

WHINNEY HILL LANDFILL

Environmental Permit Variation Application

Non-Technical Summary

**Prepared for: Suez Recycling and Recovery
Lancashire Ltd**

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1.0 Introduction

SLR Consulting Limited (SLR) has been instructed by Suez Recycling and Recovery Lancashire Limited (Suez) to prepare an Environmental Permit (EP) Variation Application to include a new Leachate Treatment Plant (LTP) and Methane Stripping Plant (MSP) at Whinney Hill Landfill under the Environmental Permitting (EP) (England and Wales) Regulations 2016.

This document provides a Non-Technical Summary of the proposed operations on site, including:

- An explanation of what is being applied for;
- A summary of the regulated facilities; and
- A summary of the key technical standards and control measures relating to the proposed changes.

To support this application for an EP variation, the following documentation is submitted in addition to this Non-Technical Summary:

- Environment Agency (EA) Application Forms, Parts A, B2, B3, C2, C3, and F1 and relevant supporting information including List of Directors, WAMITAB Certificates (and Certificates of Continuing Technical Competence (COTC)) and a Summary of the EMS;
- Associated Drawings;
- Environmental Risk Assessment;
- Operating Techniques and Best Available Techniques (BAT) Assessment;
- Baseline Site Condition Report; and
- Surface Water Pollution Risk Assessment (H1 Risk Assessment).

1.1 The Site

Whinney Hill Landfill is located in Altham West, Lancashire approximately 360m south of Clayton Le Moors and 1.5km north of Accrington. The site is centred at National Grid Reference (NGR) SD 76096 30256 and the location of the site is illustrated on Drawing 001.

The site boundary is irregularly shaped, extending to both the north and south of Whinney Hill Road which provides access to the site. The land surrounding the site is of mixed usage with commercial/industrial premises, residential areas and areas of open ground and woodland within the area.

Immediately to the north east and south of the site lies open/agricultural land and areas of woodland. Two ponds also lie to the east, and one small pond lies to the south of the site. Leeds and Liverpool Canal runs to the north of the site, approximately 420m from the site's western boundary at its closest.

Various commercial/industrial premises are located in all directions from the site. Lancashire County Council's Altham Household Waste Recycling Centre (HWRC) shares an access road with the site and is situated to the north of the area of the site which lies to the south of Whinney Hill Road and to the south east of the area of the site which lies to the north of Whinney Hill Road. To the east of this lies Huncoat Business Park which includes premises such as CSM Steel Stock, Bensons for Beds Distribution Centre and Forterra. Moorfield Industrial Estate is located to the north of the site and various commercial/industrial premises such as Greengates Builders Merchants along with multiple factories are situated to the west.

The closest residential properties to the site lie within Altham West and are located 15m from the site's south western boundary at their closest.

Enfield Cricket Ground is situated to the south west of the site and Accrington Cricket Club lies to the south east. To the south lies Accrington Stanley Football Club.

In terms of ecological designations, the site lies within close proximity of very few sensitive ecological receptors. Multiple areas of ancient woodland including Altham Clough Wood are situated within a 2km radius of the site boundary.

The surrounding land uses and local receptors within 500m are identified on Drawing 001, and the cultural and natural heritage within 2km is identified on Drawing 002.

1.2 Current Environmental Permit

The Site currently operates under EP Ref: EPR/BL9500IJ/V007. The EP includes a landfill for the disposal of non-hazardous waste and restoration and the treatment of leachate, with subsequent Directly Associated Activities (DAA's). The permit was originally determined in November 2005 and has been varied 6 times. The most recent variation was in May 2015 following an EA landfill sector review.

The EP currently allows for the following operations to be undertaken, as detailed in Table S1.1:

- A1: Landfill for non-hazardous waste and landfill restoration; and
- A2: Treatment of leachate in a facility with a capacity of >50 tonnes/day.

The EP also allows for the following Directly Associated Activities (DAA) to be undertaken, as detailed in Table S1.1:

- A3: Pre-treatment and utilisation of landfill gas for energy recovery in an appliance with a rated thermal input < 50MW;
- A4: Flaring of landfill gas for disposal in an appliance;
- A5: Landfill gas collection and monitoring;
- A6: Leachate collection and extraction;
- A7: Leachate discharge to sewer;
- A8: Temporary storage of waste (leachate);
- A9: Discharges of site drainage from the landfill;
- A10: Storage of fuel for operation of plant and equipment; and
- A11: Storage of utility materials (oil, antifreeze, oil filters, waste oil and filters, caustic soda (Sodium Hydroxide)).

1.3 Pre-Application Advice

Pre-application advice was requested by Suez and received on 21st August 2019.

2.0 Overview of the Proposed Variation

2.1 Overview of Variation

This variation application seeks to include the following changes:

- A Leachate Treatment Plant (LTP) which will require the **addition** of Section 5.4, Part A (1) (a) (i) for the biological treatment of non-hazardous waste; and
- A Grey Water (lightly contaminated runoff) Treatment System with a Methane Stripping Plant (MSP) which will be operated under the existing listed activity detailed in Table S1.1 of the EP, under Section 5.4, Part A (1) (a) (ii) for the physico-chemical treatment of non-hazardous waste.

2.2 Leachate Treatment Plant

The proposed LTP will be provided with an access roadway, an 'upper' area provides areas for control rooms and vehicle access and has an embayed area for tanker and chemical loading constructed with an impervious surface for spills containment. This 'upper' area slopes and drains via suitable SUDs compliant drainage systems for offsite discharge to surface waters. The 'embayed' spills containment area drains to a fully contained 'lower' area where bunding will be provided for all the storage tanks that are located within it.

Raw leachate will be pumped to the LTP and stored in one raw leachate balance tank (RLBT). This will provide 1,000m³ of storage so that a consistent quality and volume of leachate will be available for the treatment process.

Leachate will be transferred from the RLBT to one of two 2,130m³ Sequencing Batch Reactor (SBR) tanks (4,260m³ total SBR capacity) for treatment. Leachate will be injected in relatively small (several cubic meters per 'pulse') quantities over an extended 'feed and aerate' cycle to the SBRs. An anoxic stage can also be introduced to the treatment cycle as a means of controlling chemical and power consumption.

Each SBR tank will consist of a roofed concrete tank installed with the following key items:

- SBR feed control system and pipework;
- Aeration equipment (external blowers and internal ejectors);
- Mixing equipment (external floor mounted pumps and internal nozzle mixers);
- Decant system to allow the treated supernatant liquor to be removed;
- Instrumentation to monitor pH, dissolved oxygen (DO), liquid temperature, ammonium concentration, liquid level and flow;
- Waste sludge removal pipework and valves; and
- Chemical dosing equipment.

At Whinney Hill aeration and mixing for the SBR is via an ejector system. This will operate by means of air blowers mounted externally to the SBRs connected via pipework to ejector heads submerged within the tank. This system will also incorporate externally mounted motive flow pumps to enable more efficient aeration and provisions of anoxic mixing for de-nitrification step in the treatment cycle incorporated to control chemical and power consumption.

Clarified effluent will be passed to an effluent balance tank capable of holding 350m³ of treated effluent prior to being pumped for discharge to the public sewer or, if non-compliant, re-circulation back to the LTP's raw leachate tanks.

The existing landfill sites MSP tank will be the main collection tank for leachate from the site and pumps to transfer raw leachate to the RLBT's will be installed into the MSP tank. The existing landfill sites V- notch weir flow monitoring chamber will be the chamber that the LTP discharges treated effluent into, from which treated leachate will be discharged to the public sewer system.

2.2.1 Permitting Approach - Listed Activity

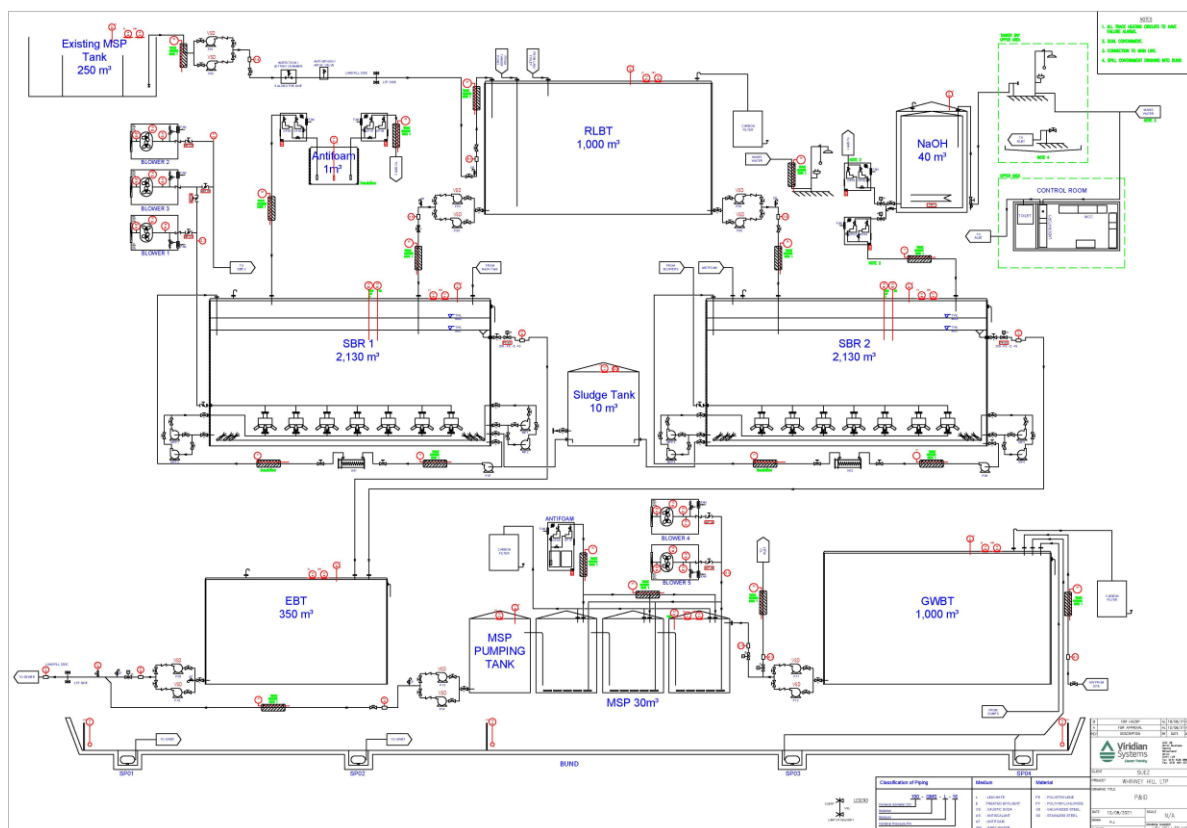
The operation of the new LTP will fall under Schedule 1 of the EP Regulations, Section 5.4, Part A (1) (a) (i) for the biological treatment of non-hazardous waste.

2.3 Methane Stripping Plant

The facility is made for the future installation of a 'Grey Water' storage, treatment and discharge system to allow for the discharge, after methane stripping, of lightly contaminated waters that other than for dissolved methane, would meet the conditions of the trade effluent discharge consent (TEDC) for the site. 'Grey Water' from the site will be delivered to the LTP via a separate delivery pipeline system to be stored in a 1,000m³ grey water balance tank (GWBT). This tank will provide 1,000m³ of storage so that a consistent quality and volume of grey water will be available for a MSP. Methane stripping will be provided via a series of four interlinked 15m³ capacity tanks, three of which will be aerated. Discharge from the MSP will combine with discharge from the LTP for pumping to sewer for disposal via a manifold within the LTP.

Figure 1 below illustrates the LTP process flow diagram.

Figure 1 – Leachate Treatment Plant Process Flow Diagram



2.3.1 Permitted Activity

The addition of the Grey Water System and MSP would require a change to the existing listed activity detailed in Table S1.1 of the EP, under Section 5.4 Part A (1) (a) (ii) for the physico-chemical treatment of non-hazardous waste.

2.4 Point Source Emission - Surface Water Discharge

Suez proposes to construct the LTP with 300m³/day treatment capacity which will discharge to foul sewer in combination with up to 1,000m³/day of surface water run-off from the site. The LTP will treat landfill leachate prior to discharging to sewer, which is currently permitted. The treated effluent will then undergo further treatment at the Hyndburn Sewage Treatment Works (STW) before eventually being discharged to the freshwater River Calder.

This point source emission is assessed in the Surface Water Pollution Risk Assessment, a summary of which is detailed below in Section 3.6.

2.5 Type of Variation Application and EA Fee

As detailed in the EA's Fees and Guidance (April 2022, Table 1.17 for landfill and deposit for recovery) that adding the biological treatment of leachate as a new activity would constitute a new application fee and a normal variation fee for amending the current listed activity to add an MSP.

As such, this application will carry the following fees:

- New Application to include a listed activity for the operation of the proposed LTP, Section 5.4 - £16,001.
- Normal variation to the existing listed activity, Section 5.4 - £8,000.

Therefore, the total fee is; £24,001.

3.0 Application Contents

3.1 Application Forms

Parts A, B2, B3 (for the addition of the new listed activity), C2, C3 (for the variation of the existing listed activity) and F1 of the EA's EP variation application forms have been completed in support of this application and are enclosed in Section 2. The application forms also require the following additional information, which has been included:

- Appendix A: List of Directors.
- Appendix B: Relevant Offences
- Appendix C: WAMITAB Certificates and Continuing Technical Competence.
- Appendix D: Summary of the Environmental Management System (EMS)

3.2 Drawings

The following drawings have been included in to support this variation application and are enclosed in Section 3 of this EP variation application;

- Drawing 001 Leachate Treatment Plant Layout
- Drawing 002 Site Drainage
- Drawing 003 Environmental Site Setting
- Drawing 004 Cultural and Natural Heritage
- Drawing 005 Site Layout and Boundary

3.3 Environmental Risk Assessment

An Environmental Risk Assessment has been produced to assess the environmental risk posed by the proposed changes set out in this EP variation application.

Strict operational procedures will continue to be implemented at the site to monitor and manage amenity risks from the activities and include provision for the monitoring of scavenging birds, vermin, insects and litter, mud on road, odour, air and noise. The impact of the proposed activities is assessed in the Environmental Risk Assessment. Potential receptors are illustrated on Drawing 001.

Subject to the implementation of the stated management measures, the conclusion has been reached that the proposed activities are unlikely to result in a significant accident risk or risk to the amenity of the local environment.

The Environmental Risk Assessment is included as Section 4 of this EP variation application.

3.4 Operating Techniques and BAT Assessment

An Operating Techniques and BAT assessment for the LTP is included in Section 5 of this variation application.

The document describes the proposed design (with process flow diagram), operation and management of the LTP, identifying how it will meet the requirements and standards set out in regulatory and industry sector

guidance. The document also includes an Accident Management Plan. Guidance reviewed for the compilation of this document includes but is not limited to:

- European Commission Joint Research Centre – Best Available Techniques Reference document on Waste Treatment (August 2018) available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018D1147&from=EN>;
- Environment Agency - Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste (May 2013) available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/298118/LIT_8199_dd704c.pdf;
- Environment Agency - Develop a management system: environmental permits (April 2018) available at <https://www.gov.uk/guidance/develop-a-management-system-environmental-permits>; and
- Environment Agency - Control and monitor emissions for your environmental permit (November 2018) available at <https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit>.

The Operating Techniques and BAT Assessment is included as Section 5 of this EP variation application.

3.5 Baseline Site Condition Report

A Baseline Site Condition Report (SCR) is a requirement for the addition of a listed activity. The baseline SCR describes the condition of the site and will provide a point of reference and baseline environmental data. Therefore, when the EP is surrendered it can be demonstrated that there has been no deterioration in the condition of the land as a result of the proposed operations and ensure that the condition of the land is in a 'satisfactory state' on surrender of the EP.

It should also be noted that the pre-application advice included as Appendix 01, confirmed that there would be no need to complete a new SCR for the inclusion of the leachate pipelines which are located beneath the site haul roads, therefore this Baseline SCR only covers the addition of the proposed LTP as requested in Part C2, Question 5f. The site will continue to operate with due regard to the conditions of the EP and all relevant environmental legislation to ensure that the site does not pose a significant risk to the surrounding human and natural environment.

The Baseline SCR is included in Section 6 of this EP variation application.

3.6 Surface Water Pollution Risk Assessment (H1 Risk Assessment)

The LTP will discharge treated effluent to sewer, under an existing trade effluent discharge consent, therefore an H1 Risk Assessment has been prepared in support of this EP variation application to assess the variance in effluent quality.

The EA requires a Surface Water Pollution Risk Assessment (hereinafter referred to as a Risk Assessment) to quantify the environmental impact of discharging hazardous pollutants to the receiving watercourse (i.e. River Calder). If a hazardous pollutant is screened from the Risk Assessment, it is deemed by the EA as not being liable to cause pollution to the River Calder.

The Risk Assessment has been modelled on:

- All hazardous pollutants listed in the existing Trade Effluent Discharge Consent (TEDC) regulated by United Utilities at their permitted maximum concentration; and

- All other hazardous pollutants monitored by Suez in their sampling regime not listed in the TEDC at concentrations as per the methodology described in the report.

The Surface Water Pollution Risk Assessment is included as Section 7 of this EP variation application.

4.0 TECHNICAL STANDARD AND CONTROL MEASURES

The key technical standards laid out in the following documents govern the design and operation of the site:

- The Environmental Permitting (England and Wales) Regulations 2016 (as amended);
- Developing a management system: environmental permits;
- Controlling and monitor your emissions for an environmental permit;
- Sector Guidance Note S5.06; Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste; and
- Relevant EA Guidance e.g., Environmental Risk Assessment's, BREF Guidance, Site Condition Reports.

In addition to the sector guidance, the appropriate sections of the waste treatment BREF document, 2018 have been reviewed.

The control measures relevant to the proposed listed activity are described in the BAT Assessment submitted with this variation application.

The proposals have been assessed against these standards and are all considered to meet the relevant technical standards.

The overall conclusion is that there is unlikely to be a significant environmental impact as a result of the proposed activities on site.

Suez is fully committed to ensuring the highest standards are met and will undertake its activities in a manner consistent with best industrial practices and in accordance with the Company's accredited IMS.