

Environment Protection Licence

Licence - 1683

Licence Details

Number:	1683
Anniversary Date:	01-July

Licensee

HUNTER WATER CORPORATION
 PO BOX 5171
 HUNTER REGION MAIL CENTRE NSW 2310

Premises

BURWOOD BEACH WASTEWATER TREATMENT WORKS
 OFF SCENIC DRIVE
 MEREWETHER NSW 2291

Scheduled Activity

Sewage treatment

Fee Based Activity

Sewage treatment processing by large plants

Scale

> 20000-30000 ML annual maximum
 volume of discharge

Region

North - Hunter
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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

HUNTER WATER CORPORATION
PO BOX 5171
HUNTER REGION MAIL CENTRE NSW 2310

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Sewage treatment	Sewage treatment processing by large plants	> 20000 - 30000 ML annual maximum volume of discharge

A1.2 The objectives of this licence are to:

- require practical measures to be taken to protect the environment and public health;
- require proper and efficient design, construction and management of the sewage treatment system to minimise harm to public health and the environment; and
- minimise the frequency and volume of overflows from the reticulation system and sewage treatment plant.

A1.3 This licence is to be construed in a manner that will promote the objectives referred to in A1.2.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
BURWOOD BEACH WASTEWATER TREATMENT WORKS
OFF SCENIC DRIVE
MEREWETHER
NSW 2291
LOT 1 DP 163423, LOT A DP 339943, LOT B DP 339943, LOT A DP 400052, LOT 1 DP 408005, LOT 1 DP 535220, LOT 2 DP 535220, LOT 1 DP 776283, LOT 7 DP 776283
THE LICENCE APPLIES TO BURWOOD BEACH WASTEWATER TREATMENT PLANT AND SHORTLAND WASTEWATER TREATMENT PLANT AND ASSOCIATED RETICULATION SYSTEMS. BURWOOD BEACH WWTW IS LOCATED ON LOTS 1 & 7 DP776283. SHORTLAND WWTW IS LOCATED ON THE REMAINING LOT AND DPS LISTED ABOVE.

A2.2 The premises also includes the reticulation system owned and operated by the licensee that is associated with the sewage treatment plant(s) identified in condition A2.1.

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A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Effluent quality monitoring (Ocean Outfall)	Discharge to waters Effluent quality monitoring (Ocean Outfall)	Inspection pit down stream of the secondary clarifier and the wet weather bypass chamber at the Burwood Beach WWTP -Monitoring Point 1 on drawing "Location of monitoring/discharge points at Burwood Beach WWTW licence no.1683 drawing no.15243" Date 2/12/11
3	Discharge to waters Sludge quality monitoring Sludge volume monitoring.	Discharge to waters Sludge quality monitoring Sludge volume monitoring.	At the sludge pumping station at the Burwood Beach WWTP identified as Monitoring Point 3 on drawing "Location of monitoring/discharge points at Burwood Beach WWTW licence no.1683 drawing no.15243" Dated 2/12/11
5	Environmental Monitoring		In the waters of Bar Beach

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6	Environmental Monitoring	In the waters of Merewether Beach
7	Environmental Monitoring	In the waters of Burwood Beach
8	Environmental Monitoring	In the waters of Glenrock Beach
9	Environmental Monitoring	In the waters of Dudley Beach
10	Effluent quality monitoring Effluent volume monitoring (Sludge dilution)	Pump well between clarifier and the sludge line at the Burwood Beach WWTP, identified as Monitoring Point 10 on drawing "Location of monitoring/discharge points at Burwood Beach WWTP licence no.1683 drawing no.15243" Dated 2/12/11
11	Scum quality monitoring Scum volume monitoring	At the scum pump well at the Burwood Beach WWTP, identified as Monitoring Point 11 on drawing "Location of monitoring/discharge points at Burwood Beach WWTP licence no.1683 drawing no.15243" Dated 2/12/11
12	Total volume monitoring	Between the primary pump station and the screening / grit removal facility at the Burwood Beach WWTP, ID as Monitoring Point 12 on drawing "Location of monitoring/discharge points at Burwood Beach WWTP licence no.1683 drawing no.15243" Date 2/12/12
13	Treated volume monitoring	Between the secondary pump station and the secondary treatment works at the Burwood Beach WWTP, identified as Monitoring Point 13 on drawing "Location of monitoring/discharge points at Burwood Beach WWTP licence no.1683 drawing no.15243" Dated 2/12/11
17	Effluent volume monitoring	At the point where the effluent bypasses the secondary pump station at the Burwood Beach WWTP identified as Monitoring Point 17 on drawing "Location of monitoring/discharge points at Burwood Beach WWTP licence no.1683 drawing no.15243" Dated 2/12/11

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18	Discharge to waters Effluent quality monitoring	Discharge to waters Effluent quality monitoring	Overflow structure of the storm storage pond at Shortland WWTW labelled as Monitoring Point 18 on drawing "Location of monitoring/discharge points at Shortland WWTW licence no.1683 on drawing no.15244" dated 5/05/2014. NB elec copy at DOC14/61522-02.
20	Discharge to waters; and effluent quality and volume monitoring	Discharge to waters; and effluent quality and volume monitoring	At Shortland WWTW dechlorination building, 260m upstream of the outfall diffuser and labelled as 'monitoring point 20' on drawing number 15244 dated 5/05/2014. NB elec copy on DOC14/61522-02.

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.
- L1.2 The licensee may only discharge untreated or partially treated sewage from the sewage treatment plant and/or the reticulation system subject to the conditions of this licence, including O1 and O2.

L2 Load limits

- L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.
- L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

Assessable Pollutant	Load limit (kg)
BOD (Coastal Water)	
BOD (Estuarine Water)	15094.00
Cadmium (Coastal Water)	124.40
Cadmium (Estuarine Water)	2.60
Chromium (Coastal Water)	223.50
Chromium (Estuarine Water)	3.90
Copper (Coastal Water)	2080.00
Copper (Estuarine Water)	51.00

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Lead (Coastal Water)	1472.00
Lead (Estuarine Water)	12.80
Mercury (Coastal Water)	8.90
Mercury (Estuarine Water)	1.30
Nitrogen (total) (Coastal Water)	1045000.00
Nitrogen (total) (Estuarine Water)	33229.00
Oil and Grease (Coastal Water)	341290.00
Oil and Grease (Estuarine Water)	1135.00
Pesticides and PCBs (Coastal Water)	7.20
Pesticides and PCBs (Estuarine Water)	0.13
Phosphorus (total) (Coastal Water)	
Phosphorus (total) (Estuarine Water)	17839.00
Selenium (Coastal Water)	14.00
Selenium (Estuarine Water)	1.28
Total suspended solids (Coastal Water)	5300000.00
Total suspended solids (Estuarine Water)	29329.00
Zinc (Coastal Water)	4500.00
Zinc (Estuarine Water)	383.50

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

L2.3 For the purpose of determining compliance with condition L2.1, assessable pollutant loads to the Mayfield Advanced Water Treatment Plant should be excluded.

L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\&s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\&s.

L3.4 Water and/or Land Concentration Limits

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POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	5	10	15	-
Total suspended solids	milligrams per litre	35	50	60	-

POINT 20

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
BOD	milligrams per litre	25	60		
Nitrogen (ammonia)	milligrams per litre		8		
Nitrogen (total)	milligrams per litre		20		
pH	pH				6.5-8.5
Phosphorus	milligrams per litre		7		
Total suspended solids	milligrams per litre	40	80		

L4 Volume and mass limits

- L4.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- liquids discharged to water; or;
 - solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	kilolitres per day	510000
3	kilolitres per day	5000
20	kilolitres per day	31000

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L5 Waste

- L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.
- L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.
- L5.3 The licensee may receive and/or transfer sewage and Group C waste generated outside the premises for treatment, processing or reprocessing at the premises. The licensee must take reasonable steps to ensure that sewage received at the premises has been lawfully discharged in accordance with a trade waste agreement or customer contract (as applicable) in force between the licensee and the generator of the waste. The licensee must treat, process or reprocess the sewage and Group C waste in accordance with this licence prior to discharge from the premises.
- L5.4 The licensee may receive, store, treat, process or reprocess and/or transfer at the premises sewage products generated or stored outside the premises by the licensee's other sewage treatment systems. Sewage products must be received, treated, processed or reprocessed in accordance with this licence.
- L5.5 Grit or screenings generated by activities on the premises may be disposed of by the licensee within the boundary of the sewage treatment plant(s) on the premises, but only if they are disposed of in a manner that prevents or minimises material harm to the environment.

L6 Potentially offensive odour

- L6.1 No condition in this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997 provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L7 Other limit conditions

- L7.1 After 31 May 2004 the licensee must not permit discharges in dry weather from any sewage pumping stations or directed overflow structures within the premises.
- L7.2 The requirements of condition L7.1 do not apply to sewage pumping station(s) Dudley No.3, Dudley No.6 and Kahibah No.1.

Note: The requirements of condition M7.3 applies to these sewage pumping stations.

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4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Note: The requirements of O1.1 apply to the whole of the premises, including the reticulation system.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

Note: The requirements of O2.1 apply to the whole of the premises, including the reticulation system.

O3 Emergency response

O3.1 In the event of an overflow or bypass that harms or is likely to harm the environment, the licensee must use all practicable measures to minimise the impact of the overflow or bypass on the environment and public health. These measures are to be implemented as soon as practical after the licensee or one of the licensee's employees or agents becomes aware of the overflow or bypass.

O4 Processes and management

Extensions to the reticulation system

O4.1 The licensee must ensure that any extension to the reticulation system is planned, designed, constructed and installed to prevent as far as practicable discharges of sewage or partially treated sewage from the premises.

Note: "The premises" includes both the new and the previously existing parts of the reticulation system.

Additional directed overflow structures

O4.2 Additional directed overflow structures must not be constructed within the sewage treatment system unless the directed overflow structure is essential for the proper and efficient operation of the system.

Before constructing an additional directed overflow structure, the licensee must prepare a written report assessing the following issues for the purposes of this condition:

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- a) risk of harm to public health, environment or property if the proposed directed overflow structure is not constructed;
- b) risk of harm to public health and the receiving environment if an overflow from the directed overflow structure occurred;
- c) systems to be used to monitor overflows, power failures or mechanical failures of pumping or electrical equipment relating to or affecting the proposed directed overflow structure; and
- d) ability of the licensee to respond to overflows from the proposed directed overflow structure and to minimise the impact on the environment and public health.

O4.3 The directed overflow structure report specified in O4.2 must be:

- a) kept for at least 4 years after the report is made or the directed overflow structure is constructed, whichever is later; and
- b) produced in a legible form to any authorised officer of the EPA who asks to see it.

Appropriate treatment processes

O4.4 The portion of sewage inflows to the Burwood Beach sewage treatment plant less than 1400L/s must receive screening, de-gritting, biological treatment and clarification prior to discharge to point(s) 1 and 3.

O4.5 The portion of sewage inflows to the Burwood Beach sewage treatment plant that is 1400L/s or more must receive screening and degritting prior to discharge to point(s) 1 and 3.

O4.6 The portion of sewage inflows to the Shortland sewage treatment plant less than 360L/s must receive screening, de-gritting, biological treatment and settling prior to discharge to point(s) 20.

O4.7 The portion of sewage inflows to the Shortland sewage treatment plant that is 360L/s or more must receive screening prior to discharge to point(s) 20.

O4.8 However the licensee is not taken to have breached condition O4.4 to O4.7 if the licensee can demonstrate:

- a) the failure to treat the liquid waste as required was solely as a result of a failure of the power supply to the premises, or a failure of essential equipment;
- b) the failure of power supply or equipment could not reasonably have been prevented; and
- c) normal operating conditions were restored as soon as possible after the power supply failure or the failure of essential equipment.

O5 Other operating conditions

Prohibition on acceptance of pesticides

O5.1 The licensee must not consent to any discharge of organophosphate pesticides (including chlorpyrifos, diazinon, malathion) or organochlorine pesticides (including dieldrin, heptachlor and chlordane) into the sewage treatment system.

Additional sewage pumping stations

O5.2 Discharges in dry weather from any sewage pumping station(s) installed within the sewage treatment system after 3 November 2003 are not permitted.

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Biosolids

- O5.3 Biosolids at the premises must be stored, treated, processed, classified, transported and disposed in accordance with the Biosolids Guidelines, or as otherwise approved in writing by the EPA.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- in a legible form, or in a form that can readily be reduced to a legible form;
 - kept for at least 4 years after the monitoring or event to which they relate took place; and
 - produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- the date(s) on which the sample was taken;
 - the time(s) at which the sample was collected;
 - the point at which the sample was taken; and
 - the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:
- M2.2 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Aldrin	micrograms per litre	2 Times a year	Grab sample
alpha-BHC	micrograms per litre	2 Times a year	Grab sample
Arsenic	micrograms per litre	2 Times a year	Grab sample
beta-BHC	micrograms per litre	2 Times a year	Grab sample
Biochemical oxygen demand	milligrams per litre	Every 12 days exactly	Composite sample
Cadmium	micrograms per litre	2 Times a year	Grab sample

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Chlordane, total	micrograms per litre	2 Times a year	Grab sample
Chromium	micrograms per litre	2 Times a year	Grab sample
Copper	micrograms per litre	2 Times a year	Grab sample
Dieldrin	micrograms per litre	2 Times a year	Grab sample
Endosulfan	micrograms per litre	2 Times a year	Grab sample
Endrin	micrograms per litre	2 Times a year	Grab sample
gamma-BHC (Lindane)	micrograms per litre	2 Times a year	Grab sample
Heptachlor	micrograms per litre	2 Times a year	Grab sample
Heptachlor epoxide	micrograms per litre	2 Times a year	Grab sample
Hexachlorobenzene	micrograms per litre	2 Times a year	Grab sample
Lead	micrograms per litre	2 Times a year	Grab sample
Mercury	micrograms per litre	2 Times a year	Grab sample
Methoxychlor	micrograms per litre	2 Times a year	Grab sample
Nickel	micrograms per litre	2 Times a year	Grab sample
Oil and Grease	milligrams per litre	Every 12 days exactly	Composite sample
p,p-DDD	micrograms per litre	2 Times a year	Grab sample
p,p-DDE	micrograms per litre	2 Times a year	Grab sample
p,p-DDT	micrograms per litre	2 Times a year	Grab sample
Polychlorinated biphenyls	micrograms per litre	2 Times a year	Grab sample
Selenium	micrograms per litre	2 Times a year	Grab sample
Silver	micrograms per litre	2 Times a year	Grab sample
Total suspended solids	milligrams per litre	Every 12 days exactly	Composite sample
Zinc	micrograms per litre	2 Times a year	Grab sample

POINT 3

Pollutant	Units of measure	Frequency	Sampling Method
Aldrin	micrograms per litre	Monthly	Grab sample
alpha-BHC	micrograms per litre	Monthly	Grab sample
Arsenic	micrograms per litre	Weekly	Grab sample
beta-BHC	micrograms per litre	Monthly	Grab sample
Cadmium	micrograms per litre	Weekly	Grab sample
Chlordane, total	micrograms per litre	Monthly	Grab sample
Chromium	micrograms per litre	Weekly	Grab sample
Copper	micrograms per litre	Weekly	Grab sample
Dieldrin	micrograms per litre	Monthly	Grab sample
Endosulfan	micrograms per litre	Monthly	Grab sample
Endrin	micrograms per litre	Monthly	Grab sample
gamma-BHC (Lindane)	micrograms per litre	Monthly	Grab sample
Heptachlor	micrograms per litre	Monthly	Grab sample
Heptachlor epoxide	micrograms per litre	Monthly	Grab sample
Hexachlorobenzene	micrograms per litre	Monthly	Grab sample
Lead	micrograms per litre	Weekly	Grab sample

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Mercury	micrograms per litre	Weekly	Grab sample
Methoxychlor	micrograms per litre	Monthly	Grab sample
Nickel	micrograms per litre	Weekly	Grab sample
Nitrogen (ammonia)	milligrams per litre	Every 6 days	Grab sample
Oil and Grease	milligrams per litre	Every 6 days	Grab sample
p,p-DDD	micrograms per litre	Monthly	Grab sample
p,p-DDE	micrograms per litre	Monthly	Grab sample
p,p-DDT	micrograms per litre	Monthly	Grab sample
Polychlorinated biphenyls	micrograms per litre	Monthly	Grab sample
Selenium	micrograms per litre	Weekly	Grab sample
Silver	micrograms per litre	Weekly	Grab sample
Total solids	percent by weight	Every 6 days	Grab sample
Zinc	micrograms per litre	Weekly	Grab sample

POINT 6,8,7,5,9

Pollutant	Units of measure	Frequency	Sampling Method
Enterococci	colony forming units per 100 millilitres	Every 6 days	Grab sample

POINT 10,11

Pollutant	Units of measure	Frequency	Sampling Method
Total solids	percent by weight	Every 6 days	Grab sample

POINT 18

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Daily during any discharge	Grab sample
Faecal Coliforms	colony forming units per 100 millilitres	Daily during any discharge	Grab sample
Nitrogen (ammonia)	milligrams per litre	Daily during any discharge	Grab sample
pH	pH	Daily during any discharge	Grab sample
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

POINT 20

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Special Frequency 1	Grab sample
Chlorine (free residual)	milligrams per litre	Special Frequency 1	Grab sample

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Faecal Coliforms	colony forming units per 100 millilitres	Special Frequency 1	Grab sample
Nitrate + nitrite (oxidised nitrogen)	milligrams per litre	Special Frequency 1	Grab sample
Nitrogen (ammonia)	milligrams per litre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Phosphorus (total)	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

Note: Daily during any discharge means a sample must be taken within the first 24 hours of the discharge occurring, and each day thereafter, with a minimum of 12 hours between subsequent samples, if the discharge continues.

Weekly means weekly at a minimum of 5 day intervals.

Fortnightly means fortnightly at a minimum of 10 day intervals.

Monthly means monthly at a minimum of 20 day intervals.

2 times a year means twice yearly with at least 5 months between samples.

Special frequency 1 is defined as the collection of one sample per discharge event lasting in excess of 12 hours and one sample to be collected in every consecutive seven day period for discharge events that occur for durations of longer than seven days.

M2.3 For each monitoring/discharge point or utilisation area specified below (by point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in column 1. The licensee must use the sampling method and sample at the frequency specified opposite in the other columns.

Point 1

Pollutant	Frequency	Sampling Method
Total suspended solids	On both the two days immediately following the samples collected above whenever the result of any sampling required by this licence indicates a result higher than the 90 percent limit for any parameter	Composite sample
Oil and grease	On both the two days immediately following the samples collected above whenever the result of any sampling required by this licence indicates a result higher than the 90 percent limit for any parameter.	Composite sample

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M2.4 In addition to the requirements of M2.1, the following information must be recorded for any discharges from Point 18:

- a) The date and duration of the discharge; and
- b) The reason for the discharge.

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Testing methods - load limits

Note: Division 3 of the *Protection of the Environment Operations (General) Regulation 2009* requires that monitoring of actual loads of assessable pollutants listed in L2.2 must be carried out in accordance with the relevant load calculation protocol set out for the fee-based activity classification listed in the Administrative Conditions of this licence.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

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- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.
- M6.4 For the purpose of this condition, operating hours are defined as twenty four hours a day, seven days a week.
- M6.5 The public notification referred to in condition M6.2 must include specific reference to the fact that the complaints line may be used by the community for the reporting of overflows.

M7 Requirement to monitor volume or mass

- M7.1 For each discharge point or utilisation area specified below, the licensee must monitor:
- the volume of liquids discharged to water or applied to the area;
 - the mass of solids applied to the area;
 - the mass of pollutants emitted to the air;
- at the frequency and using the method and units of measure, specified below.

POINT 1

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	Special Method 1

POINT 3

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	Special Method 2

POINT 10

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)

POINT 11

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)

POINT 12

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	Flow meter and continuous logger

POINT 13

Frequency	Unit of Measure	Sampling Method
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Continuous	kilolitres per day	Flow meter and continuous logger
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POINT 17

Frequency	Unit of Measure	Sampling Method
Daily	kilolitres per day	Special Method 3

POINT 20

Frequency	Unit of Measure	Sampling Method
Continuous	kilolitres per day	Magnetic flow meter

M7.2 For the purposes of the table(s) above:

- Special Method 1 means monitoring volume by calculation (ie. F1-F3-F4-F5);
- Special Method 2 means monitoring volume by calculation ie. (F3 (Flow meter and continuous logger) +F4+F5); and
- Special Method 3 means monitoring volume by calculation (ie. F1-F2).
- Volume monitored at Point 12 is the sum of flows into the east and west inlets to the screening house.

M7.3 Equipment used to monitor the volume must provide data that is within 5 percent of the actual volume over the likely full range of flow required to be measured by the equipment.

M7.4 In the event that the licensee cannot comply with a volume monitoring method as required by this licence solely due to the failure or malfunction of essential monitoring equipment, volume may be calculated using another agreed method approved in writing by the EPA. This provision only applies for the duration of the failure or malfunction and the licensee is to rectify the failure or malfunction as soon as practical.

M7.5 For the purpose of condition M6.3 the alternative method approved by the EPA is as follows:

Monitoring Point	Frequency	Method
3	In the event of failure of the Sludge Volume Flow Meter (F3)	Pump hours run times pump flow rate (L/s)
12	In the event of failure of the Total Volume Flow Meter (Point 12 (F1)) and no bypass occurring	The treated volume flow meter (Point 13 (F2))
12	In the event of failure of the Total Volume Flow Meter (Point 12 (F1)) and bypass occurring	Pump hours run times pump flow rate (L/s) of all operating pumps in the primary pump station, provided that all variable speed pumps are running at maximum speed.
13	In the event of failure of the Treated Volume Flow Meter (Point 13 (F2)) and no bypass occurring	Total Volume (Point 12 (F1)) flow meter
13	In the event of failure of the Treated Volume Flow Meter (Point 13 (F2)) and bypass occurring	Pump hours run times pump flow rate (L/s)
17	In the event of failure of the total volume flow meter	Level sensing Venturi Flume

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In the event of failure of the flow meter at the dechlorination building

Magnetic flowmeter at the inlet to the chlorine contact tank or the venturi flume on the bypass flow plus the hours run on the storm return pumps

M8 Requirement to record bypass incidents from sewage treatment plants

- M8.1 The licensee must record the following details in respect of each bypass of any of the appropriate treatment processes required by condition O4 which may adversely affect the quality of the final effluent:
- the EPA point identification number through which the bypass discharged;
 - the estimated start time, date and duration of the bypass;
 - the estimated volume of the bypass;
 - the level of treatment at the sewage treatment plant prior to discharge; and
 - the most likely cause of the bypass.

M8.2 Sewage treatment plant overflows

The licensee must record the following details in relation to each overflow from the sewage treatment plant:

- the EPA point identification number through which the overflow discharged;
- the date, estimated start time and estimated duration of the overflow;
- the estimated volume of the overflow;
- the level of treatment at the sewage treatment plant prior to discharge; and
- the most likely cause of the overflow.

M8.3 Overflows from the reticulation system

From 3 November 2003 the licensee must record the following details in relation to each observed or reported overflow from the reticulation system:

- the location of the overflow;
- the date, estimated start time, and estimated duration of the overflow;
- the estimated volume of the overflow;
- the most likely cause of the overflow; and
- actions taken to prevent the overflow happening again.

M9 Other monitoring and recording conditions

- M9.1 The licensee must monitor biosolids that are produced at the premises in accordance with the Biosolids Guideline. However, the licensee is not required to comply with the monitoring conditions in the Biosolids Guideline that relate to the reuse or disposal of biosolids at the locations other than the premises.

6 Reporting Conditions

R1 Annual return documents

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R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date. The notification must specify:

- a) the assessable pollutants for which the actual load could not be calculated; and
- b) the relevant circumstances that were beyond the control of the licensee.

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.8 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and

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Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

- R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
 - a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
 - a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
 - f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
 - g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

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R4 Other notifications

R4.1 Where either:

- a) sewage or partially treated sewage is discharged from the premises as a result of a bypass of the sewage treatment plant, or
- b) an observed or reported overflow has occurred from the reticulation system,

and the overflow or bypass may result in a significant risk to public health, the licensee is to promptly give appropriate notification to any parties that are likely to be affected, such as:

- i) the EPA's Pollution Line service on 131 555,
- ii) the NSW Department of Public Health; and
- iii) local council(s) where relevant.

R4.2 Within 3 months the licensee must develop and implement an incident notification protocol. The incident notification protocol must include procedures for notification of, but not limited to, the following groups or organisations:

- a) notification of the EPA's Pollution Line service on 131 555 where an overflow has occurred from either the treatment plant or the reticulation system that has discharged to a waterway or could reasonably be expected to discharge to a waterway;
- b) notification of the NSW Department of Public Health for incidents of public health significance; and
- c) notification of local council(s) where relevant.

For the purposes of this condition, "overflow" does not include leakage.

R4.3 Notifications required by condition R4 must include the following information:

- a) the nature of the incident that led to the bypass or overflow;
- b) any testing or inspections of the discharge or receiving waters that have been carried out;
- c) any testing or inspections currently occurring and when results are anticipated; and
- d) any other available information regarding harm or potential harm to the environment.

R4.4 The notification is to be given as soon as practicable after the licensee or one of the licensee's employees or agents becomes aware of the incident.

The notification could detail incidents in more than one location or sewage treatment system operated by the licensee.

Note: These reporting requirements do not affect any obligations of the licensee to report under Part 5.7 of the Act incidents which cause or threaten harm to the environment.

R4.5 The Licensee must notify the SafeFood NSW of incidents of significance to shellfish production. This notification is to be given as soon as practicable after the licensee or one of the licensee's employees or agents becomes aware that the incident may be of significance to shellfish production.

R5 Annual system performance report

R5.1 The licensee must supply to the EPA an Annual System Performance Report not later than 60 days after the end of each reporting period.

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- R5.2 The Report is to supplement the Annual Return and must include but need not be limited to:
- the 50 percentile, 90 percentile, 100 percentile and 3DGM values calculated from the monitoring data for each pollutant which has corresponding concentration limits specified in this licence;
 - a diagram showing the major process elements, discharge points and monitoring points at the premises' sewage treatment plant(s), where there has been any significant change since the previous reporting period or this information has not been provided previously to the EPA;
 - the number of dry and wet weather bypasses recorded over the reporting period (recorded in accordance with condition M7);
 - a summary of observed, reported or recorded sewage treatment plant bypasses and overflows. These data are to be for the current reporting period and for the previous twelve-month periods, up to a maximum of four, for which data has been required to be collected. Any significant actions taken to address bypasses or overflows are to be noted;
 - the amount of rainfall measured at a rain gauge at the STP, or at the rain gauge closest to the centre of the catchment of the sewage treatment system, for each month of the reporting period;
 - a progress report on the implementation over the reporting period of actions specified in the PRP's; and
 - any additional structures constructed in accordance with condition O4.1.
- R5.3 The Annual System Performance Report must be presented in a format approved in writing by the EPA.

R6 Other reporting conditions

- R6.1 The licensee is to forward the results of monitoring required in conditions M2.1 Point 5, M2.1 Point 6, M2.1 Point 7, M2.1 Point 8 and M2.1 Point 9 to the EPA Beachwatch Unit as soon as they become available.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Contact number for incidents and responsible employees

- G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
- respond at all times to incidents relating to the premises; and
 - contact the licensee's senior employees or agents authorised at all times to:
 - speak on behalf of the licensee; and

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ii) provide any information or document required under this licence.

- G2.2 The licensee is to inform the EPA in writing of the representative or representatives and their telephone number(s) by 1 August 2003. The EPA must be notified of the telephone number(s) on commencement of its/their operation.
- G2.3 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G3 Signage

- G3.1 The location of EPA point numbers 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, 18, and 20 must be clearly marked by a sign that indicates the point identification number used in the licence and located as close as practical to the point.

G4 Other general conditions

- G4.1 The following pollution reduction programs have been completed by the licensee

Pollution Reduction Program	Due Date	Completion Date
Commission Mayfield to Broadmeadow Wastewater System Upgrade	28 June 2013	9 August 2012
Provide dry weather storage for Waratah West pump station	30 June 2012	10 May 2012
Upgrade Burwood Beach Wastewater Treatment Works - Stage 2 Upgrade. Improve treatment process so that TSS limits are achieved at discharge point 1.	31 March 2011	31 March 2011
Provide a report on findings of smoke and dye testing investigations in Mayfield to the EPA Regional Manager - Hunter	21 December 2012	19 December 2012
Submit to the EPA Manager, Hunter Region a validation report of the existing system performance in the Dudley-Charlestown wastewater catchment	15 December 2013	9 December 2013
Commission Adamstown Wastewater System Upgrade	20 December 2013	20 December 2013

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Submit to the EPA Manager, Hunter Region an Upgrade Program Report of works to be implemented in the Dudley-Charlestown wastewater catchment. The report needs to include a timeframe for implementation and cost estimate for the works.	30 June 2014	27 June 2014
Upgrade Minmi No. 2 pumping station	31 December 2014	9 December 2014
Provide to the EPA's Regional Manager, Hunter, a System Performance Review report for the Newcastle West Wastewater Network.	19 December 2014	16 December 2014
Submit to the EPA's Regional Manager, Hunter, the Upgrade Management Strategy for the Newcastle West Wastewater Network including proposed works, timetable for implementation and cost estimates.	25 June 2015	19 June 2015
Newcastle West catchment - complete feasibility study on upgrading Wallsend storm flow pump station (SFPS) to 600L/s and assess associated impacts at Shortland wastewater treatment works from additional wet weather flow (refer DOC15/225754)	30 June 2016	30 June 2016
The licensee must complete concept designs for improvements to secondary containment for all Network Dosing Units, loading and unloading bunds, double containment pipework and pumps and sealing containment at discharge pits.	1 May 2017	28 April 2017
Newcastle West catchment - complete inflow/infiltration investigations and rectification works in the Newcastle 10 wastewater pump station subcatchments known as "151S", "B7262" and "G935" (refer DOC15/225754)	30 June 2017	30 June 2017
Stage 3 - Dudley-Charlestown UMP - Complete inflow/infiltration works along Flaggy Creek to reduce direct inflow to the sewer system.	14 January 2017	12 January 2017
Stage 3 - Dudley-Charlestown UMP - Carry out inflow/infiltration investigations in the Kahibah sub catchment including smoke testing and CCTV inspections to identify high priority inflow/infiltration sources.	14 January 2017	12 January 2017

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Stage 3 - Dudley-Charlestown UMP - Optimise Stage 1 gravity main upgrades in the Glenrock catchment to further reduce wet weather overflows.	14 January 2017	12 January 2017
The licensee must design and construct bunds around the hazardous chemical loading and unloading areas at Stockton 3 Waste Water Pumping Station.	30 May 2017	30 May 2017

8 Pollution Studies and Reduction Programs

U1 PRP 104 - Reticulation System Works

U1.1 The licensee must undertake investigations, works and activities to minimise wet weather overflows in terms of both frequency and volume from the sewage system. As a minimum environmental standard, works must achieve the performance outcomes proposed and/or outlined in the documents titled "Upgrade Management Plan for the Wastewater System of Newcastle (Burwood Beach) Catchment Volume 3 – Upgrade Strategy" dated September 2000 and Upgrade Management Plan for the Wastewater System of Dudley/Charlestown Catchment Volume 1 – Summary" dated June 2005.

The licensee must also undertake works to prevent dry weather discharges from the pumping stations listed at L7.2.

U1.2 Notwithstanding condition U1.1 all works associated with this PRP must be done so with consideration of best available technology for the activity, including consideration of Guideline 15, Guidelines for Sewerage Systems, Sewerage System Overflows, November 2004 (and more recent editions of this document as they are published) of the National Water Quality Management Strategy. Where reasonable and practicable, such technology must be incorporated into the works.

U1.3 Within one month of the completion of each specific action listed in Table 1 the licensee must submit a written report to the EPA providing details of the upgrade works completed against the requirements of condition U1.1, including the expected environmental outcomes to be achieved. The report must also include how the licensee has considered best available technology referred to in condition U1.2, the reasons for the use of the chosen technology, and why it was "reasonable and practicable" to make that choice.

U1.4 The licensee must complete the specific works as outlined in Table 1 of this condition.

Table 1

System Upgrade Works	Completion Date
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Submit to the EPA's Regional Manager, Hunter, a report detailing the results of flow gauging, modelling and evaluation of system improvements carried out as part of Stage 3 of the Dudley-Charlestown Upgrade Management Program (UMP). The report must include a program of works, timetable for implementation and cost estimates.	19 October 2018
Newcastle West catchment - upgrade Elernmore Vale wastewater system with new gravity main from Elernmore Vale to Wallsend Park and construct additional 1ML storage structure in Wallsend Park to store peak flows during rain storms	14 December 2018
Newcastle West catchment - Upgrade Waratah West wastewater pump station to a capacity of 125L/s or greater and divert flows to Shortland wastewater treatment plant	14 December 2018

Note: It is the EPA's intention to require the implementation of upgrade works identified in the Dudley-Charlestown Wastewater Catchment Upgrade Program Report and Newcastle West Wastewater Network via additional Pollution Reduction Programs.

U2 Burwood Beach UV Disinfection Plant - Commissioning

U2.1 The licensee must provide the EPA Regional Manager Hunter with a commissioning report 9 months after commissioning of the ultraviolet disinfection system. The report must be prepared by a suitably qualified person and detail performance monitoring of the 6 month period immediately following commissioning. The report must provide, but not be limited to monthly:

- a) monitoring results for UVT, turbidity and total suspended solids concentrations in treated effluent; and
- b) monitoring results of pre and post-UV treated effluent for enterococci, e.coli and faecal coliforms.

Commissioning Report Submission Date: 20 December 2017

Note: The ultraviolet disinfection system was commissioned on 20 March 2017 - EPA reference DOC17/199067

U3 Burwood Beach WWTW - Stage 3 Upgrade - Monitoring Ammonia and Biosolids Discharges to Ocean

U3.1 The licensee must review the plume dispersion model used to inform the Burwood Beach WWTW Stage 3 Upgrade Strategy¹ every five years.

The first review is to occur in June 2019 with the input data to include ammonia concentrations and discharge flow rate data for effluent and biosolids discharge up to and including June 2019.

¹ Worley Parsons Services Pty Ltd, December 2013, Integrated Assessment of Monitoring - Burwood Beach WWTW.

U3.2 The licensee must submit to the Manager, Hunter Region, a report providing details of the review of

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plume dispersion modelling referred to in condition U3.1 of this licence. The report must identify the degree of dilution achieved for ammonia at the outfall and the extent of the ammonia plume that exceeds a concentration of 0.91mg/L¹ around the outfall.

If ammonia levels exceed ANZECC Guidelines for marine toxicity, the report must justify any reasons for the increase in plume extent and identify actions to be taken to reduce ammonia levels to within ANZECC Guideline values for marine toxicity.

Report submission date: 20 December 2019

¹ ANZECC 2000, Australian and New Zealand Guidelines for Fresh and Marine Water Quality, (Australian and New Zealand Environment and Conservation Council).

U3.3 The licensee must implement the monitoring strategy outlined in the report titled, 'Burwood Beach WWTW Proposed Marine Monitoring Strategy', dated June 2015, prepared by Hunter Water Corporation. The monitoring strategy must include the parameters, monitoring methods and frequencies listed in Table 1 of this condition.

The definitions of parameters referred to in Table 1 are as follows:

Biosolids Quality: physico-chemical parameters of ammonia, oil & grease, total solids, volatile solids, total kjeldahl nitrogen, nitrogen oxides, total nitrogen, total phosphorus and suspended solids. Metals including arsenic, cadmium, chromium, chromium VI, copper, lead, manganese, mercury, nickel, selenium, silver and zinc. Pesticides including organochlorines, organophosphates and PCBs.

Effluent Quality: physico-chemical parameters of pH, ammonia, oil & grease, total kjeldahl nitrogen, nitrogen oxides, total phosphorus, biological oxygen demand and suspended solids. Metals including arsenic, cadmium, chromium, chromium VI, copper, lead, manganese, mercury, nickel, selenium, silver and zinc. Pesticides including organochlorines, organophosphates and PCBs.

Beachwatch monitoring: water quality monitoring of faecal indicator bacteria and presence of oil/grease at recreational beaches.

Dilution/Dispersion Models: characterise dilutions and dispersion over Spring and Autumn conditions (mixed and stratified) under current and future flows.

Ecotox testing: Characterise whole effluent & biosolids toxicity Whole Effluent Testing (WET)/ Toxicity Identification Evaluation (TIE) under multi-species tests. Characterise end-of-pipe effluent and WAS toxicity WET/TIE-algal, sea urchin and other (eg fish).

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Seabed Infauna Ecology: characterise and assess sandy seabed infauna assemblages around outfalls and zone of impact.

Reef Ecology: Characterise and assess encrusting reef flora and fauna assemblages around outfalls and zone of impact.

Sediment Contamination: Characterise and assess sediment contamination around outfall (metals, organics, total kjeldahl nitrogen) and zone of impact.

Water quality: assess extent of marine water quality (and phytoplankton) impacts around outfalls.

Seafood contamination: assess seafood contamination (metals and pesticides) around outfall, Glenrock and Dudley.

Health Risk Assessment: undertake screening level health risk assessment for local beaches - swimming and surfing.

Table 1

Parameters	Method	Frequency
Biosolids Quality	Grab and composite samples	As per monitoring requirements detailed at condition M2 of this licence for EPL points 1 and 3
Effluent Quality	Grab and composite samples	As per monitoring requirements detailed at condition M2 of this licence for EPL points 1 and 3
Beachwatch Monitoring	Grab samples	As per monitoring requirements detailed at condition M2 of this licence for EPL points 5, 6, 7, 8, and 9
Dilution/Dispersion models (effluent and biosolids)	Hydrodynamic modelling	5 yearly, commencing in 2019

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Ecotox testing	Ecotoxicology test assays on grab samples from treated effluent and waste activated sludge process streams discharged to ocean plus end of pipe samples	Six monthly, commencing in 2017 calendar year
Seabed Infauna Ecology	A gradient design incorporating control and reference site based on previous studies and hydrodynamic modelling carried out between 2011 and 2013 as part of the Marine Environmental Assessment Program	5 yearly, commencing in 2019
Reef Ecology	A gradient design incorporating control and reference sites. Sites based on previous studies and hydrodynamic modelling carried out between 2011 and 2013 as part of the Marine Environmental Assessment Program	5 yearly, commencing in 2019
Sediment contamination	A gradient sampling design, with sites chosen based on bottom type (presence of soft sediment) and past studies	5 yearly, commencing in 2019
Water Quality	A radial gradient design incorporating multiple sites including reference sites. Sites based on previous studies and hydrodynamic modelling carried out between 2011 and 2013 as part of the Marine Environmental Assessment Program	5 yearly, commencing in 2019
Seafood contamination	A control/impact design assessing commercial and recreational target species, as per previous studies carried out between 2011 and 2013 as part of the Marine Environmental Assessment Program	5 yearly, commencing in 2019
Health Risk Assessment	Screening level microbial health risk assessment for bathers and surfers	To be submitted to the EPA by 18 December 2020

- U3.4 The licensee must provide the EPA Regional Manager, Hunter with a report for the Burwood Beach WWTW marine biosolids monitoring strategy every five years, with the first report to be submitted by 20 December 2019. The report must include the following information: 1) summary of monitoring data collected for biosolids quality, effluent quality and beachwatch monitoring collected in the previous five year period. 2) data and/or results collected for ecotox testing, seabed infauna ecology, reef ecology, sediment contamination, water quality, seafood contamination and, if appropriate, the Health Risk Assessment. 3) comparison of all monitoring data and results against relevant guideline criteria and previous studies, including the Marine Environmental Assessment Program (2011-2013). If results exceed relevant guideline criteria for marine environments, the report must provide any reason(s) for the elevated result(s) or increase from previous studies. The report must also identify actions to be taken to reduce levels to within guideline criteria, where appropriate.

U4 Hunter River Estuary Model and Future Load and Concentration Limits

- U4.1 The licensee must submit a report detailing the findings of the investigations from the Hunter River Estuary model by Friday 12 July 2019 to the Environment Protection Authority's Regional Manager,

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Hunter.

The report must identify:

- proposed 90%-ile effluent pollutant concentrations for all pollutants specified in this licence that relate to discharges from Shortland wastewater treatment works; and
- proposed load limits for all assessable pollutants for estuarine waters listed in this licence.

The report is to be submitted electronically to hunter.region@epa.nsw.gov.au

U5 Guiding environmental principles

U5.1 Guiding environmental principles

The following guiding principle will apply to the pollution reduction programs in this licence. The document titled "Upgrade Management Plan for the Wastewater System of Newcastle (Burwood Beach) Catchment Volume 3 - Upgrade Strategy" dated September 2000 forms the basis of the reticulation system upgrade strategies. This document acknowledges that leakage reduction works form an important component of the wet weather upgrade strategy and as such will be used as a tool to target source control of wet weather flows.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Grahame Clarke

Environment Protection Authority

(By Delegation)

Date of this edition: 29-September-1999

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End Notes

- 1 Licence varied by notice V/M upgrade, issued on 06-Jul-2000, which came into effect on 06-Jul-2000.
- 2 Licence varied by notice 1002102, issued on 23-Oct-2000, which came into effect on 17-Nov-2000.
- 3 Licence varied by notice 1009306, issued on 02-Jul-2001, which came into effect on 27-Jul-2001.
- 4 Licence varied by notice 1010242, issued on 03-Dec-2001, which came into effect on 28-Dec-2001.
- 5 Licence varied by notice 1014132, issued on 04-Jan-2002, which came into effect on 29-Jan-2002.
- 6 Licence varied by notice 1016625, issued on 15-Apr-2002, which came into effect on 10-May-2002.
- 7 Licence varied by notice 1017406, issued on 16-May-2002, which came into effect on 16-May-2002.
- 8 Licence varied by notice 1019409, issued on 02-Jul-2003, which came into effect on 27-Jul-2003.
- 9 Licence varied by notice 1037530, issued on 28-May-2004, which came into effect on 22-Jun-2004.
- 10 Licence varied by notice 1038863, issued on 27-Jan-2005, which came into effect on 21-Feb-2005.
- 11 Licence varied by notice 1047592, issued on 27-Sep-2005, which came into effect on 22-Oct-2005.
- 12 Licence varied by notice 1061986, issued on 24-Aug-2006, which came into effect on 24-Aug-2006.
- 13 Licence varied by notice 1067866, issued on 20-Dec-2006, which came into effect on 20-Dec-2006.
- 14 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 15 Licence varied by admin corrections to annual return, issued on 02-Jul-2009, which came into effect on 02-Jul-2009.
- 16 Licence varied by notice 1104061, issued on 24-Aug-2009, which came into effect on 24-Aug-2009.
- 17 Licence varied by notice 1106786, issued on 21-Dec-2009, which came into effect on 21-Dec-2009.

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18	Licence varied by notice 1112489, issued on 30-Mar-2010, which came into effect on 30-Mar-2010.
19	Licence varied by notice 1126181, issued on 13-Jul-2011, which came into effect on 13-Jul-2011.
20	Licence varied by notice 1501635 issued on 10-Nov-2011
21	Licence varied by notice 1503647 issued on 31-Jan-2012
22	Licence varied by notice 1506202 issued on 28-May-2012
23	Licence varied by notice 1507018 issued on 14-Sep-2012
24	Licence varied by notice 1511528 issued on 29-Jan-2013
25	Licence varied by notice 1519675 issued on 26-May-2014
26	Licence varied by notice 1522347 issued on 05-Sep-2014
27	Licence varied by notice 1527139 issued on 10-Mar-2015
28	Licence varied by notice 1529256 issued on 18-Jun-2015
29	Licence varied by notice 1538112 issued on 05-May-2016
30	Licence varied by notice 1542990 issued on 06-Sep-2016
31	Licence varied by notice 1546326 issued on 09-Feb-2017
32	Licence varied by notice 1553921 issued on 20-Jul-2017
33	Licence varied by notice 1570786 issued on 17-Dec-2018