UMBRELLA ENVIRONMENTAL

PROTECTING YOUR BUSINESS

Environmental Risk Assessment

Umbrella Environmental
9 Goldington Road
Bedford
MK40 3JY
Company Number:
13446157

Website: www.umbrella-environmental.co.uk
Email: andrew@umbrellaenvironmental.co.uk
Mob: 07498 671713

Site Address:
Lincoln Storm Limited
Worle Quarry
Kewstoke Road
Weston-Super-Mare
Somerset
BS22 9LF

Registered Office:
Worle Quarry
Kewstoke Road
Weston-Super-Mare
Somerset
BS22 9LF

Application Reference:
EPR/KB3002CW
Document Reference:
020.1_05_004
Issue Date:
27/07/2023

Document Control

Document Title	Reference	Client	Status
Environmental Risk Assessment	020.1_05_004	Lincoln Storm Limited	FINAL

Document History

Version	Issue date	Author	Checked	Description
D1	27/06/2023	AIL		Draft for Client Review.
V1	27/07/2023	AIL		FINAL

CONTENTS

Tables

Figures

1 INTRODUCTION

This Environmental Risk Assessment (ERA) accompanies the application for a bespoke Installation EPR/KB3002CW at Lincoln Storm Ltd UK, Worle Quarry, Kewstoke Road, Weston-Super-Mare, Somerset, BS22 9LF. The site Location is shown on the **Site Plan (MA6)**.

The site historically was a quarry where minerals and stones were removed for construction etc., latterly the area has had an industrial and waste use. A majority of the permitted area has been used as a waste site since 2011.

The only waste accepted to site is shown tin Table 2.2 in the Non-Technical Summary (NTS) (MA1) . Waste will be brought in by approved contractors (registered waste carriers).

This document summarises the application for a bespoke waste installation permit allowing for Lithium Ion batteries and other associated waste streams to be accepted, processed, and for production of Storm Black for onward transportation and use (non-waste) or further processing (waste).

1.1 Scope

This risk assessment is based on the source-pathway-receptor approach. All potential sources of pollution associated with the acceptance, treatment and storage of permitted inert and non-hazardous waste activities have been assessed against the principal receptor types identified within the site's vicinity.

The requirement for risk management measures is then dependent on a viable pathway being present between the source and the receptor. Where such a pathway exists, management measures are required to reduce risk.

1.2 Aims

This assessment aims to consider potential environmental hazards associated with the activity, to identify sensitive receptors which these may impact, and determine the influence management practice has on reducing risk.

2 SITE SETTING

2.1 Location

The site is located within the disused Worle Quarry in the area of Kewstoke to the north of Weston-Super-Mare. The National Grid Reference (NGR) for the site is ST 35142 63205 and the site location is illustrated in the maps provided as Sensitive Receptors and Location.

2.2 Humans and Property

The site is located in a mixed-use area. The closest residential receptors lie within Worle approximately 20m to the north with further properties to the east, south, and west. Areas of woodland border the site above the quarry to the south, east and west. The Worlebury golf course lies 40m to the west. The main access to the site is via Lower Kewstoke Road which is located adjacent to the site's northern EP boundary.

An area of Ancient Woodland called Worle Wood lies 195m to the north west of the site.

The EP boundary and site layout is shown in the accompanying site plan.

2.3 European Designated Receptors

	EUROPEAN DESIGNATED SITES	Distance	Direction
1	Ramsar & SSSI - The Severn Estuary	2076 m	WNW
2	SSSI - Ellenborough Park West	3877 m	SW
3	SSSI - Spring Cove Cliffs	3936 m	WSW
4	SSSI - Banwell Caves	5232 m	SSE
5	SSSI - Bleadon Hill	5512 m	S
6	SSSI - Puxton Moor	5513 m	E
7	SSSI - Purn Hill	5971 m	SSW
8	SSSI - Biddle Street, Yatton	6237 m	ENE
9	SSSI - Shiplate Slait	6306 m	SSE
10	SSSI - Banwell Ochre Caves	6777 m	SE
11	SSSI - Yanal Bog	7585 m	ESE
12	SSSI - Crook Peak to Shute Shelve Hill	7613 m	SSE
13	SSSI - Max Bog	7657 m	SE
14	SSSI - Tickenham, Nailsea & Kenn Moors	8152 m	ENE
15	SSSI - Kenn Church, Kenn Pier & Yew Tree Farm	8358 m	NE
16	SSSI - Kings Wood & Urchin Wood	9575 m	ENE

The closest designated site (Salt Marsh) is the Severn Estuary located in excess of 2000 m away from site.

2.4 Geology

Table 1 Geology

Artificial Ground/Made Ground	Made ground, quarry back fill.
Superficial and Drift Geology	No Superficial Layer
Bedrock and Solid Geology	Principal Aquifer

2.5 Hydrogeology

Superficial Aquifer- Secondary Undifferentiated- Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer

in different locations due to the variable characteristics of the rock type 399 m North East of site.

Bedrock Aquifer- Principal, Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

2.6 Hydrology

SURFACE WATER		
Drainage Channels within Arable Land north of Kewstoke Road	363 m	NNW
Ponds within park areas south of the Bristol-Exeter Railway Line	1350 m	SE
Kewstoke Rhyne (stream)	1634 m	NW
Redcroft Rhyne (stream)	1543 m	NNW
River Banwell	1817 m	ENE

2.7 Flood Risk

Flood zone 1, an area with a low probability of flooding

2.8 Air Quality

Not in an Air Quality Management Zone (AQMA).

2.9 Nature of Risk Assessment

This document provides a broad and general assessment of the risk factors considered to be of significance for the site, and an evaluation of the impact from the principal risk factors to receptors within the site vicinity.

3 METHODOLOGY

3.1 Hazard Identification

The Environment Agency's 'H1 Software Tool Version 2.78 April 2017', has been used to undertake a series of risk assessments to reveal the potential impact of the site's waste activities of their releases upon the local environment.

3.2 Types of Waste Activity Hazards

Hazard		Sources	Risk	Further Assessment
Odour	• Odour from storage • Odour from processing • Odour from Transfer	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch	• Non-Conforming wastes	• Table 8 Odour
Noise and Vibration	• Engine Noise (idling) • Noise from vehicle and plant movement. • Noise from reverse warnings • Noise from waste processing • Vibration from plant and vehicle movements	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch	• Processing and storage occur inside a building.	• Table 9 Noise and Vibration
Fugitive Emissions	• Dust from waste processing • Dust from Stored Waste • Litter form waste storage and/or treatment • Litter from vehicle movements • Pest form waste storage • Runoff from site operations	1. Waste delivery 2. Storage area run-off pre and post treatment 3. Treatment Process 4. Material dispatch 5. Fire Water	• Dust and particulate matter liberated from external areas only during dry conditions. • Loss of material during unloading, treatment and dispatch of waste.	• Table 10 Fugitive Emissions
Accidents	• Leak from onsite diesel oil storage • Transfer of substances • Plant or Equipment Failure • Fire in waste materials • Flooding • Vandalism	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch 5. Fire Water 6. Flood risk from Rivers, Sea or surface water. 7. Unauthorised access	• Loss of waste from vehicles • Spillages from processing equipment and vehicles transferring waste in to and out of site. • Damage to processing equipment and site infrastructure by vandals.	• Table 11 Accidents

			• Uncontrolled emissions of fire water and smoke.	
Sensitive Areas	• Damage to protected ecosystems	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch 5. Fire Water	• Sensitive receptors located around site impacted by normal operating activities and those during an incident.	• Table 8 Odour • Table 9 Noise and Vibration • Table 10 Fugitive Emissions • Table 11 Accidents

If a hazard has been identified by the H1 screening tool that may have an environmental impact these have been identified and have been provided with mitigation in Section 4 of this document.

3.3 Identify Receptors

Receptors are those sites/activities that are at risk form the hazards that a waste activity may have impact on and are defined as below:

- Protected sites and species
- Anywhere used to grow food or to farm animals or fish
- Drain and sewer systems
- Factories and other businesses
- Fields and allotments used to grow food
- Footpaths
- Groundwater, groundwater source protection zone
- Homes, or groups of homes (such as villages or housing developments
- Playing fields and playgrounds
- Private drinking water supplies
- Regionally important geological
- Schools, hospitals and other public buildings
- Water, for example ponds, streams, rivers, lakes or the sea –
- Conservation and habitats protected areas and areas of scientific interest

The receptors most likely to be impacted by the waste sites activities are listed below in Table 2 Key Receptors

Table 2 Key Receptors

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
		SITE		
HUMANS AND PROPERTY		Site Workers	On site	-
		Site Visitors	On site	-
		COMMERCIAL		
	1	Multiple Commercial Units off Lower Kewstoke Road	0 m	N
	2	Manor Farm (business park)	470 m	N
	3	Ash Tree Holiday Park	657 m	NNW
	4	Home Farm Caravan Site	791 m	WNW
	5	Elmsley Nursery (garden centre)	1266 m	NW
	6	Multiple Retail Units off Coker Road	1284 m	ESE
	7	North Worle Shopping Centre	1364 m	ESE
	8	Multiple Commercial Units off Park Way	1530 m	ESE
	9	Multiple Commercial Units off Elmham Way	1614 m	SE
	10	Hazelwood Caravan Park	1617 m	WNW
	11	Meadow Lee Caravan Park	1645 m	WNW
	12	Locking Castle Retail Park	1729 m	SE
	13	Woodspring View Stables	1768 m	NNW
	14	Assumed Development Land	1793 m	ESE
	15	Country View Holiday Park	1797 m	NW
	16	Multiple Commercial Units off Milton Road	1803 m	WSW
	17	Woodspring Nursery (garden centre)	1805 m	NNW

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	18	Sandy Bay Holiday Village	1808 m	NW
	19	Multiple Commercial Units off Filers Way	1864 m	ESE
	20	Ebdon Court Farm (business park)	1889 m	NE
	21	Sandy Bay Caravan Park	1968 m	WNW
	22	Quex Caravan Park	1990 m	WNW
		RESIDENTIAL		
	1	Residential Property off Worlebury Hill Road	13 m	NW
	2	Residential Properties west of Lower Kewstoke Road and north of Church Road	65 m	E
	3	Residential Properties between Lower Kewstoke Road & Ebdon Road	127 m	ENE
	4	Residents of Worle	309 m	SSE
	5	Residential Properties off Kewstoke Road	435 m	WNW
	6	Residential Properties within Worlebury Golf Club	613 m	W
	7	Residential Properties between Queens Way and New Bristol Road	621 m	ESE
	8	Residents of Castle Batch	631 m	ENE
	9	Residents of Ebdon	706 m	WNW
	10	Residential Properties off Norton Lane	712 m	WNW
	11	Residents of Mead Vale	1096 m	SSE
	12	Residents of Milton	1105 m	SW
	13	Residents of Worlebury	1197 m	WSW
	14	Residents of Ashcombe	1203 m	SW
	15	Residents of Kewstoke	1261 m	WNW
	16	Residents south of the Bristol-Exeter Railway Line	1451 m	SSE
	17	Paddock Park (static homes)	1559 m	ESE
	18	Summer Lane Care & Nursing Home	1601 m	SE
	19	Residents of Ebdon Village	1704 m	NE
	20	Residents of St. Georges	1885 m	ESE
	21	Residents of Sand Bay	1945 m	WNW
		PUBLIC USE		
	1	Worle Village Primary School	285 m	SSE
	2	St. Martins C of E Primary School	568 m	SSW
	3	Weston-Super-Mare Crematorium & Cemetery	596 m	NE
	4	Mendip Green Primary School	625 m	SSE
	5	St. Marks VA Ecumenical Church of England Primary School	674 m	ENE
	6	Worle Community School	805 m	SSE
	7	St. Marks Church Centre	825 m	E

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	8	Mead Valley Community Primary School	979 m	S
	9	Castle Batch Community Centre	1032 m	ENE
	10	Becket Primary School	1033 m	ESE
	11	Kewstoke Primary School	1214 m	WNW
	12	Milton Park Primary School	1318 m	SW
	13	Castle Batch Primary School Academy	1353 m	ENE
	14	Worlebury St. Pauls C of E Primary School	1377 m	WSW
	15	Priory Community School	1422 m	E
	16	St. Pauls Church, Kewstoke	1526 m	WNW
	17	Weston College	1578 m	SW
	18	Maltlands Play Area	1652 m	SSW
	19	Worle Station Car Park (North)	1655 m	ESE
	20	Cygnet Hospital	1682 m	WNW
	21	Worle Parkway Car Park	1694 m	ESE
	22	Herons Moor Academy	1701 m	SE
	23	Weston Milton Station Car Park	1751 m	SSW
	24	Kewstoke Village Hall	1769 m	WNW
	25	North Somerset Magistrates Court	1785 m	ESE
	26	Riverbank Medical Centre	1787 m	ENE
		PUBLIC RIGHTS OF WAY (PROW)		
	1	Footpath between Lower Kewstoke Road & Pleshey Close	14 m	SSW
	2	Footpath between Lower Kewstoke Road & Worlebury Hill Road	138 m	NNW
	3	Footpath between Castle Road & Queensway	255 m	ESE
	4	Footpath between Kewstoke Road & Worlebury Hill Road	467 m	W
	5	Footpath between Worlebury Hill Road & Pleshey Close	599 m	WSW
	6	Footpath between Kewstoke Road & Norton Lane	800 m	NW
	7	Footpath between Myrtle Farm & Foss Lane	863 m	NNW
	8	Footpath between Locking Road & Moor Lane	1248 m	SSW
	9	Footpath between Queensway & Walford Avenue	1477 m	ESE
	10	Footpath between Worlebury Hill Road & Weston Wood	1658 m	WSW
	11	Footpath between Crookes Lane & Sand Bay	1665 m	WNW
		ROADS & RAILWAYS		
	-	Lower Kewstoke Road	131 m	N
	-	B3440	806 m	SSE
	-	Bristol-Exeter Railway Line	1424 m	SSE
		RECREATIONAL		

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	1	Worlebury Golf Club	20 m	W
	2	Lynch Farm Park	168 m	ENE
	3	Worle Juniors Football Ground	299 m	NE
	4	Worle Recreation Ground	775 m	SE
	5	Castle Batch (park)	878 m	ENE
	6	Baytree Recreation Ground	1043 m	SSW
	7	Verbena Square	1301 m	SE
	8	Recreational Ground off Verbena Way	1307 m	SE
	9	Play Park off Lower Norton Lane	1457 m	WNW
	10	Playground off Moor Lane	1458 m	SSE
	11	Playing Field off Wheatfield Drive	1492 m	NE
	12	Summer Lane Park	1504 m	SE
	13	Plumley Park	1565 m	SSE
	14	Ashcombe Park	1604 m	WSW
	15	Bransby Bunker (park)	1688 m	SSE
	16	Welford Avenue Play Area	1781 m	ENE
	17	Ashcombe Park Bowling Club	1933 m	WSW
		AGRICULTURAL		
	1	Allotment Gardens off Castle Road	183 m	E
	2	Packets of Arable Land north of Kewstoke Road and east of Norton Lane	359 m	NW
	3	Packets of Arable Land east of Collum Lane	539 m	NNE
	4	Packets of Arable Lane north of Kewstoke Road and west of Norton Lane	637 m	WNW
	5	Allotment Gardens off Church Road	647 m	SSW
	6	Packets of Arable Land north of Lower Norton Lane & east of Elmsley Lane	808 m	NNW
	7	Packets of Arable Land north of Lower Norton Lane and west of Elmsley Lane	1136 m	NW
	8	Allotment Gardens off Aspen Park Road	1406 m	SSE
	9	Packets of Arable Lane north of Foss Lane	1554 m	NNW
	10	Packets of Arable Land east of the River Banwell	1833 m	NE
	11	Agricultural Depot off Wick Road	1886 m	NE
	12	Packets of Arable Land south of the A370	1959 m	SSE
WATER		**SURFACE WATER**		
	-	Drainage Channels within Arable Land north of Kewstoke Road	363 m	NNW
	-	Ponds within park areas south of the Bristol-Exeter Railway Line	1350 m	SE
	-	Kewstoke Rhyne (stream)	1634 m	NW

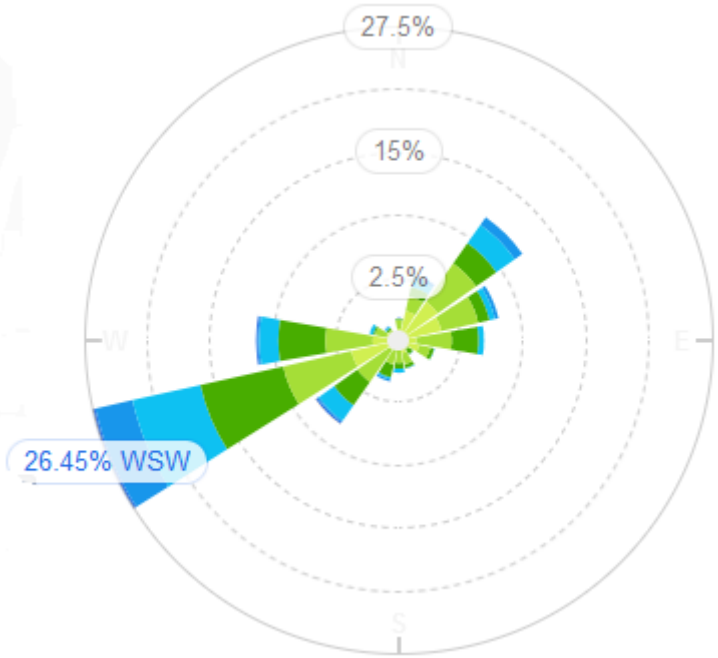
TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	-	Redcroft Rhyne (stream)	1543 m	NNW
	-	River Banwell	1817 m	ENE
		GROUNDWATER		
	-	Bedrock Aquifer - Principal	On site	-
	-	Superficial Aquifer - No Superficial Layer	On site	-
ENVIRONMENTALLY SENSITIVE		**DESIGNATED SITES**		
	1	Ancient Woodland - Worle Hill Woods	263 m	NW
	2	Local Nature Reserve & Ancient Woodland - Weston Woods	1627 m	WSW
		EUROPEAN DESIGNATED SITES		
	1	Ramsar & SSSI - The Severn Estuary	2076 m	WNW
	2	SSSI - Ellenborough Park West	3877 m	SW
	3	SSSI - Spring Cove Cliffs	3936 m	WSW
	4	SSSI - Banwell Caves	5232 m	SSE
	5	SSSI - Bleadon Hill	5512 m	S
	6	SSSI - Puxton Moor	5513 m	E
	7	SSSI - Purn Hill	5971 m	SSW
	8	SSSI - Biddle Street, Yatton	6237 m	ENE
	9	SSSI - Shiplate Slait	6306 m	SSE
	10	SSSI - Banwell Ochre Caves	6777 m	SE
	11	SSSI - Yanal Bog	7585 m	ESE
	12	SSSI - Crook Peak to Shute Shelve Hill	7613 m	SSE
	13	SSSI - Max Bog	7657 m	SE
	14	SSSI - Tickenham, Nailsea & Kenn Moors	8152 m	ENE
	15	SSSI - Kenn Church, Kenn Pier & Yew Tree Farm	8358 m	NE
	16	SSSI - Kings Wood & Urchin Wood	9575 m	ENE
		NON-DESIGNATED SITES		
	1	BAP - Deciduous Woodland surrounding Worlebury Golf Club	0 m	S
	2	BAP - Low Calcareous Grassland off Helens Steps	580 m	WSW
	3	BAP - Coastal & Floodplain Grazing Marshes north of Northon and Ebdon	718 m	NNW
	4	BAP - Coastal & Floodplain Grazing Marshes south of the Bristol-Exeter Railway Line	1455 m	SE
	5	BAP - Lowland Meadows north of Lower Norton Lane	1514 m	WNW
	6	BAP - Deciduous Woodland in Ashcombe Park	1602 m	SW
	7	BAP - Coastal & Floodplain Grazing Marshes east of Ebdon	1682 m	NE
	8	BAP - Coastal & Floodplain Grazing Marshes between Castle Batch & St. Georges	1711 m	E

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
HERITAGE LOATIONS		LISTED BUILDINGS AND PARKS		
	1	Grade II Listed Building - Worle Tower Observatory	74 m	W
	2	c.8 No. Grade II Listed Buildings in Worle	257 m	SE
	3	3 No. Grade II Listed Buildings at 'The Newtons'	260 m	N
	4	3 No. Grade II Listed Farmhouses in Norton	743 m	NW
	5	Scheduled Monument - Motte at Castle Batch	1037 m	ENE
	6	3 No. Grade II Listed Buildings in Kewstoke	1478 m	WNW
	7	Grade II Listed Feature - Ebdon Bow Bridge	1888 m	NE

3.4 Wind Rose

Wind rose shows the prevailing wind direction for the waste site.

Figure 1 Wind Rose



3.5 Pathways

Table 3 Potential Pathways

Hazard	Potential Receptors	Pathway
Odour	Humans/Property/ Sensitive Areas (Designated)	Atmosphere
Noise and Vibration		Atmosphere, Physical
Fugitive Emissions	Ground Water/Humans/Property/ Sensitive Areas (Designated)	Atmosphere, Physical
Fire, Spills and Contaminated surface water.		Atmosphere, Physical, Infiltration via the ground
Vermin, Birds, Insects	Humans/Property/ Sensitive Areas (Designated)	Atmosphere, Physical

3.6 Risk

Environmental Risk is the probability of a receptor being exposed to an environmental hazard and the impact of such exposure. The Primary risk is assessed with no mitigation in place such as managerial procedures and physical engineering.

To assess risk the probability and the consequence of exposure have to be assessed see below tables.

Table 4 Probability of Exposure

Probability of exposure
HIGH – exposure is probable: direct exposure likely with no / few barriers between hazard, source and receptor.
MEDIUM – exposure is fairly probable: feasible exposure possible, barriers to exposure less controllable.
LOW – exposure is unlikely: several barriers exist between hazards source and receptors to mitigate against exposure.
VERY LOW – exposure is very unlikely; effective, multiple barriers in place to mitigate against exposure.

Table 5 Consequence of Exposure

Consequences of Exposure
HIGH – the consequences are severe: sufficient evidence that short or long term exposure may result in serious damage.
MEDIUM – consequences are significant; sufficient evidence that exposure to hazard may result in damage that is not severe in nature and reversible once exposure ceases (e.g. irritant).
LOW – consequences are minor; damage not apparent though reversible adverse changes may occur.
VERY LOW – consequences are negligible; no evidence of adverse changes following exposure.

Application of the probability and consequences of an hazard gives a risk rating as shown by the matrix below in

Table 6 Risk Matrix

		Consequences			
		Very Low	Low	Medium	High
Likelihood	High	Low	Medium	High	High
	Medium	Low	Medium	Medium	High
	Low	Low	Low	Medium	Medium
	Very Low	Very Low	Low	Low	Low

3.7 Management of Risk

For all the hazards identified in section 3.2 above, managerial procedures and hard infrastructure engineering have been developed in accordance with relevant guidance documents.

Residual risk will remain and these are detailed in table 8 to 11.

Table 7 Activity Risks

Reference	Process
AR1	Waste receipt
AR2	Waste storage pending treatment or recovery/disposal
AR3	Waste treatment processes
AR4	Material dispatch for recovery/disposal

Table 8 Odour

Odour							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 Reception (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) AR2 Storage (Secure Storage) AR3 **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation).	**Humans & Property** **Protected Nature Conservation Sites** **Atmosphere** *Inhalation of particles.* *Deposition of dust/particles on property and land.*	**Air**	**LOW**	**MEDIUM**	**MEDIUM**	• Waste accepted is not known to be odorous • All vehicles delivering and collecting materials to/from the site are covered or containerised. • Upon delivery at the site the waste is subject to strict waste acceptance procedures to identify, reject and/or segregate potentially non-conforming waste. This minimises the likelihood of unauthorised waste being accepted on site. • All incoming loads are booked in advance with the logistics manager who records the source, category and chemistry	**LOW**

AR4 Material Dispatch (Recovery/disposal)						of the load to be delivered to site. • Daily maintenance and inspection of storage areas. • All vehicles, plant and machinery would be operated and maintained in accordance with manufacturer's specifications. • Process equipment regularly cleaned to remove particulates • Any waste which is found to be excessively malodorous is immediately placed in the quarantine area and marked with a red sign. The Site Manager will notify the customer within 24 hours of receipt and arrangements will be made to return the material to the customer at the customer's expense. • The **OTEMS (MA10)** provides managerial procedures to prevent odour.	

Table 9 Noise and Vibration

Noise and Vibration							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage** (Secure Storage)	**Noise sensitive locations**[1] **Protected Nature Conservation Sites** .	**Air,** **Land**	**HIGH**	**MEDIUM**	**HIGH**	• Machinery is inspected and maintained regularly in line with manufacturer's recommendations. • Upon delivery at the site the waste is subject to strict waste acceptance procedures to identify, reject and/or segregate potentially non-conforming waste. This minimises the likelihood of unauthorised waste being accepted on site.	**MEDIUM**

[1] **Notes:** Noise–sensitive location defined in H3 *Horizontal Guidance for Noise Part 2 – Noise Assessment and Control* published by the Environment Agency as - *'Any dwelling, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity, which for its proper enjoyment requires the absence of noise at nuisance levels'.* Part 1 of H3 suggests that '*commercial premises may be* [noise sensitive], *depending upon the activities undertaken there'.*

AR3 **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation). **AR4** **Material Dispatch (Recovery/disposal)**						• All incoming loads are booked in advance with the logistics manager who records the source, category and chemistry of the load to be delivered to site. • Daytime operations only. • See **Noise and Vibration Management Plan (MA9)**. • The **OTEMS (MA10)** provides managerial procedures to prevent noise and vibration	

Table 10 Fugitive Emissions

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage** (Secure Storage) **AR3** **Treatment processes** (Treatment consisting Shredding, Drying and	**Humans & Property** **Protected Nature Conservation Sites** *Litter Nuisance*	**Air;** **windblown, physical transport and deposition**	**LOW**	**MEDIUM**	**MEDIUM**	• All vehicles delivering and collecting materials to/from the site are covered or containerised. • Waste types accepted are pre sorted reducing risk of litter and debris. • Upon delivery at the site the waste is subject to strict waste acceptance procedures to identify, reject and/or segregate potentially non-conforming waste. This minimises the likelihood of unauthorised waste being accepted on site. • All incoming loads are booked in advance with the logistics manager who records the source, category and	**LOW**

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
mechanical separation). **AR4** **Material Dispatch (Recovery/disposal)**						chemistry of the load to be delivered to site. • All vehicles leaving the stie are visually inspected by site operatives to ensure they are clear of loose waste and that any material being exported from the site is secure. Vehicles are cleaned as necessary • Type of waste is unlikely to produce litter. • Daily housekeeping of site surfaces to remove litter and debris and prevent spread. • Daily maintenance and inspection of storage areas. • Training provided to all relevant staff to collect loose litter and debris on a see it pick it up basis.	

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
						• All waste activities occur inside see **Site Plan (MA6)**. • The **OTEMS (MA10)** provides managerial procedures to prevent litter and debris.	

Water							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage** (Secure Storage) **AR3** **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation.)	**Protected Nature Conservation Sites** **Surface Water** **Groundwater** *Contamination*	**Land, water, runoff**	**LOW**	**MEDIUM**	**MEDIUM**	• All waste transfers are overseen by a competent person. • Daily site inspections and good housekeeping procedures in place – recorded in site diary. • Spill kits on site and employees are trained in their use and disposal. • Fuel/oil storage is in accordance with the Oil Storage Regulations and provided with secondary internal containment. • No waste stored within 10 m of a water course. • No waste stored within 50 m of any spring or borehole (other than site test boreholes).	**LOW**

Water							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR4 **Material Dispatch (Recovery/disposal)**						• All waste stored internally undercover. • Sealed drainage system see **Site Plan (MA66)**. • Waste stored on impermeable surface within a building. • The **OTEMS (MA10)** provides managerial procedures to prevent ingress of rain water and control of surface water.	

Mud and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and transfer of waste out of site) **AR4** **Material Dispatch (Recovery/disposal)**	**Humans & Property** *Amenity impact*	**Direct deposition**	**LOW**	**LOW**	**LOW**	• Daily inspections by site staff and records kept. • Road sweeping as required. • Transport vehicles inspected when leaving site and cleaned as required. • Waste is not known to originate from locations that are muddy. • Waste is inherently non muddy. • The **OTEMS (MA10)** provides managerial procedures to prevent mud and debris escaping.	**LOW**

Pest, Vermin, Scavengers							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
N/A - Given types of wastes accepted at site unlikely to give rise to significant pest issues.	**Humans & Property** **Protected Nature Conservation Sites**	**Air; Ground depending on vector**	**LOW**	**MEDIUM**	**LOW**	• Daily site inspections and good housekeeping procedures in place. • Permitted wastes unlikely to attract scavenging animals. • Waste stored in a building. • The **OTEMS (MA10)** provides managerial procedures to prevent pest and vermin.	**LOW**

Table 11 Accidents

Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
TRANSFERRING SUBSTANCES							
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage** (Secure Storage) **AR3** **Treatment processes** (Treatment consisting Shredding, Drying and	**Humans & Property** **Protected Nature Conservation Sites** **Surface Water** **Groundwater** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**LOW**	**MEDIUM**	• All vehicles delivering and collecting materials to/from the site are covered. • All waste that arrives is either containerised or on pallets. • All waste transfers are overseen by a competent person. • Fuel/oil storage is in accordance with the Oil Storage Regulations and provided with secondary internal containment. All stored within secured perimeter. • Limited vehicle movements on site and 10 mph speed limit • Spill kits on site and employees are trained in their use and disposal.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
mechanical separation. **AR4** **Material Dispatch (Recovery/disposal)**						• Deposit of waste occurs within a designated areas. • The **OTEMS (MA10)** provides managerial procedures to prevent accidents	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
PLANT OR EQUIPMENT FAILURE							
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements**	**Humans & Property** **Protected Nature**	**Land, air, water**	**LOW**	**LOW**	**MEDIUM**	• Limited vehicle movements within site reduces risk of accident. • Critical spares held on site.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
(waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage** (Secure Storage) **AR3** **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation. **AR4** **Material Dispatch (Recovery/disposal)**	**Conservation Sites** **Surface Water** **Groundwater** **Atmosphere** *Adverse impact*					• Planned maintenance program limits failure of key process components. • Daily inspections of plant, equipment and site infrastructure. • The **OTEMS (MA10)** provides managerial procedures to prevent plant or equipment failure.	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
FLOODING							
N/A – the site is not identified as being at risk from flooding	-	-	-	-	-	• There are no surface water features within the site boundary. • The site lies within a Flood Zone 1, defined as "Land having a less than 1 in 1,000 annual probability of river or sea flooding". Therefore, the likelihood of flooding is low. The site manager will ensure the site is signed up to receive flood warnings from the EA when these are available for this postcode.	-

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
						• An evacuation procedure will be prepared and implemented on site if required. In the event that a flood occurs, the site will be evacuated. Following a flood incident, the Site Manager is responsible for carrying out an investigation to determine that the site can be brought back into operational safely and for carrying out any necessary prior remedial action. • The Site Manager is responsible for implementing risk management measures.	
VANDALISM							

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
Entire Process	**Humans & Property** **Protected Nature Conservation Sites** **Surface Water** **Groundwater** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**MEDIUM**	**MEDIUM**	• The site has a number of security measures in place. The site benefits from a continuous presence of staff during operational hours, between 7am to 7pm Monday to Friday. Security on site includes: • 1.8m high perimeter fencing surrounding the site; • Access gate controlled by Lincoln Storm staff and locked outside of operational hours; • The site is enclosed by the sheer quarry face; Access to quarry edge has been completely fenced and CCTV installed and monitored to prevent vandalism and danger to the public from falling. • Access to site via keypad with each staff member having appropriate access rights; • CCTV system covering full extent of the site; and	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
						• Presence of a security guard outside of operational hours or on-call resident member of staff on site. • All visitors and contractors are required to sign in and are escorted by a member of staff. • All security measures on site are inspected at the commencement of every working day by site operatives to ensure their continued integrity. Any defects or damages which compromise the integrity of the enclosure will be made secure by temporary repair by the end of the working day. Permanent repairs will be made within a maximum of 5 days. • All waste is stored and processed internally except one container see **Site Plan (MA6)**	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
						• The **OTEMS (MA10)** provides managerial procedures to prevent vandalism.	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
FIRE							
AR1 **Reception** (delivery of waste to the site) **Vehicle Movements** (waste delivery, movement of waste within the site and	**Humans & Property** **Protected Nature Conservation Sites** **Atmosphere**	**Spread through physical contact; fanned by winds**	**LOW**	**HIGH**	**MEDIUM**	• **Fire Prevention Plan (MA3)** in operation. • Waste storage areas will be separated with appropriate fire breaks or fire resistant barriers between combustible materials. • Incoming waste is source segregated. • CCTV.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
transfer of waste out of site) **AR2** **Storage** (Secure Storage) **AR3** **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation. **AR4** **Material Despatch (Recovery/disposal)**	*Loss of life and property, loss of habitat, destruction and loss of amenity*					• Potential ignition sources will be removed from waste storage areas. • The operational section of the site is a no smoking area. All areas are subject to daily housekeeping. • The **OTEMS (MA10)** provides managerial procedures to prevent fire.	

Table 12 Point Source Emissions

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR3 **Treatment processes** (Treatment consisting Shredding, Drying and mechanical separation. Emission Points 1 to 6.	**Humans & Property** **Protected Nature Conservation Sites**	**Air;** **windblown, physical transport and deposition**	**LOW**	**MEDIUM**	**MEDIUM**	• Details of emission points are provided with Form 2.5: 5 mobile diesel generators and one emission point for water (as steam) from rotary dryer.	**LOW**

UMBRELLA ENVIRONMENTAL

PROTECTING YOUR BUSINESS

9 Goldington Road Bedford MK40 3JY

www.umbrella-environmental.co.uk

andrew@umbrellaenvironmental.co.uk

Mob: 07498 671713