

EARBA STORAGE

A GILKES ENERGY COMPANY

Earba Pumped Storage Hydro Scheme EIA Report

Appendix 18.2: Construction Noise Modelling Exercises and Input Data Summary February 2024



Quality Information

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Revision History

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Appendix 18.2 Construction Noise Modelling Input Data Summary

Table 18-A2-1 Equipment and plant noise data taken from BS 5228-1 Annex C

Construction Activity	Equipment / Plant Item	Quantity	BS5228-1		Octave Band Sound Pressure Levels dB(Lin)							
			Ref.	L _{Aeq} dB(A)	63	125	250	500	1k	2k	4k	8k
Site Establishment Works (Modelling Input R1)	Bulldozer CAT D6T	1	C.5.15	83	83	81	76	77	82	70	65	58
	Excavator CAT 336F (35t)	2	C.5.18	80	76	79	75	75	76	73	70	65
	Excavator CAT 320F (20t)	2	C.2.19	77	95	84	79	73	70	68	64	57
	CAT Grader 14M	1	C6.31	86	88	87	83	79	84	78	74	65
	ADT Dump Truck CAT 745C	3	C.5.17	81	85	88	77	75	77	74	69	63
	Vibratory Compactor CAT CS56B	1	C.5.22	81	92	83	75	79	77	70	67	61
Upgrade of access roads, or construction of new temporary haul road	Bulldozer CAT D6T 153kW 21t	1	C.5.15	83	83	81	76	77	82	70	65	58
	Excavator CAT 336F (35t)	3	C.5.18	80	76	79	75	75	76	73	70	65
	Excavator CAT 320F (20t)	3	C.2.19	77	95	84	79	73	70	68	64	57
	ADT Dump Truck CAT 745C	4	C.5.17	81	85	88	77	75	77	74	69	63
	CAT Grader 14M (193Kw)	1	C6.31	86	88	87	83	79	84	78	74	65
	Vibratory Compactor CAT CS56B 12t	2	C.5.22	81	92	83	75	79	77	70	67	61
	Crawler crane 35t	1	C.4.43	70	80	76	71	63	64	63	56	50
	Asphalt paver	1	C.5.31	77	72	77	74	72	71	70	67	60
Peninsulaworks	Drill rig FlexiROC T35	2	C.6.35	86	85	93	78	79	80	79	76	74
	Excavator CAT 336F (35t)	2	C.5.18	80	76	79	75	75	76	73	70	65
	ADT Dump Truck CAT 745C	2	C.5.17	81	85	88	77	75	77	74	69	63
	Crawler Crane Piling rig (50t)	1	C.3.29	70	81	77	69	67	62	60	61	51
	Bulldozer CAT D6T	1	C.5.15	83	83	81	76	77	82	70	65	58
	CAT Grader 14M	1	C6.31	86	88	87	83	79	84	78	74	65
	Vibratory Compactor CAT CS56B	1	C.5.22	81	92	83	75	79	77	70	67	61
Lower Control Works: (screened inlet/outlet structures).	Drill rig FlexiROC T35	3	C.6.35	86	85	93	78	79	80	79	76	74
	Shotcrete jumbo	2	C.9.2	92	94	95	90	91	87	85	80	73
	Rock drills	3	C.9.1	90	86	92	85	88	84	83	78	77
	Shovel CAT 992K (wheeled Loader)	1	C.9.7	88	88	93	84	84	83	81	79	69
	ADT Dump Truck CAT 745C	3	C.5.17	81	85	88	77	75	77	74	69	63
	Excavator CAT 352F (50t)317kW	1	C.6.4	80	86	90	78	74	75	70	62	60
	Crawler crane (50t)	4	C.4.46	67	78	69	67	64	62	57	49	40
	Bulldozer CAT D6T	1	C.5.15	83	83	81	76	77	82	70	65	58

Construction Activity	Equipment / Plant Item	Quantity	BS5228	L_{Aeq} dB(A)	Octave Band Sound Pressure Levels dB(Lin)							
			Ref.		63	125	250	500	1k	2k	4k	8k
Concrete aggregate processing & materials handling	Excavator CAT 336F (35t)	2	C.5.18	80	76	79	75	75	76	73	70	65
	Excavator CAT 320F (20t)	2	C.2.19	77	85	84	79	73	70	68	64	57
	CAT Grader 14M	1	C6.31	86	88	87	83	79	84	78	74	65
	ADT Dump Truck CAT 745C	3	C.5.17	81	85	88	77	75	77	74	69	63
	Vibratory Compactor CAT CS56B	1	C.5.22	81	92	83	75	79	77	70	67	61
Transportation of spoil to upper dam via temporary haul road	Shovel CAT 992K (wheeled Loader)	1	C.9.7	88	88	93	84	84	83	81	79	69
	CAT 777F Dump Truck 700kW / 100t	4	C.6.14	89	89	94	89	85	83	81	76	71

Figure 18-A-1 Formation of Temporary Haul Route

For the upgrade of access roads/tracks and construction of a new temporary haul road, predictions have been manually completed in accordance with the procedures detailed in Section F.2.2 of BS 5228-1. The operating noise data, in terms of $L_{Aeq,T}$ at 10m distance, has been referenced from Annex C of the Standard. At this stage, the details of the plant requirements for road construction and upgrade works are not finalised.

Predictions assume a typical plant operating scenario for this item of work for such road works as has been assumed with plant spread along a 100m length segment of new haul route operating for 100% of the time. The plant spread is indicatively presented in **Figure 18-A-1**.

The assumed BS5228 reference noise levels for typical haul route construction vehicles is provided in **Table 18-A-2** below.

Figure 18-A-1: Temporary Haul Route Plant Formation

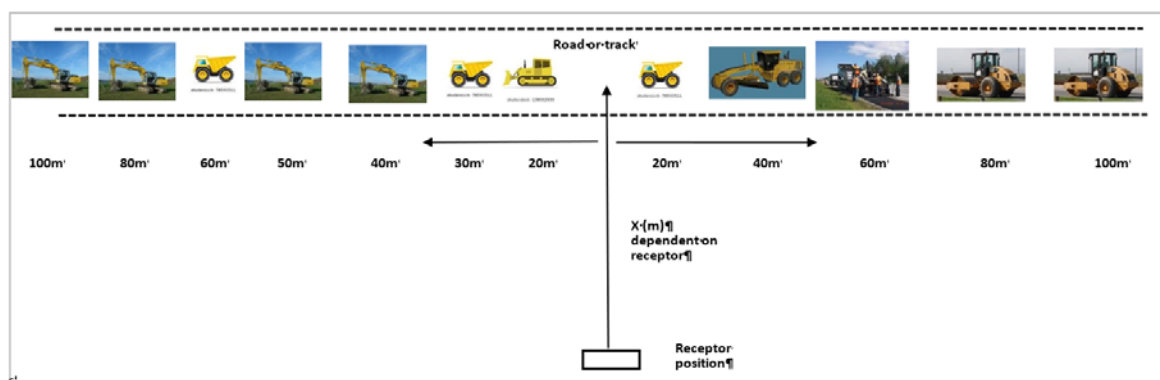


Table 18-A2-2 Haul Route Improvement Plant Information

Plant Type	L _{Aeq,T} @ 10m
BS5228-1. Plant Item	
Excavator (35t) No.1	80
Excavator (35t) No.2	80
ADT Dump Truck No.1	81
Excavator (20t). No.1	77
Excavator (20t) No.2	77
ADT Dump Truck No.2	81
Bulldozer CAT D6T	83
ADT Dump Truck No.3	81
CAT Grader 14M	86
Asphalt paver	77
Vibratory Compactor 1	81
Vibratory Compactor 2	81