GIL/BBP/ENV/MOEF&CC/EC/506 29/05/2024

THE REGIONAL OFFICER,
Integrated Regional Office (IRO), Vijayawada,
Ministry of Environment, Forest and Climate Change,
Green House Complex, Gopalareddy Road,
Vijayawada-520010, Andhra Pradesh.

Sub: Half-yearly Environmental Clearance Compliance (October 2023 to March 2024) Report Submission– Grasim Industries Ltd.

(Ref: **1.** Environmental Clearance vide F. No. J-11011/90/2011- IA II (I), Dated 22nd March, 2013
2. Transfer of Environmental Clearance vide F. No. J-11011/90/2011-IA II (I), Dated 21st November, 2019.
3. Extension of validity of EC till 22nd March 2023, vide F. No. J-11011/90/2011-IA II (I) Dated 18th August 2020.)

Dear Sir,

With respect to the above mentioned subject, Grasim Industries Limited (Chemical Division, BB Puram) are herewith enclosing our EC conditions compliance report for the period October 2023 – March 2024, with this letter for your information and kind record please.

Thanking you,

Yours faithfully,

For Grasim Industries Limited
(Chemical Division, BB Puram)

Sridhara Narasimha Sastry
President & Unit Head

Contact Details:
Mobile Nos: 9977448340 (alt) 8008303882

Email : shridhara.sastry@adityabirla.com
Alt : grcd-bbp.environment@adityabirla.com

Encl.: As above

ADITYA BIRLA
GRASIM

Grasim Industries Limited, Balabhadrapuram

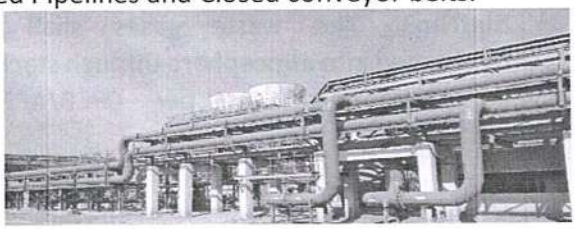
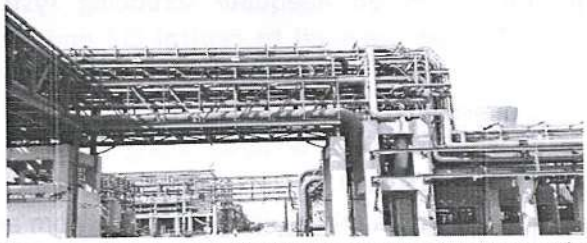
Six monthly EC Conditions Compliance Report for the period of October 2023 to March 2024.

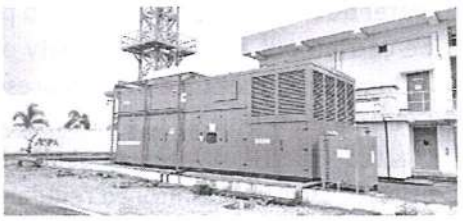
1. **Environmental Clearance vide F. No. J-11011/90/2011- IA II (I), Dated 22nd March, 2013.**
2. **Transfer of Environmental Clearance vide F. No. J-11011/90/2011-IA II (I), Dated 21st November, 2019.**
3. **Extension of validity of EC till 22nd March 2023, vide F. No. J-11011/90/2011-IA II (I) Dated 18th August 2020.**

<table>
<tr><th>S. No.</th><th>Conditions</th><th>Status of Compliance</th></tr>
<tr><td colspan="3">A. SPECIFIC CONDITIONS:</td></tr>
<tr><td>i .</td><td>No mercury cell shall be used. Manufacturing process of chlor alkali shall be based on membrane cell.</td><td>Complied,
Our Manufacturing process is based on Membrane cell.</td></tr>
<tr><td>ii</td><td>Bag filter along with adequate stack shall be provided to rice husk/coal fired boilers boiler to control particulate emissions within 50 mg/Nm3. The waste gases shall be discharged into atmosphere through stack of adequate height as per CPCB/APPCB guidelines.</td><td>Complied, we have installed Electrostatic Precipitator as an air pollution controlling device to control particulate matter to keep the particulate emission well within the prescribed limits
Recent Environmental Monitoring reports are as annexed as and Annexure-1.
<table><tr><th>S. No.</th><th>Boiler emission Limit</th><th>Result April 2024</th></tr><tr><td>1</td><td>50 mg/Nm^3</td><td>28.4 mg/Nm^3</td></tr></table></td></tr>
<tr><td>iii</td><td>As proposed adequate scrubbing system shall be provided to control Cl2 emissions less than 15 mg/Nm^3 and control HCl emissions less than 35 mg/Nm^3 respectively. Online Chlorine analyser along with alarm indicator shall be installed in the chlorine stack with a minimum reading of 1 ppm and will be connected to the DCS control room. The scrubbing media shall be sent to effluent treatment plant (ETP) for treatment. Efficiency of scrubber shall be monitored regularly and maintained properly.</td><td>Complied, we have installed Tail gas towers for HCL furnace to control HCL emissions, and Water scrubber to control Cl_2 emissions.

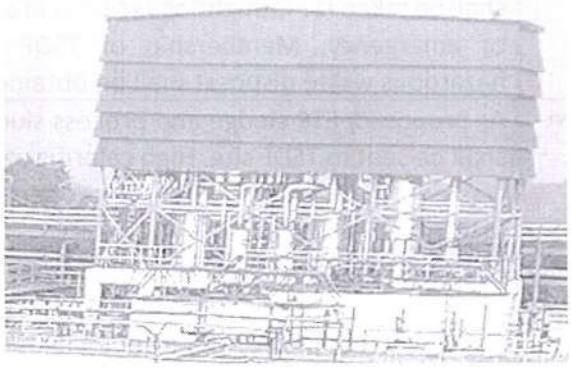
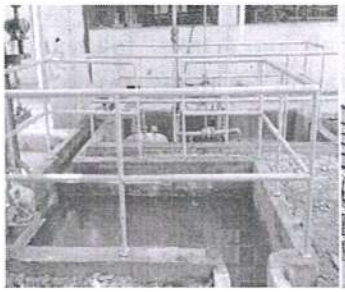
We have also provided Chlorine analysers along with alarm indicators which are installed with a minimum reading of 1 PPM and is connected to the DCS control room.
The scrubber inlet and outlet in plant parameters are metered regularly by the production lab to measure the efficiencies.

Photographs of Online Chlorine analyser connected to DCS control room are annexed as Annexure-2</td></tr>
</table>

S. No.	Conditions	Status of Compliance
iv	The gaseous emissions (SO2, NOx, Cl2, HCl) and particulate matter from boiler and process stack shall conform to the norms prescribed by the CPCB/ APPCB from time to time. At no time, the emission levels shall go beyond the prescribed standards. The system shall be interlocked with the pollution control equipment's so that in case of any increase in pollutants beyond permissible limits, plant should be automatically stopped. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack monitoring shall be done regularly and report shall be submitted to APPCB and the Ministry's regional office at Bangalore.	**Complied,** Emissions from boiler and process stacks are well within the norms of the prescribed norms. Continuous stack emission monitoring system have been installed at Boiler and Process stacks. Recent Environmental Monitoring reports are as annexed as and **Annexure-1.**
v	In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored and records maintained. The emissions shall conform to the limits stipulated by the APPCB.	**Complied**, Water sprinkling is carried out to control fugitive emissions. All our material movement is through Closed Pipelines and Closed conveyor belts.   Fugitive emission monitoring is carried out inside the plant premises, Monitoring reports is as annexed as an **Annexure-1.**
vi	A proper Leak Detection and Repair (LDAR) Program for pesticide industry shall be prepared and implemented as per CPCB guidelines. Focus shall be given for prevention of fugitive emissions for which	**Complied**. We have a well laid out preventive maintenance of pumps, valves, pipelines for proper leak detection and repair.

S. No.	Conditions	Status of Compliance
	preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to.	
vii	Proper hood along with suction facility and scrubbing arrangement should be provided in the chlorine storage area. Alarm for chlorine leakage if any in the liquid chlorine storage area shall be provided along with automatic start of the scrubbing system.	**Complied**, we have installed Suction hoods facility at chlorine storage and filling area. We also have installed chlorine sensors for alarms at chlorine handling sections. 
viii	The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.	**Complied**, Acoustic enclosures are provided for DG sets, Stacks are of adequate height and the emissions are well within the prescribed CPCB standards. Monitoring report is annexed as Annexure-1. Acoustic enclosures are as below. 
ix	The company shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal office of CPCB and the APPCB. The levels of PM10, SO2, NOX, Cl2, HCl, and CO in ambient air and emissions from the stacks shall be monitored and/ displayed at a convenient location near the main gate of the company and at important public places.	**Being Complied,** We are uploading the status of compliance of EC conditions and are being sent to RO office, MoEF&CC and SPCB. The levels of PM10, SO2, NOX, Cl2, HCl, and CO in ambient air and emissions from the stacks are being monitored and/ displayed at a convenient location near the main gate of the company and at important public places. Photograph of the same is as below. 

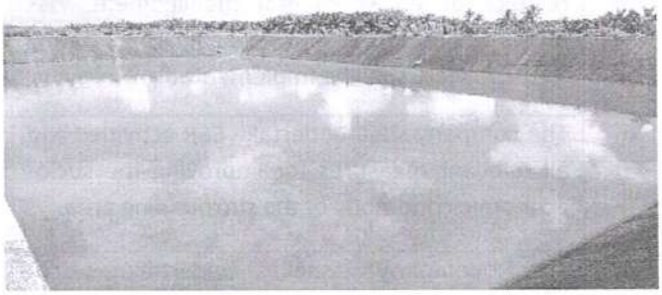
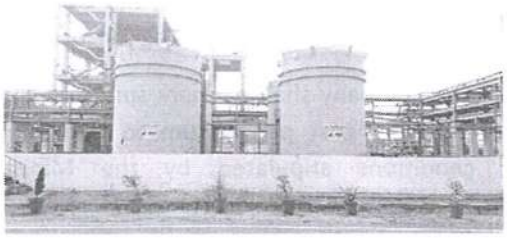
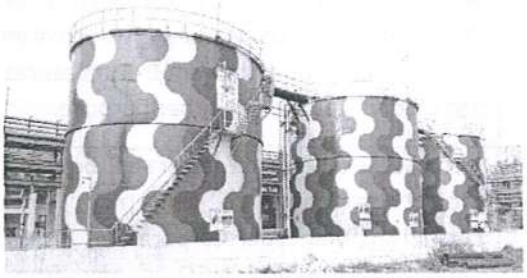
S. No.	Conditions	Status of Compliance
x	Total fresh water drawl from Godavari River shall not exceed 3800 m3/day and prior permission shall be obtained from the Competent Authority.	**Noted and agreed.** We have water withdrawal permission from APWALTA, and Our water withdrawal is within the permission.
xi	Efforts shall be made to reduce the fresh water requirement by adopting 3 R's (Reduce, Reuse and Recycle) concept.	**Noted.** 1. We have adopted state of the art Zero liquid discharge at our plant premises, the treated effluent is used back as Process water in the plant. 2. We have taken enough measures to utilize the storm water, which will be channelized to a reservoir for reutilization. 3. We have 100 % condensate recovery system for the steam generated at our plant.
xii	Industrial effluent generation shall not exceed 620 m^3/day and treated in ETP. Treated effluent shall be recycled/reused within the factory premises. Treated effluent shall be collected in the guard pond. Regular water quality monitoring of guard pond shall be carried out and Water quality of treated effluent shall meet the norms prescribed by CPCB/APPCB. Domestic wastewater shall be treated in STP. Water quality of treated effluent shall be monitored regularly.	**Noted.** Our industrial effluent generation is not exceeding the limit prescribed. • We have installed state of the art Zero Liquid discharge at our plant premises so that the process effluent is treated and reutilized in the process. • We have 100 KLD STP for domestic wastewater treatment. • Our treated effluent is reutilized in the process, after going through Multi Effect Evaporator and ATFD. The ATFD salts are disposed through TSDF.  *Fig. Integrated Water and Effluent treatment plant based on Zero liquid discharge principle.*  *Fig. Sewage Treatment Plant for treatment of Sewage.*

S. No.	Conditions	Status of Compliance
xiii	No effluent shall be discharged outside the premises and 'Zero' discharge concept shall be adopted.	**Complied**. we have installed State of the Art Zero Liquid Discharge at our plant, so that the process effluent is treated and reutilized in the process.  *Fig. MEE and ATFD at ETP Plant.*
xiv	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	**Complied**. Process effluent is carried to ETP through closed pipelines and is stored in Effluent storage tanks.   Fig. Collection pits at plant. Fig. Effluent Holding Tanks The storm water is kept separately built to collect all the rain water, the rain water is collected into a reservoir for reutilization.   *Fig. Dedicated Storm Water channel leading to 1 Lakh Cubic meter holding reservoir.*
xv	The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2008 and	**Complied**, We have obtained Authorization for Handling Hazardous waste. We also have an agreement and membership with TSDF has been obtained.

S. No.	Conditions	Status of Compliance
	amended as on date for management of Hazardous wastes and prior permission from APPCB shall be obtained for disposal of solid / hazardous waste in the TSDF. Measures shall be taken for firefighting facilities in case of emergency. Membership of TSDF for hazardous waste disposal shall be obtained.	
xvi	As proposed, ETP sludge and process sludge shall be sent to TSDF site. High calorific value waste shall be sent to cement factory/incinerated.	**Noted,** Sludge generated at process and ETP is disposed through TSDF.
xvii	The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 11989 as amended in October, 1994 and January, 2000. All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	**Noted and agreed.** All the transportation of Hazardous chemicals are being followed as per the motor Vehicle Act (MVA), 1989.
xviii	The company shall undertake following waste minimization measures :- a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapour recovery system. f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.	**Complied.** We have taken all necessary measures to minimize waste, such as a. Reuse and sale of by-product's generated during the process. b. All the filling stations have totalizer and flowmeter for controlled flow. c. All the feed systems are close feed systems. d. Venting is carried out only after getting it treated through scrubbers.
xix	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	**Complied**, Entire plant premises is having adequate safety critical devices to handle fire. We have fire hydrant system all over the plant, Fire alarm system, Smoke detectors, Breathing line, and SCBA. Few of them are as annexed in **Annexure-3**
xx	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	**Complied**, Occupational health surveillance of workers is being carried out regularly and records are being maintained as per the factories act.
xxi	Green belt shall be developed in 60 acres as per the CPCB guidelines in consultation with	**Complied**, We have 70 Acres of greenbelt with local species meeting the requirement.

S. No.	Conditions	Status of Compliance
	DFO. Thick greenbelt with suitable plant species shall be developed around the proposed pesticide unit to mitigate the odour problem. Selection of plant species shall be as per the CPCB guidelines.	
xxii	All the commitments made during the Public Hearing / Public Consultation meeting held on 15th February, 2012 shall be satisfactorily implemented and adequate budget provision should be made accordingly.	**Being Complied.** CSR activities are being Continued.
xxiii	At least 5 % of the total cost of the project should be earmarked towards the Enterprise Social Commitment based on locals need and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's Regional Office at Bhopal. Implementation of such program should be ensured accordingly in a time bound manner.	**Noted and agreed.** Enterprise Social Commitment now referred as CER is being implemented as per the attached plan as an **Annexure- 4**
xxiv	The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address (i) Standard operating process/ procedure to being into focus any infringement/deviation/violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	**Complied.** Policy towards Corporate Environment responsibility is as annexed as an **Annexure-5**
xxv	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the	**Complied.** Temporary housing is provided for Construction labour within the site during the project phase.

S. No.	Conditions	Status of Compliance
	construction wastes shall be managed so that there is no impact on the surrounding environment.	
	B. GENERAL CONDITIONS:	
i	The project authorities shall strictly adhere to the stipulations made by the AP Pollution Control Board.	**Noted and agreed.**
Ii.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed by the unit.	**Noted and Agreed,** the ambient air quality monitoring standards are met with. We are carrying out monitoring by NABL accredited third party laboratory for the same. Monitoring reports are as annexed as **Annexure-1.**
iii	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	**Noted and agreed.** We are applying for the proposed Expansion for which, we have applied for EC for the approval from MoEF&CC.
iv	The locations of ambient air quality monitoring stations shall be decided in consultation with the AP Pollution Control Board (APPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	**Noted and complied with.** CAAQM stations location has been decided in consultation with APPCB, they are located in 3 cardinal directions.  Fig. Continuous Ambient Air Quality monitoring Stations.
v	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	**Noted and agreed,** we have taken all necessary noise measures to keep the noise levels within the prescribed limits. Recent Environmental Monitoring reports are as annexed as and **Annexure-1.**
vi	The Company shall harvest rainwater from the roof-tops of the buildings and storm water drains to recharge the ground water and use the same	**Noted and agreed,** we are harvesting rain water, which is being channelized into a reservoir of Capacity 1 Lakh Cubic

S. No.	Conditions	Status of Compliance
	water for the process activities of the project to conserve fresh water.	meter. The water from reservoir can be used in project to conserve fresh water. A photograph of the same is as below.  *Fig. Reservoir to hold 1 Lakh Cubic Meter of Water.*
vii	During transfer of materials, spillages shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic wastewater and storm water drains.	**Complied,** We have constructed Dyke walls and kerb walls all around the storage tanks, so that any accidental spillages is taken care of and mixing with storm water can be avoided. Photographs of the dyke walls and kerb walls are as below. HCL Tank farm   *Fig. Tank farm for Storage of Products*
viii	Usage of Personnel Protection Equipment's by all employees/ workers shall be ensured.	**Complied,** The company is issuing all necessary PPE's which are mandatory for the employees.
ix	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	**Noted and agreed.** Prep talks and Class trainings are imparted to all employees on safety and health aspects of chemicals handling.
x	The company shall also comply with all the environmental protection measures and safeguards proposed in the project report	**Complied**.

S. No.	Conditions	Status of Compliance
	submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	All the feasible recommendations have been implemented in respect of Environmental management, risk mitigation measures and public hearing.
xi	The company shall undertake CSR activities and all relevant measures for improving the socio-economic conditions of the surrounding area.	**Noted and agreed.** We are carrying out CSR Activities for the uplifting of nearby villages. Few photographs of the CSR activities carried out by our Industry are as annexed as an **Annexure-4**
xii	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	**Noted and agreed.** We are carrying out the community welfare measures at our surrounding villages for the overall improvement of the development annexed as **Annexure- 4**
xiii	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	**Complied.** Environmental management cell is already setup at our site.
xiv	The company shall earmark sufficient funds for recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	**Noted and agreed.** The company has sufficient funds to implement the conditions in EC, CFE and CFO. These funds are not diverted for any other purpose.
xv	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilaparisad/Municipal Corporation, Urban local Body and the local NGO, if any, from who suggestions/ representations, if any, were received while processing the proposal.	**Noted.**
xvi	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the AP Pollution Control Board. A copy of Environmental Clearance and six monthly	**Noted and being complied with.**

S. No.	Conditions	Status of Compliance
	compliance status report shall be posted on the website of the company.	
xvii	The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the Gujarat 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 environmental clearance conditions and shall also be sent to the Bangalore Regional Offices of MoEF by e-mail.	**Noted.** We have submitted Environment Statement Form- V. a copy of the same is annexed as **Annexure-6**
xviii	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	**Noted and complied.**
xix	The project authorities 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 the project.	**Complied.** We have intimated the Regional office, MoEF & CC about the Date of start of the project. Letter of intimation is annexed as **Annexure- 7**

SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

Corporate Office & Laboratory : Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012.
Hyderabad: Flat No. 302, H.No. 7-1-396/B/12, Sai Ram Residency, Balkampet Road, S.R.Nagar, Hyderabad-500038.
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Recognized by Govt. of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET

Ref: SVELC/GIL/24-02/01

Date: 21-02-2024

NAME AND ADDRESS : **M/s. GRASIM INDUSTRIES LTD.,**
(Chemical Division, BB Purams)
Survey No 1 to 4, Near Kanedu Metta Road,
Balabhadrapuram, East Godavari,
Andhra Pradesh - 533343

SAMPLE PARTICULARS : **AMBIENT AIR QUALITY**

SOURCE OF COLLECTION : Near AAQMS-3 (East Gate)

DATE & TIME OF START : 09-02-2024 @ 10:45 hr

DURATION OF SAMPLING : 24 Hours

DATE OF ANALYSIS : 12-02-2024

ATMOSPHERE CONDITION : Clear Sky

TEST REPORT

S.No	Parameter	Unit	Concentration	CPCB Standard	Method
1.	Particulate Matter – (PM_{10})	$\mu g/m^3$	59.0	100	IS:5182 (P-23)
2.	Particulate Matter – ($PM_{2.5}$)	$\mu g/m^3$	22.6	60	IS:5182 (P-24)
3.	Sulphur Dioxide – (SO_2)	$\mu g/m^3$	11.8	80	IS:5182 (P-2)
4.	Nitrogen Oxide – (NO_2)	$\mu g/m^3$	12.9	80	IS:5182(P-6)
5.	Carbon Monoxide – (CO)	mg/m^3	0.16	2.0	IS:5182 (P-10)
6.	Ozone – (O_3)	$\mu g/m^3$	7.2	100	IS :5182 (P-9)
7.	Lead – (Pb)	$\mu g/m^3$	< 0.01	01	IS:5182 (P-22)
8.	Ammonia – (NH_3)	$\mu g/m^3$	< 20	400	IS:5182 (P-25)
9.	Benzene – (C_6H_6)	$\mu g/m^3$	< 0.5	05	IS 5182 (P-11)
10.	Benzo (a) pyrene – (BaP)	ng/m^3	< 0.5	01	IS 5182 (P-12)
11.	Arsenic – (As)	ng/m^3	< 5.0	06	CPCB Guidelines
12.	Nickel – (Ni)	ng/m^3	< 5.0	20	IS 5182 (P-26)

CHECKED BY

SV ENVIRO LABS & CONSULTANTS

SV ENVIRO LABS & CONSULTANTS VISAKHAPATNAM

SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

Corporate Office & Laboratory : Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012.
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Recognized by Govt. of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET

Ref: SVELC/GIL/24-02/02 Date: 21-02-2024

NAME AND ADDRESS : **M/s. GRASIM INDUSTRIES LTD.,**
(Chemical Division, BB Puram)
Survey No 1 to 4, Near Kanedu Metta Road,
Balabhadrapuram, East Godavari,
Andhra Pradesh - 533343

SAMPLE PARTICULARS : **AMBIENT AIR QUALITY**

SOURCE OF COLLECTION : Command Control Center Building Top

DATE & TIME OF START : 09-02-2024 @ 10:30 hr

DURATION OF SAMPLING : 24 Hours

DATE OF ANALYSIS : 12-02-2024

ATMOSPHERE CONDITION : Clear Sky

TEST REPORT

S.No	Parameter	Unit	Concentration	CPCB Standard	Method
1.	Particulate Matter – (PM_{10})	$\mu g/m^3$	62.4	100	IS:5182 (P-23)
2.	Particulate Matter – ($PM_{2.5}$)	$\mu g/m^3$	25.1	60	IS:5182 (P-24)
3.	Sulphur Dioxide – (SO_2)	$\mu g/m^3$	12.8	80	IS:5182 (P-2)
4.	Nitrogen Oxide – (NO_2)	$\mu g/m^3$	11.7	80	IS:5182(P-6)
5.	Carbon Monoxide – (CO)	mg/m^3	0.23	2.0	IS:5182 (P-10)
6.	Ozone – (O_3)	$\mu g/m^3$	9.4	100	IS :5182 (P-9)
7.	Lead – (Pb)	$\mu g/m^3$	< 0.01	01	IS:5182 (P-22)
8.	Ammonia – (NH_3)	$\mu g/m^3$	< 20	400	IS:5182 (P-25)
9.	Benzene – (C_6H_6)	$\mu g/m^3$	< 0.5	05	IS 5182 (P-11)
10.	Benzo (a) pyrene – (BaP)	ng/m^3	< 0.5	01	IS 5182 (P-12)
11.	Arsenic – (As)	ng/m^3	< 5.0	06	CPCB Guidelines
12.	Nickel – (Ni)	ng/m^3	< 5.0	20	IS 5182 (P-26)

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Ref: SVELC/GIL/24-02/03

Date: 21-02-2024

NAME AND ADDRESS : **M/s. GRASIM INDUSTRIES LTD.,**
(Chemical Division, BB Puram)
Survey No 1 to 4, Near Kanedu Metta Road,
Balabhadrapuram, East Godavari,
Andhra Pradesh - 533343

SAMPLE PARTICULARS : **AMBIENT AIR QUALITY**

SOURCE OF COLLECTION : Near AAQMS-2 (West Gate)

DATE & TIME OF START : 09-02-2024 @ 11:00 hr

DURATION OF SAMPLING : 24 Hours

DATE OF ANALYSIS : 12-02-2024

ATMOSPHERE CONDITION : Clear Sky

TEST REPORT

S.No	Parameter	Unit	Concentration	CPCB Standard	Method
1.	Particulate Matter – (PM_{10})	$\mu g/m^3$	60.3	100	IS:5182 (P-23)
2.	Particulate Matter – ($PM_{2.5}$)	$\mu g/m^3$	24.2	60	IS:5182 (P-24)
3.	Sulphur Dioxide – (SO_2)	$\mu g/m^3$	12.6	80	IS:5182 (P-2)
4.	Nitrogen Oxide – (NO_2)	$\mu g/m^3$	13.4	80	IS:5182(P-6)
5.	Carbon Monoxide – (CO)	mg/m^3	0.17	2.0	IS:5182 (P-10)
6.	Ozone – (O_3)	$\mu g/m^3$	8.8	100	IS :5182 (P-9)
7.	Lead – (Pb)	$\mu g/m^3$	< 0.01	01	IS:5182 (P-22)
8.	Ammonia – (NH_3)	$\mu g/m^3$	< 20	400	IS:5182 (P-25)
9.	Benzene – (C_6H_6)	$\mu g/m^3$	< 0.5	05	IS 5182 (P-11)
10.	Benzo (a) pyrene – (BaP)	ng/m^3	< 0.5	01	IS 5182 (P-12)
11.	Arsenic – (As)	ng/m^3	< 5.0	06	CPCB Guidelines
12.	Nickel – (Ni)	ng/m^3	< 5.0	20	IS 5182 (P-26)

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Ref: SVELC/GIL/24-02/04

Date: 21-02-2024

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SAMPLE PARTICULARS : **AMBIENT AIR QUALITY**

SOURCE OF COLLECTION : Cell House Building Top

DATE & TIME OF START : 09-02-2024 @ 11:15 hr

DURATION OF SAMPLING : 24 Hours

DATE OF ANALYSIS : 12-02-2024

ATMOSPHERE CONDITION : Clear Sky

TEST REPORT

S.No	Parameter	Unit	Concentration	CPCB Standard	Method
1.	Particulate Matter – (PM_{10})	$\mu g/m^3$	63.6	100	IS:5182 (P-23)
2.	Particulate Matter – ($PM_{2.5}$)	$\mu g/m^3$	26.3	60	IS:5182 (P-24)
3.	Sulphur Dioxide – SO_2	$\mu g/m^3$	13.2	80	IS:5182 (P-2)
4.	Nitrogen Oxide – NO_2	$\mu g/m^3$	11.8	80	IS:5182(P-6)
5.	Carbon Monoxide – CO	mg/m^3	0.21	2.0	IS:5182 (P-10)
6.	Ozone – (O_3)	$\mu g/m^3$	8.9	100	IS :5182 (P-9)
7.	Lead – (Pb)	$\mu g/m^3$	< 0.01	01	IS:5182 (P-22)
8.	Ammonia – (NH_3)	$\mu g/m^3$	< 20	400	IS:5182 (P-25)
9.	Benzene – (C_6H_6)	$\mu g/m^3$	< 0.5	05	IS 5182 (P-11)
10.	Benzo (a) pyrene – (BaP)	ng/m^3	< 0.5	01	IS 5182 (P-12)
11.	Arsenic – (As)	ng/m^3	< 5.0	06	CPCB Guidelines
12.	Nickel – (Ni)	ng/m^3	< 5.0	20	IS 5182 (P-26)

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Ref: SVELC/GIL/24-02/05

Date: 21-02-2024

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Andhra Pradesh - 533343

SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO
2000 KVA DG SET-1

DATE & TIME OF COLLECTION : 09-02-2024 @ 12:00 hr

DATE & TIME OF ANALYSIS : 12-02-2024 @ 10:15 hr

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Pitot Coefficient	-	0.87
2.	Specific Gravity of Fluid	-	1.0
3.	Temperature @ DGM	^0C	32
4.	Stack Temperature	^0C	191
5.	Diameter of Stack	m	0.45
6.	Cross Sectional Area of Stack	m^2	0.159
7.	Flue Gas Velocity	m/sec	16.5
8.	Flow Rate	m^3/hr	9444
9.	Duration of Sampling	minutes	30
10.	Fuel Used	-	HSD

EMISSION RATE

S.No.	PARAMETER	UNIT	RESULT	STANDARD	METHOD
1.	Particulate Matter – PM	mg/Nm^3	65.3	115	IS:11255-P-1
2.	Sulphur Dioxide – SO_2	mg/Nm^3	29.4	-	IS:11255-P-2
3.	Oxides of Nitrogen – NOx	mg/Nm^3	60.5	-	IS:11255-P-7

Note: As per the above report, all the Paramters are within the standards

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Ref: SVELC/GIL/24-02/06

Date: 21-02-2024

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Andhra Pradesh - 533343

SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO 2000 KVA DG SET-2

DATE & TIME OF COLLECTION : 09-02-2024 @ 12:45 hr

DATE & TIME OF ANALYSIS : 12-02-2024 @ 11:00 hr

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Pitot Coefficient	-	0.87
2.	Specific Gravity of Fluid	-	1.0
3.	Temperature @ DGM	^0C	32
4.	Stack Temperature	^0C	201
5.	Diameter of Stack	m	0.45
6.	Cross Sectional Area of Stack	m^2	0.159
7.	Flue Gas Velocity	m/sec	17.6
8.	Flow Rate	m^3/hr	10074
9.	Duration of Sampling	minutes	30
10.	Fuel Used	-	HSD

EMISSION RATE

S.No.	PARAMETER	UNIT	RESULT	STANDARD	METHOD
1.	Particulate Matter – PM	mg/Nm^3	73.1	115	IS:11255-P-1
2.	Sulphur Dioxide – SO_2	mg/Nm^3	35.6	-	IS:11255-P-2
3.	Oxides of Nitrogen – NOx	mg/Nm^3	68.7	-	IS:11255-P-7

Note: As per the above report, all the Paramters are within the standards

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Date: 21-02-2024

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SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO
2000 KVA DG SET – 3 (VAPS AREA)

DATE & TIME OF COLLECTION : 10-02-2024 @ 10:15 hr

DATE & TIME OF ANALYSIS : 12-02-2024 @ 12:30 hr

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Pitot Coefficient	-	0.87
2.	Specific Gravity of Fluid	-	1.0
3.	Temperature @ DGM	°C	32
4.	Stack Temperature	°C	203
5.	Diameter of Stack	m	0.45
6.	Cross Sectional Area of Stack	m^2	0.159
7.	Flue Gas Velocity	m/sec	18.2
8.	Flow Rate	m^3/hr	10417
9.	Duration of Sampling	minutes	30
10.	Fuel Used	-	HSD

EMISSION RATE

S.No.	PARAMETER	UNIT	RESULT	STANDARD	METHOD
1.	Particulate Matter – PM	mg/Nm^3	71.4	115	IS:11255-P-1
2.	Sulphur Dioxide – SO_2	mg/Nm^3	35.9	-	IS:11255-P-2
3.	Oxides of Nitrogen – NOx	mg/Nm^3	64.2	-	IS:11255-P-7

Note: As per the above report, all the Paramters are within the standards

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Ref: SVELC/GIL/24-02/08 Date: 21-02-2024

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Andhra Pradesh - 533343

SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO 15 TPH BOILER

DATE & TIME OF COLLECTION : 10-02-2024 @ 16:15 hr

DATE & TIME OF ANALYSIS : 12-02-2024 @ 12:30 hr

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Pitot Coefficient	-	0.87
2.	Specific Gravity of Fluid	-	1.0
3.	Temperature @ DGM	°C	32
4.	Stack Temperature	°C	139
5.	Diameter of Stack	m	1.5
6.	Cross Sectional Area of Stack	m^2	1.766
7.	Flue Gas Velocity	m/sec	4.8
8.	Flow Rate	m^3/hr	30516
9.	Duration of Sampling	minutes	30
10.	Fuel Used	-	Coal

EMISSION RATE

S.No.	PARAMETER	UNIT	RESULT	STANDARD	METHOD
1.	Particulate Matter – PM	mg/Nm^3	23.8	50	IS:11255-P-1
2.	Sulphur Dioxide – SO_2 (6% dry O_2)	mg/Nm^3	56.1	600	IS:11255-P-2
3.	Oxides of Nitrogen – Nox (6% dry O_2)	mg/Nm^3	47.5	300	IS:11255-P-7

Note: As per the above report, all the Paramters are within the standards

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Ref: SVELC/GIL/24-02/09 Date: 21-02-2024

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Andhra Pradesh - 533343

SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO HYPO SCRUBBER -1(VAPS)

DATE & TIME OF COLLECTION : 09-02-2024 @ 14:30 hrs

DATE & TIME OF ANALYSIS : 12-02-2024 @ 13:15 hrs

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Diameter of the Stack	m	0.25
2.	C/s Area of Stack	m^2	0.049
3.	Stack Height	m	30
4.	Pitot Coefficient	-	0.87
5.	Specific Gravity of Fluid	-	1.0
6.	Temperature @ DGM	^0C	33
7.	Stack Temperature	^0C	46
8.	Nozzle Diameter	mm	09
9.	Exit Velocity	m/sec	7.3
10.	Gas Quantity	m^3/hr	1287
11.	Duration of Sampling	minutes	30

EMISSION RATE

S.No	Parameter	Units	Result	Standard
1.	Chlorine (Cl_2)	mg/Nm^3	2.88	15

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Date: 21-02-2024

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SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO HYPO SCRUBBER -2(VENT)

DATE & TIME OF COLLECTION : 09-02-2024 @ 15:15 hrs

DATE & TIME OF ANALYSIS : 12-02-2024 @ 14:00 hrs

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Diameter of the Stack	m	0.25
2.	C/s Area of Stack	m^2	0.049
3.	Stack Height	m	30
4.	Pitot Coefficient	-	0.87
5.	Specific Gravity of Fluid	-	1.0
6.	Temperature @ DGM	^0C	32
7.	Stack Temperature	^0C	42
8.	Nozzle Diameter	mm	09
9.	Exit Velocity	m/sec	6.9
10.	Gas Quantity	m^3/hr	1217
11.	Duration of Sampling	minutes	30

EMISSION RATE

S.No	Parameter	Units	Result	Standard
1.	Chlorine (Cl_2)	mg/Nm^3	2.58	15

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Date: 21-02-2024

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Andhra Pradesh – 533343

SAMPLE PARTICULARS : **DRINKING WATER**

SOURCE OF COLLECTION : **Drinking Water @**
Near RO Plant Area

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No	Parameter	Unit	Result	IS 10500:2012 Specifications
1.	Odour	-	Agreeable	Agreeable
2.	Taste	-	Agreeable	Agreeable
3.	Turbidity	NTU	<0.01	1.0
4.	pH	-	6.03	6.5 – 8.5
5.	Total Dissolved Solids	mg/l	81.5	500
6.	Total Alkalinity as $CaCO_3$	mg/l	32	200
7.	Total Hardness as $CaCO_3$	mg/l	26	200
8.	Chlorides as Cl^-	mg/l	20.2	250
9.	Fluorides as F	mg/l	<1.0	1.0
10.	Nitrates as NO^-_3	mg/l	3.7	45
11.	Sulphates as SO_4^{2-}	mg/l	<1.0	200
12.	Iron as Fe	mg/l	0.09	0.3
13.	Copper as Cu	mg/l	<0.01	0.05
14.	Zinc as Zn	mg/l	0.005	5.0
15.	Cadmium as Cd	mg/l	<0.001	0.003

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16.	Lead as Pb	mg/l	<0.01	0.01
17.	Total Arsenic as As	mg/l	<0.01	0.01
18.	Total Chromium as Cr	mg/l	<0.01	0.05
MICROBIOLOGY:				
19.	*E. coli*	CFU/ 100mL	Not detected	Shall not be detected in 100 ml
20.	*Fecal Coliforms*	CFU/ 100mL	Not detected	Shall not be detected in 100 ml

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023
Remarks: As per the above report, all the parameters are within IS 10500:2012 Drinking Water Specifications.

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Andhra Pradesh – 533343

SAMPLE PARTICULARS : **DRINKING WATER**

SOURCE OF COLLECTION : **Drinking Water @**
Wash Pledge - 1

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No	Parameter	Unit	Result	IS 10500:2012 Specifications
1.	Odour	-	Agreeable	Agreeable
2.	Taste	-	Agreeable	Agreeable
3.	Turbidity	NTU	<0.01	1.0
4.	pH	-	7.06	6.5 – 8.5
5.	Total Dissolved Solids	mg/l	62.0	500
6.	Total Alkalinity as $CaCO_3$	mg/l	28	200
7.	Total Hardness as $CaCO_3$	mg/l	18	200
8.	Chlorides as Cl^-	mg/l	9.2	250
9.	Fluorides as F	mg/l	<0.1	1.0
10.	Nitrates as NO^-_3	mg/l	1.24	45
11.	Sulphates as SO_4^{2-}	mg/l	<1.0	200
12.	Iron as Fe	mg/l	0.08	0.3
13.	Copper as Cu	mg/l	<0.01	0.05
14.	Zinc as Zn	mg/l	0.004	5.0
15.	Cadmium as Cd	mg/l	<0.001	0.003
16.	Lead as Pb	mg/l	<0.01	0.01
17.	Total Arsenic as As	mg/l	<0.01	0.01

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18.	Total Chromium as Cr	mg/l	<0.01	0.05
MICROBIOLOGY:				
19.	*E. coli*	CFU/ 100mL	Not detected	Shall not be detected in 100 ml
20.	*Fecal Coliforms*	CFU/ 100mL	Not detected	Shall not be detected in 100 ml

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023
Remarks: As per the above report, all the parameters are within IS 10500:2012 Drinking Water Specifications.

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Ref: SVELC/GIL/24-02/13 Date: 21-02-2024

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Andhra Pradesh – 533343

SAMPLE PARTICULARS : **GROUND WATER**

SOURCE OF COLLECTION : BORE WELL – 2

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No	Parameter	Unit	Result
1.	pH	-	6.75
2.	Electrical Conductivity	mg/l	270
3.	Total Dissolved Solids	mg/l	158
4.	Total Hardness as $CaCO_3$	mg/l	104.1
5.	Calcium as Ca	mg/l	20.6
6.	Magnesium as Mg	mg/l	12.8
7.	Carbonates as CO3	mg/l	Nil
8.	Bi-Carbonates as HCO3	mg/l	2.0
9.	Sodium as Na	mg/l	16
10.	Potassium as K	mg/l	1.9
11.	Chlorides as Cl^-	mg/l	45.2
12.	Fluorides as F	mg/l	0.21
13.	Nitrates as NO^-_3	mg/l	6.4
14.	Sulphates as SO_4^{2-}	mg/l	9.3
15.	Silica as SiO_2	mg/l	52.0

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023

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Date: 21-02-2024

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SAMPLE PARTICULARS : **GROUND WATER**

SOURCE OF COLLECTION : BORE WELL – 06

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No	Parameter	Unit	Result
1.	pH	-	6.79
2.	Electrical Conductivity	mg/l	1010
3.	Total Dissolved Solids	mg/l	687
4.	Total Hardness as $CaCO_3$	mg/l	326
5.	Calcium as Ca	mg/l	34.4
6.	Magnesium as Mg	mg/l	58.3
7.	Carbonates as CO3	mg/l	Nil
8.	Bi-Carbonates as HCO3	mg/l	36
9.	Sodium as Na	mg/l	51
10.	Potassium as K	mg/l	8.6
11.	Chlorides as Cl^-	mg/l	132
12.	Fluorides as F	mg/l	0.65
13.	Nitrates as NO^-_3	mg/l	17.8
14.	Sulphates as SO_4^{2-}	mg/l	21.6
15.	Silica as SiO_2	mg/l	54.3

Note: All the above parameters are tested as per APHA methods, 24th Edition, 2023

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Date: 21-02-2024

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SAMPLE PARTICULARS : **NOISE LEVELS**

DATE OF SAMPLE MEASURED : 09-02-2024

TEST REPORT

S.No.	SOURCE OF COLLECTION	Noise levels measured in dB(A)		METHOD
		Day	Night	
1.	Near AAQMS -3 (North East)	68.2	62.8	IS:4954 – 1968 Noise Level
2.	Near AAQMS -2 (North West)	70.1	63.4	
3.	Near Command Control Center Building	65.6	58.9	
4.	Near Cell House Building	72.3	66.7	
CPCB STANDARDS		**75.0**	**70.0**	

Note: Day time shall mean from 6.00 am to 10.00 pm
Night time shall mean from 10.00 pm to 6.00 am

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Ref: SVELC/GIL/24-02/16

Date: 21-02-2024

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SAMPLE PARTICULARS : **NOISE LEVELS**

DATE OF SAMPLE MEASURED : 09-02-2024

TEST REPORT

S.No.	SOURCE OF COLLECTION	Noise levels measured in dB(A)		METHOD
		Inside Enclosure	Outside Enclosure	
1.	2000 KVA DG Set -1	99.2	70.5	IS:4954 – 1968 Noise Level
2.	2000 KAV DG Set -2	96.0	67.1	
3.	2000 KVA DG Set -3	100.3	70.6	

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SAMPLE PARTICULARS : **EFFLUENT WATER**

SOURCE OF COLLECTION : 1. ETP INLET
2. ETP OUTLET

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No.	PARAMETER	UNIT	RESULT		METHOD FOLLOWED	PCB STANDARD
			ETP Inlet	ETP Outlet		
1.	pH	--	9.57	7.12	APHA 4500-H+B, 24th Edition, 2023	5.5 – 9.0
2.	Total Dissolved Solids – TDS	mg/l	4011	391	APHA 2540-C, 24th Edition, 2023	-
3.	Total Suspended Solids – TSS	mg/l	07	<1.0	APHA 2540-D, 24th Edition, 2023	200
4.	Chemical Oxygen Demand – COD	mg/l	136	<10.0	APHA 5220 B, 24th Edition, 2023	250
5.	Bio-Chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	50	<3.0	IS 3025 P 44	100
6.	Oil & Grease	mg/l	2.0	<1.0	APHA 5520 D, 24th Edition, 2023	10
7.	Chlorides as Cl^-	mg/l	1068	165	APHA 4500 Cl, B 24th Edition, 2023	-

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SAMPLE PARTICULARS : **SEWAGE WATER**

SOURCE OF COLLECTION : 1. STP INLET
2. STP OUTLET

DATE OF COLLECTION : 10-02-2024

DATE OF ANALYSIS : 13-02-2024

TEST REPORT

S.No.	PARAMETER	UNIT	RESULT		METHOD FOLLOWED	PCB STANDARD
			STP Inlet	STP Outlet		
1.	pH	--	7.28	7.46	APHA 4500-H+B, 24th Edition, 2023	5.5 – 9.0
2.	Total Dissolved Solids – TDS	mg/l	1206	892	APHA 2540-C, 24th Edition, 2023	-
3.	Total Suspended Solids – TSS	mg/l	108	37	APHA 2540-D, 24th Edition, 2023	100
4.	Chemical Oxygen Demand – COD	mg/l	260	32	APHA 5220 B, 24th Edition, 2023	250
5.	Bio-Chemical Oxygen Demand – BOD (3 days incubation at 27^0C)	mg/l	97.0	12.0	IS 3025 P 44	30
6.	Oil & Grease	mg/l	4.2	1.8	APHA 5520 D, 24th Edition, 2023	10
7.	*Fecal Coliforms*	MPN/ 100ml	$09X10^3$	154	IS 1622	< 1000

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Ref: SVELC/GIL/24-02/19

Date: 21-02-2024

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SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO HCL FURNACE VENT – A

DATE & TIME OF COLLECTION : 09-02-2024 @ 16:30 hrs

DATE & TIME OF ANALYSIS : 12-02-2024 @ 14:30 hrs

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Diameter of the Stack	m	0.25
2.	C/s Area of Stack	m^2	0.049
3.	Stack Height	m	30
4.	Pitot Coefficient	-	0.87
5.	Specific Gravity of Fluid	-	1.0
6.	Temperature @ DGM	^0C	32
7.	Stack Temperature	^0C	29
8.	Nozzle Diameter	mm	09
9.	Exit Velocity	m/sec	6.2
10.	Gas Quantity	m^3/hr	1093
11.	Duration of Sampling	minutes	30

EMISSION RATE

S.No	Parameter	Units	Result	Standard
1.	HCl Mist	mg/Nm^3	2.75	35

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Date: 21-02-2024

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SAMPLE PARTICULARS : **STACK EMISSIONS**

SOURCE OF COLLECTION : STACK ATTACHED TO HCL FURNACE VENT – B

DATE & TIME OF COLLECTION : 10-02-2024 @ 14:00 hrs

DATE & TIME OF ANALYSIS : 13-02-2024 @ 13:45 hrs

TEST REPORT

S.No.	DESCRIPTION	UNIT	RESULT
1.	Diameter of the Stack	m	0.25
2.	C/s Area of Stack	m^2	0.049
3.	Stack Height	m	30
4.	Pitot Coefficient	-	0.87
5.	Specific Gravity of Fluid	-	1.0
6.	Temperature @ DGM	^0C	32
7.	Stack Temperature	^0C	35
8.	Nozzle Diameter	mm	09
9.	Exit Velocity	m/sec	6.8
10.	Gas Quantity	m^3/hr	1199
11.	Duration of Sampling	minutes	30

EMISSION RATE

S.No	Parameter	Units	Result	Standard
1.	HCl mist	mg/Nm^3	3.2	35

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SAMPLE PARTICULARS : **FUGITIVE AIR QUALITY**

SOURCE OF COLLECTION : NEAR SBP PLANT

DATE & TIME OF START : 10-02-2024 @ 11:00 hr

DURATION OF SAMPLING : 08 hours

TEST REPORT

S.No	PARAMETER	UNIT	RESULT	OSHA/ CPCB STANDARDS
1.	Total Suspended Particulate Matter	$\mu g/m^3$	165	10000
2.	Chlorine	$\mu g/m^3$	0.71	7.0
3.	HCl	$\mu g/m^3$	<0.1	10.0

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Date: 21-02-2024

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SAMPLE PARTICULARS : **FUGITIVE AIR QUALITY**

SOURCE OF COLLECTION : NEAR LIME PROCESS AREA

DATE & TIME OF START : 10-02-2024 @ 11:45hr

DURATION OF SAMPLING : 08 hours

TEST REPORT

S.No	PARAMETER	UNIT	RESULT	OSHA/ CPCB STANDARDS
1.	Total Suspended Particulate Matter	$\mu g/m^3$	140	10000
2.	Chlorine	$\mu g/m^3$	0.67	7.0
3.	HCl	$\mu g/m^3$	<0.01	10.0

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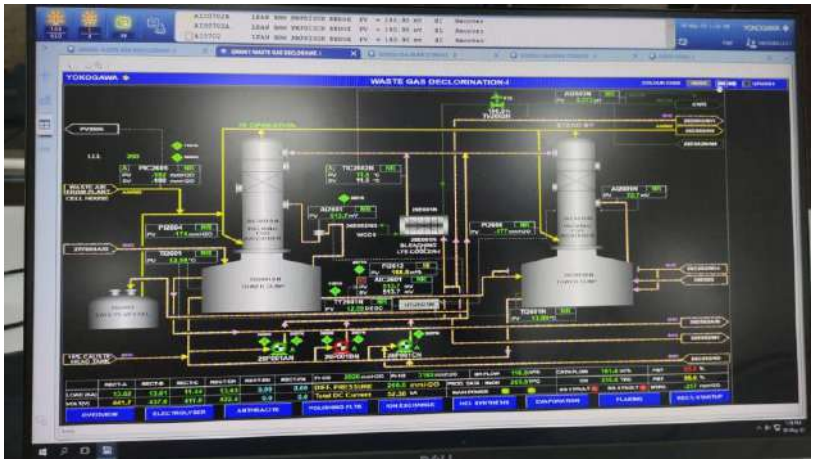
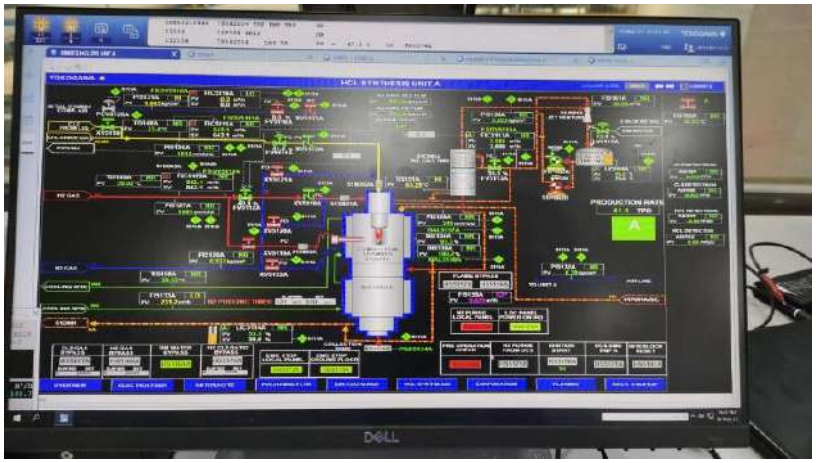
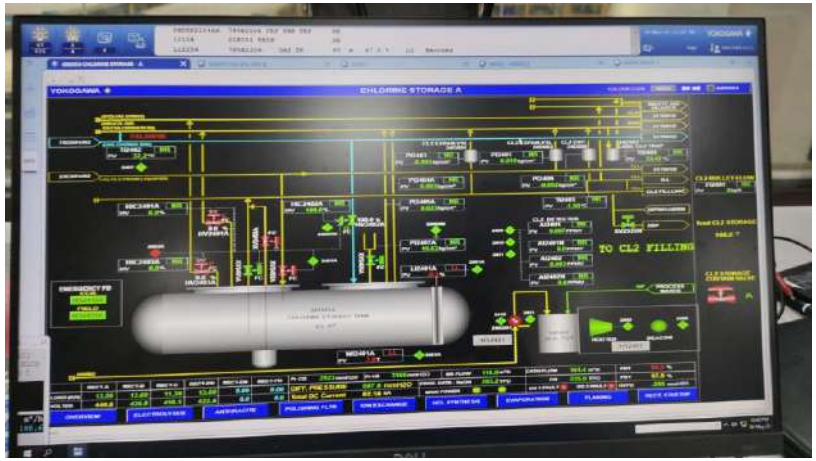
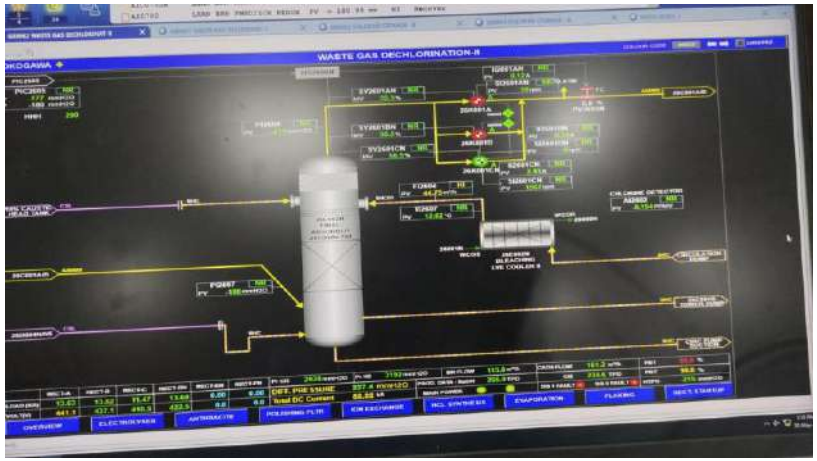
Annexure-2

Photographs of Online Chlorine analyzer connected to DCS control room









Annexure-3

Safety Critical Equipment's at Our Plant

Fig.1 Breathing line

Fig. 2 Chlorine Sensors

Fig. 3 SCBA

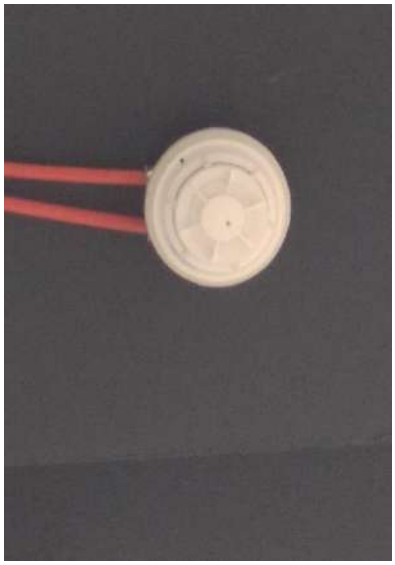


Fig.4 Smoke detectors

Fig.4 PA systems

Annexure-4

GRASIM INDUSTRIES LIMITED

Chemical Division, BB Puram

Summary of CSR Expenses

Sr No	Nature of Expenses	Spent (2021-2024)	Committed (2025-2032)
1	Sound system & Sports items to School_BBPuram	1,27,623	
2	Greenbelt development at public places	38,51,043	25,00,000
3	Covid Kits to Warrior's	2,08,570	
4	Drinking Water Plant	82,84,445	75,00,000
5	Fire Station - Dormitory Renovation	26,149	10,00,000
6	Help to Migrant Labour at Covid period	5,34,516	
7	Help to Society at Covid period	2,50,000	
8	MRO office Renovation Biccavolu	10,73,092	
9	PHC Biccavolu	3,71,775	
10	Sanitization Exp - Surrounding Villages	8,53,583	
11	Skill Development Centre	13,71,341	1,00,00,000
12	Water Dispenser to Govt offices	32,000	
13	Lockdown period labour idle charges	31,10,733	
14	Lockdown period labour welfare charges	6,75,398	
15	Overhead water tank	1,23,00,737	85,00,000
16	Road works	62,82,000	5,00,00,000
17	Community hall	6,14,95,709	1,00,00,000
18	Driving Training Expenses	72,500	
19	Housing Colony Earth levelling works	10,00,000	
20	Plantation Works	11,210	
21	PM TB Mukth Bharat	2,96,608	
22	Sachivalayam Development chrgs	2,71,326	
23	Others	15,82,348	
24	Education		89,17,293
25	Infrastructure (Water Shed + RD Projects)		6,00,00,000
26	Sustainable livelihood		1,50,00,000
25	Social Causes		75,00,000
26	Health Care		1,50,00,000
	Sub - Total	**10,40,82,707**	**19,59,17,293**
	Total CER / CSR Expenditure		**30,00,00,000**

CSR Expenditure (during construction period): Rs. 4.3 Crores (1% of project cost Rs. 430 Cores)
CSR Expenditure (during operational period) : Rs. 17.2 Crores (0.4%/year for operational period of 10years).

Annexure - 5

ADITYA BIRLA GROUP

ENVIRONMENTAL POLICY

Aditya Birla Group, a global conglomerate, recognizes that effective management of environment impacts is a fundamental part of our business. We shall strive to integrate sound environmental practices across the Group's management and governance systems to minimize environmental impacts and attain a leadership position in environmental stewardship.

Every Aditya Birla Group Company shall endeavour to:

- Maintain positive legal compliance to environmental regulations and conform to the requirements of Aditya Birla Group Sustainability Framework;
- Progressively develop, implement and maintain an internationally accepted environmental management system in our operations and new projects;
- Take initiatives towards efficient use of natural resources and energy; reduction and prevention of pollution; and promoting waste avoidance and recycling measures in line with internationally disseminated technologies and practices;
- Enhance environmental awareness through participation and consultation with employees and contractors by training and effective channels of communication;
- Engage with internal and external stakeholders and wider communities to broaden our understanding of environmental priorities, their links to global issues and initiate actions on key environmental challenges;
- Influence our contractors and suppliers to adopt the Aditya Birla Group environmental policies, principles and practices and encourage appropriate environmental management across the supply and value chain;
- Continually improve environmental performance of current and future products, services and infrastructure of the Aditya Birla Group's Companies; and
- Monitor, measure, report the progress, performance of environmental conservation and management initiatives in compliance with internationally recognized protocols and communicate approach and achievements to relevant stakeholders.

Each Aditya Birla Group Company shall sign up to this policy or develop an equivalent that shall be implemented throughout its operations.

This policy will be reviewed periodically for its suitability and updated as necessary.

Date: 18th August 2016

Annexure-6

ADITYA BIRLA
GRASIM

GIL/ENV/APCB/RO/ES/409

28/09/2023

To
Environmental Engineer,
Regional Office,
A.P. Pollution Control Board,
H.No.2-532, Santhi Nagar,
Near DIC Office, Ramanayapeta,
Kakinada – 533 005.

Subject: Submission of Environmental Statement (Form V) for the FY 2022-23-Reg.

Dear Sir,

We are submitting herewith attached Form-V, Environmental Statement for the Period of **April 2022 to March 2023**.

This is for your kind record Please.

Thanking you,

Yours Faithfully

For **Grasim Industries Ltd.,**
(Chemical Division, BB Puram)

Sridhara Narasimha Sastry
President & Unit Head

Contact Details:
Mobile Nos: 9977448340 (alt) 8008303882

Email : shridhara.sastry@adityabirla.com
Alt : grcd-bbp.environment@adityabirla.com

RECEIVED UNDER
CONTENTS NOT KNOWN
29/09/2023
A.P POLLUTION CONTROL BOARD
KAKINADA

GRASIM INDUSTRIES LTD * Chemical Division- Balabhadrapuram *

ADITYA BIRLA GROUP

ENVIRONMENTAL STATEMENT

(FORM-V)

FINANCIAL YEAR 2022-23

GRASIM

GRASIM INDUSTRIES LIMITED

GRASIM INDUSTRIES LTD * Chemical Division- Balabhadrapuram *

Chemical division- BB Puram,
Survey no: 1 to 4, Near Kanedu Metta road, Balabhadrapuram,
Biccavolu (M), East Godavari Dist -533 343, Andhra Pradesh, India

Environment Statement

FORM V
(See Rule 14)

Part-A

(i) Name and address of the owner/ occupier of the industry operation or process:

S.N Sastry,
Unit Head, Grasim Industries Ltd.,
Chemical division- BB Puram,
Survey no: 1 to 4, Near Kanedu Metta road, Balabhadrapuram,
Biccavolu (M), East Godavari Dist -533 343, Andhra Pradesh, India

(ii) Industry category Primary - (STC Code) Secondary-(STC Code). – **Large (Red Category)**

(iii) Production capacity- Units

S.No.	Product	UOM	Quantity
1.	Caustic Soda (100%)	TPD	400
2.	Caustic Soda flakes	TPD	120
3.	Hydrogen	TPD	2
4.	Liquid Chlorine	TPD	200
5.	Hydrochloric Acid (32%)	TPD	600
6.	Sodium Hypochlorite (15% Cl_2)	TPD	120
7.	Chlorinated Paraffin wax	TPD	30
8.	Mono Chloro Acetic Acid	TPD	20
9.	Stable bleaching powder	TPD	50

Production capacities as per CFO Order

(iv) Year of establishment – **27th December 2021**

(v) Date of the last environmental statement submitted. – **26th September 2022**

PART B

Water and Raw Material Consumption

1. Water consumption m^3/day

Process : 1009.17

Cooling : 127.9

Domestic : 25

GRASIM INDUSTRIES LTD. Chemical Division- Balabhadrapuram

Sl. No.	Name of Products	Process water consumption per unit of product	
		During the previous financial year (FY 21-22)	During the current financial year (FY 22-23)
1	Caustic Soda	5.8	6.22
2	Caustic Soda Flakes		
3	Liquid Chlorine		
4	Hydrogen		
5	Sodium Hypochlorite		
6	Hydrochloric Acid		
7	Stable Bleaching Powder	1	0.87
8	Chlorinated Paraffin Wax	Nil	1.92
9	Mono Chloro acetic Acid	Nil	Nil

** In the previous financial year Process Water consumption is less due to plant commissioning and short period of operation

2. Raw material consumption

Sl. No.	Name of raw materials*	Name of Products	Consumption of raw material per unit of output (Main product)	
			During the previous financial year (21-22)	During the current financial year (22-23)
1	NaCl Salt	Caustic Soda (Main Product), Caustic soda Flakes, Other by products include HCL, Cl, Hydrogen, Sodium Hypochlorite	1.7 MT/MT	1.58 MT/MT
2	Sodium Carbonate		6.008 Kg/ Mt	2.847 Kg/MT
3	Barium Carbonate		6.872 Kg/MT	6.911 Kg/MT
4	Caustic Soda		24.89 Kg/Mt	28.711 Kg/MT
5	Hydrochloric acid		11.03 Kg/ MT	19.653 Kg/MT
6	Sulphuric Acid		17.681 Kg/MT	11.337 Kg/MT
7	Sodium sulphite		2.084 Kg/MT	0.440 Kg/MT
8	Hydrated Lime	Stable bleaching powder	0.75 MT/MT	0.75 MT/MT
9	Liquid Chlorine		0.44 MT/MT	0.44 MT/MT
10	Caustic soda Lye		33.23 Kg/MT	31.6 Kg/MT
11	N- Paraffin's	Chlorinated Paraffin wax	Nil	0.43 MT/MT
12	Caustic soda		Nil	1.5 Kg/MT
13	Chlorine gas		Nil	1.17 MT/MT
15	Acetic anhydride	Mono Chloro Acetic Acid	Nil	Nil
16	Caustic Soda		Nil	Nil
17	Chlorine gas		Nil	Nil

GRASIM INDUSTRIES LTD. Chemical Division- Balabhadrapuram

PART C

Pollution discharged to environment/ unit of output.

(Parameter as specified in the consent issued)

S. No.	Pollutants	Quantity of Pollutants discharged (mass/day) (Kg/Day)	Concentration of Pollutants discharged (mass/volume) (mg/Nm^3)	Percentage of variation from prescribed standards with reasons.
(a) Water	Ours Effluent treatment plant Capacity 1200 m^3/day It has the following units. Effluent collection tank, Equalization tank, High rate solid contact clarifier, Multi grade filter, Ultra filtration, and then RO-3, RO-4, RO-5, MEE, and Agitated Thin film dryer (ATFD). No effluent is discharged outside, ATFD salts generated are disposed through APEMCL portal.			
(b) Air	PM (Steam Boiler)	15.83	29.02	Within Prescribed limits.
	HCl (Furnace-1)	0.35	9.45	
	HCl (Furnace-2	0.42	9.35	
	Cl2 (Hypo- CAPS)	0.14	3.55	
	Cl2 (Hypo- VAPS)	0.13	3.84	

** In the previous financial year pollution load is less due to plant commissioning and short period of operation

PART D

Hazardous Wastes

(as specified under Hazardous Wastes (Management and Handling) Rules, 1989 & 2016)

Hazardous Wastes	Total Dispatch Quantity	
	During the previous financial year FY 21-22	During the current financial year FY 22-23
1. From Process	Brine Sludge: 72.16 MT	Brine Sludge: 1960.34 MT
		ATFD Sludge: 254.79 MT
		SBP Sludge: 78.17 MT
		ETP Sludge: 51.69 MT
	Spent Oil: Nil	Spent Oil: Nil
2. From Pollution Control Facilities	Nil.	Nil.

** In the previous financial year generation of Hazardous waste is less due to plant commissioning and short period of operation.

GRASIM INDUSTRIES LTD * Chemical Division- Balaghadrapuram *

PART-E
Solid Wastes

Solid Wastes	Total Quantity	
	During the previous financial year FY 21-22	During the current financial year FY 22-23
A. From Process	None	Nil.
B. From Pollution Control Facility	None	6131.704
C. Quantity recycled or reutilized within the unit.	None	Nil.

** In the previous financial year no solid waste generated as plant under commissioning.

Part- F

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

1. Brine Sludge generated from the Clarifier during brine purification.
2. We are disposing Hazardous Sludge to APPCB Authorized Hazardous Waste TSDF Site through APEMCL Portal and the generation records maintaining in Form 3. We are also submitting the hazardous waste annual returns Form-4.
3. All necessary documents are provided during disposal of any hazardous waste like Hazardous Waste manifest, TREM card etc. as required during transportation and disposal.
4. Sludge is stored in RCC platform which is having double liner before sending it to authorized Hazardous waste handler.
5. Fly ash generated from the Steam Boiler Pollution Control Facilities of 15 TPH is being sent to a nearby brick manufacturing facility to utilize the fly ash.
6. Under extended producer responsibility, we as a brand owner will collect all the plastics which will be sent as a packing material with the product.
7. The plastic which is generated during the purchase of raw materials is also being disposed through APPCB authorized recyclers only.
8. We about to start making bio compost using bio composting machine which is being procured to convert organic waste to Compost, which will then be utilized as a manure.
9. Sludge which is generated in Sewage treatment is utilized as a manure.

Part- G

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

We have utilized the below pollution control measures for the protection of environment.

1. ESP has been installed which is 99.99% efficient to reduce the SPM.
2. Closed conveyor belt and Closed shed has been constructed for the storage of Coal.
3. We have the state of the art ETP with MEE and ATFD for recycling of effluent water. The salts generated from the ATFD is sent to APPCB authorized Hazardous Waste TSDF.
4. At SBP also we have installed Bag filters for reducing the fugitive dust emissions.
5. The filtered water generated from the RVDF will be recycled back into the process.

GRASIM INDUSTRIES LTD. Chemical Division- Balabhadrapuram

6. Recovery of vapour condensate in Primary Brine section (CCU vapour condensate), During full load operation excess condensate was being discarded as wastewater which is now diverted to cooling tower make up. This is done by bifurcating the line of vapour condensate & steam condensate into separate tanks and then the condensate is transferred to user departments through pipelines.
7. We are best in the water consumption in this industry, resulting in cost savings.
8. We also have used 100% LED lights in the whole plant resulting in 35% savings in lighting load.

Part-H

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

We have considered the below proposals for Environment protection for the abatement of Pollution.

1. 3 Ponds has been developed for harvesting the rain water.
2. Reservoir facility will be augmented to enable reuse of rainwater recovered.
3. Greenbelt was developed 12 Acres in addition to the present 70 Acres.
4. Present sheds will be augmented to meet the requirement of the future need on need basis.
5. Third party monitoring is being carried out for all environmental concerns such as Air, Water and Noise.
6. Drain cleaning and repairing of Storm water channel.
7. Strengthening of Environmental management systems.

Part- I

Miscellaneous:

Any other particulars in respect of environmental protection and abatement of pollution

Other particulars for improving the Quality of the Environment

Grasim Industries Ltd. recognizes that effective environment management is fundamental to our business. We shall strive to integrate sound business practices across Grasim's management and governance systems to minimize environmental impacts and attain a leadership position in environmental stewardship.

- We regularly develop awareness on Environment by organizing different training programs for our employees, including new joiners.
- We Celebrate World Environment day on 5th June in which tree plantation drive is organized in our plant and nearby area to boost green cover.
- We Optimize consumption of raw materials on continuous basis by efficient monitoring and control through DCS which avoids the human mistakes and rejection of intermediate products at different stages.
- Greenbelt is developed around the plant and nearby area, continuous improvement in greenbelt development by planting more and more trees to reduce the dust emission is being done within our land area.
- Water consumption is being reduced by improving operational discipline and recycling of water.
- Online monitoring system is installed for all plant process stacks and data is displayed near main gate.

GRASIM INDUSTRIES LTD. * Chemical Division- Balabhadrapuram *

- Scheduled monitoring of Environment (Air, Water, Effluent and Emission) is carried out by third party Which is a NABL accredited laboratory.
- Online sensors for Chlorine and Hydrogen are installed at each and every section for early detection to take action immediately.
- We have a dedicated storm water channel connected to Reservoir to reutilize the rain water, which is separate from the effluent collection.
- We have at present 8 Effluent collection pits to collect effluent which are pumped by using air operated diaphragm pump to ETP for its treatment and reutilization in the process.

GRASIM INDUSTRIES LTD. Chemical Division, Balabhadrapuram