



**TECHNICAL SPECIFICATION FOR THIRD PARTY
VETTING OF NOISE ASSESSMENT REPORT**

DOCUMENTS NO.: PEM:K:001:19-20:03

REV. NO. 00

DATE: 11.03.2020

TECHNICAL SPECIFICATION



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Project Engineering Management (PEM) division of BHEL has developed an in-house software module to compute noise level at plant boundary based on noise level of equipment and other environmental conditions. Using that software module, a report titled "Plant Level Noise Assessment Report for 2X660 MW Maitree Project" has been prepared. The report prepared by BHEL PEM is to be vetted by independent third party to prove that noise level at plant boundary would be within permissible limits.

2.0 SCOPE OF WORK

- (i) Consultancy for Plant Level Noise assessment
- (ii) Vetting of noise level (dB A) output generated through BHEL PEM's in house software
- (iii) Vetting of final noise assessment report.

3.0 DELIVERABLES & DURATION

- (i) Submission of feasibility report to BHEL within 1 month from the date of release of LOI.
- (ii) Submission of final report & vetting on the plant level noise assessment report within 3 months after submission of feasibility report.

It is expected to have 2-3 meetings with bidder after award of contract to discuss & completion of the work.

4.0 ATTACHMENTS

- (i) Plant Level Noise Assessment Report for 2X 660 MW Maitree Project

	TITLE: PLANT LEVEL NOISE ASSESSMENT REPORT	DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
		REVISION NO.:	03
		DATE:	27.11.2019
PEM-NOIDA	2X660MW MAITREE BANGLADESH	SHEET:	1 OF 36

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REVISION 02		
	DATE	NAME
PREPARED BY	30.08.2019	AK
CHECKED BY	30.08.2019	RT
APPROVED BY	30.08.2019	DP

REVISION 03		
	DATE	NAME
PREPARED BY	27.11.2019	AK
CHECKED BY	27.11.2019	RT
APPROVED BY	27.11.2019	DP

REVISION 01		
	DATE	NAME
PREPARED BY	20.03.2019	AK
CHECKED BY	20.03.2019	RT
APPROVED BY	20.03.2019	DP

REVISION 00		
	DATE	NAME
PREPARED BY	30.10.2018	AK
CHECKED BY	30.10.2018	RT
APPROVED BY	30.10.2018	DP

PROJECT: 2x 660MW MAITREE SUPER THERMAL POWER PROJECT, RAMPAL, BANGLADESH (EPC MAIN PLANT PACKAGE)					
OWNER CONSULTANT:  M/s FICHTNER GmbH & Co KG, Stuttgart, GERMANY			 OWNER: BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED, BANGLADESH		
	DATE	NAME	  BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA		
PREPARED BY	20.03.2019	AK	TITLE: PLANT LEVEL NOISE ASSESSMENT REPORT		
CHECKED BY	20.03.2019	RT			
APPROVED BY	20.03.2019	DP			
			PROJECT NO: 421 BHEL DOC NO: PE-DC-421-100-K001		
			DRAWING NO: MAITREE-00-MA-DD-120257-PEM		

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1.0 INTRODUCTION

Noise assessment of 2X660 MW MAITREE SUPER THERMAL POWER PROJECT has been done using BHEL's in-house developed 'Noise Estimation Software' module. This software module has been developed taking into consideration the requirement of International Standard ISO 9613-1 and ISO 9613-2 (Acoustics-Attenuation of Sound during propagation outdoors). Computation of noise at the plant boundary requires mathematical modeling of various parameters viz. absorption, reflection, attenuation and equipment locations inside the plot plan.

The intent of this report is to assess Noise level at plant boundary.

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2.0 NOISE ASSESSMENT CRITERIA

The contractual requirement is that Noise pressure level at plant boundary shall not exceed 60 dB(A) during daytime and 50 dB(A) during night time. However, noise pressure level at plant boundary towards township shall not exceed 50 dB(A) during day time and 40 dB(A) during night time.

The contractual requirements are reproduced below:

Permissible noise levels

The Plant shall be designed and constructed inter alia in accordance with IFC Environmental, Health and Safety Guideline Thermal Power Plants (EHSG-TPP) to reduce the operating noise level as much as possible. No individual within the boundary of the Site shall be exposed to a noise level exceeding the limits stated in the EHSG-TPP and “The Sound Pollution (Control) Rules, 2006”.

Far field noise under normal operation of the Plant measured along the Site boundary of the Plant towards the Township shall not exceed 50 dB(A) during daytime and 40 dB(A) during night-time.

For any other point of the Site boundary of the Plant the noise pressure level shall not exceed 60 dB(A) during daytime and 50 dB(A) during night-time. Day time is defined from 6:00 am to 9:00 pm. Night time is defined from 9:00 pm to 6:00 am.

Fig1: Snapshot showing permission Noise pressure limits at plant boundary

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3.0 Noise Estimation Software

Noise Estimation Software is BHEL's in-house developed software module to compute noise level at plant boundary or inside the plant due to various noise emitting equipment. The module has been developed in Visual basic and generates the output in MS-Excel sheet. It calculates the attenuation of noise due to distance, atmospheric conditions such as temperature, humidity etc., depth of vegetation.

BASIC TERMS AND CALCULATIONS

Sound:

A disturbance which propagates through an elastic material at a speed which is characteristic of that material. Sound is usually caused by radiation from a solid vibrating surface or fluid disturbances.

Sound Pressure:

The Sound Pressure is the force (N) of sound on a surface area (m^2) perpendicular to the direction of the sound. The SI-units for the Sound Pressure is N/m^2 or Pa.

The Sound Pressure Level:

The lowest Sound Pressure possible to hear is approximately 2×10^{-5} Pa (20 micro Pascal, 0.02 mPa), 2 ten billionths of an atmosphere. It is therefore convenient to express the sound pressure as a logarithmic decibel scale related to this lowest human hearable sound i.e. 2×10^{-5} Pa, 0 dB

The Sound Pressure Level can be expressed as: $L_p = 20 \log (p / p_{ref})$

Where

L_p = sound pressure level (dB)

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p = sound pressure (Pa)

$P_{ref} = 2 \times 10^{-5}$: reference sound pressure (Pa)

Sound Intensity:

Sound Intensity is the Acoustic or Sound Power (W) per unit area. The SI-units for Sound Intensity is W/m^2 .

Basic Equation Sound at receiver from source:

$$L_{p2} (dB_2) = L_{p1} (dB_1) + D_c - A;$$

Where,

L_{p2} is the dB level at receiver end at distance r from the Source Point.

L_{p1} is the dB level at Source point.

D_c = Directivity correction, for omnidirectional point sound source $D_c=0$.

A =Attenuation that occurs during propagation from the point sound source to receiver.

$$A = A_{div} + A_{atm} + A_{gr} + A_{misc}$$

- A_{div} is Geometric divergence
 - $A_{div} = 20\log_{10}r + 11$, where r =distance between receiver and source.
- A_{atm} is Attenuation due to atmospheric absorption
 - $A_{atm} = \alpha * r$ where α = attenuation coefficient per meter. (calculated as per ISO 9613: part1)
- A_{gr} is attenuation due to ground effect. (calculated as per ISO 9613: part2)
- A_{misc} is attenuation due to miscellaneous other effects. (calculated as per ISO 9613: part2)

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- Only A_{site} is considered in A_{misc} . A_{site} is attenuation due to scattering from installations (and other objects). Installations includes miscellaneous pipes, valves, boxes, structural elements etc.

Combining Decibel Levels

Sound at a receiver is often the combination from two or more discrete sources. Sources have different frequencies and random phase relation. Total energy from two sources equals the sum of the energy from each. Since the total intensity is the sum of the intensity from each individual source, we can calculate the total pressure:

$$P_T^2 = \sum_{i=1}^n P_1^2 + \sum P_1^2 + P_2^2 + \dots P_n^2$$

4.0 METHODOLOGY

Following points are considered while developing the module:

- Plot Plan (MAITREE-00-MA-LD-120001-PEM) for determining the equipment and boundary coordinates.
- Coordinate points, around 16500 in number, which are housed in a grid placed at 10m apart from each other.
- Boundary as depicted in the chart below along with the location of equipment.

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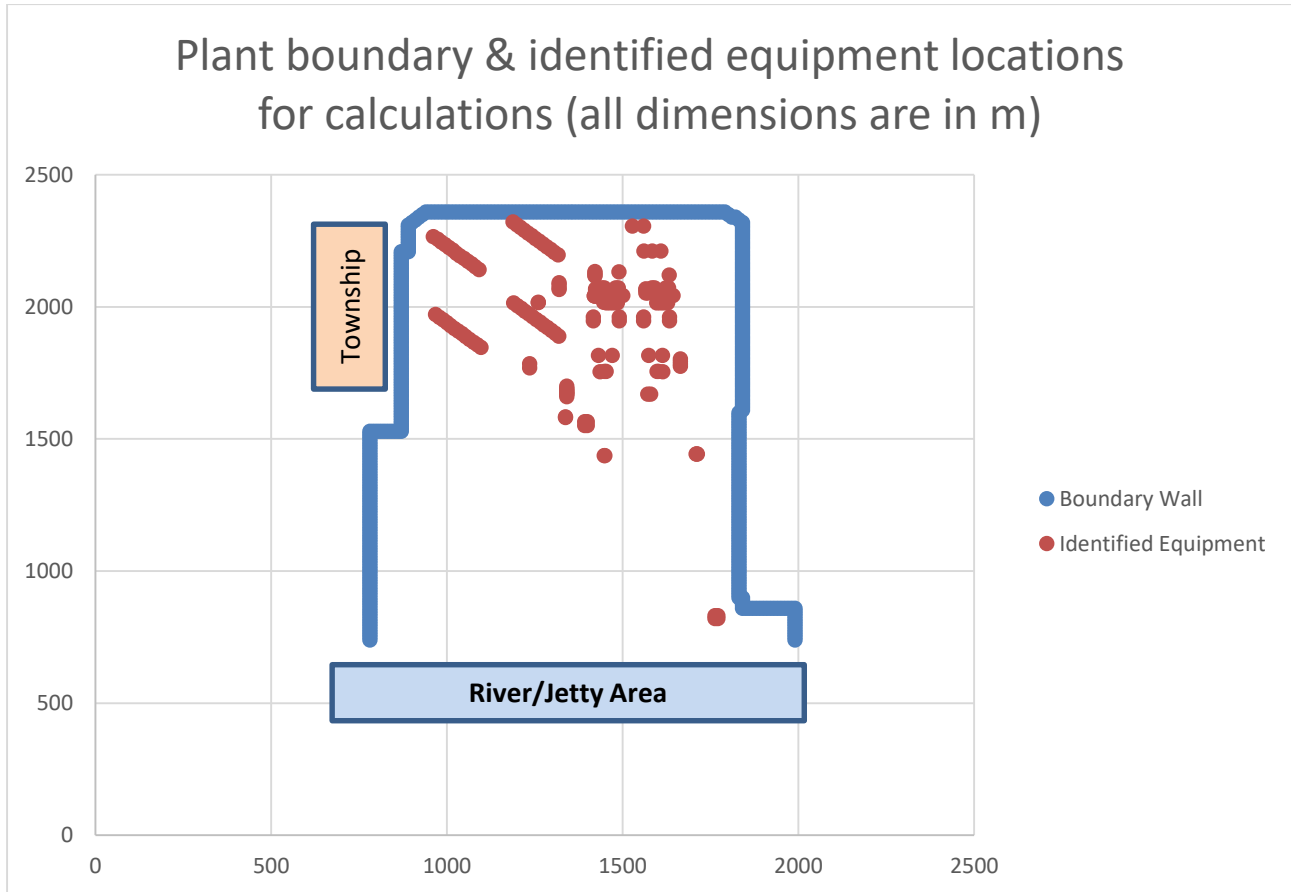


Fig2: Chart showing boundary points and location of Equipment used in the module

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4.1 Tabulation of Noise Sources

Major Noise Emitting Equipment have been identified for computation and the table below contains their KKS number, coordinates and dB(A):

Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
1	Mills-2A	02HFC01AJ001	1627	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
2	Mills-2B	02HFC02AJ001	1616	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
3	Mills-2C	02HFC03AJ001	1606	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
4	Mills-2D	02HFC04AJ001	1596	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
5	Mills-2E	02HFC05AJ001	1586	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
6	Mills-2F	02HFC06AJ001	1576	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
7	Mills-1A	01HFC01AJ001	1484	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
8	Mills-1B	01HFC02AJ001	1473	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
9	Mills-1C	01HFC03AJ001	1463	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
10	Mills-1D	01HFC04AJ001	1453	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
11	Mills-1E	01HFC05AJ001	1443	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
12	Mills-1F	01HFC06AJ001	1433	2016	5.5	90	MAITREE-00-HFC-ME-365012-HYD
13	PA FAN 2A	02HFE01AN001	1633	1962	4	85	MAITREE-1-HFE-MLU-200107-RPT
14	PA FAN 2B	02HFE02AN001	1559	1962	4	85	MAITREE-1-HFE-MLU-200107-RPT
15	PA FAN 1A	01HFE01AN001	1490	1962	4	85	MAITREE-1-HFE-MLU-200107-RPT
16	PA FAN 1B	01HFE02AN001	1416	1962	4	85	MAITREE-1-HFE-MLU-200107-RPT
17	FD FAN 2A	02HLB10AN001	1633	1948	4	85	MAITREE-1-HLB-MLU-200106-RPT
18	FD FAN 2B	02HLB20AN001	1559	1948	4	85	MAITREE-1-HLB-MLU-200106-RPT
19	FD FAN 1A	01HLB10AN001	1490	1948	4	85	MAITREE-1-HLB-MLU-200106-RPT

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
20	FD FAN 1B	01HLB20AN001	1416	1948	4	85	MAITREE-1-HLB-MLU-200106-RPT
21	ID FAN 2A	02HNC10AN001	1613	1817	6	85	Data provided by OEM
22	ID FAN 2B	02HNC20AN001	1574	1817	6	85	Data provided by OEM
23	ID FAN 1A	01HNC10AN001	1470	1817	6	85	Data provided by OEM
24	ID FAN 1B	01HNC20AN001	1431	1817	6	85	Data provided by OEM
25	DMCW PUMP 1-A(TG)	01PGC02AP001	1427	2065	1.5	85	Maitree-00-PCC-MDA-116101-PEM
26	DMCW PUMP 1-B(TG)	01PGC03AP001	1428	2060	1.5	85	Maitree-00-PCC-MDA-116101-PEM
27	DMCW(SG) PUMP 1-A	01PGC31AP001	1428	2053	1.5	85	Maitree-00-PCC-MDA-116101-PEM
28	DMCW(SG) PUMP 1-B	01PGC32AP001	1422	2053	1.5	85	Maitree-00-PCC-MDA-116101-PEM
29	ACW PUMP 1-A	01PGC01AP193	1422	2069	1.5	85	Maitree-00-PCC-MDA-116101-PEM
30	ACW PUMP 1-B	01PGC02AP192	1422	2064	1.5	85	Maitree-00-PCC-MDA-116101-PEM
31	ACW PUMP 1-C	01PGC03AP194	1422	2059	1.5	85	Maitree-00-PCC-MDA-116101-PEM
32	DMCW PUMP 2-A(TG)	02PGC02AP001	1571	2065	1.5	85	Maitree-00-PCC-MDA-116101-PEM
33	DMCW PUMP 2-B(TG)	02PGC03AP001	1571	2060	1.5	85	Maitree-00-PCC-MDA-116101-PEM
34	DMCW(SG) PUMP 2-A	02PGC31AP001	1571	2053	1.5	85	Maitree-00-PCC-MDA-116101-PEM
35	DMCW(SG) PUMP 2-B	02PGC32AP001	1565	2053	1.5	85	Maitree-00-PCC-MDA-116101-PEM
36	ACW PUMP 2-A	02PGC01AP193	1565	2069	1.5	85	Maitree-00-PCC-MDA-116101-PEM
37	ACW PUMP 2-B	02PGC02AP192	1565	2064	1.5	85	Maitree-00-PCC-MDA-116101-PEM
38	ACW PUMP 2-C	02PGC03AP194	1565	2059	1.5	85	Maitree-00-PCC-MDA-116101-PEM
39	MDBFP UNIT-1	01LAB30AP001	1512	2064	1.6	85	MAITREE-00-LCB-ME-350122-HYD
40	MDBFP UNIT-2	02LAB30AP001	1655	2064	1.6	85	MAITREE-00-LCB-ME-350122-HYD
41	TDBFP-1A	01LAB10AP001	1472	2043	6	85	MAITREE-00-LCB-ME-350122-HYD

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
42	TDBFP-1B	01LAB20AP001	1454	2043	6	85	MAITREE-00-LCB-ME-350122-HYD
43	TDBFP-2A	02LAB10AP001	1615	2043	6	85	MAITREE-00-LCB-ME-350122-HYD
44	TDBFP-2B	02LAB20AP001	1597	2043	6	85	MAITREE-00-LCB-ME-350122-HYD
45	Cond Extraction Pump-1A	01LCA01AP001	1481	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
46	Cond Extraction Pump-1B	01LCA02AP001	1479	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
47	Cond Extraction Pump-1C	01LCA03AP001	1476	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
48	Cond Extraction Pump-2A	02LCA01AP001	1624	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
49	Cond Extraction Pump-2B	02LCA02AP001	1622	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
50	Cond Extraction Pump-2C	02LCA03AP001	1619	2055	1.5	85	MAITREE-00-LCB-ME-350207-HYD
51	Drip pump-1A	01DRV10AP001	1500	2043	1.5	85	MAITREE-00-LCB-ME-350254-HYD
52	Drip pump-1B	01DRV20AP001	1500	2041	1.5	85	MAITREE-00-LCB-ME-350254-HYD
53	Drip pump-2A	02DRV10AP001	1643	2043	1.5	85	MAITREE-00-LCB-ME-350254-HYD
54	Drip pump-2B	02DRV20AP001	1643	2041	1.5	85	MAITREE-00-LCB-ME-350254-HYD
55	TG-1		1466	2063	18.5	90*	MAITREE-00-MA-DA-130502-HWR
56	TG-2		1609	2063	18.5	90*	MAITREE-00-MA-DA-130502-HWR
57	Vacuum Pump 1-A	01MAJ60AN001	1487	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
58	Vacuum Pump 1-B	01MAJ70AN001	1480	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
59	Vacuum Pump 1-C	01MAJ80AN001	1447	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
60	Vacuum Pump 1-D	01MAJ90AN001	1440	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
61	Vacuum Pump 2-A	02MAJ60AN001	1630	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
62	Vacuum Pump 2-B	02MAJ70AN001	1623	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
63	Vacuum Pump 2-C	02MAJ80AN001	1590	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
64	Vacuum Pump 2-D	02MAJ90AN001	1583	2072	1.5	85	MAITREE-00-MAJ-DA-125014-HWR
Cooling tower Fan UNIT-1_A							
65	Unit -1A Fan-1	01PGD10AN001	1189	2015	16	85	MAITREE-00-URA-MED-115104-PEM
66	Unit -1A Fan-2	01PGD10AN002	1200	2005	16	85	MAITREE-00-URA-MED-115104-PEM
67	Unit -1A Fan-3	01PGD10AN003	1211	1995	16	85	MAITREE-00-URA-MED-115104-PEM
68	Unit -1A Fan-4	01PGD10AN004	1221	1984	16	85	MAITREE-00-URA-MED-115104-PEM
69	Unit -1A Fan-5	01PGD10AN005	1232	1974	16	85	MAITREE-00-URA-MED-115104-PEM
70	Unit -1A Fan-6	01PGD10AN006	1243	1963	16	85	MAITREE-00-URA-MED-115104-PEM
71	Unit -1A Fan-7	01PGD10AN007	1254	1953	16	85	MAITREE-00-URA-MED-115104-PEM
72	Unit -1A Fan-8	01PGD10AN008	1265	1943	16	85	MAITREE-00-URA-MED-115104-PEM
73	Unit -1A Fan-9	01PGD10AN009	1275	1932	16	85	MAITREE-00-URA-MED-115104-PEM
74	Unit -1A Fan-10	01PGD10AN010	1286	1922	16	85	MAITREE-00-URA-MED-115104-PEM
75	Unit -1A Fan-11	01PGD10AN011	1297	1911	16	85	MAITREE-00-URA-MED-115104-PEM
76	Unit -1A Fan-12	01PGD10AN012	1308	1901	16	85	MAITREE-00-URA-MED-115104-PEM
77	Unit -1A Fan-13	01PGD10AN013	1318	1890	16	85	MAITREE-00-URA-MED-115104-PEM
Cooling tower Fan UNIT-1_B							
78	Unit-1B Fan-1	01PGD20AN001	967	1972	16	85	MAITREE-00-URA-MED-115104-PEM
79	Unit-1B Fan-2	01PGD20AN002	978	1961	16	85	MAITREE-00-URA-MED-115104-PEM
80	Unit-1B Fan-3	01PGD20AN003	989	1951	16	85	MAITREE-00-URA-MED-115104-PEM
81	Unit-1B Fan-4	01PGD20AN004	1000	1940	16	85	MAITREE-00-URA-MED-115104-PEM

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82	Unit-1B Fan-5	01PGD20AN005	1010	1930	16	85	MAITREE-00-URA-MED-115104-PEM
83	Unit-1B Fan-6	01PGD20AN006	1021	1919	16	85	MAITREE-00-URA-MED-115104-PEM
84	Unit-1B Fan-7	01PGD20AN007	1032	1909	16	85	MAITREE-00-URA-MED-115104-PEM
85	Unit-1B Fan-8	01PGD20AN008	1043	1899	16	85	MAITREE-00-URA-MED-115104-PEM
86	Unit-1B Fan-9	01PGD20AN009	1053	1888	16	85	MAITREE-00-URA-MED-115104-PEM
87	Unit-1B Fan-10	01PGD20AN010	1064	1878	16	85	MAITREE-00-URA-MED-115104-PEM
88	Unit-1B Fan-11	01PGD20AN011	1075	1867	16	85	MAITREE-00-URA-MED-115104-PEM
89	Unit-1B Fan-12	01PGD20AN012	1086	1857	16	85	MAITREE-00-URA-MED-115104-PEM
90	Unit-1B Fan-13	01PGD20AN013	1096	1847	16	85	MAITREE-00-URA-MED-115104-PEM
Cooling tower Fan UNIT-2_A							
91	Unit-2A Fan-1	02PGD10AN001	1187	2322	16	85	MAITREE-00-URA-MED-115104-PEM
92	Unit-2A Fan-2	02PGD10AN002	1198	2311	16	85	MAITREE-00-URA-MED-115104-PEM
93	Unit-2A Fan-3	02PGD10AN003	1208	2301	16	85	MAITREE-00-URA-MED-115104-PEM
94	Unit-2A Fan-4	02PGD10AN004	1219	2291	16	85	MAITREE-00-URA-MED-115104-PEM
95	Unit-2A Fan-5	02PGD10AN005	1230	2280	16	85	MAITREE-00-URA-MED-115104-PEM
96	Unit-2A Fan-6	02PGD10AN006	1241	2270	16	85	MAITREE-00-URA-MED-115104-PEM
97	Unit-2A Fan-7	02PGD10AN007	1251	2259	16	85	MAITREE-00-URA-MED-115104-PEM
98	Unit-2A Fan-8	02PGD10AN008	1262	2249	16	85	MAITREE-00-URA-MED-115104-PEM
99	Unit-2A Fan-9	02PGD10AN009	1273	2239	16	85	MAITREE-00-URA-MED-115104-PEM
100	Unit-2A Fan-10	02PGD10AN010	1284	2228	16	85	MAITREE-00-URA-MED-115104-PEM
101	Unit-2A Fan-11	02PGD10AN011	1295	2218	16	85	MAITREE-00-URA-MED-115104-PEM
102	Unit-2A Fan-12	02PGD10AN012	1305	2207	16	85	MAITREE-00-URA-MED-115104-PEM

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103	Unit-2A Fan-13	02PGD10AN013	1316	2197	16	85	MAITREE-00-URA-MED-115104-PEM
	Cooling tower Fan UNIT-2_B						
104	Unit-2B Fan-1	02PGD20AN001	961	2267	16	85	MAITREE-00-URA-MED-115104-PEM
105	Unit-2B Fan-2	02PGD20AN002	973	2257	16	85	MAITREE-00-URA-MED-115104-PEM
106	Unit-2B Fan-3	02PGD20AN003	983	2246	16	85	MAITREE-00-URA-MED-115104-PEM
107	Unit-2B Fan-4	02PGD20AN004	994	2236	16	85	MAITREE-00-URA-MED-115104-PEM
108	Unit-2B Fan-5	02PGD20AN005	1005	2225	16	85	MAITREE-00-URA-MED-115104-PEM
109	Unit-2B Fan-6	02PGD20AN006	1016	2215	16	85	MAITREE-00-URA-MED-115104-PEM
110	Unit-2B Fan-7	02PGD20AN007	1026	2204	16	85	MAITREE-00-URA-MED-115104-PEM
111	Unit-2B Fan-8	02PGD20AN008	1016	2194	16	85	MAITREE-00-URA-MED-115104-PEM
112	Unit-2B Fan-9	02PGD20AN009	1048	2184	16	85	MAITREE-00-URA-MED-115104-PEM
113	Unit-2B Fan-10	02PGD20AN010	1059	2173	16	85	MAITREE-00-URA-MED-115104-PEM
114	Unit-2B Fan-11	02PGD20AN011	1070	2163	16	85	MAITREE-00-URA-MED-115104-PEM
115	Unit-2B Fan-12	02PGD20AN012	1080	2152	16	85	MAITREE-00-URA-MED-115104-PEM
116	Unit-2B Fan-13	02PGD20AN013	1091	2142	16	85	MAITREE-00-URA-MED-115104-PEM
117	CW-A	01PAC01AP001	1319	2092	7.5	85	Maitree-00-PAC-ME-350303-HYD
118	CW-B	01PAC02AP001	1319	2085	7.5	85	Maitree-00-PAC-ME-350303-HYD
119	CW-C	00PAC03AP001	1319	2079	7.5	85	Maitree-00-PAC-ME-350303-HYD
120	CW-D	02PAC02AP001	1319	2073	7.5	85	Maitree-00-PAC-ME-350303-HYD
121	CW-E	02PAC01AP001	1319	2066	7.5	85	Maitree-00-PAC-ME-350303-HYD
	Aux boiler						
122	BFP-1	00QLA12AP001	1317	1548	2	85	
123	BFP-2	00QLA12AP002	1317	1541	2	85	

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
124	Fan-1	90QHL10AN001	1338	1561	2	85	
125	Fan-2	90QHL20AN001	1338	1552	2	85	
	Desalinated Water Pump House						
126	APH/ESP Wash pump-1	00GHD60AP001	1340	1660	1.5	85	Maitree-00-PCC-MDA-116101-PEM
127	APH/ESP Wash pump-2	00GHD61AP001	1340	1663	1.5	85	Maitree-00-PCC-MDA-116101-PEM
128	FGD Pump-1	00GHD81AP001	1340	1669	1.5	85	Maitree-00-PCC-MDA-116101-PEM
129	FGD Pump-2	00GHD82AP001	1340	1671	1.5	85	Maitree-00-PCC-MDA-116101-PEM
130	FGD Pump-3	00GHD83AP001	1340	1673	1.5	85	Maitree-00-PCC-MDA-116101-PEM
131	AHP Pump-1	00GHD70AP001	1340	1675	1.5	85	Maitree-00-PCC-MDA-116101-PEM
132	AHP Pump-2	00GHD71AP001	1340	1677	1.5	85	Maitree-00-PCC-MDA-116101-PEM
133	CHP-1	00GHD94AP001	1340	1679	1.5	85	Maitree-00-PCC-MDA-116101-PEM
134	CHP-2	00GHD95AP001	1340	1682	1.5	85	Maitree-00-PCC-MDA-116101-PEM
135	HVAC Pump-1	00GHD55AP001	1340	1684	1.5	85	Maitree-00-PCC-MDA-116101-PEM
136	HVAC Pump-2	00GHD56AP001	1340	1686	1.5	85	Maitree-00-PCC-MDA-116101-PEM
137	SW Pump-1	00GHD30AP001	1340	1688	1.5	85	Maitree-00-PCC-MDA-116101-PEM
138	SW Pump-2	00GHD31AP001	1340	1690	1.5	85	Maitree-00-PCC-MDA-116101-PEM
139	PW Colony pump-1	00GHD45AP001	1340	1692	1.5	85	Maitree-00-PCC-MDA-116101-PEM
140	PW Plant Pump-1	00GHD41AP001	1340	1696	1.5	85	Maitree-00-PCC-MDA-116101-PEM
141	DM MV Pump-1		1340	1700	1.5	85	Maitree-00-PCC-MDA-116101-PEM
142	DM MV Pump-2		1340	1702	1.5	85	Maitree-00-PCC-MDA-116101-PEM
143	MB REGENERATION Pump-1		1340	1706	1.5	85	
	Fire Water Pump House						
144	Jockey pump-1	00SGA06AP001	1337	1584	1.5	88	Maitree-00-SGD-DB-382005-PES

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
145	Jockey pump-2	00SGA07AP001	1337	1582	1.5	88	Maitree-00-SGD-DB-382005-PES
RO DM Plant							
146	1st Pass RO HP Pump-1	00GCF02AP001	1235	1785	1.5	77.8	MAITREE-00-GCB-MDA-200323-RPT
147	2nd Pass RO HP Pump-1	00GCF03AP001	1235	1769	1.5	77.8	MAITREE-00-GCB-MDA-200323-RPT
148	3rd Pass RO HP Pump-1	00GCF04AP001	1235	1752	1.5	77.8	MAITREE-00-GCB-MDA-200323-RPT
CW/PW Gas Chlorination							
149	Booster Water Pump-1		1259	2018	1.5	85	
150	Booster Water Pump-2		1259	2017	1.5	85	
151	Booster Water Pump-3		1259	2015	1.5	85	
Foam Pump House							
152	Pump-1		1445	2018	1.5	85	
153	Pump-2		1447	1437	1.5	85	
154	Pump-3		1449	1437	1.5	85	
Hydrogen plant Compressor							
155	Compressor-1	00QJG01AN101	1708	1444	1.5	85	MAITREE-00-RA-DA-111560-PEM
156	Compressor-2	00QJG02AN101	1710	1444	1.5	85	MAITREE-00-RA-DA-111560-PEM
157	Compressor-3	00QJG03AN101	1712	1444	1.5	85	MAITREE-00-RA-DA-111560-PEM
Fuel Oil Area							
158	HSD Transfer Pump-1	00EGC31AP001	1507	1484	1.5	85	MAITREE-0-EG-DA-111706-PEM
159	HSD Transfer Pump-2	00EGC32AP001	1511	1484	1.5	85	MAITREE-0-EG-DA-111706-PEM
160	HSD Unloading Pump-1	00EGC11AP001	1514	1484	1.5	85	MAITREE-0-EG-DA-111706-PEM
161	HSD Unloading Pump-2	00EGC12AP001	1518	1484	1.5	85	MAITREE-0-EG-DA-111706-PEM
162	HSD Pressuring Pump-1	00HJF11AP001	1470	1484	1.5	85	
163	HSD Pressuring Pump-2	00HJF12AP001	1474	1484	1.5	85	
164	Boiler Fill Pump-1	00LCR11AP001	1386	2069	1.5	85	Maitree-00-PCC-MDA-116101-PEM

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
165	Boiler Fill Pump-2	00LCR12AP001	1386	2067	1.5	85	Maitree-00-PCC-MDA-116101-PEM
	CST Pump House						
166	Cond. Forwarding Pump-1	01LCR31AP001	1385	2064	1.5	85	Maitree-00-PCC-MDA-116101-PEM
167	Cond. Forwarding Pump-2	01LCR32AP001	1385	2062	1.5	85	Maitree-00-PCC-MDA-116101-PEM
168	Cond. Forwarding Pump-3	02LCR31AP001	1385	2061	1.5	85	Maitree-00-PCC-MDA-116101-PEM
169	Cond. Forwarding Pump-4	02LCR32AP001	1385	2059	1.5	85	Maitree-00-PCC-MDA-116101-PEM
	Oxidation Blower Building						
170	Unit-1A	10HTG00AN01	1435	1755	1.5	85	MAITREE-01-HTG-MLU-200216-RPT
171	Unit-1B	10HTG00AN02	1439	1755	1.5	85	MAITREE-01-HTG-MLU-200216-RPT
172	Unit-2A	20HTG00AN01	1614	1755	1.5	85	MAITREE-01-HTG-MLU-200216-RPT
173	Unit-2B	20HTG00AN02	1610	1755	1.5	85	MAITREE-01-HTG-MLU-200216-RPT
174	Recirculation Pump-1A	10HTD00AP001	1448	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
175	Recirculation Pump-1B	10HTD00AP002	1452	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
176	Recirculation Pump-1C	10HTD00AP003	1455	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
177	Recirculation Pump-2A	20HTD00AP001	1601	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
178	Recirculation Pump-2B	20HTD00AP002	1597	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
179	Recirculation Pump-2C	20HTD00AP003	1594	1756	1.5	85	MAITREE-01-HTF-MLU-200215-RPT
180	Ball Mill-1	00HTK00AJ001	1571	1670	1.5	90	MAITREE-00-HTK-MLU-200211-RPT
181	Ball Mill-2	00HTK00AJ002	1579	1670	1.5	90	MAITREE-00-HTK-MLU-200211-RPT
	AHP Compressor House						
182	Compressor-1		1664	1803	1.5	85	MAITREE-00-ETG-DA-176036-ISG

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
183	Compressor-2		1664	1798	1.5	85	MAITREE-00-ETG-DA-176038-ISG
184	Compressor-3		1664	1794	1.5	85	MAITREE-00-ETG-DA-176037-ISG
185	Compressor-4		1664	1789	1.5	85	Maitree-00-ETG-DA-176169-ISG
186	IA Compressor-1	00QFB01AN001	1421	2117	1.5	85	MAITREE-00-QEA-DA-112307-PEM
187	IA Compressor-2	00QFB02AN001	1421	2121	1.5	85	MAITREE-00-QEA-DA-112307-PEM
188	IA Compressor-3	00QFB03AN001	1421	2126	1.5	85	MAITREE-00-QEA-DA-112307-PEM
189	SA Compressor-1	00QEB01AN001	1421	2130	1.5	85	MAITREE-00-QEA-DA-112307-PEM
190	SA Compressor-2	00QEB02AN001	1421	2134	1.5	85	MAITREE-00-QEA-DA-112307-PEM
191	SA Compressor-3	00QEB03AN001	1421	2138	1.5	85	MAITREE-00-QEA-DA-112307-PEM
192	SA Compressor-4	00QEB04AN001	1421	2143	1.5	85	MAITREE-00-QEA-DA-112307-PEM
193	DG For Main Plant DG-1		1561	2109	1.5	25*	MAITREE-00-BRV-DA-176502-ISG
194	DG For Main Plant DG-2		1561	2125	1.5	25*	MAITREE-00-BRV-DA-176502-ISG
195	DG For Main Plant DG-standby		1561	2117	1.5	25*	MAITREE-00-BRV-DA-176502-ISG
196	DG set For FGD		1486	1696	1.5	75*	MAITREE-00-BRV-DA-176523-ISG
*provided with acoustic enclosure							
197	Raw Water Pump PW-006		845	855	1.5	85	Maitree-00-PCC-MDA-116201-PEM
198	Raw Water Pump PW-007		842	855	1.5	85	Maitree-00-PCC-MDA-116201-PEM
199	Raw Water Pump PW-008		840	855	1.5	85	Maitree-00-PCC-MDA-116201-PEM
200	Raw Water Pump PW-009		837	855	1.5	85	Maitree-00-PCC-MDA-116201-PEM

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
201	Raw Water Pump PW-010		835	855	1.5	85	Maitree-00-PCC-MDA-116201-PEM
Generator Transformer							
202	GT-1		1489	2133	1.5	90	Maitree-00-BAT-EE-2251-BPL
203	GT-2		1632	2121	1.5	90	Maitree-00-BAT-EE-2251-BPL
Switch Yard							
204	ICT-1	00AAT01	1527	2306	1.5	91	Maitree-00-BAT-EE-225219-BPL
205	ICT-2	00AAT02	1559	2306	1.5	91	Maitree-00-BAT-EE-225219-BPL
206	Bus Reactor	00ABT03	1560	2212	1.5	82	Maitree-00-BAT-EE-225247-BPL
207	Line-1 Reactor	00AAT01	1584	2212	1.5	82	Maitree-00-BAT-EE-225235-BPL
208	Line-2 Reactor	00AAT02	1608	2212	1.5	82	Maitree-00-BAT-EE-225235-BPL
209	Vibrating screen Feeder-1	EBD-1	1762	821	1.5	85	
210	Vibrating screen Feeder-2	EBD-2	1770	821	1.5	85	
211	Vibrating screen Feeder-3	EBD-3	1762	832	1.5	85	
212	Vibrating screen Feeder-4	EBD-4	1770	832	1.5	85	
213	Crusher House Vibrating screen-1	EBD-1	1391	1566	1.5	85	
214	Crusher House Vibrating screen-2	EBD-2	1399	1566	1.5	85	
215	Crusher House Ring Granulator screen-1	EBC-1	1391	1551	1.5	85	
216	Crusher House Ring Granulator -2	EBC-2	1399	1551	1.5	85	

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Sl. No.	Major Noise Emitting Equipment	KKS number	Plant-East	Plant-North	Elevation	Noise level in dB(A)	Source Drawing for dB(A)
217	Aux PRDS Valve ASV-26	01LBG20AA101	1418.5	2042	19	85	Maitree-01-LBG-MDA-119127-PEM-01
218	Aux PRDS Valve ASV-29	01LBG21AA101	1418.5	2042.5	19	85	Maitree-01-LBG-MDA-119127-PEM-01
219	Aux PRDS Valve CDV-262	01LAF20AA101	1422	2042	26	85	Maitree-01-LBG-MDA-119127-PEM-01
220	Aux PRDS Valve CDV-265	01LAF21AA101	1422	2040.5	26	85	Maitree-01-LBG-MDA-119127-PEM-01

4.2 Worst Environmental condition:

Attenuation of noise is minimum in Low temperature and high Humidity giving. Hence low attenuation is the worst condition. Below table shows the environmental condition:

Parameter	Values
Worst Temperature(Jan)	13.89 °C
Max Relative Humidity(Jan)	98%
Green belt around plant boundary	Not considered
Ambient pressure	1007mbar

5.0 ASSESSMENT OF RESULTS

- The dB level at various points are plotted on the plot area.
- Lines with same dB level across the plot plan of the project are shown in the form of contours.

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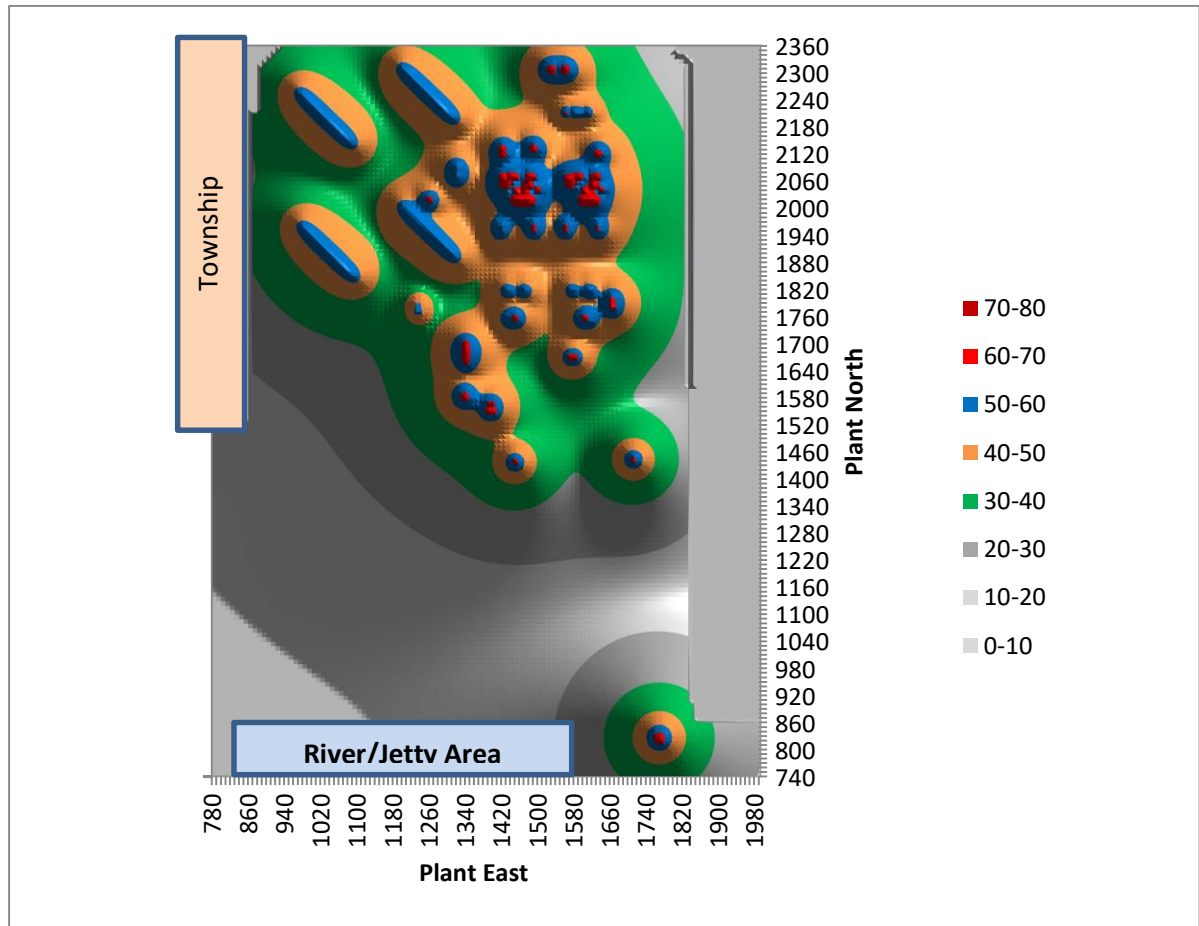


Fig3: Contour chart showing different color band according to dB(A) value range

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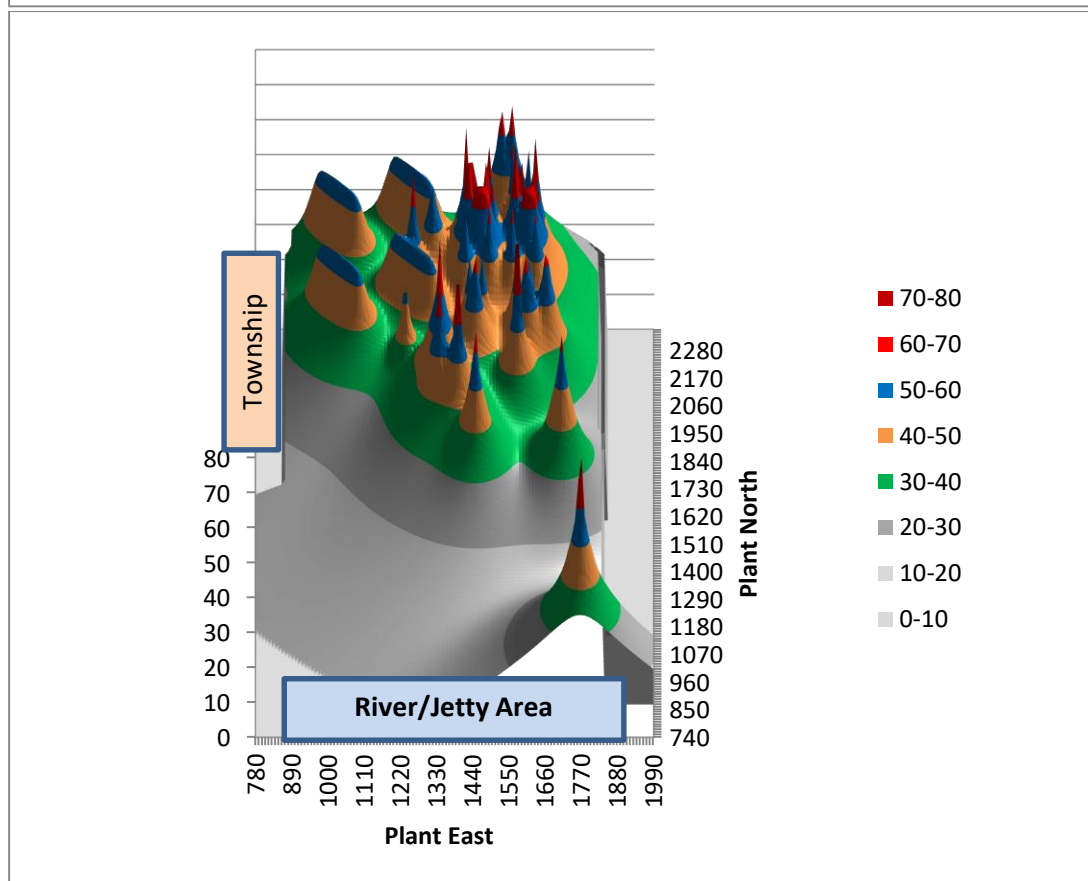
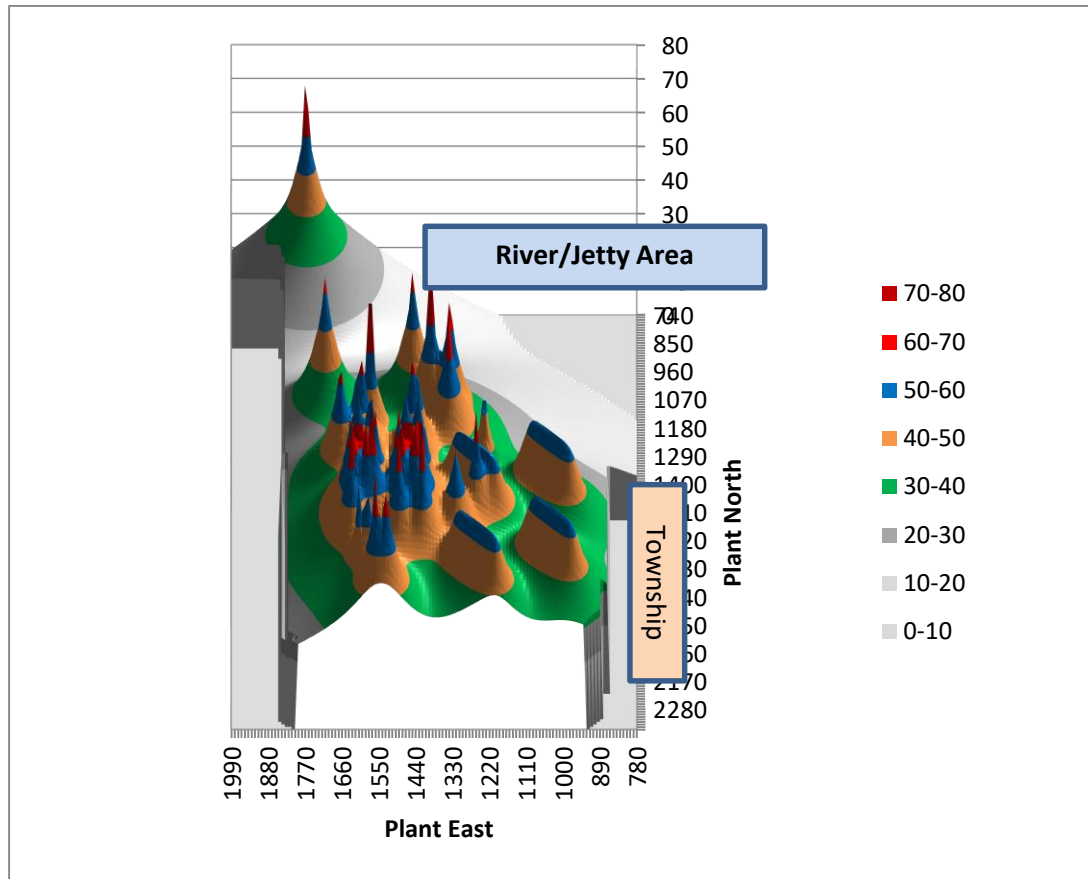


Fig4: 3D Contour chart showing different color band according to dB(A) value range

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6.0 CONCLUSION

- Noise level at plant boundary toward township is below 40dB(A).
- Noise level at other boundary points is below 50dB(A).

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Annexure-1

Table: Calculated Noise Pressure Level at Boundary Coordinates

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
780	740	3	< 1
780	750	3	< 1
780	760	3	< 1
780	770	3	< 1
780	780	3	< 1
780	790	3	< 1
780	800	3	< 1
780	810	3	< 1
780	820	3	< 1
780	830	3	< 1
780	840	3	< 1
780	850	3	< 1
780	860	3	< 1
780	870	3	< 1
780	880	3	< 1
780	890	3	< 1
780	900	3	< 1
780	910	3	< 1
780	920	3	< 1
780	930	3	< 1
780	940	3	< 1
780	950	3	< 1
780	960	3	< 1
780	970	3	< 1
780	980	3	< 1
780	990	3	< 1
780	1000	3	< 1
780	1010	3	< 1
780	1020	3	< 1
780	1030	3	< 1
780	1040	3	< 1
780	1050	3	< 1
780	1060	3	< 1
780	1070	3	< 1
780	1080	3	< 1
780	1090	3	< 1
780	1100	3	< 1
780	1110	3	< 1

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X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
780	1120	3	< 1
780	1130	3	< 1
780	1140	3	< 1
780	1150	3	< 1
780	1160	3	< 1
780	1170	3	1
780	1180	3	1
780	1190	3	1
780	1200	3	2
780	1210	3	2
780	1220	3	2
780	1230	3	2
780	1240	3	3
780	1250	3	3
780	1260	3	3
780	1270	3	4
780	1280	3	4
780	1290	3	4
780	1300	3	5
780	1310	3	5
780	1320	3	5
780	1330	3	6
780	1340	3	6
780	1350	3	6
780	1360	3	7
780	1370	3	7
780	1380	3	7
780	1390	3	8
780	1400	3	8
780	1410	3	8
780	1420	3	9
780	1430	3	9
780	1440	3	9
780	1450	3	10
780	1460	3	10
780	1470	3	10
780	1480	3	11
780	1490	3	11
780	1500	3	11
780	1510	3	12
780	1520	3	12
780	1530	3	12

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
790	1530	3	13
800	1530	3	13
810	1530	3	14
820	1530	3	14
830	1530	3	14
840	1530	3	15
850	1530	3	15
860	1530	3	15
870	1530	3	16
870	1540	3	16
870	1550	3	16
870	1560	3	17
870	1570	3	17
870	1580	3	18
870	1590	3	18
870	1600	3	18
870	1610	3	19
870	1620	3	19
870	1630	3	20
870	1640	3	20
870	1650	3	21
870	1660	3	21
870	1670	3	22
870	1680	3	22
870	1690	3	22
870	1700	3	23
870	1710	3	23
870	1720	3	24
870	1730	3	24
870	1740	3	25
870	1750	3	25
870	1760	3	26
870	1770	3	26
870	1780	3	27
870	1790	3	27
870	1800	3	28
870	1810	3	28
870	1820	3	28
870	1830	3	29
870	1840	3	29
870	1850	3	30
870	1860	3	30

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
	PLANT LEVEL NOISE ASSESSMENT REPORT		REVISION NO.:	03
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
870	1870	3	30
870	1880	3	31
870	1890	3	31
870	1900	3	31
870	1910	3	32
870	1920	3	32
870	1930	3	32
870	1940	3	32
870	1950	3	32
870	1960	3	32
870	1970	3	32
870	1980	3	32
870	1990	3	31
870	2000	3	31
870	2010	3	31
870	2020	3	31
870	2030	3	30
870	2040	3	30
870	2050	3	30
870	2060	3	30
870	2070	3	30
870	2080	3	30
870	2090	3	30
870	2100	3	30
870	2110	3	30
870	2120	3	30
870	2130	3	30
870	2140	3	30
870	2150	3	31
870	2160	3	31
870	2170	3	31
870	2180	3	32
870	2190	3	32
870	2200	3	32
870	2210	3	32
880	2210	3	33
890	2210	3	34
890	2220	3	34
890	2230	3	35
890	2240	3	35
890	2250	3	35
890	2260	3	34

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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			DATE:	27.11.2019
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
890	2270	3	34
890	2280	3	34
890	2290	3	33
890	2300	3	33
890	2310	3	32
900	2320	3	32
910	2330	3	32
920	2340	3	32
930	2350	3	32
940	2360	3	31
950	2360	3	32
960	2360	3	32
970	2360	3	32
980	2360	3	32
990	2360	3	33
1000	2360	3	33
1010	2360	3	33
1020	2360	3	33
1030	2360	3	33
1040	2360	3	33
1050	2360	3	33
1060	2360	3	33
1070	2360	3	33
1080	2360	3	33
1090	2360	3	33
1100	2360	3	33
1110	2360	3	34
1120	2360	3	34
1130	2360	3	35
1140	2360	3	36
1150	2360	3	36
1160	2360	3	37
1170	2360	3	38
1180	2360	3	39
1190	2360	3	40
1200	2360	3	40
1210	2360	3	40
1220	2360	3	40
1230	2360	3	40
1240	2360	3	39
1250	2360	3	38
1260	2360	3	38

 	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1270	2360	3	37
1280	2360	3	37
1290	2360	3	36
1300	2360	3	36
1310	2360	3	35
1320	2360	3	35
1330	2360	3	34
1340	2360	3	34
1350	2360	3	34
1360	2360	3	34
1370	2360	3	33
1380	2360	3	33
1390	2360	3	34
1400	2360	3	34
1410	2360	3	34
1420	2360	3	34
1430	2360	3	35
1440	2360	3	36
1450	2360	3	36
1460	2360	3	37
1470	2360	3	38
1480	2360	3	39
1490	2360	3	40
1500	2360	3	41
1510	2360	3	42
1520	2360	3	43
1530	2360	3	43
1540	2360	3	44
1550	2360	3	44
1560	2360	3	43
1570	2360	3	43
1580	2360	3	42
1590	2360	3	41
1600	2360	3	40
1610	2360	3	39
1620	2360	3	38
1630	2360	3	37
1640	2360	3	36
1650	2360	3	35
1660	2360	3	34
1670	2360	3	33
1680	2360	3	32

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
	PLANT LEVEL NOISE ASSESSMENT REPORT		REVISION NO.:	03
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1690	2360	3	31
1700	2360	3	31
1710	2360	3	30
1720	2360	3	29
1730	2360	3	29
1740	2360	3	28
1750	2360	3	28
1760	2360	3	27
1770	2360	3	27
1780	2360	3	26
1790	2360	3	26
1800	2350	3	25
1810	2340	3	25
1820	2340	3	25
1830	2330	3	25
1840	2320	3	24
1840	2310	3	25
1840	2300	3	25
1840	2290	3	25
1840	2280	3	26
1840	2270	3	26
1840	2260	3	26
1840	2250	3	26
1840	2240	3	27
1840	2230	3	27
1840	2220	3	27
1840	2210	3	28
1840	2200	3	28
1840	2190	3	28
1840	2180	3	28
1840	2170	3	29
1840	2160	3	29
1840	2150	3	29
1840	2140	3	29
1840	2130	3	30
1840	2120	3	30
1840	2110	3	30
1840	2100	3	30
1840	2090	3	30
1840	2080	3	30
1840	2070	3	30
1840	2060	3	30

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1840	2050	3	30
1840	2040	3	30
1840	2030	3	30
1840	2020	3	30
1840	2010	3	30
1840	2000	3	30
1840	1990	3	30
1840	1980	3	30
1840	1970	3	30
1840	1960	3	30
1840	1950	3	30
1840	1940	3	30
1840	1930	3	30
1840	1920	3	30
1840	1910	3	29
1840	1900	3	29
1840	1890	3	29
1840	1880	3	29
1840	1870	3	29
1840	1860	3	29
1840	1850	3	29
1840	1840	3	29
1840	1830	3	29
1840	1820	3	29
1840	1810	3	28
1840	1800	3	28
1840	1790	3	28
1840	1780	3	28
1840	1770	3	28
1840	1760	3	28
1840	1750	3	28
1840	1740	3	27
1840	1730	3	27
1840	1720	3	27
1840	1710	3	27
1840	1700	3	26
1840	1690	3	26
1840	1680	3	26
1840	1670	3	26
1840	1660	3	25
1840	1650	3	25
1840	1640	3	25

	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1840	1630	3	25
1840	1620	3	25
1840	1610	3	24
1830	1600	3	25
1830	1590	3	25
1830	1580	3	25
1830	1570	3	25
1830	1560	3	25
1830	1550	3	25
1830	1540	3	25
1830	1530	3	26
1830	1520	3	26
1830	1510	3	26
1830	1500	3	27
1830	1490	3	27
1830	1480	3	27
1830	1470	3	27
1830	1460	3	28
1830	1450	3	28
1830	1440	3	28
1830	1430	3	27
1830	1420	3	27
1830	1410	3	27
1830	1400	3	27
1830	1390	3	26
1830	1380	3	26
1830	1370	3	25
1830	1360	3	25
1830	1350	3	24
1830	1340	3	24
1830	1330	3	23
1830	1320	3	22
1830	1310	3	22
1830	1300	3	21
1830	1290	3	21
1830	1280	3	20
1830	1270	3	19
1830	1260	3	19
1830	1250	3	18
1830	1240	3	18
1830	1230	3	17
1830	1220	3	17

 	TITLE:		DOCUMENT NO.:	MAITREE-00-MA-DD-120257-PEM
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PEM-NOIDA	2X660MW MAITREE BANGLADESH			

X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1830	1210	3	17
1830	1200	3	16
1830	1190	3	16
1830	1180	3	16
1830	1170	3	16
1830	1160	3	16
1830	1150	3	16
1830	1140	3	16
1830	1130	3	16
1830	1120	3	16
1830	1110	3	17
1830	1100	3	17
1830	1090	3	18
1830	1080	3	18
1830	1070	3	19
1830	1060	3	20
1830	1050	3	20
1830	1040	3	21
1830	1030	3	22
1830	1020	3	22
1830	1010	3	23
1830	1000	3	24
1830	990	3	25
1830	980	3	26
1830	970	3	26
1830	960	3	27
1830	950	3	28
1830	940	3	29
1830	930	3	30
1830	920	3	31
1830	910	3	32
1830	900	3	33
1840	900	3	32
1840	890	3	33
1840	880	3	34
1840	870	3	35
1840	860	3	36
1850	860	3	34
1860	860	3	33
1870	860	3	32
1880	860	3	30
1890	860	3	29

	TITLE:		DOCUMENT	MAITREE-00-MA-DD-120257-PEM
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X-Coordinate	Y-Coordinate	Z-Coordinate	Noise Pressure level dB(A) at 3 m elevation
1900	860	3	28
1910	860	3	27
1920	860	3	26
1930	860	3	25
1940	860	3	24
1950	860	3	24
1960	860	3	23
1970	860	3	22
1980	860	3	21
1990	860	3	20
1990	850	3	21
1990	840	3	21
1990	830	3	21
1990	820	3	21
1990	810	3	21
1990	800	3	20
1990	790	3	20
1990	780	3	20
1990	770	3	20
1990	760	3	20
1990	750	3	20
1990	740	3	19

