

o/c

GIL-CDR/ENV/2024-25/145

29.05.2024

To,
Addl. Principal Chief Conservator of Forests (C),
Regional Office (ECZ)
Ministry of Environment, Forests & Climate Change
2nd Floor, Headquarter- Jharkhand State Housing Board
Harmu Chowk, Ranchi, Jharkhand - 834002

Sub: Submission of Six Monthly (October 2024 to March 2024) EC Compliance

Ref: MoEF EC letter no. J-11011/1213/2007-IA-II(I) Dated 11.02.2009 & 11.05.2023

Dear Sir,

This has reference to the captioned subject and cited reference, we are herewith submitting six monthly Compliance report for the conditions stipulated in the Environment Clearance, for the period of October 2023 to March 2024 for your kind consideration.

Hope the above are in line with the statutory requirements.

Thanking you,

Yours faithfully,
For Grasim Industries Limited,
Chemical Division

(Hitendra Keshav Awasthi)
Unit Head – Grasim Industries Ltd, Rehla

Encl.: As above.

Copy to:

1. Regional Director, Regional Directorate (East), Central Pollution Control Board, Southern Conclave, Block 502, 5th and 6th Floors, 1582 Rajdanga Main Road, Kolkata – 700107 (W.B)
2. Member Secretary, Jharkhand State Pollution Control Board, T.A. Division Building, HEC Campus, Dhurwa, Ranchi – 834004 (Jharkhand)
3. Regional Officer, Jharkhand State Pollution Control Board, E-1, CTI Colony, Dhurwa, Ranchi-834004 (Jharkhand)

Grasim Industries Limited
Chemical Division, Rehla
Garhwa Road, Rehla 822 124
Dist. Palamau, Jharkhand, India

प्राप्त कीजिए
मि. अ. अ.
19/7/24



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GIL-CDR/ENV/2024-25/145

29.05.2024

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Regional Office (ECZ)
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ENVIRONMENTAL CLEARANCE COMPLIANCE STATUS REPORT

October 2023 to March 2024

Six Monthly Compliance Status Report of Environmental Clearance for Expansion of Caustic Soda Lye Plant from 225 TPD to 550 TPD and CPP from 30 MW to 60 MW, Expansion of existing Co-products i.e. Stable bleaching Powder & Anhydrous Aluminium Chloride and addition of new Co-Products i.e. Poly Aluminium Chloride, Calcium Chloride & Sodium Sulphate within existing plant premises at Rehla

**(EC letter no. J-11011/1213/2007-IA-II(I) Dated 11.02.2009
& 11.05.2023)**



GRASIM INDUSTRIES LIMITED

CHEMICAL DIVISION REHLA

PALAMAU-822124 (JHARKHAND)

Email- grasim.rehla@adityabirla.com

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A) Specific Conditions

- (i) All the mercury cell operation shall be based on membrane cell and no mercury cell based operation shall be carried.

Compliance Status:

- Mercury Cell based Caustic soda production was stopped in the year 2006. Membrane cell based technology is adopted for the production Caustic Soda.

- (ii) The company shall install Waste Air De-chlorination (WAD) system with Sodium bi-sulphite for neutralizing chlorine emissions as waste gases from cell house and brine recycle and saturation. Demister shall be provided in Hydrochloric Acid Plant vents. The vent gases from Sodium hydrochloride plant and HCL acid plant shall be controlled at source by effective absorption system so that Chlorine concentration in the vent gases shall not exceed 5 ppm.

Compliance Status:

- Unit has installed Waste Air De-chlorination system to control the chlorine emission at source by effective absorption system and to arrest the concentration within the limit.
- Chlorine Concentration in the vent gases is maintained within the prescribed limit, which is being monitored through OCEMS as well as manual sampling & analysis methodology. NABL Accredited Laboratory Analysis report attached as *Annexure 1*.

- (iii) The Company shall install Chlorine gas detectors to detect leakage of Chlorine at liquid Chlorine storage tanks, Sodium hypo plant, HCL synthesis unit and Electrolysis area. The Company shall install on-line analyzer in HCL plant and hypo stack with recording facility.

Compliance Status:

- Unit has installed chlorine gas detector at different locations of plant including liquid chlorine storage, Sodium hypo plant, HCL synthesis and electrolysis area. List of installed Cl sensors attached as *Annexure 2*.
- OCEMS having connectivity with JSPCB and CPCB server is installed in HCL and Sodium Hypo stack.

- (iv) Cyclone & ESP to the CFBC boiler of power plant with inter locking facility, Dust extractor & bag filter to coal handling plant and pneumatic & closed ash collection & conveying system shall be provided in power plant for control of particulate emission below 100mg/Nm³.

Compliance Status:

- Unit has an appropriate arrangements of interlocking system & efficient Air pollution control devices at different source type for controlling the particulate emission below the prescribed standards.
- NABL Accredited Laboratory Analysis report attached as *Annexure 3*.

- (v) The company shall provide the monitoring arrangement with vents and regular monitoring shall be carried out and reports submitted to Jharkhand SPCB, CPCB and Ministry's Regional Office at Ranchi.

Compliance Status:

- Unit has provided the monitoring arrangement with all stacks and vents and the regular monitoring report is being submitted to nodal agencies. Apart from that GIL has also



installed Online Continuous Monitoring system with the connectivity to JSPCB and CPCB server. Also, OCEMS report is being submitted to CPCB & SPCB on a weekly basis. Weekly Report Communication attached as *Annexure 4*.

- (vi) **Fugitive emissions in the work zone environment, product and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by Jharkhand SPCB**

Compliance Status:

- Fugitive emission monitoring is being done regularly, and the emissions are within specified limit as prescribed by SPCB.
- Fugitive emission report is attached in *Annexure 5*.

- (vii) **The water requirement and waste water generation shall not exceed 9888 KLD and 840 KLD respectively.**

Compliance Status:

- The average water requirement between October 2023 to March 2024 was 7304 KLD against 9888 KLD and average waste water generation between October 2023 to March 2024 was 517 KLD against 840 KLD. All the waste Water generated from plant is being treated through ETP & RO plant and RO reject is being treated through MEE+ATFD plant.

Month	Water Drawl Month (KL)	Water Drawl (KLD)
Oct-23	225442	7272
Nov-23	220345	7345
Dec-23	205294	6622
Jan-24	227325	7333
Feb-24	219029	7553
Mar-24	238682	7699
Average Water Drawl (KLD)		7304

- (viii) **The company shall install full-fledged effluent treatment plant to treat the waste water generated from the plant including RO system to recycle or reuse all the treated wastewater.**

Compliance Status:

- Unit has installed centralized ETP with additional facility (i.e. MEE and ATFD) for achieving zero liquid discharge to treat the waste water, And the same was informed to JSPCB vide letter no. GIL-CDR/UH/ENV/2019-20/4019 Dated 29th September 2019. (Photographs attached in *Annexure 6*)

- (ix) **Green belt shall be developed in 24.62 acre out of total 81.94 acre to mitigate the effects of fugitive emissions all around the plant. The development of green belt shall be as per the Central Pollution Control Board guidelines.**

Compliance Status:

- Unit already have a green belt area of 35.47 % & above. Aside, unit is continuously identifying the places & planting the sapling within & nearby the premises to develop the denser green belt.(Photographs attached in *Annexure 7*)
- Green Belt plan drawing submitted to MOEF Ranchi vide our letter no. GIL- CDR/ ENV/ MOEF/ 18-19/3233 Dated 10th July 2018.

- (x) **The fly ash generated from the power plant shall be handled pneumatically and disposed of in accordance with the provisions of Fly Ash Notification, 2003.**

Compliance Status:

- Fly Ash is being handled & disposed of in accordance with the provisions of Fly Ash Notification Rules 2016 and as amended. Unit have a dedicated silo for the storage of Ash & these are further being sent to Cement Manufacturing, NHAI etc. for its final utilisation. (Photographs attached in *Annexure 6*).
- Annual implementation report of FY 2023-24 has been submitted to board vide our letter no. GIL-CDR/ENV/2024-25/68 Dated 30th April 2024.

- (xi) **The hazardous wastes generated from the plant shall be disposed of in accordance with the Hazardous Waste (Management and Handling) Rules 1989 and as amended.**

Compliance Status:

- Hazardous Waste generated from plant is being disposed at authorized CHW-TSDF in Jharkhand as per Hazardous & other Waste Rules, 2016 and as amended. Also, the disposal Quantity along with White Manifest or Form 10 is being submitted on a monthly basis to the Board.
- Details of Hazardous Waste Disposal & Recycling is attached as *Annexure 8*.

- (xii) **During transfer of materials, spillages shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic waste and storm drains.**

Compliance Status:

- Unit is being maintained with adequate measures, to avoid any spillage and to comply the stipulated condition.

- (xiii) **Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.**

Compliance Status:

- Occupational Health surveillance of the workers are being done timely & the records are being maintained as per the Factories Act.

- (xiv) **Training shall be imparted to all employees on safety and health aspects of chemicals handling. As informed to the Ministry, OHSAS 18001 shall be continued. 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.**

Compliance Status:

- Regular Trainings are being delivered to the employees and workers on various aspects of safety & health and handling of chemicals.
- Pre-employment and routine periodical medical examinations for all employees are being done on regular basis and the records are being maintained.

- (xv) **Usage of PPEs by all employees/ workers shall be ensured**

Compliance Status:

- Usage of PPE's by all employees/ workers are being ensured and strictly followed.



- (xvi) The company shall strictly follow all the recommendations mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) for Caustic Soda plant.

Compliance Status:

- Unit has followed & implemented the recommendations mentioned in the CREP for caustic soda plant e.g. Switch from Mercury Cell based Caustic soda production technology to Membrane cell based technology for the production of Caustic Soda

- (xvii) The company shall comply with all the commitments made during public hearing held on 28th August, 2008.

Compliance Status:

- Unit has ensured and complied the Commitments made during public hearing held on 28th August 2008.

- (xviii) 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. The housing may be in the form of temporary structures to be removed after the completion of the project.

Compliance Status:

- Unit has Complied the stipulated condition.

B) General Conditions

- (i) The project authorities shall strictly adhere to the stipulations of the SPCB/State government or any statutory body.

Compliance Status:

- We are abiding by all the compliance conditions made by SPCB/state government or any statutory body.

- (ii) 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.

Compliance Status:

- Agreed & it is being complied. No further expansion beyond the existing capacity in the plant will be carried out without prior approval from statutory body.

- (iii) At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.

Compliance Status:

- Agreed & it is being complied. Site is already equipped with the Air pollution control systems. All processes and flue gas stacks are monitored through online monitoring system, which is connected to JSPCB and CPCB server.

- (iv) The gaseous emissions (SO₂, NO_x, HCL, CO) and particulate matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.

Compliance Status:

- Gaseous emission and particulate matter along with RSPM levels from various process units are within prescribed limits and are also been monitored through online monitoring system.

- (v) The locations of ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board (SPCB) and additional stations shall be installed, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated.

Compliance Status:

- Locations of the Ambient Air Quality Monitoring Station were reviewed and based on the GLC study, unit has installed the CAAQMS at 04 locations and all the stations are well connected with JSPCB server.
- NABL accredited laboratory analysis report attached as *Annexure 9*.

- (vi) Dedicated scrubbers and stacks of appropriate height as per the Central Pollution Control Board guidelines shall be provided to control the emissions from various vents. The scrubbed water shall be sent to ETP for further treatment.

Compliance Status:

- Stack height is appropriate as per the guideline and Dedicated Scrubbers are there in HCL and Sodium Hypo to Control HCL Mist & Chlorine.

- (vii) All the storage tanks will be under negative pressure to avoid any leakages. Breather valves, N₂ blanketing and secondary condensers with brine chilling system shall be provided for all the storage tanks to minimize vapour losses. All liquid raw materials shall be stored in storage Tanks and Drums.

Compliance Status:

- Stipulated conditions are being complied, as the storage tanks are well maintained under negative pressure to avoid any leakages. Even other adequate measures are in its place to minimize vapour losses.

- (viii) The company shall undertake following Waste Minimization measures.

- Metering and control of quantities of active ingredients to minimize waste
- Reuse of by-products from the process as raw material substitutes in other processes
- Use of automated filling to minimize spillage
- Use of "Closed Feed" system into batch reactors.
- Venting equipment through vapour recovery system
- Use of high pressure hoses for equipment cleaning to reduce waste water generation

Compliance Status:

- GIL has taken following measures to reduce waste:
 - a) Site is using washed / super washed salt to minimize waste



- b) Site is using Chlorine by-product in production of Stable Bleaching Powder as well as Anhydrous Aluminium Chloride
 - c) All products are automated closed feed system like Stable Bleaching Powder, Anhydrous Aluminium Chloride and Caustic Flakes.
 - d) Products are made through this methodology to avoid waste
 - e) Appropriate Venting equipment's are provided.
 - f) Site is continuously working on this methodology to reduce the waste water generation during equipment cleaning
- (ix) **The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules- 1989 as amended in October, 1994 and January, 2000 and Hazardous Waste (Management and Handling Rules, 1989, as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage, and disposal of hazardous waste.**

Compliance Status:

- We are abiding by all the rules & guidelines of the conditions stipulated. Unit has a valid authorization (No. JSPCB/HO/RNC/HWM-11254322/2022/09 Dated 30/03/2022) from JSPCB for Generation, Storage, Transportation, Utilisation and Disposal of Hazardous Waste.
- (x) **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).**

Compliance Status:

- Noise level in and around the plant area are being monitored periodically and the level is within prescribed limit. NABL Accredited Laboratory Analysis report attached as *Annexure 10*.
 - Aside Personal Protective Equipment's have been provided to the employees to avoid any accompanied noise hazards. Also facilities like acoustic hoods, silencers, enclosures etc have been provided to reduce noise at source.
- (xi) **The company shall develop rain water harvesting structures to harvest the run-off water for recharge of ground water and to reduce requirement of the fresh water.**

Compliance Status:

- Unit has followed the rain water harvesting methodology and installed the system at several locations for water conservation, as per the approved plan by Central Ground Water Department, Ranchi vide Letter No. G.W.D- 252/Ranchi Dated 28.05.2012. Aside unit have developed additional 23 NOS RWH points at different locations. (RWH location details attached as *Annexure 11*)
- (xii) **The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval.**

Compliance Status:



- Complied, Eco Developmental plan was Submitted Vide our letter no.- ABCIL/GM(O)/JSPCB/2009-10/2104A Dated – 02.05.2009.
- Socio economic development or community welfare activities are regularly undertaken in and around the area. The development activities undertaken in the surrounding community are need based and are in the field of health care, infra development, drinking water, Training & education like on agricultural practices, self-employment, etc. (Photographs attached as *Annexure- 12*)

(xiii) The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report.

Compliance Status:

- All the environmental protection measures & safeguards such as ETP, APCEs, Hazardous Waste proper handling, transfer and disposal are being complied in accordance with the EIA/EMP report. (Photographs attached as *Annexure- 6*)

(xiv) A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.

Compliance Status:

- A separate Environmental Management Cell is constituted for the purpose of safeguarding environment, also the unit has a well-equipped & full-fledged laboratory facility to carry out the monitoring activities.

(xv) The project authorities shall earmark separate funds 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 provided shall not be diverted for any other purpose.

Compliance Status:

- Site has earmarked the separate funds for the environmental management activities. The fund is being spent on Waste Management, Air Pollution Control, Zero Waste Water Discharge and others including Greenery development, Online Monitoring, etc.

(xvi) The implementation of the project vis-a-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the Company.

Compliance Status:

- Six Monthly Compliance status report is being submitted to monitoring agencies and the same is being uploaded on the company website.
- Compliance report for the period APR'22 to OCT'23 is submitted vide letter no. GIL-CDR/ENV/2023-24/494 Dated 28/11/2023

(xvii) 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.

Compliance Status:

- Complied.



(xviii) 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.

Compliance Status:

- Complied, as the project has been already completed and the consent to operate has been issued by Jharkhand State Pollution Control Board.





ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in, eles.ranchi@gmail.com
Phone no.: 0651-2290103
Website : www.elespl.co.in

Annexure-1

TEST REPORT

Test Report No.	: ELES/RNC/2024/1413	Report Release Date	: 03.04.2024
Service Order No.	: 4400015473	Service Order Date	: 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1737
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: Sodium Hypo Stack
		Sampling Date	: 19.03.2024
Plant Status	: Operational	Sample Received Date	: 23.03.2024
Period of Analysis	: 23.03.2024 to 28.03.2024	Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION	
1	Particular of the Plant : Caustic Plant
2	Emission Due to : Process Activity
3	Stack Connected to : Sodium Hypo Stack
4	Material of Construction of Stack : PVC/FRP
5	Stack Height from Ground Level (m) : 42.0
6	Height of Sampling Port from Ground Level (m) : 35.0
7	Inner Diameter of Stack at Sampling Point (m) : 0.25
8	Shape of the Stack : Circular
9	Working Load of the Stack : N/A
10	Pollution Control System : Wet Scrubber
11	Ladder & Platform : Permanent

FUEL CHARACTERISTICS DETAILS	
1	Type of Fuel Used : N/A
2	Fuel Consumption : N/A
3	Calorific Value of Fuel (Kcal/Kg) : N/A



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARQVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No. : ELES/RNC/2024/1413	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Flue Gas Temperature	$^{\circ}\text{C}$	IS 11255 (Part- 3): 2008; RA 2018	36
Barometric Pressure	mmHg	IS 11255 (Part- 3): 2008; RA 2018	745
Velocity of Flue Gas	m/sec	IS 11255 (Part- 3): 2008; RA 2018	6.50
Quantity of Gas Flow	Nm^3/hr	IS 11255 (Part- 3): 2008; RA 2018	969
Moisture Percentage	%	IS 11255 (Part- 3): 2008; RA 2018	10.6
Chlorine (as Cl_2)*	mg/Nm^3	GEL/SOP-1	0.47

Remarks : (*)-Parameters are outsourced to other Lab.



****End of Report****


Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
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Website : www.elespl.co.in

CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2024/1414	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1738
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: HCL Furnace No.-B
		Sampling Date	: 20.03.2024
Plant Status	: Operational	Sample Received Date	: 23.03.2024
Period of Analysis	: 23.03.2024 to 28.03.2024	Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION

1	Particular of the Plant	: Caustic Plant
2	Emission Due to	: Process Activity
3	Stack Connected to	: HCL Furnace No.-B
4	Material of Construction of Stack	: PVC/FRP
5	Stack Height from Ground Level (m)	: 18.5
6	Height of Sampling Port from Ground Level (m)	: 1.20
7	Inner Diameter of Stack at Sampling Point (m)	: 0.15
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: N/A
10	Pollution Control System	: Wet Scrubber
11	Ladder & Platform	: Permanent

FUEL CHARACTERISTICS DETAILS

1	Type of Fuel Used	: N/A
2	Fuel Consumption	: N/A
3	Calorific Value of Fuel (Kcal/Kg)	: N/A



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAECE97130124

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TEST REPORT


Test Report No. : ELES/RNC/2024/1414	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Flue Gas Temperature	°C	IS 11255 (Part- 3): 2008; RA 2018	37
Barometric Pressure	mmHg	IS 11255 (Part-3): 2008; RA 2018	745
Velocity of Flue Gas	m/sec	IS 11255 (Part- 3): 2008; RA 2018	5.20
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part- 3): 2008; RA 2018	281
Moisture Percentage	%	IS 11255 (Part- 3): 2008; RA 2018	9.5
Hydrogen Chloride (HCl)*	mg/Nm ³	GEL/SOP-01	1.07

Remarks : (*)-Parameters are outsourced to other Lab.



****End of Report****


Authorized Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/1415	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1739
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: HCL Furnace 810-A
Plant Status	: Operational	Sampling Date	: 21.03.2024
Period of Analysis	: 23.03.2024 to 28.03.2024	Sample Received Date	: 23.03.2024
		Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION

1	Particular of the Plant	: Caustic Plant
2	Emission Due to	: Process Activity
3	Stack Connected to	: HCL Furnace 810-A
4	Material of Construction of Stack	: PVC/FRP
5	Stack Height from Ground Level (m)	: 40.0
6	Height of Sampling Port from Ground Level (m)	: 35.0
7	Inner Diameter of Stack at Sampling Point (m)	: 0.15
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: N/A
10	Pollution Control System	: Wet Scrubber
11	Ladder & Platform	: Permanent

FUEL CHARACTERISTICS DETAILS

1	Type of Fuel Used	: N/A
2	Fuel Consumption	: N/A
3	Calorific Value of Fuel (Kcal/Kg)	: N/A



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TEST REPORT

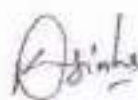
Test Report No. : ELES/RNC/2024/1415	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Flue Gas Temperature	°C	IS 11255 (Part- 3): 2008; RA 2018	35
Barometric Pressure	mmHg	IS 11255 (Part-3): 2008; RA 2018	745
Velocity of Flue Gas	m/sec	IS 11255 (Part- 3): 2008; RA 2018	4.84
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part- 3): 2008; RA 2018	265
Moisture Percentage	%	IS 11255 (Part- 3): 2008; RA 2018	9.0
Hydrogen Chloride (HCl)*	mg/Nm ³	GEL/SOP-01	1.02

Remarks :(*)-Parameters are outsourced to other Lab.



****End of Report****


Authorized Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PTC011325

TEST REPORT

Test Report No. : ELES/RNC/2024/1416	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1740
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: HCL Furnace 810-B
Plant Status	: Operational	Sampling Date	: 21.03.2024
Period of Analysis	: 23.03.2024 to 28.03.2024	Sample Received Date	: 23.03.2024
		Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION

1	Particular of the Plant	: Caustic Plant
2	Emission Due to	: Process Activity
3	Stack Connected to	: HCL Furnace 810-B
4	Material of Construction of Stack	: PVC/FRP
5	Stack Height from Ground Level (m)	: 40.0
6	Height of Sampling Port from Ground Level (m)	: 34.0
7	Inner Diameter of Stack at Sampling Point (m)	: 0.15
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: N/A
10	Pollution Control System	: Wet Scrubber
11	Ladder & Platform	: Permanent

FUEL CHARACTERISTICS DETAILS

1	Type of Fuel Used	: N/A
2	Fuel Consumption	: N/A
3	Calorific Value of Fuel (Kcal/Kg)	: N/A



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2016PTC031125

TEST REPORT

Test Report No. : ELES/RNC/2024/1416	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Flue Gas Temperature	°C	IS 11255 (Part- 3): 2008; RA 2018	35
Barometric Pressure	mmHg	IS 11255 (Part-3): 2008; RA 2018	745
Velocity of Flue Gas	m/sec	IS 11255 (Part- 3): 2008; RA 2018	4.91
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part- 3): 2008; RA 2018	271
Moisture Percentage	%	IS 11255 (Part- 3): 2008; RA 2018	8.4
Hydrogen Chloride (HCl)*	mg/Nm ³	GEL/SOP-01	1.28

Remarks :(*)-Parameters are outsourced to other Lab.



****End of Report****


Authorised Signatory
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Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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Location Wise List of Chlorine Sensor

CL2 Filling Station:-		
S.No.	Tag No.	Location
1	CL2SNR-01A	CL2 FILLING STATION ,INFRONT OF INDRAJEET SINGH OFFICE
2	CL2SNR-01B	CL2 FILLING STATION, INFRONT OF STORAGE TANK F
3	CL2SNR-01C	CL2 FILLING STATION ,NEAR 250 NM3 COMPRESSOR
4	CL2SNR-01	CL2 FILLING STATION, EMPATY TONNER STORAGE AREA
5	CL2SNR-09	CL2 TONNER AREA , NEAR TONNER DEGASING HEADER
6	CL2SNR-17	CL2 TONNER AREA , PILLAR NO-07 FROM ROAD SIDE
7	CL2SNR-18	CL2 FILLING AREA , PILLAR NO-05 FROM ROAD SIDE
8	CL2SNR-19	CL2 FILLING AREA , NEAR BALANCE NO-06
9	CL2SNR-20	CL2 FILLING AREA , BETWEEN BALANCE NO 7 & 8
10	CL2SNR-21	CL2 FILLING AREA , BETWEEN BALANCE NO 1 & 2
11	CL2SNR-22	CL2 FILLING AREA , BETWEEN BALANCE NO 3 & 4
CL2 Storage Area :-		
12	CL2SNR-03	CHLORINE STORAGE TANK, BETWEEN CL2 STORAGE TANK 4 & 5
13	CL2SNR-01G	CHLORINE STORAGE TANK , BACK SIDE OF STORAGE TANK F
14	CL2SNR-01D	CHLORINE STORAGE TANK,BACK SIDE OF STORAGE TANK A.
15	CL2SNR-01E	CHLORINE STORAGE TANK, NEAR LADDER ADJUSCENT TO STORAGE TANK A
16	CL2SNR-01F	CHLORINE STORAGE TANK, NEAR STORAGE TANK F
VAM Area :-		
17	CL2SNR-25	VAM AREA , NEAR ALCL3 VAPORISER
Brine Section :-		
18	CL2SNR-04	POLISH BRINE, OLD BUILDING
19	CL2SNR-23	NEW PRECOAT AREA , FIRST FLOOR FROM ROAD SIDE
SBP Section :-		
20	CL2SNR-12	SBP GODOWN, NEAR LOADING AREA
21	CL2SNR-13	SBP GODOWN , LEFT SIDE FROM MAIN ENTRY
22	CL2SNR-10	SBP PLANT , BACK OF DRUM NO-01
23	CL2SNR-11	SBP PLANT, BACK OF CL2 TANK
24	CL2SNR-30	SBP PLANT, IN GODOWN -A
25	CL2SNR-29	SBP PLANT, IN GODOWN -B
HCL Furnace Area :-		
26	CL2SNR-01J	HCL-FURNACE-C , TOP FLOOR
27	CL2SNR-01I	HCL-FURNACE-B , TOP FLOOR
28	CL2SNR-28	HCL-FURNACE-A , NEAR PIC602
29	CL2SNR-01H	HCL-FURNACE-A, TOP FLOOR

Process / Cell House Area :-		
30	CL2SNR-A1-1151	CELL HOUSE ,NEAR ELECTROLYSER B SAMPLE POINT
31	CL2SNR- 33	CELL HOUSE , NEAR ELECTROLIZER -E AT GROUND FLOOR
32	CL2SNR- 34	PROCESS BUILDING, NEAR SEAL POT AT FIRST FLOOR
33	CL2SNR- 35	PROCESS BUILDING, NEAR SEAL PH-802 AT GROUND FLOOR
AlCl3 Area :-		
34	CL2SNR-15	ALCL3 OLD REACTOR
35	CL2SNR-14	ALCL3 CYLINDER STORAGE
36	CL2SNR-16	ALCL3 NEW REACTOR
37	CL2SNR-31	ALCL3 NEW REACTOR NO. 11 AT 8 MTR HEIGHT
Sodium Hypo Area :-		
38	CL2SNR-A1-2602	SODIUM HYPO AREA , TOP FLOOR
Evaporation Section :-		
39	CL2SNR-08	EVAPORATION AREA , FIRST FLOOR
40	CL2SNR-02	EVAPORATION PLANT , 2ND FLOOR.
Flaking Section :-		
41	CL2SNR-24	FLAKING PLANT , FIRST FLOOR FROM ROAD SIDE
Cl2 Compressor Room :-		
42	CL2SNR-36	Near PIC-2001 IN COMPRESSOR AREA
43	CL2SNR-37	IN FRONT OF CL2 PLANT OFFICE
44	CL2SNR-38	COMPRESSOR AREA, NEAR FREON COMPRESSOR -A
45	CL2SNR-39	COMPRESSOR AREA, NEAR CL2 COMPRESSOR -E
Cl2 Vaporiser Area :-		
46	CL2SNR- 40	VAPORISER AREA, AT FIRST FLOOR
47	CL2SNR- 41	VAPORISER AREA, NEAR SURGE VESSEL
48	CL2SNR- 42	VAPORISER AREA, NEAR VAPORISER TANK
Cl2 Liquifier Area :-		
49	CL2SNR- 43	LIQUIFIER AREA, IN FRONT OF OLD VAM
50	CL2SNR- 44	LIQUIFIER AREA, NEAR CL2 FILTER AT FIRST FLOOR
Boundary Wall of Plant Area :-		
51	CL2SNR- 45	BOUNDRY WALL NEAR 80 Ton WEIGH BRIDGE
52	CL2SNR-32	AT WTP PLANT
53	CL2SNR-27	AT CAUSTIC STORAGE TANK- 4
54	CL2SNR-26	BOUNDRY WALL IN FRONT OF ALCL3 PLANT
CPP:-		
55	CL2SNR-CT	CPP-1 COOLING TOWER AREA



ENVIRONMENTAL LABORATORIES &

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CIN: U74999JH2018PTC021123

TEST REPORT

Test Report No. : ELES/RNC/2024/1411	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1735
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: CPP Stack-1
		Sampling Date	: 19.03.2024
Plant Status	: Operational	Sample Received Date	: 23.03.2024
		Type of Sample	: Flue Gas
Period of Analysis	: 23.03.2024 to 28.03.2024	Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION	
1	Particular of the Plant : Boiler
2	Emission Due to : Burning of Coal
3	Stack Connected to : CPP Stack-1
4	Material of Construction of Duct : MS
5	Stack Height from Ground Level (m) : 80.0
6	Height of Sampling Port from Ground Level (m) : 5.0
7	Inner Diameter of Duct at Sampling Point (m) : 1.4 x 1.927
8	Shape of the Duct : Rectangular
9	Working Load of the Stack : 74971 Ton/Month
10	Pollution Control System : ESP
11	Ladder & Platform : Permanent

FUEL CHARACTERISTICS DETAILS	
1	Type of Fuel Used : Coal
2	Fuel Consumption : 16681 Ton/Month
3	Calorific Value of Fuel (Kcal/Kg) : N/A

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ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No. : ELES/RNC/2024/1411	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Particulate Matter (PM)	mg/Nm ³	IS 11255(Part 1):1985; RA 2019	57
Sulphur Di-Oxide (SO ₂)	mg/Nm ³	USEPA 6C :2017	368
Oxides of Nitrogen (NO _x)	mg/Nm ³	USEPA 7E :2020	84
Flue Gas Temperature	°C	IS 11255 (Part-3): 2008; RA 2018	129
Barometric Pressure	mmHg	IS 11255 (Part-3): 2008; RA 2018	744
Velocity of Flue Gas	m/sec	IS 11255 (Part-3): 2008; RA 2018	22.30
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part-3): 2008; RA 2018	146976



****End of Report****


Authorized Signatory
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ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES &

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CIN: U74999MH2018PTC011321

TEST REPORT

Test Report No. : ELES/RNC/2024/1412	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/SM/1736
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: CPP Stack-2
Plant Status	: Operational	Sampling Date	: 19.03.2024
Period of Analysis	: 23.03.2024 to 28.03.2024	Sample Received Date	: 23.03.2024
		Type of Sample	: Flue Gas
		Sampling Procedure	: ELES/DOC/SMPL/02(A)
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

GENERAL INFORMATION	
1	Particular of the Plant : Boiler
2	Emission Due to : Burning of Coal
3	Stack Connected to : CPP Stack-2
4	Material of Construction of Duct : MS
5	Stack Height from Ground Level (m) : 110.0
6	Height of Sampling Port from Ground Level (m) : 6.5
7	Inner Diameter of Duct at Sampling Point (m) : 1.524 x 2.438
8	Shape of the Duct : Rectangular
9	Working Load of the Stack : 70244 Ton/Month
10	Pollution Control System : ESP
11	Ladder & Platform : Permanent

FUEL CHARACTERISTICS DETAILS	
1	Type of Fuel Used : Coal
2	Fuel Consumption : 14937 Ton/Month
3	Calorific Value of Fuel (Kcal/Kg) : N/A



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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CIN: U74999JH2008PTC011125


TEST REPORT

Test Report No. : ELES/RNC/2024/1412	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

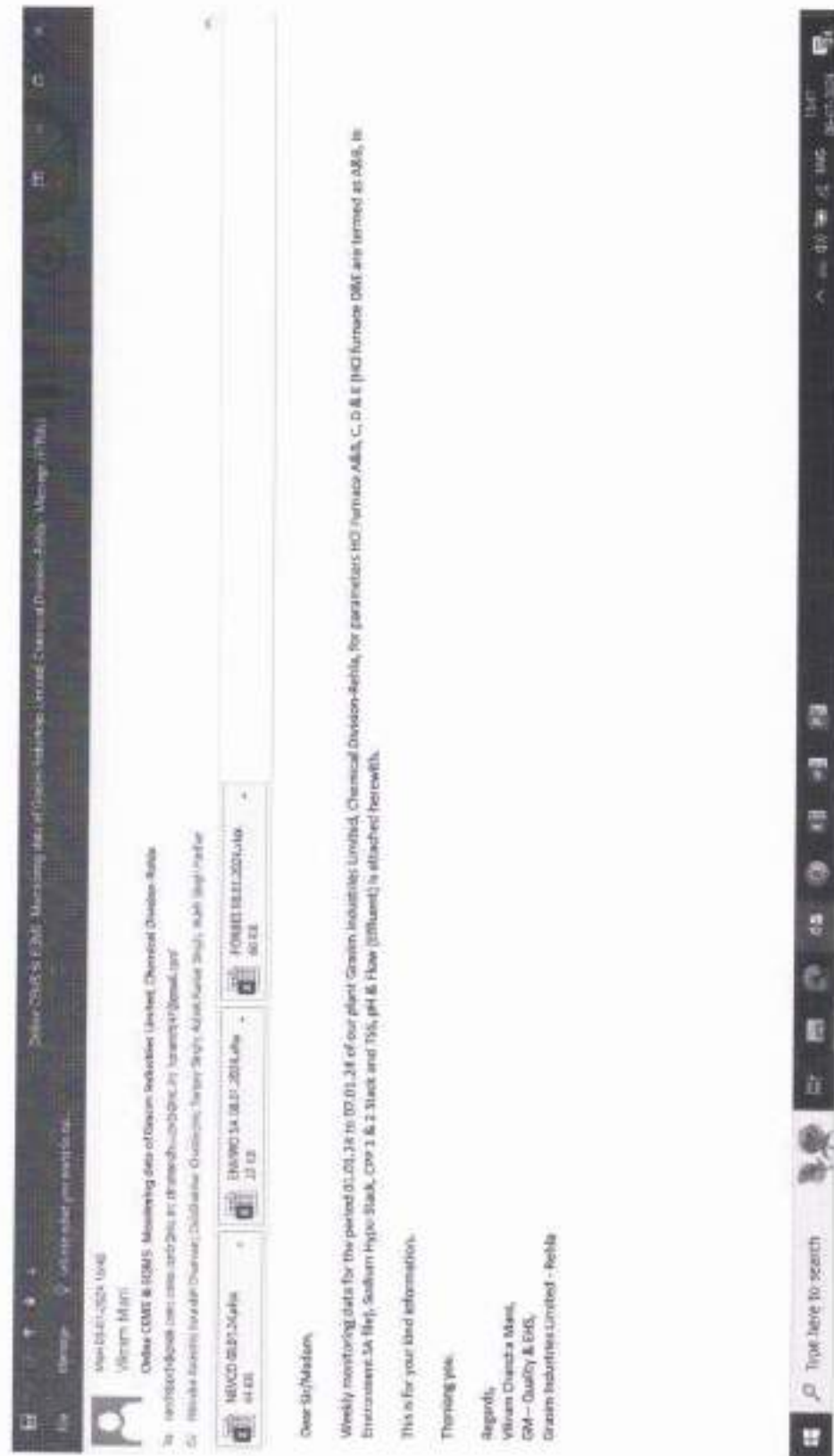
Discipline : Chemical		Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Particulate Matter (PM)	mg/Nm ³	IS 11255(Part 1):1985; RA 2019	47
Sulphur Di-Oxide (SO ₂)	mg/Nm ³	USEPA 6C :2017	282
Oxides of Nitrogen (NO _x)	mg/Nm ³	USEPA 7E :2020	73
Flue Gas Temperature	°C	IS 11255 (Part-3): 2008; RA 2018	121
Barometric Pressure	mmHg	IS 11255 (Part-3): 2008; RA 2018	744
Velocity of Flue Gas	m/sec	IS 11255 (Part-3): 2008; RA 2018	18.19
Quantity of Gas Flow	Nm ³ /hr	IS 11255 (Part-3): 2008; RA 2018	167546



****End of Report****


 Authorised Signatory
 Dr. Deependra Kumar Sinha
 Ph. D Environmental Engg.
 ELES Pvt. Ltd. Technical Manager

ANNEXURE-4





CIN: U74999JH2018PTC011125

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
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TEST REPORT

Test Report No. : ELES/RNC/2024/1409	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/FA/1733
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: New Process Building
Plant Status	: Operational	Sampling Date	: 19.03.2024
Period of Analysis	: 23.03.2024 to 30.03.2024	Sample Received Date	: 23.03.2024
		Type of Sample	: Fugitive Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

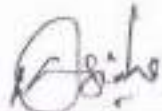
METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 744
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result
Chlorine (as Cl ₂)*	mg/m ³	GEL/SOP-01	0.59
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	0.25

Remarks:(*) - Parameters are outsourced to other Lab.



****End of Report****


Authorised Signatory
Dr. Deependra Kumar Sinha
 Ph. D Environmental Engg.
 ELES Pvt. Ltd. Technical Manager

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Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1410	Report Release Date	: 03.04.2024
Service Order No.	: 4400015473	Service Order Date	: 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/FA/1734
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: Old Process Building
		Sampling Date	: 19.03.2024
Plant Status	: Operational	Sample Received Date	: 23.03.2024
Period of Analysis	: 23.03.2024 to 30.03.2024	Type of Sample	: Fugitive Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved


METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 744
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result
Chlorine (as Cl ₂)*	mg/m ³	GEL/SOP-01	0.28
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	0.6

Remarks: (*) - Parameters are outsourced to other Lab.

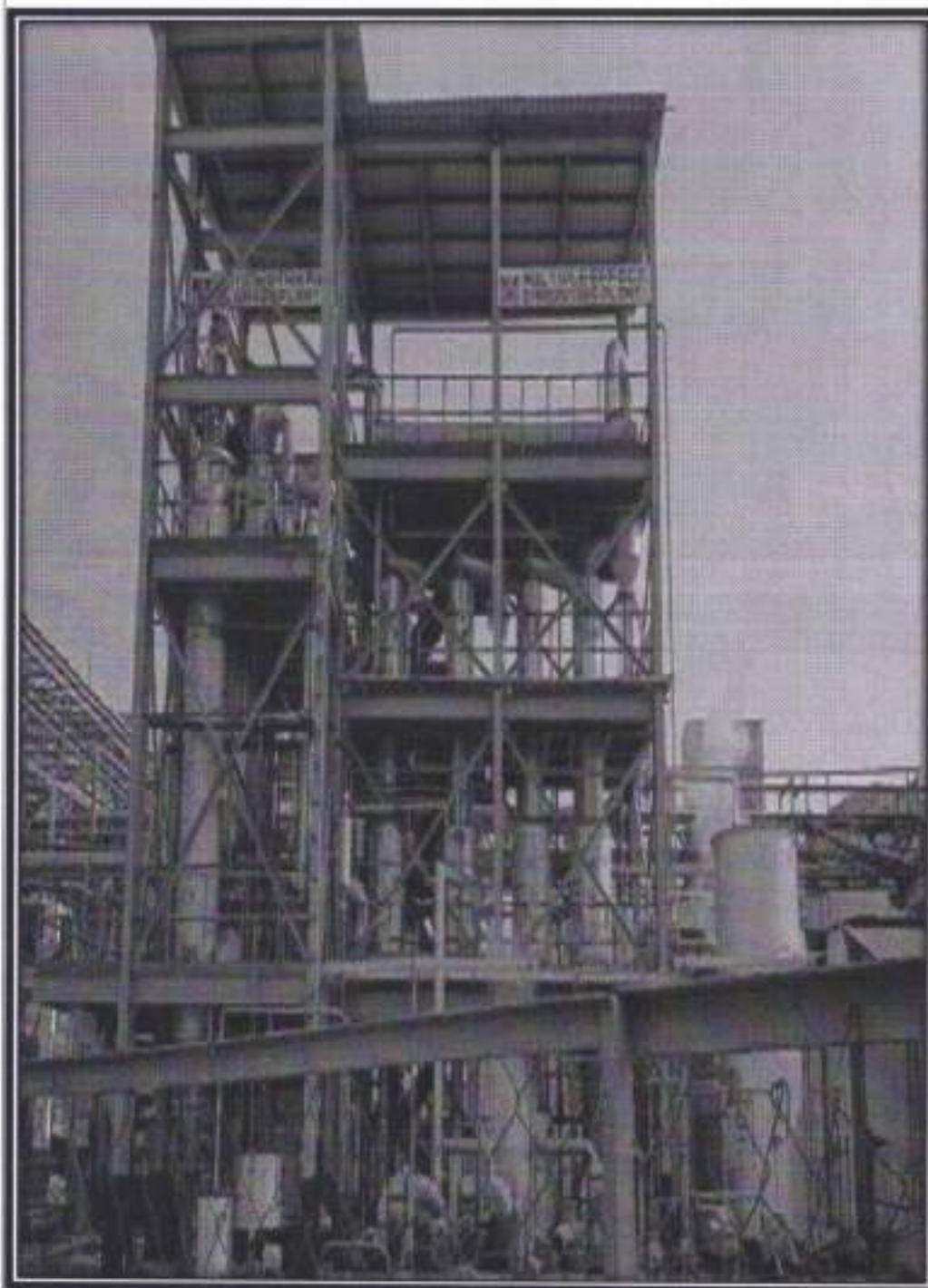


****End of Report****

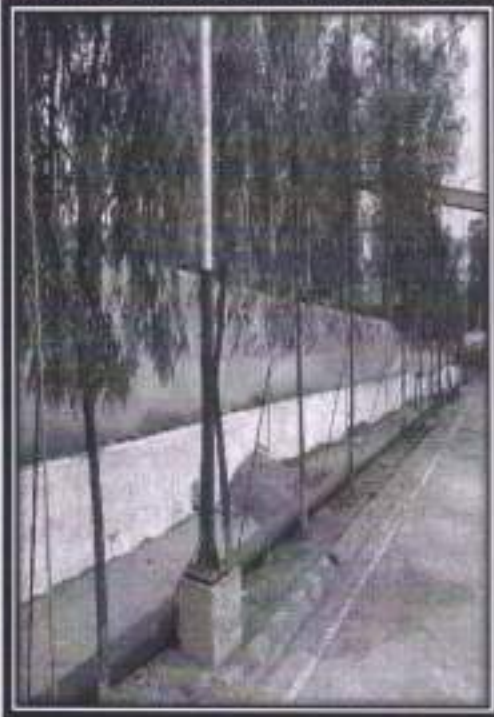

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Photograph: ETP (MEE+ATFD Facility),



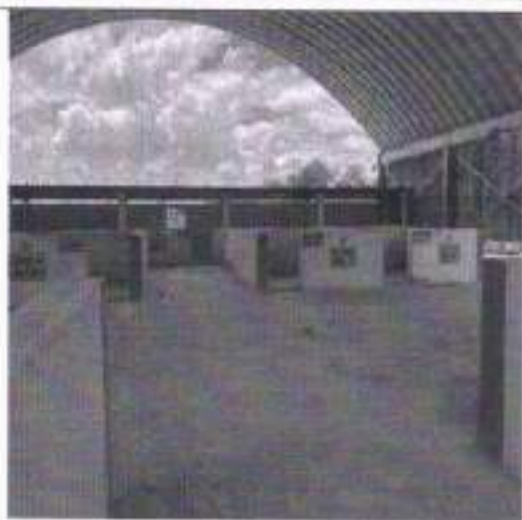
Photograph: Installed Fly Ash Silo & Dust Separator Systems (i.e. Dry Fog & Sprinkler)



Photographs: Continuous Ambient Air Quality Monitoring Station



Photographs: Waste Storage Area

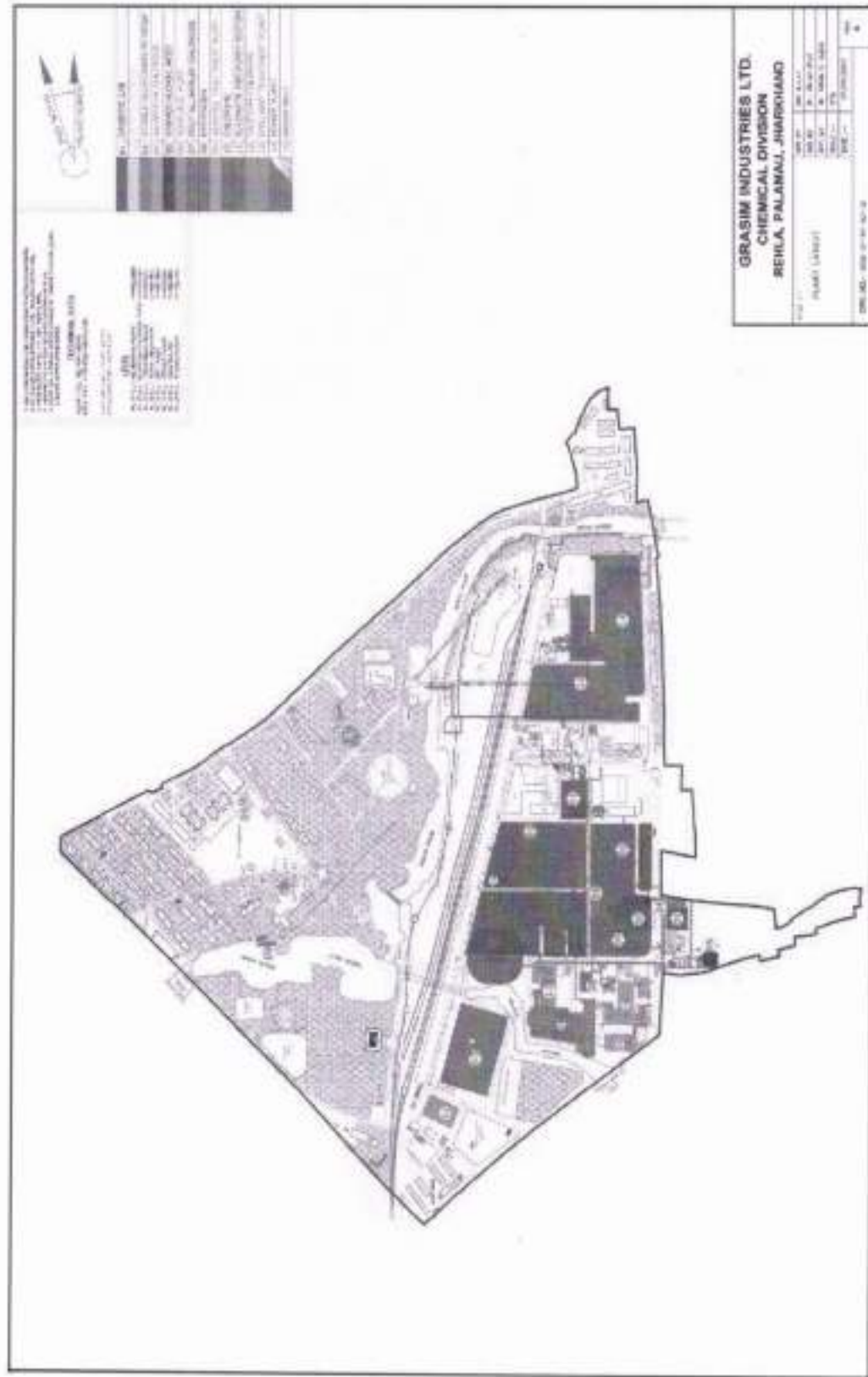


Photographs: Green Belt



Green Belt Mapping

Annexure 7



GRASIM INDUSTRIES LIMITED

CHEMICAL DIVISION, REHLA

Hazardous Waste Generation, Disposal & Recycle Details (Oct'23 to March'24)

Sl. N.	Waste Type	Category	Generation (MT)	Disposal (MT)	Despatched to
1	Asbestos waste	Sch-1, Cat-15.2	0.00	0.00	CHW-TSDF (AWMPL)
2	Empty Barrels/ Container/ Liners Contaminated with Hazardous Chemicals / Wastes/ C.T.Fills	Sch-1, Cat-33.1	0.00	0.00	CHW-TSDF (AWMPL)
3	Contaminated Cotton Rags or other Cleaning materials	Sch-1, Cat-33.2	0.00	0.00	CHW-TSDF (AWMPL)
4	ETP sludge	Sch-1, Cat-35.3	173.31	165.70	CHW-TSDF (AWMPL)
5	Fibre Reinforced Plastic Waste (F R P)	Others	0.00	0.00	CHW-TSDF (AWMPL)
6	Insulation Waste (Glass wool)	Others	0.48	0.48	CHW-TSDF (AWMPL)
7	MEE+ATFD WASTE	Others	374.74	369.55	CHW-TSDF (AWMPL)
8	Used Oil	Sch-1, Cat-5.1	3.18	3.18	Authorised Recycler
9	Used Membrane	Others	0.40	0.40	CHW-TSDF (AWMPL)
10	Spent Resin	Sch-1, Cat-35.2	0.00	0.00	CHW-TSDF (AWMPL)
11	Process & Wastes from treatment of Salt sludge	Sch-1, Cat-11.5	0.00	0.00	CHW-TSDF (AWMPL)
12	Brine Sludge (Membrane Cell Plant)	Sch-1, Cat-16.3	2229.11	2447.12	CHW-TSDF (AWMPL)
13	Spent Carbon or filter medium	Sch-1, Cat-36.2	0.00	0.00	CHW-TSDF (AWMPL)
14	Oil & Grease skimming	Sch-1, Cat-35.4	0.00	0.00	CHW-TSDF (AWMPL)



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TEST REPORT

Test Report No. : ELES/RNC/2024/1401	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	ELES/RNC/2024/AA/1722
Address	Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	Hospital Roof Top
Plant Status	Operational	Sampling Date	18.03.2024 to 19.03.2024
Period of Analysis	23.03.2024 to 30.03.2024	Sample Received Date	23.03.2024
		Type of Sample	Ambient Air
		Sampling Procedure	ELES/DOC/SMPL/02
		Sampling Done By	ELES Pvt. Ltd.
		Sample Condition	Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg) : 745
3	Relative Humidity (%) : 54	4	Weather Condition : Clear
5	Longitude : 83°53'15.21"E	6	Latitude : 24°13'31.33"N

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24):2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182(Part-10):1999;RA2019	1.02	2 (8hrs)
Chlorine as (Cl ₂)*	mg/m ³	GEL/SOP-01	<0.15	--
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	<0.1	--

Remarks: 1 (*) - Parameters are outsourced to other Lab.



****End of Report****

Dr. Deependra Kumar Sinha
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CIN: U74999JH2018PTC011125

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Website : www.elespl.co.in**TEST REPORT**

Test Report No.	: ELES/RNC/2024/1402	Report Release Date	: 03.04.2024
Service Order No.	: 4400015473	Service Order Date	: 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/AA/1723
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: Vikram Nagar
		Sampling Date	: 18.03.2024 to 19.03.2024
		Sample Received Date	: 23.03.2024
Plant Status	: Operational	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 23.03.2024 to 30.03.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 745
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear
5	Longitude	: 83°53'12.87"E	6	Latitude	: 24°13'53.23"N

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	72	100 (24hrs)
Particulate Matter(PM2.5)	µg/m ³	IS 5182 (Part-24):2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	9.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182(Part-10):1999;RA2019	<1.0	2 (8hrs)
Chlorine as (Cl ₂)*	mg/m ³	GEL/SOP-01	<0.15	--
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	<0.1	--

Remarks: 1 (*) – Parameters are outsourced to other Lab.



****End of Report****


Authorised Signatory
Dr. Deependra Kumar Sinha
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Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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Website : www.elespl.co.in

CIN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2024/1403	Report Release Date	: 03.04.2024
Service Order No.	: 4400015473	Service Order Date	: 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/AA/1724
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: Near Temple (Colony)
		Sampling Date	: 18.03.2024 to 19.03.2024
Plant Status	: Operational	Sample Received Date	: 23.03.2024
Period of Analysis	: 23.03.2024 to 30.03.2024	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 745
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear
5	Longitude	: 83°52'57.61"E	6	Latitude	: 24°13'43.11"N

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.8	80 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Chlorine as (Cl ₂)*	mg/m ³	GEL/SOP-01	<0.15	--
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	<0.1	--

Remarks: 1 (*) - Parameters are outsourced to other Lab.



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TEST REPORT

Test Report No. : ELES/RNC/2024/1404	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Ref. No.	: ELES/RNC/2024/AA/1725
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Location	: Near Lagoon
Plant Status	: Operational	Sampling Date	: 19.03.2024 to 20.03.2024
Period of Analysis	: 23.03.2024 to 30.03.2024	Sample Received Date	: 23.03.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 25		2	Barometric Pressure (mmHg) : 745	
3	Relative Humidity (%) : 49		4	Weather Condition : Clear	
5	Longitude : 83°52'52.23"E		6	Latitude : 24°13'29.64"N	

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	75	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	44	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	13.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	29.5	80 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	1.12	2 (8hrs)
Chlorine as (Cl ₂)*	mg/m ³	GEL/SOP-01	<0.15	--
Hydrogen Chloride (HCl)*	mg/m ³	GEL/SOP-01	<0.1	--

Remarks: 1 (*) - Parameters are outsourced to other Lab.



****End of Report****

Dr. Deependra Kumar Sinha
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ELES Pvt. Ltd. Technical Manager

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CIN: U74999JH2018PTC011125

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Website : www.elespl.co.in

TEST REPORT

Test Report No. : ELES/RNC/2024/1405	Report Release Date : 03.04.2024
Service Order No. : 4400015473	Service Order Date : 03.06.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Grasim Industries Ltd. Chemical Division Rehla	Sample Date	: 18.03.2024 to 19.03.2024
Address	: Grasim Industries Ltd. Chemical Division Rehla, Dist- Palamu.	Sampling Received Date	: 23.03.2024
Plant Status	: Operational	Type of Sample	: Ambient Noise
		Sampling procedure	: ELES/DOC/SMPL/03
		Sampling Done By	: ELES Pvt. Ltd.
		Period of Analysis	: 23.03.2024 to 28.03.2024

METEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg) : 745
3	Relative Humidity (%) : 54	4	Weather Condition : Clear

Discipline: Chemical			Group: Atmospheric Pollution				
Location	Unit	Test Protocol	Result				
Near Temple	dB(A)	IS 9989:1981; RA 2020	Time	L _{Max}	L _{Min}	L _{eq}	Regulatory Limit (Residential Zone) 55 dB(A) Day Time & 45 dB(A) Night Time
Sample ID: ELES/RNC/2024/AN/1726			Day Time	56.7	43.9	54	
Latitude:24°13'43.11"N			Night Time	50.5	37.3	43	
Longitude :83°52'57.61"E							
Near Hospital	dB(A)	IS 9989:1981; RA 2020	Time	L _{Max}	L _{Min}	L _{eq}	Regulatory Limit (Silence Zone) 50 dB(A) Day Time & 40 dB(A) Night Time
Sample ID: ELES/RNC/2024/AN/1727			Day Time	50.4	39.8	48	
Latitude: 24°13'31.33"N			Night Time	46.9	36.8	39	
Longitude : 83°53'15.21"E							

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CIN: U74999JH2018PTC031125

ENVIRONMENTAL LABORATORIES &

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1405	Report Release Date	: 03.04.2024
Service Order No.	: 4400015473	Service Order Date	: 03.06.2023

Discipline: Chemical Group: Atmospheric Pollution							
Location	Unit	Test Protocol	Result				Regulatory Limit (Industrial Zone)
Near Admin Building	dB(A)	IS 9989:1981; RA 2020	Time	L _{Max}	L _{Min}	L _{eq}	
Sample ID: ELES/RNC/2024/AN/1728			Day Time	69.1	52.0	61	
Latitude: 24°13'29.64"N			Longitude : 83°52'52.23"E	Night Time	60.1	38.6	53
Near Central Lab	dB(A)	IS 9989:1981; RA 2020	Time	L _{Max}	L _{Min}	L _{eq}	75 dB(A) Day Time & 70 dB(A) Night Time
Sample ID: ELES/RNC/2024/AN/1729			Day Time	66.8	47.5	60	
Latitude: 24°13'53.23"N			Longitude : 83°53'12.87"E	Night Time	58.3	39.7	



****End of Report****


Authorized Signatory
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Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

