# 4. Environmental Monitoring

## 4.1 Proposed Environmental Monitoring

The following monitoring is proposed taking into consideration site specific details and waste licences granted for similar type waste facilities. Locations of monitoring points and frequency of monitoring are provided.

## 4.2 Proposed Monitoring Locations

| Media | Location | Monitoring Frequency |
|---|---|---|
| **Dust Deposition** | D1 (S4715 1773) | Three times a year [Note 1] |
| | D2 (S4711 1791) | Three times a year [Note 1] |
| **Noise** | N1 (S4715 1773) | Annually |
| | N2 (S4711 1791) | Annually |
| **Biofilter** | Biofilter (S4724 1787) | See Section 4.2.1 |
| **Surface Water Discharge** | EW2 (S4751 1836) | See Section 4.2.2 |
| **Meteorological Monitoring** | Onsite (S4715 1773) | See Section 4.2.3 |
| **Treated Effluent** | EW1 (S4751 1836) | See Sections 4.2.2 & 4.4 of EIS |
| **Compost quality monitoring** | Final Compost | Monthly - See Section 4.3 of EIS |

Note 1 Twice during the period May to September.

Monitoring locations are shown on Figure 4.1.



### 4.2.1 Biofilter Monitoring [Note 1]

| Parameter | Monitoring Frequency | Analysis - Method/Technique |
|---|---|---|
| **Bed Media** | | |
| Odour assessment [Note 2] | Daily | Subjective Inspection |
| Condition and depth of biofilter [Note 3] | Daily | Visual Inspection |
| Moisture content | Bi-annually | Standard laboratory method |
| pH | Bi-annually | pH probe |
| Ammonia | Bi-annually | Standard laboratory method |
| Total viable counts | Bi-annually | Standard laboratory method |
| **Inlet and Outlet Gas** | | |
| Ammonia | Bi-annually | Colourimetric Indicator Tubes |
| Hydrogen sulphide | Bi-annually | Colourimetric Indicator Tubes |
| Mercaptans | Bi-annually | Colourimetric Indicator Tubes |

Note 1: A competent laboratory using standard and internationally acceptable techniques shall carry out the analyses.
Note 2: This subjective assessment to be carried out by a staff member immediately upon arriving on-site
Note 3: The biofilter shall be examined to ensure that no channelling is evident, and that moisture content is adequate.

### 4.2.2 Surface Water Discharge Monitoring

Monitoring control of the surface water discharges is similar to that specified in IPC licence No. 238.

**Emission Point Reference No.:** EW – 1 (Discharge of treated effluent)

| Parameter | Monitoring Frequency [Note 1] | Analysis Method/Technique |
|---|---|---|
| **Flow** | Continuous | On-line flow meter with recorder |
| **Temperature** | Continuous | On-line temperature probe with recorder |
| **pH** | Continuous | pH electrode/meter and recorder |
| **Chemical Oxygen Demand** | Daily | Standard Method |
| **Biochemical Oxygen Demand** | Daily | Standard Method |
| **Suspended Solids** | Daily | Standard Method |
| **Sulphides (as S)** | Daily | Standard Method |
| **Ammonia (as N)** | Daily | Ion selective electrode |
| **Total Nitrogen (as N)** | Weekly | Standard Method |
| **Total Nitrogen (Kjeldahl)** | Weekly | Standard Method |
| **Total Phosphorus (as P)** | Weekly | Standard Method |
| **Ortho-Phosphate (as P)** | Weekly | Standard Method |
| **Oils, fats & greases** | Weekly | Standard Method |
| **Chloride** | Weekly | Standard Method |
| **Phenols** | Weekly | Standard Method |
| **Toxicity** [Note 2] | Annually (24 hour flow proportional composite) | To be agreed with the Agency |

Note 1: Upon receipt of test results, the frequency of monitoring shall be reviewed by the Agency.
Note 2: The number of toxic units (Tu) = 100/x hour EC/LC50 in percentage vol/vol so that higher Tu values reflect greater levels of toxicity. For test regimes where species death is not easily detected, immobilisation is considered equivalent to death.

**Emission Point Reference No.:** EW - 2 (from surface water sump)

| | | |
|---|---|---|
| **Visual Inspection** | Weekly | Visual inspection |
| **pH** | Continuous | On-line pH meter [Note 1] |
| **Conductivity** | Continuous | On-line Conductivity meter [Note 2] |
| **BOD** | Annually | Standard Method |
| **Total Suspended Solids** | Annually | Standard Method |

Note 1: Diversion of surface water shall occur if pH deviates outside pH 6-9 range
Note 2: Diversion of surface water shall occur if conductivity exceeds 2,000 □S/cm.



### 4.2.3 Meteorological Monitoring

The following data is to be obtained from weather station.

| Parameter | Monitoring Frequency |
|---|---|
| **Precipitation Volume** | Monthly |
| **Wind Force and Direction** | Daily |

### 4.3 Compost quality monitoring

Compost quality shall be monitored for the parameters listed below. The trace element concentration limits shall apply to the compost quality. It is envisaged that the frequency of monitoring of compost quality will be monthly.

| Parameter (mg/kg, dry mass) | Compost Quality Standards [Note 1] | | Stabilised Biowaste [Note 1] |
|---|---|---|---|
| | Class 1 | Class 2 | |
| Cadmium (Cd) | 0.7 | 1.5 | 5 |
| Chromium (Cr) | 100 | 150 | 600 |
| Copper (Cu) | 100 | 150 | 600 |
| Mercury (Hg) | 0.5 | 1 | 5 |
| Nickel (Ni) | 50 | 75 | 150 |
| Lead (Pb) | 100 | 150 | 500 |

| | | | |
|---|---|---|---|
| Zinc (Zn) | 200 | 400 | 1500 |
| PolyChlorintated Biphenyls (PCB's) | - | - | 0.4 |
| Polycyclic Aromatic Hydrocarbons (PAH's) | - | - | 3 |
| Impurities >2mm Note 5 | <0.5% | <0.5% | <3% |
| Gravel and Stones >5mm Note 5 | <5% | <5% | - |

**Note 1:** Normalised to 30% organic matter content.

## 4.4 Wastewater Treatment Plant Monitoring

Effluent Treatment Control

| **Item** | **Parameter** | **Monitoring Frequency** | **Analysis Method /Technique** |
|---|---|---|---|
| Balancing Tank | pH | | |
| Aeration Tanks | Dissolved Aeration | Continuous | DO probe |
| | Sludge Volume Index | Weekly | Standard Methods |
| | Mixed Liquor Suspended Solids | Twice Weekly | Standard Methods |
| | Sludge Floc Microscopy | Daily | Standard Methods |

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## EIS-Drawing-9



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