

# Caulmert Limited

Engineering, Environmental & Planning  
Consultancy Services

**Maw Green Landfill Soil Treatment Facility**

**3C Waste Limited**

**Environmental Permit Variation Application**

**Dust & Emissions Management Plan**

**Prepared by:**

**Caulmert Limited**

**Office:** Strelley Hall, Main Street, Strelley, Nottingham, NG8 6PE

**Tel:** 01773 749 132

**Email:** [andystocks@caulmert.com](mailto:andystocks@caulmert.com)

**Web:** [www.caulmert.com](http://www.caulmert.com)

**Document Reference:** 5193-CAU-XX-XX-RP-V-0313.A0.C1

January 2023



**APPROVAL RECORD**

**Site:** Maw Green Landfill Soil Treatment Facility

**Client:** 3C Waste Limited

**Project Title:** Environmental Permit Variation Application

**Document Title:** Dust & Emissions Management Plan

**Document Ref:** 5193-CAU-XX-XX-RP-V-0313.A0.C1

**Report Status:** **Final**

**Project Manager:** Andy Stocks

**Caulmert Limited:** Strelley Hall, Main Street, Strelley, Nottingham, NG8 6PE

<b>Author</b>	Samantha Hayden Environmental Consultant	<b>Date</b>	12/12/2022
<b>Reviewer</b>	Andy Stocks Director of Environment	<b>Date</b>	12/12/2022
<b>Approved</b>	Andy Stocks Director of Environment	<b>Date</b>	12/12/2022

Revision Log			
Revision	Description of Change	Approved	Effective Date
C1	Initial Release	AS	10/01/2023

**DISCLAIMER**

This report has been prepared by Caulmert Limited with all reasonable skill, care and diligence in accordance with the instruction of the above named client and within the terms and conditions of the Contract with the Client.

The report is for the sole use of the above named Client and Caulmert Limited shall not be held responsible for any use of the report or its content for any purpose other than that for which it was prepared and provided to the Client.

Caulmert Limited accepts no responsibility of whatever nature to any third parties who may have been made aware of or have acted in the knowledge of the report or its contents.

No part of this document may be copied or reproduced without the prior written approval of Caulmert Limited.

## Dust & Emissions Management Plan

### TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Report Context.....	1
1.2	Objectives .....	1
<b>2.0</b>	<b>SITE BACKGROUND .....</b>	<b>1</b>
2.1	Site Setting .....	1
2.2	Proposed Development .....	2
2.3	Bioremediation Process Description.....	6
<b>3.0</b>	<b>POTENTIAL SENSITIVE RECEPTORS.....</b>	<b>7</b>
3.1	Overview .....	7
3.2	Receptors .....	7
3.3	Ecological Designations.....	7
3.4	Meteorological Setting .....	9
<b>4.0</b>	<b>POTENTIAL DUST SOURCES .....</b>	<b>10</b>
4.1	Source .....	10
4.2	Risk Assessment.....	10
<b>5.0</b>	<b>POTENTIAL PATHWAYS .....</b>	<b>16</b>
5.1	Airborne Pathways.....	16
<b>6.0</b>	<b>CONTROL MEASURES .....</b>	<b>17</b>
6.1	Overview .....	17
6.2	Pre-Acceptance, Waste Acceptance and Pre-Assessment .....	18
6.3	Site Traffic and Movement of Vehicles.....	19
6.4	Waste Operations .....	20
6.5	Pre-Screening and Hand-Picking.....	21
6.6	Dust Suppression .....	22
6.7	Bioremediation Process .....	22
6.8	Off Site Dust Emission.....	22
<b>7.0</b>	<b>MONITORING .....</b>	<b>23</b>
7.1	Baseline Background Monitoring.....	23
7.2	Schedule.....	23
7.3	Meteorological Monitoring.....	25
7.4	Dust Monitoring.....	25
7.5	Asbestos Monitoring.....	26
<b>8.0</b>	<b>ENGAGING WITH THE NEIGHBOURS .....</b>	<b>27</b>
8.1	Complaints Procedure .....	27
8.2	Complaints Monitoring.....	27

<b>9.0</b>	<b>REMEDIAL ACTION PLAN .....</b>	<b>28</b>
9.2	Record Keeping and Reporting .....	28
9.3	DEMP Review .....	28

## **DRAWINGS**

<b>5193-CAU-XX-XX-DR-V-1804</b>	Sensitive Receptor Plan
<b>5193-CAU-XX-XX-DR-V-1806</b>	Dust and Asbestos Monitoring Plan

## **APPENDICES**

<b>Appendix 1</b>	CRS Picking Station Specification
<b>Appendix 2</b>	Operating Procedures
<b>Appendix 3</b>	Asbestos Surfactant MSDS Sheets
<b>Appendix 4</b>	Complaints Recording Form
<b>Appendix 5</b>	Site Inspection Form

## 1.0 INTRODUCTION

### 1.1 Report Context

- 1.1.1 3C Waste Ltd, a wholly owned subsidiary of FCC Environment (UK) Ltd (hereafter referred to as ‘the operator’) operate Maw Green Landfill Site and the Soil Treatment Facility (STF) under permit ref. EPR/BS7722ID. Maw Green Landfill Site is located approximately 2.5km northeast of Crewe, in Cheshire.
- 1.1.2 This Dust & Emissions Management Plan (DEMP) has been updated to reflect the addition of a new area to the Maw Green STF for the storage and treatment of asbestos contaminated wastes (soils) as part of a permit variation application. As a result of this update, the report reference number has been changed from 5193-CAU-XX-XX-RP-V-0303 to 5193-CAU-XX-XX-RP-V-0313. The dust control measures in place in this DEMP remain unchanged from the original plan for the existing bioremediation process of soils at the existing STF, however additional control measures have been added to this plan to cover the risks associated with airborne asbestos fibres released from the proposed operations in the new area to the west.
- 1.1.3 This Dust & Emissions Management Plan (DEMP) provides details of appropriate measures that are required for effective dust & emissions management and control at the facility during operation.

### 1.2 Objectives

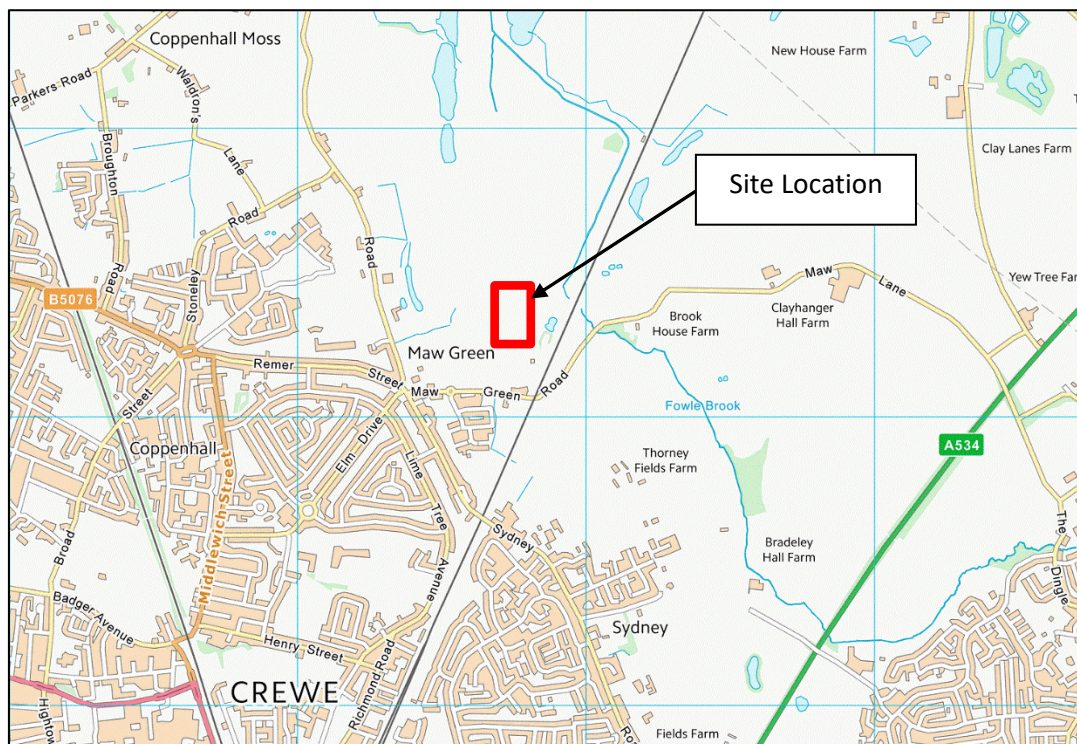
- 1.2.1 This DEMP has the aim of ensuring that potential dust and emission (asbestos fibres) sources are identified and controlled at source where possible. The DEMP aims to minimise the risk of dust and airborne asbestos fibre emissions impact at locations outside of the facility boundary.
- 1.2.2 As a minimum this DEMP will consider the following elements:
- An assessment of the risks of dust and airborne asbestos problems at the facility;
  - Identify the appropriate controls to manage the identified risks;
  - Monitoring of emissions;
  - Identify actions, contingencies and responsibilities when dust or emissions problems arise;
  - Complaints procedures; and,
  - Regular review of the effectiveness of the dust and emissions control measures.
- 1.2.3 The DEMP is supported by the procedures and controls established within the following site documents:
- The site’s Environmental Management System;
  - Activities and Operating Techniques report ref. 5193-CAU-XX-XX-RP-V-0311;
  - Best Available Techniques in report ref. 5193-CAU-XX-XX-RP-V-0312; and,
  - Environmental Risk Assessment ref. 5193-CAU-XX-XX-RP-V-0310.

## 2.0 SITE BACKGROUND

### 2.1 Site Setting

2.1.1 The Maw Green Soil Treatment Facility ('the site') is located approximately 2km north of the centre of Crewe (i.e. on the outskirts of Crewe), in the county of Cheshire. The site is centred on National Grid Reference SJ 71859 57401. The site is in a low-lying area, with general ground elevations around 45mAOD indicated.

2.1.2 The approximate location of the STF is shown below in Figure 1:



**Figure 1 – Site Location**

2.1.3 The ground rises very gently to both the west and east, indicating that the site lies in a wide-open valley. The Fowle Brook flows through this valley in a northerly direction. This brook has been diverted around the installation.

2.1.4 The site is in a predominantly agricultural setting on the north-eastern outskirts of the town of Crewe. Potential environmental receptors include domestic dwellings both within the town and farms surrounding the site. In addition, surface water receptors are present within the Sandbach Flashes Site of Special Scientific Interest (SSSI) to the north and the diverted Fowle Brook to the east being the closest surface water to the site. Also found 5km to the southeast is another SSSI – Oakhanger Moss.

2.1.5 A number of residential receptors on the outskirts of Crewe have been identified as sensitive receptors. Houses in Maw Green are located approximately 170m southwest of the site, Meadow Cottage is 210m southeast of the site and houses on Maw Green Road

are 240m southwest. Brook House Farm is also located 315m east. The closest school is Monks Coppenhall Primary School located 560m to the west-southwest of the site. As the prevailing wind direction is from the southwest, none of these developments are considered to be at a high risk from odour or dust nuisance from the site.

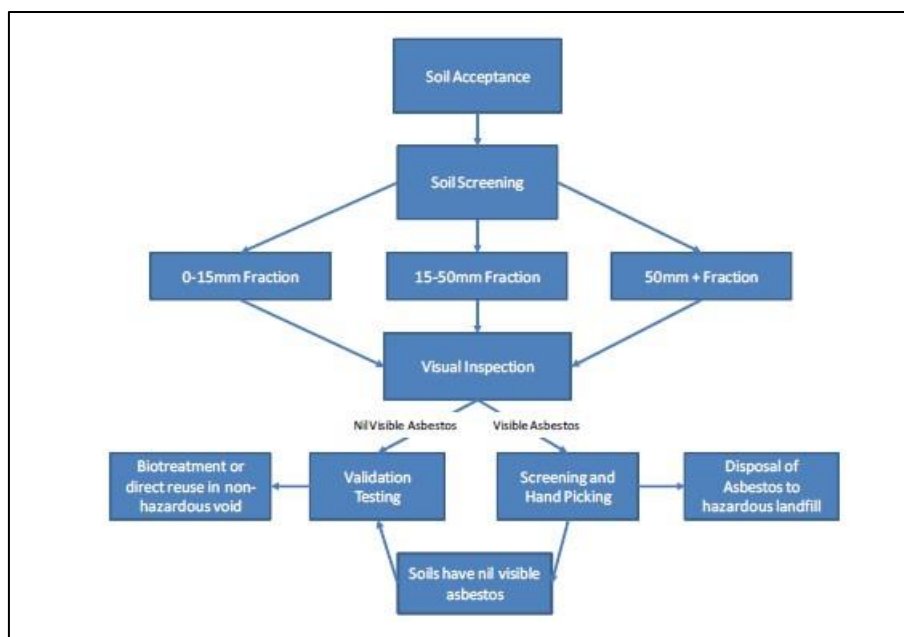
## 2.2 Proposed Development

2.2.1 It is proposed to add an additional listed activity to permit ref. EPR/BS7722ID, for the treatment and storage of soils contaminated with asbestos at the Soils Treatment Facility (STF) at Maw Green Landfill Site, as follows:

- Section 5.3 Part A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.

2.2.2 The new treatment and storage activity is to be in a separate area to the west of the existing STF, partly constructed on top of the permanently capped landfill mass, but within the existing permit boundary. The treatment of the asbestos in soils will be by 3-way screening and handpicking of bound asbestos and the storage will be solely for asbestos contaminated wastes in a separate area.

2.2.3 A flow diagram showing the proposed treatment activities for asbestos-impacted soils at Maw Green STF is shown in Figure 2 below:



**Figure 2 – Soil Treatment Overview**

2.2.4 This activity is currently being undertaken under a mobile plant deployment by Provectus at Maw Green STF for the treatment of bound asbestos in soils, and asbestos monitoring is undertaken of airborne asbestos fibres at the site. The monitoring data demonstrates that 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-0V-0312 for

monitoring results and discussion). 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.

- 2.2.5 The proposed soils bioremediation process will remain the same at the existing STF, utilising industry standard biopile technology. Hazardous soils containing bonded asbestos debris will undergo pre-acceptance checks, a pre-screening process and hand-picking of bonded asbestos fragments in the new proposed area for treatment and storage, before being sent across to the existing STF area for bioremediation (if hydrocarbon impacted) or direct to the landfill for use in restoration.
- 2.2.6 The facility will be limited to accepting wastes that can be treated to a point where they can be used for restoration soils on the landfill area in accordance with the approved restoration plan. Non-hazardous soils (including hazardous soils which have been treated) may be screened to remove oversize inclusions, prior to use in the restoration of the site, after validation testing is complete to ensure they are physically suitable. Following screening, the soils will be stockpiled for use in recovery at Maw Green Landfill Site, this may also include soils that have undergone the bioremediation process to remove oversized materials.
- 2.2.7 The new hazardous soils storage and treatment pad will be constructed from crushed concrete with underlying geo-composite clay liner (GCL). This will have sealed drainage where all surface waters will fall and be collected in a pumping chamber before being pumped across site to the existing water treatment plant on the eastern side of the existing STF 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.

#### Waste Storage

- 2.2.8 Segregation of the accepted waste types will be required on-site to ensure waste soils intended to be sent directly into the bioremediation process are not mixed with those containing asbestos. The separation of wastes in the bioremediation process is not necessary as they are not considered to be reactive. In the event of any non-conforming wastes accepted at the site, a waste rejection notification will be issued informing the waste carrier that the waste is not suitable for treatment.
- 2.2.9 After placement on the storage area, the soils will be sheeted to reduce the potential for air borne emissions. The pre-assessment testing is carried out to confirm the soil matrix and not containing any asbestos fibres above 0.1% for chrysotile asbestos and 0.01% for all other forms of asbestos. Until the testing has been completed, the soils will remain sheeted.
- 2.2.10 Following satisfactory results from pre-assessment confirming that the soils are compliant with the acceptance criteria, the soil can be stored externally, un-sheeted and will undergo pre-screening and handpicking for bonded asbestos fragments. Asbestos containing soils



with fibre concentrations that have the potential to become airborne at concentrations above the air monitoring detection limit will be rejected from site. Soils that meet all waste acceptance checks will be formally accepted for treatment.

- 2.2.11 Rejected wastes will be stored within a designated quarantine area pending removal from site and a note will be made of the waste type, quantity, hazardous properties and storage requirements. The quarantine area is segregated from the storage areas for other permitted wastes to reduce the risk of cross contamination.

#### Pre-screening and hand-picking of asbestos containing soils

##### Screening Operations

- 2.2.12 A mechanical screener will be used to remove oversize material from asbestos containing soils. Soils will be screened using a three-way screener. The screened material is then passed through the picking station to allow the removal of any bound asbestos debris. This is to remove larger items (e.g. lumps of concrete) to reduce the potential of damage to the picking station and make hand picking of asbestos debris more effective.

The screener currently being used under the mobile plant deployment at Maw Green is unmodified. Trials on enclosed screeners with a HEPA filter and uncovered screeners with general dust suppression have shown no difference in emissions as they all meet the method detection limit of <0.0005f/ml. However, the use of enclosed screeners is far slower, prone to significant downtime and uses significantly more energy due to reduced throughput for no environmental benefit. The use of standard dust suppression with a proprietary surfactant has been shown to be entirely effective as secondary mitigation to the waste acceptance criteria. Where SEM testing is undertaken this will ensure that the asbestos concentrations in air are below 0.0005f/ml. This approach and reduced detection limit for the asbestos monitoring meets the well-established principle of reducing emissions to be as low as reasonably practicable.

- 2.2.13 Daily monitoring will be undertaken to ensure that emissions meet <0.01f/ml or <0.0005f/ml as required. As secondary mitigation measures, continuous dust suppression in the form of misting systems is also provided around the screening operations to reduce the potential for any fugitive emission release. Materials moved from the screener to the picking station will be a continuous process where soils are directly fed from the screener to the picking station via a conveyor.

##### Asbestos Picking Station

- 2.2.14 The asbestos picking station will be a mobile enclosed unit and will be identical to the type approved for use under an environmental permit at the operator's other sites.
- 2.2.15 Airborne asbestos concentrations have been monitored both within, and directly adjacent to the picking station at the operator's other sites. There is no increase in asbestos concentrations above the method detection limit of either <0.01f/ml or <0.0005f/ml within the internal atmosphere of the soil screeners/picking stations monitored, nor ambient air

immediately outside of the screener/picking station. This monitoring has been undertaken since the operator commenced the treatment of bound asbestos contaminated soils. All air monitoring data has been submitted to the Environment Agency and approved as being compliant with the site's permit for each site (see monitoring data within document ref. 5193-CAU-XX-XX-RP-V-0312).

- 2.2.16 Notwithstanding the evidence that there are no elevated airborne asbestos emissions within the screening plant/picking stations of the above sites, as an additional control measure there will be a series of spray rails on the incoming and outgoing conveyor to effectively capture and contain particulate emissions. This would act as secondary mitigation for any particulate emissions.
- 2.2.17 The out-going conveyor will drop the hand-picked processed soils, and the drop height will be minimised to reduce any agitation of the soils. A dust suppression system (using a water and proprietary asbestos surfactant solution) will be in place at the site that will consist of continuous misting sprays with overlapping spray arcs, identical to the approved suppression system on the operator's other sites that can be used to continually dampen stockpiles during loading and unloading activities.
- 2.2.18 The process in the picking station will involve a manual sorting process by trained operatives who will remove visible fragments of asbestos from the materials from the conveyor. Asbestos picked from the conveyor will be placed by hand in individual polythene bags located inside the picking station beside the trained operatives. When the bags are either full, or the end of the working day is achieved, the polythene bag will be placed into a second bag and sealed using a taped swan neck. The double bagged asbestos will be taken outside and placed by hand into the on-site enclosed lockable asbestos skip. Used PPE from the picking station and direct working areas will be double bagged using the same approach as asbestos containing material (ACM) debris and placed into the enclosed lockable asbestos skip.

*Asbestos Storage (post-treatment)*

- 2.2.19 The out-going conveyor from the asbestos picking station will deposit the hand processed soils into a separate stockpile labelled as treated soils. The stockpile within this designated area will then undergo further visual inspection by the suitably trained/qualified member of staff for any residual bonded asbestos containing fragments. If any bonded asbestos fragments are encountered, the materials will be re-loaded into the asbestos picking station and processed until no visible bonded asbestos fragments are observed through visual inspection.
- 2.2.20 The materials will then undergo 'Post Treatment Verification Sampling' (See Section 2.9) testing and sampling will confirm that treated soils meet the restoration soil quality targets to enable their use in the restoration area of Maw Green Landfill Site. If, after the receipt of laboratory analysis results, the soils do not meet the acceptance criteria, the soils will either be treated further or removed from site to an alternative disposal facility.

2.2.21 Following screening, the soils will be stockpiled for use in recovery at the landfill site, this may also include soils that have undergone bioremediation.

### **2.3 Bioremediation Process Description**

2.3.1 There will be no change to the bioremediation process at the STF as part of this permit variation.

## 3.0 POTENTIAL SENSITIVE RECEPTORS

### 3.1 Overview

- 3.1.1 The site is located within a predominantly agricultural area but is situated northeast of the residential outskirts of Crewe, Cheshire. The site is in a low-lying area, with general ground elevations around 45mAOD indicated.
- 3.1.2 Potential environmental receptors include domestic dwellings both within the town and farmlands surrounding the site. In addition, surface water receptors are present within the Sandbach Flashes Site of Special Scientific Interest (SSSI) to the north and the diverted Fowle Brook to the east being the closest to the site.

### 3.2 Receptors

- 3.2.1 A number of residential receptors on the outskirts of Crewe have been identified as sensitive receptors. Houses in Maw Green are located approximately 170m southwest of the site, Meadow Cottage is 210m southeast of the site and houses on Maw Green Road are 240m southwest. Brook House Farm is also located 315m east. The closest school is Monks Coppenhall Primary School located 560m to the west-southwest of the site. As the prevailing wind direction is from the southwest, none of these developments are considered to be at a high risk from odour or dust nuisance from the site.
- 3.2.2 The closest surface water feature is a stream, Fowle Brook, to the 140m to the east-northeast of the site, which runs parallel to the railway line along the northeast site boundary. Approximately 530m to the northwest is a pond, which is located directly south of the water features which constitute Sandbach Flashes SSSI (which are 615m northwest of the site). Brook House Pools are located approximately 400m to the north, north-east of the site.
- 3.2.3 The site is situated within a NO<sub>x</sub> (as NO<sub>2</sub>) Air quality Management Area (AQMA), as is most of Cheshire. There are no Source Protection Zones (SPZs) within 2km of the site, with the nearest SPZ (Zone III) located over 8km away to the southeast.
- 3.2.4 The site is not located within a flood risk zone. The site is located on Devensian Glacial Till deposits (silt, clay, sands and gravels) classified by the Environment Agency as a Secondary (undifferentiated) Aquifer. The superficial deposits are underlain by the Wilkesley Halite Member (Halite and Mudstone) of the Mercia Mudstone Group, which has not been given aquifer status by the Environment Agency.

### 3.3 Ecological Designations

- 3.3.1 A search was conducted for habitats and environmental receptors within a 2km radius of the site. From a review of the Magic Maps website the site is not within 2km of any of the following designated sites: Areas of Outstanding Natural Beauty (AONBs), Local Nature Reserves (LNRs), National Nature Reserves (NNRs), Ramsar sites, Special Areas of

Conservation (SACs), Special Protection Areas (SPAs), or any Scheduled Monuments and World Heritage Sites.

- 3.3.2 Sandbach Flashes Site of Special Scientific Interest (SSSI) is located approximately 615m north-northwest of the proposed site. The Sandbach Flashes are made up of 14 live units, which are all found north of the site within a 5km radius. The 3 units within 900m of the site are in favourable condition (closest 615m NNW), with 8 units north of this in an unfavourable (no change) condition, one unit being unfavourable declining, and one more unit 3.4km north being in favourable condition. Sandbach Flashes are defined according to Natural England as:

*'Sandbach Flashes is a site of physiographical and biological importance. It consists of a series of pools formed as a result of subsidence due to the solution of underlying salt deposits. The water varies from freshwater, chemically similar to other Cheshire meres, to highly saline. Inland saline habitats are extremely rare and are of considerable interest because of the unusual associations of plants and animals. Most of the flashes are surrounded by semi-improved or improved grassland. Fodens Flash is partly surrounded by an important area of wet woodland.'*

- 3.3.3 Two Local Wildlife Sites (LWSs) have also been identified nearby: Brook House Pools approximately 400m north-northeast, and also Clay Lane Verges approximately 1.5km to the northeast of the site.
- 3.3.4 The potential receptors within 1000m of the site boundary are provided on drawing ref. 5193-CAU-XX-XX-DR-V-1804 and are summarised in Table 1 below:

**Table 1 - Potential Receptors identified within 1000m of the site boundary**

Receptor	Receptor Type	Distance & Direction from Site
Maw Green Landfill Site	Industrial	<10m W&N
Fowle Brook	Surface Water	140m ENE
Railway Line	Commercial	140m E
Maw Green Residential Area	Residential	170m SW
Meadow Cottage	Residential	210m SE
Maw Green Road	Public Road	220m S
House on Maw Green Road	Residential	240m SW
Brook House Farm	Residential	315m E
Brookhouse Pools Local Wildlife Site	Habitat/Surface Water	400m NNE
Car Dealership	Industrial/Commercial	420m WNW
Residences on Groby Road	Residential	440m W
Public Footpath	Recreational	450m NW

Receptor	Receptor Type	Distance & Direction from Site
Pond	Surface Water	530m NW
Monks Copenhall Primary School	Residential	560m WSW
Sandbach Flashes SSSI	Habitat	615m NNW
Stoneley Residential Area	Residential	630m NW
Sydney Residential Area	Residential	740m SE
Foxholme Farm	Residential	750m NE
Sir William Stanier Community School	Residential	930m SW
Clayhanger Hall Farm	Residential	1000m NE

### 3.4 Meteorological Setting

- 3.4.1 Fugitive emissions of dust, litter, odour and noise from the site are likely to be affected by local weather conditions, in particular by wind direction. Wind statistics observed from the closest weather station, Leek Thorncliffe, located approximately 28km east from the site are considered to be representative of the typical conditions at the site (Figure 3 below).
- 3.4.2 A review of the data recorded daily between April 2010 and September 2022 on the Windfinder.com website indicates that the most dominant wind direction is from the south-southwest towards the north-northeast.

#### Monthly wind direction and strength distribution

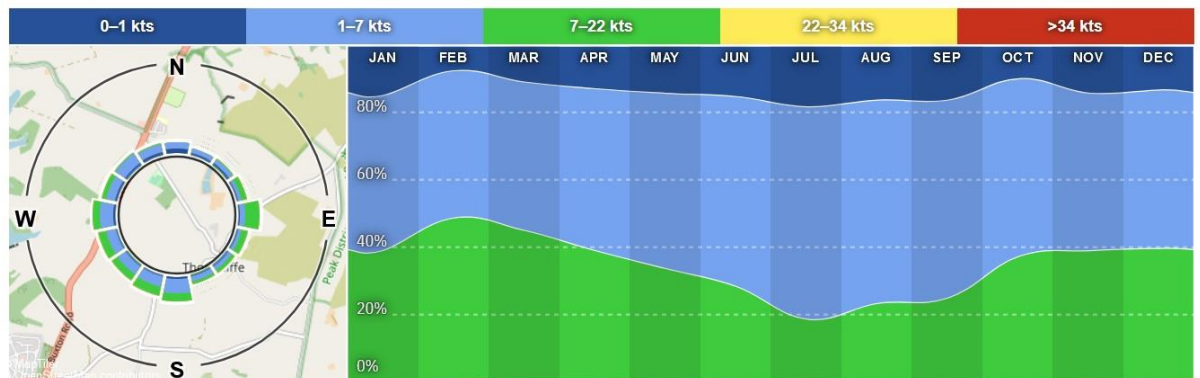


Figure 3 – Leek Thorncliffe – average annual wind direction & strength 2010-2022

## 4.0 POTENTIAL DUST SOURCES

### 4.1 Source

4.1.1 Fugitive dust could result in visible dust being observed crossing the site boundary, a human health risk to workers and human receptors beyond the site boundary and nuisance can be caused by dust deposition on surfaces at sensitive receptors.

4.1.2 Potential dust sources have been identified at the site from the operational activities to be carried out, these are detailed below:

- Delivery of wastes to site, either for bioremediation process or asbestos hand-picking;
- Vehicle movements around site;
- Transfer of soils to appropriate storage areas and then to processing areas;
- Bioremediation of hydrocarbon contaminated soils including initial placement, aeration and turning;
- Storage of asbestos contaminated soils during pre-acceptance testing;
- Screening and hand-picking of asbestos contaminated soils; and,
- Storage and transfer of residual material removed from soil screening process.

### 4.2 Risk Assessment

4.2.1 A risk assessment detailing the source, pathway and receptor has been included in Table 2 below which identifies the mitigation measures to reduce the pathway to receptors from the proposed site activities relating to fugitive emissions. The Amenity and Accidents Risk Assessment, document ref: 5193-CAU-XX-XX-RP-V-0310 provides further detail on possible hazards of odour, noise & vibration, accidents as well as fugitive emissions.

4.2.2 The risk assessment details the control and mitigation measures to minimise fugitive dust emissions from operations at Maw Green Soil Treatment Facility.

4.2.3 It is considered that the majority of dust emissions are prevented from occurring due to the pre-acceptance testing of incoming soils to detect soils with loose asbestos fibres, which are not processed and are rejected from site. Monitoring will provide verification to the effectiveness of the pre-acceptance testing and initiate any mitigation measures to be carried out on site.

4.2.4 It is maintained that the proposed new STF area for the treatment and storage of asbestos contaminated wastes will not result in significant or adverse emissions due to the nature and scale of the operations and historic air monitoring of identical operations on other sites.

4.2.5 Airborne asbestos fibre monitoring is already undertaken for the existing mobile plant deployment at Maw Green for the treatment of asbestos-impacted soils. Airborne dust samples were supplied on gridded MCE membrane filters and were tested in a laboratory

using Scanning Electron Microscopy (SEM) with fibre identification by Energy Dispersive X-ray Spectroscopy (EDXS). The test results are contained within Appendix 6 of the 'Treatment Process Description & BAT Review' report ref. 5193-CAU-XX-XX-RP-V-0312, included within this application. The Maw Green monitoring results provided by the operator from between August and November 2022 shows no discernible asbestos fibre emissions detected, with all results at or below the limit of detection (<0.0005f/ml), with a few anomalous results but still well below the 0.01 f/ml permit threshold limit.

- 4.2.6 Similarly, the same mobile plant operation has been undertaken as a licenced deployment by Provectus at Edwin Richards Quarry soils treatment facility, for the physico-chemical treatment of hazardous asbestos-impacted soils using a screener plant and hand-picking of bonded asbestos (see Appendix 7 of the 'Treatment Process Description & BAT Review' report ref. 5193-CAU-XX-XX-RP-V-0312, included within this application). This operation was undertaken within a building, and airborne dust and asbestos fibre monitoring undertaken inside the building, with samples tested at the laboratory for the presence of asbestos fibres. The monitoring results obtained from both within the building and at the screener deck, using either covered or uncovered screener, were similar and were significantly below the permit threshold of <0.01 f/ml and predominantly below <0.0005f/ml. It was concluded the absence of measurable asbestos emissions from the soil screening operation meant that a review of abatement measures could not be made other than to conclude that the waste acceptance approach at the site is entirely successful in preventing airborne asbestos emissions exceeding permit thresholds.
- 4.2.7 With reference to the above monitoring results obtained from the Maw Green current deployment operations and those at Edwin Richards Quarry soil treatment facility, it can be concluded that provided the operator undertakes the same stringent waste acceptance procedures and operational procedures as currently at Maw Green and also as shown at Edwin Richards, then the potential for elevated airborne asbestos emissions being produced at the site is highly unlikely and not observed to date, or by the soil treatment/land remediation industry in general. This will ensure both the environment and human health of workers and nearby sensitive receptors is protected.



**Table 2 -Fugitive Emissions Risk Assessment**

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
<b>FUGITIVE EMISSIONS</b>						
Dust from contaminated soil treatment	Workers and visitors to the site.	By air.	The preventative measures used for the existing STF will be used for the new treatment and storing of asbestos contaminated soils activity, and additional control measures will be used to control the risk of fugitive asbestos fibres. Preventative and mitigation measures include:	<b>Low</b> Residential receptors are largely not downwind of the site, with predominant wind direction blowing away from the SW towards the NE.	Nuisance - dust on cars, clothing etc.	<b>Low – if control measures are implemented.</b>
Dust from storage of hazardous waste storage	Residential receptors 170m SW, 210m SE and 240m SW of the site.  Users of Maw Green Road 220m SW.  Nearby wildlife and plants at Sandbach Flashes 615m NW and Local		<ul style="list-style-type: none"> <li>Provision on site of a water bowser/dust cannon and adequate year-round water supply and dust suppression by continuous water misting sprays around site with overlapping spray arcs for effective coverage.</li> <li>Waste acceptance procedures to ensure soils that have the potential for dust emissions are not accepted.</li> <li>Dust suppression misting system with added asbestos surfactant.</li> <li>Asbestos monitoring will be carried out quarterly or as required against background reference using detection limits of &lt;0.0005f/ml determined with</li> </ul>	Sandbach Flashes >600 north-west unlikely to be affected due to distance from site and less likely to be downwind most of the time.	Human health hazard from asbestos fibres.  Smothering of fauna and flora by dust within SSSI and LWS.	

	Wildlife Site 400m NE		<p>on-site monitoring as a pre-commencement condition.</p> <ul style="list-style-type: none"> <li>• Use of clean water for dust suppression, to avoid re-circulating fine material.</li> <li>• High standards of housekeeping to minimise track-out and windblown dust.</li> <li>• A preventative maintenance programme, including readily available spares, to ensure the efficient operation of plant and equipment.</li> <li>• Minimisation of drop heights during tipping.</li> <li>• Clear delineation of stockpiles to deter vehicles from running over edges.</li> <li>• Effective staff training in respect of the causes and prevention of dust.</li> <li>• Daily dust monitoring carried out to assess levels of emissions from site activities.</li> <li>• Pre-acceptance testing will be undertaken to quantify that asbestos fibres are lower than 0.1% for Chrysotile and 0.01% for any other forms of asbestos detected in soil. If there are exceedances of these limits then that soil will be rejected from site.</li> </ul> <p><b>Specific measures</b> in relation to activities within the treatment facility include:</p> <ul style="list-style-type: none"> <li>• Continuous misting sprays with overlapping arcs to be employed.</li> <li>• Meteorological conditions should be considered before activities such as transfer, and this activity should be minimised during unfavourable wind conditions.</li> </ul>	Local Wildlife Site 400m unlikely to be affected due to distance from site.  The same dust control and prevention measures will be in place.		
--	--------------------------	--	--	---	--	--

Pre-screening of asbestos soils	Workers and visitors to the site.	By air.	<p>Preventative and mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Provision on site of a water bowser/dust cannon and adequate year-round water supply by regular spraying in dry conditions with added asbestos surfactant;</li> <li>• Dust suppression continuous misting system with overlapping spray arcs for effective site coverage of storage and processing areas;</li> <li>• Asbestos monitoring will be carried out quarterly or as required against background reference levels with a detection limit of &lt;0.0005f/ml determined with onsite monitoring as a pre-commencement condition;</li> <li>• For occupational exposure, daily asbestos monitoring will be carried out during soil screening operations;</li> <li>• Use of clean water for suppression, to avoid re-circulating fine material;</li> <li>• Minimisation of drop heights during tipping;</li> <li>• Hand-picking operations are carried out in a fully enclosed picking station to minimise potential for asbestos fibre release to air;</li> <li>• Pre-acceptance testing will be undertaken to quantify that asbestos fibres are lower than 0.1% for Chrysotile and 0.01% for any other forms of asbestos detected in soil. If there are exceedances of these limits then that soil will be rejected from site;</li> <li>• Hand-picking of bound asbestos, unlikely to release fugitive asbestos fibres;</li> <li>• Staff working in hand-picking station will undertake suitable training and wear correct</li> </ul>	<p><b>Unlikely -</b> Nearest residential receptors unlikely to be affected due to distance from site boundary and not downwind to the proposed activity at the STF. Asbestos ambient air monitoring from other FCC sites (Edwin Richards Quarry) undertaking asbestos in soils treatment and storage indicates negligible asbestos levels in air when control measures in place.</p>	Human health hazard from asbestos fibres - asbestos linked illness.	<b>Low – if control measures are implemented.</b>
Handpicking of asbestos soils	<p>Residential receptors 170m SW, 210m SE and 240m SW of the site.</p> <p>Users of Maw Green Road 220m SW.</p> <p>Nearby wildlife and plants at Sandbach Flashes 615m NW and Local Wildlife Site 400m NE.</p>					

			personal protective clothing. Decontamination of workers will be undertaken to prevent fugitive asbestos fibres leaving site.			
--	--	--	---	--	--	--

## 5.0 POTENTIAL PATHWAYS

### 5.1 Airborne Pathways

5.1.1 It is considered the potential pathway for dust, particulates and asbestos fibre emissions to reach sensitive receptors is via airborne transmission. Factors affecting airborne emissions include:

- Type of wastes;
- Quantity of wastes;
- Season i.e. hot, dry, summer conditions generate more dust;
- Wind direction, strength and speed;
- Exposure of wastes to wind;
- Distance of sensitive receptor to site operations.

5.1.2 Meteorological data from Leek Thornccliffe weather station (wind statistics from winderfinder.com website) indicates that the prevailing wind is from the south-southwest towards the north-northeast. These wind conditions are considered to be reflective of those likely to be experienced at Maw Green Soil Treatment Facility.

5.1.3 A review of the sensitive receptors in Table 1 above shows that the receptors likely to be impacted by fugitive emissions of dust or airborne asbestos fibres within 500m of the site boundary are workers on Maw Green Landfill <10m to the north of the site boundary, habitats associated with the Fowle Brook (140m ENE) and Brookhouse Pools Local Wildlife Site (400m NNE). There are no residential receptors downwind of the site within 500m. Foxholme Farm is located 750m NE.

5.1.4 Given the control measures in place, the transient nature of airborne emissions and the distance of these receptors from site, it is unlikely the receptors will be significantly impacted by emissions from site. However strict control measures will be in place to keep airborne asbestos fibres and general dust emissions under control from leaving the site boundary, due to the serious human health risks posed by asbestos fibres.

## 6.0 CONTROL MEASURES

### 6.1 Overview

6.1.1 The following control measures will be implemented to minimise the impact of emissions from Maw Green Soil Treatment Facility. A number of aspects of the site infrastructure and procedures on site are designed to mitigate dust and asbestos fibre emissions, including:

#### ***Bioremediation Process***

- Daily visual dust monitoring at the site.
- Soils are received and sampled and then placed onto the vacuum system which will capture emissions whilst the initial soil testing is completed.
- Screening of contaminated soils is not required prior to biotreatment.
- Soils are formed within their initial reception area into biopiles, and the surfaces sealed using an excavator bucket.
- The use of a static biopile reduces the amount of soil management to a minimum. In a typical treatment period, the soils are turned over twice.
- The mineralization of hydrocarbons results in elevated moisture content in soils reducing the potential for dust emissions.
- The biopiles can be irrigated as a mitigation measure should surface dust be observed, albeit this is rarely required.
- Use of uncontaminated water for dust suppression, to avoid re-circulating fine material.
- High standards of housekeeping to minimise track-out and windblown dust.
- Minimisation of drop heights during tipping.

#### ***Asbestos Contaminated Soils Treatment***

- Strict waste acceptance criteria and testing: waste acceptance for soils with asbestos inclusions are limited to bound pieces and strict asbestos fibre limits that have been shown to not release airborne asbestos fibres above World Health Organisation (WHO) air quality guidance levels of <0.0005f/ml.
- Covering asbestos contaminated soils undergoing testing prior to acceptance and treatment, with tarpaulins preventing fugitive emissions whilst reception analysis is completed.
- Soils will be screened using a three way screener to remove oversize inclusions and separate soil into mid-range and fines range fractions to facilitate more effective hand picking.
- The asbestos picking station will be a mobile enclosed unit and will be identical to the type approved for use under an environmental permit at the operator's other sites.
- Use of a continuous misting system (asbestos surfactant added) in operational areas (storage and processing) to provide additional reassurance. Airborne

asbestos concentrations are below <0.0005f/ml during monitoring (see material safety data sheet for the surfactant in Appendix 3).

- Minimising drop heights of asbestos contaminated wastes from delivery vehicles, site plant and conveyors.
- Asbestos containing materials (ACM) will be double-bagged by trained site operatives in a polythene bag, sealed using a taped swan neck and placed into an enclosed lockable skip.
- The general stockpile orientation of west to east is generally parallel to prevailing wind direction to reduce wind blow potential of dust.
- Workers will undergo decontamination at the end of each working shift and used PPE from the working areas will be double-bagged and placed in the lockable asbestos skip.
- Daily site inspections will include checking the asbestos skip by a trained supervisor and arranging for the collection of the existing skip and delivery of a new asbestos skip when the existing skip has reached 75% capacity. This is to ensure that there is no risk of the skip becoming over capacity and unable to accept further bagged asbestos.

## **6.2 Pre-Acceptance, Waste Acceptance and Pre-Assessment**

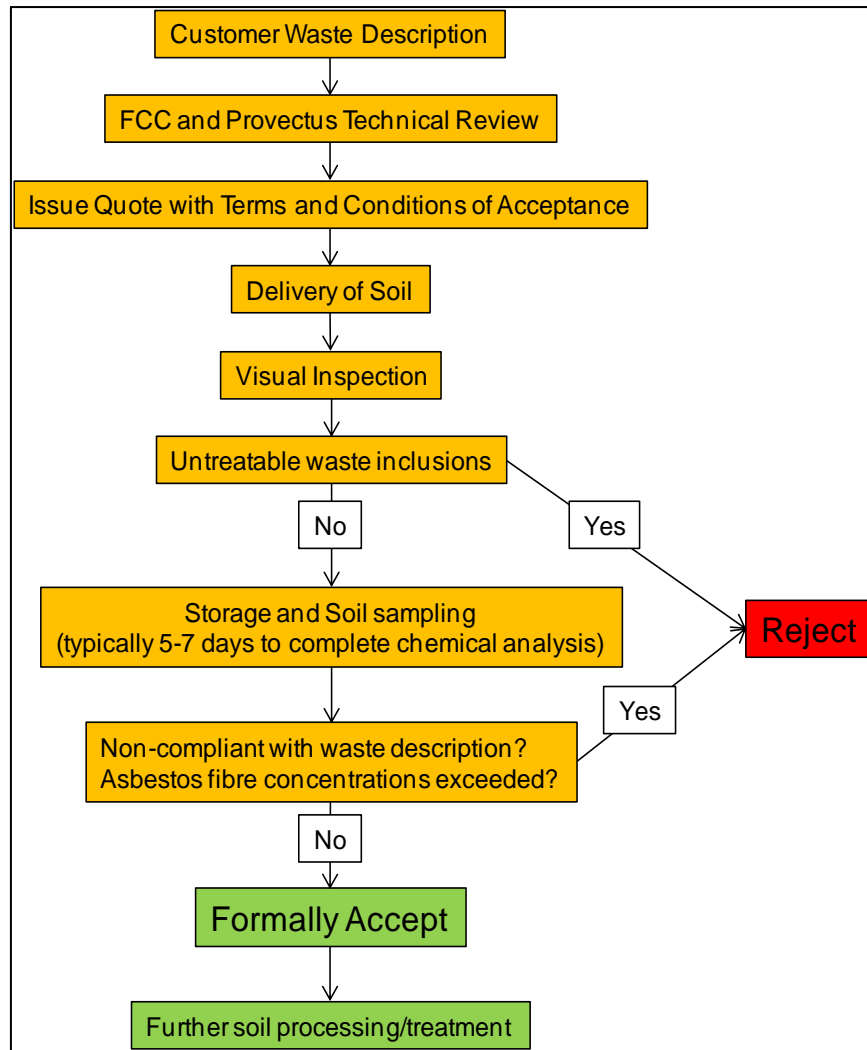
6.2.1 The site will operate in accordance with the Provectus 'Soil Reception Procedures' (Appendix 2) which details specific procedures and measures for the pre-acceptance of hazardous soils, rejection of non-conforming wastes and soil characterisation procedures and measures undertaken for sampling of soils received at the STF.

6.2.2 The weighbridge will conduct assessments of waste inputs and impose controls and restrictions on potentially dusty wastes or asbestos contaminated wastes (e.g. dampening down with water, bagging, rapid cover/sheeting following placement, refusal to tip, rejection from site).

6.2.3 Soil with asbestos will be consigned by contractors and hauliers as 17 05 03\* 'soils and stones containing hazardous substances' or 17 06 05\* 'other construction materials containing asbestos'. All asbestos containing wastes will undergo visual inspection and chemical analysis to ensure that any soils that are formally accepted are suitable for further soil processing/treatment without the potential for any asbestos fibre emissions above the detection limit. A summary of waste acceptance is shown in Figure 4 below.

6.2.4 Unacceptable forms of asbestos-containing wastes which will be rejected include:

- Asbestos pipe lagging;
- Loose asbestos fill;
- Asbestos insulation board; and,
- Soils with elevated asbestos fibres in any form that could result in airborne emissions above the detection limit (0.01f/ml) or reference background level.



**Figure 4 - Summary of Waste Acceptance Procedures – Asbestos containing wastes**

6.2.5 Pre-assessment will be carried out to identify the asbestos fibre concentrations in soil, and to ensure that waste soils only containing identifiable pieces of bonded asbestos are subject to further treatment. This approach will eliminate the potential for airborne asbestos fibre emissions above the detection limit. Pre-assessment testing will confirm that asbestos fibre content is less than 0.01% for chrysotile asbestos and 0.01% for all other forms of asbestos. Any results above these levels will be rejected. During the storage time waiting for pre-assessment results, the soil will remain sheeted. Only on satisfactory laboratory results will the waste soils be un-sheeted. Air monitoring will be undertaken during treatment of soils to provide reassurance that there are no airborne asbestos fibres present above the detection limit at all times.

### 6.3 Site Traffic and Movement of Vehicles

6.3.1 All site traffic will be kept to designated haul routes. The surface of internal haul routes will be inspected daily and swept at regular intervals with any defects made good.

6.3.2 Further standard good practices for haulage on site will include:



- Setting appropriate site speed limits;
- Even loading of vehicles to avoid spillages;
- Ensuring even road surfacing and maintenance of potential potholes;
- Regular removal of spilled material from site haul routes; and,
- Dust suppression by regular spraying in dry conditions where there is the potential to generate dust and release of particulates and asbestos fibres.

6.3.3 All vehicles leaving site will be subject to inspection and where necessary mud and debris stuck to vehicle will be removed on site prior to leaving site (e.g. using on site hoses/jet wash), to prevent drag out onto the public highway. In the event that drag-out is observed, then a road sweeper will be deployed promptly to remove any debris or other deposits on internal roads to prevent drag out onto the public highway, and external roads if required. Water from the washing down of vehicles will be contained within the site's impermeable surfacing and drainage system.

#### 6.4 Waste Operations

- All staff will be trained and made aware of the need to minimise dust and particulate emissions and to ensure asbestos fibres are not released from potentially contaminated soils during delivery, handling and storage.
- Site operatives will carry out activities in a way that will minimise any plumes as a result of handling and developing the crushed treatment pad.
- The site will be provided with a continuous water misting system which will spray a mist into the air with overlapping spray arcs to reduce the potential for airborne dust, particulates and asbestos fibres in the processing and storage areas. An asbestos surfactant will be added to the sprays to ensure asbestos fibres are captured effectively. A copy of the Material Safety Data Sheet (MSDS) is included within Appendix 3.
- During particularly dry weather the storage areas will be dampened down further as necessary. A tractor fitted with a bowser/or dust cannon can be deployed during warm, dry and windy conditions to dampen down haul roads.
- The asbestos contaminated soils will be stored and treated on a dedicated pad constructed from crushed concrete with underlying geo-composite clay liner (GCL). This will have sealed drainage where all surface waters will fall to and be collected, before being pumped to the existing water treatment plant and then discharged to sewer via existing discharge consent.
- The on-site vehicle speed limit will be enforced to ensure that vehicle movements do not generate excessive dust. All vehicles will use wheel wash to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance.

- Drop heights will be minimised during the loading and unloading of materials to reduce the likelihood of dispersion and minimise the potential for dust release as a consequence of agitation.
- A street sweeper will regularly clean site roads of any mud tracked onto road surfaces from site vehicles. Dampening of site roads/surfaces as necessary using a tanker during dry periods will minimise dust kick-up.

6.4.1 There will be no change to the bioremediation process as a result of this permit variation. The moisture content of the biopiles will continue to be maintained at a constant level to allow the bioremediation and subsequently minimise the dust potential. If soil is observed to be generating dust on the biopile it is indicative of a moisture content that is too low. Irrigation of the biopile with treated water will then be implemented to rehydrate the soil to the correct moisture content levels thereby eliminating any potential dust emissions. Operational controls during the bioremediation process are in place to ensure no turning of the biopiles is undertaken during high winds. The soils for the bioremediation process will continue to be stored on a separate impermeable kerbed concrete pad with sealed drainage.

## 6.5 Pre-Screening and Hand-Picking

6.5.1 Asbestos fibres will not be generated on site above the detection limit due to rigorous testing during the pre-acceptance stage and hand-picking within an enclosed mobile picking station, and also daily ambient air monitoring, so no abatement system is required.

6.5.2 The following control measures will be in place:

- The picking station will be an enclosed unit.
- Asbestos which has been removed from soils will be double bagged and sealed by trained operatives and placed in a sealed, covered and lockable skip for onward disposal off-site.
- Air monitoring will be carried during the pre-screening and hand-picking to confirm that asbestos levels are below the detection limit of 0.01f/ml or 0.0005f/ml as required, for the safety of workers and nearby receptors.
- All externally stored asbestos contaminated soils will be covered prior to transfer for screening and hand picking.
- Reception testing undertaken to ensure soils contain <0.1% chrysotile fibres and <0.01% other forms of asbestos fibres.
- Any waste loads containing forms of unbound asbestos/insulation will be rejected from site.

## **6.6 Dust Suppression**

6.6.1 Continuous misting suppression will spray a continuous mist into the air to reduce the potential for airborne dust and asbestos particulates:

- Misting sprays will be situated so that they concentrate spraying on storage and treatment areas for the pre-screening and hand-picking for asbestos.
- The waters for dust suppression systems will 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 3.
- During particularly dry weather the storage areas and roads of the site will be dampened down as necessary with bowser/dust cannon. Dust generation is largely on haul roads and road sweeping/dust suppression is undertaken at source to prevent or minimise dust emissions occurring.
- Air monitoring will be carried out to identify any elevated airborne asbestos fibres as a result of site activities to ensure compliance with occupational exposure reference standards. On a periodic basis this will be supplemented by background environmental monitoring that is undertaken for a longer period to achieve the lower background reference detection limit. However, it is considered that due to pre-acceptance testing and previous experience on other FCC sites, the risk of asbestos fibres being detected during air monitoring is extremely low.

## **6.7 Bioremediation Process**

6.7.1 There are to be no changes to the bioremediation process or dust generating potential of the operations as a result of this permit variation.

## **6.8 Off Site Dust Emission**

6.8.1 Dust management controls are in place for the adjacent Maw Green Landfill Site, specified in the site-specific Environmental Management System.

## 7.0 MONITORING

### 7.1 Baseline Background Monitoring

4.1.1 As part of best practice, pre-operational baseline monitoring for asbestos will be carried out to determine the air quality prior to any treatment activities and the issue of the permit. The operator will obtain baseline background monitoring prior to the commencement of operations where 3 rounds of monitoring using a detection limit of <math><0.0005\text{f/ml}</math> will be taken at locations shown on drawing ref: 5193-CAU-XX-XX-DR-V-1806.

7.1.1 Following issue of the permit, the operator will be able to compare the monitoring results against reference background levels obtained from baseline monitoring. The background reference levels will be used as an action level should there be any soils with elevated asbestos fibres above the detection limit (0.01f/ml) or reference background level.

4.1.2 Detail of the frequency and thresholds of monitoring are included in the updated Dust & Emissions Management Plant (DEMP), document ref: 5193-CAU-XX-XX-RP-V-0313.

### 7.2 Schedule

7.2.1 Dust and asbestos fibre air monitoring will be undertaken in order to assess the effectiveness of the operational management and mitigating control measures at the STF. Monitoring will identify the potential for dust or asbestos fibres to impact the nearby receptors, informing the implementation of appropriate remediation measures.

7.2.2 Environmental monitoring locations are detailed in the dust and asbestos Monitoring Plan drawing ref. 5193-CAU-XX-XX-DR-V-1806.

7.2.3 Monitoring will be undertaken by designated staff that will be fully trained by site management. All site personnel will be responsible for reporting any problem dust emissions identified during their day to day operations.

7.2.4 Monitoring at the Facility will consist of the following in Table 3 below:

**Table 3 - Monitoring Outline**

Parameter	Frequency	Thresholds	Comments
Meteorological Monitoring	Manually checked at start of each working day.	Site management to assess weather conditions to determine if likely to generate excessive dust i.e. windy, hot, dry.	Use of a weather station app or website.
Dust Monitoring	Daily on-site checks (or	On-site checks and off-site checks in response to an	Daily on-site checks (or more frequently following dust

	<p>more frequently following dust complaints, or during prolonged dry or windy conditions)</p> <p>Monthly as per landfill permit</p>	<p>issue being identified.</p> <p>Dust monitoring at 4 locations on-site using Frisbee dust gauges or similar (e.g. MCE membrane filters) (locations shown in Monitoring Plan drawing ref. 5193-CAU-XX-XX-DR-V-1806).</p>	<p>complaints, or during prolonged dry or windy conditions).</p> <p>Frisbee dust gauge method as described in M17 guidance.</p>
Complaints Monitoring	Ad-Hoc	Dealt with by site management as soon as practicable.	Logged in accordance with Complaints Procedure
Asbestos (TCM)	Daily during initial soil screening	<p>&lt;0.01f/ml</p> <p>*Asbestos monitoring at locations around the STF during soil screening over 2 hour period.</p> <p>*Pumped sampling &gt;1m above ground level Flow rate = 4 litres/minute, minimum sample volume 480 litres, filter pore size = 1.2 µm asbestos fibre limit of detection = 0.001 fibres/ml.</p>	<p>Method as described in M17 guidance and Table S3.3. This frequency is far in excess of other similarly permitted facilities.</p> <p>Monitoring undertaken around the treatment during soil screening process.</p>
Asbestos (SEM)	Quarterly or as required	Supplementary asbestos monitoring at boundary locations (see drawing ref: 5193-CAU-XX-XX-DR-1806) to ensure compliance with an	Added reassurance to ensure baseline of asbestos emissions is not changing. Method is as described in M17 guidance. Detection limit anticipated to be <0.0005f/ml. This monitoring is far in

		agreed background reference level.	<p>excess of other similarly permitted facilities.</p> <p>Pre-operational background monitoring will be carried out at locations shown on 5193-CAU-XX-XX-DR-V-1806. Three rounds of monitoring will be taken prior to the commencement of activities at site and prior to the issue of the permit.</p>
--	--	------------------------------------	--

### 7.3 Meteorological Monitoring

7.3.1 In the event of dust complaints, the data enables complaints to be assessed against the meteorological conditions for the relevant period. Meteorological information will be recorded on the Complaints Recording Form (Appendix 4).

### 7.4 Dust Monitoring

7.4.1 Dust monitoring will continue at 4 locations (drawing ref. 5193-CAU-XX-XX-DR-V-1806) onsite using Frisbee dust gauges or similar (e.g. MCE membrane filters) to measure for deposited dust and asbestos fibres. Limits and frequency of monitoring will be as per the existing permit.

7.4.2 As part of the daily inspections, appropriately trained and experienced site personnel will carry out an on-site inspection to monitor visual dust generation, which will be recorded on the daily Site Inspection Form (Appendix 5). The records of the site daily inspections will be made available to the Environment Agency (EA) on request.

7.4.3 Visual dust monitoring will include observing the movement of vehicles, stockpiling and movement of materials, to establish if such operations are giving rise to dust emissions and the size and frequency of these releases.

7.4.4 The frequency of site inspections will be increased when site activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

7.4.5 In the event that visual dust emissions are observed to be crossing the site boundary or surfaces are becoming soiled, the site management will be informed immediately and the approximate location and extent of the dust plume, or deposition, assessed and site operations reviewed and remediated.

## **7.5 Asbestos Monitoring**

- 7.5.1 As part of the daily inspections, appropriately trained and experienced site personnel will carry out an on-site inspection to monitor visual dust, particulates, and asbestos fibres emission generation, which will be recorded on the daily Site Inspection Form (Appendix 5). The records of the site daily inspections will be made available to the EA on request.
- 7.5.2 The frequency of site inspections will be increased when site activities with a high potential to produce emissions are being carried out and during prolonged dry or windy conditions.
- 7.5.3 Asbestos monitoring can be carried out by placing air pumps around the perimeter of the working area whilst soil screening is being undertaken, locations of the pumps will be determined by wind direction on the day of sampling. Asbestos monitoring will only be undertaken during periods when asbestos contaminated wastes are being accepted and treated.
- 7.5.4 Dust and asbestos monitoring during the operations on site will also be undertaken at environmental monitoring points on-site using Frisbee dust gauges or similar (e.g. MCE membrane filters) to measure for deposited dust and asbestos. The monitoring locations are shown in the dust and asbestos Monitoring Plan drawing ref. 5193-CAU-XX-XX-DR-V-1806.

## 8.0 ENGAGING WITH THE NEIGHBOURS

### 8.1 Complaints Procedure

8.1.1 As part of this Dust & Emissions Management Plan (DEMP), engagement with the neighbours will be undertaken.

8.1.2 Typically, any complaints received at the site are likely to be through the Environment Agency or Local Authority although the operator is willing to deal directly with the complainants and where necessary the following can be implemented:

- Information can be provided to the local neighbours (via the Environment Agency) regarding the point and method of contact for the Facility in the event that fugitive dust has been detected or they want to discuss any activities at the Facility.
- Complainants can be advised that any complaints / concerns will be addressed immediately following identification / notification and contingency action implemented.
- Complainants can be advised of any corrective action and a follow up call carried out if required.

8.1.3 The operator will continue to maintain a routine liaison with the Environment Agency regarding nuisance emissions of dust. In the event of a dust complaint being received by the EA the complaint is passed to the operator for investigation. The primary point of contact at the site for complaints and liaison is the Site Manager who will ensure that the recording, investigation and close-out of complaints is undertaken as described below and in accordance with company management procedures. Every complaint will be recorded on 3C Waste Limited's system as below:

- All complaints are recorded by the site manager or site staff on the FCC 'Safeguard' online incident recording system, describing the complaint and severity.
- The complaint can be forwarded to the Regional Environment Manager to undertake further investigation.
- Depending on the severity, the complaint can be escalated to senior management for investigation if necessary.
- The system is a digitalised process and records a wide range of reporting.

### 8.2 Complaints Monitoring

8.2.1 Any complaints received directly by the Facility or via the Regulatory bodies, including the EA and Local Authority, will be recorded on the FCC 'Safeguard' online incident recording system. This will instigate emissions monitoring at the location of the complaint and on site to determine the source and extent of the reported emissions. If necessary, monitoring will also be carried out at the nearest sensitive receptors to the Facility and the monitoring results recorded.



## 9.0 REMEDIAL ACTION PLAN

9.1.1 Following receipt of a complaint or identification of visual dust emissions at the STF which may give rise to an offsite impact the following action plan will be undertaken, including:

- Additional monitoring as detailed above to identify the extent of the impact and potential cause and source;
- Examination of the operational activities at the Facility at the time of the complaint or identification of an impact;
- Examination of the meteorological conditions at the time of the complaint or identification of an impact;
- Carry out a review of the operational procedure and process controls as detailed in Section 4 and instigate any control measures immediately following identification of the problem; and,
- Further monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

### 9.2 Record Keeping and Reporting

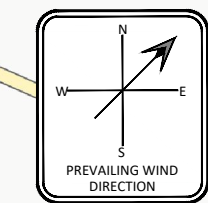
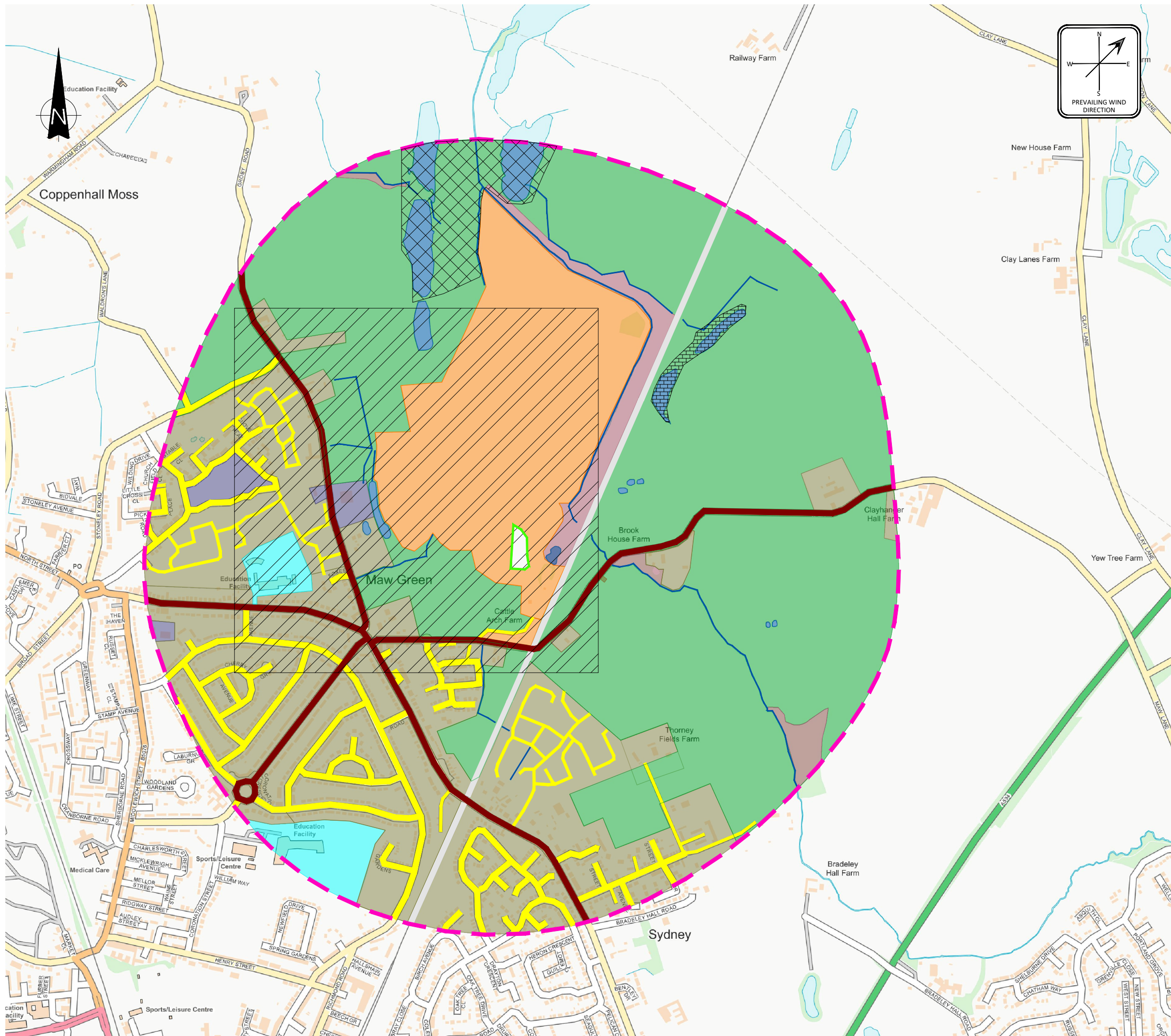
9.2.1 The Complaints Recording Form (Appendix 4) will be completed and the forms will be maintained free from damage and kept within the Site office and will be made available to the regulating authorities on request. The record keeping will form part of the facility's Management System.

### 9.3 DEMP Review

This Dust & Emissions Management Plan (DEMP) will be reviewed by site management when there is a relevant change in site operations and procedures, a variation to the permit or a number of dust complaints are received at the site.

## DRAWINGS

5193-CAU-XX-XX-DR-V-1804	Sensitive Receptor Plan
5193-CAU-XX-XX-DR-V-1806	Proposed Monitoring Plan

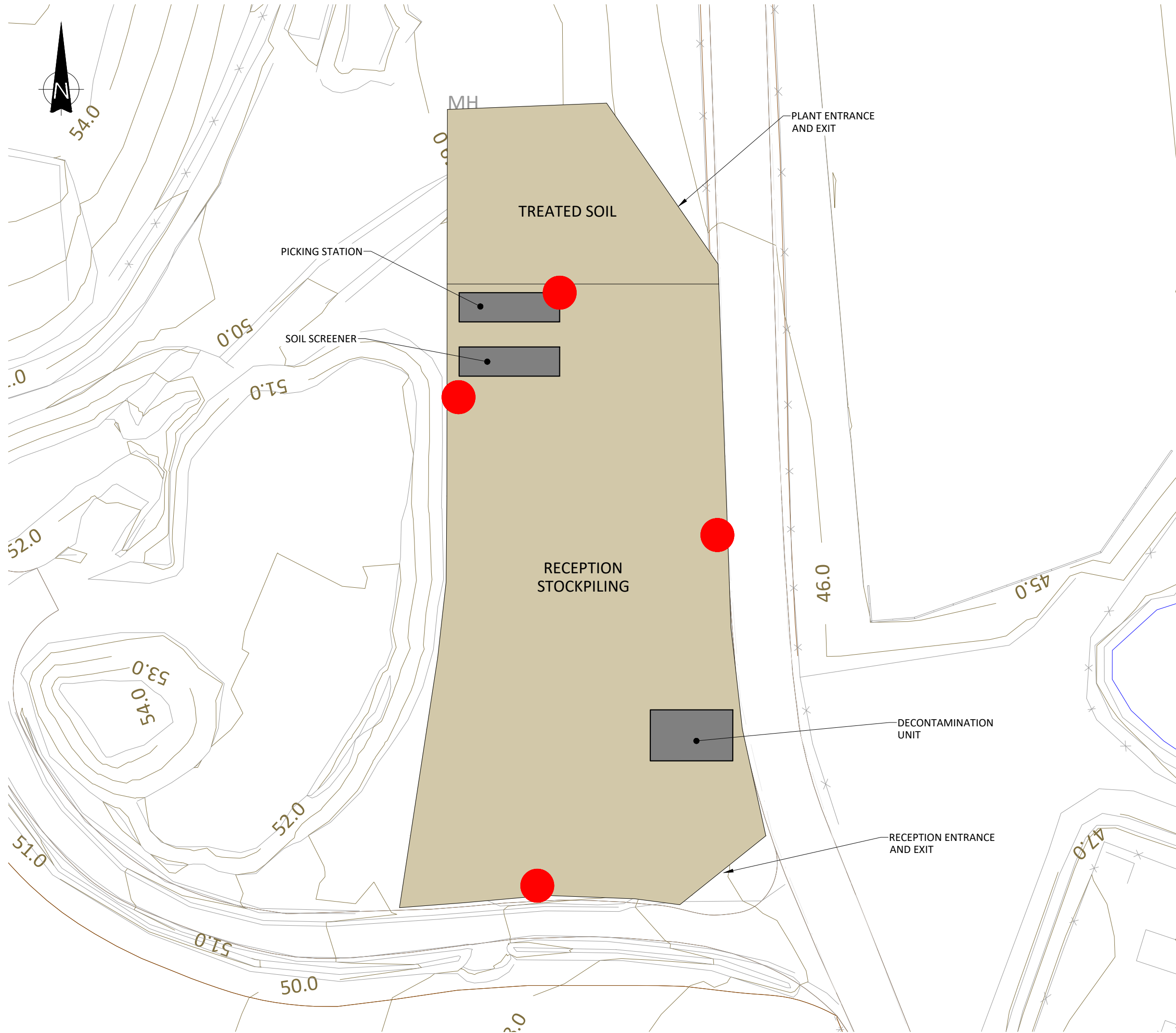


- LEGEND**
- ACTIVITY BOUNDARY
  - 1000m OFFSET
  - SURFACE WATER
  - WOODLAND
  - COMMERCIAL
  - LANDFILL SITE
  - RESIDENTIAL
  - MAJOR ROAD
  - MINOR ROAD
  - RAIL
  - AGRICULTURAL
  - EDUCATIONAL
  - RECREATIONAL
  - SSSI
  - PROTECTED SPECIES - NON FISH
  - LOCAL WILDLIFE SITE

P01	ISSUED FOR INFORMATION	EJD	SH	SH	19.10.22
REV	MODIFICATIONS	BY	RE	AP	DATE
PURPOSE OF ISSUE					STATUS
<b>FOR INFORMATION</b>					<b>S2</b>
CLIENT:					
<b>3C WASTE LIMITED</b>					
PROJECT:					
<b>MAW GREEN SOILS TREATMENT FACILITY</b>					
TITLE:					
<b>NEW TREATMENT AREA SENSITIVE RECEPTORS PLAN</b>					
DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY		
EJD	EJD	SH	SH		
DATE	SCALE @ A3	JOB REF:	REVISION		
18.10.2022	1:10000	5193	P01		
DRAWING NUMBER					
<b>5193-CAU-XX-XX-DR-V-1804</b>					

Registered Office: Intec, Parc Menai, Bangor, Gwynedd, LL57 4FG Company Registered No: 06716319

© COPYRIGHT CAULMERT LIMITED - NOT TO BE COPIED OR REPRODUCED IN ANY WAY OR FORM WITHOUT PRIOR WRITTEN CONSENT FROM CAULMERT LIMITED



**LEGEND**

- CRUSHED CONCRETE SITE SURFACING WITH GEO-COMPOSITE CLAY LINER (GCL)
- MONITORING POINT

P01	ISSUED FOR INFORMATION	EJD	SH	SH	20.10.22
REV	MODIFICATIONS	BY	RE	AP	DATE
PURPOSE OF ISSUE				STATUS	
FOR INFORMATION				S2	
CLIENT:					
3C WASTE LIMITED					
PROJECT:					
MAW GREEN SOILS TREATMENT FACILITY PERMIT VARIATION					
TITLE:					
PROPOSED MONITORING PLAN					
DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY		
EJD	EJD	SH	SH		
DATE	SCALE @ A3	JOB REF:	REVISION		
19.10.2022	1:500	5193	P01		
DRAWING NUMBER					
5193-CAU-XX-XX-DR-V-1806					

Registered Office: Intec, Parc Menai, Bangor, Gwynedd, LL57 4FG Company Registered No: 06716319

## APPENDIX 1

### CRS Picking Station Specification



Specification  
Ref: CRS-045-SITE MASTER



**COMPLETE  
RECYCLING  
SYSTEMS**

T: +44 (0) 28 8076 0496  
E: [Marketing@crsni.com](mailto:Marketing@crsni.com)  
W: [www.crsni.com](http://www.crsni.com)

Office Address: 136 Termon  
Road, Carrickmore, County  
Tyrone,  
BT79 9HW, N.Ireland



**SALE OR HIRE**

**UNPARALLELED  
PERFORMANCE**

# NEW SITE MASTER



**Designed For Building & Construction Sites To Retrieve Valuable Products From Waste Reducing What Goes Into Your Skip.**



## Features & Benefits

- Mobile 2 - 4 Man pick
- Designed for Building & Construction Sites
- Retrieve Valuable Products from waste
- Cut Down on what goes into your skip
- Adjustable Height
- Canopy for Weather Protection
- Economical Simple Design
- Electric Drive
- Robust & Heavy Duty Build

**SALE OR HIRE**

**UNPARALLELED PERFORMANCE**



- Fully Mobile
- Easily Transported Around And Between Sites
- 2 to 4 Man Picking
- Low Cost To Run



- Low Maintenance
- Reduce Skip hire cost

## OPTIONS

- Hydraulic Drive
- Air Brakes
- Hard Cover
- Chevron Belt
- Radial Stockpiler



# 1.0 Conveyor

## Feature

- Heavy duty profile steel construction
- Specially designed 8mm and 5mm steel profile to produce high strength section
- Typically 3 times stronger than traditional 6mm channel designs

## Technical Specification

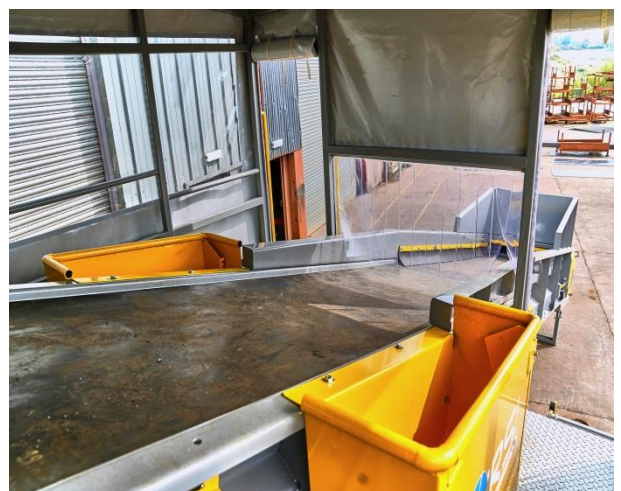
- 1000mm wide heavy duty rubber belt
- EP500/3ply – 5mm top cover 1.5mm bottom cover
- 8.5m drum centres
- 3.0kW Hi Torque Motovario slip on gear motor drive
- 100mm dia carry rollers placed at 875mm centres
- 100mm dia disc return rollers placed at 2115mm centres
- Head and Tail are fully enclosed to reduce spillage
- High sides incorporated into conveyor with skirting rubber
- Impact bars at infeed boot
- Plough scraper at Tail to reduce material build up
- SKF 50mm bearings (Tail)
- SKF 60mm bearings (Head)
- 288mm dia crowned and lagged drum
- 220mm dia crowned tail drum
- Rosta belt scraper tensioner with polyurethane rubber
- Perspex window at each maintenance point along conveyor
- Dirt chute at tail under plough scraper
- Support legs
- Full guards with emergency stops



## 2.0 Picking Station

### Feature

- 2-4 Man Picking
- 3.5mm Chequered Walkway
- 2 Dropboxes:
  - Width: 900mm
  - Depth: 452mm
  - Height: 989mm
- Access Step Ladders to Picking Station
- Canopy for Weather Protection
- Optional Hard Cover



## 3.0 Wheel Assembly

### Feature

- Adjustable Ram
- Handbrake Lever
- 300x80mm Stud Axle
- Super Single Tyres - 385/65 R22.5



## APPENDIX 2

### Operating Procedures

## STC – WI 002 - SOIL RECEPTION PROCEDURE

<b>Author:</b>	Andy Clee – Ops Man	<b>Approved By:</b>	Jon Owens – STC Director
<b>Distribution:</b>	Z/QMS/Work Instructions - STC		

### Document Changes

Revision No:	Summary of Changes	Date
5	Incorporates asbestos reception procedure	16.12.2022

### Introduction

This procedure relates to the measures to be undertaken for the assessment of data and inspection of waste received at the soil treatment facility. It allows rejection of non-conforming waste to ensure no contaminated soils are accepted which cannot be treated by the treatment facility to a standard suitable for reuse, or which breach the list of permitted wastes as shown in the site’s Environmental permit.



### Principle of Operation

The inspection will allow the following to be assessed prior to acceptance:

1. Presence of untreatable and hazardous materials (e.g. tars, clinker, asbestos insulation etc.) in the contaminated soil.
2. Presence of excessive litter/debris in the contaminated soil.
3. Compliance with the previously supplied chemical/physical analysis information (supplied by waste producer).
4. Potential for the waste to behave as a liquid or have free water/oil in the waste

If the waste material is not compliant with the agreed conditions of the Environmental Permit and pre-acceptance assessment, then the waste will be declined/rejected. As a note, if the STC is permitted to accept asbestos the forms of untreatable asbestos described in point 1 are predominantly insulation products as follows in Table 1.

**Table 1. Unacceptable Forms of Asbestos Insulation Products**

Form of asbestos	Example
Asbestos pipe lagging	
Loose asbestos fill	



**Procedure**

**Pre-Acceptance Assessment**

Pre-acceptance is undertaken by Provectus to confirm treatability to meet the reuse criteria. A set of Terms and Conditions for acceptance are sent to the Waste Producer/client including a clear statement of any waste characterisation samples that are deemed untreatable. These are agreed in writing between the Waste Producer/client and Provectus prior to an authorisation number (contract line) being issued by FCC at the weighbridge for deposit at the Soil Treatment Facility.

Where data gaps exist or queries remain about the suitability of material for treatment, Provectus or FCC will offer to attend the site of origin to undertake pre-acceptance analysis and visually inspect the material and obtain further information about the waste description. Alternatively, the material may be quarantined on arrival at the STF and subject to further testing.

If the moisture content of the material is >30% then the potential for free water or oil will be further reviewed. Where moisture contents are at this level and the material does not behave as a liquid, have the potential for releasing water/oil etc and is suitable for the site infrastructure then it would be accepted on a case by case basis. Material must be able to support its own weight and ideally be able to be formed into a larger batch.

Should either Provectus, or after consultation, FCC determine that there is the high potential for material to contain untreatable inclusions or to behave as a liquid or contain free water or oil then the waste will be rejected for acceptance.

**Duty of Care Documentation**

No tipping on the STC will be permitted without relevant duty of care documentation from the waste producer. With this information, the job can be set up with FCC and a DW number issued to the client. All loads must be accompanied with the correct paperwork which must be checked on-site at the STC to ensure that the load is indeed destined for the STC, and that the documents are correctly completed. The consignee section of Consignment notes, for hazardous waste, and waste transfer notes for non-hazardous waste, shall be completed by Provectus at the STC once the load has been deemed acceptable by the STC site manager.

**Health and Safety**

The STC manager is to provide guidance on where the soil is to be tipped, and any relevant safety information prior to tipping of soil. On STC's where asbestos is permitted, it is crucial that loads are placed in the correct tipping areas.

Technicians and site personnel are to stand well away from the lorry when tipping to avoid any crush injuries/incidents as a result of being in close proximity to the tipping lorry. Any drivers must be informed of the requirement to wear a hard hat and high visibility vest when outside of the lorry cabin.

Lorries shall be informed to check that any waste/debris is removed from their lorry prior to leaving the STF.

If loads are to be tipped into the asbestos area, then additional site-specific driver rules apply and must be adhered to.

#### **Visual Inspection: Waste Input**

The following locations will be used for accepting wastes:

- Hydrocarbons only: biopile treatment area
- Asbestos only, or asbestos and hydrocarbons: designated asbestos processing area

The following plant and personnel are required as part of this procedure:

- Provectus STC manager
- Excavator

Each load of soil for inspection (new jobs) will be tipped onto the designated area. The STC manager will inform the tipper lorry driver to remain at the tipping area until the inspection has been completed.

In the event of the material containing free water or oil, the load will be immediately rejected.

In the event of untreatable forms of asbestos being present, the load will be immediately rejected

If the STC is not permitted to accept asbestos, any asbestos found will result in a rejection

The excavator will be used to expose any unsuitable materials and allow a comprehensive visual assessment. The technician will determine the next action when this has been completed, this will comprise of the following:

- Waste is accepted and tipper lorry is permitted to leave the STF with the accompanying paperwork, or;
- Waste is not accepted and the unsuitable element of waste load, either partial or complete load is removed by excavator and placed back into the tipper lorry. A rejection form is filled in on-site and both Landfill Manager (LM) and Sales Manager (SM) are informed. It is the duty of FCC to inform the Environment Agency of any rejected loads.

At the end of the formal waste acceptance procedure the soil will be prepared for processing or biotreatment. Coordination of further treatment/processing events is to be decided by the STC Manager.

Continual visual inspections are to be made by the trained excavator operator who is to inform the STC manager of any material that may be deemed unsuitable.

#### **Chemical Analysis: Waste Input**

Based on visual inspection, sampling frequency will be considered; this is in relation to the volume from each hazardous waste production site. Sampling will be undertaken on soils using composite sampling methods described in BS812.

The chemical analysis of soils generally takes 5-7 days to complete, therefore limited storage times are required. Materials will be placed into treatment as soon as practicable from the receipt of chemical analysis and formal acceptance of the waste.

The range of contaminants for analysis will be based upon the original contaminating substances. A copy of the analysis shall be checked by the STC operations manager for

verification against the original client data. In the event of non-conformity, the STC operations manager shall liaise with the STC sales manager, and a decision on the next course of action will be taken.

For avoidance of doubt, the limits for asbestos from laboratory testing will be as follows:

- Chrysotile only: 0.1%
- Other forms of asbestos (or chrysotile and others): 0.01%
- Asbestos debris limited to those which can be removed as Notifiable Non-Licensed Works (NNLW) if the site is permitted to accept asbestos.

The waste will only be formally accepted once reception analyses are received and approved in accordance with Soil Assessment Procedure illustrated in STC-PR02-V2 (Figure 1) below.



### Summary of Waste Reception

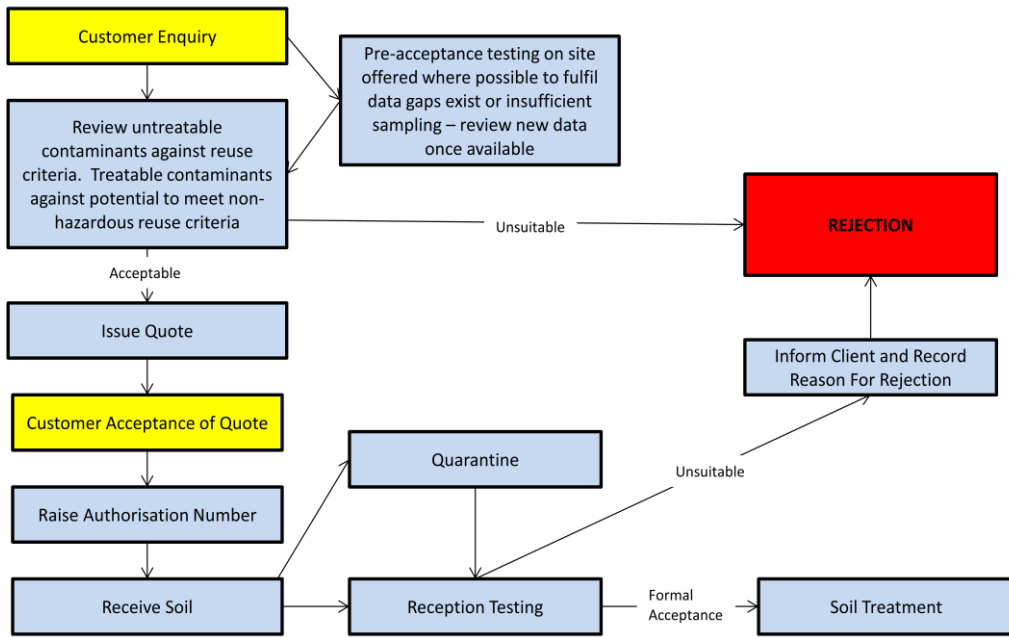
Figure 1 is a flow diagram for the waste reception procedure. The procedure is implemented to ensure that the waste is only formally accepted once visual inspections and chemical analysis of received wastes have been successfully completed. This ensures that any soils that are formally accepted are suitable for further soil processing/treatment. All non-compliant wastes will be rejected.

Figure 1. Summary of Waste Acceptance Procedure

STC-PR02-V2

### Soil Assessment Procedure

STF – PR02 – V2



STC-PR02-V2

# STC – WI 003 - SOIL CHARACTERISATION PROCEDURE

<b>Author:</b>	Andy Clee – Ops Man	<b>Approved By:</b>	Jon Owens – STC Director
<b>Distribution:</b>	Z/QMS/Work Instructions - STC		

**Document Changes**

Revision No:	Summary of Changes	Date
8	Slight change in wording	14.12.22

**Introduction**

This procedure relates to the measures to be undertaken for the sampling of soils received at the STC. See procedure STC – WI 002 Soil Reception for background information.

**Objectives**

The main objective of the operation is to ensure soils received at the Soil Treatment Centre (STC) are visually, structurally, and chemically similar to those described by the waste producer/client during pre-acceptance, and therefore compliant with the Environmental permit and suitable for treatment and reuse. This will allow any non-conforming waste to be rejected.

**Procedure**

The sampling of soils will be performed by the STC technician or STC site manager. The procedure follows composite sampling methods as described in BS812.

A minimum of at least one composite sample must be taken from each job (unique authorisation code/DW number) and at the frequency highlighted in Table 1 below. Chemical testing is undertaken to ensure that the material being tipped is consistent with the analysis and description provided by the client at the pre-characterisation stage. It also checks to see if the material remains consistent throughout the project.

**Table 1:** Requirements for sampling:

Volume of soil (t)	No. of samples needed (before or during acceptance at STC)
< 100	1
100 - 500	2
500 +	2 + 1 for every 500t

The general suite of analysis for soils shall include:

- pH
- CLEA Metals
- Total TPH
- Total PAHs
- Total Cyanide

- Phenols
- SVOCs and VOCs (where required)
- PCBs (where required)
- Asbestos (screen and quantification where asbestos is identified)
- Moisture content

These parameters may be adapted by the STC operations manager or FCC compliance due to prior knowledge of contaminants derived from client waste description, history and data.

Liquid oil phase wastes are not permitted for treatment at the site.

All analysis will be undertaken by a UKAS/MCERTS accredited laboratory using accredited methods.

Once the analysis results are received, they will be assessed by a suitably qualified and experienced STC manager to confirm they meet the requirements for treatment. These results are to be stored electronically onto the STC server.

Where possible, the soils are to be placed into a batch with similar contamination level. The receiving batch has contaminant limits (these are not contaminant limits for soil inputs which can vary and exceed the average batch limits). The hydrocarbons in the batches will be limited to an average as shown in Table 2.

Concentrations for inorganics to be reviewed in accordance with WM3 (Jan 2021).

Asbestos concentrations to be assessed using criteria in Table 3.

Should the results not conform to the requirements for treatment the waste will be rejected following the formal rejection procedure.

**Table 2. Maximum Average Contaminant Concentrations for Receiving Batch**

Substance	Carbon Range	Lower Elimination Rate	Upper Elimination Rate	Maximum average batch concentration (lower level) - mg/kg	Maximum average batch concentration upper level) - mg/kg	Comments
Petrol range organics	C6-C10	95%	99%	20,000	100,000	Limited by odour potential
Diesel	C10-C25	60%	90%	2,500	10,000	Target of below 1,000mg/kg for reuse even though diesel is only hazardous at 1% (10,000mg/kg)
Lube Oils	C25+	40%	65%	1,667	2,857	Review age of spill and soil type before assessing which elimination rate to use
Unknown Oil	C10+	40%	80%	1,667	5,000	Review age of spill, source and soil type before assessing which elimination rate to use
PAHs	C10+	30%	90%	1,429	10,000	Limited by odour potential
Phenols	C6+	90%	99%	10,000	100,000	Limited by odour potential
Solvents	C2+	95%	99%	20,000	100,000	Limited by odour potential
VOCs	C2+	99%	99%	100,000	100,000	Limited by odour potential

**Table 3. Maximum Asbestos Contaminant Concentrations for Treatment**

Substance	Maximum concentration (%)	Comments
Chrysotile	<0.1%	Bound forms of ACM only
Amphibole ACM Types	<0.01%	Bound forms of ACM only
Asbestos insulation/unbound asbestos	Absent	No acceptance of any form of asbestos in friable/insulation form

# STC – WI 011 – PROCESSING OF SOILS WITH VISIBLE ASBESTOS DEBRIS

<b>Author:</b>	Andy Clee – Ops Man	<b>Approved By:</b>	Jon Owens – STC Director
<b>Distribution:</b>	Z/QMS/Work Instructions - STC		

## Document Changes

Revision No:	Summary of Changes	Date
8	Change of wording	16.12.2022

## Definitions and Abbreviations

ACM – Asbestos Containing Materials  
 >NNLW – Notifiable non-licensed works

## Introduction

This procedure relates to the measures to be undertaken for the removal of visible ACM fragments from soil received at the STC if permitted to do so. The purpose of the removal of asbestos debris would be to allow further treatment of soils by biotreatment or to stockpile processed soils for disposal in the non-hazardous void or to be reused as part of the landfill restoration scheme.

## Principle of Operation

The general principle of the operation is to receive and treat soils at the site with visible asbestos fragments that would be classified as hazardous waste under Environment Agency guidance WM3.

The aim of the processing works would be to remove visible asbestos fragments from the soil to facilitate direct reuse in the adjacent non-hazardous void, to be reused as part of the restoration scheme on the landfill, or for further biotreatment to reduce hydrocarbons to concentrations suitable for reuse as described above.

Pre-acceptance checks and analysis of the received soil and processed soil will ensure that no unsuitable soil is received at the facility either for treatment or reuse in the non-hazardous void or restoration scheme. Strict RPE and air monitoring during the soil processing works will ensure the protection of site workers and surrounding receptors.

The works would be notified to the HSE as notifiable non-licensed works (NNLW) on the basis that ACMs are potentially broken/degraded and require effective management to ensure the protection of workers and surrounding receptors. No licensed works are proposed for treating soils at the site.

## Procedure

Analysis for soils impacted with visible asbestos fragments would be reviewed prior to any offer to accept at the appropriately licensed sites. Waste acceptance limits for asbestos fibres in soils would be **0.1%** for serpentine asbestos (chrysotile) and **0.01%** for amphibole asbestos types. Site visits will be undertaken where required and any supplementary analysis undertaken to comply with STC-WI 002 and STC – WI 003 to ensure that soils are suitable for treatment using the available methodology at the site.

Should any non-compliant wastes be encountered, the standard rejection procedure will be implemented. In the event that the works to reject waste would constitute licensed asbestos works in accordance with HSE guidance, the standard notification would be made and works would cease until the non-compliant waste is removed.

Soils would be received at the site and placed in asbestos storage area. Soils will be visually inspected to ensure non-compliant materials (e.g. insulation products) are not present, sampled and covered with a tarpaulin to ensure control of any potential emissions during the reception analysis phase. The reception analysis will be reviewed and only soils that are deemed to have no potential to generate asbestos fibres above the detection limit of 0.1% (chrysotile) and 0.01% (amphibole) will be formally accepted. Soils that have the potential to generate airborne asbestos fibres, i.e. they exceed the asbestos fibre acceptance criteria or contain non-compliant products (e.g. lagging, asbestos insulation board etc) will be rejected and removed from site.

Stockpiled soils will be transferred to the asbestos processing area and loaded onto a three way screen with a fines, mid range and oversize separation system. The mid range fraction will be loaded onto the picking station with asbestos operatives removing visible fragments and double bagging prior to storage in a locked skip. The fines and oversize will be visually inspected prior to storage for validation testing. If visually identifiable asbestos is present in the fines or oversize fraction these will be loaded onto the picking station, or spread out on the ground for picking prior to validation testing.

The locked asbestos skip will be removed from site when full and taken to a licensed hazardous landfill for disposal.

All personnel will enter and leave the asbestos area via the designated decontamination facility.

#### **Plant/Equipment to be Used:**

- Tarpaulins
- Asbestos air monitoring equipment
- 360 excavator
- Dumper truck
- 3 way screener
- Picking station
- Hopper feeder
- Decontamination Unit
- Pressure washer/misting unit

#### **Plant/Operator Certification Required:**

- CPCS/CSCS Cards
- Asbestos Awareness
- CAT B asbestos training (pickers)

#### **Summary of Known or Suspected Hazards (either construction, physical or contamination hazards identified):**

- The stored soil from a variety of sources will contain low levels of ACM debris and asbestos fibre concentrations lower than the waste acceptance limits previously described. The potential for airborne asbestos fibres being generated is considered extremely low.
- The potential routes of asbestos exposure are by inhalation of dust.
- Construction hazards (slips, trips and falls on uneven ground, machinery)
- Physical hazards associated with moving equipment & machinery.

## General Description of Work

- Soils received will be covered with tarpaulins whilst awaiting reception analysis
- Reception analysis to be reviewed and approved by the Operations Manager prior to any transfer to the asbestos processing area.
- All screening and hand picking works to be undertaken with background air monitoring to confirm if asbestos fibres are being generated
- Enter clean end of decontamination unit and pick up disposable overalls/overshoes (if used) and disposable RPE if used
- Don PPE and where required RPE (as specified) prior to entering designated area of site via dirty exit of decontamination unit
- Excavate and screen stockpiled soils in a controlled manner with handpicking of debris into waste asbestos sack directly where possible. Where required, use the surfactant spray if any asbestiform materials appear dry/friable. Place double bagged ACM debris in the dedicated lockable skip at the end of each work period.
- Wipe all tools, etc. with a dampened cloth.
- Place used damp rags in a waste sack and seal.
- At the edge of the work area, clean the outside of all waste sacks and seal.
- Wipe off boots and face mask (if worn) with a cloth and bucket provided.
- Disposable overalls (turned inside out), gloves and where required, any used disposable respirators in asbestos waste bag. Seal the clear bag.
- Once soils have nil visible asbestos and are chemically approved as suitable for further treatment or reuse, they can be sent to the non-hazardous void or restoration scheme following approval from FCC Compliance.
- Ambient asbestos monitoring in air to be undertaken daily during screening/hand picking works. Works must cease to allow damping down measures to be implemented if fibre concentrations exceed **0.01f/cm3**.

Site Manager to conduct a visual inspection of work areas and transit routes.

## Personal Protection

### PPE:

- Hi-Visibility vest/jacket (where required)
- Hard Hat
- Protective boots (steel toecap/midsole)
- Disposable overalls: Type 5 (BS EN ISO 13982-1)
- Disposable overshoes (where required)
- Disposable gloves

### RPE:

- disposable respirator to standards EN149 (type FFP3) or EN1827 (type FMP3);
- half or full mask respirator (to standard EN140) with P3 filter; or semi-disposable respirator (to EN405) with P3 filter. Masks may be positive or negative pressure depending on face fit requirements. Should negative pressure masks be used then a break every hour of continuous use should be undertaken.

Also:

- Surfactant spray (e.g. Idenden Dampstrip Asbestos Penetrant 30-330 or similar)
- First Aid Kit
- Mobile Phone
- Site radio

### **Emergency Procedures**

#### Personnel injury/overexposure:

Remove to fresh air and provide first aid procedures as required; Contact Emergency services if accident/injuries warrants; Decontaminate personnel if required (remove overalls and PPE, wash hands and forearms).

#### Fire or Explosion:

Evacuate the work area and summon local Fire Brigade. Do not attempt to fight fire. Remain upwind of smoke in safe area. Follow existing Emergency Site Procedures.

### **Decontamination Procedure**

- Personnel:**
- 1) Remove disposable contaminated clothing and discard in the designated waste container.
  - 2) Wash hands/face/forearms prior to leaving decontamination unit.

### **Site Rules**

- **NO SMOKING**, No eating, drinking, or chewing of gum.
- Wear protective equipment specified above.
- Utilise good personal hygiene habits – wash hands and exposed skin with soap and water prior to leaving site.
- Remove and dispose of contaminated clothing as described above before leaving the working area.

The safe working procedures detailed in this method statement must be adhered to.



## APPENDIX 3

Asbestos Surfactant MSDS Sheets

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 1  
Compilation date: 11/04/2017  
Revision No: 1

**Section 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Product name:** EVERGARD WETTING AGENT

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

**1.3. Details of the supplier of the safety data sheet**

**Company name:** SMH Products Ltd

SMH House  
Maxwell Street  
South Shields  
Tyne & Wear  
NE33 4PU

**Tel:** 0191 456 6000

**Fax:** 0191 456 7777

**Email:** enquiries@smhproducts.com

**1.4. Emergency telephone number**

**Section 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification under CLP:** Aquatic Chronic 3: H412

**Most important adverse effects:** Harmful to aquatic life with long lasting effects.

**2.2. Label elements**

**Label elements:**

**Hazard statements:** H412: Harmful to aquatic life with long lasting effects.

**Precautionary statements:** P273: Avoid release to the environment.

P501: Dispose of contents/container to hazardous or special waste collection point.

**2.3. Other hazards**

**PBT:** This product is not identified as a PBT/vPvB substance.

**Section 3: Composition/information on ingredients**

**3.2. Mixtures**

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 2

**Hazardous ingredients:**

STEOL CS-230

EINECS	CAS	PBT / WEL	CLP Classification	Percent
-	-	-	Eye Dam. 1: H318; Skin Irrit. 2: H315; Aquatic Chronic 3: H412	1-10%

PRIMARY ALCOHOL ETHOXYLATE

614-482-0	68439-46-3	-	Eye Dam. 1: H318; Acute Tox. 4: H302	<1%
-----------	------------	---	--------------------------------------	-----

**Section 4: First aid measures**

**4.1. Description of first aid measures**

**Skin contact:** Wash immediately with plenty of soap and water.

**Eye contact:** Bathe the eye with running water for 15 minutes.

**Ingestion:** Wash out mouth with water.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so.

**4.2. Most important symptoms and effects, both acute and delayed**

**Skin contact:** There may be mild irritation at the site of contact.

**Eye contact:** There may be irritation and redness.

**Ingestion:** There may be irritation of the throat.

**Inhalation:** No symptoms.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Immediate / special treatment:** Not applicable.

**Section 5: Fire-fighting measures**

**5.1. Extinguishing media**

**Extinguishing media:** Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

**5.2. Special hazards arising from the substance or mixture**

**Exposure hazards:** In combustion emits toxic fumes.

**5.3. Advice for fire-fighters**

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

**Section 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Refer to section 8 of SDS for personal protection details. Turn leaking containers leak-side up to prevent the escape of liquid. Mark out the contaminated area with signs and prevent access to unauthorised personnel.

[cont...]

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 3

**6.2. Environmental precautions**

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

**6.3. Methods and material for containment and cleaning up**

**Clean-up procedures:** Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

**6.4. Reference to other sections**

**Reference to other sections:** Refer to section 8 of SDS.

**Section 7: Handling and storage**

**7.1. Precautions for safe handling**

**Handling requirements:** Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area.  
Avoid the formation or spread of mists in the air.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage conditions:** Store in a cool, well ventilated area. Keep container tightly closed. The floor of the storage room must be impermeable to prevent the escape of liquids.

**7.3. Specific end use(s)**

**Specific end use(s):** No data available.

**Section 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Workplace exposure limits:** No data available.

**DNEL/PNEC Values**

**Hazardous ingredients:**

**STEOL CS-230**

Type	Exposure	Value	Population	Effect
DNEL	Dermal	2750	Workers	Systemic
DNEL	Inhalation	175	Workers	Systemic
DNEL	Oral	15	General Population	Systemic
DNEL	Dermal	1650	General Population	Systemic
DNEL	Inhalation	52	General Population	Systemic
PNEC	Fresh water	0.24	-	-
PNEC	Marine water	0.024	-	-
PNEC	Fresh water sediments	0.9168	-	-
PNEC	Marine sediments	0.0917	-	-

[cont...]

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 4

PNEC	Soil (agricultural)	0.946	-	-
PNEC	Microorganisms in sewage treatment	10	-	-

**8.2. Exposure controls**

**Engineering measures:** The floor of the storage room must be impermeable to prevent the escape of liquids.

**Respiratory protection:** Respiratory protection not required.

**Hand protection:** Protective gloves.

**Eye protection:** Safety glasses.

**Skin protection:** Protective clothing.

**Section 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**State:** Liquid

**Colour:** Colourless

**Odour:** Characteristic odour

**Viscosity:** Non-viscous

**pH:** 3.00

**9.2. Other information**

**Other information:** No data available.

**Section 10: Stability and reactivity**

**10.1. Reactivity**

**Reactivity:** Stable under recommended transport or storage conditions.

**10.2. Chemical stability**

**Chemical stability:** Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

**Hazardous reactions:** Hazardous reactions will not occur under normal transport or storage conditions.  
Decomposition may occur on exposure to conditions or materials listed below.

**10.4. Conditions to avoid**

**Conditions to avoid:** Heat.

**10.5. Incompatible materials**

**Materials to avoid:** Strong oxidising agents. Strong acids.

**10.6. Hazardous decomposition products**

**Haz. decomp. products:** In combustion emits toxic fumes.

**Section 11: Toxicological information**

[cont...]

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 5

**11.1. Information on toxicological effects**

**Hazardous ingredients:**

**STEOL CS-230**

DERMAL	RAT	LD50	>2000	mg/kg
ORAL	RAT	LD50	>2000	mg/kg

**PRIMARY ALCOHOL ETHOXYLATE**

ORL	RAT	LD50	>200<2000	mg/kg
-----	-----	------	-----------	-------

**Toxicity values:** No data available.

**Symptoms / routes of exposure**

**Skin contact:** There may be mild irritation at the site of contact.

**Eye contact:** There may be irritation and redness.

**Ingestion:** There may be irritation of the throat.

**Inhalation:** No symptoms.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

**Section 12: Ecological information**

**12.1. Toxicity**

**Hazardous ingredients:**

**STEOL CS-230**

ALGAE	48H EC50	27.7	mg/l
DAPHNIA	48H EC50	7.4	mg/l
FISH	96H LC50	7.1	mg/l

**PRIMARY ALCOHOL ETHOXYLATE**

FISH	96H LC50	1-10	mg/l
------	----------	------	------

**12.2. Persistence and degradability**

**Persistence and degradability:** Not biodegradable.

**12.3. Bioaccumulative potential**

**Bioaccumulative potential:** Bioaccumulation potential.

**12.4. Mobility in soil**

**Mobility:** Readily absorbed into soil.

**12.5. Results of PBT and vPvB assessment**

**PBT identification:** This product is not identified as a PBT/vPvB substance.

[cont...]

**SAFETY DATA SHEET**  
EVERGARD WETTING AGENT

Page: 6

**12.6. Other adverse effects**

**Other adverse effects:** Toxic to aquatic organisms. Toxic to soil organisms.

**Section 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal operations:** Transfer to a suitable container and arrange for collection by specialised disposal company.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

**Section 14: Transport information**

**Transport class:** This product does not require a classification for transport.

**Section 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Specific regulations:** Not applicable.

**15.2. Chemical Safety Assessment**

**Chemical safety assessment:** A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

**Section 16: Other information**

**Other information**

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

\* indicates text in the SDS which has changed since the last revision.

**Phrases used in s.2 and s.3:** H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H412: Harmful to aquatic life with long lasting effects.

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

## APPENDIX 4

### Complaints Recording Form



**COMPLAINTS RECORDING FORM**

<b>Date recorded:</b>		<b>Reference Number:</b>	
Name and address of caller:			
Telephone number of caller:			
Time and Date of call:			
Nature of complaint (noise, odour, dust, other) (date, time, duration):			
Weather at the time of complaints: (rain, snow, fog, etc.)			
Any other complaints relating to this report			
Site activity/activities carried out at the time of the complaint:			
<b>FOLLOW UP</b>			
Actions taken:			
Date of call back to complainant:			
Summary of conversation:			
<b>RECOMMENDATIONS</b>			
Changes in procedures? Include details and date of changes made:			
<b>Form completed by:</b>			
<b>Signed:</b>			
<b>Date:</b>			

## APPENDIX 5

### Site Inspection Form

## SITE INSPECTION FORM (DAILY INSPECTIONS)

WEEK STARTING:								
DAILY SITE INSPECTION		DAY						
		M	T	W	T	F	S	S
SITE ENTRANCE/NOTICE BOARD								
SECURITY - GATES								
SECURITY - FENCING								
SITE ROADS / SURFACES								
WASTE CONTAINERS & BAYS								
WASTE TYPES								
WASTE/SKIP STORAGE								
PLANT/EQUIPMENT								
FUEL TANK/BUND (if any)								
FLOORING & HARDSTANDING (if any)								
DRAINAGE CHANNELS/GULLIES								
WASTE TYPES/ QUANTITIES								
REJECTED WASTE TYPES / STORAGE								
NOISE LEVELS								
FIRES								
LITTER								
DUST								
ODOUR								
VERMIN								
RECORDS								
OTHER -								
INSPECTION CARRIED OUT BY								
NOTES/ACTION (CONTINUE ON A SEPARATE SHEET IF NECESSARY):								
CHECKED BY		SIGNATURE						
POSITION		DATE						
Sheet		of						



[WWW.CAULMERT.COM](http://WWW.CAULMERT.COM)



Registered Office: InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG

**Tel:** 01248 672666

**Email:** [contact@caulmert.com](mailto:contact@caulmert.com)

**Web:** [www.caulmert.com](http://www.caulmert.com)