

Appendix 4.2

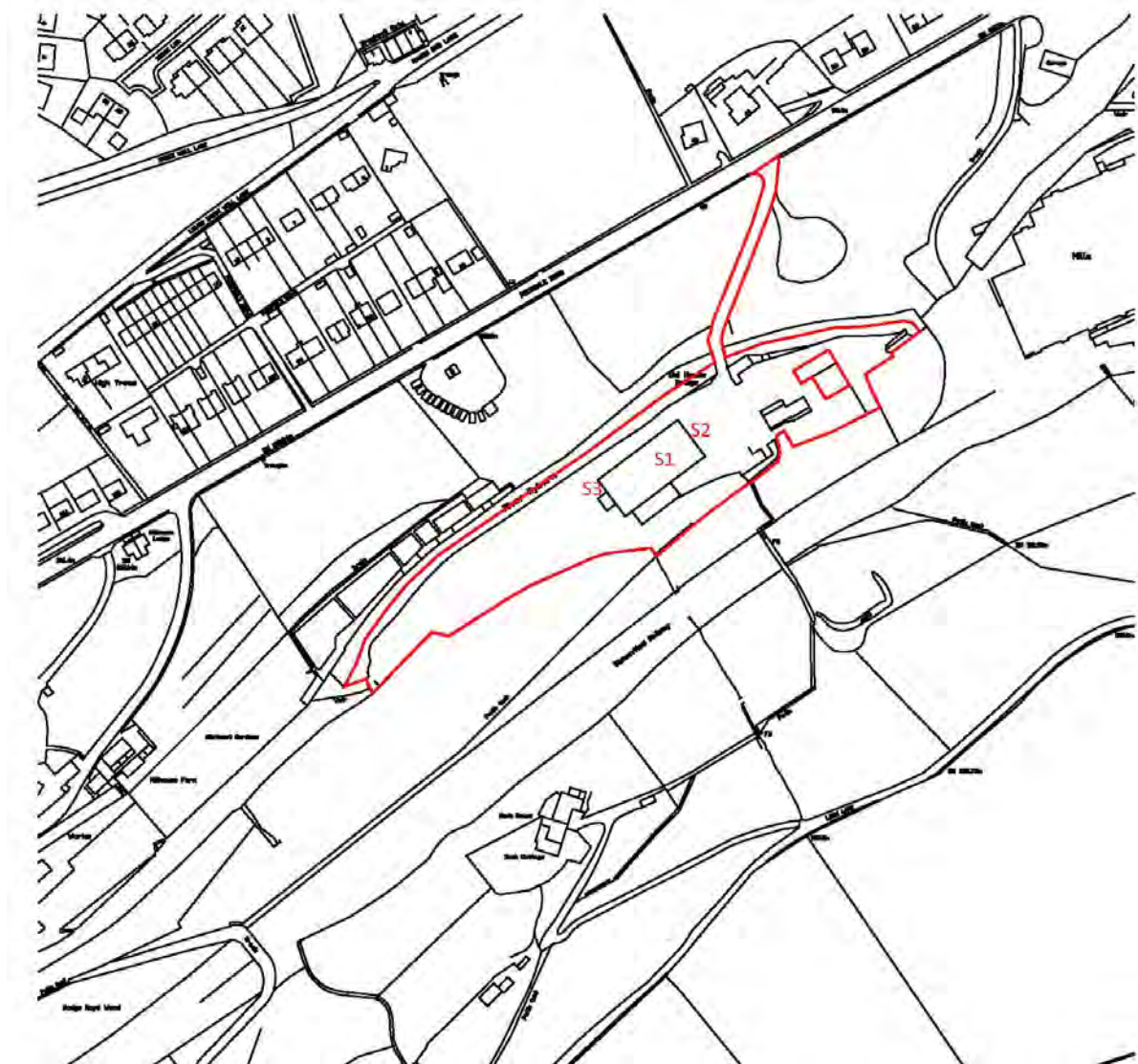
Existing Noise Sources

4.2 EXISTING NOISE SOURCES

4.2.1 A survey was undertaken on the 23rd May 2019 to gauge the noise levels attributable to the current activities. The data from the survey was used to construct a noise model in accordance with ISO 9613 and BS 5228 for on-site mobile plant/HGVs.

4.2.2 Noise surveys were undertaken at the following locations:

Figure 4.2.1 Noise Monitoring Locations for current on-site operations



Source noise levels are presented in Table 4.2.1

Table 4.2.1: Measured Source Noise Levels

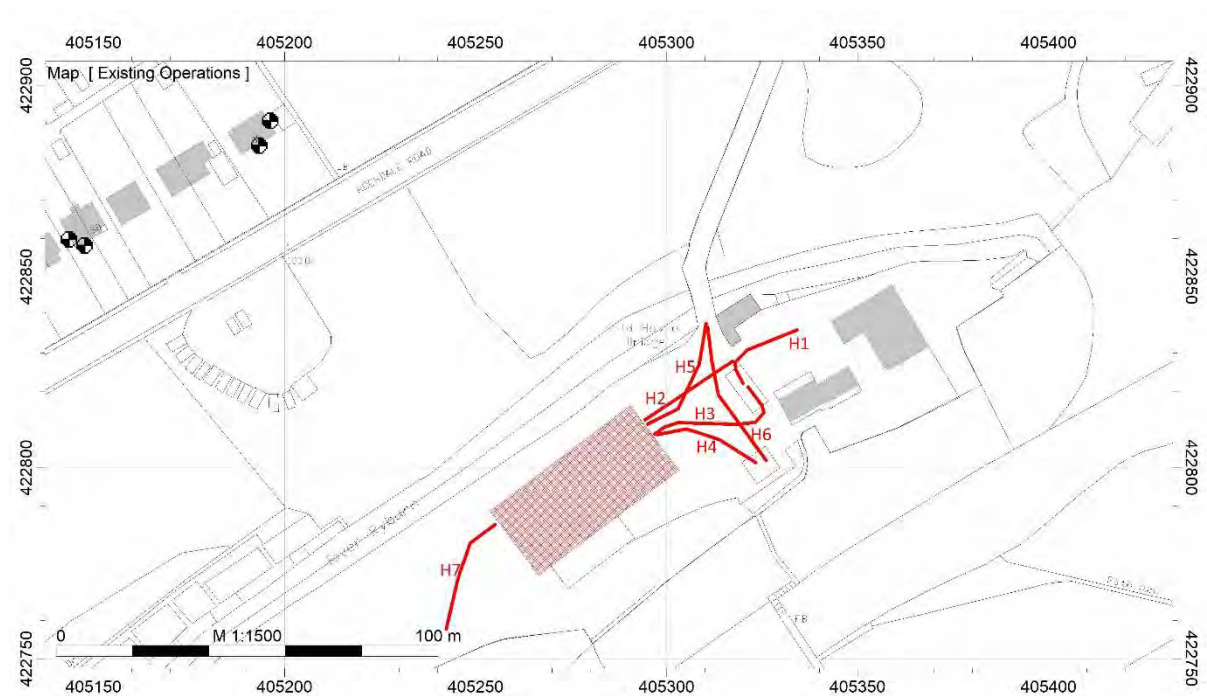
Location	63 Hz	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	8k Hz	Comment
dB (Z)									
S1 inside recycle shed, all plant operation	78.8	82.4	84.0	81.3	79.0	74.7	72.0	64.8	The noise survey was over an hour. The noise sources included a 'Case 930G' loading shovel, a 'Case 621XR' loading shovel and a 'Case CX210B' grab. The shredder is a 'Tana Shark 440DT'. Other noise sources included short events (less than 5 minutes) for skips unloading and HGV loading of crushed material. It was not possible to separately measure noise levels from each plant to the general hubbub within the shed.
S2 at the front open door of the recycle shed	63.2	65.7	65.9	58	57.7	46	40.2	35	The noise survey was over an hour. The above noise sources were measured at the large open doors which are 5m wide and 10m high. The dominant noise source at the doors was the noise egress from the shredder. The higher noise data for location S2 is used in the noise model for the open doors.
S3 at the rear open door of the recycle shed	62.4	64.8	64.3	58.6	56.9	44.3	38.5	33.2	

In addition to the above data, pass-by noise data of mobile sources was also measured and presented in Table 4.2.1 (these haul routes are illustrated in Figure 4.2.1). These haul routes are shown below in Figure 4.2.2.

Table 4.2.2: Hual Route Data

Route detail	Measured Noise Level at 10m, $L_{Aeq,T}$ dB	Estimated Speed, km/h	% on- time, 1 hr	No of Movements per hour
H1 - HGV parking manoeuvring including the use of reversing beepers adjacent to the weighbridge office	78.9	20	9.4	5
H2 - HGV traversing the yard to towards the recycle shed	79.5	20	7.4	5
H3 - HGV/skip lorry manoeuvring into the recycle shed	81.3	20	14	6
H4 - Skip lorry traversing the yard to the skip storage and unloading the skip at the skip storage area	79.8	30	15.5	6
H5 - HGV travelling from the recycle shed towards the access road	82.3	30	4.7	5
H6 - Skip lorry loading a skip and travelling towards the access road	77.5	30	7.2	6
H7 - Wheeled loader with recycle material unloading to a fixed skip at the rear of the recycle shed	76.4	30	10.9	4

Figure 4.2.2 Mobile Haul Routes



4.2.3 Based upon measured noise data internally and externally as well site observations at the recycle shed, the following sound reduction indices have been estimated and used for the ISO 9613 calculations:

Table 4.2.3: Estimated Sound Reduction Index dB Rw, Recycle Shed

Building Element	63 Hz	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	8k Hz
Walls	16	17	18	23	21	29	32	30
Roof	13	14	15	20	18	26	29	27