

FROM :

PHONE NO. :

Mar. 14 2011 04:37PM P1

Env. Cl.  
1 Bottle

Fax to: Head, Chavara

**F. No. 11-36/2008-IA.III**  
**Government of India**  
**Ministry of Environment & Forests**  
**(IA-III Division)**

**Paryavaran Bhawan,**  
**CGO Complex, Lodhi Road,**  
**New Delhi - 110 003,**

**Dated: 1<sup>st</sup> March, 2011**

**To**  
**M/s Indian Rare Earths Ltd.**  
**Plot No. 1206, Veer Savarkar Marg,**  
**Near Sidhivinayak Temple, Prabhadevi,**  
**Mumbai - 28**

**Subject: Environmental and CRZ clearance for Beach Sand Mining at**  
**Chabara, Alappad, Panmana and Ayanivelikulangara villages**  
**of Kollam District, Kerala by M/s Indian Rare Earths Ltd. -**  
**Reg.**

\*\*\*

This has reference to your letter No. CH/INMIN/180-ha dated 11.06.2010 seeking CRZ Clearance under CRZ Notification, 1991 and Environmental Clearance under the Environment Impact Assessment Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the Environment Impact Assessment Notification, 2006 and CRZ Notification, 1991 on the basis of the mandatory documents enclosed with the application viz., the Questionnaire, EIA, EMP, and the additional clarifications furnished in response to the observations of the Expert Appraisal Committee constituted by the competent authority in its meetings held on 16<sup>th</sup> - 18<sup>th</sup> September, 2008 and 18<sup>th</sup> - 20<sup>th</sup> August, 2010.

2. It is interalia, noted that the proposal is for beach sand mining (180 ha.) at Alappad, Panmana and Ayanivelikulangara village in Kollam District, Kerala. Indian Rare Earths (IRE) has been granted mining lease to collect heavy mineral sand in Alappad, Panmana and Ayanivelikulangara village in Kollam district for an area of 180 ha vide G.O (Rt.) No. 745/07/ID dated 08/06/07 by the Government of Kerala. Indian Rare Earths Ltd main plant is at Chavara about 19 kms road distance from the proposed Mining Lease (ML) area

3. The total area 180 ha. will include 132 ha. private agriculture and homestead and 48 ha. Government land including canal and lake. The minable reserve of ilmenite, rutile, zircon, sillimanite, zircon and brown ilmenite is about 249,00,000 tons (24.9 Mt). The average heavy mineral content of the area proposed for mining is about 18.85 %. The dredge will be working in a pond of water and no effluents are generated during its operations. No liquid effluent is generated. Fugitive dust due to material



15

handling and transportation will be controlled by water spraying. Reject material generated in MRP will be used to refill the mined out area in the back side of the pond. Monazite, a radio active mineral is mined out making the area radiation free which will be stored in earthen trenches for ensuring safety from radiation. The trenches are covered using 1 m. thick sand cover. The total power requirement will be met from KSEB 11 KV line. No other fuels will be required for the energy. The total cost of the project will be Rs.10.00 Crores

4. The proposed ML area does not come under 'forest land'. No existing mangrove areas will be mined; however the project facilitates mangrove afforestation in three pockets enhancing the total mangrove area to 8 ha in lieu of the existing 0.8 ha. The western part of ML area will be converted to sand dunes after mining and offers opportunity to restore sandy expanses and natural vegetation. The natural sand dunes can prevent sea erosion to certain extent and also provides an umbrella to CRZ norms. The TOR for the project was issued vide letter no. 11-36/2008-IA.III dated 29.09.2008

5. The Expert Appraisal Committee, after due consideration of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations, have recommended for the grant of Environmental and CRZ Clearance for the project. Accordingly, the Ministry hereby accords necessary Environment Clearance and CRZ Clearance for the above project as per the provisions of Environment Impact Assessment Notification, 2006 and CRZ Notification, 2011, subject to strict compliance of the terms and conditions as follows:

6. **SPECIFIC CONDITIONS :**

- (i) "Consent Order" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any work at the site.
- (ii) No construction work shall be carried out in Coastal Regulation Zone area.
- (iii) 50 mtr. all along the canal shall be maintained as buffer and shall not be disturb at all.
- (iv) No religious places shall be disturbed without the Consent of locals.
- (v) TCLP analysis of both mined and tail materials can be done to check the presence of Hazardous materials and report shall be submitted along with the six monthly monitoring reports.

*Shouf*

FROM :

PHONE NO. :

Mar. 14 2011 04:43PM P1.

- (vi) A green belt shall be developed after mining and refilling block by block. Mangroves as recommended shall be developed in the area contiguous to Vattakayal.
- (vii) Project proponent shall ensure that no disturbance is caused to the mangroves.
- (viii) All the commitments made during the public hearing including the budget for corporate social responsibility shall be earmarked for carrying out the activities.
- (ix) There shall be no waste disposal in to the coastal area.
- (x) The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.
- (xi) The project proponent shall take up mangrove plantation/green belt in the project area, wherever possible. Adequate budget shall be provided in the Environment Management Plan for such mangrove development.
- (xii) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.

7. GENERAL CONDITIONS :

- (i) Full support shall be extended to the officers of this Ministry/Regional Office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
- (ii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.
- (iii) Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (iv) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.



- (v) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.
- (vi) The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
- (vii) A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.
- (viii) State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's office for 30 days.

8. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.

9. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

10. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bangalore.

11. Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

12. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/

FROM :

PHONE NO. :

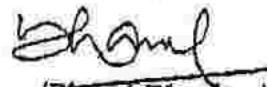
Mar. 14 2011 04:42PM P3

representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

13. The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.


14. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.

15. The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.

  
(Bharat Bhushan)  
Director (IA-III)  
01.03.2011

Copy to:

1. The Secretary, Department of Environment & Forests, Government of Kerala, Kerala State Coastal Zone Management Authority, Sasthra Bhawan, Pattom, Thiruvananthapuram - 4.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum- Office Complex, East Arjun Nagar, Delhi - 110 032.
3. The Chairman, Kerala Coastal Zone Management Authority, Science & Technology (A) Department, Sasthra Bhavan, Pattom, Thiruvananthapuram.
4. The Chief Conservator of Forests, Ministry of Environment and Forests, Regional Office, Western Region, Kendriya Paryavaran Bhavan, Link Road No. 3, Ravishankar Nagar, Bangalore - 462016 Karnataka.
5. The Chairman, Kerala State Pollution Control Board, Plamoodu Junction, Pattom Palace, Trivandrum 695004, Kerala.
6. Director (E), Ministry of Environment and Forests.
7. Guard File.

  
Bharat Bhushan)  
Director (IA-III)

**No.-1**  
Government of India  
Minister of Environment, Forest and Climate Change  
Impact Assessment Division

\*\*\*

Indira Paryavaran Bhavan,  
Vayu Wing, 3rd Floor, Aliganj,  
Jor Bagh Road, New Delhi-110003

19 Nov 2015

To,

M/s INDIAN RARE EARTHS LIMITED  
INDIAN RARE EARTHS LIMITED Chavara,  
Kollam-691583  
Kerala

**Tel.No.0476-2680701; Email:ansari@niist.res.in**

Sir/Madam,

This has reference to the proposal submitted in the Ministry of Environment, Forest and Climate Change to prescribe the Terms of Reference (TOR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, the proponent had submitted online information in the prescribed format (Form-1 ) along with a Pre-feasibility Report. The details of the proposal are given below:

- |   |   |
|---|---|
| <b>1. Proposal No.:</b>                 | IA/KL/MIN/25461/2014  |
| <b>2. Name of the Proposal:</b>         | Mining of Beach Sand Minerals in Alappad, Panmana and Ayanivelikulangara of Kollam District, Kerala |
| <b>3. Category of the Proposal:</b>     | Non-Coal Mining   |
| <b>4. Project/Activity applied for:</b> | 1(a) Mining of minerals   |
| <b>5. Date of submission for TOR:</b>   | 14 Sep 2015   |

In this regard, under the provisions of the EIA Notification 2006 as amended, the Standard TOR for the purpose of preparing environment impact assessment report and environment management plan for obtaining prior environment clearance is prescribed with public consultation as follows:



## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

Terms of Reference (TOR) for preparation of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for "Mining of Minerals" as per the EIA Notification, 2006 has been devised to improve the quality of the reports and facilitate decision-making transparent and easy. TOR will help the project proponents to prepare report with relevant project specific data and easily interpretable information. TOR for mining of minerals is expected to cover all environmental related features.

Mining of minerals plays a positive role in the process of country's economic development. In addition to the contribution towards economic growth, mining can also be a major source of degradation of physical as well as social environment, unless it is properly managed. Environmental impacts can arise during all activities of the mining process. Minimizing the damage due to mining operations depends on sound environmental practices in a framework of balanced environmental legislation. The potential adverse effects of mining activities include air pollution, surface and groundwater pollution, noise and vibration, damage to local ecology, natural topography and drainage, depletion of water resources etc. All these environmental components are required to be considered while selecting a proper methodology of mining, mitigation measures to reduce pollution load, conservation of natural resources etc.

The projects of mining of minerals as stated in the schedule require prior environment clearance under the EIA notification, 2006. Category 'A' Projects are handled in the MoEF&CC and Category 'B' projects are being handled by the respective State Environment Impact Assessment Authorities (SEIAAs) notified by MoEF&CC and following the procedure prescribed under the EIA Notification, 2006. As per this Notification, as amended, the projects of mining of minor minerals with mining lease area equal to or greater than 50 hectare are to be handled at the level of the MoEF&CC for grant of EC. Such projects with mining lease area less than 50 hectare are to be handled by the respective State Environment Impact Assessment Authority (SEIAA).

### **1(a):STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR NON-COAL MINING PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of

## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

- 5) Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.



## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered

## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

## **STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/ ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE**

---

- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
- a) All documents to be properly referenced with index and continuous page numbering.
  - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - d) Where the documents provided are in a language other than English, an English translation should be provided.
  - e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
  - f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
  - g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
  - h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
  - i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

\*\*\*\*\*

**F.No.J-11015/227/2015-IA-II (M)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**Impact Assessment Division**

\*\*\*\*\*

Indira Paryavaran Bhavan  
Vayu Wing, 3<sup>rd</sup> Floor, Aliganj,  
JorBagh Road, New Delhi-110 003

Date: 12<sup>th</sup> February 2019

To

**M/s. Indian Rare Earth Limited**  
Plot No. 1207, Veer Savarkar Marg,  
Near Siddhi Vinayak Temple,  
Prabhdevi, Mumbai-400 028

**Sub: Mining of Beach Sand Mineral with enhancement of production capacity from 2,37,150 TPA to 7,50,000 TPA by M/s Indian Rare Earth Limited, located at village(s)- Alappad, Panmana and Ayanivelikulangara, Tehsil-Karunagappally, District-Kollam, Kerala (180ha) (Consultant-NIIST, Thiruvanthapuram)-Extension of the validity of the TOR-reg.**

**Ref: 1. MoEF & CC TOR letter No: J-11015/227/2015-IA-II (M),  
Dated 11.08.2015.  
2. Online Proposal No: IA/KL/MIN/25461/2014.**

Sir,

The Proposal of M/s Indian Rare Earth Limited is for Mining of Beach Sand Mineral with enhancement of production capacity from 2, 37,150 TPA to 7, 50,000TPA. The mine lease area is located at village(s)-Alappad, Panmana and Ayaniveilkulangara, Tehsil-Karunagappally, District-Kollam, Kerala in MLA of 180ha. The latitudes and longitudes of the Mine Lease area lies between 09°00'55.97" to 09°02'3.80" N, 76° 31'17.19" to 76° 30'29.90"E.

2. The project proposal was earlier considered in the EAC meeting held during 24-26 June 2015 wherein the Committee prescribed the Standard TOR for undertaking detailed EIA study. The TOR was issued vide letter No. J-11015/227/2015/IA-II dated 11.08.2015 and it was valid up to 10.08.2016.

3. The project proponent applied for extension of TOR validity on 02.11.2018 i.e. after the expiry of validity of TOR. However, as per the OM J-11013/41/2006-IA-11 (I) (Part) dated 29.08.2017; the project proponent application for extension of validity of TOR will need EAC consideration. Therefore, the project proposal was

placed in the EAC meeting held on 22-23 January 2019. Based on the information furnished and presentation made by the project proponent and discussions held, the Committee **recommended** for extending the TOR validity for a period of one year from the date of expiry i.e. 11.08.2018 to 10.08.2019.

4. All other terms and conditions mentioned in the ToR letter dated 11.08.2015 shall remain the same.
5. This issues with the approval of Competent Authority.

Yours faithfully,

  
Dr. R. B. Lal)

**Additional Director/Scientist'E'**

**Copy to:**

1. **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, Dr. Rajendra Prasad Road, New Delhi-110 001.
2. **The Director**, Department of Environment, Government of Kerala, Secretariat, Thiruvananthapuram.
3. **The Director**, Directorate of Mines and Geology, Government of Kerala, Kesavadasapuram, Pattom Palace P.O., Thiruvananthapuram -695004, Kerala, India.
4. **The Member Secretary**, Kerala Pollution Control Board, Head Office, Pattom, P. O., Thiruvananthapuram-695004.
5. **The Secretary**, Department of Industry & Commerce, Vikas Bhavan P.O, Thiruvananthapuram, Kerala 695033.
6. **The Secretary**, Department of Forest, Government of Kerala, Nandavanam, Vazhuthacaud, Thiruvananthapuram, Kerala 695014.
7. **The Additional Principal Chief Conservator of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office (SZ), Kendriya Sadan, 4<sup>th</sup> Floor, E&F Wings, 17<sup>th</sup> Main Road, Koramangala II Block, Bangalore - 560034.
8. **The Chairman**, Central Pollution Control Board, Farivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
9. **The Controller General**, Indian Bureau of Mines, Indra Bhavan, Civil Lines, Nagpur-440 001.
10. **The District Collector**, Kollam District, Government of Kerala.
11. **Guard File.**
12. **MOEF & CC Website.**

  
Dr. R. B. Lal)

**Additional Director/Scientist'E'**





HOD(Mining) / OC  
Paper of external origin  
Dispose in 3 days  
- 8/10/2018  
CGM & HEAD

## KERALA COASTAL ZONE MANAGEMENT AUTHORITY

### Directorate of Environment & Climate Change

4<sup>th</sup> Floor, KSRTC Bus Terminal, Thampanoor, Thiruvananthapuram - 01

Ph. 0471-2339696, E-mail: [kczmasandtd@gmail.com](mailto:kczmasandtd@gmail.com)

No: 2933/A1/2018/KCZMA

Date: 22.10.2018

From

The Member Secretary, KCZMA.

To

The Director  
Ministry of Environment Forest and Climate Change  
Govt. of India  
J-615, Jal Block  
Indira Pariyavaran Bhavan  
New Delhi-110003

29 OCT 2018

Sir,

Sub:-KCZMA -Mining of Heavy Mineral Sand in Alappad,Panmana and Ayanivelikulangara Village in Kollam District for an area of 180 Ha by Indian Rare Earths Limited, Chavara,Kollam - reg.

- Ref: 1. Letter No. IREL/CH/MNG/325/2014 dated 21.06.2018 from the Chief General Manager & Head of Indian Rare Earths Limited  
2. Decision No. 96.03.14 of the 96<sup>th</sup> meeting of KCZMA held on 07.07.2018

Kerala Coastal Zone Management Authority received an application from the Chief General Manager & Head of Indian Rare Earths Limited for obtaining CRZ clearance for the mining of heavy mineral sand from its mining block at Vellanathuruth (Block NK IV) in Alappad in Kollam District. The proposed area will be dredged out for the collection of heavy minerals and tailings will be used for back filling the area and after leveling the areas will be given back to the land owners for rehabilitation and agriculture. The excavation will be upto a depth of 8m from surface and the water table will be intercepted at a depth of about 2m.The dredging will be carried out using water from the man-made pond. However, no ground water or surface water will be consumed for the mining operations. The area of project site is 180 Ha.

The project site is bound by Lakshwadeep Sea in the west, while the T-S Canal and Vattakayal forms the Eastern boundary. The area under consideration extends from 09° 01'06" N 76°31'09" E to 09°02'17"N 76°30'39"E. The CRZ categories consist of CRZ IA, CRZ IB, CRZ III and CRZ IV. As per CRZ notification 2011 Clause 81 CRZ I A (i) (a) and B,8 III CRZ III A (b) and (c),8 IV CRZ IV (b),no new construction shall be permitted in CRZ-I except- projects relating to Department of Atomic Energy, in CRZ I area, mining of rare minerals in CRZ III area and Pollution from oil and gas exploration and drilling, mining, boat house and shipping in CRZ IV area.

KCZMA in its 96<sup>th</sup> meeting vide agenda no. 96.03.14 discussed the matter in detail and decided to recommend the proposal of M/s Indian Rare Earths Limited to Ministry of Environment , Forest and Climate Change for considering the CRZ Clearance for mining of heavy mineral sand subject to the condition that no mechanical mining will be allowed in CRZ IB. In the circumstance, the above proposal of Indian Rare Earth Ltd, Chavara, Kollam is forwarded for your consideration subject to the condition that no mechanical mining will be allowed in CRZ IB.

Yours faithfully,



**Dr VEENA N MADHAVAN IAS**  
**Member Secretary, KCZMA**

Copy to

✓ The Chief General Manager & Head, M/s Indian Rare Earths Limited, Chavara,  
Kollam-691583

**FORM H-8**  
**For the financial Year 1st April 2016 to 31st March 2017**  
**ANNUAL RETURN**  
**[ See rule 45(5) (b) (viii)]**  
**(Read the instructions carefully before filling the particulars)**

To  
(i) The Regional Controller of Mines  
Indian Bureau of Mines  
Bangalore Region,  
PIN:  
( Please address to Regional Controller of Mines in whose territorial jurisdiction the mines falls as notified from time to time by the Controller General, Indian Bureau of Mines under Rule 62 of the Mineral Conservation and Development Rules, 1988 )  
(ii) The State Government of Kerala

**Part - I**  
**(General and Labour)**

<b>1. Details of the Mine</b>	
(a) Registration Number	IBM/6118/2011
(b) Mine Code	55KRL09003
(c) Name of the Mineral	SILLIMANITE
(d) Name of Mine	NK BLOCK IV EE ILMENITE M
(e) Name(s) of other Mineral(s), if any produced from the same mine	
<b>2. Location of the Mine:</b>	
Village	ALAPPAD
Post Office	CHERIAZHEKAL
Tahsil/Taluk	KARUNAGAPALLY
District	KOLLAM
State	KERALA
PIN Code	691583
Fax No.	04762680141
Phone No.	04762680701
Mobile No.	9447073003
E-mail	mining-ch@irel.co.in
<b>3. Name and Address of Lessee/Owner (along with fax no. and e-mail)</b>	
Name of Owner	M/s. Indian Rare Earths Limited
Street/Village	Plot No.- 1207V.S.Marg, Prabhadevi
Post Office	--
Tahsil/Taluk	--
District	MUMBAI (SUBURBAN)
State	MAHARASHTRA
PIN Code	400028
Fax No	02224220236
Phone No	02224220230
Mobile No	9869272093
E-mail	cmd@irel.co.in
4. Registered Office of the Lessee	M/s. Indian Rare Earths Limited Plot No.- 1207V.S.Marg, Prabhadevi MUMBAI (SUBURBAN),
5. Director in charge	Shri. D. Singh
6. Agent	Shri. S.Surya Kumar
7. Manager	Shri.S.Ananda Padmanabhan
8. Mining Engineer in charge	Shri C.Sundar
9. Geologist in charge	Shri. E.J.Koshy
10.(i) Transferer (previous owner)	Dr.R.N.Patra

**Final Submitted**

**11. Particulars of Area Operated/Lease**  
(Furnish information on items (i) to (v) lease-wise in case mine workings cover more than one lease)

<b>Lease - 1</b>	
Lease No. allotted by State Govt.	G.O. No.746/07/ID, Dated 08.06.2007
(i) Area under lease	
Under Forest	0.000 hectares
Outside Forest	180.000 hectares
Total	180 hectares
(ii) Date of execution of mining lease deed	07/06/2011
(iii) Period of lease	20
(iv) Area for which surface rights are held	7.270 hectares
(v) (a) Date of renewal (if applicable)	06/06/2031
(b) Period of renewal (if applicable)	20

(vi) In case there is more than one mine in the same lease area, indicate name of mine and mineral produced	<b>Mine Name</b>	<b>Mine Code</b>	<b>Mineral Name</b>
	--	--	--

<b>12. Lease area (surface area) utilisation as at the end of year (hectares)</b>	<b>Under forest</b>	<b>Outside forest</b>	<b>Total</b>
(i) Already exploited & abandoned by opencast (O/C) mining	0.000	0.000	0.000
(ii) Covered under current (O/C) Workings	0.000	2.500	2.500
(iii) Reclaimed/Rehabilitated	0.000	0.000	0.000
(iv) Used for waste disposal	0.000	0.000	0.000
(v) Occupied by plant, buildings, residential, welfare buildings & roads	0.000	1.000	1.000
(vi) Other Purpose ( )	0.000	0.000	0.000
(vii) Work done under progressive mine closure plan during the year	0.000	0.000	0.000

<b>13. Ownership/exploiting Agency of the mine:</b> (Public Sector/Private sector/Joint Sector)	Public Sector
--	---------------

**Part-II**  
**Employment & Wages (I)**

1. Number of technical and supervisory staff employed at the mine		
Description	Wholly employed	Partly employed
(i) Graduate Mining Engineer	1	0
(ii) Diploma Mining Engineer	0	0
(iii) Geologist	1	0
(iv) Surveyor	0	0
(v) Other administrative and technical supervisory staff	0	0
<b>Total</b>	<b>2</b>	<b>0</b>
2. (i) Number of days the mine worked	320	
(ii) No. of shifts per day	3	
(iii) Indicate reasons for work stoppage in the mine during the year (due to strike, lockout, heavy rain, non-availability of labour, transport bottleneck, lack of demand, uneconomic operations, etc.) and the number of days of work stoppage for each of the factors separately .	Reason	No of Days
	Others	45

Final Submitted



**Employment & Wages (II)**

3.(i) Employment of Labour and wages paid :-

Maximum number of persons employed on any one day during the year

(i) In workings below ground on 00-00-0000 0 Persons

(ii) In all in the mine on 00-00-0000 0 Persons

Classification	Total number of man days worked during the year			No. of days worked during the year	Average daily number of persons employed			Total Wages /Salary bills for the year(in₹)
	Direct	Contract	Total		Male	Female	Total	
(1)	2(A)	2(B)	2(C)	(3)	4(A)	4(B)	4(C)	(5)
<b>A. Below Ground</b>								
(i) Foreman and mining mates	0	0	0	0	0	0	0	0.00
(ii) Face workers and Loaders	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>B. Opencast workings</b>								
(i) Foreman and mining mates	0	0	0	0	0	0	0	0.00
(ii) Face workers and Loaders	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>C. Above ground</b>								
(i) Clerical & Supervisory Staff (excluding the superior supervisory staff)	0	0	0	0	0	0	0	0.00
(ii) Workers in any Attached factory, Workshop or mineral dressing plant	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

3.(ii) Total salaries paid to technical and supervisory staff employed in the mine during the year (in ₹)

0.00

**Part-II A  
Capital Structure**

1. Value of Fixed Assets (in ₹) 0  
(in respect of the mine, beneficiation plant, mine work-shop, power and water installation)

In case this information is furnished as combined information in another mine's return please specify mine Code/mine Name

Mine Name	Mine Code	Mineral Name
--	--	--

(in ₹)

Description	As at the beginning of the year	Additions during the Year	Sold or discarded during the year	Depreciation during the year	Net closing Balance (2+3)-(4+5)	Estimated market value
(i) Land	0	0	0	0	0	0
(ii) Building						
Industrial	0	0	0	0	0	0
Residential	0	0	0	0	0	
(iii) Plant and Machinery including transport equipment	0	0	0	0	0	0
(iv) Capitalised Expenditure such as pre-production exploration, development, major overhaul and repair to machinery etc. (As prescribed under Income Tax Act)	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

2. Source of Finance (as at the end of the year) (in ₹):

(i) Paid up Share Capital	0
(ii) Own Capital	0
(iii) Reserve & Surplus (All Types)	0
(iv) Long Term loans outstanding	0

Name of the Institution/Source	Amount of Loan	Rate of Interest
00	0	0

3. Interest and Rent (in ₹)

(i) Interest paid during the year	0
(ii) Rents (excluding surface rent) paid during the year	0

**Part - III**  
**Consumption of Materials**

**1. Quantity and cost of material consumed during the year**

Description	Unit	Quantity	Value (in ₹)
<b>(i) Fuel</b>			
(a) Coal	Tonnes	0	0
(b) Diesel Oil	Ltrs	0	0
(c) Petrol	Ltrs	0	0
(d) Kerosene	Ltrs	0	0
(e) Gas	Cu.M.	0	0
<b>(ii) Lubricant</b>			
(a) Lubricant oil	Ltrs	0	0
(b) Grease	kgs.	0	0
<b>(iii) Electricity</b>			
(a) Consumed	Kwh	0	0
(b) Generated	Kwh	0	0
(c) Sold	Kwh	0	0
<b>(iv) Explosives (furnish full details in Part IV)</b>			0
(v) Tyres	Nos.	0	0
(vi) Timber & Supports			0
(vii) Drill rods & kits	Nos.	0	0
(viii) Other spares & stores			0

**2. Royalty and Rents (in ₹)**

Item	Paid for current year	Paid towards past arrears
(a) Royalty	0	0
(b) Dead rent	0	0
(c) Surface rent	0	0
3. Compensation paid for felling trees during the year (in ₹)	0	
4. Depreciation on fixed assets (in ₹)	0	

### 5. Taxes and Cesses

Item	Amount in ₹ paid during the year to	
	Central Govt.	State Govt.
(i) Sales Tax	0	0
(ii) Welfare cess	0	0
(iii) Other taxes & cesses:-		
(a) Mineral cess	0	0
(b) Cess on dead rent	0	0
(c) Others (please specify): 0	0	0
6. Other expenses (in ₹)		
(i) Overheads	0	
(ii) Maintenance	0	
(iii) Money value of other benefits paid to workmen	0	
(iv) Payment made to professional agencies	0	

Final Submitted

**Part - IV**  
**Consumption of Explosives**

1. Licensed capacity of magazine: ( specify unit separately in Kg/Tonne, numbers, meters )	Item	Unit	Capacity
	Explosives	Kg	0
	Detonators	Nos.	0
	Fuses	Meters	0
2. Total production during the year (in Tonne)	0.000		
3. Overburden removed (in Tonne)	0		

Classification of Explosives	Unit	Quantity consumed during the year		Estimated requirement during the next year	
		Small dia. (upto 32 mm)	Large dia. (above 32 mm)	Small dia. (upto 32 mm)	Large dia. (above 32 mm)
1. Gun Powder	Kg	0	0	0	0
2. Nitrate Mixture					
(a) Loose ammonium nitrate	Kg	0	0	0	0
(b) Ammonium nitrate in cartridge form	Kg	0	0	0	0
3. Nitro Compound	Kg	0	0	0	0
4. Liquid Oxygen soaked cartridges	Kg	0	0	0	0
5. Slurry explosives (Mention different trade names): 0	Kg	0	0	0	0
6. Detonators.					
(i) Ordinary	Nos.	0	0	0	0
(ii) Electrical					
(a) Ordinary	Nos.	0	0	0	0
(b) Delay	Nos.	0	0	0	0
7. Fuse					
(a) Safety Fuse	Mts	0	0	0	0
(b) Detonating Fuse	Mts	0	0	0	0
8. Plastic ignition cord	Mts	0	0	0	0
9. Others:		0	0	0	0

**Part - V**  
**General Geology & Mining (Sec 1/2 for Sillimanite)**

1. Mineral(s) worked and their characteristics : (In case more than one mineral is worked, the information asked for under (a) to (c) in respect of the remaining mineral(s) may be furnished in a separate sheet and attached with the return)

(a) Name of Mineral		Sillimanite
(b) Type of Ore		Granular
(c) Quality: Chemical Analysis of Typical Grades Produced for Granular		
Constituent		Grade
(i) Size Range	Fines < 2 mm	
(ii) Principal Constituent	SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub>	95.1
(iii) Subsidiary Constituent	ZrO <sub>2</sub>	1.5
	Fe <sub>2</sub> O <sub>3</sub>	0.3
	TiO <sub>2</sub>	0.3
(a). Name of rock/mineral excavated and disposed as waste	Silica ( Quartz)	
(b). Name(s) of the ore/mineral excavated but not sold i.e., mineral reject	Silica	
(c). Typical analysis of mineral reject(s)		
Constituent		Grade %
SiO <sub>2</sub>		95

**3. Sec 3 for Sillimanite**

3. Reserves and Resources estimated at the end of the year			
Classification	Code	Quantity	Grade (as per NMI grades as indicated in the mining plan)
(1)	(2)	(3)	(4)
Total Mineral Resources (A + B)			
A. Mineral Reserve			
1. Proved Mineral Reserve	111	131445	
2. Probable Mineral Reserve	121	0	
	122	0	
B. Remaining Resources			
1. Feasibility Mineral Resource	211	0	
2. Prefeasibility Mineral Resource	221	0	
	222	0	
3. Measured Mineral Resource	331	0	
4. Indicated Mineral Resource	332	0	



5. Inferred Mineral Resource	333	<input type="text" value="0"/>	<input type="text"/>
6. Reconnaissance Mineral Resource	334	<input type="text" value="0"/>	<input type="text"/>

Final Submitted

#### 4. Mining operations during the year

4.1 Exploration			
Item	Grid in Meters	Meterage	Number
Drilling	□	0	0
Trenching	□	0	0
Pitting	□	0	0
4.2 Opencast			
(A) Details of Benches (Separately for mechanised and manual sections)			
	In ore		In OB/Waste
(i) Number of Benches	Mechanised	0	0
(ii) Average height (meters)	Mechanised	0	0
(iii) Depth of the deepest working from adjacent ground (Meters )	Mechanised	0	0
(B) (i) Total ROM Ore production (tonnes)	0		
(C) Total quantity of Overburden/Waste removed during the year (tonnes)			
Overburden/Waste	During the year		Cumulative
(i) Quantity back filled	0		0
(ii) Quantity disposed of in external dumps	0		0
4.3 Underground			
(a) Driving (metres) in ore	0		
(b) Cross Cutting/Footwall Drives (in barren) (Metres)	0		
(c) Winzing (meters)	0		
(d) Raising (meters)	0		
(e) Shaft sinking (meters)	0		
(f) Stope preparation (meters)	0		
(g) Tonnage of ore blocked for stopping (tonnes)	0		
(h) Quantity of waste removed (tonnes)	0		
4.4	(a) Within lease area		(b) Outside lease area
(i) Number of trees planted during the year	0		0
(ii) Survival rate in percentage	0.00		0

**Sec 4. Mineral Rejects for Sillimanite**

4.2 Opencast	
4.2(B) (ii) Mineral Rejects generated with grades (tonnes)	
a. Quantity	0
b. Grade	0
4.3 Underground	
4.3(i) Mineral Rejects generated with grades (tonnes)	
a. Quantity	0
b. Grade	0

**Sec 5/6/8/9**

5. Type and aggregate Horse Power of Machinery: Give the following information for the types of machinery in use such as hoist, fans, drills, loaders, excavators, dumpers, haulages, conveyors, pumps, etc. Details of any new machinery added during the year may be furnished with cost.				
Type of machinery	Capacity of each unit	No.of units	Electrical/ Non-Electrical (specify)	Used in opencast/ underground (specify)
FRONT END LOADER	1.000 CUM	2	Electrical	Opencast
6.(i) Give details of future plans, if any, of exploration and development, production schedule, replacements and expansion of machinery and equipment etc.				
(ii) If you have laboratory facilities for R & D then give a brief description:		R & D centre is in Kollam		
8. Furnish surface and/or underground plans and sections as prepared and brought up-to-date (as required under rule 28 of MCDR)				
9. Please indicate the salient features which affected mining operations during the year.		obtaining surface rights		

**Sec 7 for Sillimanite**

7.(i) Details of mineral Treatment Plant, if any. Give a brief description of the process capacity of the machinery deployed and its availability. (Enclose Flow Sheet and Material Balance of the Plant)		
(ii) Furnish following information every year:		
Item	Tonnage	Average Grade
Feed	0	0
Concentrates	0	0
By-products/Co-products	0	0
Tailings	0	0

Final Submitted

**Part - VI (PRODUCTION,DISPATCHES AND STOCK)**

**1. Production and Stocks of ROM ore at Mine-head ( SILLIMANITE )**

Category	Opening stock (in tonne)	Production (in tonne)	Closing stock (in tonne)
(a) Open Cast Workings	0.000	237148.850	0.000
(b) Underground Workings	0.000	0.000	0.000
(c) Dump Workings	0.000	0.000	0.000

**2. Grade-wise production, Despatches, Stocks and Ex-mine prices of Processed ore( SILLIMANITE )**

Grades	Opening stock at mine head (in tonne)	Production (in tonne)	Dispatches from mine head (in tonne)	Closing stock at mine head (in tonne)	Ex-mine price (in ₹ Per Tonne)
(a) Sillimanite	0.000	0.000	0.000	0.000	0.00

**3. (i) In case the mineral is being pulverised in own factory, please give the following particulars ( SILLIMANITE )**

Grade	Total Quantity of mineral pulverized (in tonne)	Total quantity of Pulverized mineral produced (for each mesh size)		Total quantity of pulverized mineral sold during the month		
		Mesh size	Quantity (tonne)	Mesh size	Quantity (tonne)	Ex-factory Sale value (in ₹)

3.(ii) Average cost of Pulverization: (in ₹) per tonne

**4. Details of Deductions used for computation of Ex-mine price(in ₹ /Tonne) ( SILLIMANITE )**

Deduction claimed	Amount(in ₹)/Tonne)	Remarks
(a) Cost of transportation (indicate Loading station and Distance from mine in remarks)	0.00	Details are included in 55KRL09001
(b) Loading and Unloading charges	0.00	
(c) Railway freight ,if applicable (indicate destination and distance in remarks)	0.00	
(d) Port Handling charges/export duty (indicate name of port in remarks)	0.00	
(e) Charges for Sampling and Analysis	0.00	
(f) Rent for the plot at Stocking yard	0.00	
(g) Other charges (specify clearly in remarks):	0.00	
Total (a) to (g)	0.00	

Final Submitted



**5. Sales/Dispatches effected for Domestic Consumption and for exports( SILLIMANITE )**

Grade	Nature of Dispatch (indicate whether Domestic Sale or Domestic Transfer or Captive consumption or Export)	For Domestic Consumption			
		Registration number as allotted by the Indian Bureau of Mines to the buyer	Consignee name	Quantity (in tonne)	Sale value (in ₹)
--	NIL	0	NIL	0.000	0.00

NOTE:- Mine owners are required to substantiate domestic sale value/ FOB value for each grade of ore quoted above with copy of invoices.

**5. Sales/Dispatches effected for Domestic Consumption and for exports ( SILLIMANITE )**

Grade	Nature of Dispatch (indicate whether Domestic Sale or Domestic Transfer or Captive consumption or Export)	For export		
		Country	Quantity (in tonne)	F.O.B Value (in ₹)
--	NIL		--	--

**6. Give Reason for increase/decrease in production**

Give reasons for increase/decrease in production compared to the previous year or nil production, if any, during the year .

Details are included in 55KRL09001

**7. Give Reason for increase/decrease in grade wise ex-mine price**

Give reasons for increase/decrease in grade wise ex-mine price ,if any, during the year compared to the previous year .

Details are included in 55KRL09001

**Part - VII  
COST OF PRODUCTION**

	Item	Cost Per Tonne (in ₹ )
(i)	Direct Cost	0.00
	(a) Exploration	0.00
	(b) Mining	0.00
	(c) Beneficiation(Mechanical Only)	0.00
(ii)	Over-head cost	0.00
(iii)	Depreciation	0.00
(iv)	Interest	0.00
(v)	Royalty	0.00
(vi)	Taxes	0.00
(vii)	Dead Rent	0.00
(viii)	Others (specify) 0	0.00
	<b>Total</b>	<b>0.00</b>

Mineral Name	Production proposal for financial year 2016 - 2017	Production reported during the financial year 2016 - 2017	Difference
SILLIMANITE	0	237148.85	-237149

I Certify that the information furnished above is correct and complete in all respects.

Place :

Dist: KOLLAM, KERALA

Pin:691583

Date : 11-04-2018

Signature

Name :

Designation:

Owner / Agent / Mining Engineer / Manager

**From: 117.193.72.97 at 2019-03-22 18:36:01**

**Final Submitted**

**FORM H-8**  
**For the financial Year 1st April 2017 to 31st March 2018**  
**ANNUAL RETURN**  
**[ See rule 45(5) (b) (viii)]**  
**(Read the instructions carefully before filling the particulars)**

To  
(i) The Regional Controller of Mines  
Indian Bureau of Mines  
Bangalore Region,  
PIN:  
( Please address to Regional Controller of Mines in whose territorial jurisdiction the mines falls as notified from time to time by the Controller General, Indian Bureau of Mines under Rule 62 of the Mineral Conservation and Development Rules, 1988 )  
(ii) The State Government of Kerala

**Part - I**  
**(General and Labour)**

<b>1. Details of the Mine</b>	
(a) Registration Number	IBM/6118/2011
(b) Mine Code	55KRL09003
(c) Name of the Mineral	SILLIMANITE
(d) Name of Mine	NK BLOCK IV EE ILMENITE M
(e) Name(s) of other Mineral(s), if any produced from the same mine	
<b>2. Location of the Mine:</b>	
Village	ALAPPAD
Post Office	CHERIAZHEKAL
Tahsil/Taluk	KARUNAGAPALLY
District	KOLLAM
State	KERALA
PIN Code	691583
Fax No.	04762680141
Phone No.	04762680701
Mobile No.	9447073003
E-mail	mining-ch@irel.co.in
<b>3. Name and Address of Lessee/Owner (along with fax no. and e-mail)</b>	
Name of Owner	M/s. Indian Rare Earths Limited
Street/Village	Plot No.- 1207V.S.Marg, Prabhadevi
Post Office	--
Tahsil/Taluk	--
District	MUMBAI (SUBURBAN)
State	MAHARASHTRA
PIN Code	400028
Fax No	02224220236
Phone No	02224220230
Mobile No	9869272093
E-mail	cmd@irel.co.in
4. Registered Office of the Lessee	M/s. Indian Rare Earths Limited Plot No.- 1207V.S.Marg, Prabhadevi MUMBAI (SUBURBAN),
5. Director in charge	Shri. D. Singh
6. Agent	Shri. S.Surya Kumar
7. Manager	Shri.S.Ananda Padmanabhan
8. Mining Engineer in charge	Shri C.Sundar
9. Geologist in charge	Shri. E.J.Koshy
10.(i) Transferer (previous owner)	Dr.R.N.Patra

**Final Submitted**

**11. Particulars of Area Operated/Lease**  
(Furnish information on items (i) to (v) lease-wise in case mine workings cover more than one lease)

<b>Lease - 1</b>	
Lease No. allotted by State Govt.	G.O. No.746/07/ID, Dated 08.06.2007
(i) Area under lease	
Under Forest	0.000 hectares
Outside Forest	180.000 hectares
Total	180 hectares
(ii) Date of execution of mining lease deed	07/06/2011
(iii) Period of lease	20
(iv) Area for which surface rights are held	13.000 hectares
(v) (a) Date of renewal (if applicable)	06/06/2031
(b) Period of renewal (if applicable)	20

(vi) In case there is more than one mine in the same lease area, indicate name of mine and mineral produced	<b>Mine Name</b>	<b>Mine Code</b>	<b>Mineral Name</b>
	--	--	--

<b>12. Lease area (surface area) utilisation as at the end of year (hectares)</b>	<b>Under forest</b>	<b>Outside forest</b>	<b>Total</b>
(i) Already exploited & abandoned by opencast (O/C) mining	0.000	0.000	0.000
(ii) Covered under current (O/C) Workings	0.000	2.500	2.500
(iii) Reclaimed/Rehabilitated	0.000	1.500	1.500
(iv) Used for waste disposal	0.000	0.000	0.000
(v) Occupied by plant, buildings, residential, welfare buildings & roads	0.000	1.000	1.000
(vi) Other Purpose ( )	0.000	0.000	0.000
(vii) Work done under progressive mine closure plan during the year	0.000	0.000	0.000

<b>13. Ownership/exploiting Agency of the mine:</b> (Public Sector/Private sector/Joint Sector)	Public Sector
--	---------------

**Part-II**  
**Employment & Wages (I)**

1. Number of technical and supervisory staff employed at the mine		
Description	Wholly employed	Partly employed
(i) Graduate Mining Engineer	1	0
(ii) Diploma Mining Engineer	0	0
(iii) Geologist	1	0
(iv) Surveyor	0	0
(v) Other administrative and technical supervisory staff	0	0
<b>Total</b>	<b>2</b>	<b>0</b>
2. (i) Number of days the mine worked	353	
(ii) No. of shifts per day	3	
(iii) Indicate reasons for work stoppage in the mine during the year (due to strike, lockout, heavy rain, non-availability of labour, transport bottleneck, lack of demand, uneconomic operations, etc.) and the number of days of work stoppage for each of the factors separately .	Reason	No of Days
	Others	12

Final Submitted

**Employment & Wages (II)**

3.(i) Employment of Labour and wages paid :-								
Maximum number of persons employed on any one day during the year								
(i) In workings below ground on 05-03-2018 0 Persons								
(ii) In all in the mine on 05-03-2018 0 Persons								
Classification	Total number of man days worked during the year			No. of days worked during the year	Average daily number of persons employed			Total Wages /Salary bills for the year(in₹)
	Direct	Contract	Total		Male	Female	Total	
(1)	2(A)	2(B)	2(C)	(3)	4(A)	4(B)	4(C)	(5)
<b>A. Below Ground</b>								
(i) Foreman and mining mates	0	0	0	0	0	0	0	0.00
(ii) Face workers and Loaders	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>B. Opencast workings</b>								
(i) Foreman and mining mates	0	0	0	0	0	0	0	0.00
(ii) Face workers and Loaders	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>C. Above ground</b>								
(i) Clerical & Supervisory Staff (excluding the superior supervisory staff)	0	0	0	0	0	0	0	0.00
(ii) Workers in any Attached factory, Workshop or mineral dressing plant	0	0	0	0	0	0	0	0.00
(iii) Others	0	0	0	0	0	0	0	0.00
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
3.(ii) Total salaries paid to technical and supervisory staff employed in the mine during the year (in ₹)					0.00			



**Part-II A  
Capital Structure**

1. Value of Fixed Assets (in ₹) 0  
(in respect of the mine, beneficiation plant, mine work-shop, power and water installation)

In case this information is furnished as combined information in another mine's return please specify mine Code/mine Name

Mine Name	Mine Code	Mineral Name
--	--	--

(in ₹)

Description	As at the beginning of the year	Additions during the Year	Sold or discarded during the year	Depreciation during the year	Net closing Balance (2+3)-(4+5)	Estimated market value
(i) Land	0	0	0	0	0	0
(ii) Building						
Industrial	0	0	0	0	0	0
Residential	0	0	0	0	0	
(iii) Plant and Machinery including transport equipment	0	0	0	0	0	0
(iv) Capitalised Expenditure such as pre-production exploration, development, major overhaul and repair to machinery etc. (As prescribed under Income Tax Act)	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

2. Source of Finance (as at the end of the year) (in ₹):

(i) Paid up Share Capital	0
(ii) Own Capital	0
(iii) Reserve & Surplus (All Types)	0
(iv) Long Term loans outstanding	0

Name of the Institution/Source	Amount of Loan	Rate of Interest
0	0	0

3. Interest and Rent (in ₹)

(i) Interest paid during the year	0
(ii) Rents (excluding surface rent) paid during the year	0

**Part - III**  
**Consumption of Materials**

**1. Quantity and cost of material consumed during the year**

Description	Unit	Quantity	Value (in ₹)
<b>(i) Fuel</b>			
(a) Coal	Tonnes	0	0
(b) Diesel Oil	Ltrs	0	0
(c) Petrol	Ltrs	0	0
(d) Kerosene	Ltrs	0	0
(e) Gas	Cu.M.	0	0
<b>(ii) Lubricant</b>			
(a) Lubricant oil	Ltrs	0	0
(b) Grease	kgs.	0	0
<b>(iii) Electricity</b>			
(a) Consumed	Kwh	0	0
(b) Generated	Kwh	0	0
(c) Sold	Kwh	0	0
<b>(iv) Explosives (furnish full details in Part IV)</b>			0
(v) Tyres	Nos.	0	0
(vi) Timber & Supports			0
(vii) Drill rods & kits	Nos.	0	0
(viii) Other spares & stores			0

**2. Royalty and Rents (in ₹)**

Item	Paid for current year	Paid towards past arrears
(a) Royalty	0	0
(b) Dead rent	0	0
(c) Surface rent	0	0
3. Compensation paid for felling trees during the year (in ₹)	0	
4. Depreciation on fixed assets (in ₹)	0	

### 5. Taxes and Cesses

Item	Amount in ₹ paid during the year to	
	Central Govt.	State Govt.
(i) Sales Tax	0	0
(ii) Welfare cess	0	0
(iii) Other taxes & cesses:-		
(a) Mineral cess	0	0
(b) Cess on dead rent	0	0
(c) Others (please specify): 0	0	0
6. Other expenses (in ₹)		
(i) Overheads	0	
(ii) Maintenance	0	
(iii) Money value of other benefits paid to workmen	0	
(iv) Payment made to professional agencies	0	

Final Submitted

**Part - IV**  
**Consumption of Explosives**

1. Licensed capacity of magazine: ( specify unit separately in Kg/Tonne, numbers, meters )	Item	Unit	Capacity
	Explosives	Kg	0
	Detonators	Nos.	0
	Fuses	Meters	0
2. Total production during the year (in Tonne)	0.000		
3. Overburden removed (in Tonne)	0		

Classification of Explosives	Unit	Quantity consumed during the year		Estimated requirement during the next year	
		Small dia. (upto 32 mm)	Large dia. (above 32 mm)	Small dia. (upto 32 mm)	Large dia. (above 32 mm)
1. Gun Powder	Kg	0	0	0	0
2. Nitrate Mixture					
(a) Loose ammonium nitrate	Kg	0	0	0	0
(b) Ammonium nitrate in cartridge form	Kg	0	0	0	0
3. Nitro Compound	Kg	0	0	0	0
4. Liquid Oxygen soaked cartridges	Kg	0	0	0	0
5. Slurry explosives (Mention different trade names): 0	Kg	0	0	0	0
6. Detonators.					
(i) Ordinary	Nos.	0	0	0	0
(ii) Electrical					
(a) Ordinary	Nos.	0	0	0	0
(b) Delay	Nos.	0	0	0	0
7. Fuse					
(a) Safety Fuse	Mts	0	0	0	0
(b) Detonating Fuse	Mts	0	0	0	0
8. Plastic ignition cord	Mts	0	0	0	0
9. Others:		0	0	0	0

**Part - V**  
**General Geology & Mining (Sec 1/2 for Sillimanite)**

1. Mineral(s) worked and their characteristics : (In case more than one mineral is worked, the information asked for under (a) to (c) in respect of the remaining mineral(s) may be furnished in a separate sheet and attached with the return)

(a) Name of Mineral		Sillimanite
(b) Type of Ore		Granular
(c) Quality: Chemical Analysis of Typical Grades Produced for Granular		
Constituent		Grade
(i) Size Range	Fines < 2 mm	
(ii) Principal Constituent	SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub>	95.1
(iii) Subsidiary Constituent	ZrO <sub>2</sub>	1.5
	Fe <sub>2</sub> O <sub>3</sub>	0.3
(a). Name of rock/mineral excavated and disposed as waste	Silica (quartz)	
(b). Name(s) of the ore/mineral excavated but not sold i.e., mineral reject	Silica	
(c). Typical analysis of mineral reject(s)		
Constituent		Grade %
SiO <sub>2</sub>		95

**3. Sec 3 for Sillimanite**

3. Reserves and Resources estimated at the end of the year			
Classification	Code	Quantity	Grade (as per NMI grades as indicated in the mining plan)
(1)	(2)	(3)	(4)
Total Mineral Resources (A + B)			
<b>A. Mineral Reserve</b>			
1. Proved Mineral Reserve	111	131445	<input type="text"/>
2. Probable Mineral Reserve	121	0	<input type="text"/>
	122	0	<input type="text"/>
<b>B. Remaining Resources</b>			
1. Feasibility Mineral Resource	211	0	<input type="text"/>
2. Prefeasibility Mineral Resource	221	0	<input type="text"/>
	222	0	<input type="text"/>
3. Measured Mineral Resource	331	0	<input type="text"/>
4. Indicated Mineral Resource	332	0	<input type="text"/>
5. Inferred Mineral Resource	333	0	<input type="text"/>

6. Reconnaissance Mineral Resource	334	0	
---------------------------------------	-----	---	--

Final Submitted

#### 4. Mining operations during the year

4.1 Exploration			
Item	Grid in Meters	Meterage	Number
Drilling	□	0	0
Trenching	□	0	0
Pitting	□	0	0
4.2 Opencast			
(A) Details of Benches (Separately for mechanised and manual sections)			
	In ore		In OB/Waste
(i) Number of Benches	Mechanised	0	0
(ii) Average height (meters)	Mechanised	0	0
(iii) Depth of the deepest working from adjacent ground (Meters )	Mechanised	0	0
(B) (i) Total ROM Ore production (tonnes)	0		
(C) Total quantity of Overburden/Waste removed during the year (tonnes)			
Overburden/Waste	During the year		Cumulative
(i) Quantity back filled	80000		80000
(ii) Quantity disposed of in external dumps	0		0
4.3 Underground			
(a) Driving (metres) in ore	0		
(b) Cross Cutting/Footwall Drives (in barren) (Metres)	0		
(c) Winzing (meters)	0		
(d) Raising (meters)	0		
(e) Shaft sinking (meters)	0		
(f) Stope preparation (meters)	0		
(g) Tonnage of ore blocked for stopping (tonnes)	0		
(h) Quantity of waste removed (tonnes)	0		
4.4	(a) Within lease area		(b) Outside lease area
(i) Number of trees planted during the year	0		0
(ii) Survival rate in percentage	0.00		0

**Sec 4. Mineral Rejects for Sillimanite**

4.2 Opencast	
4.2(B) (ii) Mineral Rejects generated with grades (tonnes)	
a. Quantity	0
b. Grade	0
4.3 Underground	
4.3(i) Mineral Rejects generated with grades (tonnes)	
a. Quantity	0
b. Grade	0

**Sec 5/6/8/9**

5. Type and aggregate Horse Power of Machinery: Give the following information for the types of machinery in use such as hoist, fans, drills, loaders, excavators, dumpers, haulages, conveyors, pumps, etc. Details of any new machinery added during the year may be furnished with cost.				
Type of machinery	Capacity of each unit	No. of units	Electrical/ Non-Electrical (specify)	Used in opencast/ underground (specify)
FRONT END LOADER	1.000 CUM	2	Electrical	Opencast
6.(i) Give details of future plans, if any, of exploration and development, production schedule, replacements and expansion of machinery and equipment etc.				
(ii) If you have laboratory facilities for R & D then give a brief description:				
8. Furnish surface and/or underground plans and sections as prepared and brought up-to-date (as required under rule 28 of MCDR)				
9. Please indicate the salient features which affected mining operations during the year.				



**Sec 7 for Sillimanite**

7.(i) Details of mineral Treatment Plant, if any. Give a brief description of the process capacity of the machinery deployed and its availability. (Enclose Flow Sheet and Material Balance of the Plant)	MSP is situated at a distance of 18 kms from this lease	
(ii) Furnish following information every year:		
Item	Tonnage	Average Grade
Feed	0	0
Concentrates	0	0
By-products/Co-products	0	0
Tailings	0	0

Final Submitted

**Part - VI (PRODUCTION,DISPATCHES AND STOCK)**

**1. Production and Stocks of ROM ore at Mine-head ( SILLIMANITE )**

Category	Opening stock (in tonne)	Production (in tonne)	Closing stock (in tonne)
(a) Open Cast Workings	0.000	231703.920	0.000
(b) Underground Workings	0.000	0.000	0.000
(c) Dump Workings	0.000	0.000	0.000

**2. Grade-wise production, Despatches, Stocks and Ex-mine prices of Processed ore( SILLIMANITE )**

Grades	Opening stock at mine head (in tonne)	Production (in tonne)	Dispatches from mine head (in tonne)	Closing stock at mine head (in tonne)	Ex-mine price (in ₹ Per Tonne)
(a) Sillimanite	0.000	0.000	0.000	0.000	0.00

**3. (i) In case the mineral is being pulverised in own factory, please give the following particulars ( SILLIMANITE )**

Grade	Total Quantity of mineral pulverized (in tonne)	Total quantity of Pulverized mineral produced (for each mesh size)		Total quantity of pulverized mineral sold during the month		
		Mesh size	Quantity (tonne)	Mesh size	Quantity (tonne)	Ex-factory Sale value (in ₹)

3.(ii) Average cost of Pulverization: (in ₹) per tonne

**4. Details of Deductions used for computation of Ex-mine price(in ₹ /Tonne) ( SILLIMANITE )**

Deduction claimed	Amount(in ₹)/Tonne)	Remarks
(a) Cost of transportation (indicate Loading station and Distance from mine in remarks)	0.00	Details are included in 55KRL09001
(b) Loading and Unloading charges	0.00	
(c) Railway freight ,if applicable (indicate destination and distance in remarks)	0.00	
(d) Port Handling charges/export duty (indicate name of port in remarks)	0.00	
(e) Charges for Sampling and Analysis	0.00	
(f) Rent for the plot at Stocking yard	0.00	
(g) Other charges (specify clearly in remarks):	0.00	
Total (a) to (g)	0.00	

Final Submitted

**5. Sales/Dispatches effected for Domestic Consumption and for exports( SILLIMANITE )**

Grade	Nature of Dispatch (indicate whether Domestic Sale or Domestic Transfer or Captive consumption or Export)	For Domestic Consumption			
		Registration number as allotted by the Indian Bureau of Mines to the buyer	Consignee name	Quantity (in tonne)	Sale value (in ₹)
--	NIL	0	NIL	0.000	0.00

NOTE:- Mine owners are required to substantiate domestic sale value/ FOB value for each grade of ore quoted above with copy of invoices.

**5. Sales/Dispatches effected for Domestic Consumption and for exports ( SILLIMANITE )**

Grade	Nature of Dispatch (indicate whether Domestic Sale or Domestic Transfer or Captive consumption or Export)	For export		
		Country	Quantity (in tonne)	F.O.B Value (in ₹)
--	NIL		--	--

**6. Give Reason for increase/decrease in production**

Give reasons for increase/decrease in production compared to the previous year or nil production, if any, during the year .

Details are included in 55KRL09001

**7. Give Reason for increase/decrease in grade wise ex-mine price**

Give reasons for increase/decrease in grade wise ex-mine price ,if any, during the year compared to the previous year .

Details are included in 55KRL09001

**Part - VII  
COST OF PRODUCTION**

	Item	Cost Per Tonne (in ₹ )
(i)	Direct Cost	0.00
	(a) Exploration	0.00
	(b) Mining	0.00
	(c) Beneficiation(Mechanical Only)	0.00
(ii)	Over-head cost	0.00
(iii)	Depreciation	0.00
(iv)	Interest	0.00
(v)	Royalty	0.00
(vi)	Taxes	0.00
(vii)	Dead Rent	0.00
(viii)	Others (specify) 0	0.00
	<b>Total</b>	<b>0.00</b>

Mineral Name	Production proposal for financial year 2017 - 2018	Production reported during the financial year 2017 - 2018	Difference
SILLIMANITE	0	231703.92	-231704

I Certify that the information furnished above is correct and complete in all respects.

Place :

Dist: KOLLAM, KERALA

Pin:691583

Date : 27-01-2019

Signature

Name :

Designation:

Owner / Agent / Mining Engineer / Manager

**From: 117.193.72.97 at 2019-03-22 18:36:19**

**Final Submitted**