



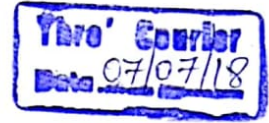
O/C LTP

920

29.06.2018

✓ Director

Ministry of Environment, Forests & Climate Change  
Regional Office,  
Kendriya Sadan, 4<sup>th</sup> Floor, E & F Wings,  
7<sup>th</sup> Main Road, II Block, Koramangala,  
Bangalore - 560 034



Sir,

**Sub :** Compliance Report for the period Oct'17 to Mar'18 w.r.t Expansion of Viscose Staple Fibre (51,100 TPA to 87,600 TPA) and Captive Power Plant (10 MW to 20 MW) at Kumarapatnam, Renebennur Taluka, Haveri, Karnataka by M/s Grasim Industries Limited.

**Ref :** 1. Sl. No.B (vii) of Environmental Clearance accorded by MoEF vide letter # J- 11011 /371/2006-IA II (I) dated 08.11.2007  
2. Letter No. EP/12.1/524/KAR/8138 Dated 08.03.2016 from Adviser, MoEF & CC

With reference to the subject cited above, we are herewith submitting the EC compliance report for the period from 01.10.2017 to 31.03.2018. It may please be noted that the plant is running as per the condition stipulated in EC. We assure that the EC compliance report will be submitted to MoEF office regularly as per the frequency stipulated.

Thanking you,

Yours faithfully,

For GRASIM INDUSTRIES LIMITED

Sd/-   
(Ajay Kumar Gupta)  
Sr. President & Unit Head

cc:

1. The Member Secretary,  
Central Pollution Control Board,  
(Ministry of Environment & Forests Govt. of India),  
Parivesh Bhavan,  
East Arjun Nagar, New Delhi - 110 032
2. The Chairman,  
Karnataka State Pollution Control Board,  
"Parisara Bhavan", 4<sup>th</sup> & 5<sup>th</sup> Floor,  
#49, Church Street,  
Bangalore - 560 001
3. The Member Secretary,  
Karnataka State Pollution Control Board,  
"Parisara Bhavan", 4<sup>th</sup> & 5<sup>th</sup> Floor,  
#49, Church Street,  
Bangalore - 560 001
4. The Environmental Officer,  
Regional Office,  
Karnataka State Pollution Control Board,  
Plot No. 501,  
Near Central Excise & Customs Office,  
"C" Block, Devaraja Urs Layout,  
Davangere - 577 006



**Birla Cellulose**  
Fibres from Nature

Grasim Industries Limited

Units : Harihar Polyfibers & Grasilene Division  
Kumarapatnam 581123, Dist. Haveri, Karnataka.

T : +91 836 2482000 / +91 8373 242171 To 75 / +91 8192 247550 To 54 | F : +91 8373 242875 / +91 8192 247555

W : www.grasim.com | E : grasimharihar@adityabirla.com | CIN : L17124MP1947PLC000410

Regd. Office : P.O. Birlagram, Nagda 456 331 (M.P.)

**GRASIM INDUSTRIES LIMITED : KUMARAPATNAM  
GRASILENE DIVISION**

**COMPLIANCE TO ENVIRONMENTAL CLEARANCE  
FOR THE PERIOD FROM OCT'17 TO MAR'18**

Reference : MoEF Letter No. J-11011/371/2006-IA.II(I) dated 08/11/2007 & 30/12/2013

**PART - I**

1	Project Type	Industry	
2	Name of the Project	Expansion of Viscose Staple Fibre (51,100 TPA to 87,600 TPA) & Captive Power Plant (10 MW to 20 MW) at Kumarapatnam, Ranebennur, Haveri, Karnataka by M/s Grasim Industries Ltd.	
3	Clearance letter No. & date	MoEF Letter No. J-11011/371/2006-IA.II(I) dated 08/11/2007	
4	Location : District & State / UT	Haveri District, Karnataka Sate	
5	Address for Correspondence	Grasim Industries Limited : Kumarapatnam Grasilene Division Kumarapatnam - 581123 Ranebennur, Haveri, Karnataka	
6	Financial Details:		
a	Project cost as originally planned & subsequent revised estimates & the years of price reference	Cost Originally Planned: INR 276.0 Crores. The project was put on hold due to global meltdown & economic crisis. The project was taken up in 2011 at INR 449 Crores.	
b	Allocations made for environmental management plans, with item-wise breakup	<b>Improvement Projects</b>	<b>Investment (Rs. in Crores)</b>
		Multistage flash evaporators for recovering sodium sulphate from lean stream to meet the TDS limit in mixed treated effluent	64.60
		CFBC Boilers as against AFBC boilers to reduce coal consumption	67.00
		New 200 TPD sulphuric acid plant ipo 1 new & 1 old 100 TPD acid plant to reduce SO2 emission	20.00
		Upgradation of ETP i.e. primary clarifier, pump house, diffused aeration system, sludge dewatering system, etc.	4.30
		<b>Total Investment</b>	<b>155.90</b>
c	Total expenditure on the project	Rs. 449.00 Crores	
d	Actual expenditure incurred on the environmental management plans so far	Rs. 155.90 Crores	
7	Status of construction		
a	Date of commencement	May 2011	
b	Date of completion (actual &/or planned)	Trial commenced from October 2012	

The domestic effluent generated in plant premises is treated along with trade effluent in ETP as permitted by KSPCB.



## PART - II

Subject : Expansion of Viscose Staple Fibre (51,100 TPA to 87,600 TPA) & Captive Power Plant (10 MW to 20 MW) at Kumarapatnam, Ranebennur, Haveri, Karnataka by M/s Grasim Industries Ltd.

Reference : MoEF Letter No. J-11011/371/2006-IA.II(I) dated 08/11/2007 & 30/12/2013

### A) Specific Conditions:

SN	Conditions	Compliance
i	Pollution control equipments for control of SO <sub>2</sub> , CS <sub>2</sub> etc shall be provided	Complied
ii	Technology employed shall achieve standards notified by MoEF. Control & monitoring of CS <sub>2</sub> & H <sub>2</sub> S shall be made	Complied
iii	AAQ for CS <sub>2</sub> & H <sub>2</sub> S shall be monitored at 3 locations	Complied
iv	Total water shall not exceed 18, 670 m <sup>3</sup> /d	Complied
v	Fly ash utilization shall be as per its 2003 notification	Complied
vi	Solid waste disposal	Complied
Vii	Green belt shall be developed on 14 ha area	Complied
viii	Environmental safeguards recommended in EIA/EMP shall be implemented	Complied

### B) General Conditions:

SN	Conditions	Compliance
i	Must strictly adhere to KSPCB & State Govt. conditions	Complied
ii	No further expansion/modernization without prior approval of MoEF	Complied
iii	Gaseous emission shall conform to the standards stipulated	Complied
iv	AAQ shall be monitored at 3 locations & data on AAQ & stack emissions shall be submitted to MoEF & its RO once in six months	Complied
v	Fugitive emissions shall be controlled & monitored regularly	Complied
vi	Adequate number of effluent quality monitoring stations shall be set up & monitored	Complied
Vii	Industrial wastewater shall be treated as per GSR 422(E) standards	Complied
viii	Compliance of the provisions of Hazardous Chemical Rules	Complied
ix	Compliance of the provisions of Hazardous Waste Management Rules	Complied
x	Noise control & monitoring shall be carried out	Complied
xi	Rain water harvesting shall be carried out	Complied
xii	Occupational health surveillance shall be carried out	Complied
xiii	Environmental Cell with laboratory facility shall be setup	Complied
xiv	CREP recommendations shall be implemented	Complied
xv	Socio-economic & community development programs must be undertaken	Complied
xvi	Financial provisions to implement EMP measures shall be provided	Complied
xvii	Six monthly compliance report shall be submitted	Complied
xviii	Paper advertisement about EC shall be given	Complied
xix	Information on date of commencement of work & financial closure should be submitted	Complied
C	The Ministry may revoke or suspend the clearance	Conditions are complied with
D	The Ministry reserved the right to stipulate additional conditions	No additional conditions were stipulated
E	The above conditions will be enforced, inter-alia other provisions	Agreed to comply



**PART – III**

Subject : Expansion of Viscose Staple Fibre (51,100 TPA to 87,600 TPA) & Captive Power Plant (10 MW to 20 MW) at Kumarapatnam, Ranebennur, Haveri, Karnataka by M/s Grasim Industries Ltd.

Reference : MoEF Letter No. J-11011/371/2006-IA.II(I) dated 08/11/2007 & 30/12/2013

A. SPECIFIC CONDITIONS		
Sl. No.	Condition	Status
i	The process emissions in the form of SO <sub>2</sub> from the acid plant shall be scrubbed by caustic or wet scrubber. Electrostatic Precipitators (ESPs) shall be provided to power plant boiler to control particulate matter. Double conversion Double Absorption (DCDA) system in H <sub>2</sub> SO <sub>4</sub> production area, 3-stage condensing system for recovery of CS <sub>2</sub> , Klaus Kiln Sulphur recovery system to recover Sulphur from CS <sub>2</sub> plant tail gases etc. shall be provided. Vents from scrubbers and condensers shall be periodically monitored and maintained as per the best practicable technology.	<ol style="list-style-type: none"><li>1. Scrubber is provided for Acid Plant stack gases.</li><li>2. ESPs are provided to Power Plant Boilers to control Particulate matter</li><li>3. For Sulphuric Acid production Double conversion Double Absorption (DCDA) system is adopted.</li><li>4. Sulphur is being recovered from CS<sub>2</sub> plant tail gases.</li></ol> Emissions are monitored regularly from CFBC boiler stack, Spinning chimney and acid plant chimney. All emissions are within norms.
ii	The technology employed shall achieve standards notified by the Ministry for the Rayon Industry vide Gazette Notification No. 195 dated 16 <sup>th</sup> October, 2006 regarding ambient air quality and stack emission norms for CS <sub>2</sub> and H <sub>2</sub> S. Further efforts shall be made to bring down CS <sub>2</sub> levels. CS <sub>2</sub> storage tanks shall be provided with water dyke and sprinkling arrangements. The company shall monitor CS <sub>2</sub> and H <sub>2</sub> S regularly and data on the emission levels shall be submitted to the Ministry and its Regional-Office at Bangalore, KSPCB and CPCB. Provision shall be made for retrofitting additional equipment if necessary.	<ol style="list-style-type: none"><li>1. CS<sub>2</sub> emission less than 99.0 kg/t Fibre is achieved on continuous basis. Actual emission is 96-97 kg/t of fibre</li><li>2. CS<sub>2</sub> storage tanks are provided with water dyke and sprinkling arrangements.</li><li>3. The monitored values are being submitted to the Ministry and its Regional Office at Bangalore, KSPCB and CPCB.</li><li>4. Sufficient space is left in the plant area for retrofitting additional pollution control equipments in future as &amp; when required.</li></ol>
iii	The industry shall measure ambient air quality for CS <sub>2</sub> and H <sub>2</sub> S at the 3 ambient air quality monitoring stations set up in consultation with the KSPCB to ensure CS <sub>2</sub> and H <sub>2</sub> S not to exceed 100 µg/m <sup>3</sup> and 150 µg/m <sup>3</sup> respectively.	The industry had already set up 3 ambient air quality monitoring stations in consultation with the KSPCB. CS <sub>2</sub> and H <sub>2</sub> S being monitored as per the AAQM Guidelines. The monitored values are well within the prescribed standards at all times. Industry has also installed continuous online AAQM stations at all the three locations. Compiled AAQM report enclosed.



Sl. No.	Condition	Status
iv.	The water requirement from River Tungabhadra after expansion shall not exceed 18,670 m <sup>3</sup> /day. Prior permission for the draw of 18,670 m <sup>3</sup> /day water from Tungabhadra river shall be obtained from the concerned Department. The quantity of wastewater shall not exceed 61.2 m <sup>3</sup> /Ton of product as proposed for the expansion plant. Sodium sulphate recovery shall be increased from 71.4% to 89% in the proposed expansion. All the wastewater shall be treated in effluent treatment plant (ETP) having primary and secondary treatment facilities and treated waste water shall be discharged into river only after meeting the standards prescribed by the KSPCB or under EPA whichever are more stringent.	<ol style="list-style-type: none"> <li>1. Water requirement is not exceeding 18670 m<sup>3</sup>/d for fibre production.</li> <li>2. Permission is available for drawing 18670m<sup>3</sup> of water from River Tungabhadra.</li> <li>3. Waste water quantity does not exceed 61.2 m<sup>3</sup>/Ton of product for the expanded capacity. Total effluent discharged is less than 15120 m<sup>3</sup>/d.</li> <li>4. Sodium Sulphate recovery of 89.0 % for the expanded capacity is achieved continuously. Overall Na<sub>2</sub>SO<sub>4</sub> recovery is 84%. TDS load in effluent is submitted to KSPCB every month. No increase in TDS after the expansion achieved.</li> <li>5. Effluent is treated in ETP &amp; standards prescribed by SPCB are being met after mixing with treated effluent from Pulp Plant on continuous basis. Compiled analysis report enclosed.</li> <li>6. Continuous online effluent analysing device is installed at mixed effluent outlet point.</li> </ol>
v.	The fly ash from power plant boilers shall be utilized as per Fly ash notification, 1999 and subsequently amended in 2003.	100 % utilization of Fly Ash is being achieved on continuous basis. Yearly report on fly ash usage is submitted to CPCB every year. During Oct'17-Mar'18 26843.6 tons of fly ash (including bottom ash) generated and entire quantity has been sold to brick manufacturing units. Fly ash generation & consumption details have been submitted to KSPCB & CPCB.
vi.	The solid waste shall be segregated according to its calorific content and stored separately for treatment and disposal. De-ashed charcoal, churi, dried ETP sludge shall be mixed with coal and used as fuel in boilers. Used/waste oil shall be provided to registered recyclers/ reprocessors.	<ol style="list-style-type: none"> <li>1. De-ashed charcoal, churi and ETP organic sludge being used in Boiler as fuel after mixing with coal.</li> <li>2. Gypsum sludge is used for cement block manufacturing.</li> <li>3. Used oil being given to Authorized recycler.</li> </ol>
vii.	Green belt of adequate width and density shall be developed in 14 ha out of 41 ha project area to mitigate the effect of fugitive emissions all around the plant. The development of green belt along the boundary wall, open space and avenue roads shall be provided in consultation with the local DFO as per the CPCB guidelines.	Sufficient Green belt maintained in and around the plant to mitigate the effect of fugitive emissions. Sufficient greenery has been developed on almost 238 acres of land of Grasim Industries Ltd. as per the guidelines from DFO and grown approx. 1,52,000 Nos. of multiple tree species.
viii.	The project proponent shall comply with the environmental protection measures and safeguards recommended in EIA/EMP/Risk Analysis reports as well as the recommendations of the public hearing panel.	All the environmental protection measures and safeguards recommended in EIA/EMP/Risk analysis reports are complied.



B. GENERAL CONDITIONS:		
Sl. No.	Condition	Status
i.	The project authorities must strictly adhere to the stipulations made by the Karnataka Pollution Control Board (KSPCB) and the State Government.	Adhered to the stipulations made by the Karnataka State Pollution Control Board (KSPCB) and the State Government.
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 adequacy of the conditions imposed and to add additional environmental protection measures required if any.	Noted. Prior approvals from MoEF will be obtained in case of further expansions or modifications have to be done to survive in the market. Accordingly, TOR has been obtained to carryout EIA study for the proposed expansion of "Pulp Plant from , VSF Plant, Sulphuric Acid Plant, Carbon Disulphide plant, and Captive Power Plant along with new Excel Fibre Plant at Village: Kumarapatnam, Taluka: Ranebennuru, District: Haveri, Karnataka. Details are: Pulp from 74400 TPA to 148800 TPA, VSF from 87600 TPA to 175200 TPA, New Excel Fibre of 36500 TPA, Acid Plant from 75110 TPA to 150220 TPA, CS <sub>2</sub> plant from 14365 TPA to 28730 TPA and Sodium, sulfate from 71520 TPA to 143040 TPA. Power plant from 20 MW to 45 MW Public Hearing conducted & final EIA report preparation is in progress:
iii.	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19.05.1993 and standards prescribed from time to time. The State Board may specify more stringent standards for relevant parameters keeping in view nature of the industry and its size and location. At no time, emission levels shall go beyond prescribed standards. Continuous monitoring system shall be installed in stacks to monitor SPM and interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds limit.	Scrubber is provided for acid plant stack gases to control SO <sub>2</sub> . ESPs are provided to power plant boilers to control SPM emissions. For sulphuric acid production double conversion double absorption (DCDA) system is adopted. Sulphur is being recovered from CS <sub>2</sub> plant tail gases through Klaus Kiln process. CS <sub>2</sub> emission is less than 99.0kg/t fibre on continuous basis. The SPM from the stacks are within limits. Continuous monitoring devices are installed on all the stacks and reports are being transmitted to CPCB. Reports are submitted to SPCB.
iv.	At least three ambient air quality monitoring stations shall be established in the downward direction as well as where maximum concentration of SPM, SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the KSPCB. Data on ambient air quality and stack emissions shall be regularly submitted to this Ministry including its Regional Office at Bangalore/KSPCB and CPCB once in six months.	Industry had already set up 3 ambient air quality monitoring stations in consultation with the KSPCB. CS <sub>2</sub> and H <sub>2</sub> S being monitored as per the AAQM Guidelines. Industry has conducted AAQM analysis in Kavalettu village once in a month. The monitored values are well below the prescribed standards at all times. Continuous online AAQM devices are installed at three locations and data connected to CPCB.



Sl. No.	Condition	Status
v.	Fugitive emissions in the work zone environment shall be periodically monitored with instruments of proper range and emissions shall conform to the standards prescribed by the KSPCB. Action shall be taken to reduce fugitive emissions in the work zone environment as far as possible. Dust collectors shall be provided at transfer points to control fugitive emissions	<ol style="list-style-type: none"> <li>1. Fugitive emission in the work zone environment monitored and the values are well within the prescribed standards.</li> <li>2. Shutters are provided for machines to minimize the CS<sub>2</sub> in the work environment.</li> <li>3. Fugitive emission is from Spinning Machine when the cellulose is regenerated from viscose. CS<sub>2</sub> concentration in the working area is less than TLV of 10 ppm.</li> <li>4. Coal dust controlled by proper effluent spraying arrangement.</li> </ol>
vi.	Adequate number of influent and effluent quality monitoring stations should be set up in consultation with the KSPCB. Regular monitoring shall be carried out for relevant parameters.	<ol style="list-style-type: none"> <li>1. Adequate monitoring stations provided to monitor the influent and effluent quality.</li> <li>2. Treated effluent quality being monitored on daily basis for relevant parameters.</li> <li>3. The KSPCB has given permission for discharging the treated effluent after mixing with the sewage from the plant. Discharge of effluent is less than 15120 m<sup>3</sup>/d. The combined effluent is meeting the stipulated standards.</li> </ol>
vii.	Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended from time to time. The treated wastewater shall be discharged into river only after meeting the standards prescribed by the KSPCB or under E(P)A, whichever are more stringent.	<ol style="list-style-type: none"> <li>1. Effluent Treatment based on primary treatment for clarification and neutralization followed by secondary treatment designed on the principle of extended aeration activated sludge process is in operation.</li> <li>2. The combined treated effluents meet stipulated standards prescribed by KSPCB.</li> <li>3. Additional equipment is installed in the existing ETP for treating the waste water generated from expanded capacity.</li> </ol>
viii.	The project authorities must strictly comply with the rules and regulations under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000. Prior approvals of Chief Inspector of Factories, Chief Inspector of Explosives, Fire Safety Inspectorate etc. must be obtained.	<ol style="list-style-type: none"> <li>1. Industry is complying with the rules and regulations under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000.</li> <li>2. Approvals from Chief Inspector of Factories, Chief Inspector of Explosives, Fire &amp; Safety Inspectorate etc. are obtained.</li> </ol>
ix.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2000. Authorisation from the KSPCB must be obtained for collection, storage, treatment and disposal of hazardous wastes.	Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 being complied. The hazardous waste generated is used oil. Maximum quantity generated is 4.0 KL/year, which is sold out to authorised recycler.



Sl. No.	Condition	Status
x.	The overall noise levels in and around the plant area shall be kept within the standards (85 dBA) by providing noise measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (P) Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	The noise level in and around the plant is monitored & is within the standards 1. Efficient equipments having low noise level are installed. 2. Silencers and enclosures are provided for noise generating sources. 3. Equipments are subjected to Non-Destructive Testing. 4. The ambient noise levels are monitored and the values are well within the prescribed standards. Reports submitted to SPCB every month. Latest ambient noise level monitoring report enclosed.
xi.	Rainwater shall be harvested to conserve the fresh water and recharge the ground water and an action plan shall be submitted to the Ministry.	Facility available to collect & use rain water from about 2,50,000 m <sup>2</sup> area.
xii.	All the measures regarding occupational health surveillance of the workers shall be undertaken and regular medical examination of all the employees be ensured as per the Factories Act and records maintained, specifically for those who engaged in handling hazardous substances. First aid facilities in the Occupational Health Care Center shall be strengthened and medical records of each employee shall be maintained separately.	Industry is carrying out general medical examination of all employees and also special tests like lung function test, Spirometry test, hearing capacity test etc. for specific employees as per the requirement and working area. Specialists such as Cardiologist, Ophthalmologist, and Orthopedic Surgeons are visiting our Medical centre minimum once in a month as Consultants and this facility is extended to all employees and their family members.
xiii.	A separate Environment Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	EMC is established and is taking care of environmental management system implementation, treatment plant operations & maintenance, air & effluent analysis, environmental record management, ensuring the adherence to environmental legal requirements, audits etc.
xiv.	All the recommendations of the Charter on the Corporate Responsibility for the Environmental protection (CREP) for the fibre plants shall be implemented.	Noted but Fibre plant does not fall under CREP.
xv.	The company must undertake socio-economic development activities in the surrounding villages like community development programs, educational programs, drinking water supply and health care etc. for the overall improvement of the environment.	Socio-economic developmental activities are being carried out by the Industry under Group's CSR policy. CSR activities are carried out under 5 major headings i.e. Women Empowerment, Health Care, Education, Sustainable Livelihood, Infrastructure Development & Social Welfare.



Sl. No.	Condition	Status
xvi	As proposed in EIA/EMP, Rs. 45.00 Crores and Rs. 4.50 Crores earmarked towards capital cost and recurring cost/annum for pollution control measures shall be used exclusively to implement the conditions stipulated by the Ministry of Environment & Forests as well as the State Government. A time bound implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Ministry's Regional Office at Bangalore. The funds shall not be diverted for any other purposes.	Ref PART - I Sl. No. 6 (b)
xvii	The regional Office of this Ministry at Bangalore/CPCB/KSPCB shall monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to the regularly	Report submitted & being complied
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 KSPCB/Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local news papers that are widely circulated in the region of which one shall be in the vernacular language of the locally concerned and a copy of the same should be forwarded to the Regional office at Bangalore.	The Industry had advertised in two local news papers (One in English and one in vernaculars) regarding the accordance of Environmental Clearance by the MoEF. The advertisement appeared in "Deccan Herald", English paper dated 15.11.2007 & "Prajavani" Kannada paper dated 14.11.2007.
xix.	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 commencing the land development work.	Not applicable. The expansion activities carried out within the existing plant premises with internal funds.
<b>3.0</b>	<b>Compliance to the conditions stipulated in J-11011/371/2006-IA.II(I) 30/12/2013</b>	
i.	Zinc bearing effluent shall be segregated from the industrial effluent & treated in ETP. Treated effluent shall conform to the standards prescribed for the effluent discharge. Necessary permission may be obtained from the KSPCB	Zinc bearing effluent is taken into primary clarifier for neutralization with lime. Underflow i.e. gypsum is dewatered & dried using filter press. Treated effluent conforms to the prescribed standards. Necessary permission has been obtained from the KSPCB.
ii.	Treated effluent shall be passed through guard pond. Online continuous monitoring system viz. pH meter, TOC analyser and flow meter as well as monitoring facility for relevant pollutants (i.e. Zinc) shall be installed to monitor the treated water quality.	Treated effluent is passed through guard pond. Online continuous monitoring system for pH, BOD, COD, TSS, Temperature & flow is installed. TOC analyser is also installed.
iii.	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Separate drain has been provided for storm water & arrangements made for storm water to pass through guard pond.

- C. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

Implementation is satisfactory.

- D. The Ministry reserved the right to stipulate additional conditions if found necessary. The company will implement these conditions.

No additional conditions were implemented.

- E. The above conditions will be enforced, inter-alia other provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environmental (Protection) Act, 1986 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.

Agreed to comply with all the conditions.



GRASIM INDUSTRIES LIMITED : KUMARAPATNAM  
GRASILENE DIVISION

Water Consumption & Treated Effluent Discharged  
from Grasilene Division from Oct'17 to Mar'18

Month	Water Consumed, m <sup>3</sup> /d	Effluent Discharged, m <sup>3</sup> /d
Oct-17	15985	12044
Nov-17	16261	12086
Dec-17	15819	11822
Jan-18	13952	10684
Feb-18	14012	10183
Mar-18	15127	10547

\* Part of effluent generated used for greenery development & gardening within factory premises

**GRASIM INDUSTRIES LIMITED : KUMARAPATNAM**

**Analysis of Combined Treated Effluent from Harihar Polyfibers & Grasilene Division from 01.10.2017 to 31.03.2018**

Sl. No.	Parameters	Units	KSPCB Limits	Oct'17	Nov'17	Dec'17	Jan'18	Feb'18	Mar'18
1	Colour & Odour	-	*	All efforts should be made to remove colour & unpleasant odour as far as practicable					
2	Total Suspended Solids	mg/l	Max 100	82	85	84	85	75	69
3	Total dissolved Solids (Inorganic)	"	Max 2100	1864	1774	1808	1785	1787	1789
4	Temperature	deg. C	**	32.2	31.9	32.0	31.5	31.7	31.9
5	pH	-	6 to 8.5	7.8	7.6	7.6	7.4	7.3	7.6
6	Oils & Grease	mg/l	Max 10	0.53	0.67	1.00	1.26	1.24	1.29
7	Residual Chlorine	"	Max 1.0	ND	ND	ND	0.38	0.35	0.42
8	Ammonical Nitrogen (as N)	"	Max 50	1.81	1.77	1.96	1.98	1.89	1.98
9	Total Kjeldal Nitrogen (as N)	"	Max 100	2.07	2.18	2.24	2.33	2.21	2.26
10	Free Ammonia (as NH <sub>3</sub> )	"	Max 5.0	1.7	1.7	1.9	0.8	0.7	0.6
11	BOD <sub>3</sub> at 27 °C	"	Max 30	22	23	22	22	23	22
12	COD	"	Max 250	201	200	196	197	189	180
13	Arsenic (as As)	"	Max 0.2	ND	ND	ND	ND	ND	ND
14	Mercury (as Hg)	"	Max 0.01	ND	ND	ND	ND	ND	ND
15	Hexavalent Chromium (as Cr+6)	"	Max 0.1	ND	ND	ND	ND	ND	ND
16	Total Chromium (as Cr)	"	Max 2.0	ND	ND	ND	ND	ND	ND
17	Boron (as B)	"	Max 2.0	ND	ND	ND	ND	ND	ND
18	Chloride (as Cl)	"	Max 1000	277	277	297	331	363	420
19	Flouride (as F)	"	Max 2.0	ND	ND	ND	ND	ND	ND
20	Dissolved Phosphates (as P)	"	Max 5.0	0.48	0.50	0.80	0.45	0.44	0.44
21	Sulphate (as SO <sub>4</sub> )	"	Max 1000	774	776	872	759	716	737
22	Sulphide (as S)	"	Max 2.0	0.56	0.42	1.20	1.07	1.15	1.16
23	Phenols (as C <sub>6</sub> H <sub>5</sub> OH)	"	Max 1.0	ND	ND	ND	ND	ND	ND
24	Bioassay as per IS 6582 - 1971	% Survival	#	100	100	100	100	100	100
25	Zinc (Zn)	mg/l	Max. 1.0	ND	ND	ND	ND	ND	ND

(\*) All efforts should be made to remove colour & unpleasant odour as far as practicable

(\*\*) Shall not exceed 5°C above the receiving water temperature

(#) Not less than 90% of test animal shall survive in 96 hours.

ND Not Detectable



GRASIM INDUSTRIES LIMITED : KUMARAPATNAM

Ambient Air Quality Monitoring Results for the Period Oct'17 - Mar'18

Month	Location																							
	Intake Well						Sangam Guest House						New ETP Laboratory						Kavaletthu Village					
	PM - 10 (µg/m3)	PM - 2.5 (µg/m3)	H2S (µg/m3)	CS2 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	PM - 10 (µg/m3)	PM - 2.5 (µg/m3)	H2S (µg/m3)	CS2 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	PM - 10 (µg/m3)	PM - 2.5 (µg/m3)	H2S (µg/m3)	CS2 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	PM - 10 (µg/m3)	PM - 2.5 (µg/m3)	H2S (µg/m3)	CS2 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)
Oct-17	26	21	BDL	BDL	BDL	BDL	23	19	BDL	BDL	BDL	BDL	27	22	BDL	BDL	BDL	BDL	28	20	BDL	BDL	BDL	BDL
Nov-17	25	19	BDL	BDL	BDL	BDL	27	22	BDL	BDL	BDL	BDL	26	19	BDL	BDL	BDL	BDL	30	23	BDL	BDL	BDL	BDL
Dec-17	24	19	BDL	BDL	BDL	BDL	26	22	BDL	BDL	BDL	BDL	25	21	BDL	BDL	BDL	BDL	36	27	BDL	BDL	BDL	BDL
Jan-18	24	19	BDL	BDL	BDL	BDL	26	20	BDL	BDL	BDL	BDL	26	20	BDL	BDL	BDL	BDL	26	19	BDL	BDL	BDL	BDL
Feb-18	31	24	BDL	BDL	BDL	BDL	28	23	BDL	BDL	BDL	BDL	34	26	BDL	BDL	BDL	BDL	32	25	BDL	BDL	BDL	BDL
Mar-18	31	24	BDL	BDL	BDL	BDL	27	20	BDL	BDL	BDL	BDL	28	22	BDL	BDL	BDL	BDL	40	30	BDL	BDL	BDL	BDL
AAM*	27	21					26	21					28	22					32	24				

BDL - Below Detection Limit

Online AAQM stations installed at three locations and data connected to CPCB & KSPCB websites

AAQM is also done monthly once in Kavaletthu village i.e. behind guest house (Max GLC point). The values are more or less same

Location	Ambient Noise Level - dB (A) at different locations											
	Month											
	Oct-17		Nov-17		Dec-17		Jan-18		Feb-18		Mar-18	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Guest House	56	47	58	46	59	47	55	45	57	46	55	45
SBM Building	67	46	65	45	63	44	62	43	63	42	64	43
Intake well	59	47	57	46	58	45	59	47	60	48	62	49
ETP Lab	63	50	61	51	63	50	62	51	61	50	60	52
Airstrip	56	43	54	41	55	43	53	41	54	42	52	41

**GRASIM INDUSTRIES LIMITED : KUMARAPATNAM  
GRASILENE DIVISION**

Stack Emission Report for the Period - 01.10.2017 - 31.03.2018																			
Analysis Report																			
Chimney attached to	Spinning Plant (Main Stack) -																		
Number of the stack (as in CFO)	One																		
Source of Emission	Spinning Process																		
Height of the stack - m AGL	175																		
Stack cross section area (m <sup>2</sup> )	CS2 recovery system & Chimney height as Consent Order																		
Air pollution equipment installed	CS2 recovery system & Chimney height as Consent Order																		
Sl.No	Parameters	Units	Limits	Apr-17	May-17	Jun-16	Jul-17	Aug-16	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg			
1	Date of sampling			3rd & 17th	2nd & 16th	2nd & 16th	3rd & 17th	2nd & 17th	4th & 18th	9th & 23rd	4th & 18th	3rd & 16th	4th & 25th	4th & 25th	3rd & 21st				
2	Rate of Emission	Nm <sup>3</sup> /hr	375000	280265	273835	269045	272445	312565	315450	310832	312413	314893	311320	314700	311565	313119			
3	Particulate Matter	mg/Nm <sup>3</sup>	150	18.0	20.0	22.0	20.0	18.5	21.0	21	22.0	20	21	23	23	22			
4	CS2	kg/t	*	96.95	96.00	96.35	95.50	94.20	92.95	92.90	96.00	95.95	96	95.05	94.9	95			

Chimney attached to	Sulphuric Acid Plant																		
Number of the stack (as in CFO)	Two																		
Source of Emission	Sulphuric Acid Production																		
Height of the stack - m AGL	51																		
Stack cross section area (m <sup>2</sup> )	0.196																		
Air pollution equipment installed	Alkali Scrubber & Demister																		
Sl.No	Parameters	Units	Limits	Apr-17	May-17	Jun-16	Jul-17	Aug-16	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg			
1	Date of sampling			4th & 18th	3rd & 17th	3rd & 17th	4th & 18th	3rd & 21st	6th & 23rd	10th & 24th	6th & 9th	4th & 17th	6th & 23rd	6th & 22nd	5th & 22nd				
2	Rate of Emission	Nm <sup>3</sup> /hr	16400	14949	14865	14960	14853	15383	15438	16372	15995	15750	15103	15029	15130	15253			
3	Sulphur Dioxide (SO <sub>2</sub> )	kg/t of 100% acid	1.0	0.21	0.24	0.30	0.25	0.30	0.30	0.29	0.25	0.205	0.375	0.43	0.48	0			
4	H2SO4 mist	mg/Nm <sup>3</sup>	50	20.0	21.0	29.5	26.0	27.0	26.5	24.5	21.0	20.5	23	20.5	22	22			

Chimney attached to	CS2 Plant																		
Number of the stack (as in CFO)	Three																		
Source of Emission	CS2 manufacturing Process																		
Height of the stack - m AGL	31																		
Stack cross section area (m <sup>2</sup> )	0.196																		
Air pollution equipment installed	Klaus Kiln Sulphur Recovery System for recovery of sulphur from CS2 plant tail gases, alkali scrubber																		
Sl.No	Parameters	Units	Limits	Apr-17	May-17	Jun-16	Jul-17	Aug-16	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg			
1	Date of sampling			5th & 19th	4th & 18th	6th & 19th	5th & 19th	4th & 22nd	5th & 21st		5th & 21st	5th & 17th	5th & 27th	7th & 26th	7th & 23rd				
2	Rate of Emission	Nm <sup>3</sup> /hr	7300	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil			
3	CS2	kg/t	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

Klaus Kiln for Sulphur recovery from CS2 Plant tail gases

Chimney attached to	Power Plant Boilers																		
Number of the stack (as in CFO)	Four																		
Source of Emission	Coal fed Boilers																		
Height of the stack - m AGL	110																		
Stack cross section area (m <sup>2</sup> )	14.2864 at sampling Point																		
Air pollution equipment installed	Electro Static Precipitators (ESP)																		
Sl.No	Parameters	Units	Limits	Apr-17	May-17	Jun-16	Jul-17	Aug-16	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg			
1	Date of sampling			6th & 20th	5th & 19th	7th & 20th	6th & 20th	5th & 23rd	8th & 23rd	12th & 26th	8th & 23rd	10th & 31st	8th & 26th	8th & 27th	8th & 24th				
2	Emission rate	Nm <sup>3</sup> /hr	366000	308668	307624	310483	296683	318975	318924	315902	323145	321102	305443	313820	305832	311549			
3	Particulate Matter	mg/Nm <sup>3</sup>	150	77	65	66	70	77	77	76	68	63.0	65	64	60.5	63			

Chimney attached to	Viscose Section																		
Number of the stack (as in CFO)	Five																		
Source of Emission	Viscose Preparation (Intermittent emission)																		
Height of the stack - m AGL	22																		
Stack cross section area (m <sup>2</sup> )	0.018																		
Air pollution equipment installed	Chimney height as per Consent Order																		
Sl.No	Parameters	Units	Limits	Apr-17	May-17	Jun-16	Jul-17	Aug-16	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Avg			
1	Date of sampling			7th & 21st	6th & 20th	8th & 21st	7th & 21st	7th & 24th	7th & 20th	13th & 27th	7th & 20th	7th & 30th	7th & 28th	9th & 28th	9th & 25th				
3	Emission rate	Nm <sup>3</sup> /hr	3780	3060	3070	3076	3065	2973	2928	2962	3024	3162	2997	3103	2999	3065			

\* The emission quantity of CS2 shall be limited to 99 kg/t of fibre produced