

13 November 2020

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Enviroguard Pty Limited
PO Box 1824
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Attention: Paul Antony

Dear Paul

Erskine Park Landfill - Airspace Increase Addendum to Noise Impact Assessment Onsite Material Processing

1 Introduction

Enviroguard Pty Ltd (Enviroguard) obtained approval from Penrith City Council (Council) and NSW Environment Protection Authority (EPA) to construct a mechanically stabilised earth wall (MSE Wall) for airspace expansion at Erskine Park Landfill, located at 4 Quarry Road, Erskine Park.

As part of the approval, SLR Consulting Australia Pty Ltd (SLR) prepared a Noise Impact Assessment (NIA) (SLR Report *630.30043-R01-v1.0*, dated July 2020), which assessed the potential construction and operational noise impacts associated with the project.

Enviroguard has identified the need for temporary onsite processing of the engineered fill material to allow compliance with the construction specification to build the MSE Wall. The required processing involves crushing, screening, and stockpiling the material onsite, and internal haulage to the MSE Wall construction areas.

SLR has been engaged by Enviroguard to prepare an addendum to the NIA assessing the potential for additional construction noise impacts associated with the onsite material processing.

2 Process Description

The temporary processing would be located on the landfill crown at around 92 m AHD with an anticipated footprint of around 10,000 m² to accommodate the plant, stockpiling and traffic. The process involves:

- Delivery of fresh material
- Loading fresh material into either a crusher or a screen
- Moving crushed or screened material to a nearby stockpile pending material testing
- Loading approved material onto dump trucks to haul the material onsite to the MSE Wall construction area.

Multiple stockpiles will be maintained onsite during the processing activity. The stockpile heights are anticipated to be no more than 98 m AHD, which is 6 m above the current landform.

The indicative processing area and stockpile locations are shown in **Figure 1**.

Figure 1 Indicative Processing Area and Stockpile Locations



Note 1: Figure provided by Enviroguard.

The approved construction works for the MSE Wall are expected to occur over a 12-month period requiring around 300,000 tonnes of material. The temporary onsite material processing is expected to occur over an 8-month period commencing in December 2020.

2.1 Construction Hours and Equipment

All works associated with temporary onsite material processing would be undertaken during standard daytime construction hours (7 am to 6 pm Monday to Friday, and 8 am to 1 pm Saturday).

The plant and equipment required for the processing, along with their typical operating time per day and sound power level is detailed in **Table 1**.

Table 1 Plant and Equipment

Plant Type and Quantity	Sound Power Level (per item) ¹	Weekday Operating Hours (7 am to 6 pm) ²	Saturday Operating Hours (8 am to 1 pm) ²
Crusher x1	119 dBA	4 hours	2 hours
Screen x1	111 dBA	10 hours	4 hours
Cat 980k Wheel Loader x2	109 dBA	10 hours	4 hours
30 Tonne Excavator x1	105 dBA	10 hours	4 hours

Note 1: Sound power levels from manufacturer data or SLR measurement database.

Note 2: Operating hours provided by Enviroguard.

No additional vehicle movements are anticipated as part of the onsite material processing. Material deliveries to the site and internal haulage of materials associated with construction of the MSE Wall were included in the approved NIA construction noise assessment. As such, vehicle movements are considered to be accounted for in the cumulative assessment of construction noise from the onsite material processing and the approved MSE Wall construction works assessed in the NIA.

3 Construction Noise Criteria

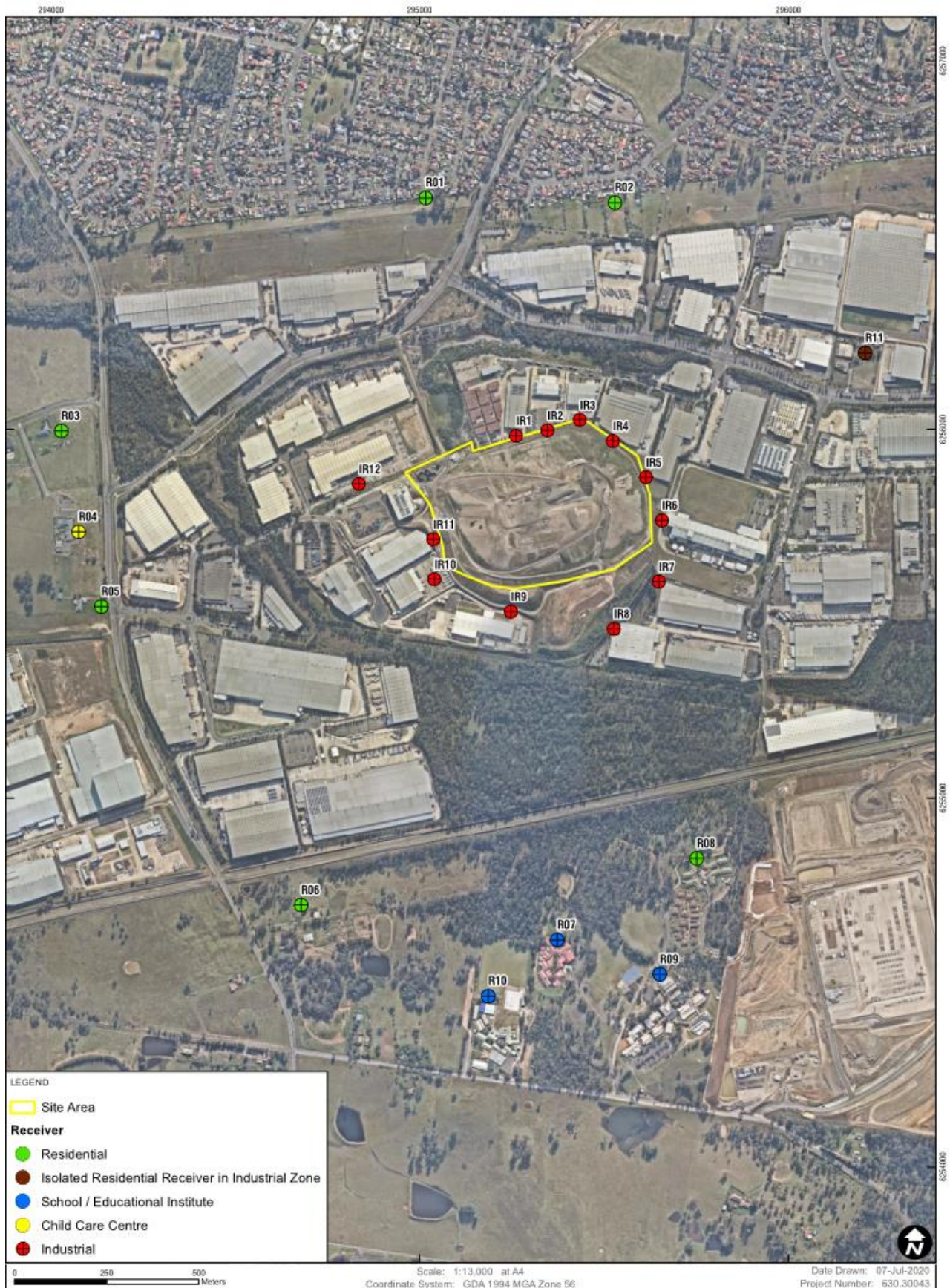
The nearest sensitive receivers to the site were identified in the NIA and are shown in **Figure 2**.

The NIA derived construction Noise Management Levels (NMLs) for the nearest receivers, based on the existing background noise levels in the area, as per the procedures detailed in the EPA's *Interim Construction Noise Guideline* (ICNG). The construction NMLs are reproduced in **Table 2**.

Table 2 Construction Noise Management Levels

Location	Receiver Type	Time of Day	Standard Day NML	Highly Noise Affected NML
R01, R02	Residential	Standard daytime construction hours	53	75
R03, R05, R06	Residential	Standard daytime construction hours	54	75
R08	Residential	Standard daytime construction hours	45	75
R04	Childcare centre	Standard daytime construction hours	65	-
R07, R09, R10	School/educational institute	Standard daytime construction hours	45	-
R11	Isolated residential receiver in industrial zone	Standard daytime construction hours	56	75
IR1 – IR12	Industrial receivers	Standard daytime construction hours	75	-

Figure 2 Nearest Sensitive Receivers



4 Construction Noise Impact Assessment

4.1 Noise Modelling Methodology

Computer noise modelling was used to predict construction noise emissions from the temporary onsite material processing. The noise model prepared for the NIA using SoundPLAN v8.1 software was updated to include the onsite material processing plant and equipment.

Consistent with the NIA, the noise model calculations used the following meteorological parameters for standard daytime construction hours:

- Standard weather – 0.5 m/s source to receiver wind, D stability class
- Noise-enhancing weather – 3 m/s source to receiver wind, D stability class.

The plant and equipment modelled for the onsite material processing is detailed in **Table 1**. The following two scenarios were modelled:

- Crusher, screen, loaders and excavator all operating
- Screen, loaders and excavator operating with no crusher.

These scenarios conservatively assumed that no shielding would be provided by the stockpiles either side of the processing area.

4.2 Predicted Construction Noise Emissions – Onsite Material Processing

Predicted noise levels from the proposed onsite material processing are detailed in **Table 3**.

Table 3 Predicted Construction Noise Levels – Onsite Material Processing

Location	Standard Day NML	Highly Noise Affected	Predicted Noise Level (dBA) – LAeq(15minute)			
			All Processing Plant Operating		All Processing Plant Except Crusher	
			Standard Weather	Noise-Enhancing Weather	Standard Weather	Noise-Enhancing Weather
R01	53	75	43	46	38	41
R02	53	75	46	49	40	43
R03	54	75	39	42	34	37
R04	65	-	42	45	37	40
R05	54	75	42	45	36	39
R06	54	75	40	43	35	38
R07	45	-	43	46	37	40
R08	45	75	44	47	38	42
R09	45	-	41	44	36	39
R10	45	-	39	42	34	37
R11	56	75	44	47	38	41
IR1-IR12	75	-	54	57	53	54

Note 1: NML exceedances shown in **bold**.

The above shows that:

- Noise emissions from temporary onsite material processing are generally predicted to be below the NMLs at the nearest receivers.
- Noise levels from the operation of all processing plant during standard weather conditions are predicted to be below the NMLs at all receivers. Minor exceedances of the NMLs of up to 2 dB are predicted at R07 and R08 to the south of the site during noise-enhancing weather.
- Noise levels from the operation of all processing plant except the crusher are predicted to be below the NMLs at all receivers during both standard and noise-enhancing weather conditions.

It is noted that the above noise levels assume that no shielding is provided by the stockpiles either side of the processing area. Indicative modelling of the stockpiles indicates that noise levels would be reduced by up to 8 dB at the most-affected receivers due to the shielding provided by the stockpiles when they are at their largest size. The actual level of reduction would vary depending on the location and size of the stockpiles, the location of the plant and equipment, and the amount of shielding provided to each receiver location.

The predicted exceedances of the NMLs are considered minor in magnitude and are predicted only during noise-enhancing weather conditions with all equipment operating concurrently. It is anticipated that these impacts would occur infrequently and would be easily manageable with typical best-practice noise management measures, such as regular maintenance of equipment, orienting directional noisy equipment away from receivers, shutting down equipment when not in use, and avoiding using noisy equipment concurrently where possible. Additionally, the stockpiles would typically provide some shielding from the processing plant, further minimising potential noise impacts. It is anticipated that the noise impacts would be negligible at the most-affected receivers.

4.3 Predicted Cumulative Construction Noise Emissions – Processing and MSE Wall

Noise levels from construction of the MSE Wall were predicted in the NIA. Cumulative noise levels from construction of the MSE Wall and the temporary onsite material processing are detailed in **Table 4**.

Table 4 Predicted Cumulative Construction Noise Levels – Processing and MSE Wall

Location	Standard Day NML	Highly Noise Affected	Predicted Noise Level (dBA) – LAeq(15minute)					
			MSE Wall Construction (NIA)		Cumulative MSE Wall & All Processing Plant		Cumulative MSE Wall & All Processing Plant Except Crusher	
			Standard Weather	Noise-Enhancing Weather	Standard Weather	Noise-Enhancing Weather	Standard Weather	Noise-Enhancing Weather
R01	53	75	31	34	44	47	39	42
R02	53	75	<30	32	46	49	40	43
R03	54	75	<30	33	39	43	34	39
R04	65	-	32	35	42	45	38	41
R05	54	75	33	36	43	45	38	41
R06	54	75	36	40	41	45	38	42
R07	45	-	37	40	44	47	40	43
R08	45	75	40	43	45	48	42	45
R09	45	-	37	40	43	46	39	43
R10	45	-	35	38	41	44	37	41
R11	56	75	33	36	44	47	39	42
IR1-IR12	75	-	58	60	60	62	59	61

Note 1: NML exceedances shown in **bold**.

The above shows that:

- Cumulative noise emissions from temporary onsite material processing and construction of the MSE Wall are generally predicted to be below the NMLs at the nearest receivers.
- Cumulative noise levels from the MSE Wall and all processing plant are predicted to be below the NMLs at all receivers during standard weather conditions. Minor exceedances of the NMLs of up to 3 dB are predicted at R07, R08 and R09 to the south of the site during noise-enhancing weather conditions.
- Cumulative noise levels from the MSE Wall and all processing plant except the crusher are predicted to be below the NMLs at all receivers during both standard and noise-enhancing weather conditions.

Similar to the processing plant alone, the predicted cumulative exceedances of the NMLs are considered minor in magnitude and are predicted only during noise-enhancing weather conditions with all equipment operating concurrently. It is anticipated that these impacts would occur infrequently and would be easily manageable with typical best-practice noise management measures. Additionally, the stockpiles would typically provide some shielding from the processing plant, further minimising potential noise impacts. It is anticipated that the noise impacts would be negligible at the most-affected receivers.

5 Conclusion

Assessment of potential construction noise impacts associated with temporary onsite material processing has been undertaken.

Noise emissions from the processing plant including the crusher are predicted to result in minor exceedances of the NMLs (up to 2 dB) at two receivers to the south of the site during standard daytime construction hours under a worst-case scenario which includes noise-enhancing weather conditions. No exceedances are predicted during standard weather conditions.

Noise emissions from the operation of the screen and other processing plant without the crusher are predicted to be below the NMLs during both standard and noise-enhancing weather conditions.

Cumulative noise emissions from the construction of the MSE Wall and onsite material processing are generally predicted to be below the NMLs. Cumulative exceedances of the NMLs (up to 3 dB) at three receivers to the south of the site are predicted when the crusher is in use during noise-enhancing weather conditions.

The predicted exceedances of the NMLs are considered minor in magnitude and are predicted only during noise-enhancing weather conditions with all equipment operating concurrently. It is anticipated that these impacts would occur infrequently and would be easily manageable with typical best-practice noise management measures. Additionally, the stockpiles would typically provide some shielding from the processing plant, further minimising potential noise impacts. It is anticipated that the noise impacts would be negligible at the most-affected receivers.

Yours sincerely



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Senior Consultant

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Authorised by: AW