



# Decision Document

## *Environmental Protection Act 1986, Part V*

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**Proponent:** Water Corporation

**Licence:** L7882/1992/14

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**Registered office:** 629 Newcastle Street  
LEEDERVILLE WA 6007

**Premises address:** Beenyup Wastewater Treatment Plant  
Part Lot 8278 on Plan 30778, Ocean Reef Road  
CRAIGIE WESTERN AUSTRALIA 6025  
Bound by the following points

| <b>Point</b> | <b>Easting</b> | <b>Northing</b> |
|--------------|----------------|-----------------|
| 1            | 383932.04m     | 6482700.62m     |
| 2            | 384010.53m     | 6482748.00m     |
| 3            | 384116.46m     | 6482755.52m     |
| 4            | 384146.54m     | 6482763.18m     |
| 5            | 384149.93m     | 6482701.61m     |
| 6            | 384170.03m     | 6482702.20m     |
| 7            | 384165.22m     | 6482733.01m     |
| 8            | 384339.70m     | 6482741.06m     |
| 9            | 384342.89m     | 6482684.45m     |
| 10           | 384383.60m     | 6482687.31m     |
| 11           | 384389.41m     | 6482600.98m     |
| 12           | 384434.98m     | 6482603.54m     |
| 13           | 384438.54m     | 6482549.71m     |
| 14           | 384443.75m     | 6482546.68m     |
| 15           | 384455.28m     | 6482376.99m     |
| 16           | 384450.62m     | 6482373.23m     |
| 17           | 384455.06m     | 6482312.90m     |
| 18           | 384532.63m     | 6482318.61m     |
| 19           | 384531.53m     | 6482335.27m     |
| 20           | 384595.84m     | 6482339.99m     |
| 21           | 384594.88m     | 6482315.55m     |
| 22           | 384599.70m     | 6482261.03m     |
| 23           | 383932.87m     | 6482216.62m     |
| 24           | 383931.33m     | 6482228.03m     |
| 25           | 383938.24m     | 6482276.32m     |
| 26           | 383961.56m     | 6482314.51m     |
| 27           | 383967.98m     | 6482420.53m     |
| 28           | 383965.59m     | 6482452.45m     |
| 29           | 383960.15m     | 6482454.02m     |



|    |            |             |
|----|------------|-------------|
| 30 | 383956.19m | 6482508.51m |
| 31 | 383933.16m | 6482518.59m |
| 32 | 383930.96m | 6482570.84m |
| 33 | 383937.71m | 6482613.83m |
| 34 | 384264.48m | 6482738.17m |
| 35 | 384260.60m | 6482813.19m |
| 36 | 384359.81m | 6482819.61m |
| 37 | 384363.69m | 6482743.28m |

**Issue date:** Friday, 30 September 2011

**Commencement date:** Tuesday, 1 November 2011

**Expiry date:** Monday, 31 October 2031

### **Decision**

Based on the assessment detailed in this document the Department of Environment Regulation (DER) CEO delegated officer, has decided to issue an amended licence. The delegated officer considers that in reaching this decision, it has taken into account all relevant considerations.

Decision Document prepared by: Melissa Chamberlain  
Licensing Officer

Decision Document authorised by: Alan Kietzmann  
Delegated Officer



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## 1 Purpose of this Document

This decision document explains how DER CEO delegated officer has assessed and determined the application and provides a record of the decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to the delegated officer's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

## 2 Administrative summary

| Administrative details  |   |   |
|---|---|---|
| Application type  | Works Approval <input type="checkbox"/><br>New Licence <input type="checkbox"/><br>Licence amendment <input checked="" type="checkbox"/><br>Works Approval amendment <input type="checkbox"/> |   |
| Activities that cause the premises to become prescribed premises  | <b>Category number(s)</b>   | <b>Assessed design capacity</b>   |
|   | 54  | 135,000 cubic meters per day  |
|   | 61  | 50,000 tonnes per year  |
| Application verified  | Date: N/A   |   |
| Application fee paid  | Date: N/A   |   |
| Works Approval has been complied with   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>  |   |
| Compliance Certificate received   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>  |   |
| Commercial-in-confidence claim  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |
| Commercial-in-confidence claim outcome  |   |   |
| Is the proposal a Major Resource Project?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |
| Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   | Referral decision No:<br>Managed under Part V <input type="checkbox"/><br>Assessed under Part IV <input type="checkbox"/> |



|  |   |   |
|--|---|---|
| Is the proposal subject to Ministerial Conditions?   | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Ministerial statement No: 382<br>EPA Report No: 912   |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i> )? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Is the Premises within an Environmental Protection Policy (EPP) Area   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |
| Is the Premises subject to any EPP requirements?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |

### 3 Executive summary of proposal and assessment

Beenyup WWTP is located on part of Lot 8278 on Plan 30778 Ocean Reef Road, Craigie, Western Australia. The plant has been operating at this premises since 1972. The Lot is bounded by the Mitchell Freeway to the east, Ocean Reef Road to the north, the residential suburb of Craigie to the west and Craigie Open Space, an area of regionally significant bushland, to the south. Water Corporation’s Advanced Water Replensihment Plant is located on the same lot immediate north of the premises, and the rest of the Lot contains the Bush Forever site 303 as well as a hardstand area to the north occupied by Water Corporation’s construction branch.

The geology of the site is generally made up of Bassendean sands over Tamala Limestone. A large stretch of the Quindalup dune system occurs along the western margin of the site. The Perth Groundwater Atlas indicates the historical maximum water table level at the site is at 4.0m AHD, corresponding to 17-19m below current ground level. A dissipation test at the site indicated that the water table was present at 18.1m below ground level (3.6m AHD) (Worley Parsons, 2007); therefore, interference of plant structural and civil elements by groundwater is not expected.

Sewage enters the plant via pipelines. After screening, the wastewater flows into circular grit removal tanks, aerated to allow the inorganic material to settle and the organic material to pass through very slowly to large rectangular primary sedimentation tanks allowing about 50 per cent of the suspended solids to settle out as sludge. Sludge is collected by scraper mechanism and pumped to the solids handling area for thickening and digestion. The treated wastewater leaving the primary tanks called primary treated wastewater passes to secondary treatment tanks. Secondary treatment is achieved in aeration tanks by the activated sludge process. Following aeration, the treated wastewater passes slowly through circular clarifiers in which the activated sludge settles leaving a high quality secondary effluent. The settled sludge containing micro-organisms is rapidly removed using scrapers and is returned to the aeration tanks.

Solids removed from the primary sedimentation tanks and excess solids produced by the activated sludge process are thickened and fed to the anaerobic digesters. Following digestion, the sludge is mechanically dewatered to produce a biosolid suitable for use as a soil conditioner.



Secondary treated wastewater flows by gravity to the Indian Ocean in the vicinity of the Marmion Marine Park and is discharged into 10 metres of water via two outlets, one 1850 metres and the other one 1650 metres offshore, where it is rapidly diluted and dispersed

The main emission from the premises is odour. Odourous air is extracted from the inlet works, primary tanks, secondary treatment tanks and sludge storage facilities, sludge loading and unloading area, and passed through biological scrubbers and chemical scrubbers vented to a 50 meter stack.

### **February 2016 Amendment**

This Licence is the result of an amendment to adjust the premises boundary to the physical boundary of the treatment plant rather than the entire Lot 8278. The licence has also been converted to the new format for consistency with other Water Corporation licences. Changes have been made in relation to definitions and controlled waste codes. This amendment does result in any alteration of discharges, emissions or processes at the premises but does extend the expiry date of the instrument.

The premise is subject to Ministerial Statement 382 and this licence does not duplicate any conditions of this statement.



## 4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

| DECISION TABLE  |   |   |                     |
|---|---|---|---------------------|
| Works Approval / Licence section                            | Condition number<br>W = Works Approval<br>L = Licence | Justification (including risk description & decision methodology where relevant)  | Reference documents |
| Premises operation  | L1.2.1<br>L1.2.2<br>L1.2.3<br>L1.2.4                  | <p>Condition 1.2.1 and Table 1.2.1 limits the waste types and quantities that can be accepted at the premises to those that have been assessed under the licence application as suitable given the infrastructure and control measures at the premises.</p> <p>Condition 1.2.2 and Table 1.2.2 limits the waste processing that can occur to those assessed under the licence application as suitable given the infrastructure and control measures at the premises, and relevant to the licence categories applied for.</p> <p>Condition 1.2.3 and Table 1.2.3 specify the containment infrastructure at the premises and any requirements of those infrastructure as the assessment has been undertaken and control measures proposed under the understanding that the specified infrastructure is in place to contain the specified materials.</p> <p>Condition 1.2.4 specifies that wastewater treatment tanks must be managed appropriately to avoid damage and ensure proper function to prevent potential spillage or malfunction of the treatment system.</p> | L7882/1992/14       |
| Point Source Emissions to Air and monitoring air emissions. | L2.1.1  | <p><u>Emission Description</u><br/> <i>Emission:</i> Odour from the acceptance and processing of biological wastes resulting in hydrogen sulphide and volatile organic compounds.<br/> <i>Impact:</i> Odour has the potential to interfere with the amenity of odour sensitive receptors. The nearest residents are located approximately 50 meters west of the premises.</p>   | L7882/1992/14       |



| DECISION TABLE                   |   |   |                     |
|----------------------------------|---|---|---------------------|
| Works Approval / Licence section | Condition number<br>W = Works Approval<br>L = Licence | Justification (including risk description & decision methodology where relevant)  | Reference documents |
|                                  |   | <p><i>Controls:</i> Waste is delivered to the premises via an enclosed pipeline. Odourous air is extracted from the inlet works, primary tanks, secondary treatment tanks and sludge storage facilities, sludge loading and unloading area, and passed through biological scrubbers and chemical scrubbers vented to a 50 meter stack.</p> <p><u>Risk Assessment</u><br/>Consequence: Minor<br/>Likelihood: Possible<br/>Risk Rating: Moderate</p> <p><u>Regulatory Controls</u><br/>Condition 1.2.3 and Table 1.2.3 specify the containment infrastructure that wastewater must be stored in, including the requirement that covers be kept on the primary and aeration tanks at all time except when removal is required for maintenance operations or during emergency situations.</p> <p>Condition 2.1.1 and Table 2.1.1 specify the emission points where air emissions can occur under the licence.</p> <p>Condition 2.1.2 and Table 2.1.2 specify that the air emissions at the emission points cannot exceed the limits of 0.20 g/s and 0.19 g/s at any time.</p> <p>Condition 2.1.3 requires the licensee to maintain a log of all CEMS calibration curve correlations and make this log available on request to allow DER to verify the data collected.</p> <p>Condition 3.2.1 and Table 3.2.1 requires the licensee to monitor for hydrogen sulphide continuously to determine compliance with licence limits, and also requires quarterly monitoring data on hydrogen sulphide (mg/m<sup>3</sup> and g/s), volumetric flow rate and stack exit temperature to assess the nature of air emissions.</p> |                     |



| DECISION TABLE  |  |  |                     |
|---|--|--|---------------------|
| Works Approval / Licence section  | Condition number<br>W = Works Approval<br>L= Licence | Justification (including risk description & decision methodology where relevant)   | Reference documents |
|   |  | <p>Conditions 3.2.2 to 3.2.4 further specify how CEMS monitoring must occur to ensure that monitoring is done effectively and appropriately and the data can be relied upon.</p> <p>Condition 6 of the previous licence required the plant to achieve a hydrogen sulphide emission of less than 1.5 ppm at the stack outlet. Targets have been removed from the licence in accordance with DER regulatory policy as they are not enforceable unless linked to a specific management activity. Hydrogen sulphide limits have been placed on the licence and the Licensee will need to implement appropriate management and monitoring strategies to ensure compliance with the condition.</p> <p><u>Risk Assessment</u><br/>Consequence: Minor<br/>Likelihood: Possible<br/>Risk Rating: Moderate</p>                             |                     |
| <b>Point source emissions to surface water and surface water monitoring</b> |  | <p><u>Emission Description</u><br/><i>Emission:</i> Residual Nitrogen and Phosphorus contained within the treated wastewater.<br/><i>Impact:</i> Excess nutrients may impact the receiving environment (Indian Ocean) causing eutrophication and/or may alter the water quality impacting sea life.<br/><i>Controls:</i> The licensee is required by Ministerial Statement to limit the daily loading rate of Nitrogen and Phosphorus being discharged to the ocean and monitor these concentration loads.</p> <p><u>Risk Assessment</u><br/>Consequence: Minor<br/>Likelihood: Possible<br/>Risk Rating: Moderate</p> <p><u>Regulatory Controls</u><br/>Condition 2.2.1 and Table 2.2.1 specifies that treated wastewater may be discharged to the Ocean Reef Ocean outlet. The ocean discharge is regulated by Ministerial</p> | L7882/1992/14       |





| DECISION TABLE                          |  |   |  |
|---|--|---|--|
| Works Approval / Licence section        | Condition number<br>W = Works Approval<br>L= Licence | Justification (including risk description & decision methodology where relevant)  | Reference documents                                      |
|   |  | Statement 382.<br><br><u>Risk Assessment</u><br>Consequence: Minor<br>Likelihood: Possible<br>Risk Rating: Moderate   |  |
| <b>Fugitive Emissions</b>               |  | Dust emissions are not expected from premises activities. Any fugitive dust emissions would be adequately managed under the general provisions of the <i>Environmental Protection Act 1986</i> .  | <i>Environmental Protection Act 1986</i>                 |
| <b>Odour</b>                            |  | Odour emissions are risk assessed above in emissions to air. Any fugitive odour emissions not otherwise controlled by the licence conditions can be adequately managed under the general provisions of the <i>Environmental Protection Act 1986</i>   | <i>Environmental Protection Act 1986</i>                 |
| <b>Noise</b>                            |  | Noise emissions are not expected from premises activities. The licensee is required to comply with the <i>Environmental Protection (Noise) Regulations 1997</i>   | <i>Environmental Protection (Noise) Regulations 1997</i> |
| <b>Monitoring of inputs and outputs</b> | L3.4.1   | Condition 3.4.1 and Table 3.4.1 requires the licensee to continually monitor the sewage inlet flow and the volume of septage and sewage waste tankered into the premises to monitor compliance with licence limits.   | N/A  |
| <b>Information</b>                      | L4.1.1   | Condition 4.1.1 sets out the requirements for any records that are required under this licence, such as ensuring they are legible and retained for 6 years, which assists DER in regulating the conditions of this licence.<br><br>Condition 4.1.2 requires the occupier to undertake an audit of their operations against the conditions of the licence and to report on this compliance in an Annual Audit Compliance Report (AACR). This condition assists DER in regulating the occupier's compliance with licence conditions and allows an opportunity for DER to receive the occupier's environmental performance.<br><br>Condition 4.1.3 requires a complaints management system to be implemented where | N/A  |



| <b>DECISION TABLE</b>                   |   |  |  |
|---|---|--|--|
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|   |   | <p>the occupier can internally address any issues that arise from premises operations. DER will review these complaints as reported in the Annual Environmental Report (AER) and can consider the requirement for the reassessment of any regulatory controls to address the complaints.</p> <p>Condition 4.2.1 requires the licensee to submit an AER. The AER is required to include the AACR and a summary of the complaints required under condition 4.1.3. DER reviews all of the data provided in the AER to assess compliance with the licence conditions and to monitor the environmental impacts from the premises.</p> <p>Condition 4.2.2 requires the Annual Report to include any relevant process, production or operational data recorded under conditions of this licence to ensure all relevant data is provided in the annual report for DER to review, and requires an assessment of the information against previous monitoring results and licence limits to ensure the licensee has reviewed the data and provides DER with comparative information.</p> <p>Condition 4.2.3 specifies that the licensee must submit copies of original monitoring reports within 14 days of request by the CEO, in the event that the CEO wishes to review this data.</p> <p>Condition 4.3.1 requires the licensee to notify the CEO if there is a breach of any licence limit (i.e processing limits). The notifications required under this condition give DER appropriate notice of any environmental impacts at the premises so that DER can determine if any further action is required to address the incident.</p> |  |
| <b>Licence Duration</b>                 | N/A   | <p>As the licence has been reassessed as part of this amendment. Based on the risk profile, the expiry date has been extended to 2031 (15 years).<br/>Water Corporation have advised that there are no planning or lease agreements which expire within this period.</p>   | Department of Environment Regulation Guidance Statement, Licence Duration, |



| <b>DECISION TABLE</b>                   |   |   |                            |
|---|---|---|----------------------------|
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|   |   |   | November                   |



## 5 Advertisement and consultation table

| Date      | Event                                     | Comments received/Notes   | How comments were taken into consideration  |
|-----------|---|---|---|
| 1/03/2016 | Proponent sent a copy of draft instrument | Comment was received on 21 March 2016. Response identified errors in the descriptions of activities and controls (e.g. omission of activated carbon in odour control, air emissions through stack after scrubbing, ocean outfall discharge distance was incorrect, and duplication of a condition) as well as clarification of flow rate measurement units. | Errors have been corrected and wording clarified to reflect operations and monitoring requirements. |



## 6 Risk Assessment

*Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management*

**Table 1: Emissions Risk Matrix**

| Likelihood     | Consequence   |          |          |          |         |
|----------------|---------------|----------|----------|----------|---------|
|                | Insignificant | Minor    | Moderate | Major    | Severe  |
| Almost Certain | Moderate      | High     | High     | Extreme  | Extreme |
| Likely         | Moderate      | Moderate | High     | High     | Extreme |
| Possible       | Low           | Moderate | Moderate | High     | Extreme |
| Unlikely       | Low           | Moderate | Moderate | Moderate | High    |
| Rare           | Low           | Low      | Moderate | Moderate | High    |