



The Kerala Minerals and Metals Ltd.

(A Govt. Of Kerala Undertaking)

(An ISO 9001, ISO 14001, OHSAS 18001 & SA 8000 Certified Company)

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CIN-U14109KL1972SGC002399

TP/ENV/P&L

19.06.2023

To,

M/s B.S. Krishnan Associates,
Advocates,
PB No 2469, Kailas, Warriam Rd,
Pallimukku,
Ernakulam,
Kerala 682 016.

Sirs,

Sub: Quarterly compliance report to the registry of NGT southern zone-reg.

Ref: Judgment of the NGT dt. 31.08.2017 on application nos 142 of 2013 (SZ),
applications nos 290 of 2013 (SZ) and application nos 453 of 2013 (SZ)-
Directions from NGT-reg.

As directed vide the Judgment of NGT referred attached herewith is the quarterly report on the status of compliance on the directions under points 1 to 6 (covered under pages 119 to 157 of the Judgment) for your kind verification and forwarding to the registry of NGT.

Thanking You,
Yours Faithfully,

For The Kerala Minerals and Metals Limited

Managing Director

CHANDRABOSE. J

Managing Director

The Kerala Minerals and Metals Ltd.

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Chavara, Kollam - 691583

Quarterly report to NGT

Status of compliance of the directions of the NGT as on 31.05.2023.

#	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>KITCO was awarded the work for DPR preparation for both short term and long term measures suggested by NEERI and report submitted to KSPCB on 20.07.2018 for approval. After the meeting with chairman, KSPCB on 10.12.2018, approval letter received from KSPCB dated 07.01.2019. Following measures were suggested.</p> <ul style="list-style-type: none">• Construction of garland drain around the iron oxide/ETP ponds: Time frame -12 months from the date of award of work.• Remediation of affected land near KMML premises: Time frame - 2 to 3 years.• Solid waste management in KMML (Insitu/Exsitu storage). As an alternative/cost effective method, the containment of iron oxide in geotubes 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.
	<p>ii. Implementation of the measures after receipt of approval from the KSPCB within the time frame proposed for completion.</p>	<p>a. After open e-tendering work order for the construction of Garland drain around new ETP/IOP and old ETP/IOP was issued to M/s Ravi Kumar & M/s Biohomes on 08.10.2019 and 08.04.2021 respectively. The period of contract was extended due to events viz. adverse climatic condition, restriction imposed as part of pandemic COVID19 lock down, local labour issues, ETP sludge shifting process etc. The works are now progressing at</p>



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site. More than 90% of garland drains work around New ETP and installation of pump also done. 60% of garland drain works around Old ETP/IOP ponds have been completed. Rain related water table is causing delays during the work execution Updated Time frame for completion is July 2023 around new ETP and August 2023 around old ETP/ IOP.

b. E-Tender was invited for the Test patch for remediation of contaminated area inside KMML premises and its consultancy works on 09.07.2019. No parties quoted. Action for limited tender for consultancy work taken on 07.08.2019. Two parties quoted the tender. Work order was issued to M/s FEDO on 05.12.2019 for consultancy and supervision of the test patch area for contaminated land in KMML premises.

M/s FEDO have submitted a detailed project report with schematic drawing and lay out of the contaminated land remediation work. Tendering for test patch done in three occasions i.e, 25.02.20 (only single offer received), 24.06.2020 & 19.08.2020 (no party quoted).

Due to non receipt of offers, action for doing the activity on trial basis has been initiated. Accordingly Land preparation for land remediation sample Test patch area development activities started on trial basis inside KMML. Since land remediation (In-Suite flushing) inside KMML premises involved huge investment and due to non availability of competent agency to execute the same, KMML is also exploring the possibility of remediating the test patch area by Bioremediation process. In this regard we are exploring the service of M/s State Horticulture Society and sampling analysis is going on. The development activity for suitable methodology is in progress. (Time frameset is one year (December 2023).

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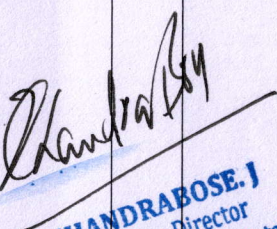


C. Considering the constraint for shifting the entire quantity of sludge to newly proposed containment system and limitation of vacant land availability, another technological option was identified by KMML through US based Titanium technology consultant.

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. In principle approval was received and directed to submit details of the proposal. Tendering action for the Geotube iron oxide containment from New elevated iron oxide pond was done during Oct 2021 and bid time also extended as per the request from vendors.

Subsequently, Geotube suppliers had intimated KMML to get environmental clearance to submit offer for the tender. KMML submitted a request letter to KSPCB on 23/02/22 for Environmental clearance approval to go ahead with the collection and containment of Iron oxide slurry in Geotubes from the elevated new iron oxide pond as trial phase activity. Dewatered Iron oxide solids can safely be transferred to offsite after the containment. A presentation of solid waste management using Geotubes was conducted at the chamber of Chairman, KSPCB on 16/05/22 and 14/10/2022. KMML officials visited CPCB, New Delhi on 28/11/2022 and handed over the request letter for obtaining authorization for conducting trial Geotube filling and containment of iron oxide from new elevated iron oxide pond. VC meeting/technical presentation was conducted on 03.01.2023 with CPCB officials and queries were addressed, awaiting clearance.

Work can be started only with the technical concurrence of CPCB/ KSPCB and KMML Board approval.


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		We have been awaiting CPCB approval for the trial.
2& 3	There is no necessity for transporting the waste from KMML to KEIL at Kochi, since the wastes are non-hazardous in nature as studied and reported by NEERI as per the HWMH rules.	Disposal of iron oxide to Ms/ KEIL stands discontinued from 07.08.2014.
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 only as per the direction of AERB.
5	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>E-Tender was invited for the Test patch for remediation of contaminated area inside KMML premises and its consultancy works on 09.07.2019. No parties quoted. Action for limited tender for consultancy work taken on 07.08.2019. Two parties quoted the tender. Work order was issued to M/s FEDO on 05.12.2019 for consultancy and supervision of the test patch area for contaminated land in KMML premises.</p> <p>M/s FEDO have submitted a detailed project report with schematic drawing and lay out of the contaminated land remediation work. Tendering for test patch done in three occasions i.e, 25.02.20 (only single offer received), 24.06.2020 & 19.08.2020 (no party quoted).</p> <p>Due to non receipt of offers, action for doing the activity on trial basis has been imitated. Accordingly Land preparation for land remediation sample Test patch area development activities started on trial basis inside KMML. Since land remediation (In-Suit flushing) inside KMML premises involved huge investment and due to non availability of competent agency to execute the same, KMML is also exploring the possibility of remediating the test patch area by Bioremediation process. In this regard</p>

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		we are exploring the service of M/s State Horticulture Society and sampling analysis is going on. The development activity for suitable methodology is in progress.(Time frame set is one year (December 2023).
	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.	ii. KMML is supplying about 7 to 8 Lakhs liters/day drinking water of potable quality to the local residents and shall continue to supply as directed.
6	i. The soil/water remediation process as suggested by NEERI is the independent responsibility of KMML. KMML is directed 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.	DD for Rs. 1 Crore is remitted in the name of Chairman, KSPCB on 21.09.2017.
	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 th of every succeeding month. KMML shall display the quarterly compliance report on their website also.	Quarterly report on status of compliance on the directions of NGT shall be submitted to NGT and shall be displayed in KMML website as directed.

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