

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

**ORIGINAL APPLICATION NO. 94 of 2024(SZ)**

Shafeek S : Applicant

Vs

State of Kerala & Others : Respondent(s)

**REPORT FILED BY THE CHIEF ENVIRONMENTAL  
ENGINEER, KSPCB BEFORE THE HON'BLE NATIONAL  
GREEN TRIBUNAL, SOUTH ZONE, CHENNAI, IN  
ORIGINAL APPLICATION NO. 94/2024.**



Adv. Rema Smrithi.V.K

ADDITIONAL STANDING COUNSEL FOR THE SECOND RESPONDENT

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

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**VOLUME 1**

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Dated this the 5<sup>th</sup> day of February 2025

Rema Smrithi. V.K, Advocate

ADDITIONAL STANDING COUNSEL FOR THE SECOND RESPONDENT

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL**

**SOUTH ZONE, CHENNAI**

**Original Application No. 94 of 2024 (SZ)**

Petitioner : Shafeek S  
Respondents : The Chief Secretary, Govt of Kerala & Ors

**REPORT FILED BY THE CHIEF ENVIRONMENTAL ENGINEER,  
KSPCB, BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,  
SOUTH ZONE, CHENNAI, IN ORIGINAL APPLICATION NO.  
94/2024.**

**1.0 Background**

The report is in continuation to the Joint Committee's submission to the Hon'ble NGT on 14/08/2024 regarding pollution from Kerala Minerals and Metals Ltd (KMML), Chavara, Kollam District. The NGT, in its order dated 08/02/2024 on OA 776/2023, directed the case to the Southern Zone Bench, renumbering it as O.A. 94/2024, and formed a Joint Committee including the Kerala State Pollution Control Board (KSPCB) and District Collector, Kollam, to investigate the issue and submit a report within two months.

The Joint Committee, which included the Chief Environmental Engineer, KSPCB, and Chavara Special Tahsildar nominated by District Collector, Kollam, conducted field visit on 19/04/2024, and reports were filed to the NGT on 30/04/2024 & 14/08/2024. Water samples were collected from the applicant's house and KMML during the above inspection. The analysis reports showed that parameters like Iron, Residual Chlorine, and turbidity exceeding



*Vinaya*

**VINAYA. K.S**  
**CHIEF ENVIRONMENTAL ENGINEER**

the drinking water limits as per IS 10500:2012. The company officials ensured adequate drinking water supply during the meeting followed by the site inspection. CEE, RO, Trivandrum has been authorized to represent the KSPCB in the above case vide proceedings no: KSPCB/691/2022-SEE-1 dtd 05/02/2025 attached as Annexure I.

## **2.0 Present Status of Water Supply scheme reported by M/s KMML.**

The Kerala Minerals and Metals Ltd, Chavara also submitted additional details in connection with the Water supply scheme managed by the industry vide letter dated 30/01/2025 and copy of the report is produced here with as Annexure II. It is reported that drinking water is being supplied to nearby 7 wards (Kolam, Kalari, Mekkad, Chittoor, Ponmana, Panmana and Porookkara) in adequate quantity without fail.

## **3.0 Verification of Present Status.**

The Special Tahsildar Chavara enquired about the present status of the water supply scheme and it is reported that sufficient water is delivered to the area where the complainant is residing including the complainant's house which is in line with the status reported by the company. The complainant requested to maintain the same situation and is informed to the company. The concern raised by the complainant regarding pollution issues of KMML is being addressed separately in various cases before Hon'ble NGT (OA 74/2023, EA 07/2023 etc) and Company has been directed to complete the Long term and Short term measures proposed by the company and recommendation by Joint Committee in OA 74/2023 of Hon'ble NGT. The latest status report filed by the industry regarding the same is attached as Annexure III.

M/s KMML shall ensure adequate supply of water to the residents in the nearby wards and timely completion of the long term, short term measures and recommendation of the joint committee in OA 74/2023 of Hon'ble NGT.

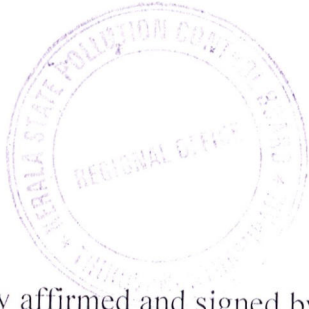
All that stated above are true to the best of my knowledge and belief.



*Vinaya*

VINAYA K S  
CHIEF ENVIRONMENTAL ENGINEER

Dated this the 5<sup>th</sup> day of February 2025.



A handwritten signature in blue ink that reads "Vinaya".

Chief Environmental Engineer

**VINAYA. K.S**

KSPCB

**CHIEF ENVIRONMENTAL ENGINEER**

Solemnly affirmed and signed by the deponent who is known to me on this the 5th day of February 2025.

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

**ORIGINAL APPLICATION NO. 94 of 2024(SZ)**

Shafeek S : Applicant

Vs

State of Kerala & Others : Respondent(s)

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Dated this the 5<sup>th</sup> day of February 2025

Rema Smrithi. V.K, Advocate

ADDITIONAL STANDING COUNSEL FOR THE SECOND RESPONDENT



## KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004



KSPCB/691/2022-SEE-1

Date : 05/02/2025

### AUTHORISATION

**Sub :-** Original Application No.94 of 2024 (SZ) before the Hon'ble NGT – filed by Sri. Shefeek S. regarding The Kerala Minerals and Metals Limited (KMML) Kollam - Authorisation.

The Chief Environmental Engineer, Regional Office, Thiruvananthapuram is hereby authorized to represent Kerala State Pollution Control Board in Original Application No. 94 of 2024 (SZ) before the Hon'ble NGT.

**For and on behalf of the  
KERALA STATE POLLUTION CONTROL BOARD**

*Shwara*

**MEMBER SECRETARY**

To

The Chief Environmental Engineer,  
Regional Office,  
Thiruvananthapuram.

Copy to :-

1. Adv. Rema Smrithi V.K.  
No.2, Temple Glade Apartments  
Kalakshetra Colony  
Beach Road  
Besant Nagar  
Chennai-600090.
2. The Environmental Engineer,  
Legal Cell, KSPCB Regional Office,  
Ernakulam.
3. The Environmental Engineer,  
District Office,  
Kollam.



## **The Kerala Minerals and Metals Ltd.**

(A Govt. of Kerala Undertaking)

(An ISO 9001, ISO 14001 & ISO 45001 Certified Company)

SANKARAMANGALAM, CHAVARA-691 583

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ANNEXURE II



CIN-U14109KL1972SGC002399

TP/ENV/NGT/01

30.01.2025

**The Chief Environmental Engineer  
The Kerala State Pollution Control Board  
Pattom, Thiruvananthapuram**

Dear Sir/Madam,

Sub: Hon'ble NGT cases- KMML compliance report on Execution Application No. 7/2023 in Original Application No:290/2013 filed by Sri. Suresh Kumar in Hon'ble NGT (SZ), Chennai, Original Application No. 74/2023 (Earlier OA 502/2022 (PB)) filed by Sri. Padmakumar in Hon'ble NGT (SZ), Chennai and Original Application No. 94/2024 (Earlier OA 776 of 2023(PB) LP) filed by Sri. Shefeek S. in Hon'ble NGT (SZ), Chennai.

Ref:(1) Execution Application No. 7/2023 in Original Application No:290/2013 filed by Sri.

Suresh Kumar in Hon'ble NGT (SZ), Chennai.

(2) Original Application No. 74/2023 (Earlier OA 502/2022 (PB)) filed by Sri. Padmakumar in Hon'ble NGT (SZ), Chennai.

(3) Original Application No. 94/2024 (Earlier OA 776 of 2023(PB) LP) filed by Sri. Shefeek S. in Hon'ble NGT (SZ), Chennai.

(4) Letter No: TP/ENV/NGT/01 dated 27.01.2025 forwarded KSPCB.

Vide ref (4), We have already submitted the action taken report & status covering short term & long-term measures, directions/ findings suggested in the Hon'ble NGT verdict, Joint Committee recommendations with respect to ref (1.2 & 3) to KSPCB on 27.01.2025.

Now we are furnishing additional details pertaining to public water supply from KMML corresponding to OA No: 94/2024 viz. compliant raised by Sri. Shefeek S, local resident. It may be noted that KMML has been providing drinking water through pipelines and tank mounted vehicles to local community including Sri. Shefeek. S, who is a resident of the neighboring Kalari Ward.

At present there is no complaint regarding drinking water supply to Sri. Shefeek.S. The complaint raised by Sri. Shefeek. S regarding supplying of clean water is solved by KMML. The details of public water supply from KMML is attached as Annexure-I,II,III & IV, for your kind perusal

**Thanking You,  
Yours faithfully,  
For The Kerala Minerals and Metals Limited**

**HOD (ENV) & AGM (E/I)**

Cc: (1) The Senior Environmental Engineer - 1  
Kerala State Pollution Control Board  
Pattom, Thiruvananthapuram - 695004.

(2) The Environmental Engineer  
Kerala State Pollution Control Board  
District Office, Ushas Building, Big Bazar,  
Kollam - 691001.

DETAILS OF DRINKING WATER PROVIDED BY SEVEN NEIGHBOURING  
WARDS

1. No of wards covered - 7, Chitoor, Mekkad, Ponmana,  
Panmana, Kalari, Kolam, Porukara
2. No of Households covered - 5578
3. No of residents covered and  
time allotted to each ward - Around 5578, water provide viz-  
Company pipe line Jalanidhi pipe line  
Tank mounted Lorry & Tube well  
constructed by KMML
4. Details about length of pipe laid  
quantity of water supplied through  
pipeline - Around 65 Km company pipe line  
Jalanidhi pipe line laid at Panmana  
Panchayath
5. Quantity of water supplied through  
Tanker lorry and its details - 1,60,000 Litter to 1,81,000 Litter / day

KERALA MINERALS AND METALS LIMITED

Sankaramangalam - Chavara

Potable Drinking Water Supply Scheme

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The seven neighbouring wards of the Company viz Kalari, Kolam, Mekkad, Chittoor, Ponmana, Panmana and Porukara are provided with potable drinking water after purification from the Company's water treatment plant. This is done through the laid pipe lines which is about 65km to ensure drinking water to all the household in these wards Around 8 lakhs ltr of water is supplied through this pipe line net work. Over and above this, one lakh fifty thousand ltr of water is provided in tank mounted lorries each day though out the year and during summer additional quantity of more than fifty thousand liters is being provided.

In addition to this required quantity of water is provided for marriage, house warming, religious functions based on request of the ward members.

**Tube wells**

The Company has constructed tube wells and the output of these wells is connected to the laid pipe line of the water supply scheme that is maintained by the Jalanidhi. Wells are constructed for Mekkad, Chittoor, Panmana, Ponmana, Porukara, Kalari, Kolam. One tube well was constructed for two wards of Vadakkumthala. The cost of constructions and connecting to the Jalanidhi line was borne by the Company. At the time of discussion for construction of tube well, it was agreed that current charges wages of the well operators, repairs and maintenance would be borne by Jalanidhi. For ensuring smooth supply of water, the cost of repairs of these wells and pipe line network are meet by the Company.

The wells constructed at Porukkara and Vaduthala are not functioning. The company has informed the Panchayath that new wells will be constructed if suitable alternative land is provided. They are yet to identify land for the purpose. On identification of land Company would construct wells in these areas.

**Jalanidhi scheme**

The Jalanidhi scheme in the year 2009-2010 was aimed to provide drinking water to all the households of Chavara and Panmana Panchayath from the Sasthamcotta fresh water lake.

For the implementation of the scheme, then Hon'ble minister for water resource, Officials and elected members both the Panchayath, political leaders requested the Company management for providing financial assistance. Based on the request the Board of Directors approved to provide 1.17 Cores of rupees for implementation of the scheme (73.48 Lakhs for Panmana Panchayath and 44.32 Lakhs for Chavara Panchayath). On implementation of the scheme the water provided by the Company to the neighbouring area was to be discontinued.

The water from Sasthamcotta Lake was not sufficient hence the Company after providing the requested amount is still providing water from the water treatment plant to these areas both through laid pipe line and tank mounted lorries and yield from the tube wells constructed. Over and above thus 50% of water cess of the seven wards is borne by the Company.

**Committee of redressal of complaint related to drinking water.**

A committee has been constituted for redressal of complaint and for monitoring smooth supply of drinking water to the seven neighbouring wards of the Company. The water committee is constituted with Manager (Welfare) Manager (Utility) Manager (Civil), Security Officer, Public Relation Officer and Community Liaison Officer.

The Committee convene to evaluate each complaints related to disruption of water supply and action are taken on war footing to solve and ensure smooth uninterrupted water supply.

The telephone numbers of the Public Relation Officer and Community Liaison officer are provided to the ward members. They are available 24 hours and attend to complaints and solve the issues of water supply.

Enclosed herewith the details of amount expended by the Company for ensuring water supply to the neighbouring wards of the Company.

As on expenditure

1.	Jalanidhi Project	-	Rs. 1,17,00,000/-
2.	Tube well Construction	-	Rs. 1,71,27,212/- (6 Nos)
3.	Water charge paid to SLEC	-	Rs. 1,70,86,600/- (from 2011)
4.	Tank mounted lorry Hire charge	-	Rs. 3,80,44,251/- (from 2012)
5.	Tube well maintenance charge	-	Rs. 9,59,166/-
			-----
			Rs.8,49,17,229/-
			=====

**\*Expenditure on water treatment**

plant for supply of drinking water per Year - 72 Lacs  
(800m<sup>3</sup> x 25 x30 x12)

\*Apart from this, the company has bear the cost of laying the pipe line within a <sup>length</sup>radius of 65 km and their day to day maintenance.

**Details of Drinking water supply to the neighboring wards of the company through tank mounted vehicle**

Potable drinking water is distributed to the seven neighbouring wards of the Company viz Kalari, Kolam, Mekkad, Chittoor, Ponmana, Panmana and Porukara after purification from the Company's water treatment plant for the past several years. Drinking water is supplied on tank mounted vehicles based on the work order issued by the Company. Mr. Abdul Shukkoor is the contractor entrusted with the work for the year 2024.

**Company's monthly expenses for drinking water supply through tank mounted vehicles during the year 2024**

January	- Rs. 3,97,319/-
February	- Rs. 4,15,417/-
March	- Rs. 4,85,849/-
April	- Rs. 4,95,601/-
May	- Rs. 4,90,778/-
June	- Rs. 4,47,777/-
July	- Rs. 4,63,327/-
August	- Rs. 4,98,149/-
September	- Rs. 4,71,456/-
October	- Rs. 4,69,070/-
November	- Rs. 5,35,806/-
December	- Rs. 5,54,979/-

**Total expense incurred during the year 2024 - Rs. 57,25,528/-**

DATE	PIPE LINE (M3)	WATER TANKER (M3)	DATE	PIPE LINE (M3)	WATER TANKER (M3)	DATE	PIPE LINE (M3)	WATER TANKER (M3)	DATE	PIPE LINE (M3)	WATER TANKER (M3)	DATE	PIPE LINE (M3)	WATER TANKER (M3)	DATE	PIPE LINE (M3)	WATER TANKER (M3)
01-Jul	774	159	01-Aug	729	151	01-Sep	779	187	01-Oct	746	192	01-Nov	751	168	01-Dec	774	203
02-Jul	696	95	02-Aug	779	174	02-Sep	749	199	02-Oct	774	195	02-Nov	736	144	02-Dec	889	193
03-Jul	755	166	03-Aug	743	172	03-Sep	778	194	03-Oct	769	199	03-Nov	745	160	03-Dec	953	209
04-Jul	763	163	04-Aug	724	190	04-Sep	745	139	04-Oct	734	167	04-Nov	774	175	04-Dec	758	198
05-Jul	772	175	05-Aug	732	163	05-Sep	814	194	05-Oct	686	87	05-Nov	724	178	05-Dec	836	208
06-Jul	771	180	06-Aug	755	181	06-Sep	778	185	06-Oct	739	157	06-Nov	750	175	06-Dec	761	164
07-Jul	757	160	07-Aug	739	190	07-Sep	806	186	07-Oct	730	168	07-Nov	733	178	07-Dec	899	191
08-Jul	791	162	08-Aug	760	189	08-Sep	778	165	08-Oct	725	118	08-Nov	759	181	08-Dec	777	184
09-Jul	776	178	09-Aug	749	191	09-Sep	773	192	09-Oct	731	110	09-Nov	723	190	09-Dec	782	204
10-Jul	762	148	10-Aug	756	188	10-Sep	764	190	10-Oct	716	117	10-Nov	727	181	10-Dec	924	198
11-Jul	754	125	11-Aug	770	183	11-Sep	763	185	11-Oct	782	157	11-Nov	700	140	11-Dec	735	191
12-Jul	751	164	12-Aug	790	180	12-Sep	742	185	12-Oct	744	189	12-Nov	793	163	12-Dec	756	184
13-Jul	749	168	13-Aug	777	190	13-Sep	761	179	13-Oct	788	177	13-Nov	739	175	13-Dec	736	144
14-Jul	741	180	14-Aug	753	167	14-Sep	821	193	14-Oct	766	183	14-Nov	777	187	14-Dec	752	185
15-Jul	727	176	15-Aug	762	195	15-Sep	716	179	15-Oct	757	171	15-Nov	744	189	15-Dec	727	147
16-Jul	746	190	16-Aug	734	169	16-Sep	756	169	16-Oct	767	170	16-Nov	745	218	16-Dec	776	194
17-Jul	710	171	17-Aug	746	204	17-Sep	726	182	17-Oct	740	144	17-Nov	768	221	17-Dec	760	192
18-Jul	716	139	18-Aug	696	201	18-Sep	815	175	18-Oct	749	144	18-Nov	753	199	18-Dec	766	187
19-Jul	725	143	19-Aug	804	190	19-Sep	784	187	19-Oct	809	191	19-Nov	777	214	19-Dec	776	198
20-Jul	782	189	20-Aug	735	163	20-Sep	781	183	20-Oct	720	176	20-Nov	832	164	20-Dec	793	179
21-Jul	756	156	21-Aug	730	161	21-Sep	753	182	21-Oct	776	175	21-Nov	786	192	21-Dec	770	178
22-Jul	748	190	22-Aug	767	193	22-Sep	731	152	22-Oct	784	187	22-Nov	805	186	22-Dec	776	196
23-Jul	757	202	23-Aug	785	177	23-Sep	726	148	23-Oct	771	173	23-Nov	762	195	23-Dec	734	169
24-Jul	754	197	24-Aug	778	196	24-Sep	775	169	24-Oct	762	186	24-Nov	765	117	24-Dec	805	180
25-Jul	779	188	25-Aug	792	191	25-Sep	749	197	25-Oct	748	184	25-Nov	844	219	25-Dec	800	163
26-Jul	744	151	26-Aug	766	164	26-Sep	727	139	26-Oct	758	181	26-Nov	759	220	26-Dec	752	128
27-Jul	750	185	27-Aug	763	179	27-Sep	735	173	27-Oct	756	194	27-Nov	669	147	27-Dec	752	194
28-Jul	771	186	28-Aug	744	170	28-Sep	761	164	28-Oct	761	184	28-Nov	744	183	28-Dec	776	194
29-Jul	742	179	29-Aug	808	196	29-Sep	784	192	29-Oct	744	180	29-Nov	756	169	29-Dec	701	182
30-Jul	740	169	30-Aug	610	166	30-Sep	739	183	30-Oct	776	192	30-Nov	774	191	30-Dec	850	193
31-Jul	741	153	31-Aug	814	172				31-Oct	790	192				31-Dec	786	182
<b>TOTAL (M3)</b>	<b>23300</b>	<b>5187</b>		<b>23390</b>	<b>5596</b>		<b>22909</b>	<b>5347</b>		<b>23398</b>	<b>5240</b>		<b>22735</b>	<b>5419</b>		<b>24432</b>	<b>5712</b>
<b>AVG.</b>	<b>751.61</b>			<b>754.52</b>			<b>763.63</b>			<b>754.77</b>			<b>757.97</b>			<b>788.13</b>	

**SIX MONTHS TOTAL (M3)** 140168  
**AVG. (M3)** 761.78 (7,61,78,000)

*ditgas*  
*MAD SC*  
*HUB (C) IF*  
*29/01*



## **The Kerala Minerals and Metals Ltd.**

(A Govt. of Kerala Undertaking)

(An ISO 9001, ISO 14001 & ISO 45001 Certified Company)

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CIN-U14109KL1972SGC002399

TP/ENV/NGT/01  
27.01.2025

**The Chief Environmental Engineer  
The Kerala State Pollution Control Board  
Pattom  
Thiruvananthapuram**

Dear Sir/Madam,

Sub: Hon'ble NGT cases- KMML compliance report on Execution Application No. 7/2023 in Original Application No:290/2013 filed by Sri. Suresh Kumar in Hon'ble NGT (SZ), Chennai, Original Application No. 74/2023 (Earlier OA 502/2022 (PB)) filed by Sri. Padmakumar in Hon'ble NGT (SZ), Chennai and Original Application No. 94/2024 (Earlier OA 776 of 2023(PB) LP) filed by Sri. Shefeek S. in Hon'ble NGT (SZ), Chennai.

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(3) Original Application No. 94/2024 (Earlier OA 776 of 2023(PB) LP) filed by Sri. Shefeek S. in Hon'ble NGT (SZ), Chennai.

As discussed during the recent site visit of KSPCB to KMML and Vide ref (1, 2 & 3), we hereby submit the action taken report & status covering short term & long-term measures, directions/ findings suggested in the Hon'ble NGT verdict, Joint Committee Recommendation, etc. and attached as Annexure.

Submitted for your kind information.

**Thanking You,  
Yours faithfully,  
For The Kerala Minerals and Metals Limited**

**HOD (ENV) & AGM (E/I)**

Cc: (1) The Senior Environmental Engineer - 1  
Kerala State Pollution Control Board  
Pattom, Thiruvananthapuram - 695004.

(2) The Environmental Engineer  
Kerala State Pollution Control Board  
District Office, Ushas Building, Big Bazar,  
Kollam - 691001.

**ANNEXURE**

**STATUS & ACTION TAKEN REPORT ON SHORT TERM AND LONG-TERM MEASURES**

Sl No.	Item	Brief Status/History	Target	Remarks
1. a.	<b><u>Long Term Measures</u></b>  <u>Acid Regeneration Plant (ARP) technology modification to generate saleable iron oxide.</u>	<ul style="list-style-type: none"><li>• KMML floated tender in July - 19 &amp; it was retendered due to single bid.</li><li>• KMML invited tender in September 2019 and only one party quoted.viz. M/s INDROX Global Pvt.Ltd. NewDelhi.</li><li>• 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.</li><li>• As approved by the Board, the file was put up to Government on 01.06.2020, to get final sanction to place order.</li><li>• As per the direction given by Government of Kerala retendering done in June 2021.</li><li>• Global retender was invited on 10.06.2021. The bidders were M/s. Indrox Global Pvt. Ltd and M/s. Samrox.</li><li>• The offer submitted was evaluated and noted that the only acceptable offer is from M/s. Indrox Global Pvt. Ltd and approved in the 250<sup>th</sup> Board Meeting of the Company held on 15.01.2022. The file was submitted for final Government approval.</li><li>• Subsequently, a meeting was convened under the chairmanship of Hon'ble Minister for Industries, Law &amp; Coir on 09.06.2022 and in the meeting, it was decided to work out the cost reasonableness &amp; submit report to Government of Kerala.</li><li>• Accordingly, FEDO, Kochi had done the Cost analysis study, and the report got submitted to Government for approval to place order.</li></ul>	<b>Target completion date: 31.05.2026</b>	Work in progress.

		<ul style="list-style-type: none"> <li>• <u>Government accorded its approval for the project on 26.05.2024.</u></li> <li>• <u>LOI has been placed on the party dated. 04.06.2024.</u></li> <li>• <u>Work order was issued on 18.09.2024 and the final work order got accepted on 15.01.2025.</u></li> <li>• <u>Work under progress and now in basic Engineering/ drawing evaluation/approval stage.</u></li> </ul>		
II	<b><u>Short Term Measures</u></b>			
a	<u>Construction of garland drain around the IOP/ ETP ponds</u>	<ul style="list-style-type: none"> <li>• Completed garland drain construction around new ETP.</li> <li>• Garland drain construction around old ETP/ IOP Few stretch work in capped area of the pond is in progress.</li> <li>• <b><u>Garland drain construction work in progress around new IOP.</u></b></li> </ul>	Around new IOP the work will be completed by 30.04.2025.	
b	<u>Remediation of affected land near KMML premises.</u>	<ul style="list-style-type: none"> <li>• Reengaged M/s FEDO, Kochi for Project Management Consultancy to do the test patch trial in the allegedly contaminated land in KMML premises.</li> <li>• Three parties quoted for the E-tender &amp; work order issued to M/s P T Jayapal.</li> <li>• Execution of the work started by the first week of April 2024 and installation completed.</li> <li>• First set of remediation trial runs with lime solution done at site under the supervision of PMC M/s. FEDO, Kochi.</li> <li>• Status of the work &amp; procedure following got informed to KSPCB.</li> <li>• M/s FEDO, Kochi (PMC), 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</li> </ul>	To be explored in detail based on the trial already done.	

		<p>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 is not to be applied extensively without further study.</p> <ul style="list-style-type: none"> <li>• To adopt remediation activities using specific technologies from the global front and as a part of further study on the way forward action to remediate the land, KMML has invited a global expression of interest (EOI) to identify suitable &amp; competent bidders who can support their latest technology in the field.</li> <li>• The last date for submission of EOI was 17.01.2025. But no quotes from parties received.</li> <li>• <b><u>So, action taken to get a concurrence from IIT, Madras, to take up this job on test patch trial basis, awaiting their response.</u></b></li> </ul>		
c	<p><u>Solid Waste Management (In-situ/ ex-situ storage)</u></p> <p>i. Geotube as a trial implementation.</p>	<ul style="list-style-type: none"> <li>• Tendering done for Geotube iron oxide containment from new elevated iron oxide pond on trial basis.</li> <li>• The new technology of Geotubes involves dewatering and storage of iron oxide using Geotubes from the elevated new iron oxide pond.</li> <li>• Evaluation of the offers received was completed. Awaiting approval/authorization from CPCB/KSPCB for the trial.</li> <li>• CPCB reported to Hon'ble NGT court during the hearing dated 20.12.24, to submit application online for the approvals.</li> <li>• It is to be noted that we are going to place order for the value addition of stockpiled iron oxide in the storage ponds. This project is expected to be implemented in another 18 months of time and which would make it happen to consume the stockpiled masses of</li> </ul>	<p>Plant setup will take 18 months from the date of placement of order for the value addition of stockpiled iron oxide in ponds.</p>	<p>By considering placement of order for plant set up to do value addition, Geotube proposal can be considered as a secondary option only.</p>

		sludge stored and the mass will be utilized as value added product.		
	<p>ii. Disposal of Iron oxide/ETP sludge</p> <p><u>Iron oxide residue sales</u></p>	<ul style="list-style-type: none"> <li>• KMML invited E- tender for the sales of iron oxide residue on 19.12.2019. Sales order was issued to M/s Miracle Sands and Chemicals, Tuticorin for 10000 MT on 09.06.2020.</li> <li>• The matter has been taken up by the party for concurrence from CPCB. <b>Awaiting authorization from CPCB</b> for trial production (value added product) by M/s Miracle Sands and Chemicals, at their location.</li> <li>• CPCB reported to Hon'ble NGT court during the hearing dated 20.12.24, to submit application online for the approvals.</li> <li>• <b><u>Miracle Sands and Chemicals submitted their application online to CPCB in Jan-25.</u></b></li> <li>• In order to select potential agencies to carry out the value addition of stockpiled iron oxide &amp; ETP sludge on a DBFOO basis with suitable technology, KMML published a global Expression of Interest (EOI). Offers received from the parties and CSIR-NIIST, Thiruvananthapuram was appointed as consultant to carry out the technical evaluation of the proposal.</li> <li>• E- Tender was floated subsequently and finalized the proposal.</li> <li>• M/s Tetrabic India Private Limited, Hyderabad, is the party identified. GO to engage in land lease agreement and sludge off take agreement with M/s Tetrabic India was received on 09.11.2024. Land lease agreement is in preparation. Sludge off take draft agreement also being finalized and on 27.01.2025 draft was forwarded for the concurrence from M/s Tetrabic India Private Limited, Hyderabad.</li> </ul>	<p>Tentatively 6-8 months from CPCB approval</p> <p>Plant setup will take 18 months from the date of placement of order for the value addition of stockpiled iron oxide in ponds.</p>	<p><b>Awaiting authorization from CPCB, New Delhi</b></p>

<p>iii. <u>ETP sludge sales</u></p>	<ul style="list-style-type: none"> <li>• After e-tendering, Sales order was issued to M/s Miracle Sands and Chemicals, Tuticorin for 50000 MT of ETP sludge.</li> <li>• <b>M/s Miracle Sands and Chemicals have completed the shifting of approx. 28000 MT of ETP sludge as on 27.01.2025.</b></li> <li>• <b>KMML invited another open e tender for sale of ETP sludge stored in KMML for a quantity of 20000 MT on 15.01.2025 ( Qty for FY:2025-26).</b></li> </ul>	<p>Work in progress</p>	<p><b>Ongoing activity.</b></p>
<p>iv. Value addition of by products</p>	<ul style="list-style-type: none"> <li>• In order to select potential agencies to carry out the value addition of stockpiled iron oxide &amp; ETP sludge on a DBFOO basis with suitable technology, KMML published a global Expression of Interest (EOI). Offers received from the parties and CSIR-NIIST, Thiruvananthapuram was appointed as consultant to carry out the technical evaluation of the proposal.</li> <li>• E- Tender was floated subsequently and finalized the proposal.</li> <li>• M/s Tetrabic India Private Limited, Hyderabad, is the party identified. GO to engage in land lease agreement and sludge off take agreement with M/s Tetrabic India was received on 09.11.2024. Land lease agreement is in preparation. Sludge off take draft agreement also being finalized and on 27.01.2025 draft was forwarded for the concurrence from M/s Tetrabic India Private Limited, Hyderabad.</li> </ul>	<p>Plant setup will take 18 months from the date of placement of order for the value addition of stockpiled ETP in ponds.</p>	
<p>v. In house value addition of iron oxide</p>	<ul style="list-style-type: none"> <li>▪ KMML has developed an in-house technique for value addition of iron oxide by converting it to Iron Sinters (Sponge iron).</li> <li>▪ Earlier two sets of in-house trials were taken and tested at end user for further process refining.</li> <li>▪ <b>Third trial with modified process methodology got done. The product was tested at M/s.</b></li> </ul>		

		<p><b>Peekay Steel. Based on their feedback another set of trial for a 50 MT quantity is being planned.</b></p> <ul style="list-style-type: none"> <li>▪ <b>The results to be achieved for further fine tuning if required else technology documentation is the next phase.</b> <ul style="list-style-type: none"> <li>▪ Technology freezing/DPR Preparation - 6 months</li> <li>▪ Statutory Clearance - 6 months</li> <li>▪ Tendering activities - 6 months</li> <li>▪ Plant installation- 18 months</li> <li>▪ Plant Trial run - 6 months</li> </ul> </li> <li>• Intimation letter already forwarded to KSPCB vide letter (TP/TS/ENV dt. 01.02.2024) for iron oxide brick manufacturing in KMML.</li> </ul>	42 months from the placement of order.	
	vi. Iron oxide brick making plant	<ul style="list-style-type: none"> <li>• As part of NH-66 widening work, about 8 lakhs quantity of bricks are required for KMML boundary wall construction.</li> <li>• E-tender invited (2023_KMML_586898_1 dt. 12.07.2023), for the set up of Iron Oxide brick manufacturing as done in the earlier days of KMML.</li> <li>• Work order dt. 26.12.2023 was issued to M/s C Ashokan to produce 8,00,000 nos of iron oxide brick for the in-home use of KMML.</li> <li>• The plant building construction completed &amp; Equipments installed.</li> <li>• Produced approx. 3.25 lakhs bricks, till 27.01.2025.</li> </ul>	6 months.	Manufacturing in progress.

### Disposal of Online generated Iron oxide to CTSDf to Kochi

1. It is also decided that the iron oxide which is further generated from the acid regeneration plant would get disposed of to CTSDf, Kochi (M/s. Kerala Enviro infrastructure Limited).
2. An agreement dated 02.08.2024 has been entered between KMML and KEIL for the disposal of iron Oxide for a period of two years which are going to generate from ARP.
3. Till 26.01.2025, a total quantity of 10192.73 MT of Iron oxide sludge has been transferred in the special vehicle provided by M/s KEIL.

**Status of action taken and implementation of the recommendations of Joint committee**

	<b>Findings of the Joint committee</b>	<b>Status, Target and remarks</b>
1	The remedial measures both short term and long term already proposed by M/s KMML shall be implemented within the committed time limit.	Time lined status of short term and long-term measures mentioned items covered in the previous pages.
2	The existing effluent treatment system shall be upgraded to ensure compliance to the effluent discharge norms prescribed under the consent conditions – within one year	<p><u>New Tertiary Tank in U 200</u> - Addition to improve the existing effluent treatment system.</p> <p><u>Civil work</u></p> <ul style="list-style-type: none"> <li>▪ Foundation work completed</li> </ul> <p><u>Mechanical work</u></p> <ul style="list-style-type: none"> <li>▪ Tank fabrication, erection and rubber lining work completed.</li> <li>▪ Purchase order issued for agitator and gear box. Agitator gear box expected on first week of February 2025.</li> <li>▪ Expected time of completion – February 2025.</li> </ul> <p><u>ETP revamping/ Modernization</u></p> <ul style="list-style-type: none"> <li>▪ Work order issued on M/s SBA Enviro system, Delhi for DPR preparation.</li> <li>▪ The final DPR submitted by the party for the construction of 6 MLD Effluent Treatment plant got submitted to KSPCB on 26.06.2024 for Technical concurrence.</li> <li>▪ Forwarded letter to KSPCB dt. 05.12.2024 seeking permission for conducting a technical presentation through video conference on the technical aspects of 6 MLD Effluent</li> </ul>

		<p>Treatment Plant in KMML.</p> <ul style="list-style-type: none"> <li>▪ Tentative time of Completion- December 2026.</li> </ul>
3	<p>Integrated consent to operate issued to KMML by KSPCB shall be amended suitably with the necessary effluent discharge norms and hazardous waste management according to The Environment (Protection) Rules 1986 within a month.</p>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ A pH and flow meter already installed locally at the outlet of discharge pump and pH is displayed in the ETP MCC room.</li> <li>▪ The pH details are daily recorded by KMML.</li> </ul>
4	<p>Place proper sign boards should be placed at all suitable places to avoid human/ animal contact with the polluted stagnant water bodies in the vicinity of the human habitation - within a month.</p>	<p>Sign board installed at site on 28.10.2023.</p> <p><b>Complied</b></p>
5	<p>Permanent capping of existing storage ponds or temporary capping using LDPE liners and also suitable chemical dosage to neutralize runoff before next monsoon or by May 2023.</p>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ Almost fifty percentage of the old ponds area are capped.</li> <li>▪ Temporary capping of old iron oxide pond II for an area of 6300 M2 using LDPE sheet completed on 03.02.2024.</li> <li>▪ Temporary capping of settling pond 1 for an area of 6200 m2 using LDPE sheet completed on 21.05.2024.</li> <li>▪ Tender floated for capping of settling pond 1 for an area of 6776 M2 using LDPE sheet on 15.01.2025.</li> <li>▪ Action taken for the procurement of 20,000 M<sup>2</sup> of liner film.</li> </ul>
6	<p>Not to discharge untreated effluent into any drain or natural drain. Construct Garland drain all along the industry premises within 9 months</p>	<p><b>Complied</b></p> <p><u>Storm water cleaning</u></p> <ul style="list-style-type: none"> <li>▪ Cleaning of the storm water drains</li> </ul>

	and along the periphery of old iron oxide ponds by March 2023. Also the runoff should be neutralized if required and ensured if required suitable and proper treatment before its discharge.	<p>being done periodically.</p> <ul style="list-style-type: none"> <li>▪ Work order issued to M/s Friends Motors for storm water drain cleaning on 08.01.2025. Work completed.</li> </ul> <p><u>Storm Water Drain Neutralization</u></p> <ul style="list-style-type: none"> <li>▪ The storm water drain is neutralizing continuously using lime solution at a point near the railway gate exit.</li> </ul>
7	Among the process changes, feasibility of inclusion of waste water option for recovery of acid and neutralization of iron oxide sludge using suitable chemicals prior to the disposal of iron oxide sludge into storage tank within 3 months.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ KMML already have the feasibility of recycling wash water and reusing in plant itself to the possible extent.</li> <li>▪ The iron oxide slurry is neutralized at source before pumping to the new pond. The iron oxide is deposited in the new IOP and clear liquor is recycled to the slurry preparation tank.</li> </ul>
8	Lime treatment in existing dump yards and surface water contaminated areas- ongoing.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ Lime treatment in the existing dump yards as temporary measures being done continuously.</li> <li>▪ In addition, lime spreading have done prior to capping of old ponds.</li> </ul>
9	Regular water supply and periodical health camp- ongoing.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ KMML is continuously supplying about 7 to 8 lakhs liters per day of drinking water of potable quality to the surrounding local residences.</li> <li>▪ Potable water is getting supplied through pipeline around 65 kms for local residence and also through tankers.</li> <li>▪ Conducting regular medical camps once in a month and providing</li> </ul>

		medicines, medical aid to ailing patients/ palliative care.
10	As the iron oxide pond capacity exhausted, take immediate action for temporary storage and safe disposal with immediate effect.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ As the storage space in Iron oxide pond has exhausted, temporary storage area for safe disposal of iron oxide is done in accordance with the Hazardous and Other Waste (Management and transboundary Movement) Rules.</li> <li>▪ <u>Iron Oxide Brick Making</u> Work order dated. 26.12.23 was issued to M/s C Ashokan for iron oxide brick making plant and for making 8 lakh no.s of bricks for in-home use of KMML. Produced approx 3.25 lakhs bricks.</li> <li>▪ The value addition of iron oxide with the support of M/s Tetrabic Private Limited, iron oxide brick production, production of iron oxide sinters, etc. will utilize a portion of iron oxide generated/store in the premises in secured ponds.</li> </ul>
11	Utilization of iron oxide sludge for recovery of iron within 3 months and also explore the option of red oxide from iron oxide sludge within 3 months.	<p><b><u>In-house Value addition of Iron oxide</u></b></p> <ul style="list-style-type: none"> <li>• Since there is no readily available technology for producing iron sinter from KMML iron oxide sludge, KMML has developed an in-house technique for value addition of iron oxide by converting it to iron sinters (sponge iron).</li> <li>• However, KMML have to further develop and fine tune a technology for iron sinter commercialization. Trials are ongoing.</li> </ul>

		Time of completion - <b>42 months.</b>
12	Detailed assessment of affected areas and implement remedial measures in contaminated site as well as ground water, and feasibility of acquisition of affected land	<ul style="list-style-type: none"> <li>▪ Based on CSIR – NEERI, Nagpur study report, KMML started remediation of contaminated sites on trial basis.</li> <li>▪ Feasibility of acquisition of attested land is under consideration of Government.</li> </ul>
13	<p>M/s. KMML also ensure compliance to CPCB directions issued under section 5 of the environment sound management of Hazardous and Other waste (management and Trans boundary Movements) Rules, 2016 as amended.</p> <p>KMML submit Action taken report to CPCB directions issued under section 5 of the environment sound management of Hazardous and Other waste (management and Trans boundary Movements) Rules, 2016 as amended.</p>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ Action taken report is being submitted to CPCB Chairman once in two months.</li> <li>▪ Latest Bi-monthly report submitted on 19.11.2024.</li> </ul>
14	All tube wells located within the industry premises shall be connected with tamper proof flow meter to record total water consumption of natural resources within 3 months and submit report to KSPCB on quarterly basis.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>▪ Monthly water consumption report is being submitted to KSPCB.</li> <li>▪ Quarterly report of total water consumption submitted to KSPCB on 05.12.2024.</li> </ul>
15	Install OCEMS (Online continuous effluent monitoring system) and a flow meter at effluent outlet discharge into sea to assess compliance to the effluent discharge norms prescribed by KSPCB and displayed at the entrance of the industry for the information to Public within 5 months.	<p><b>Complied.</b></p> <p>A pH and flow meter already installed locally at the outlet of discharge pump and pH is displayed in the ETP MCC room. The pH details are daily recorded by water treatment plant of KMML.</p> <p>OCEMS (Online continuous effluent monitoring system) installation completed</p>

		<p>on 24.10.2024.</p> <p>KSPCB online portal registration process requested for implementation Letter No: TP/ENV/PCB forwarded to KSPCB on 06.12.2024.</p> <p>KSPCB central server registration completed on 13.12.2024.</p>
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### **Other Activities**

**As part of Corporate Social Responsibility (CSR), the company is also extending the following supports to the general public.**

- Conducting regular medical camps.
- Providing medical aid to ailing patients/ palliative care.
- Support to nearby Panchayaths for providing street lights, drains, stray dog catching etc.
- Covid Second Line Treatment Centre (CSLTC) – We have setup a CSLTC at GHSS, Sankaramangalam School. This facility was a 850 Nos bedded one with oxygen support from KMML and the same was maintained for more than a year time. Rs. 4.5 Crores expended and as part of COVID support.
- Supplied liquid medical oxygen at reduced rate for pandemic treatment.
- Providing support for the infrastructure upliftment of nearby schools.
- Tailing sand supply to nearby surroundings for low lying land filling.
- Supporting welfare activities of mining area.
- Dividend payment to Government of Kerala.
- We are continuously supplying about 7 to 8 lakhs liters per day of drinking water of potable quality to the surrounding local residences.
- Potable water is supplied through pipe line around 65 kms for local residence and also in tankers.
- KMML is paying 50% of water tax of the Jalanidhi scheme for local residences.