

## Quarterly report to NGT

### Status of compliance of the directions of the NGT as on 31.08.2025.

#	Direction from NGT	Status of Compliance
1	<p>i. Prepare the design for both short term and long-term measures suggested by NEERI through competent and expert developers/contractors with suitable time frame for completion and presenting the design to the KSPCB for its approval/further direction, within three months from the date of Judgment (31.08.2017).</p> <p>ii. Implementation of the measures after receipt of approval from the KSPCB within the time frame proposed for completion.</p>	<ul style="list-style-type: none"> <li>• M/s KITCO prepared the DPR for short term measures and submitted to KSPCB for approval on 20.07.2018.</li> <li>• Approval obtained from KSPCB for short term measures DPR on 07.01.2019.</li> <li>• <b>Points stands Complied.</b></li> </ul> <p><b><u>Short term Measures</u></b> <b><u>Garland Drain</u></b></p> <ul style="list-style-type: none"> <li>• Completed construction of garland drain around new ETP.</li> <li>• Construction of garland drain around old IOP/ETP pond was completed as per site conditions. Few stretch in the capped area is under construction. Garland drain construction at north, west &amp; east portions of old IOP/ ETP has been completed covering 870 meters length. On the south side, 100 meters out of the planned 460 meters have been completed. The work in the remaining portion is under progress and is expected to be completed by September 2025.</li> <li>• <b>Both the above garland drains are already provided with collection pits, neutralization and pumping facilities &amp; in operation.</b></li> <li>• The civil construction work of the garland drain around new IOP was completed on 23.05.2025.</li> </ul> <p><b><u>Land Remediation of Test Patch area(1R) inside KMML -</u></b></p> <ul style="list-style-type: none"> <li>• M/s FEDO, Kochi, was appointed as the project management consultancy.</li> <li>• Three parties quoted for the E-tender towards work execution. E-tender evaluation done, and work order issued to M/s P.T.</li> </ul>

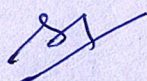
  
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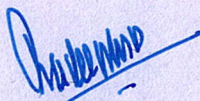


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- Execution of the work started by the first week of April 2024.
- Sprinkling of lime solution was completed by August 2024 and leachate collection done at site & completed the test process. The leachate quantity was low due to site conditions.
- M/s FEDO, Kochi (Project Management Consultants), submitted a test patch trial report on 12.11.2024. In the report they summarized that *"The remediation method did not improve the pH of ground water. As the pH of water did not improve, it was deduced that the soil pH also did not improve. Hence the proposed methodology of land remediation need not to be applied extensively without further study"*.
- To adopt remediation activities using specific technologies from the global front and as part of further study on the way forward action to remediate the land, KMML has taken immediate actions to invite a global expression of interest (EOI) to identify suitable & competent bidders who can support their latest technology in the field for remediation. EOI invited on 03.12.2024.
- KMML received no offers for the EOI. Hence alternatives were explored. Discussions done with Indian Institute of Technology Madras (IITM), Chennai. They couldn't give us a solution package and intimated they have no expertise in the said area. Meanwhile, we have also contacted IIT Roorkee, for providing a further study as suggested in the report of FEDO during the test patch execution and solution on the matter. Documents related to the activities were send to IIT Roorkee for their review. A meeting in this



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regard to assess the site conditions is being planned.

• **Target completion (Test patch) - September - 2026**

**Solid waste management in KMML (Insitu/Exsitu storage).**

- As an alternative/effective method, the containment of iron oxide in Geotube was proposed by KMML.
- The new technology involves dewatering and storage of solid waste using GEOTUBES which was presented to KSPCB in the meeting held on 10.12.2018. This was proposed to be done as trail.
- Work can be started only with the technical concurrence of CPCB/ KSPCB. KSPCB directed the same for CPCB approval.
- Letter dated 18.03.2024 was forwarded to Govt. of Kerala, seeking support to KMML by intervening with CPCB for their approval.
- Letter dated 11.07.2024 was sent to CPCB as a follow up action.
- E-mail sent to CPCB on 12.09.2024 intimating the directive of Hon'ble NGT court hearing dated 16.08.2024 and requested CPCB to allow approval as there is need to complete the activities in a time lined manner.
- KMML was awaiting CPCB approval for the trial dewatering and storage of iron oxide using Geotubes from elevated Iron Oxide Pond. A follow up letter was also forwarded on 06.12.2024 and a reply from CPCB was awaited. Subsequently, online applications as suggested by CPCB are kept under hold due to following reasons.
- It is to be noted that we have place letter of intent for a Design, Build, Finance, Own & Operate (DBFOO) type plant for the value addition of stockpiled iron oxide & ETP in the

  
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storage ponds. This project is expected to be implemented in another 18 months of time, and which would make it happen to consume all the stockpiled masses of sludges stored in the pond and the load will be removed in three years time from the date of success run. Hence the proposal for Geotube filling would be redundant.

- The successful bidder for both IO and ETP sludge value addition is M/s. Tetrabic, Hyderabad (TIPL).
- Government of Kerala had accorded its approval to place formal orders on the above party by allowing 5 acres of KMML land on lease basis to set up the plant.
- G.O has been issued on 09.11.2024 and done drafting of the land lease & Sludge off take agreements. LOI has been issued to the party.
- KMML's edits on the sludge off-take draft agreement submitted by TIPL were sent back to TIPL for their concurrence & completed the process by signing of the agreement.
- Land lease agreement has been prepared and land lease rate is fixed in this regard. The agreement to be entered in line with the vetting & approval from Government of Kerala. This awaited.
- **Target - 18 months from date of final land lease agreement acceptance.**
- The other activities like ETP sludge sales is in progress. So far around 34120 MT ETP has been sold for alternate use as on 07.09.2025.
- Regarding iron oxide residue sale of 10000 MT, CPCB has approved only 42 MT. The party is in the

  
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process of extending consent from TNPCB, which was valid only up to 30.03.2025.

**Long Term Measure**

**ARP Technology Modification**

- KMML floated global tender in July-19. Due to one bid, it was decided to retender.
- KMML invited global re-tender and opened in September 2019 and again only one party quoted. Viz. M/S. Indrox Global Pvt. Ltd., New Delhi(IGPL).
- Tender was closed in December 2019 and after evaluation of the proposal, the file was put up to 243<sup>rd</sup> Board Meeting of the company held on 21.05.2020, for approval.
- As approved by the Board, the file was put to the Government on 01.06.2020 for getting final sanction.
- As per the direction given by Government of Kerala, Retendering done during June 2021.
- Global retender was on 10.06.2021.
- The offer submitted by M/s INDROX GLOBAL PVT LTD was evaluated and approved in the 250<sup>th</sup> Board Meeting of the Company held on 15.01.2022 and submitted for the Government approval.
- A meeting was convened under the chairmanship of Hon'ble Minister for Industries, Law & Coir on 09.06.2022 and in the meeting, it was decided to work out the cost reasonableness & submit report to Government of Kerala.
- Accordingly FEDO, Kochi, had done the cost analysis study and the report got submitted to Government of Kerala for approval to place order.
- The Govt has accorded administrative approval for the project on 26.05.2024.



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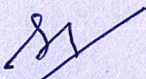
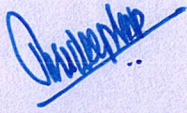
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- LOI placed on the party dated 04.06.2024. Party accepted the LOI and reverted on 19.08.2024 with acceptance letter. The party visited KMML on 13.08.2024 and 14.08.2024 and kick off meeting of the project was held at KMML on those dates.
- Work order was issued to M/s. IGPL, New Delhi, on 18.09.2024 and the party didn't accept the same and asked for zero date amendment (which was supposed to be from the date of acceptance of LOI).
- After the KMML Board meeting approval, a revised work order was issued to the party on 18.11.2024 and the party accepted the work order on 21.11.2024.
- On receipt of Advance Bank Guarantee, advance payment has been released to the party. Work in progress.
- The billing schedule submitted by IGPL approved on 15.01.2025.
- M/s IGPL has submitted the civil drawings for ARP modification, drawings reviewed and approved on 23.01.2025.
- Tender document prepared for civil work and tendering done. Work order placed for oxide bin, purification plant & ware house civil works. Work has been started at site for oxide bin on 21.04.2025.
- Civil work for oxide bin will be completed by the end of September 2025. & purification plant by October 2025.
- M/s INDROX Global would start the site erection of equipments probably by October 2025.
- **Target completion - May- 2026.**

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There is no necessity for transporting the waste from KMML to KEIL at Kochi, since the wastes are non-hazardous in nature

Disposal of iron oxide to Ms/ KEIL was discontinued from 07.08.2014. The iron oxide generated and stored inside KMML premises could be effectively utilized for the value addition.



	as studied and reported by NEERI as per the HWMH rules.	However, from 16.08.2024 and as per KSPCB approved action plan, KMML is disposing Iron oxide to KEIL (online generated quantity from ARP) and is being done at par with ARP plant operations. No iron oxide is getting accumulated now in the storage pond. Already accumulated IO in the ponds would be utilized for value addition projects.
4	The material produced by KMML is non radioactive in nature as per the report of AERB. However, KMML shall scrupulously implement those recommendations of the AERB for storage of tailings of mineral separation.	The sand tailings generated at the Mineral Separation unit is disposed/ stored only as per the direction of AERB. <b><u>The point stands complied.</u></b>
5	<p>i. KMML is directed to prepare an appropriate scientific scheme for remediation of contaminated soil or ground water as recommended by NEERI through an expert/contractor with specific time frame and submit the same to the KSPCB for approval, within three months from the date of Judgment (31.08.2017) and complete the necessary project within the time frame specified subject to the approval from KSPCB.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">   <b>SAHIL M.</b>  HOD (ENV) &amp; AGM (E/I) </div> <div style="text-align: center;">   <b>PRADEEP KUMAR P.</b>  MANAGING DIRECTOR  KMML </div> </div>	<ul style="list-style-type: none"> <li>• M/s KITCO prepared the DPR for short term measures and submitted to KSPCB for approval on 20.07.2018.</li> <li>• KMML had prepared a DPR by engaging KITCO, Kochi and the same got approved by KSPCB on 07.01.2019.</li> </ul> <p><b><u>Land Remediation of Test Patch area (1R) inside KMML</u></b></p> <ul style="list-style-type: none"> <li>• After repeated tenders, we couldn't get suitable bid. Hence it was decided to take trial initially with the help of PMC M/s FEDO and the items to be supplied &amp; installed by the contractor.</li> <li>• Three parties quoted for the e-tender, for supply and installation of the facilities.</li> <li>• E-tender evaluation completed and work order issued to M/s P.T.Jayapal.</li> <li>• Execution of the work started by the first week of April 2024.</li> <li>• Sprinkling of lime solution was completed by August 2024 and leachate collection done at site &amp; completed the process.</li> <li>• M/s FEDO, Kochi (Project Management Consultants), submitted a test patch trial report</li> </ul>



  
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ii. KMML shall continue to supply adequate potable water to the people residing in and around its industrial premises until the projects of soil remediation and ground water remediation is completed fully.

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i. The soil/water remediation process as suggested by NEERI is the independent responsibility of KMML. KMML is directed

on 12.11.2024. In the report they summarized that *"The remediation method did not improve the pH of ground water. As the pH of water did not improve, it can be deduced that the soil pH also did not improve. Hence the proposed methodology of land remediation need not to be applied extensively without further study"*.

- To adopt remediation activities using specific technologies from the global front and as part of further study on the way forward action to remediate the land, KMML has taken actions to invite a global expression of interest (EOI) to identify suitable & competent bidders who can support their latest technology in the field. EOI was invited on 03.12.2024.
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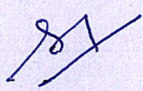
- **Target completion (Test patch) - September - 2026**

**KMML is continuously supplying about 7 to 8 Lakhs liters/day drinking water of potable quality to the local residents and shall continue to supply as directed. The point stands complied.**

**DD for Rs. 1 Crore is remitted in the name of Chairman, KSPCB on 21.09.2017. KMML obeyed the**



<p>to deposit a sum of Rs. 1 Crore under the principle of "polluter pays" in favour of Chairman, KSPCB, who shall keep the said amount in a separate account named as "Environment relief fund for remediation of Chavara region due to pollution caused by KMML". The said amount to be managed by the Chief Secretary, Govt. of Kerala and Chairman, KSPCB and utilize the remediation and/ or distribution to affected persons either as per the direction of NGT or as per the decision of the State Government.</p>	<p><b>direction of Hon'ble court.</b></p> <p>As per Hon'ble NGT case in EA 07/2023 in OA 290/2023 a "Health status assessment of people residing around Kerala Minerals and Metals Ltd. Chavara, Kollam" study has been conducted by 'Department of Community Medicine Government Medical College, Thiruvananthapuram. The report is now available with Statutory and Government bodies, for their actions.</p>
<p>ii. KMML shall file their periodical compliance reports to the registry of NGT, Southern zone once in three months beginning with quarter ending on 30.11.2017 followed by quarter ending with 28.02.2018, 31.05.2018 and 31.08.2018 by the 10<sup>th</sup> of every succeeding month. KMML shall display the quarterly compliance report on their website also.</p>	<p>Quarterly report on status of compliance on the directions of NGT is being submitted to NGT and also displays the same in KMML website as directed.</p>

  
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