

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE BENCH AT CHENNAI**

**Original Application No. 33 of 2023 (SZ)**

Nukatati Rajasekhar & another .... Applicants

-Vs-

Union of India,  
Through its Secretary,  
Ministry of Environment Forest and CC  
& 6 others ... Respondents

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EVENTS – TURPULANKA LAND LEASE**

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Dated at Chennai on this the 28<sup>th</sup> day of November, 2024



Counsel for 7<sup>th</sup> Respondent

O.C



Lr.No : APL/ENV/2024/11-690

Date: 20.11.2024

The Hon'ble District Collector & Magistrate  
East Godavari District,  
Rajamahendaravaram.

**Subject: Andhra Paper Limited, Rajamahendravaram - Turupulanka Island Land Lease –  
Renewal request follow up No. 18 – Reg...**

REF : **As stated hereinafter**

- 1) APIIC Lr.No : PM/KPU/APIIC/101/97,dt.21.02.2014
- 2) Revenue Department Lr.No : Assign-II(2)/990/2008, dt.14.08.2014
- 3) Commissionerate of Industries Lr.No: 29/1/2014/14744,dt.29.11.2014
- 4) APPCB Directions to Andhra Paper Limited under various orders.
- 5) APL letter no: APL/ENV/2023/07-574, dated 29.07.2023.
- 6) **APL letter no: APL/ENV/2023/09-582, dated 16.09.2023.**
- 7) **Meeting with Hon'ble District Collector by Our Executive Director on 26.09.2023**
- 8) APL letter no: APL/ENV/2023/10-589, dated 16.10.2023 Follow Up letter – 2
- 9) APL letter no: APL/ENV/2023/11-596, dated 20.11.2023 Follow Up letter – 3
- 10) APL letter no: APL/ENV/2023/12-604, dated 06.12.2023 Follow Up letter – 4
- 11) APL letter No: APL/ENV/2024/01-614, dated 02.01.2024 Follow Up letter - 5
- 12) APL letter dated 02.01.2023 addressed to MRO regarding land survey initiatives
- 13) APL letter No: APL/ENV/2024/01-617, dated 11.01.2024 Follow Up letter – 6
- 14) APL letter No: APL/ENV/2024/01-623, dated 23.01.2024 Follow Up letter - 7
- 15) APL letter No: APL/ENV/2024/02-624, dated 03.02.2024 Follow Up letter - 8
- 16) APL letter No: APL/ENV/2024/02-629, dated 19.02.2024 Follow Up letter – 9
- 17) APL letter No: APL/ENV/2024/03-630, dated 07.03.2024 Follow Up letter – 10
- 18) APPCB Direction order:617/APPCB/HO/ECS/KKD/2019, dt.15.03.2024 under point no: 1
- 19) APL letter No: APL/ENV/2024/03-631, dated 22.03.2024 Follow Up letter – 11
- 20) APL letter No: APL/ENV/2024/05-652, dated 23.05.2024 Follow Up letter – 12
- 21) APL letter No: APL/ENV/2024/06-656, dated 24.06.2024 Follow Up letter – 13
- 22) APL Letter No: APL/ENV/2024/06-656, dated 23.07.2024 Follow Up letter –14
- 23) APL Letter No: APL/ENV/2024/08-670, dated 23.08.2024 Follow Up letter - 15
- 24) **District Collector's letter Ref. no : Lands-2/466334/2023,dt.06/09/2024 for conveying Meeting with all stake holders – Further directions to submit report from all stake holder departments.**
- 25) APL letter.No : APL/ENV/2024/09-681, dated 27.09.2024 Follow Up letter – 16
- 26) **Turupulanka Land Survey by Thasidahar from 17<sup>th</sup> to 19<sup>th</sup> October, 2024.**
- 27) **APL letter No : APL/ENV/2024/10-685 , dated 30.10.2024 Follow Up letter – 17**

## ANDHRA PAPER LIMITED

(Corporate Identity Number: L21010AP1964PLC001008)

Regd. Office: Rajamahendravaram – 533 105, East Godavari District, India. Tel: +91-883-2471831

Corp. Office: 31, Chowringhee Road, Park

Street, Kolkata – 700 016, India. Tel: +91-33-71500500

Website: [www.andhraper.com](http://www.andhraper.com); Email: [info@andhraper.com](mailto:info@andhraper.com)

An ISO 9001:2015, ISO 14001: 2015, ISO 45001: 2018 and FSC® Certified Company

(FSC® - C084811, FSC® - C119477 & FSC® - C112308)



## Respected Madam

Your kind attention is invited to the references cited above.

In continuation to our office letter no: APL/ENV/2023/07-574 dated 29.07.2023 and further follow-up letters nos. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16 & 17 cited above **and APPCB direction under reference no.18**, once again we would like to bring to your kind notice that:

Earlier, the Government have issued orders vide G.O.Ms.No : 810 Revenue (Assignment.I) Department , dated : 04.08.1992 granted lease in an extent of Ac.612.71 cents situated in Turupulanka sand shoals in the River Godavari vide survey no's 52, 53, 85 and Long strip on the border of Lanka No. 85 and 85.A and 54 to Andhra Paper Limited, Rajamahendravarm for discharge of its treated effluents for a period of 10 years with effect from 01.07.1989 at the rate of Rs.300/- per acre per annum. The said lease rental amount works out to Rs.1,83,813/- per annum for which Andhra Paper is being paid without fail every year and the company is in continuous possession and enjoyment of the said land for its operations since 1969.

**Andhra Paper Limited is being following with Government since 1997** for renewal and approached Government for necessary renewals on long-term basis, as Andhra Paper is an established industry and running successfully. We would like to submit the current status of renewal with the government:

1) **The APLMA has recommended** the proposal to the Government for renewal of lease **from 1999 to till 2009 and for a further period of 33 years** in favour of Andhra Paper as per reference cited no.2

2) **Further Commissioner of Industries also recommended** the proposal to the Industries & Commerce Department for renewal of lease from 1999 to till 2009 and for a further period of 33 years in favour of Andhra Paper as per reference cited no.3 with direction to fix revised lease rentals as per prevailing policies of Government.

3) **Committee headed by Sub- Collector inspected Turupulanka on 28.09.2016** for fixation of lease amount as per directions of the then Hon'ble District Collector.

4) **Subsequently, Turupulanka land survey conducted by Office of The Tahsildar – Rajamahendravarm Urban on 20.03.2023**, as per Hon'ble District Collector directions and we came to understand that, the said report had been submitted to District Collector's office.

5) Your good office is also aware of the matter as our Executive Director brought it to your kind notice several times during personal meetings.

6) On 26.02.2024, APPCB monitoring committee chaired by Member Secretary reviewed the status of Turupulanka Lease and directed to get renewal order before 25th Mar 2024 otherwise

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to stop discharge of effluent in Turpulanka lands, which in turn impacts operation of the industry & will result into closure.

7) Directions from APPCB Member Secretary under cited reference no.18, we need the renewal of our Land Lease agreement (or) if it is not possible immediately, we seek one letter from Hon'ble District Collector's Office stating that, the subject matter is under process. The similar letter was issued to the company by the then Hon'ble Collector earlier in 2016.

**Further we would like to bring to your kind notice that:**

1) We came to know that the revenue department officials having jurisdiction over the said land have started enquiring about the land and began to survey for providing land to weaker sections for the purpose of cultivation under the government initiative.

2) As the land mentioned in the above survey numbers belongs to the company as a continuous leaseholder, please direct concerned department officials to serve notice before conducting the survey so that our company officials will accommodate the revenue department during the survey to clear any ambiguity and to avoid overlap of the Survey numbers or the incorrect allotment of leased land belonging to the Company to weaker sections.

3) In this regard, Andhra Paper request your good office to properly verify the Survey numbers identifying with the land before proceeding with the allotment to weaker sections to rule out any overlapping of Survey numbers.

**A meeting was conducted in the your chambers with Municipal Corporation, Joint Collector, Executive Engineer – Irrigation Head works, AD –Industries, Environmental Engineer – APPCB Regional Office, RDO – Rajahmundry, Tahsildar - Rajahmundry Urban along with Andhra Paper Limited on 11.09.2024 to review Land lease status. Wherein it was directed by you to conduct site inspections by individual departments and to submit reports and comments to this office for taking further course of proceedings for land lease renewal.**

**Tahsidhar and his team conducted Land survey from 17<sup>th</sup> to 19<sup>th</sup> October, 2024. After following with yours office, we came to know that APPCB, Irrigation, Municipal Corporation and Thasildahr were submitted their reports along with land survey data and it is under processing stage.**

**Your kind intervention and support to obtain Renewal Order of Turupulanka Lease is requested.**

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Thanking you

Yours Sincerely

**Andhra Paper Limited – Unit: Rajahmundry**

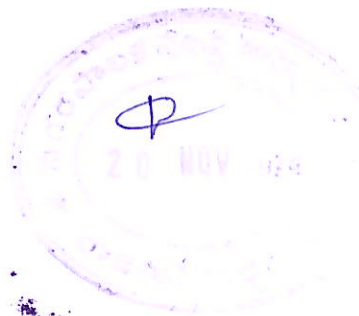


*M. Sura Reddy*  
**M. Sura Reddy**  
**Sr. Vice President (Operations) & Factory Manager**

- CC:
1. Member Secretary – APPCB, Board Office – For Kind Information
  2. Environmental Engineer – APPCB, Regional – For information
  3. The Principal Secretary - Commerce & Industries
  4. The Commissioner of Industries
  5. The Chief Commissioner of Land Administration
  6. CMO Office.
  7. RDO – Rajamahendravaram
  8. MRO - Rajamahendravaram Urban
  9. Commissioner - Rajamahendravaram Municipal Corporation.



11:57 AM



*Received copy*

Received One Closed Cover  
 Time.....  
*12-34 PM*  
*Sub-Collector*  
**Sub-Collector**  
**RAJAHMUNDRY.**

*KUTJAY*  
*20/11/2024*  
**TASILDAR'S OFFICE**  
**RAJAMAHENDRAVARAM URBAN**

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Ref.No. Lands-2/466334/2023, dt.06/09/2024

East Godavari Collectorate  
Rajamahendravaram.

From Smt. P. Prasanthi, I.A.S., Collector & District Magistrate, East Godavari, Rajamahendravaram.	To 1. The Municipal Commissioner, Rajamahendravaram 2. The Joint Collector, East Godavari. 3. The Municipal Commissioner, Municipal Corporation, Rajamahendravaram. 4. The Executive Engineer, Irrigation, Godavari Head Works, Dowlaiswaram. 5. The AD, Industries, E.G. 6. The Executive Engineer, Pollution Control Boards, East Godavari. 7. The Revenue Divisional Officer, Rajamahendravaram. 8. The Tahsildar, Rajamahendravaram Urban.
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Sir/Madam,

Sub:- Lanka Lands - East Godavari District - Rajamahendravaram Division - Rajamahendravaram Urban Mandal - Turpu Lanka sand shoals - Renewal of Lease of land measuring an extent of Ac. 612.71cts in lankas in favour of M/s Andhra Paper Mill Limited, Rajamahendravaram w.e.f 01-07-1999 - Meeting proposed - Regarding.

Ref:- Lr. No. APL/ENV/ 2023/07-574, dt.29-07-2023, etc of the Andhra Paper Mill Limited, Rajamahendravaram.

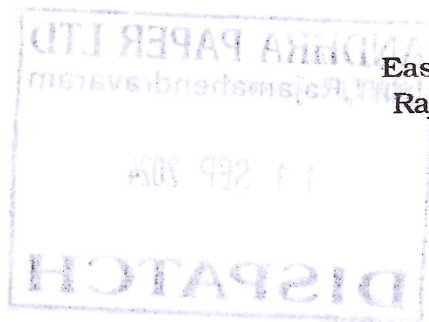
\*\*\*\*

I invite attention to the reference cited wherein Sr. Vice President (Operations) & Factory Manager, APPM Unit, Rajamahendravaram is requesting for renewal of lease of Turpulanka for an extent of Ac.612.71cts.

In this connection, a meeting is proposed by the District Collector, East Godavari on 11-09-2024 (Wednesday) at about 3 P.M at Collectorate, East Godavari, Bommuru.

In view of the above, you are requested to attend the said meeting without fail with all relevant documentary evidences and report. A copy of the reference cited is herewith enclosed for ready reference.  
Encls. As above.

Yours faithfully,  
For Collector,  
East Godavari District,  
Rajamahendravaram.



Digitally Signed by G.  
Narasimhulu  
Date: 06-09-2024 20:45:30  
Reason: Approved

**Purchase Order**

		<b>PO Number</b>	<b>PO Date</b>
		13810875	11 OCT 2024
<b>Supplier</b>		<b>Ship-To and Bill-To Address</b>	
<p><b>Vendor Code: 200200168</b>                  ENDRESS+HAUSER PVT LTD GSTN 27AAACE5283C1ZV                  7B 7TH FLOOR GODREJ ONE, PIROJSHANAGAR VIKHROLI EAST                  MUMBAI - 400079                  India</p> <p><b>Attn: MR. RAJESH Phone: 9959021030</b>  <b>E-mail: hemal.desai@in.endress.com</b></p>		ANDHRA PAPER LIMITED Rajamahendravaram Mill Sriram Nagar Rajamahendravaram East Godavari 533105 India	

<b>Instructions</b>	<b>Buyer Contact Details</b>
All other terms & conditions as per our Company's Standard Terms & Conditions of Purchase. Necessary Test report and Dimension report to accompany where applicable. 'Original for Buyer' and 'Duplicate for Transporter' Invoice should accompany goods.	<p><b>Buyer:</b> Srikanth Patnala  <b>Tel:</b> 9441808598  <b>Fax:</b> 0883-2562946  <b>E-mail:</b> srikanth.patnala@andhrpaper.com</p>

<b>Supplier Reference</b>	<b>Agreement Reference</b>	
REF: Revised Quote 2009434345 R2 Mail. Dtd 07.10.24		
<b>Mode of Dispatch</b>	<b>Freight</b>	<b>Shipment terms</b>
Through any suitable mode	Paid Basis.	DAP Our Mills
<b>Payment terms</b>	<b>Insurance</b>	
Net 7 days	TO YOUR ACCOUNT	

Item	Item Description	Quantity	UoM	Unit Price (INR)	Total Value	Delivery Date
1	88308598 TRANSMITTER, MAG FLOW 6IN 5WBB1F-AAHAEBK -P2DQA12GAA1+Z1 ENDRESS+HAUSER 230VAC 150CL Make: E+H,5WBB1F-PQ59/0 5WBB1F- AAHAEBKP2DQA12GAA1+AAI7PCZ1 Promag W 10, 5WBB1F, DN150 6" IN: Integrated GST Ship to address: Rajamahendravaram Mill Sriram Nagar Rajamahendravaram East Godavari 533105 India	1.000	EA	131638.00	131638.00	20 DEC 2024
			%	18	23694.84	
2	88308599 TRANSMITTER, MAG FLOW 4IN 5WBB1H-AAHAEBK -P2DQA12GAA1+Z1 ENDRESS+HAUSER 230VAC 150CL	2.000	EA	116894.00	233788.00	20 DEC 2024

**Registered Office:**  
**ANDHRA PAPER LIMITED**  
**Sriram Nagar - Rajamahendravaram**  
**East Godavari District**  
**Andhra Pradesh, India.**  
**www.andhrpaper.com**

**Purchase Order ( Continued )**

	<b>PO Number</b>	<b>PO Date</b>
	13810875	11 OCT 2024
<b>Instructions</b>		<b>Buyer Contact Details</b>
All other terms & conditions as per our Company's Standard Terms & Conditions of Purchase. Necessary Test report and Dimension report to accompany where applicable. 'Original for Buyer' and 'Duplicate for Transporter' Invoice should accompany goods.		<b>Buyer:</b> Srikanth Patnala <b>Tel:</b> 9441808598 <b>Fax:</b> 0883-2562946 <b>E-mail:</b> srikanth.patnala@andhrapaper.com

Item	Item Description	Quantity	UoM	Unit Price (INR)	Total Value	Delivery Date
	Make: E+H, 5WBB1H- AAHAEBKP2DQA12GAA1+AAI7PCZ1 Promag W 10, 5WBB1H, DN100 4"					
	IN: Integrated GST		%	18	42081.84	
	Ship to address: Rajamahendravaram Mill Sriram Nagar Rajamahendravaram East Godavari 533105 India					
	Total Basic			INR	365426.00	
	Total P&F			INR	0.00	
	Total Tax			INR	65776.68	
	Grand Total			INR	431202.68	

**GSTIN:**37AAACT8849D1Z3

**Range:** RANGE V

**Division:** RAJAMAHENDRAVARAM

**Commissionerate:** VISAKHAPATNAM II

REF: Revised Quote 2009434345 R2 Mail, Dtd 07.10.24

P & F: Included

FREIGHT: FOR, Site

DELIVERY TIME: 8-10 weeks

INCO TERMS: FOR, Plant

PAYMENT TERMS: 7 days Credit

Warranty: 12 months from the date of installation or 18 months from the date of supply, whichever is earlier.

LD: (0.5% Per Weeks Maximum 5% Of basic Value) after crossing 02 weeks(grace period) of scheduled delivery date.

All Original Documents Should be sent along with material only or to

**Registered Office:**

**ANDHRA PAPER LIMITED**

**Sriram Nagar - Rajamahendravaram**

**East Godavari District**

**Andhra Pradesh, India.**

**www.andhrapaper.com**

**Purchase Order ( Continued )**

Instructions		PO Number	PO Date
All other terms & conditions as per our Company's Standard Terms & Conditions of Purchase. Necessary Test report and Dimension report to accompany where applicable. 'Original for Buyer' and 'Duplicate for Transporter' Invoice should accompany goods.		13810875	11 OCT 2024
		Buyer Contact Details	
		<b>Buyer:</b> Srikanth Patnala <b>Tel:</b> 9441808598 <b>Fax:</b> 0883-2562946 <b>E-mail:</b> srikanth.patnala@andhrapaper.com	

below address:

To,  
Mr. Ravi Chandra  
Stores Department  
Andhra Paper Limited  
Unit- Rajahmundry  
Sriram Nagar - East Godavari - 533105, Andhra Pradesh  
Contact No: 0883 256 2921

Other Terms:

=====

1. Material must be supplied as per drawing only, if not, material will get rejected. This is applicable where drawing is provided from our side or prior approval of a particular drawing has taken from us. In case of any discrepancy in material code or between material code and drawing the onus is on vendor to get clarifications from their end from APL.
2. Delivery date mentioned in PO is inclusive of 2 weeks of transit time, so please adhere on it. Material to be replaced free of cost if damaged in transit.
3. GST: It is the statutory obligation of the vendor to file the Goods and Services Tax returns properly in the manner prescribed and pay taxes so that APL will get the Input Tax Credit (ITC) of the taxes paid to the Vendor. In case ITC is denied to APL on account of non-filing of Returns, non-payment of taxes or any other misdemeanour attributable to the vendor the amount of ITC
4. APL has to be informed net 7 days before readiness of material. Vendor is liable to provide net weight and dimensions of the consignment along with packing details. Please note that we keep a liability in our system for transport charges which cannot be exceeded. Please note that we prefer the following list of transporters / courier services # Associated Road Carriers. If the consignment amount is less than INR 5000 then only can the following be approached à government speed post (ONLY FOR INVOICES), Kesineni Cargo, Sindhu Cargo, Sri Kaleswari Parcel, SRMT (Sri Ramdas Motor Transport), VRL Logistics. Please note that if one chooses transport of their choice without our approval then demurrages resulting from transport will be in the vendor's scope. Please note that L.R./ dispatch details/ tracking no. has to be shared with us the very day the dispatch is made.
5. Please send 2 Original Bills + 2 Duplicate Bills along with material to avoid delay in making your payment. Correct PO NO and HSN code must be mentioned in your Invoice.

**Registered Office:**

**ANDHRA PAPER LIMITED**  
**Sriram Nagar - Rajamahendravaram**  
**East Godavari District**  
**Andhra Pradesh, India.**  
**www.andhrapaper.com**

**Purchase Order ( Continued )**

Instructions		PO Number	PO Date
All other terms & conditions as per our Company's Standard Terms & Conditions of Purchase. Necessary Test report and Dimension report to accompany where applicable. 'Original for Buyer' and 'Duplicate for Transporter' Invoice should accompany goods.		13810875	11 OCT 2024
Buyer Contact Details		<b>Buyer:</b> Srikanth Patnala <b>Tel:</b> 9441808598 <b>Fax:</b> 0883-2562946 <b>E-mail:</b> srikanth.patnala@andhrapaper.com	

6. After dispatch of material please share with us LR and Tax Invoice scan copy to collect material without any delay from transport.

7. Do not combine 2 Plants material in single LR, please mention Plant name in L.R. copy for easy collection from Transport.

-----  
This is a computer generated form and does not require any authorization.

IMS Format No: P&F/APL/F/006, Rev. No.01, Dt. 05.01.2021

=====

**TERMS AND CONDITIONS OF PURCHASE****1. Acceptance**

Acknowledgment or shipment of any part of this Order, or performance of the work called for by this Order, shall be deemed an acceptance of this Order and agreement by Seller to be bound by and comply with all terms and conditions set forth or referenced herein and on the face hereof and on attachments hereto. This Order does not constitute an acceptance by Purchaser of any offer to sell, any quotation, or any proposal. Reference in this Order to any such offer to sell, quotation, or any proposal shall in no way constitute a modification of any of the terms and conditions of this Order. This Order constitutes an offer by Purchaser, the acceptance of which shall be expressly limited to the terms and conditions stated herein. AN ATTEMPTED ACKNOWLEDGEMENT OF THIS ORDER CONTAINING TERMS AND CONDITIONS INCONSISTENT WITH OR IN ADDITION TO THE TERMS AND CONDITIONS OF THIS ORDER IS NOT BINDING UPON PURCHASER UNLESS SPECIFICALLY ACCEPTED BY PURCHASER IN WRITING. In the event of a conflict between these Purchase Order Conditions and the terms of any supply or services agreement between Purchaser and Seller governing the same subject matter hereunder, the terms of that supply or services agreement shall supersede these Purchase Order Conditions. Stenographic and clerical errors and omissions by the Purchaser are subject to correction.

**2. Price**

If Seller's price or the regular market price of the items covered hereunder is lower than the price stated in this Order on the date of shipment of the item, Seller agrees to give Purchaser the benefit of such lower price on any such item. No charges for transportation, boxing, crating, etc., are allowable unless Purchaser has previously approved.

**3. Default and Delays in Shipment**

Time and rate of delivery are of the essence in the performance of this Order, except in instances of delay which are due to causes beyond the reasonable control and without the fault or negligence of Seller and its Sellers. Purchaser may by written notice of default to Seller (a) terminate the whole or any part of this Order in any one of the following circumstances: (i) if Seller fails to make shipment of items or fails to perform the work within the time specified herein or any extension thereof; or (ii) if Seller fails to comply with the other terms and conditions of this Order; and (b) procure upon such terms as Purchaser shall deem appropriate, items or services similar to those so terminated, in which case Seller shall continue performance of this Order to the extent not terminated and shall be liable to Purchaser for any excess costs for such similar items or services and any expenses incurred in connection therewith. Seller shall indemnify and hold harmless Purchaser for all costs, expenses and damages, whether direct, indirect, incidental or consequential, arising from Seller's default.

**4. Force Majeure**

Neither party shall be held responsible for any delay or failure in performance of any part of this Agreement resulting from any Act of God, fire, flood, explosion, war, strike, embargo, government requirement, civil or military authority, nature or the public enemy or any other causes not foreseeable or beyond the control of the party whose performance must be suspended or excused, provided that such delay or failure in performance could not have been prevented by reasonable precautions, and such non-performing or delayed party gives the other party prompt written notice of the Force Majeure. Events such as delays in transportation, inability to obtain goods or materials, or other forms of supply disruption shall not constitute Force Majeure and shall not be an excuse to performance. In the event of Force Majeure, the non-performing party shall use its best efforts to recommence performance whenever and to whatever extent possible without delay, including through the use of alternate sources, workaround plans or other means. If a Force Majeure Event or other similar extraordinary event causes Seller to allocate limited resources between or among Seller's customers, Seller shall not provide to any other customers of Seller priority over Purchaser. If Seller's delay or nonperformance continues for a period of at least thirty (30) days, Purchaser may terminate, at no charge, this Order.

**5. Inspection**

All items and services (collectively "work") shall be received subject to Purchaser's inspection. Items that are defective in workmanship or material or otherwise not in conformity with the requirements of the Order, including any applicable drawings, specifications, samples and other descriptions provided to Seller, may be rejected and returned at Seller's expense or may be accepted at an appropriate reduction in price. Purchaser, in addition to such other rights, remedies and choices it may have by contract or by law, at its option and sole discretion, may require Seller to promptly replace, repair, or credit Purchaser for rejected items and, if Seller fails to promptly replace or repair, Purchaser may replace the items elsewhere and charge to Seller the additional cost. Seller shall indemnify and hold harmless Purchaser for all costs, expenses and damages, whether direct, indirect or consequential, arising from Seller's failure to provide conforming items. Purchaser shall have the right to evaluate the work furnished pursuant to this Order for compliance

with the applicable drawings, specifications, samples and other descriptions that are given Seller in connection with this Order by Purchaser. Seller shall provide Purchaser and its customer(s) with free access to the work performed under this Order, for the purpose of inspection thereof. At any time during the progress of the work, Purchaser may reject any or all of the work if the same are not in accord with Seller's such non-compliance. Seller agrees to correct, at its expense, each error or defect leading to such rejection and resubmit the corrected work to Purchaser within seven (7) business days, or other mutually agreed upon date, after receipt of notice from Purchaser of such error or defect.

**6. Warranty**

6a. Seller warrants that all items and work will conform strictly with applicable drawings, specifications, samples and other descriptions that are made available to Seller in connection with this Order by Purchaser via E-mail or by any other means made available by Purchaser, as well as any applicable law. Seller warrants that all items and work will be merchantable and free from defects in design, materials and workmanship and, if not of Purchaser's design, be suitable for the purpose intended whether expressed or reasonably implied. The foregoing warranties shall survive acceptance and payment and shall run to the Purchaser, its customers and the users of the item or work. Remedies for a breach of the warranties herein may include, but are not limited to, repair or replacement at no cost to Purchaser, or reimbursement of the purchase price of nonconforming items, at Purchaser's election. Seller shall be responsible for the cost of labor and engineering assistance or development required to make the repair and all associated costs such as but not limited to shipping and customs and services that may be required to make the repair. For the avoidance of doubt, the Seller shall pay to the Purchaser all the reasonable out of pocket expenses (if any) incurred by the Purchaser in testing or examining any part of the products for the purpose of or in connection with this clause or in or about or in connection with the making good, replacing or repairing any part of the product if the cause of failure is attributable to the Seller. It is the responsibility of the Seller to show that the failure cannot be attributed to the Seller.

(i) Any defective part repaired or replaced during the Warranty Period shall itself be subject to a further warranty period of the balance of the original Warranty Period, or an additional two (2) years, whichever is greater.

(ii) The repair or replacement of any faulty unit or product includes the delivery to the Purchaser of a descriptive report of the fault found, when appropriate, of the repair carried out on such faulty unit or product.

(iii) The maximum period for repair of the units (including shipping and customs clearance) shall be one (1) year or as defined in the requirements provided by Purchaser in its request for quotation ("Requirements"), whichever is earlier.

6b. Seller further warrants that it has and will transfer to Purchaser clear and unencumbered title to the items.

6c. Seller shall indemnify and hold harmless Purchaser for all costs, expenses and damages, whether direct, indirect, incidental, or consequential, arising from a breach of this warranty or any other term or condition of this Order.

6d. Each Party represents and warrants to the other that:

(i) it is duly organized, validly existing and in good standing under the laws of the country and/or place of its organization,

(ii) it has all requisite power and authority to enter into and perform its obligations under this order,

(iii) this order is a legal, valid and binding obligation enforceable against such Party in accordance with its terms,

(iv) it has taken all requisite corporate action to approve the execution, delivery and performance of this order; and

(v) its execution of and performance under this order shall not violate any applicable existing regulations, rules, statutes, or court orders of any local, state or federal governmental authority, court, or body.

6e. Seller represents and warrants to Purchaser that:

as of the date of this Purchase Order, Seller is not aware of any quality issues with respect to the product that would cause the product to fail to meet the specifications, including but not limited to exceeding the expected rate of failures over the product design life time, and that if Seller becomes aware of any quality issue in the future it will immediately notify Purchaser;

(i) Seller shall provide 90% confidence estimate of the failure rate of the unit under the operating conditions given in the Requirements along with the predominant expected failure modes. If the unit is an assembly, this information shall be provided for each field-replaceable sub-unit, regardless of whether failure of the sub-unit affects the overall unit performance. If the list of predominant failure modes changes, Seller shall immediately notify Purchaser; and

(ii) Seller shall promptly notify Purchaser of any proposed changes in design, materials, or sourcing and shall not implement any such changes without Purchaser's prior written consent.

(iii) Seller shall promptly notify Purchaser of any change in running failure rate during manufacturing testing of components, subassemblies, or finished systems, that is more than one standard deviation away from the monthly mean for the relevant product, during the time that the product sold to

Purchaser is manufactured.

**7. Patent and other IP Indemnity**

Notwithstanding the specifications, drawings, samples and other descriptions furnished by Purchaser, Seller warrants that the items and the sale or use thereof by Purchaser or any transferee will not infringe any copyrights, trade secrets, trademarks or other intellectual property rights ("IPR"). Seller shall defend, indemnify, protect, and hold harmless Purchaser, its successors and assigns, customers and users of the items, from and against any and all claims, damages, losses, liabilities, and expenses, including reasonable attorney's fees and costs, resulting from any IPR infringement claim or allegation related to the items. If Purchaser has reason to believe that the use, sale, transfer, or other disposition of items or any part thereof is likely to be enjoined by a court, Seller at no expense to Purchaser shall promptly (i) obtain for Purchaser the right to use, sell, transfer or otherwise dispose said items, and (ii) if (i) is not possible, replace or modify such items with equivalent non-infringing items acceptable to Purchaser that have substantially the same form, fit and function. If Seller is unable to perform the above two options (i) and (ii) promptly, Purchaser, at its option and Seller's expense, may purchase replacement items from other sources and return any infringing items at its possession to Seller. Seller shall extend the benefit of this provision to Purchaser's successors, assigns, and customers. Seller shall not enter into or acquiesce to any settlement containing any admission of or stipulation to any guilt, fault, liability or wrongdoing on the part of Purchaser or which would otherwise adversely affect Purchaser without Purchaser's prior written consent.

**8. Critical Components**

Seller shall warrant and represent that in the event (1) this Agreement is terminated in whole or in part by Purchaser for cause, in accordance with its terms; or (2) Seller is unable or unwilling to comply with any material term of this Agreement, including without limitation any term relating to delivery dates, product quality, etc. or; (3) Seller is unwilling or unable to maintain pricing that is competitive in the marketplace; or (4) Seller becomes insolvent, files or has filed against it a petition in bankruptcy, makes a general assignment in favor of its creditors or is otherwise financially at risk, as determined by Purchaser, then Seller shall grant to the Purchaser or to any third party designated by the Purchaser, to the extent that the Seller is entitled to do so, an irrevocable and non-exclusive license(s) to:

(i) manufacture the item and have the item manufactured solely for the Purchaser's consumption and use thereof as envisioned under this agreement;

(ii) use and have used any Background IP and Foreground IP in connection with the item. Whatever the date of signature of the license agreement(s), the said license shall be deemed to take effect on the effective date of termination and shall remain in full force for the longer of three (3) years following the date of termination, or until the item is no longer required by Purchaser to satisfy Purchaser's contractual commitments. Purchaser shall notify the Seller in writing in the event of early termination of any license issued hereunder;

(iii) in the manner and to the extent directed by the Purchaser, supply, without any disruption to program requirements, to the Purchaser or to any third party designated by the Purchaser: all technical dossiers, software, information, data and all Seller's tooling directly related to the manufacture of Products. The supply shall be at no cost to the Purchaser or to such third party except in the case of termination by Purchaser for convenience, in which case the supply shall be on fair and reasonable terms to be agreed between the Parties in good faith. If the tools are not Seller's property, the Seller shall take, with respect to their owner and the law, all measures necessary to guarantee they shall be available to the Purchaser for the duration referenced in (a) above; at Purchaser's designee all raw material, parts, equipment, etc. purchased from third parties by the Seller for the purpose of performing this Agreement or the relevant Orders so terminated. The transfer shall be at no cost to the Purchaser or to such third party;

(iv) in the event of termination for Seller's default reimburse all costs, expenses, losses and damages incurred by the Purchaser to remedy the Seller's default and all costs incurred by the Purchaser in re-sourcing the work required to manufacture the Products, as agreed to under the terms of this Order;

(v) for any termination of this Order for whatever reasons and as of the effective termination date, the Seller shall send immediately to the Purchaser, accompanied with evidence in documentary form, a status report regarding: (a) the Products completed, in stock in the Seller's premises and, (b) the Products in course of manufacture and, (c) if any, the stocks of raw material, parts, equipment, etc. purchased from third parties by the Seller for the purpose of performing the Orders so terminated and, (d) the tools used by the Seller for the purpose of performing the Orders, and cease forthwith all operations relating to this Order in its facilities and in the facilities of its own Sellers and/or subcontractors; and terminate or transfer (as specified by the Purchaser) all sub-contracts and/or supply agreements and/or other operational agreements entered into by the Seller with any third party for the purpose of or in connection with

(vi) use its best efforts to assist Purchaser in promptly identifying and establishing a qualified alternative source of supply.

**9. Purchaser's Property**

9a. Title to and the right to immediate possession of all tools, molds, dies, parts, supplies, jigs, fixtures, plans, drawings, specifications and all other equipment, materials and property that are furnished by Purchaser for Seller's use hereunder; or are procured, produced, manufactured or fabricated by Seller in connection with Seller's performance hereunder; or are in any manner paid for directly or indirectly by Purchaser (all of which is collectively referred to as "Purchaser's Property"); shall at all times be and remain in Purchaser. Seller will ensure that at all times Purchaser's Property shall be and remain free and clear of any interest or claim on the part of Seller's creditors or other third parties. Seller waives any and all liens that it has or may acquire with respect to Purchaser's Property. Seller shall take all measures which Purchaser deems appropriate to perfect or evidence Purchaser's title to all Purchaser's Property, including without limitation executing and filing informational financing statements and other documents with respect thereto, and for such purpose, Seller hereby irrevocably appoints Purchaser as Seller's attorney-in-fact to execute all such documents in Seller's name and on Seller's behalf. Seller shall clearly mark or otherwise adequately identify all Purchaser's Property as belonging to Purchaser. Seller shall not transfer possession of any Purchaser's Property to any third party, or delegate or assign any of Purchaser's obligations with respect thereto, unless otherwise specifically agreed by Purchaser in writing.

9b. While any Purchaser's Property remains in Seller's possession, Seller shall at its sole expense maintain the same in good operating condition and repair and in compliance with all warranties contained herein. Seller shall be responsible for and shall bear all risk of loss or damage to all Purchaser's Property while in Seller's care, custody, possession or control, and shall insure such risks with full replacement value fire and extended coverage insurance reasonably satisfactory to Purchaser. Unless otherwise agreed by Purchaser in writing, Seller will use all Purchaser's property solely and exclusively to perform for Purchaser's benefit hereunder and not for the benefit of any other party. In the event that Purchaser's Property is used for any purpose prohibited by this paragraph, this Order shall be automatically terminated and Seller shall be responsible for any and all losses and damages caused, notwithstanding any criminal proceedings which may be brought.

9c. Seller, as a material part of the consideration hereunder, hereby assumes all risk of damage to property or injury to persons arising from its use of all Purchaser's Property. Seller shall indemnify Purchaser from and hold Purchaser harmless against any and all claims arising from Seller's use of all Purchaser's Property, including all attorney's fees, expenses and liabilities incurred in the defense or settlement of any such claims, and, in the event of any claim against Purchaser by an employee or agent of Seller, Seller's liability and indemnification obligation hereunder shall not be limited by any amount recoverable by such persons under worker's compensation or similar applicable law. Seller shall maintain such liability insurance with respect to its obligations under this Paragraph as Purchaser may from time to time require.

9d. Purchaser shall have the right to recover immediate possession of all Purchaser's Property at any time, with or without cause, and without any additional charge or fee being assessed to Purchaser by reason of such recovery. Upon Purchaser's request, Seller shall deliver all Purchaser's Property to Purchaser, FOB Seller's dock, in good condition and repair, normal wear and tear only excepted. Seller grants to Purchaser the unconditional right to enter upon Seller's premises during normal business hours upon twenty-four (24) hours notice to recover Purchaser's Property.

**10. Purchaser's Design**

If the items or parts thereof, contracted for hereunder, are of Purchaser's design, the Purchaser retains title and ownership rights in such design and Seller shall not reproduce for others any such item or parts thereof without the prior written consent of Purchaser, nor shall Seller supply or disclose to others any information regarding such items or parts thereof, nor incorporate in other items or articles any special feature of design or manufacture, considered by Purchaser to be peculiar or unique to the items or parts thereof, contracted for hereunder, without such prior written consent.

**11. Invention or Improvement**

Any invention or improvement resulting from or arising out of performance by Seller or Seller's employees under this Purchase Order, which performance has been funded by Purchaser, shall be the sole property of Purchaser. Seller shall notify Purchaser promptly of any such invention or improvement within thirty (30) days of its conception, discovery or existence, and shall assign all rights to such invention or improvement to Purchaser.

**12. Payment Terms and Discount**

The payment terms governing this Order shall be shown on the face of this Order. The time in connection with any payment or discount offered to Purchaser will be computed from the date of the goods are received or services rendered, plus Purchaser's receipt date of all accurate supporting documents

required in this Order, if the latter date is later than the aforesaid date of receipt. Payment will be made in the currency stated in the Order.

**13. Set Off**

Any amount due to Seller by Purchaser for any items furnished hereunder may, at Purchaser's option, be applied to the payment of any sums owing by Seller to Purchaser.

**14. Assignment and Delegation**

Seller may not assign, subcontract, pledge, or in any manner encumber Seller's rights under this Order or delegate its performance hereunder without Purchaser's written permission. Seller shall be responsible to Purchaser for all work, as defined in this Order, performed by Seller's subcontractors at any tier.

**15. Changes/Stop Work Order**

Purchaser may, at any time, by written notice make changes within the general scope of this Order in the specifications, designs, drawings, quantity ordered, methods of shipment, packaging, or place or time of delivery. If any such changes cause an increase or decrease in the cost of or the time required for the performance of any part of the work under this Order, an equitable adjustment shall be made in the price or delivery schedule, or both, and this Order shall be modified in writing accordingly. Any claim by Seller for an adjustment must be made in writing thirty (30) days of the receipt of any such notice. Nothing contained herein shall relieve Seller from proceeding without delay to perform this Order as changed.

**16. Obsolescence, Diminishing Sources, and Discontinued Products**

16a. Upon determination by the Seller, that a process/component required in the delivery of the item(s) ordered hereunder is unavailable, through no fault of Seller, during the performance of this Order due to obsolescence or diminishing sources, or that such process/component is discontinued, Seller shall immediately notify the Purchaser of this condition or intention. The Seller shall immediately define the shortage or pending obsolescence/discontinuance by providing the Purchaser with (a) satisfactory evidence that its best efforts were made to obtain the affected parts required to meet current contractual requirements and that Seller initiated preliminary investigation of alternate parts (i.e. parts that are technically and physically compatible with hardware design.); (b) identify / propose any potential third party Seller capable of supplying enough parts in the current year to meet the total contractual requirements; and (c) offer Purchaser an opportunity for a life-time buy of the affected product beyond the current contractual requirement, to include price and availability information. The foregoing is in addition to Seller's other obligations pursuant to this Order and shall in no event relieve Seller from any liability to Purchaser for any damages arising as a result of any failure by Seller to fully comply with the terms of this Order.

16b. If, there are insufficient parts to meet current contractual requirements, the Purchaser may, in addition to any other rights and remedies available to it under this Order or applicable law take one or more of the following actions: (a) assist Seller with the procurement from a third party Seller of enough parts to meet current contractual requirements; or (b) authorize the procurement of the life-time buy parts; or (c) terminate this order for default.

16c. Seller acknowledges and agrees that a consistent and reliable source of supply is of utmost importance to Purchaser. Seller further acknowledges that it has been selected by Purchaser in part due to Seller's willingness to maintain a reliable and consistent source of supply to Seller for the product ordered hereunder. Therefore, Seller covenants and agrees, by accepting this Order, to use its best efforts to maintain the ability to fulfill future orders placed by Seller for any of the products subject to this Order for a period of at least twelve months following the last delivery date specified under this Order. If Seller anticipates any difficulty in meeting Purchaser's demand for any such product during such twelve month period (based on forecasts submitted by Purchaser, whether binding or otherwise, or, if no such forecasts are available, then based on Purchaser's purchasing history of the applicable product for the past two years), then Seller shall immediately provide written notice of any such anticipated difficulty and shall use best efforts to remediate such difficulty to ensure an uninterrupted source of supply for Purchaser. Seller acknowledges that this provision is a material term of this Order, and shall defend, indemnify and hold harmless Purchaser from and against any and all loss, cost, expense claims and damages related to or arising out of Seller's failure to fully comply with this provision.

**17. Termination**

17a. In addition to all of the other rights which Purchaser may have to cancel this Order, Purchaser shall have the further right, without assigning any reason therefore, to terminate any work hereunder, in whole or in part, at any time. Purchaser will not be liable to Seller for any costs for completed items, items in process or materials acquired or contracted for, if such costs were incurred more than the permitted number of days prior to the delivery dates as stated on the face of this Order or, if none is stated, thirty (30) days. If Purchaser cancels this Order within such time as specified on the face of this Order or, if none is stated, thirty (30) days, and if the

parties cannot agree within a reasonable time upon the amount of fair compensation to Seller for such termination: (a) Purchaser will pay the contract price for all items reasonably completed in accordance with this Order and not previously paid for unless said item(s) is part of Seller's standard commercial items, and (b) Purchaser will pay a fair and proper proportion of the contract price for items in process and for all materials acquired or contracted for within the time specified on the face of this Purchase Order for the purpose of fulfilling this Purchase Order which Seller is unable to cancel, return or otherwise use in Seller's operations. Should Purchaser so desire, cancellation charges shall be subject to Purchaser's audit at Purchaser's expense.

17b. Purchaser's ability to terminate this Order for cause shall be immediate and without prior written notice, in the event of any of the following by Seller: (i) a breach of any covenant, representation or warranty hereunder; (ii) in the event of (a) any change in the active management or ownership of Seller or (b) the sale, transfer or other disposition of all or substantially all of the assets of Seller or any affiliate, division or unit of Seller, either of which Purchaser, in its sole discretion, believes may have an adverse effect on Seller's ability to fulfill its obligations under this Order; or (iii) (a) any proceeding in bankruptcy, reorganization or arrangement for the appointment of a receiver or trustee to take possession of Seller's assets or any other proceeding under any law for relief from creditors shall be instituted by or against Seller (and such proceeding is not dismissed within sixty (60) days from the filing date); or (b) if Seller shall make an assignment for the benefit of its creditors.

**18. Indemnification/Insurance**

In the event Seller, its employees, agents, subcontractors and/or lower-tier subcontractors enter premises occupied by or under the control of Purchaser in the performance of this Order, Seller agrees that it will indemnify and hold harmless Purchaser, its officers and employees from any loss, costs, damage, expense or liability by reason of property damage, including, but not limited to, theft, or personal injury of whatsoever nature or kind arising out of, as a result of, or in connection with such entry. Seller, its subcontractors and lower-tier subcontractors shall produce and maintain workers' compensation, comprehensive general liability, bodily injury and property damage insurance in reasonable amounts, and such other insurance as Purchaser may require and shall comply with all site requirements. Seller shall provide Purchaser thirty (30) days' advance written notice prior to the effective date of any cancellation or change in the term or coverage of any Seller required insurance. If requested, Seller shall send a "Certificate of Insurance" showing Seller's compliance with these requirements. Seller shall name Purchaser as an additional insured for the duration of this Order. Insurance maintained pursuant to this clause shall be considered primary with respect to the interest of Purchaser and is not contributory with any insurance with Purchaser may carry. Seller agrees that Seller, Seller's insurer(s) and anyone claiming by, through, under or in Seller's behalf shall have no claim, right of action or right of subrogation against Purchaser and its customers based on any loss or liability insured against under the foregoing insurance.

**19. Compliance with All Laws**

Seller warrants, and it is a condition of this Order, that all performance hereunder shall be in accordance with all applicable national laws, regulations and orders. Until accepted by Purchaser, all items are Seller's sole responsibility including, but not limited to, the responsibility for proper, lawful handling or shipment of such items, or of any by-item or waste stream resulting there from. Seller shall indemnify and hold harmless Purchaser, its officers, employees, and agents from any and all claims, demands, suits or actions environmentally related or of any other nature whatsoever, including reasonable attorney's fees, and expenses arising from Seller's activity in the negligent performance or omission of any specified, required or requested work for or on behalf of Purchaser.

19a. Seller warrants that it shall not offer to give or agree to give to any person any gift or consideration of any kind as an inducement or reward in exchange for any act or forbearance from an act in relation to the obtaining or performance of this Order.

**20. Right of Access**

20a. Seller, without additional charge, shall permit reasonable access by representatives of Purchaser, Purchaser's customers and applicable regulatory agencies to Seller's premises (and the premises of Seller's subcontractors and Seller(s)) for the purpose of examining Seller's facilities, processes, goods, and records relating to this Order. Such examination may include inspection and testing of equipment, materials, parts, items (including software and licensed materials) to be furnished and services to be rendered, manufacturing and assembly processes, testing and quality procedures, and all applicable records relating to the manufacture, inspection, testing, and sale of such items and the furnishing of such services.

20b. If requested by Purchaser, Seller shall provide at its facility, without additional charge, suitable and convenient office space for representatives of Purchaser and/or representatives of Purchaser's customers, as reasonably required. The office shall be properly lighted and heated and maintained in a clean condition and have telephones, facsimile machines and computers with internet connectivity.

**21. Passage of Title and Risk**

Title and risk of loss or damage to the items shall pass from Seller to Purchaser in accordance with the INCOTERM specified on the face of this Order. If this Order calls for additional services to be performed after delivery, Seller shall retain title and risk of loss and damage to the items until the additional services have been performed. If Seller is authorized to invoice Purchaser for items upon shipment or prior to the performance of additional services, title to the items shall vest in Purchaser upon payment of the invoice, but risk of loss and damage shall pass to Purchaser when the additional services have been performed.

**22. Non-Discrimination in Employment**

In connection with performance of work hereunder, the Seller agrees to comply with all laws, rules, regulations and orders pertaining to non-discrimination in employment, as may be applicable to Purchaser or Seller.

**23. Remedies**

All rights and remedies of Purchaser set forth in this Order or available at law shall be cumulative and not alternative and shall not be exhausted by any one or more uses thereof. The waiver by Purchaser of any term or condition of this Order shall not be deemed a waiver of any subsequent breach of the same or any other term or condition. **SELLER HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS ORDER.**

**24. Limitation of Liability**

In no event shall Purchaser be responsible or held liable to Seller for punitive, indirect, incidental or consequential damages, including, without limitation, liability for loss of use, loss of profits, capital investment, product development costs, unabsorbed overhead, or interest expenses, however the same may be caused, including fault or negligence of Purchaser.

**25. Survival of Obligations**

The obligations of the parties under this Order, which, by their nature would continue beyond the termination, cancellation or expiration of this Order, shall survive the termination, cancellation or expiration of this Order.

**26. Seller's Liability**

Seller assumes the entire responsibility and liability for losses, expenses, damages, demands and claims in connection with or arising out of any personal injury or alleged personal injury (including death), and/or damage or destruction or alleged damage or destruction to property sustained or alleged to have been sustained in connection with or to have arisen out of the negligent performance of the work by or willful misconduct of Seller, its agents, employees, subcontractors, and consultants, save and except liability as may result from, or be in connection with, the willful or negligent act or omission of Purchaser, its officers, agents, employees or independent contractors acting for Purchaser. Seller shall indemnify and hold harmless Purchaser, its officers, agents and employees from any and all liability for such losses, expenses, damages, demands and claims and shall defend any suit or action brought against any or all of them based on any alleged personal injury or damage and shall pay any damage costs and expenses, including attorney's fees, in connection with or resulting from such suit or action.

**27. Taxes**

Except where prohibited by law, Purchaser and Seller agree that all customs duties, VAT, turnover taxes, sales tax, and other applicable taxes, social insurance contributions, or fees (those imposed on or measured by the services provided or goods delivered) are included in the prices provided by Seller, and shall not be billed to Purchaser as separate items. Seller shall also be responsible for any and all payroll taxes for services performed in country by Seller's personnel. If VAT, GST, sales tax, or other similar taxes are imposed by the country in which the services are performed, unless Purchaser has provided an exemption certificate or a direct pay permit, Seller agrees to bill such taxes as separate line items on an invoice, in accordance to the applicable taxing jurisdiction's laws. Where VAT is applicable, Seller agrees to use its reasonable commercial efforts to ensure that its invoices to Purchaser are issued in such a way that they meet the requirements for deduction of input VAT by Purchaser.

**28. Export Control**

Seller shall be responsible for the control, disclosure of and access to technical data, information and other items received under this Order and agrees to be responsible for being knowledgeable as to all laws, regulations and requirements regarding the export, re-export, resale, shipment or diversion of items, including but not limited to the International Traffic in Arms Regulations (ITAR) and the export laws of the country of the Purchaser, as well as the export laws of the country of Seller. Seller shall comply with all such laws and regulations and shall indemnify Purchaser for all liabilities, penalties, losses, damages, costs or expenses that may be imposed on or incurred by Purchaser in connection with any violations of such laws and regulations by Seller.

**29. Import****29a. Customs**

For each shipment of items covered by this Order, Seller shall

furnish Purchaser with a commercial invoice containing, at a minimum, the following information: (a) port of entry; (b) name and address of Seller and Purchaser entity purchasing the items; (c) name of shipper (if different from Seller); (d) country of export; (e) detailed description of items in English; (f) quantities and weights; (g) actual purchase price, including all elements of the amount paid or payable by Purchaser; (h) the currency in which the sale was made; (i) all charges, costs and expenses associated with the items, including freight, insurance, commission, containerization and packing, unless the cost of packing, containerization and inland freight are already included in the invoice price; (j) all rebates or discounts; and (k) the country of origin (manufacture) of the items. The value of any goods or services furnished for the production of the items (e.g., "assists") not included in the invoice price, must be reported on the invoice for the first shipment of goods unless Purchaser directs otherwise in writing. All items, unless specifically exempted, shall be marked in a conspicuous place as legibly, indelibly, and permanently as the nature of the article (or container) will permit, with the country of manufacture of the items. Seller agrees to comply with all laws and regulations governing the importation of goods into the customs territory of any country of importation. Seller agrees to hold harmless and indemnify Purchaser, its directors, officers and employees against all losses, claims, penalties, judgments, liabilities and expenses which any of them may pay or incur arising out of this Order, including but not limited to all representations made by the Seller with respect to documentation or other Customs or Governmental requirements with regard to entry requirements, classification, valuation, preferential treatment, duty drawback or trade terms.

**29b. Government Duty Increases**

If government authorities declare or otherwise impose countervailing duties, antidumping duties, or retaliatory duties on items imported by Purchaser under this Order, Purchaser reserves the right to terminate this Order in accordance with the provisions in Section 15.

**29c. Duty Drawback Rights**

All drawbacks of duties and rights thereto related to duties paid by Seller or Purchaser upon importation of the items into any customs territory if the items are subsequently exported from that country shall accrue to the exclusive benefit of Purchaser. Seller agrees to provide Purchaser with all documents, records and other supporting information necessary to obtain any such duty drawback, and agrees to reasonably cooperate with Purchaser to obtain such payment.

**30. Notices**

Any notice or demand required to be given or made by Seller shall be in writing and shall be duly given or served on Purchaser if sent to the address noted in the Order and by any one of the following means only: (a) in person -- such communication shall be deemed to have been received on the day of delivery provided receipt of delivery is obtained; or (b) by registered or certified mail (or its international equivalent) -- such communication shall be deemed to have been received, under normal service conditions, on the day it was received or on the tenth day after it was dispatched, whichever is earlier. Purchaser may change the address by giving prior written notice.

**31. Severability**

If any of the provisions of this Order shall be invalid or unenforceable, such invalidity or unenforceability shall not invalidate or render unenforceable this entire Order, but rather this entire Order shall be construed as if not containing the particular invalid or unenforceable provision or provisions, and the rights and obligations of the parties shall be construed and enforced accordingly.

**32. Applicable Law**

32a. The laws of the State of Andhra Pradesh, without regard to its conflicts of laws principles, shall govern in all respects the performance of this Order. During pendency of any dispute arising under this Order, Seller shall proceed diligently with performance hereunder.

32b. Any claim or dispute arising out of this Order shall be referred to and finally resolved by arbitration in Rajamahendravaram, A.P., by arbitrators appointed by the Purchaser. The language of the arbitration shall be English.

**33. Order of Precedence**

In the event of any inconsistency among this Order, the documents referenced herein and any attachments hereto, the inconsistency shall be resolved by giving precedence in the following descending order: (i) provisions set forth on the face of this Order, (ii) the specifications, (iii) the drawings, (iv) these terms and conditions, and (v) the other documents incorporated by reference.

**34. Confidential Information**

34a. Seller agrees that it will at all times hold in confidence for Purchaser all designs, know-how, techniques, devices, drawings, specifications, patterns, technical information, documents, business plans, item requirements, forecasts and similar data, oral, written or otherwise, conveyed by Purchaser to Seller in connection herewith or procured, developed, produced, manufactured or fabricated by Seller in connection with Seller's performance hereunder (collectively, "Information"). Seller shall exercise the same degree of care to prevent disclosure of any Information to others as it takes to preserve and safeguard its own proprietary information,

but in any event, no less than a reasonable degree of care. Seller shall not, without the prior written consent of Purchaser, reproduce any Information; nor disclose Information to any party; nor use Information for any purpose other than performance for the benefit of Seller hereunder.

34b. Any technical knowledge or information of Seller which Seller shall have disclosed or may hereafter disclose to Purchaser in connection with the items or services or other performance covered by this Order shall not, unless otherwise specifically agreed upon in writing by Purchaser, be deemed to be confidential or proprietary information and shall be acquired by Purchaser free from any restrictions as part of the consideration of this Order.

34c. Seller acknowledges that monetary remedies alone may not be an adequate remedy for any breach or threatened breach of any of the obligations of this Agreement. Therefore, Purchaser shall be entitled to seek injunctive or other equitable relief in addition to any other remedy to which it may be entitled at law or in equity without the need of posting a bond or other security or proving that monetary damages would be an inadequate remedy. Such remedies shall not be deemed to be the exclusive remedies for a breach of this Agreement but shall be in addition to all other remedies available at law or in equity.

34d. Seller shall not, without prior written consent of Purchaser, issue any news release, publicity or promotion material regarding this Order or make public use of any identification in any circumstances related to this Order. "Identification" means any semblance of any trade name, trademark, service mark, insignia, symbol, logo, or any other designation or drawing of Andhra Paper Limited and its affiliates. Seller shall remove or obliterate any identification prior to use or disposition of any material rejected or not purchased by Purchaser.

**35. Translation**

If these terms and conditions are translated into another language and there is any diversion between this English version and the translated version, then this English version text shall prevail.

**36. Definitions**

- (a) "items" means all goods, machinery, equipment, software, components, work, services (including but not limited to, the design, procurement, manufacture, assembly, tests and inspections, and delivery of the items to Purchaser and if so specified in the Order, installation and/or commissioning of the Items) or other materials ordered by Purchaser as specified in the Order;
- (b) "Order" means the purchase order or other form of request by Purchaser to Seller for the supply of the items;
- (c) "Purchaser" means the party purchasing the items subject of this Order;
- (d) "Seller" means the party supplying the items subject of this Order; and
- (e) "Jurisdiction" means the governing law of the territory where Purchaser's place of business is located.

**Purchase Order**

<b>Supplier</b>		<b>PO Number</b>	<b>PO Date</b>
Vendor Code: 200200544 CHOLAMANDALAM MS RISK SERVICES LTD GSTN 33AABCC6610Q1ZL DARE HOUSE NO.2 NSC BOSE ROAD, CENNAI GPO CHENNAI - 600001 India  Attn: MR.SUBBA RAO N.V Phone: 08056025714 E-mail: inquiry@cholams.murugappa.com		13807023	19 JUL 2024
<b>Ship-To and Bill-To Address</b>		ANDHRA PAPER LIMITED Rajamahendravaram Mill Sriram Nagar Rajamahendravaram East Godavari 533105 India	
<b>Instructions</b>		<b>Buyer Contact Details</b>	
# All other terms & conditions as per Andhra Paper Limited's Standard Terms & Conditions of Purchase. # Please mention returnable gate pass ref. in your invoice & delivery challan (applicable for repair services). Necessary Test report and Dimension report to accompany # TDS will be levied as applicable.		Buyer: Sandeep Edara Tel: 0883-2562965 Fax: E-mail: sandeep.edara@andhraper.com	
<b>Supplier Reference</b>		<b>Agreement Reference</b>	
<b>Mode of Dispatch</b>		<b>Freight</b>	<b>Shipment terms</b>
			DAF
<b>Payment terms</b>		<b>Insurance</b>	

Item	Item Description	Quantity	UoM	Unit Price (INR)	Total Value	Delivery Date
1	NCG Study 3000296 PROFESSIONAL & CONSULTANCY SERVICES - AU IN:Integrated GST-ND	1.000	AU	1,440,000.00	1440000.00	31 DEC 2024
			%	18	259200.00	
	Total Basic			INR	1440000.00	
	Total P&F			INR	0.00	
	Total Tax			INR	259200.00	
	Total Swachh Bharat & Krishi Kalyan Cess			INR	0.00	
	Grand Total				1699200.00	

**GSTIN:**37AAACT8849D1Z3  
**Range:** RANGE V  
**Division:** RAJAMAHENDRAVARAM  
**Commissionerate:** VISAKHAPATNAM II

Carry Out Studies on NCG sources and identify the impacts and suggest mitigation measure at APL for Rajahmundry unit

Contact: Sreerama Chandra Murthy

Scope of Work:

APL Rajahmundry Mill would like to carry out the following studies as directed by APPCB.

**Registered Office:**  
**ANDHRA PAPER LIMITED**  
**Sriram Nagar - Rajamahendravaram**  
**East Godavari District**  
**Andhra Pradesh, India.**  
**www.andhraper.com**

**Purchase Order ( Continued )**

Instructions		PO Number	PO Date
# All other terms & conditions as per Andhra Paper Limited's Standard Terms & Conditions of Purchase. # Please mention returnable gate pass ref. in your invoice & delivery challan (applicable for repair services). Necessary Test report and Dimension report to accompany # TDS will be levied as applicable.		13807023	19 JUL 2024
		Buyer Contact Details	
		<b>Buyer:</b> Sandeep Edara <b>Tel:</b> 0883-2562965 <b>Fax:</b> <b>E-mail:</b> sandeep.edara@andhrapaper.com	

- # Reliability studies on the NCG collection and treatment system.
- # To identify the dispersion pattern of odours substances (TRS) in the core zone and possible impacts in the surrounding area of the industry and recommend short- term and long-term plans to implement requisite containment measures to mitigate any odour nuisance in the surroundings

LS@INR14,40,000/-

Delivery Terms: As per the user requirement (16 Weeks from the date of PO Issued)

Payment Terms:

- 20% of project cost including GST after completion of site visit within 45 days
- 30% of project cost including GST after reliability studies within 45 days
- 50% of project cost including GST after delivering dispersion patterns with impacts within 45 days

Specific Terms & Conditions:

1. VOC Measurement considered in this proposal has been limited to 10 Nos of samplings.
2. Lodging & Boarding are under APL Scope.
3. To & Fro Travel Charges are under vendor scope.
4. All safety, PPE, ESI, PF, Insurance, Current & Future statutory, Tools & Tackles are under vendor scope.
5. All safety Precautions should meet APL Standards.

Other Terms & conditions:

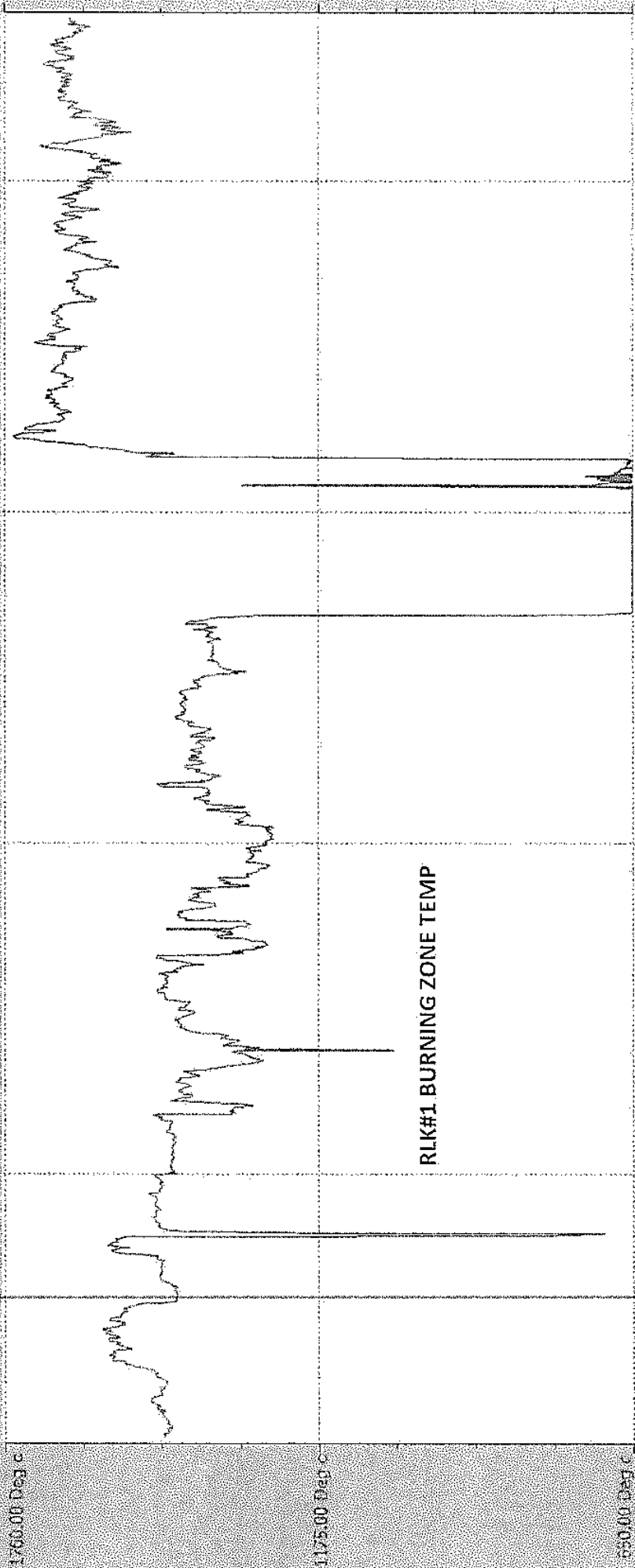
- a) You shall read the below terms & conditions along with those defined, stipulated in the Service Agreement attached herewith. Please acknowledge the receipt of this PO, Service Contract by returning a signed copy.
- # This order is issued to you on basis of confirmation to comply to Scope Of Work(SOW), Terms & Conditions of this PO and the Contractor Safety Policy requirements.
- # You shall maintain a record of activities performed by your workforce on daily basis and submit the details along with Bills/Invoices.

**Registered Office:**

**ANDHRA PAPER LIMITED**  
**Sriram Nagar - Rajamahendravaram**  
**East Godavari District**  
**Andhra Pradesh, India.**  
**www.andhrapaper.com**

PAE F2000AV 2HEB Trend Display

Trend Display requires special privileges to be modified // 1 Month



Object Name	Object Description	Aspect	Property	Log Name	Current Val	Low Range	High Range	Time Offset	Style	Units	Time	Min Value	Max Value	Property Description
PAE F2000AV	Burning Zone Temperature	Temp	Temp	1977.46 Deg	650.00 D	1700.00	00:00:00	00:00:00	Linear	Linear	5/17/2023 10:47:03 AM	650.00 Deg	1685.87 Deg	Temp
PAE F2000AV	O2 Flow	Flow	Flow	0.0 %	0.0 %	0.0 %	00:00:00	00:00:00	Linear	Linear	5/17/2023 10:47:03 AM	0.0 %	0.0 %	Flow
PAE F2000AV	O2 analyzer	Flow	Flow	199.12 %	0.0 %	0.0 %	00:00:00	00:00:00	Linear	Linear	5/17/2023 10:47:03 AM	0.0 %	0.0 %	Flow
PAE F2000AV	Gas Temperature	Temp	Temp	199.12 %	0.0 %	0.0 %	00:00:00	00:00:00	Linear	Linear	5/17/2023 10:47:03 AM	30.92 %	252.28 %	Temp

ENG 10:47 AM  
INTL 6/7/2023

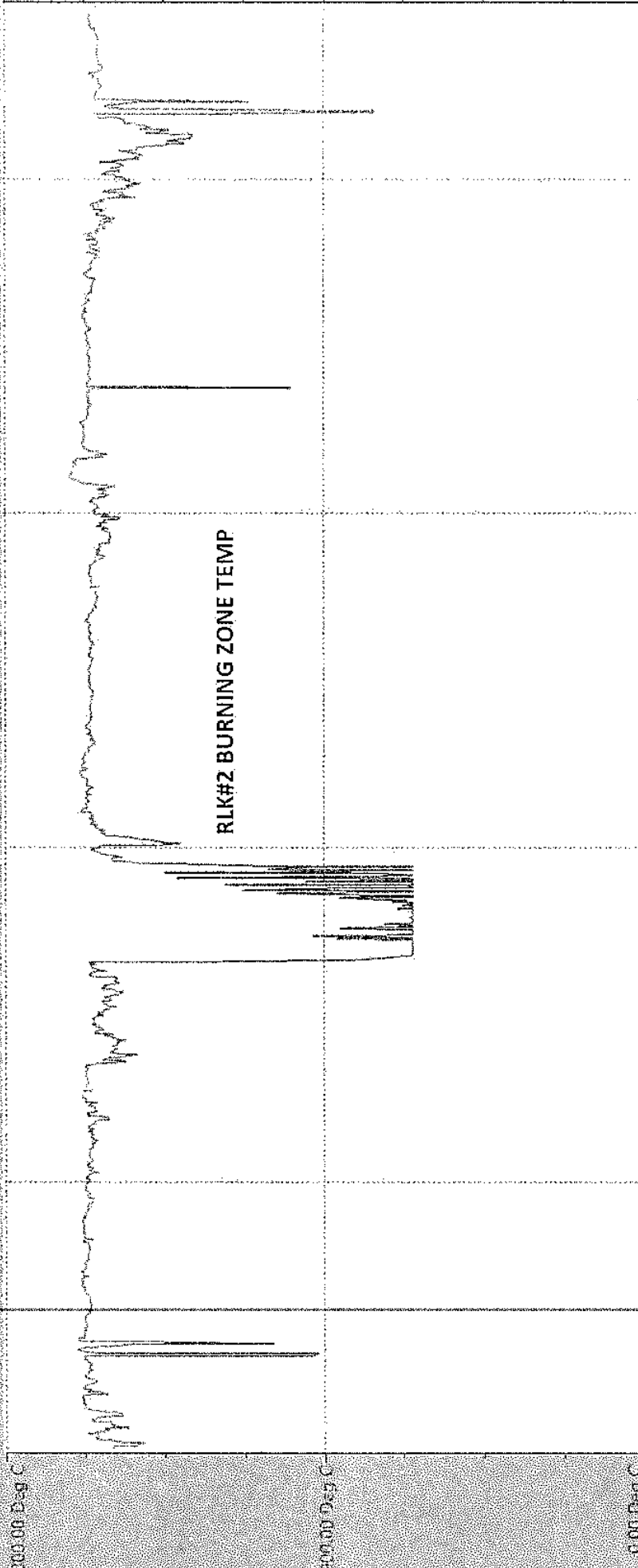
PAE F2000AV  
PAE F2000AV

PAE F2000AV  
PAE F2000AV

PAE F2000AV  
PAE F2000AV

PAE F2000AV  
PAE F2000AV

Trend Display require special privileges to be modified. // 1 Month





RLK#2 BURNING ZONE TEMP

5/8/2023 5/15/2023 5/22/2023 5/29/2023

Object Name	Object Description	Aspect	Property	Log Name	Client Val	Low Range	High Range	Time Offset	Style	Unit	Filter	Time	Value	Property Description
RLK#2 BURNING ZONE TEMP	Burning Zone Temp	Function	Signal Value	SEANLESS	1574.45 Deg	0.00 Deg	1800.00 Deg	00:00:00	Linear	Deg C	None	5/29/2023 12:37:50 PM	1610.00 Deg	Max Value
RLK#2 BURNING ZONE TEMP	Combust Temp LK Temp E	Function	Signal Value	SEANLESS	455.59 Deg	550.00 Deg	780.00 Deg	00:00:00	Linear	Deg C	None	5/29/2023 12:37:50 PM	543.03 Deg	Min Value
RLK#2 BURNING ZONE TEMP	Flw Gas O2 Content	Function	Signal Value	SEANLESS	10.97 %	0.00 %	31.00 %	00:00:00	Linear	%	None	5/29/2023 12:37:50 PM	20.05 %	TimeAverag
RLK#2 BURNING ZONE TEMP	Flw Gas O2 Content	Function	Signal Value	SEANLESS	19.16 kg/h	0.00 kg/h	230.00 kg/h	00:00:00	Linear	kg/h	None	5/29/2023 12:37:50 PM	1595.33 kg/h	TimeAverag

ENG 10:43 AM  
JNL 6/1/2023

 ANDHRA PRADESH POLLUTION CONTROL BOARD	<b>ANDHRA PRADESH POLLUTION CONTROL BOARD</b> <b>ZONAL LABORATORY: VISAKHAPATNAM</b> 39-33-20/4/1, Madhavadhara VUDA Colony, Visakhapatnam - 530018 e-mail: zovsplatb-ses2@appcb.gov.in	 TC-14351
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Form No: APPCB/ZL/VSP/CI.7.8/FM40

**FORM - IV**

**REPORT BY THE STATE BOARD ANALYST**  
**[See Rule-14]**

**Report No. VSPA202410185 & 188****Date: 29.10.2024**

I hereby certify that I, M. Ravi, State Board Analyst duly appointed under sub-section (2) of Section 26 of the Air (Prevention and Control of Pollution) Act, 1981, received on the day of 26.10.2024 from Junior Scientific Officer, Zonal Laboratory, Visakhapatnam, the following stack emission sample for analysis is from:

- 1) **VSPA202410185:** Stack attached to 1 X 1300 TDP Recovery Boiler
- 2) **VSPA202410186:** Stack attached to 100 TPD Rotary lime Kiln -1
- 3) **VSPA202410187:** Stack attached to 160 TPD Rotary lime Kiln -2
- 4) **VSPA202410188:** Stack attached to 1 x 105 TPH Coal Fired Boiler

of M/s ANDHRA PAPER LIMITED, (FORMERLY INTERNATIONAL PAPER APPM LIMITED), UNIT: RAJAHMUNDRY, SRIRAMNAGAR, RAJAMAHENDRAVARAM, EAST GODAVARI DISTRICT collected on 24.10.2024 & 25.10.2024 was received in a condition fit for analysis as reported below:

I further certify that I have analyzed the above-mentioned sample from 26.10.2024 to 29.10.2024 and declare the result of the analysis to be as follows:

S.No.	Report No.	Parameter	Result (mg/Nm <sup>3</sup> )	CTO Standard (mg/Nm <sup>3</sup> )	Test Method
1.	<b>VSPA202410185</b>	Particulate Matter (PM)	44.7	50.0	IS:11255 (Part 1)
2	<b>VSPA202410186</b>	Particulate Matter (PM)	15.6		
3	<b>VSPA202410187</b>	Particulate Matter (PM)	12.7		
4	<b>VSPA202410188</b>	Particulate Matter (PM)	40.1		

The condition of the seals, fastening and container on receipt was intact.

Signed this on: 29.10.2024

Address:

M. Ravi,  
 Senior Environmental Scientist/ Quality Manager  
 Zonal Laboratory, APPCB, Visakhapatnam

  
 SIGNATURE OF THE STATE BOARD ANALYST/  
 QUALITY MANAGER

\*\*\* END OF THE REPORT\*\*\*



ANDHRA PRADESH POLLUTION CONTROL BOARD  
ZONAL LABORATORY: VISAKHAPATNAM  
39-33-20/4/1, Madhavadhara VUDA Colony,  
Visakhapatnam - 530018



M.RAVI  
SENIOR ENVIRONMENTAL SCIENTIST

e-mail: zovsplab-ses2@appcb.gov.in

Form No: APPCB/ZL/VSP/CL.7.8/FM40

**FORM - IV**

**REPORT BY THE STATE BOARD ANALYST**

[See Rule-14]

**Report No. VSPA202410185 & 188**

**Date: 29.10.2024**

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- 1) **VSPA202410185:** Stack attached to 1 X 1300 TDP Recovery Boiler
- 2) **VSPA202410186:** Stack attached to 100 TPD Rotary lime Kiln -1
- 3) **VSPA202410187:** Stack attached to 160 TPD Rotary lime Kiln -2
- 4) **VSPA202410188:** Stack attached to 1 x 105 TPH Coal Fired Boiler

of M/s ANDHRA PAPER LIMITED, (FORMERLY INTERNATIONAL PAPER APPM LIMITED), UNIT: RAJAHMUNDRY, SRIRAMNAGAR, RAJAMAHENDRAVARAM, EAST GODAVARI DISTRICT collected on 24.10.2024 & 25.10.2024 was received in a condition fit for analysis as reported below:

I further certify that I have analyzed the above-mentioned sample from 26.10.2024 to 29.10.2024 and declare the result of the analysis to be as follows:

S.No.	Report No.	Parameter	Result (mg/Nm <sup>3</sup> )	CTO Standard (mg/Nm <sup>3</sup> )	Test Method
1.	VSPA202410185	Sulphur Dioxide (SO <sub>2</sub> )	14.6	-	IS-11255 (Part-2)
2	VSPA202410188		22.6		
3	VSPA202410186	Hydrogen Sulphide (H <sub>2</sub> S)	8.6	10.0	TCEQ Lab Method 17
4	VSPA202410187		8.2		

The condition of the seals, fastening and container on receipt was intact.

Signed this on: 29.10.2024

Address:

M. Ravi,  
Senior Environmental Scientist/ Quality Manager  
Zonal Laboratory, APPCB, Visakhapatnam

SIGNATURE OF THE STATE BOARD ANALYST/  
QUALITY MANAGER



# Glens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

## TEST REPORT

Report No : EN23070161 Report Date : 14 Jul 2023

Customer Name : M/S.Andhra Paper Limited

Customer Address : Rajamahendravaram,East Godavari Dist,Andhra Pradesh-533105

Sample Description : Stack Emission

Sample No : EN23070161

Sample Identification : Rotary Line Kiln Stack-02 Sampling Date : 07 Jul 2023

Sample Condition : Good Sample Received on : 08 Jul 2023

Sampling Procedure : GL/EN/SOP/111 Test Started on : 08 Jul 2023

Instrument Used : Optima Analyzer Test Completed on : 14 Jul 2023

Sample Submission type : Lab Representative

### Test result

S.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Atmospheric Pollution				
1	Hydrogen Sulphide as H <sub>2</sub> S	IS 11255 (Part 4): 2006	8.4	mg/m <sup>3</sup>
2	Particulate Matter	GL/ EN/SOP/113 (EPA 5): 1991	14.5	mg/Nm <sup>3</sup>

.....End of Report.....  
Page 1 of 1

  
Verified By

  
Authorized Signature  
S. HARIHARASUDHAN  
ASSISTANT MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

#### Terms and Conditions:

- \* The Test Results Relate only to the items tested.
- \* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
- \* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the application regulations.
- \* The Laboratory's Responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
- \* A Satisfactory test report in no way implies that the product so tested is approved by NABL.
- \* Laboratory is not responsible for the authenticity of photocopied test reports.



# Glens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

## TEST REPORT

Report No : EN23070162 Report Date : 14 Jul 2023

Customer Name : M/S.Andhra Paper Limited

Customer Address : Rajamahendravaram,East Godavari Dist,Andhra Pradesh-533105

Sample Description : Stack Emission

Sample No : EN23070162

Sample Identification : Rotary Line Kiln Stack-01 Sampling Date : 07 Jul 2023

Sample Condition : Good Sample Received on : 08 Jul 2023

Sampling Procedure : GL/EN/SOP/111 Test Started on : 08 Jul 2023

Instrument Used : Optima Analyzer Test Completed on : 14 Jul 2023


Sample Submission type : Lab Representative

### Test result

S.No	Test Name	Test Method	Results	Units
Discipline: Chemical				
Group: Atmospheric Pollution				
1	Hydrogen Sulphide as H <sub>2</sub> S	IS 11255 (Part 4): 2006	9.1	mg/m <sup>3</sup>
2	Particulate Matter	GL/ EN/SOP/113 (EPA 5): 1991	45.7	mg/Nm <sup>3</sup>

.....End of Report.....  
Page 1 of 1

  
Verified By

  
Authorized Signature  
S. HARIHARASUDHAN  
ASSISTANT MANAGER<sup>®</sup>

GLENS INNOVATION LABS Pvt Ltd, #6/1, 1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

#### Terms and Conditions:

- \* The Test Results Relate only to the items tested.
- \* The Test Report Shall not be reproduced in full or part without the written approval of Glens.
- \* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the application regulations.
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- \* A Satisfactory test report in no way implies that the product so tested is approved by NABL.
- \* Laboratory is not responsible for the authenticity of photocopied test reports.



# GLens Innovation Labs Pvt Ltd.

NABL Accredited as per ISO17025:2017, Certified as per ISO 9001:2015 & ISO 45001:2018

## TEST REPORT

Report No. : EN23120397

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 14-Dec-2023  
 Sample Description : Stack Emission Received Date : 15-Dec-2023  
 Sampling Location : Kiln 1 Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
<b>Discipline: Chemical</b>					
<b>Group: Atmospheric Pollution</b>					
1	Hydrogen Sulphide as H <sub>2</sub> S	mg/Nm <sup>3</sup>	8.0	IS 11255 (Part 4):2006	10
2	Particulate Matter	mg/Nm <sup>3</sup>	32.0	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

Verified By

Authorized Signature  
E. PRITHVIRAJAN  
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #5/1, 1st Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

#### Terms and Conditions:

- \* The test results related only to the items tested.
- \* The test report shall not be reproduced in full or part without the written approval of Glens.
- \* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the applicable regulations. Page 1 of 1
- \* The Laboratory's responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
- \* A Satisfactory test report in no way implies that the product tested is approved by NABL.
- \* Laboratory is not responsible for the authenticity of the photocopied test reports.



# GLens Innovation Labs Pvt Ltd.

NABL Accredited as per ISO17025:2017 , Certified as per ISO 9001:2015 & ISO 45001:2018

## TEST REPORT

Report No. : EN23120398

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 12-Dec-2023  
 Sample Description : Stack Emision Received Date : 15-Dec-2023  
 Sampling Location : Kiln 2 Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Hydrogen Sulphide as H2S	mg/Nm3	7.20	IS 11255 (Part 4):2006	10
2	Particulate Matter	mg/Nm3	35.0	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

  
Verified By

  
Authorized Signature

**E. PRITHIVIRAJAN**  
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor , Sri Jothi Complex Murugesan Street , Balavinayagar Nagar , Arumbakkam Chennai 600106

#### Terms and Conditions:

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- \* The Laboratory's responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
- \* A Satisfactory test report in no way implies that the product tested is approved by NABL.
- \* Laboratory is not responsible for the authenticity of the photocopied test reports.



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(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

**Corporate Office & Laboratory :** Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012.  
**Hyderabad:** Flat No. 302, H.No. 7-1-396/B/12, Sai Ram Residency, Balkampet Road, S.R.Nagar, Hyderabad-500038.  
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**Ref: SVELC/APML/24-09/09**

**Date: 30-09-2024**

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** **STACK EMISSIONS**

**SOURCE OF COLLECTION :** Coal Fired Boiler - CF6

**DATE & TIME OF COLLECTION :** 09-09-2024 @ 10:00 hr

### TEST REPORT

S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	85
2.	Diameter of Stack	m	2.5
3.	Cross Section Area of Stack	m <sup>2</sup>	4.90
4.	Temperature @ DGM	°C	30
5.	Stack temperature	°C	154
6.	Flue Gas Velocity	m/sec	9.51
7.	Flow Rate	Nm <sup>3</sup> /hr	116305
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	41.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	80.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	179	<300	IS: 11255-P-7
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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Ref: SVELC/APML/24-09/10

Date: 30-09-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

SAMPLE PARTICULARS : STACK EMISSIONS

SOURCE OF COLLECTION : Recovery Boiler -4

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

### TEST REPORT

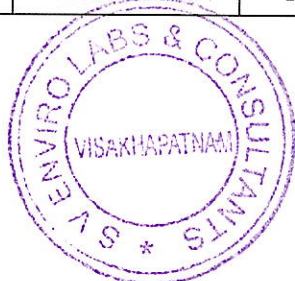
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	90
2.	Diameter of Stack	m	3.5
3.	Cross Section Area of Stack	m <sup>2</sup>	9.61
4.	Temperature @ DGM	°C	31
5.	Stack temperature	°C	172
6.	Flue Gas Velocity	m/sec	8.94
7.	Flow Rate	Nm <sup>3</sup> /hr	205756
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	39.7	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	85.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	191	<300	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	4.51	--	USEPA Method-11
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-09/11

Date: 30-09-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

SAMPLE PARTICULARS : STACK EMISSIONS

SOURCE OF COLLECTION : Rotary Lime Kiln-1

DATE & TIME OF COLLECTION : 09-09-2024@ 11:30 hr

### TEST REPORT

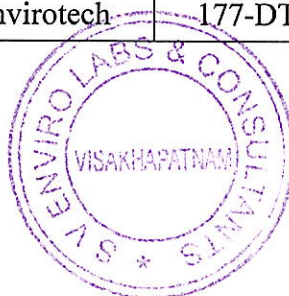
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	°C	32
5.	Stack temperature	°C	149
6.	Flue Gas Velocity	m/sec	8.57
7.	Flow Rate	Nm <sup>3</sup> /hr	24456
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	45.3	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	82.9	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	247	<500	IS:11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	5.20	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-09/12

Date: 30-09-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Rotary Lime Kiln-2

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

### TEST REPORT

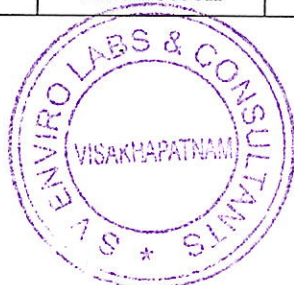
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	<sup>0</sup> C	30
5.	Stack temperature	<sup>0</sup> C	118
6.	Flue Gas Velocity	m/sec	8.19
7.	Flow Rate	Nm <sup>3</sup> /hr	25225
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	41.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	70.3	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	198	<500	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	6.15	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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Ref: SVELC/APML/24-10/09

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Coal Fired Boiler - CF6

**DATE & TIME OF COLLECTION :** 23-10-2024 @ 10:00 hr

### TEST REPORT

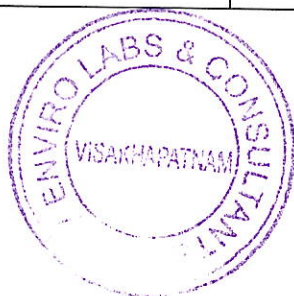
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	85
2.	Diameter of Stack	m	2.5
3.	Cross Section Area of Stack	m <sup>2</sup>	4.90
4.	Temperature @ DGM	°C	32
5.	Stack temperature	°C	139
6.	Flue Gas Velocity	m/sec	8.71
7.	Flow Rate	Nm <sup>3</sup> /hr	110400
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	45.1	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	92.7	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	189	<300	IS: 11255-P-7
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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Ref: SVELC/APML/24-10/10

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Recovery Boiler -4

**DATE & TIME OF COLLECTION :** 23-10-2024 @ 10:45 hr

## TEST REPORT

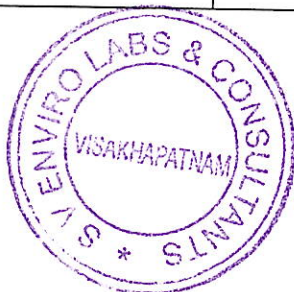
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	90
2.	Diameter of Stack	m	3.5
3.	Cross Section Area of Stack	m <sup>2</sup>	9.61
4.	Temperature @ DGM	<sup>0</sup> C	33
5.	Stack temperature	<sup>0</sup> C	161
6.	Flue Gas Velocity	m/sec	9.10
7.	Flow Rate	Nm <sup>3</sup> /hr	214747
8.	Duration of Sampling	minutes	30

## EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	42.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	95.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	188	<300	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	3.97	--	USEPA Method-11
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-10/11

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Rotary Lime Kiln-1

**DATE & TIME OF COLLECTION :** 23-10-2024@ 11:30 hr

## TEST REPORT

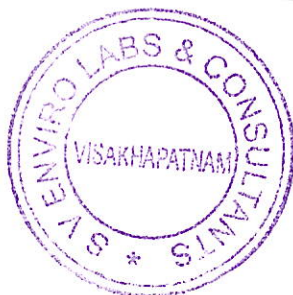
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	°C	30
5.	Stack temperature	°C	131
6.	Flue Gas Velocity	m/sec	8.93
7.	Flow Rate	Nm <sup>3</sup> /hr	26619
8.	Duration of Sampling	minutes	30

## EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	38.7	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	69.5	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	212	<500	IS:11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	5.73	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-10/12

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Rotary Lime Kiln-2

**DATE & TIME OF COLLECTION :** 23-10-2024 @ 12:00 hr

## TEST REPORT

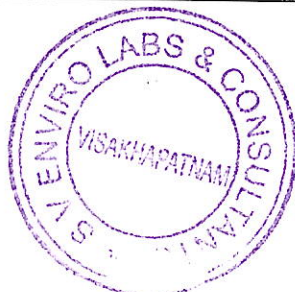
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	<sup>0</sup> C	33
5.	Stack temperature	<sup>0</sup> C	129
6.	Flue Gas Velocity	m/sec	9.03
7.	Flow Rate	Nm <sup>3</sup> /hr	27051
8.	Duration of Sampling	minutes	30

## EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	47.2	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	81.9	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	224	<500	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	6.91	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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**Ref: SVELC/APML/24-09/09**

**Date: 30-09-2024**

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** **STACK EMISSIONS**

**SOURCE OF COLLECTION :** Coal Fired Boiler - CF6

**DATE & TIME OF COLLECTION :** 09-09-2024 @ 10:00 hr

### TEST REPORT

S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	85
2.	Diameter of Stack	m	2.5
3.	Cross Section Area of Stack	m <sup>2</sup>	4.90
4.	Temperature @ DGM	°C	30
5.	Stack temperature	°C	154
6.	Flue Gas Velocity	m/sec	9.51
7.	Flow Rate	Nm <sup>3</sup> /hr	116305
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	41.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	80.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	179	<300	IS: 11255-P-7
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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Ref: SVELC/APML/24-09/10

Date: 30-09-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

SAMPLE PARTICULARS : STACK EMISSIONS

SOURCE OF COLLECTION : Recovery Boiler -4

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

### TEST REPORT

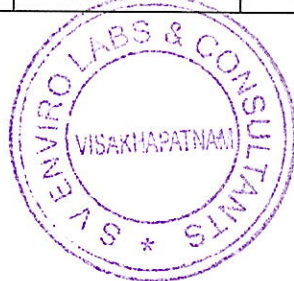
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	90
2.	Diameter of Stack	m	3.5
3.	Cross Section Area of Stack	m <sup>2</sup>	9.61
4.	Temperature @ DGM	°C	31
5.	Stack temperature	°C	172
6.	Flue Gas Velocity	m/sec	8.94
7.	Flow Rate	Nm <sup>3</sup> /hr	205756
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	39.7	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	85.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	191	<300	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	4.51	--	USEPA Method-11
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
CHECKED BY



  
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Hyderabad: Flat No. 302, H.No. 7-1-396/B/12, Sai Ram Residency, Balkampet Road, S.R.Nagar, Hyderabad-500038.  
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Ref: SVELC/APML/24-09/11

Date: 30-09-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

SAMPLE PARTICULARS : STACK EMISSIONS

SOURCE OF COLLECTION : Rotary Lime Kiln-1

DATE & TIME OF COLLECTION : 09-09-2024@ 11:30 hr

### TEST REPORT

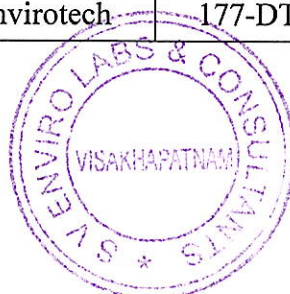
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	°C	32
5.	Stack temperature	°C	149
6.	Flue Gas Velocity	m/sec	8.57
7.	Flow Rate	Nm <sup>3</sup> /hr	24456
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	45.3	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	82.9	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	247	<500	IS:11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	5.20	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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**Ref: SVELC/APML/24-09/12**

**Date: 30-09-2024**

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Rotary Lime Kiln-2

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

### TEST REPORT

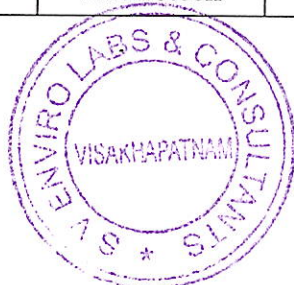
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	°C	30
5.	Stack temperature	°C	118
6.	Flue Gas Velocity	m/sec	8.19
7.	Flow Rate	Nm <sup>3</sup> /hr	25225
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	41.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	70.3	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	198	<500	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	6.15	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

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Ref: SVELC/APML/24-10/09

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Coal Fired Boiler - CF6

**DATE & TIME OF COLLECTION :** 23-10-2024 @ 10:00 hr

### TEST REPORT

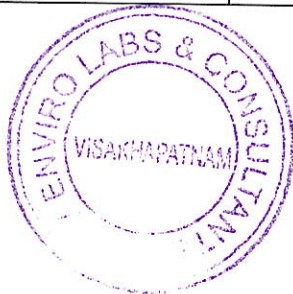
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	85
2.	Diameter of Stack	m	2.5
3.	Cross Section Area of Stack	m <sup>2</sup>	4.90
4.	Temperature @ DGM	°C	32
5.	Stack temperature	°C	139
6.	Flue Gas Velocity	m/sec	8.71
7.	Flow Rate	Nm <sup>3</sup> /hr	110400
8.	Duration of Sampling	minutes	30

### EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	45.1	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	92.7	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	189	<300	IS: 11255-P-7
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

  
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Ref: SVELC/APML/24-10/10

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Recovery Boiler -4

**DATE & TIME OF COLLECTION :** 23-10-2024 @ 10:45 hr

## TEST REPORT

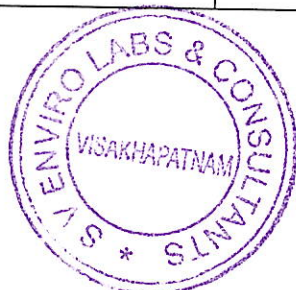
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	90
2.	Diameter of Stack	m	3.5
3.	Cross Section Area of Stack	m <sup>2</sup>	9.61
4.	Temperature @ DGM	<sup>0</sup> C	33
5.	Stack temperature	<sup>0</sup> C	161
6.	Flue Gas Velocity	m/sec	9.10
7.	Flow Rate	Nm <sup>3</sup> /hr	214747
8.	Duration of Sampling	minutes	30

## EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	42.9	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	95.2	<600	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	188	<300	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	3.97	--	USEPA Method-11
4.	Mercury	mg/Nm <sup>3</sup>	<0.005	<0.03	USEPA Method-29

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-10/11

Date: 31-10-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** STACK EMISSIONS

**SOURCE OF COLLECTION :** Rotary Lime Kiln-1

**DATE & TIME OF COLLECTION :** 23-10-2024@ 11:30 hr

## TEST REPORT

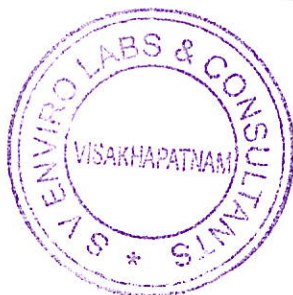
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	<sup>0</sup> C	30
5.	Stack temperature	<sup>0</sup> C	131
6.	Flue Gas Velocity	m/sec	8.93
7.	Flow Rate	Nm <sup>3</sup> /hr	26619
8.	Duration of Sampling	minutes	30

## EMISSION RATE

S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	38.7	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	69.5	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	212	<500	IS:11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	5.73	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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Ref: SVELC/APML/24-10/12

Date: 31-10-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

SAMPLE PARTICULARS : STACK EMISSIONS

SOURCE OF COLLECTION : Rotary Lime Kiln-2

DATE & TIME OF COLLECTION : 23-10-2024 @ 12:00 hr

## TEST REPORT

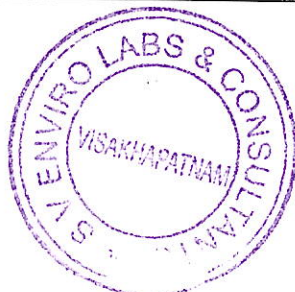
S. No.	DESCRIPTION	UNIT	RESULT
1.	Stack Height	m	60
2.	Diameter of Stack	m	1.2
3.	Cross Section Area of Stack	m <sup>2</sup>	1.13
4.	Temperature @ DGM	<sup>0</sup> C	33
5.	Stack temperature	<sup>0</sup> C	129
6.	Flue Gas Velocity	m/sec	9.03
7.	Flow Rate	Nm <sup>3</sup> /hr	27051
8.	Duration of Sampling	minutes	30

## EMISSION RATE



S.No.	PARAMETER	UNITS	RESULT	STANDARDS	METHOD
1.	Particulate Matter – PM	mg/Nm <sup>3</sup>	47.2	<50	IS:11255-P-1
2.	Sulphur Dioxide – SO <sub>2</sub>	mg/Nm <sup>3</sup>	81.9	<400	IS:11255-P-2
3.	Oxides of Nitrogen -NO <sub>x</sub>	mg/Nm <sup>3</sup>	224	<500	IS: 11255-P-7
4.	Hydrogen Sulphide	mg/Nm <sup>3</sup>	6.91	<10	USEPA Method-11

Instrument Used	Make	Model	Calibrated on	Calibration Due
Stack Monitoring Kit	Lata Envirotech	APM-160/ 177-DTC-2024	27.03.2024	26.03.2025

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	<b>ANDHRA PRADESH POLLUTION CONTROL BOARD</b> <b>ZONAL LABORATORY: VISAKHAPATNAM</b> 39-33-20/4/1, Madhavadhara VUDA Colony, Visakhapatnam – 530018 e-mail: zovsplab-ses2@appcb.gov.in	 TC-14351
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Form No: APPCB/ZL/VSP/CI.7.8/FM38B

**ANALYSIS REPORT**

FORM – X

REPORT BY THE BOARD ANALYST

(See Rule 26)

Report No. VSP202410730 to 734Date: 08.11.2024

I hereby certify that I, Sri M. Ravi, State Board Analyst, Zonal Laboratory duly appointed under sub-section (3) of section 53 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) received from the Junior Scientific Officer, Zonal Laboratory, Visakhapatnam on the day of 25.10.2024, the following samples for analysis

- VSP202410730 : ETP Inlet from paper machine  
 VSP202410731 : ETP Inlet from pulp mill and others  
 VSP202410732 : Aeration Tank Outlet  
 VSP202410733 : Secondary Clarifier Outlet  
 VSP202410734 : Treated effluent which is leading to discharge to River Godavari at Turupulanka Island

of M/s Andhra Paper Limited (Formerly M/s International Paper APPM Limited), Unit: Sriramnagar, Rajamahendravaram, East Godavari District collected on 24.10.2024. The samples were in a condition fit for analysis reported below:

I further certify that I have analyzed the above-mentioned samples from 25.10.2024 to 08.11.2024 and declare the result of the analysis to be as follows.

S. No.	Parameter	SAMPLE CODES					Test Method [APHA (24 <sup>th</sup> Edition)]
		Analysis Results					
		730	731	732	733	734	
1.	pH @ 25°C	7.29	6.34	7.03	7.10	7.23	4500 - H+B
2.	Total Suspended Solids (at 105°C)	72	654	48	163	44	2540 - D
3.	Total Dissolved Solids (at 180°C)	636	1044	1188	1836	968	2540 - C
4.	Chemical Oxygen Demand (COD)	560	856	88	100	88	5220 - B
5.	Biochemical Oxygen Demand (BOD) 3 days@ 27°C	154	250	24	30	24	IS 3025 (Part 44)

The condition of the seals, fastening and container on receipt was intact.

**Note:**



1. Result is related to sample as received and tested
2. All Values are expressed in mg/L except pH
3. This report shall not be reproduced except in full without the prior approval of Laboratory

Signed this: **08.11.2024****Address:**

Sri M. Ravi,  
 Senior Environmental Scientist,  
 Zonal Laboratory, APPCB, Visakhapatnam.

  
**STATE BOARD ANALYST**  
 (Senior Environmental Scientist)

\*\*\* END OF THE REPORT \*\*\*

 ANDHRA PRADESH POLLUTION CONTROL BOARD	<b>ANDHRA PRADESH POLLUTION CONTROL BOARD</b> <b>ZONAL LABORATORY: VISAKHAPATNAM</b> 39-33-20/4/1, Madhavadhara VUDA Colony, Visakhapatnam - 530018 e-mail: zovsplat-ses2@appcb.gov.in	 TC-14351
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Form No: APPCB/ZL/VSP/CI.7.8/FM40

**FORM - IV**

**REPORT BY THE STATE BOARD ANALYST**  
**[See Rule-14]**

**Report No. VSPA202410185 & 188****Date: 29.10.2024**

I hereby certify that I, M. Ravi, State Board Analyst duly appointed under sub-section (2) of Section 26 of the Air (Prevention and Control of Pollution) Act, 1981, received on the day of 26.10.2024 from Junior Scientific Officer, Zonal Laboratory, Visakhapatnam, the following stack emission sample for analysis is from:

- 1) **VSPA202410185:** Stack attached to 1 X 1300 TDP Recovery Boiler
- 2) **VSPA202410186:** Stack attached to 100 TPD Rotary lime Kiln -1
- 3) **VSPA202410187:** Stack attached to 160 TPD Rotary lime Kiln -2
- 4) **VSPA202410188:** Stack attached to 1 x 105 TPH Coal Fired Boiler

of M/s ANDHRA PAPER LIMITED, (FORMERLY INTERNATIONAL PAPER APPM LIMITED), UNIT: RAJAHMUNDRY, SRIRAMNAGAR, RAJAMAHENDRAVARAM, EAST GODAVARI DISTRICT collected on 24.10.2024 & 25.10.2024 was received in a condition fit for analysis as reported below:

I further certify that I have analyzed the above-mentioned sample from 26.10.2024 to 29.10.2024 and declare the result of the analysis to be as follows:

S.No.	Report No.	Parameter	Result (mg/Nm <sup>3</sup> )	CTO Standard (mg/Nm <sup>3</sup> )	Test Method
1.	<b>VSPA202410185</b>	Particulate Matter (PM)	44.7	50.0	IS:11255 (Part 1)
2	<b>VSPA202410186</b>	Particulate Matter (PM)	15.6		
3	<b>VSPA202410187</b>	Particulate Matter (PM)	12.7		
4	<b>VSPA202410188</b>	Particulate Matter (PM)	40.1		

The condition of the seals, fastening and container on receipt was intact.

Signed this on: 29.10.2024

Address:

M. Ravi,  
Senior Environmental Scientist/ Quality Manager  
Zonal Laboratory, APPCB, Visakhapatnam

  
 SIGNATURE OF THE STATE BOARD ANALYST/  
 QUALITY MANAGER

\*\*\* END OF THE REPORT\*\*\*



ANDHRA PRADESH POLLUTION CONTROL BOARD  
ZONAL LABORATORY: VISAKHAPATNAM  
39-33-20/4/1, Madhavadhara VUDA Colony,  
Visakhapatnam - 530018



M.RAVI  
SENIOR ENVIRONMENTAL SCIENTIST

e-mail: zovsplab-ses2@appcb.gov.in

Form No: APPCB/ZL/VSP/CL.7.8/FM40

**FORM - IV**

**REPORT BY THE STATE BOARD ANALYST**

[See Rule-14]

**Report No. VSPA202410185 & 188**

**Date: 29.10.2024**

I hereby certify that I, M. Ravi, State Board Analyst duly appointed under sub-section (2) of Section 26 of the Air (Prevention and Control of Pollution) Act, 1981, received on the day of 26.10.2024 from Junior Scientific Officer, Zonal Laboratory, Visakhapatnam, the following stack emission sample for analysis is from:

- 1) **VSPA202410185:** Stack attached to 1 X 1300 TDP Recovery Boiler
- 2) **VSPA202410186:** Stack attached to 100 TPD Rotary lime Kiln -1
- 3) **VSPA202410187:** Stack attached to 160 TPD Rotary lime Kiln -2
- 4) **VSPA202410188:** Stack attached to 1 x 105 TPH Coal Fired Boiler

of M/s ANDHRA PAPER LIMITED, (FORMERLY INTERNATIONAL PAPER APPM LIMITED), UNIT: RAJAHMUNDRY, SRIRAMNAGAR, RAJAMAHENDRAVARAM, EAST GODAVARI DISTRICT collected on 24.10.2024 & 25.10.2024 was received in a condition fit for analysis as reported below:

I further certify that I have analyzed the above-mentioned sample from 26.10.2024 to 29.10.2024 and declare the result of the analysis to be as follows:

S.No.	Report No.	Parameter	Result (mg/Nm <sup>3</sup> )	CTO Standard (mg/Nm <sup>3</sup> )	Test Method
1.	VSPA202410185	Sulphur Dioxide (SO <sub>2</sub> )	14.6	-	IS-11255 (Part-2)
2	VSPA202410188		22.6		
3	VSPA202410186	Hydrogen Sulphide (H <sub>2</sub> S)	8.6	10.0	TCEQ Lab Method 17
4	VSPA202410187		8.2		

The condition of the seals, fastening and container on receipt was intact.

Signed this on: 29.10.2024

Address:

M. Ravi,  
Senior Environmental Scientist/ Quality Manager  
Zonal Laboratory, APPCB, Visakhapatnam

SIGNATURE OF THE STATE BOARD ANALYST/  
QUALITY MANAGER



# Glens Innovation Labs Pvt Ltd.

NABL Accredited as per ISO17025:2017, Certified as per ISO 9001:2015 & ISO 45001:2018

## TEST REPORT

Report No. : EN23120393

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 14-Dec-2023  
 Sample Description : Stack Emision Received Date : 15-Dec-2023  
 Sampling Location : Coal Fired Boiler S1 Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
<b>Discipline: Chemical</b>					
<b>Group: Atmospheric Pollution</b>					
1	Particulate Matter	mg/Nm <sup>3</sup>	47.20	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

Verified By

Authorized Signature  
E. PRITHIVIRAJAN  
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #C/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

#### Terms and Conditions:

- \* The test results related only to the items tested.
- \* The test report shall not be reproduced in full or part without the written approval of Glens.
- \* The test items will not be retained for more than 15 days from the date of issue of test report except in the case as required by the applicable regulations.
- \* The Laboratory's responsibility under this report is limited to proven wilful negligence and will in no case be more than the invoiced amount.
- \* A Satisfactory test report in no way implies that the product tested is approved by NABL.
- \* Laboratory is not responsible for the authenticity of the photocopied test reports.



# Glens Innovation Labs Pvt Ltd.

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## TEST REPORT

Report No. : EN23120396

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 12-Dec-2023  
 Sample Description : Stack Emision Received Date : 15-Dec-2023  
 Sampling Location : Recovery Boiler Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Particulate Matter	mg/Nm <sup>3</sup>	44.0	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

  
Verified By

  
Authorized Signature

**E. PRITHIVIRAJAN**  
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #6/1,1 St Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

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## TEST REPORT

Report No. : EN23120397

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 14-Dec-2023  
 Sample Description : Stack Emission Received Date : 15-Dec-2023  
 Sampling Location : Kiln 1 Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
<b>Discipline: Chemical</b>					
<b>Group: Atmospheric Pollution</b>					
1	Hydrogen Sulphide as H <sub>2</sub> S	mg/Nm <sup>3</sup>	8.0	IS 11255 (Part 4):2006	10
2	Particulate Matter	mg/Nm <sup>3</sup>	32.0	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

  
Verified By

  
Authorized Signature  
E. PRITHIVIRAJAN  
LAB MANAGER

GLENS INNOVATION LABS Pvt Ltd, #5/1, 1st Floor, Sri Jothi Complex Murugesan Street, Balavinayagar Nagar, Arumbakkam Chennai 600106

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## TEST REPORT

Report No. : EN23120398

Name of the Client : Andhra Paper Limited  
 Address of the Client : Rajamahendravaram Mill Sriram Nagar Rajamahendravaram, East Godavari 533105  
 Sample Name : Stack Emission Sampling Date : 12-Dec-2023  
 Sample Description : Stack Emision Received Date : 15-Dec-2023  
 Sampling Location : Kiln 2 Commenced On : 15-Dec-2023  
 Sample Submission Type : Collected by Lab Representative Completed On : 22-Dec-2023  
 Sample Condition : Good Report Date : 26-Dec-2023  
 Sampling Plan and Method : GL/EN/SOP/111



### Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Hydrogen Sulphide as H2S	mg/Nm3	7.20	IS 11255 (Part 4):2006	10
2	Particulate Matter	mg/Nm3	35.0	GL/ EN/SOP/113	50

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

\*\*\*End of Report\*\*\*

  
Verified By

  
Authorized Signature

**E. PRITHIVIRAJAN**  
LAB MANAGER

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# SWAN ENVIRONMENTAL PVT. LTD.,

(ISO 9001 : 2015 CERTIFIED)

Plot. No. 922 & 935, Swami Ayyappa Co-Op Society, Madhapur, Hyderabad - 500 081, Telangana, India.

Phone: +91-40-40216184/85, Fax: +91-40-40216183

Email : info@swanenviron.com Website : www.swanenviron.com

## CALIBRATION CERTIFICATE

**Certificate No:** SEPL/CEMS/APL/2024/0808

**Date of Issue** :27-08-2024

**Customer** : M/s. Andhra Paper Ltd., Rajahmundry, East Godavari Dist., A.P.

**Station Name** : CFB6 Stack

### Instrument Details:

**Instrument** : Online Stack Dust (SPM) Monitor

**Date of Calibration** :22-08-2024

**Make** : Mip OY, Finland

**Due Date** :19-11-2024

**Model** : LM3189.

**Serial No.** : 3189041.

### Calibration Filter Details:

Details	Serial NO	Optical Density
Optical Filter	1195847	20 %

### Calibration Details :

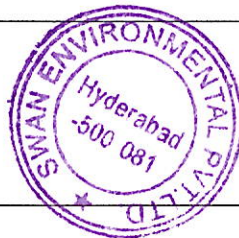
Parameter	Span Calibration		
	Standard Optical Density	Measured Density	% of Deviation
Opacity	20.0 %	20.16%	1.4%

**Accepted Tolerance:  $\pm 2$  %**

**Result:** The Calibration of above instrument is performed and it meets the acceptance criteria.

**Calibrated by:**

*P. Rajesh*  
Mr.P.Rajesh  
Engineer Service



**Reviewed by:**

*PN Mahadev*  
Mr.PN Mahadev  
Sr.Sales & Service Engineer



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Email : info@swanenviron.com Website : www.swanenviron.com

## CALIBRATION CERTIFICATE

**Certificate No:** SEPL/CEMS/APL/2024/0807 **Date of Issue** : 27-08-2024

**Customer** : M/s. Andhra Paper Ltd., Rajahmundry, East Godavari Dist., A.P.

**Station Name** : RB4 Stack

### Instrument Details:

**Instrument** : Online Stack Dust (SPM) Monitor **Date of Calibration** : 22-08-2024  
**Make** : Mip OY, Finland **Due Date** : 19-11-2024  
**Model** : LM3189.  
**Serial No.** : 3189065

### Calibration Filter Details:

Details	Serial NO	Optical Density
Optical Filter	1195847	20 %

### Calibration Details :

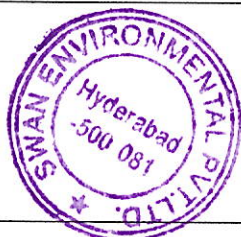
Parameter	Span Calibration		
	Standard Optical Density	Measured Density	% of Deviation
Opacity	20.0 %	20.15%	0.75%

**Accepted Tolerance:**  $\pm 2\%$

**Result:** The Calibration of above instrument is performed and it meets the acceptance criteria.

**Calibrated by:**

*P. Rajesh*  
**Mr.P.Rajesh**  
 Engineer Service



**Reviewed by:**

*PN Mahadev*  
**Mr.PN Mahadev**  
 Sr.Sales & Service Engineer



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## CALIBRATION CERTIFICATE

**Certificate No:** SEPL/CEMS/APL/2024/0805

**Date of Issue** : 27-08-2024

**Customer** : M/s. Andhra Paper Ltd., Rajahmundry, East Godavari Dist., A.P.

**Station name** : RLK-1 Stack

### Instrument Details:

**Instrument** : Online Stack Dust (SPM) Monitor

**Date of Calibration** : 22-08-2024

**Make** : EMS Instrument

**Due Date** : 19-11-2024

**Model** : L2400

**Serial No.** : M162422

### Calibration Filter Details:

Details	Serial NO	Optical Density
Optical Filter	1195847	20 %

### Calibration Details :

Parameter	Span Calibration		
	Standard Optical Density	Measured Density	% of Deviation
Opacity	20 %	20.02%	0.1%

**Accepted Tolerance:**  $\pm 2\%$

**Result:** The Calibration of above instrument is performed and it meets the acceptance criteria.

**Calibrated by:**

**Reviewed by:**

*P. Rajesh*

Mr.P.Rajesh  
Engineer Service



*Mr. PN Mahadev*

Mr.PN Mahadev  
Sr.Sales & Service Engineer



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Email : info@swanenviron.com Website : www.swanenviron.com

## CALIBRATION CERTIFICATE

**Certificate No:** SEPL/CEMS/APL/2024/0806

**Date of Issue** : 27-08-2024

**Customer** : M/s. Andhra Paper Ltd., Rajahmundry, East Godavari Dist., A.P.

**Station name** : RLK-2Stack

### Instrument Details:

**Instrument** : Online Stack Dust (SPM) Monitor

**Date of Calibration** : 22-08-2024

**Make** : EMS Instrument

**Due Date** : 19-11-2024

**Model** : L2400

**Serial No.** : M162423

### Calibration Filter Details:

Details	Serial NO	Optical Density
Optical Filter	1195847	20 %

### Calibration Details :

Parameter	Span Calibration		
	Standard Optical Density	Measured Density	% of Deviation
Opacity	20 %	20.19%	0.95%

**Accepted Tolerance:**  $\pm 2\%$

**Result:** The Calibration of above instrument is performed and it meets the acceptance criteria.

**Calibrated by:**

**Reviewed by:**

*P. Rajesh*

Mr.P.Rajesh  
Engineer Service



*PN Mahadev*

Mr.PN Mahadev  
Sr.Sales & Service Engineer



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Email: info@swanenviron.com Website: www.swanenviron.com

## Maintenance Report for MIP-OY LM3189 Opacity Dust Monitor

### Company Details

Company Name:	Andhra Paper Limited, Rajahmundry Unit
Location Name:	Coal Fired Boiler -06

### Boiler Dust Monitor Details

Monitor Model:	MIP-OY LM3189
Serial Number:	3189041

### Maintenance Duration

Start Date:	02.04.2024
End Date:	29.04.2024

### Calibration Status

Checked OK with 20% Opacity Film

### Report Status

Good

### Maintenance Activities

Maintenance Activity	Details
Visual Inspection	Conducted visual inspection of MIP-OY LM3189 Opacity Dust Monitor.
Cleaning	Cleaned external surfaces and optical components using appropriate solutions.
Functional Testing	Verified operational functionality through simulated monitoring scenarios.
Calibration Check	Conducted calibration check with 20% opacity film, confirmed parameters within limits.
Detector Lens Cleaning	Thoroughly cleaned detector lens to ensure optimal performance.
Laser Operational Check	Identified laser as working fine during operational checks.
Electrical Components Check	Confirmed all electrical components are operational.
Board Voltages Check	Verified all board voltages; confirmed within acceptable range.
Voltage Transformer Replacement	Replaced internal voltage transformer due to identified abnormality.

## Operational Checks

### 1. Boiler Dust Monitor Unit

Detail	Measured Value	Ref. required
Output Voltage V+	+14.79 V	+14.8 ± 0.5 V
Output Voltage V-	-14.83 V	-14.8 ± 0.5 V
Reference Voltage (V ref)	+2.51 V	±2.5 ± 0.1 V
Test Point V_TP2	+4.97 V	+5.0 ± 0.1 V
Test Point V_TP6	-5.00 V	-5.0 ± 0.1 V

### 2. Transmitter Unit

Transmitter wavelength	655 nm
------------------------	--------

### 3. Receiver Unit

Detail	Measured Value	Ref. required
Input Voltage V+	+14.76 V	+14.8 ± 0.5 V
Input Voltage V-	-14.79 V	-14.8 ± 0.5 V
Test Point V_TP1	+5.0 V	±5.0 ± 0.3 V
Test Point V_TP2	-4.95 V	-3.0 ± 0.3 V
Reference Voltage (V ref)	-3.00 V	-3.0 ± 0.1 V

## General Checks

S. No	Details	Result
1	Instrument Physical Check	Good
2	Availability of Identification Codes & Marking	Ok
3	Condition of Laser Diode Module	Good
4	Condition of Detector Module	Good
5	Condition of Analysis Module Assembly	Good
6	Condition of Analogue Meter	Good
7	Condition of Range Switch	Good
8	Condition of Display Module	Good
9	Length of Cable Accessories (cable 10 meters)	Yes, Ok
10	Power-on Check	Yes, Ok
11	Burn-in Test	Passed, Ok
12	Analogue Current Output Check	Checked, Ok
13	Analogue Voltage Output Check	Checked, Ok
14	Overall Performance Check	Checked, Ok

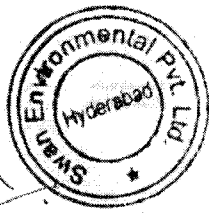
## Summary

The MIP-OY LM3189 Opacity Dust Monitor installed at Andhra Paper Limited's Rajahmundry Unit underwent routine maintenance from 02.04.2024 to 29.04.2024, confirming its operational status as good. All necessary checks and cleaning procedures were conducted, ensuring the monitor's reliability and accuracy in monitoring opacity levels. The internal voltage transformer was replaced due to an identified abnormality. The monitor is now functioning correctly and meets calibration standards.

## Issued by:

Name:	PN Mahadev
Position:	Sr. Sales & Service Engineer
Company:	SWAN ENVIRONMENTAL PRIVATE LIMITED, HYDERABAD

*Inspected by*  
*M. Dahan*





# SWAN ENVIRONMENTAL PVT. LTD.,

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Email : [info@swanenviron.com](mailto:info@swanenviron.com) Website : [www.swanenviron.com](http://www.swanenviron.com)

## Maintenance Report for MIP-OY LM3189 Opacity Dust Monitor

### Company Details

Company Name:	Andhra Paper Limited, Rajahmundry Unit
Location:	Recovery Boiler - 04

### Boiler Dust Monitor Details

Monitor Model:	MIP-OY LM3189
Serial Number:	3189065

### Maintenance Duration

Start Date:	02.04.2024
End Date:	29.04.2024

### Calibration Status

Checked OK with 20% Opacity Film

### Report Status

Good

### Operational Checks

#### 1. Boiler Dust Monitor Unit

Detail	Measured Value	Ref. required
Output Voltage V+	+14.79 V	+14.8 ± 0.5 V
Output Voltage V-	-14.83 V	-14.8 ± 0.5 V
Reference Voltage (V ref)	+2.51 V	±2.5 ± 0.1 V
Test Point V.TP2	+4.97 V	+5.0 ± 0.1 V
Test Point V.TP6	-5.00 V	-5.0 ± 0.1 V

## General Checks

S. No	Details	Result
1	Instrument Physical Check	Good
2	Availability of Identification Codes & Marking	Ok
3	Condition of Laser Diode Module	Good
4	Condition of Detector Module	Good
5	Condition of Analysis Module Assembly	Good
6	Condition of Analogue Meter	Good
7	Condition of Range Switch	Good
8	Condition of Display Module	Good
9	Length of Cable Accessories (cable 10 meters)	Yes, Ok
10	Power-on Check	Yes, Ok
11	Burn-in Test	Passed, Ok
12	Analogue Current Output Check	Checked, Ok
13	Analogue Voltage Output Check	Checked, Ok
14	Overall Performance Check	Checked, Ok

### 2. Transmitter Unit

Details for the transmitter unit will be filled here.

### 3. Receiver Unit

Detail	Measured Value	Ref. required
Input Voltage V+	+14.76 V	+14.8 ± 0.5 V
Input Voltage V-	-14.79 V	-14.8 ± 0.5 V
Test Point V_TP1	+5.0 V	±5.0 ± 0.3 V
Test Point V_TP2	-4.95 V	-3.0 ± 0.3 V
Reference Voltage (V ref)	-3.00 V	-3.0 ± 0.1 V

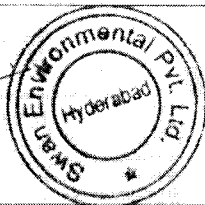
## Summary

The MIP-OY LM3189 Boiler Dust Monitor installed at Andhra Paper Limited's Rajahmundry Unit underwent routine maintenance from 02.04.2024 to 29.04.2024, confirming its operational status as good. All necessary checks and cleaning procedures were conducted, ensuring the monitor's reliability and accuracy in monitoring opacity levels. The internal voltage transformer was replaced due to an identified abnormality. The monitor is now functioning correctly and meets calibration standards.

### Issued by:

Name:	PN Mahadev
Position:	Sr. Sales & Service Engineer
Company:	SWAN ENVIRONMENTAL PRIVATE LIMITED, HYDERABAD

*Inspected by*  
*PN Mahadev*





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Phone: +91-40-40216184/85, Fax: +91-40-40216183.

Email : info@swanenviro.com Website : www.swanenviro.com

## Maintenance Report for EMS 2400 Opacity Dust Monitor

### Company Details

Company Name:	Andhra Paper Limited, Rajahmundry Unit
Location Name:	Rotary Lime Klin 01

### Boiler Dust Monitor Details

Monitor Model:	EMS 2400
Serial Number:	M162422

### Maintenance Duration

Start Date:	02.04.2024
End Date:	29.04.2024

### Calibration Status

Checked OK with 20% Opacity Film

### Report Status

Good

### Maintenance Activities

Maintenance Activity	Details
Visual Inspection	Conducted visual inspection of EMS 2400 Opacity Dust Monitor.
Cleaning	Cleaned external surfaces and optical components using solutions.
Functional Testing	Verified operational functionality through simulated monitoring scenarios.
Calibration Check	Calibrated using 20% opacity film, confirmed parameters within limits.
Detector Lens Cleaning	Cleaned detector lens with solutions, confirmed no physical damages.
Laser Operational Check	Identified laser as working fine during operational checks.
Electrical Components Check	Checked all electrical components; confirmed operational status.
Board Voltages Check	Verified all board voltages; confirmed within acceptable range.

## Operational Checks

### 1. Boiler Dust Monitor Unit

Detail	Measured Value	Ref. required
Output Voltage V+	+14.79 V	+14.8 $\pm$ 0.5 V
Output Voltage V-	-14.83 V	-14.8 $\pm$ 0.5 V
Reference Voltage (V ref)	+2.51 V	$\pm$ 2.5 $\pm$ 0.1 V
Test Point V_TP2	+4.97 V	+5.0 $\pm$ 0.1 V
Test Point V_TP6	-5.00 V	-5.0 $\pm$ 0.1 V

### 2. Transmitter Unit

Transmitter wavelength	655 nm
------------------------	--------

### 3. Receiver Unit

Detail	Measured Value	Ref. required
Input Voltage V+	+14.76 V	+14.8 $\pm$ 0.5 V
Input Voltage V-	-14.79 V	-14.8 $\pm$ 0.5 V
Test Point V_TP1	+5.0 V	$\pm$ 5.0 $\pm$ 0.3 V
Test Point V_TP2	-4.95 V	-3.0 $\pm$ 0.3 V
Reference Voltage (V ref)	-3.00 V	-3.0 $\pm$ 0.1 V

## General Checks

S. No	Details	Result
1	Instrument Physical Check	Good
2	Availability of Identification Codes & Marking	Ok
3	Condition of Laser Diode Module	Good
4	Condition of Detector Module	Good
5	Condition of Analysis Module Assembly	Good
6	Condition of Analogue Meter	Good
7	Condition of Range Switch	Good
8	Condition of Display Module	Good
9	Length of Cable Accessories (cable 10 meters)	Yes, Ok
10	Power-on Check	Yes, Ok
11	Burn-in Test	Passed, Ok
12	Analogue Current Output Check	Checked, Ok
13	Analogue Voltage Output Check	Checked, Ok
14	Overall Performance Check	Checked, Ok

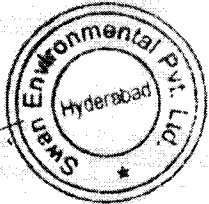
## Summary

The EMS 2400 Opacity Dust Monitor located at Rotary Lime Klin 01 of Andhra Paper Limited's Rajahmundry Unit underwent maintenance from 02.04.2024 to 29.04.2024. All maintenance activities were successfully completed without observing any abnormalities or physical damages. The monitor's electrical components and board voltages were checked and confirmed to be operating within acceptable parameters. The laser was identified as working fine during operational checks. It is currently operating at peak efficiency and meets calibration standards.

## Issued by:

Name:	PN Mahadev
Position:	Sr. Sales & Service Engineer
Company:	SWAN ENVIRONMENTAL PRIVATE LIMITED, HYDERABAD

*Inspected by*  
*PN Mahadev*





# SWAN ENVIRONMENTAL PVT. LTD.,

(ISO 9001 : 2015 CERTIFIED)

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Email : [info@swanenviron.com](mailto:info@swanenviron.com) Website : [www.swanenviron.com](http://www.swanenviron.com)

## Maintenance Report for EMS 2400 Opacity Dust Monitor

### Company Details

Company Name:	Audhra Paper Limited, Rajahmundry Unit
Location Name:	Rotary Lime Klin 02

### Boiler Dust Monitor Details

Monitor Model:	EMS 2400
Serial Number:	M162423

### Maintenance Duration

Start Date:	02.04.2024
End Date:	29.04.2024

### Calibration Status

Checked OK with 20% Opacity Film

### Report Status

Good

### Maintenance Activity, Observations, and Actions Taken

S. No	Maintenance Activity	Observations	Actions Taken
1	Identified low detector voltages and calibration issues.	Detector voltages were only 0.9V, actual voltage should be +5V.	Replaced both detector boards and the detector itself.
2	Checked laser intensity, found to be within acceptable range.	Laser intensity checked and found to be good.	Conducted calibration to ensure accurate readings.

## Operational Checks

### 1. Boiler Dust Monitor Unit

Detail	Measured Value	Ref. required
Output Voltage V+	+14.79 V	+14.8 $\pm$ 0.5 V
Output Voltage V-	-14.83 V	-14.8 $\pm$ 0.5 V
Reference Voltage (V ref)	+2.51 V	$\pm$ 2.5 $\pm$ 0.1 V
Test Point V.TP2	+4.97 V	+5.0 $\pm$ 0.1 V
Test Point V.TP6	-5.00 V	-5.0 $\pm$ 0.1 V

### 2. Transmitter Unit

Transmitter wavelength	655 nm
------------------------	--------

### 3. Receiver Unit

Detail	Measured Value	Ref. required
Input Voltage V+	+14.76 V	+14.8 $\pm$ 0.5 V
Input Voltage V-	-14.79 V	-14.8 $\pm$ 0.5 V
Test Point V.TP1	+5.0 V	$\pm$ 5.0 $\pm$ 0.3 V
Test Point V.TP2	-4.95 V	-3.0 $\pm$ 0.3 V
Reference Voltage (V ref)	-3.00 V	-3.0 $\pm$ 0.1 V

## General Checks

S. No	Details	Result
1	Instrument Physical Check	Good
2	Availability of Identification Codes & Marking	Ok
3	Condition of Laser Diode Module	Good
4	Condition of Detector Module	Good
5	Condition of Analysis Module Assembly	Good
6	Condition of Analogue Meter	Good
7	Condition of Range Switch	Good
8	Condition of Display Module	Good
9	Length of Cable Accessories (cable 10 meters)	Yes, Ok
10	Power-on Check	Yes, Ok
11	Burn-in Test	Passed, Ok
12	Analogue Current Output Check	Checked, Ok
13	Analogue Voltage Output Check	Checked, Ok
14	Overall Performance Check	Checked, Ok

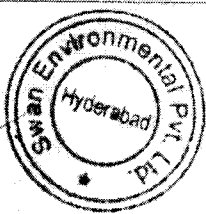
## Summary

The EMS 2400 Opacity Dust Monitor installed at Andhra Paper Limited's Rajammundry Unit, Rotary Lime Klin 02, underwent routine maintenance from 02.04.2024 to 29.04.2024, confirming its operational status as good. All necessary checks and cleaning procedures were conducted, ensuring the monitor's reliability and accuracy in monitoring opacity levels. Semiconductors were replaced due to identified issues. The monitor is now functioning correctly and meets calibration standards.

## Issued by:

Name:	PN Mahadev
Position:	Sr. Sales & Service Engineer
Company:	SWAN ENVIRONMENTAL PRIVATE LIMITED, HYDERABAD

*Inspected by  
Rohas*





APL/ENV/2023/11-594

08.11.2023

To

Environmental Engineer,  
A. P. Pollution Control Board, Regional Office,  
Kakinada, **Andhara Pradesh.**

SUB: Andhra Paper Limited, Rajahmundry – Compliance status on CFO condition no.11 under General Head – Intimation

REF : **Consent Order No:APPCB/VSP/RJY/361/CTO/HO/2010- Dated 03.07.2023**

Dear Sir

We are pleased to inform you the compliance status of General Condition under S.No.11 of above cited CFO order dated 03.07.2023 as under:

**S. No: 11 of General Condition of CFO order**

*"The Industry shall restrict the temperature of wastewater to below 35 deg.c at inlet of ETP. The Plan of action to restrict the temperature of wastewater at inlet of ETP within 2 months shall be furnished to RO Kakinada and ZO Visakhapatnam."*

**Compliance Status:**

**Existing ETP cooling tower was rebuild as per below and successfully commissioned in the 3<sup>rd</sup> week of August. 2023.**

- Entire civil tank and structures renovated.
- Cooling tower internal replaced
- Heat exchange surface area increased
- Wings increased from 4 to 8 No's of new set, accordingly gear new gear box installed
- Motor capacity increased from 50 HP to 100 HP.
- Drip eliminators replaced.
- Modification of inlet effluent distribution header line.
- Safety handrails replaced with SS pipe.
- Hot well slope readjusted to maintain equivalence
- Effluent inlet nozzles replaced

**ANDHRA PAPER LIMITED**

**(Corporate Identity Number: L21010AP1964PLC001008)**

Regd. Office: Rajamahendravaram – 533 105, East Godavari District, India. Tel: +91-883-2471831

Corp. Office: 31, Chowringhee Road, Park Street, Kolkata – 700 016, India. Tel: +91-33-71500500

Website: [www.andhrpaper.com](http://www.andhrpaper.com); Email: [info@andhrpaper.com](mailto:info@andhrpaper.com)

An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 Certified Company



The project work was assigned to M/S. S.V.Cooling Towers (P) Ltd. E-32 Kavi Nagar Industrial Area, Sector-17, Ghaziabad-201002, U.P, India with an **estimated Budget is: Rs.73.714 Lacs.**

**Post implementation of Effluent temperatures are given below which are in compliance.** The photographs of cooling tower is attached to this letter.

Date	ETP Inlet ( or ) Cooling tower inlet (Degrees centigrade)	Cooling tower outlet ( or ) Aeration Inlet (Degrees centigrade)	Differential Temperatures
07.11.2023	49	36	13
08.11.2023	48	35	13

This is for your kind information and update

Yours Sincerely

For **Andhra Paper Limited. Unit – Rajahmundry**

**M. Sura Reddy**

**Sr. Vice President (Operations) & Factory Manager**

CC : Regional Directorate  
CPCB – Chennai.



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## ETP COOLING TOWER PHOTOGRAPHS



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# SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

Corporate Office : Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012  
 & Laboratory www.svenviolabs.com, Ph:0891-2755528, Cell: +91 9440338628  
 info@svenviolabs.com, svenviro\_labs@yahoo.co.in

Branch Office : 2-53, Mahipala Street, Yanam - 533464.

Recognized by Govt.of India-MoEF & CC, New Delhi, Accredited by : NABL & NABET



Ref: SVELC/APML/23-02/02

Date: 21-02-2023

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

SAMPLE PARTICULARS : EFFLUENT

SOURCE OF COLLECTION : ETP OUTLET  
 (Discharged into Sand Sholes of River Godavari)  
 (Samples collected by APPCB on 14-02-2023 and  
 the same counter samples was hand over to M/S.  
 SV ENVIRO LABS & CONSULTANTS by APL)

DATE OF COLLECTION : 14-02-2023

## TEST REPORT

S. No.	PARAMETER	UNIT	RESULT	PCB Standards
1.	Color	Hazen	135	-
2.	pH	--	7.34	5.5-9.0
3.	Total Suspended Solids –TSS	mg/l	55.0	<100
4.	Total Dissolved Solids –TDS	mg/l	1642	-
6.	Chemical Oxygen Demand – COD	mg/l	124	<250
7.	Bio-chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	25.0	<30

Note: All the above parameters are analysed as per APHA 23<sup>rd</sup> Ed,2017 & IS 3025(P-44).

CHECKED BY



SV ENVIRO LABS & CONSULTANTS



# SV ENVIRO LABS & CONSULTANTS

(ENVIRONMENTAL ENGINEERS & CONSULTANTS IN POLLUTION CONTROL)

**Corporate Office & Laboratory :** Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam-530012.  
**Hyderabad:** Flat No. 302, H.No. 7-1-396/B/12, Sai Ram Residency, Balkampet Road, S.R.Nagar, Hyderabad-500038.  
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Ref: SVELC/APML/24-01/17

Date 22-01-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** EFFLUENT

**SOURCE OF COLLECTION :** ETP OUTLET  
 (Samples collected by APPCB on 11-01-2024 and  
 the same counter samples was hand over to  
 M/S. SV ENVIRO LABS & CONSULTANTS by APL)

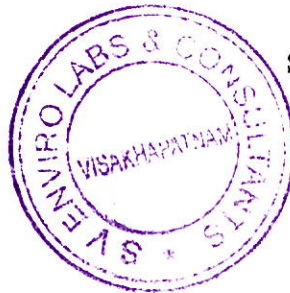
**DATE OF COLLECTION :** 11-01-2024

## TEST REPORT

S. No.	PARAMETER	UNIT	RESULT	PCB Standards
1.	Colour	Hazen	123	-
2.	pH	--	7.42	6.5-8.5
3.	Total Suspended Solids –TSS	mg/l	36.0	<100
4.	Total Dissolved Solids –TDS	mg/l	1451	-
6.	Chemical Oxygen Demand – COD	mg/l	119	<250
7.	Bio-chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	27.0	<30

**Note:** All the above parameters are analysed as per APHA 24<sup>th</sup> Edition,2023 & IS 3025(P-44).

CHECKED BY 



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Ref: SVELC/APML/24-02/17

Date 21-02-2024

NAME AND ADDRESS : M/s. ANDHRA PAPER MILL LIMITED.,  
 Rajahmundry, East Godavari,  
 Andhra Pradesh – 533105.

SAMPLE PARTICULARS : EFFLUENT

SOURCE OF COLLECTION : ETP OUTLET  
 (Samples collected by APPCB on 09-02-2024 and  
 the same counter samples was hand over to  
 M/S. SV ENVIRO LABS & CONSULTANTS by APL)

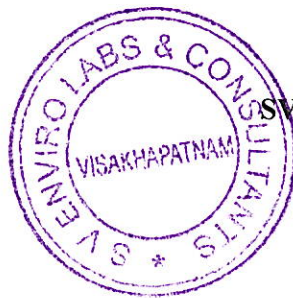
DATE OF COLLECTION : 09-02-2024

## TEST REPORT

S. No.	PARAMETER	UNIT	RESULT	PCB Standards
1.	Colour	Hazen	148	-
2.	pH	--	7.63	6.5-8.5
3.	Total Suspended Solids –TSS	mg/l	42.0	<100
4.	Total Dissolved Solids –TDS	mg/l	1521	-
6.	Chemical Oxygen Demand – COD	mg/l	137	<250
7.	Bio-chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	25.0	<30

**Note:** All the above parameters are analysed as per APHA 24<sup>th</sup> Edition, 2023 & IS 3025(P-44).

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Ref: SVELC/APML/24-06/17

Date 05-07-2024

**NAME AND ADDRESS :** M/s. ANDHRA PAPER MILL LIMITED.,  
Rajahmundry, East Godavari,  
Andhra Pradesh – 533105.

**SAMPLE PARTICULARS :** EFFLUENT

**SOURCE OF COLLECTION :** ETP OUTLET  
(Samples collected by APPCB on 28-06-2024 and  
the same counter samples was hand over to  
M/S. SV ENVIRO LABS & CONSULTANTS by APL)

**DATE OF COLLECTION :** 28-06-2024

### TEST REPORT

S. No.	PARAMETER	UNIT	RESULT	PCB Standards
1.	Colour	Hazen	134	-
2.	pH	--	7.29	6.5-8.5
3.	Total Suspended Solids –TSS	mg/l	39.0	<100
4.	Total Dissolved Solids –TDS	mg/l	1372	-
6.	Chemical Oxygen Demand – COD	mg/l	126	<250
7.	Bio-chemical Oxygen Demand – BOD (3 days incubation at 27°C)	mg/l	23.0	<30

**Note:** All the above parameters are analysed as per APHA 24<sup>th</sup> Edition,2023 & IS 3025(P-44).

  
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