
# Annual Environmental Management Report 2016-2017

*Woodlawn Mechanical Biological Treatment Facility*

**January 2018**

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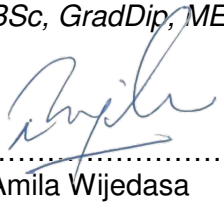

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# Contents

# DEFINITIONS/ABBREVIATIONS

| | |
|---|---|
| **AEMR** | Annual Environmental Management Report |
| **ALS** | Australian Laboratory Services Pty Ltd |
| **CEMP** | Construction Environmental Management Plan |
| **DPE** | Department of Planning and Environment |
| **EA** | Environmental Assessment |
| **EMP** | Environment Management Plan |
| **EP&A** | Environmental Planning and Assessment (Act and Regulations) |
| **EPA** | NSW Environment Protection Authority |
| **EPL** | Environment Protection Licence |
| **E2W** | Earth2Water Pty Ltd |
| **MSW** | Mixed Solid Waste |
| **OEMP** | Operational Environmental Management Plan |
| **The Consent** | PA 06-0239 |
| **The Bioreactor** | Woodlawn Bioreactor |
| **The Facility** | Woodlawn Mechanical Biological Treatment Facility |
| **TPA** | Tonnes per annum |
| **Veolia** | Veolia Australia and New Zealand |
| **WHS** | Work Health and Safety (Act and Regulation) |
| **WRVCP** | Waste Receipt and Vehicle Control Plan |
| **WMBT** | Woodlawn Mechanical Biological Treatment Facility |

# EXECUTIVE SUMMARY

This Annual Environmental Management Report (AEMR) is the second report prepared to detail the environmental performance of the Woodlawn Mechanical Biological Treatment Plant Facility (the Facility), owned and operated by Veolia Australia and New Zealand (Veolia). The AEMR covers the period of 7 September 2016 to 6 November 2017 (this reporting period).

Veolia has prepared this AEMR in accordance with Schedule 4, Condition 5 of Project Approval PA 06_0239 (the Consent), as well as relevant legislative requirements and industry best practices (refer **Section 1**). In addition to the Consent, an Environment Protection Licence (EPL) 20476 regulates the operational activities conducted at the Facility.

In this reporting period, the construction phase of the Facility was completed between 1 October 2015 ï 7 March 2017, transitioning to the commissioning phase on 8 March 2017, followed by full operations commencing on 1 July 2017 (refer **Section 2**).

The AEMR provides a summary of environmental monitoring conducted at the Facility during this reporting period (refer **Section 3**). There were no non-compliances identified against the conditions of the Consent (the Consent Conditions) and no complaints received during this reporting period (refer **Section 4**).

# Section 1

*Introduction*

# SECTION 1 INTRODUCTION

## 1.1 Site Overview

Veolia Australia and New Zealand (Veolia) own and operate the Woodlawn Mechanical Biological Treatment facility (the Facility), located at 619 Collector Road, Tarago, within the Southern Highlands of NSW.

The term mechanical biological treatment refers to several combinations of a hybrid process that combines mechanical techniques (used to sort mixed waste with potential recovery of inert recyclable material) and biological techniques (to stabilise the organic fraction). This type of technology to be used at the Facility is a composting process to treat the residual fraction of municipal, commercial and industrial solid waste (MSW) received from councils (or commercial/industrial customers) opting to utilise this waste management option over landfilling.

The construction stage of the Facility took place between 1 October 2015 ï 7 March 2017, followed by a wet commissioning period from 8 March 2017, before the Facility commenced full operations in July 2017.

Stage 1 of the Facility has been constructed with a capacity to process 184,000 tonnes per annum (TPA), including 144,000 TPA of mixed waste and 40,000 TPA of garden waste. The Facility includes the following infrastructure:

- An access road for waste trucks;
- Car parking, weighbridge and amenities;
- Reception building and associated infrastructure;
- Biological Rotating System (BRS) drums;
- Refining building;
- Organic buffer storage area;
- Fermentation building; and
- Compost storage area.

A Site Layout Plan is provided in **Appendix A**.

Containerised waste is received from the Sydney Metropolitan Area (SMA), via rail, and unloaded onto road trucks for transport to the Facility, where mixed waste organic outputs (herein referred to as compost) are produced. The waste collected from the SMA is containerised at two transfer stations owned and operated by Veolia (namely the Banksmeadow and Clyde Transfer Terminals).

Residual material from the MBT process is deposited in the Woodlawn Bioreactor (Bioreactor), a landfill, located adjacent to the Facility. The compost produced is intended to be applied for remediation of land disturbed from former mining activities undertaken around the Bioreactor. Any recyclable materials recovered are taken offsite to an appropriate facility.

## 1.2 Legislative Requirements

The main legislative instruments governing the environmental performance and activities undertaken at the Facility include the EP&A Act regulated by the Department of Planning and Environment (DPE), and the *Protection of the Environment Operations Act 1997* (POEO Act) regulated by the Environment Protection Authority (EPA), as well as their respective associated regulations.

The Consent and EPL, issued by these regulatory authorities contain conditions stipulating the compliance requirements for the Facility. The Consent Condition relevant to the preparation of this AEMR is provided in **Table 1-1** below.

**Table 1-1 - Consent Conditions for the preparation of this AEMR**

| Condition | Requirement |
|---|---|
| ***SCHEDULE 4 – REPORTING*** | |
| ***Annual Reporting*** | |
| **5** | Every year from the date of this approval, unless the Director-General agrees otherwise, the Proponent shall submit an AEMR to the Director-General and relevant agencies. The AEMR shall:<br>a) identify the standards and performance measures that apply to the development;<br>b) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;<br>c) include a summary of the monitoring results for the development during the past year;<br>d) include an analysis of these monitoring results against the relevant:<br>• Impact assessment criteria;<br>• Monitoring results from previous years; and<br>• Predictions in the EIS;<br>e) identify any trends in the monitoring results over the life of the development;<br>f) identify any non-compliance during the previous year; and<br>(a) describe what actions were, or are being taken to ensure compliance. |

## 1.3 Responsibilities

- Environmental monitoring for the Facility was undertaken during this reporting period as by Woodlawn site staff as follows:
  - James Easterbrook (Woodlawn Environmental Officer) ï during the construction stage until December 2016;
  - Christian Chang (MBT Process Engineer) ï during the construction and operational stages; and
  - Harneet Puarr (Woodlawn Environmental Officer) ï during the operational stage.
- Analyses of samples were performed at Australian Laboratory Services Pty Ltd (ALS), which is a NATA accredited laboratory.
- An independent noise audit was conducted by SLR Consulting Australia Pty Ltd (SLR) in October 2017. The audit team associated with this noise assessment included Mark Blake and John Sleeman. The audit team was approved by the DPE, in accordance with Schedule 3, Condition 28 of the Consent.

# Section 2

*Facility Development Overview*

# SECTION 2 FACILITY DEVELOPMENT OVERVIEW

## 2.1 Approvals

Project approval (PA 06_0239) for the Facility was granted by the DPE, on 6 November 2007, for the development, construction and operation of a mixed waste organic outputs producing facility with a limit of 240,000 TPA of mixed waste and 40,000 TPA of garden waste.

Stage 1 of the Facility has been constructed with a capacity to process 184,000 TPA, including 144,000 TPA of mixed waste and 40,000 TPA of garden waste.

An Environment Protection Licence (EPL) 20476 was issued by the NSW EPA on 22 December 2014 to permit construction and was subsequently modified to regulate the operational activities conducted at the Facility.

## 2.2 Construction Stage

Veolia prepared a Construction Environmental Management Plan (CEMP) to satisfy regulatory requirements and provide control measures for key environmental issues for the Facility during the construction phase.

The CEMP was approved by the DPE on 8 August 2014 and detailed the management and control measures to be implemented by the Principal Contractor to manage the environmental performance. The document focused on water quality, waste, traffic, air quality, noise, landscape, vegetation, and site contamination management.

Lipman Pty Ltd (Lipman) was engaged as the Principal Contractor Facility and were responsible for implementing the management system for environmental performance for construction activities between 1 October 2015 ï 7 March 2017. No non-compliances with the Consent Conditions occurred during the construction stage of this report period.

## 2.3 Operation Stage

Veolia prepared the Operational Environmental Management Plan (OEMP) which was approved by the DPE on 24 January 2017. The OEMP is the working environmental management tool for the operation of the Facility, concentrating on management of soil, leachate, water quality, waste, air quality, and emergency response during the operational stage and details controls and monitoring criteria to manage the environmental performance during the operational stage.

No non-compliances with the Consent Conditions occurred during the operational stage of this reporting period.

In accordance with Condition 5 of Schedule 4 of the Consent, this AEMR includes a review of the monitoring results and complaint records, discussion on trends in monitoring data in relation to the environmental performance of the Facility against performance criteria and statutory requirements, which are provided in **Section 3**.

# Section 3

*Environmental Monitoring and Management*

# SECTION 3 ENVIRONMENTAL MONITORING AND MANAGEMENT

## 3.1 Monitoring Requirements

This section outlines both construction and operational monitoring requirements governing the environmental performance and activities undertaken at the Facility.

Monitoring was undertaken throughout the reporting period in accordance with the Environmental Monitoring Schedules/Programs as proposed within the CEMP and OEMP respectively.

In this reporting period, construction monitoring was conducted between 6 September 2016 ï 7 March 2017. Operational monitoring commenced 8 March 2017.

Environmental Monitoring Schedules/Programs provide details on all monitoring requirements of the Consent, EPL and other appropriate regulations to measure and assess the continuing suitability, adequacy and effectiveness of on-site environmental management measures.

**Tables 3-1** and **3-2** summarises the environmental monitoring conducted at the Terminal during its construction and operation. Routine inspections and housekeeping checks were also undertaken during this reporting period to ensure the designated environmental controls were effective.

During the construction stage, the environmental monitoring results showed that the construction of the Facility did not cause an increase in dust levels or surface water pollutants to off-site receivers. A summary of monthly monitoring results for the construction period are provided in Appendix B.

**Table 3-1 Construction Monitoring Requirements**

| Condition Ref | Type of Monitoring | Frequency | Commentary |
|---|---|---|---|
| Schedule 3, Condition 29 | Meteorological monitoring | Continuous | Ongoing, transitioned into operational phase as part of site housekeeping (refer Table 3.2) |
| Schedule 3, Condition 23 & 24<br><br>EPL Condition M2.2 | Depositional Dust Monitoring | Monthly | Ongoing, transitioned into operational phase as part of air quality monitoring (refer Table 3-2) |
| Schedule 3, Condition 25 and 26 | Construction & Traffic Noise Monitoring | As required | Not triggered as no noise complaints were received |

| | | | |
|---|---|---|---|
| Schedule 3, Condition 20<br><br>EPL Condition M2.3 | Surface Water Monitoring | Quarterly | Ongoing, transitioned into operational phase as part of water quality monitoring (refer Table 3-2) |
| EPL Condition L2.4 | Surface water discharge quality monitoring | Daily during any discharge | Ongoing, transitioned into operational phase as part of water quality monitoring (refer Table 3-2) |

**Table 3-2 Operational Monitoring Requirements**

| Condition Ref | Type of Monitoring | Frequency | Commentary |
|---|---|---|---|
| Schedule 3, Condition 29 | Meteorological monitoring | Continuous | Ongoing basis |
| Schedule 3, Condition 23 & 24<br><br>EPL Condition M2.2 | Depositional Dust Monitoring | Monthly | Ongoing basis |
| Schedule 3, Condition 25 & 26 | Operational noise monitoring | As required | Condition satisfied, monitoring conducted: 2 ï 3 October 2017 |
| Schedule 3, Condition 20<br><br>EPL Condition M2.3 | Surface Water Monitoring | Quarterly | Ongoing basis |
| EPL Condition L2.4 | Discharge Monitoring | Daily during any discharge | Ongoing basis |
| Schedule 3, Condition 20<br><br>EPL Condition M2.3 | Groundwater Quality Monitoring | Quarterly | Ongoing basis |
| Schedule 3, Condition 20<br><br>EPL Condition M2.3 | Leachate Monitoring | Six monthly | Ongoing basis |
| EPL Condition O5.3 | Leachate Level | Weekly or as required | Ongoing basis |
| Schedule 3, Condition 6<br><br>EPL Condition | Waste volume monitoring | Daily | Ongoing basis |

| | | | |
|---|---|---|---|
| L3.1 | | | |
| Schedule 3, Condition 9 | Site Inspection and Housekeeping | Weekly | Ongoing basis |
| Schedule 3, Condition 10 | Pest and Vermin Checks | Every two months | Ongoing basis |

### 3.1.1 MBT Facility Monitoring Points

The monitoring locations selected are reflected in EPL 20476. The monitoring type, sampling location, frequency and EPL ID for each of these licensed points are detailed in **Table 3-3** below.

**Table 3-3 - Details of MBT Licensed Monitoring Points**

| Monitoring Type | Sampling Location | Frequency | EPA Monitoring Point ID No. |
|---|---|---|---|
| **Meteorology** | Meteorological station located within Woodlawn Ecoprecinct | Continuous | 10 |
| **Air Quality** | Residential Receiver ï Pylara | Monthly | 4 |
| | Background receiver ï Woodlawn Eco Project ï West Void | Monthly | 6 |
| | Background receiver ï Woodlawn MBT Facility ï Lot 69 | Monthly | 7 |
| **Surface Water** | Site 115 ï Allianoyonyige Creek | Quarterly | 1 |
| **Discharge Monitoring** | Site 140 ï Discharge Point | Daily, during any discharge | 8 |
| **Groundwater Monitoring** | MB32 - Immediately down gradient of leachate aeration dam | Quarterly | 11 |
| **Leachate Monitoring** | Leachate aeration dam | Every 6 months | 12 |
| **Noise Monitoring** | Residential receiver ï Torokina | As required | 2 |
| | Residential receiver ï Willeroo | As required | 3 |

Monitoring data collected from the points described in **Table 3-3** have been tabulated and provided within the following sections.

## 3.2 Meteorology

A meteorological station, installed at the Eco Project Site, is utilised by the Facility to obtain continuous ambient weather conditions. The meteorological station was operating during the construction phase of this reporting period and will continue to operate while operations occur. The station allows sampling and analysis of the parameters specified in **Table 3-4** below, along with the standards and statutory requirements to collect and record this data.

During the reporting period, servicing and calibration of sensors was completed on a quarterly basis to ensure accuracy of data was maintained.

**Table 3-4 - Meteorological Data Parameters and Performance Measures**

| Parameter | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Wind Direction at 10 metres | Data correlated with other environmental monitoring results for Facility operations and complaint resolution | Am-2 & AM-4 | Schedule 3, Condition 29<br><br>EPL Condition M4.1 |
| Wind Speed at 10 metres | | AM-2 & AM-4 | |
| Sigma theta | | AM-2 & AM-4 | |
| Temperature at 10 metres | | AM-4 | |
| Temperature at 2 metres | | AM-4 | |
| Total Solar Radiation | | AM-4 | |
| Rainfall | | AM-4 | |

## 3.3 Air Quality

Air quality monitoring, pertaining to odour and dust emissions, was undertaken in accordance with the Consent to determine whether activities conducted at the facility impacted on ambient air quality. Further details regarding air quality monitoring and management practices during the construction and operation of the facility are provided in the following sections.

### 3.3.1 Dust Monitoring

Ongoing dust monitoring is carried out to monitor the dust deposition impacts of the project on the surrounding area. The following assessment criteria was used as per Schedule 3 Condition 23 of the Development Consent.

**Table 3-5- Dust Monitoring Parameters and Performance Measures**

| Parameter | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Total suspended particulate (TSP) matter | 90Õg/m3 | Approved methods for sampling and analysis of air pollutants in New South Wales (EPA) | Schedule 3, Condition 23 |
| Particulate matter < 10Õm (PM10) | 30Õg/m3 | | |
| Maximum increase in Deposited Dust Level | 2g/m2/month | | |
| Deposited Dust | 4g/m2/month | | |

Note: Deposited Dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air ï Determination of Particulates ï Deposited Matter ï Gravimetric Method.

Construction Phase

Results from the Environmental Assessment (EA) modelling of the Facility construction indicated that predicted particulate matter and depositional dust impacts from construction phase would be below the air quality goals for each parameter at residential receivers, showing a compliance with the regulatory requirements. Monitoring of PM10 and TSP is not an EPL requirement and would be monitored as required.

In accordance with the approved Monitoring Schedule in the CEMP and EPL conditions, monthly deposited dust samples were collected at two locations on site, as well as at the Pylara Farm, to assess the background dust levels and subsequently observe any changes that may occur as a result of the construction activities.

Depositional dust levels (as insoluble solids) at all three monitoring points (4, 6 and 7) generally ranged between 0.6 and 3.2 g/m2/month, with exception to dust levels recorded for Point 4 in January 2017 which recorded levels of 4.7 g/m2/month which was above the depositional dust limit.. Given that for the corresponding month there were no similar levels recorded at the dust gauges (Point 6 and 7) located within the proximity of the MBT facility, it can be inferred that this dust emission was not as a result of the MBT facility activities and can be treated as an outlier. Veolia infer that this result is due to activities such as mowing and/or recreational campfires in the immediate vicinity by visiting guests. Veolia proposed to move the dust gauge to a location approximately 100 metres from its current location.

No significant trends for the results of depositional dust monitoring were identified.

During this reporting period no dust complaints were received at the site.

**Table 3-6 - Deposited Dust (g/m$^2$/mth) Monitoring Results for Points 4, 6 & 7**

| Monitoring Location | Point 4 (Pylara) | | Point 6 (West Void) | | Point 7 (WMBT – Lot 69) | |
|---|---|---|---|---|---|---|
| Month | Total Solids | Insoluble Solids | Total Solids | Insoluble Solids | Total Solids | Insoluble Solids |
| Oct 2016 | 3.2 | 3.2 | 2 | 2 | 0.6 | 0.6 |
| Nov 2016 | 2.8 | 2.6 | 2.5 | 2.2 | 1.2 | 1.2 |
| Dec 2016 | 2.9 | 1.7 | 3.4 | 1.1 | 1 | 1 |
| Jan 2017 | 5.1 | 4.7 | 2.7 | 2.3 | 0.6 | 0.6 |
| Feb 2017 | 1.8 | 1.1 | 2.4 | 2 | 0.8 | 0.8 |

Operational Phase

As part of the EA, a comprehensive air quality (dust and odour) and greenhouse gas impact assessment was undertaken for the Facility to determine the potential impacts of dust, suspended particulate matter, odour and greenhouse gas emissions resulting from operations.

The modelling results predicted annual average PM10 concentrations were predicted to easily meet the EPA criterion of 30 εg/m3 when considering all sources during operation, with the MBT Facility itself providing a minor contribution of up to 1.6 εg/m3. Annual average TSP concentrations were also predicted to easily meet the EPA criterion of 90εg/m3 during the operation of the Facility. Operations will contribute up to 3.9 εg/m3 at any modelled receptor.

In accordance with the approved Monitoring Program in the OEMP, deposited dust monitoring continued to be conducted on a monthly basis at the three monitoring locations (Point 4, 6 and 7).

During the last reporting period, depositional dust levels (as insoluble solids) at all three monitoring points generally ranged between <0.2 and 4 g/m2/month and were all within the depositional dust criteria. During this reporting period no dust complaints were received at the site.

**Table 3-7 - Depositional Dust (g/m2/mth) Monitoring Results for Points 4,6 & 7**

| Monitoring Location | Point 4 (Pylara) | | Point 6 (West Void) | | Point 7 (WMBT – Lot 69) | |
|---|---|---|---|---|---|---|
| Month | Total Solids | Insoluble Solids | Total Solids | Insoluble Solids | Total Solids | Insoluble Solids |
| Mar 2017 | 4.1 | 3.9 | 1.3 | 0.9 | 0.4 | 0.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Apr 2017 | 0.09 | 0.09 | 0.9 | 0.9 | 0.3 | 0.3 |
| May 2017 | 0.8 | 0.8 | 1.9 | 0.6 | <0.2 | <0.2 |
| June 2017 | <0.2 | <0.2 | 0.4 | 0.4 | <0.2 | <0.2 |
| July 2017 | 2.4 | 2.4 | 0.5 | 0.5 | <0.2 | <0.2 |
| Aug 2017 | 8.6 | 4 | 1.5 | 0.5 | 0.2 | 0.2 |
| Sep 2017 | 2.1 | 2.1 | 0.8 | 0.8 | 0.4 | 0.4 |
| Oct 2017 | 1 | 1 | 3.4 | 3 | 0.5 | 0.5 |

### 3.3.2 Odour

Operational Phase

The air quality impact assessment (AIA) prepared by SLR, predicted that MBT Facility operations would comply with relevant air quality goals and are not expected to generate offensive or nuisance odours at nearby sensitive receivers.

The adopted odour criterion of 6 OU was predicted to be achieve at all receptors with the exception of the TriAusMin (now Heron) administration building, which was predicted to experience a 99th percentile odour concentration of 8.5 OU. This concentration was predicted to be dominated by the existing source of the Bioreactor, rather than the operation of the Facility, which was predicted to result in a 99th percentile concentration of 1.7 OU when modelled alone.

**Table 3-8 - Odour Emission Performance Criteria**

| Parameter | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Odour Emissions | 6 OU | German Standard VDI 3940 ôDetermination of Odorants in Ambient Air by Field Inspectionsô | OEMP |

The management of odour emissions from each of the proposed processing stages is maintained by the use of biofilters. Biofilters are pollution control mechanisms which use living material to biologically degrade and filter pollutants which may cause odours. These pollutants are absorbed into the biofilter material whereby it is broken down by microorganisms. Two biofilter odour control systems (OCS) are located adjacent to the processing areas at the Site.

No odour complaints were received in this reporting period.

## 3.4 Water Monitoring

### 3.4.1 Surface Water Monitoring

Quarterly surface water monitoring is carried out to monitor any potential surface water impacts of the project on the surrounding area. Details of monitoring parameters and provided in **Table 3-9** as per EPL Conditions.

**Table 3-9 - Surface Water Monitoring Parameters and Performance Measures**

| Parameters | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Ammonia (NH3), Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO) Electrical Conductivity (EC), pH, Potassium, Redox Potential, Total Dissolved Solids (TDS), Total Organic Carbon (TOC) | Monitoring trends and data analysis | Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales | EPL Condition M2.3 |

Baseline data for surface water has been obtained from historical water quality monitoring undertaken for monitoring location Site 115 - Allianoyonyiga Creek between September 2006 and September 2016. Baseline data shows historical pollutant concentration trends as outlined in **Table 3-10**.

**Table 3-10 - Surface Water Baseline Data**

| Pollutant | Site 115 - Allianyonyige Creek |
|---|---|
| | Baseline |
| NH3 | 0.1 mg/L |
| BOD | 2.94mg/L |
| DO | 8.5mg/L |
| EC | 240 - 4360 uS/cm |
| pH | 6.7 - 8.6 |
| Potassium | 3.09mg/L |
| Redox Potential | 119mV |
| TDS | 250 - 3820mg/L |
| TOC | 14.67mg/L |
| TSS | 258mg/L |

Construction Phase

Surface water monitoring as per **Table 3-9**, was conducted at the facility to determine whether surface water flowing offsite could be contaminated as a result of construction activities. One monitoring round was conducted on 26 September 2016 (refer to **Table 3-11** for results). Ammonia and Biological Oxygen Demand (BOD) were detected below their limits of reporting (LOR) of <0.1 and <2mg/L respectively. All parameters monitored remained relatively consistent with or below to historical concentrations.

**Table 3-11 - Surface Water Monitoring Results for Point 1 during Construction**

| Pollutant | Site 115 - Allianyonyige Creek |
|---|---|
| | 26/09/2016 |
| NH3 | <0.1mg/L |
| BOD | <2mg/L |
| DO | 9.49mg/L |
| EC | 1910ÕS/cm |
| pH | 8.16 |
| Potassium | 1mg/L |
| Redox Potential | 238mV |
| TDS | 1310mg/L |
| TOC | 17mg/L |
| TSS | 9mg/L |

Operational Phase

Surface water monitoring was conducted at the WMBT Facility as per **Table 3-9** to determine whether surface water flowing offsite could be contaminated as a result of composting operations.

Only one monitoring round was conducted in the operational phase of the reporting period as a result of low frequency and volume of rainfall (Refer to

**Table 3-12** for results). All parameters were consistent or lower than baseline averages. Similar to historical trends, Ammonia and Biological Oxygen Demand (BOD) were detected below their limits of reporting (LOR) of <0.1 and <2mg/L respectively.

**Table 3-12 - Surface Water Monitoring Results for Point 1 during Operations**

| Pollutant | Site 115 - Allianyonyige Creek |
|---|---|
| | 8/08/2017 |
| NH3 | <0.1mg/L |
| BOD | <2mg/L |
| DO | 10.75mg/L |
| EC | 3720ÕS/cm |
| pH | 7.67 |
| Potassium | 1.3mg/L |
| Redox Potential | 286mV |
| TDS | 2600mg/L |
| TOC | 14mg/L |
| TSS | 4mg/L |

### 3.4.2 Discharge Monitoring

Surface water discharge monitoring is conducted at the facility to determine whether surface water flowing offsite could be contaminated as a result of construction or operational activities. The results of discharge monitoring are assessed against discharge limits stipulated within the Consent and EPL 20476 which are described in **Table 3-13**.

**Table 3-13 - Discharge Parameters and Performance Measures**

| Parameter | Performance Measure | Standards | Statutory Requirements |
|---|---|---|---|
| pH | 6.5 ï 8.5 | Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales | EPL Condition L2.4 |
| Total Suspended Solids (TSS) | 50 mg/L | | |

Construction Phase

There was a low frequency and volume of rainfall events during the construction and operational stage of the last reporting period, which resulted in no discharge events occurring at Site 140.

Operational Phase

Condition 19 of the Consent states the stormwater retention pond must capture and store all stormwater runoff generated at the premises during a 24-hour duration 1-in-100-year Average Recurrence Interval (ARI) rainfall event. Following the commencement of operations the Facility must ensure it maintains a closed water management system, which ensures no discharge to the downstream environment.

Since operations commenced in March 2017, no discharge events were recorded at Site 140 indicating compliance with this condition.

### 3.4.3 Groundwater Monitoring

Groundwater monitoring tests for specific chemicals of concern including ammonia, potassium and total organic carbon (TOC) as key indicators for leachate migration as required in the EPL conditions (See Table 3-14).

**Table 3-14 Groundwater Monitoring Parameters and Performance Criteria**

| Parameters | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Ammonia (NH3), Electrical Conductivity (EC), pH, Potassium, Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Lead, Sulfate, Zinc | Monitoring trends and data analysis | Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales | EPL Condition L2.4 |

Construction Phase

No groundwater monitoring was required during construction as no potential risk to groundwater quality was identified as part of the construction works.

Operational Phase

The new ground water monitoring well was installed on 25 January 2017, immediately down gradient of the leachate aeration pond (please refer to the **Appendix A** for monitoring location) to enable the monitoring and detection of any leachate migration from the dam to the underlying groundwater.

Following the installation of the monitoring well, one baseline monitoring round was conducted in February 2017 to classify the general characteristics of groundwater encountered at the site prior to operations, as stipulated in the EPL. Since the commencement of composting operations, two quarterly monitoring rounds were undertaken where all results were consistent with baseline quality results. All groundwater results can be found in **Appendix C**.

### 3.4.4 Leachate Monitoring

Operational Phase

To determine the characterisation of the leachate generating from the composting operations, a baseline needs to be established. As per the EPL requirements, one round of leachate monitoring was undertaken in May 2017. Further monitoring data collected over the next reporting periods will contribute to understanding this profile. The monitoring results from this period are provided in **Appendix D.**

**Table 3-15 Leachate Monitoring Parameters and Performance Criteria**

| Parameters | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Alkalinity (as calcium carbonate), Aluminium, Ammonia, Arsenic, Barium, Benzene, Cadmium, Calcium, Chloride, Chromium (hexavalent), Chromium (total), Cobalt, Copper, Electrical Conductivity, Ethyl benzene, Fluoride, Iron, Lead, Magnesium, Manganese, Mercury, Nitrate, Nitrite, Organochlorine Pesticides, Organophosphate Pesticides, pH, Phosphorus (total), Polycyclic aromatic hydrocarbons, Potassium, Sodium, Sulfate, Toluene, Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Total petroleum hydrocarbons, Total Phenolics, Total suspended solids (TSS), Xylene, Zinc | Monitoring trends and data analysis | Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales | EPL Condition L2.4 |

In addition to chemical testing, the level of the water in the leachate aeration pond is also visually monitored on a weekly basis and after every rainfall event to ensure the freeboard is not exceeded as per Condition O5.3 of the EPL.

## 3.5 Noise Monitoring

Construction and operational activities at the Facility were restricted within the approved operating/construction hours described in **Table 3-16** as per Schedule 2, Condition 27 of the Consent.

**Table 3-16 - Approved Hours of Construction & Operation**

| Activity | Day | Hours |
|---|---|---|
| Construction Hours | Monday ï Friday | 7:00am-6:00pm |
| | Saturday | 7:00am-1:00pm |
| | Sunday & Public Holidays | Nil |
| Operation Hours | Monday ï Saturday | 6:00am ï 10:00pm |
| Emergency Hours | Monday ï Sunday | Anytime |

Note: Operation of BRS Drums and associated infrastructure is permitted over 24 hours.

Noise limits are stipulated in the Consent to ensure the site does not generate nuisance noise emissions as a result of construction or operational activities.

**Table 3-17 - Noise Impact Assessment Criteria dB(A)**

| Parameter | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Residences on privately owned land (during construction) | Laeq (15min) = 40dB | NSW Industrial Noise Policy (EPA) | Schedule 3, Condition 25 |
| Residences on privately owned land (during operations) | Laeq (15min) = 35 dB | | |
| Traffic Noise on privately owned land | Laeq (1 hour) = 60dB | Environmental Criteria for Road Traffic Noise (DECC) | Schedule 3, Condition 26 |

Construction Phase

No exceedance in noise impact above background levels from construction noise emissions was anticipated as per the EA findings. During construction, noise control measures were followed as outlined in the Construction Noise Management Plan. Construction activities at the site were also restricted within the approved operating/construction hours described in **Table 3-16** as per Schedule 2, Condition 27 of the Consent.

No noise monitoring was undertaken during the construction phase as no noise complaints were received.

Operational Phase

SLR Consulting was engaged to conduct operational noise monitoring to conduct a noise audit of the Woodlawn Mechanical Biological Treatment Facility, to determine if any impact of operational activities on nearby receivers occurs in regards to the emission of nuisance noise.

**Operational Noise**

Ambient noise measurements were conducted at the two locations as identified as the nearest residences on privately owned land, as specified in Condition 25 of the Consent. The results of the operator-attended measurements confirm the noise impact assessment criteria (Refer to **Table 3-17**) is complied with at the nearest residences on privately-owned land, with LAeq(15minute) noise levels recorded below 35 dBA at both locations. The operator-attended measurements also recorded levels higher than LAeq(15minute) 35 dBA, and in these instances the ambient noise environment was due to natural sounds such as birds, insects and frogs.

**Traffic Noise**

Traffic noise levels were calculated at the nearest residence to the road between the Crisps Creek Intermodal Terminal and Woodlawn MBT, for comparison with the Traffic Noise Impact Assessment Criteria specified in the approval. The results of the operator-attended measurements and calculation confirm the Project Approval (06_0239) noise criteria is complied with at the nearest residence on privately-owned land.

A copy of the noise audit report was submitted to the DPE on the 6 December 2017. The performance of the Facility in managing potential noise emissions was also assessed on the receipt of any noise complaints. No noise complaints were received in this reporting period.

## 3.6 Waste Monitoring

A Waste Receipt and Vehicle Control Plan (WRVCP) was prepared which details waste management infrastructure, system and procedures implemented during the operational phase of the Facility.

All waste received at the Facility was recorded in PWS (Paper-less Weighbridge System) system. PWS records vehicle registrations, the date and time of delivery, the gross and tare weight of the vehicle, as well as the waste type and source of the waste delivered to the site.

### 3.6.1 Waste Acceptance and Screening

Waste was screened in accordance with the NSW Resource Recovery Screening and Recording of Waste Procedure at the Clyde Transfer Terminal and Banksmeadow Transfer Terminal sites before the loading of waste into containers for the transportation to the Facility. If any waste is detected that is not acceptable through the screening process, it is rejected and cannot be loaded into the containers.

Once the waste is received at the Facility, the operator of the grapple crane inspected the waste as it is discharged from the vehicle, to check for non-conforming waste. In the event that easily extractable, bulk recyclable waste was detected this waste was separated from the general waste stream and set aside for removal from the facility to another facility licensed to receive this type of waste for processing or recycling. This includes waste types identified as less desirable to processing operations. No records of non-conforming waste were recorded during this reporting period.

### 3.6.2 Waste Volume Monitoring

Schedule 3, Condition 2 of the Consent stipulates that the Facility must not receive or process more than 240,000 TPA of mixed waste and 40,000 TPA of garden waste. Under the Facility operations (Stage 1), the site is approved to accept and treat 184,000 TPA, which includes 144,000 TPA of mixed waste and 40,000 TPA of garden waste. The WRVCP details the Waste Monitoring Program used to monitor and record incoming waste at the Facility. The performance measures for the waste volumes are detailed in **Table 3-18.**

**Table 3-18 - Stage 1 Waste Parameters and Performance Measures**

| Parameter | Performance Measure | Standards | Statutory Requirement |
|---|---|---|---|
| Mixed waste | 280,000 TPA | NSW EPA Waste Classification Guidelines | Schedule 3, Condition 2 |
| Garden waste | 40,000 TPA | | |

Veolia utilised the data provided by PWS to track and monitor the amount of incoming waste transported by rail to Crisps Creek Intermodal Facility and transferred to the Facility. **Table 3-19** indicates that the Facility has remained within the annual waste limit stipulated within the Consent. Veolia shall continue to monitor incoming waste tonnages at the Facility for the following operational year.

**Table 3-19 - Incoming Waste Tonnages during Operations (8 Mar 2017 – 6 Nov 2017)**

| Source | Waste Type | Total TPA |
|---|---|---|
| Banksmeadow Transfer Terminal | Mixed Waste | 36,776 |
| Clyde Transfer Terminal | Mixed Waste | 13,803 |
| | TOTAL | 50,579 |

**Table 3-20 - Outgoing Waste Tonnages during Operations (8 Mar 2017 – 6 Nov 2017)**

| Source | Waste Type | Total TPA |
|---|---|---|
| Woodlawn MBT | Mixed Waste - Non Putrescible | 29,759 |
| | Ferrous or Non Ferrous Metal | 13 |
| | Compost (plus process loss) | 20,807 |
| | TOTAL | 50,579 |

## 3.7 Pests, Vermin and Litter Control

Operational Phase

Litter control for the Facility was carried out in accordance with Veolia's Housekeeping and Inspection Procedure which provides guidance on litter management on Veolia sites. Inspection was undertaken by the Facility Manager and/or operators daily to ensure the items on site specific inspection checklists are undertaken as part of the site's housekeeping requirements, which determines the effectives of the measures.

The potential for the spread of small insects, disease and weed seeds from the Facility will be limited through appropriate management techniques in the waste processing building and outdoor operations area. The composting organic material, which may contain insect eggs or larvae, weed seeds and spores, will be subject to temperatures in excess of 55 degrees for at least three days. This will ensure that potential pests and diseases within the waste stream are destroyed, and will thereby be prevented from spreading throughout the local area. The following table identifies the housekeeping undertaken at the Facility to manage pest, vermin and litter.

**Table 3-21 - Pest, Vermin and Litter Performance Measures**

| Parameter | Performance Measure | Standard | Statutory Requirement |
|---|---|---|---|
| Litter Control | Visual Inspection | Veolia National Integrated Management System | Schedule 3, Condition 9 |
| Vermin, Pest and Noxious Weed Management | | | Schedule 3, Condition 10 |

No pest and/or vermin complaints or management issues were reported during the operation of the Facility during the reporting period.

# Section 4

*Environmental Performance*

# SECTION 4 ENVIRONMENTAL PERFORMANCE

The environmental performance of the Facility is assessed through the results of environmental monitoring and internal inspections and any complaints received.

A discussion of improvement strategies are provided within this section.

## 4.1 Previous Non-Conformances and Findings

In the previous (2015 - 2016) reporting period, there were no non-conformances with the conditions of Development Consent identified and no complaints received in this reporting period.

## 4.2 Current Non-Conformances and Corrective Actions

There were no non-conformances with the Consent Conditions identified and no complaints received in this (2016 ï 2017) reporting period. One improvement to the environmental management of the Facility was implemented during this reporting period, refer to Table 4-1 for details.

**Table 4-1 – Improvement Strategies during 2016-2017**

| Item No. | Improvement Strategy | Completed Action |
|---|---|---|
| 1. | Based on feedback from EPA, Veolia was required to incorporate a groundwater monitoring program at the WMBT site. | Earth2Water Pty Ltd (E2W) installed a new groundwater well on 25 January 2017, immediately down gradient of the leachate aeration pond to enable the monitoring and detection of any leachate migration. |

## 4.3 Conclusion

Based on a review of the Facilityôs environmental monitoring results, its environmental performance is positive. In addition to this, no complaints have been received. The Facility will continue to focus on optimising the performance of operations to ensure all requirements of the Consent and EPL are maintained.

# REFERENCES

1. NSW Environmental Protection Authority. (2006). *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.*
2. NSW Environmental Protection Authority. (2004). *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales.*
3. Umwelt Environment Consulting. (2006). *Environmental Assessment: Woodlawn Expansion Project Volume 1 – Main Report.*
4. Veolia Environmental Services. (2013). *Environmental Assessment: Woodlawn Mechanical Biological Treatment Facility.*
5. Veolia Environmental Services. (2014). *Construction Environmental Management Plan*
6. Veolia Environmental Services (2016). Mechanical Biological Treatment Facility Annual Environmental Monitoring Report. Veolia. November 2016.
7. Veolia Environmental Services. (2017). *Operational Environmental Management Plan*

# APPENDICES

## Appendix A - Site Plan

MGA

TO COLLECTOR

1
DP 180491

Pt 97
DP 754919

COLLECTOR

MB13
E 731858 N 6118412

EPL 20476 POINT 1
ALLIANOYONYIGA CREEK
E 731952 N 6118394

MB12
E 732775 N 6118274

MB11
E 732774 N 6118272

34
DP 754919

5
DP 830765

Pt 97
DP 754919

4
DP 830765

33
DP 754919

EXISTING EVAPORATION
DAM 2

Pt 6
DP 830765

EPL 20476 POINT 8
DISCHARGE MONITORING
E 7332919 N 6117841

SITE BOUNDARY 4
E 732768 N 6117847

EXISTING
DRAINAGE
CHANNEL

EXISTING EVAPORATION
DAM 1

EPL 20476 POINT 11
MB32 GROUNDWATER
E 733079 N 6117706

SITE BOUNDARY 3
E 733099 N 6117702

APPROVED
BOUNDARY

APPROVED
BOUNDARY

EPL 20476 POINT 12
LEACHATE AERATION POND
E 733062 N 6117682

MBT
FACILITY

PROPOSED STAGE 2
DEVELOPMENT

STORMWATER
PONDS

SITE BOUNDARY 1
E 732639 N 6117576

WM6
E 733346 N 6117412

30
DP 754919

EXISTING EVAPORATION
DAM 3

SITE BOUNDARY 2
E 732889 N 6117451

MB7
E 733204 N 6117329

69
DP 754919

SITE ENTRY 1
E 733306 N 6117398

5
DP 830765

EPL 20476 POINT 6
WEST VOID
E 733866 N 6117237

91
DP 754919

88
DP 754919

Pt 6
DP 830765

ROAD

21
DP 827588

TO TARAGO

ACCESS ROAD TO SITE
(CONSTRUCTION STAGE ONLY)

MAIN FACILTY
ACCESS

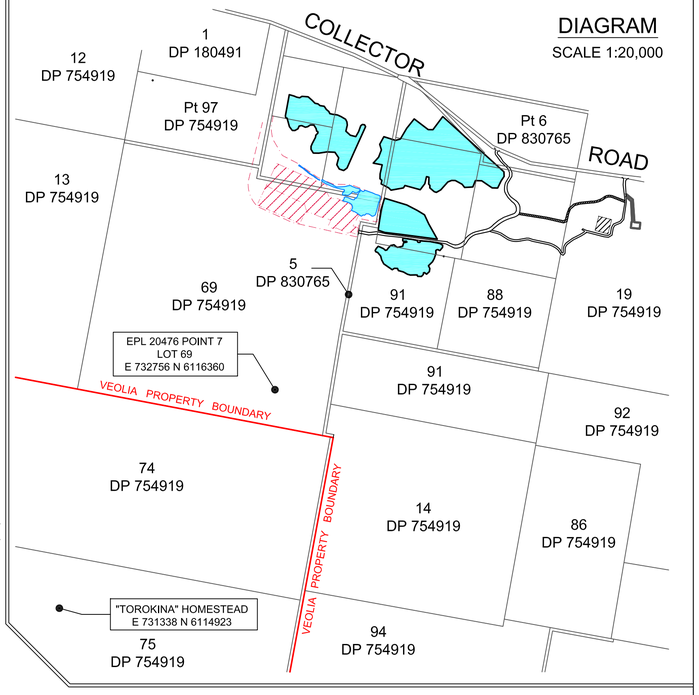
PERMANENT SITE
ACCESS

EXISTING
ADMINISTRATION
BUILDING

25
DP 754919

2
DP 1179305

## DIAGRAM
SCALE 1:20,000




| POINT | EASTING | NORTHING |
|---|---|---|
| SITE ENTRY 1 | 733306 | 6117398 |
| SITE BOUNDARY 1 | 732639 | 6117576 |
| SITE BOUNDARY 2 | 732889 | 6117453 |
| SITE BOUNDARY 3 | 733099 | 6117702 |
| SITE BOUNDARY 4 | 732768 | 6117847 |
| EPL 20476 POINT 1 ALLIANOYONYIGA CREEK | 731952 | 6118394 |
| EPL 20476 POINT 6 WEST VOID | 733866 | 6117237 |
| EPL 20476 POINT 7 LOT 69 | 732756 | 6116360 |
| EPL 20476 POINT 8 DISCHARGE MONITORING | 732919 | 6117841 |
| EPL 20476 POINT 11 MB32 GROUNDWATER | 733079 | 6117706 |
| EPL 20476 POINT 12 LEACHATE AERATION POND | 733062 | 6117682 |
| MB7 | 733204 | 6117329 |
| MB11 | 732774 | 6118272 |
| MB12 | 732775 | 6118274 |
| MB13 | 731858 | 6118412 |
| WM6 | 733346 | 6117412 |
| "TOROKINA" HOMESTEAD | 731338 | 6114923 |

VEOLIA ENVIRONMENTAL SERVICES

A1 SHEET

SCALE 1:4000

0 80 160 240 320 400
Metres



| ISSUE | AMENDMENT | DRAWN | DATE |
|---|---|---|---|
| A | INITIAL ISSUE | MK | 12/09/2014 |
| B | MONITORING POINT AMENDMENTS | MK | 17/09/2014 |
| C | GENERAL REVISION & AMENDMENTS | MK | 6/02/2017 |
| D | LEACHATE AERATION POND ENHANCED | MK | 8/02/2017 |
| E | DISCHARGE MONITORING POINT & MB32 AMENDED | MK | 15/02/2017 |
| F | STORMWATER PONDS ADDED | MK | 20/02/2017 |

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LandTeam

VEOLIA ENVIRONMENTAL SERVICES

WOODLAWN BIOREACTOR
AND MBT FACILITY
COLLECTOR ROAD, TARAGO

PLAN SHOWING SITE LAYOUT AND
ENVIRONMENTAL MONITORING POINTS
WOODLAWN MBT FACILITY
COLLECTOR ROAD, TARAGO

DRAWN: MK
CHECKED: JK
APPROVED: VEOLIA
ISSUE F
DRAWING No. 204543-30

DATUM N/A | CONTOUR INTERVAL N/A | DATE 20/02/2017

J:\Surveyors\Jobs\Veolia\204543 WASP Detail\CAD\204543-30 MBT Facility Plans Issue F.dwg

# Appendix B – Construction Monitoring Summary Reports

# Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 31 October 2015 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

## A. Project progress

Construction activity on site began with site set up, commencement of bulk and some detailed excavation, sedimentation ponds and fermentation concrete pads commencing. The silt fence erection and site run off controls were put in place for the work undertaken.

## B. Monitoring summary

Depositional Dust monitoring was undertaken during this reporting period.

## C. Monitoring data

Below are the results from the depositional dust monitoring for this period:

**Point 4,6,7: Depositional Dust**

| Location | Unit | October 2015 |
|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 |
| Point 6 (West Void) | g/m2/mth | 5.4 |
| Point 7 (WMBT) | g/m2/mth | No data |

## D. Concentration limits exceedances

Not applicable.

## E. Response to concentration limit exceedances

Not applicable.

## F. Licence non-compliances and investigations

No non-compliances or investigations were recorded.

# Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 30 November 2015 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

## A. Project progress

- Bulk excavation is progressing well with approx. 75,000m3 cut to full completed to date.
- Fermentation, Buffer, Refining and Drum pads trimmed to level.
- Reception pit 95% excavated with remainder in rock to compete, this includes for the additional 20% building expansion depth.
- Pad footings are complete to the first stage of the Fermentation building, Organic Buffer Building at 75% complete to the Refining Building.
- Piling for the BRS Drum pads is complete.
- Pad footings to the BRS Drums is 40% complete.
- Sediment controls setup complete and are being continually monitored.
- The ponds road bore cross is complete.
- In ground services across the project are 50% complete.
- Structural steel erection for the Fermentation Building has commenced.
- Materials from the BRS drum containers has been removed, with sorting and pre-assembly

Project approximately 10% complete.

## B. Monitoring summary

Depositional Dust monitoring was undertaken during this reporting period.

## C. Monitoring data

Below are the results from the depositional dust monitoring for this period:

### Point 4,6,7: Depositional Dust (g/m2/mth)

| Location | Unit | October 2015 | November 2015 |
|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 |
| Point 7 (WMBT) | g/m2/mth | No data | No data |

## D. Concentration limits exceedances

Not applicable.

## E. Response to concentration limit exceedances

Not applicable.

## F. Licence non-compliances and investigations

No non-compliances or investigations were recorded.

# Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 31 December 2015 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

## A. Project progress

- Bulk excavation is progressing well with approx. 85,000m3 cut to full completed to date.
- Reception pit excavated and reinforcement 70% tied.
- Pad footings are complete to the second stage of the Fermentation building.
- Main pad footings to the BRS Drums is complete.
- Sediment controls include V drains and are being continually monitored.
- The ponds road bore cross is complete.
- In ground services across the project are 50% complete.
- Structural steel erection for 50% of Fermentation & Organic Buffer complete.
- Structural steel erection for Refining Building commenced early January.
- Precast panels for Organic Buffer to be installed early January.
- Pre-assembly of materials from BRS drum containers progressing.
- Ponds road widening complete with monitoring now commenced.
- Construction of the haul road to commence early January.

Project approximately 17% complete

## B. Monitoring summary

A new depositional dust gauge was installed on 1 December 2015 to establish monitoring from Point 7 (Background receiver – Woodlawn Eco Precinct – Lot 69). This new monitoring site has been named 'DG33' internally.

## C. Monitoring data

Below are the results from the depositional dust monitoring for this period:

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Unit | October 2015 | November 2015 | December 2015 |
|---|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 | 0.6 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 | 5.8 |
| Point 7 (WMBT) | g/m2/mth | No data | No data | 0.8 |

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## D. Concentration limits exceedances

Not applicable.

## E. Response to concentration limit exceedances

Not applicable.

## F. Licence non-compliances and investigations

No non-compliances or investigations were recorded.

# Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 31 January 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

## A. Project progress

- Bulk excavation is progressing well with approx. 90,000m3 cut to full competed to date, back fill to Reception pit, mat pad and haulage road areas continuing.
- Sediment controls include V drains and are being continually monitored.
- HV pole installation commenced along the haulage road
- Reception pit base slab pour complete.
- Reception pit first wall lift commenced.
- Drum pre-assembly, rear frame structures and girth gear continuing.
- Drum lift studies and drum lifting delivery sequencing complete
- Drum main footing survey recording ongoing – no compliance issues to report
- Refining building structural steel and precast walls complete.
- Refining building roof cladding commenced.
- Organic Buffer precast walls complete
- Organic Buffer building roof cladding and roof safety system complete.
- Organic Buffer building push wall formwork commenced.
- Structural Steel to the second stage of the Fermentation building commenced.
- Fermentation building maintenance corridor ground slab concrete works commenced.
- Preparation has commenced for the installation of the BRS Drum trunnions, with install to commence mid February.
- In ground services site wide are 50% complete.
- Ponds road monitoring complete ready for installation of next layer of dolerite.

Project now approximately 23 % complete

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## B. Monitoring summary

Depositional Dust monitoring was undertaken during this reporting period.

## C. Monitoring data

Below are the results from the depositional dust monitoring for this period:

**Point 4,6,7: Depositional Dust**

| Location | Unit | Oct 2015 | Nov 2015 | Dec 2015 | Jan 2016 |
|---|---|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 | 0.6 | 1.3 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 | 5.8 | 10 |
| Point 7 (WMBT) | g/m2/mth | No data | No data | 0.8 | 0.9 |

## D. Concentration limits exceedances

Not applicable.

## E. Response to concentration limit exceedances

Not applicable.

## F. Licence non-compliances and investigations

No non-compliances or investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 February – 29 February 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project progress

- ♣ Haul road bulk excavation complete with first layer of road base down
- ♣ Sediment controls including V drains and are being continually monitored and an area of sedimentation control outflow was identified and rectified by the use of hay bales.
- ♣ HV pole installation complete, overhead cable installation commenced
- ♣ Reception pit second lift complete, backfilling and first ring beam commenced.
- ♣ Drum pre-assembly, rear frame structures and girth gear continuing.
- ♣ Drum trunnion alignment for 3 & 4 complete, temporary stand setup commenced
- ♣ Refining wall cladding 85% complete.
- ♣ Refining slabs have been poured, switch room and workshop remain.
- ♣ Organic Buffer building push wall formwork commenced.
- ♣ Organic Buffer building push wall reinforcement installation 75% complete.
- ♣ Structural Steel to the second stage of the Fermentation building complete.
- ♣ Fermentation building maintenance corridor ground slab concrete works ongoing, mid height walls continuing and FRP works to push wall commenced.
- ♣ In ground services site wide are 75% complete.

Project approximately 31 % complete

### B. Monitoring summary

1 round of depositional dust and surface water monitoring was undertaken in February. A rainfall event on 1 February created flow and both Point 8 (Site 140) and point 1 (Site 115) were sampled. The depositional dust results for February have not been received back from the laboratory as yet (submitted 02/03/2016).

### C. Monitoring data

**Point 1: Site 115**

| Analyte | Unit | 1/02/2016 |
|---|---|---|
| Ammonia | mg/L | <0.1 |
| Biochemical Oxygen Demand | mg/L | <2 |
| Dissolved Oxygen | mg/L | 6.79 |
| Electrical Conductivity | µS/cm | 2910 |

| | | |
|---|---|---|
| pH | pH | 7.96 |
| Potassium | mg/L | 5 |
| Redox Potential | mV | 300 |
| Total Dissolved Solids | mg/L | 2470 |
| Total Organic Carbon | mg/L | 19 |
| Total Suspended Solids | mg/L | <2 |

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Unit | Oct 2015 | Nov 2015 | Dec 2015 | Jan 2016 |
|---|---|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 | 0.6 | 1.3 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 | 5.8 | 10 |
| Point 7 (WMBT) | g/m2/mth | No data | No data | 0.8 | 0.9 |

**Point 8: Site 140**

| Analyte | Unit | 1/02/2016 |
|---|---|---|
| pH | mg/L | 8.13 |
| Total Suspended Solids | mg/L | 225 |

## D. Concentration limits exceedances

The concentration limit for TSS was exceeded at Point 8 (site 140). TSS was also tested at Point 1 which is located downstream of Point 8 on the boundary of the Woodlawn Bioreactor site. The result for TSS at Point 1 was <2mg/L demonstrating that there was no elevated discharge from the site.

**Point 8: Site 140**

| Analyte | Concentration limit | Unit | 1/02/2016 |
|---|---|---|---|
| Total Suspended Solids | 50 | mg/L | 225 |

## E. Response to concentration limit exceedances

Veolia have engaged Lipman, the project managers to install a hay bale sedimentation trap at Point 8 to reduce and/or eliminate unfiltered discharge from the construction site.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 March – 31 March 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project progress

- Haul road base complete, carpark works to commence in April.
- Sediment controls include V drains and are being continually monitored.
- HV overhead cable installation 85% complete
- Reception pit third lift complete, ring beam 2 pour 2 works have commenced.
- BRS drum pedestals complete.
- Drum pre-assembly, rear frame structures and girth gear continuing.
- Drums 4 welding commenced.
- Drum 3 alignment complete.
- Drum 4 & 3 temporary stand setup ongoing.
- Drum trunnion alignment for 1 & 2 ongoing.
- Refining building wall cladding 95% complete.
- Refining building structural works complete.
- Organic Buffer building structural works complete, cladding 95% complete.
- Fermentation Building cladding 60% complete.
- Fermentation building push walls 55% complete, main building slabs to commence in April.
- Fermentation odour duct installation commenced
- In ground services for the site are 95% complete.

Project approximately 43 % complete

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in March.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Unit | Oct 2015 | Nov 2015 | Dec 2015 | Jan 2016 | Feb 2016 |
|---|---|---|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 | 0.6 | 1.3 | 0.4 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 | 5.8 | 10 | 9 |
| Point 7 (WMBT) | g/m2/mth | No data | No data | 0.8 | 0.9 | 0.7 |

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## D. Concentration limits exceedances

No concentration limits were exceeded during the reporting period.

## E. Response to concentration limit exceedances

Lipman, the project managers for the WMBT project have installed a silt fence sedimentation trap at Point 8 to reduce and/or eliminate unfiltered discharge from the construction site.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 April – 30 April 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project progress

- Haul road base complete and work commenced on facility internal roads
- Sediment controls include V drains and are being continually monitored.
- HV overhead cable installation complete preparing for testing
- Reception pit complete, structural steel commenced.
- BRS drum pedestals complete.
- Drum pre-assembly, rear frame structures and girth gear continuing.
- Drums 4 welding 90% complete repair painting to commence
- Drum 3 welding 80% complete.
- Drum 1 & 2 temporary stand set up to commence
- Drum trunnion alignment for 1 & 2 complete.
- Refining building wall cladding complete apart from equipment install gap.
- Organic Buffer building structural works complete, cladding complete.
- Fermentation Building cladding 90% complete.
- Fermentation building push walls 95% complete, aero grates commenced.
- Fermentation odour duct installation 90% commenced
- In ground services for the site are complete.
- Trommels, Ballistic separators and conveyors delivered to sit for installation in the from BRS Drums to the Refining Building.

**Project approximately 58 % complete**

## B. Monitoring summary

1 round of depositional dust monitoring was undertaken in April (laboratory results pending). No surface water monitoring was conducted due to insufficient rainfall.

## C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Unit | Oct 2015 | Nov 2015 | Dec 2015 | Jan 2016 | Feb 2016 | Mar 2016 |
|---|---|---|---|---|---|---|---|
| Point 4 (Pylara) | g/m2/mth | 1.8 | 5.7 | 0.6 | 1.3 | 0.4 | 2.4 |
| Point 6 (West Void) | g/m2/mth | 5.4 | 5.5 | 5.8 | 10 | 9 | 11 |
| Point 7 (WMBT) | g/m2/mth | No data | No data | 0.8 | 0.9 | 0.7 | 2 |

## D. Concentration limits exceedances

No concentration limits were exceeded during the reporting period.

## E. Response to concentration limit exceedances

No concentration limits were exceeded during the reporting period.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 May – 31 May 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project progress

- Haul road base complete, Veolia car park works/ changes to commence in June subject to design finalisation.
- Sediment controls include V drains and are being continually monitored.
- Reception building precast 85% complete.
- Reception structural steel 90% complete.
- Drum assembly, rear frame structures and girth gear continuing all 4 drums
- Defects rectification commence in Refining Building.
- Defects rectification commenced in Organic Buffer.
- Fermentation building cladding 95% complete.
- Fermentation slab installation 60% complete.
- Fermentation odour duct installation 90% complete.
- Organic Buffer & Refining Building odour duct installation 95% complete.
- In ground services site wide are 98% complete.
- Geofabric and dolerite installation to the Maturation pad 60% complete.
- Dolerite road installation 70% complete.

**Project approximately 67 % complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in May (laboratory results pending). April results are included below. Surface water monitoring was conducted and no flow was recorded at Point 8. A low flow was recorded at Point 1 (Site 115) and results are listed below:

**Point 1: Site 115**

| Analyte | Unit | 10/05/2016 |
|---|---|---|
| Nitrogen (ammonia) | mg/L | <0.1 |
| Biochemical Oxygen Demand | mg/L | <2 |
| Dissolved Oxygen | mg/L | 7.25 |
| Electrical Conductivity | µS/cm | 3630 |
| pH | pH | 7.93 |
| Potassium | mg/L | 3.4 |

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| | | |
|---|---|---|
| Redox Potential | mV | 276 |
| Total Dissolved Solids | mg/L | 2850 |
| Total Organic Carbon | mg/L | 19 |

**Point 8**

No flow recorded. See photo below.

## C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded during the reporting period.

## E. Response to concentration limit exceedances

No concentration limits were exceeded during the reporting period.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 June – 30 June 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- Haul road base complete, Veolia car park works/ changes subject to design finalisation and some upgrade works.
- Sediment controls include V drains and are being continually monitored. An excessive rain fall event over a 48 hour period tested the controls but overall the system performed well.
- Reception building precast and structural steel complete.
- BRS Drum inlet segments lifted into position for drums 1 & 2 with crawler crane being relocated to north side to allow installation of inlet segments on drums 3 & 4.
- BRS drum girth gear installation and alignment ready to commence.
- Minor omissions and defect rectification continues on all buildings, biofilters and external works.
- Fermentation slab installation complete and building cladding 96% complete.
- Odour duct installation 90% complete in fermentation Building and 95% in both organic buffer and refining buildings.
- In ground services site wide are 98% complete.
- Geofabric and dolerite installation to the Maturation pad 60% complete.
- Dolerite internal road installation 70% complete.

**Project approximately 73% complete.**

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## B. Monitoring summary

1 round of depositional dust monitoring was undertaken in June (laboratory results pending). Two rounds of surface water monitoring were conducted and flow was recorded at both Point 1 (Site 115) and Point 8 on both 06/06/16 and 20/06/16.

**Point 1: Site 115**

| Analyte | Unit | 06/06/2016 | 20/06/2016 |
|---|---|---|---|
| Nitrogen (ammonia) | mg/L | <0.1 | <0.1 |
| Biochemical Oxygen Demand | mg/L | <2 | <2 |
| Dissolved Oxygen | mg/L | 9.15 | 9.00 |
| Electrical Conductivity | µS/cm | 553 | 285 |
| pH | pH | 7.67 | 7.62 |
| Potassium | mg/L | 3 | 16.2 |
| Redox Potential | mV | 228 | 226 |
| Total Dissolved Solids | mg/L | 440 | 388 |
| Total Organic Carbon | mg/L | 9 | 12 |

**Point 8: Site 140**

| Analyte | Unit | Concentration Limits | 1/02/2016 | 20/06/16 |
|---|---|---|---|---|
| pH | mg/L | 6.5-8.5 | 7.15 | 7.75 |
| Total Suspended Solids | mg/L | 50mg/L | 56 | 23 |

## C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

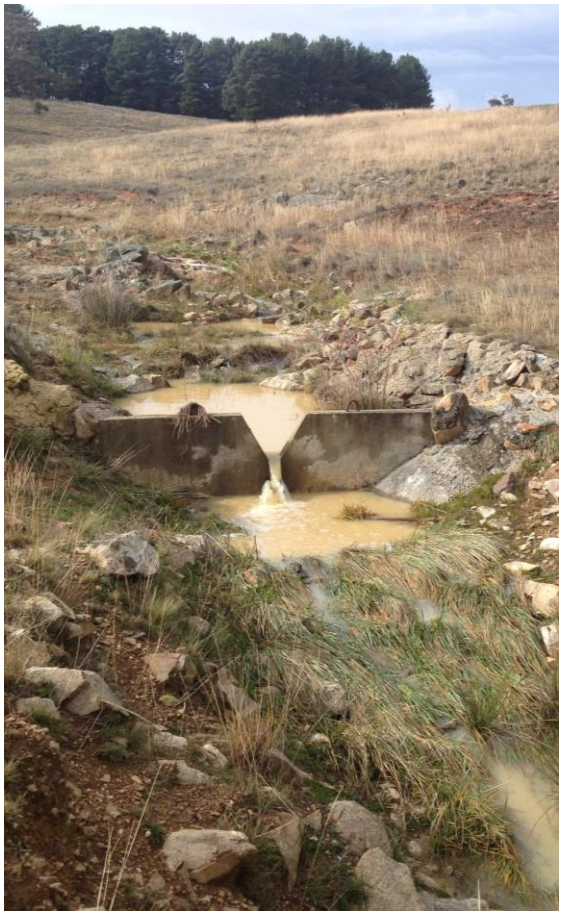
| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

The concentration limit for TSS was exceeded at Point 8 (site 140) on 06/06/2016. TSS was also tested at Point 1 which is located downstream of Point 8 on the boundary of the Woodlawn Bioreactor site. The result for TSS at Point 1 was 282mg/L and is reflective of turbidity generated in a natural watercourse by 142.5mm of rainfall over the previous

two days. This demonstrates the capacity of the barrier to reduce sediment discharge from the construction site.

**Point 1:** Site 115 (06/06/16)



**Point 8:** Site 140 (06/06/16)

## E. Response to concentration limit exceedances

The minor concentration limit exceedance at Point 8 on 06/06/16 demonstrates that the sediment barrier installed at this location is preventing sediment from leaving the construction site as demonstrated by the photos above. The second round of monitoring on 20/06/16 confirms this with TSS recorded below the concentration limit at 23mg/L.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 July – 31 July 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- Haul road base complete, car park works/ changes subject to design finalisation and upgrade works.
- Sediment controls include V drains and are being continually monitored.
- Reception building cladding 90% complete, overhead gantry crane installed and fit out continuing
- Remaining alignment and welding of drums/ girth gear currently being completed.
- Minor omissions and defects rectification to all buildings, biofilters & external works ongoing.
- Odour duct footing installation 75% complete.
- Fermentation slab installation complete.
- Fermentation odour duct installation 90% complete.
- Organic Buffer & Refining Building odour duct installation complete.
- In ground services site wide are 99% complete.
- Geofabric and dolerite installation to the Maturation pad complete.
- Weighbridge structure installation complete.

**Project approximately 78% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in June (laboratory results pending). No surface water monitoring was undertaken at either location in July.

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## C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 August – 31 August 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- Haul road base complete,
- Sediment controls include V drains are continually monitored.
- Reception building cladding complete and fitout 80% complete with grapple to be fitted
- BRS drums/ girth gear currently complete with gearboxes being installed
- Refining building equipment installation 75% complete with trommels and ballistic separators
- Minor rectification work to all buildings, biofilters & external works ongoing to completion
- External odour duct footing installation 95% complete with internal ducting in buildings complete
- Fermentation building complete and fit out 90% complete.
- In ground services complete.
- Maturation pad civil works complete.
- Weighbridge 90% complete.
- Electrical power to site with substations energised.
- Progressively electrical power will be passed through the site.
- Electric motors, pumps, hydraulic and pneumatic systems are being energized and tested
- With systems being powered and tested a new safety regime is in place – Lock Out Tag Out for personnel safety and permits to restrict and control work in areas where energized systems exist.

**Project approximately 85% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in August (laboratory results pending). Point 4 had elevated readings due to the presence of ash residue. A temporary campfire established 5 metres from the monitoring point during the month is representative of such an elevated reading. No surface water monitoring was undertaken at either monitoring location.

## C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| July | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 September – 30 September 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- MBT main intersection works planned to commence near bioreactor facility.
- Leachate pond final bund walls planned for north and east aspects.
- Building interconnecting conveyors installed 95% complete
- Installation of conveyor belts in progress at 60% complete
- Fermentation building overhead gantry installed.
- In ground services complete.
- Remaining push wall and stacker rail installation complete in Fermentation building.
- Landscape topsoiling works commenced.
- Odour Duct support steel installed and odour duct installation 80% complete.
- Commissioning works on track with power to MCC's, MSB's & PLC panels across the project.
- Weighbridge fitout works 60%.
- Reception grapple crane installation planned.
- Admin Building delivery in progress for installation.
- Site signage and access road installation planned.

**Project approximately 88% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in September (laboratory results pending). Surface water monitoring was undertaken after a rainfall event on 19/09/16.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |

| 2016 | | | |
|---|---|---|---|
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| August | 2.1 | 1.6 | 0.2 |
| September | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## Point 1: Site 115

| Analyte | Unit | 19/09/2016 |
|---|---|---|
| Nitrogen (ammonia) | mg/L | <0.1 |
| Biochemical Oxygen Demand | mg/L | <2 |
| Dissolved Oxygen | mg/L | 9.41 |
| Electrical Conductivity | µS/cm | 1910 |
| pH | pH | 8.16 |
| Potassium | mg/L | 1 |
| Redox Potential | mV | 238 |
| Total Dissolved Solids | mg/L | 1310 |
| Total Organic Carbon | mg/L | 17 |
| Total Suspended Solids | mg/L | 9 |

## Point 8: WMBT Discharge point

| Analyte | Unit | 19/09/2016 |
|---|---|---|
| Nitrogen (ammonia) | mg/L | 0.6 |
| Biochemical Oxygen Demand | mg/L | <2 |
| Dissolved Oxygen | mg/L | 9.13 |
| Electrical Conductivity | µS/cm | 796 |
| pH | pH | 8.12 |
| Potassium | mg/L | 1.9 |
| Redox Potential | mV | 236 |
| Total Dissolved Solids | mg/L | 447 |
| Total Organic Carbon | mg/L | 6 |
| Total Suspended Solids | mg/L | 71 |

## D. Concentration limits exceedances

The Total Suspended Solids (TSS) concentration limit of 50mg/L was exceeded at Point 8.

## E. Response to concentration limit exceedances

Although the concentration limit for TSS was exceeded slightly at Point 8. The TSS result of 9mg/L for Point 1, located downstream of the facility, demonstrates nil detrimental effect beyond the site boundary.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

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## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 October – 31 October 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- Commissioning works to BRS Drums 1- 4
- Commissioning to Apron Feeders Reception Building
- Commissioning to Biofilter 2 Fans (4 off)
- Filling of Fire Tanks x 2
- Commissioning to Wet Fire Services Systems
- Belting of conveyors
- Electrical installation for Eilbeck Crane - Reception
- Merford Chair installation Reception Control Room
- Delivery of mobile push walls Maturation pad
- Weighbridge boom gate installation
- Topsoiling and spray seed across the site
- Final trim layer of dolerite road base for entry and site.
- Biofilter 1 and 2 fit out works commenced
- Administration Building fit out
- Commissioning through the project SCADA ongoing

**Project approximately 93% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in October (laboratory results pending). No surface water monitoring was undertaken at either monitoring location in July.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |

| 2016 | | | |
|---|---|---|---|
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| August | 2.1 | 1.6 | 0.2 |
| September | 6.3 | 5.2 | 0.7 |
| October | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 30 November 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

- Dry Commissioning works to BRS Drums 98%
- Dry Commissioning works to Reception Building including Overhead Gantry Crane 80%
- Dry Commissioning of conveyors across the process 70%
- Construction concrete Refining turning circle complete
- Dry Commissioning of plant & equipment across the process 65%
- Landscape Mulching across the site for tree planting to commence
- Haul road 2 coat spray seal complete
- Main MBT intersection carpark entry kerb installation.
- MBT Administration Building fitout 80%

**Project approximately 97% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in November (laboratory results pending).

No surface water monitoring was undertaken at either monitoring location in November.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |

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| | | | |
|---|---|---|---|
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| August | 2.1 | 1.6 | 0.2 |
| September | 6.3 | 5.2 | 0.7 |
| October | 3.2 | 2 | 0.6 |
| November | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 31 December 2016 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

Dry Commissioning has been completed and some adjustments are being made. Conditional building certification has been granted awaiting final items from Veolia. Final works on the crane and the material receival reception high speed shutters are being completed with minor omissions and defects being finalized by the site contractor. Final adjustments to the systems are being implemented in preparation for taking in product and the wet commissioning of the plant when the license is available. This will enable the Veolia project team to test the plant and later hand over to operations before mid 2017.

**Project approximately 99.8% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in December (laboratory results pending).

No surface water monitoring was undertaken at either monitoring location in November.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |

| | | | |
|---|---|---|---|
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| August | 2.1 | 1.6 | 0.2 |
| September | 6.3 | 5.2 | 0.7 |
| October | 3.2 | 2 | 0.6 |
| November | 2.8 | 2.5 | 1.2 |
| December | Laboratory results pending | Laboratory results pending | Laboratory results pending |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 31 January 2017 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

Waiting for remaining outstanding items to be rectified by the Civil contractor. Wet commissioning will commence until all major defects are rectified.

The approval of the Woodlawn OEMP, a Department of Planning (DPE) Consent requirement for operations to commence, was received in January, 2017. The EPA Operational licence is planned to be received in February, 2017. The Occupancy Certificate (OC) has been issued by PCA (Philip Chun and Associates) for building compliance.

**Project approximately 99.8% complete.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in January.

No surface water monitoring was undertaken at either monitoring location in January.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |

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| | | | |
|---|---|---|---|
| August | 2.1 | 1.6 | 0.2 |
| September | 6.3 | 5.2 | 0.7 |
| October | 3.2 | 2 | 0.6 |
| November | 2.8 | 2.5 | 1.2 |
| December | 2.9 | 3.4 | 1 |
| January | 5.1 | 2.7 | 0.6 |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

## Environment Protection Licence Monthly Summary

| | |
|---|---|
| **Site** | Woodlawn Mechanical & Biological Treatment Facility |
| **Reporting Period** | 1 – 28 February 2017 |
| **EPL** | 20476 |
| **Anniversary Date** | 22 December |

*This document provides a summary of published environmental monitoring data for the Woodlawn Mechanical & Biological Treatment Facility in accordance with Section 66(6) of the Protection of the Environment Operations Act (NSW).*

### A. Project construction progress

The civil contractor was granted Practical Completion on the 24th February 2017. The wet commissioning is planned to commence on March, 2017.

Additional defects have been identified. Project defects are monitored before properly rectified.

The EPA operational licence was received in February, which is an approval required to enable waste to be able to be received at the facility.

**Project completed with Practical Completion granted to the civil contractor. Defects will be monitored and rectified as commissioning continues.**

### B. Monitoring summary

1 round of depositional dust monitoring was undertaken in February, 2017.

No surface water monitoring was undertaken at either monitoring location in February.

### C. Monitoring data

**Point 4,6,7: Depositional Dust (g/m2/mth)**

| Location | Point 4 (Pylara) | Point 6 (West Void) | Point 7 (WMBT) |
|---|---|---|---|
| **2015** | | | |
| October | 1.8 | 5.4 | No data |
| November | 5.7 | 5.5 | No data |
| December | 0.6 | 5.8 | 0.8 |
| **2016** | | | |
| January | 1.3 | 10 | 0.9 |
| February | 0.4 | 9 | 0.7 |
| March | 2.4 | 11 | 2 |
| April | 0.7 | 25.9 | 0.5 |
| May | 0.7 | 21 | 0.2 |

| | | | |
|---|---|---|---|
| June | 2.5 | 6 | 0.4 |
| July | 23.6 | 0.3 | 1.2 |
| August | 2.1 | 1.6 | 0.2 |
| September | 6.3 | 5.2 | 0.7 |
| October | 3.2 | 2 | 0.6 |
| November | 2.8 | 2.5 | 1.2 |
| December | 2.9 | 3.4 | 1 |
| January | 5.1 | 2.7 | 0.6 |
| February | 1.8 | 2.4 | 0.8 |

## D. Concentration limits exceedances

No concentration limits were exceeded.

## E. Response to concentration limit exceedances

No concentration limits were exceeded.

## F. Licence non-compliances and investigations

No non-compliances and investigations were recorded.

# Appendix C – Groundwater Quality Results

# MBT Groundwater Quality Results - MB32

| Monitoring Point Identification | | MB32 | MB32 | MB32 |
|---|---|---|---|---|
| **Date** | **Units** | 15/02/2017 | 6/07/2017 | 4/10/2017 |
| **FIELD MEASUREMENTS** | | Baseline | Q1 | Q2 |
| Time | AM/PM | 9:45am | 2:00pm | 10:40am |
| Sampler | Initials | CC | CC | CC |
| pH | pH | 7.5 | 7.45 | 7.44 |
| Conductivity | µS/cm | 13600 | 13650 | 14300 |
| Oxidation-Reduction Potential | mV | -46.5 | -45.9 | -54.2 |
| Dissolved Oxygen | mg/L | 6.2 | 7.17 | 7.07 |
| Temperature | °C | 17.2 | 14.8 | 14.9 |
| Depth to Water | m | 4.3 | 4.5 | 4.46 |

| **LABORATORY ANALYSIS** | | | | |
|---|---|---|---|---|
| Laboratory Sample Code | | CA1700910-001 | CA1703770-001 | CA1705477-001 |
| Bicarbonate | mg/L | 669 | | |
| Carbonate | mg/L | <0.1 | | |
| Alkalinity (as CaCO3) | mg/L | 669 | | |
| Nitrogen (ammonia) | mg/L | 0.2 | <0.1 | 0.1 |
| Chloride | mg/L | 4310 | | |
| Conductivity | µS/cm | 14200 | 14100 | 14000 |
| Dissolved Calcium | mg/L | 246 | | |
| Dissolved Magnesium | mg/L | 512 | | |
| Dissolved Potassium | mg/L | 16.9 | 6.9 | 7.1 |
| Dissolved Sodium | mg/L | 2220 | | |
| pH | pH | 7.67 | 7.73 | 7.96 |
| Sulphate | mg/L | 542 | 1040 | 420 |
| Total Dissolved Solids | mg/L | 8700 | 9370 | 9320 |
| Chromium (Hex) | mg/L | <0.01 | | |
| Dissolved Aluminium | mg/L | 0.03 | | |
| Dissolved Arsenic | mg/L | 0.04 | | |
| Dissolved Cadmium | mg/L | 0.00054 | | |
| Dissolved Cobalt | mg/L | 0.0062 | | |
| Dissolved Copper | mg/L | 0.01 | | |
| Dissolved Lead | mg/L | 0.0004 | <0.0002 | <0.0002 |
| Dissolved Manganese | mg/L | 1.78 | | |
| Dissolved Mercury | mg/L | 0.0002 | | |
| Dissolved Zinc | mg/L | 0.023 | 0.031 | 0.042 |
| Fluoride | mg/L | <0.1 | | |
| Nitrite | mg/L | 0.02 | | |
| Nitrate | mg/L | 2.7 | | |
| Organo-chlorine pesticides | mg/L | <0.002 | | |
| Organo-phosphate pesticides | mg/L | <0.002 | | |
| Polycyclic Aromatic Hydrocarbons | µg/L | <0.5 | | |
| TPH C6-C9 | µg/L | 60 | | |
| TPH C10-C14 | µg/L | 50 | | |
| TPH C15- C28 | µg/L | <100 | | |
| TPH C29-C36 | µg/L | <50 | | |

| | | | | |
|---|---|---|---|---|
| Benzene | µg/L | 39 | | |
| Toluene | µg/L | 3 | | |
| Ethyl Benzene | µg/L | <2 | | |
| Xylene | µg/L | <2 | | |
| Total Phenols | mg/L | <0.05 | | |
| Total Organic Carbon | mg/L | 14 | 9 | 23 |
| Dissolved Barium | mg/L | 0.105 | | |
| Total Chromium | mg/L | 0.019 | | |
| Dissolved Iron | mg/L | | | |
| Nitrate + Nitrite (oxidised nitrogen) | mg/L | 2.72 | | |

# Appendix D – Leachate Quality Results

# MBT Leachate Aeration Dam Results

| **Monitoring Point Identification** | | Leachate (WMBT) | Leachate (WMBT) |
|---|---|---|---|
| **Date** | **Units** | 2/05/2017 | 13/10/2017 |
| **FIELD MEASUREMENTS** | | | |
| Time | AM/PM | 5pm | 2:30pm |
| Sampler | Initials | CC | CC |
| pH | pH | 7.58 | 7.26 |
| Conductivity | µS/cm | 1186 | 11410 |
| Temperature | °C | 13.5 | 19.1 |
| Oxidation-Reduction Potential | mV | -60.2 | -27.7 |
| Dissolved Oxygen | mg/L | 9.15 | 0.5 |

| **LABORATORY ANALYSIS** | | | |
|---|---|---|---|
| Laboratory Sample Code | | CA1702491-001 | CA1705714-001 |
| Bicarbonate | mg/L | 185 | 4740 |
| Carbonate | mg/L | <0.1 | <0.1 |
| Alkalinity (as CaCO3) | mg/L | 185 | 4740 |
| Nitrogen (ammonia) | mg/L | 3.5 | 349 |
| Chemical Oxygen Demand | mg/L | 90 | 13800 |
| Chloride | mg/L | 64.5 | 831 |
| Chromium (Hex) | mg/L | <0.01 | <0.01 |
| Conductivity | µS/cm | 1200 | 11800 |
| Fluoride | mg/L | 0.2 | <0.5 |
| Nitrate | mg/L | 0.3 | <5 |
| Nitrite | mg/L | 0.36 | <1 |
| Organo-chlorine pesticides | µg/L | <2 | <2 |
| Organo-phosphate pesticides | µg/L | <2 | <2 |
| Polycyclic Aromatic Hydrocarbons | µg/L | <0.5 | <0.5 |
| TPH C6-C9 | µg/L | <20 | 350 |
| TPH C10-C14 | µg/L | <50 | 3920 |
| TPH C15- C28 | µg/L | <100 | 1530 |
| TPH C29-C36 | µg/L | <50 | 120 |
| Benzene | µg/L | <1 | <1 |
| Toluene | µg/L | <2 | <2 |
| Ethyl Benzene | µg/L | <2 | 3 |
| Xylene | µg/L | <2 | <2 |
| pH | pH | 8.12 | 7.49 |
| Sulphate | mg/L | 299 | 304 |
| Total Suspended Solids | mg/L | 22 | 1180 |
| Total Dissolved Solids | mg/L | 795 | 12900 |
| Nitrate + Nitrite (oxidised nitrogen) | mg/L | 0.66 | <5 |
| Total Organic Carbon | mg/L | 23 | 2640 |
| Total Phosphorous | mg/L | 0.18 | 13.5 |
| Total Aluminium | mg/L | 0.31 | 1.11 |
| Total Arsenic | mg/L | 0.007 | 0.014 |
| Total Barium | mg/L | 0.0684 | 0.0176 |
| Total Cadmium | mg/L | 0.00016 | 0.00013 |

| | | | |
|---|---|---|---|
| Total Calcium | mg/L | 0.126 | 1940 |
| Total Chromium | mg/L | 0.003 | 0.321 |
| Total Cobalt | mg/L | 0.0039 | 0.031 |
| Total Copper | mg/L | 0.008 | 0.009 |
| Total Iron | mg/L | 0.48 | 8.72 |
| Total Lead | mg/L | 0.014 | 0.0009 |
| Total Magnesium | mg/L | 20.8 | 142 |
| Total Manganese | mg/L | 0.074 | 6.71 |
| Total Mercury | mg/L | <0.0001 | 0.0017 |
| Total Phenols | mg/L | <0.05 | 1.37 |
| Total Sodium | mg/L | 69.3 | 580 |
| Total Zinc | mg/L | 0.065 | 0.03 |
| Total Potassium | mg/L | 35.3 | 416 |
| BOD | mg/L | | 10600 |
| Nitrogen (total) | mg/L | 6.87 | |