

Ref: GGIAL/MoEF/EC/2018/0306

Date: 25th November' 2018

To,

The Additional Principal Chief conservator of Forest (C)
Ministry of Environment & Forests & Climate Change,
Regional Office (SZ),
4th Floor, E&F Wing, Kendriya Sadan,
Koramangala, Bengaluru - 560034

Dear Sir,

Sub: Submission of 3rd Half Yearly EC Compliance Report of Greenfield International Airport at Mopa (Goa).

Ref: Environmental clearances vide your letter No. F.No.10-29/2011 –IA.III dated 28th October'2015 & letter No. F. No 10-29/2011-IA-111 dt: 22/02/2018

With reference to the subject referred above, we are pleased to submit the 3rd Half Yearly EC Compliance Report of Greenfield International Airport (GMR Goa International Airport Limited) at Mopa (Goa), for your kind perusal please.

Kindly acknowledge receipt of the same.

Thanking you,

Yours sincerely,
for GMR Goa International Airport Limited.

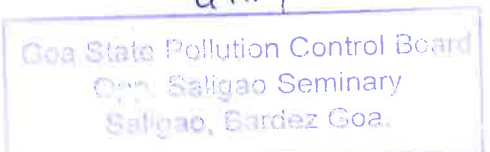

M.L.N.B Prasad
Chief Development Officer



Enclosed: As Above

Copy for kind information to:

- The Director, MoEF & CC, GOI, New Delhi -3
- The Member Secretary, CPCB, Delhi -32
- The Member Secretary, Goa State Pollution Control Board, Panaji, Goa
- The Director, Directorate of Civil Aviation, GoG, Porvorim, Goa -21



Environment Clearance Compliance Status Report

Dated: 25/11/2018

MoEF & CC Vide Letter No:F.NO.10-29/2011-IA.III dtd.28th October'2015

Six Monthly Compliance Report for the period April'18 to September'18 (2nd report by GMR Goa International Airport Limited after amendment of EC on 22/02/2018)

Sl. No	Reference Clause of EC	Conditions	Compliance
01	4 (A) (i)	'Consent to Establish' shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974	Obtained Consent to Establish from Goa State Pollution Control Board (GSPCB), vide Letter No:5/5163/16-PCB/CI-2454 dt-16/01/2017 Complied & Submitted (Annexure – A of vide letter no – 108/DOCA/EC/HYCR/2017/575 dt.10/11/2017 of DoCA, Goa).
02	4 (A) (ii)	The Project Proponent shall ensure availability of adequate land at the junction of the Mopa Airport road and Mumbai /Goa NH-17 for traffic circulation/management and to provide for all the traffic interchanges and proposed clover.	Will be addressed.
03	4 (A) (iii)	The approach and exit roads to the Airport shall be got approved from the NHAI and should be according to IRC norms.	Will be complied.
04	4 (A) (iv)	A perusal of the Topo sheet superimposed on the runway area indicates that the extreme end of the runway is covering the drainage area partly. The drainage area which is under the runway shall be channelized. The area between the parallel taxiway and runway shall be handled carefully to drain the water from the area in the outfall 2.	Being addressed in our construction programme.





Sl. No	Reference Clause of EC	Conditions	Compliance
05	4 (A) (v)	The PP shall submit the site clearance certificate from Directorate General of Civil Aviation (DGCA), before commencement of work at the project site.	Complied and submitted (Annexure – B of vide letter no – 108/DOCA/EC/HYCR/2017/575 dt. 10/11/2017 of DOCA, Goa).
06	4 (A) (vi)	Sewage and other liquid effluent generated from the airport including from the existing terminal should be treated according to the norms laid down by the State Pollution Control Board. The treated sewage shall be recycled for flushing/ gardening. Proper Dual plumbing shall be provided.	Will be addressed and complied with during operational phases of airport. Currently necessary infrastructure is being built in the construction phases.
07	4 (A) (vii)	The solid waste generated shall be properly collected, segregated and disposed according to the provisions of Solid Waste (Management and Handling) Rules, 2000. The project proponent shall make provisions for drinking water at convenient places for passengers and also at the cafeterias as to reduce generation of solid wastes including PET bottles.	Will be addressed and complied with during operational phases of airport. Currently necessary infrastructure is being built in the construction phases.
08	4 (A) (viii)	Installation and operation of DG sets shall comply with the guidelines of CPCB.	CPCB Guidelines will be followed.
09	4 (A) (ix)	Parking provision shall be provided according to the National Building Code of India, 2005.	Will be complied
10	4 (A) (x)	Water conservation fixtures shall be provided and water balance shall be maintained through verifiable metering for fresh raw water, recycled as well as rain water harvesting.	Being addressed in our construction programme.
11	4 (A) (xi)	Necessary permission shall be obtained for drawing of ground water from competent authority prior to construction / operation of the project.	Obtained permission for sinking of 2 no's of bore well from WRD, Goa, vide letter no-1298 dt.09/11/2017. Submitted, Vide





Sl. No	Reference Clause of EC	Conditions	Compliance
12	4 (A) (xii)	The land use around the Airport complex shall be regulated through a plan to control unauthorized development which may create problems in the operation of Airport.	Being addressed in close Co - operation/association with Mopa Airport Development Authority of GoG.
13	4 (A) (xiii)	The wastewater from hangers shall be tested for presence of heavy metals, if any, and shall be treated in STP. The treated waste water shall be used for gardening/ flushing.	Will be addressed and complied with during operational phases of airport. Currently necessary infrastructure is being built in the construction phases.
14	4 (A) (xiv)	Rain water harvesting shall be provided to recharge the ground water.	Will be addressed and complied with during operational phases of airport. Currently necessary infrastructure is being built in the construction phases.
15	4 (A) (xv)	Energy conservation to the extent of at least 20% shall be incorporated including water conservation (reuse/recycle, rain water harvesting and water efficient fixtures) and other green building practices for various buildings proposed within the airport complex. The PP shall consider ECBC Guidelines 2009 to achieve energy-efficiency. The energy conservation measures shall be subject to periodic verification by the competent Energy Conservation/Efficiency authority in the State.	Will be addressed and complied with during operational phases of airport. Currently necessary infrastructure is being built in the construction phases.



Sl. No	Reference Clause of EC	Conditions	Compliance
16	4 (A) (xvi)	The project proponent shall prepare a detailed traffic management plan to take care of increased vehicular traffic which should also cover/clearly delineate widening/ increasing the existing roads and associated road infrastructure approving/ installation of road safety features/pedestrian facility/FOB/under passes etc. (that can be done by carrying out road safety audits). Measures shall be taken to prevent encroachment along/ within the Rows on connecting/ main arterial roads.	Will be addressed.
17	4 (A) (xvii)	All the recommendations of the EMP shall be complied with in letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to RO, MoEF&CC along with half yearly compliance report.	Being ensured. Matrix format attached for kind information (Annex. I)
18	4 (A) (xviii)	The responses/ commitments made during public hearing shall be complied with in letter and spirit.	Being followed.
19	4 (A) (xix)	Project Proponent shall install noise level display system. Noise level shall be monitored regularly in all seasons (different meteorological conditions) within the compound as well as nearby habitations and it shall be ensured that the noise level is within the prescribed limits. During night time the noise levels measured at the boundary shall be restricted to the permissible levels to comply with the prevalent regulations.	Being monitored, reports attached for kind information. (Annex. II)
20	4 (A) (xx)	The location of monitoring stations and monitoring of noise level during day and night shall be in accordance with the CPCB guidance document "Requirement and procedure for monitoring Ambient Noise Level due to aircraft" published on 25th June, 2008.	Noted. Guidelines will be followed during Operations.
21	4 (A) (xxi)	Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate	Noted, Being Complied.



Sl. No	Reference Clause of EC	Conditions	Compliance
		watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.	
22	4 (A) (xxii)	Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approval of the SPCB.	Noted, Being complied.
23	4 (A) (xxiii)	Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining environmental clearance.	Environmental clearance has already been obtained from MoEF & CC, EC vide letter no F.No-10-29/2011-IA.III dt.28/10/2015. Amendment of Environmental Clearance has already been obtained from MoEF & CC, EC vide letter no F.No 10-29/2011-IA-111 dt.22/02/2018.
24	4 (A) (xxiv)	The project proponent will set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Being Complied.
25	4 (A) (xxv)	Corporate Environment Responsibility: a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.	Complied and Submitted, Vide letter no – GGIAL/MoEF/EC/2018/237 dt.12/05/2018 of GGIAL, Goa





Sl. No	Reference Clause of EC	Conditions	Compliance
		<p>b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/ conditions.</p> <p>c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/ violations of environmental norms to the Board of Directors of the company and/ or shareholders or stakeholders at large.</p>	<p>Complied.</p> <p>Being Ensured.</p> <p>Being Ensured.</p>
B.	GENERAL CONDITIONS:-		
26	4 (B) (i)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc.	Being implemented.
27	4 (B) (i)	The housing may be in the form of temporary structures to be removed after the completion of the project.	Noted , will be followed.
28	4 (B) (ii)	A First Aid Room will be provided in the project both during construction and operation of the project.	Complied.
29	4 (B) (iii)	All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.	Being Complied.
30	4 (B) (iv)	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	Being ensured.





Sl. No	Reference Clause of EC	Conditions	Compliance
31	4 (B) (v)	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards. The diesel required for operating DG sets shall be stored in underground tanks and if required clearance from Chief Controller of Explosives shall be taken.	Being Complied.
32	4 (B) (vi)	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.	Being followed.
33	4 (B) (vii)	Fly ash usage shall be explored as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27 th August, 2003.	Possibility of fly ash usage will be explored with reference to mix design and local availability of fly ash.
34	4 (B) (viii)	Ready mixed concrete must be used in building construction.	Being followed.
35	4 (B) (ix)	Storm water control and its re-use as per CGWB and BIS standards for various applications.	Will be followed.
36	4 (B) (x)	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Best practices for reduction in water demand during construction stage is being followed.
37	4 (B) (xi)	Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.	Being followed.
38	4 (B) (xii)	Use of glass may be reduced by up to 40% to reduce the electricity consumption and load on air-conditioning. If necessary, use high quality double glass with special reflective coating in windows.	Noted. Will be ensured.

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Sl. No	Reference Clause of EC	Conditions	Compliance
39	4 (B) (xiii)	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfill requirement.	Will be followed.
40	4 (B) (xiv)	Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code which is proposed to be mandatory for all air-conditioned spaces while it is aspirational for non-air-conditioned spaces by use of appropriate thermal insulation material to fulfill requirement.	Will be followed.
41	4 (B) (xv)	The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.	Will be followed.
42	4 (B) (xvi)	Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.	Will be followed.
43	4 (B) (xvii)	The construction of the structures shall be undertaken as per the plans approved by the concerned local authorities/local administration, meticulously conforming to the existing local and central rules and regulations.	Will be followed.
44	4 (B) (xviii)	The construction material shall be obtained only from approved quarries. In case new quarries are to be opened, specific approvals from the competent authority shall be obtained in this regard.	Being complied.
45	4 (B) (xix)	Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.	Being complied.
46	4 (B) (xx)	Full support shall be extended to the officers of this Ministry/Regional Office by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan	Will be ensured.

Sl. No	Reference Clause of EC	Conditions	Compliance
		including action taken reports in respect of mitigation measures and other environmental protection activities.	
47	4 (B) (xxi)	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry regarding the implementation of the stipulated conditions.	Monitoring Report (AAQ, Water and Noise enclosed as Annexure –II).
48	4 (B) (xxii)	Ministry of Environment, Forest & Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted.
49	4 (B) (xxiii)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted.
50	4 (B) (xxiv)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest & Climate Change.	Noted.
51	4 (B) (xxv)	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Financial closure of the project has been achieved on 07 th July 2017. The appointed date of the project has been declared on 04 th September 2017. Land development work has already been started (Letter submitted to Regional office MoEF & CC vide letter no – GGIAL/MoEF/2018/0194, Dated :26/02/2018).

Sl. No	Reference Clause of EC	Conditions	Compliance
52	4 (B) (xxvi)	A copy of the clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	Complied.
53	4 (B) (xxvii)	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office / Tehsildar's office for 30 days.	Complied
54	4 (B) (xxviii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	Noted. Will be ensured.
55	5(B)	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 2006, including the amendments and rules made thereafter.	Relevant environmental acts as applicable will be followed.
56	6(B)	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Necessary approvals from the concerned authorities will be obtained as applicable.
57	7(B)	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen	Complied.



Sl. No	Reference Clause of EC	Conditions	Compliance
		on the website of the Ministry of Environment, Forest & Climate Change at http://www.envfor.nic.in . The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry.	
58	8(B)	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No .460 of 2004 as may be applicable to this project.	Noted.
59	9(B)	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Being Complied.
60	10(B)	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted.
61	11(B)	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Noted. Will be ensured.

Sl. No	Reference Clause of EC	Conditions	Compliance
C. Additional Condition of Environment Clearance vide NGT order 21/08/2018			
A			
Air Environment			
62	1	Total Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM) during construction phase. Un-burnt and Hydro Carbons (HC), Lead (Pb), CO ₂ , SO ₂ , CO ₂ , SOOT and Oxides of Nitrogen (NO _x) during operation phase are going to be major pollutants in this kind of project. Besides, fugitive emissions of Volatile Organic Compounds (VOC) during fuel handling can be another issue for ambient air environment. The provision of only 6 (six) Air Quality Monitoring Stations is inadequate as sampling duration has been given as 'twice a week, 4 weeks in a season as per CPCB standards for NAAQM, 1994. It would be appropriate if the Project Proponent establishes real time online continuous Air Quality Monitoring Station also which is connected to CPCB server and capable of monitoring all relevant and critical parameters and mitigation measures taken.	Monitoring of Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM) will be conducted during construction phases. real time online continuous Air Quality Monitoring Station also which is connected to CPCB server will be installed in the operation phases.
63	2	Although all parameters w.r.t ambient air parameters have been found to be within limits for all 6 (six) locations monitored, we feel for the purpose of giving/depicting holistic picture with regard to ambient air in the area, at least 3 (three) more locations falling in the State of Maharashtra be also monitored and documented.	Will be Complied.
B			
Water Environment			
64	1	Only two number of Rain Water Harvesting pits have been provided which we feel are not adequate and there is a need to place other pits at such locations so as to capture all the excess drainage for water re-charge.	Design of rain water harvesting pits is in progress and adequate pits will be provided for ground water re-charge.



Sl. No	Reference Clause of EC	Conditions	Compliance
65	2	More frequent Water Quality Monitoring i.e. once every month may be carried out by Project Proponent at bore wells and STP discharge plants instead of 4 (four) times in a year as proposed.	Will be Complied with once airport is operational.
	C	Noise Environment	
66	1	It has been proposed that ambient noise levels shall be monitored around the premises of airport, near DG sets and at main entrance/boundary of airport once a week at 7 (seven) locations which we feel are inadequate. Besides these, continuous monitoring of occupational noise exposure limits in such industrial environments would be appropriate with audible or visual alarm output capability.	Will be Complied with once airport is operational.
67	2	Integrated Noise Model (INM) be more frequently used and mitigation undertaken during the operational phase of project at regular intervals.	Will be Complied with once airport is operational.
68	3	Although ambient noise levels have been found to be within limits at 9 (nine) locations monitored, we feel for the purpose of giving/depicting holistic picture with regard to ambient noise levels in the area, at least 3 (three) more locations falling in the State of Maharashtra be also monitored and documented.	Ambient noise levels monitoring will be carried out during construction phases.
	D	Land Environment	
69	1	There is a potential for impact on soil quality due to project related spills and leaks of fuel and chemicals and uncontrolled disposal of wastes and waste water. Adequate care be taken to avoid spills and leaks of hazardous substances and all project related wastes. Littering on sites and beyond the sites needs to be adequately prevented and controlled.	Will be complied
70	2	Debris and Muck Management Plan to be prepared and implemented so as to avoid spillage of muck and debris on the slopes.	Will be Complied



Sl. No	Reference Clause of EC	Conditions	Compliance
71	3	Soil conservation and stabilization measures needs to be undertaken by deploying both mechanical and bio-engineering methods.	Top soil stored within project site. If required same will be stabilised.
72	4	Remediation, restoration and compensation needs to be integral part of policy so as to provide adequate relief for any environmental or project related disasters.	Will be Complied.
	E	Biological Environment	
73	1	Efforts be made to transplant the trees to other locations in the same vicinity by using appropriate mechanical devices which are available these days.	Efforts will be made for transplantation of trees.
74	2	Efforts be made to plant indigenous species which are tall in size rather than small saplings.	Will be Complied.
75	3	Concerns have been raised by appellants with regard to plant species 'Dipicadi concanense' which has been claimed to be a threatened plant. This claim of the appellants have been negated by the respondent by producing a documentation of Botanical Survey of India, Western Regional Centre, Pune, Maharashtra titled as "A Note on Occurrence and Distribution of Dipicadi concanense". By invoking Precautionary Principle, we direct the Project Proponent to draw up a Conservancy by Plan/Scheme for 'Dipicadi concanense' in collaboration with Forest Department, State of Goa and Botanical Survey of India and ensure its implementation	Complied.
	F	Socio-economic Environment	
76	1	Adequate drills with respect to implementation of Disaster Management plan needs to be carried out at regular intervals so as	Will be Complied



Sl. No	Reference Clause of EC	Conditions	Compliance
77	2	to ensure preparedness and rapid response to any disasters both man-made or natural. Although 'Disaster Management Plan' as Annexure-II is part of EIA Report under the Sub head 1.2.1- National Disasters needs further elaboration especially in terms of Emergency Response Measures, Rules and Responsibility, Mitigation, etc.	Will be complied.

Environmental Mitigation measures as per EIA Report and Compliance Status

Annexure – I

Sl. Nos	Mitigation measures	Compliance status
Mitigation measures for Air Environment during Construction Phase		
01	Ensure preventive maintenance of vehicles and equipment.	Preventive maintenance of vehicles and equipment is being carried out on regular basis and record is being maintained.
02	Ensure vehicles with valid Pollution under Control certificates are used.	Being Complied.
03	Implement dust control activities such as water sprinkling on unpaved sites	Dust suppression with water tankers being carried out all hauling roads.
04	Ensure vertical stacks with height sufficient for dispersion as per CPCB guideline for DG stacks.	DG sets with appropriate stack height provided. CPCB Guidelines being followed.
Mitigation measures for Water Environment during Construction Phase		
05	Monitor water usage at construction camps to prevent wastage.	Labour camp under construction, Will be followed.
06	Ensure STP at construction camps/sites and the proposed facilities are properly designed to handle peak waste water load and properly maintained	STP will be installed at labour colony.
07	Ensure supply of temporary/portable toilets for construction staff	Labour camp under construction, Will be ensured.
Mitigation measures for Land Environment during Construction Phase		
08	Avoiding rainy season for construction so as to avoid soil erosion	Appropriate measures taken to prevent soil erosion, if construction is carried out in rainy season.
09	Restricting all construction activities inside project boundary	Will be followed.
10	Ensure top soil stock pile is not contaminated with any type of spills	Being followed.



Environmental Mitigation measures as per EIA Report and Compliance Status

11	Ensure an material resulting from clearing and grading should not be deposited on approach roads, streams or ditches, which may hinder the passage and/or natural water drainage.	Being followed.
Mitigation measures for Noise Environment during Construction Phase		
12	Ensure preventive maintenance of equipment and vehicles	Preventive maintenance of vehicles and equipment being carried out on regular basis.
13	Ensure DG sets are provided with acoustic enclosures and exhaust mufflers	DG sets have acoustic enclosures.
14	Ensure vehicle movement is avoided at night, and close to sensitive receptors (such as schools, hospitals, place of worships)	Work is in progress at table top plateau, isolated from villages. Necessary precaution measured being ensured
Mitigation measures for Biological Environment during Construction Phase		
15	Keep a tally of trees cut	Complied with where practical.
16	Avoid cutting of trees wherever possible	Complied with where practical.
17	Closing of trenches as soon as possible after pipeline laying, if any.	Will be followed or tranches will be barricaded.
Mitigation measures for Socio-economic Environment during Construction Phase		
18	Prohibit use of firewood in project camps and making use of cooking gas is mandatory.	Being Complied
19	Regulating speed limit of the vehicles	Speed boards to be display in the all roads and regular training/awareness to be conducted for drivers/operators.

ANNEXURE-II



Sadekar Enviro Engineers Pvt. Ltd.

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SAVE WATER
SAVE LIFE

Gazetted By Ministry of Environment & Forest, GOVT. OF INDIA. S. O. 21(E), Valid upto 02.01.2019, ★ QCI-NABET Accredited EIA Consultancy

Lab. Accredited by NABL, Valid up to 29.06.2020 ★ Certified by ISO 9001:2008 & BS OHSAS 18001 : 2007

AMBIENT AIR QUALITY MONITORING REPORT

Report No.	SEE/AR/09/18/3831	Report Date	03/10/2018		
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited				
Address of Client	Mopa, Goa				
Sample Collected By	SEEPL Representative	Environmental condition of lab			
Date of Sampling	28/09/2018	Temperature (°C)*	26.3	Humidity (%)*	59
Analysis Started On	29/09/2018	Analysis Completed On		03/10/2018	

AMBIENT AIR STATION LOCATION

Location of ambient air station	Airport Boundary, Opp. To CH1400n ✓				
Ambient Temperature (°C)*	29.8	Humidity (%)*	81		
Wind Speed (km/hr)*	0.8	Wind Direction (deg)*	237		
Instruments Used	R.D.S.(APM- 460), F.P.S.(APM – 550) & G.P.S.(APM – 411)				

POLLUTION PARAMETERS

Sr. No.	Parameters	Result	Unit	Limits (NAAQS-2009)	Method
01.	SPM	66.37	µg/m ³	-	IS 5182(Part 04)
02.	PM ₁₀	41.84	µg/m ³	100.00	IS 5182(Part 23)
03.	PM _{2.5}	13.12	µg/m ³	60.00	Lab SOP NO.: SEE/LD/SOP-AA-04
04.	SO ₂	<3.00	µg/m ³	80.00	IS 5182 (Part 02)
05.	NO _x	<9.00	µg/m ³	80.00	IS 5182 (Part 06)
06.	CO	0.04	mg/m ³	4.00	Lab SOP NO.: SEE/LD/SOP-AA-10

Note : Test results related only to the sample tested.

: Test results relate only to the condition prevailing at the time of sampling

: This certificate may not be reproduced in part, without the permission of this laboratory.

: Calibration details of the equipments used in monitoring and / or analysis is back-side of analysis report

: "The tests marked with an * are not accredited by NABL".

Susmita

Analysed by
Susmita Kapdoskar



Authorized Signatory
Vinayak Kudkar

HEAD OFF. & LAB : Plot No. A-95, Road No. 16, Kisan Nagar Road, M.I.D.C. Wagle Industrial Area, Thane - 400 604, Maharashtra State, India.

☎ : (91-22) 2583 3321 / 2583 3322 / 2583 3323 / 2583 3324 • E-mail : prs@sadekaronviro.com / psadokar5@gmail.com

BRANCH OFF. : 310, Dempo Towers, EDC Patto, Panaji-403 001, Goa State, India ☎ : (0832) 2437048 / 2437164

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Sadekar Enviro Engineers Pvt. Ltd.

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AMBIENT AIR QUALITY MONITORING REPORT					
Report No.	SEE/AR/09/18/3831	Report Date	03/10/2018		
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited				
Address of Client	Mopa, Goa				
Sample Collected By	SEEPL Representative	Environmental condition of lab			
Date of Sampling	28/09/2018	Temperature (°C)*	26.3	Humidity (%)*	59
Analysis Started On	29/09/2018	Analysis Completed On		03/10/2018	

AMBIENT AIR STATION LOCATION

Location of ambient air station	R & R Colony ✓		
Ambient Temperature (°C)*	29.8	Humidity (%)*	81
Wind Speed (km/hr)*	0.8	Wind Direction (deg)*	237
Instruments Used	R.D.S.(APM- 460), F.P.S.(APM – 550) & G.P.S.(APM – 411)		

POLLUTION PARAMETERS

Sr. No.	Parameters	Result	Unit	Limits (NAAQS-2009)	Method
01.	SPM	73.59	µg/m ³	-	IS 5182(Part 04)
02.	PM ₁₀	56.38	µg/m ³	100.00	IS 5182(Part 23)
03.	PM _{2.5}	21.25	µg/m ³	60.00	Lab SOP NO.: SEE/LD/SOP-AA-04
04.	SO ₂	4.88	µg/m ³	80.00	IS 5182 (Part 02)
05.	NO _x	<9.00	µg/m ³	80.00	IS 5182 (Part 06)
06.	CO	0.04	mg/m ³	4.00	Lab SOP NO.: SEE/LD/SOP-AA-10

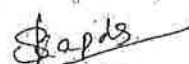
Note : Test results related only to the sample tested.

: Test results relate only to the condition prevailing at the time of sampling


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Analysed by
Susmita Kapdoskar




Authorized Signatory
Vinayak Kudkar



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AMBIENT AIR QUALITY MONITORING REPORT					
Report No.	SEE/AR/09/18/3830	Report Date	03/10/2018		
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited				
Address of Client	Mopa, Goa				
Sample Collected By	SEEPL Representative	Environmental condition of lab			
Date of Sampling	28/09/2018	Temperature (°C)*	26.3	Humidity (%)*	59
Analysis Started On	29/09/2018	Analysis Completed On		03/10/2018	

AMBIENT AIR STATION LOCATION

Location of ambient air station	Semeche Advan, Varkhad ✓				
Ambient Temperature (°C)*	29.8	Humidity (%)*	81		
Wind Speed (km/hr)*	0.8	Wind Direction (deg)*	237		
Instruments Used	R.D.S.(APM-460), F.P.S.(APM-550) & G.P.S.(APM-411)				

POLLUTION PARAMETERS

Sr. No.	Parameters	Result	Unit	Limits (NAAQS-2009)	Method
01.	SPM	68.84	µg/m ³		IS 5182(Part 04)
02.	PM ₁₀	40.11	µg/m ³	100.00	IS 5182(Part 23)
03.	PM _{2.5}	10.73	µg/m ³	60.00	Lab SOP NO.: SEE/LD/SOP-AA-04
04.	SO ₂	<3.00	µg/m ³	80.00	IS 5182 (Part.02)
05.	NO _x	<9.00	µg/m ³	80.00	IS 5182 (Part 06)
06.	CO	0.05	mg/m ³	4.00	Lab SOP NO.: SEE/LD/SOP-AA-10

Note : Test results related only to the sample tested.

: Test results relate only to the condition prevailing at the time of sampling

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Susmita
Analysed by
Susmita Kapdoskar



Vinayak
Authorized Signatory
Vinayak Kudkar



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NOISE LEVEL MONITORING REPORT

Report No.	SEE/AR/07/18/1990-93	Report Date	11/07/2018
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited		
Address of Client	Mopa, Goa		
Date of Sampling	09/07/2018		
Sample Collected By	SEEPL Representative		

Sr. No.	Sampling Location (From 1.0 meter off)	Report No.	Noise in dB(A)		Noise in dB(A) Leq
			Max.	Min.	Day Time
01.	Near R&R Colony	SEE/AR/07/18/1990	50	42	48
02.	Runway CH 3850 boundary	SEE/AR/07/18/1991	46	38	41
03.	Near Primary school at Simeche Advan; Varkhand	SEE/AR/07/18/1992	48	35	46
04.	At GGIAL Main Gate	SEE/AR/07/18/1993	46	39	41

➤ Noise Limits as per Schedule III of "The Environment (Protection) Rules, 1986" are as follows:

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

- Day time is reckoned in between 6.00am to 10.00pm and night time is reckoned in between 10.00pm to 6.00am.
- *dB(A) Leq 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 the energy mean of the noise level over a specified period.

Note : Test results related only to the sample tested.

: Test results relate only to the condition prevailing at the time of sampling

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Monitored by
Anand Chavan



Authorized Signatory
Vinayak Kudkar



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NOISE LEVEL MONITORING REPORT

Report No.	SEE/AR/07/18/1994-97	Report Date	11/07/2018
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited		
Address of Client	Mopa, Goa		
Date of Sampling	09/07/2018		
Sample Collected By	SEEPL Representative		

Sr. No.	Sampling Location (From 1.0 meter off)	Report No.	Noise In dB(A)		Noise in dB (A)
			Max.	Min.	Night Time
01.	Near R&R Colony	SEE/AR/07/18/1994	47	40	42
02.	Runway CH 3850 boundary	SEE/AR/07/18/1995	41	35	38
03.	Near Primary school at Simeche Advan, Varkhand	SEE/AR/07/18/1996	39	33	35
04.	At GGIAL Main Gate	SEE/AR/07/18/1997	45	37	40

➤ Noise Limits as per Schedule III of "The Environment (Protection) Rules, 1986" are as follows:

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

- Day time is reckoned in between 6.00am to 10.00pm and night time is reckoned in between 10.00pm to 6.00am.
- *dB(A) Leq 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 the energy mean of the noise level over a specified period.

Note : Test results related only to the sample tested.

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ANALYSIS REPORT FOR WATER SAMPLE

Report No.	SEE/07/18/1521	Report Date	13/07/18	
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited			
Address of Client	Mopa, Goa			
Order / Reference	As per dated 09/07/18	Environmental Condition of Lab	Temp °C 26.5	Humidity % 56
Sampling Point	Storm water drain at Simeche Advan, Varkhand (downstream of drain originating from Airport site)			
Sample Details	Strom water	Date of Collection	09/07/18	
Sample Collected By	SEEPL Representative	Sample Received On	09/07/18	
Analysis Started On	09/07/18	Analysis Completed On	13/07/18	
Sample Container	Glass bottle + PVC Can	Sample Quantity	1000 ml + 1000ml	

Chemical Parameters


Sr.No.	Parameters	Results	Unit	Limits	Method
1.	pH	6.25	-	5.5-9.0	APHA(23 rd Edition) 4500 H ⁺ -B
2.	Chemical Oxygen Demand (COD)	12.00	mg/lit	250.00	APHA(23 rd Edition) 5220-B
3.	Biochemical Oxygen Demand (27°C 3 day) (BOD)	<3.00	mg/lit	30.00	IS 3025 (Part 44)
4.	Total Suspended Solids (TSS)	18.00	mg/lit	100.00	APHA(23 rd Edition) 2540-D
5.	Oil & Grease (O & G)	1.00	mg/lit	10.00	APHA(23 rd Edition) 5520-O & G
6.	Total Dissolved Solids (TDS)	28.00	mg/lit	Not Specified	APHA(23 rd Edition) 2540-C
7.	Turbidity	13.00	NTU	Not Specified	APHA(23 rd Edition) 2130 B

* Limits: General standards for Discharge of Environmental Pollutants into Inland Surface water, as per The Environment (Protection) Rules, 1986.

Note: Test results related only to the sample tested.

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Komal Gawas
Analyzed by




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ANALYSIS REPORT FOR WATER SAMPLE

Report No.	SEE/08/18/2015	Report Date	13/08/18	
Name of Client	M/s. Megawide Construction DMCC C/o GMR Goa international Airport Limited			
Address of Client	Mopa, Goa			
Order / Reference	As per dated 09/08/18	Environmental Condition of Lab	Temp °C 26.5	Humidity % 57
Sampling Point	Naneche Paani warkhand Village			
Sample Details	Strom water	Date of Collection	09/08/18	
Sample Collected By	SEEPL-Representative	Sample Received On	09/08/18	
Analysis Started On	09/08/18	Analysis Completed On	13/08/18	
Sample Container	Glass bottle + PVC Can.	Sample Quantity	1000 ml + 1000ml	

Chemical Parameters

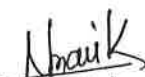
Sr.No.	Parameters	Results	Unit	Limits	Method
1.	pH	6.55	-	5.5-9.0	APHA(23 rd Edition) 4500 H ⁺ -B
2.	Chemical Oxygen Demand (COD)	8.00	mg/lit	250.00	APHA(23 rd Edition) 5220-B
3.	Biochemical Oxygen Demand (27°C 3 day) (BOD)	<3.00	mg/lit	30.00	IS 3025 (Part 44)
4.	Total Suspended Solids (TSS)	6.00	mg/lit	100.00	APHA(23 rd Edition) 2540-D
5.	Oil & Grease (O & G)	1.00	mg/lit	10.00	APHA(23 rd Edition) 5520-O & G
6.	Total Dissolved Solids (TDS)	52.00	mg/lit	Not Specified	APHA(23 rd Edition) 2540-C
7.	Turbidity	9.00	NTU	Not Specified	APHA(23 rd Edition) 2130 B

* Limits: General standards for Discharge of Environmental Pollutants into Inland Surface water, as per The Environment (Protection) Rules, 1986.

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Namrata Naik
Analyzed by




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