



आई आर ई एल (इंडिया) लिमिटेड  
**IREL (India) Limited**

(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)  
**(A Govt. of India undertaking)**

CIN : U15100MH1950GOI008187 Website : www.irel.co.in

ISO 9001:2015 & ISO 14001:2015 & ISO 45001:2018 Company



28.05.2022

The Administrator  
State Environmental Impact Assessment Authority, Kerala  
KSRTC Bus Terminal Complex, 4<sup>th</sup> floor  
Thampanoor  
Thiruvananthapuram- 695001.

Sir/Madam

Sub :Submission of Half yearly compliance report- Environment clearance of our mining lease of NK Block IV having an extent of 40.556 Ha in Alappad &Panmana Villages, Karunagappally Taluk,Kollam District.

Ref : SEIAA, Kerala letter No 931/A1/2019/SEIAA dated 21.04.2021.

**Half Yearly Monitoring Report for 1<sup>st</sup> Half of 2022.**

As per the letter referred above from SEIAA, Kerala conveying the composite Environmental and CRZ clearance for beach sand mining in 40.566 Ha area in the above villages, we are submitting herewith the half yearly report for first half of 2022.

Regards

Yours Faithfully  
For IREL (India) limited, Chavara

  
R.V.Viswanath 30/5/22  
General Manager & Head.

Copy to Regional Office, MOEF &CC, Bengaluru.

आई आर ई एल (इंडिया) लिमिटेड, चवरा, कौल्लम, केरल राज्य, भारत-691 583  
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## Half yearly Monitoring Report for the period October 2021 to March 2022

### Introduction:

IREL (India) Limited (Formerly Indian Rare Earths Limited), a Government of India undertaking under the Department of Atomic Energy has been engaged in the mining and beneficiation of the heavy minerals from the Chavara deposit in Kollam district of Kerala state. IREL has been granted mining lease to collect heavy mineral sand from the area vide G.O. (Ms) 22/2005/ID dated 22.02.2005 & G.O. (MS) No.32/2006/1D dated 15.03.2006 & subsequently extended till the reserves are exhausted vide G.O.(MS) No.55/2021/1D dated 22.02.2021 by the Government of Kerala and IREL obtained Environmental and CRZ clearance vide 610/SEIANKU4639/14 dated 19.01.2021, from SEIAA, Kerala for beach sand mining in 40.566 Ha area in the villages of Alappad and Panmana for the production of ROM up to 7,00,000 tonnes per annum from inland deposits and 40000 tonnes per annum from replenishable deposits. The Environmental Management Cell is functioning and conducted regular review meetings under the chairmanship of Shri R.V.Viswanath, General Manager & Unit Head for monitoring the environmental activities of the project.

**Environmental Policy of IREL:** IREL, Chavara is an ISO certified company for Quality and Environment Management and Occupational Health & Safety Management System. Our integrated Management System policy is as follows:

We, at IREL, Chavara are committed to sustain our growth in the supply of beach sand minerals & mineral products through:

- Satisfy applicable requirement
- Protection of Environment (Including prevention of pollution)
- Provide safe and healthy working conditions for prevention of work related injury and ill health
- Fulfill compliance obligations related to products & Services, environment and occupational health & Safety.
- Conservation and protection of natural resources
- Eliminate hazards and reduce OH & Risks
- Prevention of incidents & ill health
- Consultation and Participation of workers.

**Location:** The project area lies between Latitude 09°02' 15.8" N & Longitude 76°30' 31.9" E and Latitude 09°02' 16.80" N & Longitude 76°30' 34" (Toposheet No 58 C/8). A village road passes through the plot. This road connects the plot to NH 47 at Karunagapally at a distance of about 6 km, through Panikkarkadavu bridge, on the north. The broad gauge railway line is about 1 km to the east of NH 47. The nearest railway station is Karunagapally at a distance of about 8 km. M/s Kerala Minerals and Metals Ltd (KMML), a state government undertaking engaged in beach sand mining, beneficiation and pigment production & IREL are the only two major industries in this area.

### STATUS OF COMPLIANCE OF EC CONDITIONS

Clause	EC conditions	Compliances
	<b>Specific Conditions</b>	
1	The mining quantity shall be limited to 23,000 cu.mt per km length as recommended by NCESS.	Mining quantity will be limited to 23,000 cu.mt per km length as recommended by NCESS and the Mining plan will be modified accordingly.
2	The monitoring of changes in shore line along the Chavara coast (particularly the shore adjacent to mining site) shall be carried out by NCESS once in two years and report shall be submitted to the regional office of ministry.	Budgetary offer from NCESS is received for carrying out the work.
3	No ground water shall be extracted in the CRZ areas to meet the water requirement of the project.	It is ensured that no ground water is extracted in the CRZ areas to meet the water requirement of the project.
4	As per the Ministry's office memorandum F No 22-65/2017 -IA .III dated 1st May 2018 and proposed by the project proponent, an amount of Rs 0.3crores i.e 2% of the project cost shall be earmarked under Corporate Environmental Responsibility (CER) for the activities such as support to local government, schools, sanitations and health including construction of public toilets in the surrounding villages, as per the need based assessment carried out. The activities proposed under CER shall be restricted to the affected area around the project. The monitoring report shall be submitted to the regional office as a part of the half yearly compliance report and to the District Collector. It should be posted on the website of the project proponent.	Rs 0.3crores was earmarked under Corporate Environmental Responsibility (CER) and Rs. 28.3lakh has already been spent (2021-22) in the affected area around the project.

5	As per MOEF & CC communication, the mining quantity shall be limited to 23,000 cu.mt per KM length as recommended by NCESS.	Mining quantity is limited to 23,000 cu.mt per km length as recommended by NCESS and the Mining plan will be modified accordingly.
6	EC is subject to the final decision in OA 76/2019 of Hon'ble National Green Tribunal(NGTI, New Delhi).	Noted.
7	Mining operations have to carried out as per the approved mining plan and directions contained in the letter dated 17 th September 2019 of Department of Atomic Energy , GOI: approving the extension of validity of mining plan for NK Block no IV from 2019-20 to 23-24.	It is ensured that mining operation is carried out as per the approved mining plan.
8	Lease agreement with Govt of Kerala for mining in Block IV has expired in Feb 2020. The project proponent will commence mining only after execution of valid lease deed with Govt of Kerala.	In the process of executing the lease deed, we are awaiting response from the State Government for fixing the stamp duty charges.
9	The project proponent shall obtain all statutory clearances from Govt of Kerala before commencement of work and scrupulously follow the decision taken in the meeting held on 16.01.2019 and 17.01.2019, which was chaired by Honorable Chief Minister of Kerala for the sustainable mining and also to Address the grievances of local inhabitants.	It is ensured that sustainable mining operations are carried out with all statutory clearances.
10	The project proponent shall follow the recommendations of study report of NCESS in mining operations to ensure sustainable mining leading to social and ecological security of project region.	Recommendation of NCESS is ensured for sustainable mining.
11	In response to the direction given by NGT in OA 76/2019, the report of the joint committee submitted on 02.11.2019 constituted by NGT. In this report, the committee has made the suggestions for sustainable mining by IREL (India) Ltd. The project proponent shall explore the possibilities of implementing suggestions in the best interest of sustainable mining.	The suggestions made by Joint Committee are implemented in the possible way in the interest of sustainable mining.
12	Ground water recharge and rainwater harvesting structures should be provided in the rehabilitated mined areas, covering all the houses and plots included in the resettlement & rehabilitation plan.	Ground water recharge and rainwater harvesting structures are provided land owners in the rehabilitated houses in mined out areas as per town planner approval.
13	Project proponent shall implement	Activities proposed in the EIA report

	activities proposed in the EIA report to ensure the social and ecological security in the project region. SEAC will conduct regular field inspections to monitor the implementation activities mentioned in EIA report	are implemented.
14	The project proponent shall make sincere efforts to address all genuine grievances expressed by the petitioners in W.P. (C) and in their written representation submitted on 23.06.2020 before SEIAA on priority, to enlist the support of local inhabitants for sustainable mining.	Sincere efforts are made addressing genuine grievances expressed by local inhabitants.
15	The Project proponent shall submit half yearly compliance report to SEIAA and regional office, MoEF&CC, Bengaluru.	Half yearly compliance report is submitted to SEIAA and Regional Office, MOEF &CC Bengaluru.
16	As this is a Special project of Ecological, Economic, Social and Scientific importance, Authority decided to constitute a committee to monitor the EC conditions under the Chairmanship one of expert members of SEAC nominated by Chairman SEAC. The District Geologist, a responsible senior officer from IREL, a senior scientist from NCESS who is involved in preparation of the report and a representative from local NGO nominated by DC Kollam. shall be the members of the committee. The committee will meet once in 3 months and monitor the implementation of EC conditions and prepare an inspection report for the compliance EC conditions. The representative from IREL (India) Ltd. shall be the convener of the meeting and IREL shall provide all logistic support for conduct of meeting and field inspection.	Monitoring committee will be constituted under chairmanship of one of the expert member of SEAC nominated by Chairman, SEAC involving District Geologist, Senior officer from IREL, Senior Scientist from NCESS, Local representative nominated by DC, Kollam to monitor the EC conditions. Requested DC, Kollam to nominate a Local Representative and the response is awaited.
17	Under CER in addition to the above activities suggested by MoEF &CC, the activities like Drinking water supply, Skill development, Education in colleges, Construction of roads, Cross drains, Electrification, Solid waste management facilities, Rain water harvesting structures, Avenue plantation, Plantation in community area shall also be taken up.	Provided Drinking water supply, Skill development for locals, provided aid in colleges, Construction of roads in mining area is a continuous process, Provided Cross drains, Electrification work in resettlement colony is done and continuing, Solid waste management facilities provided, Rain water harvesting structures, Avenue plantation, Plantation in rehabilitated are continuing.

**Standard Conditions: (As Ministry's O.M No 22-34/2018-IAIII dated 8.01.2019&1-6.01.2020)**

<b>I. Statutory compliance</b>		
Clause	conditions	Compliances
1	The Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.	Not applicable for our project
2	The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IA II (M), dated 29th October, 2014, regarding "Impact of mining activities on Habitations issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".	Mitigation measures as mentioned are followed.
3	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
4	The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ( <a href="http://www.parivesh.nic.in">www.parivesh.nic.in</a> ). A copy of the advertisement may be forwarded to the concerned MoEF&CC, Regional Office for compliance and record.	Complied.
<b>II. Water quality monitoring and preservation.</b>		
1	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine	Water samples are collected and are being made and the reports are attached as Annexure.

	Lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department/ State Pollution Control Board.	
	<b>III. Public hearing and human health issues.</b>	
1	The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Personnel working in dusty areas are provided with protective respiratory devices and they are also provided with adequate training and information on safety and health aspects.
2	Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside ( company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.	Not applicable as the employees are from nearby local areas only.
3	The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.	The activities proposed during the Public Hearing are being carried out and it is an ongoing process. The Status Report on implementation of Action Plan will be submitted to the concerned Regional Office of the Ministry along with District Administration.
	<b>IV. Miscellaneous</b>	
1	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the SEIAA, Kerala,	Six monthly compliance report on the status of the implementation of the stipulated environmental safeguards is submitted to MOEF&CC & its concerned

*Handwritten signature*

	MOEF&CC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board	Regional Office, Central Pollution Control Board and State Pollution Control Board.
2	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC, SEIAA, Kerala.	The Environmental Management Cell is functioning and conducts regular review meetings under the Chairmanship of Shri R.V.Viswanath, General Manager & Unit Head for monitoring the environmental activities of the project
3	In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause vs Union of India, the mining lease holder shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc	The possibility of re-grassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc will be explored.
4	Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its authorised offices and also by the regional office of the Ministry of Environment & Forests, Govt. of India, Bengaluru. Necessary assistance for entry and inspection should be provided by the project proponent	IREL extends full cooperation to the MoEF&CC officers by furnishing the requisite data / information / monitoring reports during their inspection.

**Study on Ground Water & Ambient Air Monitoring :**

We have conducted Ambient air monitoring and ground water analysis of the samples from the open wells in the mining area and nearby areas during the period from October 2021 to March 2022. The analysis of the samples were done through M/s Standards Environmental & Analytical Laboratories, Udyogamandal, Emakulam, an NABL accredited laboratory. The results are consolidated below:



**Ambient Air Monitoring:**

Parameters	KSPCB Limit	Near mining office at Vellanathuruthu	East of Panickar Kadavu bridge	Par1darathuruthu school
Particulate Matter PM10 (ug/m <sup>3</sup> )	100	65.9	46.5	41.4
Particulate Matter PM2.5 (ug/m <sup>3</sup> )	60	45.1	26.9	25.3
Sulphur Dioxide (ug/m <sup>3</sup> )	80.0	36.1	21.4	20.8
Nitrogen Dioxide (ug/m <sup>3</sup> )	80.0	<2.00	<2.00	<2.00
Carbon Monoxide (ug/m <sup>3</sup> )	4.0	<2.00	<2.00	<2.00

**Ground water Analysis:**

Parameters	Location			
	Acceptable limit	Open well near PHC, Vellanathuruthu	Dredge Pond at Vellanathuruthu	Excavation pit at Pandarathuruthu
Colour (Hazen)	5.00( max)	1.00	1.00	1.00
Odour	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity (NTU)	1.0	0.3	0.5	0.7
pH	6.5-8.5	6.89	6.98	7.1
Total Dissolved Solids (mg/L)	500 (max)	302	230	180
Total Hardness (as CaCO <sub>3</sub> ) (mg/L)	200 (max)	110	96	92
Calcium (as Ca) (mg/L)	75.0 (max)	32.8	25.6	28.0
Magnesium (as Mg)	30.0 (max)	6.82	7.79	5.36

(mg/L)				
Chloride (as Cl) (mg/L)	250 (max)	109 :	109	39.6
Iron (as Fe) (mg/L)	1.00 (max)	0.21	0.29	0.29
Total Coli form Bacteria (MPN/100ml)	Absent/100 ml	Absent/100 ml	Absent/100 ml	Absent/100 ml
Ecoli	Absent/100 ml	Absent/100 ml	Absent/100 ml	Absent/100 ml