ENVIRONMENTAL NOISE ASSESSMENT

Yard at Knights Business Centre, Squires Farm Industrial Estate, Palehouse Common, Framfield, Uckfield TN22 5RB

Pyrite Industries Ltd

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Waste, Planning & Environmental Consultants

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1 <u>Introduction</u>

- 1.1.1 Oaktree Environmental have been commissioned by Pyrite Industries Ltd to undertake an environmental noise assessment(ENA) for a site at Yard at Knights Business Centre, Squires Farm Industrial Estate, Palehouse Common, Framfield, Uckfield TN22 5RB.
- 1.1.2 This report is to be submitted to the Local Authority in support of a planning application for; Change of use of land and operation of an end-of-life tyre recycling facility comprising the shredding, colouring, and baling for recovery, together with enabling works (reference WD/818/CM).

1.2 Site Description and Proposed Development

- 1.2.1 The location of the site is shown on Drawing No SQU/1906/02 and all references to 'the site' in this ENA shall mean the red line planning application boundary.
- 1.2.2 The site is located on the wider Squires Farm Industrial Estate and is currently bounded by a mature tree line forming the north and south western boundary between the application site and neighbouring farms; Tewitts Farm (north-west); Easons Farm (south-west). To the south/south-east comprises the access track to the site and open agricultural field beyond. The north is immediately comprised of an industrial building known as Unit 8 with the Industrial Estate situated beyond.
- 1.2.3 Surrounding noise sources comprise numerous industrial/commercial such as; Haynes Agricultural, Southern Industrial Fasteners, A&D Motor Services, ABYSS Brewing, Revive Joinery and Holley Ltd. A review of the existing soundscape is provided within Section 4.2.
- 1.2.4 Open fields are located immediately to the north western and south western site boundaries. The nearest residential property is approximately 150-175 metres to the west of the site and comprises Tewitts Farm. Residential cottages are also situated approximately 300 metres west of the site on Pump Lane, (as well as adjacent to the B2192 approximately 350 metres to the east of the site. A further residential

property is some 320 metres to the south of the site across two open fields and Palehouse Common Road.

1.2.5 Pyrite Industries Ltd are seeking planning permission for the development of a tyre recycling facility to produce tyre shred/crumb and will eventually also produce tyre bales.

1.3 Hours of operation

1.3.1 It is proposed the site will be open for the acceptance and removal of waste during the following hours:

Monday to Friday	07:00 - 17:30
Saturday	07:00 - 14:00
Sunday/Bank holidays	CLOSED

1.3.2 It is proposed to operate the plant i.e. for the processing waste during the following hours:

Monday to Friday	09:00 - 17:00
Saturday	09:00 - 14:00
Sunday/Bank holidays	CLOSED

2 <u>Planning Policy</u>

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:
- 2.1.2 "Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:
 - Avoid significant adverse effects on health and quality of life:
 - Mitigate and minimise adverse effects on health and quality of life;
 - Where possible, contribute to the improvement of health and quality of life."
- 2.1.3 The first aim of the NPSE is to avoid significant adverse effects, considering the shared UK principles of sustainable development (further discussed Section 1.8 of the Statement).
- 2.1.4 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".
- 2.1.5 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.

2.1.6 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 National Planning Policy Framework, revised in July 2018, 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:
 - Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
 - Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.
- 2.2.2 Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.
- 2.2.3 The revised document also makes reference to the Noise Policy Statement for England.

2.3 **Planning Practice Guidance – Noise**

- 2.3.1 Further to the guidance set out in the NPPF, a Planning Practice Guidance with regards to noise was issued in 2014. This guidance 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 <u>Noise Assessment Criteria</u>

- 3.1.1 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

3.2 **BS8283:2014**

3.2.1 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 3.1 - 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 LAeq, 16hour

3.3 **BS4142:2014**

- 3.3.1 BS4142:2014 provides a method for "assessing and rating industrial 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.
- 3.3.2 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 exceedence 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 exceedence 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.
- 3.3.3 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.

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

Table 3.2 - BS4142:2014 Corrections and Penalties

3.4 WHO Guidelines for Community Noise

3.4.1 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.

- 3.4.2 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.
- 3.4.3 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).

4 <u>Survey</u>

4.1 **Procedure and Monitoring Locations**

- 4.1.1 A continuous noise survey was completed by Acoustic Associates Sussex (AAS) between the hours of 09:0024/4/2019 and 12:45 on the 29/4/2019in accordance with BS 7445-1: 2003. The full report including location and results is provided within Appendix II.
- 4.1.2 The measurement location taken from the report is shown below in Figure 4.1, below. Acoustics Associates Sussex Ltd provide the rationalefor the monitoring position within the monitoring report (provided within Appendix II); As far as possible in NW corner of applicants site, whilst remaining freefield and not under vegetation and tree canopy. Line of sight to Allied Waste to North East. Access not possible to Tewitts Farm, tried main gate and access point but call mechanism fails to connect 08:30 24/4/2019. Client also tried to engage with Tewitts but messages not returned.

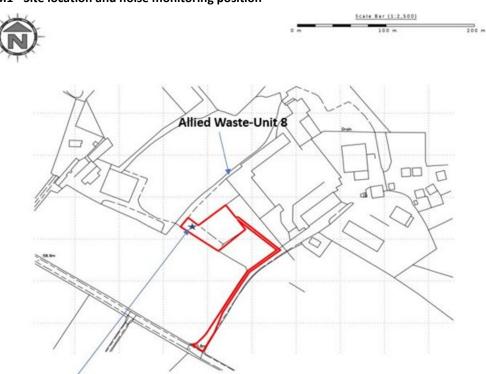


Figure 4.1 - Site location and noise monitoring position

Measurement Position of Sound Level Meter

4.1.3 The background monitoring was undertaken using a type 1 sound level meter, the details (including calibration certificate) are provided within Appendix II.

4.2 **Results**

- 4.2.1 Acoustics Associates Sussex Ltd provide a review of the existing soundscape within the monitoring report(provided within Appendix II); Allied Waste with diesel forklift and reverse bleeper operating inside and out (FLT noted tracking along the industrial estate). On setting up and decommissioning the survey position portacabins and ISO containers were being delivered to South of site. Birdsong and distant road traffic noise also noted. Additional fork lift trucks were noted on the industrial estate and the Sussex Stone and ceramic centre were heard to be cutting/grinding in the distance.
- 4.2.2 Background measurements were taken as an LA90 figure over a 15 minute time base, FAST and A weighted. An average LA90 for each hour along with a minimum and maximum are shown below, full background monitoring results are provided within Appendix II. Considering the hours of operation (see Section 1.2), only monitoring results during these hours are included below.

Measurement Time	Hourly Average LA90	Lowest 15 minute LA90	Lowest 15 minute LA90
24/04/2019	45	43.5	46.1
09:00-10:00	45	43.5	40.1
24/04/2019	44.5	41	46.2
10:00-11:00	44.5	41	40.2
24/04/2019	44.3	42.1	49.3
11:00-12:00	44.5	42.1	
24/04/2019	43.7	42.1	47.5
12:00-13:00	43.7	42.1	47.5
24/04/2019	45.8	43.6	47.1
13:00-14:00	45.0	43.0	47.1
24/04/2019	44.2	42.5	45.9
14:00-15:00	44.2	42.5	45.5
24/04/2019	43.8	42.1	46
15:00-16:00	45.0	42.1	40
24/04/2019	45.3	40	46.8
16:00-17:00	40.0	42	

 Table 4.1–Hourly Average, Minimum and Maximum LA90 results for hours between 07:00-19:00

Measurement Time	Hourly Average LA90	Lowest 15 minute LA90	Lowest 15 minute LA90
24/04/2019	40.9	38.3	42
17:00-18:00	40.9	38.5	43
24/04/2019	40.7	39.7	42.4
17:00-18:00	40.7	39.7	42.4
24/04/2019	37.8	34.7	42.2
18:00-19:00	57.0	54.7	42.2
25/04/2019	47.5	45.3	51.7
07:00-08:00	-7.5	-3.5	51.7
25/04/2019	45	44.5	46
08:00-09:00	13	11.5	10
25/04/2019	46.2	43.6	47.9
09:00-10:00			
25/04/2019	44.6	43.7	45.6
10:00-11:00			
25/04/2019	46.8	46.4	47.2
11:00-12:00			
25/04/2019	46.2	45	48.4
12:00-13:00			
25/04/2019	46.4	45.8	47.9
13:00-14:00			
25/04/2019	45.5	43.7	47.9
14:00-15:00			
25/04/2019	47	46.6	47.3
15:00-16:00			
25/04/2019 16:00-17:00	45.6	44.1	48
25/04/2019			
17:00-18:00	41.8	40.8	42.3
25/04/2019			
18:00-19:00	38.8	36.8	41.3
26/04/2019			
07:00-08:00	45.7	43.3	47.6
26/04/2019			
08:00-09:00	44	43.1	44.9
26/04/2019			
09:00-10:00	44.4	43.1	48.1
26/04/2019	44.5	12.1	45.2
10:00-11:00	44.5	43.1	45.2
26/04/2019	44.5	12.6	49.2
11:00-12:00	44.5	42.6	48.3
26/04/2019	44.2	12.6	16 E
12:00-13:00	44.2	42.6	46.5
26/04/2019	44.5	12.5	15.9
13:00-14:00	44.J	42.5	45.8
26/04/2019	46.2	44.8	46.9
	1	I	

Measurement Time	Hourly Average LA90	Lowest 15 minute LA90	Lowest 15 minute LA90
14:00-15:00			
26/04/2019 15:00-16:00	47	45.9	48.6
26/04/2019 16:00-17:00	47.2	45.3	48.8
26/04/2019 17:00-18:00	45.6	45.2	46.4
26/04/2019 18:00-19:00	44.9	43.8	46.1
27/04/2019 07:00-08:00	47.2	45.3	48.3
27/04/2019 08:00-09:00	48.6	48.4	49.2
27/04/2019 09:00-10:00	48.5	48.1	48.7
27/04/2019 10:00-11:00	48.4	47.7	48.9
27/04/2019 11:00-12:00	48	46.1	49
27/04/2019 12:00-13:00	48	46.5	49.9
27/04/2019 13:00-14:00	48.2	46	51.5

4.3 **Uncertainty**

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 before and after the measurements.
- Weather during the background monitoring was generally still with no precipitation, however maximum wind speeds of 30mph were observed on Saturday 27th due to Storm Hannah.
- 4.3.1 It should be noted that as stated in Section 4.1.2, no monitoring was undertaken at receptor due to the lack of access and lack of a response following attempts to engage with the residents. Whilst the location is as close as possible to the nearest receptor, the location is approximately 120m for the receptor. It is reasonable to assume therefore that a significant level of farm noise from Tewitts Farm has not been adequately represented in the background monitoring.

5 Noise Impact Assessment

5.1 Introduction

- 5.1.1 It is considered the most significant noise sources associated with the proposed development are:
 - Noise associated with the external yard operations comprising: shreddingand baling of tyre wastes using associated plant and general movement of forklift trucks.
- 5.1.2 Table 5.2 below includes the sound power levels for these activities which have been measured by Oaktree Environmental at similar sites. The measurement of the shredding has come from a site where the primary shredder feeds a second shredder via a conveyor belt, the measurement position was at a point 3m between both these items of plant. The noise monitoring files for these measurements, including audio recordings, can be provided upon request by the Local Authority.
- 5.1.3 As these noise sources will not be constant, correction has been applied for averaged fraction of the hour these are expected to occupy.

Activity	Noise Level (LAeq)	Source
Operation of both	89.6 at 3m distance	Onsite measurement by Oaktree
Primary and		Environmental at a similar site
Secondary shredders		
Tyre baling	79.2 at 2m distance	Onsite measurement by Oaktree
		Environmental at a similar site
Forklift truck	69.8 at 3m distance	Onsite measurement by Oaktree
		Environmental at a similar site

Table 5.1 – Noise levels associated with external operations

5.2 **External Operations**

5.2.1 Table 5.2 overleaf includes the assessment of the typical daily external operations at the proposed development compared to the background noise levels at both residential receptors.

- 5.2.2 As per BS4142:2014, an acoustic correction feature of 5dB has been applied as it is considered that both the tonal and impulsivenature of theoperations may beclearlyperceptible above the existing background of the industrial estate.
- 5.2.3 A correction has been applied for averaged fraction of the hour these noise sources are expected to occupy based on the likely operation of the site. A reference time of one hour has been assumed for the external yard, as it is envisaged that external operations will commence after 07:00.
- 5.2.4 The average 15 minute LA90 figure over the working hours of the site (i.e. 07:00-19:00 Monday to Friday and 07:00-12:00 Saturday) has been used, this equates to 45.1dB. As stated previously, the raw data is supplied within Appendix II.
- 5.2.5 A distance of 180m and 270m has been used within the assessment in table 5.2, this has been based on the approximate distance of the plant from the receptors based on the proposed layout plan rather than the distance from the site boundary.
- 5.2.6 In order to reduce the impact of the operations from the nearest residential dwellings a 3m close boarded timber fence is to be erected in the location of the existing fence line. Whilst the value of the screening is a complex issue, as a rule of thumb 10dB has been assumed in this instance.

Operation	Calculated noise level at dwellings at Tewitts Farm	Calculated noise level at Pump Lane
Operation of both Primary and Secondary shredders	89.6-20log(180/3)= 54.0dB	89.6-20log(270/3)= 50.5dB
Tyre baler	79.2+10log(5/60)= 68.4dB	79.2+10log(5/60)= 68.4dB
	68.4-20log(180/3)= 32.8dB	65.2-20log(270/1)= 29.3dB

Table 5.2 – Assessment of typical external operations

Operation	Calculated noise level at dwellings at Tewitts Farm	Calculated noise level at Pump Lane
Forklift truck	69.8+10log(20/60)= 65.0dB	69.8+10log(20/60)= 65.0dB
	65.0-20log(180/1)= 19.9dB	65.0-20log(270/1)= 16.4dB
Calculated sound level from typical site activity at	$10\log (10^{54.0/10} + 10^{32.8/10} + 10^{19.9/10})$ = 54.0dB	$10\log (10^{50.5/10} + 10^{29.3/10} + 10^{16.4/10})$ = 50.5dB
receptor Acoustic Correction Feature (BS4142:2014)	+5as tonality and impulsivitylikely to be just perceptible i comparison to surrounding industrial estate	
Rating Level	59.0dB	55.5dB
Impact of screening	59.0 - 10dB = 49.0dB	55.5 - 10dB = 45.5dB
Excess of Rating Level over average Background Level at measured point	49.0-45.1= 3.9dB above average background level	45.5-45.1=0.4dB below background level

- 5.2.7 Therefore, as per BS4142:2014 (summarised in Section 3.3) the proposals are unlikely to result in a negative impact at the nearest residential dwellings.
- 5.2.8 This is further supported by that fact that rating levels at the noise sensitive receptors also fall well within the within the WHO criteria for external noise levels.
- 5.2.9 With regards to the receptor to the northwest (Tewitts Farm), this receptor is located on a working farm with several associated farm buildings located within 50m of the dwelling. Considering the noise associated with agricultural machinery and activities, it is considered that these receptors to be less sensitive than would be the case and therefore not the typical residential receptor considered within BS4142:2014.

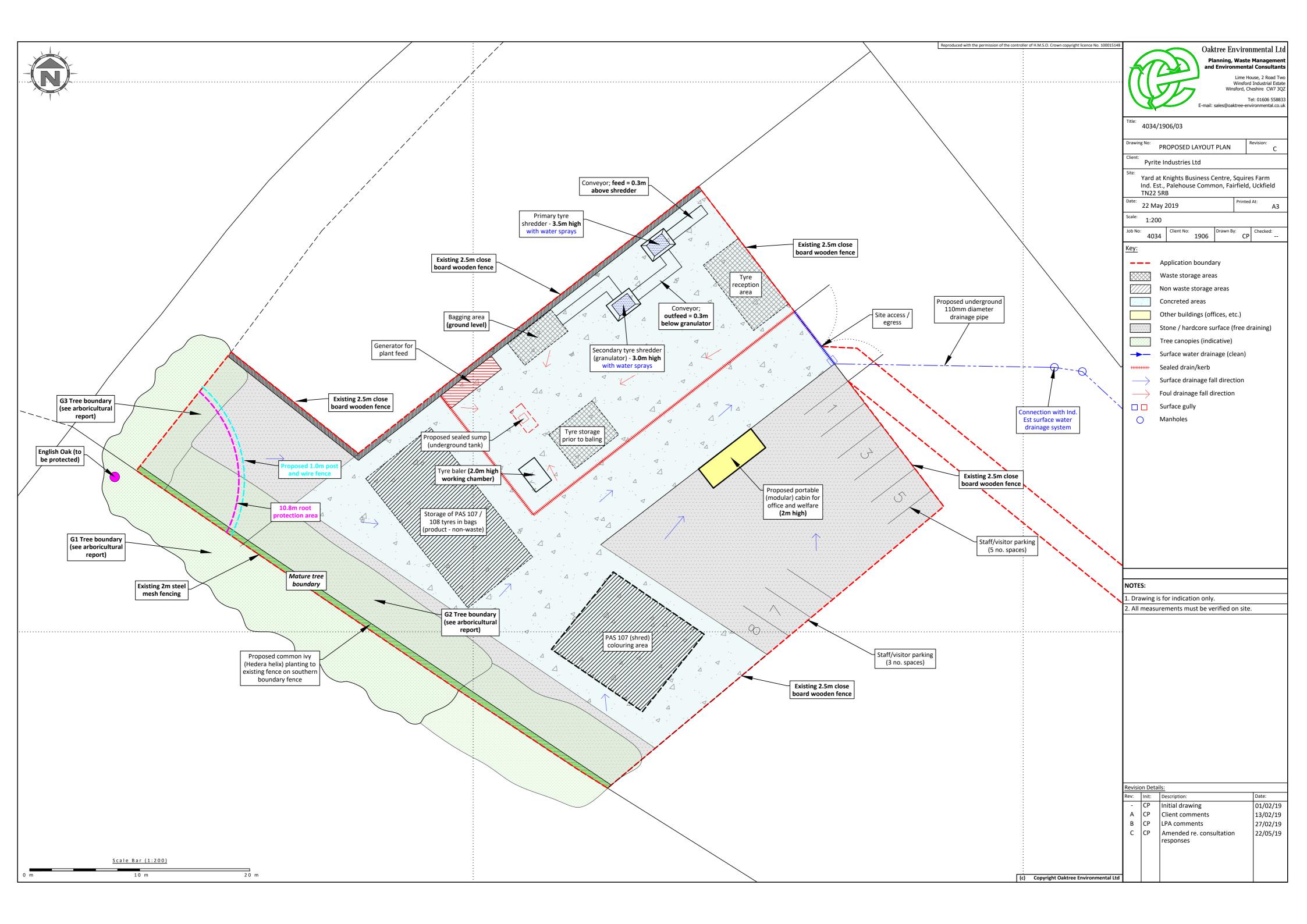
6 <u>Conclusion</u>

6.1 Summary& Recommendations

- 6.1.1 Oaktree Environmental have undertaken aENA for the proposed development at theYard at Knights Business Centre, Squires Farm Industrial Estate, Palehouse Common, Framfield, Uckfield TN22 5RB.
- 6.1.2 Proposed operations within the externalyardcomprisetheshredding and baling of waste tyres and the general movement of wasteusing the sites forklift truck.
- 6.1.3 The nearest residential property is approximately 150-175 metres to the west of the site and comprises Tewitts Farm. Residential cottages are also situated approximately 300 metres west of the site on Pump Lane, (as well as adjacent to the B2192 approximately 350 metres to the east of the site.
- 6.1.4 As a result of the; proposed activities, location of plant, erection of 3m close boarded timber fence and distance to the nearest residential receptor, the impact from the external operations on the output of the existing industrial estate and therefore the impact on the nearest noise sensitive receptors is considered low.

Appendix I

Drawings



Appendix II

Acoustics Associates Sussex Report

including monitoring data

Squires Farm Ind Estate. TN22 5RB

Meter Used - 01dB SIP95 Class 1, SLM. Microphone position 1.95m above ground level and secured on monopod attached to heavy duty tripod. Serial Number of SLM – 10510 (Calibration sheet below)

Dataset.Started recording 09:00 hours 24/4/2019. 1 second logging. Calibrated before and after survey in situ without any drift. Stopped recording 12:45 29/4/2019.

Parameters provided in Microsoft Excel. A weighted, FAST, L_{A90, 15 minute} continuous in order that day and night values may be calculated.

Location – TQ50777/18430. See annotated site plan below and photograph of sound level meter and microphone.

Rationale for selection of monitoring location. As far as possible in NW corner of applicants site, whilst remaining freefield and not under vegetation and tree canopy. Line of sight to Allied Waste to North East (note the open door from Allied Waste in background). Access not possible to Tewitts Farm, tried main gate and access point but call mechanism fails to connect 08:30 24/4/2019. Client also tried to engage with Tewitts but messages not returned,

Soundscape. Allied Waste with diesel forklift and reverse bleeper operating inside and out (FLT noted tracking along the industrial estate). On setting up and decommissioning the survey position portacabins and ISO containers were being delivered to South of site. Birdsong and distant road traffic noise also noted. Additional fork lift trucks were noted on the industrial estate and the Sussex Stone and ceramic centre were heard to be cutting/grinding in the distance.

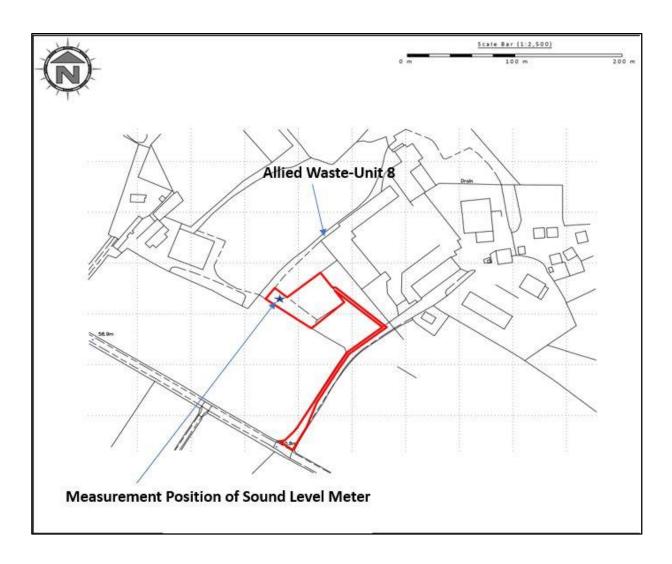
Hours for Allied Waste (known from talking to Kevin and Dan at the Allied Waste Site) – 07:00 to 17:00 Mon to Fri and permitted for 7-12 Saturday, but Saturday rarely works those hours. EA permit the Allied Waste site. See photograph of permitted hours also.

Lots of adjacent transport companies. Stone and Ceramics Company also loading company vans on setting up of survey.

Erection of large agricultural barn on land to North west in between Tewitts Farm and application site seen on google aerial screen shot below and image



Weather data. Unfortunately, our two weather stations were deployed on other projects. However, fortunately, a private weather station on the wunderground web network is available on Pump lane to the North of the measurement position. <u>https://www.wunderground.com/dashboard/pws/IUCKFI2</u>. Wind speeds may well be elevated for Sat 27th April 2019 with the onset of Storm Hannah but this needs to be checked.









Unit 8 = Allied Waste

Unit 6 and 7 A&D Motor Services

Unit 5- Not named, B8 type use, palletised storage

Types of units on the industrial/commerical estate.see below.





INSTRUMENT CONDITION	
Adjustments Made	NO
Adjustments Made	NO

Repairs Made

ENVIRONMENT

The instrument was placed in the laboratory environment for a minimum period of 4 hours and was operated prior to calibration.

Measurements were made in ambient conditions of 22°C ± 3°C and 45% ± 15% RH.

NO

PROCEDURE

Measurements were performed in accordance with the in house laboratory procedure 2184 All equipment used has been calibrated/verified against measurement standards or reference equipment traceable to International or National Measurement Standards as specified in our control procedure WI64

The results attached to this certificate refer to measurements made at the time of test and not to the instrument's ability to maintain calibration.

The attached results are a true record of the levels required to return the instrument to the original stated manufacturer's specification and accuracy where known.

File		ETR	Yard	cma	
Start			Turu	24/04/2019 0	9:00
End				29/04/2019 1	
Periods		15m			
Location		#2			
Weighting		A			
Data type		Leq			
Unit		dB			
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	29.9

Overall