

Appendix 7 NOISE ASSESSMENT

7.1 Monitoring Locations

Figure 1 – Brondre Fawr



Figure 2 – Custogion



Figure 3 – Cwmdrwr



Figure 4 – Ddullai Bank



Figure 5 – Fwnog (Proxy)



Figure 6 – Lower Nanthir



Figure 7 – New House



Figure 8 – Pabyllwyd Barn

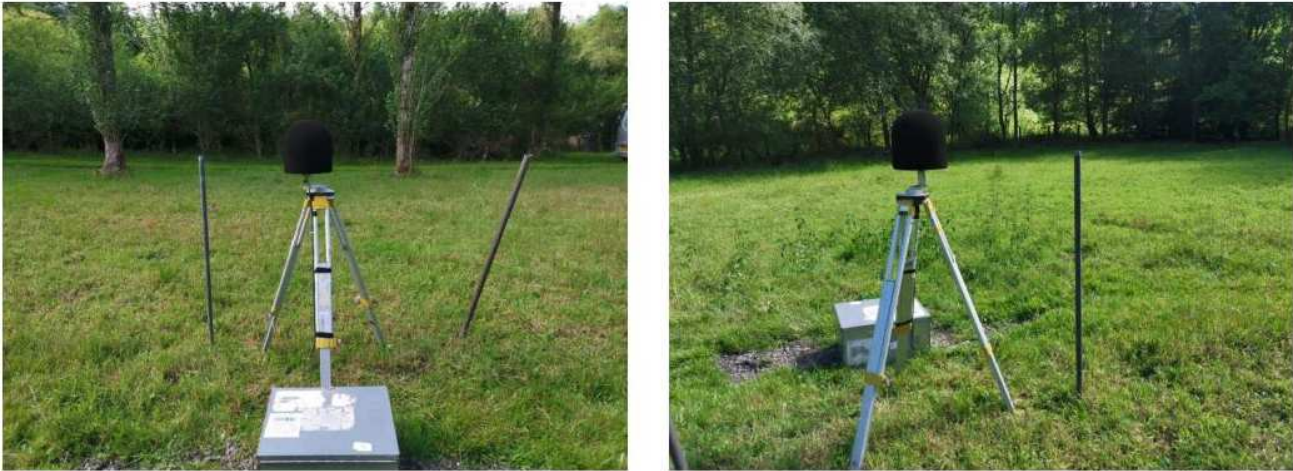
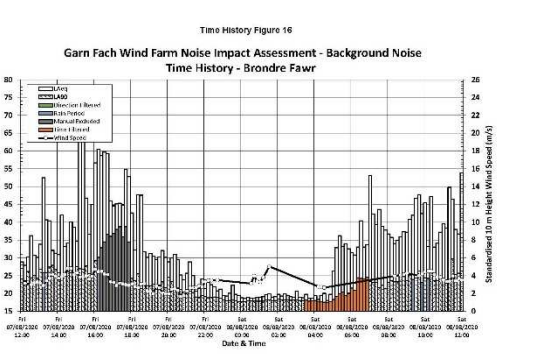
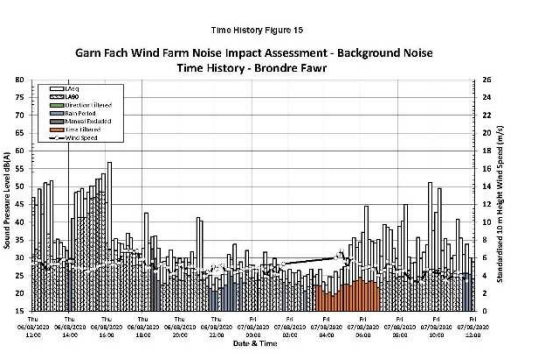
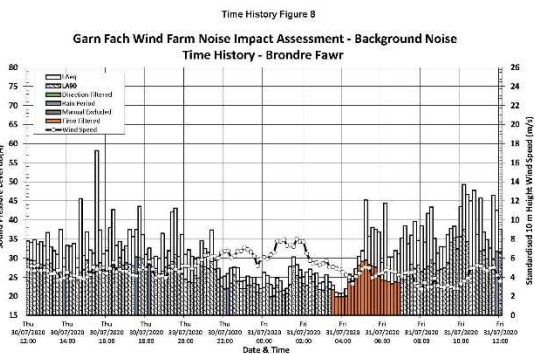
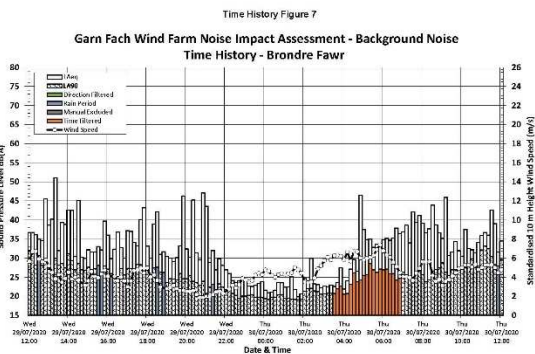
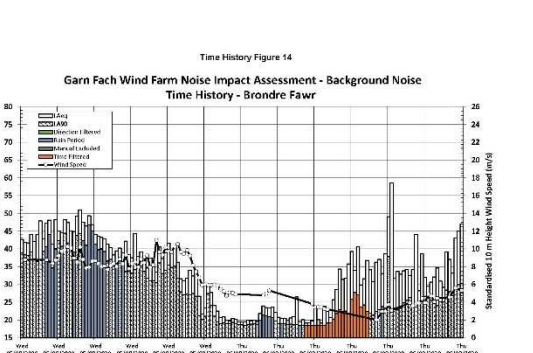
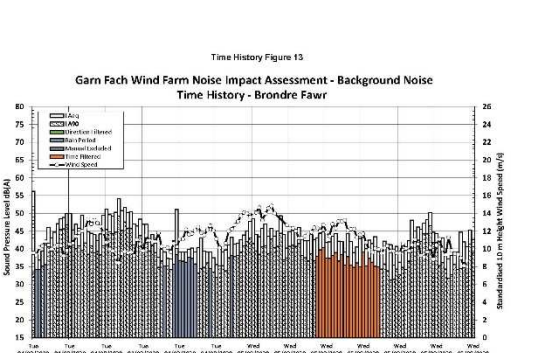
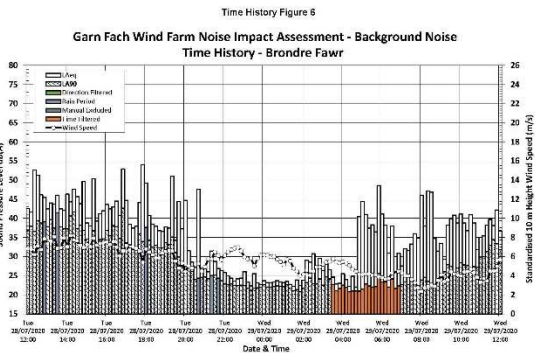
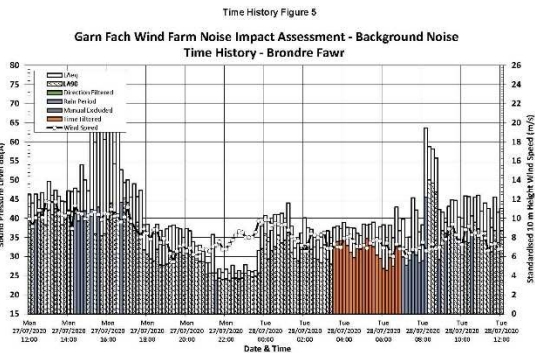
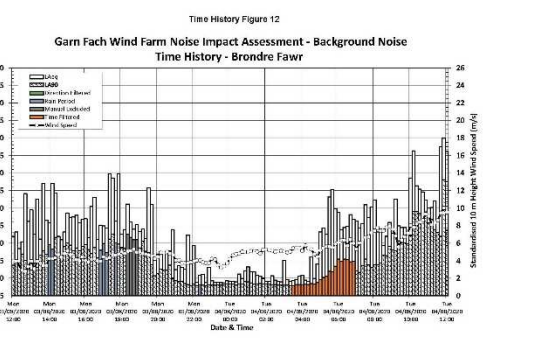
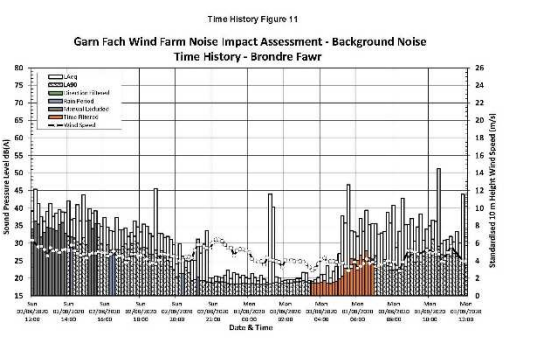
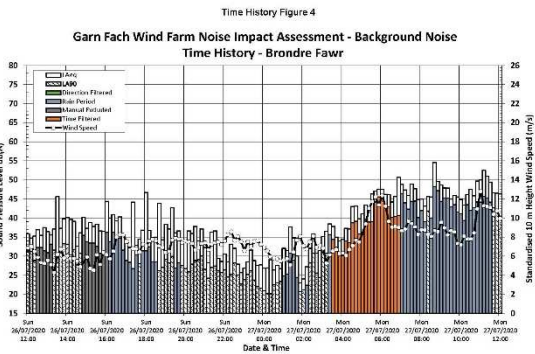
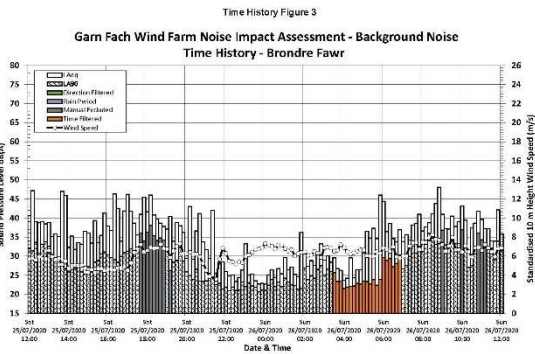
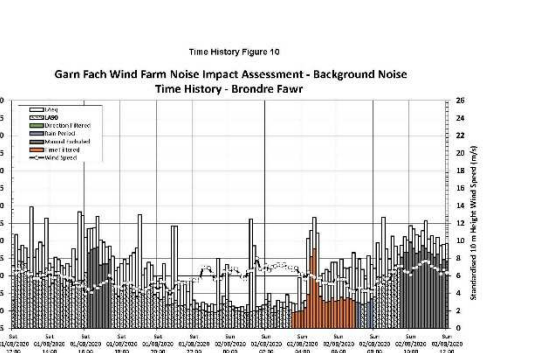
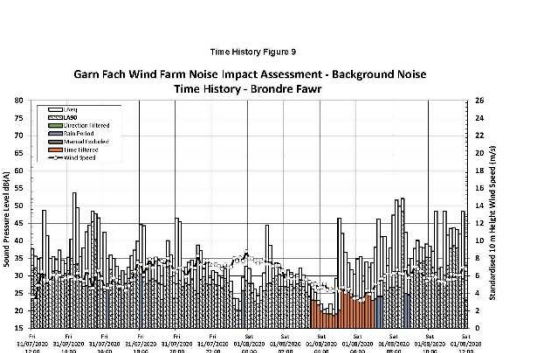
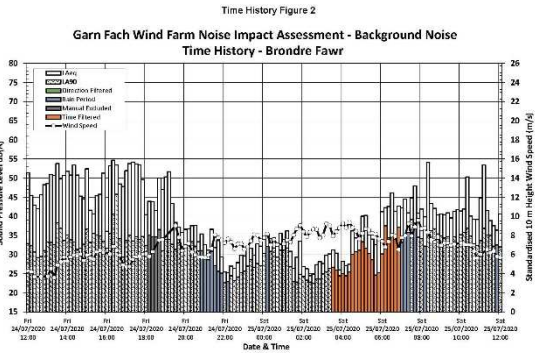
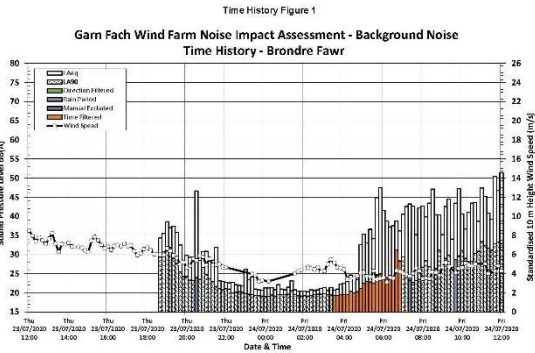
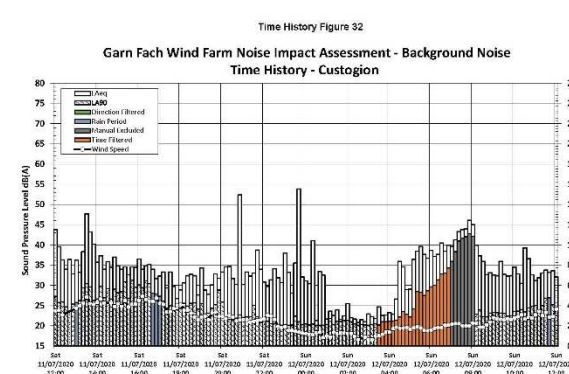
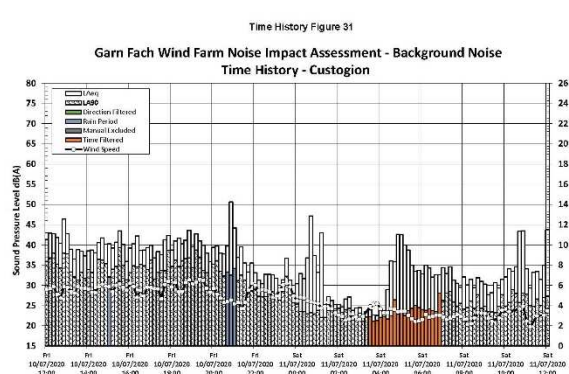
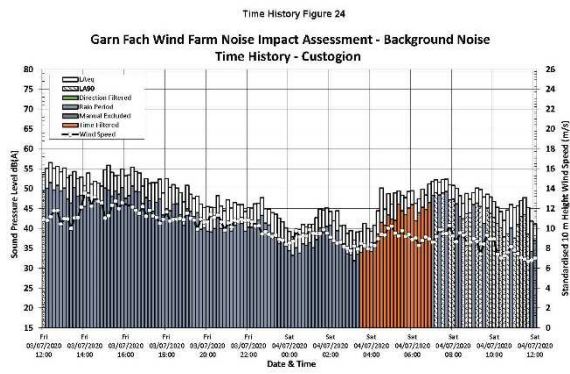
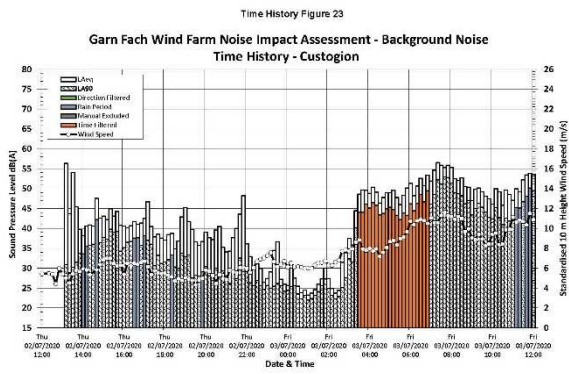
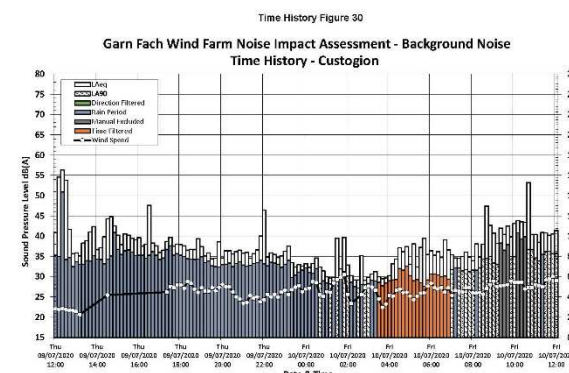
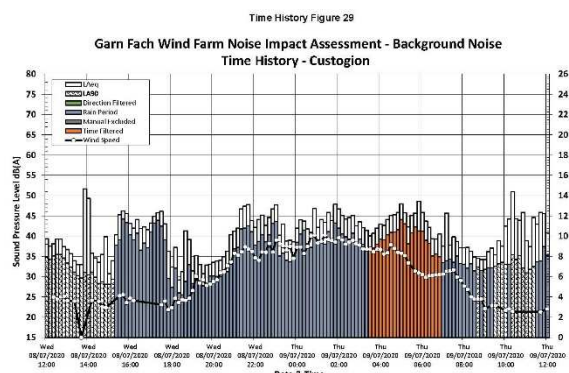
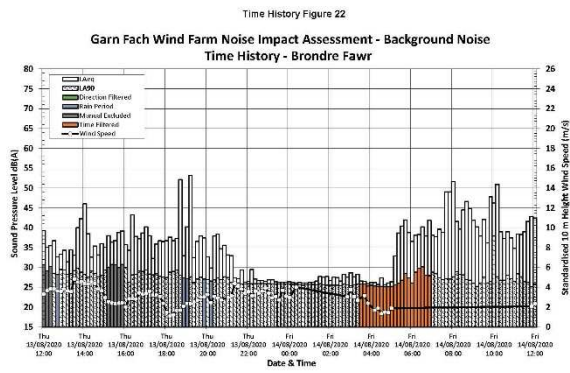
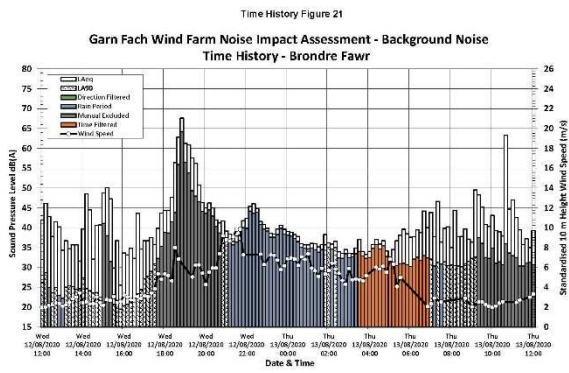
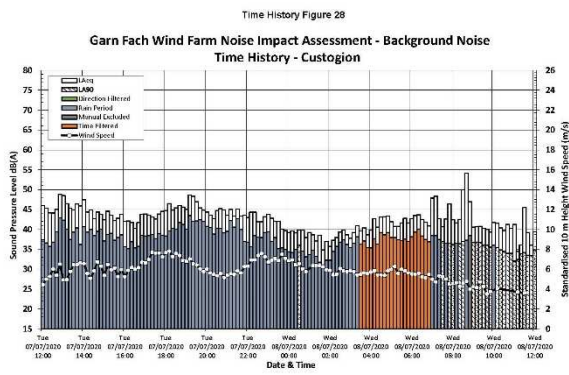
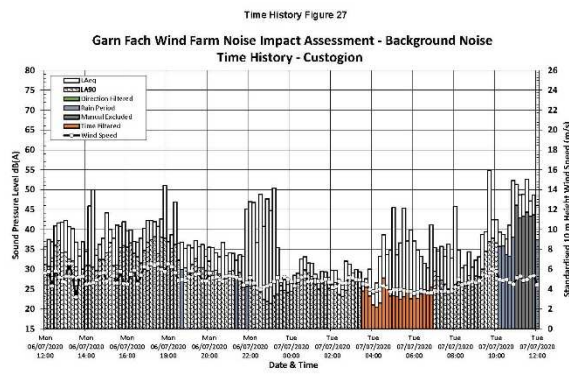
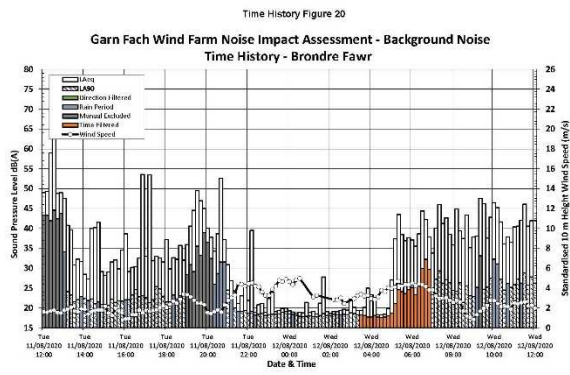
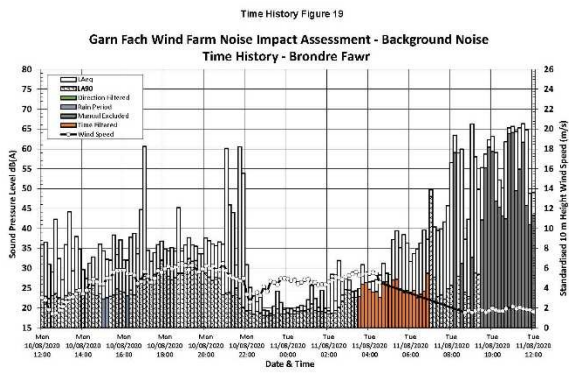
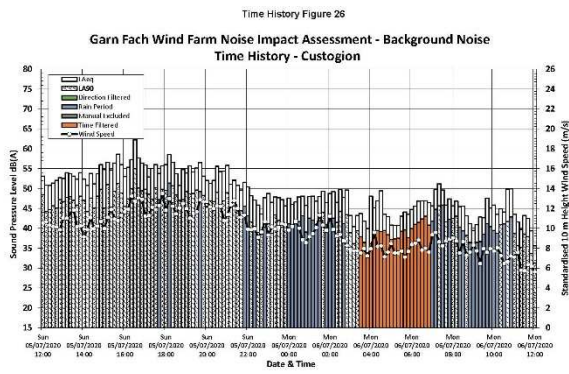
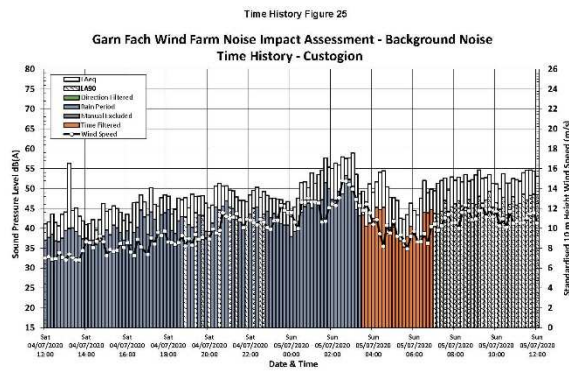
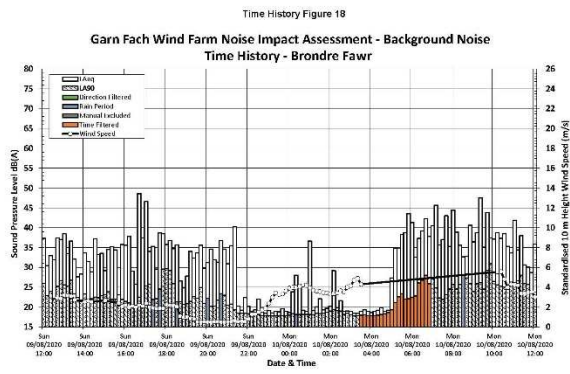
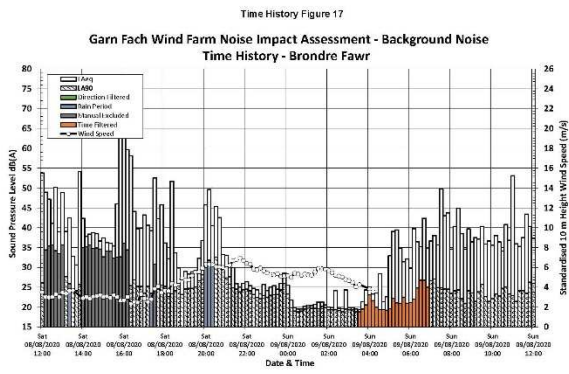


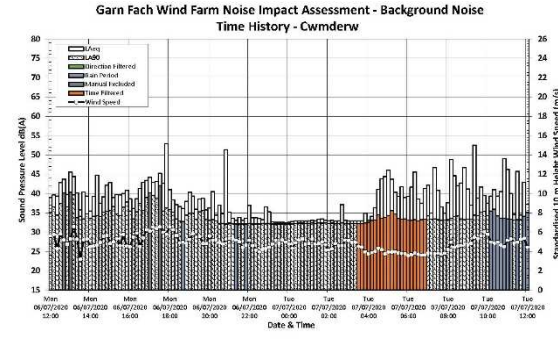
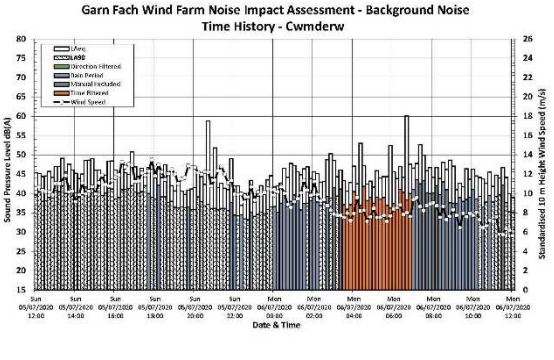
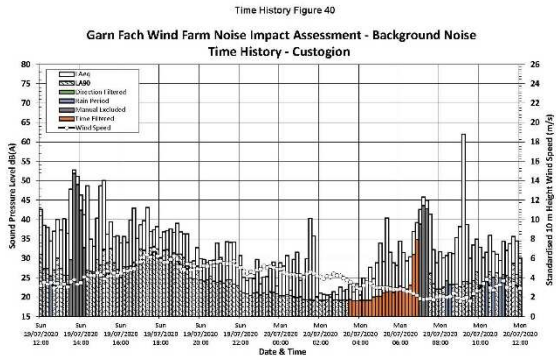
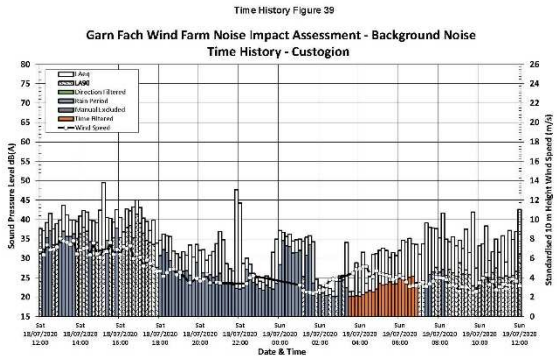
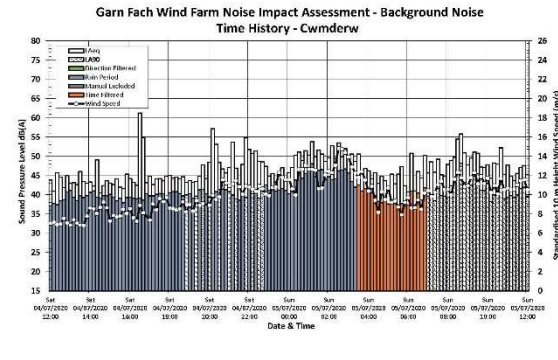
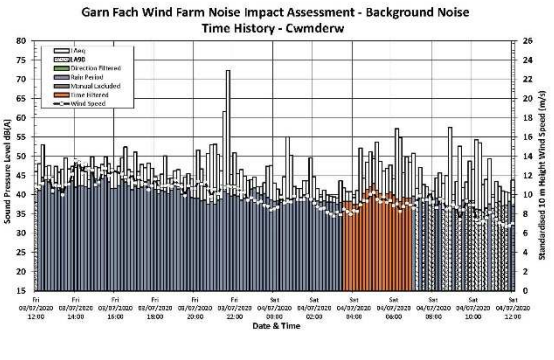
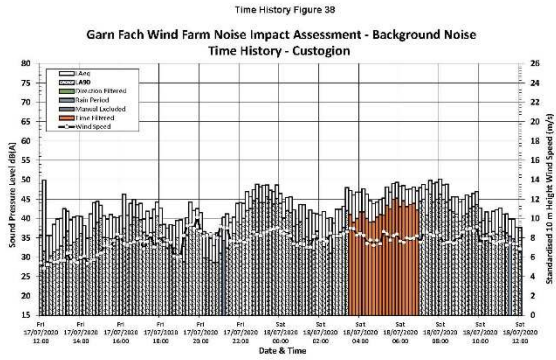
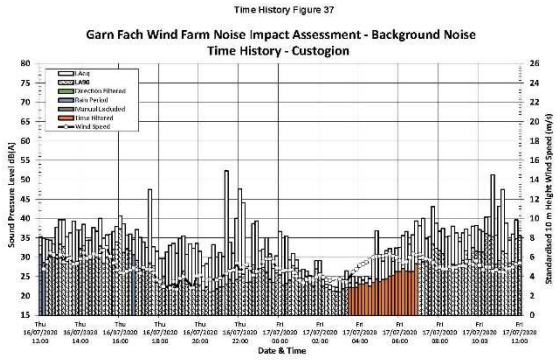
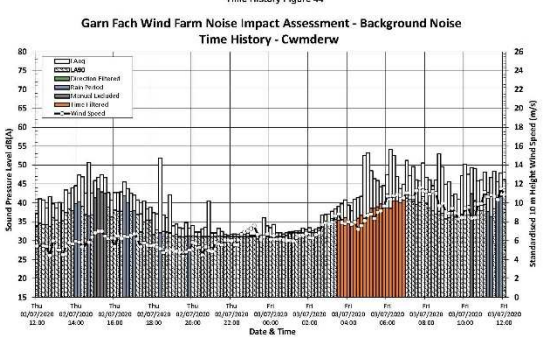
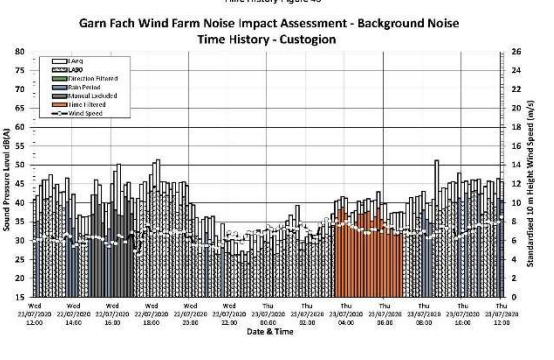
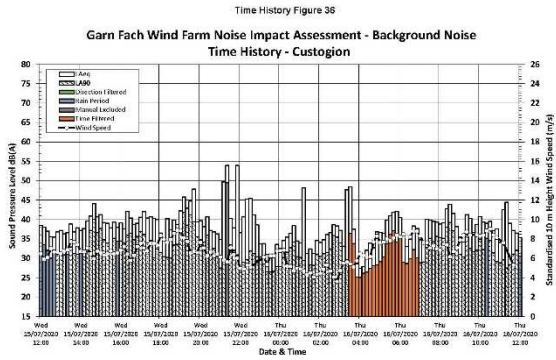
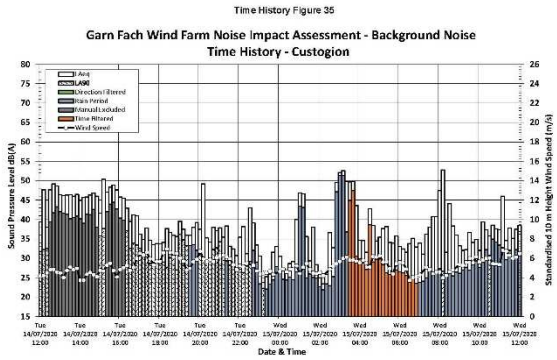
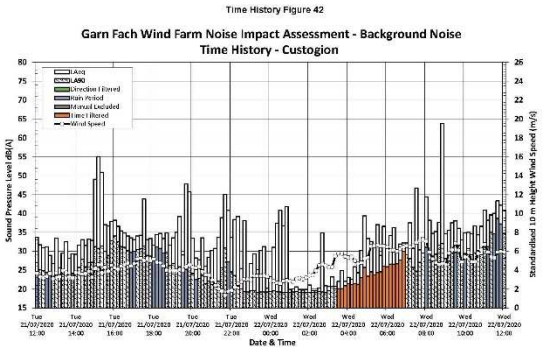
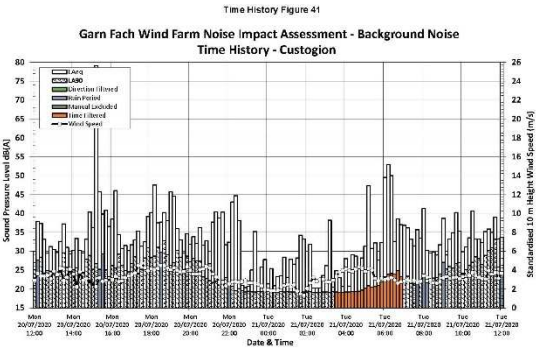
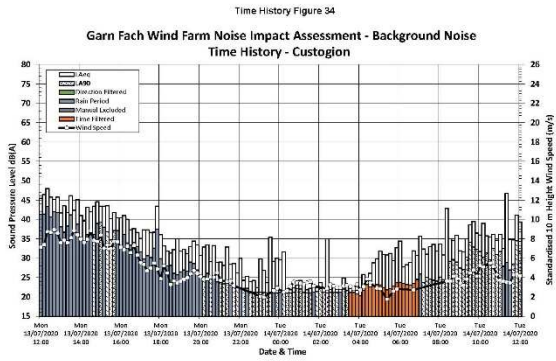
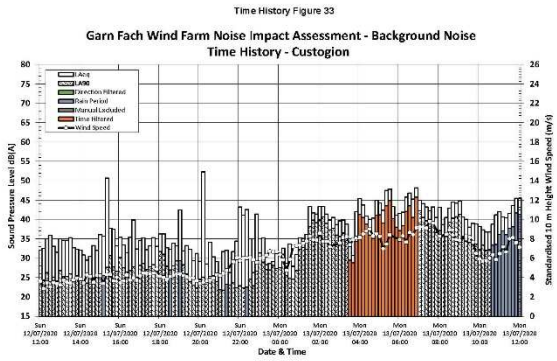
Figure 9 – Pabyllwydd Ganol

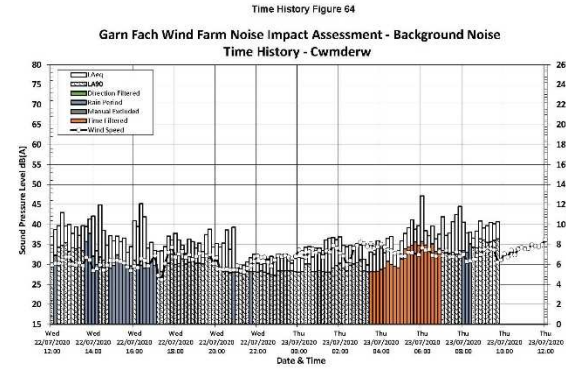
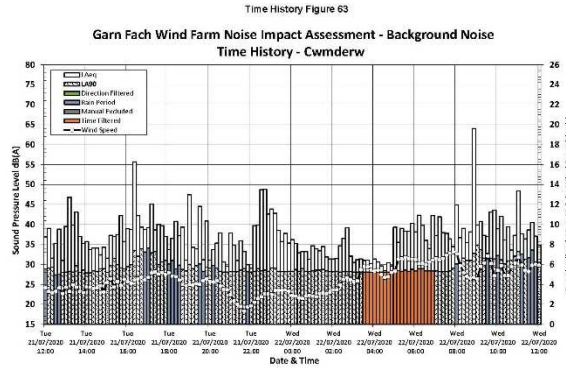
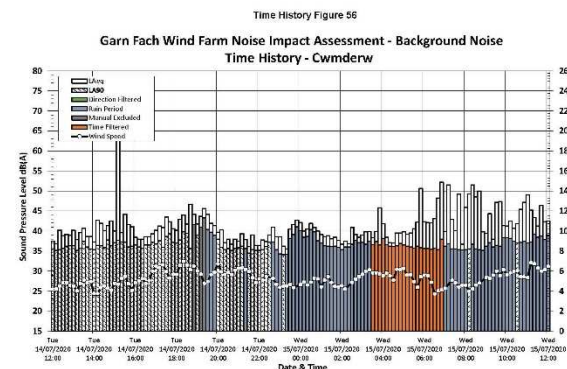
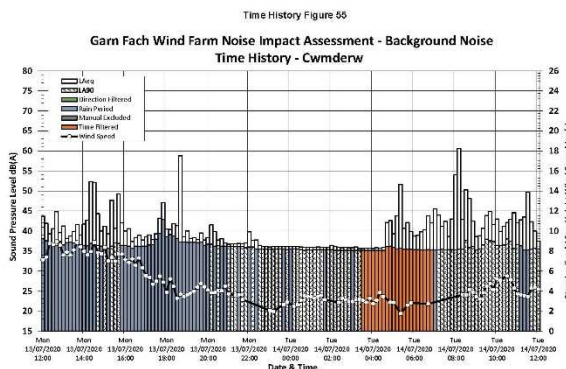
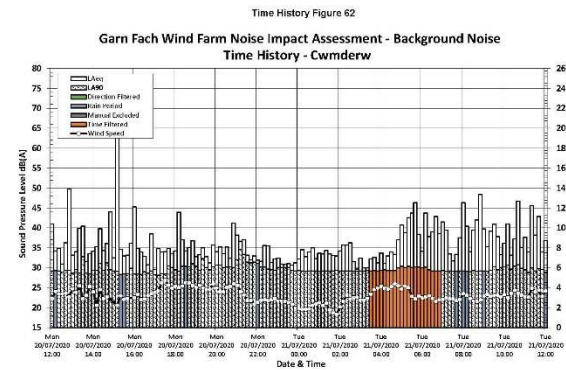
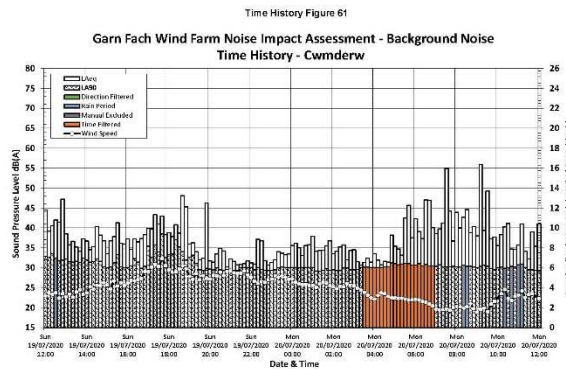
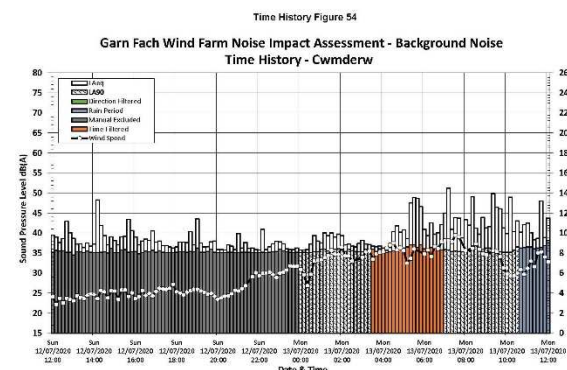
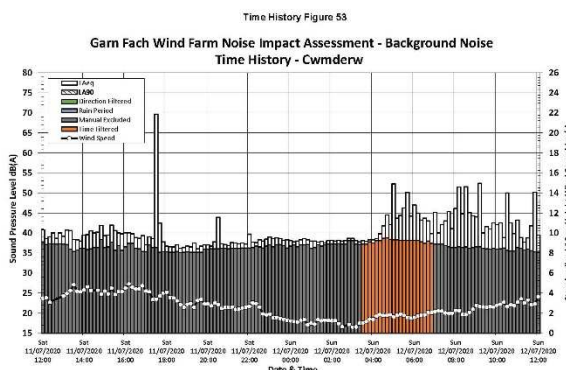
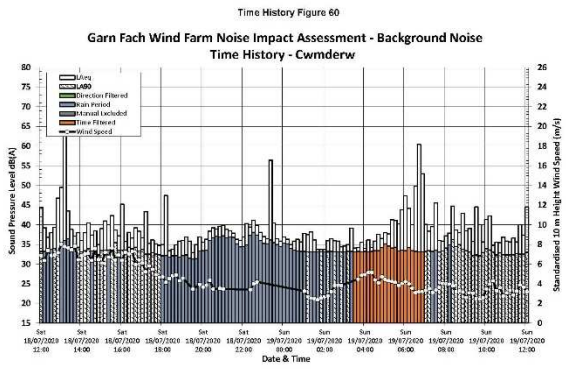
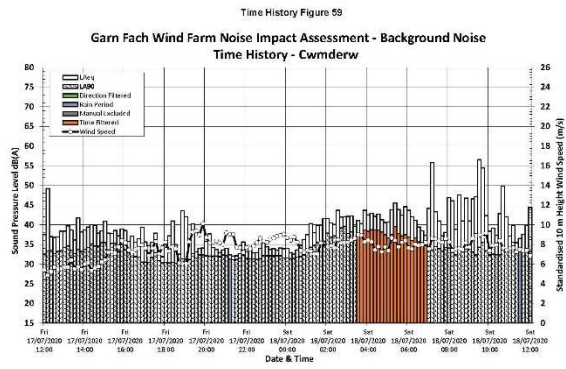
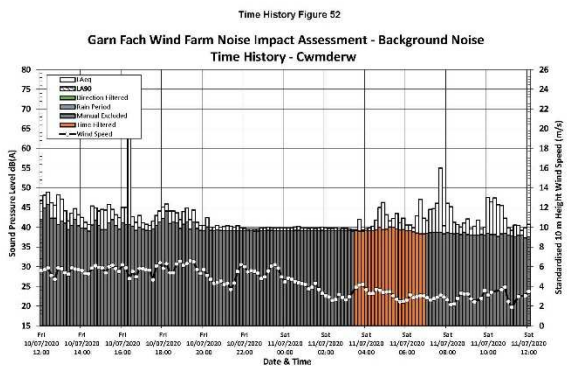
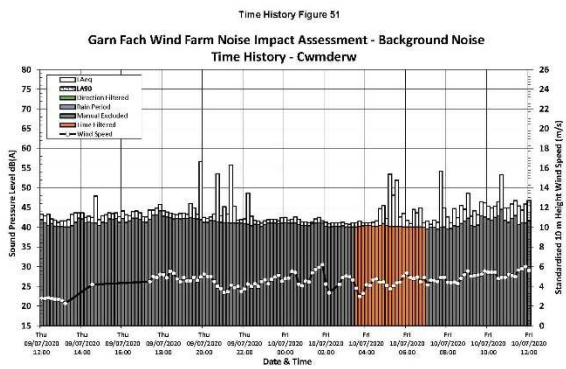
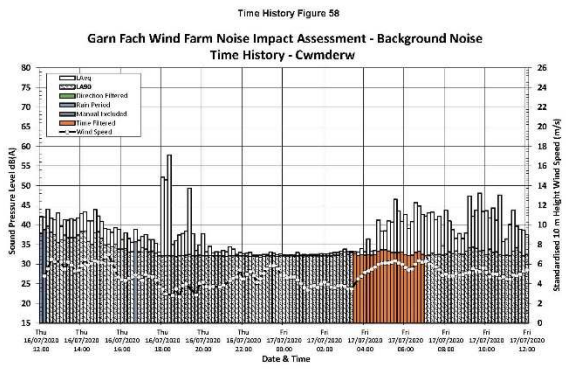
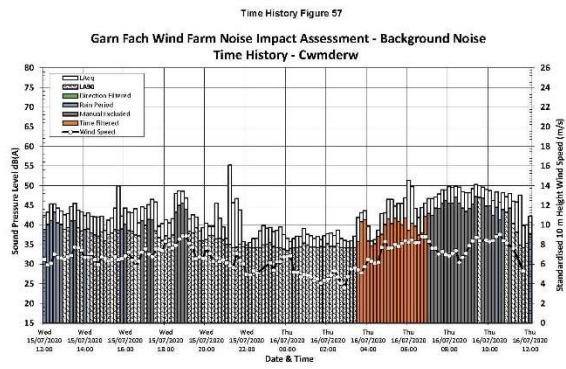
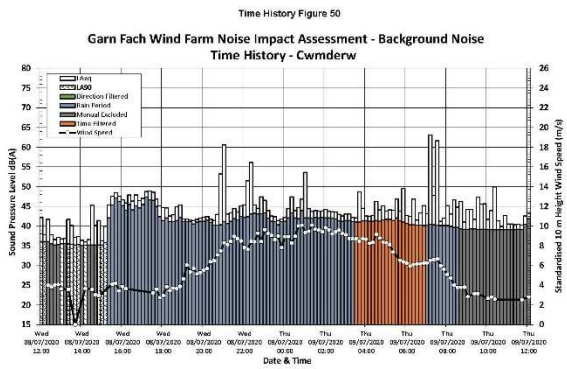
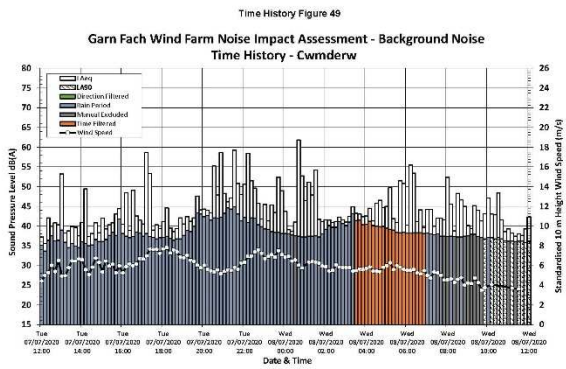


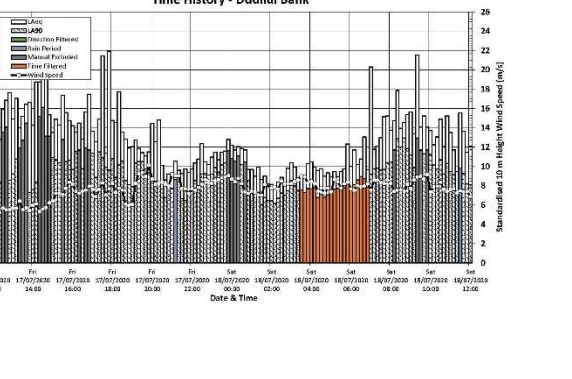
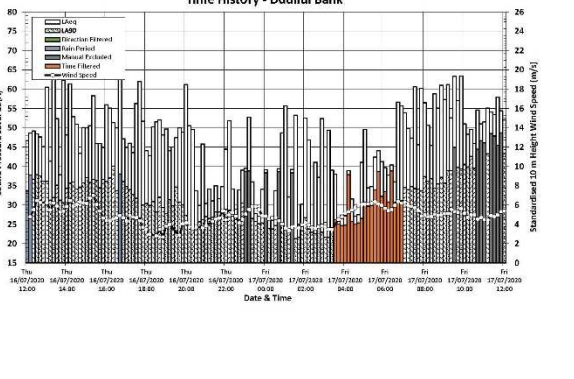
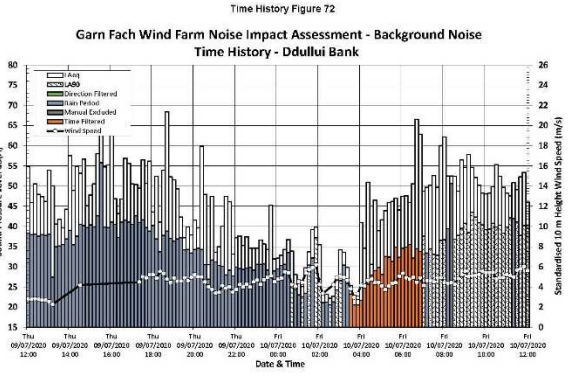
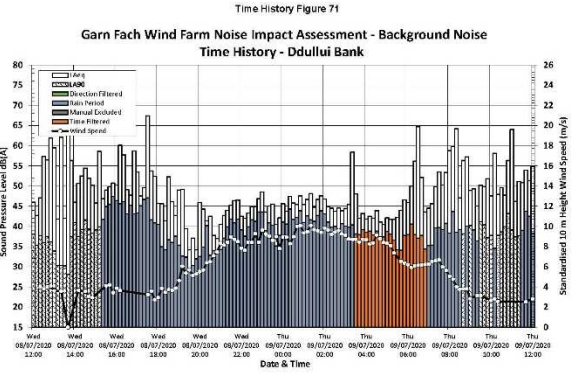
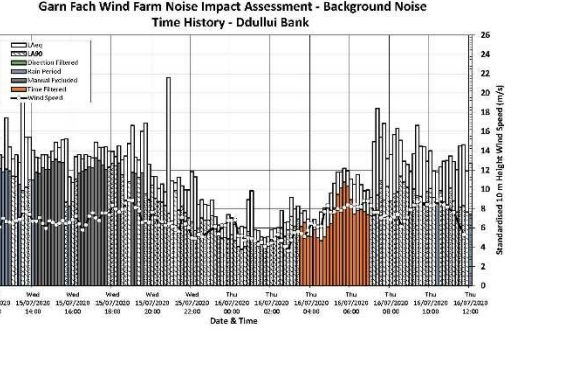
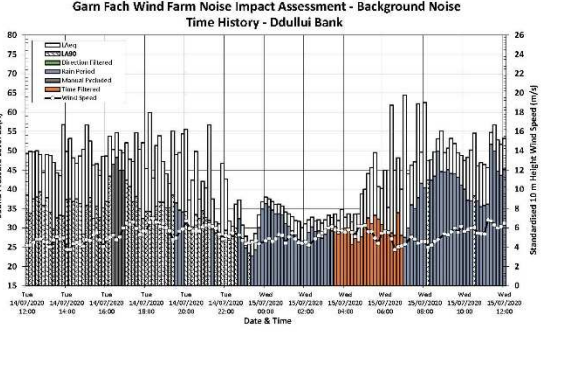
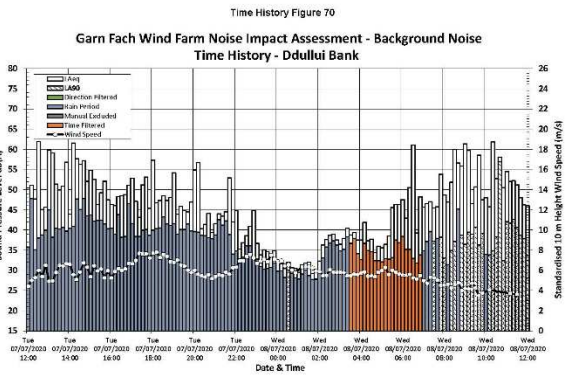
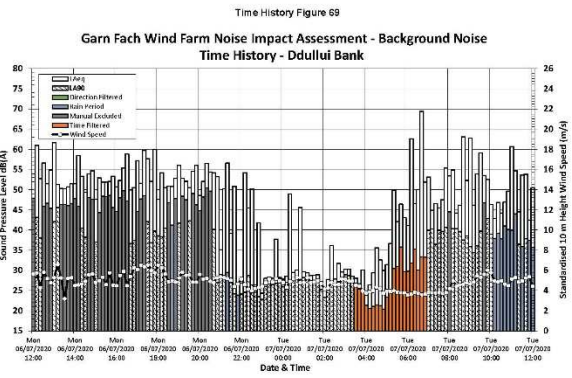
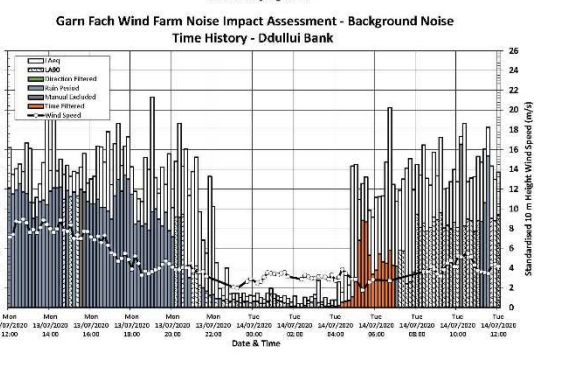
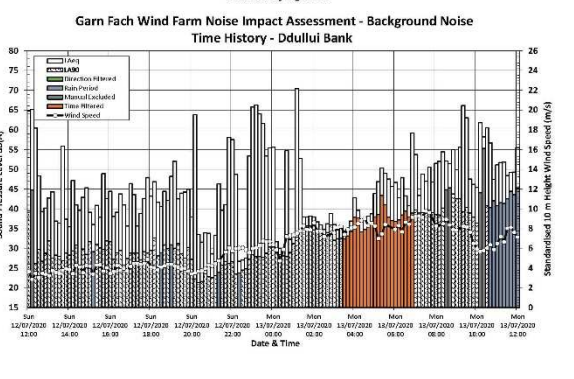
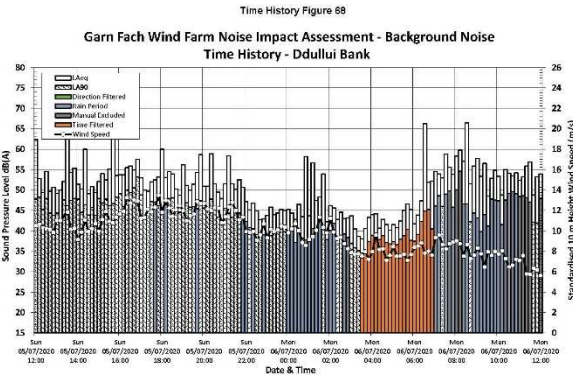
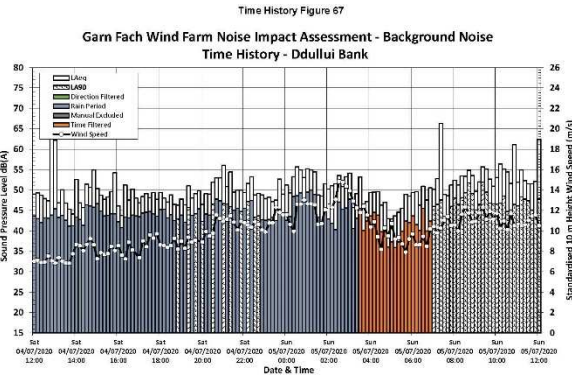
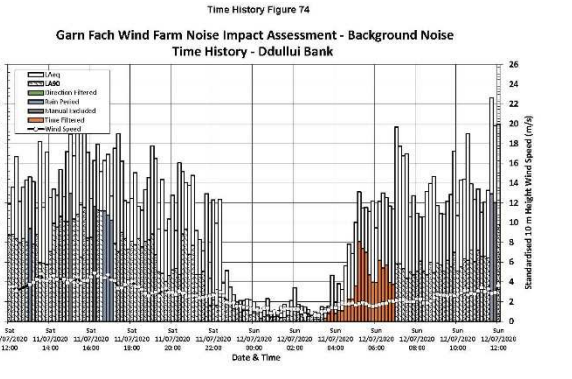
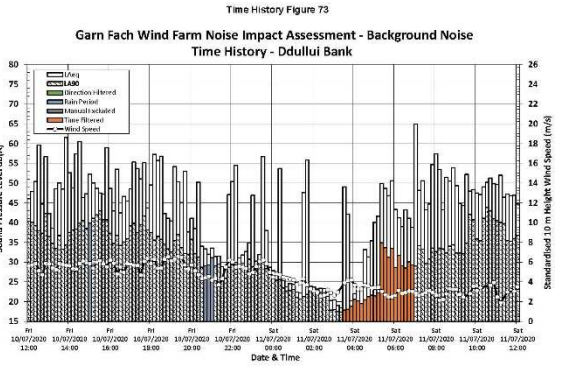
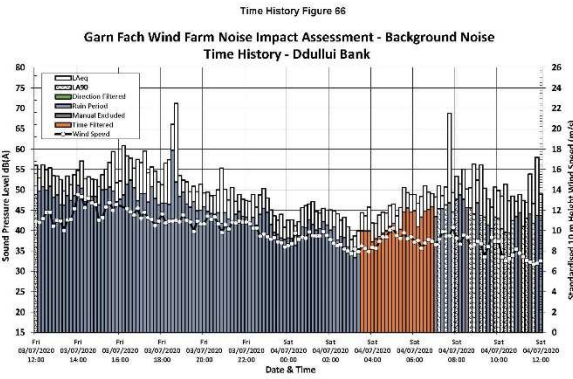
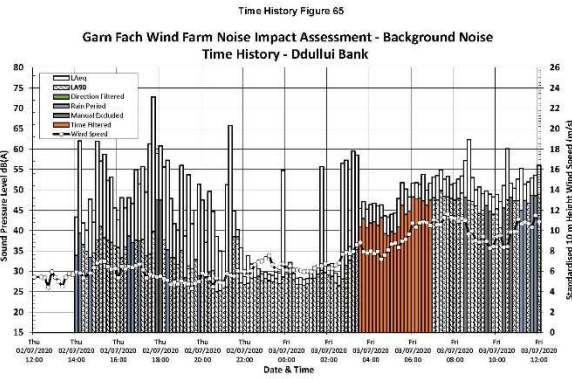
7.2 Time Histories

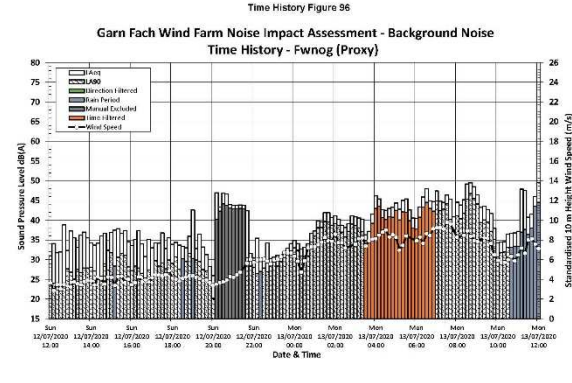
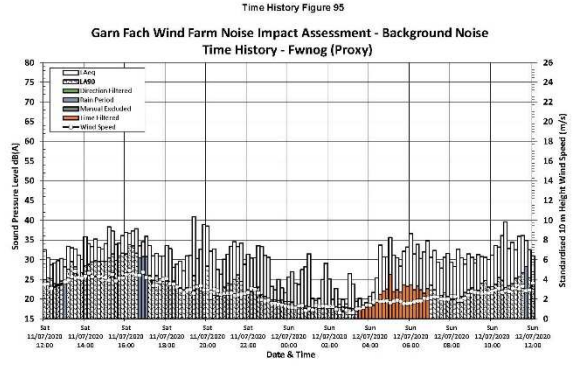
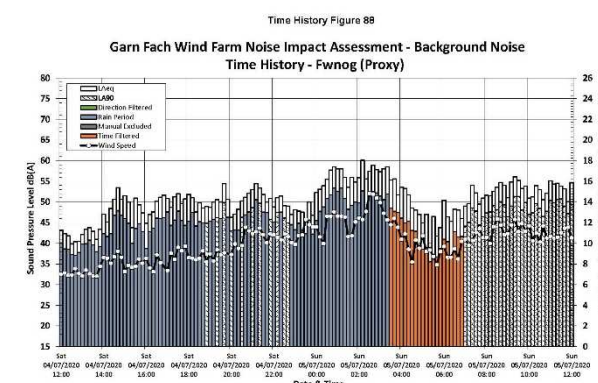
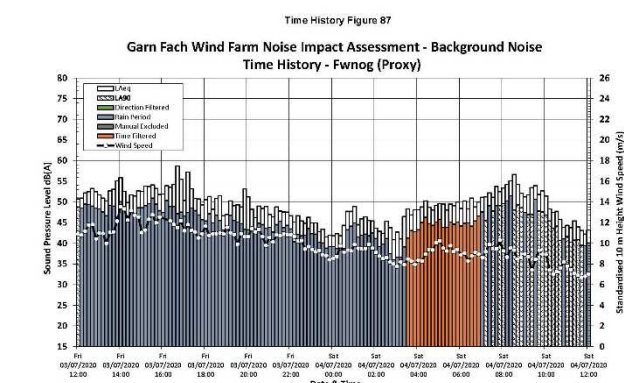
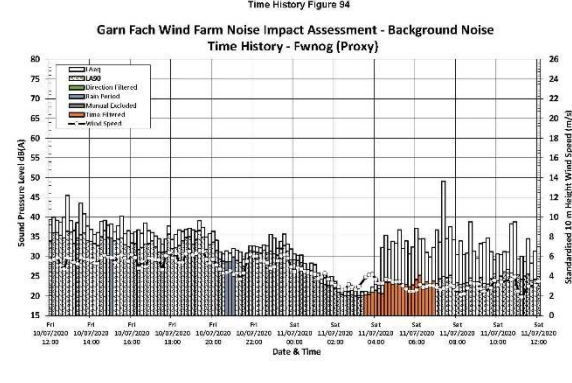
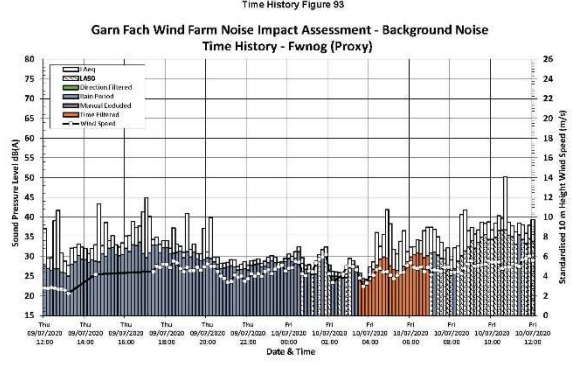
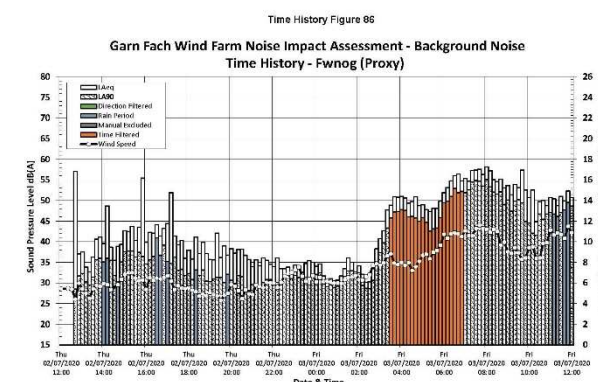
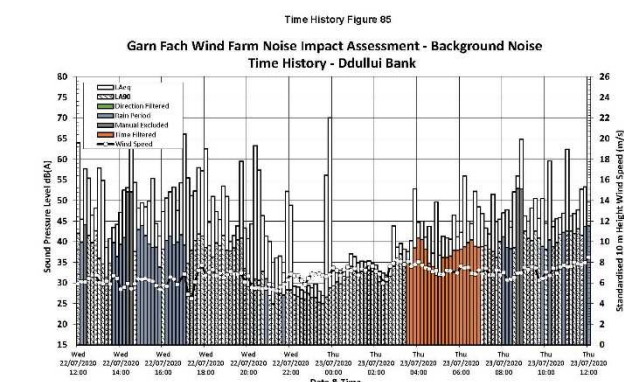
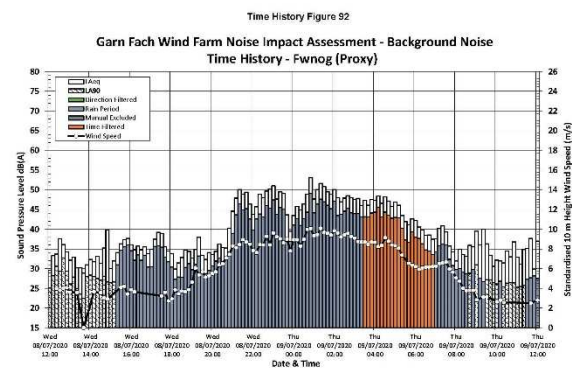
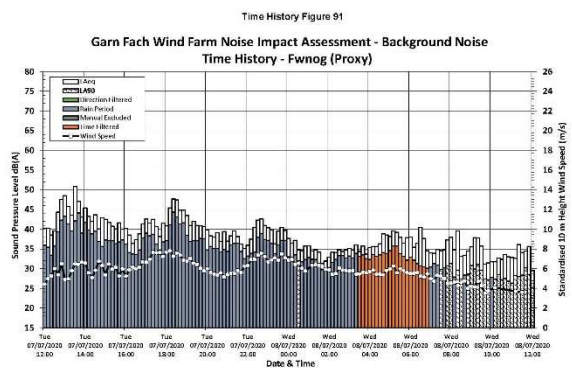
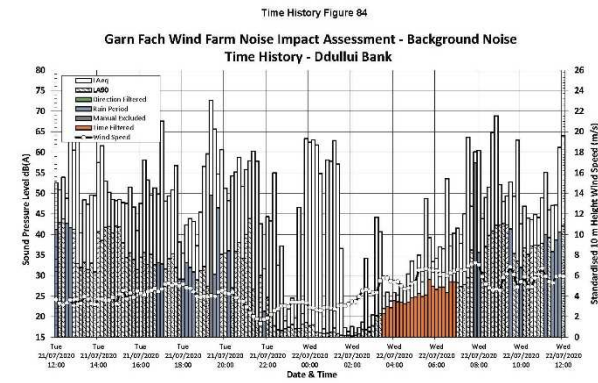
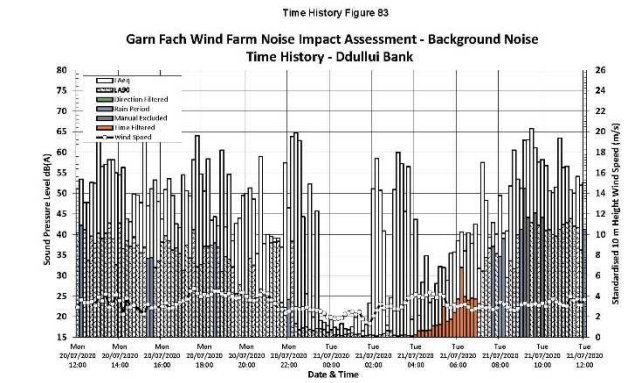
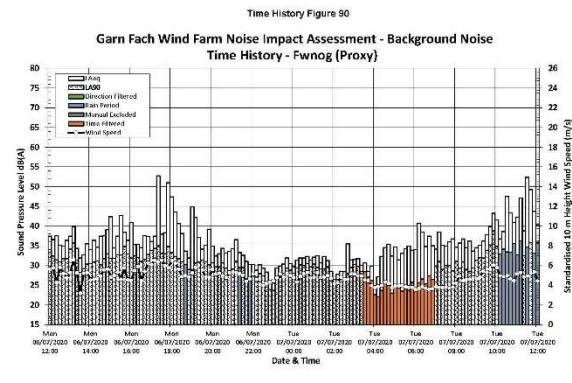
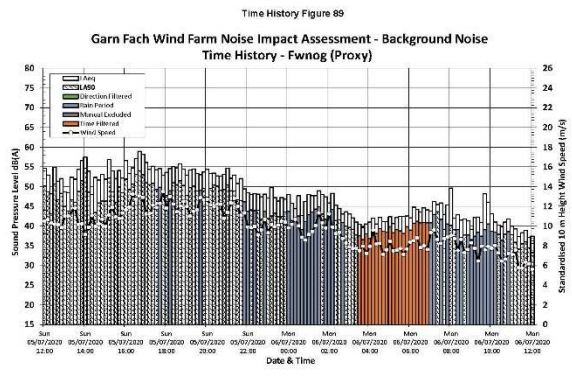
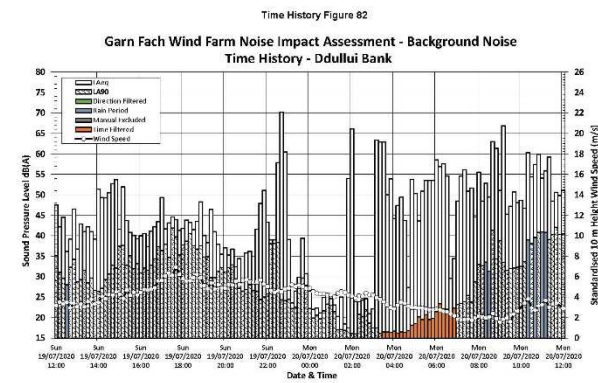
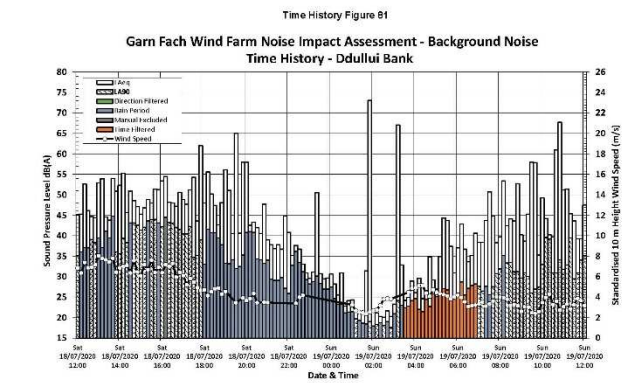


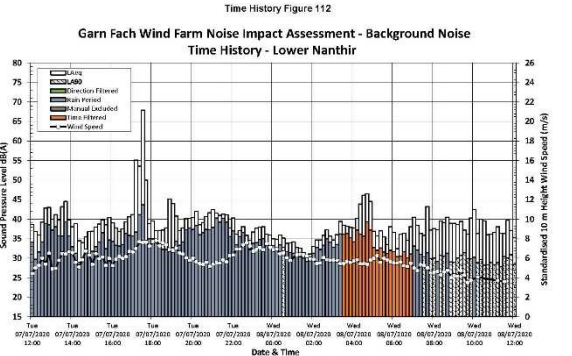
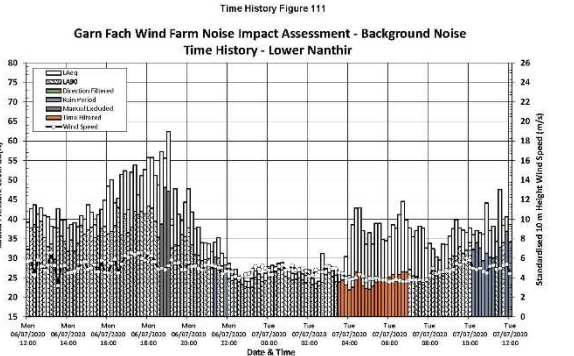
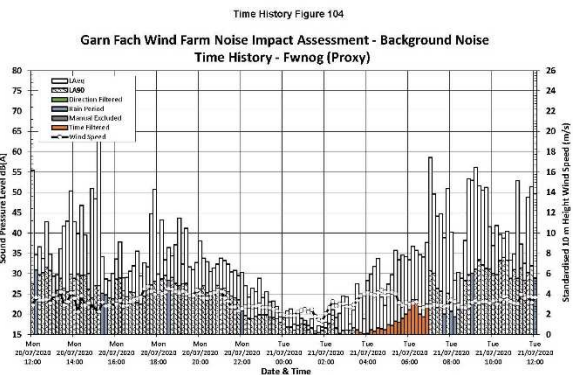
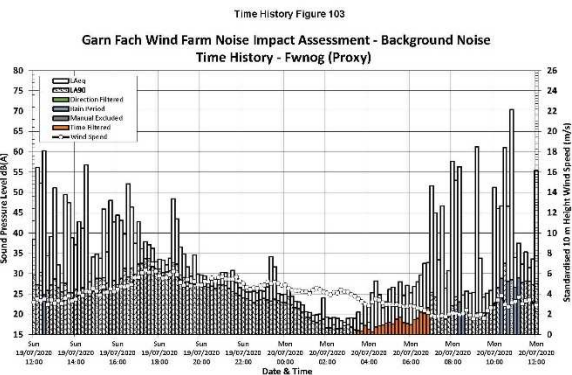
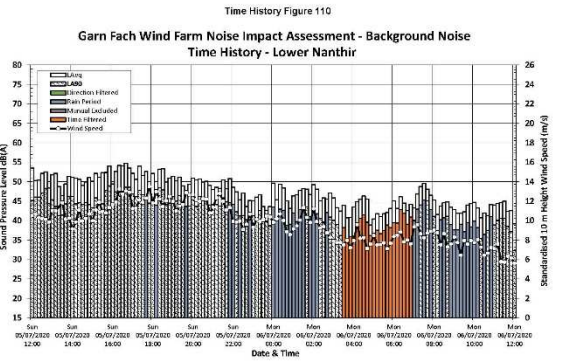
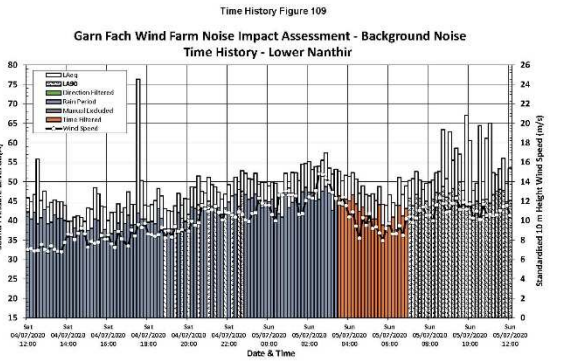
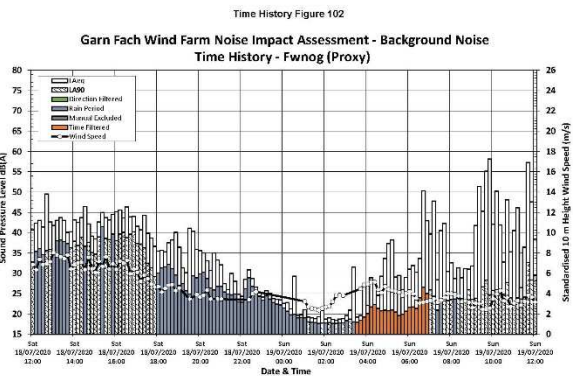
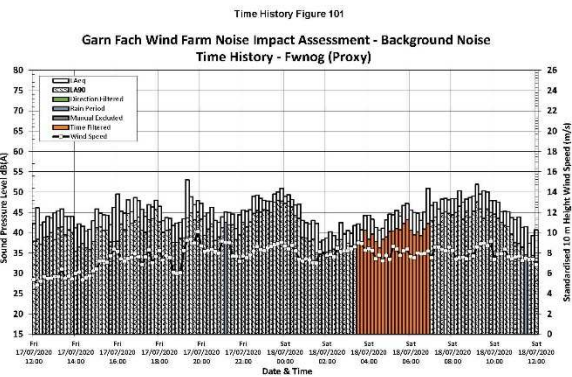
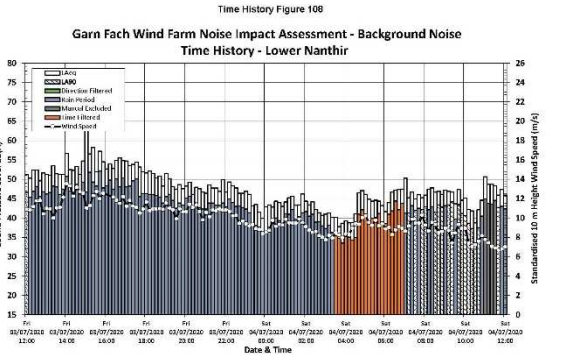
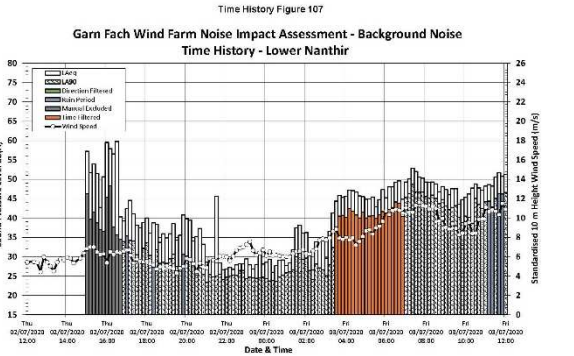
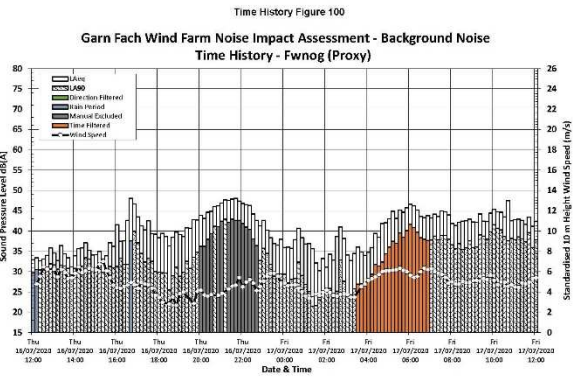
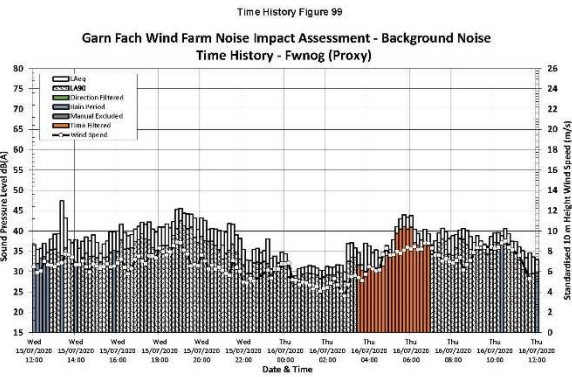
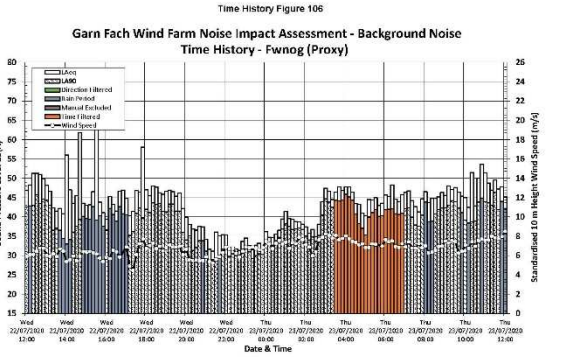
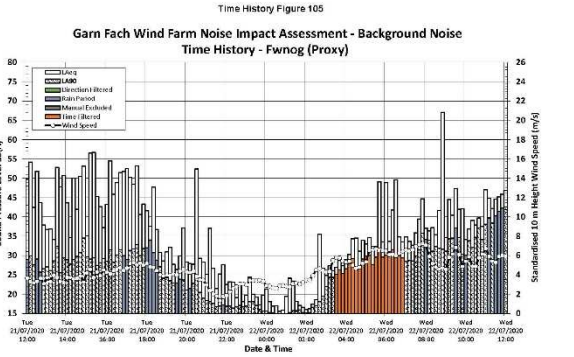
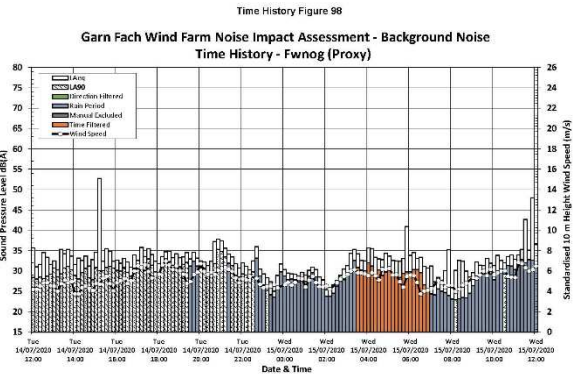
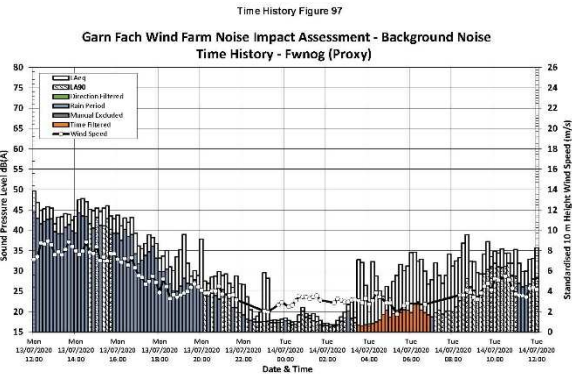


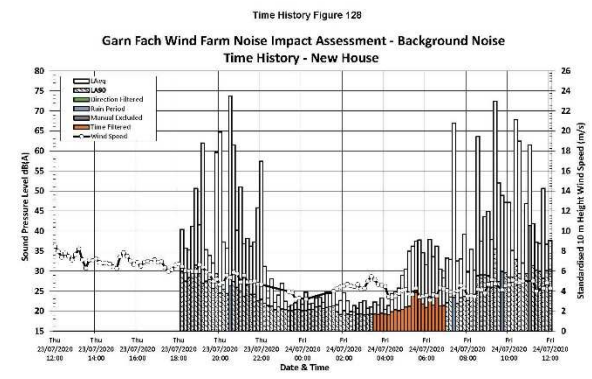
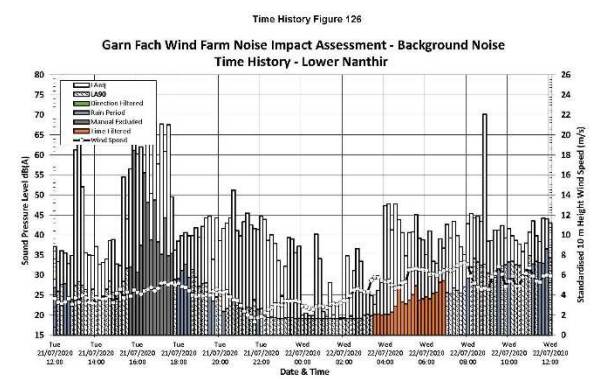
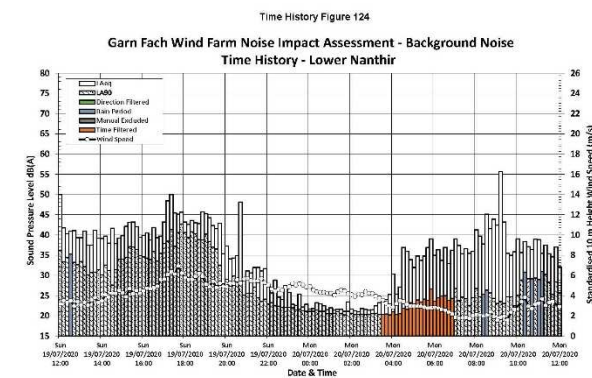
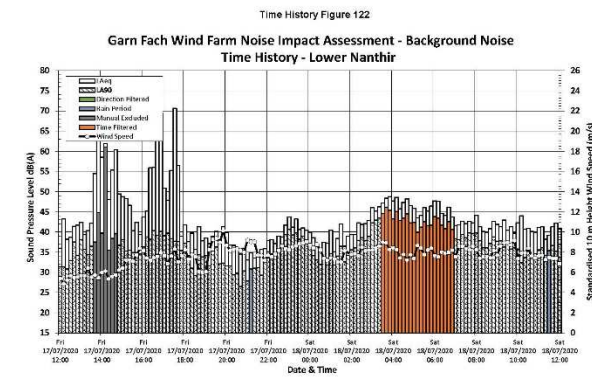


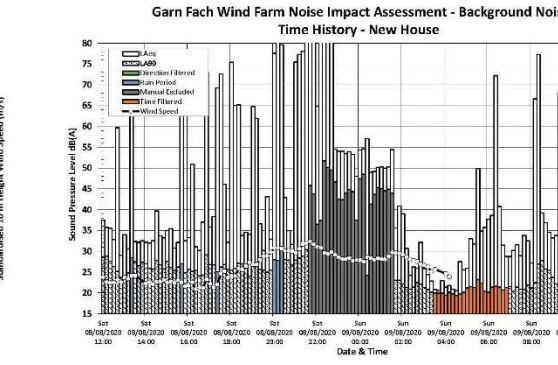
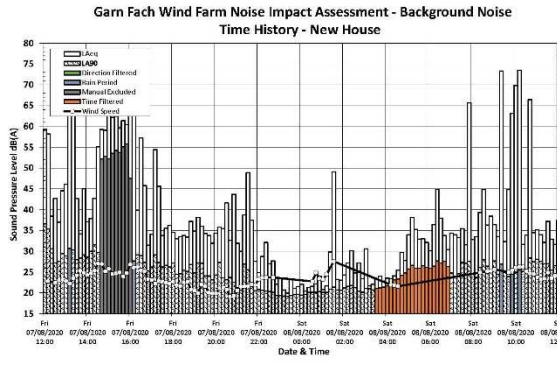
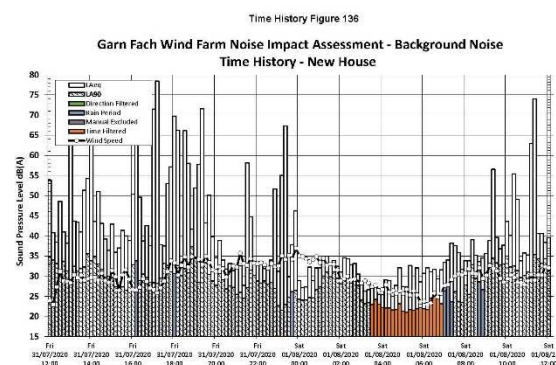
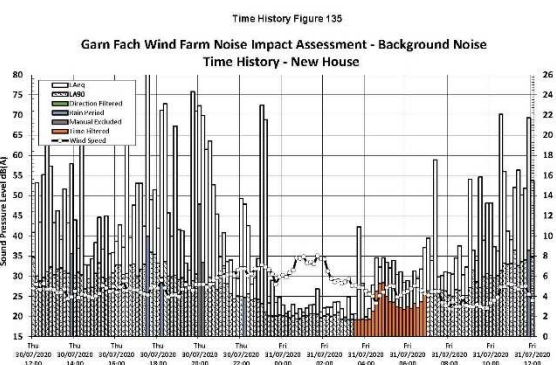
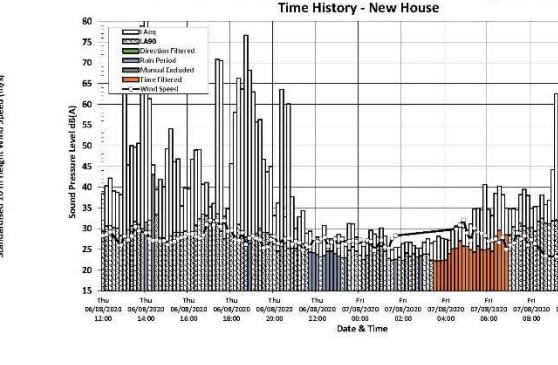
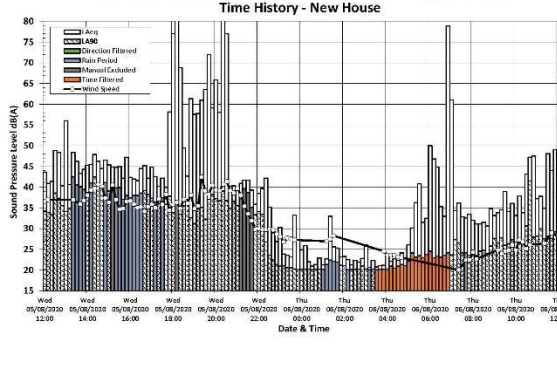
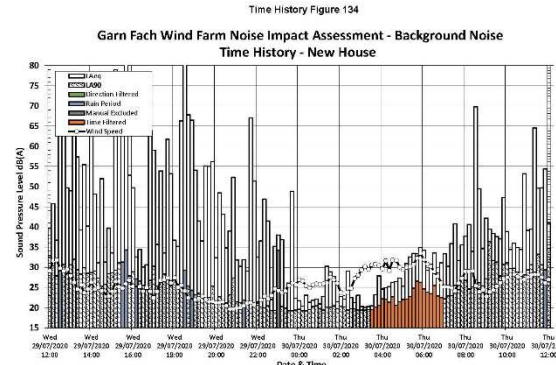
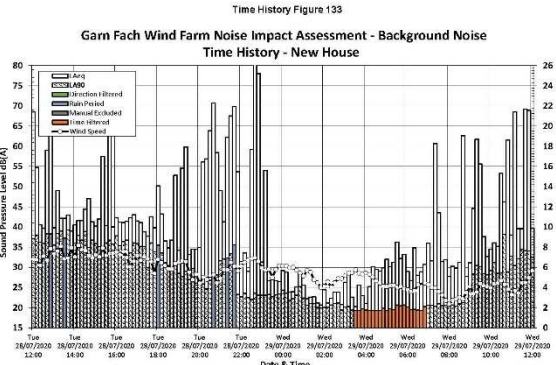
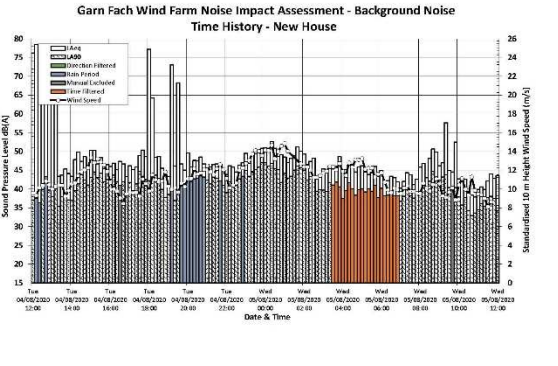
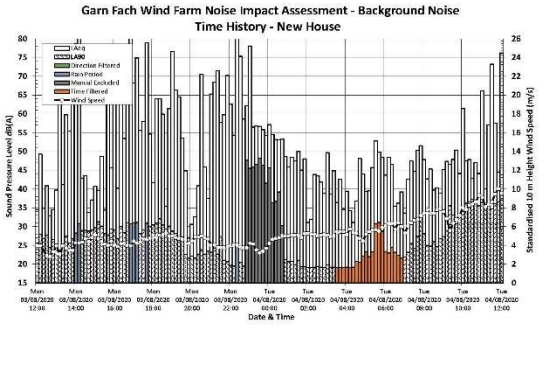
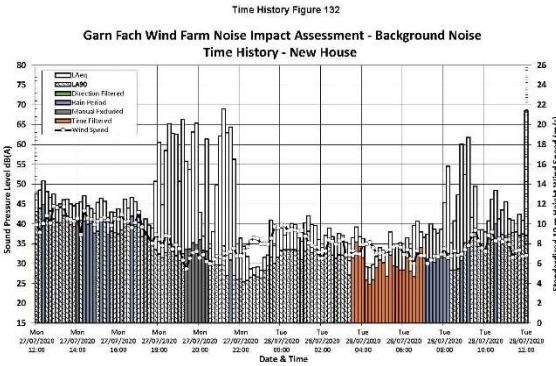
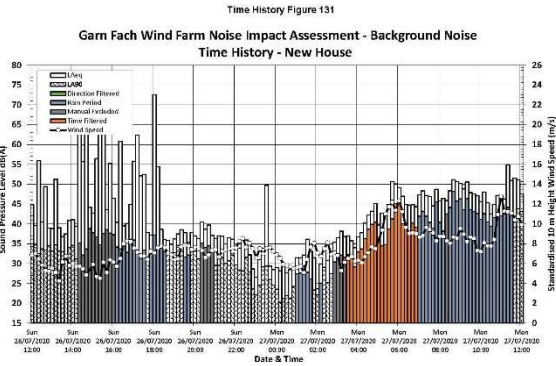
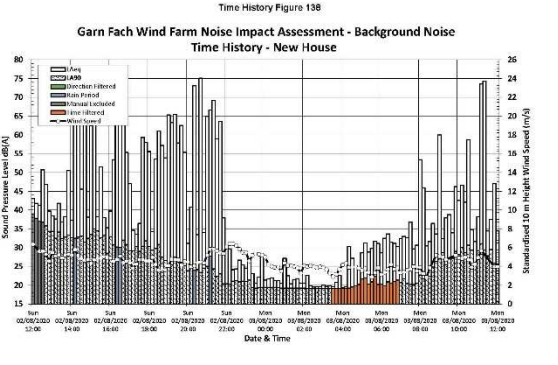
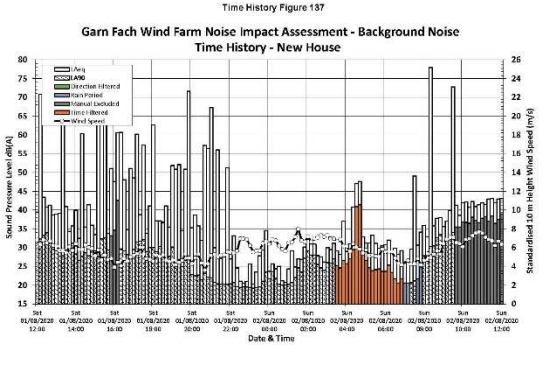
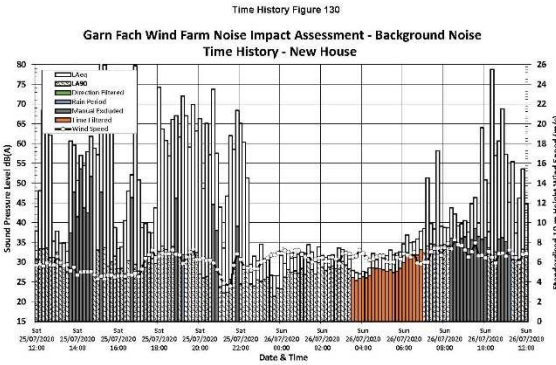
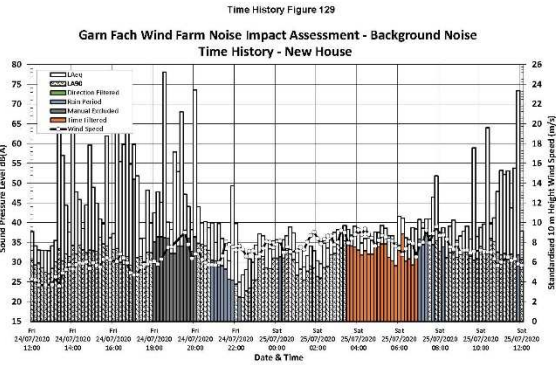


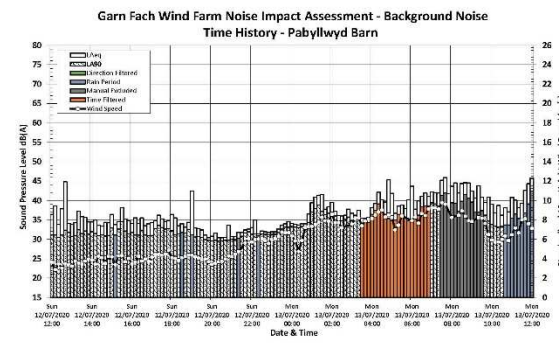
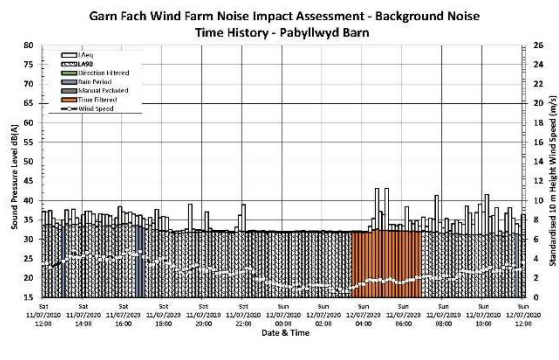
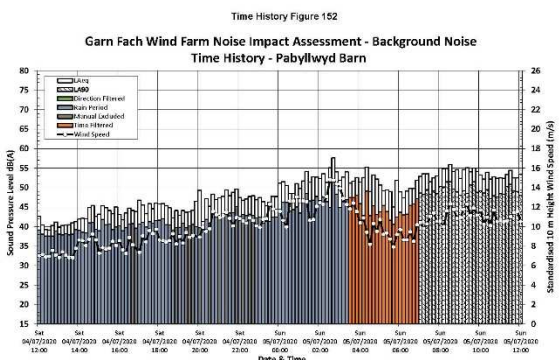
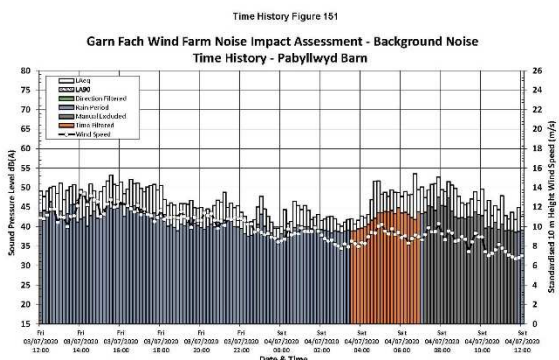
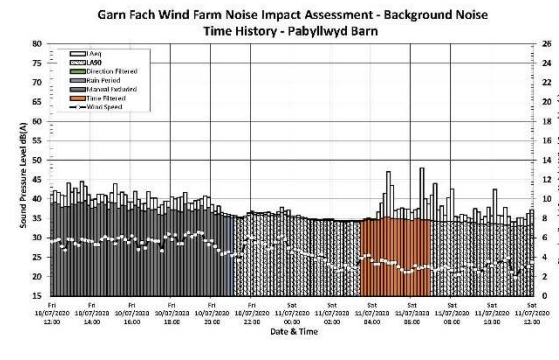
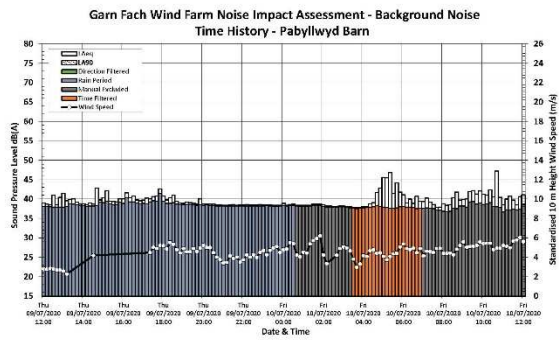
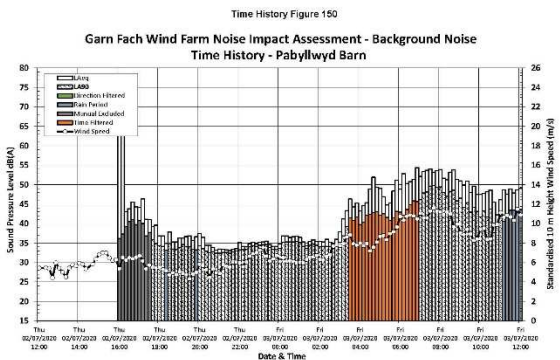
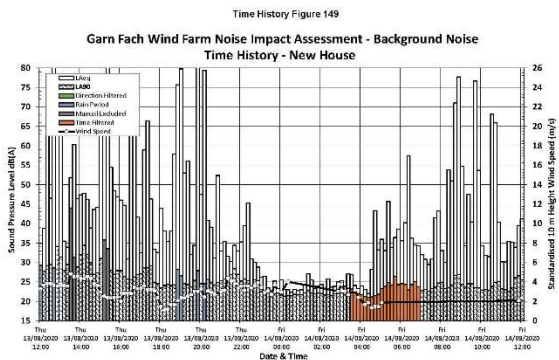
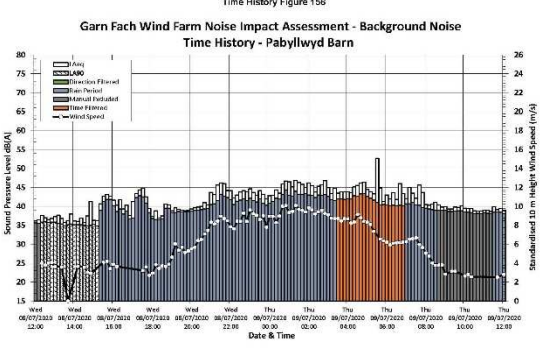
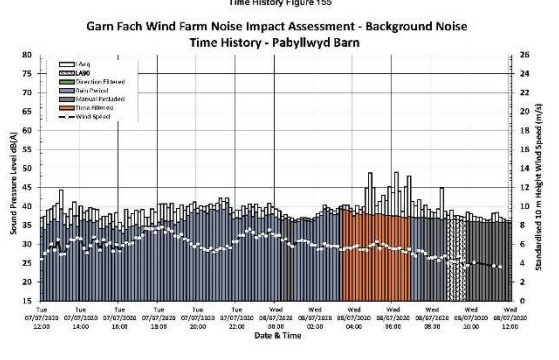
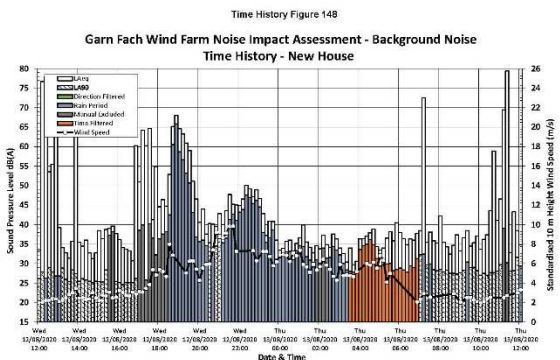
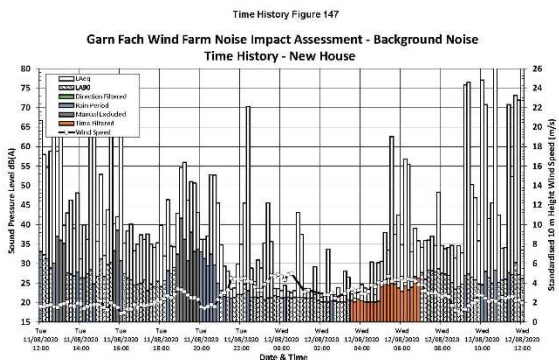
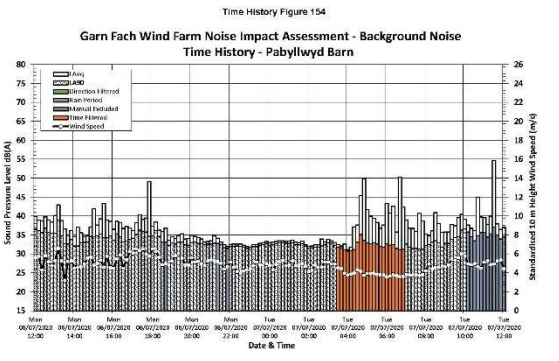
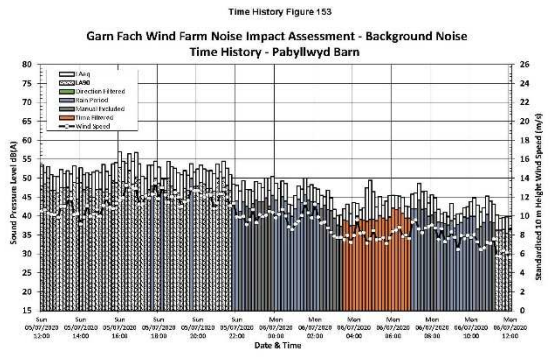
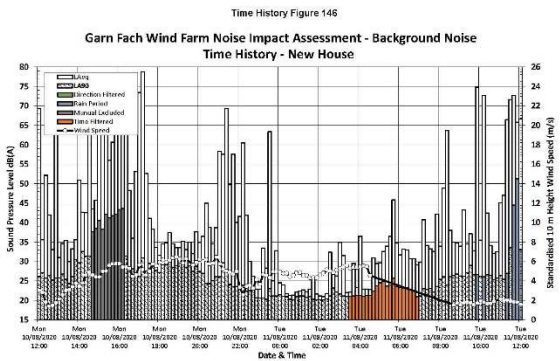
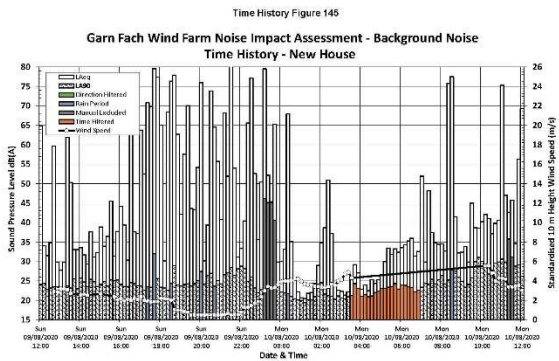


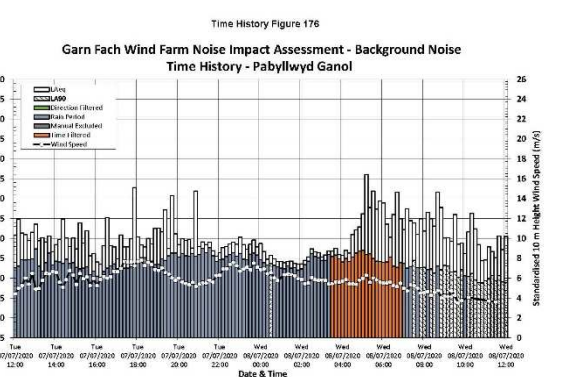
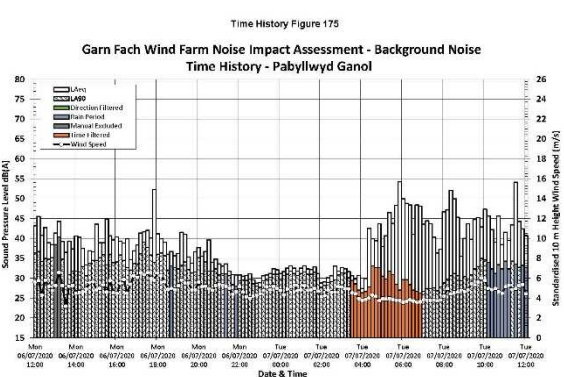
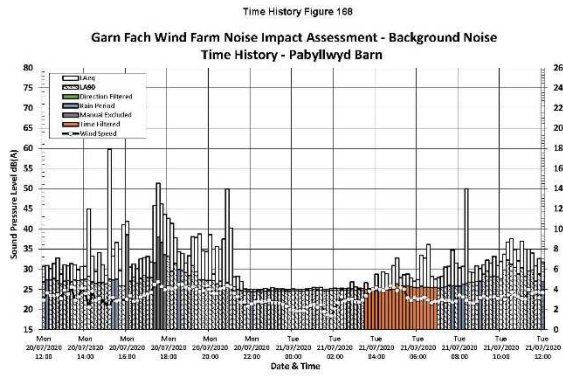
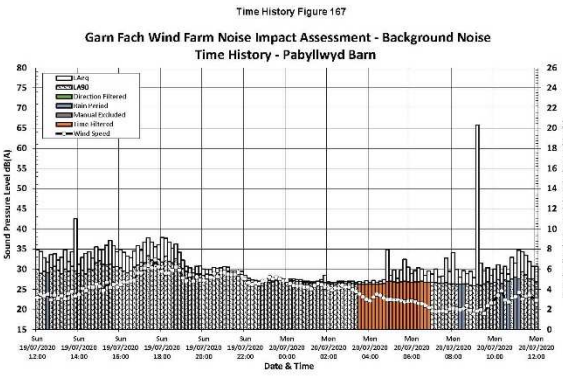
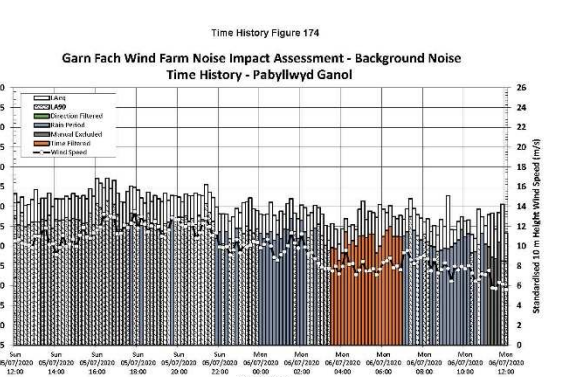
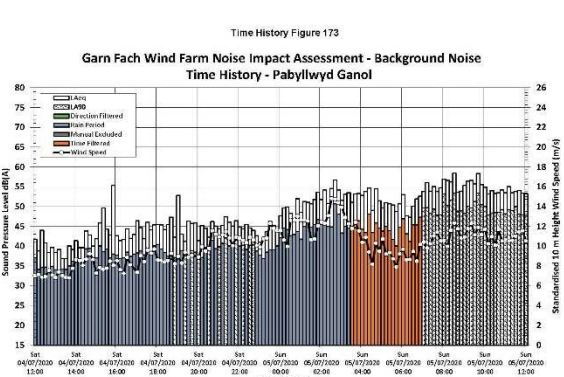
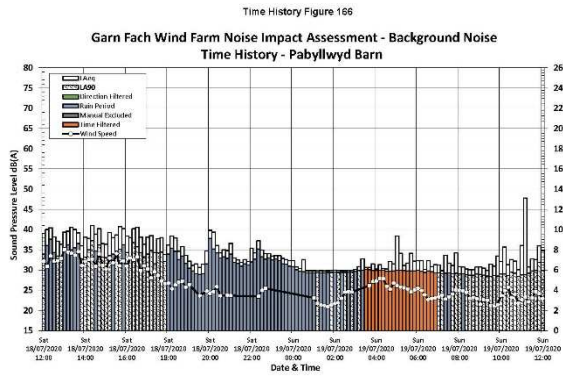
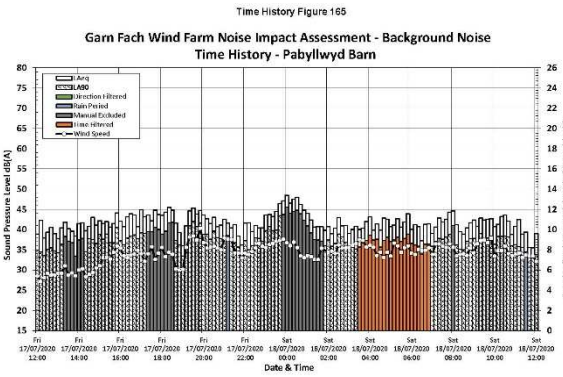
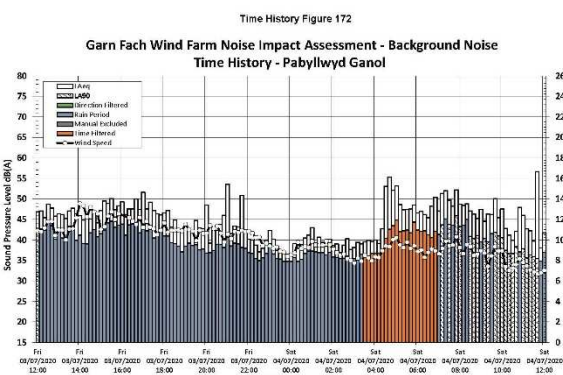
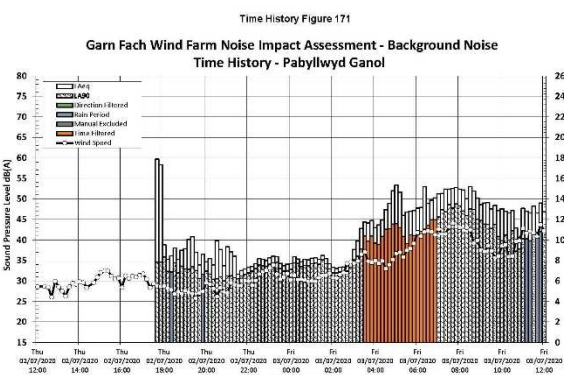
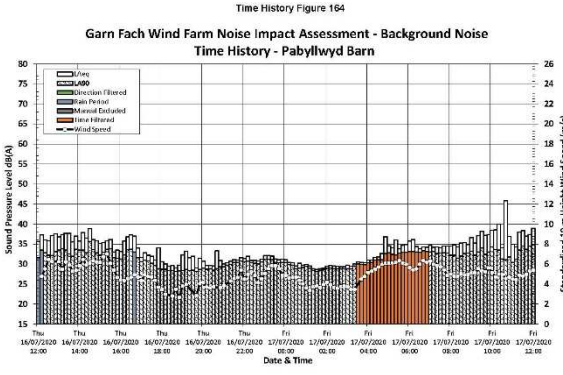
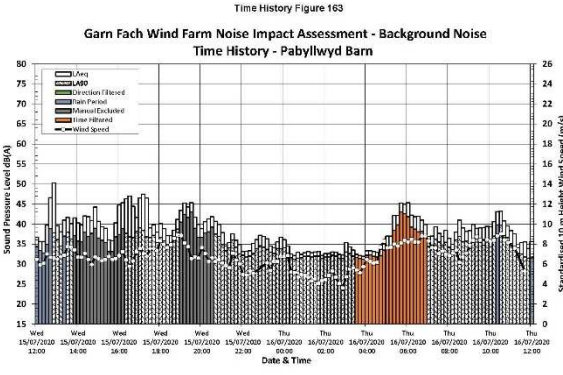
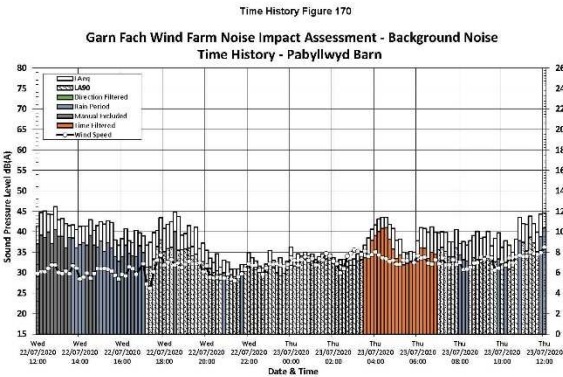
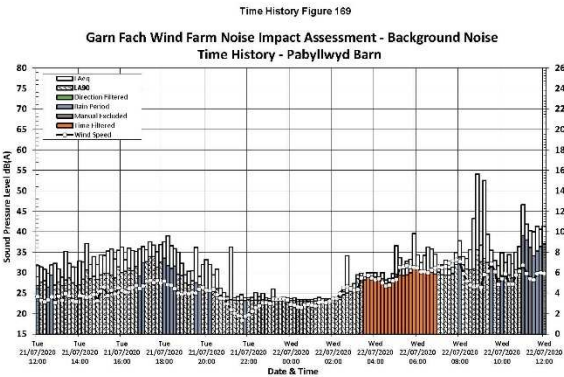
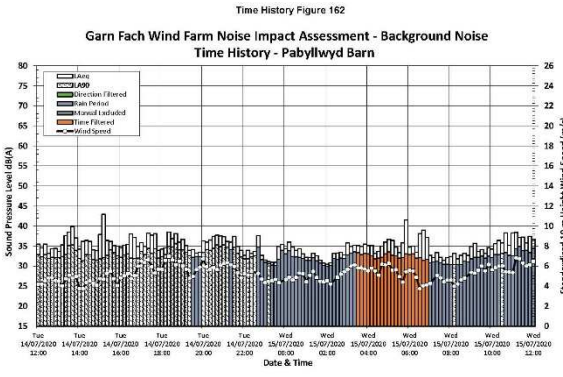
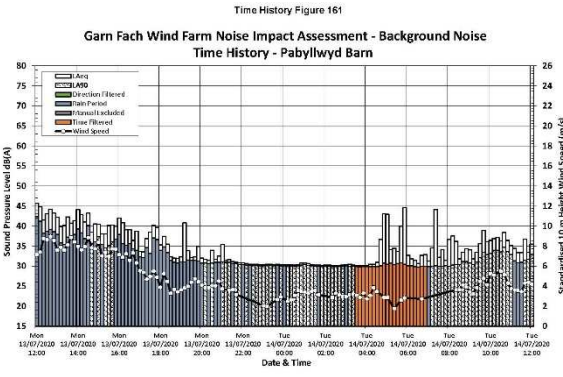


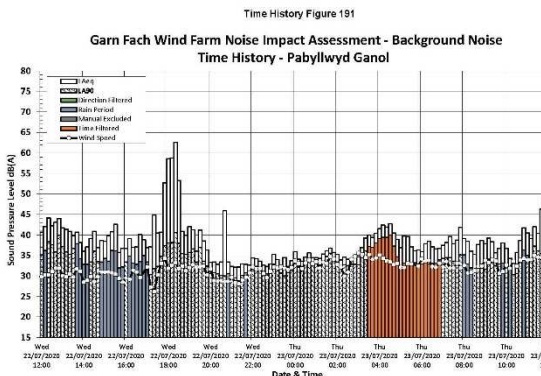
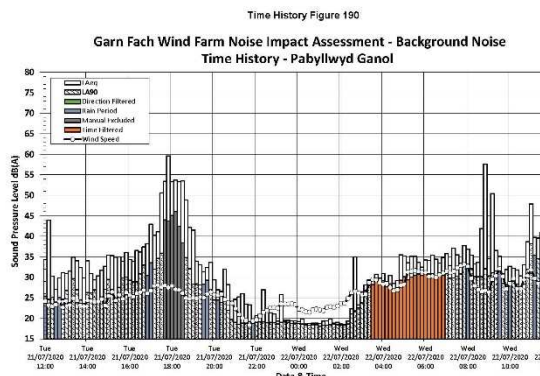
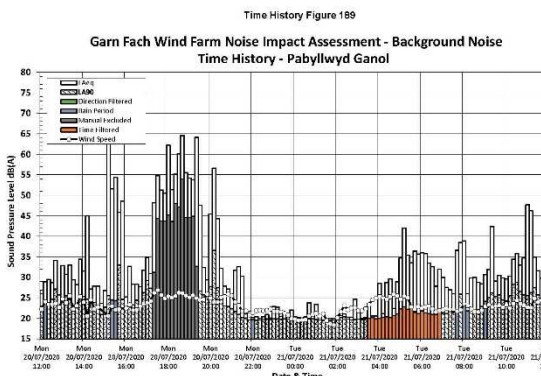
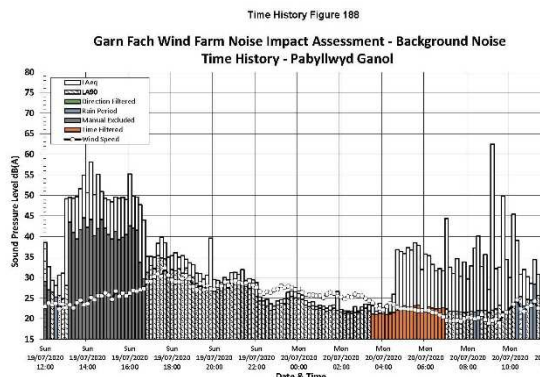
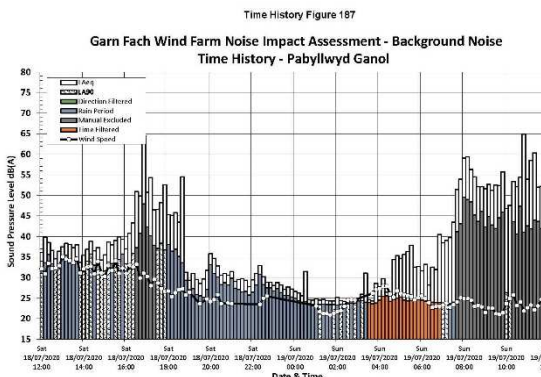
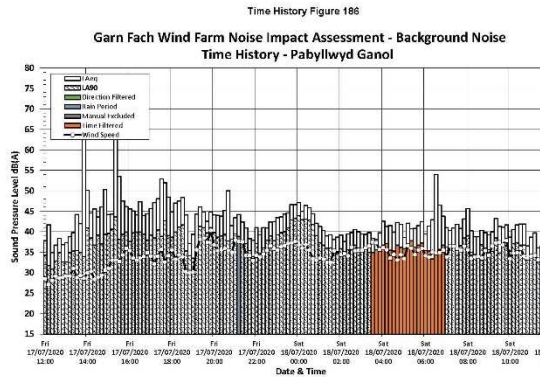
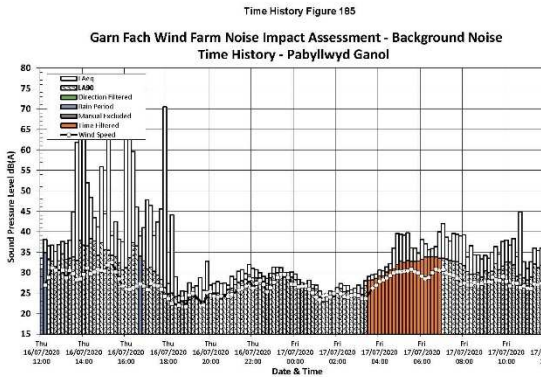
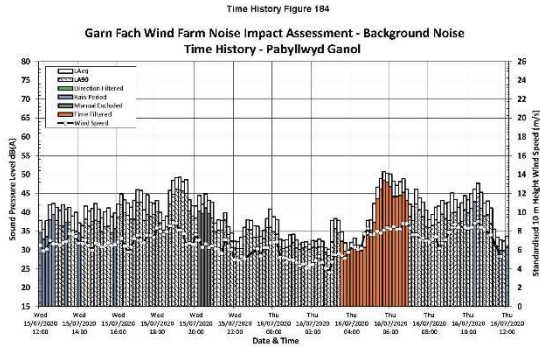
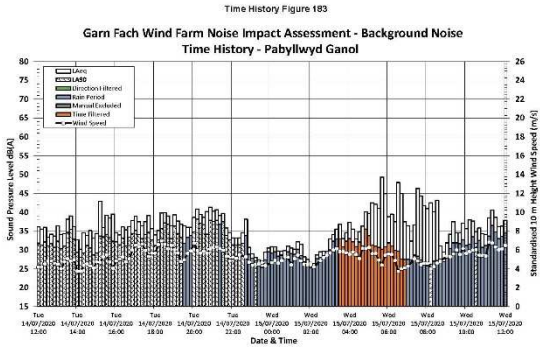
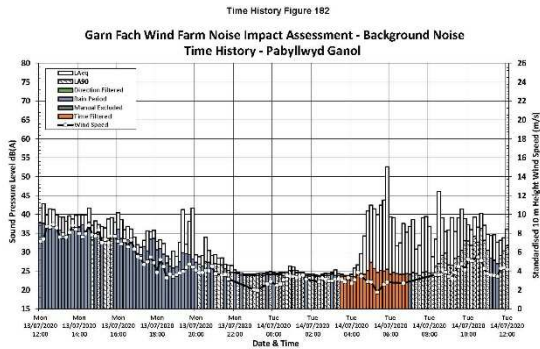
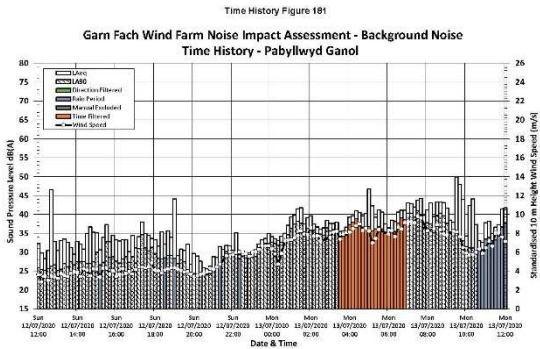
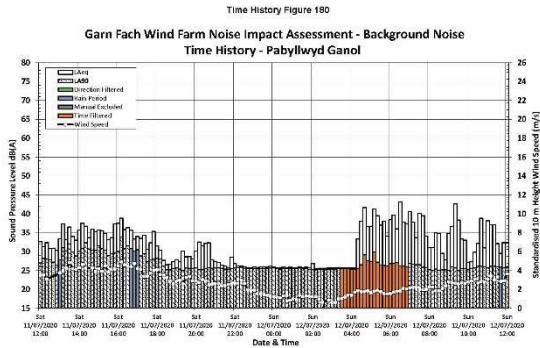
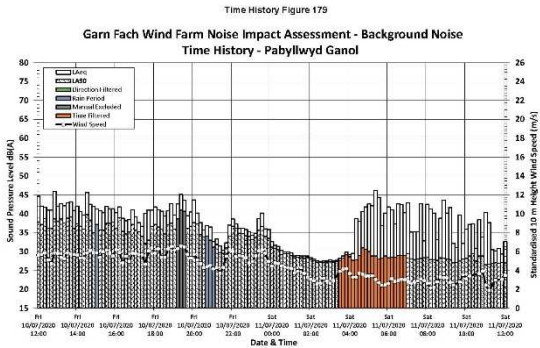
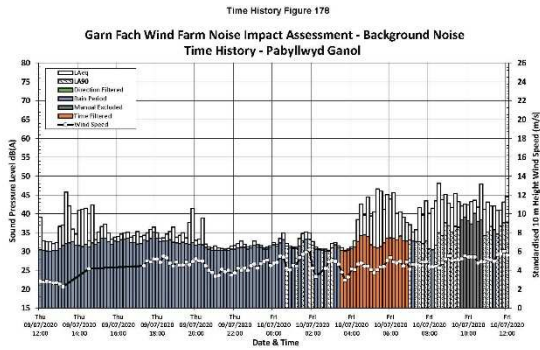
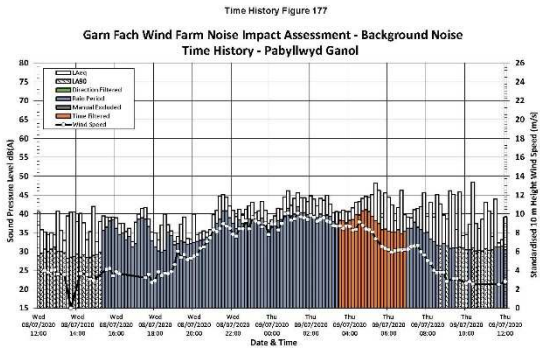






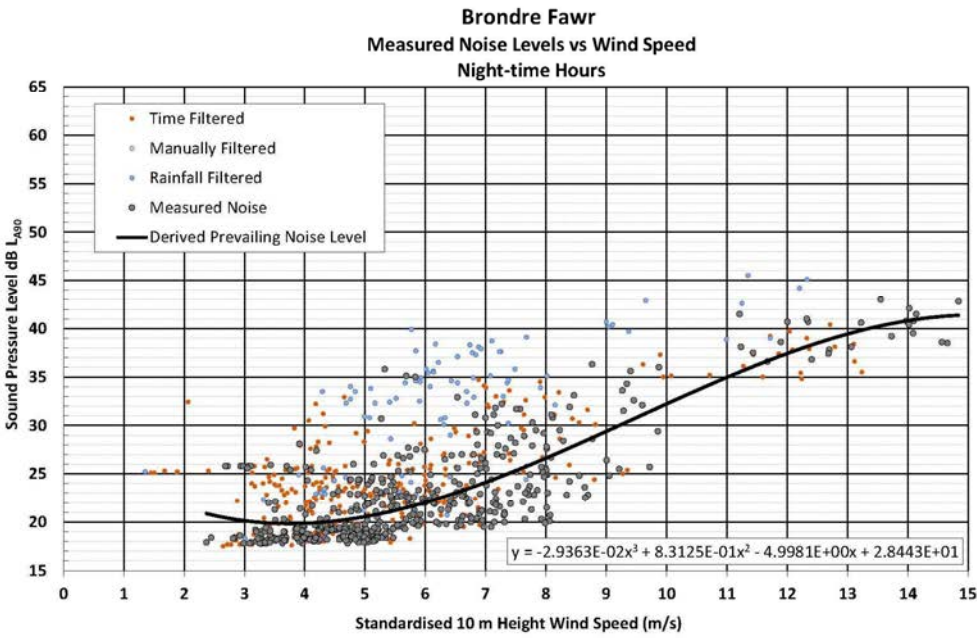




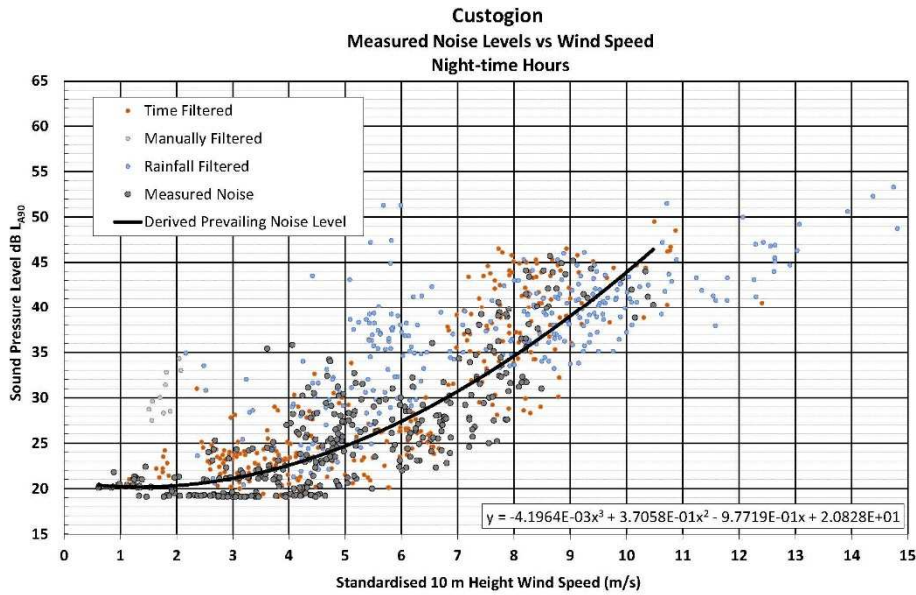


7.3 Background Noise

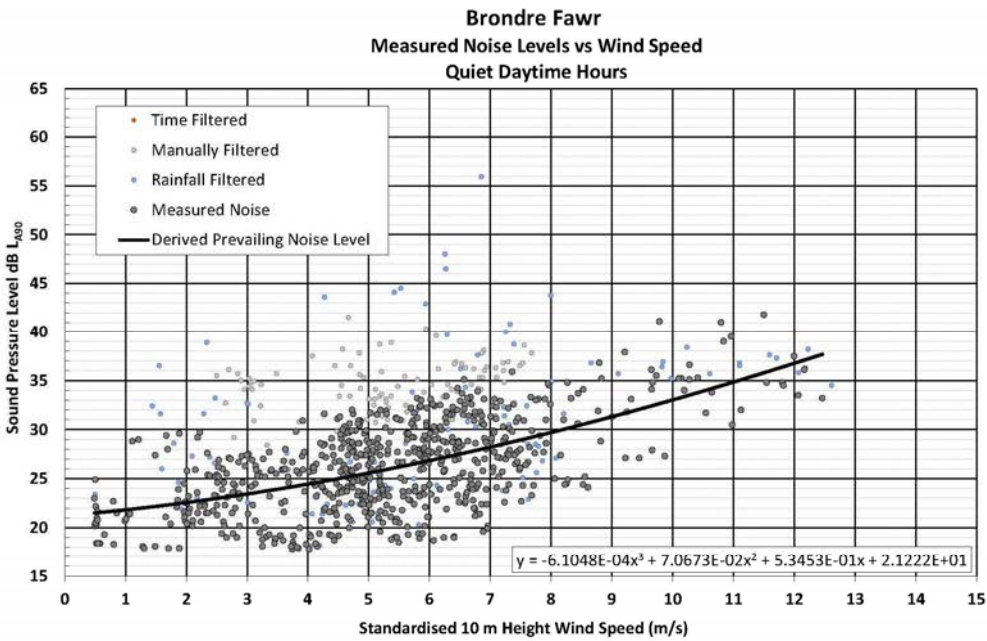
Regression Figure 1



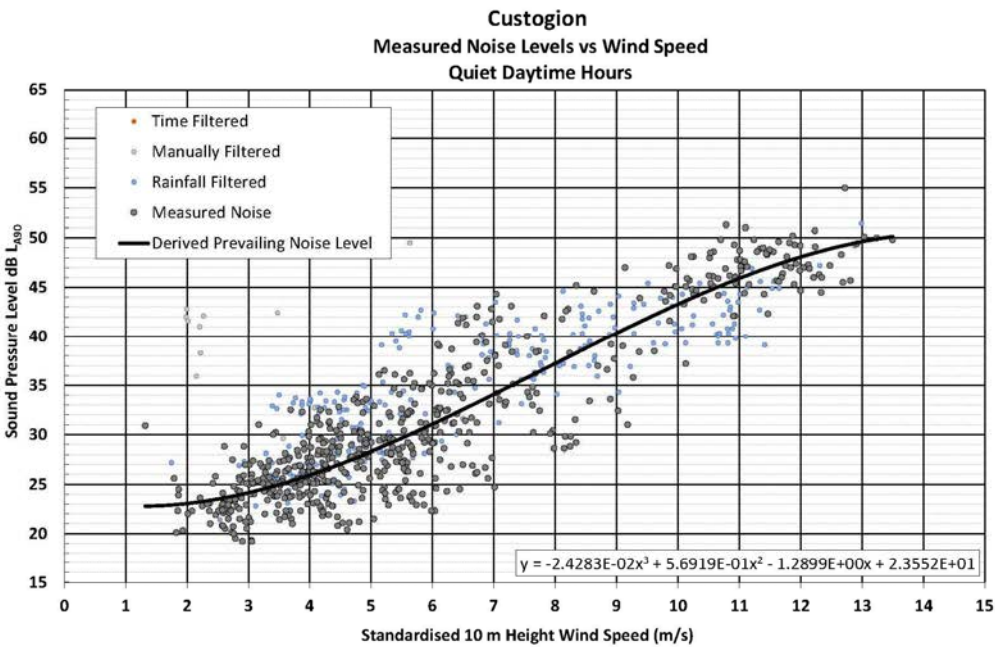
Regression Figure 3



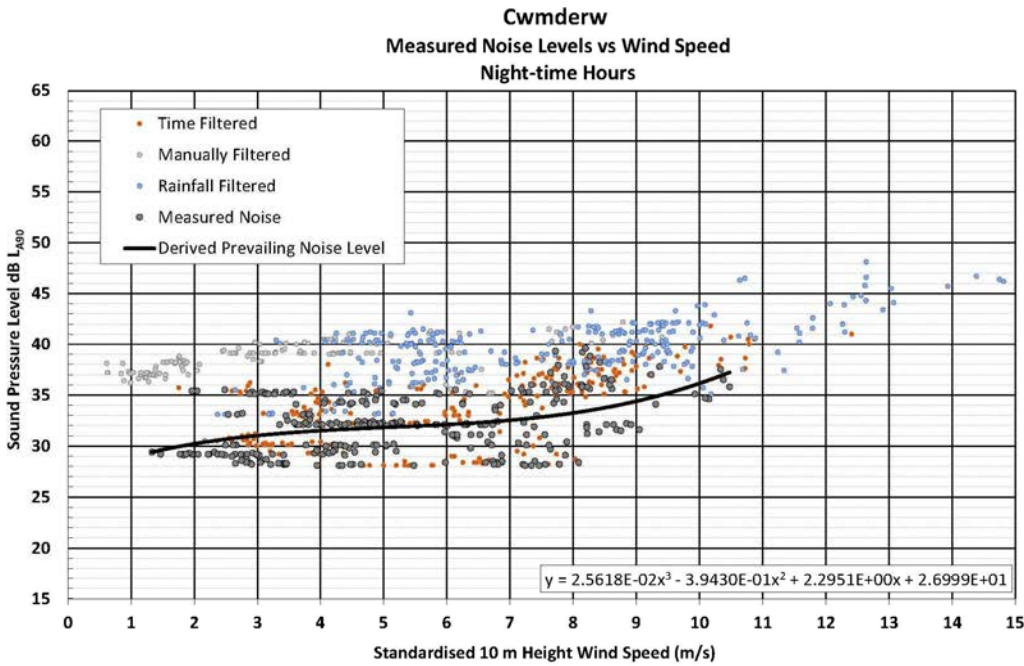
Regression Figure 2



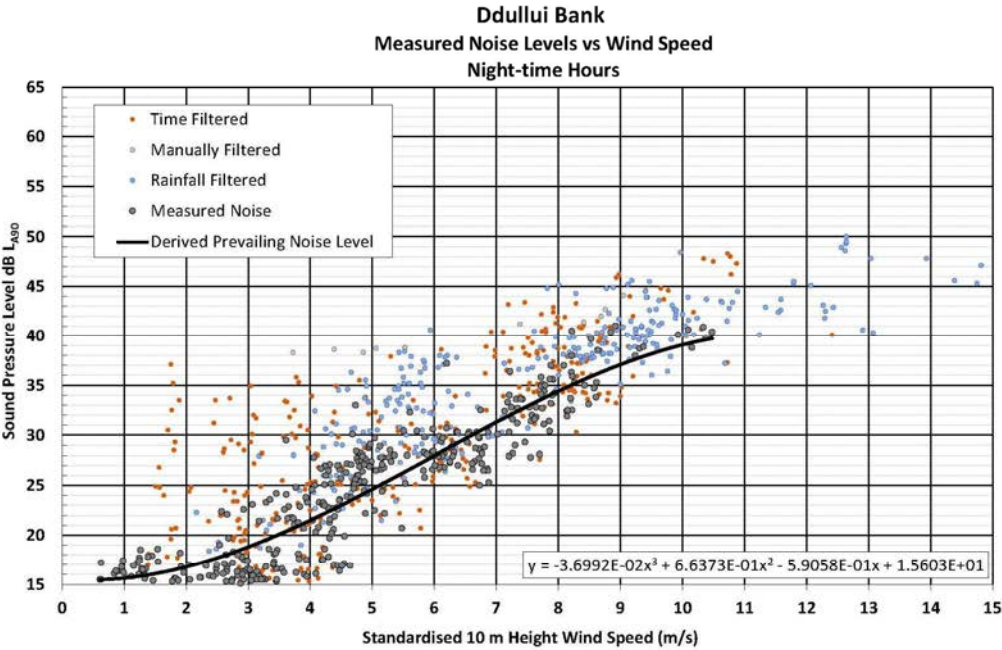
Regression Figure 4



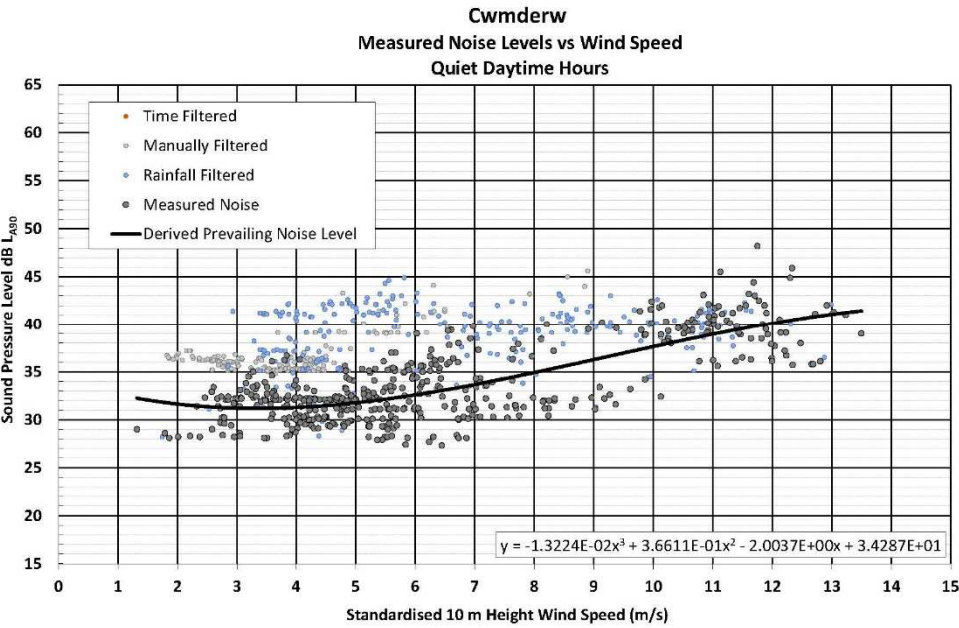
Regression Figure 5



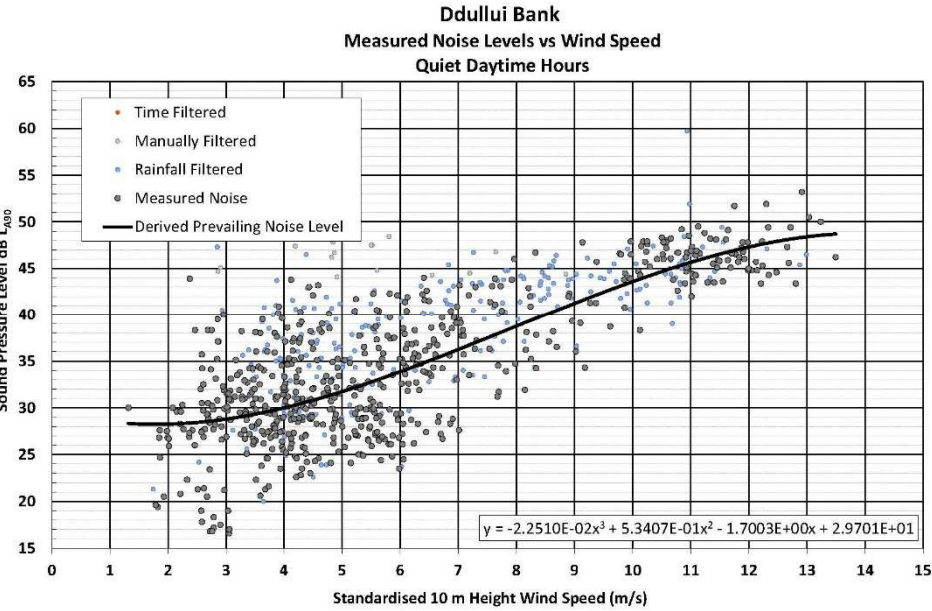
Regression Figure 7



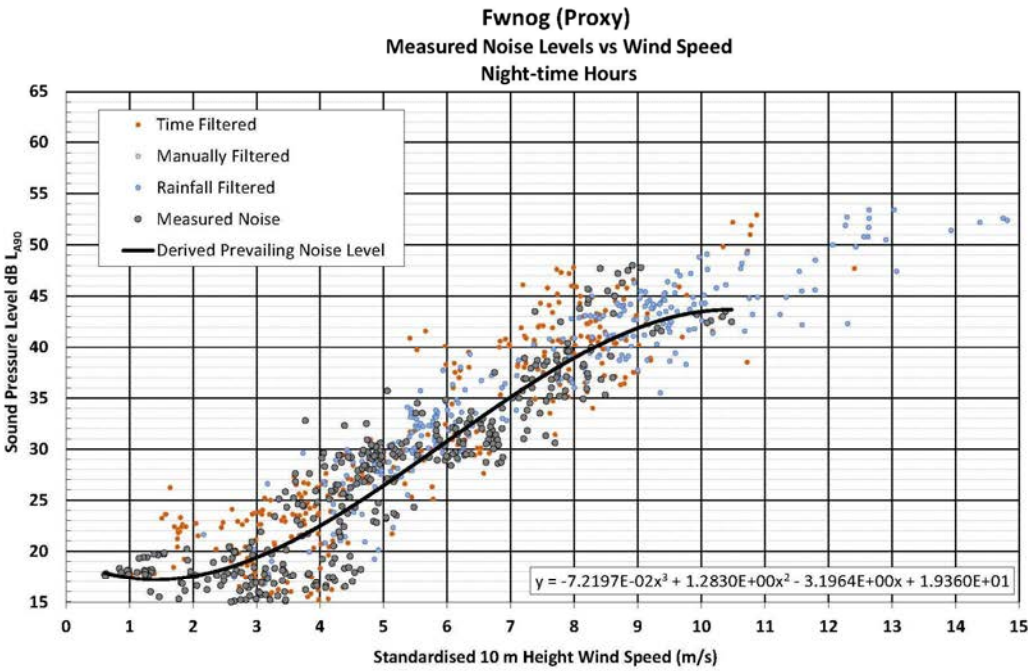
Regression Figure 6



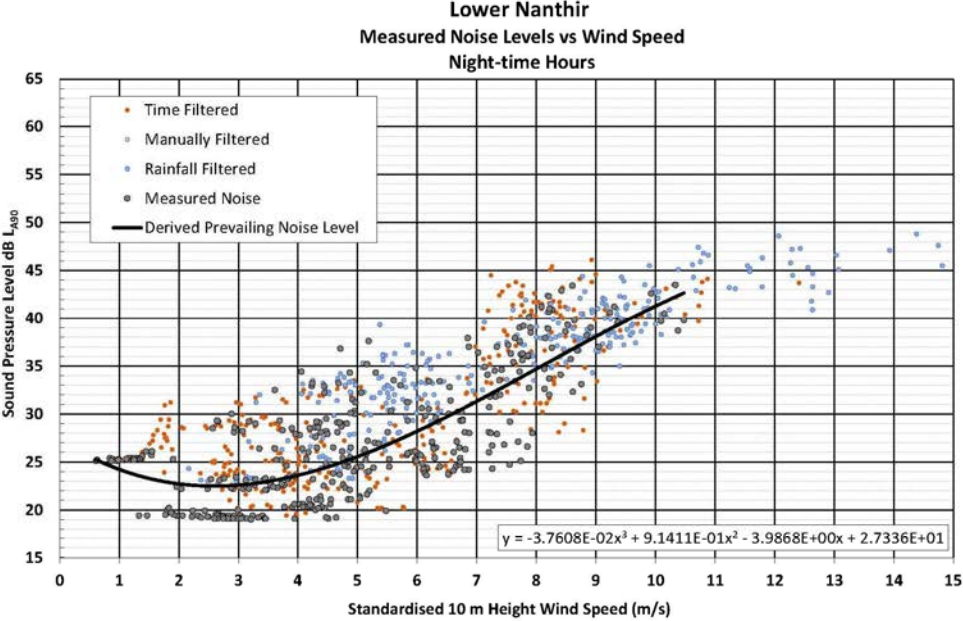
Regression Figure 8



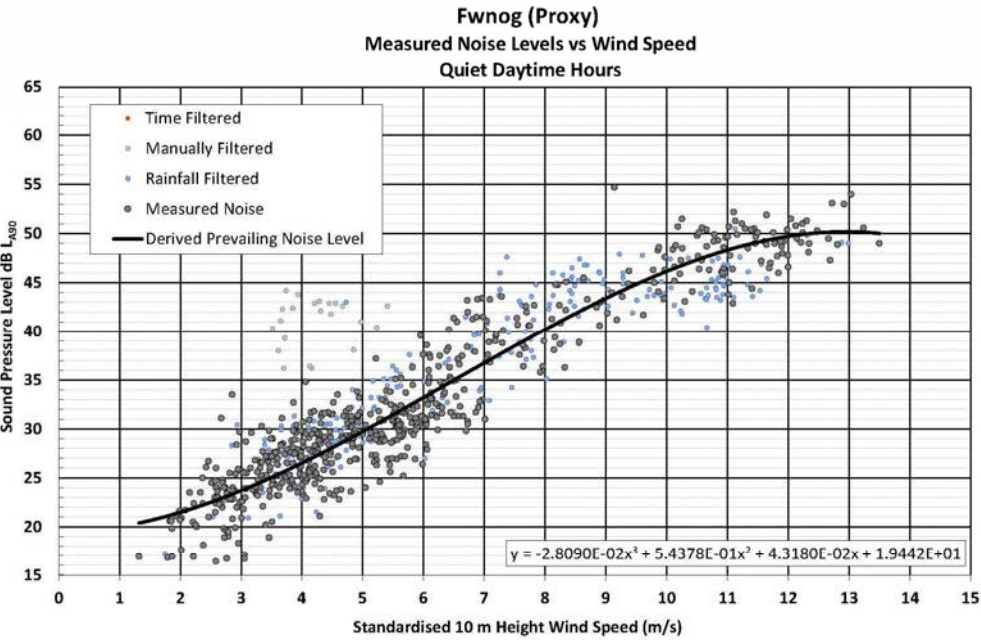
Regression Figure 9



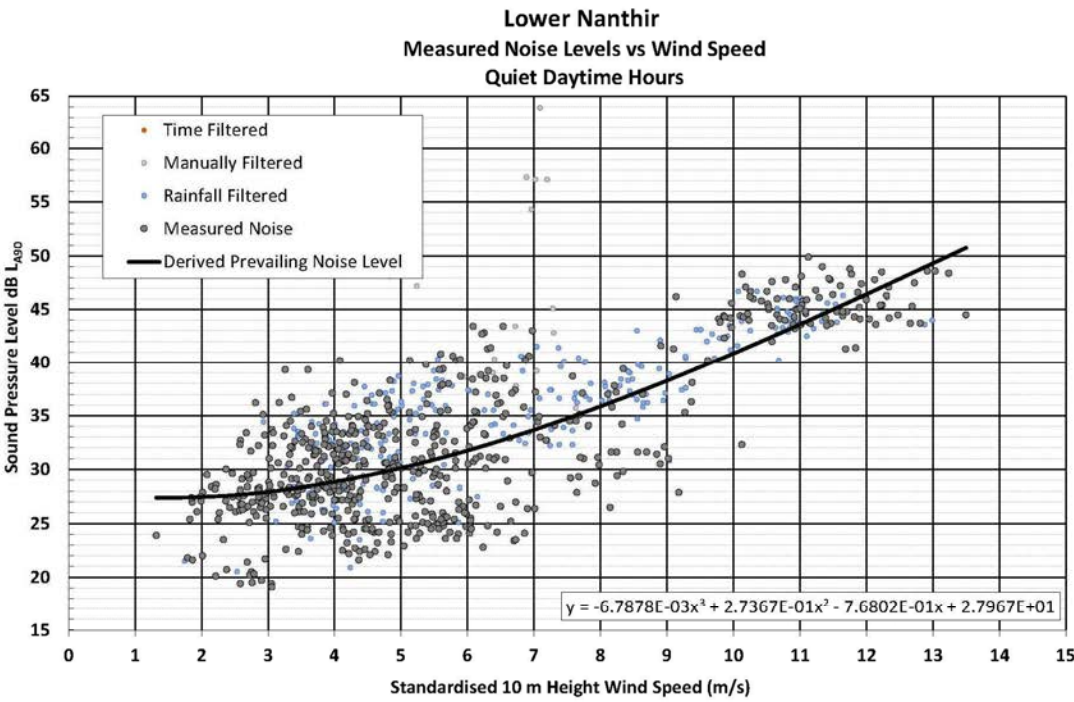
Regression Figure 11



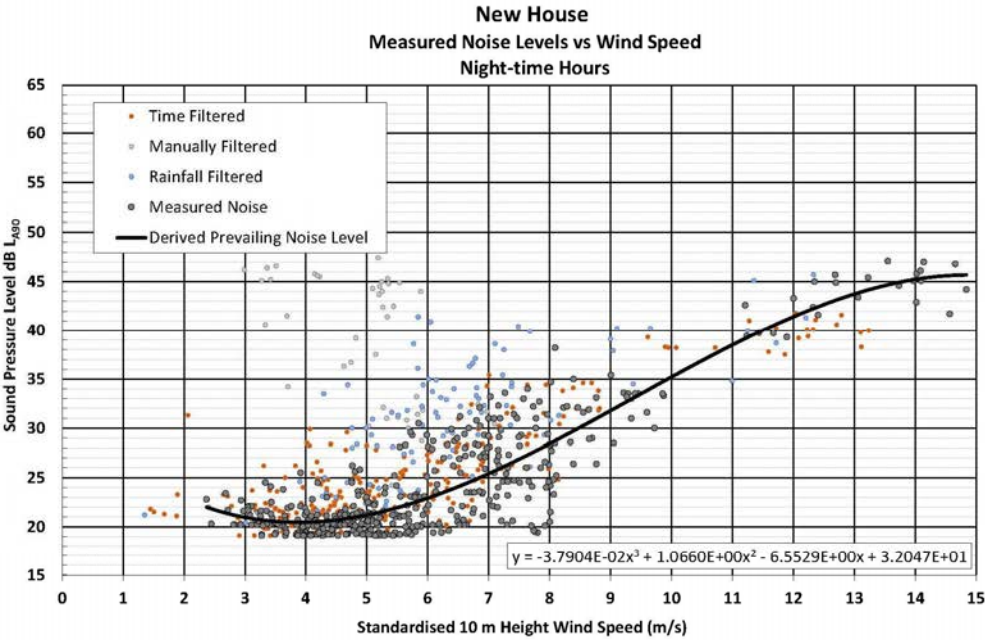
Regression Figure 10



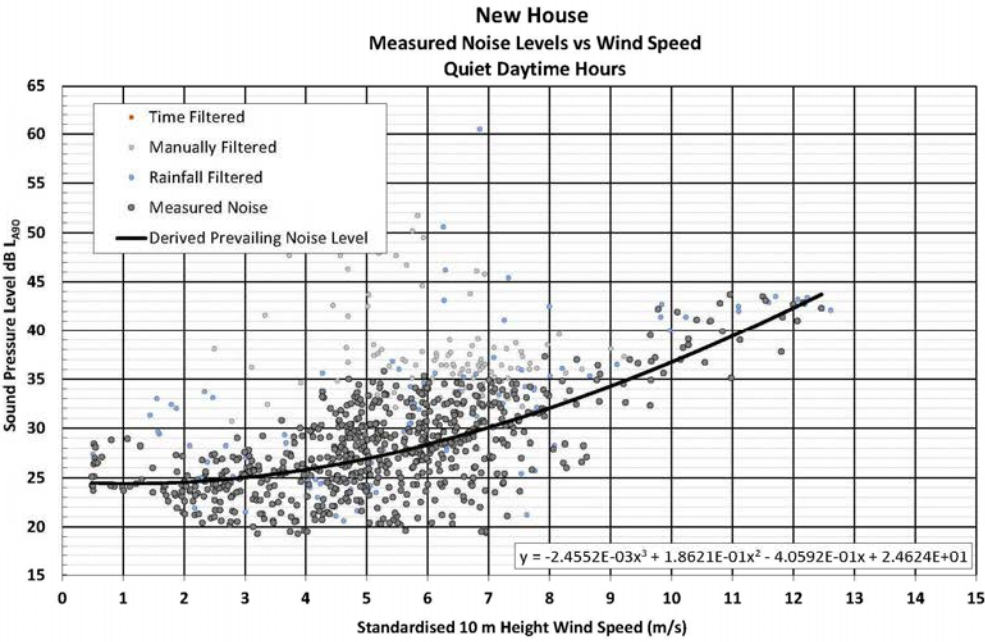
Regression Figure 12



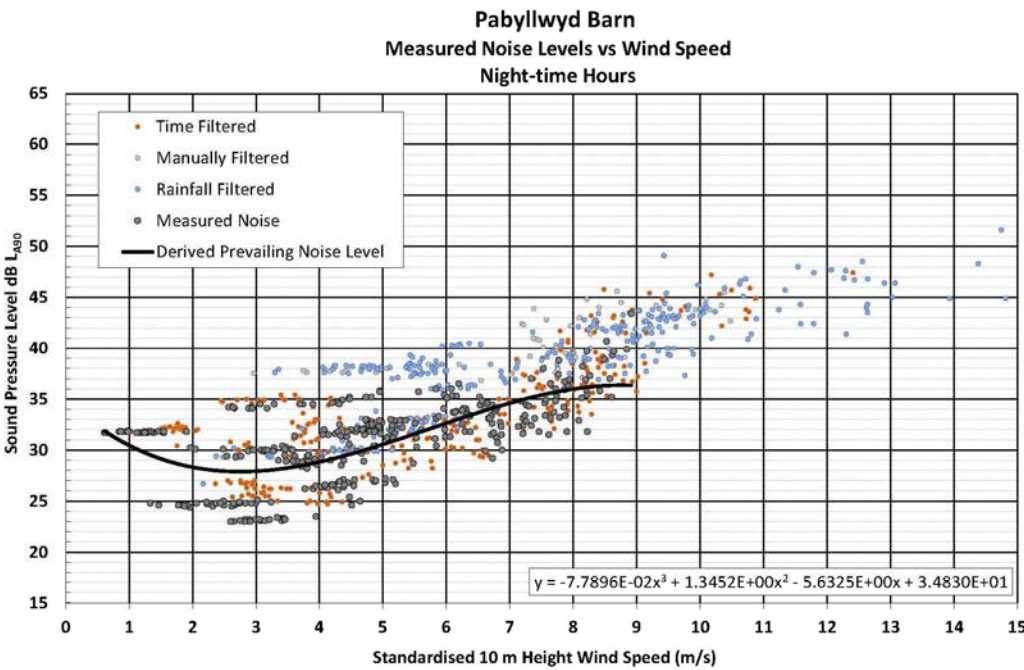
Regression Figure 13



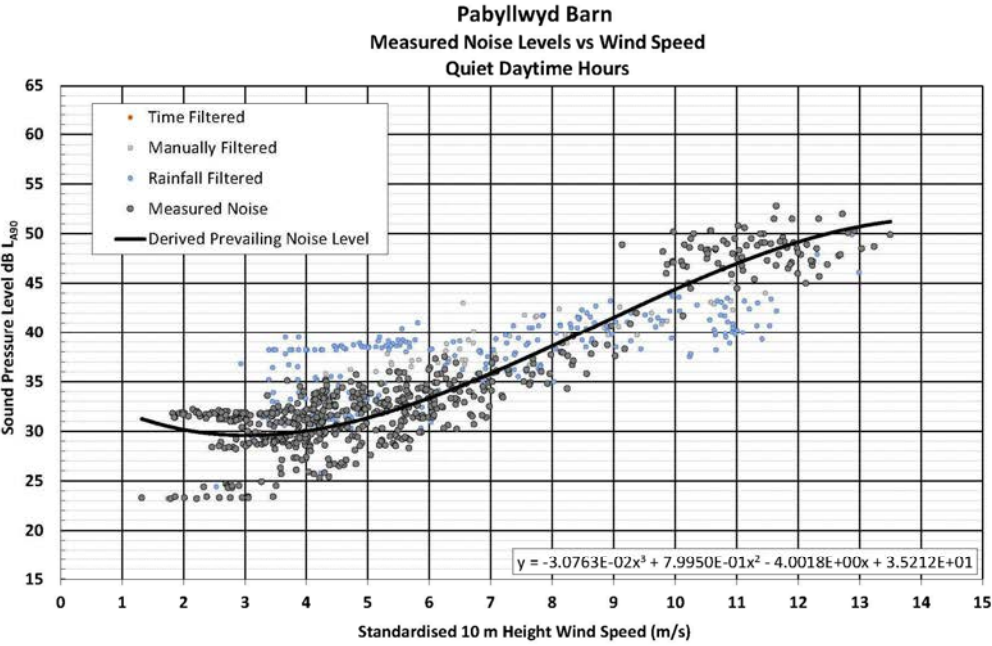
Regression Figure 14

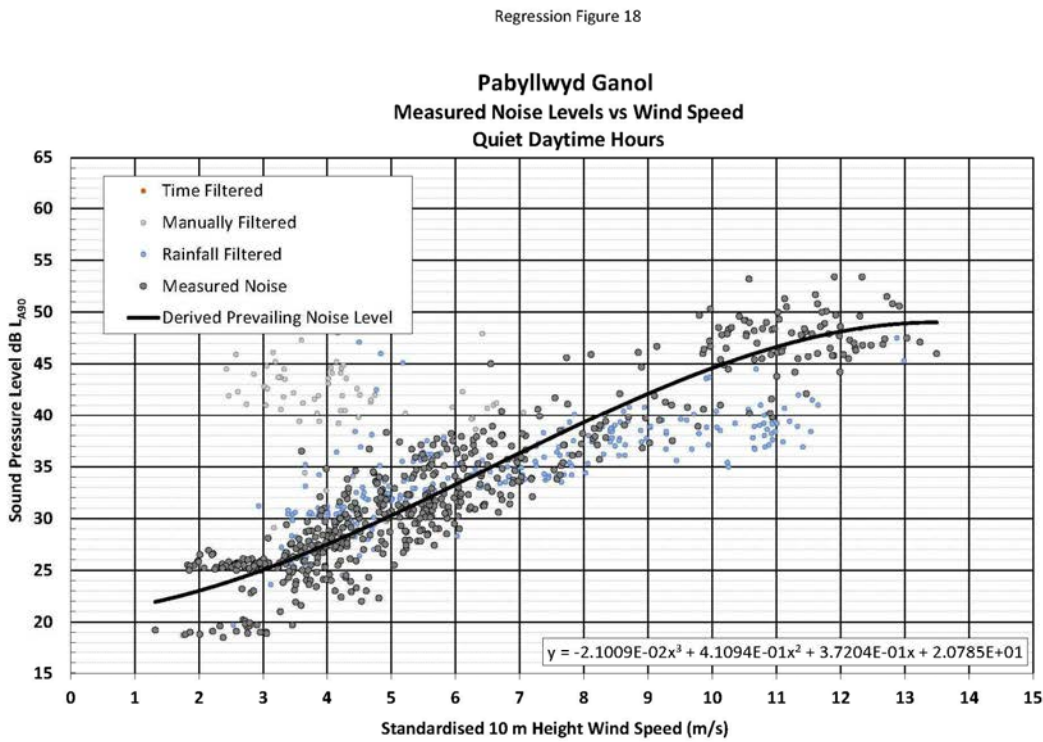
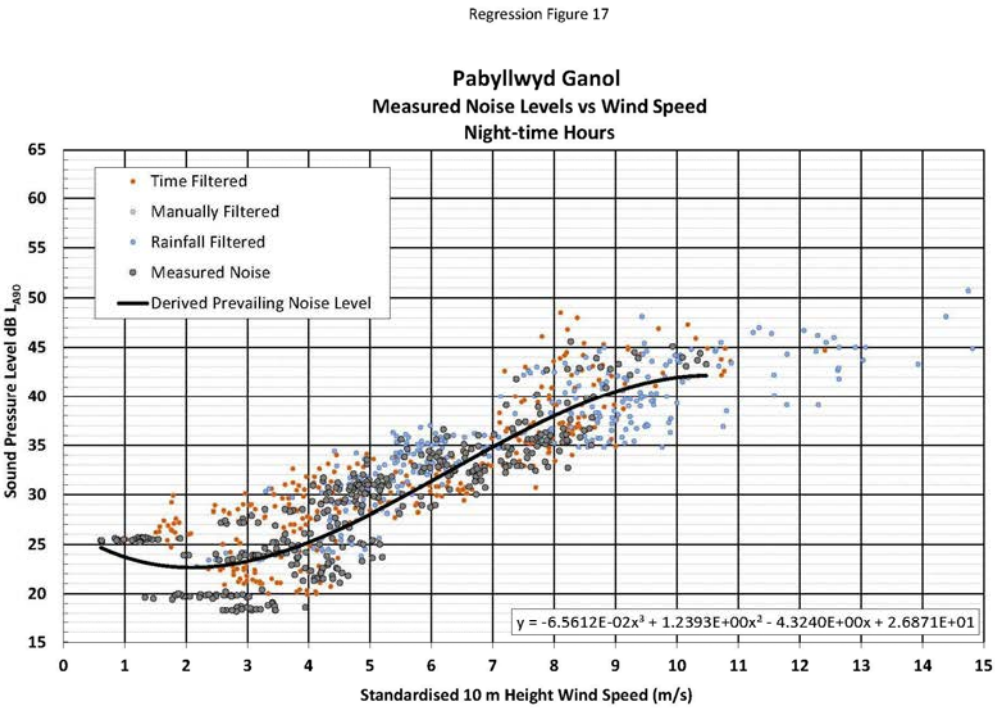


Regression Figure 15



Regression Figure 16





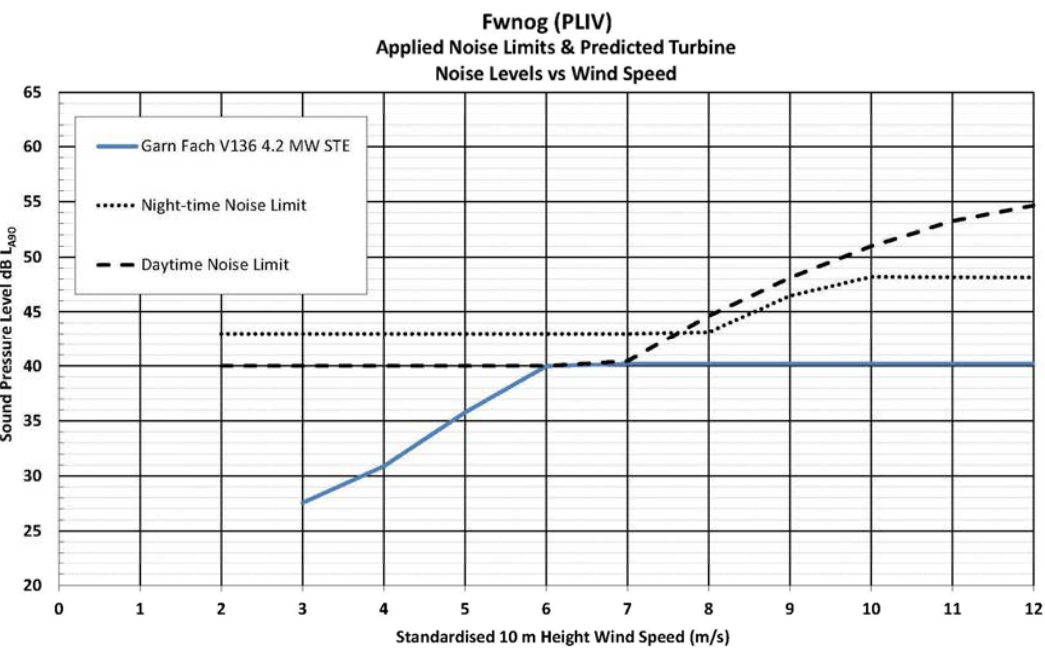
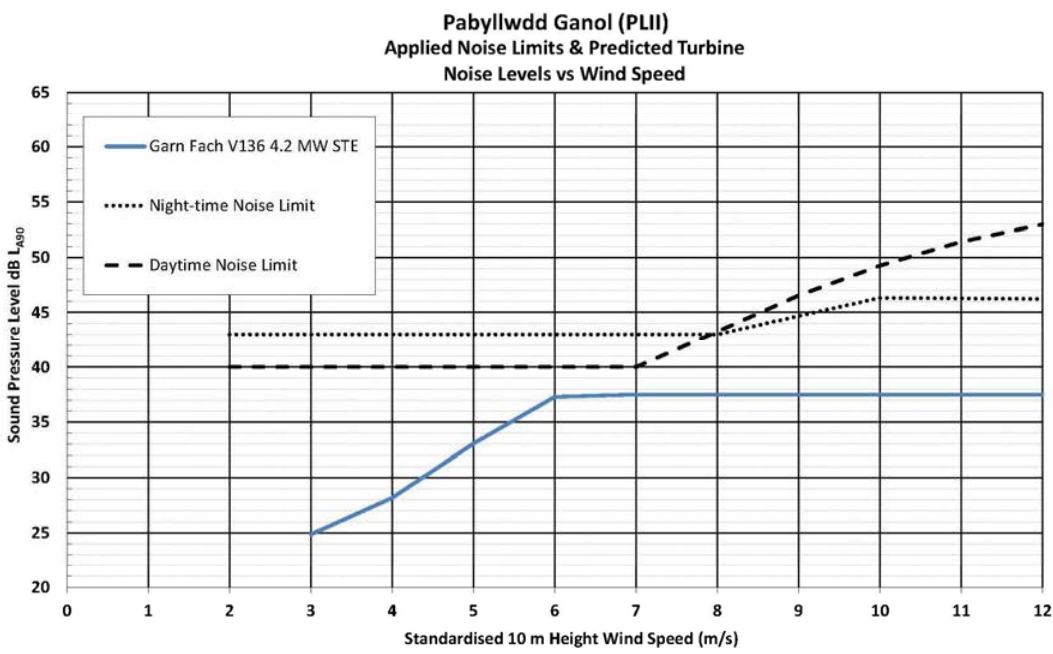
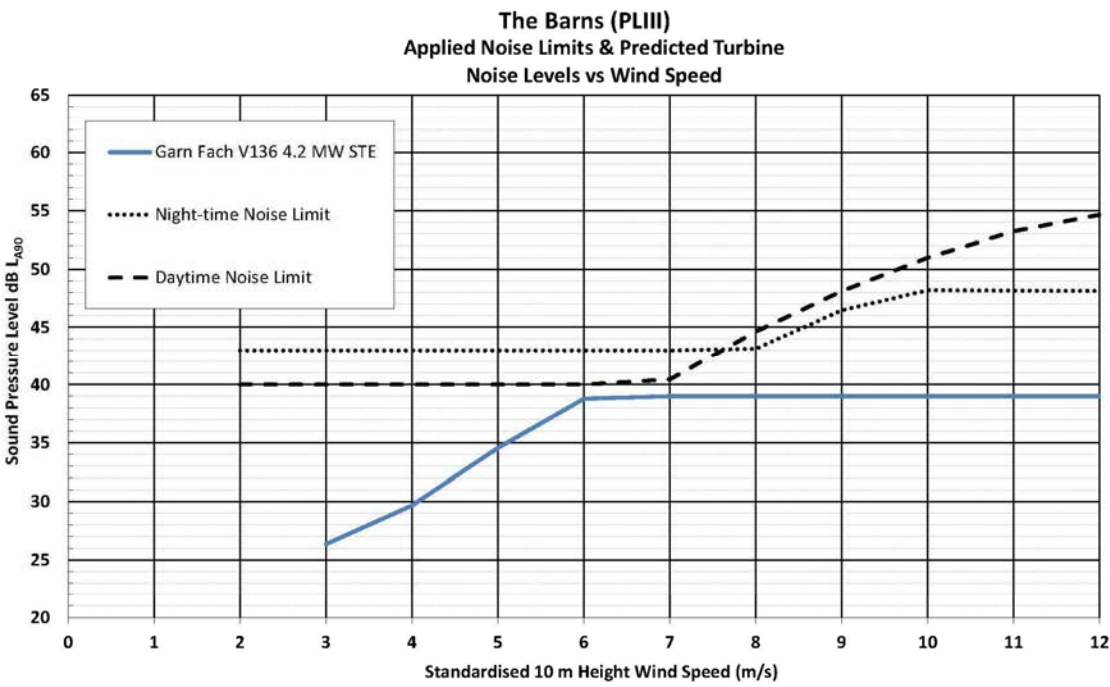
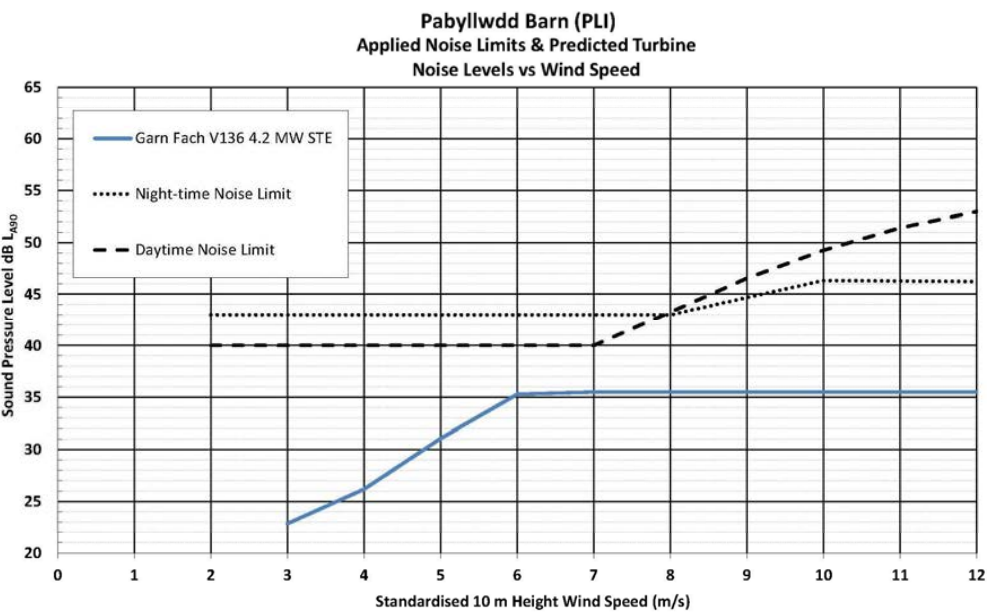
7.4 Tables of Topographical Corrections

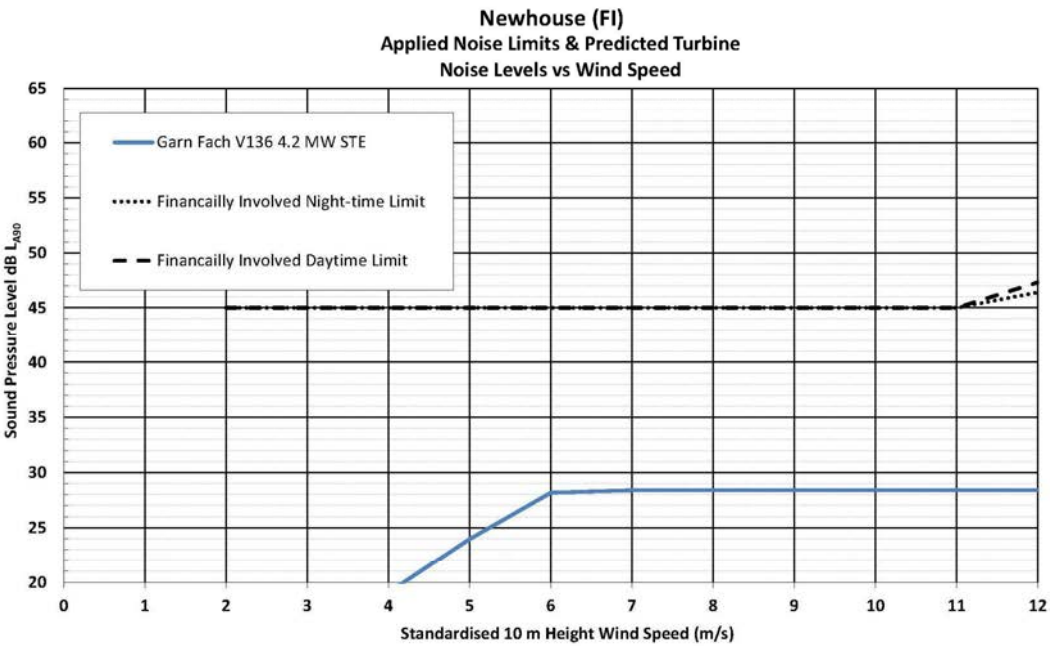
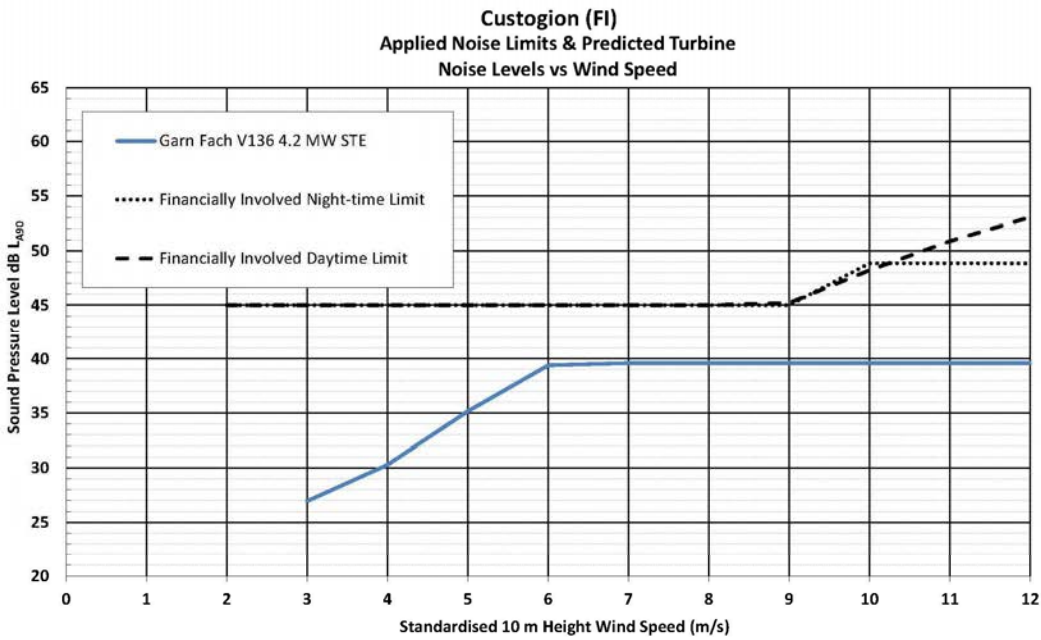
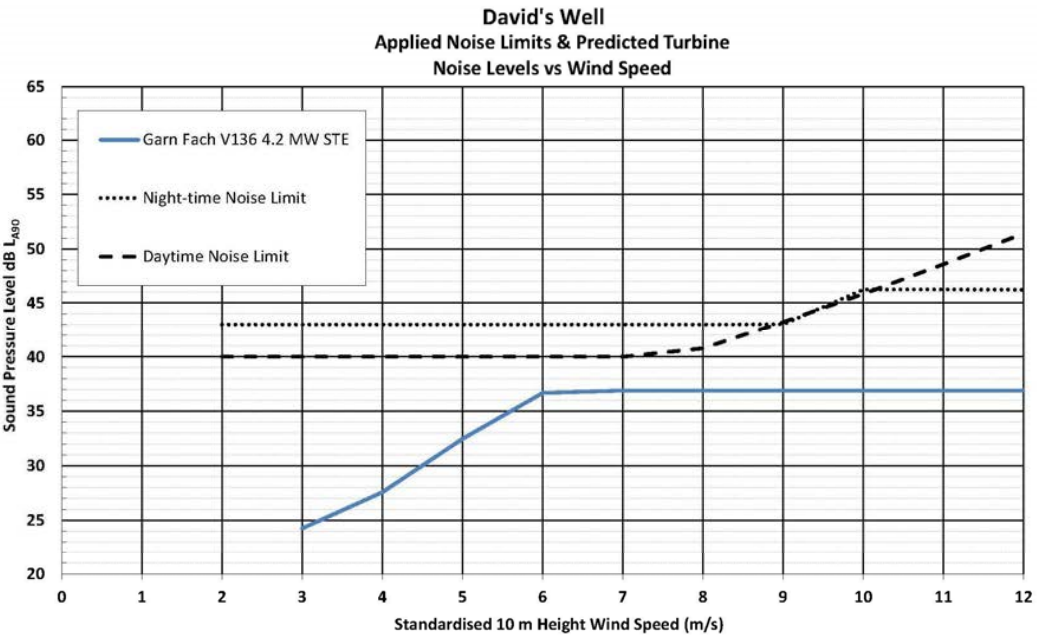
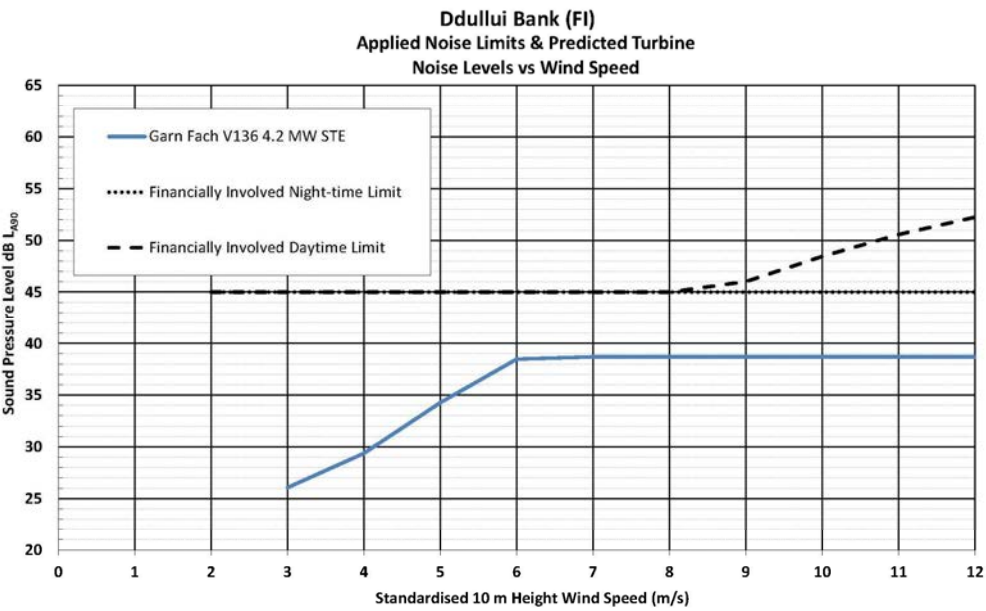
The table below shows the corrections applied to each property resulting from the topographical corrections discussed in section 7.5 of the Written Statement.

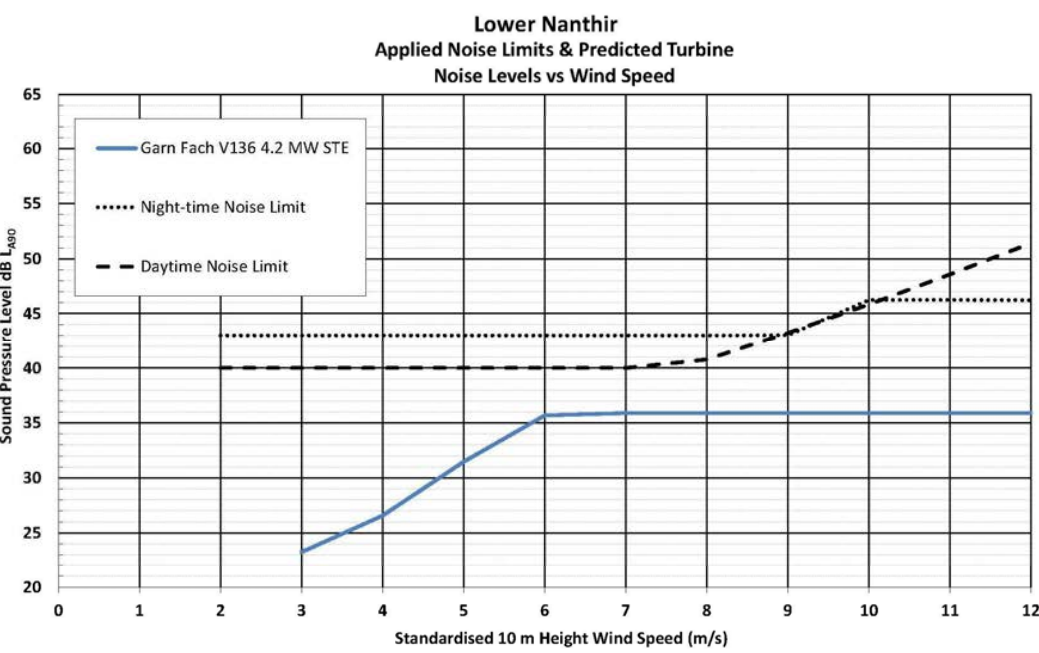
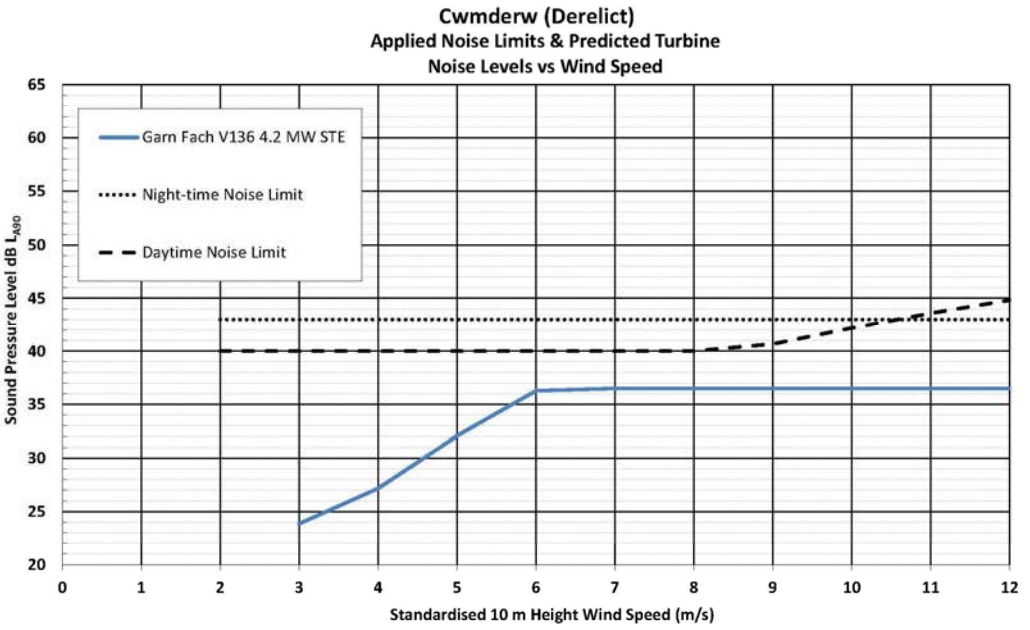
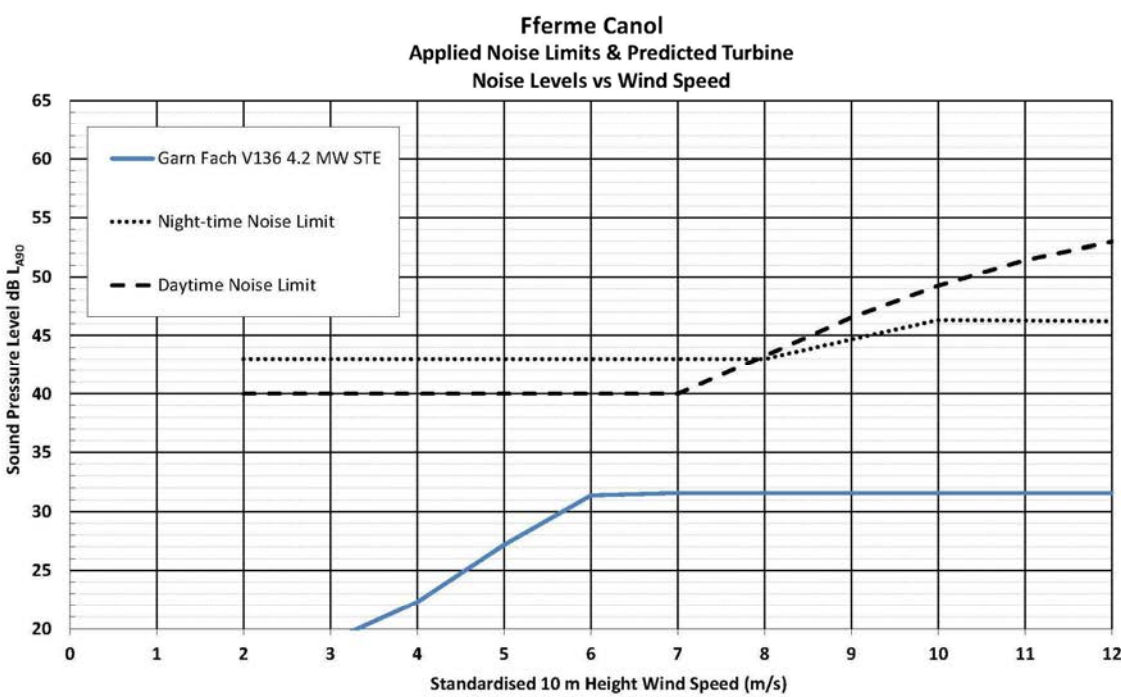
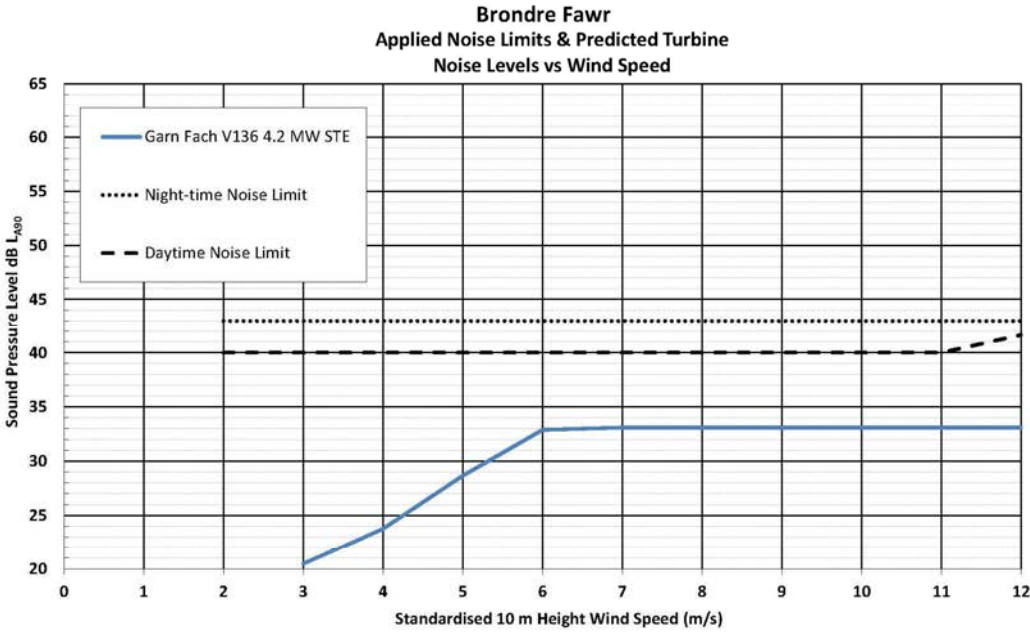
Table 7-1 – Topographical corrections applied to predicted noise levels for each assessment location, dB L_{A90}

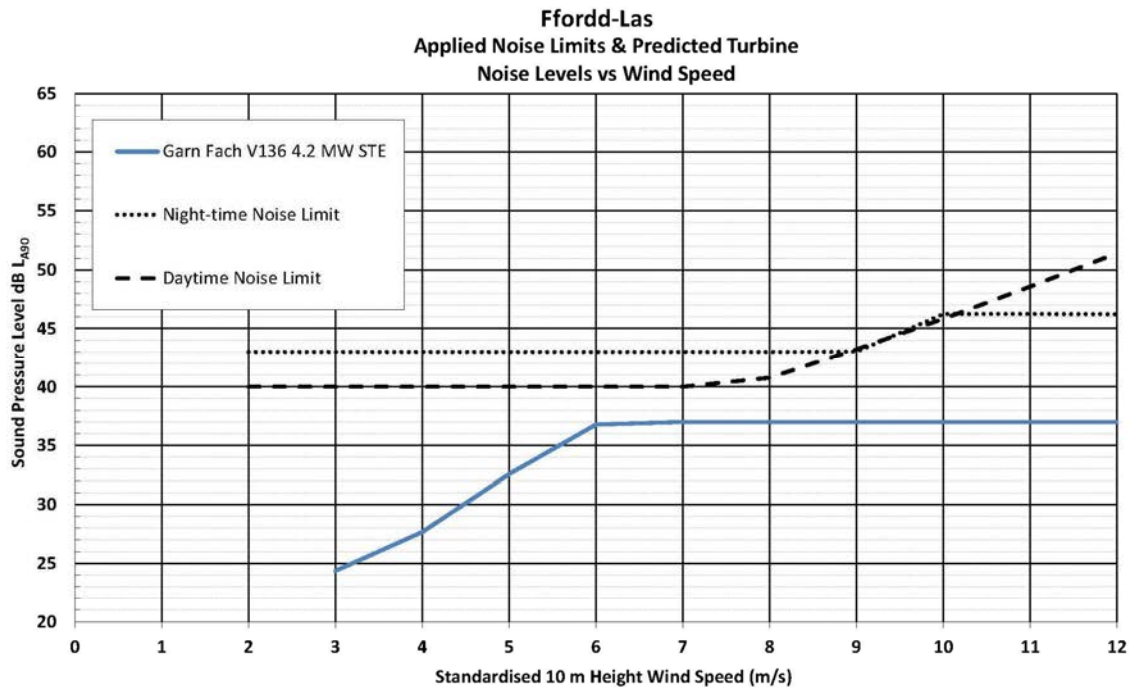
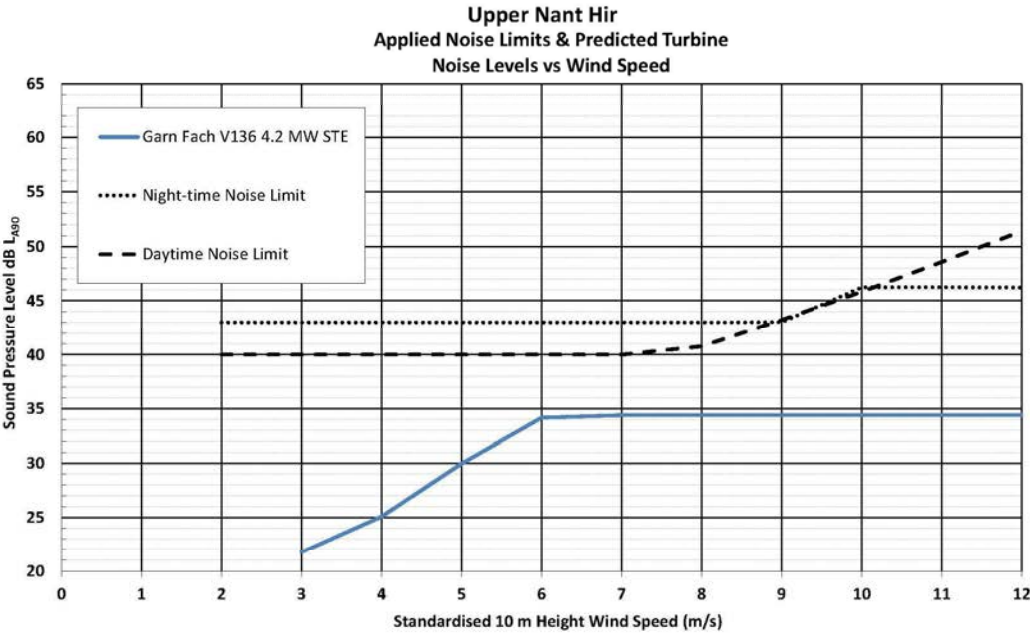
Location	Easting	Northing	Wind farms included, and difference relative to no topographical corrections				
			Garn Fach in isolation	P&L in isolation	Llandinam Repowering in isolation	Garn Fach and P&L	Garn Fach and Llandinam Repowering
Pabyllwdd Barn (PLI)	305371	282582	-0.1	0.0	0.0	0.0	0.0
Pabyllwdd Ganol (PLII)	305068	282409	-0.1	0.0	-0.1	-0.1	0.0
The Barns (PLIII)	304858	281891	0.0	0.0	-0.1	0.0	-0.1
Fwnog (PLIV)	304814	281364	0.0	0.0	0.0	0.0	0.0
Ddullui Bank	305252	280929	0.0	-0.1	0.0	0.0	0.0
Custogion	305373	279824	-0.1	0.0	0.0	0.0	-0.1
David's Well	305432	278027	0.0	0.0	0.0	0.0	0.0
Newhouse	304978	276174	0.0	0.0	0.0	0.0	0.0
Brondre Fawr	303536	277298	0.0	0.0	-0.1	0.0	-0.1
Cwmderw	303084	278759	0.0	-0.4	0.0	-0.1	0.0
Fferme Canol	305944	283301	0.0	0.0	0.0	-0.1	0.0
Lower Nanthir	305537	277971	-0.1	-0.1	0.0	-0.1	0.0
Upper Nant Hir	305723	277859	0.0	0.0	-0.1	0.0	0.0
Ffordd-Las	305351	277948	0.0	0.0	0.0	-0.1	-0.1

7.5 Assessment in Isolation

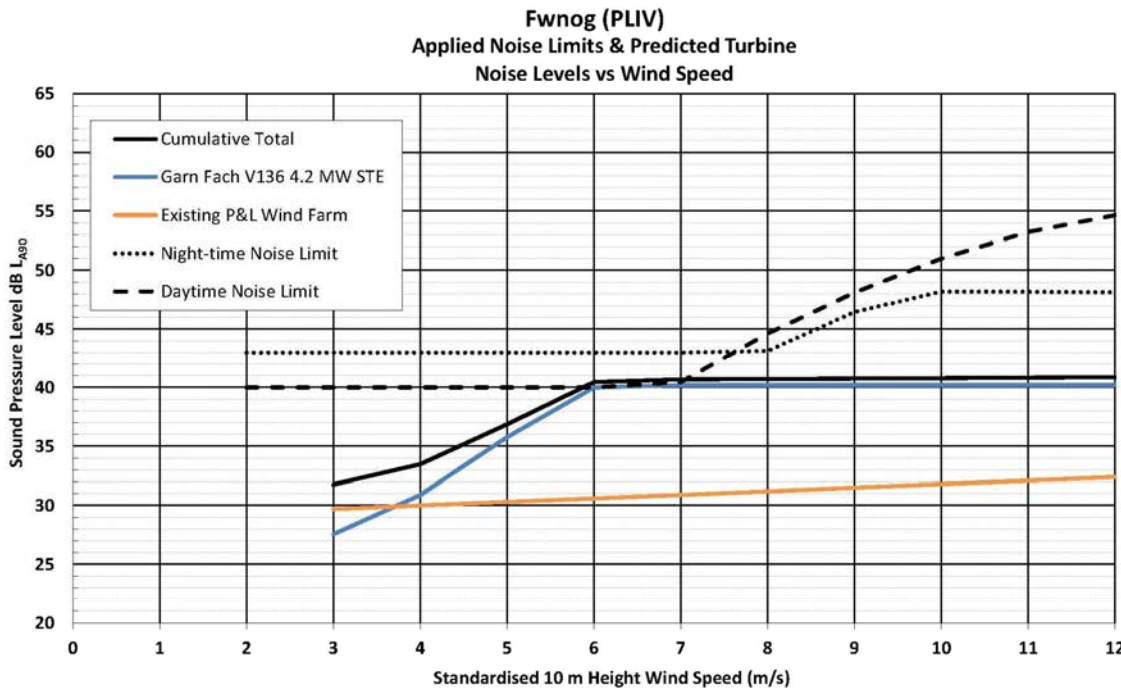
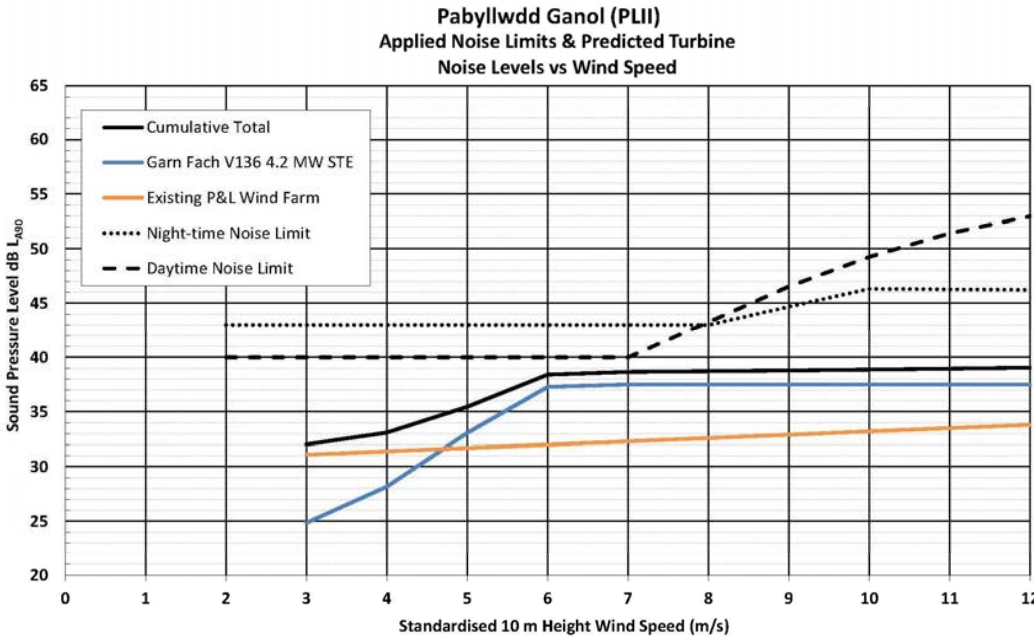
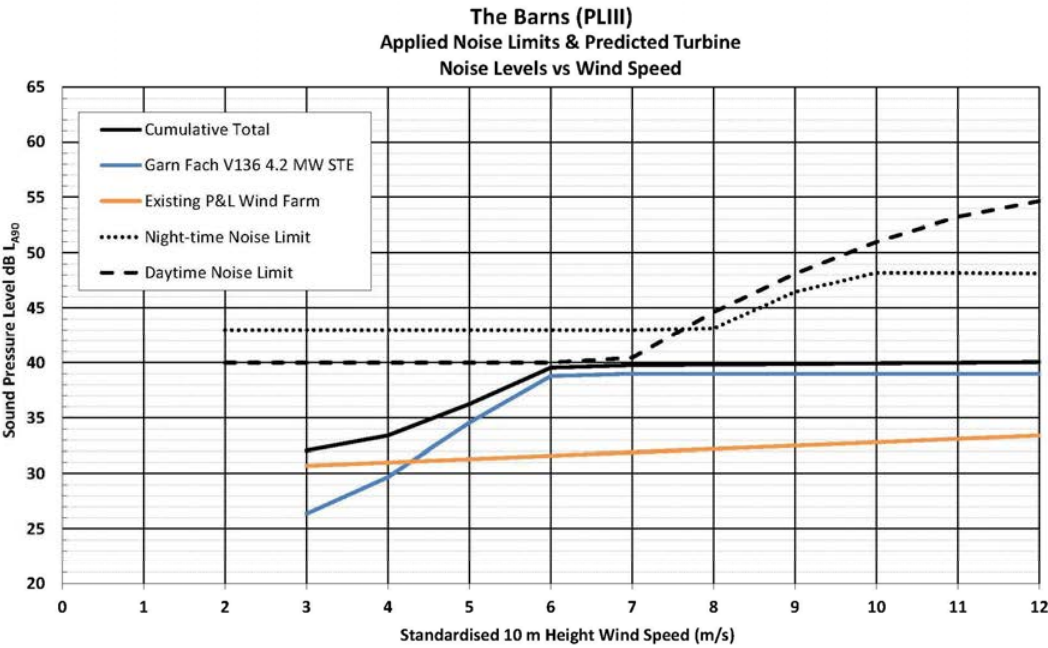
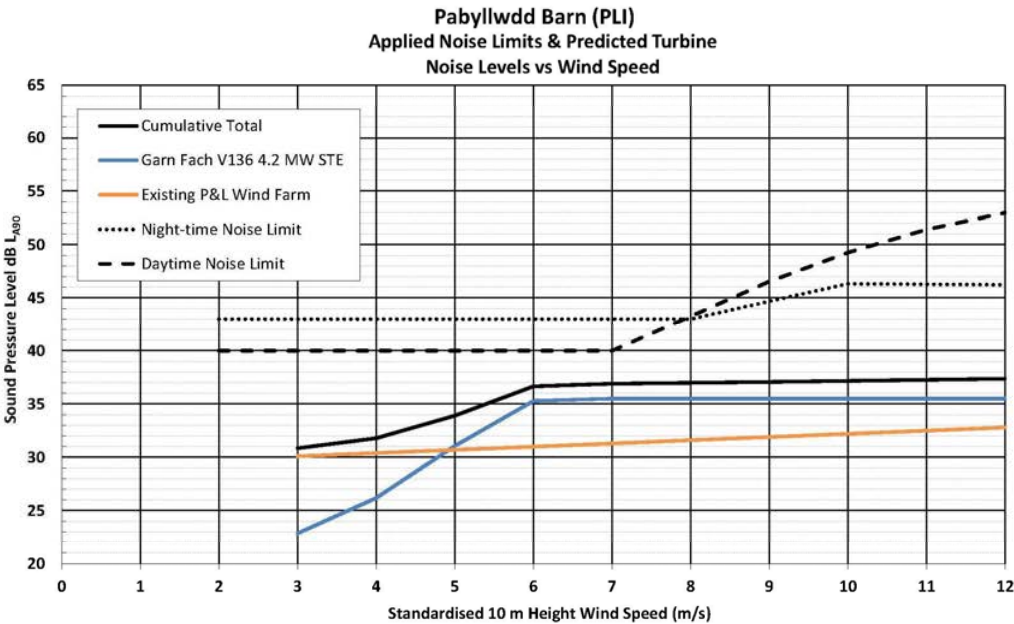


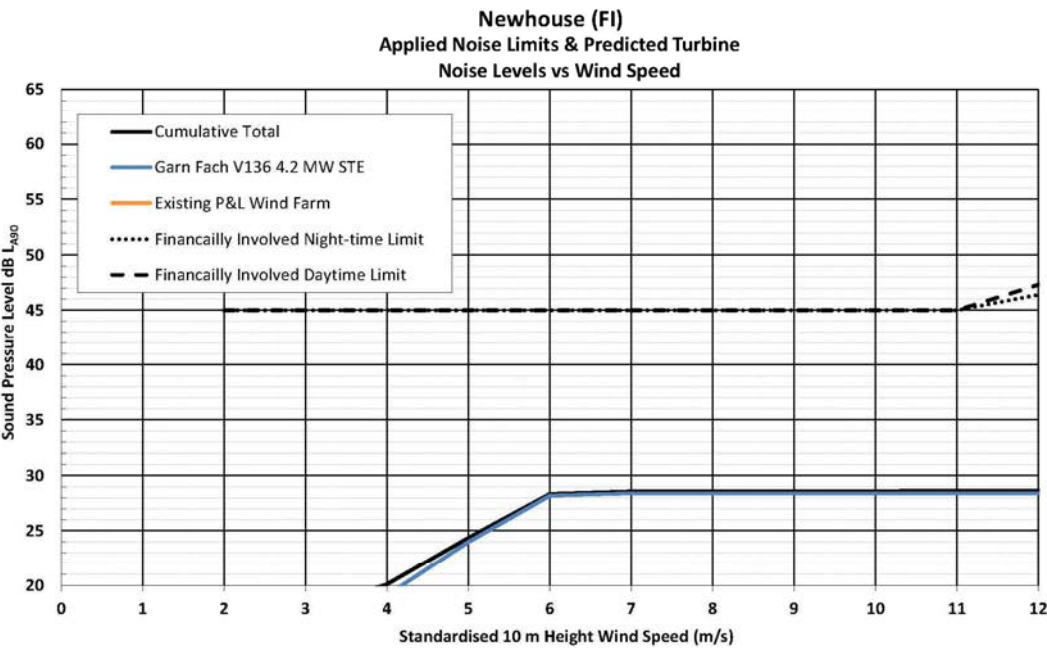
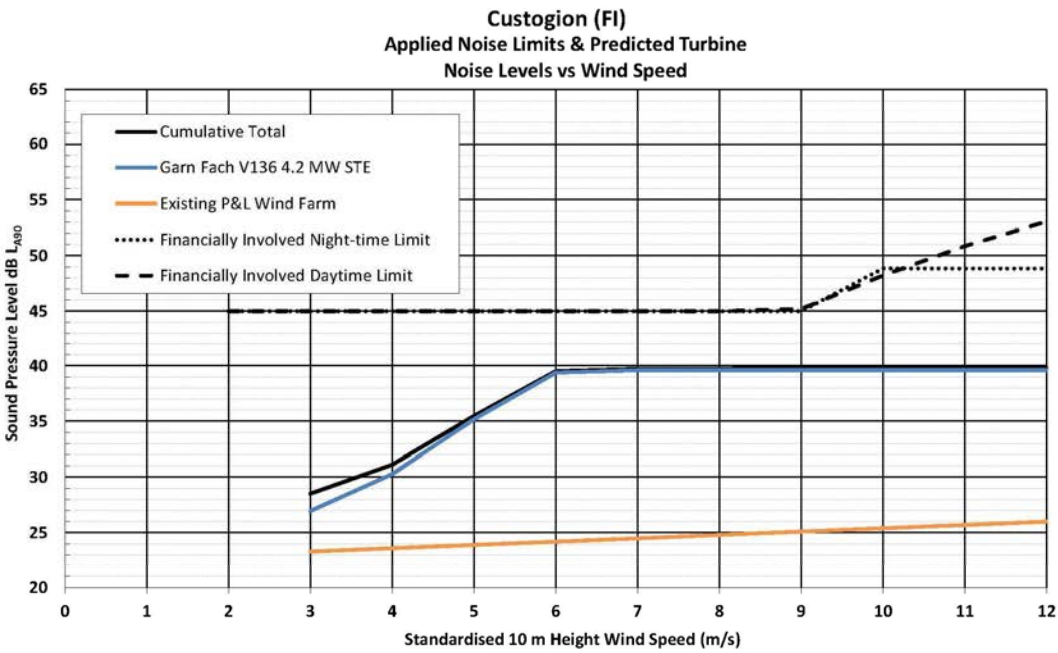
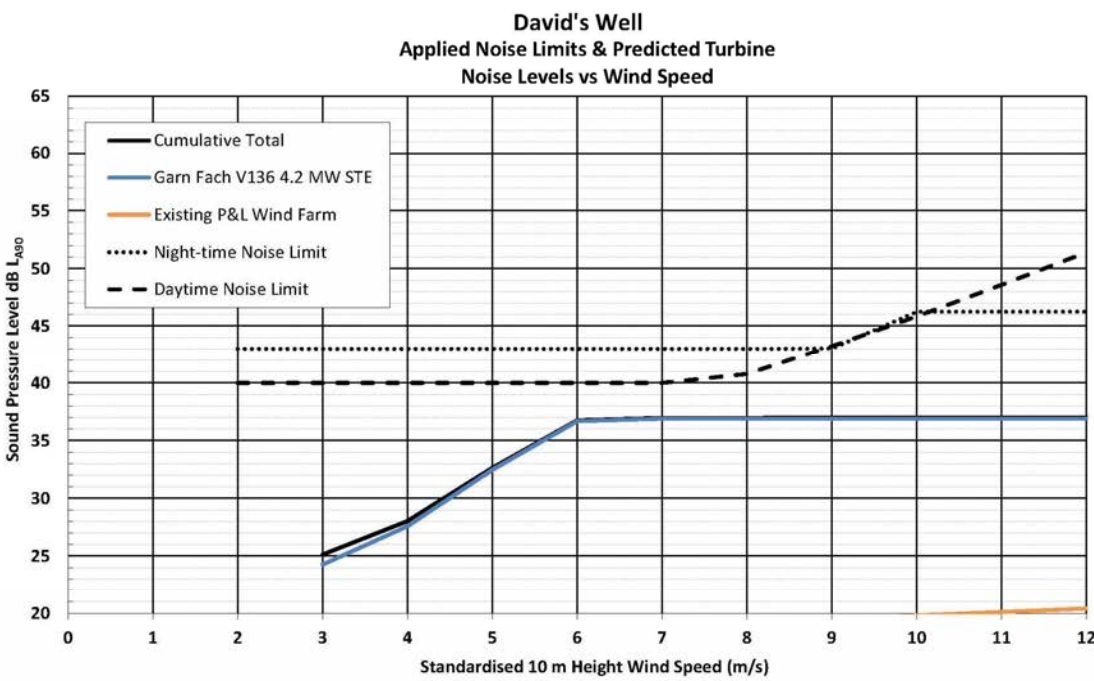
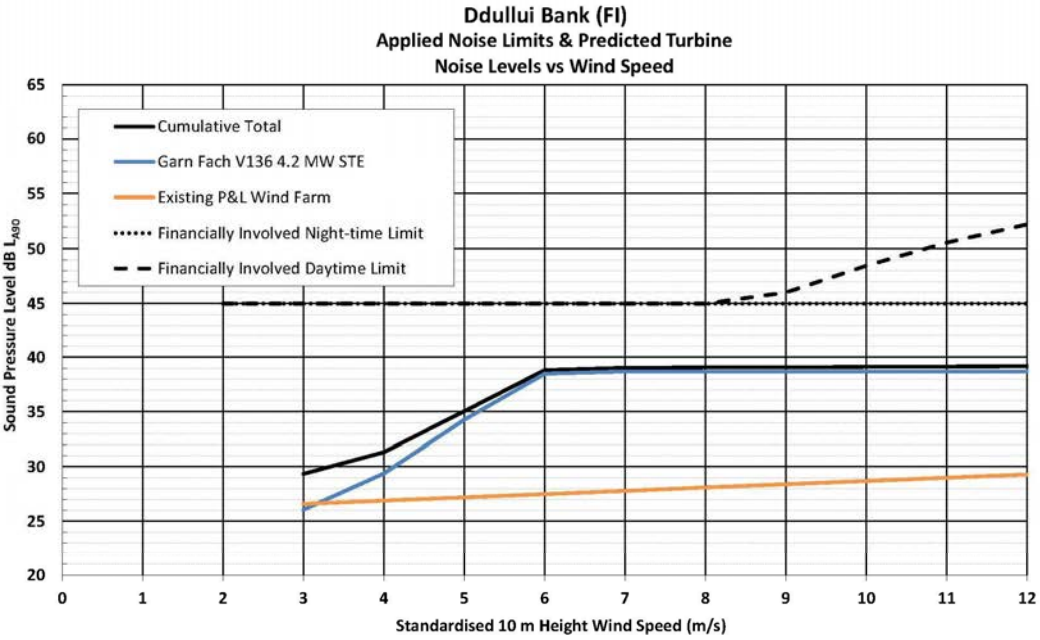


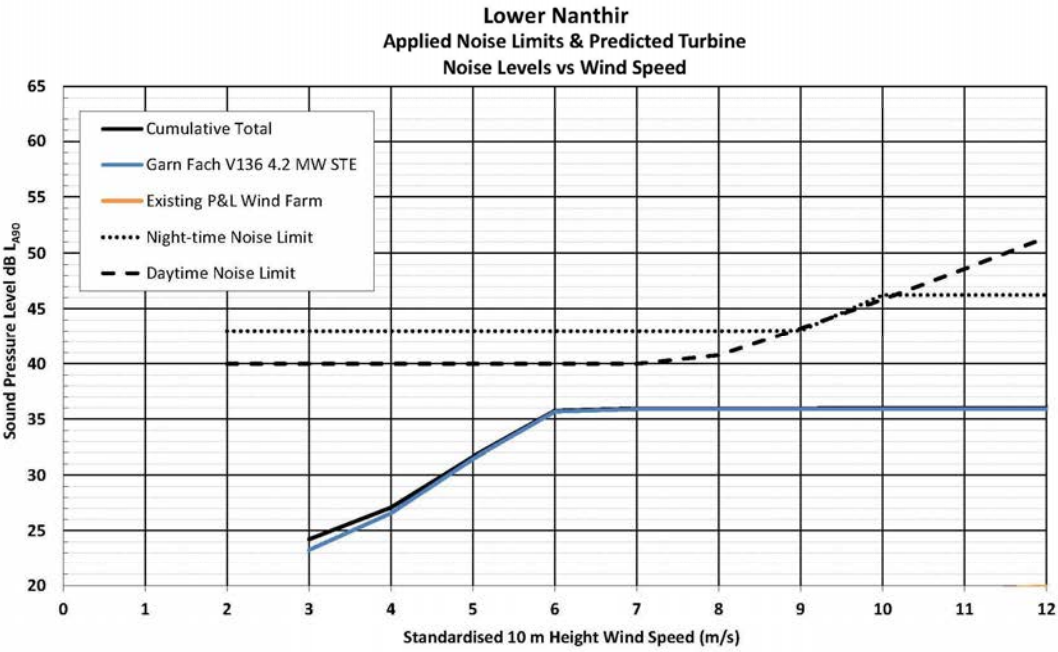
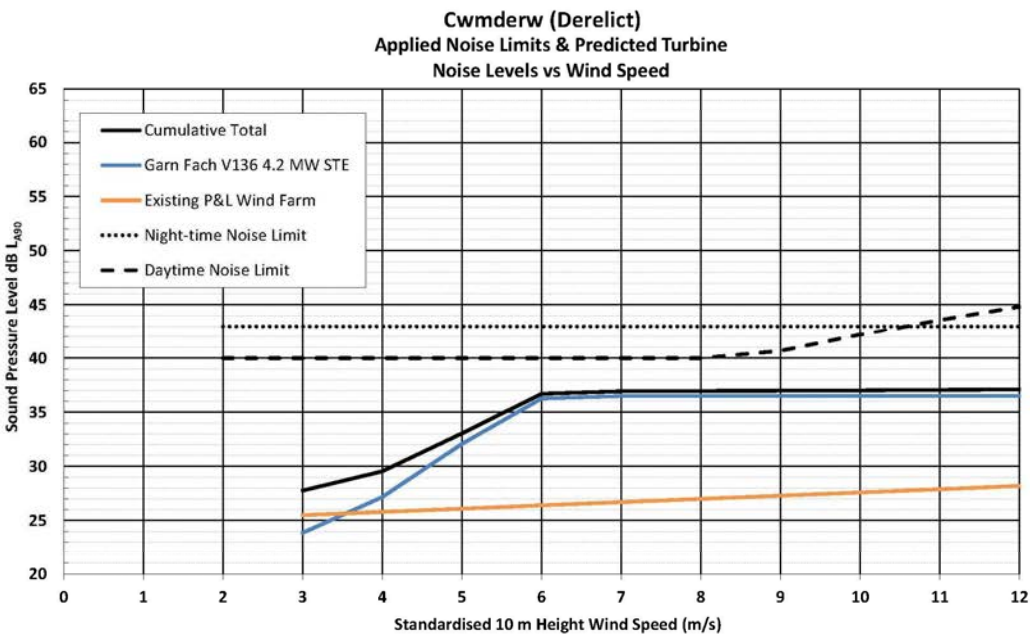
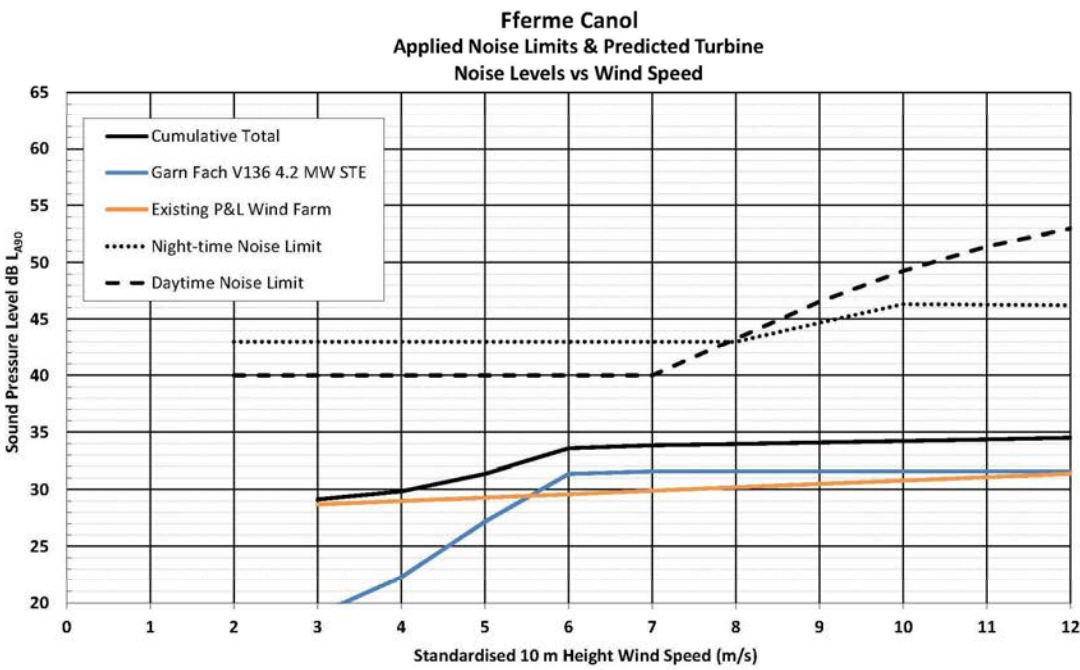
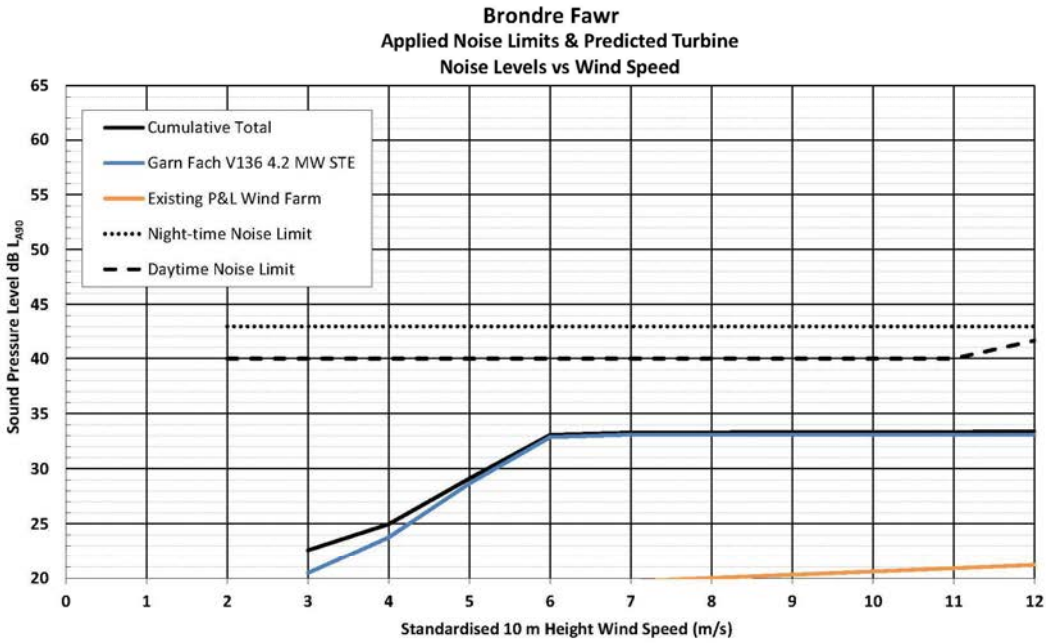


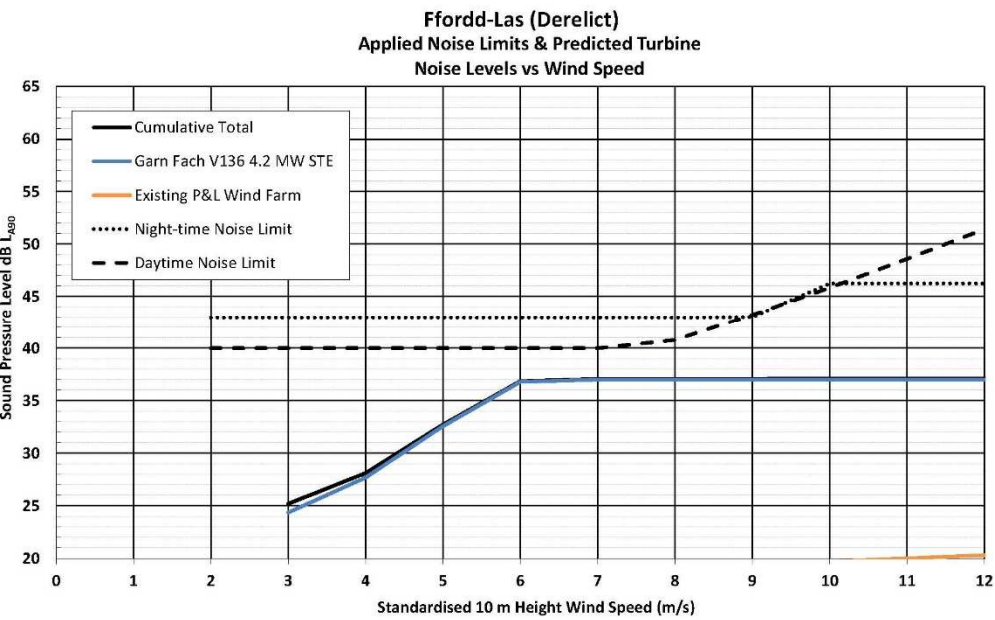
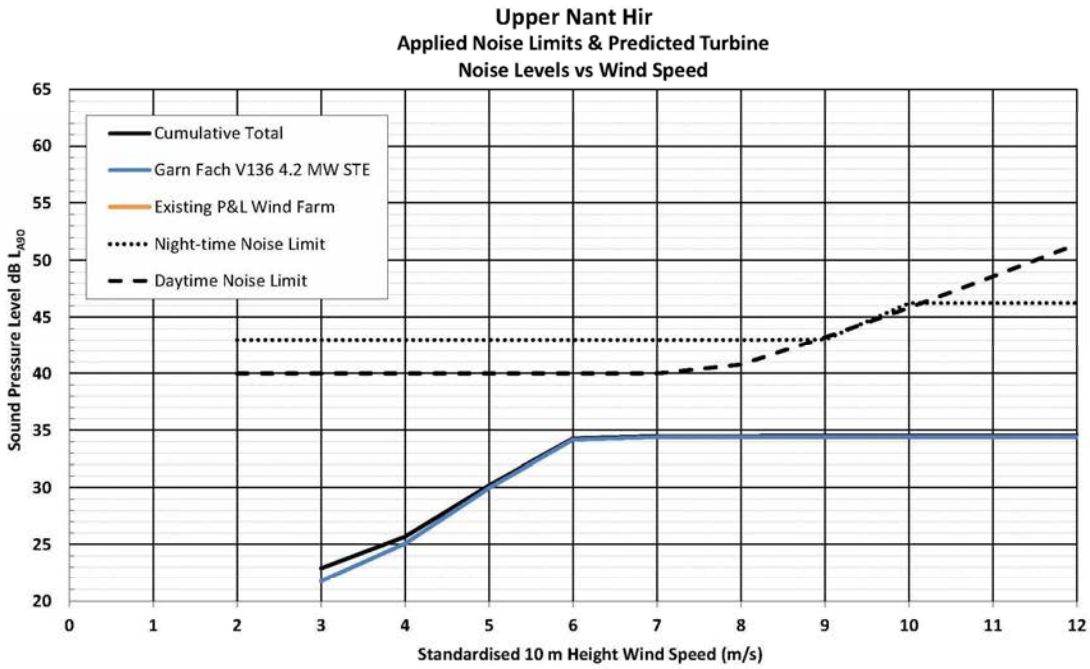


7.6 Assessment with Llandinam Existing (P&L)

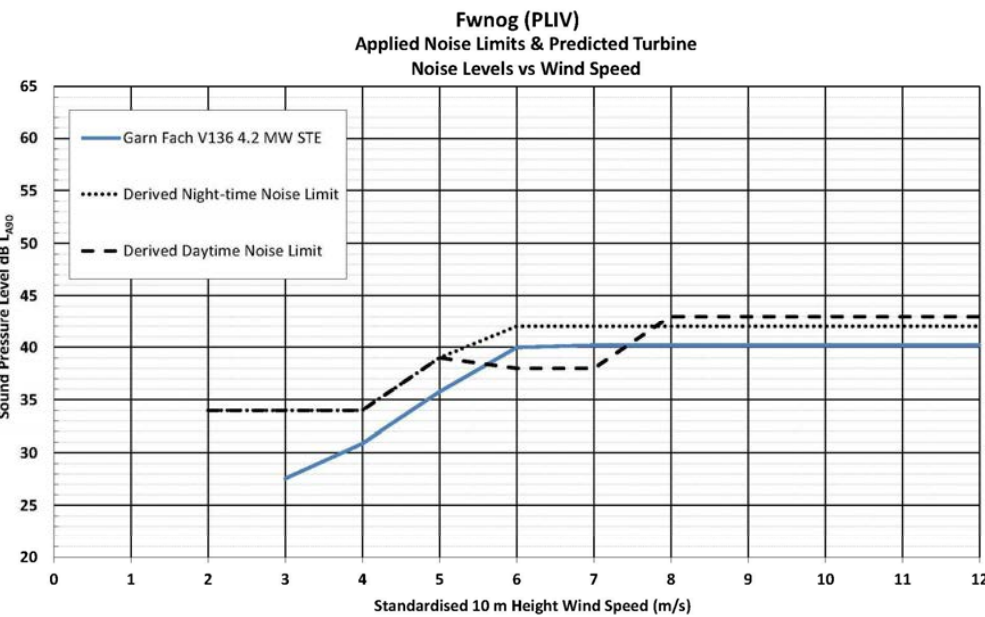
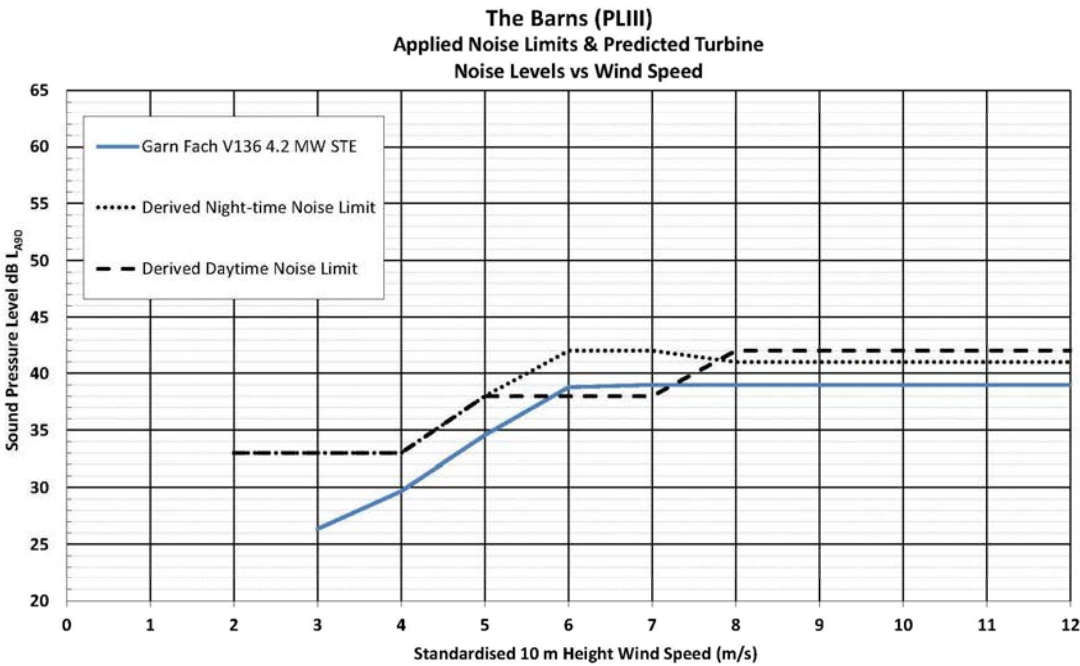
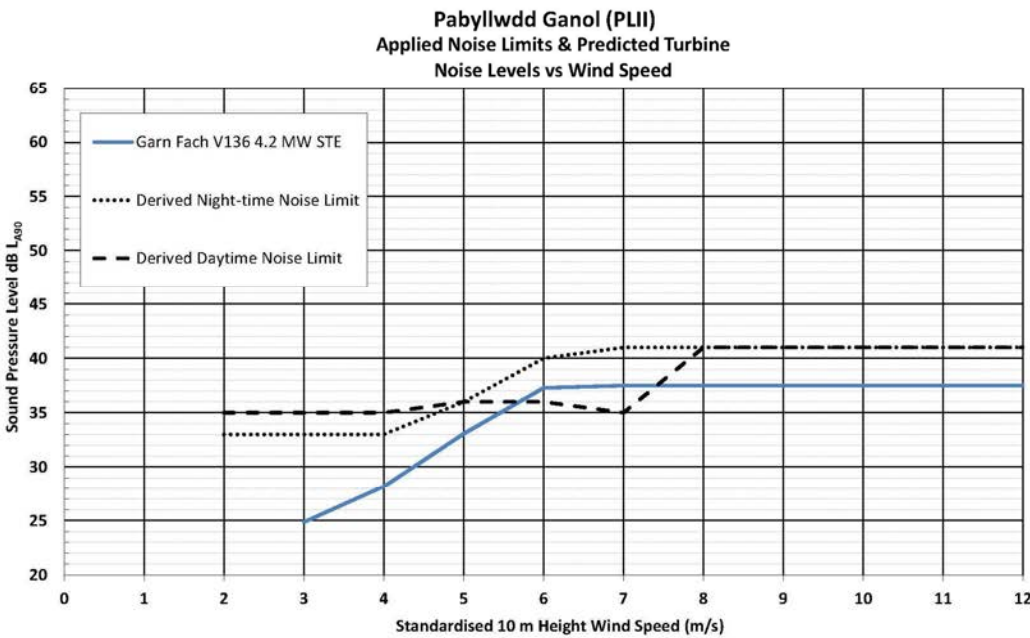
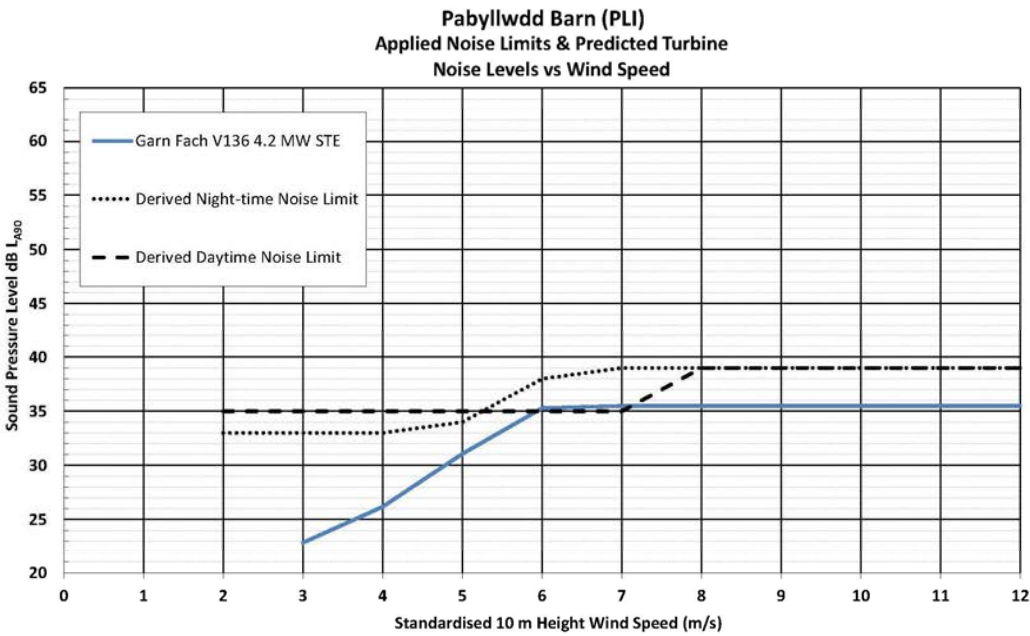


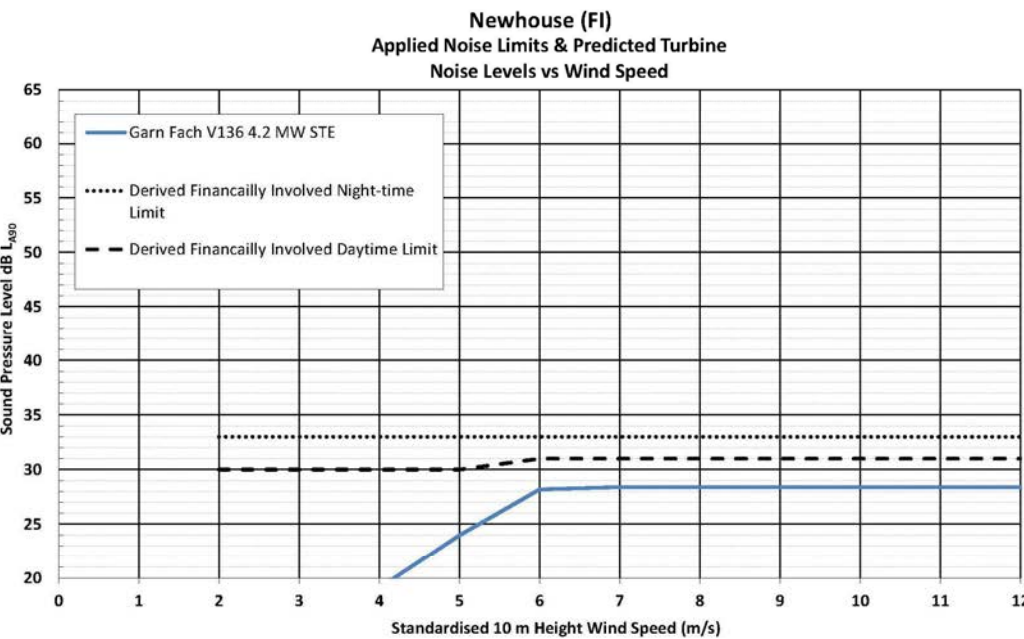
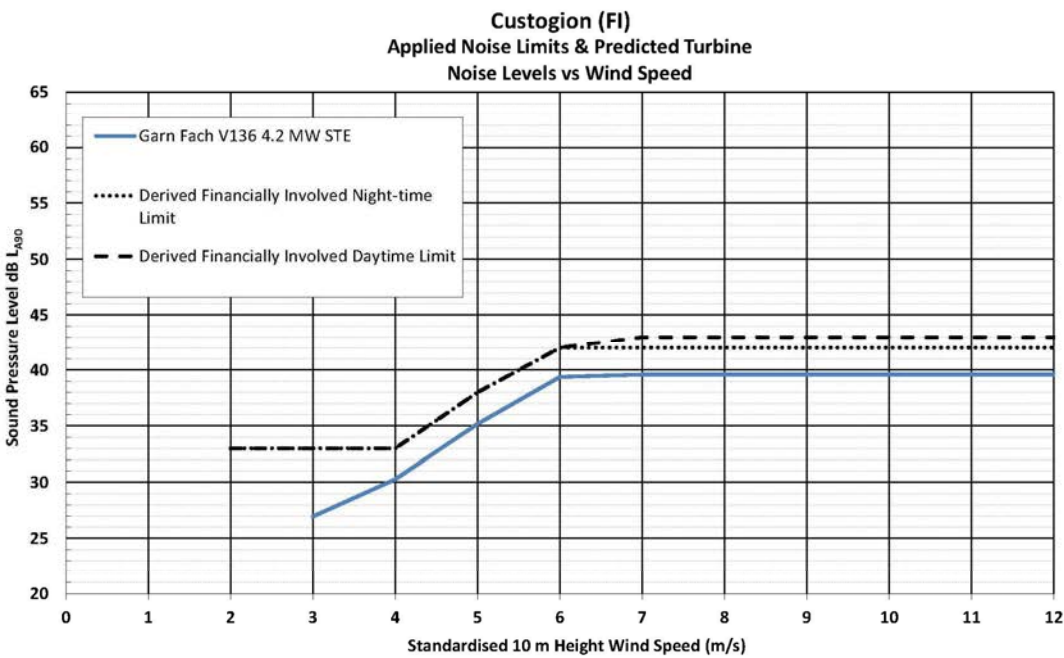
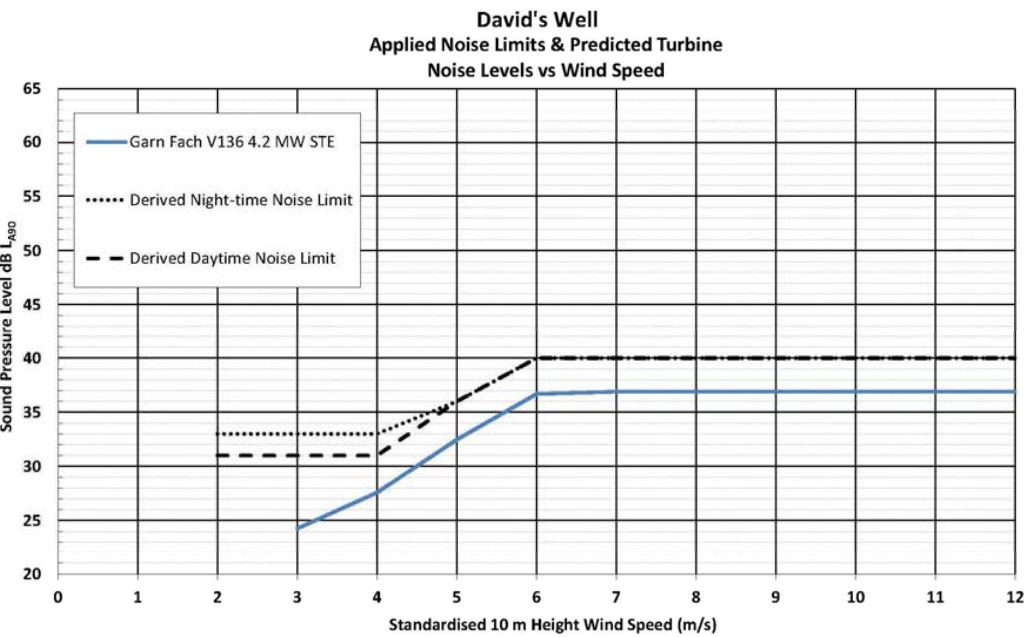
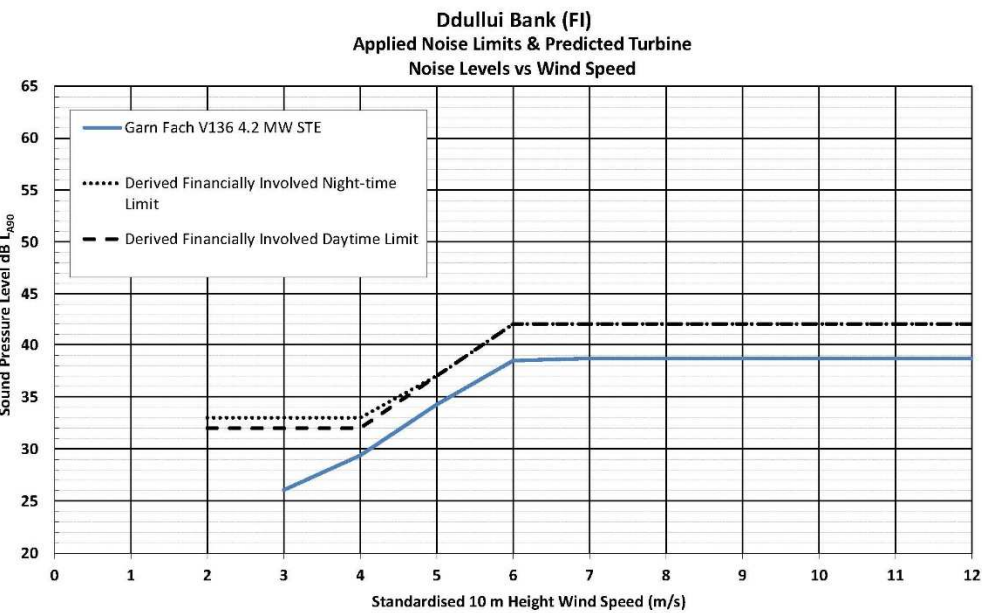


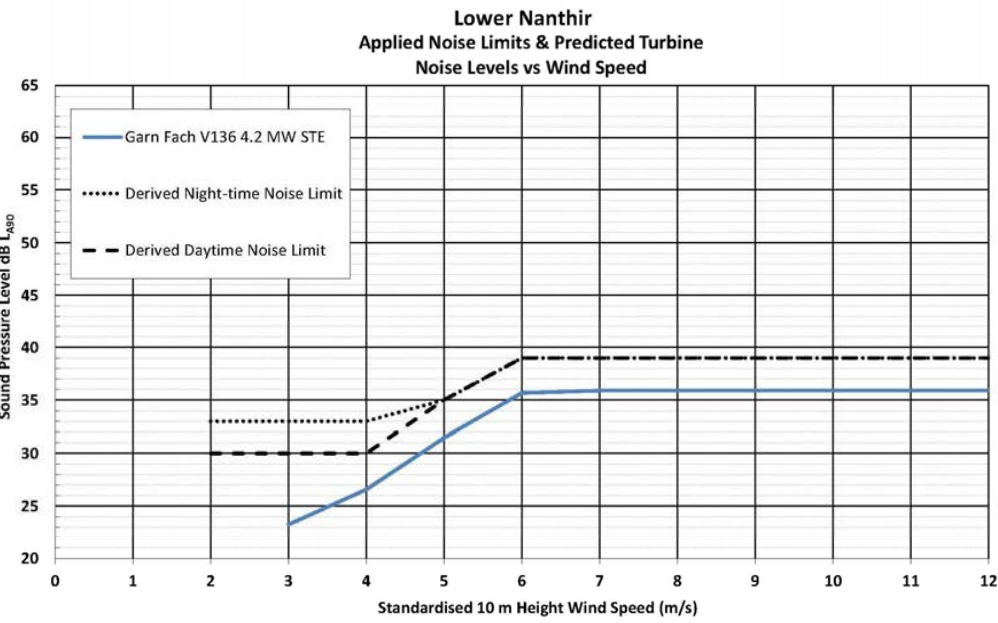
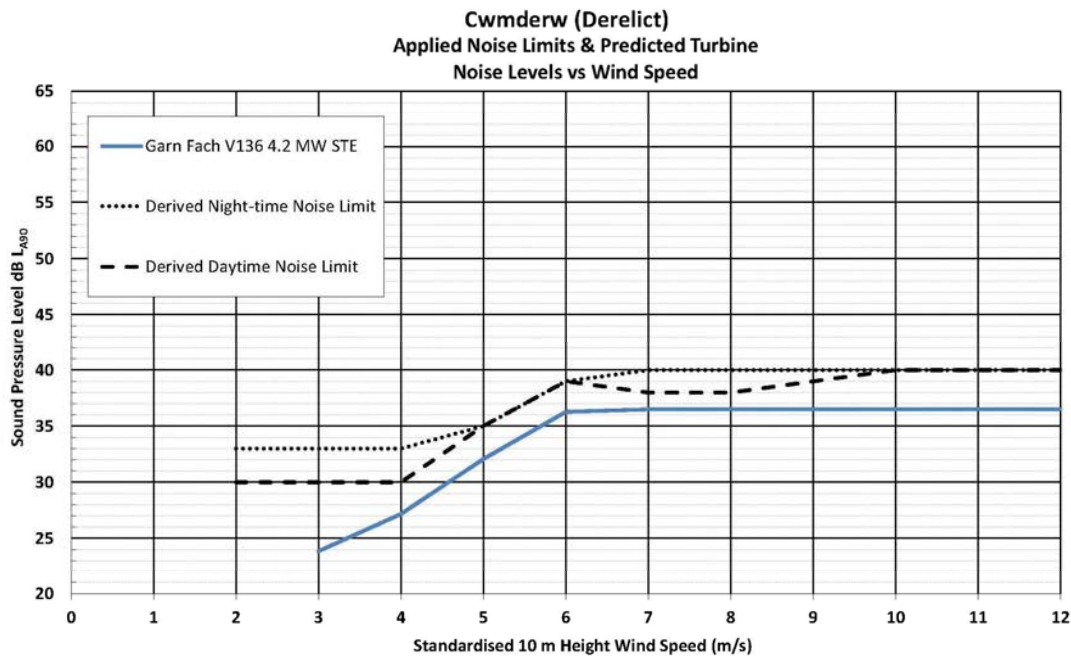
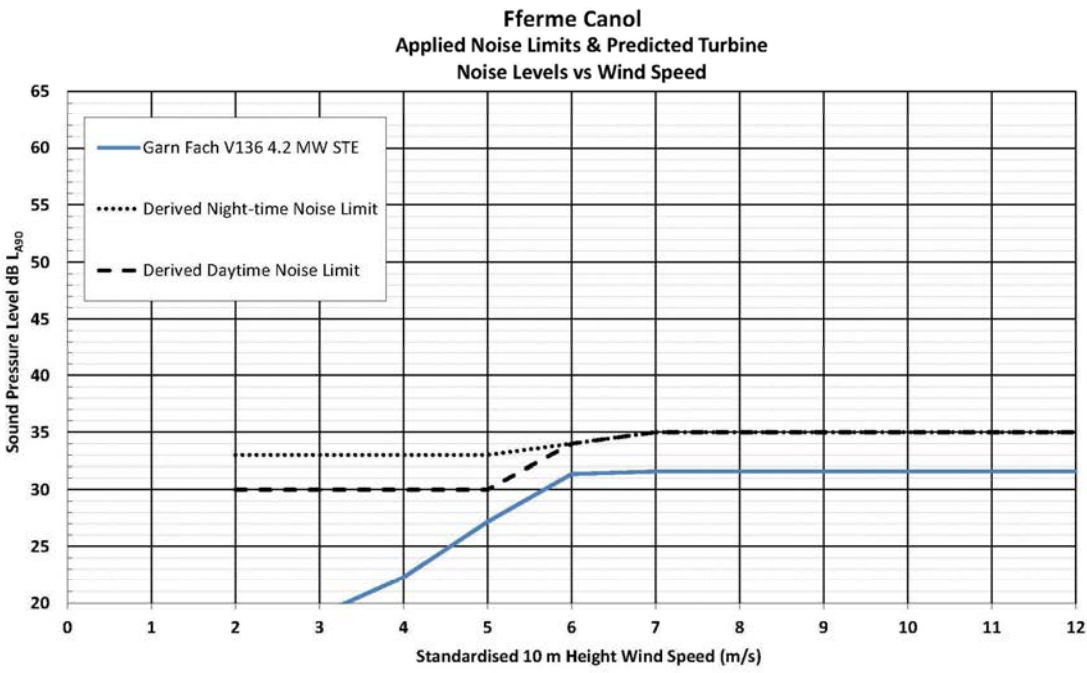
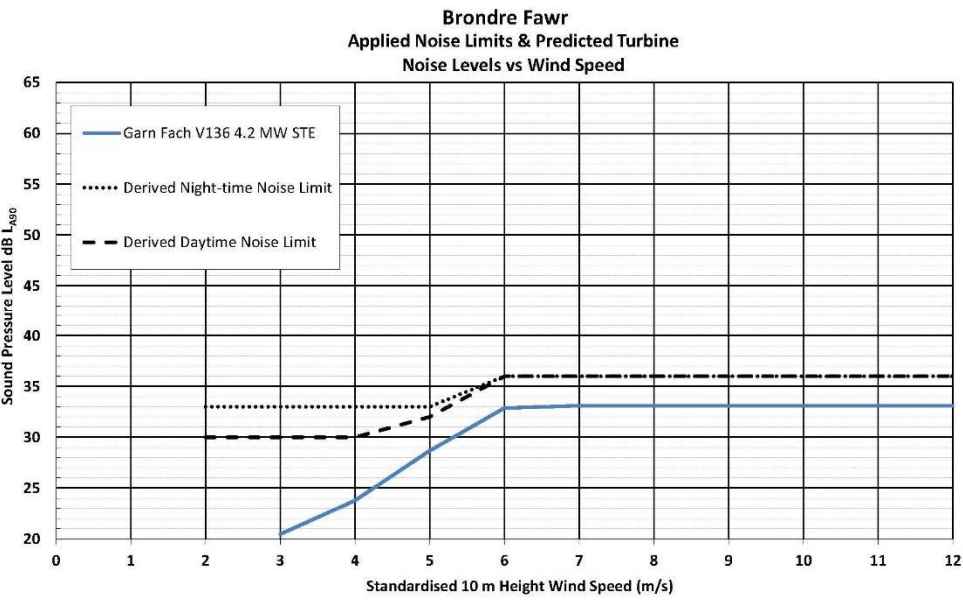


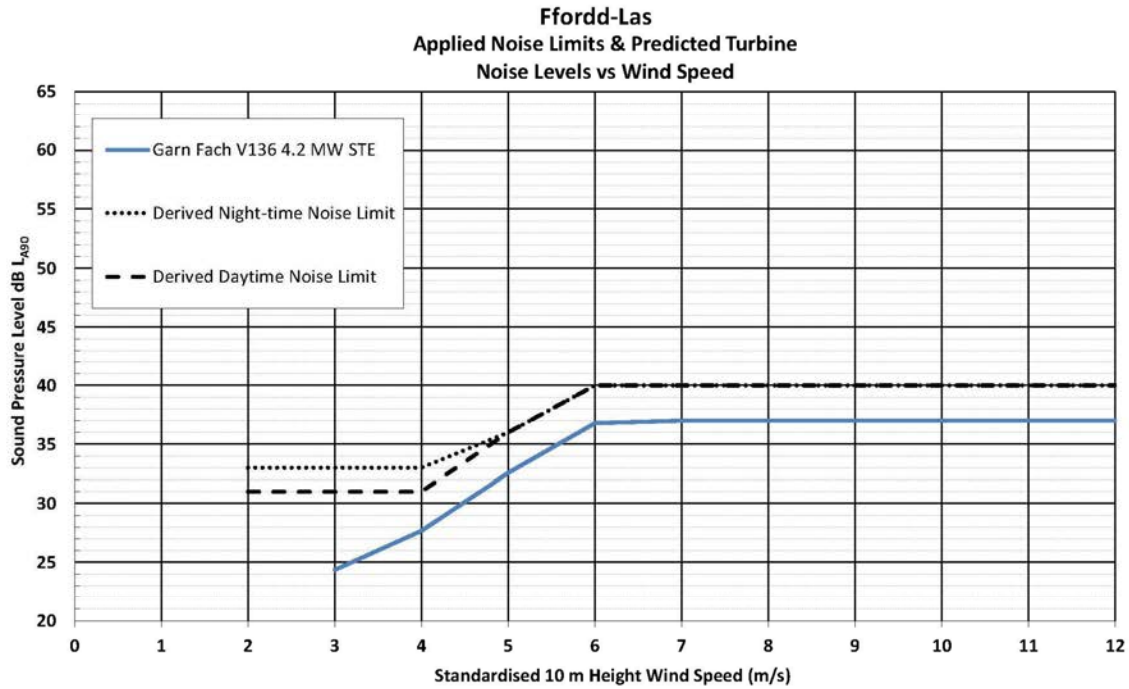
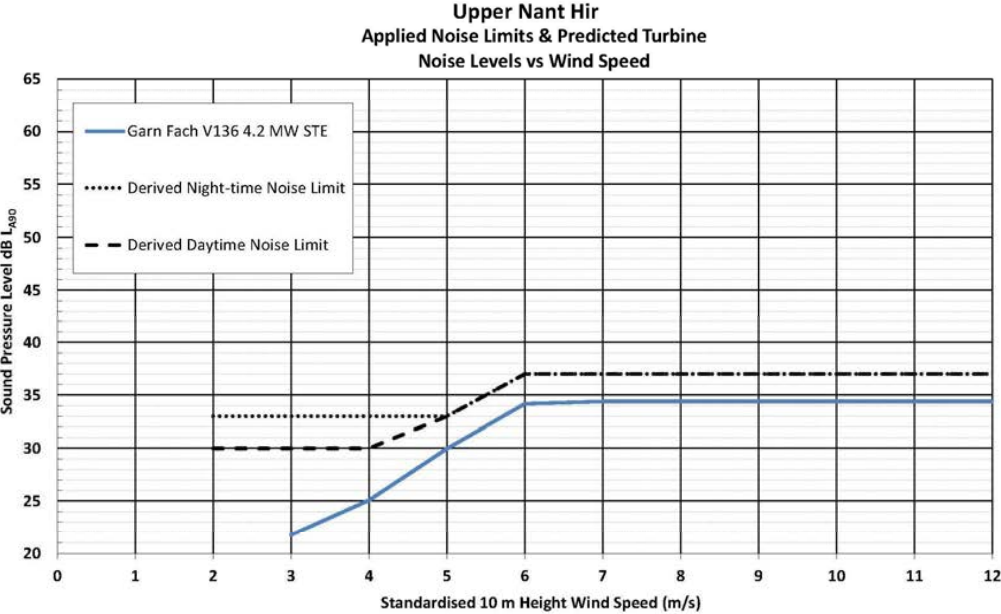


7.7 Derived Limits Accounting for Llandinam Repowering









7.8 Mitigation Strategy

T4 MITIGATION											
Standardised 10 m Height Wind Speed (m/s)											
Wind Direction	2	3	4	5	6	7	8	9	10	11	12
0°	#N/A	M0	M0	M0	M0	M1	M0	M0	M0	M0	M0
15°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
30°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
45°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
60°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
75°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
90°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
105°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
120°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
135°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
150°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
165°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
180°	#N/A	M0	M0	M0	M0	M2	M0	M0	M0	M0	M0
195°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
210°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
225°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
240°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
255°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
270°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
285°	#N/A	M0	M0	M0	M2	M5	M0	M0	M0	M0	M0
300°	#N/A	M0	M0	M0	M2	M3	M0	M0	M0	M0	M0
315°	#N/A	M0	M0	M0	M2	M2	M0	M0	M0	M0	M0
330°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
345°	#N/A	M0	M0	M0	M0	M2	M0	M0	M0	M0	M0

T6 MITIGATION											
Standardised 10 m Height Wind Speed (m/s)											
Wind Direction	2	3	4	5	6	7	8	9	10	11	12
0°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
15°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
30°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
45°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
60°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
75°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
90°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
105°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
120°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
135°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
150°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
165°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
180°	#N/A	M0	M0	M0	M0	M1	M0	M0	M0	M0	M0
195°	#N/A	M0	M0	M0	M0	M2	M0	M0	M0	M0	M0
210°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
225°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
240°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
255°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
270°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
285°	#N/A	M0	M0	M0	M1	M2	M0	M0	M0	M0	M0
300°	#N/A	M0	M0	M0	M0	M2	M0	M0	M0	M0	M0
315°	#N/A	M0	M0	M0	M0	M1	M0	M0	M0	M0	M0
330°	#N/A	M0	M0	M0	M0	M1	M0	M0	M0	M0	M0
345°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0

T10 MITIGATION											
Standardised 10 m Height Wind Speed (m/s)											
Wind Direction	2	3	4	5	6	7	8	9	10	11	12
0°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
15°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
30°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
45°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
60°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
75°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
90°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
105°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
120°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
135°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
150°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
165°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
180°	#N/A	M0	M0	M0	M0	M1	M0	M0	M0	M0	M0
195°	#N/A	M0	M0	M0	M1	M1	M0	M0	M0	M0	M0
210°	#N/A	M0	M0	M0	M1	M1	M0	M0	M0	M0	M0
225°	#N/A	M0	M0	M0	M1	M1	M0	M0	M0	M0	M0
240°	#N/A	M0	M0	M0	M2	M1	M0	M0	M0	M0	M0
255°	#N/A	M0	M0	M0	M2	M1	M0	M0	M0	M0	M0
270°	#N/A	M0	M0	M0	M2	M1	M0	M0	M0	M0	M0
285°	#N/A	M0	M0	M0	M2	M1	M0	M0	M0	M0	M0
300°	#N/A	M0	M0	M0	M1	M1	M0	M0	M0	M0	M0
315°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
330°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
345°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0

T8 MITIGATION											
Standardised 10 m Height Wind Speed (m/s)											
Wind Direction	2	3	4	5	6	7	8	9	10	11	12
0°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
15°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
30°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
45°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
60°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
75°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
90°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
105°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
120°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
135°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
150°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
165°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
180°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
195°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
210°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
225°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
240°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
255°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
270°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
285°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
300°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
315°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
330°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
345°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0

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T15 MITIGATION											
Standardised 10 m Height Wind Speed (m/s)											
Wind Direction	2	3	4	5	6	7	8	9	10	11	12
0°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
15°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
30°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
45°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
60°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
75°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
90°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
105°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
120°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
135°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
150°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
165°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
180°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
195°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
210°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
225°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
240°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
255°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
270°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
285°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
300°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
315°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
330°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0
345°	#N/A	M0	M0	M0	M0	M0	M0	M0	M0	M0	M0

7.9 Mitigation for Derived Limits

