

Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

Maw Green Landfill Soils Treatment Facility

3C Waste Limited

Environmental Permit Variation Application

Activities & Operating Techniques Report

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Activities & Operating Techniques Report

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Application Context	1
1.2	Document Structure	1
2.0	ACTIVITIES	3
2.1	Activities to be added (Part B3 Q1a).....	3
2.2	Types of waste accepted (Part B3 Q1b).....	3
3.0	EMISSIONS (PART B3 Q2)	5
3.1	Point source emission to air	5
3.2	Point source emission to sewers, effluent treatment plants or other transfers off site 5	5
3.3	Point source emission to water (other than sewers)	6
3.4	Point source emission to land.....	6
4.0	OPERATING TECHNIQUES – WASTE TREATMENT	7
4.1	Technical standards (Part B3 Q3a).....	7
4.2	General requirements (Part B3 Q3b).....	8
4.3	Types and amounts of raw materials (Part B3 Q3c)	8
5.0	INFORMATION FOR SPECIFIC SECTORS (PART B3 Q3D – APPENDIX 4)	9
5.1	Question 1: Appendix 4 – For the landfill sector, provide your Environmental Setting and Installation design (ESID) report and any other risk assessments to control emissions	9
5.2	Question 2: Appendix 4 – For recovery of hazardous waste on land activities, provide your Waste Acceptance Procedures (including Waste Acceptance Criteria)	9
5.3	Question 3: Appendix 4 – Provide your Hydrogeological Risk Assessment (HRA) for the site	9
5.4	Question 4: Appendix 4 – Provide your Outline Engineering Plan for the site.....	9
5.5	Question 5: Appendix 4 – Provide your Stability Risk Assessment (SRA) for the site ..	9
5.6	Question 6: Appendix 4 – Provide your Landfill Gas Risk Assessment (LFGRA) for the site	9
5.7	Question 7: Appendix 4 – For recovery of hazardous waste on land activities, have you completed a monitoring plan for the site?	9
5.8	Question 8: Appendix 4 – Have you completed a proposed plan for closing the site and your procedures for looking after the site once it has closed?	9
6.0	MONITORING	10
6.1	Measures for monitoring point source emissions (Part B3 Q4a)	10
7.0	REFERENCES	11

TABLES

Table 1	Types of activities
Table 2	Waste Types
Table 3	Technical Standards – Waste Treatment

1.0 INTRODUCTION

1.1 Application Context

- 1.1.1 3C Waste Limited (a wholly owned subsidiary of FCC Environment (UK) Limited) have appointed Caulmert Limited to prepare an environmental permit variation application to vary existing Maw Green Landfill permit ref. EPR/BS7722ID to include for the treatment of asbestos in soils (additional Section 5.3A(1)(a)(ii) activity) by 3-way screen and handpicking of bound asbestos fragments which will include an additional area for storage of solely asbestos contaminated wastes and be separate to the current STF bioremediation area. The proposed area for asbestos handling is located to the west of the current STF, as shown on drawing ref. 5193-CAU-XX-XX-DR-V-1805.
- 1.1.2 There is a local market for the treatment of soil containing asbestos. The site will accept hazardous asbestos contaminated soils for treatment to remove bound asbestos fragments and so recover the soils as a non-hazardous waste for use in restoration of the Maw Green Landfill. Bound asbestos fragments will be double bagged by hand, stored in a lockable skip and subsequently sent to a suitably licensed hazardous waste disposal facility (landfill). Asbestos-impacted soils will not be accepted for treatment if they contain fibre concentrations that could generate airborne fibres at concentrations above the threshold limit of 0.01 f/ml. Incoming soils will be tested for asbestos fibres prior to treatment. Any soils exceeding the limits will be rejected from site.
- 1.1.3 This activity is currently being undertaken under a mobile plant deployment by Provectus at Maw Green STF for the treatment of asbestos in soils, and asbestos monitoring is undertaken of airborne asbestos fibres at the site.
- 1.1.4 The monitoring data indicates airborne emissions are always below the detection limit of 0.0005 f/ml (see Treatment Process Description & BAT Review document ref. 5193-CAU-XX-XX-RP-V-0312). Therefore, this permit variation for Maw Green is to formalise the asbestos-soils treatment activity to be included as a permitted activity at the STF within the permit.
- 1.1.5 The bioremediation process at the existing STF will not change.

1.2 Document Structure

- 1.2.1 This 'Activities and Operating Techniques Report' provides a detailed response to questions within application form Part B3 for bespoke installation permits, to cover adding a new listed activity for the treatment activity.
- 1.2.2 The B3 form requests information about the activities the application relates to and the operating techniques that will apply to them. Information is requested on: -
- a) Types of activities;
 - b) Types of waste to be accepted;
 - c) Emissions;

- d) Operating techniques including technical standards;
- e) General requirements in relation to amenity and accident risks;
- f) Types and amounts of raw materials;
- g) Information for specific sectors (hazardous waste recovery and disposal sector);
- h) Monitoring of point source emissions;
- i) Resource efficiency and climate change.

1.2.3 This 'Activities and Operating Techniques Report' has been prepared to provide responses to the environmental permit application form Part B3 which relates to the issues listed above. To aid cross-referencing between this 'Activities and Operating Techniques Report' and the application form, the various issues are presented in the same order as in the application form and the headings in this document include reference to the specific question number to which the information relates.

2.0 ACTIVITIES

2.1 Activities to be added (Part B3 Q1a)

2.1.1 The activity proposed to be added to the permit is the physico-chemical treatment of hazardous waste for recovery and also the temporary storage of hazardous wastes for asbestos contaminated soils. Table 1 below lists only the activities to be added as part of this permit variation and the proposed tonnages:

Table 1. Types of activities

Name	Installation Schedule 1 reference	Description of the installation activity	Activity Capacity	Annex I and Annex II codes	Hazardous Waste Treatment Facility
Handpicking & Pre-screening of asbestos contaminated soils	Section 5.3 Part A (1)(a)(ii) activity	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.	38,000 tonnes at any one time	R5 – the recycling or reclamation of inorganic material. D9 – physico-chemical treatment of waste.	50,000 tonnes per annum (tpa)

2.1.2 The proposed tonnage of hazardous soils to be accepted within the STF is 50,000 tonnes per annum, which was recently applied to be increased as part of a previous permit application for the STF at Maw Green Landfill Site, permit variation number EPR/BS7722ID/V008. This is yet to be determined at the time of writing this report. There will be no changes to any of the existing activities listed in the permit or to the Directly Associated Activities as a result of this permit variation.

2.2 Types of waste accepted (Part B3 Q1b)

2.2.1 This application proposes new hazardous waste codes to be included in the Maw Green Landfill Permit for the new activity at the STF, specifically for the acceptance of asbestos contaminated soils, as follows in Table 2:

Table 2 – Waste Types

17	Construction and demolition wastes (including excavated soil from contaminated sites)	Details
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 03*	soil and stones containing hazardous substances	Wastes that contain identifiable pieces of bonded asbestos (any particle of size that can be identified as potentially being asbestos by a competent person if examined by the naked eye).
17 06	Insulation materials and asbestos-containing construction materials	
17 06 05*	construction materials containing asbestos	Wastes that contain discrete pieces of bonded asbestos within the soil matrix only.

- 2.2.2 There are no other changes to the current waste types listed in Table S2.3a and S2.3b of the permit for the Soils Treatment Facility as part of this permit variation application. The above wastes listed in Table 2 will be for the separate treatment and storage of asbestos wastes activity at the STF.

3.0 EMISSIONS (PART B3 Q2)

3.1 Point source emission to air

- 3.1.1 There will be no point source emissions to air from the proposed operations for the treatment and storage of bound asbestos contaminated soils, as part of this permit variation.
- 3.1.2 The potential for dust and airborne asbestos fibre emissions from the activity are considered in the Amenity & Accidents Risk Assessment report ref. 5193-CAU-XX-XX-RP-V-0310 and further control measures are presented in the updated Dust & Emissions Management Plan ref. 5193-CAU-XX-XX-RP-V-0313.
- 3.1.3 There will be no change to point source emissions to air from the existing STF area biofilter for bioremediation, as part of this permit variation.

3.2 Point source emission to sewers, effluent treatment plants or other transfers off site

- 3.2.1 There will be no change to point source emissions to sewers, effluent treatment plants or other transfers off-site as part of this permit variation.
- 3.2.2 The new hazardous soils storage and treatment pad will be constructed from crushed concrete with underlying geo-composite clay liner (GCL). Treatment pads are designed to have a fall towards a main water collection drain to ensure that water is continually drained from the pads. Water is unable to leave the downgradient periphery of the pads by lateral flow due to the presence of a containment bund of 300mm height. Water is unable to migrate to underlying controlled waters due to the presence of an engineered pad with a geosynthetic clay liner that would have a design permeability of 1×10^{-9} m/s as a minimum. The sealed drainage will ensure all surface waters will fall and be collected at the pumping chamber in the north-eastern side of the site, before being pumped across to the existing water treatment plant and then discharged to sewer via existing discharge consent. Asbestos and other restricted substances will continue to be tested for prior to discharging any waste waters to sewer, as per limits within the discharge consent. Asbestos is only accepted in a bound form. This means that it is encapsulated in a cement matrix within the soil. The presence of asbestos in a bound matrix in soil has previously been expected to prevent the release of asbestos fibres into soil porewater. Fibre concentrations in soil are generally not detected at or below the detection limit of <0.001% in received soils. Water monitoring from asbestos soils processing and storage areas at Edwin Richards Quarry, in Rowley Regis Mobile Plant operation, a similar site operated by FCC, has not detected asbestos fibres to be present in effluent from asbestos processing areas (see Appendix 5 of Treatment Process Description & BAT Review report ref. 5193-CAU-XX-XX-RP-V-0312) and therefore, no abatement of asbestos in effluent is proposed for the asbestos in soils treatment pad.

3.3 Point source emission to water (other than sewers)

3.3.1 There are existing surface water emission points relating to the landfill activity, however no direct discharge to surface water occurs as part of the STF activity and this will not change as a result of the proposed activity.

3.4 Point source emission to land

3.4.1 There will be no change to point source emissions to land as part of this permit variation. Treated soils will undergo post-treatment verification sampling and testing, before being used for the restoration of the landfill as treatment for recovery purposes.

4.0 OPERATING TECHNIQUES – WASTE TREATMENT

4.1 Technical standards (Part B3 Q3a)

Table 2: Technical standards – Waste treatment

Description of Schedule 1 activity or directly associated activity	Relevant technical guidance note or Best available techniques as described in BAT conclusions under IED	Document reference
Section 5.3 Part A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day (pre-screening & hand-picking of asbestos contaminated soils)	<p>Environment Agency Guidance: Sector Guidance Note IPPC S5.06: Recovery and disposal of hazardous and non-hazardous waste (published May 2013, updated October 2018).</p> <p>Commission implementing decision (EU) 2018/1147 of 10 August 2018. 'Establishing best available techniques (BAT) conclusions for waste treatment', under Direction 2010/75/EU of the European Parliament and of the Council.</p> <p>Risk assessments for your environmental permit (last updated 31st August 2022).</p>	<p>Treatment Process Description & BAT Review' doc. ref. 5193-CAU-XX-XX-RP-V-0312 included in this application.</p> <p>Environmental Risk Assessment - Amenity and Accidents Risk Assessment document ref. 5193-CAU-XX-XX-RP-V-0310 included in this application.</p> <p>Management System ref. 5193-CAU-XX-XX-RP-0315, included in this application.</p> <p>Dust & Emissions Management Plan ref. 5193-CAU-XX-XX-RP-V-0313</p> <p>Odour Management Plan ref. 5193-CAU-XX-XX-RP-V-0314</p>

- 4.1.1 For many installation activities, a 'sector guidance note' (SGN) have been published which sets out in detail the indicative 'best available techniques' (BAT) standards for how to carry out those activities. The sector guidance notes are based on European BAT reference document (BREFs) that are intended to ensure European consistency in the understanding of what is BAT for a certain sector.
- 4.1.2 There is a specific SGN for waste treatment, which is 'Sector Guidance Note IPPC S5.06. Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste'.
- 4.1.3 The Environment Agency are now implementing a revised set of BAT conditions which all new and existing installations are required to meet. As part of this, a revised BAT assessment is required which implements all relevant BAT conclusions as described in the Commission Implementing Decision. The BAT Reference Document for Waste Treatment (the BREF) was published in August 2018 following a European Union Wide review of BAT.

4.1.4 The technical standards for Maw Green STF against BAT Conclusions are detailed within report 5193-CAU-XX-XX-RP-V-0312 (attached to this application).

4.2 General requirements (Part B3 Q3b)

4.2.1 It is a general requirement for all applications to consider the risk of emissions in relation to possible accidents, fugitive emissions, odour and noise and vibration as a result of this variation. Risk assessments were carried out using the Environment Agency's templates for environmental risk assessments as set out in the guidance:

- An Amenity and Accidents Risk Assessment document ref. 5193-CAU-XX-XX-RP-V-0310 is included within the application.
- The Dust & Emissions Management Plan (DEMP) was also updated for the STF to include for the additional asbestos wastes treatment and storage activities and is provided as document referenced 5193-CAU-XX-XX-RP-V-0313.
- The Odour Management Plan (OMP) has also been updated as document ref. 5193-CAU-XX-XX-RP-V-0314, however there were only minor changes to the introductory wording of this document and the risks to receptors and control measures remain the same and so this has not been submitted as part of this variation.

4.3 Types and amounts of raw materials (Part B3 Q3c)

Raw materials

4.3.1 The waters for dust suppression systems may be dosed with an asbestos surfactant additive which is a specially formulated solution which is capable of penetrating and "wetting out" amphibole (hydrophobic) forms of asbestos quickly and thoroughly. A copy of the MSDS sheets for the asbestos surfactant can be found in Appendix 2 of the Treatment Process Description & BAT Review report ref. 5193-CAU-XX-XX-RP-V-0312. The treatment process does not require the use of any other raw materials except water and asbestos surfactant additive for dust/asbestos fibre suppression, and small amounts of water for general cleaning and domestic use on site.

4.3.2 The use of raw materials as part of the bioremediation treatment process at the STF will not change as part of this permit variation.

4.3.3 The operator will select the least harmful products to use in the operation wherever possible.

4.3.4 The operator will keep Safety Data Sheets for all products used at the facility and will monitor the quantity of materials used. This will provide data for regular reviews of raw materials usage at the facility.

5.0 INFORMATION FOR SPECIFIC SECTORS (PART B3 Q3D – APPENDIX 4)**5.1 Question 1: Appendix 4 – For the landfill sector, provide your Environmental Setting and Installation design (ESID) report and any other risk assessments to control emissions**

5.1.1 An Environmental Setting and Installation Design (ESID) addendum report to the original 2003 ESID has been provided as part of this permit variation as document ref. 5193-CAU-XX-XX-RP-V-0309.

5.1.2 An Amenity and Accidents Risk Assessment (ARA) report ref. 5193-CAU-XX-XX-RP-V-0310 for the Soil Treatment Facility (STF) has been updated as part of this permit variation application.

5.2 Question 2: Appendix 4 – For recovery of hazardous waste on land activities, provide your Waste Acceptance Procedures (including Waste Acceptance Criteria)

5.2.1 The operating techniques, including waste acceptance procedures relating to the proposed activities have been updated as a result of the current mobile plant deployment operation at Maw Green. The acceptance of soils from the STF to be used in the restoration of the landfill will be in accordance with the approved Waste Recovery Plan.

5.3 Question 3: Appendix 4 – Provide your Hydrogeological Risk Assessment (HRA) for the site

5.3.1 Not relevant to this application.

5.4 Question 4: Appendix 4 – Provide your Outline Engineering Plan for the site

5.4.1 Not relevant to this application.

5.5 Question 5: Appendix 4 – Provide your Stability Risk Assessment (SRA) for the site

5.5.1 Not relevant to this application.

5.6 Question 6: Appendix 4 – Provide your Landfill Gas Risk Assessment (LFGRA) for the site

5.6.1 Not relevant to this application.

5.7 Question 7: Appendix 4 – For recovery of hazardous waste on land activities, have you completed a monitoring plan for the site?

5.7.1 Additional proposed monitoring at the site for dust and asbestos fibre emissions is covered in the updated Dust & Emissions Management Plan report ref. 5193-CAU-XX-XX-RP-V-0313.

5.8 Question 8: Appendix 4 – Have you completed a proposed plan for closing the site and your procedures for looking after the site once it has closed?

5.8.1 The closure plan for the landfill site remains unchanged as a result of this permit variation.

6.0 MONITORING

6.1 Measures for monitoring point source emissions (Part B3 Q4a)

Emissions to air

- 6.1.1 There will be no point source emissions to air from the proposed operations for the treatment and storage of bound asbestos contaminated soils, as part of this permit variation.
- 6.1.2 There will be no other changes to the point source emissions to air as part of this permit variation application. Daily olfactory, temperature and moisture content monitoring of the biofilter will continue as per the permit and is in addition to the biofilter sampling and testing as required in the permit. There are no other point source emissions proposed as part of this permit variation.
- 6.1.3 Monitoring at the site for dust and asbestos fibres and further control measures is covered in the Dust & Emissions Management Plan ref. 5193-CAU-XX-XX-RP-V-0313.

Emissions to sewers, effluent treatment plants or other transfers off site

- 6.1.4 There will be no changes to the point source emissions to sewers, effluent treatment plants or other transfers off-site as part of this permit variation application. Surface water will be collected by the site drainage system and directed to a pumping chamber on the north-eastern side of the new treatment area, before being pumped across to the existing water treatment plant at the STF. Treated waters will be discharged to sewer in accordance with the parameter limits detailed within the existing trade effluent discharge consent.

Emissions to water (other than sewers)

- 6.1.5 There are no discharges to surface water resulting from this application for the Soil Treatment Facility, which benefits from a contained drainage system separate from the landfill.

Emissions to land

There are no point source emissions to land resulting from this application for the Soil Treatment Facility, which will be operated to ensure dust and debris emissions are minimised and operations are undertaken on the treatment pad only. The site surfacing will consist of crushed concrete with geo-composite clay liner (GCL) membrane to prevent run-off entering the ground below.

7.0 REFERENCES

- Directive 2008/98/EC of the European and of the Council of 19 November 2008 on waste and repealing certain Directives.
- The Environmental Permitting (England and Wales) Regulations 2016.
- Environment Agency (2007): Sector Guidance Note IPPC S5.06. Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste.
- European Parliament 2018: Commission implementing decision (EU) 2018/1147 of 10 August 2018. Establishing best available techniques (BAT) conclusions for waste treatment, under Direction 2010/75/EU of the European Parliament and of the Council.
- Environment Agency (2013): Understanding the meaning of a regulated facility. RGN 2 version 3.0.
- Environment Agency (2017): Application for an environmental permit – Part B3 – variation to a bespoke installation permit. Version 13, September 2021.

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