Environmental Statement

FORM V
(See rule 14)

Environmental Statement for the financial year ending the 31st March 2025.

PART A

Name and address of the owner/occupier of the industry operation or process	M/s. GMR Hyderabad International Airport Limited, Shamshabad, Ranga Reddy District, Hyderabad, Telangana state.
Industry category Primary – (STC Code) Secondary – (STC Code)	Airports (**Orange category** as per the revised CPCB- Classification of the industrial sectors January 2025)
Production capacity	Passengers: 29483977; Cargo: 183403 tonnes
Year of establishment	The Airport was commissioned on 23rd March 2008
Date of last environmental statement submitted.	30th June 2024

PART B

Water and Raw Material Consumption

Water consumption in m^3/d - N/A	
Process -	-----
Cooling –	-----
Domestic -	-----

Name of products	**Process water consumption per unit of product output.**	
	During the current financial year (2023-24)	**During the current financial year (2024-25)**
Airport operations	3852 KLD (Domestic + Cooling + Flushing+ irrigation) GHIAL net water consumption	4027.92 KLD (Domestic + Cooling + Flushing+ irrigation) GHIAL net water consumption
Break-up	fresh water (HMWS): 1076 KLD Fresh water (Reservoir 2): 222 KLD Treated wastewater: 1263 KLD Ground water: 1290 KLD	fresh water (HMWS): 1208.73 KLD Fresh water (Reservoir 2): 276.28 KLD Treated wastewater: 1225.94 KLD Ground water: 1316.98 KLD

***Water consumption details are attached as Annexure- I**

Raw material Consumption: Not Applicable since this is an airport.

Name of raw material/ Name of products	Consumption of raw material per unit of output	
	During the previous financial year (2023-24)	During the current financial year (2024-25)
	-------	--------

PART C
Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollution	Quantity of pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water (b) Air	No wastewater has been discharged from the airport. The sewage generated from the Airport (**1726 KL / day**) was treated in the STP within the premises of the airport. After treatment the wastewater is recycled for flushing, cooling tower makeup and irrigation within the airport premises] The air pollutants from the DG set chimneys are released at the height of 100 feet.	Wastewater and air quality parameters are being monitored by MoEF &CC approved laboratory. Monitoring data enclosed as **Annexure II.**	Waste water parameters are within the prescribed standards. The ambient air quality and D.G sets - chimney monitoring results are within the T.G.P.C.B. prescribed standards.

PART D

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management & Handling Rules, 1989)

Hazardous Wastes	Total Quantity (Liters)	
	During the current financial year (2023-24)	During the current financial year (2024-25)
From Process (Used oil & Grease)	Total: 18730 liters 18730 liters (Used oil)	Total: 9600 liters of Used Oil, 132 numbers used oil filters and 116 kg of expired lab chemicals
From pollution control facilities.	Nil	Nil

Hazardous Wastes generation & disposal details are attached as Annexure- III

PART E

Solid Wastes

		Total Quantity (kg)	
		During the current financial year (2023-24)	During the current financial year (2024-25)
From Process (Food waste, plastic, paper, metal and glass scrap)	kg	4638021	6107065
From pollution control facility (STP generated sludge)	kg	720000	385000
Quantity recycled or reutilized within the unit (Food waste, sludge from STP is converted into compost and used as manure)	kg	1450000	1109000
Sold (Plastic, paper, metal and glass scrap)	kg	636021	689885
Disposed (Disposal of food waste to GHMC)	kg	3272000	4693180

Total solid waste generated 6107065 kg/year [Food waste-5417180 kg, STP sludge- 385000 kg, paper/carton box- 348645 kg, plastic-151511 kg, Iron/Metal waste-60498 kg and glass-129231 kg]
****Solid Waste Disposal details are mentioned in Annexure-IV**

PART F

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Type of waste	Composition	Quantity generated in (Ltr/Year)	Disposal
Hazardous waste (Used oil & Aviation Turbine Fuel)	Organic material	Used oil- 9600 liters/year 132 No's oil filters (used) and 116 kg of expired lab chemicals	T.G.P.C.B authorized agencies.
Solid waste	Garbage (Paper, plastic, metal, glass), STP sludge and food waste	6107065 kg/year	*Sludge generated from STP are used as manure. *Food waste generated is being sent to GHMC dump yard. *Other waste i.e. paper, plastic, glass, metal is sent to recyclers.

PART G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.

- The treated wastewater and the rainwater runoff had been used for irrigation, cool Tower Makeup and flushing purposes instead of HMWS & SB source water.

*Expenditure made on Pollution control equipment /Services/Consents/Waste disposal etc. for the financial year 2024–25.

S. No.	Description	Cost Incurred for 2024-25 (In Rs.)
1	Noise Monitoring Terminal (NMT)_Space Rental charges	1,38,000.00
2	Hydrogen gas cylinders refilling for GHIAL	56,280.00
3	Real Time Data uploading Charges to TGPCB server	77,280.00
4	Annual Maintenance Contract (AMC) of Piezometers	54,000.00
5	10MBPS Internet Leased Line (ILL) services for NMTs	3,20,000.00
6	Weather Monitoring station data logger program upgradation	1,28,000.00
7	Third party environmental quality monitoring	8,50,000.00
8	Refilling of gas Cylinders for Calibration of the analyzers	12,850.00
9	Verification of Greenhouse Gas (GHG) emissions inventory 2024	3,00,000.00
10	Comprehensive Maintenance Contract (CMC) Visits for NMTs	27,90,000.00
11	Annual Rate Contract (ARC) for DWLR/Piezometers	1,30,000.00
12	ESG Training to the relevant staff of GHIAL	1,15,000.00
13	Hydrogen gas manifold system Maintenance	90,000.00
14	Annual water audit for GHIAL	2,25,000.00
15	Purchase of UPS Batteries for Continuous Ambient Air Quality Monitoring Station (CAAQMS)	80,352.00
16	ARC of CAAQMS	4,32,625.00
17	Disposal of Expired Hazardous Lab Chemicals, at GHIAL	58,000.00
18	Operation and Maintenance of CCTV cameras	38,000.00
19	CCTV Camera Spare Supply	1,20,000.00
20	Verification of Annual Carbon footprint 2024 in line with ACA Level 5	5,92,080.00
21	Life Cycle Assessment (LCA) training for GHIAL employees	75,000.00
22	Fencing Around Piezometers for 3 locations	3,65,400.00
23	Upgradation of Level 5 airport carbon accreditation fees	11,13,203.00
24	Procurement of Carbon offsetting and removal units	11,37,000.00
25	STP, WTP, rain water harvesting Operational Cost	3,18,26,053.06

S. No.	Description	Cost Incurred for 2024-25 (In Rs.)
26	Solid waste collection and transportation charges(MSW) including Operational charges of Composting Plant	1,76,56,164.00
27	Solar Power Plant Operation & Maintenance	47,65,216.00
28	Consent Fee Payment	8,11,608.00
30	Horticulture & Greenbelt development	12,83,00,000.00
	Total Rs.	**19,26,57,111.06**

PART H

Additional measures/investment proposal for environmental protection including abatement of pollution.

A laboratory for testing of airport's domestic wastewater was established at Sewage Treatment Plants, Rajiv Gandhi International Airport (RGIA).

An integrated Solid Waste Management Facility was established to handle airport food waste.

PART I

Any other particulars for improving the quality of the environment

- RGI Airport is being powered with **100% renewable energy**.
- A 5 MW electric vehicle (EV) charging station was established at the airside.
- In the airside, bridge mounted equipment was installed with fixed electric ground Power unit, and pre-conditioned air units. These facilities prevent the mobile diesel GPU and PCA units operation, thereby reducing emissions at the airport.
- GHIAL along with its airport stakeholders ensuring sustainable airport operation at RGIA like community empowerment, greenbelt development, solar energy use, green buildings construction, single use plastic control, reduction of carbon emissions and maintaining carbon neutral airport status and Net Zero Carbon Organization with **Level-5 of the Airport Carbon Accreditation** etc.

Shivarama M S,
Head- Safety and Environmental Compliance
GMR Hyderabad International Airport,
Shamshabad, Ranga Reddy District,
Telangana state.

-End-

Annexure -1

Water consumption details for April 2024 –March 2025

GMR Hyderabad International Airport Limited-Net Water Consumption FY 2024-2025							
Month	**Domestic (kl)**		**Cooling Tower (CT) makeup water (kl)**	**Flushing (kl)**	**Gardening (kl)**		**Total (kl)**
	HMWS&SB	**Reservoir-2**	**Treated WW**	**Treated WW**	**Treated WW**	**Ground Water**	**GHIAL's net Water Consumption**
Apr-24	45871	0	20868	20151	0	85733	172623
May-24	47297	0	26101	20329	0	87191	180918
Jun-24	37763	0	26223	17003	0	44336	125325
Jul-24	40664	0	24519	17688	0	8378	91249
Aug-24	38100	0	23445	16374	1758	17827	97504
Sep-24	28362	18092	19183	7909	8858	11664	94068
Oct-24	32922	15483	19146	6569	9186	28433	111739
Nov-24	29614	15426	13017	11642	2652	47929	120280
Dec-24	29888	14536	12962	12965	4147	24531	99029
Jan-25	30972	9286	10549	16520	5618	35122	108067
Feb-25	29756	12560	14158	18395	2581	44530	121980
Mar-25	49976	15460	19209	14493	3250	45022	147410
	441183	**100843**	**229380**	**180038**	**38050**	**480696**	**1470190**
						Per Day (kl per day)	**4027.92**

Note:

1. Domestic: fresh water from HMWS&SB
2. Cooling tower (CT) makeup: Treated wastewater (WW) from STP
3. Flushing: Treated wastewater (WW) from STP
4. Gardening: Treated wastewater (WW) from STP + Groundwater

*GHIAL's net consumption means excluding concessionaires like Novotel, In-flight kitchens, Amazon fulfillment center, GMR Aero Technic Limited, SEZ tenants etc.

RAJIV GANDHI INTERNATIONAL AIRPORT HYDERABAD

ENVIRONMENTAL QUALITY MONITORING REPORT

Submitted to

M/s. GMR Hyderabad International Airport Ltd.

Shamshabad, Hyderabad 500108.

MARCH 2025

Prepared by

Vimta

Driven by Quality. Inspired by Science.

Vimta Labs Limited, Hyderabad.

ACKNOWLEDGEMENT

M/s. Vimta Labs Limited express since redoubt of gratitude to M/s. GMR Hyderabad International Airport Ltd., for the opportunity given by assigning the preparation of Environmental Quality Monitoring Study for **Rajiv Gandhi International Airport** located at Shamshabad, Hyderabad. Special mention needs to be made for executives of M/s. GMR Hyderabad International Airport for their co-operation and assistance during the preparation of this report. We also wish to acknowledge our gratitude to all of them who helped during the monitoring period.

For and on behalf of
M/s. Vimta Labs Limited

Authorized Signatory.
Name : Dr. Subba Reddy Mallampati
Position : Manager-Environment

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

Short form	Expanded Form
%	Percentage
^0C	Degree Celsius
<	Less than
µg	Microgram
µm	Micrometer
µs	Micro Siemens
AAQ	Ambient Air Quality
ACF	Activated Carbon Filter
AGL	Airfield Ground Lighting
a.m.	After meridian
TSPCB	TelanganaStatePollution Control Board
BOD	Bio-Chemical Oxygen Demand
BDL	Below Detectable Limit
COD	Chemical Oxygen Demand
CFO	Consent for Operation
cm	Centimeter
CO	Carbon Monoxide
dB(A)	Decibels on scale A
ds/m	Deci siemens per meter
D.G. Set	Diesel Generator Set
E	East
E.C.	Electrical Conductivity
ENE	East of Northeast
g/cc	Gram/centimeter cube
GHIAL	GMR Hyderabad International Airport Ltd
IS	Indian Standards
kg/ha	Kilogram per hectare
km	Kilometer
Kmph	Kilometer per hour
KVA	Kilo Volt – Ampere
l	Liter
$L_{eq.}$	Equivalent levels
m	Meter
mg	Milligram
mg/l	Milligram per liter
mg/Nm^3	Milligram per normal cubic meter
max	Maximum
min	Minimum
mm	Millimeter
m/sec	Meter per second
N	North
Nm^3	Normal cubic meter

Short form	Expanded Form
Nm^3/hr	Normal cubic meter per hour
NOx	Oxides of Nitrogen
NW	Northwest
pH	Potentiality of hydrogen ions
$PM_{2.5}$	Particulate Matter size less than 2.5 µm
PM_{10}	Particulate Matter size less than 10 µm
p.m.	Post meridian
ppm	Parts per million
RGIA	Rajiv Gandhi International Airport
RWHS	Rainwater Harvesting Structure
S	South
SE	Southeast
SO_2	Sulphur Dioxide
SPM	Suspended Particulate Matter
Sq.m	Square meter
SSW	South of Southwest
STP	Sewage Treatment Plant
TDS	Total Dissolved Solids
W	West
WNW	West of Northwest
WTP	Water Treatment Plant
g/KW-hr	Gram per Kilo Watt hour

1.0 INTRODUCTION

M/s. GMR Hyderabad International Airport Limited has awarded **M/s.VIMTA LABS LIMITED.** The environmental consultancy service contract for carrying out monthly environmental parameters monitoring study for their ongoing works of Rajiv Gandhi International Airport, Shamshabad, Hyderabad. This monitoring report is an overview of the findings of the field investigations carried out for the month of March 2025. The field monitoring data was collected from 10-03-2025 to 11-03-2025 at Rajiv Gandhi international Airport, Shamshabad and 10 km surrounding area. The study area for Environmental Monitoring is airport premises and its surrounding area up to10 km of aerial distance is taken as buffer zone which is located towards east of Hyderabad, NH-7(Bangalore Highway). This site is approximately 20 km away from the Hyderabad city premises.

1.1 Objective:

The objective of environmental parameters monitoring is to create an overview of the existing environmental quality using the field investigations in and around the study area.

1.2 GMR Hyderabad International Airport Limited:

GMR Hyderabad International Airport Limited (GHIAL) is a joint venture company promoted by the GMR Group (74%) in partnership with Government of India (13%), Government of Telangana (13%). The Company was incorporated to design, finance, build, operate and maintain a world class Greenfield airport at Shamshabad, Hyderabad, and Telangana.

1.3 Environmental Monitoring Study:

The environmental monitoring study and analysis is carried out for air, water, soil, wastewater quality and Noise Levels in and around the airport site. The samples collection measurements are carried out within a radius of 10 km with the airport site as epicenter.

The ambient air quality monitoring is carried out for 24 hours for assessing air pollutants levels. Instantaneous duplication for the water and wastewater samples are collected to assess the quality of water and waste water characteristics.

2.0 ENVIRONMENTAL STATUS OF STUDY AREA

2.1 Meteorological Monitoring: Data Analysis - Micro Meteorological Status

Meteorological parameters are important factors in the study of air pollution. The transport and diffusion of the pollutants in the atmosphere are governed by meteorological parameters. Wind velocity, wind direction and diffusion of pollutants depend mainly on three factors. Ambient temperatures, humidity, rainfall, atmospheric pressure etc. are known as secondary meteorological parameters as these factors control the dispersion of the pollutants indirectly by affecting the primary

Factors. Thus, to assess the air pollution impact, it is essential to collect the above meteorological parameters in the project area.

2.1.1 Data Presentation:

Meteorological data was recorded at intervals of every one hour, during the study period of March 2025. Recorded average values for the month of March 2025.

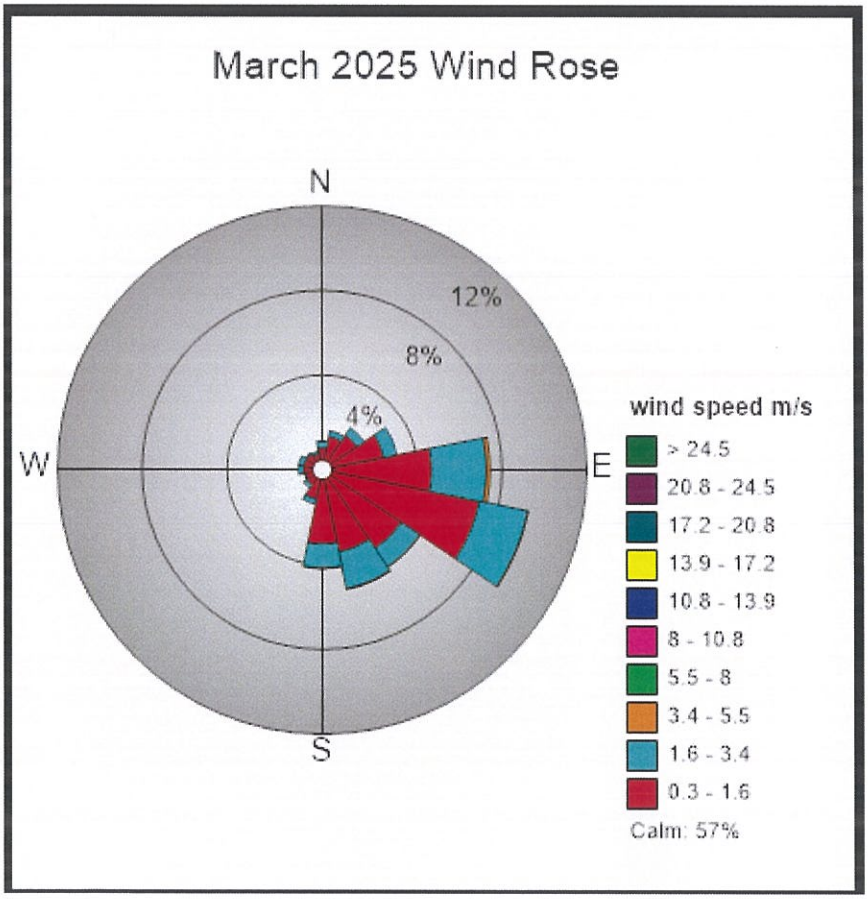
S No.	Parameters	March 2025		
		Min	Max	Average
1	Relative humidity (%)	7.1	89.6	42.5
2	Temperature (^{0}C)	14.2	39.8	29.0
3	Total rainfall (mm)	7.6		
4	Predominant Wind Direction	East		
5	Wind speed (m/s)	0	3.17	0.54
6	Atmospheric Pressure (milli bars)	600.88	1099.06	1049.84

2.1.3 Results:

The winds are predominantly recorded in the East direction. The winds were blowing with speed ranging from 0.0 to 3.17 m/s of the total time. Calm conditions prevailed for 57.0%<1km/hr) of the total time. The average temperature range is with minimum of 14.2^{0}C and maximum o f 39.8^{0}C.

Note: -Data source for Meteorological data is weather monitoring system installed at Airside of the RGIA.

FIGURE – 1: WIND ROSE DIAGRAM MARCH 2025



2.2 Ambient Air Quality:

2.2.1 Analysis Techniques

TABLE-1
TECHNIQUES USED FOR AMBIENT AIR QUALITY MONITORING

Sr.No.	Parameter	Technique	Technical Protocol
1	Particulate Matter as PM_{10}	Gravimetric	IS-5182 (Part -23)
2	Particulate Matter as PM2.5	Gravimetric	IS-5182 (Part -24)
3	Sulphur dioxide as SO_2	Spectrophotometer	IS-5182 (Part-02)
4	Oxides of Nitrogen as NO_2	Spectro photometer	IS-5182 (Part-06)
5	Ozone as O_3	Spectro photometer	Method-411
6	Carbon monoxide as CO	NDIR	IS-5182 (Part-10)
7	Ammonia as NH_3	UV- Spectro photometer	Indophenol Blue Method
8	Benzene as C_6H_6	Gas Chromatography	ASTM D 3686-95
9	Methane as CH_4	Gas Chromatography	IS-5182 (Part -12)

2.2.2 Details of Monitoring Locations:

Seven locations have been selected for ambient air quality monitoring locations. Location details are given in **Table-2.**

TABLE – 2
AMBIENT AIR QUALITY MONITORING LOCATIONS

Sr. No	Name of the Location	Direction/distance with respect to airport		Environmental setting
		Direction	Distance (km)*	Pollution generating sources
1	Site Office	Nodal Center	0.0	Vehicular movements, aircraft movements, airport dust, fugitive dust from surrounding activities.
2	GMR VF Building	Nodal Center	0.0	Vehicular movements, aircraft movements, airport dust, fugitive dust from surrounding activities.
3	Airport Expansion (East Processor)	Nodal Center	0.0	Vehicular movements, aircraft movements, airport dust, fugitive dust from surrounding activities.

Sr. No	Name of the Location	Direction/distance with respect to airport		Environmental setting
		Direction	Distance (km)*	Pollution generating sources
4	GMR Township, Mamidipalli	Northeast	3.43	Residential activities are like unpaved village roads, vehicular pollution, agricultural & domestic activities.
5	Rasheedguda	South West	3.4	Residential activities are like unpaved village roads, Vehicular pollution, agricultural &domestic activities.
6	Sardar Nagar	Southeast	8.2	Residential activities are like unpaved village roads, vehicular pollution, agricultural & domestic activities.
7	Vellankanni Nagar	North West	4.7	Residential activities are like unpaved village roads, vehicular pollution, agricultural & domestic activities.

2.2.3 Parameter Monitored and Results: Monitoring has been conducted for PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, Ammonia, Ozone, Methane and Benzene. The ambient air quality monitoring results of all these parameters are given in Table – 3&4

TABLE- 3
AMBIENT AIR QUALITY RESULTS

Sampling Locations			Buffer Zone (Surrounding)			
			GMR Township Mamidipalli	Rasheedguda	Sardar Nagar	Vellankanni Nagar
Parameters	**Units**	**Limits**	**10.03.2025**	**11.03.2025**	**11.03.2025**	**10.03.2025**
Particulate Matter as PM_{10}	$\mu g/m^3$	< 100	69.7	69.6	60.6	73.4
Particulate Matter as PM2.5	$\mu g/m^3$	< 60	39.5	33.4	31.5	38.9
Sulphur dioxide as SO_2	$\mu g/m^3$	< 80	23.9	22.6	20.3	20.6
Oxides of Nitrogen as NO_2	$\mu g/m^3$	< 80	18.6	23.1	22.8	24.7
Ozone as O_3	$\mu g/m^3$	< 100	23,3	24.9	24.7	21.9
Carbon monoxide as CO	mg/m^3	< 02	0.912	0.986	0.943	0.897
Ammonia as NH_3	$\mu g/m^3$	< 400	8.8	24.1	29.8	22.3
Benzene as C_6H_6	$\mu g/m^3$	< 05	< 1.0	< 1.0	< 1.0	< 1.0
Methane as CH_4	$\mu g/m^3$	--	<0.01	<0.01	<0.01	<0.01

Sampling Location			RGI Airport Boundary		
			Site Office	GMR VF Building	Airport Expansion (East Processor)
Parameters	**Units**	**Limits**	**10.03.2025**	**10.03.2025**	**11.03.2025**
Particulate Matter as PM_{10}	$\mu g/m^3$	< 100	67.5	69.9	73.4
Particulate Matter as PM2.5	$\mu g/m^3$	< 60	39.3	39.8	39.9
Sulphur dioxide as SO_2	$\mu g/m^3$	< 80	21.2	27.4	22.7
Oxides of Nitrogen as NO_2	$\mu g/m^3$	< 80	25.6	26.3	20.1
Ozone as O_3	$\mu g/m^3$	< 100	25.9	27.3	23.4
Carbon monoxide as CO	mg/m^3	< 02	0.899	0.856	0.899
Ammonia as NH_3	$\mu g/m^3$	< 400	30.1	28.4	17.5
Benzene as C_6H_6	$\mu g/m^3$	< 05	< 1.0	< 1.0	< 1.0
Methane as CH_4	$\mu g/m^3$	--	<0.01	<0.01	<0.01

Note:

1. **AAQ Standard limits: - as per GHIAL's CFO dated 29.03.2024and NAAQMS.**

FIGURE-2
VARIATIONS OF AAQ PARAMETERS PM_{10} AND $PM_{2.5}$

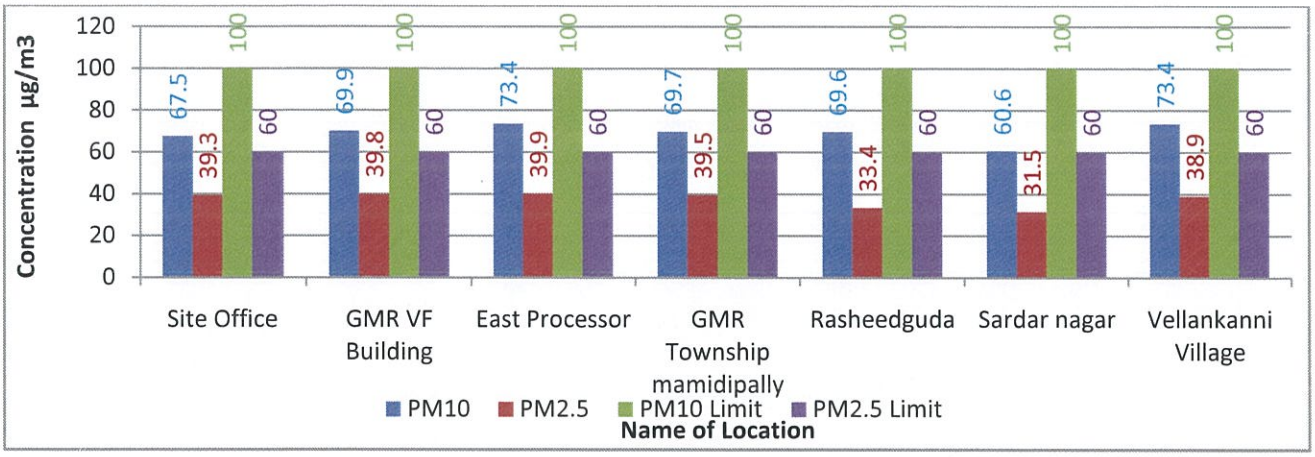
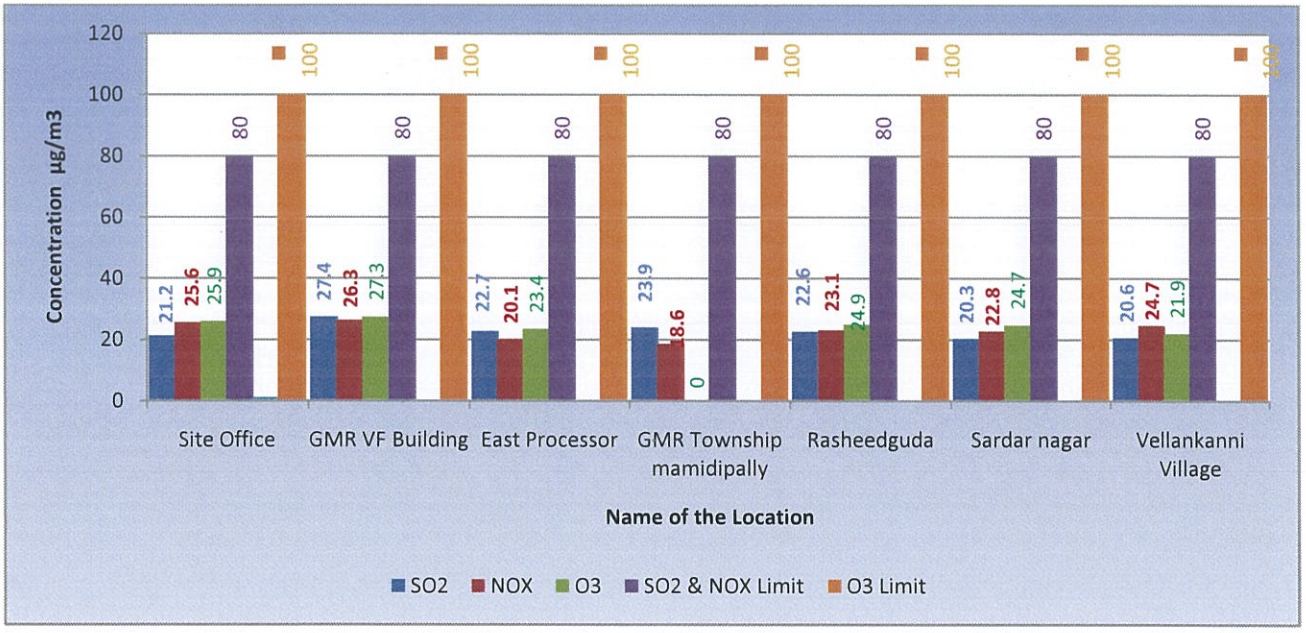


FIGURE-3 VARIATIONS OF AAQ PARAMETERS SO_2, NO_X AND OZONE (O_3)



2.3 Noise Levels

2.3.1 Details of monitoring locations:

During the study period noise monitoring has been conducted at Seven locations. Locations details are given in Table- 4

TABLE-4
NOISE MONITORING LOCATIONS

S. No.	Name of the location	Direction / distance with respect to airport site		Description
		Direction	Distance (km)*	
1	Site Office	Nodal Center	0.0	Airport
2	GMR VF Building	Nodal Center	0.0	Airport
3	Airport Expansion (East Processor)	Nodal Center	0.0	Airport
4	GMR Township, Mamidipalli	North East	3.43	Airport
5	Rasheedguda	South West	3.4	Airport Noise Zone
6	Sardar Nagar	Southeast	8.2	Airport Noise Zone
7	Vellankanni Nagar	North West	4.7	Airport Noise Zone

2.3.2 Parameters Monitored: Parameters monitored during the study period are given in **Table-5**.

TABLE -5
NOISE ANALYSIS DATA

Sr. No.	Locations	Date	Noise Levels in dB (A) L_{eq}			
			Day Time	Limits	Nighttime	Limits
RGI Airport Core Zone						
1	GMR VF Building	10.03.2025	65.4	75	57.4	70
RGI Airport Site						
2	Site Office	10.03.2025	66.8	75	58.9	70
3	Airport Expansion (East Processor)	11.03.2025	61.8		52.6	
Buffer Zone (Airport Noise Zone)						
4	GMR Township, Mamidipalli	10.03.2025	64.1	70	56.4	65
5	Rasheedguda	11.03.2025	64.4		57.7	
6	Sardar Nagar	11.03.2025	65.2		55.4	
7	Vellankanni Nagar	10.03.2025	63.9		55.9	

Note: The standards in the residential Area are superseded by the Airport Noise zone standards as per MOEF&CC, GSR 568(E) under airport noise zone notified by DGCA vide letter Ref No. 04-01/2019-AED dated 05.07.2024.
The standards are Day time (from 6.00 am to 10.00 pm). ***Leq:*** *70 dB (A)*
Night timefrom 10.00 pm to 6.00 am) ***Leq:*** *65 dB (A).*

TABLE-6
AMBIENT NOISE LEVELS STANDARDS FOR AIRPORTS – GSR 568 (E)

➢ As per MoEF& CC GSR 568 (E) Noise standards for Airports are as follows

Category of Airports	Limits in dB(A) Leq	
	Day Time	Night Time
Ambient Noise levels in Airport Noise zone		
Busy Airports	70	65
All other Airports excluding proposed Airports	65	60
Within Airport boundary	75	70

- Rajiv Gandhi International Airport, Hyderabad comes under Busy Airports Category

Note:

- Day Time is recorded in between 6:00 AM to 10:00PM.
- Nighttime is recorded between 10:00PM to 6:00 AM.
- Silence zone is defined as areas up to 100 meters around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the Competent Authority.
- Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.
- Mixed categories of areas should be declared as one of the four above-mentioned categories by the Competent Authority and the corresponding standards shall apply.

Source: EPA Notification (G.S.R. 106-01-123 (E), dt. 26.12.1989 published in the Gazette No. 643 dt. 26.12.1989)

- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A" in dB (A) L_{eq}, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.
- L_{eq}: It is energy mean of the noise level over a specified period.

Figure-4 Noise Levels Variation for Airport Core Zone.

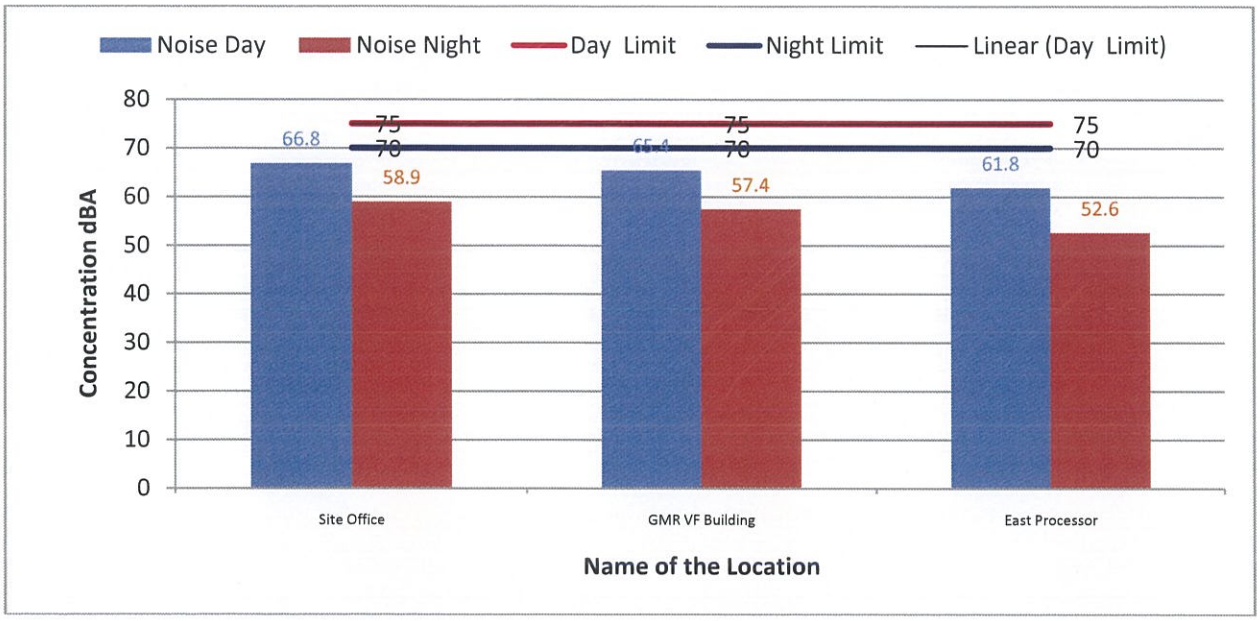
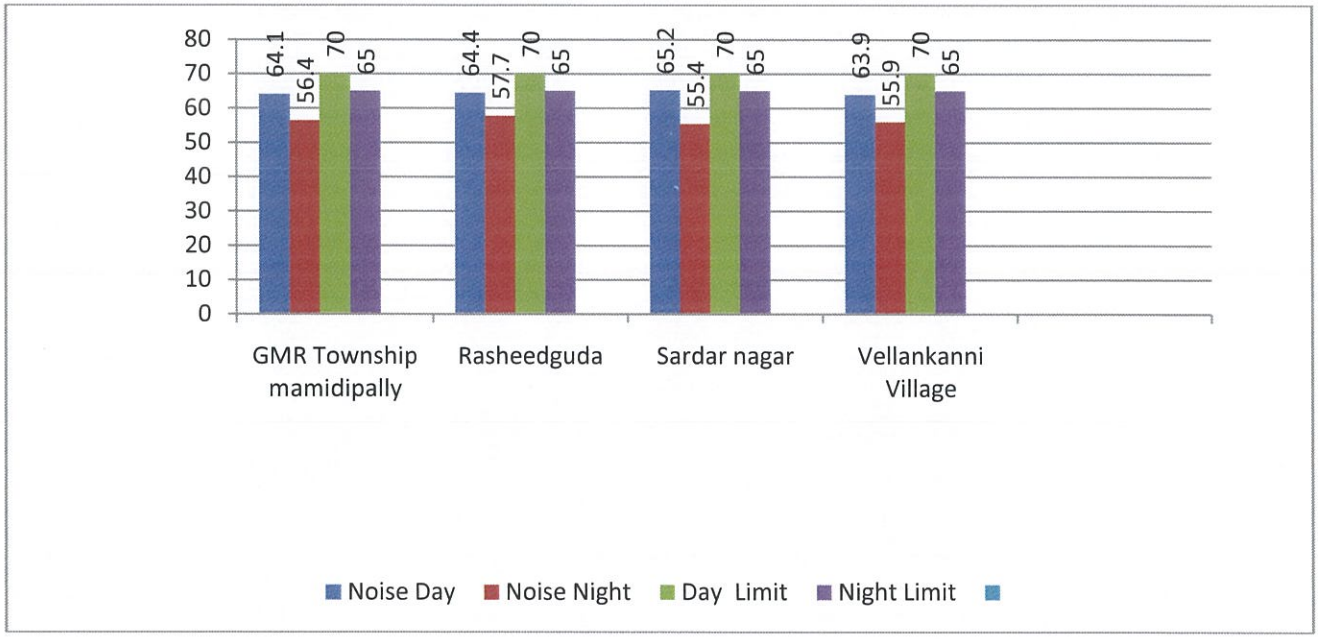


Figure-5 Noise Levels Variation for Airport Buffer zone (Airport Noise Zone).



2.4 Ground water quality monitoring:

2.4.1 Details of monitoring locations: Four ground water samples were collected and analyzed for different parameters. Locations details are given in **Table-7**.

TABLE-7
DETAILS OF GROUND WATER SAMPLING LOCATIONS

Sr. No.	Name of the location	Direction/distance with respect to airport site		Sources	Description
		Direction	Distance (km)*		
1	Raseedguda	South West	3.4	Bore well water	Rural & Residential Area
2	Gollapali	South	3.1	Bore well water	Rural & Residential Area
3	GMR Township, Mamidipalli	North East	3.43	Bore well water	Rural & Residential Area
4	Airport-1 (Irrigation Water)	West	0.0	Bore well water	Rural & Residential Area

2.4.2 Parameters monitored and results:

Monitored parameters and their results at different locations are given in **Table-9&10**.

TABLE-8
GROUND WATER QUALITY RESULTS

Date of Collection: 11.03-2025 **Date of Analysis: 12-03-2025**

S No	Test Parameters	Units	Results		LIMITS (IS:10500)2012	
			Raseedguda	Gollapalli	Desirable	Permissible
1	pH at 25°C	-	7.81	8.07	6.5	8.5
2	Electrical Conductivity at 25°C	µS/cm	1227	916	-	-
3	Total dissolved solids at 180°C	mg/L	772	578	500	(2000)
4	Total Hardness as $CaCO_3$	mg/L	485	305	200	(600)
5	Total Alkalinity as $CaCO_3$	mg/L	370	280	200	(600)
6	Calcium as Ca	mg/L	112.2	82.4	75	(200)
7	Magnesium as Mg	mg/L	60.4	44.6	30	(100)
8	Free Residual chlorine	mg/L	<0.05	<0.05	0.2	(1.0)
9	Chlorides as Cl	mg/L	186.2	97.4	250	(1000)
10	Sulphates as SO_4	mg/L	31.8	22.4	200	(400)
11	Fluorides as F	mg/L	0.70	0.72	1.0	(1.5)
12	Nitrates as NO_3	mg/L	34.21	32.2	45	(NR)
13	Sodium as Na	mg/L	34.25	35.0	-	-
14	Potassium as K	mg/L	1.4	2.3	-	-
15	Iron as Fe	mg/L	0.24	0.06	0.3	(NR)

TABLE-9
GROUND WATER QUALITY RESULTS

Date of Collection: 11.03-2025 **Date of Analysis: 12-03-2025**

SNo	Test Parameters	Units	Results		LIMITS (IS:10500)2012	
			GMR Township, Mamidipalli	Airport-1 (Irrigation Water) – L5 Well	Desirable	Permissible
1	pH at 25°C	-	7.15	7.34	6.5	8.5
2	Electrical Conductivity at 25°C	µS/cm	836	991	-	-
3	Total dissolved solids at 180°C	mg/L	548	643	500	(2000)
4	Total Hardness as $CaCO_3$	mg/L	310	360	200	(600)
5	Total Alkalinity as $CaCO_3$	mg/L	260	255	200	(600)
6	Calcium as Ca	mg/L	62.4	84.2	75	(200)
7	Magnesium as Mg	mg/L	34.2	38.6	30	(100)
8	Free Residual chlorine	mg/L	<0.05	<0.05	0.2	(1.0)
9	Chlorides as Cl	mg/L	74.9	124.9	250	(1000)
10	Sulphates as SO_4	mg/L	30.8	46.2	200	(400)
11	Fluorides as F	mg/L	0.63	0.70	1.0	(1.5)
12	Nitrates as NO_3	mg/L	34.5	44.2	45	(NR)
13	Sodium as Na	mg/L	36.2	42.6	-	-
14	Potassium as K	mg/L	1.1	2.5	-	-
15	Iron as Fe	mg/L	0.24	0.13	0.3	(NR)

FIGURE- 6: VARIATION OF GROUND WATER

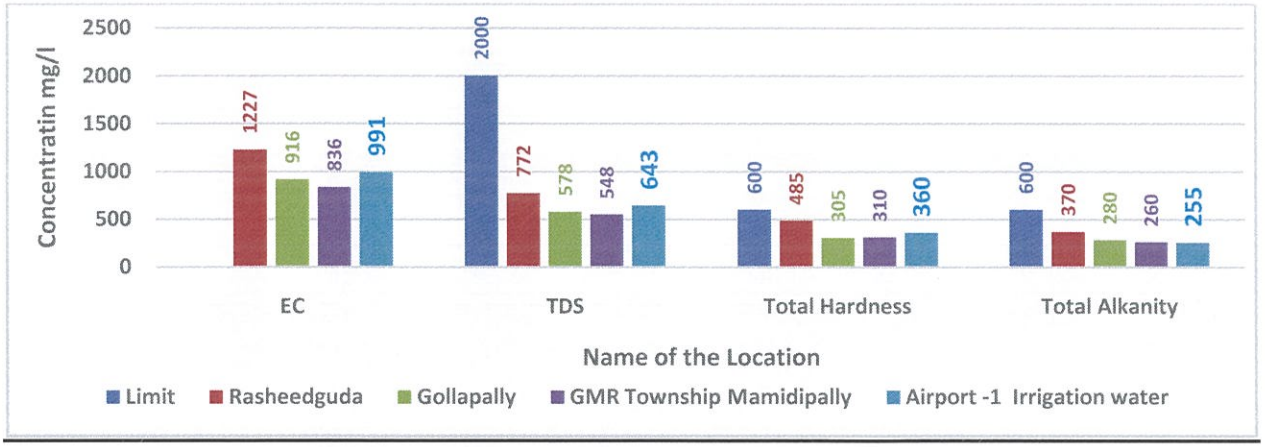
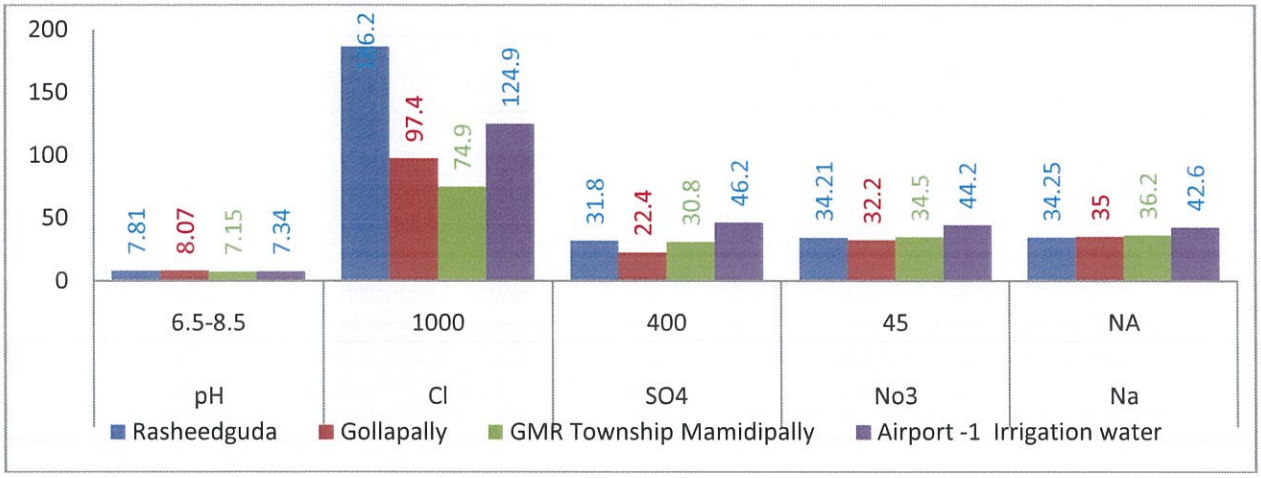


FIGURE- 7: VARIATION OF GROUND WATER:



2.5 Wastewater Analysis

Waste Water samples were collected from one STP i.e. STP - IV for analysis from Equalization Tank and Softener outlet.

2.5.1 Details of Monitoring Locations:

Two wastewater samples have been collected; details of sampling location are given in **Table-10.**

TABLE-10
DETAILS OF WASTE WATER SAMPLING LOCATIONS

S. No	Location	Direction/Distance from airport		Description
		Direction	Distance	Wastewater samples collected
1	Equalization Tank – IV	Nodal Center	0.0	Airport-Airside
2	Softener outlet - IV	Nodal Center	0.0	Airport-Airside

2.5.2 Parameters Monitored:

All the parameters are well within the prescribed limits as presented in Table-12 & 13.

TABLE-11
MEASURED WASTEWATER PARAMETERS WITH RESULTS

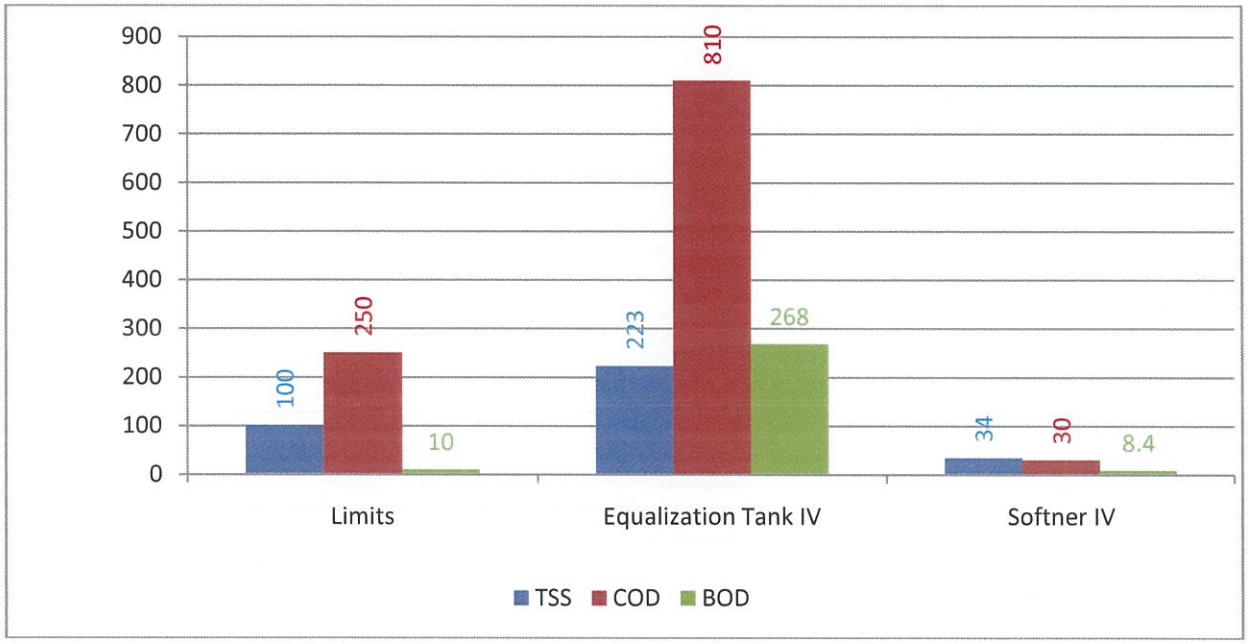
Date of Collection: 11.03.2025 **Date of Analysis: 12.03.2025**

Name and Address of the Industry			M/s. GMR Hyderabad International Airport Ltd. Shamshabad-500 409, Hyderabad.		
			Results		Limits
Sl. No.	Test Parameters	Units	Equalization Tank Inlet-IV	Softener Outlet - IV	
1	Apparent	-	Black	Colorless	--
2	True Color	Hazen	10	<5.0	-
3	Odor	Ton	Dis-Agreeable	Dis-Agreeable	-
4	Total Suspended Solids at 105°C	mg/L	223	34	100
5	Turbidity	NTU	1.6	<1.0	-
6	Oil & Grease	mg/L	3.8	1.6	10
7	pH at 25°C	-	8.12	7.47	5.5-9.0
8	Electrical Conductivity	µS/cm	2125	1754	-
9	Residual Free chlorine as Cl	mg/L	<1.0	<1.0	1.0
10	Ammonical Nitrogen as NH_3-N	mg/L	132.2	4.4	50
11	Nitrates as NO_3	mg/L	22.3	6.5	10
12	Nitrites as NO_2	mg/L	<1.0	<1.0	-
13	Phosphates as PO_4	mg/L	30.5	3.1	5.0
14	Chemical Oxygen demand at 150°C	mg/L	810	30	250
15	Biochemical Oxygen demand 3days at 27°C	mg/L	268	8.4	10
16	Total Hardness as $CaCO_3$	mg/L	150	110	-
17	Sulfide as S^{2-}	mg/L	<1.0	<1.0	2.0
18	Dissolved Oxygen as DO	mg/L	<1.0	3.7	-
19	Arsenic as As	mg/L	<0.01	<0.01	0.2
20	Mercury as Hg	mg/L	<0.001	<0.001	0.01

Name and Address of the Industry			M/s. GMR Hyderabad International Airport Ltd. Shamshabad-500 409, Hyderabad.		
			Results		Limits
21	Lead as Pb	mg/L	0.02	<0.01	0.1
22	Cadmium as cd	mg/L	0.06	<0.01	2.0
23	Hex.Chromium as Cr+6	mg/L	<0.01	<0.01	0.1
24	Total Chromium as cr	mg/L	0.05	<0.01	2.0
25	Zinc as Zn	mg/L	0.08	0.14	5.0
26	Copper as Cu	mg/L	0.26	0.10	3.0
27	E.coli	MPN/100ml	Absent	Absent	-
28	Total Dissolved Solids at 180°C	mg/L	1334	1121	-

**CPCB Limit as per GSR 422(E) & GHIAL Consent order dt.29.03.2024

FIGURE-8: VARIATION OF WASTE WATER STP – IV



2.6 DG Stack Emission Data:

2.6.1 Presentation of results

DG - Stack details

Sample Collected on	2025.03.25
DG Set No	(NEW-7)
DG Set Capacity	2000 KVA (NEW-7)
DG Location	DG Yard RGIA
Stack diameter (m)	0.56
Stack Cross section (m^2)	0.246

Flue Gas characteristics

Temperature (^0C)	135
Velocity (m/sec)	11.9
Flow rate (Nm^3/hr)	7820

Emission Data

Parameters	Units	Limits*	Test Results
Sulphur dioxide @ 15% O2	mg/Nm^3	--	55.5
	Kg/day		10.40
	Ton/day		0.0104
Carbon Monoxide @ 15% O2	mg/Nm^3	**150**	43.4
	gr/kw-hr	**≤ 3.5**	**0.170**
Oxides of Nitrogen @ 15% O2	mg/Nm^3	**710**	53.9
	gr/kw-hr	**NOx + HC**	**0.211**
Hydro Carbons as CH4 @ 15% O2	mg/Nm^3		13.2
	gr/kw-hr	**≤ 4.0**	**0.052**
Particulate Matter @15% O2	mg/Nm^3	**75**	14.8
	gr/kw-hr	≤ 0.2	**0.058**
Non-Methane Hydrocarbons (NMHC) @ 15% O_2	mg/Nm^3	**100**	19.5

***Note: DG Set Emission Limits as per CPCB notification GSR 449 (E) dated 09.07.2002**

DG - Stack details

Sample Collected on	2025.03.11
DG Set No	07
DG Set Capacity	770 KVA
DG Location	Site Office
Stack diameter (m)	0.15
Stack Cross section (m^2)	0.018

Flue Gas characteristics

Temperature (^0C)	99
Velocity (m/sec)	11.4
Flow rate (Nm^3/hr)	559.6

Emission Data

Parameters	**Units**	**Limits***	**Test Results**
Sulphur dioxide@ 15% O2	mg/Nm^3	--	33.4
	Kg/day		0.279
	Ton/day		0.0003
Carbon Monoxide @ 15% O2	mg/Nm^3	**≤ 3.5**	38.2
	gr/kw-hr		**0.017**
Oxides of Nitrogen@ 15% O2	mg/Nm3	**NOx + HC ≤ 4.0**	65.0
	gr/kw-hr		**0.029**
Hydro Carbons as CH4@ 15% O2	mg/ Nm^3		15.5
	gr/kw-hr		**0.007**
Particulate Matter@15% O2	mg/ Nm^3	**≤ 0.2**	8.63
	gr/kw-hr		**0.006**
Non-Methane Hydrocarbons (NMHC) @ 15% O_2	mg/Nm^3	**100**	16.6

***Note: DG Set Emission Limits as per CPCB notification GSR 771 (E) dated 11.12.2013**

3.0 CONCLUSION:

Ambient Air Quality:

Ambient Air Quality parameters such as PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, Ammonia, Ozone, Methane and Benzene are well within the limits prescribed by TSPCB.

Ambient Noise Level:

Noise levels recorded in day and night are within the standard limits.

Wastewater Quality:

Wastewater samples are collected from each stage of treatment process in STP, Outlet water quality are within the General standard of effluent Discharge limits prescribed by Central Pollution Control Board and as per CFO issued by Telangana State Pollution Control Board.

Ground Water Quality:

Ground water samples are drawn from various locations in and surrounding villages which are found within the permissible limits.

Stack Emission:

Stack emission parameters are tested and found within the standard limits as prescribed by the TSPCB.

Annexure –III

Hazardous Waste Generation and Disposal during Apr'24 - Mar'25

Manifest number	Date	Name of the waste	Name of Generator	Quantity (Litres)	Authorised agency
GHIAL/HWM/2024/03	02-07-2024	Used oil	Air India Sats Airport Services Pvt. Ltd.	2520	M/s. Mistry Petroleum Products
GHIAL/HWM/2024/04	03-08-2024	Waste Used oil	Indigo	2800	M/s Smart Lubricants
GHIAL/HWM/2024/05	16-09-2024	Used Oil	GMR Air Cargo & Aerospace Engineering Ltd	500	M/s. Mistry Petroleum Products
GHIAL/HWM/2024/06	01-10-2024	Used oil	GMR Hyderabad International Airport Ltd.	1470	M/s. Mistry Petroleum Products
GHIAL/HWM/2024/07	07-11-2024	Used Oil & Used Oil filters	Celebi Airport Services India Pvt Ltd	630 litres 132 nos. oil filters (Used)	M/s. K.M.R Industries
GHIAL/HWM/2024/08	18-12-2024	Expired lab Chemicals	GMR Hyderabad International Airport Ltd.	116 kg	M/s. Enviro Waste Management Service Pvt Ltd.
GHIAL/HWM/2024/09	20-12-2024	Used oil	Air India Sats Airport Services Pvt. Ltd.	1680	M/s. Mistry Petroleum Products
Total hazardous waste generation during Apr'24 - Mar'25				**9600- Used oil 132 No's oil filters (used) 116 kg of expired lab chemicals**	

Annexure –IV

Solid Waste Disposal for April 2024-March 2025

Month & Year	Quantity in kg
Apr-24	459611
May-24	493673
Jun-24	479058
Jul-24	475848
Aug-24	428862
Sep-24	632576
Oct-24	503243
Nov-24	524939
Dec-24	535367
Jan-25	514086
Feb-25	516948
Mar-25	542854
Total waste generation	**6107065**
STP Sludge	**385000**
Total waste generation from process + STP	**6492065**

Note: Total solid waste generated 6107065 kg/year [Food waste-5417180 kg, STP sludge-385000 kg, paper/carton box- 348645 kg, plastic-151511 kg, Iron/Metal waste-60498 kg and glass-129231 kg]