

1.1 The OEE is of the opinion that the constructed wetland (reed beds), which form part of the surface water treatment system, are not authorised by the current licence. It appears this understanding is based on Condition 6.15.5 which states that treated storm water from paved areas shall be directed to the percolation area described in Drawing 02-034-J4-MCOS2F03.

1.2 Details of the design of original surface water treatment system were provided in the Attachment D.1.k original waste licence application¹ made in 2005. It comprised an oil and solids separator followed by a lagoon, a lined wetland and a percolation area and it is discussed in Section 4.3 of the Inspectors Report.² The Report notes that run-off from the yard and wood and metal storage areas is directed to the treatment system.

1.3 Condition 3.13.2 of the original licence (W0217-01) stipulated that storm water drainage from impermeable areas was to be directed to the storm water drainage and treatment system as described in Attachment D.1.K of the application and Drawing No. 02-034-J4-MCOS2F03³. The drawing shows the lagoon, reed bed and percolation area.

1.4 Subsequently the layout was reconfigured by installing an additional lagoon and converting the original lagoon to a settlement pond. Due to the method of lagoon construction method, desludging was not efficient and in 2015 KWD Recycling commissioned Waste Works, who had designed the original system to carry out upgrades. The proposed design is in Appendix 1 of the Appropriate Assessment (AA) Screening Report and it comprised;

- A new oil/water separation tank
- New solids settlement tank 30m³ (primary treatment)
- New aeration tank 30m³ (first stage secondary treatment)
- New sludge settlement tank 30m³
- New vertical flow reed bed (second stage secondary treatment) in place of the lagoon
- No change to existing wetland (tertiary treatment)
- No change to the existing percolation area and discharge point.

1.5 An assessment of the upgrade completed by Waste Works in September 2015 concluded that the system was operating as a vertical flow reed bed/percolating filter under mainly aerobic conditions and was very effective at reducing the level of suspended solids and biochemical oxygen demand (BOD) and the ammonia levels were expected to reduce over time. A copy of the Waste Works assessment report is also in Appendix 1 of the AA Screening Report.

1.6 In 2015 the Office of Environmental Enforcement (OEE) instructed KWD Recycling to cease operating the aeration and sludge settlement tanks. KWD Recycling complied with the instruction; however the aerator remains functional. The aeration and sludge settlement tanks now serve as additional solids settlement units.

1.7 The existing system is described in Sections 4.6 and 8.6.2 of the Environmental Impact Assessment Report, submitted with the review application⁴. It was not an objective of the review application to alter either the existing surface water drainage system, or the design and method of operation of the surface water treatment system.

¹ http://www.epa.ie/licences/lic_eDMS/090151b280042b6c.pdf

² http://www.epa.ie/licences/lic_eDMS/090151b2800c9035.pdf

³ http://www.epa.ie/licences/lic_eDMS/090151b2800b8040.pdf

⁴ http://www.epa.ie/licences/lic_eDMS/090151b280665652.pdf

1.8 Table 9 of the Inspector's Report ⁵on the review application clearly describes the existing treatment system as comprising 'settling tanks, silt traps, oil interceptor and reed bed'. It notes that the drainage area connected to the storm water treatment system included outdoor non-processing and waste processing areas. Table 10 of the Report refers to 'three storm water settling tanks' the 'glass reed bed' and the 'lagoon reed bed' in the column describing the in situ abatement, but omits reference to these in the 'recommended abatement' column.

1.9 Condition 6.15.6 of the current licence requires KWD Recycling to undertake an investigation of the suitability of the current storm water drainage and treatment system. The investigation shall identify the level of any process effluent contamination in the storm water collection system, settling tanks, silt trap, oil interceptor, reed beds⁶ and percolation ditch. Any recommendations arising from this investigation and any additional measures required by the Agency shall be implemented following approval by the Agency.

1.10 The Inspector's Report does not identify any concerns over the design and operation of the existing stormwater treatment system and it does not state that the treatment system, as described in the application, is either not acceptable, or not approved. The reference to 'reed beds' in Condition 6.15.6 confirms the Inspector was satisfied the constructed wetlands are an integral part of the treatment system. In this context it is considered that the absence of reference to the settlement tanks and reed beds in the 'recommended abatement' column in Table 10 was an oversight.

1.11 The Inspector's Report on the review application includes Figures 8 and 9 showing respectively the surface water drainage system authorised under W0217-01 and the existing drainage system as described in the review application. The Report notes differences between the system authorised under W0217-01 and the existing system; however the drawing of the authorised system from which Figure 8 in the Report was extracted is not Drawing 02-034-J4-MCOS2FO3, but Drawing No 02-034-J4-MCOS2⁷, which incorrectly shows the percolation pipe lengths as 120m.

1.12 Figure 9 in the Report is an extract from Drawing No.2 Site Drainage submitted with the review application⁸. The oil interceptor shown on the drawing was installed in accordance with Condition 3.14 of W0217-01. It is noted that there have been no changes to the percolation area approved under W0217-01.

1.13 It is considered that the reference in Condition 6.15 of the current licence to Drawing 02-034-J4-MCOS2FO3 was an oversight and that the correct drawing is Drawing No.2, of which Figure 9 in the Inspector's Report is an extract.

1.14 Table 11 of the Inspector's Report lists the results of the monitoring of the roof water discharges and the discharge to the percolation area conducted in 2016 and 2017 derived from the relevant Annual Environmental Reports. The Table includes the trigger levels that had been calculated for the roof water and the treated storm water.

1.15 The Report notes that the trigger levels for ammonia and suspended solids had been exceeded, and therefore process effluent from the processing and storage of waste outdoors was currently at risk from entering the storm water treatment system. This conclusion appears to form the basis for Condition 8.13.1 that requires all waste treatment and storage areas to take place indoors.

⁵ http://www.epa.ie/licences/lic_eDMS/090151b2806c8fa4.pdf

⁶ Our emphasis

⁷ http://www.epa.ie/licences/lic_eDMS/090151b28003c487.pdf

⁸ http://www.epa.ie/licences/lic_eDMS/090151b28066346a.pdf

1.16 However the exceedances of the trigger levels only occurred in the roof water emissions (R1 and R2) and the treated stormwater, which included the run-off from the metal and timber storage areas, was consistently below the trigger levels. The roof water is piped directly from the building to the discharge points and there is no risk of process effluent from external storage areas contaminating the roof water run-off.

1.17 Section 8.6.1 of the EIAR discusses the results of the monitoring of the roof water and identifies birds roosting on the building as a possible source of the elevated ammonia. This is not uncommon and research, both in Ireland and internationally, has found that rotting vegetation and birds are sources of elevated ammonia, total and faecal coliforms that are detected in roof water run-off^{9,10}.

1.18 Condition 8.13.1 requiring all waste treatment and storage areas to be indoors is not consistent with Condition 6.15.3, which stipulates that run-off from process areas of the facility used for the holding, storage and treatment of waste and scrap metal shall be diverted for collection and safe disposal.

1.19 In relation to the 'safe disposal' of run-off, *The Decision and Reasons for the Decision* section of the licence, which describes the basis for the Agency's determination that an Appropriate Assessment was not required, took into consideration the two percolation areas that provide for the discharge to ground of treated sanitary effluent and of treated effluent from outdoor yard areas.

1.20 The BAT assessment completed in 2017 based on the BAT Guidance Notes for the Waste Sector - Waste Transfer and Materials Recovery (EPA, 2011) submitted with the application¹¹ described how KWD Recycling operations complied with BAT. The existing stormwater drainage systems, as described in Section 4.6.1 of the EIAR, also complies with BAT 19 (e), (f) and (g) of the Best Available Techniques (BAT) Reference Document for Waste Treatment (2018).

- BAT 19 (e) addresses the roofing of waste storage areas and the conclusion is that depending on the risks posed by the waste in terms of soil and/or water contamination, waste should be stored and treated in covered areas to prevent contact with rainwater and thus minimise the volume of contaminated run-off water. This applicability may be constrained when high volumes of waste are stored or treated (e.g. mechanical treatment in shredders of metal waste).

The existing stormwater treatment system has the capacity to treat rainwater run-off from the external metal and timber storage areas, with the treated water discharged to ground in a percolation area. This effectively mitigates the risk of soil and groundwater contamination and therefore roofing of the metal and timber storage areas is not required.

- BAT 19 (f) addresses the segregation of water streams and the conclusion is that each water stream (e.g. surface run-off water, process water) should be collected and treated separately, based on the pollutant content and on the combination of treatment techniques. In particular, uncontaminated waste water streams should be segregated from waste water streams that require treatment. This requirement is generally applicable to existing plants within the constraints associated with the layout of the water collection system.

⁹ <https://arrow.dit.ie/cgi/viewcontent.cgi?article=1003&context=engschcivrep>

¹⁰ <https://arrow.dit.ie/cgi/viewcontent.cgi?article=1029&context=engschcivart>

Rainwater run-off from areas where there is the potential for significant contamination to occur (compost bay and bin wash) is collected separately and sent off-site for treatment. Run-off from other areas where the risk of contamination is lower is collected and treated in the on-site stormwater treatment system. The run-off from the building roofs discharges directly to a surface water drain without treatment.

- BAT 19 (g) addresses adequate drainage infrastructure and the conclusion is that the waste treatment areas should be connected to drainage infrastructure. Rainwater falling on the treatment and storage areas should be collected in the drainage infrastructure along with washing water, occasional spillages, etc. and, depending on the pollutant content, recirculated or sent for further treatment. This is generally applicable to existing plants within the constraints associated with the layout of the water drainage system.

Rainwater falling on the metal and timber storage area is collected and directed to the stormwater treatment system.

1.21 Pending the Agency's decision on the Technical Amendment the rainwater run-off from the timber and metal storage areas has been temporarily diverted to the holding tank serving the bin was from where it is tankered off-site for treatment.

1.22 It is considered that the wording of Condition 6.15.5 can be amended as follows to reflect the intention to approve the current storm water treatment system

Current Condition

Condition 6.15.5. Treated storm water from paved areas shall be directed to the percolation areas described in drawing no. 02-034-14-MCOS2F03 after treatment in a silt trap and oil separator.

Proposed Condition

Condition 16.15.5. Treated storm water from paved areas shall be directed to the percolation area described in Drawing No.2 Site Drainage in the review application after treatment in a silt trap, oil separator and reed beds.

1.23 The wording of Condition 8.13.1 can be amended to bring it into alignment with Condition 6.15.3.

Current Condition

8.13.1 All waste reception, storage and processing shall be carried out inside a building or a suitably enclosed structure. No waste shall be stored or handled outdoors.

Proposed Condition

8.13.1. All waste reception, storage and processing shall be carried out inside a building, suitably enclosed structure or in areas where run-off is collected and diverted for safe disposal.

1.24 For the avoidance of doubt 'safe disposal' includes the on-site stormwater treatment system.