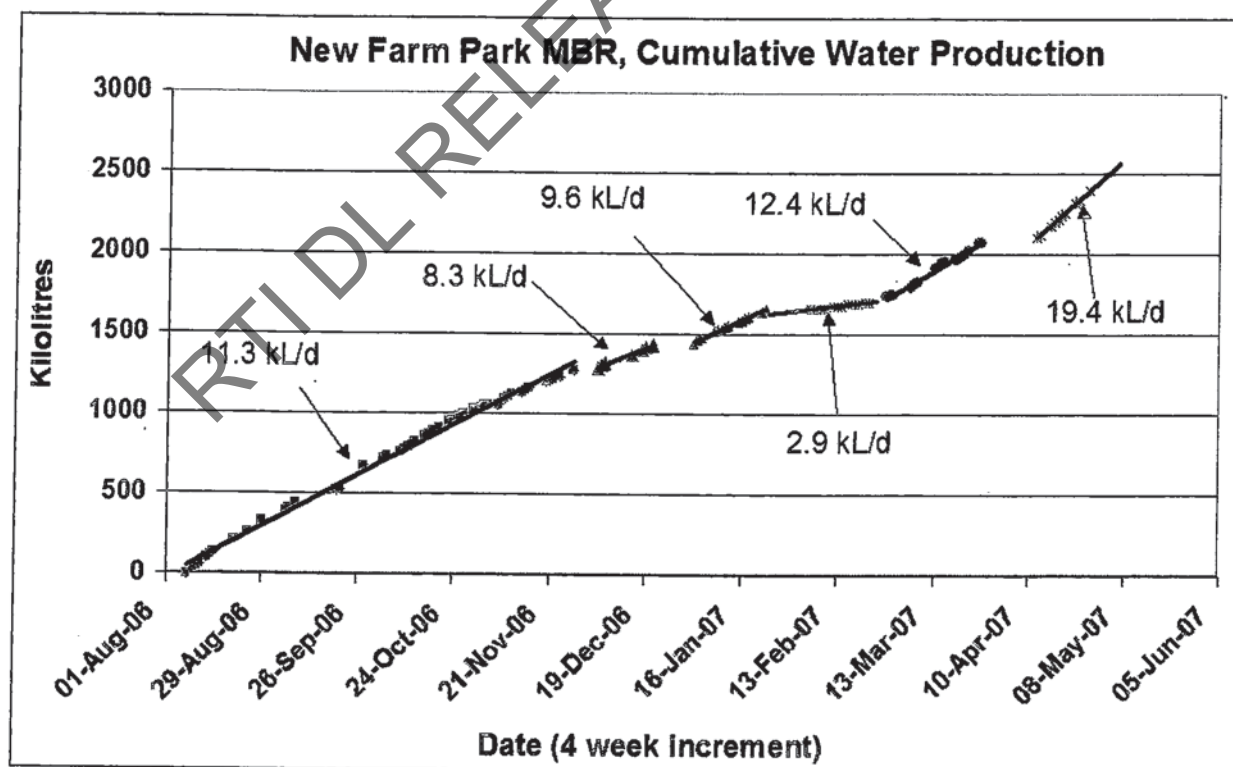


Figure 13. Cumulative Water Production from the MBR Plant

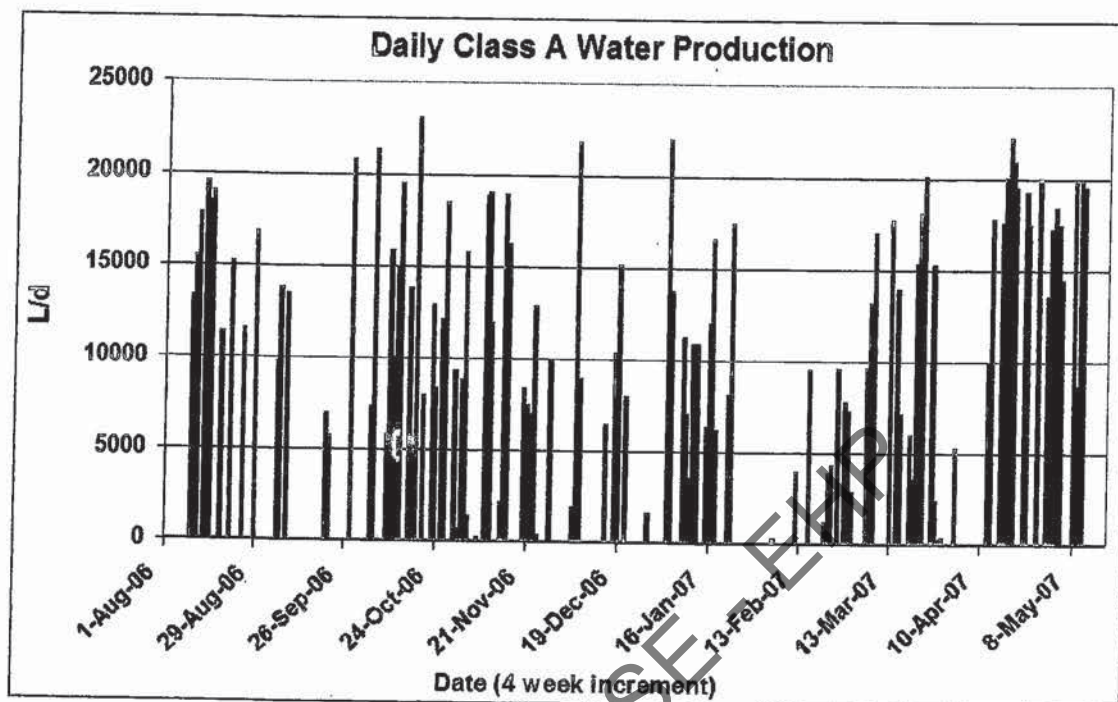


Figure 14. Daily Water Production from the ReAqua MBR Plant

7 Operating Costs

7.1 Energy costs

The energy cost is based on operation of the following equipment:

- Wastewater pump
- MBR plant and
- Irrigation pump

Starting from 1st July 2006 to 19th January 2007, the operation of the ReAqua MBR plant consumed 14,890 kWh. Figure 14 shows the quarterly energy consumption since commissioning. The average daily electricity cost of the plant was \$12.53. Had the plant been receiving full design flow, there would only have been a marginal increase in power or operating costs for the ReAqua MBR plant.

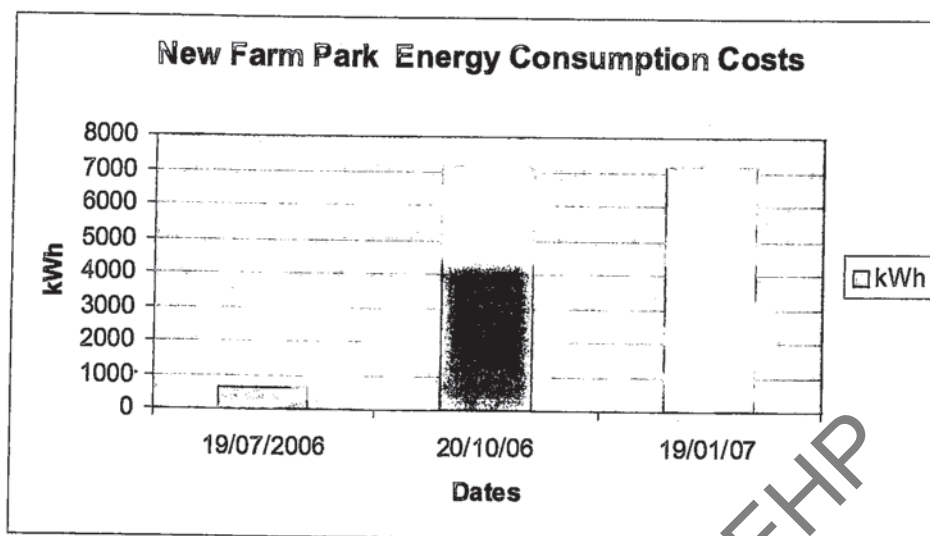


Figure 15. Energy consumption at New Farm Park Water mining Plant

7.2 Membrane cleaning costs

Over the course of the trials, flow through the membrane has been measured every month. The instantaneous flow has been more or less constant at the design figure of 0.29 L/s over the period from July 2006 to March 2007. In April 2007, the membranes were cleaned using the simple "Clean in Place" technique (CIP). This involved passing about 250 litres of 0.5% sodium hypochlorite solution into the membrane module, waiting for a contact period of two hours, then flushing the membranes and residual solution to drain. Hydraulic head loss across the membrane module decreased from about 300 mm to 110 mm after cleaning. Based on this data, it is expected that membrane cleaning would be conducted twice a year.

The price for the supply of the replacement membrane unit would be approximately \$18,000 using 2006 \$ values and based on experience elsewhere the membrane unit would require replacement once every 10 years.

The cost of cleaning consists of about \$20 for chemicals and around four hours of labour; assuming \$45 per hour, the annual cost would be about \$400.

8 Irrigation

8.1 Management of Football field and Rose Gardens

Prior to the implementation of water restrictions in Brisbane, the football fields at New Farm Park were irrigated with potable water on a set frequency and duration based on seasonal variations. The irrigation system for the football field comprises of eight individual stations, each with eight sprinklers. In summer and winter irrigation occurred twice a week for 20-30 minutes and 10-15 minutes respectively. The system was automatically controlled and included a rain sensor override. Figure 16 shows the irrigation of the Rose Gardens



Figure 16. Irrigation of Rose Gardens at New Farm Park.

To effectively and efficiently irrigate the football field and rose gardens after implementation of the MBR system an analysis of the physical, biological and meteorological characteristics of the football fields were calculated to design the required irrigation system. Table 7 shows this analysis.

Table 7. Irrigation System Parameters

Parameter	Value
Plant available water	62.79 mm
Irrigation Depth	41.86 mm
Irrigation Interval	Summer 8.5 days
	Winter 21 days
Average Irrigation events per year	28
Annual Irrigation Application	1172.08mm
Irrigation volume per square metre per month	97.67 L (annual average)

The data's were interpreted using MEDLI model. Interpretation of the data in Table 7 requires the irrigation system to supply a maximum of 41.86mm over the entire football field every 8.5 days. This equates to 418.6 kL to bring the soil from 50% moisture depletion to field capacity. Therefore in summer approximately 49 kL/day and in winter approximately 20 kL/day of irrigation water will be required. In addition to the amount of water required the football field is irrigated every alternative days, Monday, Wednesday and Friday at 11.30 pm for 8 mins per station.

Figure 17 shows the football field before the MBR plant was installed and after the MBR plant was in operation and the recycled water was used to irrigate the football fields.

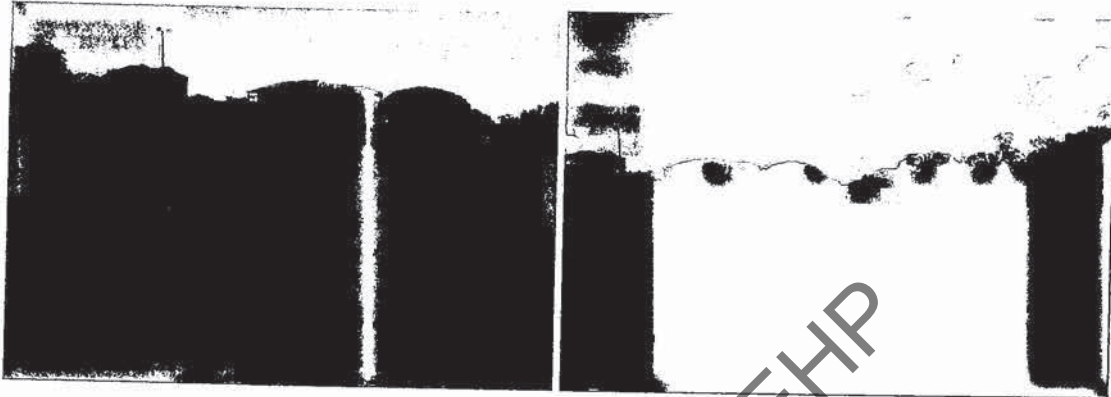


Figure 17. Before and after irrigation of Football field

To efficiently manage irrigation requirements, Brisbane Water installed a weatherTRAK™ system to control irrigation frequency and duration. The weatherTRAK™ system utilises real time data from weather stations in the area of the application that is transmitted via satellite to a central service centre where irrigation requirements are calculated based on temperature, evapotranspiration, soil type, and plant type etc. The calculated irrigation requirements are then sent via satellite to the on site controller that then adjusts the irrigation schedule to deliver the required water. The system also provides an internet based interface that allows the operator to remotely adjust the irrigation requirements (can change desired growing conditions from lush growth to survival watering) while also allowing for remote monitoring of system faults. Figure 18 shows a screen shot of the system.

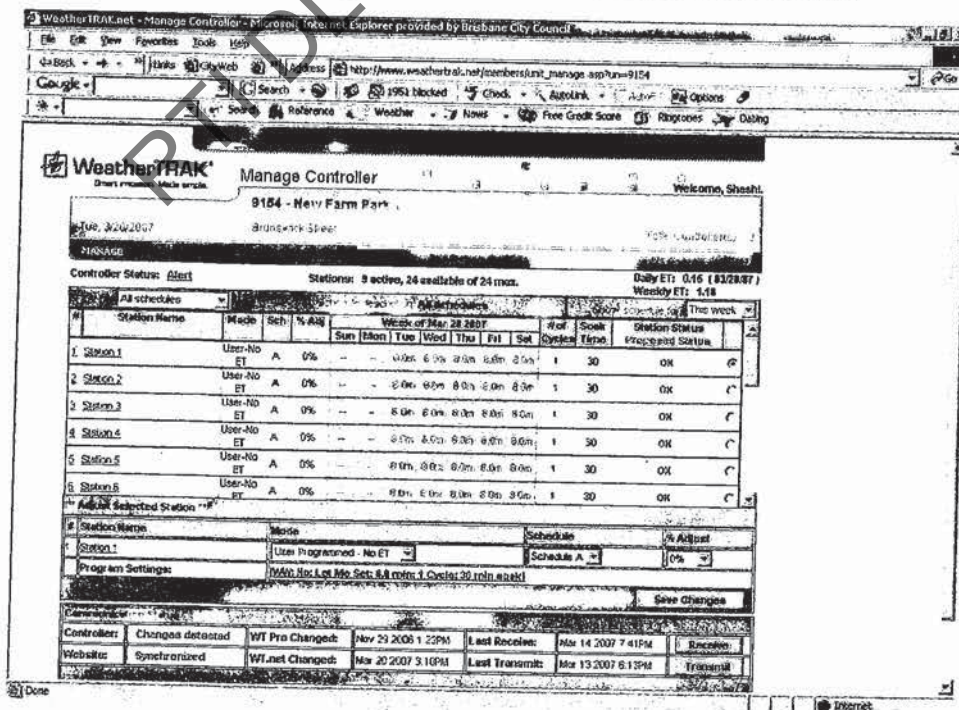


Figure 18. Screen shot of weatherTRAK™ system

9 Conclusions

The New Farm Park Water Mining Research & Development project was a success in technically proving the suitability of a ReAqua MBR plant in a water mining application in Queensland.

The lessons learned can be divided into the following three parts.

Part 1: Extraction of wastewater

Part 2: MBR Plant operation & maintenance

Part 3: Product water storage & Irrigation

Part 1: Extraction of wastewater

The extraction of wastewater from the MH requires a carefully designed arrangement to prevent blockage and pump damage. The following measures should be undertaken to ensure this:

- Modelling of the sewer flows should be undertaken prior to decision on the plant treatment capacity. Pumps capable of handling raw wastewater are to be installed.
- The variations in the diurnal flow has to be considered while designing the pump and balance tank capacities.
- Salinity issues have to be factored in to estimate the volume of useful wastewater available to treat.

Part 2: MBR Plant operation & maintenance

The product water quality always met the Class A water requirements as set by EPA QLD.

The denitrification mixing pump had frequent blockages. This was primarily due to the inlet slot size in the submersible pump casing and also ragging of the impellor caused the pump to stall on start-up. This pump is now being replaced with a mixer designed for this type of application.

The original external MLSS recirculation pump layout resulted in vibration causing a plastic pipe to fracture from fatigue. To overcome this problem the external pump was replaced by a submersible pump placed within the Membrane Tank. This arrangement not only avoided the vibration but also improved the recirculation of MLSS.

There were frequent faults caused by the UV disinfection unit. They were traced to a faulty electronic controller. After the controller was replaced, no further problems were observed.

Part 3: Product water tank & Irrigation

The Product water tank has a holding capacity of 26,000L and for mining projects, a larger capacity than daily production is recommended.

Design of the irrigation pump was crucial in terms of sufficient pressure for total coverage of the irrigated area. As the irrigation pump for this particular project has variable speed drive, it maintains constant pressure in the reticulation system. The stopping/starting of the irrigation pump when not irrigating can be used to indicate leakages and water wastage from the system.

The New Farm Park Water Mining Research and Development trial had many practical experiences for Brisbane Water and EIMCO Water Technologies. As the technology is the first of its kind to be trialed in SE Queensland, some good experience was gained, especially in the operation of the MBR plant. Minor changes to existing plant design have ensured better operational results. It can be concluded that the EIMCO ReAqua MBR technology is well suited for water mining purposes where there is a need for high quality water for irrigation purposes. Robust design of auxiliary systems can provide acceptable reliability without high costs as minor plant shut downs do not produce out of spec water and irrigation can be stopped for short periods without adverse effect.

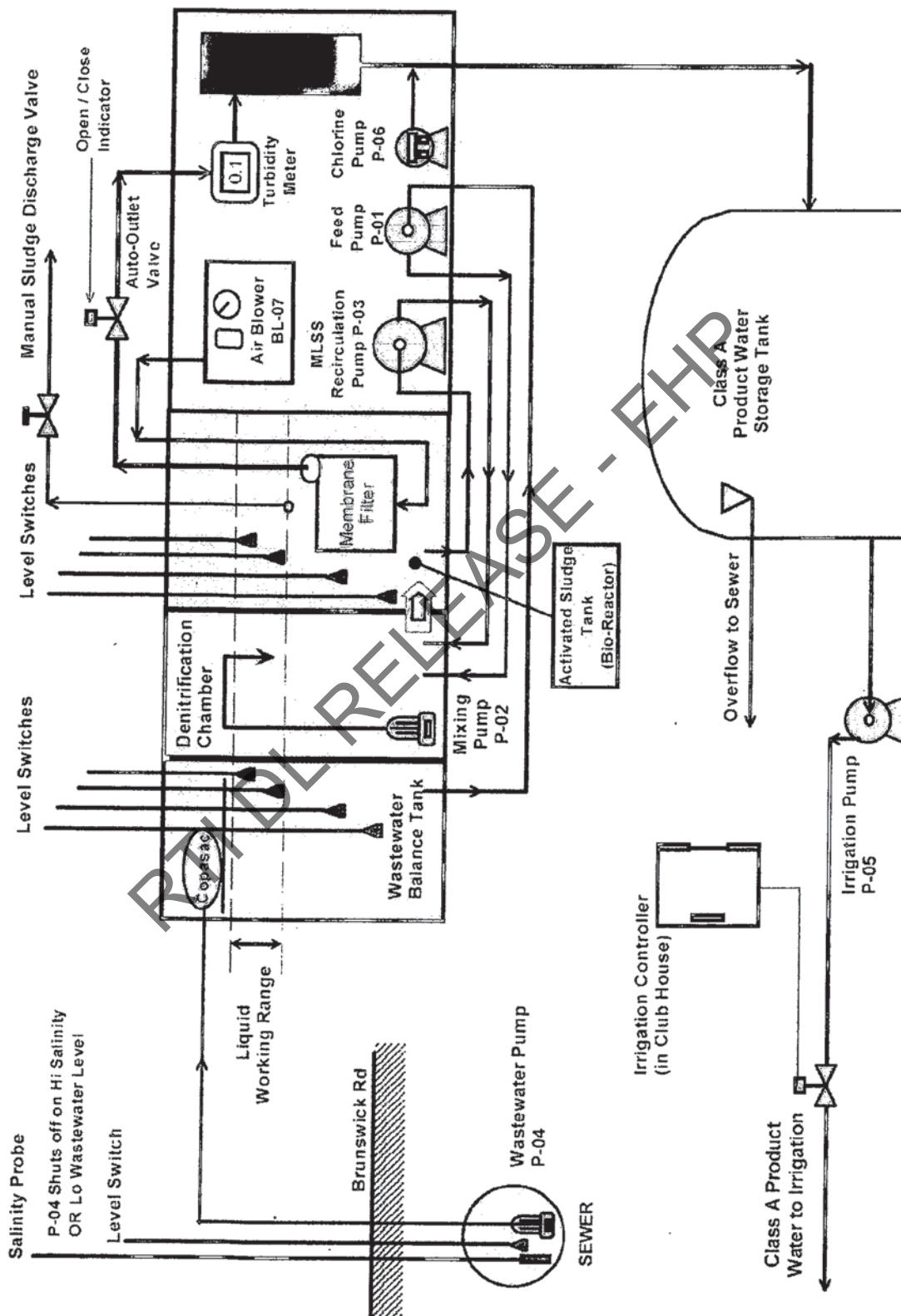
10 Acknowledgment

Many thanks to BW/BCC staff, LAS staff, the residents of New Farm Park and support of the State Government in making this project possible.

APPENDICES

RTI DL RELEASE - EHP

APPENDIX 1 Schematic of overall process



APPENDIX 2 Monitoring Requirements

Table 1 – Monitoring Program

Monitoring Point	Discharge Location	Quality Characteristics	Frequency	Responsibility
Outflow of the Wastewater Treatment Plant prior to irrigation	SP1	E.Coli cfu/100mL Median	Weekly	BW
		BOD5 (mg/L) Median	Monthly	BW
		Turbidity (NTU) 95%ile Max	Continuous	EIMCO to maintain and calibrate meter
		Suspended Solids (mg/L) Median	Weekly	BW
		Total Dissolved Salts (mg/L) or Electrical Conductivity (dS/m) Median	Monthly	BW
		pH	Weekly	BW
		Total Nitrogen	Monthly	BW
		Total Phosphorous	Monthly	BW
		Effluent Flow Rate	Daily	EIMCO/BW

APPENDIX 3 Process Operational Data

Parameters	Values
MLSS concentration	8,000-18,000 mg/L
MLSS pump return rate	Continuous, 4 times inlet feed ie, 4 times wastewater inflow (0.2 L/s)
U.V Dose	Ultraviolet dosage in excess of 30,000 microwatt seconds per cm ² applied to fluid.
Chlorine dose	3-4 mg/L

R S A Cover SheetType of Approval: 73P SURRENDER OF REGISTRATION CERTIFICATE

- ☐ Environmental Protection (Waste Management) Regulation 2000
☒ Environmental Protection Act ☐ Integrated Planning Act ☐ Environmental Protection Regulations
☐ Noise EPP ☐ Air EPP ☐ Water EPP

Name: BRISBANE CITY COUNCILSITE address: LUGGAGE POINT AND NEW FARM PARK

Contact Officer: Project Reference Number:
 Permit No.: ENR800467806 FILE NUMBER: STH16/STH6196

☒ Approved☐ Deferred☐ Not ApprovedDecision: Approval go submitter

Manager's Signature: [Redacted] Date Approved: 26/7/07 Date Posted: 26/7/07
 Registered Post No. Date Faxed:

OFFICE USE ONLY**LICENCE ISSUE/REISSUE**
☐
☐
☐

Register updated

Licence sent to applicant with letter

Register updated (date of letter to applicant, licence No, final tick)

IF ALL TICKED.....

RETURN FINAL COPIES
TO DISTRICT FILES**RSA NOT REQUIRING LICENCE ISSUE/REISSUE**
☐
☐

Letter sent to applicant

Register updated (date of decision, letter to applicant, and final tick)

IF ALL TICKED.....

RETURN FINAL COPIES
TO DISTRICT FILES

Final Update:

Notice

Environmental Operations

Decision to grant surrender of a registration certificate

This statutory notice is issued by the administering authority pursuant to section 73P(1) of the Environmental Protection Act 1994, to advise you of a decision or action.

Brisbane City Council
Water Resources
GPO Box 1434
BRISBANE QLD 4001

Your reference :

Our reference : STH16 and STH6196 ENRE00467806

Attention: Mr Matthew Dunn – Manager, Environmental Compliance

Re: Application by Brisbane City Council to surrender registration certificate number ENRE00467806.

Thank you for your application to surrender registration certificate number ENRE00467806. Your application, which was received by this office on 28 June 2007, has been approved under grounds detailed in section 73Q(4) of the *Environmental Protection Regulation 1998*.

Should you have any queries in relation to this Notice, please contact Lindsay Splatt on telephone (07) 3225 8557.

sch4p4(6) Personal information

SIGNATURE

26/7/07

DATE

Lawrie Wade
Manager
Delegate of administering authority
Environmental Protection Act 1994

Enquiries:

Southern Regional Office (Brisbane)
GPO Box 2771 BRISBANE QLD 4001
Phone: (07) 3225 8557
Fax: (07) 3225 8723

DECISION DUE DATE: 26 July 2007

**REQUEST FOR SURRENDER OF REGISTRATION CERTIFICATE
ENVIRONMENTAL PROTECTION ACT 1994 (EP Act)
SECTION 73O**

CLIENT: Brisbane City Council
SITE ADDRESS: Luggage Point and New Farm park
FILE NO: STH16 and STH6196
REGISTRATION CERTIFICATE NO: ENRE00467806

1. BACKGROUND

Brisbane City Council was issued a single Registration Certificate for all of its ERA 15 Sewage treatment activities on 10 April 2007. As a consequence, registration certificates that were already in existence are no longer required and are being surrendered.

As the activities are continuing, I advised BCC that the EPA would not require audit statements to accompany the surrender applications.

2. REQUIREMENTS FOR APPLICATION

The completed checklist demonstrates that the received application has complied with all requirements for surrender.

It should be noted that the checklist directs refusal of the application where the subject land has not been satisfactorily remediated. As stated, in this instance the activity is continuing under separate EPA approvals. The subject registration certificate is no longer required and its surrender should be approved.

Section 73O of the EP Act specifies the requirements for a surrender application. These requirements have been addressed below:

Approved Form

The application has been made using the approved form.

Supported by Enough Information

The application is supported by enough information to enable the administering authority to consider the application and make a decision.

Audit Statement for the Environmental Authority

NA in this instance.

Fee Prescribed Under a Regulation

Currently there is no fee prescribed under the *Environmental Protection Regulation 1998* for an application to surrender a registration certificate.

Section 73O provides the criteria to be considered by the administering authority in deciding an application for surrender. These requirements have been addressed below:

Any Relevant EPP requirement

There are no EPP requirements specific to surrender. The audit statement indicates compliance with conditions and, by inference, EPP requirements.

Checklist

Section 730 — Environmental Protection Act 1994

Requirements for surrender of a registration certificate

This checklist is to enable officers to assess a surrender application using the criteria of section 730 of the Environmental Protection Act 1994.

Applicant details

Name of applicant:	Brisbane City Council	
EA no: ENRE00467806	DA no: IPDE00335205B11 (If applicable):	File no: STH116 and STH6196

Application requirements

Is the correct form attached?	☒ Yes	☐ No
Has an audit statement been included with the application?	☐ Yes	☒ No

NOTE:

No fee is payable for a surrender application.

Where there are multiple activities on the registration certificate, the application does not have to be for all of the activities on the registration certificate. Where one or more activities remain after a surrender, an administrative amendment would be made to give effect to the change and an amended registration certificate would be issued.

Validity of application

After completing the list above, mark which of the following applies:

If all of the 'Yes' boxes are marked, the surrender application can be processed..... ☒
If all the 'No' boxes are marked, the application is invalid and should be returned to the applicant using the unacceptable application notice..... ☐

Surrender requirements

Has the activity commenced?	☒ Yes	☐ No —	If no, surrender must be approved (see section 730(4))
Has the activity been abandoned or the activity ceased?	☐ Yes	☒ No —	If no, surrender is not required ¹
Has an audit statement been made by or for the registration certificate holder?	☐ Yes	☒ No —	If no, application is not valid.

¹ Where a surrender application has been made, it must be processed where the activity will continue to be operated by another entity (i.e. there has been an application for a continuing registration).



28 JUN 2007

ECSU

Enquires: Matt Dunn
Telephone: 3403 1833
Your ref:
Our ref:

12 June 2007

Ecoaccess Customer Service Unit
Environmental Protection Agency
GPO Box 15155
Brisbane Qld 4002

Water Resources
City Policy & Strategy Division
Brisbane Square Level 8
266 George Street
Brisbane Qld 4000
GPO Box 1434
Brisbane Qld 4001

Telephone 3403 8888
Facsimile 3403 9456

**APPLICATION TO SURRENDER ERA REGISTRATION CERTIFICATE
FOR BRISBANE CITY COUNCIL SEWAGE TREATMENT PLANTS**

Brisbane City Council request to submit an application to surrender operator registration certificates that are no longer required for sewage treatment plants (STP) as they now come under the one integrated certificate, ENRE00658307, approved by EPA this earlier year.

As discussed with EPA Operations, it is BCC's understanding that the EPA would accept the surrender applications with out an accompanying audit statement or requirements for site rehabilitation as the activities have not changed and they continue to operate under the new single integrated operator registration.

Please find enclosed surrender applications for the following operator registrations:

Operator Registration	Facility	Activity
ENRE00467806	Luggage Point (Old SR2202) & New Farm Park	ERA 15(g) & ERA 15(b)

s.73

Should you wish to discuss this matter further please contact Matt Dunn, A/Environmental Compliance Manager on 3403 1833.

sch4p4(6) Personal information

Barry Ball
Manager
Water Resources
Urban Management
BRISBANE CITY COUNCIL

Surrender of a registration certificate

3. Why is a surrender application being made?

If you require more space, attach a separate signed statement.

Brisbane City Council have an integrated operator registration for Council's wastewater treatment plants, ENRE00658307. The operator registration certificates are no longer relevant and are required to be surrendered or cancelled. As BCC is continuing to operate the wastewater treatment plants under the new single integrated registration and after discussion with EPA Southern Region Operation staff, it is BCC's understanding that the EPA would accept the surrender application without site rehabilitation and an audit statement.

4. Have all the activities that are being surrendered commenced?

☒ YES → Go to question 5

☐ NO → Provide details of the uncommenced activities to be surrendered from the certificate.
An audit statement is required for all commenced activities that are being surrendered.

If you require more space, please attach a separate signed statement.

ERA

Location

5. Has an audit statement been attached for each commenced activity being surrendered?

☐ NO → Your application is invalid and will not be processed.

☐ YES



28 JUN 2007

ECSU

Enquires: Matt Dunn
Telephone: 3403 1833
Your ref:
Our ref:

12 June 2007

Ecoaccess Customer Service Unit
Environmental Protection Agency
GPO Box 15155
Brisbane Qld 4002

Water Resources
City Policy & Strategy Division
Brisbane Square Level 8
266 George Street
Brisbane Qld 4000
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Brisbane Qld 4001

Telephone 3403 8888
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Please find enclosed surrender applications for the following operator registrations:

Operator Registration	Facility	Activity
ENRE00467806	Luggage Point (Old SR2202) & New Farm Park	ERA 15(g) & ERA 15(b)
s.73 irrelevant information		

Should you wish to discuss this matter further please contact Matt Dunn, A/Environmental Compliance Manager on 3403 1833.

sch4p4(6) Personal information

Barry Ball
Manager
Water Resources
Urban Management
BRISBANE CITY COUNCIL

Application form

Section 730 — *Environmental Protection Act 1994*☐ OFFICIAL USE ONLYDATE RECEIVED ☐

FILE REF

PROJECT REF

COMPLETE FORM

CORRECT AA

ADMINISTERING DISTRICT

ENTERED BY [SIGNATURE]

DATE

Surrender of a registration certificate

This form is to be used where the registered operator wishes to surrender their registration certificate under Section 730 of the *Environmental Protection Act 1994*.

Application details**1. Registration certificate number to be surrendered**

REGISTRATION CERTIFICATE NUMBER

ENRE00467806(SR2202), SR2204, SR2208, ENER00516406, SR1981, SR2212, SR2211

2. Is surrender application for part of a registration certificate for multiple activities?☒ No → Go to question 3.☐ YES → Provide details of the activities to be surrendered from the certificate.

If you require more space, please attach a separate signed statement.

ERA

Location

3. Why is a surrender application being made?

If you require more space, attach a separate signed statement.

Brisbane City Council have an integrated operator registration for Council's wastewater treatment plants, ENRE00658307. The operator registration certificates are no longer relevant and are required to be surrendered or cancelled. As BCC is continuing to operate the wastewater treatment plants under the new single integrated registration and after discussion with EPA Southern Region Operation staff, it is BCC's understanding that the EPA would accept the surrender application without site rehabilitation and an audit statement.

4. Have all the activities that are being surrendered commenced?

☒ YES → Go to question 5

☐ NO → Provide details of the uncommenced activities to be surrendered from the certificate.
An audit statement is required for all commenced activities that are being surrendered.

If you require more space, please attach a separate signed statement.

ERA

Location

5. Has an audit statement been attached for each commenced activity being surrendered?

☐ NO → Your application is invalid and will not be processed.

☐ YES

Surrender of a registration certificate**6. Declaration**

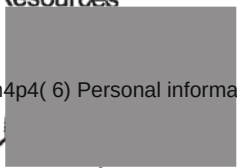
Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- I apply for the surrender of this registration certificate.
- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge. I understand that it is an offence under s480 of the EP Act to give to the administering authority or an authorised person a document containing information that I know is false, misleading or incomplete in a material particular.
- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Freedom of Information Act 1992* and the *Evidence Act 1977*.

APPLICANT'S NAME

Barry Ball

Manager, Water Resources

APPLICANT'S SIGNATURE  sch4p4(6) Personal information

DATE

12/6/07

7. Applicant checklist

- ☒ Application form(s) completed and signed
- ☐ Supporting information or accreditation attached (if applicable)

Please return your completed application kit to:

**Ecoaccess Customer Service Unit
Environmental Protection Agency**

PO Box 15155
City East
Queensland 4002.

Enquiries: **1300 368 326**
Facsimile: (07) 3115 9600
Email: eco.access@epa.qld.gov.au

R S A Cover SheetType of Approval: SECTION 73
REGISTRATION CERTIFICATE

- ☐ Environmental Protection (Waste Management) Regulation 2000
☒ Environmental Protection Act ☐ Integrated Planning Act ☐ Environmental Protection Regulations
☐ Noise EPP ☐ Air EPP ☐ Water EPP

Name: Brisbane City CouncilSITE address: Luggage Point +
New Farm Park STP'sContact Officer: M. Dunn Project Reference Number:Licence No.: ENRE00467806 FILE NUMBER:

☒ Approved ☐ Deferred ☐ Not Approved

Decision: APPROVED AS SUBMITTEDManager's Signature: [Redacted] Date Approved: 1/2/06 Date Posted: 2-2-06Registered Post No. 26155478 Date Faxed:
26155479**OFFICE USE ONLY****LICENCE ISSUE/REISSUE**

- | | |
|---|--|
| ☐ Register updated | IF ALL TICKED.....
RETURN FINAL COPIES
TO DISTRICT FILES |
| ☐ Licence sent to applicant with letter | |
| ☐ Register updated (date of letter to applicant, licence No, final tick) | |

RSA NOT REQUIRING LICENCE ISSUE/REISSUE

- | | |
|---|--|
| ☐ Letter sent to applicant | IF ALL TICKED.....
RETURN FINAL COPIES
TO DISTRICT FILES |
| ☐ Register updated (date of decision, letter to applicant, and final tick) | |



**Queensland
Government**

Enquiries Matthew Dunn
Telephone (07) 3225 8557
Your reference
Our reference ENRE00467806

Environmental Protection Agency

Incorporating the
Queensland Parks and Wildlife Service

Annalie Roux
Water Resources - Urban Management Division
Brisbane City Council
69 Ann St
BRISBANE QLD 4000

Dear Ms Roux

Integrated Certificate of Registration for Luggage Point and New Farm Park

Please find enclosed a copy of the amended certificate of registration for the Luggage Point Wastewater Treatment Plant (WWTP) that includes the new water mining plant activity located at New Farm Park, as agreed with Brisbane City Council for the issue of a single integrated certificate of registration for the activities.

As a result of this the EPA has cancelled the single certificate of registration that was issued for the New Farm Park water mining plant, ENRE00458405, as it is no longer required.

Please note due to current changes to legislation, Environmental Authority SR2202 previously issued to you, is now a development approval and should be retained for referral to the conditions therein.

The anniversary date of the Luggage Point WWTP, 17 May, has been retained for both activities.

If you wish to discuss this matter further please contact Matthew Dunn on telephone (07) 3225 8557.

Yours sincerely

sch4p4(6) Personal information

Damien Brown
Director, Environment
Southern, EPA

27-1-06

Certificate of Registration

No: ENRE00467806

This registration certificate is issued by the Environmental Protection Agency and is a replacement document for the original approval issued on: 10 May 2002 for SR2202 and 19 December 2005 for ENRE00458405.

The anniversary day for the purposes of the Annual Return remains: 17 May.

This registration certificate is a requirement of section 73 of the *Environmental Protection Act 1994* and authorises the registered operator to undertake the activities listed below at the following places; subject to the conditions set out in a development approval attached to the premises, or the relevant code of environmental compliance.

Registered Operator:-
Brisbane City Council
69 Ann Street
BRISBANE QLD 4001

s.73 irrelevant information

Place:-

Lot 102 Plan SP102967

Located at:-

New Farm Park NEW FARM QLD 4005

Registered Activity/ies: -

ERA 15(b) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

sch4p4(6) Personal information

Delegated by
Environmental Protection Agency

27-1-06

Page 1 of 1



**Queensland
Government**

Enquiries Matthew Dunn
Telephone (07) 3225 8557
Your reference
Our reference ENRE00467806

Environmental Protection Agency

Incorporating the
Queensland Parks and Wildlife Service

30 January 2006

Annalie Roux
Water Resources - Urban Management Division
Brisbane City Council
69 Ann St
BRISBANE QLD 4000

Dear Annalie

Integrated Certificate of Registration for Luggage Point and New Farm Park

Please find enclosed a copy of the amended certificate of registration for the Luggage Point Wastewater Treatment Plant (WWTP) that includes the new water mining plant activity located at New Farm Park, as agreed with Brisbane City Council for the issue of a single integrated certificate of registration for the activities.

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The anniversary date of the Luggage Point WWTP, 17 May, has been retained for both activities.

If you wish to discuss this matter further please contact Matthew Dunn on telephone 3225 8557.

Yours sincerely

Miss Sarah Fenaughty
Manager, Industry Units
Southern Region - Env Ops
Environmental Operations Division

Page 1 of 1



environmental licences and permits

Certificate of Registration

No: ENRE00467806

This registration certificate is issued by the Environmental Protection Agency and is a replacement document for the original approval issued on ~~Insert Original Permit Effective Date~~ **SR2202**

The anniversary day for the purposes of the Annual Return ~~Insert is or remains~~ **10 May 2002 for SR2202 and 17 May**

This registration certificate is a requirement of section of the *Environmental Protection Act 1994* and authorises the registered operator to undertake the activities listed below at the following places; subject to the conditions set out in a development approval attached to the premises, or the relevant code of environmental compliance.

Registered Operator:-
Brisbane City Council
69 Ann Street
BRISBANE QLD 4001

Place:-

Lot 41 Plan SL482

Located at:-

200 Main Beach Road MYRTLETOWN QLD 4008

Registered Activity/ies: -

ERA 15(g) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 000 equivalent persons or more.

Place:-

Lot 102 Plan SP102967

Located at:-

New Farm Park NEW FARM QLD 4005

Registered Activity/ies: -

ERA 15(b) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

Delegate

Environmental Protection Agency

Page 1 of 1



Evelyn Reilly

From: Erin Sullivan [erin.sullivan@epa.qld.gov.au]
Sent: Friday, 27 January 2006 3:22 PM
To: evelyn.reilly@epa.qld.gov.au
Subject: RE: Ecoaccess feedback form

Hi Evelyn

Amendment Application for SR2202, at Status of Assessment, has been deleted.

-----Erin Sullivan-----
Business Systems Support Officer
Systems & Support
Environmental Operations
Environmental Protection Agency

Ph: 3115 9620
<mailto:eco.system@epa.qld.gov.au>

-----Original Message-----

From: evelyn.reilly@epa.qld.gov.au [mailto:evelyn.reilly@epa.qld.gov.au]
Sent: Friday, 27 January 2006 3:09 PM
To: Generic - eco.system@epa.qld.gov.au
Subject: Ecoaccess feedback form

Below is the result of your feedback form. It was submitted by
(evelyn.reilly@epa.qld.gov.au) on Friday, January 27, 2006 at 15:09:46

firstname: Evelyn

lastname: Reilly

number: 3224 5097

business_unit: Licensing, Environmental Operations, Southern

reason_for_deletion: Incorrect administrative amendment entered by ECSU. I require the
current amendment application for SR2202 to be removed.

project_ref: 240516

permit_ref: SR2202

currentdate: 27/01/2006

New rego on pro ref. 209170.

ENRE00467806.

relates to SR2202 + IPDE00335205B11.

00458405
old ENRE will be cancelled
once this has been
signed off.

Bring Up Details Report

240516 - Brisbane City Council Licences - various locations - various
era's - 12-JAN-2006

Ref: 14613

Created Date: 24-JAN-06

Status: Submitted

Closed Date:

Assigned To: DUNN, Matthew

Due Date: 25-JAN-06

Email Address: matthew.dunn@epa.qld.gov.au

Reminder Date:

Project Director: FENAUGHTY, Sarah

Project Manager:

CC:

CC:

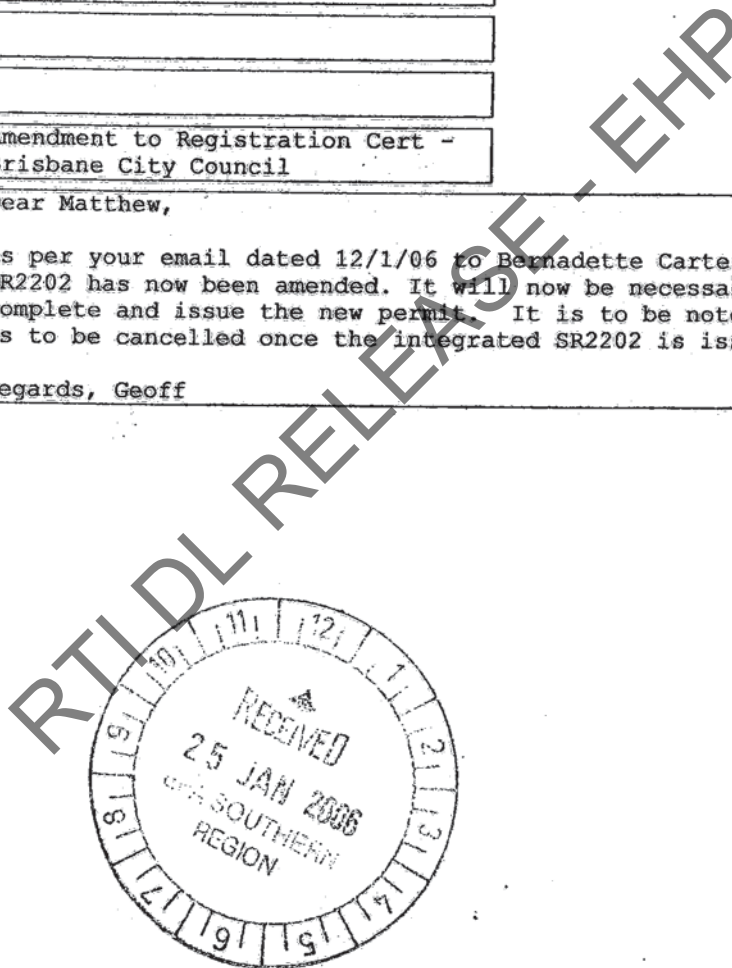
Subject: Amendment to Registration Cert -
Brisbane City Council

Comments: Dear Matthew,

As per your email dated 12/1/06 to Bernadette Carter (ECSU), permit
SR2202 has now been amended. It will now be necessary for you to
complete and issue the new permit. It is to be noted that ENRE00458405
is to be cancelled once the integrated SR2202 is issued.

Regards, Geoff

sch4p4(6) Personal information



Bernie Carter

From: Matthew Dunn [matthew.dunn@epa.qld.gov.au]
Sent: Thursday, 12 January 2006 1:15 PM
To: bernie.carter@epa.qld.gov.au
Cc: Louise Jordan
Subject: FW: Application for Registration Certificate for Multiple ERA*s



Application for
Registration C...

Hi Bernie,

As discussed yesterday with Louise Jordan, Brisbane City Council - Brisbane Water wanted to integrate the operator registration for the wastewater treatment plant at New Farm Park ENRE00458405 that we recently issued with their operator registration for their Luggage Point WWTP SR2202.

Please find attached the supporting information.

My understanding is that we can integrate the registration certificates and administratively cancel the one for the wastewater treatment plant at New Farm Park.

Regards

Matthew Dunn
Senior Environmental Officer
Southern Region - Environmental Operations
Environmental Operations Division
Environmental Protection Agency

Ph: (07) 3225 8557
Fax: (07) 3225 8723
E-mail: matthew.dunn@epa.qld.gov.au

Visit us online at www.epa.qld.gov.au

① Nayla Cres, Karana Dr

1a	15d	19a
1b	15e	19b
1c	15f	20c
1d	15g	21d
1e	15h	22e
		28
		43
		66
		62

② New Farm Park, Brunswick St. New Farm.

RTI DL RELEASE - EHP

Supporting Information for Application for Registration Certificate for Multiple ERA's

3. Are your activities sufficiently close in distance to make feasible the integrated day-to-day management of the activities?

Luggage Point WWTP is approximately 13.5km (direct line) from the proposed location of the Water Mining Plant in New Farm Park.

4. Are the activities operationally interrelated?

Activities at both sites involve the treatment of sewage.

5. Does the integrated operation of the activities lead to a lower risk of environmental harm being caused by the activities?

Having the treatment plant located at New Farm Park operated and maintained by competent and experienced staff from Luggage Point WWTP will reduce the risk of environmental harm being caused.

RTI DL RELEASE - EHP

Application form

Registration – Environmental Operations

OFFICIAL USE ONLY

DATE RECEIVED

Attachment 1 – to accompany your application for a registration certificate for multiple ERAs¹

This form is to be used by those applying for a single registration certificate for multiple activities under s73D of the *Environmental Protection Act 1994*, and is to be attached to the application form for a registration certificate.

FILE REF

PROJECT REF

COMPLETE FORM

CORRECT AA

COMPLETE FEE

ENTERED BY (SIGNATURE)

DATE

ERAs¹ to be included on registration certificate

1. List all the ERAs¹ to be listed on the registration certificate (including any on an existing certificate that you would like combine with these new activities).

DETAILS

ERA 15(b)

What is the number of your existing registration certificate (where applicable)?

DETAILS

Registration certificate for Luggage Point WWTP Licence number SR2202

2. Are the activities listed in section 1 (above) carried out under the day-to-day management of a single responsible person (e.g. site manager or operations manager)?

☐ No → You will not be issued with a single registration certificate.

☒ YES → Please list name and position of responsible person.

NAME AND POSITION OF RESPONSIBLE PERSON

Denis Marlow - Area Controller North

GUIDE

Please answer the questions on this form in order, unless instructed to go to another question and label attachments alphabetically (e.g. "Attachment A").

2-5. While you are not required to provide supporting information, a single registration certificate will not be issued if the administering authority is not satisfied the activities will be carried out as a single integrated operation. These are the four criteria specified in section 73F(3) of the EP Act for determining whether the activities will be carried out as a single integrated operation.

¹ Other than a mining activity or a petroleum activity.



Attachment 1 – to accompany your application

7. Declaration

Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the *Oaths Act 1867*.
- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Freedom of Information Act 1992* and the *Evidence Act 1977*.

APPLICANT'S NAME

Craig Meinicke (for Brisbane City Council)

APPLICANT'S SIGNATURE

DATE

12/01/2006

8. Applicant checklist

- ☒ Application form(s) completed and signed
- ☒ Fees paid or enclosed (if applicable)
- ☒ Supporting information or accreditation attached (if applicable)

Please return your completed application kit to:

Ecoaccess Customer Service Unit
Environmental Protection Agency

PO Box 155
Brisbane Albert Street
Queensland 4002.

Enquiries: 1300 368 326
Facsimile: (07) 3115 9600
Email: eco.access@epa.qld.gov.au

Notice

Environmental Operations

Decision — permit¹ application

This statutory notice is issued by the Environmental Protection Agency to advise of a statutory decision on a permit application under environmental and/or conservation legislation.

Brisbane City Council
Trading as: Brisbane Water
GPO Box 1434
Brisbane Q 4001

EPA SOUTHERN REGION	
Correspondence No. 8TH 2005/1278	Barcode No.
File No. 8TH 256	PART/FOLIO 1/1
Action Officer L. Jordan	Related Items

Your reference :
Our reference : 209170

Attention: Andy Krumins,

Re: Decision made in relation to your application under environmental legislation administered by the Environmental Protection Agency (EPA).

The EPA has assessed your application received on 15 December 2005 and wishes to advise you of the decision in regard to each application as specified below:

Application for	Reg Certificate No.	Decision
Registration under Environmental Protection Act 1994	ENRE00458405	Granted

Please note that for each approval, this Notice of Decision and the relevant attachments constitute the permit documentation. Please retain this approval documentation for your records.

If you require more information, please contact Brooke McKenzie the Project Manager, on the telephone number listed below.

sch4p4(6) Personal information

Bernadette Carter
Team Leader
Environmental Protection Agency
Date: 19/12/05

Enquiries:
Ecoaccess Customer Service Unit
PO Box 15155
CITY EAST QLD 4002
Ph. 1300 368 326
Fax. (07) 3115 9600

Attachment — Registration Certificate

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions, or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service.

Certificate of Registration

No: ENRE00458405

This certificate is issued by the Environmental Protection Agency.

The certificate takes effect from: 19 December 2005.

The anniversary day for the purpose of the Annual Return is: 19 December.

This registration certificate is a requirement of section 73F of the *Environmental Protection Act 1994* and authorises the registered operator to undertake the activity listed below at the following place, subject to a current development approval for the activity stated to be carried out at the place as stated in this certificate, or the relevant code of environmental compliance.

TAKE NOTICE: The granting of this registration certificate does not exempt the registered operator from the need to obtain such other approvals as may be required under other legislation.

Registered Operator:**Brisbane City Council****Trading as: Brisbane Water**

69 Ann Street

Brisbane Q 4000

Place	Located at	ERA
Lot 102 on SP102967	New Farm Park Brunswick Street New Farm Q 4005	ERA 15(b) Sewage treatment - operating - a standard sewerage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

sch4p4(6) Personal information

Bernadette Carter

Delegate

Environmental Protection Agency

19/12/05

eco access

Environmental licences and permits

Receipt No. 287
Date 21.11.05
Amount \$1710.30
Initials EPA CSL Mania

RECEIVED

30 NOV 2005

ECSU

Application form

Environmental Protection Act 1994 – Section 73D

Registration certificate for an environmentally relevant activity (ERA¹)

This form is to be used when applying to become a registered operator to carry out one or more ERAs¹ under s73D of the Environmental Protection Act 1994. Please label attachments alphabetically (e.g. "Attachment A").

1. Applicant details

APPLICANT/COMPANY NAME Brisbane City Council	PHONE 07 3403 8888
TRADING NAME Brisbane Water	ACN OR ABN (AND ANZSIC CODE IF APPLICABLE)
REGISTERED ADDRESS 69 Ann Street	FAX 07 3403 6905
POSTAL ADDRESS (IF SAME AS REGISTERED WRITE 'AS ABOVE') GPO Box 1434, Brisbane QLD 4001, Australia	EMAIL ADDRESS
CONTACT NAME Andy Krumins	PHONE (IF DIFFERENT TO APPLICANT PHONE) 07 3403 0238

2. ERA¹ details

ERA NUMBER(S) AND DESCRIPTION 15(b) - Sewage Treatment - Ability to treat 100 to 1500ep.	LOCATION (E.G. STREET ADDRESS, OR FOR MOBILE OR TEMPORARY ACTIVITIES, LOCAL GOVERNMENT AREA(S) New Farm Park Football Oval, Corner Sydney St and Brunswick Street, New Farm QLD 4005.
ERA NUMBER(S) AND DESCRIPTION	LOCATION
ERA NUMBER(S) AND DESCRIPTION	LOCATION

3. Which situation best describes this application (please tick one of the 4 options)?

- ☒ I propose to conduct one or more new ERAs¹ subject to a development approval (DA).
- ☐ I am the holder of the DA (insert number below) or have lodged an application for a DA (insert number below)
- ☐ I will be operating under another person's DA (insert number below) and I have attached their written consent
- The relevant DA number² is: _____ OR The relevant DA application number³ is: _____
- ☐ I propose to conduct one or more new ERAs subject to a code of environmental compliance.

¹ Other than a mining activity or a petroleum activity

² This is the identifying number for a current DA, whether the DA is yours or another person's.

³ This is the identifying number for an application lodged with an assessment manager, but not yet decided.



- ☐ I propose to conduct one or more existing ERA(s) and the registration certificate is held by another person.

This is known as a "continuing registration". The existing registration certificate number is: _____

(Note: you must complete the dual signature requirement at the end of this form.)

- ☐ I am operating a level 2 ERA operated under an existing deemed approval or development approval (tick which applies below) and I did not apply for a registration certificate before 4 October 2005.

A deemed approval will continue to have effect unless the operator or scale of activity has changed since the activity was deemed to have an approval.

A development approval for a level 2 activity will continue to have effect until the term of the development approval (if any) expires or the scale of activity changes.

☐ Existing deemed approval

☐ For an existing development approval, state your development approval number _____

4. Are you applying to have multiple activities⁴ on a single registration certificate?

☐ Yes You will need to complete Attachment 1 to demonstrate that all your activities are part of a "single integrated operation".

☒ No

5. Applicant suitability

Have you ever:

- received a penalty infringement notice, environmental protection order, restraint order or been convicted of an offence under the *Environmental Protection Act 1994*? ☐ Yes* ☒ No
- had an environmental authority or registration certificate, or similar licence or permit (however called) under a corresponding law (whether administered by this state, another state or territory, the Commonwealth or another country), cancelled or suspended⁵? ☐ Yes* ☒ No
- been convicted of an environmental offence under a corresponding law (whether administered by this state, another state or territory, the Commonwealth or another country)⁵? ☐ Yes* ☒ No

Has a company or business you have held a position of management or control in ever, for an incident that occurred while you held a position of management or control:

- received a penalty infringement notice, environmental protection order, restraint order or been convicted of an offence under the *Environmental Protection Act 1994*? ☐ Yes* ☒ No
- had an environmental authority or registration certificate, or similar licence or permit (however called) under a corresponding law (whether administered by this state, another state or territory, the Commonwealth or another country), cancelled or suspended⁵? ☐ Yes* ☒ No

⁴ The term 'multiple activities' includes two or more ERAs¹ at a single premise; and one or more ERAs¹ at two or more premises. Any of these combinations can include a "mobile and temporary ERA".

⁵ For a corporation this question applies to any of the corporation's executive officers or another corporation that they have been an executive officer for. Otherwise this question applies to the applicant or another person of whom the applicant is a partner.

Application form
Registration certificate for an ERA¹

- o been convicted of an environmental offence under a corresponding law (whether administered by this state, another state or territory, the Commonwealth or another country)⁵?

☐ Yes* ☒ No

- * please provide complete details (such as location of offence or incident, date of offence or incident, amount of fine, facts and circumstances surrounding the offence or incident, name of court, court reference number, etc) in an attachment; and
attach any submission you would like the administering authority to consider in assessing this information, which will be used in deciding whether you are a suitable person to be a registered operator.

Your application should be decided within 10 business days of receiving the application if all of the no boxes are ticked, or within 20 business days of receiving the application if any of the yes boxes are ticked.

6. Declaration

Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- o I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1867.
- o I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the Freedom of Information Act 1992 and the Evidence Act 1977.
- o I will take all reasonable and practical measures to comply with the relevant environmental requirements, including the conditions that apply to the activity I will be carrying out and the general environmental duty.

APPLICANT'S FULL NAME <i>Annaliese Rone</i>
APPLICANT'S SIGNATURE sch4p4(6) Personal information

APPLICANT'S POSITION E.G. (DIRECTOR, MANAGER, OWNER) <i>Water Services Manager (for owner)</i>
DATE <i>25/11/05</i>

If you are applying for a "continuing registration" (see section 3) the current registered operator must agree to the transfer using the endorsement below:

I agree to the transfer of the activities nominated in section 3 of this form from my registration certificate to the applicant. I understand that by agreeing to this transfer:

- ? these activities will be removed from my registration certificate;
- ? the applicant will be issued a registration certificate for these activities; and
- ? I will be issued an amended registration certificate for any remaining activities, or the registration certificate will be cancelled where no activities remain.

CURRENT REGISTERED OPERATOR'S FULL NAME <i>Annaliese Rone for Brisbane City Council</i>
CURRENT REGISTERED OPERATOR'S SIGNATURE sch4p4(6) Personal information

DATE <i>25/11/05</i>

7. Applicant checklist

- ☒ Application form(s) completed and signed
- ☒ Fees paid or enclosed (see the information sheet *Summary of fees — environmentally relevant activities* for the applicable fee)
- ☒ Supporting information attached (if applicable)
- ☐ Account code selected from section 8 for the type of application and the EPA district in which the activity operates

Please return your completed application kit to:

Ecoaccess Customer Service Unit
Environmental Protection Agency

PO Box 15155
City East
Queensland 4002

Enquiries: **1300 368 326**
Facsimile: (07) 3115 9600
Email: eco.access@epa.qld.gov.au

8. Account code

☐	Continuing registration	
	District	Account code
☒	Brisbane	4049 WBL 00 SROR
☐	Cairns	4049 NCZ 00 SROR
☐	Emerald	4049 LCM 00 SROR
☐	Gladstone	4049 LGE 00 SROR
☐	Mackay	4049 LME 00 SROR
☐	Maryborough	4049 WMZ 00 SROR
☐	Mount Isa	4049 NNZ 00 SROR
☐	Rockhampton	4049 LKE 00 SROR
☐	Sunshine Coast	4049 WDW 00 SROR
☐	Toowoomba	4049 WSZ 00 SROR
☐	Townsville	4049 NTZ 00 SROR

☐	Other registration	
	District	Account code
☒	Brisbane	4026 WBL 00 SROR
☐	Cairns	4026 NCZ 00 SROR
☐	Emerald	4026 LCM 00 SROR
☐	Gladstone	4026 LGE 00 SROR
☐	Mackay	4026 LME 00 SROR
☐	Maryborough	4026 WMZ 00 SROR
☐	Mount Isa	4026 NNZ 00 SROR
☐	Rockhampton	4026 LKE 00 SROR
☐	Sunshine Coast	4026 WDW 00 SROR
☐	Toowoomba	4026 WSZ 00 SROR
☐	Townsville	4026 NTZ 00 SROR

Notice

Cultural Heritage

Notice of Decision - Development Approval

This notice is issued by the Queensland Heritage Council pursuant to s.3.5.15 of the *Integrated Planning Act 1997* to advise of a decision.

Ms J Munro
Chief Executive Officer
Brisbane City Council
GPO Box 1434
Brisbane Q 4001
Attn: Andy Krumins

cc: Stewart Armstrong
Manager
Planning, Southern Region EPA

Your reference: -

Our reference: Project Ref No 209170 : QHR No 602402 : Permit No IPDH0035605E11

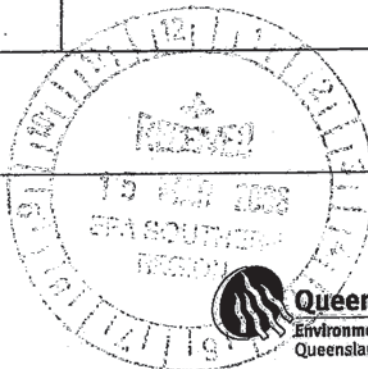
Dear Ms Munro

Re: Application for development in New Farm Park, Brunswick, Street New Farm

Pursuant to Section 33(1) of the *Queensland Heritage Act 1992* and Section 3.5.11 of the *Integrated Planning Act 1997*, the Queensland Heritage Council acting as alternate assessment manager has assessed the application received on 15 December 2005 and wishes to advise you of the decision for each activity applied for as specified below:

Description of works proposed:

Activity	Decision
Material Change of Use - Development Approval Installation of a water mining plant for a period of up to twelve months.	Approved



Notice of decision – development application

in accordance with the following drawings/documents:

- New Farm Park Water Mining Trial - Site Based Management Plan, Brisbane Water, October 2005,
- New Farm Park Irrigation Management Plan for Temporary Research and Development Project, Brisbane Water, November 2005, and
- Site Layout Plan, New Farm Park Water Mining Project, Brisbane Water, February 2006.

to the following registered place:

New Farm Park, Brunswick Street, New Farm

in Local Government Authority area:

Brisbane City Council.

Please find below the conditions of approval and/or reasons for refusal for each activity applied for. Review and appeal processes may be available to the applicant in regard to this decision. The applicant should seek independent advice to confirm the procedures available.

If you require more information, please contact the Project Manager, Emily Brice on the contact details below.

Conditions of Approval pursuant to s.3.5.11(1)(b) for Project Ref No 209170 : QHR No 602402 : Permit No IPDH0035605E11

- (1) The temporary plant is to be removed within 12 months from installation or a new application is to be submitted.
- (2) The Heritage Council shall be informed by the applicant when the works carried out within the terms of this notice have been completed and again when the plant has been removed at the end of the temporary use.
- (3) This advice relates only to the documents, drawing numbers and issue/dates set down in this notice.
- (4) Variation to these conditions requires application to the Queensland Heritage Council.
- (5) Access must be provided to the site during construction and following completion for compliance inspection by officers of the Southern Region, Environmental Protection Agency.
- (6) This approval lapses at the end of the applicable currency period stated in s3.5.21 of the Integrated Planning Act 1997.

Further advice

TAKE NOTICE: This application does not exempt the applicant from the need to obtain such other approvals as may be required under other legislation.

Notice of decision – development application

sch4p4(6) Personal information

Signature

8 March 2006

Date

p4(6) Personal information

Gail Pini
Manager
Qld Heritage Council Secretariat
Environmental Protection Agency

for the Chairperson, Queensland Heritage Council

Enquiries:
Emily Brice
Southern Region EPA
GPO Box 2771
Brisbane Q 4001
Phone. 3225 8560
Fax. 3225 8723

RTI DL RELEASE - EHP



NEW FARM PARK WATER MINING TRIAL - SITE BASED MANAGEMENT PLAN

ASSESSMENT MANAGER DECISION

APPROVED

sch4p4(6) Personal information

IN ACCORDANCE WITH THE
QUEENSLAND HERITAGE ACT 1992 s.33
SUBJECT TO ALL THE CONDITIONS
SET OUT IN THE NOTICE
1000402 IPDH0035605E11
REFERENCE.....

DATED 08 MAR 2006

SIGNED sch4p4(6) Personal information

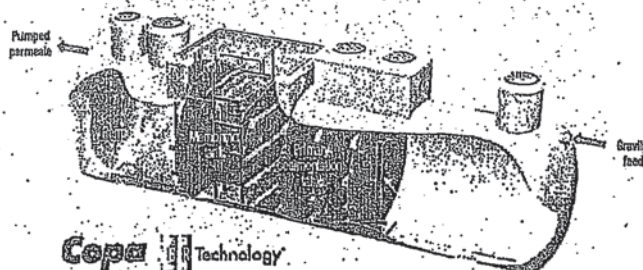
QUEENSLAND HERITAGE COUNCIL DELEGATE
ENVIRONMENTAL PROTECTION AGENCY
PO BOX 155 BRISBANE ALBERT ST



ASSESSMENT MANAGER DECISION
APPROVED
IN ACCORDANCE WITH THE
QUEENSLAND HERITAGE ACT 1992 s.33
SUBJECT TO ALL THE CONDITIONS
SET OUT IN THE NOTICE
602402 IPD40035605E11
REFERENCE.....
DATED 08 MAR 2000
Information-
SIGNED [REDACTED] (6) Personal information
QUEENSLAND HERITAGE COUNCIL, DEPT. OF
ENVIRONMENTAL PROTECTION AND
PO BOX 155 BRISBANE ALBERT ST Q.

Irrigation Management Plan For Temporary Research and Development Project

November 2005



Notice of Decision – Development Approval

This notice is issued by the Environmental Protection Agency pursuant to Section 3.5.15 of the Integrated Planning Act 1997 to advise of a decision or action.

Brisbane City Council
GPO Box 1434
BRISBANE QLD 4001

Our reference: 209170

Attention: Craig Meinicke

Dear Mr Meinicke

Re: Application for Development Approval

The Environmental Protection Agency, acting as assessment manager, wishes to advise that your application for development approval, received on 15-DEC-2005, has been assessed, and on 20-FEB-2006 it was granted.

1. Property/Location:

Street address - New Farm Park NEW FARM QLD 4005

Lot/Plan - Lot 102 Plan SP102967

2. Details of the decision

Aspect of Development

- Development Approval for a MCU involving an ERA
- ERA 15(b) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

EPA Ref Number

- IPDE00335205B11

3. Effectiveness and currency periods

This development approval takes effect -

- From the time the decision notice is given, if there is no submitter and the applicant does not appeal the decision to the court; or
- When the submitter's appeal period ends, if there is a submitter and the applicant does not appeal the decision to the court; or
- Subject to the decision of the court, when the appeal is finally decided, if an appeal is made to the court.

[refer to sections 3.5.19 and 3.5.20 of the Integrated Planning Act 1997 for further details]

sch4p4(6) Personal information 20/2/06

Environmental Protection Agency
www.epa.qld.gov.au ASN 87/221 168 786



Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

This approval will lapse unless substantially started within 4 years starting the day the approval takes effect.

4. The approved plans

Nil

5. Other necessary development permits

This approval pursuant to the Integrated Planning Act 1997 does not remove the need to obtain any further approval for this development, required by this or other State and/or Commonwealth legislation. Applicants are advised to check with all relevant statutory authorities for such approvals as may be required. Applicants should also comply with all relevant legislation.

6. Codes for self-assessable development

Any self-assessable development for an environmentally relevant activity conducted in conjunction with this approval, must comply with the relevant code of environmental compliance.

7. IDAS referral agencies

The IDAS referral agencies and their response to each approval type required for this application are:

Concurrence Agencies: Nil

8. Submissions

This application did not trigger Public Notification.

9. Appeal rights

An attached extract from the *Integrated Planning Act 1997* details your appeal rights regarding this decision. You should seek independent advice to confirm all your available avenues.

If you require more information, please contact Matthew Dunn, the Project Manager, on the telephone number listed below.

Yours sincerely

sch4p4(6) Personal information

20/2/08

Lawrie Wade
Delegate
Environmental Protection Agency

Enquiries:
Southern Region Environmental Operations
(Brisbane) Water
15th Floor, 288 Edward Street
BRISBANE QLD 4001
Phone: (07) 3224 6885
Fax: (07) 3225 8723

Attachment – Appeal Rights (extract from the *Integrated Planning Act 1997*)

APPEAL RIGHTS - Extract from the Integrated Planning Act 1997**Division 8—Appeals to court relating to development applications****4.1.27 Appeals by applicants**

- (1) An applicant for a development application may appeal to the court against any of the following -
 - (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a currency period;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the "applicant's appeal period") after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

4.1.28 Appeals by submitters

- (1) A submitter for a development application may appeal to the court only against -
 - (a) the part of the approval relating to the assessment manager's decision under section 3.5.14 or 3.5.14A; or
 - (b) for an application processed under section 6.1.28(2) – the part of the approval about the aspects of the development that would have required public notification under the repealed Act.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following-
 - (a) the giving of a development approval;
 - (b) any provision of the approval including-
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a currency period for the approval.
- (3) However, a submitter may not appeal if the submitter-
 - (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 3.5.19(1)(b)(ii).
- (4) The appeal must be started within 20 business days (the "submitter's appeal period") after the decision notice or negotiated decision notice is given to the submitter.

4.1.29 Appeals by advice agency submitters

- (1) Subsection (1A) applies if an advice agency, in its response for an application, told the assessment manager to treat the response as a properly made submission.
- (1A) The advice agency may, within the limits of its jurisdiction, appeal to the court about any part of the approval relating to the assessment manager's decision under section 3.5.14 or 3.5.14A.
- (3) The appeal must be started within 20 business days after the day the decision notice or negotiated notice is given to the advice agency as a submitter.
- (4) However, if the advice agency has given the assessment manager a notice under section 3.5.19(1)(b)(ii), the advice agency may not appeal the decision.

4.1.30 Appeals for matters arising after approval given (co-respondents)

- (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice -
 - (a) a notice giving a decision on a request for an extension of the currency period for an approval;
 - (b) a notice giving a decision on a request to make a minor change to an approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded planning scheme) that was assessed as if it were an application made under a superseded planning scheme.

Division 9 - Appeals to court about other matters**4.1.31 Appeals for matters arising after approval given (no co-respondents)**

- (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice -
 - (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under section 3.5.33A(9)(b) or 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.

4.1.32 Appeals against enforcement notices

- (1) A person who is given an enforcement notice may appeal to the court against the giving of the notice.
- (2) The appeal must be started within 20 business days after the day notice is given to the person.

4.1.33 Stay of operation of enforcement notice

- (1) The lodging of a notice of appeal about an enforcement notice stays the operation of the enforcement notice until -
 - (a) the court, on the application of the entity issuing the notice, decides otherwise; or
 - (b) the appeal is withdrawn; or
 - (c) the appeal is dismissed.
- (2) However, subsection (1) does not apply if the enforcement notice is about -
 - (a) a work, if the enforcement notice states the entity believes the work is a danger to persons or a risk to public health; or
 - (b) carrying out development that is the demolition of a work.

4.1.34 Appeals against decisions on compensation claims

- (1) A person who is dissatisfied with a decision under section 5.4.8 or 5.5.3 for the payment of compensation may appeal to the court against -
 - (a) the decision; or
 - (b) a deemed refusal of the claim.
- (2) An appeal under subsection (1)(a) must be started within 20 business days after the day notice of the decision is given to the person.
- (3) An appeal under subsection (1)(b) may be started at any time after the last day a decision on the matter should have been made.

4.1.35 Appeals against decisions on requests to acquire designated land under hardship

- (1) A person who is dissatisfied with a designator's decision to refuse a request made by the person under section 2.6.19, may appeal to the court against -
 - (a) the decision; or
 - (b) a deemed refusal of the request.
- (2) An appeal under subsection (1)(a) must be started within 20 business days after the day notice of the decision is given to the person.
- (3) An appeal under subsection (1)(b) may be started at any time after the last day a decision on the matter should have been made.

4.1.37 Appeals from tribunals

- (1) A party to a proceeding decided by a tribunal may appeal to the court against the tribunal's decision, but only on the ground -
 - (a) of error or mistake in law on the part of the tribunal; or
 - (b) that the tribunal had no jurisdiction to make the decision or exceeded its jurisdiction in making the decision.
- (2) An appeal against a tribunal's decision must be started within 20 business days after the day notice of the tribunal's decision is given to the party.

4.1.38 Court may remit matter to tribunal

If an appeal includes a matter within the jurisdiction of a tribunal and the court is satisfied the matter should be dealt with by a tribunal, the court must remit the matter to the tribunal for decision.

Division 10 - Making an appeal to court

4.1.39 How appeals to the court are started

- (1) An appeal is started by lodging written notice of appeal with the registrar of the court.
- (2) The notice of appeal must state the grounds of the appeal.
- (3) The person starting the appeal must also comply with the rules of the court applying to the appeal.
- (4) However, the court may hear and decide an appeal even if the person has not complied with subsection (3).

4.1.41 Notice of appeal to other parties (div 8)

- (1) An appellant under division 8 must give written notice of the appeal to-
 - (a) if the appellant is an applicant-
 - (i) the chief executive; and
 - (ii) the assessment manager; and
 - (iii) any concurrence agency; and
 - (iv) any principal submitter whose submission has not been withdrawn; and
 - (v) any advice agency treated as a submitter whose submission has not been withdrawn; or
 - (b) if the appellant is a submitter or an advice agency whose response to the development application is treated as a submission for an appeal-
 - (i) the chief executive; and
 - (ii) the assessment manager; and
 - (iii) any referral agency; and
 - (iv) the applicant; or
 - (c) if the appellant is a person to whom a notice mentioned in section 4.1.30 has been given-
 - (i) the chief executive; and
 - (ii) the deciding entity; and
 - (iii) any entity that was a concurrence agency or building referral agency for the development application to which the notice relates.
- (2) The notice must be given within-
 - (a) if paragraph (b) does not apply-10 business days after the appeal is started; or
 - (b) if the appellant is a submitter or advice agency whose response to the development application is treated as a submission for an appeal-2 business days after the appeal is started.
- (3) The notice must state-
 - (a) the grounds of the appeal; and
 - (b) if the person given the notice is not the respondent or a co-respondent under section 4.1.43 -
 - (c) that the person may, within 10 business days after the day the notice is given, elect to become a co-respondent to the appeal by filing in the court a notice of election in the approved form.

4.1.42 Notice of appeal to other parties (div 9)

- (1) An appellant under division 9 must, within 10 business days after the day the appeal is started give written notice of the appeal to -
 - (a) if the appellant is a person to whom a notice mentioned in section 4.1.31⁷³ has been given - the entity that gave the notice; or
 - (b) if the appellant is a person to whom an enforcement notice is given - the entity that gave the notice and if the entity is not the local government, the local government; or
 - (c) if the appellant is a person dissatisfied with a decision about compensation - the local government that decided the claim; or
 - (d) if the appellant is a person dissatisfied with a decision about acquiring designated land - the designator; or
 - (e) if the appellant is a person who is disqualified as a private certifier - the entity disqualifying the person and if the entity disqualifying the person is not the accrediting body, the accrediting body; or
 - (f) if the appellant is a party to a proceeding decided by a tribunal - the other party to the proceeding.
- (2) The notice must state the grounds of the appeal.

4.1.43 Respondent and co-respondents for appeals under div 8

- (1) Subsections (2) to (8) apply for appeals under section 4.1.27 to 4.1.29.
- (2) The assessment manager is the respondent for the appeal.
- (3) If the appeal is started by a submitter, the applicant is a co-respondent for the appeal.
- (4) Any submitter may elect to become a co-respondent to the appeal.
- (5) If the appeal is about a concurrence agency response, the concurrence agency is a co-respondent for the appeal.
- (6) If the appeal is only about a concurrence agency response, the assessment manager may apply to the court to withdraw from the appeal.
- (7) The respondent and any co-respondents for an appeal are entitled to be heard in the appeal as a party to the appeal.
- (8) A person to whom a notice of appeal is required to be given under section 4.1.41 and who is not the respondent or a co-respondent for the appeal may elect to be a co-respondent.
- (9) For an appeal under section 4.1.30-
 - (a) the assessment manager is the respondent; and
 - (b) any entity that was a concurrence agency or a building referral agency for the development application to which a notice under section 3.6.3 relates may elect to become a co-respondent.

4.1.44 Respondent and co-respondents for appeals under div 9

- (1) This section applies if an entity is required under section 4.1.42 to be given a notice of an appeal.
- (2) The entity given written notice is the respondent for the appeal.
- (3) However, if under a provision of the section more than 1 entity is required to be given notice, only the first entity mentioned in the provision is the respondent.
- (4) The second entity mentioned in the provision may elect to be a co-respondent.

4.1.45 How an entity may elect to be a co-respondent

An entity that is entitled to elect to be a co-respondent to the appeal may do so, within 10 business days after notice of the appeal is given to the entity, by following the rules of court for the election.

4.1.46 Minister entitled to be represented in an appeal involving a State interest

If the Minister is satisfied that an appeal involves a State interest, the Minister is entitled to be represented in the appeal.

4.1.47 Lodging appeal stops certain actions

- (1) If an appeal (other than an appeal under section 4.1.30) is started under division 8, the development must not be started until the appeal is decided or withdrawn.
- (2) Despite subsection (1), if the court is satisfied the outcome of the appeal would not be affected if the development or part of the development is started before the appeal is decided, the court may allow the development or part of the development to start before the appeal is decided.

Development Approval

Section 3.5.15

Integrated Planning Act 1997

EPA Permit¹ number:	IPDE00335205B11
Assessment Manager reference:	as above
Date application received by EPA:	15-DEC-2005
Permit¹ Type:	Development Approval for a MCU involving an ERA
Date of Decision:	20-FEB-2006
Decision:	Granted in full with conditions
Relevant Laws and Policies:	Environmental Protection Act 1994 and any subordinate legislation

Development Description

Property/Location

Lot/Plan:

Lot 102 Plan SP102967

Street address:

New Farm Park NEW FARM QLD 4005

Aspect of Development:

ERA 15(b) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

Additional comments or advice about the application

Nil

Additional information for applicants

The standard currency periods stated in section 3.5.21 of the Integrated Planning Act 1997 or the nominated currency period, apply to each aspect of development in this permit¹. For information on when this permit¹ takes effect and the relevant currency periods, please see point 3 in the Notice of Decision.

Contaminated Land

It is a requirement of the *Environmental Protection Act 1994* that if an owner or occupier of land becomes aware a Notifiable Activity (as defined by Schedule 2 of the *Environmental Protection Act 1994*) is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 30 days after becoming so aware, give notice to the Environmental Protection Agency.

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service



Environmentally Relevant Activities

The aforementioned description of any environmentally relevant activity (ERA) for which this permit is issued is simply a restatement of the ERA as prescribed in the legislation at the time of issuing this permit. Where there is any conflict between the abovementioned description of the ERA for which this permit is issued and the conditions specified herein as to the scale, intensity or manner of carrying out of the ERA, then such conditions prevail to the extent of the inconsistency.

This permit authorises the ERA. It does not authorise environmental harm unless a condition within this permit explicitly authorises that harm. Where there is no such condition, or the permit is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

In addition to this permit, the person to carry out the ERA must be a registered operator under the Environmental Protection Act 1994. For the person to become a registered operator, they must apply for a registration certificate under section 73F of the Environmental Protection Act 1994.

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20/2/06

Lawrie Wade
Delegate
Environmental Protection Agency

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¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service



CONDITIONS OF APPROVAL

Activity: ERA 15(b) Sewage treatment - operating - a standard sewage treatment works having a peak design capacity to treat sewage of 100 or more equivalent persons but less than 1 500 equivalent persons.

Agency Interest: General

General 1: Prevent and/or minimise likelihood of environmental harm.

In carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and / or to minimise the likelihood of environmental harm being caused.

General 2: Maintenance Of Measures, Plant and Equipment.

The operator of an ERA to which this approval relates must:

- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval; and
- (b) maintain such measures, plant and equipment in a proper and efficient condition; and
- (c) operate such measures, plant and equipment in a proper and efficient manner.

General 3: Records.

Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.

General 4: Site Based Management Plan.

From commencement of an ERA to which this approval relates, a site based management plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all ERAs that are carried out.

The SBMP must address the following matters:

- (a) Environmental commitments - a commitment by senior management to achieve specified and relevant environmental goals.

CONDITIONS OF APPROVAL

- (b) Identification of environmental issues and potential impacts.
- (c) Control measures for routine operations to minimise likelihood of environmental harm.
- (d) Contingency plans and emergency procedures for non-routine situations.
- (e) Organisational structure and responsibility.
- (f) Effective communication.
- (g) Monitoring of contaminant releases.
- (h) Conducting environmental impact assessments.
- (i) Staff training.
- (j) Record keeping.
- (k) Periodic review of environmental performance and continual improvement.

General 5: All records required by this approval must be kept for 5 years.

General 6: Notification.

Telephone the EPA's Pollution Hotline or local office as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.

General 7: Information About Spills.

A written notice detailing the following information must be provided to the EPA within 14 days of any advice provided in accordance with condition General 7:

- a) the name of the operator, including their approval / registration number;
- b) the name and telephone number of a designated contact person;
- c) quantity and substance released;
- d) vehicle and registration details;
- e) person/s involved (driver and any others);
- f) the location and time of the release;
- g) the suspected cause of the release;
- h) a description of the effects of the release;
- i) the results of any sampling performed in relation to the release,
- j) actions taken to mitigate any environmental harm caused by the release; and
- k) proposed actions to prevent a recurrence of the release.

General 8: Monitoring.

CONDITIONS OF APPROVAL

A competent person(s) must conduct any monitoring required by this approval.

General 9: Equipment Calibration.

All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this approval must be calibrated, and appropriately operated and maintained.

General 10: Trained / Experienced Operator(s).

The daily operation of the waste water treatment system and pollution control equipment must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system and control equipment.

General 11: All determinations of the quality of contaminants released must be performed by a person or body possessing appropriate experience and qualifications to perform the required measurements.

General 12: Annual Monitoring Report.

An annual monitoring report must be prepared each year, and presented to the administering authority when requested. This report may form part of the annual monitoring report for the wastewater treatment plant that is connected through the sewerage network to this plant. This report shall include but not be limited to:

- a) a summary of the previous twelve (12) months monitoring results, or part thereof, obtained under any monitoring programs required under this approval and, in graphical form showing relevant limits, a comparison of the previous twelve (12) months monitoring results to both this approvals limits and to relevant prior results;
- b) an evaluation/explanation of the data from any monitoring programs;
- c) a summary of any record of quantities of releases required to be kept under this approval;
- d) a summary of the record of equipment failures or events recorded for any site under this approval;
- e) an outline of actions taken or proposed to minimise the environmental risk from any deficiency identified by the monitoring or recording programs;

CONDITIONS OF APPROVAL

Agency Interest: Air

Air 1: Nuisance.

The release of noxious or offensive odours or any other noxious or offensive airborne contaminants resulting from the activity must not cause a nuisance at any nuisance sensitive or commercial place.

Agency Interest: Land

Land 1: Land Disposal.

The only contaminants permitted to be released to land are effluent to the areas shown in Figure 1 in compliance with the limits levels stated in Table 1 - Contaminant release limits to land and the conditions of this approval.

Land 2: Notices must be prominently displayed on areas undergoing effluent irrigation, warning the public that the area is irrigated with effluent and not to use or drink the effluent. These notices must be maintained in a visible and legible condition.

Land 3: Monitoring must be undertaken and records kept of a monitoring program of contaminant releases to the irrigation area at the monitoring points, frequency, and for the parameters specified in Table 1 Contaminant release limits to land and Table 2 - Monitoring program.

Land 4: The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates.

Land 5: Pipelines and fittings associated with the effluent irrigation system must be clearly identified. Lockable valves or removable handles must be fitted to all release pipes situated in public access areas.

Land 6: A minimum area of 1 hectare of land, excluding any necessary buffer zones, must be utilised for the irrigation of treated effluent/stormwater.

Land 7: Provision Of Treated Effluent To Other Persons.

CONDITIONS OF APPROVAL

If responsibility of the treated effluent is given or transferred to another person:

- (a) the responsibility of such effluent must only be given or transferred in accordance with a written agreement (the third party agreement);
- (b) include in the third party agreement a commitment from the person utilising the effluent to use effluent in such a way as to prevent environmental harm or public health incidences and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the Environmental Protection Act 1994, environmental sustainability of any effluent disposal and protection of environmental values of waters; and
- (c) upon being notified or otherwise becoming aware that the person's use of effluent is causing or threatens to cause environmental harm or is posing a human health risk, and if the person does not rectify the situation upon written request, the giving and transferring responsibility for such effluent must cease.

Land 8: When conditions prevent the irrigation of effluent to land (such as during rain events), alternative measures must be taken to store/dispose of effluent (such as returning the effluent to sewer, wet weather storage or tankering off site).

Land 9: The irrigation of effluent must be carried out in a manner such that:

- a) vegetation is not damaged;
- b) soil erosion and soil structure damage is avoided;
- c) there is no surface ponding of effluent;
- d) percolation of effluent beyond the plant root zone is minimised;
- e) the capacity of the land to assimilate nitrogen, phosphorus, salts, organic matter as measured by biochemical oxygen demand and water is not exceeded; and
- f) the quality of ground water is not adversely affected.

Agency Interest: Noise

Noise 1: Noise Nuisance.

Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place

Noise 2: Noise Monitoring.

When requested by the administering authority, noise monitoring must be

CONDITIONS OF APPROVAL

undertaken to investigate any complaint of noise nuisance, and the results notified within 14 days to the administering authority. Monitoring must include:

- LA max, adj, T
- LA 10, adj, 10 mins
- LA 1, adj, 10 mins
- the level and frequency of occurrence of impulsive or tonal noise;
- atmospheric conditions including wind speed and direction;
- effects due to extraneous factors such as traffic noise; and
- location, date and time of recording.

Noise 3: The method of measurement and reporting of noise levels must comply with the latest edition of the Environmental Protection Agency's Noise Measurement Manual.

Agency Interest: Social

Social 1: Complaint Response.

The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request:

- a) Time, date, name and contact details of the complainant;
- b) reasons for the complaint;
- c) any investigations undertaken;
- d) conclusions formed; and
- e) any actions taken.

Agency Interest: Water

Water 1: Treatment plant alarms, warnings and failure mode

The treatment plant must be fitted with pump failure alarms and high level alarms to warn of imminent plant overflow. All alarms must be able to operate without mains power. In the event of a power outage the plant shall not release effluent to the irrigation area or have any release of sewage to the environment.

Water 2: Preventing contaminant release to land
Spillage of all contaminants must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.

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Attachment - Tables

Table 1 - Contaminant release limits to land

Monitoring Point	Discharge Location	Quality Characteristics	Release Limit
Outflow of the Wastewater Treatment Plant prior to irrigation	SP1	E.Coli cfu/100mL Median (95%ile)	< 10
		BOD5 (mg/L) Median	20
		Turbidity (NTU) Median (Max)	< 2 (5)
		Suspended Solids (mg/L) Median	5
		Total Dissolved Salts (mg/L) or Electrical Conductivity (dS/m) Median	1000 (TDS) 1.6 (EC)
		pH	6 min 9 max
		Total Nitrogen (mg/L as nitrogen) Median	15
		Total Phosphorus (mg/L as phosphorus) Median	9

Table 2 - Monitoring program

Monitoring Point	Discharge Location	Quality Characteristics	Frequency
Outflow of the Wastewater Treatment Plant prior to irrigation	SP1	E.Coli cfu/100mL Median	Weekly
		BOD5 (mg/L) Median	Monthly
		Turbidity (NTU) 95%ile Max	Continuous
		Suspended Solids (mg/L) Median	Weekly
		Total Dissolved Salts (mg/L) or Electrical Conductivity (dS/m) Median	Monthly
		pH	Weekly
		Total Nitrogen	Monthly
		Total Phosphorus	Monthly
		Effluent flow rate (KL)	Daily

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service





Doc Id: Active Date: 3 October 2005 Brisbane Water Confidential
Printed: 28/11/2005 Owner: Craig Meinicke Page 1 of 27
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SITE BASED MANAGEMENT PLAN

LIST OF ABBREVIATIONS

BW	-	Brisbane Water
EPA	-	Environmental Protection Agency
EA	-	Environmental Authority
EMP	-	Environmental Management Program
ERA	-	Environmentally Relevant Activity
ha	-	Hectares
IMS	-	Integrated Management System
kL	-	Kilolitres
L	-	Litres
m	-	Metres
SBMP	-	Site based management plan
WWTP	-	Waste Water Treatment Plant

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WATER RECYCLING

New Farm Park Site Based Management Plan

Environmental System Audit	Management	Systematic and documented verification process to objectively obtain and evaluate evidence to determine whether an organisation's environmental management system conforms to the environmental management system audit criteria set by the organisation, and communication of the results of this process to management.
Environmental Objective		Overall environmental goal arising from the environmental policy and significant environmental aspects, that an organisation sets itself to achieve, and which is quantified where practicable.
Environmental Performance		Measurable outputs of the environmental management system, relating to an organisation's control of the impacts of its activities, products or services on the environment, based on its environmental policy, objectives and targets.
Environmental Policy		Statement by the organisation of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.
Environmental Protection Policy (EPP)		An enforceable policy prepared under the EPA which prescribes standards and criteria for environmental performance.
Environmental Target		Detailed performance requirement, quantified where practicable, applicable to all or part of the organisation, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental Value (EPAct definition)		<ul style="list-style-type: none">a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; orb) another quality of the environment identified and declared to be of environmental value under an environmental protection policy regulation.
Environmentally Activity (ERA)	Relevant	An activity prescribed by the Environmental Protection (Interim) Regulation, 1995. Such activities require an Environmental Authority for lawful operation.
EPA		Queensland Environmental Protection Agency.
EPAct		Environmental Protection Act (1994).
Integrated Management System (IMS)		An IMS incorporates the systems available to manage the environmental, safety and economical risks of an organisation or activity.
Interested Party		Individual or group concerned with or affected by the environmental performance of an organisation.
ISO 14001		International Standard for Environmental Management Systems' (Adopted as an Australian/New Zealand standard in)
Management Review		Process or Procedure for reviewing the performance and the continuing suitability of the Environmental Management System.
Preventive Maintenance		Preventive Maintenance can be defined as programmed work done to prevent breakdown, reduce wear, improve efficiency, and extend the life of equipment and structures.
Site Based Management Plan (SBMP)		The documented set of measures at a site intended to achieve environmental objectives and targets and the timeframe in which these are to be achieved.



2.0 ENVIRONMENTAL POLICY AND OBJECTIVES

The Brisbane Water's Integrated Management policy outlines the Environmental Policy that applies across all of Brisbane Water operations.

2.1 Brisbane City Council / Brisbane Water Policies

Brisbane Water's Integrated Management policy describes how Brisbane Water will contribute to the achievement of the Brisbane City Council's Environmental Policy and commitment to Environmental Performance.

Brisbane Water's Integrated Management policy has also been developed to specifically address the activities, issues and responsibilities of Brisbane Water to ensure that Brisbane Water diligently and effectively manages the environmental impacts of its activities.

Brisbane Water's Integrated Management policy clearly demonstrates our commitment to Brisbane City Councils environmental performance objectives.

Policies are communicated to staff via the Environmental Awareness Training Sessions and to the public by display of the Brisbane Water's Integrated Management policy in the reception foyers of Brisbane Water Buildings.

2.2 Legal and Other Requirements

The Legal and Other Requirement's Procedure describes the requirements as stated under ISO 14001 – 1996 Sub-Clause 4.3.2. An updated procedure is currently being developed as a requirement for certification to the updated ISO 14001: 2004. Applicable legal and other requirements of the New Farm Park Water Mining Facility will be declared in the appropriate sections of this SBMP.

2.3 Objectives and Targets

Objectives and targets pertinent to this SBMP have been set by the System Planning Branch of Brisbane Water.

Sources from which the objectives and targets are set may include but not limited to the following documents;

- Brisbane City Council's Environmental Policy
- Internal review of Brisbane Water Brisbane Water's Integrated Management policy (site specific),
- Review of Legal and Other Requirement's (site specific),
- Brisbane Water Business Plan
- Production's Branch Action Plan,
- Audit Program, and
- Corrective and Preventive Actions.



3.2 Surrounding Environment

The environment surrounding the site is given in Table 3.2. Information on the surrounding environment is required to assess the potential impact of an environmental incident on the surrounding neighbourhood and environment.

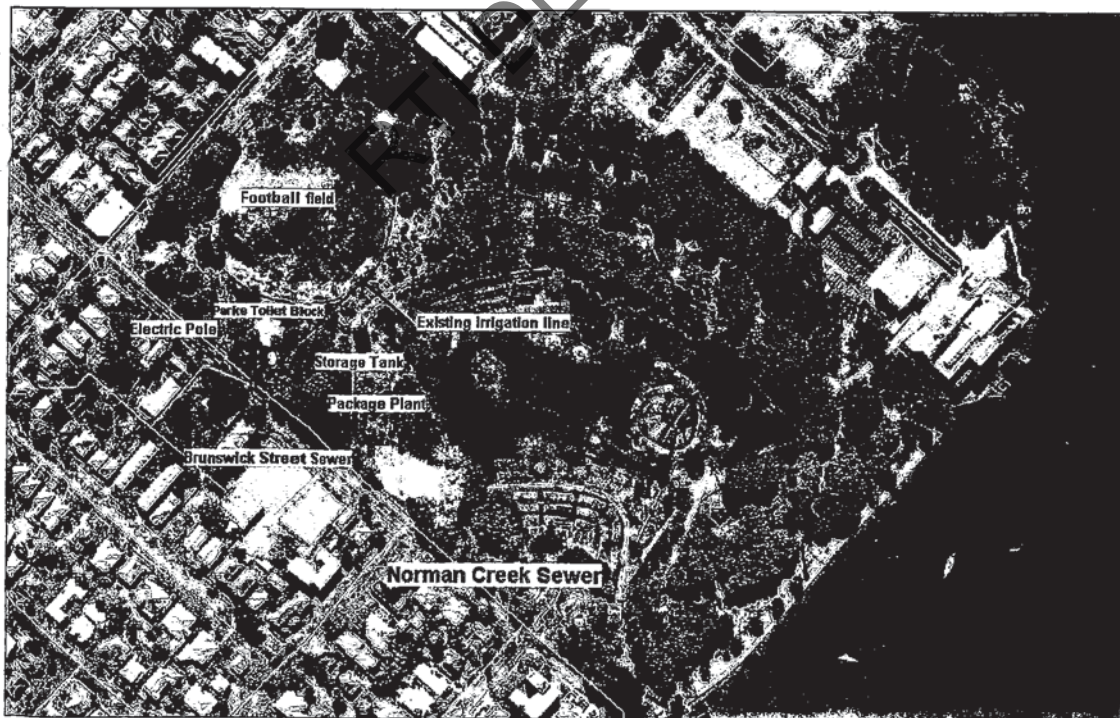
Table 3-2 Surrounding Environment

Detail	Description
Surrounding Land Use (City Plan Flags)	The site resides in the North Western end of New Farm Park. The South Eastern end of the park fronts the Brisbane river. Residential areas surround the park. Parkland Area (PK), Heritage Place – Cultural (HPC), Inner North Eastern Suburbs Infrastructure Charges Plan (IHGINE5)
Nearest Residence:	< 50m
Sensitive Areas:	Brisbane River, Parkland
Topography:	Flat
Nearby Environmental Influences:	No significant influences
Discharge Points:	See IMP (Appendix 1)
Environmental Values:	Brisbane River, Sports/Recreation Areas, Community Groups

3.3 Description of Operations

3.3.1 Process Description

The scope of this Water Mining R&D Project is limited to the irrigation of the 1ha football ground at North Western end of New Farm Park. The following diagram represents a layout of the project.



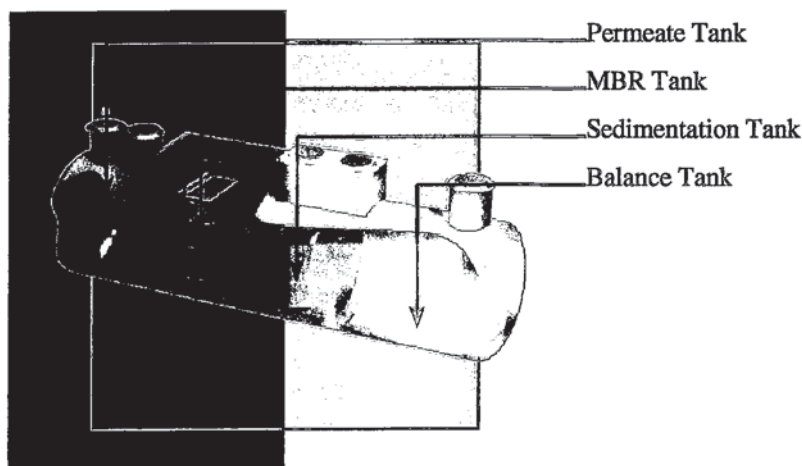


Figure 2: Cross-Section of a CF 125 Clereflo MBR Unit

Figure 2 illustrates the internal structure of the tank that is commercially available for treatment of up to 22.5 kL/d.

The permeate tanks holds the recycled water which is fed to a UV disinfection unit to produce Class A water for municipal irrigation. From the UV disinfection unit the Class A water is fed to the existing irrigation line where a connection is made which enables a return to potable water if required. For a more detailed explanation of the Irrigation process, see the IMP (Appendix 1).

3.4 Environmental Issues

3.4.1 Odour

As the Clereflo MBR is a sealed unit it does not release noxious or offensive odour into the surrounding environment.

3.4.2 Noise

The New Farm Park Water Mining Facility is a purpose built fully enclosed silent operating plant.

3.4.3 Waste

The Clereflo MBR is a zero waste facility as the gross sewage particles are returned to the sewer system and transported to Luggage Point WWTP.

3.4.4 Chemicals

The Clereflo MBR and UV disinfection unit utilise physical and biological means to treat the raw sewage to class A quality water and the plant incorporates a periodic self cleaning mechanism. Hence, there are no chemical requirements in the process or on site.



3.6 Objectives and Targets

Given our dry climate and continuing drought conditions it is anticipated the demand on water recycling will increase. Therefore, BW is investigating a number of research projects to fulfil future water requirements. The primary objective of the New Farm Park Water Mining Facility is to determine the viability of water recycling projects within a community context. The targets include:

- Provide a transparent project;
- Community involvement;
- No environmental incidents or complaints.

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5 MANAGEMENT PLANS

5.1 Emergency Response and Contingency Plans

Emergency Response and Contingency plans are required to deal with environmentally related incidents and unforeseeable risks. They offer a methodology for corrective response to minimise or mitigate environmental harm. First the risks must be identified and then plans can be formulated to remedy them.

The objectives for Emergency Response and Contingency Plans are to:

- Provide methods and resources for the handling, notification and reporting of identified contingencies;
- Prevent and minimise contamination of the environment, including sensitive receivers and receival waters which could lead to possible public health issues;
-) Comply with statutory requirements and licences.

Process and site specific emergency plans and contingency plans are to be supplied by Copa. In addition, Brisbane Water has a number of procedures to deal with an emergency, namely: 003431 \\C2k145\qpulse4\docs\active\001115.DOC- Reporting Environmental Incidents and Complaints, 002297 - Emergency Management Plan and 000886 - Corrective and Preventative Action Procedure.

In case of an emergency or excessive flow conditions, the New Farm Park Water Mining Facility includes a contingency plan that enables sewage flow to be 'diverted' back to the former sewer flow system where it continues on to Luggage Point WWTP.

5.2 Irrigation Management Plan (IMP)

While aspects of irrigation management are included in general operating and maintenance procedures, an irrigation management plan is a crucial operational requirement of the development approval and licence conditions. Hence, BW has developed an IMP intended as a stand alone, operational document for the recycled water user (BCC LAS). The IMP has been included as a separate entity within this Site based management plan (Appendix 1).

5.3 Recycled Water Management Plan

A Recycled Water Management Plan (RWMP) is the documentation of the management system for recycled water use. Most of the requirements of a RWMP are included in this SBMP or the attached IMP. According to the DRAFT QLD Water Recycling Guidelines 2005, where a SBMP is already present, the RWMP can be included within the existing plan with the addition of a HACCP style analysis and management of the risks associated with recycled water (See table 5.1). A HACCP analysis is an efficient way of analysing environmental, community and health risks, hence its recommendation by the DRAFT QLD Water Recycling Guidelines 2005. The risk score in table 5.1 was evaluated using BW risk procedures (see section 3.5) and identifies the level of effort required by those associated to manage the risks associated with the facility.

The purpose of a RWMP is to provide BW with a description of the organisations requirements for efficient, effective and safe (health and environmental) use of recycled water in New Farm Park. The RWMP is a progressive management tool to be reviewed, audited and improved continually, in conjunction with the SBMP, over the life cycle of the New Farm Park Water Mining Facility.



5.4 Waste Management Plan

The Clereflo MBR is a zero waste facility as the gross sewage particles are returned to the sewer system and transported to Luggage Point WWTP.

Despite the Clereflo MBR being a zero waste facility, a Waste Management Program is a specific ERA 15(b) licence requirement. There are two end products at the New Farm Park Water Mining Facility; 'class A' water and gross sewage particles. 'Class A' water will be used to irrigate the selected area, as per the IMP (Appendix 1). Gross sewage particles will be returned to the sewage system and transported to Luggage Point WWTP where waste will come under licence SR 2202, and subject to the Luggage Point Waste Management Program.

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7. COMMUNICATION

Methods of communicating information are achieved through procedural reporting, recording and Council Information Technology (IT) network. The Business Management System allows any person to report, formally and/or verbally depending on the urgency, any nonconformances/issues associated with business operations, quality, environmental or safety issues.

7.1 Internal Communication

Procedure 001058 – Communication in Brisbane Water describes the method by which Brisbane Water:

- internally communicates with the various levels and functions of the organisation
- internally communicates with the various levels and functions of the organisation regarding the quality management system and its effectiveness.
- communicates aspects and the Integrated Management System (IMS) between the various levels and functions of the organisation
- receives, documents and responds to relevant communication from interested parties

Brisbane Water's procedure 001038 – Communication and Reporting of Environmental Incidents and Complaints is used for reporting internally. Environmental issues are in the Q-Pulse system or a project specific issue tracking system.

7.2 External Communication

Brisbane Water's 001038 – Communication and Reporting of Environmental Incidents and Complaints procedure and Brisbane City Council's EP005 – Reporting Environmental Incidents and Complaints are as a guideline for reporting externally to EPA as well.

7.2.1 Communication with the public

Any environmentally related complaint shall be dealt with by referring to Brisbane Water's 001038 – Communication and Reporting of Environmental Incidents and Complaints procedure and Brisbane City Council's EP005 – Reporting Environmental Incidents and Complaints.

Public consultation occurred during the feasibility and project planning phase.



WATER RECYCLING
New Farm Park Site Based Management Plan

All environmental records will be kept for a period of 5 years and are the responsibility of Records Management.

8.2.1 Incident & Complaint Reporting

Complaints with regard to New Farm Park Water Mining Facility may be received through the Brisbane Water Call Centre on (07) 3403 8888.

All incidents and complaints shall be dealt with by referring to procedure Brisbane Water's 001038 – Communication and Reporting of Environmental Incidents and Complaints procedure and Brisbane City Council's EP005 – Reporting Environmental Incidents and Complaints.

This procedure fulfils all the requirements of EPA complaint recording system.

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10. REVIEWS

10.1 Environmental Audits

System Planning Environmental Management Services will perform a full compliance audit after a period of 6 months, and a review of associated documents (SBMP, IMP) is to occur annually. The QLD EPA will conduct an external audit of the facility as required by licence requirements. Only trained and/or capable staff from within BW Operations are to conduct environmental audits as part of the existing Internal Audit program.

The compliance audits are to be included in the internal audit schedule and registered in the Qpulse database. Audits are scheduled on the basis of risk to the business, the environment and licence compliance.

10.2 Environmental Management System Review

The Integrated Management System (includes Environmental Management System) coordinators develop a monthly IMS report and meet monthly to carry out a review on quality, safety and environmental activities.

10.3 Business Review

Business review activities are to occur according to the procedure 000996 - Management Review Procedure.

10.4 Continual Improvement

As this facility is a research trial it is anticipated there will be limited opportunities for continual improvement. However, if an opportunity for technological or process enhancement arises it will be incorporated pending approval from BW management.



12. APPENDICES

Appendix 1 – New Farm Park Irrigation Management Plan

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