HYDERABAD RAJIV GANDHI INTERNATIONAL AIRPORT
GMR Hyderabad International Airport Limited

GMR
Regd. Office:
GMR Aero Towers,
Rajiv Gandhi International Airport,
Shamshabad, Hyderabad 500 108,
Telangana State, India
CIN U62100TG2002PLC040118
T +91 40 67394099/67393903/67395000
F +91 40 67393228
W www.hyderabad.aero

Ref: GHIAL/AO-ENV/TSPCB/2022/

29/04/2022

The Environmental Engineer,
Regional Office-I,
Telangana State Pollution Control Board,
Ranga Reddy District.

Sub: Submission of Environmental Statement for the period April 2021-March 2022.

Ref: Consent order no. 210822751923, dated 17.02.2021

Dear Sir

Please find attached herewith "Environmental Statement" in Form-V for the period **April 2021 -March 2022.**

This is for your information and records please.

Thanking you,

Yours truly,
For **GMR Hyderabad International Airport Limited,**

N. Venkatachalapathy,
Head- Safety & Environment.

Enclosure: Environmental Statement in Form-V

Copy to:

- The Member Secretary, TSPCB., Hyderabad.

Environmental Statement

FORM V
(See rule 14)

Environmental Statement for the financial year ending the 31st March 2022.

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 (Red category industrial sector)
Production capacity	Airport capacity – 12 million passengers & 3 lakhs metric ton cargo per annum
Year of establishment	The Airport was commissioned on 23rd March 2008
Date of last environmental statement submitted.	28th September 2021

PART B

Water and Raw Material Consumption

Water consumption in m3/d - N/A	
Process -	-----
Cooling –	-----
Domestic -	-----

Name of products	**Process water consumption per unit of product output.**	
	During the current financial year (2020-21)	**During the current financial year (2021-22)**
Airport operations	1609 KLD (Domestic + Cooling + flushing)	1854 KLD (Domestic + Cooling + Flushing)
Break-up	Fresh water: 772 KLD Treated Wastewater: 837 KLD	Fresh water: 797 KLD Treated Wastewater:1057 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 (2020-21)	During the current financial year (2021-22)
	-------	--------

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 (**1196.68 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.S.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 (2020-21)	During the current financial year (2021-22)
From Process (Used oil & Grease)	Total:16480 liters 16480 liters (Used oil & Used Aviation Turbine Fuel)	Total:11968 liters 11968 liters (Used oil & Used Aviation Turbine Fuel)
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 previous financial year (2020-21	**During the current financial year (2021-22)**
From Process (Food waste, plastic, metal and glass scrap)	kg	1324590	1725800
From pollution control facility (STP generated sludge)	kg	12000	236100
Quantity recycled or reutilized within the unit (Food waste, sludge from STP is converted into compost and used as manure)	kg	12000	236100
Sold (Plastic, paper, metal and glass scrap)	kg	79600	22660
Disposed (Disposal of food waste to GHMC)	kg	1244990	1703140

Total solid waste generated 1725800 kg/year [Food waste-1701140 kg, STP sludge- 236100 kg, paper-9790 kg, plastic-11500 kg and glass-1370 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	11968 liters/year	T.S.P.C.B authorized agencies.
Solid waste	Garbage (Paper, plastic, metal, glass), STP sludge and food waste	1725800 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 used for irrigation and flushing purposes instead of HMWS & SB source water.

*Expenditure made on Pollution control equipment /Services/Consents/Waste disposal etc. for the financial year 2021–22.

S.NO	Description	Cost incurred for 2021-22 (in Rs).
1	Sewage Treatment Plant operational charges (energy, manpower and chemicals)	1,17,85,658.63
2	Water Treatment Plant operational charges (energy, manpower and chemicals)	53,74,586.70
3	Rainwater harvesting tanks (energy, manpower, civil works) operation & maintenance	5,75,686.36
4	RO Plant for the water treatment (energy, manpower, chemicals and lab analysis)	25,06,507/-
5	Horticulture and green belt development	4,00,23,390
6	Solid waste collection and disposal charges	65,48,682
7	Operation and maintenance cost of (CAAQMS) Continuous Ambient Air Quality Monitoring Station (AMC,ARC & Calibration)	7,56,443.4
8	Third party environmental quality monitoring in and around the airport	3,49,486
9	Software for TSPCB connectivity of OCEMS & integration of Ambient Air Quality Monitoring Station AAQMS - West, EAST & PTB	73,600
10	Telangana State Pollution Control Board (TSPCB) Consent for Operation Fee renewal for 25 MPPA	15,00,000
11	Greenhouse gas Auditing for Carbon accreditation	1,18,000
12	Airport Noise zoning Study	6,50,000
Total		70,262,040.09

PART H

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

In addition to the existing STP of 1850 KLD, GMR Hyderabad International Airport Ltd., (GHIAL) has established another 2X 1350 KLD = 2700 KLD of Sewage Treatment Plants at Rajiv Gandhi International Airport (RGIA).

PART I

Any other particulars for improving the quality of the environment

- GHIAL has commissioned its second 5MWp Solar Power Plant in addition to the existing 5MWp by which GHIAL has increased its total installed capacity to 10MWp.

- GHIAL has been awarded with **Green Airport Recognition 2022 – "Carbon Emission Management" – Silver** by the Airports Council International.

- GHIAL along with its airport stakeholders ensuring sustainable airport operation at RGIA like greenbelt development, solar energy use, green buildings construction, single use plastic control, reduction of carbon emissions and maintaining carbon neutral airport status (Level 3+), community empowerment etc.

N. Venkatachalapathy

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

-End-

Annexure - I

GMR Hyderabad International Airport Limited

Water consumption for April 2021 - March 2022

Month	Domestic (KL)	Cooling tower (KL)	Flushing (KL)	Irrigation (KL)	Total Quantity (KL)
Apr-21	15022.96	7290	17467	852	40631.96
May-21	20806.74	6447	17437	6309	50999.74
Jun-21	22632.14	4624	13332	10045	50633.14
Jul-21	22853.19	4451	15917	11506	54727.19
Aug-21	21774.64	5655	17056	8769	53254.64
Sep-21	22084.41	5515	18110	10492	56201.41
Oct-21	24966.52	6670	19254	11233	62123.52
Nov-21	30339.29	5889	19191	10421	65840.29
Dec-21	27437.69	5807	21543	8307	63094.69
Jan-22	28883.78	5193	19758	7546	61380.78
Feb-22	22536.18	3880	20797	4035	51248.18
Mar-22	31471.36	5259	25141	4810	66681.36
Total	**290808.9**	**66680**	**225003**	**94325**	**676816.9**
Average/ day	**796.74**	**182.68**	**616.45**	**258.42**	**1854.29**

- Domestic Water Source- HMWS&SB
- Cooling Tower Make-up, Flushing water and Irrigation water source- Treated Wastewater

ENVIRONMENTAL QUALITY MONITORING REPORT

March 2022

Rajiv Gandhi International Airport

Submitted to:

M/s. GMR Hyderabad International Airport Limited,

Shamshabad, Hyderabad - 500108.

Prepared by:

M/s Pragathi Labs and Consultants Pvt. Ltd.

(Recognized by MoEF & CC., GOI, New Delhi
Certified by ISO 9001:2015, & ISO 45001:2015)
Plot No. B15 & 16, Industrial Estate, Behind Pollution Control Board,
Opp. Dena Bank, Sanath Nagar
Hyderabad, Telangana – 500018
Tel: +91- 9849872272

ACKNOWLEDGEMENT

M/s. Pragathi Labs & Consultants PVT LTD expresses sincere debt 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. PRAGATHI LABS & CONSULTANTS PVT LTD

Authorized Signatory

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ABBREVATIONS

Short	Expanded Form	Short	Expanded Form
%	Percentage	$L_{eq.}$	Equivalent levels
°C	Degree Celsius	m	Meter
µg	Microgram	mg	Milligram
µm	Micrometer	mg/l	Milligram per liter
µs	Micro Siemens	mg/Nm^3	Milligram per normal cubic meter
AAQ	Ambient Air Quality	max	Maximum
ACF	Activated Carbon Filter	min	Minimum
AGL	Airfield Ground Lighting	mm	Millimeter
a.m.	After meridian	m/sec	Meter per second
TSPCB	Telangana State Pollution Control Board	Nm^3	Normal cubic meter
APHA	American Public Health Association	Nm^3/hr	Normal cubic meter per hour
BOD	Bio-Chemical Oxygen Demand	NOx	Oxides of Nitrogen
BDL	Below Detectable Limit	NW	Northwest
COD	Chemical Oxygen Demand	pH	Potentiality of hydrogen ions
CFO	Consent for Operation	$PM_{2.5}$	Particulate Matter size less than 2.5 µm
cm	Centimeter	PM_{10}	Particulate Matter size less than 10 µm
CO	Carbon Monoxide	p.m.	Post meridian
dB(A)	Decibels on scale A	ppm	Parts per million
ds/m	Decisiemens per meter	RGIA	Rajiv Gandhi International Airport
D.G. Set	Diesel Generator Set	RWHS	Rain Water Harvesting Structure
E.C.	Electrical Conductivity	SE	Southeast
ENE	East of Northeast	SO_2	Sulphur Dioxide
g/cc	gram/centimeter cube	SPM	Suspended Particulate Matter
GHIAL	GMR Hyderabad International Airport Ltd	Sq.m	Square meter
IS	Indian Standards	SSW	South of Southwest
kg/ha	Kilogram per hectare	STP	Sewage Treatment Plant
km	Kilometer	TDS	Total Dissolved Solids
km/h	Kilometer per hour	WNW	West of Northwest
KVA	Kilo Volt – Ampere	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. Pragathi Labs & Consultants Pvt Ltd (PLCPL)** the environmental consultancy service contract for carrying out monthly environmental parameters monitoring study for their ongoing works of Rajiv Gandhi International Airport, Shamshabad and Hyderabad. This monitoring report is an overview of the findings of the field investigations carried out for the month of March, 2022.The field monitoring data was collected during **03-03-2022 to 08-03-2022** at Rajiv Gandhi international Airport, Shamshabad and surrounding area. The study area for Environmental Monitoring is airport premises and its surrounding area is taken as buffer zone which is located towards east of Hyderabad, NH-44(Bangalore Highway). This site is approximately 20 km away from the Hyderabad city premises.

1.1 Objective

The objective of the 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 (63%) in partnership with Airport Authority of India (13%), Government of Telangana (13%) and Malaysia Airports Holdings Berhad (11%). 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 duplicate for the water and wastewater samples are collected to assess the quality of water and wastewater characteristics.

2.0 Environmental Status of Study Area

2.1. Meteorological Monitoring

2.1.1 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.

2.1.2 Meteorological Data

Meteorological data was recorded continuously in RGIA Core Zone, during the study period of March 2022. Recorded average values for the month of March 31st 2022.

Table 1 Meteorological data of March 2022

S. No.	Parameters	March 2022		
		Min	Max	Average
1	Relative humidity (%)	7.4	88.7	41.8
2	Temperature (°C)	17.1	40.2	28.9
3	Total rainfall (mm)	0.0		
4	Predominant Wind Direction	E ,ESE,SE		
5	Wind speed (m/s)	0	2.99	0.90
6	Atmospheric Pressure (mille bars)	599.86	600.18	599.88

2.1.3 Results

The predominant wind direction found during study period of March month was predominantly East followed by East South East & South East. Wind frequency in the East (16.9%), East South East (12.2%), and South East (11.4%).The blowing wind speed varies from 0 to 2.99 m/s of the total time.Calm conditions prevailed for 22.31 % (<1km/hr) of the total time. The minimum and maximum temperature is 17.1 °C of 40.2 °C in the total time.

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

Fig. 1 Wind Rose Diagram of March 2022

2.2 Ambient Air Quality

2.2.1 Analysis Techniques and Method of Measurement

Table 2 Ambient Air Quality Monitoring Methodology and Protocol

S. No.	Parameter	Method of Measurement
1	Particulate Matter (PM_{10})	Respirable Dust Sampler (IS:5182 (Part-23), 2006
2	Particulate Matter ($PM_{2.5}$)	$PM_{2.5}$ Dust Sampler (IS:5182-Part-24),
3	Sulphur Dioxide (SO_2)	IS:5182 (Part-2), 2001 (Improved West & Gaeke Method)
4	Nitrogen dioxide(NO_2)	IS:5182 (Part-6),2006 (Modified Jacob & Hocchheiser Method)
5	Carbon Monoxide (CO)	IS:5182 (Part-10), 1999 (Non-Dispersive Infra-Red Method)
6	Hydrocarbons (HC)	IS:5182 (Part-17), 1979 (Adsorption and Desorption followed by GC)
7	Ozone (O_3)	IS:5182 (Part-9), 1974 (Chemical Method)

2.2.2 Details of Monitoring Locations

Ambient air quality monitoring is conducted in and around RGI Airport in 4 locations and the details of Location is mentioned in Table 3.

Table 3: Ambient Air Quality Monitoring Locations

S. No	Name of the Location	Direction	Distance from the Aerodrome Reference (km)	Specification of the Location
1	Near East Pier Flg-4	-	---	Core Zone
2	GMR Vara Lakshmi Foundation	North west	---	Core Zone
3	GMR Township, Mammidipalli	North East	3.43	Buffer Zone
4	Rasheedguda	South West	3.29	Buffer Zone

2.2.3 Ambient Air Quality Results

Ambient Air samples are collected as per the procedure mentioned in Table 2 and collected samples are analyzed for PM_{10}, $PM_{2.5}$, SO_2, NO_x, Ozone, CO, and Hydrocarbons. Ambient air quality results are given in Table 4.

Table 4: Ambient Air Quality Results in Expansion Sites

Parameter	Unit	Limit	GMRVF	GMR Township, Mammidipalli	Rasheedguda	Near East Pier Flg-4
Date of Monitoring			03-03-2022	03-03-2022	03-03-2022	03-03-2022
PM_{10}	µg/m³	100	60	54	48	63
$PM_{2.5}$	µg/m³	60	32	28	24	30
Sulphur Dioxide (SO_2)	µg/m³	80	14.5	12.8	10.2	16.1
Oxides of Nitrogen (NOx)	µg/m³	80	18.7	17.2	16.4	20.3
Ozone (O_3)	µg/m³	100	10.9	9.7	12.5	11.6
Carbon Monoxide (CO)	mg/m³	2	0.34	0.28	0.25	0.46
Hydrocarbons (HC)	ppm	-	<1.0	<1.0	<1.0	<1.0

***Note: AAQ Standard limits: - as per GHIAL's CFO dated 01.02.2022.**

Fig. 2 Ambient Air Quality in Buffer and Core Zone

2.3 Ambient Noise Levels Monitoring:

2.3.1 Details of monitoring locations:

During Ambient Noise monitoring, noise levels are recorded in and around airport premises in 4 locations. Details of location are mentioned in Table - 5.

Table - 5: Ambient Noise Monitoring Locations

S. No	Name of the Location	Direction	Distance from the Aerodrome Reference Point (ARP) (km)*	Specification of the Location
1	AGL West	West	0.0	Core Zone
2	AGL East	East	0.0	Core zone

2.3.2 Ambient Noise Levels Results: Results of Ambient Noise Levels in and around airport premises is in Table - 6.

Table 6: Ambient Noise Levels

S.No	Sampling Location	Date of Monitoring	Units	Result		Standard Limit	
				Leq Day	Leq Night	Day Time	Night time
1	AGL West	March '22	dB (A)	51.25	49.75	75	70
2	AGL East	March '22	dB (A)	67.05	66.98	75	70

Table - 7: Ambient Noise levels standards

- As per Noise Pollution (Regulation and Control) Rules, 2000 Noise Limits are.

Category of Area	Limits in dB(A) Leq*	
	Day Time	Night Time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

TABLE - 8: 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:

1. Day Time is recorded in between 6 a.m. and 10 p.m.
2. Night time is recorded in between 10 p.m. and 6 a.m.
3. 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.
4. Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.

5. 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.
6. 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) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is energy mean of the noise level over a specified period.

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 9

Table 9: Ground Water Sampling Locations (Bore wells)

Code	Location	Direction	Distance (km)	Location Description
GW1	Rasheedguda	South West	7	Rural & Residential Area
GW2	GMR Town Ship, Mammidipalli	North East	3.5	Rural & Residential Area
GW3	Airport Borewell sample	Nodal Center	0	Industrial Area
GW4	Gollapalli Village	North West	6	Rural & Residential Area

2.4.2. Ground Water Quality Results

Physico-chemical analysis of Ground water locations at selected sites (Table 10 & 11) are listed below.

Table 10: Ground Water Quality Results

Date of Collection: 03rd and 04th March, 2022 Date of Analysis: 04th to 12th March, 2022

S.No	Parameter	Unit	Locations		IS 10500 : 2012 Standard	
			GW_1	GW_2	Acceptable Limits	Permissible Limits
1	pH @ 25.0°C	-	8.1	7.8	6.5-8.5	No relaxation
2	Electrical Conductivity	µmhos/cm	1330	1002	Not Specified	Not Specified
3	Total Dissolved solids	mg/l	920	708	500	2000
4	Alkalinity as $CaCO_3$	mg/l	304	272	200	600
5	Hardness as $CaCO_3$	mg/l	416	344	200	600
6	Calcium as Ca	mg/l	102	112	75	200
7	Magnesium as Mg	mg/l	39	15	30	100
8	Sodium as Na	mg/l	113	73	Not Specified	Not Specified
9	Potassium as K	mg/l	1.6	1.9	Not Specified	Not Specified
10	Chlorides as Cl^-	mg/l	180	110	250	1000
11	Fluoride as F	mg/l	1.0	1.2	1	1.5
12	Sulphates as SO_4	mg/l	48	69	200	400
13	Iron as Fe	mg/l	0.24	0.2	0.3	No relaxation
14	Phosphates	mg/l	2.8	2.3	Not Specified	Not Specified
15	Nitrates as N	mg/l	16	6.7	45	No relaxation

Table 11: Ground Water Quality Results

Date of Collection: 03rd and 04th March, 2022 Date of Analysis: 04th to 12th March, 2022

S. No	Parameter	Unit	Locations		IS 10500: 2012 Standard	
			GW_3	GW_4	Acceptable Limits	Permissible Limits
1	pH @ 25.0°C	-	7.8	8.4	6.5-8.5	No relaxation
2	Electrical Conductivity	µmhos/cm	984	.974	Not Specified	Not Specified
3	Total Dissolved solids	mg/l	652	661	500	2000
4	Alkalinity as $CaCO_3$	mg/l	276	260	200	600
5	Hardness as $CaCO_3$	mg/l	308	296	200	600
6	Calcium as Ca	mg/l	88	85	75	200
7	Magnesium as Mg	mg/l	20	20	30	100
8	Sodium as Na	mg/l	79	98	Not Specified	Not Specified
9	Potassium as K	mg/l	2.0	1.4	Not Specified	Not Specified
10	Chlorides as Cl^-	mg/l	115	155	250	1000
11	Fluoride as F	mg/l	1.1	1.1	1	1.5
12	Sulphates as SO_4	mg/l	61	57	200	400
13	Iron as Fe	mg/l	0.12	0.18	0.3	No relaxation
14	Phosphates	mg/l	1.4	3.1	Not Specified	Not Specified
15	Nitrates as N	mg/l	12	19	45	No relaxation

Fig. 3 Variation of Ground Water Quality

Fig. 4 Variation of Ground Water Quality

2.5 Wastewater Quality

Wastewater samples is collected from STP Inlet, Filter Feed, ACF Outlet and Softener outlet of STP to analyse its water quality through which treatment efficiency is assessed.

2.5.1 Details of Monitoring Locations

Four wastewater samples have been collected and details of sampling location are given in Table 12.

Table 12: Details of Wastewater Sampling Locations

Code	Location	Direction from ARP	Description
SW-1	STP Inlet	Nodal Center	Airport -Airside
SW-2	Filter Feed		
SW-3	Ultra feed outlet		
SW-4	Softener outlet		

2.5.2 Wastewater Quality Results

Waste water sample is collected in each phase of STP treatment process to assess and analyse the treatment efficiency. In Softener outlet water sample which is outlet water from STP all the parameters are within the prescribed limits and the results of sample are in Table 13.

Table 13: Wastewater Quality Results of STP

Date of Collection: 03rd and 04th March, 2022 **Date of Analysis: 04th to 12th March, 2022**

S.No	Test Parameters	Units	SW-1	SW-2	SW-3	SW-4	Limits
1	Apparent Color	Hazen	Light brown	Light Yellow	Colorless	Colorless	-
2	True Color	Pt-Co	6.0	5.0	< 5.0	< 5.0	-
3	Odour	-	Mild pungent	Agreeable	Agreeable	Agreeable	-
4	Turbidity	NTU	1.0	1.0	1.0	1.0	-
5	pH @ 25.0 °C	-	6.7	7.1	6.4	6.8	6.5 – 9.0
6	Electrical Conductivity	µmhos/cm	1502	1595	1626	1688	-
7	Total Dissolved solids	mg/l	998	1054	1069	1105	2100
8	Total Suspended Solids	mg/l	96	38	18	12	200
9	Hardness as $CaCO_3$	mg/l	256	240	148	164	–
10	Total Residual Chlorine	mg/l	1.0	0.5	<0.1	<0.1	-
11	Ammonical Nitrogen as N	mg/l	30	19	8.0	9.0	-
12	Nitrites	mg/l	5.0	2.5	1.5	2.1	-
13	Nitrate as NO_3	mg/l	6.0	4.2	3.0	2.9	-
14	Phosphates	mg/l	3.2	1.1	1.6	2.3	-
15	Oil and Grease	mg/l	9.0	5.0	3.0	3.0	10
16	COD	mg/l	532	32	28	20	-
17	BOD (3 days at 27 °C)	mg/l	120	9.0	11	.8.0	10
18	Dissolved Oxygen	mg/l	4.2	4.7	5.5	6.6	-
19	Sulphides as S	mg/l	7.0	5.0	5.0	4.0	-

Fig. 5 Variation of Wastewater Quality in STP

2.6 D.G. Stack Emissions

2.6.1 D.G. Stack Emission Results

Table 14: DG Stack Emission Results

Sample Collected on	08-03-2022		
DG Set No	4		
DG Set Capacity	2000 KVA		
DG Location	D.G. Yard		
Stack diameter (m)	0.65		
Stack Height (m)	30		
Stack Cross section (m^2)	0.33		
Flue Gas characteristics			
Temperature (K)	426		
Velocity (m/sec)	8.9		
Flow rate (Nm^3/hr)	9222		
Emission Data			
Parameters	**Units**	**Limits**	**Test Results**
Particulate matter (PM)	(mg/Nm^3)	75	29.3
Oxides of Nitrogen (NOx)	(mg/Nm^3)	360	79.6
Carbon monoxide (CO)	(mg/Nm^3)	150	11.5
Non Methane Hydrocarbon (as C)	(mg/Nm^3)	100	15
Sulphur Dioxide (SO_2)	(mg/Nm^3)	--	35.4

2.6 Conclusion

2.6.1 Ambient Air Quality

Ambient Air Quality in and around the airport premises are well within the prescribed limits of National Ambient Air Quality Standards (NAAQS) notified by CPCB.

2.6.2 Ambient Noise Levels:

Ambient Noise levels is recorder in airport premises (core zone) and in surrounding area (buffer zone) and it is observed that noise levels in day and night are within the standard limits of CPCB (Noise Pollution (regulation and Control) rules 2000 and GSR 568(E).

2.6.3 Ground Water Quality

Ground water samples are drawn from various locations in and surrounding villages and their quality is found well within the permissible portable water limits (IS 10500:2012).

2.6.4 Wastewater Quality

Wastewater samples are collected from each stage of treatment process in STP and analyzed. The Outlet water quality of STP is within the limits prescribed in CFO issued by Telangana State Pollution Control Board.

Annexure - 3

GMR Hyderabad International Airport Limited (GHIAL)

Hazardous Waste Disposal in FY 2021-22

Sl No	Type of waste	Generator	Date of disposal	Quantity (Litres)	Agency name	Remarks
1	Used Oil/ Waste Oil	Air India sats	30.04.2021	900	M/s Bhadradri Traders	softcopy sent to TSPCB
2	Used Oil/ Waste Oil	Indigo	01.10.2021	3328	M/s. SLNS Industries	softcopy sent to TSPCB
3	Used Oil/ Waste Oil	GMR Air Cargo	27.10.2021	1000	M/s Mistry Petroleum Products	softcopy sent to TSPCB
4	Used Oil/ Waste Oil	Reliance (Fuel Farm)	07.12.2021	840	M/s. VIRANI Company	softcopy sent to TSPCB
5	Used Oil/ Waste Oil	Air India sats	18.02.2022	630	M/s Bhadradri Traders	softcopy sent to TSPCB
6	Used Oil/ Waste Oil	GHIAL	28.02.2022	1470	M/s Mistry Petroleum Products	softcopy sent to TSPCB
7	Used Oil/ Waste Oil	Indigo	10.03.2022	3000	M/s Mistry Petroleum Products	softcopy sent to TSPCB
8	Used Oil/ Waste Oil	GMR Air Cargo	30.03.2022	800	M/s Mistry Petroleum Products	softcopy sent to TSPCB
				11968		

Annexure-IV

GMR Hyderabad International Airport Limited

Solid waste disposal for April 2021- March 2022

Month	Quantity in kg
Apr-21	105560
May-21	83445
Jun-21	82775
Jul-21	92360
Aug-21	109860
Sep-21	166040
Oct-21	162000
Nov-21	191160
Dec-21	207860
Jan-22	173040
Feb-22	175880
Mar-22	173820
Total waste generation from process	1723800
STP sludge	**236100**
Total waste generation from process + STP	**1959900**

Note: Total solid waste generated 1725845 1725800 kg/year [Food waste-1701140 kg, STP sludge-236100 kg, paper-9790 kg, plastic-11500 kg and glass-1370 kg]