NOISE IMPACT ASSESSMENT

Moss Road, Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB

Circle Recycling Ltd

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Drawing No. LRIE/2948/04 – Sensitive Receptors Plan

1 Introduction

1.1 General

1.1.1 Oaktree Environmental Ltd has been instructed by Circle Recycling Ltd to prepare a Noise Impact Assessment (NIA) for their site situated at Moss Road, Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB. The site currently operates within the stipulations of a SR2015No.4 EP comprising the manual sorting and transfer of household, commercial and industrial (HCI) wastes.

1.1.2 The NIA is required as the operator is seeking to the vary the permit as set out below which may lead to an increase in noise arising from the site:

i) Install a mechanical treatment plant for waste sporting where only manual methods are currently undertaken;
ii) The throughput of the above activity will be increased from 75,000 tonnes per annum (tpa) to <150,000 tonnes per annum.
iii) Some storage, transfer and treatment of will take place externally and not inside a building.

1.1.3 This NIA has been produced to accord with the Environment Agency's guidance "*Noise impact assessments involving calculations or modelling*" published 23/10/2018 and other associated guidance detailed in Section 2.

1.2 Site Location

1.2.1 The site is located on Land at Moss Road, Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB. The national grid reference for the site is SJ 98016 55191.

1.3 Hours of operation

1.3.1 The site will be operated to the hours specified below:

Monday to Friday	06:00 - 20:00
Saturday	06:00 - 14:00
Sundays, Bank/Public holidays	Closed

1.3.2 The site will only use the crusher or any other external mechanical treatment plant during the following hours:

Monday to Friday	09:00 - 17:00
Saturday	No operations
Sundays, Bank/Public holidays	No operations

1.3.3 The only activities on site which will be permitted outside of these hours are onsite maintenance works, emergency deliveries of waste/plant/machinery and general office use. During times where the site is closed or not in operation, the site will be locked and secured to prevent unauthorised vehicular and/or pedestrian access.

2 Noise assessment guidance

2.1 Noise Policy Statement for England

2.1.1 The Noise Policy Statement for England (NPSE), March 2010, sets out the Governments long-term noise policy, the aims of which are:

i) "Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:
ii) Avoid significant adverse effects on health and quality of life:
iii) Mitigate and minimise adverse effects on health and quality of life;
iv) Where possible, contribute to the improvement of health and quality of life."

2.1.2 The first aim of the NPSE is to avoid significant adverse effects, considering the shared UK principles of sustainable development.

2.1.3 The second aim provides guidance on the scenario when the potential noise impact falls between the LOAEL (Lowest Observed Adverse Effect Level) and the SOAEL (Significant Observed Adverse Effect Level), in which case it is stated; "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development". However, it is also stated "This does not mean that such adverse effects cannot occur".

2.1.4 With regards to the SOAEL, the document states "It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations", acknowledging that this is very much dependent on the noise source, the receptor and the time of day. Therefore, the NPSE provides the necessary policy flexibility until further guidance / evidence is available.

2.1.5 Other guidance will need to be taken into account when applying the principles of the NPSE, as well the nature of the proposed development and its specific circumstances.

2.2 National Planning Policy Framework

2.2.1 The NPPF, revised in 2019, replaces the Planning Policy Guidance Note 24 (PPG 24) and does not make reference to any other relevant noise guidance, other than the NPSE.

2.2.2 With regards to noise, the NPPF states the planning process should "contribute and enhance the natural and local environment", with regards to noise this means "preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affect by unacceptable levels" of, amongst other things, noise.

2.2.3 The NPPF states that Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life,
b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

2.3 Planning Practice Guidance – Noise

2.3.1 Although this NVMP is being submitted to the Environment Agency, it is important to set out the appropriate guidance set out in the NPPF which advises that the Local Authority should consider the following when decision making:

- Whether or not a significant adverse effect is occurring or likely to occur.
- Whether or not an adverse effect is occurring or likely to occur.
- Whether or not a good standard of amenity can be achieved.

2.3.2 As previously discussed within the NPSE, the guidance discusses the LOAEL and SOAEL and provides scenarios that could be expected for the perception level of noise, plus the associated activities that may be required to bring about the desired outcome. Again, as with the NPSE, no objective noise levels are provided for LOAEL or SOAEL.

2.3.3 It is stated that "the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation". These factors include:

- The absolute noise level of the source and the time of day it occurs.
- Where the noise is non-continuous (intermittent), the number of noise events along with any patterns of occurrence.
- The frequency of content and acoustic characteristics (tonality etc.) of the noise.
- The effects of noise on the surrounding wildlife.
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design.
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

3 Sensitive Receptors

3.1 Receptor Plan

3.1.1 A sensitive receptors plan (SRP) has been produced to accompany this NVMP and is shown in Appendix I referenced as on Drawing No. LRIE/2948/04. The receptors highlighted are those which are considered to be at risk by noise generated by the site.

3.2 List of receptors

3.2.1 The receptors listed from the SRP are also shown in the table below with approximate distances to these residential properties.

Table 3.1 – Distances to Selected, Representative Sensitive Locations

Boundary	Receptor	Approximate distance from site boundary (m)
North	Residential dwellings off Moss Road	180m
East	Residential dwellings off Mossfield Road	230m
East	Residential dwellings off Springfield Road	250m
East	Woodbridge College	290m
East	Residential dwellings off Waverley Avenue	305m
East	Residential dwellings off Iris Avenue	325m

3.3 Other noise sources

3.3.1 The site is located within an established industrial estate with numerous surrounding commercial/industrial uses. Other land uses which will contribute to the background noise level are tabulated below in Table 3.2 below.

Table 3.2 – Other Noise Emitting Operators

Company	Address	Type of Business	Approximate distance from site boundary (m)
Cautrac	Moss Rd, Kearsley, Bolton BL4 8NE	Construction Machinery and Equipment sales/hire	Adjacent north
PHS Treadsmart	Unit 36 Moss Rd, Kearsley, Bolton BL4 8NB	Carpet Retail Shop	Adjacent south
David Woods Foods	Industrial Estate, Unit 14 Lyon Rd, Kearsley, Bolton BL4 8NB	Food producer	10m east
Charlton Sweeper Hire	Unit 91, Moss Rd, Kearsley, Bolton BL4 8HS	Plant and machinery hire	65m south
Startright Scaffold Hire Ltd	Unit 9, Lyon Road Industrial Estate, Bolton BL4 8NB	Scaffolding service	70m northeast
AFI Uplift Ltd	Unit 25 Moss Road, Lyon's Industrial Estate, Kearsley, Bolton BL4 8NB	Plant and machinery hire	90m southeast
Nasip Meat	Unit 26/27/Lyon Rd Ind Est, Bolton BL4 8NB	Butchers	100m southeast
Keyframe (UK)	Unit 29- 32, Lyon Industrial Estate, Moss Rd, Kearsley, Bolton BL4 8NB	Double glazing manufacture and supply	110m north
Flameproofings	Unit 1 & 2/Lyon Road Ind Est, Bolton BL4 8NB	Manufacturer	125m east
TRL Car Repairs	Unit 15 Lyon Rd, Kearsley, Bolton BL4 8NB	Vehicle repair shop	140m southeast
Pfaudler	Unit 5 Lyon Rd, Kearsley, Bolton BL4 8TG	Process systems manufacturer and installer	155m east
JMA Transport	Unit 12a Lyon Road Industrial Estate, Kearsley, Bolton BL4 8HS	Transportation service	235m southeast

3.3.2 Additional significant noise sources within the vicinity of the site include the M61 to the west and south and noise emitting operators within the industrial estates beyond.

4 Noise Assessment Criteria

4.1 General

4.1.1 In order to assess the impacts of existing road traffic and industrial noise on the proposed development, the following documents have been used:

- BS8233:2014
- BS4142:2014
- World Health Organisation (WHO) Guidelines on Community Noise

4.2 BS8233:2014

4.2.1 This document provides guidance on the relevant level of sound insulation required by a variety of building types affected by general environmental noise and provides recommendations for appropriate internal ambient noise level criteria for a variety of different situations including residential dwellings. The table below includes the proposed noise criteria within BS8283:2014 with regards to residential properties:

Table 4.1 - BS8233:2014 Internal Criteria

Activity	Location	07:00 – 23:00	23:00 – 7:00
Resting	Living rooms	35 $L_{Aeq, 16hour}$	-
Dining	Dining room	40 $L_{Aeq, 16hour}$	-
Sleeping	Bedroom	35 $L_{Aeq, 16hour}$	30 $L_{Aeq, 16hour}$

4.3 BS4142:2014

4.3.1 BS4142:2014 provides a method for assessing and rating sound of an industrial / commercial nature. The method described in the standard uses the rating level from a noise source and the existing background noise level to assess the potential effects of sound on the residential premises upon which sound is incident.

4.3.2 Using this method, the background sound level is subtracted from the rating level. The resulting figure is assessed using the following guidance from the document:

- The greater the difference between the background sound level and the rating level, the greater the impact on the receptor.
- An exceedance of the background level of around 10dB or more is likely to be an indication of a significant adverse impact, dependent on the context.
- An exceedance of the background level of around 5dB is likely to be an indication of an adverse impact, dependent on the context.
- The lower the rating level compared to the existing background level, the less likely an adverse impact or a significant adverse impact. Where the rating level does not exceed the background level, this is indicative of a low impact, dependent on context.

4.3.3 The document introduces a requirement to consider and report the uncertainty in the data as well as also including guidance for applying a correction/penalty for certain adverse acoustic features such as tonality, impulsivity or intermittency. The following table summarises the corrections based on the subjective assessment of the noise.

Table 4.2 - BS4142:2014 Corrections and Penalties

	Tonality	**Impulsivity**	**Other characteristics**
Just perceptible	*+ 2dB*	*+ 3dB*	
Clearly perceptible	*+ 4dB*	*+ 6dB*	
Highly perceptible	*+ 6dB*	*+ 9dB*	
Readily Distinctive against Residual Environment			*+ 3dB*

4.4 WHO Guidelines for Community Noise

4.4.1 The WHO Guidelines (1999) recommends indoor night-time guidelines in order to avoid sleep disturbance, the document states these to be 30 dB (LAeq)and 45 dB (LA_{fmax})for continuous and individual noise events respectively.

4.4.2 The document states that the number of noise events should also be considered and that individual noise events should not exceed 45 dB (LA_{fmax})more than 10 – 15 times per night.

4.4.3 The WHO document also recommends that steady, continuous noise levels should not exceed 55 dB (LAeq)on outdoor living areas (balconies, terraces etc.). However, in order protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB (LAeq).

5 Survey

5.1 Procedure and Monitoring Locations

5.1.1 An initial noise survey was completed on the 13th October and 3rd November 2021 in accordance with BS 7445-1: 2003 by Thomas Benson of Oaktree Environmental Ltd. Attended background level measurements were taken at locations representative of the nearest noise sensitive receptors within the vicinity of the site.

5.1.2 The measurement locations are presented within the Noise Monitoring Plan within Figure 5.1, below:

Figure 5.1 - Site location and noise monitoring position

5.1.3 Whilst the dwellings off Moss Road, 180m have also been identified as receptors, these are located 2-30m from the carriageway of the M61 and therefore are not considered particularly sensitive considering the anticipated high background level as a result of the motorway (likely 60dB+ based on experience).

5.2 Weather conditions

5.2.1 The weather during the background surveys is summarised in the table below:

Date	Wind Speed (max)	Cloud Cover	Temperature	Precipitation
13/10/2021	Max recorded windspeeds of 2.8m/s whilst onsite	100%	12-14^{oC}	Very light drizzle preceding the monitoring.
03/11/2021	Gusts of up to 3.5m/s however generally more still	100%	8-10^{oC}	Dry during the monitoring with showers commencing at 16:30

5.3 Equipment Used During the Survey

5.3.1 Details of the equipment used during the survey are shown in the table below:

Table 5.1 - Survey Equipment

Description	Model	Manufacturer	Serial No.	Calibration Date
Class 1 Sound Analyser	NOR 150	Norsonic	15030504	02/10/2020
Microphone	Norsonic Type 1225	Norsonic	305208	02/10/2020
Field Calibrator	NOR 1251	Norsonic	35205	03/03/2021

5.4 Results

5.4.1 The results of the background noise monitoring survey are tabulated overleaf in tables 5.2 and 5.3.

Table 5.2 - Measurement Results for NMP A (Mossfield Road)

Measurement Time	LA_{eq}	LA_{fmax}	LA_{90}	LA_{10}
13/10/2021 06:10-07:10	58.0	94.7	45.3	51.2
13/10/2021 08:55-09:55	51.5	70.0	46.0	52.2
03/11/2021 14:00-15:00	52.8	73.2	49.1	53.7

Table 5.3 - Measurement Results for NMP B (Springfield Road)

Measurement Time	LA_{eq}	LA_{fmax}	LA_{90}	LA_{10}
13/10/2021 07:20-08:20	67.7	102.4	54.3	68.9
13/10/2021 10:00-11:00	63.3	78.9	51.9	66.7
03/11/2021 15:02-16:02	70.5	107.0	52.0	66.7

5.5 Existing Noise Climate at Mossfield Road

5.5.1 During the attended monitoring at this location, noise sources comprising the existing noise climate were observed to include; constant road traffic noise arising from the M61 to the south and west as well as more sporadic movements along Mossfield Road, occasional noises from the industrial estate to the west (reverse alarms, bangs and crashes etc.) and movements associated with local residents.

5.6 Existing Noise Climate at Springfield Road

5.6.1 The existing noise climate at Springfield Road was largely similar to that of Mossfield Road, with fairly constant road traffic along Springfield providing much of the background level. Whilst the M61 was still audible at this location it is difficult to distinguish from the surrounding road network. Likewise, noise from the industrial estate was largely inaudible.

5.6.2 However, during the 07:20-08:20 and 15:02-16:02 monitoring at this location, passing school children were a significant contributing factor to the noise level. As can be seen from Table 5.3, the LAmax during both these periods is greater than 100dB (A). The access to Kearsley Academy is located some 45m from the nearest residential dwelling on Springfield Road and therefore the number of passing pedestrians is considerable. Road traffic was also observed to have markedly increased during these periods, as would be expected.

6 Noise Impact Assessment

6.1 Introduction

6.1.1 Table 6.1 below includes the noise sources associated with the proposed operation of the site.

Table 6.1 - Noise levels Associated with Proposed Operations

Activity	Noise Level (LAeq)	Sound Power Level	Source
Operation of the Trommel (internal)	75.1dB (A) at 5m	100	Oaktree measurement of similar operation
Picking bays (internal)	72.3dB (A) at 11m	104	Oaktree measurement of similar plant
Overband magnet and scrap metal skip (internal)	86.6db (A) at 3m	107	Oaktree measurement of plant at a similar site
Paper and cardboard baler (internal)	78.5dB (A) at 1.5m	93	Oaktree measurement of similar plant
Loading and operation of crusher	82dB (A) at 10m	109	Oaktree measurement of similar plant
Loading feed hopper	84.3dB (A) at 1m	92.3	Oaktree measurement of similar plant
Operation and loading of Shredder	88.6 dB (A) at 2m	TBC	Oaktree measurement of similar plant as proposed
Operation and loading of Screener	82.6 dB (A) at 1m	TBC	Oaktree measurement of similar plant as proposed
Tipping of wastes	72.6dB (A) at 8m	98.6	Oaktree measurement of similar activity
Loading shovel sorting and moving waste	75.9dB (A) at 7m	103.8	Oaktree measurement of similar activity

6.1.2 It should be noted that the measurement for the overband magnet has been taken from a much larger process and is therefore likely to comprise an overestimation of the noise associated with this activity.

6.1.3 To assess the potential noise impacts associated with the installation of the recycling facility on the on the nearby noise sensitive receptors, noise models have been created using CadnaA. The software package utilises standardised noise prediction methodologies and algorithms in order to predict the propagation of noise from source to receiver.

6.1.4 The CadnaA noise model was constructed using OS mapping Opendata and Google Earth satellite imagery.

6.1.5 The following assumptions/parameters are made within the model:

- The intervening land between the site boundary and residential properties was modelled with G = 0.8 as it was considered that the land is predominantly acoustically absorbent.
- Noise sources are assumed to be constant (i.e. operating for the vast majority of the hourly reference time) with the exception of the loading of the feed hopper, which is expected to comprise 20 minutes per hourly reference period consistent with the typical operation of MRF such as this.
- Buildings were set as acoustically reflective, with a reflection loss of 1 dB.
- Noise levels were determined on a grid and at residential properties representing the nearest residential facades. The height of each receiver was 2.0 m, consistent with the height of a typical first storey window.
- The predicted noise levels were free-field, A-weighted, sound pressure levels. The noise contours generated within the model are also at a height of 2.0 m, assumed to be the worst-case scenario.
- Surrounding residential properties were modelled at a height of 6.5m and building heights have been taken from observations and information provided from the Local Authority public access where available.
- The main treatment building height was modelled at 7.5m, whilst the internal surface area (walls and ceiling) was assumed to be 10,500m^2 .

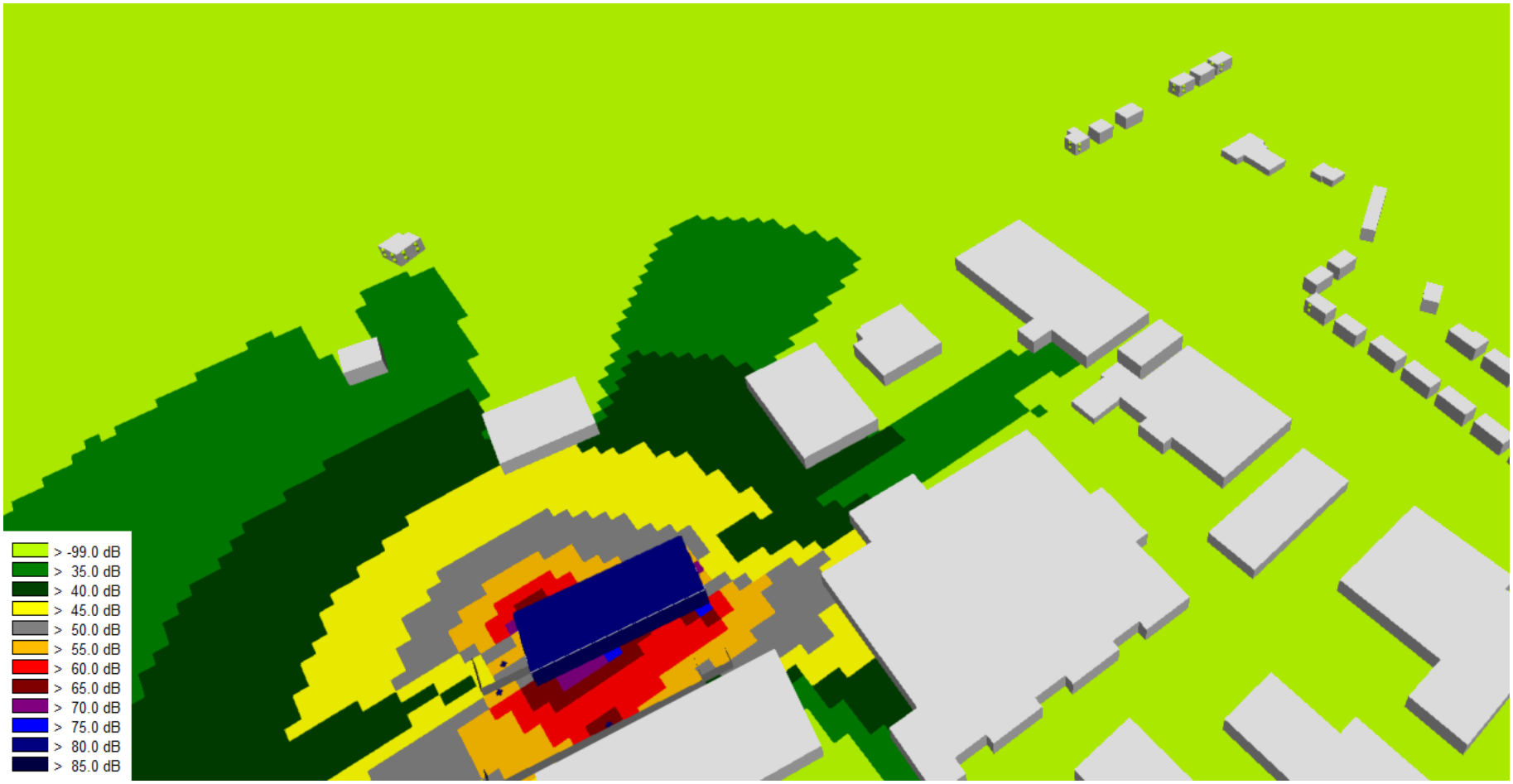
- The roller shutters on the northern and southern façade are assumed to be open in order to provide a worst-case scenario assessment.
- The value of R (sound reduction index offered by the building) was based upon the 1mm thick steel sheeting with bricks comprising the first 1.5m from surface level.

6.1.6 Figure 6.2 overleaf details the predicted noise levels (in dB A) associated with the internal operations at the relevant receptors.

6.1.7 It should be noted that the modelling overleaf likely comprises an overestimation of the noise level associated with the site based on the applied “on-times”. However, as the crusher is only operated 1-2 days a week this has been excluded from the assessment within Figure 6.2-.6.3, however this is discussed further on in Section 6.

Figure 6.2 – Noise modelling of noise associated with typical operations

Figure 6.3 – Noise modelling of noise associated with typical operations



6.1.8 With regards to tonal/impulsive penalties, it is considered that a 6dB addition may be applied for the impulsive nature of the operations. However, any tonal elements arising from the trommel will be reduced via the building envelope and masked by the noise associated from the surrounding road network which is generally very prevalent. This gives a rating level as follows for the nearest residential receptors:

39dB (A) at Mossfield Road,
29dB (A) at Springfield Road.
32dB (A) at Moss Road,

6.1.9 When compared to the relevant background levels within Table 5.2 and 5.3, the resultant impact is considered negligible/low as per BS4142:2014. Moss Road

6.1.10 It should be noted that with roller shutter doors shut during the operation, this falls to the following:

30dB (A) at Mossfield Road,
31dB (A) at Springfield Road.
32dB (A) at Moss Road,

6.1.11 The above notwithstanding, in order to further limit noise related impacts as much as possible the MRF will only be operated between the hours of 09:00-17:00 Monday to Friday.

6.1.12 As stated previously, the crusher will only be operated 1-2 days a month, when required. Figure 6.4-6.5 overleaf details the predicted noise levels (in dB A) associated with the internal operations at the relevant receptors.

Figure 6.4 – Noise modelling of noise associated with typical operations including the crusher

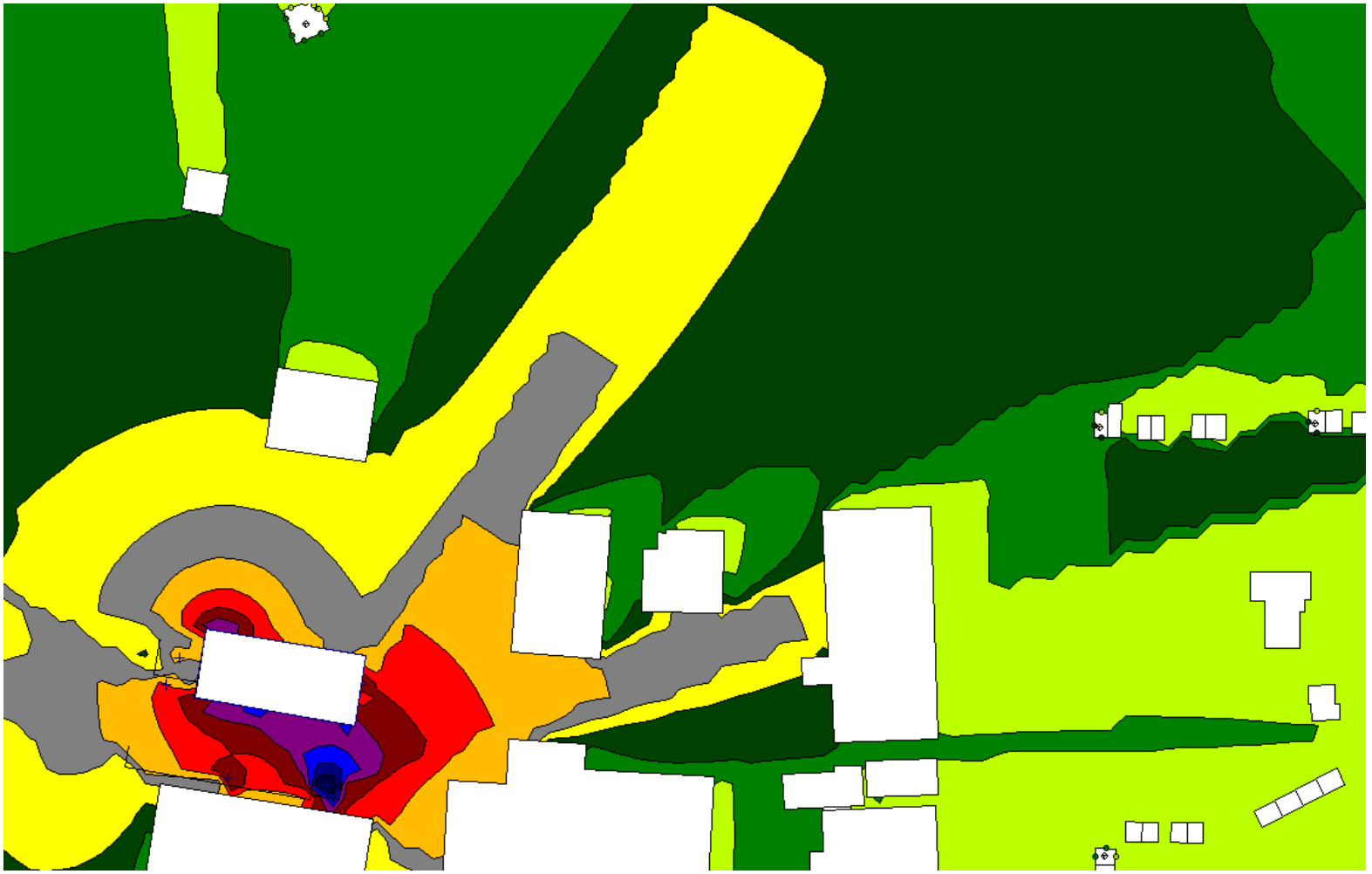


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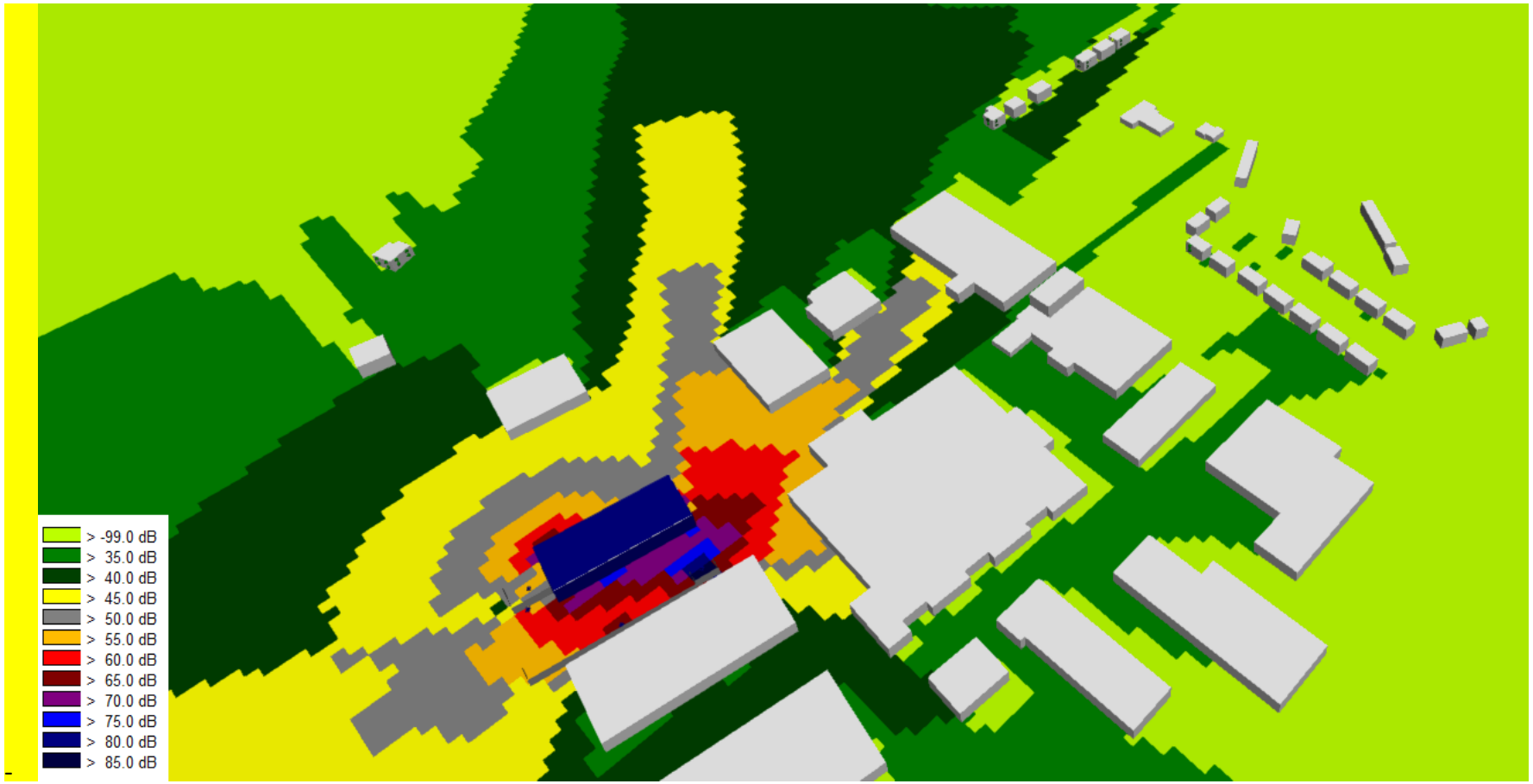
Figure 6.5 – Noise modelling of noise associated with typical operations including the crusher



6.1.13 As per BS4142:2014 (As per BS4142:2014, an acoustic correction feature has been applied within the assessment due to the impulsive and intermittent nature of the noise sources, when applied this would equate to the following rating levels at the nearest receptors:

- 44dB (A) at Mossfield Road,
- 50dB (A) at Springfield Road
- 45dB (A) at Moss Road,

6.1.14 From comparison of the above to the weekday background levels discussed within Table 5.2-5.3. The resultant impact is low as per BS4142:2014. In addition, it should also be observed that noise levels fall well within the WHO criteria for external amenity areas.

6.2 Uncertainty

6.2.1 Uncertainty in this assessment was controlled via the following precautions/procedures:

- Both the sound level meter and calibrator have a traceable laboratory calibration and the meter was field-calibrated both before and after the measurements.
- The measurement locations are considered representative of the existing noise climate outside the nearest residential dwellings to the proposed development given the nature of the existing noise climate. Whilst a greater level of background data would be desirable, it is considered unlikely that it would change the findings of the report.
- Weather during the background sound monitoring was ideal for outdoor noise monitoring (dry, wind speed under 5m/s).

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7 Conclusion

7.1 Summary & Recommendations

7.1.1 Oaktree Environmental Ltd has undertaken a full Noise Impact Assessment in line with BS4142: 2014 for the proposed activities to take place at the site which is located at Moss Road, Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB.

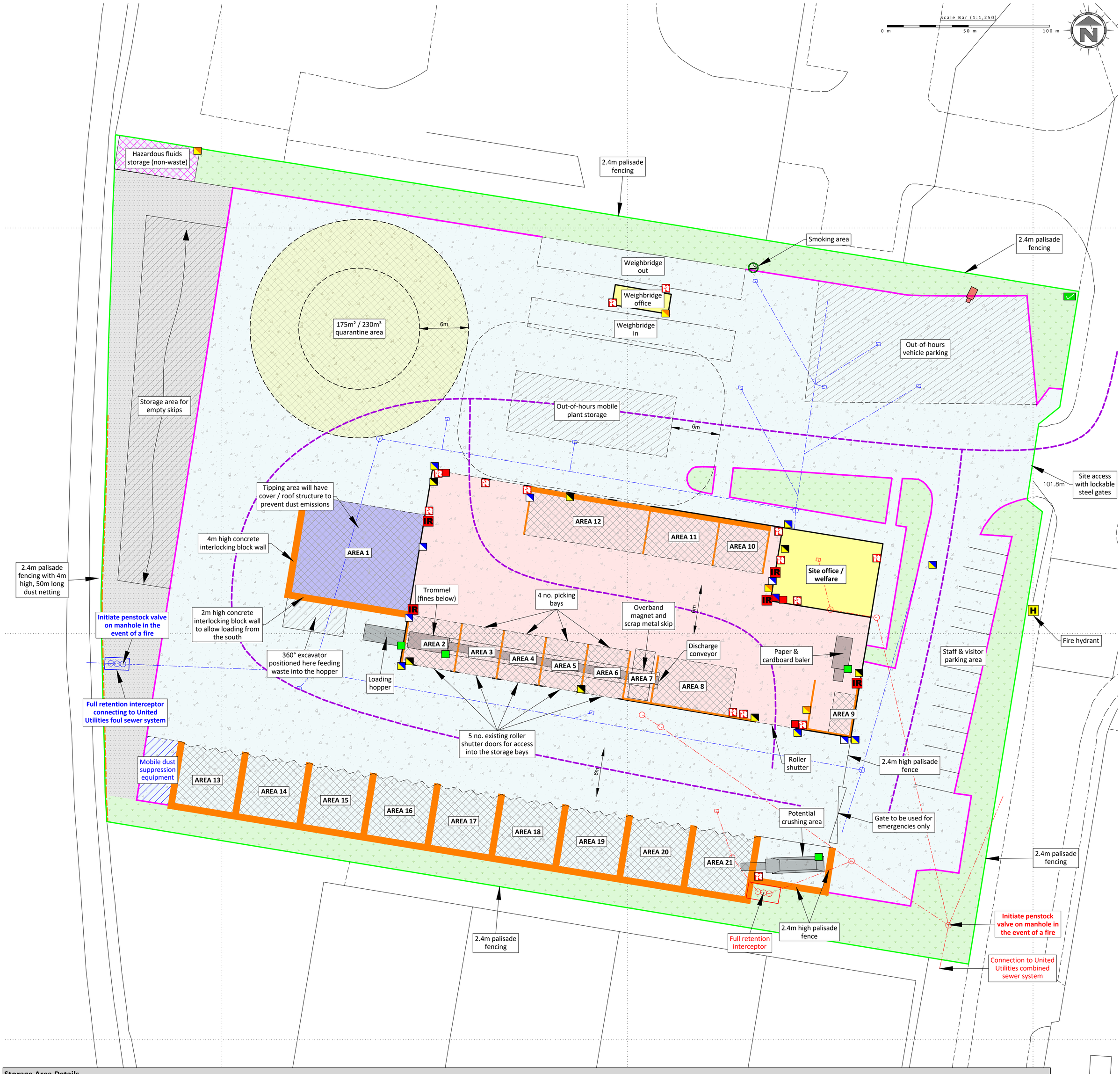
7.1.2 The Noise Impact Assessment has been undertaken in order to determine the impacts associated with the proposed operation of the site. The assessment includes a comparison of the rating level from the proposed operations against the measured background sound level as per BS4142:2014.

7.1.3 The site benefits from being within an established industrial estate, with the nearest receptors located approximately 180m+ from the site boundary.

7.1.4 The overall impact associated with the proposed extension of operating hours is considered **low** based on the; BS4142:2014 assessment within Section 6.0 and the following discussion. Based on this, it is considered that a Noise & Vibration Management Plan should only be required once the new site activities are taking place and complaints are received.

Appendix I

Drawings



Storage Area Details

Plan Ref	Description	Storage type	Containment / type	Height of firewall (m)	Max width of pile (m)	Max length of pile (m)	Max height of pile (m)	Approx. area (m2)	Conversion factor used	Approx. volume (m3)	Average storage time	Max storage time	Comments
AREA 1	Mixed waste reception area (HCI waste)	Unprocessed	Free standing pile / three-sided concrete interlocking block fire wall	4	15	12.5	3	187.5	0.75	422	<2 hours	<48 hours	48 hours is based on Sat - Mon; storage time likely to be less as the pile will continually move throughout the day
AREA 2	Trommel fines	Sorted by trommel screen	Free standing pile / two-sided concrete panel fire wall	3	6.5	6	2	39	0.75	59	<2 hours	<48 hours	As above
AREAS 3 -6	Hand picked wastes from picking line comprising wood, residual, plastic, paper & cardboard	Processed (by hand)	As above	3	6.5	6	2	39	0.75	59	<2 hours	<48 hours	As above and volume is based on each storage bay. Once bays are full the waste will be transferred to the external overflow bays (AREAS 13 - 19)
AREA 7	Scrap metal	Processed (magnet)	40 cubic yard skip	3	2.5	6.1	2.62	15.25	1	40	<12 hours	1 week	Skip removed when full and replaced with empty skip; timescale dependent on metal content in waste
AREA 8	Hardcore / rubble	Sorted via treatment plant	Free standing pile / two-sided concrete panel fire wall	3	10	6	2	60	0.75	90	<2 hours	<48 hours	See AREA 1 comments
AREA 9	Baled paper & cardboard	Processed, sorted & baled	Bales within three-sided concrete panel fire wall	3	2.5	5	2	12.5	0.75	19	<2 hours	<48 hours	See AREA 3 - 6 comments
AREA 10	Miscellaneous bay i.e. non-conforming waste	Unprocessed (hand sorted)	Free standing pile / three-sided concrete panel & interlocking block fire wall	3	6	6	2	36	0.75	54	<48 hours	<48 hours	See AREA 1 comments
AREA 11	Plasterboard	Unprocessed (hand sorted)	As above	3	6	6	2	36	0.75	54	<2 hours	<48 hours	See AREA 1 comments
AREA 12	Residual waste	Processed, hand sorted by treatment plant	As above	N/A	15	6	2	90	1	180	<48 hours	<48 hours	Acting as overflow bay from AREAS 3 - 6; pile removed sooner if full
AREAs 13 - 18	Overflow storage bays from wastes recycled inside the building	Processed, hand sorted by treatment plant	Free standing pile / three-sided concrete interlocking block fire wall	4	8	8	3	64	0.75	144	<48 hours	<1 week	As above and pile size based on each bay
AREA 19	Soils & stone	As above	As above	4	8	8	3	64	0.75	144	<48 hours	<1 week	As above
AREAs 20 & 21	Hardcore & crushed stone	As above and crushed	As above	4	8	8	3	64	0.75	144	<48 hours	<1 week	As above

CONVERSION FACTORS

Conversion factors for waste piles are worked out using the following methods set out by The Environment Agency

The maximum length width pile is based on the largest dimension – the volume of the pile has been calculated using the area x height x relevant conversion factor

Conversion of 1 for materials stored within containers, area of storage in stackable containers and waste/bale stacks

Conversion of 0.75 for waste stored within a bay based on volume of pyramid x rectangle x height

Conversion of 0.333 for waste stored in a free-standing stockpile

For areas containing skips, conversion is calculated by volume of each skip x number of skips

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

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DRAWING TITLE
SITE LAYOUT & FIRE PLAN

CLIENT
Circle Recycling Ltd

PROJECT/SITE
Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB

SCALE @ A1	CLIENT NO	JOB NO
1:250	2948	001
DRAWING NUMBER	**REV**	**STATUS**
LRIE/2498/03	C	Issued
DRAWN BY	**CHECKED**	**DATE**
CP	--	18.04.23

KEY:

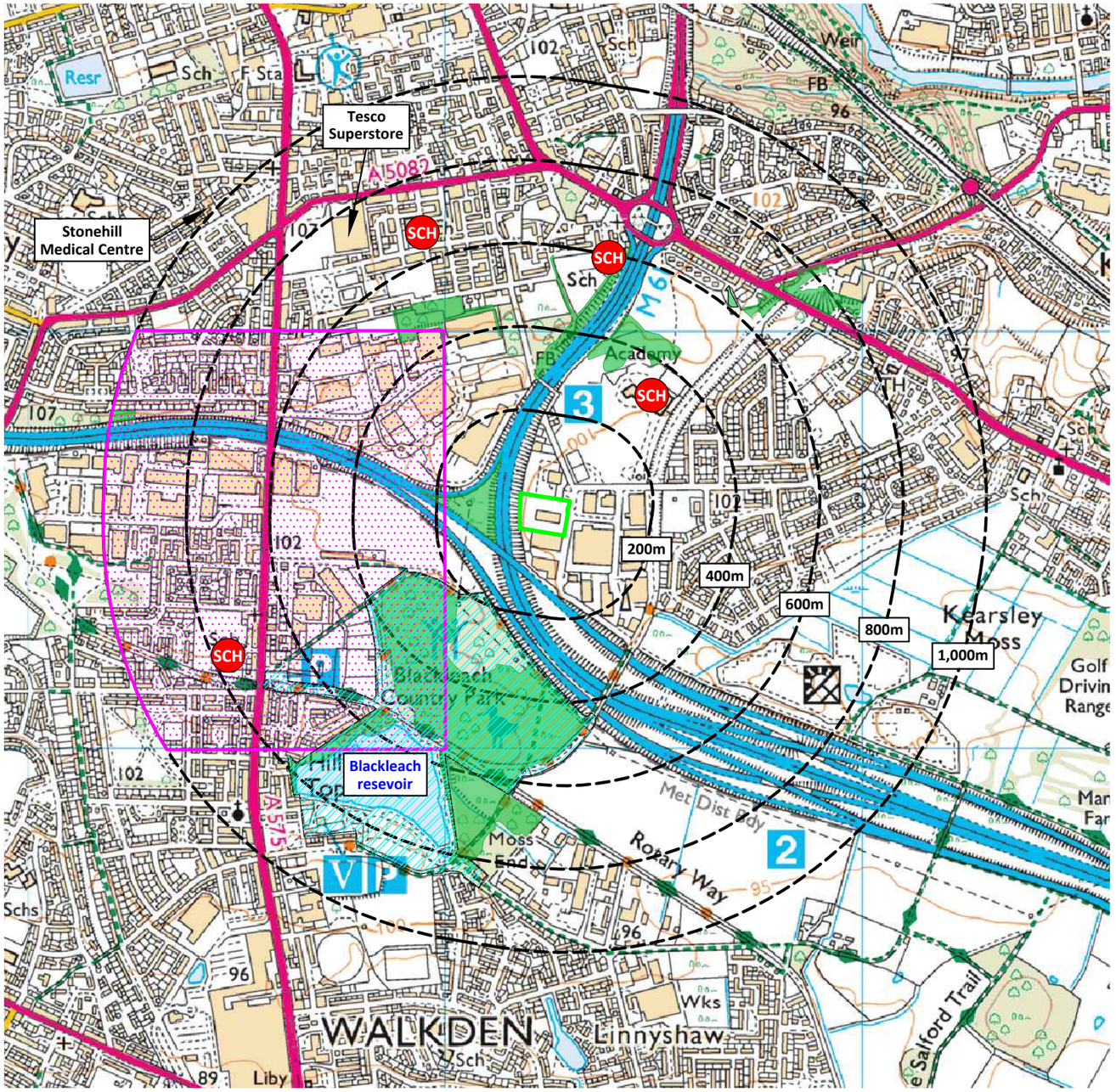
- Permit boundary
- Waste storage areas
- Non-waste hazardous fluid storage i.e. diesel, AdBlue etc..
- Waste recycling building (concrete floor with sealed drainage
- Other buildings i.e. workshops/offices
- Impermeable concrete with sealed drainage
- 0.15m high concrete kerb
- 0.6m - 0.8m thick concrete interlocking block firewall
- 0.15m wide concrete panel firewall
- Surface water gully's & manholes
- Foul water gully's & manholes
- Underground surface water drainage
- Underground foul water drainage
- Quarantine area
- Fire water containment equipment
- Fire extinguisher locations
- Plant shut off points
- Fire alarms
- Spill kits
- Water points
- Access route for emergency services Surface water gully's
- Fire hydrant
- Fire assembly point
- Flame/heat detection cameras
- CCTV cameras (internal & external)
- Pan, tilt & zoom camera (50m coverage)

NOTES

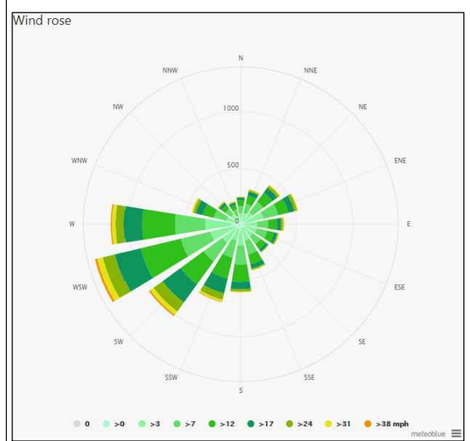
REVISION HISTORY

Rev:	Date:	Init:	Description:
-	06.10.21	CP	Initial drawing
A	07.10.21	CP	Client comments
B	12.10.21	CP	Client comments
C	18.04.23	CP	Operator name change

- Permit boundary
- Surface water body (pond / pool / lake)
- Stream, river, beck
- Buildings includes Agricultural, industry, commerce and retail - could also include small houses)
- Residential blocks
- Class A roads
- Class B roads
- Class C roads
- Local nature reserve / local wildlife site
- Protected species
- Priority Habitat - Deciduous Woodland
- Other woodland areas (non-habitat)
- SCH — Schools including primary, high, colleges and Universities
- Care homes
- Places of worship
- H — Fire hydrants (indicative)



Wind rose



Compass Wind Rose for Bolton sourced on 21/09/2021
- source: Meteoblue

Scale Bar (1:12,500)

0 km 500 m 1 km

NOTES

REVISION HISTORY

Rev:	Date:	Init:	Description:
-	07.10.21	CP	Initial drawing
A	18.04.23	CP	Operator name change

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

DRAWING TITLE
PERMIT BOUNDARY PLAN

CLIENT
Circle Recycling Ltd

PROJECT/SITE
Lyon Road Industrial Estate, Kearsley, Bolton, Lancashire BL4 8NB

SCALE @ A3	CLIENT NO	JOB NO
1:12,500	2948	001

DRAWING NUMBER	REV	STATUS
LRIE/2948/04	A	Issued

DRAWN BY	CHECKED	DATE
CP	--	18.04.23

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