STL SPRAYBOOTH TECHNOLOGY LIMITED	**Acoustic Information for Cyclone Booth with 710mm Impeller**
Site: Veetec Hayes	Project Ref: 1647
By: C.Watkins	Booth Type: STL Cyclone

The information given is to enable an evaluation of the calculated sound levels at the rear and front boundaries. The data from the spray booth extract ventilation system have been used as this is the predominant sound source.

Fan Impeller details

Impeller Type – Backward Curved
Fan Speed – 1400 rpm
Duty 28,000 m3/hr at 400Pa

Fan Acoustic Data

The fan curve shows a “A” decibel free outlet sound power level LW(A)8
Fan Sound Power Level = 98dB(A) LWA8

Sound Level calculated at Boundary

From the fan manufactures acoustic information the single level has been split across the octave band spectrum. Installation losses have been applied for the ducted system and terminal. Free field reduction has been applied for the different distances between the outlet with the front and rear boundaries.

	Octave Band Mid-Frequency (Hz)								
	63	125	250	500	1k	2k	4k	8k	Total
"A" Weighted Front Boundary	15.7	30.	28.2	25.4	36.4	31.4	25	15.4	39
"A" Weighted Rear Boundary	27.7	42.7	40.2	37.4	48.4	43.4	37	27.4	51

Resultant “A” Weighted Sound Level Free Field at Boundary

Front Boundary = 39 dB(A)
Rear Boundary = 51 dB(A)

Sound Evaluation at Boundary

Using information from the Centre for Hearing and Communication the resultant dB(A) levels can be compared with levels as a point of reference

10 dB(A) normal breathing
20 dB(A) whispering at 5 feet
30 dB(A) soft whisper
40 dB(A) quiet residential Area
50 dB(A) rainfall
60 dB(A) normal conversation
70 dB(A) Freeway Traffic

The resultant sound levels at the boundary equates to a level that is similar to the background noise between quiet residential area and rainfall. The facility sits in an industrial are, with no residential properties in the vicinity. It can be established that the resultant sound emitted from the booth ventilation system is below the background level of the area. As result there will be no noise impact at the properties boundaries and the neighbouring properties.