Swanscombe Solar Panel Recycling Facility

H1 Complaint Environmental Risk Assessment

For

UBH Group
Solar Recycling Solutions
Unit B3
Manor Way business Park
Manor Way
Swanscombe
DA10 0PP

V.2 – November 2025

Table of Revisions & Reviews – Environmental Risk Assessment

Review Date	Revision Number	Date Of Issue	Reason for Review	Reviewed by:	Approved by:
10/25	V.1	10/25	Application Version – ERA for new solar panel recycling site	MRT/UBH	MRT/UBH
11/25	V.2	11/25	Application Version with details about potential risk & mitigation for local SSSI	MRT/UBH	MRT/UBH
			Annual Review of Previous Version		
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Document to be reviewed (and amended as necessary) as part of any upgrading or change of plant and/or in light of any incident or accident investigation.

Notwithstanding the above, this document will be reviewed annually as a minimum.

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1.0 Preface

1.1 This ERA and associated documents have been prepared with all reasonable care, skill & diligence by Mike Thompson Partnership Ltd (MTP) and associated consultants as necessary.

Information contained herein is based on the interpretation of data collected from various sources – mainly the client - which has been accepted in good faith as being accurate and valid.

These documents are for the exclusive use of the client named in the document header and only for the project also detailed in the header.

No warranties are expressed or should be inferred by any third parties. These documents should not be relied upon by other parties without written consent from MTP.

MTP disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the works.

Evaluations and conclusions detailed herein do not preclude the presence of other issues on site, which could not be reasonably have been revealed by these reports or any assessments detailed herein.

2.0 Site Overview

2.1 Site Infrastructure

The site comprises 3 bays of a row of enclosed industrial/warehousing units, each bay measuring approximately 16m x 38m.

The warehouse units are constructed of brick/block work with some stell cladding.

The fibre cement roof is supported by reinforced concrete trusses. There are a number of translucent panels in the roof to allow some natural light into the building. The trusses are supported by reinforced concrete legs. Where walls are present, these are located between these legs.

The building has 3 large roller shutter doors to the northern side and a single door on the southeastern corner to provide vehicular access.

All sides of the building (apart from the common wall on the eastern boundary) are provided with personnel doors to give access and fire escapes.

Inside the building are a number of steel framed mezzanine floors providing storage and viewing areas. Inside the 2 end bays of the building lie two 2 storey 2 office/amenity areas. These are constructed of block work within the envelope of the main building. These do not rise to roof height but are flat roofed some 1-2m below the main roof.

The building is floored with a float-finished reinforced concrete floor. This is to be kerbed to a depth of 150mm at each external opening to provide a measure of bunding to control spillages/fire water.

There is an unloading area in front of the buildings, to the north. This lies in front of the main access to the buildings & the site reception area.

To the west lies another unloading/storage area with sealed hardstanding and drainage.

To the south lies an unsealed hardstanding area, with drainage gulleys present.

All external areas of the site are secured using 2.1m high palisade fencing with numerous locked gates providing vehicular access.

The northern side of the Main entrance for the site is on the north side of the building, alongside the unloading area.

All the buildings have a sealed, concrete floor and the unloading area to the north also has a sealed concrete floor.

The site is furnished with a CCTV system and fire alarm – both monitored by SRS staff.

The site is supplied with mains power, water and gas.

The site does not operate under a Trade Effluent Consent as no effluent is produced. Sewage from the amenity facilities goes to the public sewer under Manor Road to the north. Drainage from the sealed unloading areas to the north & west of the building also go to the public sewer under Manor Road to the north. Drainage from the hardstanding southern area is allowed to drain to ground through the surface of the yard.
No gulleys or interceptors are provided as no leachable materials or vehicles are stored here and all waste (which does not contain any leachable materials) is stored in sealed shipping containers.

2.2 Site Location

The SRS Swanscombe solar panel recycling site is located at Solar Recycling Solutions, Unit B3, Manor Way business Park, Manor Way, Swanscombe DA10 0PP.

The site lies just north of the A226 road and just west of the main London to Ashford railway line.

The immediate area around the site comprises a large industrial estate with various industrial units housing mainly vehicle maintenance works, vehicle breakers yards, etc.

Th site has been, since the mid19th century, a chalk quarry and then papermill before its current use as a miscellaneous industrial estate unit.

Within 200m of the site (to both north & south) lie a number of the elements of the Swanscombe Peninsula SSSI.

The main site access is along Manor Way, an unadopted highway accessed from the roundabout on Tilman Avenue, some 60m north of the A226 London Road.

The National Grid Reference for the site is: TQ 60718 75042

The What3Words codes relevant to the site access are:

- A226 London Road Junction: NEAT.INVEST.VIBES
- Tillman Avenue Roundabout: BASIS.MOVIE.BEARD
- Site Main Entrance: INPUT.PLUS.AHEAD

2.3 Flood Risk

The site falls in a Flood Risk Zone 3 but the operations pose little environmental risk in the event of flooding.

The operations make no change to the buildings or infrastructure that have been site for 20+ years.

The operations do not generate, store or use large amounts of liquids. Those liquids that are present on site are stored in double bunded containers.

No waste materials, plant or infrastructure on site will float.

No materials on site are water soluble or will leach into standing flood water.

The site is located in a such a position that it will not be subjected to major flows of running flood water so there is nothing that could be washed away and cause issues downstream.

3.0 Description of Activities/Non Technical Summary

3.1 The Waste Processing Activities to take place on site are:
The waste recycling and processing activities undertaken at the Site are as follows:

- **R4: Recycling or reclamation of metals and metal compounds**
- **R5: Recycling or reclamation of other inorganic materials**
- **R13: Storage of waste awaiting recovery**

3.2 The Swanscombe site technology is specifically designed to process silicon/glass solar panels – as used in all the current domestic and commercial/industrial applications.

Due to issues with the presence of cadmium telluride and/or gallium arsenide, thin layer panels will not be processed at the site.

These compounds are deemed hazardous waste and the site is not planning to accept these panels due to their presence within the panels.

3.3 The current site was developed from late 2024 and comprises 3 bays of an existing warehouse/industrial unit (with a small external storage area) located in Swanscombe.

3.4 The deconstruction process comprises a fully automated line which, after inspection & manual removal of the junction/inverter boxes and cabling, deframes the panels and reduces the glass/silicon panel to its component materials.

All materials (except plastics) are produced in a format and purity that allows direct use as a replacement to virgin materials, enabling the products to be classed as End-of-Waste.

The End-of-Waste process & document systems will be generated in collaboration with the end-users of the materials, so ensuring that the quality required for the materials to replace virgin resources are attained and maintained.

Any plastics are recovered in granular form and, due to the potential presence of POPs in this material, are all sent for thermal recovery at a suitably permitted facility off site.

3.5 Due to the nature of the construction of solar panels, the waste units received at SRS are unsuitable for refurbishment and re-use so all solar panels sent to SRS Swanscombe are deconstructed and recycled in granular form.

3.6 All parts of the deconstruction/recycling line that may generate dust are covered by dust extraction & filtration systems as required.

These extraction & filtration systems operate to ensure that any emissions are below the ELV limit of 5mg/m^3, so ensuring compliance with relevant regulations.

3.7 There are no liquids used on site (apart from fuel for the fork lifts & maintenance fluids) and any maintenance fluids are kept in bunded containment.

4. Emissions & Pathways

4.1. The table below summarises the emission types, sources, and control measures in place:

Emission Type	Source	Pathway	Control Measures
Air (dust)	Panel deconstruction, mechanical cutting	Local ventilation and filtration before release via stack	HEPA dust extraction and filter system achieving <5 mg/m³ particulate concentration
Air (fumes)	Forklift truck exhaust	Building ventilation	Limited use; maintained equipment; internal combustion only for short movement periods
Water / runoff	None – sealed surface	N/A	All drainage to sealed system; no process effluent
Soil / groundwater	Storage of maintenance fluids / diesel	Spillage, leakage	Double-bunded containers; sealed surfacing; spill kits on-site; no liquid waste handled on site; no pathway to groundwater
Noise	Cutting and handling machinery	Airborne transmission	All operations within enclosed building; normal daytime hours; periodic maintenance to reduce vibration / noise, all processes electric drive
Odour	None expected	N/A	No odorous materials or processes

5. Receptors

5.1. The table below summarises the receptors near the site and their potential exposure routes:

Receptor	Distance / Description	Sensitivity	Pathway
Nearest residential property	~150 m south west	Medium	Air (dust/noise)
Commercial / industrial neighbours	Adjacent units	Low	Air / shared yard access
Surface water	Nearest drainage ditch ~150 m south	Medium	Runoff (controlled) also no direct runoff from site to ditch (where access present)
Groundwater	Secondary aquifer (chalk)	Medium	None – sealed surfacing
Ecology	Swanscombe Peninsula SSSI units located within 200m to west & north of site	Relatively Low	Air (dust)
Human health	Workers and visitors	Medium	Direct exposure – controlled via PPE and LEV

6. Source–Pathway–Receptor Risk Assessment

6.1. The risk assessment matrix below identifies key risks and mitigation measures.

Source	Pathway	Receptor	Impact	Likelihood	Consequence	Risk	Control / Mitigation
Dust from deconstruction	Airborne via exhaust stack	Local residents & Swanscombe Peninsula SSSI sites to north & west	Nuisance dust	Low	Low	Low	HEPA filtration; emission <5 mg/m³; totally enclosed process; dust modelling for sensitive human receptors show non-significant impact at similar distances as SSSI; minimal exhaust loading from BAT filtration systems (<5 mg/m³ is worst case used for modelling); dust is inert - (no contamination) silicon dust from glass – non-carcinogenic
Forklift exhaust	Airborne	Local residents / workers	Minor local air impact	Low	Low	Low	Minimal use; well-maintained vehicles; vehicles electric drive wherever possible.
Fuel / oil storage	Spill to surface / drains	Groundwater, soil	Contamination	Very Low	Medium	Low	Double bunding, impermeable surfacing, spill response; no interaction with ground water; forklifts to be electric wherever possible
Noise from equipment	Airborne	Nearest receptor (250 m)	Nuisance	Low	Low	Low	Internal operation; limited hours; all working behind closed doors
Waste handling	Mismanagement	Environment	Litter, dust	Very Low	Low	Low	All storage internal; labelled containers

7. Risk Evaluation and Residual Risk All identified hazards have been assessed as Low risk after the application of embedded controls.

7.2. The site design — sealed surfaces, full enclosure, bunding, and state-of-the-art dust extraction & filtration systems — ensures no credible source–pathway–receptor linkage remains of environmental significance.

7.3. Residual risk rating: Low across all environmental aspects.

8. Control and Monitoring Measures

The following control and monitoring measures will be in place:

Aspect	Control Measure	Frequency / Responsibility
Dust emissions	BAT filtration systems; Monitoring as per Permit requirements; Filter inspection and maintenance	Daily / Site Manager
Liquid Containment Bund integrity	Visual inspection	Weekly / Maintenance Supervisor
Spill response	Spill kits maintained	Monthly / Operator
Housekeeping	Clean floors, remove debris	Daily / Operators
Noise	Equipment servicing	Weekly / Maintenance Supervisor

9. Accident Management and Emergency Planning The following protocols and equipment are in place to ensure mitigation of any environmental impacts if an incident occurs on site:

- Spill kits available near all fluid storage and operational zones.
- Emergency procedures displayed on-site.
- Plant shuts down if OTNOC activity or breakdown detected – especially with dust filtration systems.
- Fire extinguishers maintained in accordance with manufacturer guidance.
- Staff training in emergency response, spill management, and safe waste handling.

10. Conclusion This Environmental Risk Assessment demonstrates that potential environmental impacts from operations at SRS Swanscombe are insignificant when managed through existing controls.

10.2. There are no significant source–pathway–receptor linkages remaining.

10.3. The operation is low risk in accordance with the Environment Agency's H1 Guidance and is suitable for an environmental permit.