

**STATE POLLUTION CONTROL BOARD, ODISHA**

(DEPARTMENT OF FOREST AND ENVIRONMENT, GOVERNMENT OF ODISHA)  
Paribesh Bhawan, A/118, Nilakanthnagar, Unit - VIII,  
Bhubaneswar - 751 012, INDIA

No. 12142

VII - L - Misc - 989

Date: 03/08/2023

To

The Registrar  
National Green Tribunal  
Principal Bench,  
Faridkot House, Copernicus Marg,  
New Delhi - 110 001  
E-mail: [judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) / [ngt.filing@email.com](mailto:ngt.filing@email.com)

E-mail/Speed Post

Sub: OA No.05/2023/PB - Surendra Panigrahi v. State of Odisha &amp; Ors.

Ref: This Board letter No.6932 dtd.29.04.2023.

Sir,

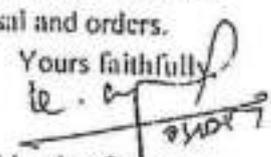
The Hon'ble Tribunal vide their order dtd.21.02.2023 has been pleased to constitute a joint committee comprising State PCB, Bhava Atomic Research Centre, Director Mines, DFO, Ganjam and Collector, Ganjam and directed for submission of a report for further consideration on 01.05.2023. The State PCB has been declared as the Nodal Agency for coordination and compliance. In the above referred letter, the Board has sought for two months more time for submission of report. The case is now posted to 04.08.2023 for hearing.

In the meantime, the Regional Officer of this Board at Berhampur, who has been nominated to represent the joint committee and also to act as Nodal Officer vide his letter No.2338 dtd.27.07.2023 has submitted the report of the joint committee which was held on 25.07.2023 for consideration by the Hon'ble Tribunal. It is indicated in the said letter that the Bhava Atomic Research Centre has submitted the report as per action plan of the joint committee which has been annexed in the committee report as Annexure-IX, therefore there is no need of putting signature of the representative namely Dr. S.K.Jha in the joint committee report. Copy of the letter dtd.2338 dtd.27.07.2023 along with the report of the joint committee is enclosed for kind reference.

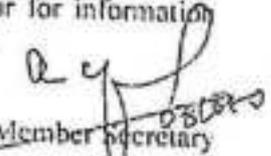
In view of the above, it is requested to please place the matter before the Hon'ble Tribunal on dtd.04.08.2023 during hearing of this case for their kind perusal and orders.

Encl: As above.

Yours faithfully

  
Member SecretaryMemo No. 12143 / Date: 03/08/2023

Copy forwarded to the Regional Officer, SPC Board, Berhampur for information and necessary action with reference to his letter No.2338 dtd.27.07.2023.

E-mail  
  
Member Secretary

9618 6 28/7/23

E-mail: rospcb.berhampur@ospcboard.org

Website: [www.ospcboard.org](http://www.ospcboard.org)



REGIONAL OFFICE OF THE  
STATE POLLUTION CONTROL BOARD, ODISHA  
[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]  
2<sup>nd</sup> Floor, New Division Office, IDCO, Berhampur Division,  
Industrial Estate, Berhampur, Dist- Ganjam - 760008, Odisha, India

No. 2338 /Legal-58/2023

DI. 27-07-2023

By Speed Post/E-despatch/E-mail

To  
The Sr. Law Officer, L-II  
State Pollution Control Board,  
Bhubaneswar-12.

Sub: Submission of Joint Committee Report in the matter of O.A. No. 05/2023/PB- Surendra Panigrahi vs. State of Odisha- reg.

Ref: Head Office Letter No. 7063 dtd. 03.05.2023.

Sir,

With reference to the above, the report of joint committee as per order dtd. 21.02.2023 of Hon'ble NGT, PB, New Delhi in the matter of O.A. No. 05/2023/PB- Surendra Panigrahi vs. State of Odisha is herewith submitted. All the members of the Joint Committee have signed the report except Dr. S.K. Jha, Scientific Officer (H) and Head, RPS (NF), HPD, BARC, Mumbai. Dr. S.K. Jha was present during initial joint committee meeting held on 12.04.2023. As per action plan, B.A.R.C has submitted the detail radioactivity analysis of collected Ground water and Surface water samples. They have also submitted the radioactivity analysis w.r.t Alpha, Beta from 2018 to 2022 of alleged Gram Panchayats (Arjyapalli, Kanamana and Kalipali). Report of B.A.R.C is annexed as Annexure-IX in the Joint Committee report.

Concluding meeting of the Joint Committee was held on 25.07.2023, where Mrs. A. Rout, SO/E, HPU, OSCOM and Sri Abinash Sahu, Officer-In-Charge of HPU, OSCOM were present as a representative of Dr. S.K. Jha. They have informed that B.A.R.C has submitted the detail report as per action plan of Joint Committee, which is annexed in the committee report. Therefore there is no need of putting signature of Dr. S.K. Jha in the Joint Committee Report. Accordingly the Joint Committee Report is submitted herewith without signature of Dr. S.K. Jha, representing B.A.R.C.

This is for your kind information and necessary action.

Encl: As Above

Memo No. 2339 /DI. 27-07-2023

Copy forwarded to the P.S to Member Secretary for kind information of the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar.

Yours faithfully,

*[Signature]*  
27/07/2023

REGIONAL OFFICER

*[Signature]*  
27/07/2023

REGIONAL OFFICER

S.D  
*[Signature]*  
28/07/2023

Memo No 2340 /Dt. 27-07-2023

Copy along with Joint Committee report forwarded to the Collector & District Magistrate, Ganjam, Chatrapur for kind information.

  
27/07/2023  
REGIONAL OFFICER

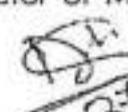
Memo No 2341 /Dt. 27-07-2023

Copy along with Joint Committee report forwarded to the D. F.O., Berhampur for kind information.

  
27/07/2023  
REGIONAL OFFICER

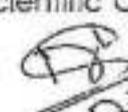
Memo No 2342 /Dt. 27-07-2023

Copy along with Joint Committee report forwarded to the Deputy Director of Mines, Berhampur for kind information.

  
27/07/2023  
REGIONAL OFFICER

Memo No 2343 /Dt. 27-07-2023

Copy along with Joint Committee report forwarded to the Dr. S.K. Jha, Scientific Officer (H) and Head, RPS (NF), HPD, BARC, Mumbai for kind information.

  
27/07/2023  
REGIONAL OFFICER

Memo No 2344 /Dt. 27-07-2023

Copy forwarded to the Legal Consultant, State Pollution Control, Board, Bhubneswar for kind information.

  
27/07/2023  
REGIONAL OFFICER

**REPORT OF THE JOINT COMMITTEE MEMBERS CONSTITUTED BY  
HON'BLE NGT, PB, NEW DELHI IN COMPLIANCE TO THE ORDER  
DTD.21.02.2023 IN O.A NO. 05/2023 PB- SURENDRA PANIGRAHI VS.  
STATE OF ODISHA.**

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**A. Background:**

The Hon'ble NGT, PB, New Delhi in their Order dtd. 21.02.2023. has constituted a joint committee in O.A. No. 05/2023/PB- Surendra Panigrahi vs. State of Odisha comprising of State PCB, Bhabha Atomic Research Centre, Director Mining, DFO, Berhampur and Collector, Ganjam. The committee has to submit its report regarding current status of environment in Gram Panchayats alleged to be affected, particularly with reference to granting mining operations, preventing ground and surface water contamination and safeguarding health of citizens. The Regional Officer, SPCB, Odisha, Berhampur was nominated as the Nodal Officer and representative of SPC Board, Odisha vide Board's letter no.2899 dtd. 27.02.2023 for coordination and compliance.

The meeting of the joint committee members was held on 12.04.2023 at 10.30 AM in the Sadhabana Conference Hall of Collectorate, Ganjam. After detail deliberations the concerned authorities were assigned specific action points for compliance of the order of Hon'ble NGT. (Copy of the proceedings of the meeting enclosed as annexure-I).

M/s IREL(India)Limited formerly Indian Rare Earth Limited, At- Matikhalo, Chatrapur is having mining of Beach Sand Minerals, Mineral Separation unit & Monazite Processing Plant inside mining lease area of 2464.054 Ha.

**B. Status of Environmental Clearance, Consent to Operate and Water Pollution Control Measures adopted by M/s IREL (INDIA) limited:**

1. **Status of Environmental Clearance.** Environment Clearance was issued by MoEF& CC, Government of India vide no. J-11015/528/2007-IA.II (M) dtd. 11.01.2019 for enhancement of capacity of Beach Sand Minerals from 25,00,000 TPA to 75,00,000 TPA (ROM) to be processed in the Mineral Separation Plant to extract Ilmenite & other associated minerals (Rutile, Zircon, Monazite, Sillimanite & Garnet) by M/s IREL(India) Limited, located At/Po-Matikhalo, Chatrapur, Dist-Ganjam (Copy Enclosed As Annexure-II).
2. Environmental Clearance was issued by MoEF & CC, Government of India vide No. J-11015/348/2009-IA.II (M) dtd. 09.02.2011 for setting up of a Monazite Processing Plant (Presently REEP) having capacity of 10,000 TPA within the premises of M/s Indian Rare Earths Limited (Presently M/s IREL (INDIA) limited). (Copy Enclosed As Annexure-III).

3. Status of Consent to Operate under section 25/26 of Water (PCP) Act, 1974 & section 21 of Air (PCP) Act, 1981 and amended there after:

- a) **Mining and Mineral Separation unit:** The unit has obtained Consent to Operate issued by S.P.C. Board, Odisha vide consent order no: 636 dated 16.02.2023 valid up to 31-03-2024 for production of Beach Sand Mineral Products (Ilmenite, Rutile, Zircon, Monazite, Sillimanite, Garnet) – 6,35,000 TPA and Zirconia/Stabilised Zirconia/Zirconia based chemicals – 3.5 TPA (Copy Enclosed As Annexure-IV).
- b) **Water Pollution Control Measures adopted by the Mining and Mineral Separation unit:** Water is mainly required for dredging and mineral separation at mining site, slurry transport, spiral concentrator at plant, forth flotation, zirconia plant and domestic purpose. Waste water generated from dredging and mineral separation at mining site is pumped back along with tailing for back filling. Waste water generated from spiral concentrator at plant is partly pumped back to the dredging site. Balance waste water from spiral concentrator and forth flotation collected in pond no.- 1. Effluent containing HCl of Zirconia plant is neutralized in a neutralization pit before discharge to common pond no. 1. After gravitational settling, water from this pond is recycled in the process.
- c) **Monazite Processing Plant:** The unit has obtained Consent to Operate issued by S.P.C. Board, Odisha vide consent order no: 2794 dated 31.03.2023 valid up to 31-03-2024 for production of Tri Sodium Phosphate- 13,500 TPA, Rare Earths Chloride- 10,375 TPA, Ammonium Di-Uranate- 26 TPA, Thorium Oxalate- 2000 TPA, Thorium Nitrate- 150 TPA (Copy Enclosed as Annexure-V).
- d) **Water Pollution Control Measures adopted by the Monazite processing Plant:** M/s IREL (India) Limited has installed ETP of capacity 5 m<sup>3</sup>/hr for treatment of non-nitrate effluent generated from the process. ETP is having three lined tanks. The treated effluent from post treatment tank after ensuring discharge parameters (Radioactivity level, pH etc) is pumped to common holding pond of MSP area and reused in MSP. Nitrate effluents are being stored in 'sodium nitrate storage pond' (lined) under shed for solar evaporation. Deactivating chemicals are added to reduce the radioactivity level conforming to AERB stipulations. After drying the Sodium Nitrate salts were stored in RCC Trenches along with radioactive solid wastes. Boiler blow down and DM plant effluent of Power Plant are Neutralized and channelized to post treatment tank (pond-3) of ETP for reuse. Periodical blow down from cooling tower of Power

Plant is channelized to post treatment tank (pond-3) of ETP for reuse. Domestic waste water generated from the colony is treated in a dedicated sewerage treatment plant (STP), having capacity 600 KLD. Treated effluent is being used for plantation purpose inside OSCOM Housing Colony.

- e) **Details of ETP:** The unit has installed 100 KLD (5 m<sup>3</sup>/hr) ETP for treatment of non-nitrate effluent generated from the process. ETP is having three lined tanks. The effluents are collected in the pre-treatment holding tank. Effluent from this tank is pumped to filter press to remove suspended solids. Generated filter cake is disposed in RCC trenches. The filtered effluent is stored in tank-2. Effluent from tank-2 is pumped to static mixer wherein deactivating agents are added. Mixing of these effluents results in a precipitate, which carries a major portion of the radio nuclides. It is then mixed with calcium chloride where hydroxy apatite of Calcium Phosphates  $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$  is precipitated. The suspension is mixed with Poly-electrolyte solution for flocculation. The slurry from flash mixer is let into the flocculator compartment of clariflocculator and allowed to settle. A retention time of about 3 hours is provided in the clariflocculator. The overflow from this is taken to post treatment tank-3 for monitoring. The settled mass is pumped to a frame type filter press. The sludge discharged from the filter press is collected in HDPE laminated bags, tied and disposed in the RCC trenches. The filtrate is pumped to post treatment tank for disposal or to pre-treatment tank for further treatment depending upon its quality. The treated effluent from post treatment tank after ensuring discharge parameters (Radioactivity level, pH etc) is pumped to common holding pond (Pond-1) of MSP area and reused in MSP.

### **C. Compliance submitted by Concerned Authorities w.r.t Actions point:**

- 1. Action point 1(a): Issue of Mining Operation-** The detail status of Mining Lease and compliance to mining operation including development of green belt in backfilled mined out area shall be enquired by Deputy Director Mines, Berhampur for submission of status report.

**Compliance:** DDM, Berhampur vide memo no.314 dtd 24.04.2023 has submitted report (Copy enclosed as Annexure-VI).

➤ **Status of Mining Lease:**

- i. The mining lease in favour of M/s. IRE Ltd. for Ilmenite, Rutile, Zircon, Monazite, Garnet, Quartz & Silimanite over an area of Ac. 7400.00 was granted in villages of Uppulaputti, Basanaputti, Zimi, Agasti Nuagaon, Humuribana, Humuri Tampara, Arjipalli, Kanamana, Matikhalo, Badaputti, Sagarpur and Nagarpur in the district of Ganjam vide Govt. Proceeding No. 6038/MG dtd. 07.06.1973 for a period of 20 years.
- ii. Subsequently the mining lease was revised to 2877.76 Hectres or Ac. 711.00 vide Department Proceeding No. 10468/MG dtd. 24.09.1975.
- iii. The first renewal of mining lease over an area of 2618.490 Hectres was granted vide Department Proceeding No. 10663 dtd. 25.11.2022 w.e.f dtd. 21.03.1999 for another 20 years. The lease area was further reduced to 2464.054 Hectres vide this Dept G.P no. 9159 dt. 15.09.2005. Accordingly the lease deed was executed on dt. 27.10.2005 over an area of 2464.054 Hects or 6088.670 acres w.e.f 21.03.1999 for another period of 20 years i.e upto dt. 20.03.2019.
- iv. Further the extension of mining lease over area of 2464.054 Hectres for beach sand minerals was made for period from 21.03.2019 to 31.03.2047 vide Department of Steel and Mines letter no. 4409/SM/BBSR/dt.01.06.2018.

➤ **Status of Mining operation including reclamation and plantation:**

- i) The area put for mining operation for the period from 2019 to 2024 is 135 hecets.
- ii) Dredging method of mining is adopted for excavation of beach sand minerals deposit. In mine operation the excavation/dredging and back filling of mined out area move simultaneously. Total mined out mineral concentrate is transported to mineral separation plant in slurry form through pipes. For surface operation, the trees are being cleared off as per requirement.
- iii) The details of actual creation of green belt and reclamation data for the year 2018-19 to 2022-23 is mention below as per **Table-1:**

**Table -1:**

Sl No	Year	Mined out area(in Acres)	Backfilled area/reclaimed area(in Acres)	Green Belt Development Area(in Acres)
1	2018-19	119.21	75.211	54.90
2	2019-20	73.67	105.33	56.00
3	2020-21	71.21	98.78	50.00
4	2021-22	86.27	79.18	50.50
5	2022-23	82.89	84.73	75.00
<b>Total</b>		<b>433.25</b>	<b>443.231</b>	<b>286.40</b>

(Backfilled area is more than mined out area due to the fact that backlogged mined area (mined out area prior to 2018-19) covered under reclamation)

2. **Action point 1(b): Issue of Forest-Status of Forest Clearance, status of compensatory afforestation, tree felling permission for mining operation in forest and non-forest land, status of green belt development by the lessee inside and outside mining lease area.**

**Compliance:** DFO, Berhampur Division vide letter no. 3161 dt. 29.04.2023 has submitted report (Copy enclosed as Annexure-VII).

➤ **Status of Forest Clearance:**

- i. Mining lease area is 2464.054 Ha. which includes 157.702 Ha. of Forest land. Stage -I approval has been issued by the MoEF& CC vide File No. 8-15/2018/FC dtd. 18.10.2018 for diversion of 157.702 Ha. of DLC forest land including 5.660 ha of DLC forest land in safety Zone.
- ii. Stage-II approval was granted by FE& CC Department Government of Odisha vide letter no. 2465 dtd. 08.02.2023 for non-forestry use of 157.702 Ha. of DLC forest land including 5.660 Ha. of DLC forest land in safety zone.

➤ **Status of Compensatory Afforestation:**

- iii. The user agency has deposited Rs. 5,03,84,900.00 towards cost of Compensatory Afforestation and Rs. 2,89,24,300.00 towards additional compensatory afforestation. In addition to this they have deposited Rs. 81,52,309.00 towards 1.5 times of Safety Zone identified in degraded forest land.
- iv. Compensatory afforestation will be taken up in Ranipur DPF over 320 Ha. in ANR mode @ 200 plants per Ha. and the additional Compensatory Afforestation will be taken up in Dumangiri DPF over 120 Ha. in ANR mode @ 800 plant per Ha. The 1.5 safety zone will be taken up in Antaraipur DPF over 55 Ha @ 500 plant per Ha. After realization of the funds from State CAMPA the plantations will be taken up.

➤ **Status of tree felling permission for mining operation in forest and non-forest land:**

- v. The no. of trees enumerated for felling over forest land for mining operations on 2014 were 14,679. But till date no felling permission has been issued for felling of trees in the 157.702 Ha. of forest land for which Stage-I and Stage-II forest clearance has been granted by MoEF& CC.
- vi. The user agency in non-forest land has conducted tree enumeration in presence of Forest Officials, Revenue Officials and the Occupier of that land and the enumeration list is vetted by the Tahasildar cum compensation officers.

- vii. The details of tree felled after enumeration & finalization of compensation in non-forest land for undertaking mining operation by IREL in last five years is mentioned below at Table-2:

**Table -2:**

Sl No	Year	Area put for Mining Operations(In Acres)	No. of trees felled for undertaking mining operations
1	2018-19	119.21	11102
2	2019-20	73.67	6967
3	2020-21	71.21	6615
4	2021-22	86.27	7672
5	2022-23	82.89	7783
<b>Total</b>		<b>433.25</b>	<b>40139</b>

- **Status of green belt development by the lessee inside and outside mining lease area from 2018-19 to 2022-23:** The user agency has planted 2,86,400 nos. of seedlings in the mined out area and 4700 nos. outside of mines area against 40139 nos. felling of trees for mining purpose.

3. **Action point 2(a): Ground and Surface water contamination-** Ground and surface water samplings will be carried out jointly by SPCB, Odisha and Health Physics unit of B.A.R.C, Chatrapur to ascertain the current water quality standards in alleged to be affected Gryam Panchayats i.e. Konamana, Arjyapalli & Kalipalli.

**Compliance:**

- i) Ground water (12 nos. of sources) and Surface water (4 nos. of sources) samples were collected jointly by officials of Regional Office, Berhampur, SPC Board, Odisha and Health Physics Unit of B.A.R.C, Chatrapur on dtd. 19.04.2023 from the alleged to be affected Gram Panchayats i.e. Konamana, Arjyapalli and Kalipalli. The Collected samples were submitted to Central Laboratory of Board for analysis. Similarly samples were also collected by Health Physics Unit of B.A.R.C, Chatrapur for radioactivity analysis.
- ii) The Central Laboratory of S.P.C. Board, Odisha has submitted tests reports vide letter no. 9095 dtd 05.06.2023 (Copy enclosed as Annexure-VIII).
- iii) As the pond water is being mostly used for bathing purpose, to assess the exiting water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated best use

Classification for Class-B (Outdoor bathing (Organized))(IS: 2296(1982)) and Primary water quality criteria for outdoor bathing laid down by Ministry MoEF& CC vide notification no. GSR 742(E) dt. 25.09.2000. In absence of tolerance limit for the metals in Class B & MoEF Standards tolerance limit prescribed under class- C (Drinking water after conventional treatment and after disinfection) has been used for assessment of pond water quality.

- iv) From the analysis results it is observed that water quality of pond near Badaputi Village, Ganjam did not conform to the criteria limit specified for Biochemical Oxygen Demand (BOD), Total Coliform Bacteria (TC) and Faecal Coliform (FC) Bacteria. High value of Dissolved Oxygen (7.8 mg/L) observed in the analysis result may be ascribed to eutrophic condition of the pond. All tested heavy metals conform to the respective specified limits. Such non-conformance with respect to BOD, TC & FC values prescribed under class-B indicated that the water is not fit for bathing purpose.

Water quality of Pond near entrance to Kanamana village, Ganjam did not conform to the criteria limit specified for Dissolve Oxygen (DO), Biochemical Oxygen Demand (BOD) & Total Coliform Bacteria (TC). All tested heavy metals conform to the respective specified limits. Such non-conformance with respect to BOD & TC values prescribed under class-B indicated that the water is not fit for bathing purpose.

Water quality of Pond near re-habitation colony of Kalipalli village did not conform to the criteria limit specified for Total Coliform Bacteria (TC). All tested heavy metals conform to the respective specified limits. Such marginal deviation in total coliform values may be ascribed to the human activities in the pond.

Water quality of Pond near K Arjipalli village, Ganjam did not conform to the criteria limit specified for Total Coliform Bacteria (TC). Such deviation in total coliform values may be ascribed to the human activities in the pond. All tested heavy metals conform to the respective specified limits except cadmium-0.07mg/L.

- v) Analysis reports of all the 12 nos of ground water samples were compared along with drinking water specification IS 10500:2012.
- vi) From the analysis report it is revealed that ground water quality of Hand Pump No.1 in Kalipalli village conform to the drinking water specification for all tested parameters except Nitrate content (73.403 mg/L in comparison to the stipulated limit of 45 mg/L). Ground water quality of Hand Pump No.2 in Kalipalli village has non-compliance w.r.t Ammonia, Total Iron, Cadmium, Lead, Nickel. Ground water quality of Hand Pump No.3 in Kalipalli village shows non-

compliance w.r.t Ammonia, Lead and Nickel. The Total iron content (1.090 mg/L) is marginally higher than the stipulated limit (1.0 mg/L). Ground water quality of hand Pump in Badaputi village conform to the drinking water specification for all tested parameters except Ammonia (0.56 mg/L) with a marginal deviation from the stipulated limit (0.5 mg/L). Ground water quality of hand Pump at the Basanaputi village conforms to the drinking water specification for all tested parameters. Ground water quality of Hand Pump-1 in K Arjipalli village conform the drinking specification w.r.t all tested parameters except Nitrate content which has very high values (112.082 mg/L) in comparison to stipulated limit of 45 mg/L. Ground water quality of Hand Pump-2 in K Arjipalli village conform to the drinking water specification w.r.t all tested parameters except Total Colliform(TC) and Faecal Colliform(FC) bacteria values. Ground water quality of hand Pump in Bada Arjipalli village conform to the drinking water specification w.r.t all tested parameters except Ammonia content. Ground water quality of hand Pump in Sana Arjipalli village conform to the drinking water specification w.r.t all tested parameters except Total Iron content. Ground water quality of hand Pump in Takiria village has non-compliance w.r.t Nitrate, Sulphate, Cadmium, Lead and Nickel content. Ground water quality of hand Pump in Kanamana village has non-compliance w.r.t Nitrate, Total Iron, Lead, Total Colliform (TC) and Faecal Colliform(FC) bacteria values. The Cadmium and Nickel concentration are found to be very much close to the stipulated limits of 0.003 mg/L and 0.02 mg/L respectively. Ground water quality of hand Pump in Matikhalo village conforms to the drinking water specification except Total iron content.

4. **Action point 2(a): Ground and Surface water contamination-** Ground and surface water samplings will be carried out jointly by SPCB, Odisha and Health Physics unit of B.A.R.C, Chatrapur to ascertain the current water quality standards in alleged to be affected Gryam Panchayats i.e. Konamana, Arjyapalli & Kalipalli.

- i) Health Physics Unit of B.A.R.C, Chatrapur has submitted its report vide letter dated 27.04.2023(Copy enclosed as Annexure- IX).The radioactivity analysis w.r.t Alpha, Beta and Uranium concentration were carried out for all the collected Ground water (12 nos. of sources) and Surface water (4 nos. of sources) at HPU, OSCOM.
- ii) The analysis data shows that the present radioactivity in the water samples were within permissible limit as prescribed by the national regulatory bodies' i.e AERB and BIS. Traces of activities present in the water samples are natural

and not related to anthropogenic activities. Although the study area is one of the natural high background radiation areas.

5. **Action point 2(b): IREL(INDIA), LTD** will submit the safety audit reports undertaken by AERB at Rare Earth Processing Plant, Matikhalo, I.R.E.L, OSCOM with respect to health of lining of effluent treatment plant and radioactive waste disposal sites of past five years as per guideline of Atomic Energy Regulatory Board to prevent ground water contamination.

**Compliance:**

- i) IREL (India) Limited, OSCOM has submitted its compliance report vide letter no. IREL/OSCOM/REEP/909 'A' dtd. 25.04.2023 (Copy Enclosed As Annexure-X).
  - ii) Atomic Energy Regulatory Board (AERB), Government of India is monitoring radiological aspects of Monazite processing plant. Periodically AERB is conducting inspections of IREL (India) Limited.
  - iii) AERB, Government of India has issued Licence for processing of 10,000 TPA Monazite vide letter no. AERB/OPSD/55222/2021/478A dtd. 19.04.2021 valid up to 30.04.2025.
  - iv) AERB, Government of India has issued Authorization under G.S.R. 125 Atomic Energy (Safe Disposal of radioactive Waste) Rules 1987, Rule-5 for safe disposal or transfers of radioactive waste vide authorization no. 0021 valid up to 30.04.2025.
6. **Action point 2(c): BARC** will submit the surface and ground water monitoring report in the vicinity of last five years.

**Compliance:**

- i) Health Physics Unit of B.A.R.C, Chatrapur has submitted its report vide letter dated 27.04.2023 (Copy enclosed as Annexure-IX ). The radioactivity analysis w.r.t Alpha, Beta from 2018 to 2022 were submitted for alleged Gram Panchayats ( Arjyapalli, Kanamana and Kalipali).
- i) The analysis data shows that the radioactivity levels were within permissible limit as prescribed by the national regulatory bodies.

7. **Action point 3: Health of Local Citizens-** Investigation by Chief District Medical Officer, Ganjam regarding health impacts w.r.t Kidney disease in alleged to be affected Gram Panchayats i.e. Konamana, Arjyapalli & Kalipalli with a comparison to other areas like Berhampur, Chatrapur and Ganjam.

**Compliance:**

- i) Chief District Medical & Public Health Officer, Ganjam, Berhampur has submitted information on prevalence of Kidney disease in comparison to affected GP i.e. Kanamana, Bada Arjyapali, Kalipalli with Berhampur, Chatrapur & Ganjam urban area vide letter no. 10380 dtd. 24.07.2023(Copy enclosed as Annexure-XI ).
- ii) The chronic Kidney disease cases (New & Old) are presently under treatment at G.P Kanamana, G.P Bada Arjyapali, G.P Kalipalli, NAC Chatrapur, NAC Ganjam and BeMC, Berhampur is mentioned as below as per table No.-3:

**Table-3**

Name of GP/Urban Area	Population	Cases	Prevalence (per 100 population)
G.P Kanamana	8530	2	0.02
G.P Badaarjyapali	10889	6	0.05
G.P Kalipalli	7796	35	0.45
NAC Chatrapur	23610	22	0.09
NAC Ganjam	12875	5	0.04
BeMC, Berhampur	356598	63	0.02

- iii) The burden of prevalence of the chronic kidney disease is less than 1 % in rural area and less that 0.5 % in urban area which has low indicator with reference to the data on disease burden.

**D. Conclusions:**

1. Environment Clearance was issued by MoEF& CC, Government of India vide no. J-11015/528/2007-IA.II(M) dtd. 11.01.2019 for enhancement of capacity of Beach Sand Minerals from 25,00,000 TPA to 75,00,000 TPA (ROM) to be processed in the Mineral Separation Plant to extract Ilmenite & other associated minerals (Rutile, Zircon, Monazite, Sillimanite& Garnet) by M/s IREL(India) Limited, located At/Po-Matikhalo, Chatrapur, Dist-Ganjam.
2. Environmental Clearance was issued by MoEF & CC, Government of India vide No. J-11015/348/2009-IA.II (M) dtd. 09.02.2011 for setting up of a Monazite Processing Plant (Presently REEP) having capacity of 10,000 TPA within the premises of M/s Indian Rare Earths Limited (Presently M/s IREL (INDIA) limited).

3. The unit has obtained Consent to Operate for mining and mineral separation unit from S.P.C. Board, Odisha vide consent order no: 636 dated 16.02.2023 valid up to 31-03-2024 for production of Beach Sand Mineral Products (Ilmenite, Rutile, Zircon, Monazite, Sillimanite, Garnet) - 6,35,000 TPA and Zirconia/Stabilised Zirconia based chemicals - 3.5 TPA.
4. The unit has obtained Consent to Operate for Monazite processing plant from S.P.C. Board, Odisha vide consent order no: 2794 dated 31.03.2023 valid up to 31-03-2024 for production of Tri Sodium Phosphate- 13,500 TPA, Rare Earths Chloride- 10,375 TPA, Ammonium Di-Uranate- 26 TPA, Thorium Oxalate- 2000 TPA, Thorium Nitrate- 150 TPA.
5. Mining lease over area of 2464.054 Hectres for beach sand minerals, was valid up to 31.03.2047 granted by Department of Steel and Mines, Government of Odisha vide letter no. 4409/SM/BBSR/dt.01.06.2018.
6. The area put for mining operation for the period from 2019 to 2024 is 135 hecets.
7. From 2018-19 to 2022-23 Mined out area is 433.25 Acres, Backfilled area/reclaimed area is 433.231 Acres and , Green Belt Development Area is 286.40 Acres.
8. Mining lease area is 2464.054 Ha., which includes 157.702 Ha. of Forest land. Stage -I approval and State-II approval has been obtained for diversion of 157.702 Ha. of DLC forest land including 5.660 ha of DLC forest land in safety Zone.
9. Compensatory afforestation activity will be started after realization of the funds from State CAMPA.
10. The no. of trees enumerated for felling over forest land for mining operations on 2014 were 14,679. But till date no felling permission has been issued for felling of trees in the 157.702 Ha. of forest land for which Stage-I and Stage-II forest clearance has been granted by MoEF& CC.
11. The user agency in non-forest land has conducted tree enumeration in presence of Forest Officials, Revenue Officials and the Occupier of that land and the enumeration list is vetted by the Tahasildar cum compensation officers.
12. From 2018-19 to 2022-23 area put for mining operation is 433.25 Acres. About 40139 nos. of trees were felled in non-forest land for mining.
13. The user agency has planted 2,86,400 nos. Of seedlings in the mined out area and 4700 nos. outside of mines area against 40139 nos. felling of trees for mining purpose from 2018-19 to 2022-23.
14. M/s IREL (India) Limited has installed ETP of capacity 5 m<sup>3</sup>/hr for treatment of non-nitrate effluent generated from the process. ETP is having three lined tanks. The treated effluent from post treatment tank after ensuring discharge parameters (Radioactivity level, pH etc) is pumped to common holding pond of MSP area and

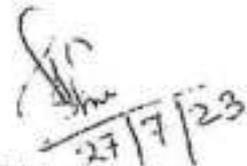
reused in MSP. Nitrate effluents are being stored in sodium nitrate storage pond (lined) under shed for solar evaporation. Deactivating chemicals are added to reduce the radioactivity level conforming to AERB stipulations. After drying the Sodium Nitrate salts were stored in RCC Trenches along with radioactive solid wastes. Domestic waste water generated from the colony is treated in a dedicated sewerage treatment plant (STP) having capacity 600 KLD. Treated effluent is being used for plantation purpose inside OSCOM Housing Colony.

15. Ground water (12 nos. of sources) and Surface water (4 nos. of sources) samples were collected jointly by officials of Regional Office, Berhampur, SPC Board, Odisha and Health Physics Unit of B.A.R.C, Chatrapur on dtd. 19.04.2023 from the alleged to be affected Gram Panchayats i.e. Konamana, Arjyapalli and Kalipalli. Collected samples were submitted to Central Laboratory of Board for analysis. Similarly samples were also collected by Health Physics Unit of B.A.R.C, Chatrapur for radioactivity analysis.
16. As the pond water is being mostly used for bathing purpose, to assess the exiting water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated best use Classification for Class-B (Outdoor bathing (Organized))(IS: 2296(1982)) and Primary water quality criteria for outdoor bathing laid down by MoEF & CC vide notification no. GSR 742(E) dt. 25.09.2000. In absence of tolerance limit for the metals in Class B & MoEF Standards tolerance limit prescribed under class- C (Drinking water after conventional treatment and after disinfection) has been used for assessment of pond water quality. Analysis report of Central Laboratory of State Pollution Control Board revealed that non-conformance with respect to Biochemical Oxygen Demand (BOD), Total Coliform Bacteria (TC) and Faecal Coliform (FC) Bacteria and Dissolve Oxygen (DO) in pond water. This deviation may be ascribed to the human activities in the pond.
17. Analysis reports of all the 12 nos. of ground water samples were compared along with drinking water specification IS 10500:2012. Analysis report of Central Laboratory of State Pollution Control Board revealed that non-conformance with respect certain parameters w.r.t drinking water specifications. The actual cause of the deviation of certain parameters in ground water is not ascertained. The presence of nitrate may be due to use of fertilizers for agriculture purpose.
18. The radioactivity analysis w.r.t Alpha, Beta and Uranium concentration were carried out for all the collected Ground water (12 nos. of sources) and Surface water (4 nos. of sources) at HPU, OSCOM. The analysis data shows that the present radioactivity in the water samples were within permissible limit as prescribed by

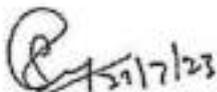
- the national regulatory bodies' i.e AERB and BIS. Traces of activities present in the water samples are natural and not related to anthropogenic activities.
19. The radioactivity analysis w.r.t Alpha, Beta from 2018 to 2022 were also submitted for alleged Gram Panchayats (Arjyapalli, Kanamana and Kalipali). The submitted data shows that the radioactivity levels were within the permissible limit as prescribed by the national regulatory bodies.
  20. Atomic Energy Regulatory Board (AERB), Government of India is monitoring radiological aspects of Monazite processing plant. AERB, Government of India has issued Licence for processing of 10,000 TPA Monazite vide letter no. AERB/OPSD/55222/2021/478A dtd. 19.04.2021 valid up to 30.04.2025. AERB, Government of India has issued Authorization under G.S.R. 125 Atomic Energy (Safe Disposal of radioactive Waste) Rules 1987, Rule-5 for safe disposal or transfers of radioactive waste vide authorization no. 0021 valid up to 30.04.2025.
  21. The chronic Kidney disease cases (New & Old) are presently under treatment at G.P Kanamana- 02 nos, G.P Badaarjyapali-06 nos, G.P Kalipalli-35 nos, NAC Chatrapur- 22 nos., NAC Ganjam- 05 nos. and BeMC, Berhampur-05 nos. The burden of prevalence of the chronic kidney disease is less than 1% in rural area and less than 0.5% in urban area which has low indicator with reference to the data on disease burden.
  22. Executive Engineer (RWSS), Berhampur vide letter no. 173(Lab) dtd. 27.07.2023 (Copy enclosed As Annexure-XII.) has submitted test reports of different water quality parameters during 2016-2017 & 2017-2018. Water supplied from the bore wells & tube wells those water quality was within permissible limit as per IS-10500-2012. Periodically District laboratory have been testing the water samples of tube wells and production wells from Kanamana, Arjipalli & Kalipali. Recently water samples from above GPs were sent to State Laboratory, Khandagiri, Bhubaneswar for testing.
  23. A Mega water supply scheme work is also going on, taking River Rushikulys as source of water to provide safe drinking water to all the villages of Kanamana, Arjipalli & Kalipali G.Ps.



Regional Officer  
State Pollution Control Board,  
Berhampur



Deputy Director of Mines  
Berhampur



Shri Sunny Khokhar, I.F.S.  
DFO, Berhampur, Ganjam

Shri Dibya Jyoti Barida, I.A.S.  
Collector & District Magistrate,  
Ganjam

PROCEEDINGS OF THE MEETING OF THE JOINT COMMITTEE MEMBERS  
HELD ON 12.04.2023 (WEDNESDAY) AT 10.30AM IN THE SADBHABANA  
CONFERENCE HALL OF COLLECTORATE, GANJAM CONSTITUTED BY  
HON'BLE NGT, PB, NEW DELHI VIDE ORDER DTD. 21.02.2023 IN  
O.A NO. 05/2023

The meeting of the joint committee members was held on 12.04.2023 at 10.30 AM for compliance of order dtd. 21.02.2023 of the Hon'ble NGT, PB, New Delhi in O.A. No. 05/2023/PB- Surendra Panigrahi vs. State of Odisha- Indian Rare Earth Ltd.

The list of members attended the meeting are as below and attendance sheet is enclosed as Annexure-I:

- 1) Ms. Lina Kumari Xess, O.A.S., A.D.M. (Gen), Ganjam representative of Collector Ganjam.
- 2) Sri Sunny Khokhar, I.F.S., Divisional Forest Officer(D.F.O), Berhampur, Ganjam.
- 3) Sri Prasanna Kumar Patra, O.A.S., Sub-Collector, Chatrapur representative of Collector Ganjam.
- 4) Dr. S.K. Jha, Scientific Officer(H), Health Physics Division, B.A.R.C.
- 5) Sri Priyadarshi Bal, Deputy Director of Mines(D.D.M), Berhampur.
- 6) Sri Deepak Kumar Sahoo, Regional Officer, S.P.C.B, Berhampur, representative S.P.C.B, Odisha.
- 7) Representatives from IREL, OSCOM were also present in the meeting.

At the outset the Regional Officer, SPCB, Odisha, Berhampur, the representative of SPCB, Odisha welcomed all the committee members and apprised that the Hon'ble NGT, PB, New Delhi in their Order dtd. 21.02.2023 has constituted a joint committee comprising State PCB, Bhabha Atomic Research Centre, Director Mining, DFO, Ganjam and Collector, Ganjam. The committee will submit its report to give current status of environment in Gram Panchayats alleged to be affected, particularly with reference to granting mining operations, preventing ground and surface water contamination and safeguarding health of citizens. The State PCB is the nodal agency for coordination and compliance. The case is posted to 01.05.2023.

Dr. S.K. Jha, Scientific Officer (H), Health Physics Division, B.A.R.C, Mumbai has given a power point presentation regarding radiological and environmental surveillance activities of HPD, BARC. He mentioned that the southwest and southeast coastal regions of India have rich deposits of monazite containing approximately 9 % Th as ThO<sub>2</sub>. Depending on the local geology and geochemical processes, average concentrations of thorium in soils is around 9mg/kg. Health Physics Unit (HPU) of Radiation Protection Section(Nuclear Fuels).

Health Physics Division located at IREL (India) Ltd., OSCOM, is carrying out periodic radiological surveillance in and around the IREL facilities, as an independent scientific investigating agency of Bhabha Atomic Research Centre, Mumbai. The surveillance activities of the HPU include monitoring of plant facilities, occupational workers, public and the environment. The activities pertaining to the operations of IREL facilities are carried out under specified regulatory guidelines of Atomic Energy Regulatory Board (AERB) to ensure radiological safety. He presented before the committee the existing levels of trace elements in different water sources. He stressed that the findings of the research work and periodic evaluation/review by the scientific community unanimously agree that the level of radiation exposure around these facilities are unlikely to cause an adverse health impact. He also informed the committee that studies from the thorium rich mineral belt of Kerala did not indicate significant variation in health attributes between the population groups of High Background Radiation Areas (HBRA) and control areas far away from the HBRA. Also, other studies carried out across the globe for HBRA of Brazil, China and Iran reflect similar findings, ruling out the association between radiation exposure in HBRA and adverse health impact.

After detail deliberations following action points were decided by the joint committee members:

**1) Issue of Mining Operation and Forest:**

- a) The detail status of Mining Lease and compliance to mining operation including development of green belt in backfilled mined out area will be enquired by the D.D.M. Berhampur and he will submit the report by 24.04.2023.

**Action: Deputy Director of Mines (D.D.M), Berhampur**

- b) Status Forest Clearance, status of compensatory afforestation, tree felling permission for mining operation in forest and non-forest land, status of green belt development by the lessee inside and outside mining lease area will be enquired by the D.F.O, Berhampur and he will submit the detail report by 24.04.2023.

**Action: D.F.O, Berhampur**

**2. Ground and Surface water contamination :**

- a) Ground and surface water samplings will be carried out jointly by SPCB, Odisha and Health Physics unit of B.A.R.C, Chatrapur to ascertain the current water quality standards in alleged to be affected Gryam Panchayats i.e Konamana, Arjyapalli &

Kalipalli. Health Physics unit of B.A.R.C, Chatrapur will undertake analysis w.r.t radio-activity level in the ground and surface water bodies.

Action: SPCB, Odisha and Health Physics unit of B.A.R.C, Chatrapur

- b) IREL (INDIA) LTD, will submit the safety audit reports undertaken by AERB at Rare Earth Processing Plant, Matikhalo, I.R.E.L, OSCOM with respect to health of lining of effluent treatment plant and radioactive waste disposal sites of past five years as per guideline of Atomic Energy Regulatory Board to prevent ground water contamination. The reports shall be submitted by 25.04.2023.

Action: IREL (INDIA) LTD, Chatrapur

- c) Dr. S.K. Jha, Scientific Officer (H), Health Physics Division, B.A.R.C, Mumbai has apprised that BARC is conducting regular monitoring of Surface and Ground water in the vicinity. Accordingly B.A.R.C is requested to submit the analysis report of past five years. The reports shall be submitted by 25.04.2023.

Action: Health Physics unit of B.A.R.C, Chatrapur

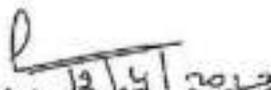
### 3. Health of Local citizens :

- a) The Collector and District Magistrate, Ganjam will instruct Chief District Medical Officer, Ganjam to investigate health impacts w.r.t Kidney Disease in alleged to be affected Gram Panchayats i.e Konamana, Arjyapalli & Kalipalli with a comparison to other areas like Berhampur, Chatrapur and Ganjam.

Action: Chief District Medical Officer, Ganjam

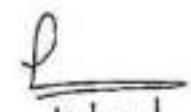
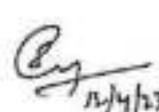
The meeting ended with vote of thanks to the chair.

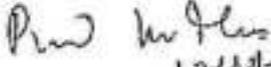
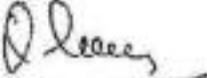
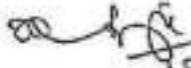
Approved by

  
Additional District Magistrate (Gen), Ganjam, Chatrapur

ATTENDANCE SHEET

24

SL NO.	NAME AND DESIGNATION	SIGNATURE
1	Lina Kumar Xuu ADM, Agnjam	 12/4/2023
2	Purana Kumar Patra	 12/4/23
3	SUNNY KHOKHAR, IFS DIVISIONAL FOREST OFFICER BERHAMPUR	 12/4/23
4	P. S. K. Bal (D.D.M. Berhampur)	 12/4/23
5	Dr. D. K. Sahoo, RO SPCB, Berhampur	 12/4/2023
6	Malendu Meher J.E.E., SPCB, Berhampur	 12/4/23
7	Punam Behara	

SL NO.	NAME AND DESIGNATION	SIGNATURE
8	G. K. Nayak, DGM - Tech (Monitoring & RR) OSCOM, M/s IREL (India) Limited	 12/04/2023
9	P. K. Mishra Chief Manager (TS) OSCOM, M/s IREL (India) Limited	 12/4/2023
10	Dr (Lt Col) B Subha HOD (Med) OSCOM, IREL (India) Ltd	 12.4.23
11	Dr. K. Naik, DGM (Res & CSR). OSCOM,	 12/4/23.
12	N. S. K. Jha Head RPS (NF)	Souvik Kumar Jha 12-4-2023
13	Biplab Kumar Sahoo AES, SPCB, Bhubaneswar	 12/04/2023



सत्यमेव जयते

No. J-11015/528/2007-IA.II (M)

Government of India  
Ministry of Environment, Forest and Climate Change  
Impact Assessment Division

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

Dated: 11<sup>th</sup> January, 2019

To,

M/s Indian Rare Earths Limited (IREL)  
Odisha Sands Complex (OSCOM)  
Matikhalo (P.O.) Chatrapur  
District Ganjam, Odisha-761 045  
Phone : 06811-257890 to 257895  
Email: [head-ireo@irel.co.in](mailto:head-ireo@irel.co.in)

Shri S. K. Panda  
CM (Es)

Sub.: Enhancement of capacity of Beach Sand Minerals from 25,00,000 TPA to 75,00,000 TPA (ROM) to be processed in the Mineral Separation Plant to extract ilmenite and other associated minerals (rutile, zircon, monazite, sillimanite and garnet) by M/s Indian Rare Earths Ltd., located at P.O. Matikhalo, Chatrapur, District Ganjam, Odisha (MLA 2464.054ha)- Environmental Clearance regarding.

Ref.: Online proposal no. IA/OR/MIN/84026/2009.

This has reference to your letter no. TS/ENVR/43A/7211A dated 09.09.2011 and subsequent letters dated 24.07.2012, 30.04.2013, 01.07.2014 and 18.10.2018 on the subject mentioned above. The mine is located at P.O. Matikhalo, Chatrapur, District Ganjam, Odisha in the MLA 2464.054ha.

2. The proposal is for enhancement of capacity of Beach Sand Minerals from 25,00,000 TPA to 75,00,000 TPA (ROM) which will be processed in the mineral separation plant to extract ilmenite and other associated minerals (rutile, zircon, monazite, sillimanite and garnet) in the mine lease area of 2464.054 ha. The Orissa Sands Complex (OSCOM) of IREL is situated in Ganjam District of Orissa State, on the east coast adjoining the Bay of Bengal and is engaged in mining and mineral separation of ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from the mining lease area. The mining lease area of OSCOM, IREL extends over a stretch of 18 km along Bay of Bengal with an average width of 1.5 km. Atomic Mineral Directorate for Exploration and Research (AMD) has explored this deposit and proven the availability of beach sand minerals. The mining lease area of OSCOM, IREL is located over the toposheet nos: 74A/15 and 74E/3 and existing within coordinates: 19° 21' 38"N, 85° 03' 23"E and 19° 15' 38"N, 84° 55' 00"E. Rushikulya river flows at the northern side of the mining lease area and the distance of mine lease boundary from the Rushikulya River Bank varies from 50 m to 1500 m.

3. The project was prescribed Terms of Reference (TORs) on 20.10.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal of EC was considered in the Expert Appraisal Committee held during November 28<sup>th</sup>-30<sup>th</sup>, 2011. The proposal was reconsidered in the 30<sup>th</sup> Meeting of the Expert Appraisal Committee held during August 29<sup>th</sup>-31<sup>st</sup>, 2012 wherein the proposal recommended for environmental clearance. Further, the requisite information/clarification was sought from the Project Proponent. The MoEF&CC, vide letter of even no. dated 23.9.2014 has approved the environmental clearance for enhancement of raw sand mining from 25,00,000 TPA to 75,00,000 TPA with the mineral separation plant to extract Ilmenite and other associated minerals (Rutile, Zircon, Monazite, Sillimanite and Garnet) subject to submission of Stage-I Forest Clearance and requested M/s IREL to submit Stage-I Forest Clearance for further action. In this context, the PP has now submitted the Stage-I Forest Clearance vide Ministry's letter no: F.No 8-15/2018-FC, dated: 18.10.2018 for diversion of 157.702ha DLC forest land. M/s OSCOM, IREL uploaded and submitted the details of Stage-I forest clearance to MoEF&CC on 23.10.2018 and accordingly the proposal was placed before the EAC in its meeting held during **November 15-16, 2018**, as the forest clearance has been submitted after 18 months. The Committee deliberated the recommendation of Odisha State Coastal Zone Management Authority (OCZMA) and **recommended** the proposal for grant of EC.

4. The mine lease area is 2,464.054 ha which includes 2306.352ha Barren land and 157.702ha of forestland. It is reported by the Proponent that 2191.194ha area is for excavation, 70.480ha for overburden/dumps, 2.860ha for mineral storage, 34.790ha for infrastructure, 3.340ha for road, 6.000ha for railways, 148.530ha for plantation and 6.860ha for mineral separation plant/coal handling plant. Stage-I Forest Clearance has been received by the Ministry vide letter no: F.No 8-15/2018-FC, dated: 18.10.2018 for diversion of 157.702ha DLC forest land. The Mine plan including progressive mine closure plan was approved by the Atomic Minerals Directorate for Exploration & Research, Hyderabad, (AMD) vide letter no AMD-20 (2)/90-PMSG/1, dated 05.02.1999. The mining scheme was approved by the Atomic Minerals Directorate for Exploration & Research, Hyderabad vide letter no. AMD/MPA/3M/IREL/OSCOM/2464.05 Ha/2011/1 dated 29.07.2011. Atomic Mineral Directorate for Exploration & Research, Department of Atomic Energy, Government of India vide letter dated: 12.12.2013 approved the mining plan in favour of IREL, OSCOM, for undertaking mining of raw sand in the mining lease area at the rate of 75,00,000 TPA (ROM).

5. Project Proponent reported that State Pollution Control Board, Odisha (OSPCB) issued the Consent to Operate (CTO) under the Air and Water Acts for mining and mineral separation activities in 02.03.1988 and renewing the CTO in regular intervals as per the statute. It is noted that MoEF has earlier granted environmental clearance on 14th May, 1991 for production of 94,850 TPA of synthetic rutile and other minerals such as Sillimanite (30,000 TPA), Rutile (10,000 TPA), Zircon (2,000 TPA) and monazite (4000 TPA). The proponent informed that the first mining lease was granted over an area of 2877.76ha for a period from 21.03.1979 to 20.03.1999. The mining operations started during end of 1983-84. Further, the renewed mining lease deed was

executed on 27.10.2005 and is valid for a period of 20 years i.e. from 21.03.1999 to 20.03.2019 over an area of 2464.054ha. Regional Office (MoEF), Bhubaneswar is certifying the Environment Clearance compliances for the existing mining and mineral separation operations in regular intervals.

6. Government of Odisha has renewed the mining lease over an extent of 2464.054 ha for a further period of 20 years w.e.f. 21.3.1999 to 20.3.2019 for mining of Ilmenite, Rutile, Zircon, Monazite, Sillimanite & Garnet and executed the mining lease deed. Atomic Mineral Directorate for Exploration and Research (AMD) approved the mining plan for mining and production of beach sand minerals. Scheme of mining document under MCDR 1988 has been approved by AMD in regular intervals as per the statute in review of the approved mining plan. The heavy mineral deposit of OSCOM, IREL mining lease area -2464.054 ha contains the monazite above threshold value as specified under the Atomic Mineral Concession Rules 2016. Beach sand minerals also notified as "Atomic Minerals" under Part-B of first schedule of MMDR Act 1957 w.e.f. 11.7.2016. The mining operations at OSCOM, IREL have been undertaken as per the approved mining plan in a sustainable manner.

7. Project Proponent reported that M/s IREL is authorized to use 13,500 m<sup>3</sup>/day of water, supplied by Odisha Public Health & Engineering Department (OPHED) as per contractual agreement and 1,776 m<sup>3</sup>/day of bore well water for existing operations. However, for Capacity Expansion project, there will be additional requirement of 2,580 m<sup>3</sup>/day water out of which 2,200 m<sup>3</sup>/day will be met by digging 10 number of bore wells at plant site for which permission is already obtained from Central Ground Water Authorities. Drinking water will be met from the existing network. Additional power requirement will be 6 MW for CEMMU project and the total power requirement including existing units and township would be of the order of 14.4 MW. This power requirement will be met by increasing contract demand of existing power supply agreement with SOUTHCO. The additional fuel requirement will be about 28 tpd for CEMMU project. The effluents generated from the attrition of zircon/sillimanite, will be collected in separate collection tanks and treated at Effluent Treatment system of Mineral Separation Plant. It will be ensured that the treated wastewater quality meets the limits for disposal norm set by Orissa State Pollution Control Board (OSPCB).

8. Project Proponent reported that Opencast Mining operations carried out at OSCOM utilizing (a) Dredge & Wet Upgradation (DWUP) and (b) Supplementary Mining Plant (SMP). The Dredge mining process comprises of dredging of raw sand (ROM), pumping it to surge bin in form of slurry through a rotary trommel screen. The trommel removes over size pebbles, boulders & grass roots etc. from the sand slurry. From the surge bin, the slurry is fed to a series of spirals at a constant pulp density for separation of heavy minerals. The heavy mineral output so obtained is pumped to Mineral Separation Plant in form of slurry using stage booster pumps depending upon the distance of mining unit. The water used for slurry pumping again returns back to mining area through open channels existing in mining area and water table is maintained. The tailings are simultaneously backfilled in the mined out areas. The area is levelled to near original topography and plantation of local species developed over

the mined out area. In case of Supplementary mining Plants, the ROM is mined engaging Heavy Earth Moving Machinery. The mined out ROM is cleaned through screens/trommels to remove the trash materials prior to feeding to the gravity spirals in the form of slurry. The heavy mineral output from the SMPs is either pumped or transported to Mineral Separation Plant for further separation of individual minerals. The tailings generated in SMP are utilized for backfilling of the mined out areas. The Dredging / SMP operations adopted by IREL, OSCOM does not affect the Ground Water Table as there is no net drawl of water from the ground.

9. Project Proponent reported that in Mineral Separation Plant (MSP), the separation of the individual minerals is carried out utilizing the physical properties of the individual minerals namely electrical conductivity, magnetic susceptibility, surface characteristics, specific gravity etc. The major separation equipment consists of electrostatic plate separators, electrostatic separators, various types of low and high intensity magnetic separators, screen separators, rake classifiers, conditioners, flotation cells, spirals, wet tables, air tables, attritioners, rake classifiers, conditioners, flotation cells, spirals, wet tables, air tables, flotex, carona stat HT separators etc. In addition, a number of dryers are provided to eliminate moisture in the feed concentrate and products from wet separators, and also to heat up dry solids before high-tension separators. The sub-grade minerals are stored for future use. The reject sands are back filled in mined out area and plantation developed. During capacity expansion, advanced mineral processing (physical separation) equipments like Dryers, WHIMS, HT Separators, Rare Earth Magnetic Separators, Jigs, Hydrosizers, etc. will be added suitably to the existing Mineral Separation Plant.

10. Project Proponent reported that No national park/sanctuary is reported within 10 km of mine lease, however, nesting sites of Olive Ridley Turtles are reported within 5.5km from the approved mine site and 2.16km from mine lease boundary. The proponent stated that no mining will be carried out within 5km of the nesting site. In this context, NOC has been granted by Principal Chief Conservator of Forests & Chief Wildlife Warden vide letter No. 3536/WL(C)(SSP)-149/2012 dated 11<sup>th</sup> May 2012 for carrying out mining in north sector with respect to Capacity Expansion of Mining & Mineral Separation Units (CEMMU). Odisha State Coastal Zone Management Authority (OCZMA) recommended for the capacity expansion of mining and mineral separation units of OSCOM, IREL under CRZ -2011 notification vide letter dated: 13716/E&F, dated 24.7.2012. The mining area is mostly barren, does not contain much vegetation. After separation of heavy minerals, the mined out area is simultaneously back filled with the tailings which mostly consists of Quartz in its native state. The mined out area is leveled to original topography and left for one year for sand stabilization. After one year, the area is planted with suitable species e.g. Casurina, Cashew nut. The growth of herbaceous trees/creepers further stabilizes the sand and the ecological conditions are restored back. For all the plantation and nursery activities, an annual budgetary provision is being made which will also be practiced for mining during capacity expansion.

11. The Public Hearing for the project was held on 29<sup>th</sup> March, 2011 under the Chairmanship of Dr. Sashibhusan Padhi, Additional District Magistrate, Ganjam District. The representative from the Odisha State Pollution Control Board was also present. The issues raised by public were addressed by the project proponent. Project Proponent has reported that there is no court case / litigation is pending against this project. The Project proponent has submitted an undertaking by way of affidavit dated 14.11.2018 as required under para 5 (1) the Ministry's Office Memorandum No. F:3-50/2017-IA.III(Pt.), dated 30.05.2018. The PP undertakes to comply with all the statutory requirements and judgement of Hon'ble Supreme Court dated the 2<sup>nd</sup> August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Others.

12. The capital cost of the project is Rs. 138 Crores (Rs. 48 crores for Mining Unit and Rs.90 crores for Mineral Separation Plant). The proponent has reported that Rs. 11.47 crores had already made expenditure towards for environmental protection measures. Further, a budget provision Rs. 1.46 crores has been made towards capital investment and Rs. 1.07 crores proposed towards recurring expense/annum towards for environmental protection measures. As reported by the Proponent, Rs 1.3 Crore earmarked for socio-economic welfare measures for the nearby villagers and Rs. 231.03 crores under R&R plans. Project Proponent, vide letter dated 16.11.2018, has reported that they have earmarked Rs. 1.035 Crores/= towards Corporate Environmental Responsibility (CER) as per Ministry's OM dated 01.05.2018.

13. The Ministry of Environment, Forest and Climate Change has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned proposal of **M/s Indian Rare Earths Ltd., for enhancement of capacity of Beach Sand Minerals from 25,00,000 TPA to 75,00,000 TPA (ROM) to be processed in the Mineral Separation Plant (MSP) to extract ilmenite and other associated minerals (rutile, zircon, monazite, sillimanite and garnet), located at P.O. Matkhalo, Chatarpur, District Ganjam, Odisha in the mine lease area of 2464.054ha** subject to implementation of the following conditions and environmental safeguards.

#### A. Specific Conditions

- 1) This Environmental clearance is granted subject to outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Odisha, Hon'ble NGT or any other Court of Law, if any, as may be applicable to this project.
- 2) This Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors..

- 3) The Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
- 4) No mining activities will be allowed in forest area, if any, for which the Forest Clearance is not available.
- 5) The Environmental Clearance is subject to obtaining requisite NBWL Clearance, if any, from the Standing Committee of National Board for Wildlife for Mining project.
- 6) The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Odisha and effectively implement all the conditions stipulated therein.
- 7) In Inter-tidal zone, only manual mining operations shall be carried out deploying persons using baskets and hand spades for collection of ore or minerals as per the approved mining plan.
- 8) Necessary AERB clearance shall be obtained under the Atomic Energy (Radiation Protection) Rules, 2004 for operation of BSM (Beach Sand Minerals) facility.
- 9) No mining shall be carried out in "NO GO ZONE / NO OPERATION ZONE" as stipulated in the conditions in the NOC letter no. 3536/WL(C)(SSP)-149/2012, dated 11<sup>th</sup> May 2012, granted by Principal Chief Conservator of Forests & Chief Wildlife Warden.
- 10) No mining shall be carried out in the CRZ-I area i.e. the area within HTL & LTL.
- 11) No drilling and blasting shall be involved.
- 12) After mining, the mined out area shall be backfilled and levelled to near original topography and plantation should be developed over the same, so that, mining activity do not affect the beach profile.
- 13) Conditions as laid down by the Odisha State Coastal Zone Management Authority as stipulated vide letter No.13716/F&E dated 24th July 2012 while recommending for CRZ clearance shall be strictly complied as given below:
  - (a) Green belt with local species has to be taken up if Govt. land is available.
  - (b) The present status of sand dunes in the proposed mine area is to be mapped by Odisha Space Application Centre (ORSAC) and validated by DFO, Berhampur.

- (c) The sand dunes should not be mined.
- (d) During breeding season of Olive Ridley turtles, the restrictions imposed by PCCF(Wildlife) are to be followed.
- 14) Conditions of NOC, granted by Principal Chief Conservator of Forests & Chief Wildlife Warden (PCCF & CWLW) vide letter No.3536/WL(C)(SSP)-149/2012 dated 11<sup>th</sup> May 2012, shall be strictly complied as given below:
- (a) No mining shall be carried out in "NO GO ZONE / NO OPERATION ZONE".
- (b) The Capacity expansion of Mining and Mineral Separation Unit has to be within the premises of the existing unit of OSCOM premises of Indian Rare Earths Ltd. at village Matikhalo, Chhatrapur, District: Ganjam, Odisha under operation and no extra land or deforestation shall be made.
- (c) The 5 (five) Km zone of the nesting/ mass nesting site of endangered Olive Ridley sea turtles from Rushikulya river mouth area shall be as a NO GO AREA or NO DEVELOPEMNT ZONE. No mining or sand extraction or habitat alteration or activities of similar nature shall be done in the area as per the map authenticated by competent authorities of the Odisha Forest Department.
- (d) The Proponent shall take up the mining or sand extraction activities starting from the southern extreme end of the lease hold area till 10 km zone of the Rushikulya river area as per the map authenticated by competent authorities of the Odisha Forest Department. This may give the working period of 8-9 years. Before one year of reaching the 10 km zone segment of the Rushikulya river mouth area, the User Agency shall apply for fresh "No Objection".
- (e) Within the existing unit as well as proposed expansion site, the User Agency shall take all necessary steps to reduce its outdoor illumination during the mass emergence of Olive Ridley sea turtles and their hatchlings.
- (f) Release of effluents or by-products of the factory shall be as per the norms of the OSPCB. Toxic chemicals and by-products shall not be released into the Rushikulya River since it is likely to result in reducing the food base of marine turtles, and likely to cause pollution of river / sea water affecting estuarine and marine wildlife.
- (g) This NOC will remain valid from the date of issue of this letter till 2019 or till reaching the 10 km zone from the Rushikulya river mouth or till the area remains under safe category on wildlife resource conservation considerations, whichever is earlier in the interest of environmental protection.
- 15) A 15 m barrier of no mining zone all along the side facing the nallah/water body (Tamparalake) passing through the lease area or if passing adjacent the lease

shall be demarcated and thick vegetation of native species raised. Status of implementation shall be submitted to the Regional Office of the Ministry on half yearly basis.

- 16) Out of 1395.400ha of mineable land, 20.737ha of land covers four small villages of Arjipalli Panchayat namely Bara Arjipalli, Sana Arjipalli, Sana Arjipalli (Katuru) and KandraArjipalli. As informed by the Proponent, though the displacement is temporary in nature, Rehabilitation & Resettlement (R&R) benefits to the temporarily displaced Project Affected Families (PAFs) shall be provided in consultation with Local Administration as per the provisions of Odhisa Resettlement & Rehabilitation Policy, 2006, National Rehabilitation & Resettlement Policy, 2007 and payment of compensation & annual lease rent shall be as per the provisions under MM(D&R) Act, 1957. Need based assessment for the nearby villages shall be conducted to study economic measures which can help in upliftment of poor section of society. Income generating projects/tools such as development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.
- 17) Implementation of Conservation Plan for Schedule I species as approved by the Chief Wild Life Warden, Bhubaneswar.
- 18) Identification of sand dunes shall be done prior to undertaking mining activities and their conservation shall be as per MoEF&CC guidelines from time to time. No flattening of sand dunes shall be carried out. Dressing or altering the sand dunes, hills, natural features including landscape changes shall not be carried out for beautification/recreational purposes. Precautions shall be taken to prevent intrusion of sea water into hinterland to avoid problem of submersion/flooding.
- 19) Tailings and rejects shall be filled back systematically after separating the heavy/rare minerals. Sand tailing shall be put back at the mined area on completion of extraction of rare minerals. Afforestation shall be taken up with suitable species on mined out areas to prevent erosion of shoreline. Under no circumstances, the tailings will be dumped in agricultural lands, wet lands, paddy fields, canals and the backfilling will be carried out only in the inland mined out areas.
- 20) The mining activities shall be regulated in such a way that there will be minimum disturbance to the fauna during spawning and brooding period i.e. from November to March.
- 21) Mining shall be carried out in phases only. Simultaneous opening of entire beach front is not permissible. There shall be uninterrupted access to the seafront. Minimum 20m width of approach roads shall be provided where necessary.

- 22) Mining shall be carried out by permitted methods without the use of any forms of blasting. Use of explosives for blasting is prohibited. The mining should be stated near sea side and mining should be progressed parallel to sea coast so that inland water table is not disturbed.
- 23) Radiation survey shall be carried out as stipulated by the Atomic Minerals Directorate for Exploration and Research, Department of Atomic Energy, Government of India to ascertain the effects of radioactive minerals.
- 24) Regular monitoring of water quality upstream and downstream of adjoining water bodies shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment, Forests & Climate Change, its Regional Office, Odisha, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- 25) Mineral handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- 26) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change 5 years in advance of final mine closure for approval.

#### **B. Standard Conditions**

- 1). No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.
- 2). No change in the calendar plan including excavation, quantum of beach sand mineral i.e. Ilmenite, Rutile, Zircon, Monazite, sillimanite and Garnet and waste should be made.
- 3). The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) for the project.
- 4). Mining shall be carried out as per the provisions outlined in mining plan approved by AMD as well as by abiding to the guidelines of Directorate General Mines Safety (DGMS).
- 5). The lands which are not owned by Proponent, mining will be carried out only after obtaining the consents from all the concerned land owners as per the provisions of the Atomic Mineral Concession Rules, 1960 and MMDR Act, 1957.

- 6). Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for monitoring land use pattern and report submitted to Ministry of Environment, Forest and Climate Change its Regional Office.
- 7). The critical parameters as per the Notification 2009 such as  $PM_{10}$ ,  $PM_{2.5}$ ,  $NO_x$ , and  $SO_x$  etc. in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- 8). Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of  $PM_{10}$  and  $PM_{2.5}$  such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all the sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.
- 9). Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. The monitoring shall be carried out four times in a year pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board.
- 10). Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table.
- 11). Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and

submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.

- 12). The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.
- 13). Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. The material transfer points should invariably be provided with Bag filters and or dry fogging system. In case of Belt-conveyors facilities the system should be fully covered to avoid air borne dust; Use of effective sprinkler system to suppress fugitive dust on haul roads and other transport roads shall be ensured.
- 14). Sufficient number of Gullies to be provided for better management of water. Regular Monitoring of pH shall be included in the monitoring plan and report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
- 15). There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis and Implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.
- 16). The reclamation at waste dump sites shall be ecologically sustainable. Scientific reclamation shall be followed. The local species may be encouraged and species are so chosen that the slope, bottom of the dumps and top of the dumps are able to sustain these species. The aspect of the dump is also a factor which regulates some climatic parameters and allows only species adopted to that micro climate.
- 17). The top soil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation

- becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
- 18). Plantation shall be raised in a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area, around water body, along the roads etc. by planting the native species in consultation with the local DFO/Agriculture Department and as per CPCB Guidelines. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.
  - 19). Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "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", if any, applicable to the project.
  - 20). The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.
  - 21). As per the Company Act, the CSR cost should be 2 % of average net profit of last three years. Hence CSR expenses should be as per the Company Act/Rule for the Socio Economic Development of the neighborhood Habitats which could be planned and executed by the Project Proponent more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers. The report shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office on six monthly basis.
  - 22). Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
  - 23). Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.
  - 24). Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from

time to time. Oil and grease trap should be installed before discharge of workshop effluents.

- 25). 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.
- 26). A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- 27). The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office.
- 28). The project authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- 29). The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Central Pollution Control Board and State Pollution Control Board.
- 30). The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- 31). A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.
- 32). State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.
- 33). The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at [www.environmentclearance.nic.in](http://www.environmentclearance.nic.in) / [parivesh.nic.in](http://parivesh.nic.in) and a copy of the same should be forwarded to the Regional Office.

14. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
15. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
16. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Odisha and any other Court of Law relating to the subject matter.
17. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.



(Dr. R.B. Lal)

Addl. Director/ Scientist 'E'

**Copy to:**

- 1). **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- 2). **The Secretary**, Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.
- 3). **The Secretary**, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
- 4). **The Secretary**, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
- 5). **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- 6). **The Additional Principal Chief Conservator of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office (EZ), A/3, Chandrasekharapur, Bhubaneswar - 751023.
- 7). **The Member Secretary**, Odisha State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- 8). **The Member Secretary**, Odisha State Coastal Zone Management Authority (OCZMA), Odisha.
- 9). **The Director**, AMD / DAE, AMD Complex, Begumpet, Hyderabad-500 016 (INDIA).
- 10). **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- 11). **The Member Secretary**, Central Ground Water Board Ministry of Agriculture and Irrigation, 12/1 Jam Nagar House, Shahjahan Road, New Delhi 110011.

- 12). The District Collector, District- Keonjhar, State of Odisha.
- 13). Guard File.
- 14). MoEF&CC Website.

(Dr. R. B. Lal)  
Addl. Director/ Scientist 'E'

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No. J-11015/348/2009-IA.II (M)

Government of India  
Ministry of Environment & ForestsParyavaran Bhavan,  
C.G.O. Complex, Lodi Road,  
New Delhi-110 003.Dated the 9<sup>th</sup> February, 2011

To

✓  
M/s Indian Rare Earths Limited  
(A Government of India Undertaking)  
Orissa Sands Complex,  
Matikhalo (P.O), Chatrapur  
District Ganjam,  
Orissa-761 045  
E-mail: [headireo@sancharnet.in](mailto:headireo@sancharnet.in)

**Subject:** Setting up of Monazite Processing Plant by M/s Indian Rare Earths Limited in Village Matikhalo, Tehsil Chatrapur, District Ganjam, Orissa- environmental clearance regarding.

Sir,

This has reference to your letter No. TS/ENVR/43A/6257'A' dated 12.07.2010 and subsequent letter dated 01.02.2011 on the subject mentioned above. The proposal was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 18.01.2010 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for setting up of a monazite processing plant (MOPP) having a capacity of 10,000 tonnes per annum (TPA) within the existing premises of Orissa Sands Complex.

2. The land requirement for the project is 13ha, which is barren land available within existing Orissa Sands Complex of Indian Rare Earths Limited. No forestland is involved. It has been stated that the Monazite Processing Plant site is out of the CRZ area. The High Tide Line is at a distance of 650m from the plant site. It has been categorically stated by the proponent that no new activity relating to the project will be taken up in the CRZ area. The existing slurry pipeline will be used. The discharge will also be made through the existing pipeline. Thus, no new pipeline will also be laid through the CRZ. The Rushikulya River is located at a distance of 12km from the proposed site. The topography of the area is flat at an average elevation of +8m above mean sea level. There is no vegetation or building inside the identified land. The groundwater table in general varies seasonally from 2.5m to 5m. The building construction works for the proposed project *inter alia* include, main plant building, warehouse for storage of raw material and products, chimneys, compressor house, cooling towers and cooling water pump house etc.

*[Signature]*  
..2/-

3. No National Park/ Wildlife Sanctuary is reported within 10km of the project area. In support of this the proponent has provided a letter No.3755/4F dated 23.06.2008 from the DFO Behrampur Division. The proponent have submitted a copy of the letter Memo No.1195/1WL(C)-FC-438/2008 dated 20.2.2009 from the Conservator of Forests (WL) informing that the scheme for conservation of Olive Ridley sea turtles at Rushikulya mouth funded by Indian Rare Earths Ltd. has been approved by Chief Wildlife Warden with a financial forecast of Rs 46 lakhs.

4. The monazite is a natural mineral like sand of about 150micron size and is mainly a phosphate of rare earths & thorium containing very low (i.e. 0.3%) uranium. Monazite is ground to fine particles of about 45micron and reacted with caustic lye at 150 degree centigrade to break the phosphate bond. During the process of caustic attack of the monazite mineral helium gas entrapped in the mineral lattice (a product of the radio-active decay of natural thorium) is liberated. This helium gas is collected and further purified for industrial use. The phosphate in monazite is converted to tri-sodium phosphate which is leached in hot water. The in-solubles are hydroxides of thorium, uranium and rare earths. The Tri-sodium phosphate solution is each separated from the insolubles by filtration and further concentrated to crystallize out the tri-sodium phosphate as dodecahydrate ( $\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$ ) as a product. The insoluble hydroxides of uranium, thorium, and rare earths are reacted with dilute hydrochloric acid for preferentially separating the rare earths as rare earths chloride which is soluble in water. Thorium and uranium hydroxide are left un-reacted as insolubles and separated from rare earths chloride solution by filtration. The clear rare earths chloride solution after suitable treatment for making it free from the radio-activity is evaporated to rare earths chloride crystals. The insoluble thorium and uranium hydroxides are digested in further quantities of hydrochloric acid and the un-reacted in-solubles mostly monazite and its mineral impurities are separated by filtration and discarded as muck. The acidic chloride solution of thorium and uranium is subjected to solvent extraction to separate thorium and uranium into their relatively purer forms such as thorium oxalate and nuclear grade uranium di-uranate respectively. The treated effluents will partly be reused. The lead barium mixed cake, insoluble sand based, iron carbonate and calcium sulphate cake will be disposed in FRF lined RCC trenches, while ETP cake will be disposed in PVC bags in earthen trenches. The total water requirement of the project is estimated as  $152.6\text{m}^3$  per hour, out of which  $54\text{m}^3$  per hour will be obtained from the OPHED.

5. The Public hearing of the project was held on 28.05.2010 for establishment of 10,000TPA of monazite processing plant by M/s Indian Rare Earths Ltd. at Orissa sand Complex. The expected cost of the project is Rs.98.31Crores. It was stated by the proponent that there is no court case pending against the project.

6. The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental

clearance under the provisions thereof to the above mentioned project for setting up of a Monazite Processing Plant by M/s Indian Rare Earths Limited for an annual production capacity of 10,000 tonnes involving land requirement of 13ha, subject to implementation of the following conditions and environmental safeguards.

**A. Specific conditions**

- (i) The project proponent shall obtain prior Consent to Establish and Consent to Operate for the project from the State Pollution Control Board, Orissa and shall effectively implement all the conditions stipulated therein.
- (ii) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any operations of the project.
- (iii) The existing slurry pipeline shall be used and no new pipeline shall be laid through the CRZ area. The discharge shall also be made through the existing pipeline. No new activity relating to the project shall be undertaken in CRZ area without obtaining requisite prior clearance under the CRZ Notification, 2011.
- (iv) No ash/waste shall be discharged or dumped in the CRZ area.
- (v) The project proponent shall develop effective emergency response procedure to ensure appropriate risk management measures in the public domain, if any, due to the project.
- (vi) The AERB clearance for the site as applicable shall be obtained before starting any construction work and a copy of the same shall be provided to the Ministry of Environment and Forests and its Regional office located at Bhubaneswar.
- (vii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (viii) Regular monitoring of conventional gaseous pollutants, radioactive pollutants in the air as well in the discharged water shall be monitored regularly as per AERB standards.
- (ix) A Disaster Management Plan and Emergency Preparedness Plan shall be prepared and put in place as per the norms of AERB. Regular mock drills shall be undertaken and based on the same, any modification required, if any, shall also be incorporated.

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- 4
- (x) The radioactive waste, if any shall be managed as per the norms prescribed by the AERB.
  - (xi) Plantation including a green belt of atleast 7.5m width all around the plant shall be developed by planting the native species in consultation with the local DFO/Agriculture Department.
  - (xii) The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.
  - (xiii) Regular monitoring of ground water level and quality shall be carried out by establishing a network of existing wells and constructing new piezometers in and around the project area especially around the trenches to be used for storage of waste material generated in the processing plant. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January)); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table and quality is getting affected due to the project activity, necessary corrective measures shall be carried out.
  - (xiv) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water(surface water and groundwater) required for the project.
  - (xv) Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.
  - (xvi) Monitoring of background radiation levels in water, soil and ambient air should be carried out periodically in the study area (core and buffer zone) of the project through an expert agency like Health Physics Division of Bhabha Atomic Research Centre (BARC).
  - (xvii) Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and the wastewater generated during the processing process. Discharges from the treatment plant and settling pits should be constantly monitored for concentration of radio nucleides.
  - (xviii) Sludge from the treatment plant and settling pit should be transported in safe containment.

- (xix) The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 km from the proposed project.
- (xx) Occupational health surveillance program of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. Health records of the workers shall be maintained.
- (xxi) Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
- (xxii) The plants growing in the area, soil invertebrate animals and local agricultural produce should be analysed to check the buildup of radioactivity levels, if any.
- (xxiii) The project proponent shall have an emergency response plan to ensure that all potentially affected people understand the possible causes and consequences of radiation and other project related activities.
- (xxiv) The project proponent shall take all precautionary measures during mining operation for conservation and protection of flora and endangered fauna namely olive ridley turtle etc. spotted in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan so approved specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Ministry of Environment and Forests and its Regional Office, Bhubaneswar.
- (xxv) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

**B. General Conditions**

- (i) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
- (ii) Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>), NOx and SO<sub>2</sub> monitoring. Location of

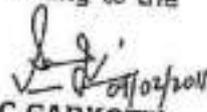
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the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

- (iii) Data on ambient air quality RSPM (Particulate matter with size less than 10micron i.e., PM<sub>10</sub>), NOx and SO<sub>2</sub> should be regularly submitted to the Ministry of Environment and Forests including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (iv) Measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. shall be provided with ear plugs / muffs.
- (v) Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.
- (vi) 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.  
  
Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- (vii) Separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- (viii) The project authorities should inform to the Regional Office located at Bhubneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (ix) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneswar.
- (x) The Regional Office of this Ministry located at Bhubneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

- (xi) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance 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 the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.
- (xii) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ 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.
- (xiii) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.
- (xiv) 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 environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.
- (xv) The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.
7. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
8. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

9. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made thereunder and also any other orders passed by the Hon'ble Supreme Court of India/High Court of Orissa and any other Court of Law relating to the subject matter.

  
(SATISH.C.GARKOTI)  
Scientist 'F'

Copy to:

- (i) The Secretary, Department of Atomic Energy, Government of India, Chatrapati Shivaji Maharaj Marg, Mumbai -400 001.
- (ii) The Secretary, Atomic Energy Regulatory Board, Mumbai, Niyamak Bhawan, Anushakti Nagar, Mumbai-400 094.
- (iii) The Secretary, Department of Environment, Government of Orissa, Secretariat, Bhubaneswar.
- (iv) The Secretary, Department of Forests, Government of Orissa, Secretariat, Bhubaneswar.
- (v) The Chief Wildlife Warden, Government of Orissa, Bhubaneswar.
- (vi) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- (vii) The Chief Conservator of Forests, Regional Office (EZ), Ministry of Environment and Forests, A-3 Chandrashekharpur, Bhubaneswar-751023.
- (viii) The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- (ix) The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- (x) The District Collector, Ganjam District, Government of Orissa.
- (xi) EI Division, Ministry of Environment & Forests, EI Division, New Delhi.
- (xii) Monitoring File.
- (xiii) Guard File.
- (xiv) Record File.



E-mail: [rosacb.berhampur@ospcbboard.org](mailto:rosacb.berhampur@ospcbboard.org)  
Website: [www.ospcbboard.org](http://www.ospcbboard.org)

REGIONAL OFFICE OF THE  
STATE POLLUTION CONTROL BOARD, ODISHA  
[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]  
2nd Floor, New Division Office, IDCO, Berhampur Division,  
Industrial Estate, Berhampur, Dist. Ganjam-760 008, Odisha, India  
**CONSENT ORDER**

No. 505 / CTO-48/2014

Date 16/02/2023

By Regd Post

CONSENT ORDER NO. 636/2022-23

Sub: Consent for discharge of sewage and/or trade effluent under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and for existing/new operation of the plant under Section 2) of Air (Prevention & Control of Pollution) Act, 1981.

Ref: - Your online consent application ID No. 4275972.

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under Section 2) of Air (Prevention & Control of Pollution) Act, 1981 and rules framed there under superseding the earlier consent order issued under Air (PCP) Act, 1981 & Water (PCP) Act, 1974 vide Board's letter no. 1012 dated 19.03.2021 to:

Name of the industry

: M/s. IREL (India) Limited, (OSCOM)  
(Mining & Mineral Separation Plant)

At/P.O.: Malikhalo, Chatrapur,  
Dist. Ganjam, Pin: 754045, (Odisha)

Name of the Occupier & Designation:

Sri S. Surya Kumar, Executive Director, OSCOM

Address:

At/P.O.: Malikhalo, Chatrapur  
Dist. Ganjam, Pin: 754045, (Odisha)

This consent order is valid for the period up to 31.03.2024.

This consent order is valid for the products quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Details of Products Manufactured:

Sl. No.	Product(Mining & Mineral Separation Plant)	Quantity
1	Beach Sand Mineral Products (Ilmenite, Rutile, Zircon, Monazite, Sillimanite, Garnet)	6,35,000 MT/Annum
2	Zirconia/ Stabilised Zirconia/Zirconia based chemicals	3.5 MT/Annum

B. Discharge permitted through the following outlet subject to the standard:

Outlet no	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr.	Prescribed standard in mg/l except pH				
				pH	TSS	BOD	Oils & Grease (mg/l)	Fecal Coll form(FC), MPN/100 ml
1	Effluent generate from MSP Plant	Settling lagoons (Pond - I) and recycled in the process	6770 KLD	5.5 to 9.0	100	—	10	—
2	Outlet of STP of capacity 600 KLD (Domestic effluent)	Reuse in plantation/ gardening/ flushing/ washing etc.	600 KLD	6.5 to 9.0	<100	30	—	<1000

P.T.O.

C. Emission permitted through the following stack subject to the prescribed standard :

Chimney Stack No	Description of Stack (Stack attached to)	Stack height (m) above GL	Quantity of emission m <sup>3</sup> /hr	Prescribed Standard in mg/Nm <sup>3</sup>			
				PM	SO <sub>2</sub>	NO <sub>x</sub>	H <sub>2</sub> S
1	Fluidized bed dryer of capacity 130 TPH.	56	93100	100	-	-	-
2.	Sillimanite dryer	20	5500	150	-	-	-
3	Zircon dryer	20	2250	150	-	-	-
4	Monazite dryer	25	1600	150	-	-	-
5	Garnet dryer	20	5500	150	-	-	-
6	Shaft dryer - I	24	1200	150	-	-	-
7	Shaft dryer - II	24	1200	150	-	-	-
8	Shaft dryer - III	24	1200	150	-	-	-
9	Concentrate dryers	37	1,00,000	150	-	-	-

D. Disposal of solid waste permitted in the following manner

Sl. No	Type of Solid Waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site
1	Tailing from Mining operation	66,65,000 TPA.	--	--	100%	Back filling of mines
02.	MSP Tail's from Mineral Separation Plant	2,00,000 TPA.	--	--	100%	Store as per mining plan. Supply to outside entrepreneurs having consent to operate of SPCB for recovery heavy minerals.

E. GENERAL CONDITIONS:

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material/and products/manufacturing process or quantity/quality of the effluent/ rate of emission/air pollution control equipment/system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.

P.T.O.



7. The consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system/air pollution control system/stock monitoring system or any other particulars as may be pertinent for preventing and controlling pollution of Water/Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been tapped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below.
  - a. Industrial cooling, spraying in mine pits or boiler feed.
  - b. Domestic purpose.
  - c. Process
13. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by him to achieve with the terms[s] and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.
18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by over flow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands of any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stocks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples/stock monitoring/inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water/Prevention and Control of Pollution Act, 1974 (as amended).

## CONSENT ORDER

28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge/emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and/ or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax/speed post within 24 hours of its occurrence.
33. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the Industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. The solid waste such as sweeping, wastage packages, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as not to cause fugitive emission, dust problem through leaching etc. of any kind.
35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by:
  - i. Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
  - ii. Controlled incineration, wherever possible in case of combustible organic material.
  - iii. Composting, in case of bio-degradable material.
36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
38. The applicant, his/heirs/legal representative or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
41. The conditions imposed as above shall continue to be in force until revoked under Section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981.
42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/stipulate additional conditions as deemed appropriate.

**F. SPECIAL CONDITIONS:****A. GENERAL:**

1. The unit shall abide the conditions stipulated in Environmental Clearance granted by MoEF & CC, Govt. of India vide letter No.J-11015/528/2007-IA.II (M) dated 11.01.2019.
2. Sand mining shall be done over the lease hold area of 2464.054 Ha under Tahasil-Chatrapur of Dist.- Ganjam as per the approved mining plan.
3. Mining operation is subject to availability of all other statutory clearances required under relevant Acts/Rules.
4. The unit shall restrict production of Monazite Processing Plant (MoPP) within consented capacity as per Consent Order letter no. 2304 dtd. 03.08.2018 issued by State Pollution Control Board, Odisha. The unit shall operate Monazite Processing Plant with strict compliance to Consent conditions.
5. A copy of the annual return (annual return submitted to Department of Atomic Energy, Govt. of India/ Directorate of Mines, Govt. of Odisha) shall be submitted every year.
6. Quantities of individual products may vary subject to the total quantities of production remaining same without any change in the process. Quantum of actual production of individual items shall be submitted in the monthly compliance report.
7. The mine shall implement the pollution control measures and safeguards as proposed in the Environment Management Plan (EMP) of Environment Impact Assessment (EIA) report.
8. The unit shall abide by the Fuel Policy of the State of Odisha Notified by Forest & Environment Department, Government of Odisha vide letter no.7485 dtd. 12.04.2021.
9. The industry shall obtain necessary permission from the central Ground Water Authority for consumption of ground water for industrial use.
10. The proponent shall obtain forest clearance under Forest (Conservation) Act 1980 for forest land inside mining lease area.
11. No change in mining technology and scope of working shall be made without prior approval of the Board.
12. The unit shall prepare accident prevention plan, process risk analysis and safety policy.
13. The unit shall abide by the E (P) Act, 1986 and Rules framed there under.
14. The unit shall abide by the Public Liability Insurance Act, 1991 and amendments made there under.
15. The Consent order has been issued without prejudice to any legal dispute arises in future with respect to the ownership of the land and other land disputes.
16. Measures shall be taken for control of noise levels below 85 dBA in the work environment.
17. The Board may impose further condition or modify the conditions as stipulated in this order during installation and/or at the time of obtaining consent to operate and may revoke this order in case the stipulated condition are not implemented and/or information is found to have been suppressed/wrongly furnished in the application form.
18. The Unit shall pay the differential fees if any as per the Odisha Gazette Notification dtd. 16.07.2012 of Forest and Environment Department, Government of Odisha.
19. No further expansion/modernization shall be carried out by the unit without prior approval from the Board.
20. Good housekeeping practice shall be followed to improve the work environment.
21. Plantation of trees shall be undertaken in the colony/ township, back filled areas, along the side of haul road and in other areas of the mines not being utilized for mining activities. The mine shall take up avenue plantation and plantation in nearby village areas in consultation with DFO/Horticulture Department. The density of the plantation shall be around 2500 plants per hectare. Nursery shall also be developed for plantation activities within the ML area and free distribution of seedlings to nearby villagers. The annual statements pertaining to the number of trees planted, areas where plantation has been done, survival percentage and area in Ha, covered under plantation shall be submitted to the Board, every year in prescribed format.



22. Ambient air quality monitoring data, noise monitoring data and water/ wastewater quality monitoring data shall be electronically displayed at the entry point of the mine or at a suitable location of the mine.
23. The unit shall take up adequate measure for routine health checkup of its employees/workers and the people residing in the neighborhood of the plant free of cost.
24. The unit shall setup a full-fledged environmental monitoring laboratory and an environment management cell with qualified personnel for monitoring of pollutant and effective remedial measures in case of necessity.
25. The mine shall submit a declaration by 30<sup>th</sup> April every year that all pollution control systems are in good condition, operated and ambient air quality as well as waste water quality conforms to the prescribed standards.

**B. WATER POLLUTION:**

1. The water used for slurry pumping purpose shall be recycled back to the mining site/dredge pond for maintaining ground water table.
2. The project proponent shall ensure that no natural water course and / or water resources are constructed due to any mining operations.
3. Appropriate mitigative measures shall be taken to prevent pollution of nearby water bodies.
4. Retention wall of adequate height shall be constructed at the toe of stock yard of mining output and sub-grade dump area. Gariand drain shall be constructed around mineral stock yards terminating at settling pit to prevent runoff of water and flow of sediments directly into nearby water bodies. Surface run-off from Tailing area, mineral stock yard, Mineral storage shall be routed through adequate settling pond (designed on maximum hourly rainfall basis) to meet prescribed standard. Gariand drain and sedimentation pit shall be de-silled after monsoon or as and when required. The discharge quality shall meet the standards prescribed.
5. ETP shall also be provided for workshops, Service centers and other areas, where water pollution due to wash outs of oil and grease and suspended solids are expected. Treated water shall be recycled for washing purpose after meeting prescribed standard.
6. Effluent generated from Mineral separation plant, shall be properly collected in lagoon (pond no-1) and treated in an adequately designed effluent treatment plant (ETP) and treated water shall be utilized in the process after meeting prescribed standard.
7. Effluent generated from Zirconia plant shall be properly treated and shall be reused in the process.
8. The mine drainage water if any shall be adequately treated before disposal.
9. Check dams of appropriate size shall be constructed at appropriate places of mine to prevent direct flow of sediment into nearby water bodies. The surface runoff water from the existing runoff management system shall meet the prescribed standards.
10. In no case waste water of the plant shall be allowed to discharge outside the factory premises.
11. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post- monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.
12. Regular monitoring of water quality of upstream and downstream of the nearby water bodies existed if any within 5Km shall be carried out once in every month and record shall be maintained and submitted to the State Pollution Control Board once in every year. Monitoring shall be carried out through MoEF & CC accredited laboratory.

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## CONSENT ORDER

13. Domestic effluent from canteen, office building and other sources shall be treated in Sewage Treatment Plant of adequate capacity/ 600 KLD to meet the following standards as notified by the MoEF & CC, Govt. of India vide G.S.R. 1265 (E), dated 13.10.2017. The treated water shall be reused for flushing, gardening and plantation to the maximum possible extent.

No.	Parameters	Standards
1.		6.5-9.0
2.	BOD(mg/l)	30
3.	TSS(mg/l)	<100
4.	Fecal Coliform (MPN/100ml)	< 1000

14. Storm water shall not be allowed to mix with effluent or floor washing and shall be channelized through separate drains as per natural gradient. The storm water shall be collected and stored in Pond-1 for use in different process.
15. The Nitrate effluent if any shall be sold to authorized private parties for production of sodium nitrate crystal after treatment. The non -Nitrate effluent shall be properly treated and reused.
16. Rainwater harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.

**C. AIR POLLUTION:**

- Regular water sprinkling shall be carried out in critical areas prone to air pollution such surface mining area to prevent fugitive dust emission. Water sprinkling through fixed water sprinklers/mobile water tankers shall also be carried out on haul roads at desired interval and should always be in wet condition. Haulage roads shall be devoid of ruts and potholes and shall be maintained properly to avoid generation of dust during movement of vehicles.
- Loading & Unloading areas including all the transfer points shall also have efficient dust suppression arrangement (dry fog system). This shall be properly maintained and operated.
- Mineral / sub-grade transporting vehicles shall be covered with tarpaulins to avoid spillages of material during transportation. Overloading of transport vehicles shall be avoided. Regular collection of spilled over material if any from the haul road shall be practiced to prevent the generation of dust due to movement of dumpers /ippers/trucks etc.
- The speed of dumpers/trucks on haul roads should be controlled as increased speed increases dust emission.
- Adequate dust extraction/suppression system shall be provided at potential dust generation points of Mineral Separation plant to control fugitive emission. Feed hoppers, transfer points, discharge points and mineral separation in dry process shall have adequate dust containment system to control fugitive emissions. Bag Filters, cyclones, multi-cyclones, dry fog dust suppression systems shall be installed at potential dust generation points. The particulate emission from dust extraction system shall not exceed 150 mg/Nm<sup>3</sup>.
- Work zone area including the road surrounding the plant shall be asphalted or concreted. Permanent high pressure water spraying system shall be installed for regular spraying of water on roads and work zone to minimizing fugitive dust emission.
- The unit shall provide adequately designed dust extraction system with cyclones/bag filter/scrubber at all dust generating locations i.e. Fluidized bed dryer, rotary dryers & shaft dryers so that particulate emission through the stack shall not exceed 150 mg/Nm<sup>3</sup>.
- Fine dust collected at the hopper of cyclones and bag filters shall be recycled in the process or suitably collected without fugitive dust emission.
- The unit shall install stack of adequate height from ground level attached to the dryers for optimal dispersion for SO<sub>2</sub> as per the formula, H= Height of the stack in mts., Q= Rate of emission of SO<sub>2</sub> in kg/hr. The unit shall provide porch and platform at suitable location with safe approach to conduct emission and monitoring at all the stacks.

P.T.O.

10. The unit shall install online continuous stack emission monitoring systems (CEMS) at all the stacks of the plant/driers for online real time monitoring for PM and data transmission through GPRS system to SPCB RTDAS server.
11. Adequate no. of Ambient Air Quality Monitoring Stations shall be established in core zone and buffer zone for monitoring of ambient air quality. The monitoring locations shall be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the Regional Officer, State Pollution Control Board.
12. The proponent shall install one Online Continuous Ambient Air Quality Monitoring Station (CAAQMS) in transportation route inside the mining lease area to monitor PM10, PM2.5, SO2, NOX, CO and other important parameters for online real time data transmission through GPRS system to SPCB RTDAS server and also upload data to CPCB.
13. Ambient Air Quality shall be maintained inside the factory premises so as to conform the national ambient air quality standard prescribed under E [P] Rule.
14. Height of the stack attached to DG Set if any shall be  $h=0.2 \sqrt{KVA}$  where h = roof height, where DG set shall be installed and KVA = Capacity of DG Set in KVA
15. The DG set shall be installed in an acoustically designed enclosure to control noise level as per the E [P] Rules.
16. Good housekeeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.

**D. SOLID & HAZARDOUS WASTE:**

1. Tailings from mining operation and other wastes shall be used for back filling of mined out areas. Rejects from Mineral Separation Plant (Subgrade) shall be stacked properly in the earmarked areas as per the approved mining plan. The project proponent shall explore ways and means for utilization of subgrade.
2. MSP tailing shall be stacked for future use shall be properly stored without causing any environmental contamination.
3. The reclamation programme for the mined out area through concurrent reclamation shall be implemented. Monitoring and management of rehabilitated area shall continue until the vegetation becomes self-sustaining.
4. Solid wastes generated from the unit, including ash shall be properly disposed off without causing any environmental nuisance in its surrounding.
5. The radioactive wastes generated if any shall be handled and disposed off as per the Atomic Energy Regulatory Board (AERB), Authorization and return shall be submitted to AERB as per Atomic Energy (Safe Disposal of Radio Active Wastes) Rules, 1967.
6. All other wastes and products which are acidic and radio active in nature shall be disposed off in RCC trenches as per the Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 as amendment thereof and as per the AERB norms.
7. The unit shall obtain Authorization under Hazardous and Other Wastes Management Rules, 2016 and amendments made there under.

P.T.O.



The occupier must comply with the conditions stipulated in section A, B, C, D, E and F to keep this consent order valid.

To,

Sri S. Surya Kumar, Executive Director, OSCOM  
M/s. IREL (India) Limited, OSCOM,  
At/Po.: Maikhalo, Chatrapur,  
Dist. Ganjam, Pin: 754045, (Odisha)

  
16/02/2023

REGIONAL OFFICER  
STATE POLLUTION CONTROL BOARD, ODISHA  
BERHAMPUR

Memo No. 506 / Date 16/02/2023

Copy forwarded to:

1. The Member Secretary, State Pollution Control Board, Bhubaneswar
2. The Collector & District Magistrate, Ganjam, Chatrapur
3. The D.F.O., Berhampur
4. The Asst. Director, Factories & Boiler, Berhampur, Ganjam
5. The Dy. Director of Mine, Ganjam Circle, Berhampur
6. Copy to Guard file.

  
16/02/2023

REGIONAL OFFICER  
STATE POLLUTION CONTROL BOARD, ODISHA  
BERHAMPUR



## EFFLUENT QUALITY STANDARDS

ANNEXURE 4

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Coastal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/Odourless as far as practicable	-----	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process wastewater – 100 b; For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	-----	
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	-----	-----	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	-----	-----	1.0
9.	Ammoniacal nitrogen (as N) mg/l max.	50	50	-----	50
10.	Total Kjeldahl nitrogen (as NH <sub>3</sub> ) mg/l max.	100	-----	-----	100
11.	Free ammonia (as NH <sub>3</sub> ) mg/l max.	5.0	-----	-----	5.0
12.	Biochemical Oxygen Demand (5 days at 20°C) mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l max.	250	-----	-----	250
14.	Arsenic (as As) mg/l max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/l max.	0.01	0.01	-----	0.001
16.	Lead (as Pb) mg/l max.	0.1	1.0	-----	2.0

P.T.O.

17.	Cadmium (as Cd) mg/l max.	2.0	1.0	-----	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	-----	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	-----	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	-----	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	-----	15
22.	Selenium (as Se) mg/l max.	0.05	0.05	-----	0.05
23.	Nickel (as Ni) mg/l max.	3.0	3.0	-----	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride ( as F) mg/l max.	2.0	15	-----	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	-----	-----	-----
27.	Sulphide (as S) mg/l max.	2.0	-----	-----	5.0
28.	Phenolic compounds as (C <sub>6</sub> H <sub>5</sub> OH) mg/l max.	1.0	5.0	-----	5.0
29.	Radioactive materials a. Alpha emitter micro curie/ml. b. Beta emitter micro curie/ml.	10 <sup>7</sup> 10 <sup>5</sup>	10 <sup>7</sup> 10 <sup>5</sup>	10 <sup>8</sup> 10 <sup>7</sup>	10 <sup>7</sup> 10 <sup>5</sup>
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/l	2 mg/l	-----	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	-----	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	-----	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	-----	-----	20 mg/l



## CONSENT ORDER

## ANNEXURE - II

## NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO <sub>2</sub> ), $\mu\text{g}/\text{m}^3$	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO <sub>2</sub> ), $\mu\text{g}/\text{m}^3$	Annual * 24 Hours **	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10 $\mu\text{m}$ ) or PM <sub>10</sub> , $\mu\text{g}/\text{m}^3$	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5 $\mu\text{m}$ ) or PM <sub>2.5</sub> , $\mu\text{g}/\text{m}^3$	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O <sub>3</sub> ), $\mu\text{g}/\text{m}^3$	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb), $\mu\text{g}/\text{m}^3$	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
7.	Carbon Monoxide (CO), $\text{mg}/\text{m}^3$	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive infra Red (NDIR) Spectroscopy
8.	Ammonia (NH <sub>3</sub> ), $\mu\text{g}/\text{m}^3$	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C <sub>6</sub> H <sub>6</sub> ), $\mu\text{g}/\text{m}^3$	Annual *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)-Particulate phase only, $\text{ng}/\text{m}^3$	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), $\text{ng}/\text{m}^3$	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni), $\text{ng}/\text{m}^3$	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

- \*\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.
- \*\* 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.



CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MoPP))

BY REGD. POST WITH AD

## STATE POLLUTION CONTROL BOARD, ODISHA

(DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA)  
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012  
Phone-2561909, Fax: 2562832, 2566935 E-mail: [paribesh1@ospcb.org](mailto:paribesh1@ospcb.org), Website: [www.ospcb.org](http://www.ospcb.org)

### CONSENT ORDER

No. 5310 / IND-I-CON-6419 Dt. 31/3/2023 /

CONSENT ORDER NO. 2794.

Sub : Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.

Ref : Your online application ID No. 4586956, Dtd.29-12-2022 and online reply dated 29.03.2023.

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: M/s Indian Rare Earths Ltd. (Monazite Processing Plant (MoPP))

Name of the Occupier & Designation: Sri S. S. Kumar, Executive Director

Address: Orissa Sands Complex, PO: Matikhalo, Chhatrapur, Dist: Ganjam-751045

*This consent order supersedes the earlier consent order issued vide Board's Letter No.2304, dtd.03.03.2018.*

#### Details of Products Manufactured:

Sl. No.	Product	Quantity
1.	Tri-Sodium Phosphate	13,500 TPA
2.	Rare Earths Chloride	10,375 TPA
3.	Ammonium Di-Uranate	26 TPA
4.	Thorium Oxalate	2,000 TPA
5.	Thorium Nitrate	150 TPA

This consent order is valid for the period upto 31.03.2024.

This consent order is valid for the specified outlets, discharge quantity and quality of effluents (ii) quantity of emission and its quality, specified chimney / stack (iii) quantity of solid waste and its disposal as specified below.

This consent is granted subject to the General and Special Conditions stipulated below:



**CONSENT ORDER**  
**M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))**

**A. Discharge permitted through the following outlet subject to the standard**

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Prescribed Standard			
				pH	SS (mg/l)	BOD (mg/l)	COD (mg/l)
1	Process effluent treated in the Effluent Treatment Plant	Stored in pond and recycled in Mineral Separation Unit	30 KLD	5.5 to 9.0	100	30	250

**B. Emission permitted through the following stack subject to the prescribed standard**

Chimney Stack No.	Description of Stack (Stack Attached to)	Stack height (m)	Quantity of emission (M <sup>3</sup> /hr)	Prescribed Standard
				Particulate Matter (PM) in mg/Nm <sup>3</sup>
1	Bag filter of boiler	40.0	40,460	150
2	Scrubber of Rare Earth Chloride Plant	20.0	15,000	150
3	Scrubber of Active Plant	25.0	25,000	150

**C. Disposal of solid waste permitted in the following manner**

Sl. No.	Type of Solid waste	Quantity generated (Metric Tonnel/ Month)	Quantity to be reused on site (TPM)	Quantity to be reused off site (TPM)	Quantity disposed off (TPM)	Description of disposal site
01.	Lead-Barium Mixed Cake	600	--	--	--	To be disposed off in FRP lined RCC underground trenches
02.	ETP Cake	50	--	--	--	Secured Landfill
03.	Thorium Oxalate	2,000	--	--	--	To be disposed in RCC trenches by pumping
04.	Insoluble Sand Wastes (Muck)	1,200	--	--	--	To be disposed off in FRP lined RCC trenches
05.	Iron Carbonate (Iron Cake)	2,500	--	--	--	To be disposed off in FRP lined RCC trenches
06.	Boiler Ash	14,850	--	--	--	Low land filling within plant premises

FRP lined RCC underground trenches are as per guideline of Atomic Energy Ministry and monitored by them.



**CONSENT ORDER**  
M/S INDIAN RARE EARTH LTD. (MONAZITE PROCESSING PLANT (MOPPI))

**D. GENERAL CONDITIONS FOR ALL UNITS**

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground for liable to review/variation/revocation of the consent order under section 27 of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The occupier would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / products / manufacturing process or quantity / quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order without any negligence on his/her part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. The applicant shall display suitable caution board at the place where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
12. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
13. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
15. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed impervious.
16. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
17. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
18. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the occupier must adopt alternate satisfactory treatment and disposal measures.
19. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
20. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
21. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Acts or Rules made therein.
22. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.



**CONSENT ORDER**

**M/S. INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))**

23. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
24. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
25. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner so as to meet the standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
26. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
27. There shall not be any fugitive or episodal discharge from the premises.
28. In case of such episodal discharge/emissions the occupier shall take immediate action to bring down the emission within the limits prescribed by the Board and stop the operation of the plant if required. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
29. The applicant shall keep the premises and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
30. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned shall be reported to the Headquarters and Regional Office of the Board by E-mail within 2 hours of its occurrence.
31. The occupier has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
32. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the shall be disposed off scientifically to the satisfaction of the Board.
33. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
  - i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
  - ii) Controlled incineration, wherever possible in case of combustible organic material.
  - iii) Composting, in case of bio-degradable material.
34. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
35. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
36. The applicant, his/hers/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
37. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
38. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
39. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
40. In case the consent fee is revised during this period, the occupier shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
41. The occupier shall comply to the conditions stipulated in CTE order issued by Odisha State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF&CC, Govt. of India.
42. The occupier shall abide by E(P) Act, 1986 and Rules framed there-under.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.



**CONSENT ORDER**  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

**GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs.50 CRORES,  
AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A)**

1. The applicant shall analyse the effluent / emissions and Ambient Air Quality every month through approved laboratory for the parameters indicated in TABLE- 'B', 'C' & Part -'B' as mentioned in this order and shall furnish the report thereof to the Board on monthly basis
2. The following information shall be forwarded to the Member Secretary on or before 10<sup>th</sup> of every month.
  - a) Performance / progress of the treatment plant.
  - b) Monthly statement of daily discharge of domestic and/or trade effluent.
3. Non-compliance with effluent limitations
  - a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
    - i) Causes of non-compliance
    - ii) A description of the non-compliance discharge including its impact on the receiving waters.
    - iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
    - iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
    - v) Steps to be taken by the applicant too prevent the condition of non-compliance.
  - b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
  - c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.
4. Proper housekeeping shall be maintained inside the factory premises including process areas by a dedicated team.
5. The occupier must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.
6. The occupier shall engage dedicated qualified manpower to ensure continuous and effective operation of online stack / Ambient Air Quality / Effluent monitoring stations for maintenance of database, real time data transfer to SPCB server, data analysis and co-ordination with concerned personnel of process units for taking corrective measures in case of non-compliances and to respond to the instructions of SPCB in this matter.



CONSENT ORDER  
M/S. INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

**E. SPECIAL CONDITIONS:**

- 1) The treated effluent after meeting the standard prescribed for surface water discharge mentioned in Section-B of this order shall be stored in lined pond inside the factory premises & shall be reused in the Mineral Processing Plant (MSP) and shall not be discharged to outside.
  - 2) Wastewater from the process shall be collected in collection sump and treated in the Effluent Treatment Plant (ETP) & shall be used in Mineral Separation Plant.
  - 3) Storm water drain shall be separated from effluent drain.
  - 4) The scrubbed liquid from wet scrubber shall be adequately treated and recycled.
  - 5) DM plant effluent shall be treated adequately & recycled.
  - 6) The cooling water shall be treated completely and recycled and in no case there shall be any discharge to outside.
  - 7) The domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.
  - 8) Solid waste so generated from the plant shall be disposed off in RCC trenches as per the provisions of Energy (Safe Disposal of Radioactive Waste) Rules, 1987.
  - 9) The industry shall abide by all the provisions of E(P) Act, 1986 and rules framed thereunder.
  - 10) The unit shall obtain authorization from the Board under the Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016.
  - 11) Process emission from storage tanks of HCL, Caustic Lye, Nitric Acid, Solvents and Reaction tanks, Mixture settlers shall be treated in wet scrubber. The scrubbed liquid shall be treated in adequately in Effluent Treatment Plant.
  - 12) The height of the stack attached to DG set shall conform the followings :
    - $H = h + 0.2\sqrt{KVA}$
    - h = Height of building where DG set is installed in meter
    - KVA = capacity of DG Set
    - H = Height of the stack in meter from ground level.
-



CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPPI))

- 13) The industry shall develop a green belt along its boundary and plant trees in vacant areas available inside premises.
- 14) The industry shall install atleast 3 nos. of online Continuous Ambient Air Quality Monitoring Station (CAAQMS) around the industry to monitor important parameters. The location of monitoring stations shall be finalized in consultation with Regional Officer, State Pollution Control Board, Berhampur.
- 15) In case the consent fees is revised upwards during this period of consent, the unit shall pay the differential amount to the Board (for remaining years) to keep the consent order in force. If the industry fails to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
- 16) The Board reserves the right to revoke / refuse consent at any time during this period incase any violation is observed and to modify / stipulate additional conditions as deemed appropriate.

ADDITIONAL CONDITIONS:

- 1) Adequate numbers of water sprinklers shall be installed along the raw material handling yards/coal handling area to control fugitive dust emission.
- 2) The unit shall also deploy adequate capacity mobile water tanker for dust suppression in internal roads and other work zone areas.
- 3) The unit shall install dry fog dust suppression systems at feed hopper, crushing, screening and other material transfer points of coal handling circuit of Boiler house for dust suppression.
- 4) The unit shall install automated dosing systems at ETP for better performance.
- 5) The unit shall periodically monitor the health of lining of holding tanks of ETP, pipelines, RCC trenches to prevent seepage of contaminated effluents.
- 6) Radioactivity level of treated water of ETP shall be conducted in each batch before pumping to common holding pond of MSP for recycling.
- 7) The unit shall always have a buffer space from top in each RCC trench during disposal of contaminated wastes. The active trenches shall be covered under shed to prevent flooding during rain.
- 8) The unit shall take up adequate measure for routine health checkup of its employees/workers and the people residing in the neighborhood of the plant free of cost.



CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

- 9) The unit shall conduct regular monitoring of ground water level and quality by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.
- 10) Solid waste so generated from the plant shall be strictly disposed in RCC trenches as per the provisions of Atomic Energy (Safe Disposal of Radioactive Waste) Rules 1987.
- 11) The unit shall conduct regular monitoring of ground water level and quality around the RCC trenches of disposal sites.

To

The Executive Director,  
M/s Indian Rare Earths Ltd.  
(Monazite Processing Plant (MoPP),  
Orissa Sands Complex, PO: Matikhalo,  
Chhatrapur, Dist: Ganjam, Odisha

*Dr. I.*  
21/03/23

CHIEF ENV. ENGINEER (M)  
STATE POLLUTION CONTROL BOARD, ODISHA

Memo No. 5311 /Dt. 31/3/2023

Copy forwarded to :

- i) Regional Officer, SPC Board, Berhampur
- ii) District Collector, Ganjam
- iii) DFO, Ganjam
- iv) CES, Central Laboratory, SPC Board, Bhubaneswar
- v) ACEE, H.S.M. Cell, (Head Office)
- vi) Consent Register

*S. Saha*  
31/3/2023

ADDL. CHIEF ENV. ENGINEER  
STATE POLLUTION CONTROL BOARD, ODISHA

*cc/c*  
*22*



CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

GENERAL STANDARDS FOR DISCHARGE OF  
ENVIRONMENT POLLUTANTS

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CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

GENERAL STANDARDS FOR DISCHARGE OF  
ENVIRONMENTAL POLLUTANTS PART - A : EFFLUENTS

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Coastal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/ Odourless as far as practicable	--	See 6 of Annex-1	See 5 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	a. For process wastewater - 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	--	--	5.5 to 9.0
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	--	--	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	--	--	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	--	50
10.	Total Kjeldahl nitrogen (as NH <sub>3</sub> ) mg/l max.	100	--	--	100
11.	Free ammonia (as NH <sub>3</sub> ) mg/l max.	5.0	--	--	5.0
12.	Biochemical Oxygen Demand (5 days at 20°C) mg/l max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/l max.	250	--	--	250
14.	Arsenic (as As) mg/l max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/l max.	0.01	0.01	--	0.001



**CONSENT ORDER**  
**M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))**

Sl. No.	Parameters	Standards			
		Inland surface	Public sewers	Land for Irrigation	Marine Coastal Areas
		(a)	(b)	(c)	(d)
16.	Lead (as pb) mg/l max.	01.	1.0	--	2.0
17.	Cardmium (as Cd) mg/l max.	2.0	1.0	--	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	--	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	--	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	--	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	--	0.05
23.	Nickel (as Ni) mg/l max.	3.0	3.0	--	5.0
24.	Cyanide (as CN) mg/l max.	0.2	2.0	0.2	0.02
25.	Fluoride (as F) mg/l max.	2.0	15	--	15
26.	Dissolved Phosphates (as P) mg/l max.	5.0	--	--	--
27.	Sulphide (as S) mg/l max.	2.0	--	--	5.0
28.	Phenolic compounds as (C <sub>6</sub> H <sub>5</sub> OH) mg/l max.	1.0	5.0	--	5.0
29.	Radioactive materials				
	a. Alpha emitter micro curie/ml.	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>8</sup>	10 <sup>7</sup>
	b. Beta emitter micro curie/ml.	10 <sup>8</sup>	10 <sup>6</sup>	10 <sup>7</sup>	10 <sup>6</sup>
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/l	2 mg/l	--	2 mg/l
32.	Iron (Fe)	3 mg/l	3 mg/l	--	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	--	0.2 mg/l
34.	Nitrate Nitrogen	10 mg/l	--	--	20 mg/l



CONSENT ORDER  
M/S INDIAN RARE EARTHS LTD. (MONAZITE PROCESSING PLANT (MOPP))

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual * 24 Hours **	40 80	30 80	- Modified Jacobs & Hochheiser (Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM <sub>10</sub> µg/m <sup>3</sup>	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or PM <sub>2.5</sub> µg/m <sup>3</sup>	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb) µg/m <sup>3</sup>	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper - ED-XRF using Teflon filter
7.	Carbon Monoxide (CO) mg/m <sup>3</sup>	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8.	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Annual *	05	05	-Gas Chromatography based continuous analyzer Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)- Particulate phase only, mg/m <sup>3</sup>	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), mg/m <sup>3</sup>	Annual*	06	06	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper
12.	Nickel (Ni), mg/m <sup>3</sup>	Annual*	20	20	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper

\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive

Annexure - VI



**DEPUTY DIRECTOR OF MINES GANJAM CIRCLE  
STEEL AND MINES DEPARTMENT, GOVT. OF ODISHA  
BERHAMPUR -760011**

Email: [mo.berhampur@orissaminerals.gov.in](mailto:mo.berhampur@orissaminerals.gov.in)

No. 313 / Mines

DL 24.04.23

From

Deputy Director of Mines,  
Ganjam Circle, Brahmapur.

To

The Collector & District Magistrate,  
Ganjam, Chatrapur.

Sub:

Report regarding Status of Mining lease and compliance to mining operation including development of green belt in backfilled mined out area of M/s IRE Limited.

Ref:

1. letter No.1075 (4)/Legal-58/2023, dt.11.04.2023 of SPCB, Odisha, Berhampur Division.

2. O.A.No.05/2023PS- Surendra Panigrahi Vs State of Odisha - Indian Rare Earth Limited, Matter - regarding.

Sir,

With reference to the letters and subject cited above please find the detail report regarding Status of Mining lease and compliance to mining operation including development of green belt in backfilled mined out area of M/s IRE Limited attached separately.

This is for your kind information and necessary action.

Yours faithfully,

*[Signature]*  
Deputy Director of Mines  
Ganjam Circle, Berhampur

Encl: As above;

*ok*

Memo No. 314 / Mines,

DL 24.4.23

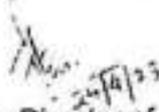
Copy along with the report forwarded to Regional Officer, SPCB, Berhampur for compilation and necessary action.

*[Signature]*  
Deputy Director of Mines  
Ganjam Circle, Berhampur

Memo No. 315 / Mines,

DL. 21.4.23

Copy alongwith the proceedings of the meeting of the joint committee members held on 12.04.2023 (Wednesday) at 10.30 AM in the Sadhabana Conference Hall of Collectorate, Ganjam Constituted by Hon'ble NGT, PB, New Delhi vide order dt.21.02.2023 in O.A.No.05/2023 submitted to the Director of Mines & Geology, Odisha, Shubaneswar for favour of information and further instruction.

  
Deputy Director of Mines  
Ganjam Circle, Berhampur

Detail Report regarding Status of Mining lease and compliance to mining operation including development of green belt in backfilled mined out area of M/s IRE Limited.

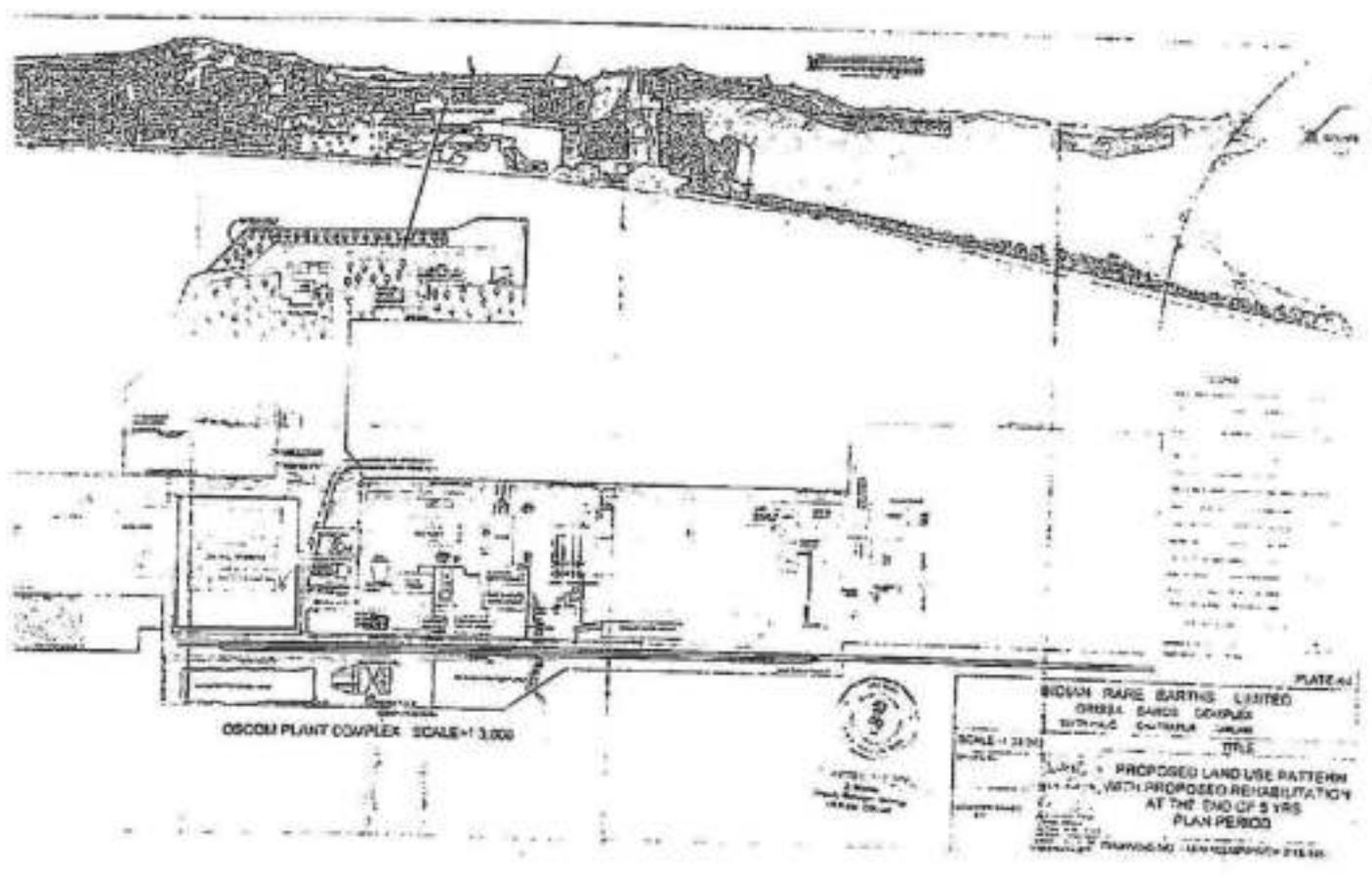
**Status of Mining Lease**

The Mining lease in favour of M/S IRE Ltd for Ilmenite, Rutile, Zircon, Monazite, Garnet, Quartz & Sillimanite over an area of Acs.7400.00 in Village Uppulaputy, Basanaputi, Zimi, Agasti Nuagaon, Humuribana, Humuri Tampara, Arjipalli, Kanamana, Matkhalo, Badaputi, Sagarpur, and Nagarpur of Ganjam district was granted vide Govt. Proceeding No.6038/MG dt.07.06.1973 for a period of 20 years and subsequently revised to 2877.76 Hects or 7111.00 Acres, vide Government proceeding No -10468/MG dt. 24.09.1975. The first renewal of Mining Lease over 2618.490 Hects was granted vide dept. proceeding No -10663 dt.25.11.2002 w.e.f dt.21.03.1999 for another 20 years. The areas reduced to 2464.054 Hects vide this Department GP No.9159 dt.15.09.2005 accordingly the lease deed was executed on Dt. 27.10.2005 over an area of 2464.054 Hects or 6088.670 acres w.e.f 21.03.1999 for another period of 20 years i.e. up to dt.20.03.2019.

Further the extensions of mining lease vide Govt of Odisha Department of Steel and Mines letter No.4409/SM/BBSR/dt.01.06.2018 over area of 2464.054 hecets was made for period from 21.03.1919 to 31.03.2047 for beach sand minerals.

**Mining operation including reclamation and plantation**

- Total area put for mining operation for the period 2019 to 2024 is 135 hecets.
- In mine operation the excavation / dredging and back filling of mined out area move simultaneously. Total mined out mineral concentrate is transported to mineral separation plant in slurry from through pipe. For surface operation, the trees are being cleared off as per requirement.
- Dredging method of Mining is adopted for the excavation of beach sand mineral deposit. Mining of raw sand and subsequent processing of the same in spirals for recovery of heavy minerals present in the raw sand, viz Ilmenite, Rutile, Zircon, Monazite, Sillimanite and Garnet.
- As per approved mining plan the proposed land used pattern with proposed rehabilitation at the end of 5 (Five) Years i.e., 2023-24 plan period enclosed as *Annexure-1*.
- The details of actual creation of green belt and reclamation data for the year 2018-19 to 2022-23 enclosed as *Annexure-2*.





## OFFICE OF THE

## DIVISIONAL FOREST OFFICER, BRAHMAPUR FOREST DIVISION

At Courtpara Square, Brahmapur- 760 004 Phone-0680 2281354, Mobile - 7653908594 e-mail-[dfobhmpm@yahoo.co.in](mailto:dfobhmpm@yahoo.co.in)

Letter No. 316 / 05 F-

Dated, Brahmapur the 29 <sup>th</sup> April 2023

To

The Regional Officer  
State Pollution Control Board  
Brahmapur, Ganjam

Sub:

OA No. 05/2023/PB- Surendra Panigrahi vs State of Odisha -India  
Rare Earth Ltd. Matter

Ref:

Letter No. 2899/VII-L-Misc-989, Dated. 27.02.2023 of State pollution  
CoOntrol Board, Odisha, Bhubaneswar

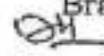
Sir,

With reference to the subject cited above, i am submitted herewith the compliance report of the OA No.05/2023/PB-Surendra Panigrahi vrs- State of Odisha- Indian Rare Earth Limited along with its enclosures for favour of information and necessary action.

Encl: As above

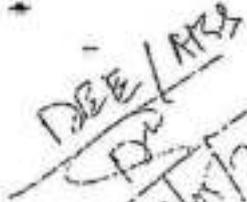
Yours faithfully

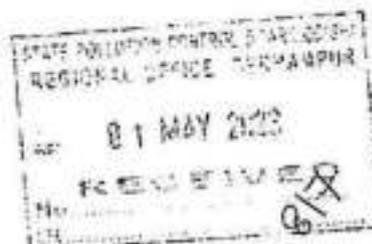
  
Divisional Forest Officer  
Brahmapur Division

Memo No. 3162 / dated 29.04.2023 

Copy forwarded to the Member Secretary, Sate Pollution Control Board, Odisha, Bhubaneswar for information and necessary action with reference to his letter No. 2899 dated 27.02.2023.

  
Divisional Forest Officer  
Brahmapur Division

  
DDE/ARS  
C/O/2023  

**Status of Forest Clearance:** The project has got its Stage-I approval vide F.No. 8-15/2018-FC dated 18.10.2018 and stage-II approval order vide F. No. 8-15/2018 FC dated 15.12.2022. The user agency has submitted compliance to the stage-II approval order vide letter No. IREL (O)/FC/Stage-II compliance/2022-23/693"A" dated 27.03.2023 which is under scrutiny.

**Status of Compensatory Afforestation:** The user agency has deposited Rs-5,03,84,900.00 towards cost of Compensatory Afforestation and Rs-2,89,24,300.00 towards additional Compensatory Afforestation. In addition to they have deposited Rs- 81, 52,309.00 towards 1.5 times of Safety zone identified in degraded forestland. The Compensatory Afforestation will be taken up in Ranibar DPF over 320 Ha. in ANR mode @ 200 plant per Ha and the Additional Compensatory Afforestation will be taken up in Dumangiri DPF over 120 Ha in ANR mode @ 800 plant per Ha. The 1.5 safety zone will be taken up in Antaraipur DPF over 55 Ha @ 500 plant per Ha. After realization of the funds from State CAMPA the plantations will be taken up.

**Tree felling permission for mining operation in forest and non-forest land:** Total 14679 Nos of trees were enumerated on 2014 in this office over the forestland for felling for the mining operation. However, till date no felling permission has been issued for felling of trees in the 157702 Ha for which stage-I & Stage-II has been granted by the MoEF & CC. However, from the non-forest land the user agency has conducted tree enumeration in presence of Forest Officials, Revenue Officials, and the occupier of that land and that enumeration list is vetted by the Tahasildar cum compensation officer & the list for last 5 years is attached.

**Status of green belt development by the lessee inside and outside mining lease area:** The user agency has planted 286400 Nos seedlings in mined out area and 4700 Nos outside of mines area against the 40139 nos felling of trees for the mining purpose.

Sir,

Pl. find the details of trees felled after enumeration & finalization compensation (in non-forest land) for undertaking mining operation by IREL in last five years.

Year	Area put for Mining operation(in acres)	No of trees felled for undertaking mining operation
2018-19	119.21 ✓	11102 ✓
2019-20	73.67 ✓	6967 ✓
2020-21	71.21 ✓	6615 ✓
2021-22	86.27 ✓	7672 ✓
2022-23	82.89 ✓	7783 ✓
<b>Total</b>	<b>433.25</b>	<b>40139</b>

सादर/Regards,

भवदीय/Your Sincerely,

मनोज कुमार नायक /Manoj Kumar Nayak

प्रबन्धक (खान सर्वेक्षण)/Manager (Mines Survey)

संसाधन/Resources

आईआरईएल (इंडिया) लिमिटेड/IREL (India) Limited

ऑस्कॉम/OSCOM

F. No. 8-15/2018-FC  
Government of India  
Ministry of Environment, Forests and Climate Change  
(FC Division)

Indira Paryavaran Bhawan,  
Aliganj, Jor Bag Road,  
New Del

Dated: 18<sup>th</sup> Oc

Co (Dev)

21/ In-principle approval



To,  
The Principal Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

Sub: Proposal for diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand.

Sir,  
I am directed to refer to the State Government's letter No. 10F (Cons) 7/2018/6146/F&E dated 16.03.2018 and 10F (Cons) 7/2018/18353/F&E dated 23.08.2018 submitting the above subject proposal for seeking prior approval of the Central Government under Section-2 (ii) & Section 2(iii) of FCA, 1980 respectively *in-connection with* diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand, and to say that the said proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act.

2. After careful consideration of the proposal of the State Government of Odisha and on the basis of the recommendations of the Forest Advisory Committee, *In-principle* approval is hereby granted for diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under Section-2 (ii) & Section 2(iii) of the Forest (Conservation) Act, 1980 subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) The approval for the diversion of forest land shall be subject to CRZ clearance if applicable.
- (iii) The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 Km length of sea shore is the location of nesting, out of this 5 Km length of sea shore with large sand beds on both sides of Rushikulya river is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance (2.5 km on both sides of Rushikulya river mouth) to be religiously conserved without any disturbance as prescribed by Chief Wildlife Warden, Odisha via letter No. 3536/WL(C)(SSP)-149/2012 dated 11<sup>th</sup> May, 2012.

- (iv) The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species, accordingly the existing thorny/shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue planting. However, soil moisture conservation should be given prime focus in possible creation of small water bodies and planting shall also be limited to confined to local thorny, fruit bearing species only.
- (v) User agency shall submit approved R&R plan before stage II approval. The User Agency shall prepare the R & R Plan as per the R&R policy of State Government in consonance with National R & R policy, Government of India before commencement of the project work and implementation. The said R&R plan will be monitored by the State Government / Regional office of MoEF&CC along with indicators for monitoring and expected observable milestone.
- (vi) 320 ha of degraded forest land has been identified in Dumanagiri DPF of Khajikote range in Berhampur Division for taking up ANR with gap plantation @ 200 plants per ha with 10 years maintenance, Bamboo fencing around plantation and soil moisture conservation with staggered trenches. This area will accommodate only 64000 plants. To compensate further balance of plantation (800 plants per ha), 120 ha degraded forest land has been identified in Ranibar DPF of Rambha Section, Khajikote Range of Berhampur Division to accommodate balance ceiling 93,702 plants (157,702 ha x 1060 plants per ha. = 157702 plants @ 64000 plants) as per MoEF & CC Guideline dated 08.11.2017. The GPS reading of this plantation area at Ranibar has not yet been submitted. The same may be submitted prior to stage II approval.
- (vii) It is learnt that the lease deed was executed on 27.10.2005 having validity from 21.03.1999 to 20.03.2019 during first RML.DLC forest land is a part of this lease. The DLC land was identified in Odisha in 1998. State government may clarify how the lease was executed (which include DLC forest land) in 2005 without prior approval of Government of India. No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.
- (viii) No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.
- (ix) The project proponent has to pay full NPV for the area.
- (x) The grant of permission under section 2(iii) of Forest (Conservation) Act 1980 will not confer any right on the project proponent for diversion under section 2(ii) of Forest (Conservation) Act 1980.
- (xi) The forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.
- (xii) State Government to confirm complete compliance of the provision of FRA 2006 prior to executing/ granting forest area on lease.
- (xiii) The permission under section 2(iii) of Forest (Conservation) Act 1980 is subject to confirmation of NPV amount for the area from CAMPA.
- (xiv) 25% of the Cost of CA will be deposited in addition to the CA cost for soil and moisture conservation works at CA site
- (xv) The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale;
- (xvi) The user agency should ensure that the compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate

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- bank online only. Amount deposited through other mode will not be accepted in compliance of the Stage- I clearance;
- (xvii) The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department CAMPA account of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- (xviii) The User Agency shall transfer online, the Net Present Value (NPV) of the forest land being diverted under this proposal, as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009. The requisite funds shall be transferred through online portal into CAMPA account of the State Concerned;
- (xix) At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (xx) Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 ] shall be done within three years at the project cost as per approved scheme. Besides this afforestation on diverted forest land to be done elsewhere measuring one-half times the area of the safety zone shall also be done at the project cost. The degraded forest land to be protected will be informed in the clearance. The protection, fencing and afforestation will be done within three years from the date of Stage-II clearance.
- (xxi) Period of diversion of the said forest land under this approval shall be for a maximum of 20 years;
- (xxii) The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
- (xxiii) No labour camp shall be established on the forest land;
- (xxiv) The User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
- (xxv) The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates;
- (xxvi) The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed.
- (xxvii) The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government;
- (xxviii) The forest land shall not be used for any purpose other than that specified in the proposal;
- (xxix) The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
- (xxx) No damage to the forest and fauna...

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(xxxix) The State Government shall complete settlement of rights, in terms of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;

(xxxii) The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;

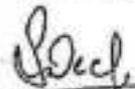
(xxxiii) The User Agency shall submit the annual self compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year;

(xxxiv) Any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and

(xxxv) The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project

After receipt of the report on the compliance to the conditions stipulated in the paragraph-2 above from the State Government of Odisha, final/stage-II approval for diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in Mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under Section-2 (ii) & Section 2(iii) of the Forest (Conservation) Act, 1980 will be considered by this Ministry.

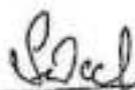
Yours faithfully,

  
(Sandeep Sharma) 16/10/18

Assistant Inspector General of Forests (FC)

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. The Nodal Officer, O/o the PCCF, Government of Government of Odisha, Bhubaneswar.
3. The Addl. PCCF (Central), Regional Office, Bhubaneswar
4. User Agency
5. File no. 8-58/2018-FC for record.
6. Monitoring Cell, of FC Division, MoEF&CC New Delhi.
7. Guard File

  
(Sandeep Sharma) 16/10/18

Assistant Inspector General of Forests (FC)

## OFFICE OF THE

## DIVISIONAL FOREST OFFICER, BRAHMAPUR FOREST DIVISION

At Courtpetta Square, Brahmapur- 760 004 Phone-0680 2281354, Mobile - 7653908594 e-mail-[dfo@bhmppa@yahoo.co.in](mailto:dfo@bhmppa@yahoo.co.in)

Memo No. 9699 / FC Act

Dated, Brahmapur the 29<sup>th</sup> October 2021

To

The Regional Chief Conservator of Forests  
Brahmapur Circle, Brahmapur

Sub:

Proposal for diversion of 157.702 Ha of DLC Forestland in Mouza Humuri Bana, Agasti Nuagam and Arjipalli under Chatrapur Tahasil of Ganjam District under Brahmapur Forest Division for Indian Rare Earths Limited, OSCOM- Submission of status of compliance to the Stage-I approval order of MoEF & CC, GOI- regarding.

Ref:

Stage-I approval order accorded by the MoEF & CC, GOI vide F. No.8-15/2018-FC dated 18.10.2018 communicated memo No. 23429 dated 01.11.2018 of the Special Secretary to Govt., F & E Department. Memo No. 16697 dated 27.09.2021 of the Conservator of Forests (Nodal), O/o -the PrCCF, Odisha

In inviting a kind reference to the memo on the subject cited above, the status of compliance to the Stage-I approval order issued in favour of M/S- IREL Limited is furnished below

1. *Condition No. i. Legal status of the diverted forestland shall remain unchanged.*

The user agency has submitted compliance that the legal status of the forestland proposed for diversion shall remain unchanged. The undertaking duly countersigned by the undersigned is enclosed as Annexure-I.

2. *Condition No. ii. The approval for the diversion of forestland shall be subject to CRZ clearance, if applicable*

The CRZ Clearance has been granted to M/s Indian Rare Earths Limited for Capacity Expansion of Mining and Mineral Separation Units (CEMMU) project at Matikhola under Chatrapur Tahasil of Ganjam District from the State Coastal Zone Management Authority (OSZMA) in their meeting held on 07.05.2012 & 08.05.2012 vide letter reference no 13716 / F& E dated 24.07.2012. The copy of the recommendation of OSCZMA is enclosed herewith in Annexure-II and the compliance thereof and under taking not to mine out the sand dunes are enclosed as Annexure- II (A) for reference.

3. *Condition No.iii. The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 Km length of sea shore is the location of nesting, out of this 5 km length of sea shore with large sand beds on both sides of Rushikulya River is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance ( 2.5 km on both sides of Rushikulya river mouth) to be religiously conserved without any disturbance as prescribed by Chief Wildlife Warden, Odisha vide letter No. 3536/WL(C)(SSP)-149/2012 dated 11<sup>th</sup> May, 2012.*

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An undertaking not to execute any Mining operation or Sand Extraction or habitat alteration or activities of similar nature within 5 (five) km zone of the nesting /mass nesting of endangered Olive Ridley sea turtle from Rushikulya river mouth area as prescribed by Chief Wildlife Warden, Odisha vide Letter No.3535/WL(C)(SSP)-149/2012, dated 11<sup>th</sup> May, 2012 has been furnished by M/s IREL (India) Limited in **Annexure-III**.

4. *Condition No. iv. The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species, accordingly the existing thorny/ shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.*

An undertaking to this effect has been furnished by the user agency to maintain the eco-system of proposed compensatory land which is a natural habitat of Peafowl and other shrub dwelling species without any alteration prioritizing soil and moisture conservation with possible creation of water bodies and avoiding undue over plantation is enclosed as **Annexure-IV**.

5. *Condition No. v. User agency shall submit approved R & R plan as before stage-II Approval. The user Agency shall prepare the R & R Plan as per the R & R policy of State Government in consonance with National R & R policy, Government of India before commencement of project work and implementation. The said R & R plan will be monitored by the State Government / Regional office of MoEF & CC along with indicators for monitoring and expected observable milestone.*

Rehabilitation and Resettlement Plan (R & R) has been prepared for the project affected families (PAFs) as per the directive issued by the Expert Appraisal Committee (Mining) of MoEF in line with OR&RP 2006 and NR&RP 2007. The recommendation of Rehabilitation & Periphery Development Advisory Committee (RPDAC) headed by RDC (SD), Brahmapur in respect of implementing the R & R plan is enclosed herewith in **Annexure-V**.

6. *Condition No. vi. 320 Ha of degraded forest land has been identified in Dumangiri DPF of Khallikote Range in Brahmapur Division for taking up ANR with gap plantation @ 200 plants per ha with 10 years maintenance, Bamboo fencing around plantation and soil moisture conservation with staggered trenches. This area will accommodate only 64000 plants. To compensate further balance of plantation (800 plants per ha), 120 ha degrades forest land has been identified in Ranibar DPF of Rambha Section, Khallikote Range of Brahmapur Division to accommodate balance ceiling 93,702 plants (157.702 ha x 1000 plants per ha. = 157702 plants -64000 plants) as per MoEF & CC Guideline dated 08.11.2017. The GPS reading of this plantation area at Ranibar has not yet been submitted. The same may be submitted prior to stage II approval.*

As per stipulation the Scheme for Compensatory Afforestation over 320 Ha of degraded Forestland in Dumangiri DPF (in ANR mode @ 200 plant/ Hector) and 120 Ha of degraded Forestland in Ranibar "A" DPF (in ANR mode @ 800 plant/ Hector) (to accommodate balance ceiling 93,702 plants (157.702 ha x 1000 plants per ha. = 157702 plants -64000 plants) as per MoEF & CC Guideline dated 08.11.2017.) has been prepared by the user agency at present wage rate i.e, Rs- 311/- per manday with 10 years maintenance and the same has also been approved by the Additional Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, Forest Conservation Act with a financial outlay of Rs- 4,51,67,268/- and Rs- 2,04,86,299/- respectively. Accordingly, the user agency has deposited the cost of Compensatory Afforestation amounting to Rs- 3,20,79,400/- vide UTR No.SBINR52020022500045314294197 dated 25.02.2020, Rs- 3,40,13,800/- vide UTR No. SBINR52021030314019324299469 dated 03.03.2021 and Rs- 73,77,500/- vide UTR No SBINR52021081637657721 dated 14.08.2021 in the Odisha CAMPA through e-payment system. The copy of the e-Challan is enclosed as Annexure-VI (A), Annexure- VI (B) & Annexure- VI (C)

Further, the GPS reading of plantation area at Ranibar "A" DPF as furnished by the user agency is enclosed as Annexure- VII.

As per the approved scheme the user agency has provided one computer with all accessories under the Infrastructure provisions. The user agency has submitted an undertaking to provide two numbers of motor cycles in kind. The undertaking duly submitted by the user agency is enclosed as Annexure-VI (D).

7. *Condition No.vii. It is learnt that the lease deed was executed on 27.10.2005 having validity from 21.03.1999 to 20.03.2019 during first RML. DLC forest land is a part of this lease. The DLC land was identified in Odisha in 1998. State government may clarify how the lease was executed (which include DLC forest land) in 2005 without prior approval of Government of India. No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.*

The user agency has submitted an undertaking that the forestland will not be physically diverted and they will not break any forestland until final approval under section 2(ii) of FCA is obtained. The user agency has also submitted a clarification regarding the lease of DLC forestland which is enclosed as Annexure- VIII.

8. *Condition No. viii No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2 (ii) of FCA is obtained.*

The user agency has submitted an undertaking that the forestland will not physically diverted and they will not break any forestland till the final approval under section 2(ii) of the Forest Conservation Act, 1980. The undertaking to this effect is enclosed as Annexure- IX.

9. *Condition No. ix. The project proponent has to pay full NPV for the area.*

The User agency has deposited the NPV of Rs.9, 87, 21,452/- (Rupees Nine Core Eighty Seven Lakhs twenty one thousand four hundred and fifty two) towards diversion of 157.702 Ha of DLC Forest land including 5.660 ha of DLC forest land in safety zone in Mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chatrapur Tahasil of Ganjam district, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand complex (OSCOM) @ Rs-6,26,000/- per Ha. The Amount has been deposited in the Head of Account "CAF, ORISSA A/C No. CA 1585CORP BANK" vide bank Draft bearing No.489157 dated. 10-08-2010 deposited in the SBI Brahmapur through RTGS. Copy of the payment towards the NPV is enclosed as Annexure-X. However, as per memo No. 16697 dated 27.09.2021 of the Conservator of Forests (Nodal), O/o- the PrCCF, Odisha, the user agency was demanded to pay the additional NPV of Rs- 1,64,01,008/- @ 7,30,000/- per Ha vide this Office memo No. 9112 dated 05.10.2021. In this connection, the user agency has submitted an undertaking to pay the additional NPV in due course of time after getting final approval from MoEF & CC, GOI and from their board of directors, which is submitted as Annexure-X (j).

10. *Condition No. x. The grant of permission under section 2(iii) of Forest (conservation) Act 1980 will not confer any right on the project proponent for diversion under section 2(ii) of Forest conservation) Act 1980.*

The user agency is agreed to the condition and furnished an undertaking in Annexure-XI not to exercise the rights conferred under section 2(iii) of Forest (Conservation) Act 1980 unlike under section 2(ii) of Forest (Conservation) Act 1980.

11. *Condition No. xi. The forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.*

The user agency is agreed to the condition and submitted an undertaking in Annexure-XII that the forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.

12. *Condition No. xii. State Government to confirm complete compliance of the provision of FRA 2006 prior to executing / granting forest area on lease.*

The State Government has completed the settlement of rights under FRA, 2006 and a certificate issued by the collector & DM, Ganjam to this effect as submitted by the user agency is enclosed in Annexure-XIII.

13. *Condition No. xiii. The permission under section 2(iii) of Forest (Conservation) Act 1980 is subject to confirmation of NPV amount for the area from CAMPA.*

The user agency has deposited full NPV value of the entire DLC forest area of 157.702 Ha @ Rs-6,26,000/- amounting to Rs.9,87,21,452/- (Rupees Nine Core Eighty Seven Lakhs Twenty One Thousand Four Hundred and Fifty Two) in the Head of Account " CAF, ORISSA A/C No. CA 1585CORP BANK" vide bank Draft bearing No.489157 dated. 10-08-2010 deposited in the SBI Brahmapur., copy of which is enclosed as **Annexure-X**. However, as per memo No. 16697 dated 27.09.2021 of the Conservator of Forests (Nodal), O/o- the PrCCF, Odisha, the user agency was demanded to pay the additional NPV of Rs- 1,64,01,008/- @ 7,30,000/- per Ha vide this Office memo No. 9112 dated 05.10.2021. In this connection, the user agency has submitted an undertaking to pay the additional NPV in due course of time after getting final approval from MoEF & CC, GOI and from their board of directors, which is submitted as **Annexure-X (i)**.

*14. Condition No. xiv 25% of the Cost of CA will be deposited in addition to the CA cost for soil and moisture conservation works at CA site.*

The user agency has deposited the 25% of the cost of CA as per approval of the Additional PrCCF, FD & Nodal, FC Act in the Ad-hoc CAMPA. Copy of the e-challan is enclosed as **Annexure-XIV**.

*15. Condition No. xv. The land identified for the purpose of CA shall be clearly depicted on a Survey of India TOPO-sheet of 1:50,000 scale.*

The land identified for the purpose of Compensatory Afforestation over 320 ha of degraded forest land in Dumangiri DPF of Khallikote Range and 120 of degraded Forest land in Ranibar-A DPF under Khallikote Range of this Division has been clearly depicted on a survey of India TOPO-sheet of 1:50,000 scale. The Map as submitted by the user agency is attached herewith as **Plate-1**.

*16. Condition No. xvi. The user agency should ensure that the compensatory levies (CA cost, NPV, etc.) are deposited through Challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance.*

The user agency has already paid Rs. 3, 20, 79,400/- towards the cost of compensatory Afforestation over 320 Ha of degraded forest land in Dumangiri DPF on dated. 25.02.2020 vide RTGS UTR No. SBINR52020022500045314294197 and Rs- 3,40,13,800/- towards the revised cost of Dumangiri and compensatory Afforestation cost over 120 Ha of degraded forestland in Ranibar "A" DPF and through e-payment mode. The user agency has also deposited an amount of Rs. 14, 29, 15,132/- towards cost of Regional Wildlife Management Plan @ 58,000/- per Ha for 2464.054 Ha of Mining Lease areas in ORRISA CAMPA on dtd.23.01.2020 through RTGS having UTR No. SBINR52020012300063480 on e-payment mode. The copies of the e-Challan and the deposit slip are enclosed herewith in **Annexure-XV** for reference. However, the user agency has submitted an undertaking to pay the differential amount of Rs- 5,91,37,296/- as per the revise rate towards implementation of Regional Wildlife Management Plan (RWMP) after getting approval from their board of directors, which is enclosed as **Annexure-XV(i)** The NPV value of the DLC forestland of 157.702 Ha @ Rs-6,26,000/- amounting to Rs.9,87,21,452/- (Rupees Nine core eighty seven Lakhs twenty one thousand four

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hundred and fifty two) has already been deposited in the Head of Account "CAF, ORISSA A/C No. CA 1585CORP BANK" vide bank Draft bearing No.489157 dated. 10-08-2010 prior to introduction of e-payment mode i.e, during the year 2009.

However M/s IREL (India) Limited has submitted an undertaking in Annexure- XVI to deposit compensatory levies (CA cost, NPV etc.) applicable if any through Challan generated online on web portal and shall deposit in appropriate bank online only.

*17. Condition No. xvii The User Agency shall transfer the cost of raising and maintaining the compensatory Afforestation at the current wage rate in consultation with State Forest Department in CAMPA account of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.*

The user agency has transferred the cost of raising and maintaining the compensatory Afforestation at the current wage rate in consultation with State Forest Department in CAMPA Account of the concerned State through online portal after issuance of demand Notice in this regard from competent authority. The provision for anticipated cost increase for works scheduled for subsequent years have been included in the CA schemes so prepared and duly approved by the Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, Forest Conservation Act.

*18. Condition No. xviii The User Agency shall transfer online, the Net Present Value (NPV) of the forest land being diverted under this proposal, as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009. The requisite funds shall be transferred through online portal into CAMPA account of the State Concerned.*

The user agency has already transferred the cost of NPV of 157.702 Ha of DLC forestland in the Head of Account "CAF, ORISSA A/C No. CA 1585CORP BANK" vide Bank Draft bearing No.489157 dated. 10-08-2010 deposited in the SBI Brahmapur as mentioned in Annexure- X. However, as per memo No. 16697 dated 27.09.2021 of the Conservator of Forests (Nodal), O/o- the PrCCF, Odisha, the user agency was demanded to pay the additional NPV of Rs- 1,64,01,008/- @ 7,30,000/- per Ha vide this Office memo No. 9112 dated 05.10.2021. In this connection, the user agency has submitted an undertaking to pay the additional NPV in due course of time after getting final approval from MoEF & CC, GOI and from their board of directors, which is submitted as Annexure-X (i).

*19. Condition No. xix At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.*

As per stipulation the user agency has furnished an undertaking to pay the additional amount of NPV if so determined in case of hike of present rate of NPV as per the final decision of the Hon'ble Supreme Court of India. The undertaking furnished by the user agency is enclosed herewith as Annexure- XVI.

20. Condition No. xx Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done within three years at the project cost as per approved scheme. Besides this Afforestation on degraded forest land to be selected elsewhere measuring one & a half times the area under safety zone shall also be done at the project cost. The degraded forest land (DFL) so selected will be informed to the MoEF & CC with shape files and Afforestation will be done within three years from the date of Stage-II clearance.

As per stipulation the user agency has reported that the user agency has taken up plantation activities over the mined out area and due to the geographical situation of the mining area it is not possible to take up the 7.5 meter strip plantation activities as safety zone within the mining lease area. Accordingly, the same was verified in the field and it is recommended to take-up the plantation elsewhere as per the approval of the competent Authority. The site inspection report furnished by the Assistant Conservator of Forests of this Division is enclosed as Annexure- XVII (A).

Further, as per stipulation the 1.5 times of safety zone has been identified in Antaripur DPP under Brahmapur Division. The shape file of the identified degraded forestland is furnished in a CD and enclosed herewith. Further, the scheme for 1.5 times of the safety zone duly approved by the Regional Chief Conservator of Forests, Brahmapur Circle vide his memo No. 1829 dated 22.04.2021 is enclosed for reference. The approved scheme and the undertaking to take up the Afforestation over 1.5 times of safety Zone area is enclosed as Annexure- XVII (B).

21. Condition No. xxi Period of diversion of the said forest land under this approval shall be for a maximum of 20 years.

The user agency has submitted an undertaking to complete the mining activities within 20 years. The undertaking furnished by the user agency is enclosed as Annexure- XVIII.

22. Condition No. xxii The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required.

The user agency has already got Environmental Clearance from MoEF & CC as per the provisions laid down in Environment Protection Act, 1986 vide letter reference no. J-11015/528/2007-IA.II (M), dated-11/01/2019 for Enhancement of capacity of beach sand minerals for 75, 00,000 TPA to be processed in Mineral Separation Plant. Copy of the Environment Clearance as submitted by the user agency is enclosed as Annexure-XIX.

23. Condition No. xxiii No labor camp shall be established on the forest land.

The user agency has submitted an undertaking not to establish any labor camp on the forest land. The undertaking to this effect is enclosed as Annexure-XX.

24. Condition No. xxiv The User Agency shall provide fuels preferably alternate fuels to the laborers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas.

The user agency has submitted an undertaking to provide firewood preferably alternate fuels to the laborers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas. The undertaking furnished by the user agency is enclosed as Annexure- XXI.

25. Condition No. xxv The boundary of the diverted forest land , mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates.

The user agency has already demarcated DLC forest land of 157.702 Ha to be diverted, mining lease area and safety zone area by erecting reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates. The GPS co-ordinates showing longitudes & latitudes with pillar to pillar distance and serial no of the pillars in support of said demarcation is attached as Annexure- XXII.

26. Condition No. xxvi The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof Shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed.

An undertaking has been submitted by the user agency in Annexure- XXIII to carry out mining operation and concurrent reclamation as per approved Mining Plan and concurrent reclamation plan from the Director, AMD, Hyderabad and annual report on implementation from the very first year after grant of stage-II Forest clearance shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned state government and the concerned regional office of the Ministry. The copy of the approved Mining Plan from Director, AMD, Hyderabad is enclosed in Annexure-XXIV.

27. Condition No. xxvii. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government.

The user agency has submitted an undertaking that the layout plan of the approved mining plan / proposal shall not be changed without the prior approval of the

Central Government. The undertaking submitted by the user agency is enclosed as Annexure-XXV.

28. Condition No. xxviii. The forest land shall not be used for any purpose other than that specified in the proposal.

The user agency has submitted an undertaking that the forest land shall not be used for any purpose other than that specified in the proposal. The undertaking furnished by the user agency is enclosed as Annexure- XXVI.

29. Condition No. xxix. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.

The user agency has submitted an undertaking that the forest land proposed to be diverted shall not be transferred to any other agency, department or person without prior approval of the central govt. The undertaking furnished by the user agency is enclosed as Annexure- XXVII.

30. Condition No. xxx. No damage to the flora and fauna of the adjoining area shall be caused.

The user agency has submitted an undertaking that no damage to the flora and fauna of the adjoining area shall be caused. The undertaking furnished by the user agency is enclosed as Annexure-XXVIII.

31. Condition No. xxxi The State Government shall complete settlement of rights, in terms of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt) dated 03.08.2009 read with 05.07.2013, in support thereof.

The state Government has completed settlement of rights in terms of the scheduled tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Acts, 2006. The documentary evidence ( FRA Certificate) as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt.) dated 03.08.2009 read with 05.07.2013 in support thereof is enclosed herewith in Annexure-XXIX.

32. Condition No. xxxii The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval.

The user agency has identified 10 Nos. of ponds in the nearby villages covering Kalipalli, Chatrapur, Bipulingi, Humbar, Agastinuagaon Gram Panchayats existing within a radius of 5 Km from the mine lease boundary. The List of the village pond with GPS co-ordinates is enclosed herewith in Annexure- XXX. The user agency is agreed to regularly undertake desilting of these village ponds so as to mitigate the impact of any type of siltation. A detailed approved plan for desilting of identified ponds and water bodies is enclosed as Annexure-XXXI.

33. Condition No. xxxiii The User Agency shall submit the annual self compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year.

The user Agency has submitted an undertaking to submit the annual compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and MoEF & CC by the end of March every year. The undertaking furnished by the user agency is enclosed as Annexure-XXXII.

34. Condition No. xxxiv. Any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife.

The user agency has submitted an undertaking to comply any other condition that concerned Regional Office may stipulate from time to time, in the interest of conservation, protection and development of forests and wildlife. The undertaking furnished by the user Agency is enclosed as Annexure-XXXIII.

35. Condition No- XXXV The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.

The user agency has submitted an undertaking to comply all the provisions of all acts, Rules, Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project as applicable. The undertaking duly furnished by the user agency is enclosed as in Annexure-XXXIV.

#### **Additional Conditions imposed by the State Govt. and compliance thereof**

A. The user agency shall contribute towards implementation of Regional Wildlife Management Plan revised rate @ 58,000/- per over the lease hold area of 2464.054 Ha. In addition to contributing towards Regional Wildlife management Plan, a Site Specific wildlife Conservation plan duly approved by CWLW, Odisha is required to be executed in the mining as well as mining impact area at project cost. The lessee should also undertake that they will implement the approved components of plan within the lease hold area.

The user agency has paid Rs- 14, 29, 15,132/- towards cost of Regional Wildlife Management plan @ 58,000/- per Ha for 2464.054 Ha of Mining lease area in ORRISA CAMPA on dated 23.01.2020 through RTGS having UTR No. SBINR52020012300063480 through e-payment mode. The copies of the e-Challan and deposit slip are enclosed as Annexure-XV of the stage-I compliance report. In the mean while the F.A.-cum- Special Secretary to Government, FE & CC Department has intimated that the F& E Department has revised the Regional Wildlife management Plan cost from Rs-58,000/- per ha to Rs-82,000/- per ha with effect from 30.10.2018 vide letter No.26159 dated 05.12.2018 and requested to demand the differential cost of Regional Wildlife management Plan amounting to Rs-5, 91, 37,296/-. In this connection, the user agency has submitted an undertaking to pay the additional differential amount in due course after getting suitable direction from MoEF & CC, GOI to this effect as per Ministry Guide line issued vide F.No.FC-11/43/2021-FC dated 22.03.2021 and approval of their Board of Directors which is enclosed as Annexure-XV(ii) of the stage-I approval order compliance.

Further, the Site Specific Wildlife Management Plan has been approved by the CWLW and the user agency has undertaken to implement the Site Specific Wildlife Management Plan.

*B. The duly approved R&R plan shall be implemented at project cost before displacement of project affected families from the project area.*

The Rehabilitation and Resettlement Plan (R&R) has been prepared for the project affected families as per directive issued by the Expert Appraisal Committee (Mining) of MoEF in line with OR&RP 2006 and NR&RP 2007. The recommendation of Rehabilitation & periphery Development Advisory Committee (RPDAC) headed by RDC (SD), Brahmapur in respect of implementing the R & R plan has been enclosed as Annexure-V of the stage-I compliance report.

*C. Mining operation shall be subject to environmental clearance for enhanced production and CRZ clearance of the MoEF & CC, GOI.*

The CRZ clearance has been granted to M/s- Indian Rare Earths Limited for capacity Expansion of Mining and Mineral Separation Units (CEMMU) project at Matikhola under Chatrapur Tahasil of Ganjam District from the State Coastal Zone Management Authority (OSZMA) in their meeting held on 07.05.2012 & 08.05.2012 vide letter reference No. 13715/F&E dated 24.07.2012. The copy of the recommendation of OSCZMA is enclosed as Annexure-II and the compliance thereof is enclosed as Annexure-II (A) of the Stage-I compliance report.

The user agency has already got Environmental Clearance from MoEF & CC as per the provisions laid down in Environment Protection Act, 1986 vide letter reference No.J-11015/528/2007-IA.II (M) dated 11.01.2019 for enhancement of capacity of beach sand minerals for 75,00,000 TPA to be processed in Mineral Separation Plant. Copy of the Environment Clearance as submitted by the user agency is enclosed as Annexure-XIX of the stage-I compliance report.

*D. Phased Reclamation plan shall be implemented at project cost.*

The user agency has undertaken to implement the phased reclamation plan at Project cost. The undertaking duly countersigned by the undersigned is enclosed as Annexure-I of this report.

- E. *The user agency shall undertake demarcation of the lease area on the ground posting four feet high cement concrete pillars embedded two feet inside the soil with serial number, forward and backward bearing and distance from pillar to pillar. The user agency shall also submit the map of lease area showing different kinds of forestland using DGPS survey data and longitude and latitude of each pillar to the Divisional Forest Officer, Brahmapur for his reference before commencement of work on final forest clearance.*

The user agency has already demarcated DLC forestland of 157.702 Ha to be diverted, mining lease area and the safety zone area by erecting reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates. The GPS co-ordinates showing longitude & latitudes with pillar to pillar distance and serial no of the pillars in support of said demarcation is enclosed as Annexure-XXII of the stage-I compliance report.

- F. *User agency shall maintain and protect the safety zone as per Para 4.7 of FC Act guideline.*

As per stipulation the user agency has reported that the user agency is taking up plantation activities over the mined out area and due to the geographically situation of the mining area it is not possible to take up the 7.5 meter strip plantation activities as safety zone with in the mining lease area. Accordingly, the same was verified in the field and it is recommended to take-up the plantation elsewhere as per the approval of the competent Authority. The site inspection report furnished by the Assistant Conservator of Forests of this Division is enclosed as Annexure- XVII (A) of the stage-I compliance report.

Further, as per stipulation the 1.5 times of safety zone has been identified in Antaripur DPF under Brahmapur Division. The shape file of the identified degraded forestland is furnished in a CD and enclosed herewith. Further, the scheme for the Afforestation has also been prepared by the user agency and duly approved by the Regional Chief Conservator of Forests, Brahmapur Circle, Brahmapur vide his memo No. 1829 dated- 22.04.2021. The approved scheme and the undertaking to take up the Afforestation over 1.5 times of safety Zone area is enclosed as Annexure- XVII (B) of the stage-I compliance report.

- G. *Tree felling shall be taken up in phases as per bare requirement.*

The user agency has undertaken to take up tree felling in phase as per bare requirement. The undertaking to this effect has been submitted as Annexure-II of this report.

- H. *Penal measures as would be imposed by MoEF & CC, shall be complied with by the user agency.*

The user agency has undertaken to comply with the penal measures as may be imposed by MoEF & GOI. The undertaking to this effect has been submitted as Annexure-III of this report.

- I. The duly approved additional CA scheme over 120 Ha of degraded forestland in Ranibar DPF of Rambha section in Khallikote Range along with GPS readings of CA area shall be furnished. Details of payment made on account of Additional CA scheme shall also be intimated.

As per stipulation the Scheme for Compensatory Afforestation over 320 Ha of degraded Forestland in Dumangiri DPF (in ANR mode @ 200 plant/ Hector) and 120 Ha of degraded Forestland in Ranibar "A" DPF (in ANR mode @ 800 plant/ Hector) (to accommodate balance ceiling 93,702 plants (157.702 ha x 1000 plants per ha. = 157702 plants -64000 plants) as per MoEF & CC Guideline dated 08.11.2017.) has been prepared by the user agency at present wage rate i.e, Rs- 311/- per manday with 10 years maintenance and the same has also been approved by the Additional Principal Chief Conservator of Forests, Forest Diversion and Nodal Officer, Forest Conservation Act with a financial outlay of Rs- 4,51,67,268/- and Rs- 2,04,86,299/- respectively. Accordingly, the user agency has deposited the cost of Compensatory Afforestation amounting to Rs- 3,20,79,400/- vide UTR No.SBINR52020022500045314294197 dated 25.02.2020, Rs- 3,40,13,800/- vide UTR No. SBINR52021030314019324299469 dated 03.03.2021 and Rs- 73,77,500/- vide UTR No SBINR52021081637657721 dated 14.08.2021 in the Odisha CAMPA through e-payment system. The copy of the e-Challan is enclosed as Annexure-VI (A), Annexure- VI (B) & Annexure- VI (C) of the stage-I compliance report.

Details of payment in respect of the proposal for diversion of 157.702 of DLC forestland in Mouza Humuri Bana, Agasti Nuagam and Arjipalli under Chatrapur Tahasil of Ganjam District under Brahmapur Forest Division for Indian Rare Earths Limited, OSCOM.

CAMPA Specified Format		
SL No	Particulars	Details
1	State/ District/ Forest Division to which proposal relates	Odisha/ Ganjam/ Brahmapur
2	Name of the user- agency, nature of the proposal	CGM & Head, OSCOM, Mining Project
3	Extent of Forest area involved	157.702 of DLC forestland
4	Whether original or Extension	Original

5	If, extension of lease, please clarify if proposal involves additional forest area and if so specify	No, it is not an extension lease
6	Date of Stage-I clearance	Vide No. 8-15/2018-FC dated 18.10.2018
7	Extension of CAMPA Charges, Head wise	
A	Compensatory Afforestation	Rs-4,51,57,268/- for 320 Ha in Dumangiri DPF and Rs-2,04,86,299 for 120 Ha in Ranibar "A" DPF of degraded forest land
B	Additional CA	NA
C	Penal CA	NA
D	Afforestation in degraded forest area (i.e, one & half times of SZ forest area	Rs-56,26,777/-
E	Catchment area treatment	NA
F	(1) Site specific Wildlife Conservation plan (approved cost for project impact area) (2) Wildlife Management Plan (Differential revised rate @ Rs-43,0000/-	
G	Additional Charges for diversion area falling under notified/ Protected area	NA
H	Net Present Value	9,87,21,452/-
I	Penal NPV	NA
J	Cost of plantation of Dwarf species	NA
K	Any other charges/ Levies	NA
8	Details of Bank Draft Details (Bank draft No., dated & amount) head wise against items indicated in	All the details of the payment to Ad-Hoc CAMPA have been furnished in Point No.10

✓ 20%

Para-7									
	Whether deposited by RTGS/e-payment, if so, the particulars and dated of remittance	The user agency has deposited in designated Ad-hoc CAMPA Account through e-payment against the demand raised by the DFO, Brahmapur Division as detailed below under point No. 10							
10	Bank corporation Bank, Lodhi Complex/ Union Bank of India, Sunder Nagar) in which deposited with date of deposition	SL No	Stage-I approval condition No. imposed by MoEF & CC	Name of the Scheme	Amount in Rs	Mode of payment in AD-Hoc CAMP A	Account No. & name of the bank	Draft No or UTR No of RTGS/IFSC	Date of deposit
		1	Condition No. 5	CA	4,51,67,2368 for 320 Ha and Rs-2,04,86,229 for 120 Ha	RTGS	Union Bank, Lodhi Complex Branch, Block-11, CGO Complex, Phase-1, Lodhi Road, New Delhi	SBINR52020022500045314294197 dated 25.02.2020 for Rs-3,20,79,400/- SBINR52021030314019324299469 dated 03.03.2021 for Rs-3,40,13,800/- SBINR52021081637657721 dated 14.08.2021 for Rs-73,77,500/-	25.02.2020/03.03.2020/14.08.2020

		2	Condition No. 18	NPV	Rs-9,87,21,452/- @ 6,26,000/- per Ha.	Bank Draft	Corporation Bank	Draft No. 489157 dated 10.08.2010	10.08.2010
		3	Condition No. 20	1.5 times of Safety Zone	Rs-56,26,777/-	RTGS	Union Bank, Lodhi Complex Branch, Block-11, CGO Complex, Phase-1, Lodhi Road, New Delhi	SBINR52021072634407838 dated 26.07.2021	26.07.2021
		4		Site specific Wild life Conservation plan	Rs-37,94,332/-	RTGS	Union Bank, Lodhi Complex Branch, Block-11, CGO Complex, Phase-1, Lodhi Road, New Delhi	SBINR52015052215290250 dated 22.05.2021	22.05.2015

		5		Regional Wildlife Management Plan	Rs- 14,2 9,15, 132/ -	RTGS	Union Bank, Lodhi Complex Branch, Block- 11, CGO Complex, Phase- 1, Lodhi Road, New Delhi	SBINR52 0200123 0006348 0 dated 23.01.20 20	23. 01. 202 0
11	Any other remarks								

Encl: status of Compliance to Stage-I  
Approval order in five sets

  
Divisional Forest Officer  
Brahmapur Division

Memo No. 9693 / dated 29.10.2021

Copy submitted to the Additional Principal Chief Conservator of Forests (Forest Diversion and Nodal Officer, Forest Conservation Act), Odisha, Bhubaneswar for favour of kind information and necessary action.

  
Divisional Forest Officer  
Brahmapur Division

Memo No. 9694 / dated 29.10.2021

Copy forwarded to the CGM & Head, OSCOM, Indian Rare Earth Limited, Matikhola, Chatrapur for information and necessary action.

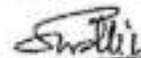
  
Divisional Forest Officer  
Brahmapur Division

## Compliance Status of conditions stipulated in Stage-I Forest Clearance

Compliance status of the conditions stipulated by MoEF & CC, Govt. of India, New Delhi in the principle approval in connection with diversion of 157.702 Ha of DLC Forest land including 3.66 Ha of DLC Forest land in safety zone in Mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total M.L area of 2464.054 ha under Chatrapur Tahasil of Ganjam District, Odisha in favour of M/s IREL(India) Limited (formerly Indian Rare Earths Limited), Orissa Sands Complex (OSCOM) for mining & separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under section- 2(ii) & 2(iii) of Forest Conservation Act 1980.

Sl.No	Conditions	Compliance Status	Reference	Page No.
1	Legal status of the diverted forest land shall remain unchanged;	M/s IREL(India) Limited has submitted an undertaking in <b>Annexure-I</b> that the legal status of the diverted forest land shall be remain unchanged.	Annexure-I	01
2	The approval for the diversion of forest land shall be subject to CRZ clearance, if applicable.	CRZ Clearance has been granted to M/s Indian Rare Earths Limited for Capacity Expansion of Mining and Mineral Separation Units (CEMMU) project at Matikhalo, Tahasil-Chatrapur in Ganjam District of Odisha from State Coastal Zone Management Authority (OSZMA) in their meeting held on 07.05.2012 & 08.05.2012 vide letter reference no 13716 / F & E dtd 24.07.2012. The copy of the recommendation of OSCZMA is enclosed herewith in <b>Annexure-II</b> for reference.	Annexure-II & 2 A	02 to 06
3	The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 Km length of sea shore is the location of nesting, out of this 5 km length of sea shore with large sand beds on both sides of	An undertaking has been furnished by M/s IREL (India) Limited in <b>Annexure-III</b> not to execute any Mining operation or Sand Extraction or habitat alteration or activities of similar nature within 5 (five) km zone of the nesting /mass nesting of endangered Olive Ridley sea turtle from Rushikulya river mouth area as prescribed by Chief Wildlife Warden, Odisha vide Letter No.3536/WL(C)(SSP)-149/2012, dated 11 <sup>th</sup> May, 2012.	Annexure-III	07

	<p>Rushikulya river is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance ( 2.5 km on both sides of Rushikulya river mouth) to be religiously conserved without any disturbance as prescribed by Chief Wildlife Warden, Odisha vide letter No. 3536/ML(C)(SSP)-</p> <p>149/2012 dated 11<sup>th</sup> May, 2012.</p>			
4	<p>The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species, accordingly the existing thorny/shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.</p>	<p>M/s IREL(India) Limited has submitted an undertaking in Annexure-IV that the eco-system of proposed compensatory land which is a natural habitat of Peafowl and other shrub dwelling species to be maintained without any alteration prioritizing soil and moisture conservation with possible creation of water bodies and avoiding undue over plantation.</p>	Annexure-IV	08
5	<p>User agency shall submit approved R &amp; R plan as before stage-II Approval. The</p>	<p>Rehabilitation and Resettlement Plan (R &amp; R) has been prepared for the project affected families (PAFs) as per the directive issued by the</p>	Annexure-V & V(I)	09 to 15 & 16 to 38



श्री. ए. ए. मलिक/S.S. Mallick

डा. ए. ए. मलिक (संसाधन एवं वन विभाग)/DGM (Resources & CSI)

श्री. ए. ए. मलिक (संसाधन विभाग)/IREL (India) Limited

ए. ए. मलिक (संसाधन विभाग)/Orissa Sands Complex

ए. ए. मलिक (संसाधन विभाग)/Po: Matikhala (Gm)-761045



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Range of Berhampur Division to accommodate balance ceiling 93,702 plants (157.702 ha x 1000 plants per ha. = 157702 plants -64000 plants) as per MoEF & CC Guideline dated 08.11.2017. The GPS reading of this plantation area at Ranibara has not yet been submitted. The same may be submitted prior to stage II approval.

Afforestation Scheme over an area of 320 Ha of degraded forestland identified in Dumunagiri DPF and Additional Compensatory Afforestation scheme over an area of 120 ha of degraded forestland identified in Ranibara(A) DPF under Khalikote range excluding the amount paid earlier based on the demand notice issued from DFO, BAM vide letter Nos. 1439/FC Act, dtd.11.02.2021 & 1442/FC Act, dtd.11.02.2021 to ORRISA CAMPA through RTGS having UTR No. SBINR52021030314019324299469, dtd.03/03/2021, (copy enclosed in Annexure-VIIB).

As far as providing articles in kind i.e motorcycle (02 Nos) is concerned under infrastructure head, the user agency do hereby undertake to provide the bikes at the earliest. ( Copy is enclosed in Annexure-VII A)

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it is learnt that the lease deed was executed on 27.10.2005 having validity from 21.03.1999 to 20.03.2019 during first RML. DLC forest land is a part of this lease. The DLC land was identified in Odisha in 1998. State government may clarify how the lease was executed (which include DLC forest land) in 2005 without prior approval of Government of India. No physical diversion of forest land will be allowed and no

User agency has submitted its Clarification to DFO, BAM towards execution of lease deed on dtd 27.10.2005 having validity from 21.03.1999 to 20.03.2019 which includes DLC forest land of 157.702 Ha in Annexure-VIII. User agency is agreed to the condition that there will be no physical diversion of forest land and no breaking up of forest land shall be permitted till the final approval under section 2 (ii) of FCA is obtained.

Annexure-VIII

52 to 53

4

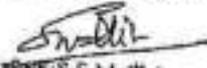
*S.S. Mallick*  
 S.S. Mallick (S.S. Mallick)  
 DGM (Resources & CSR)  
 Resource & Environment (REI) Limited  
 State Resource Centre, Orissa, Sanku Complex  
 Bhubaneswar (Orissa) Po: Matukhala (Gm.)-761015

	breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.			
8	No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2 (ii) of FCA is obtained.	M/s IREL(India) Limited has submitted an undertaking in <b>Annexure-IX</b> to keep the forest land fully undisturbed until final approval under section 2(ii) of FCA is obtained".	Annexure-IX	54
9	The project proponent has to pay full NPV for the area.	M/s IRE Ltd has deposited NPV @ Rs. 6,26,000/- per ha based on the demand notice issued by DFO, BAM for the proposed forest area classified in Eco-Value class-III amounting to Rs.9,87,21,452/- (Rupees Nine crore eighty seven lakhs twenty one thousand four hundred and fifty two) towards diversion of 157.702 Ha of DLC Forest land including 5.860ha of DLC forest land in safety zone in Mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2484.054 ha under Chatrapur Tahasil of Ganjam district, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand complex (OSCOM). The Amount has been deposited in the Head of Account " CAF, ORISSA A/C No. CA 1585CORP BANK". Vide bank Draft bearing No.489157 dtd. 10-08-2010 deposited in the SBI Berhampur. <b>The copy of payment made is enclosed in Annexure-X.</b> However, In the letter received from Divisional Forest Officer, Berhampur Forest Division vide memo No. 9112/FC Act, Dated 05.10.2021, user agency is asked to deposit NPV @ Rs. 7,30,000 per Ha, citing that the type of proposed forest area	Annexure-X & X (i).	55 to 56

		<p>is Eco-Value class-II with vegetation density 0.1. The user agency do hereby undertake to pay the differential NPV amounting to Rs. 1,64,01,008/- after obtaining final Forest Clearance from MoEF &amp; CC and accord of approval from our board.</p> <p><i>The undertaking in this regard is attached separately in Annexure-X (i)</i></p>		
10	<p>The grant of permission under section 2(iii) of Forest (conservation) Act 1980 will not confer any right on the project proponent for diversion under section 2(ii) of Forest conservation) Act 1980.</p>	<p>The user agency is agreed to the condition and furnished an undertaking in Annexure-XI not to exercise the rights conferred under section 2(iii) of Forest (Conservation) Act 1980 unlike under section 2(ii) of Forest (Conservation) Act 1980.</p>	Annexure-XI	57
11	<p>The forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.</p>	<p>M/s IREL (India) Limited is agreed to the condition and submitted an undertaking in Annexure-XII that the forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.</p>	Annexure-XII	58
12	<p>State Government to confirm complete compliance of the provision of FRA 2006 prior to executing / granting forest area on lease.</p>	<p>The State Government has completed the settlement of rights under FRA, 2006 and a certificate issued by the collector &amp; DM, Ganjam to this effect is enclosed in Annexure-XIII.</p>	Annexure-XIII	59 to 60
13	<p>The permission under section 2(iii) of Forest</p>	<p>M/s IRE Ltd has deposited NPV @ Rs. 6,26,000/- per amounting to</p>	Annexure-X & X(i)	55 to 56

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<p>(Conservation) Act 1980 is subject to confirmation of NPV amount for the area from CAMPA.</p>	<p>Rs.9,87,21,452/- ( Rupees Nine crore eighty seven lakhs twenty one thousand four hundred and fifty two) towards diversion of 157.702 Ha of DIC Forest land including 5.660ha of DLC forest land in safety zone in Mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chatrapur Tahasil of Ganjam district, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand complex (OSCOM). The Amount has been deposited in the Head of Account " CAF, ORISSA A/C No. CA 1585CORP BANK". Vide bank Draft bearing No.489157 dtd. 10-08-2010 deposited in the SBI Berhampur. The user agency do hereby undertake to pay the differential NPV amounting to Rs. 1,64,01,008/- after obtaining final Forest Clearance from MoEF &amp; CC and accord of approval from our board.</p> <p><i>The undertaking in this regard is attached separately in Annexure-X (i).</i></p>		
<p>14</p> <p>25% of the Cost of CA will be deposited in addition to the CA cost for soil and moisture conservation works at CA site.</p>	<p>The user agency has already paid 25% of the cost towards CA cost under the head of Soil &amp; Moisture Conservation (SMC) measures at CA site to ORRISA CAMPA vide RTGS No. SBINR52021081637657721 on dtd. 16.08.2021 based on the demand notice issued vide letter No.7347/FC Act, dtd.07.08.2021(copy enclosed in Annexure-XIIIA)</p>	<p>Annexure-XIIIA</p>	<p>61 to 64</p>
<p>15</p> <p>The land identified for</p>	<p>The land identified for the purpose</p>	<p>Plate-I</p>	<p>MAP</p>

  
 स.स. मलिक S.S. Mallick

पर्यावरण संसाधन विभाग, वन विभाग, DGM (Resources & CSR)  
 भारतीय रेलवे (इंजीनियरिंग) लिमिटेड (IRFI), India Limited,  
 इंडिया रेलवे कॉम्प्लेक्स, 100th Complex  
 पता: मलिकपो, मलिकपो, Po: Matikhale (Gr.)-761045

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	<p>the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale;</p>	<p>of compensatory Afforestation over 320 ha of degraded forest land in Dumunagiri DPF of Khallikote range in Berhampur Division and 120 of degraded Forest land in Ranibara-A DPF, Ganjam Tahasil, Khallikote Range, Ganjam District has been clearly depicted on a survey of India topo-sheet of 1:50,000 scale. The Map is attached herewith as <b>Plate-I</b>.</p>		
16	<p>The user agency should ensure that the compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate bank online only. Amount deposited through other mode will not be accepted as compliance of the Stage-I clearance.</p>	<p>The user agency has deposited the following Compensatory levies as per the prescribed payment mode as follows</p> <p>i) NPV of Rs.9,87,21,452.00 deposited in the head of account Head of Account "CAF, ORISSA A/C No. CA 1585CORP BANK" vide bank draft bearing No.489157 dtd. 10-08-2010 deposited in the SBI Berhampur. <i>(Copy enclosed in Annexure-X)</i></p> <p>ii) Rs.14,29,15,132/- towards cost of Regional Wildlife Management Plan @ Rs.58,000/- per Ha for 2464.054 Ha of Mining lease area has been deposited in ORRISA CAMPA on dtd.23.01.2020 through RTGS having UTR No. SBINR52020012300063480 on e-payment mode. <i>Copy enclosed in Annexure- XIII A(i).</i></p> <p>iii) CA cost of Rs 3,20,79,400.00 in the A/c of ORRISA CAMPA vide A/c No. 150825865240675 generated through e-challan Dt.18.02.2020 <i>(Annexure-XIV)</i></p> <p>iv) Revised CA plus ACA of Rs 3,40,13,800.00 in the A/c of ORRISA CAMPA vide A/c No. 150825865240417 generated</p>	<p>Annexure-X, X(i), XIII (A), XIII A (i), XIII A (ii), XIV, VII B, XVI-A.</p>	<p>45 to 50, 55,56 &amp; 59 to 70 &amp; 83 to 84</p>

S. S. Maibick

S. S. Maibick

S. S. Maibick (DGM) (Resources &amp; CSR)

S. S. Maibick (India) Limited

S. S. Maibick Complex

S. S. Maibick (Gm.)-761045

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- through e challan Dt. 02.03.2021 ( Annexure - VII)
- v) Plantation cost of Rs.56,26,777/- (over an area of 55 Ha as identified in Anantaraipur DPF, Tamana Section, Berhampur Range measuring 1.5 times of the safety zone area) to ORISSA CAMPA through RTGS having No. SBINR52021072634407838, dtd. 26.07.2021. ( Copy enclosed as annexure- XVI-A)
- v) Rs.73,77,500/- towards CA & ACA cost including Additional 25% of CA cost for SMC measures at CA site to ORRISA CAMPA vide RTGS No. SBINR52021081637657721 on dtd. 16.08.2021 based on the demand notice issued vide letter No.7347/FC Act, dtd.07.08.2021 (copy enclosed in Annexure- XIII A)
- vi) Rs. 1,64,01,008/- towards differential cost of NPV for the proposed forestland to be diverted shall be deposited. Undertaking in this regard is furnished separately in Annexure- X(i).
- vii) Rs.5,91,37,296/- towards differential cost of implementation of Regional Wildlife Management Plan (RWMP) shall be deposited. Undertaking in this regard is furnished separately in Annexure- XIII A(ii).

S.S. Mallick

श्री. एन. सी.एस. S.S. Mallick

श्री. एन. सी.एस. (डी.डी.ए. वॉ. ऑफिस) DGM (Resources &amp; CSR)

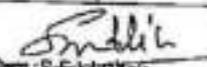
आई.रेल. इंडिया लिमिटेड IREL (India) Limited

ओरिसा सैंड्स कॉम्प्लेक्स Orissa Sands Complex

ग्राम : मतिचाल (ग्राम) / Po: Matichalo (Gr.)-761045

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	<p>The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in CAMPA account of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.</p>	<p>M/s IREL(india) Limited has already deposited the cost of CA &amp; ACA calculated at current wage rate in ORRISA CAMPA through online mode on dtd.03.03.2021 with suitable provision of anticipated increase in cost. (Copy enclosed as Annexure-VII B.)</p>	Annexure-VII B	45 to 50
18	<p>The User Agency shall transfer online, the Net Present Value (NPV) of the forest land being diverted under this proposal, as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009. The requisite funds shall be transferred through online portal into CAMPA account of the State Concerned;</p>	<p>M/s IRE Ltd has already paid the Net Present Value (NPV) of the forest land of 157.702 Ha to be diverted under this proposal as per the orders of the Hon'ble Supreme Court of India, dated 28.03.2008, 24.04.2008 and 09.05.2008 in writ petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC, dated 05.02.2009. Since, there was no provision of online payment during that period, the requisite fund has already been transferred in the Head of Account " CAF, ORISSA A/C No. CA 1585CORP BANK", vide Bank Draft bearing No.489157 dtd. 10-08-2010 deposited in the SBI Berhampur, copy enclosed in Annexure-X.</p>	Annexure-X	55

  
 S. S. Mishra  
 Director (Resources & CSR)  
 M/s IREL (India) Limited  
 Plot No. 10, Sector 10, Indraprastha Complex  
 New Delhi - 110028  
 Ph: 011-26104517/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100

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At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;

M/s IREL (India) Limited has furnished in Annexure-XV to pay the additional amount of NPV if so determined in case of hike of present rate of NPV as per the final decision of the Hon'ble Supreme Court of India.

Annexure-  
XV

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Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 ] shall be done within three years at the project cost as per approved scheme. Besides this afforestation on degraded forest land to be

Selected elsewhere measuring one & a half times the area under safety zone shall also be done at the project cost. The degraded forest land (DFL) so selected will be informed to the MoEF & CC with shape files and afforestation will be

In respect to fencing, protection & regeneration of the safety zone area [7.5 meters strip measured inwards the Mining Lease area], a detailed feasibility report has been submitted in Annexure- XVI.

Moreover, for undertaking plantation on degraded forest land over one and a half times of the area under safety zone which measures to 36.34 Ha, degraded forest land patches measuring 55 Ha has been identified in Anantaraipur DPF and a comprehensive plantation scheme along with GPS readings in shape file of the plantation area has been submitted. The scheme so prepared was duly approved by RCCF, BAM ( Copy enclosed in Annexure-XVI(i) for reference) & Rs. 56,26,777/- has been deposited to ORRISA CAMPA on dtd. 26.07.2021 through Union Bank of India having A/c No. 150825865240561, IFSC code-UBIN0903710 vide RTGS bearing no. SBINR52021072634407838, dtd. 26.07.2021 based on the demand notice issued by DFO, BAM vide letter No.4168, dtd.28.04.21.(The copy of payment made to ORRISA CAMPA is enclosed in Annexure-XVI-A).

Annexure-  
XVI  
&  
XVI-A XVI-  
A(i)

72 to 82  
83 to 84  
&  
85 to 104

*Smiti*

S. S. Mehta

1. **श्री. सुशील S.S. Mehta**

2. **श्री. सुशील (डीएम) रिसोर्स (India) Limited**

3. **श्री. सुशील (डीएम) रिसोर्स (India) Limited**

4. **श्री. सुशील (डीएम) रिसोर्स (India) Limited**

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	done within three years from the date of Stage-II clearance;			
21	Period of diversion of the said forest land under this approval shall be for a maximum of 20 years;	Govt. of Odisha, Department of Steel & Mines, vide letter no. 4409/SM, Bhubaneswar, dated-01.06.2018, has extended mining lease in favour of M/s Indian Rare Earths Limited, OSCOM for beach sand minerals over an area of 2484.054 Ha in village- Zimi, Agasti Nuagaon, Humuribana, Humuri Tampara, Arjipalli, Kanamana, Matikhalo, Badaputi, Basanaputi, Upulaputi and Sagarpur under Chatrapur Tahasil of Ganjam District till dt. 31.03.2047 under the proviso to Rule 6(11) of Atomic Mineral Concession Rule, 2016 for a period until the entire reserve of such mineral in the mine is exhausted i.e until 31.03.2047 (copy enclosed as Annexure-XVII) and lease deed has already been executed on dtd.31.10.2018. We do hereby undertake to complete mining operation in DLC forestland within the stipulated period of 20 years and agreed to the condition that period of diversion of forestland shall be 20 years. The undertaking in this regard is furnished in Annexure-XVIII.	Annexure- XVII & XVIII	105 to 108
22	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	We have already got Environmental Clearance from MoEF & CC as per the provisions laid down in Environment Protection Act, 1986 vide letter reference no. J-11015/528/2007-IA.II(M), dated-11/01/2019 for Enhancement of capacity of beach sand minerals for 75,00,000 TPA to be processed in Mineral Separation Plant. Copy enclosed in Annexure-XIX	Annexure- XIX	109 to 123

S.S. Mallick

S.S. Mallick  
 Director (Resources & CSR) / DGM (Resources & CSR)  
 Indian Rare Earths Limited (IREL) (India) Limited  
 Beach Sand Minerals Complex  
 P.O. Mauniba, Orissa  
 Pin - 761055



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	thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed.	concerned state government and the concerned regional office of the Ministry. The copy of the approved Mining Plan from Director, AMD, Hyderabad. ( Copy enclosed in Annexure-XXIV)		
27	The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government;	M/s IREL (India) Limited has submitted an undertaking in Annexure-XXV that the layout plan of the approved mining plan / proposal shall not be changed without the prior approval of the Central Government.	Annexure-XXV	202
28	The forest land shall not be used for any purpose other than that specified in the proposal;	M/s IREL (India) Limited has submitted an undertaking in Annexure- XXVI that the forest land shall not be used for any purpose other than that specified in the proposal.	Annexure-XXVI	203
29	The forest land proposed to be diverted shall under no circumstances be transferred to any	M/s IREL(India) Limited has submitted an undertaking in Annexure- XXVII that the forest land proposed to be diverted shall not be transferred to any other	Annexure-XXVII	204

*S. S. Mallik*  
 S. S. Mallik

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	other agency, department or person without prior approval of the Central Government;	agency, department or person without prior approval of the central govt.		
30	No damage to the flora and fauna of the adjoining area shall be caused;	M/s IREL(India) Limited has submitted an undertaking in Annexure-XXVIII that no damage to the flora and fauna of the adjoining area shall be caused.	Annexure-XXVIII	205
31	The State Government shall complete settlement of rights, in terms of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt) dated 03.08.2009 read with 05.07.2013, in support thereof;	The state Government has completed settlement of rights in terms of the scheduled tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Acts, 2006. The documentary evidence ( FRA Certificate) as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt) dated 03.08.2009 read with 05.07.2013 in support thereof is enclosed herewith in Annexure-XXIX	Annexure-XXIX	206 to 207
32	The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly	We have identified 10 Nos. of ponds in the nearby villages covering Kalipalli, Chatrapur, Bipulingi, Humbar, and Agastinuagaon Gram Panchayats coming within a radius of 5 Km from the mine lease boundary. The List of the village ponds with GPS co-ordinates is enclosed herewith in Annexure-XXX. Accordingly, the user agency has prepared a scheme for desiltation of these water bodies duly approved by RCCF, Berhampur	Annexure-XXX, XXXI	208 to 209 & 210 to 216

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S. S. Malik, Director of Resources &amp; CSR

M/s IREL (India) Limited,

Sands Complex,

Post: Matkhalo (Gm.)-761045

	undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;	(enclosed as Annexure-XXXI) . M/s IREL(India) Ltd do hereby undertake to carry out the desiltation job regularly as per the approved scheme.		186 ✓
33	The User Agency shall submit the annual self compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year;	M/s IREL(India) Limited has submitted an undertaking in Annexure-XXXII to submit the annual compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and MoEF & CC by the end of March every year.	Annexure-XXXII	217
34	Any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife.	M/s IREL(India) Limited has submitted an undertaking in Annexure-XXXIII to comply any other condition that concerned Regional Office may stipulate from time to time, in the interest of conservation, protection and development of forests and wildlife.	Annexure-XXXIII	218
35	The user agency shall comply all the provisions of the all Acts, Rules,	M/s IREL(India) Limited has submitted an undertaking in Annexure-XXXIV to comply all the provisions of all acts, Rules,	Annexure-XXXIV	219

Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project as applicable.		18/5
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*S.S. Mallik*

श्री. एस. एस. मल्लिक S.S. Mallik

जल संसाधन विकास एवं संरक्षण/ DOM (Resources & CSR)

संस्थान (भारत) लिमिटेड (IREL (India) Limited,

जल संसाधन संकुम/ Office Complex

जल : महाराष्ट्र (पुणे) Pp; Bhatikhata (Gm.)-761045



# आईआरईएल (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



Ref : IRE(O)/Res/NGT-Misc/2023-24/ 826 'A',

Date 19.04.2023

To  
The Divisional Forest Officer  
Berhampur Division

Sub: Furnishing information with regards to the meeting of the joint committee members constituted by hon'ble NGT, PB, New Delhi under the chairmanship of ADM (Gen.), Chatrapur, dated 12.04.2023

This has reference to the subject cited above. In this context we would like to put forth the statistical details of OSCOM Mine during last five years as asked in the meeting dated 12.04.2023 for Information.

Year	Area put for Mining operation (in acres)	No of trees felled for undertaking mining operation	Area put for plantation in mined out area (in acres)	No of trees planted in mined out area	No of trees planted out side of mined out area
2018-19	119.21	11102	54.90	54900	300
2019-20	73.67	6967	56.00	56000	600
2020-21	71.21	6615	50.00	50000	3800
2021-22	86.27	7672	50.50	50500	0
2022-23	82.89	7783	75.00	75000	0
<b>Total</b>	<b>433.25</b>	<b>40139</b>	<b>286.40</b>	<b>286400</b>	<b>4700</b>

(i) OSCOM possesses valid Environment Clearance (EC) & Forest Clearance (FC) granted by MoEF & CC, Govt of India and all its operation are completely in adherence to the conditions laid down in EC & FC. Though Stage-II forest clearance is obtained on 15.12.2022, no tree has been felled so far in forest land as on date. In respect to the Compensatory Afforestation, the full cost has been deposited in CAMPA by M/s IREL (India) Limited as per the approved scheme and State Forest Dept. will undertake afforestation as per the scheme.

(ii) OSCOM Mine operation is an eco-friendly mine technique where excavation / dredging and back filling of mined out area move hand in hand. Further, total mined out mineral concentrate is transported to Mineral Separation Plant in slurry form through pipe line favoring dust free environment. For surface operation, the trees are being cleared off as per bare minimum monthly requirement basis. Intensive plantation are being

उड़ीसा सैंड्स कॉम्प्लेक्स, माटिखालो (झाक), छत्रपुर (गंजाम), ओडिशा - 761045, भारत

Orissa Sands Complex, Matikhalo (R.O.), Chatrapur (Ganjam), Odisha - 761 045

फोन / Tel. : 06811 - 257990 - 95 फैक्स / Fax : 06811 - 257988

PTC

पंजीकृत कार्यालय : प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028

Regd. Office : Plot No. 1207, Veer Savarkar Marg, Near Siddhivinayak Temple, Prabhadevi, Mumbai - 400 028



# आईआरईएल (इंडिया) लिमिटेड IREL (India) Limited

(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)

(A Govt of India Undertaking)

CIN : U15100MH1950GOI005187 Website : www.irel.co.in

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



taken up on reclaimed mined out land with a proportion of 1000 plants per acres which is 10 times more than the trees felled per acre.

- (iv) Moreover prior to clearing off the tree growth over any land (Pvt. or Govt.) tree enumeration is conducted in presence of Forest Officials, Revenue Official, representative of IREL & occupier of that land and this enumeration report is subsequently vetted by the Tahsildar cum compensation officer, Chatrapur. Without enumeration no tree is allowed to cut down.

With regards

*(Handwritten Signature)*  
(N.K. Naik)

DGM (Resources & CSR)

*(Handwritten Initials)*

- Encl. : (i) Geo Co-Ordinate of the area put for mining operation & area planted during last five years in Annexure - I  
(ii) Photographs substantiating Plantation activities over mined out area after reclamation in Annexure II

ओरिसा सैंड्स कॉम्प्लेक्स, मालिखालो (खक), छत्रपुर (गंजम), ओडिशा - 761045, भारत

Orissa Sands Complex, Melikhalo (P.O.), Chatrapur (Genjam), Odisha - 761 045

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पंजीकृत कार्यालय : प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028

egd. Office : Plot No. 1207, Veer Savarkar Marg, Near Siddhivinsyak Temple, Prabhadevi, Mumbai - 400 028

**GEO CO-ORDINATES OF THE AREA MINED OUT DURING LAST FIVE YEARS FROM  
2018-19 TO 2022-23**

Latitude (in decimal degrees)	Longitude (in decimal degrees)	Latitude (in decimal degrees)	Longitude (in decimal degrees)
<b>Polygon -i</b>		<b>Polygon -iv</b>	
19.275203	84.913023	19.316627	84.970128
19.276381	84.914426	19.316346	84.970544
19.278661	84.917852	19.317040	84.971036
19.280983	84.919677	19.316888	84.972961
19.280761	84.921198	19.319489	84.974889
19.281317	84.921479	19.319686	84.975668
19.282476	84.920539	19.320272	84.975488
19.283207	84.921088	19.320534	84.974468
19.283381	84.920901	19.319715	84.973497
19.282345	84.919479	19.320014	84.972753
19.281845	84.918561	19.321752	84.973639
19.280677	84.917995	19.322128	84.97322
19.278164	84.915665	19.323200	84.973881
19.275969	84.913161	19.323954	84.972582
19.275269	84.912833	19.322685	84.971562
<b>Polygon -ii</b>		19.322232	84.972027
19.285292	84.922453	19.320431	84.971555
19.284912	84.923664	19.320149	84.97200
19.286674	84.925201	19.317614	84.971055
19.285502	84.929760	<b>Polygon -v</b>	
19.287626	84.930929	19.323810	84.976281
19.289379	84.929200	19.320390	84.981922
19.290360	84.930055	19.321740	84.985636
19.290202	84.930832	19.321096	84.985702
19.291830	84.931741	19.324006	84.989943
19.292600	84.930677	19.329964	84.984729
19.292519	84.930112	19.324914	84.979564
19.291944	84.93019	19.325766	84.978123
19.291792	84.929998	19.327927	84.979694
19.291255	84.930112	19.329528	84.978835
19.289852	84.92891	19.329769	84.976940
19.290051	84.928695	19.328768	84.974829
19.288960	84.927959	19.327934	84.975216
19.289204	84.926941	19.327420	84.976686
19.287919	84.925434		
19.288196	84.924862		
19.288791	84.925050		
19.288899	84.924445		
<b>Polygon -iii</b>			
19.317049	84.964973		
19.315355	84.967696		
19.317356	84.969922		
19.317644	84.969393		
19.317223	84.969266		
19.318028	84.966999		
19.320354	84.967945		
19.319790	84.965622		
19.318532	84.965420		
19.317373	84.965469		

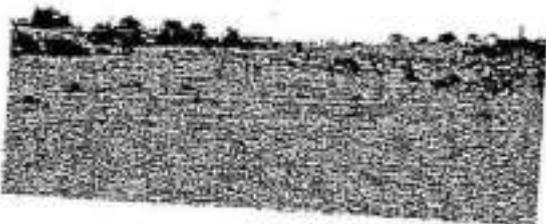
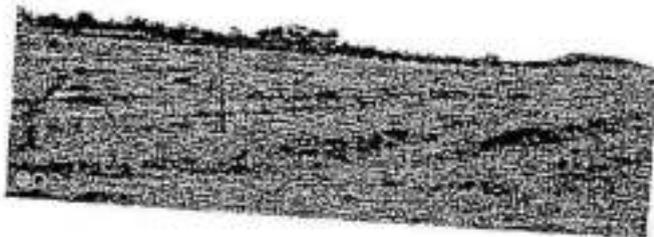
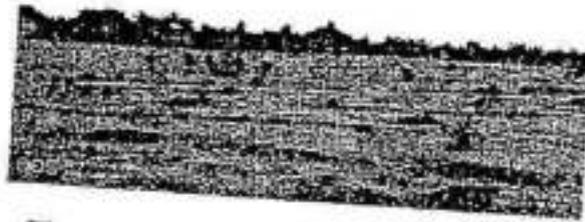
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19/04/23

COORDINATES OF THE AREA PLANTED OVER MINED OUT AREA DURING  
LAST FIVE YEARS FROM 2018-19 TO 2022-23

Latitude (in decimal degrees)	Longitude (in decimal degrees)	Latitude (in decimal degrees)	Longitude (in decimal degrees)
Polygon -i		Polygon -v	
19.269371	84.912928	19.317048	84.964884
19.272351	84.913729	19.316216	84.966161
19.277679	84.920448	19.316632	84.966864
19.278668	84.91842	19.316649	84.967517
19.275242	84.913777	19.317324	84.968114
19.271201	84.909899	19.318637	84.966905
Polygon -ii		Polygon -vi	
19.27048	84.916718	19.320775	84.968236
19.27159	84.917529	19.321406	84.967899
19.27214	84.919629	19.321525	84.966974
19.273294	84.918596	19.31925	84.965276
19.272482	84.919596	19.319023	84.966175
19.270787	84.915493	Polygon -vii	
Polygon -iii		19.326438	84.970993
19.285004	84.925057	19.325033	84.973463
19.283866	84.926638	19.325520	84.973920
19.285933	84.928486	19.328122	84.972351
Polygon -iv		Polygon -viii	
19.285457	84.929912	19.324061	84.977130
19.290089	84.931996	19.321007	84.981896
19.291111	84.93143	19.322450	84.986574
19.294099	84.936248	19.323246	84.986005
19.295418	84.935658	19.324362	84.979949
19.292000	84.930013	19.324258	84.979226
19.287073	84.929983	19.324788	84.978481
19.286708	84.927531	Polygon -viii	
Polygon -iv		19.322023	84.972276
19.297405	84.941542	19.321774	84.971902
19.297199	84.942467	19.321110	84.971724
19.299445	84.945023	19.321025	84.971836
19.29897	84.945795	19.321402	84.972042
19.299471	84.945756	19.321188	84.972546
19.30034	84.944692	19.321723	84.972841
19.29914	84.943541		
19.299494	84.942008		
19.298657	84.94126		

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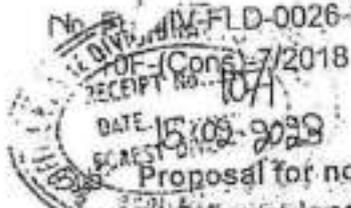
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By Speed Post/ e-mail

GOVERNMENT OF ODISHA  
FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT

\*\*\*\*\*

No. FLD-0026-2022-2465 /FE&CC, Bhubaneswar, dated the 08.02.23

ORDER

Proposal for non-forestry use of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in favour of M/s Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand within total ML area of 2464.054 ha located in mouza Humuri Bana, Agasti Nuagaon and Arjipalli under Chhatrapur Tahasil of Ganjam District (Odisha)-reg.

WHEREAS, the Head, OSCOM, Indian Rare Earth Ltd, Orissa Sands Complex (OSCOM), Odisha had applied for diversion of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand.

And whereas, the Ministry of Environment, Forest & Climate Change, Government of India, New Delhi had accorded 'in-principle' approval for diversion of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under Section-2 (ii) & Section-2 (iii) of Forest (Conservation) Act, 1980, subject to fulfilment of certain conditions vide its Letter F. No.8-15/2018-FC dtd.18.10.2018 (Annexure-I).

And whereas, the Ministry of Environment, Forest & Climate Change, Government of India, New Delhi in consideration of the compliance of the conditions of the 'in-principle' approval, have accorded final approval under Section-2 of the Forest (Conservation) Act, 1980 for non-forestry use of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in favour of M/s Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand within total ML area of 2464.054 ha located in mouza Humuri Bana, Agasti Nuagaon and Arjipalli under Chhatrapur Tahasil of Ganjam District (Odisha) vide its Letter File No.8-15/2018FC dtd.15.12.2022, subject to fulfilment of conditions as stipulated therein (Annexure-II).

Now therefore, the Government of Odisha, do hereby allow non-forestry use of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in favour of M/s Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand within total ML area of 2464.054 ha located in mouza Humuri Bana,



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-1-

Agasti Nuagaon and Arjipalli under Chhatrapur Tahasil of Ganjam District (Odisha), as per approved land schedule furnished by PCCF, Odisha vide letter No.905 dtd.12.01.2018 subject to fulfilment of the conditions of final forest clearance order as stipulated by the MoEF&CC, Government of India, New Delhi. The details land schedule of forest land as received from PCCF, Odisha vide their letter No.905 dtd.12.01.2018 are appended herewith as Annexure-III (1 Page).

The Collector, Ganjam and Divisional Forest Officer, Berhampur Forest Division, as the case may be are hereby authorized to handover the forest land coming within their jurisdiction as has been finally diverted following due procedure of law. Before handing over the diverted forest land to the user agency, it shall be ensured that Net Present Value of the forest land for this project shall be deposited in full, at applicable rates.

The Divisional Forest Officer, Berhampur Forest Division is also directed to monitor compliance to the conditions stipulated for such diversion in the respective forest/ wildlife clearance order and to report violations, if any, to the Nodal Officer, O/o Principal Chief Conservator Forests & HoFF, Odisha and to the Forest, Environment & Climate Change Department.

Execution of project activities will be subject to availability of all other statutory clearances required under relevant Acts/Rules for this mining project, deposit of requisite funds and compliance of Court's order, if any.

By order of Governor

*ds/af/23*  
(Lingaraj Otta)

OSD-cum-Special Secretary to Government

Memo No. 2466 /FE&CC, Date 08.02.23

Copy with copy of the Annexures forwarded to the Principal Chief Conservator of Forests & HoFF, Odisha for kind information and necessary follow up action.

Appropriate instruction to the Divisional Forest Officer, Berhampur Forest Division and user agency may be imparted for required follow up action at their end. It may be ensured by the Divisional Forest Officer, Berhampur Forest Division that Net Present Value of the forest land involved in this project of the user agency is deposited by them in full, at applicable rates in appropriate head. The user agency may also be instructed to furnish compliance to the conditions of forest/ wildlife clearance pertaining to the project in every quarter to the Divisional Forest Officer, Berhampur Forest Division for facilitating monitoring of compliances.

*ds/af/23*  
OSD-cum-Special Secretary to Government

Nemo No. 2467 /FE&CC, Date 08.02.23

Copy with copy of the Annexures forwarded to the Asst. Inspector General of Forests, Government of India, MoEF&CC (FC Division), Indra Paryavaran Bhawan, Jor Bagh, Ganj Road, New Delhi, Pin-110003/ Deputy Director General of Forests (Central), MoEF&CC, Government of India, IRO, A/3, Chandrasekharpur, Bhubaneswar for kind information and necessary follow up action in compliance to the order of Hon'ble NGT dtd.07.11.2012 in Appeal No.07/2012 communicated by the MoEF, Government of India vide their letter F. No.7-23/2012- FC dtd.24.07.2013.

*d. j. n. 2023*  
OSD-cum-Special Secretary to Government

Nemo No. 2468 /FE&CC, Date 08.02.23

Copy with copy of the Annexures forwarded to the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Odisha/ Principal Chief Conservator of Forests (FD&NO), FC Act, O/o PCCF & HoFF, Odisha/ Director, Environment-cum-Special Secretary to Government, Forest, Environment & Climate Change Department/ Chief Executive, OSCZMA, Bhubaneswar for information and necessary action.

*d. j. n. 2023*  
OSD-cum-Special Secretary to Government

Memo No. 2469 /FE&CC, Date 08.02.23

Copy with copy of the Annexures forwarded to the Regional Chief Conservator of Forests, Berhampur Circle/ Divisional Forest Officer, Berhampur Forest Division for information and immediate necessary compliance.

It may be ensured by the Divisional Forest Officer, Berhampur Forest Division that Net Present Value of the forest land involved in this project of the user agency shall be deposited by them in full, at applicable rates in appropriate head before handing over of the forest land to the user agency. Besides, funds, if any, due to be deposited by the user agency for this project shall also be deposited by the project proponent before the forest land is handed over to them. The user agency may also be instructed to furnish compliance to the conditions of forest/ wildlife clearance pertaining to the project in every quarter to the Divisional Forest Officer, Berhampur Forest Division for facilitating monitoring of compliances by them.

The Divisional Forest Officer, Berhampur Forest Division is also instructed to ensure that the direction given to the user agency are executed immediately.

*d. j. n. 2023*  
OSD-cum-Special Secretary to Government

Memo No. 2470 /FE&CC Date 08.02.23

Copy with copy of the Annexures forwarded to Steel & Mines Department/ Collector, Ganjam for information and necessary follow up action.

*d. j. n. 2023*  
OSD-cum-Special Secretary to Government

Memo No. 2471 / FE&CC Date 08.02.23

Copy with copy of the Annexures forwarded to the Head, OSCOM, Indian Rare Earth Ltd, Orissa Sands Complex (OSCOM), Po-Matikhalo, Dist.-Ganjam, Odisha, Pin-761045 for information and immediate necessary action.

The user agency is asked to take following actions immediately as per orders of Hon'ble National Green Tribunal dtd.07.11.2012 in Appeal No.07/2012 communicated by the MoEF, Government of India vide their letter F. No.7-23/2012-FC dtd.24.07.2013.

- i They shall publish the entire forest clearance granted in verbatim along with conditions and safeguards imposed by the Central Government in Stage-I/II forest clearance in two widely circulated daily newspapers, one in vernacular language and the other in English language so as to make people aware of the permission granted to the Project for use of forest land for non-forest purposes.
- ii They shall submit the copies of forest clearance orders granted by the Central Government/State Government to the Heads of local bodies, Panchayats and Municipal bodies along with the relevant offices of the State Government, who in turn, shall display the same for 30 days from date of receipt.
- iii Detailed action taken in compliance to the above order of State Government shall be intimated to the DFO, Berhampur Forest Division/ RCCF, Berhampur Circle/ PCCF & HoFF, Odisha/ Forest, Environment & Climate Change Department for reference.

Besides the above, the user agency is also asked to deposit Net Present Value of forest land for this project in full, if not deposited yet, at applicable rates. Requisite funds due for deposit by the user agency on account of this project shall also be deposited under appropriate head.

The user agency shall furnish compliances to the conditions prescribed in the forest/wildlife clearance order to the Divisional Forest Officer, Berhampur Forest Division in every quarter, for the purpose of monitoring by him.

 08/02/23  
OSD-cum-Special Secretary to Government

Memo No. 2472 / FE&CC Date 08.02.23

Copy with copy of the Annexures forwarded to the Head, State Portal, I.T. Centre, Odisha Secretariat, Bhubaneswar for information and necessary action. He is requested to upload this order along with its enclosures in the website of Forest, Environment & Climate Change Department immediately for information of all concerned. This is required in compliance to order of Hon'ble National Green Tribunal dtd.07.11.2012 in Appeal No.7/2012. Hence this may be done unflinchingly.

 08/02/23  
OSD-cum-Special Secretary to Government

No. 2473 / FE&CC Date 08.02.23

Copy with copy of the Annexures forwarded to the Under Secretary to Government, Office Establishment Section, Forest, Environment & Climate Change Department for information and necessary action with reference to their letter No.12939/F&E dtd.13.07.2016.

*d. 2/2/23*  
OSD-cum-Special Secretary to Government



F. No. 8-15/2018-FC  
Government of India  
Ministry of Environment, Forests and Climate Change  
(FC Division)

Indira Paryavaran Bhawan,  
Aliganj, Jor Bag Road,  
New Delhi - 110003.

Dated: 18<sup>th</sup> October, 2018

To: The Principal Secretary (Forests)  
Government of Odisha,  
Bhubaneswar

C.O. (Dir)

20/10/18 92. Anegle approved

Sub: Proposal for diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand.

Sir,

I am directed to refer to the State Government's letter No. 10F (Cons) 7/2018/6146/F&E dated 16.03.2018 and 10F (Cons) 7/2018/18353/F&E dated 23.08.2018 submitting the above subject proposal for seeking prior approval of the Central Government under Section-2 (ii) & Section 2(iii) of FCA, 1980 respectively *in-connection with* diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand, and to say that the said proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act.

2. After careful consideration of the proposal of the State Government of Odisha and on the basis of the recommendations of the Forest Advisory Committee, *In-principle* approval is hereby granted for diversion of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in mouza Humuri Bana, Agasti Nuagaon and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under Section-2 (ii) & Section 2(iii) of the Forest (Conservation) Act, 1980 subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) The approval for the diversion of forest land shall be subject to CRZ clearance, if applicable.
- (iii) The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 Km length of sea shore is the location of nesting, out of this 5 Km length of sea shore with large sand beds on both sides of Rushikulya river is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance (2.5 km on both sides of Rushikulya river mouth) to be religiously conserved without any disturbance as prescribed by Chief Wildlife Warden, Odisha via letter No. 3536/WL(C)(SSP)-149/2012 dated 11<sup>th</sup> May, 2012.

*Sd/-*  
10/10/18

- (iv) The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species, accordingly the existing thorny/shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.
- (v) User agency shall submit approved R&R plan before stage II approval. The User Agency shall prepare the R & R Plan as per the R&R policy of State Government in consonance with National R & R policy, Government of India before commencement of the project work and implementation. The said R&R plan will be monitored by the State Government / Regional office of MoEF&CC along with indicators for monitoring and expected observable milestone.
- (vi) 320 ha of degraded forest land has been identified in Dumanagiri DPF of Khalikote range in Berhampur Division for taking up ANR with gap plantation @ 200 plants per ha with 10 years maintenance, Bamboo fencing around plantation and soil moisture conservation with staggered trenches. This area will accommodate only 64000 plants. To compensate further balance of plantation (800 plants per ha), 120 ha degraded forest land has been identified in Ranibar DPF of Rambha Section, Khalikote Range of Berhampur Division to accommodate balance ceiling 93,702 plants (157,702 ha x 1000 plants per ha. = 157702 plants - 64000 plants) as per MoEF & CC Guideline dated 08.11.2017. The GPS reading of this plantation area at Ranibar has not yet been submitted. The same may be submitted prior to stage II approval.
- (vii) It is learnt that the lease deed was executed on 27.10.2005 having validity from 21.03.1999 to 20.03.2019 during first RML/DLC forest land is a part of this lease. The DLC land was identified in Odisha in 1998. State government may clarify how the lease was executed (which include DLC forest land) in 2005 without prior approval of Government of India. No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.
- (viii) No physical diversion of forest land will be allowed and no breaking up of forest land to be permitted until final approval under section 2(ii) of FCA is obtained.
- (ix) The project proponent has to pay full NPV for the area.
- (x) The grant of permission under section 2(iii) of Forest (Conservation) Act 1980 will not confer any right on the project proponent for diversion under section 2(ii) of Forest (Conservation) Act 1980.
- (xi) The forest department will be free to manage the forest area as per normal management practices and working plan prescriptions till final approval under section 2(ii) under FCA is accorded.
- (xii) State Government to confirm complete compliance of the provision of FRA 2006 prior to executing/ granting forest area on lease.
- (xiii) The permission under section 2(iii) of Forest (Conservation) Act 1980 is subject to confirmation of NPV amount for the area from CAMPA.
- (xiv) 25% of the Cost of CA will be deposited in addition to the CA cost for soil and moisture conservation works at CA site
- (xv) The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale;
- (xvi) The user agency should ensure that the compensatory levies (CA cost, NPV, etc.) are deposited through challan generated online on web portal and deposited in appropriate

*Shreef*

.. 16/10/17

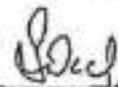
- bank online only. Amount deposited through other mode will not be accepted at compliance of the Stage- I clearance;
- (xvii) The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department, in CAMPA account of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- (xviii) The User Agency shall transfer online, the Net Present Value (NPV) of the forest land being diverted under this proposal, as per the orders of the Hon'ble Supreme Court of India dated 23.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009. The requisite funds shall be transferred through online portal into CAMPA account of the State Concerned;
- (xix) At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;
- (xx) Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 ] shall be done within three years at the project cost as per approved scheme. Besides this afforestation on degraded forest land to be selected elsewhere measuring one & a half times the area under safety zone shall also be done at the project cost. The degraded forest land (DFL) so selected will be informed to the MoEF & CC with shape files and afforestation will be done within three years from the date of Stage-II clearance;
- (xxi) Period of diversion of the said forest land under this approval shall be for a maximum of 20 years;
- (xxii) The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
- (xxiii) No labour camp shall be established on the forest land;
- (xxiv) The User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
- (xxv) The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS co-ordinates;
- (xxvi) The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed.
- (xxvii) The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government;
- (xxviii) The forest land shall not be used for any purpose other than that specified in the proposal;
- (xxix) The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
- (xxx) No damage to the flora and fauna of the adjoining area shall be caused;

*Beef*  
18/10/16

- (xxxii) The State Government shall complete settlement of rights, in terms of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry in its letter No. 11-9/1998-FC (pt.) dated 03.08.2009 read with 05.07.2013, in support thereof;
- (xxxiii) The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;
- (xxxiv) The User Agency shall submit the annual self compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year;
- (xxxv) Any other condition that the concerned Regional Office of this Ministry may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxxvi) The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, NGT Court Order & Hon'ble Court Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project

After receipt of the report on the compliance to the conditions stipulated in the paragraph-2 above from the State Government of Odisha, final/stage-II approval for diversion of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in Mouza 'Jumuri Bana, Agasti Nuagora and Arjipalli within total ML area of 2464.054 ha under Chhatrapur Tahasil of Ganjam District, Odisha in favour of Indian Rare Earths Ltd. Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand under Section-2 (ii) & Section 2(iii) of the Forest (Conservation) Act, 1980 will be considered by this Ministry.

Yours faithfully,



(Sandeep Sharma)  
18/10/18  
Assistant Inspector General of Forests (FC)

Copy to:

1. The Principal Chief Conservator of Forests, Government of Odisha, Bhubaneswar.
2. The Nodal Officer, O/o the PCCF, Government of Government of Odisha, Bhubaneswar.
3. The Asst. PCCF (Central), Regional Office, Bhubaneswar.
4. User Agency
5. File no. 8-58/2018-FC for record.
6. Monitoring Cell, of FC Division, MoEF&CC New Delhi.
7. Guard File



(Sandeep Sharma)  
18/10/18  
Assistant Inspector General of Forests (FC)

07/36264/2022

Government of India  
Ministry of Environment, Forest and Climate Change  
(Forest Conservation Division)

\*\*\*\*\*

Indira Paryavaran Bhawan,  
Jorbagh Road, Aliganj,  
New Delhi - 110003.

Dated: 15th December, 2022

To,  
The Addl. Chief Secretary (Forests),  
Government of Odisha,  
Bhubaneswar.

**Sub: Proposal for non-forestry use of 157.702 ha of DLC forest land including 5.660 ha of DLC forest land in safety zone in favour of M/s Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand within total ML area of 2464.054 ha located in mouza Humuri Bana, Agasti Nuagaon and Arjipalli under Chhatrapur Tahasil of Ganjam District (Odisha) -reg.**

Sir,

I am directed to refer to the Government of Odisha's letter No. 10F(Cons) 7/2018-6146/F&E dated 16.03.2018 on the above subject seeking prior approval of the Central Government under section 2 of the Forest (Conservation) Act, 1980. After careful examination of the proposal by the Forest Advisory Committee, constituted under section 3 of the said Act, 'in-principle' approval to the proposal under the Forest (Conservation) Act, 1980 was granted vide this Ministry's letter of even number dated 18.10.2018 subject to fulfillment of certain conditions prescribed therein. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide letter No. 6781/9F (MG)-334/2012 dated 23.03.2022, letter no. 14200/9F (MG)-334/2012 dated 20.07.2022 and letter no. 22514/9F (MG)-334/2012 dated 05.11.2022, final approval of Central Government under section 2 of the Forest (Conservation) Act, 1980 is hereby granted for non-forestry use of 157.702 h of DLC forest land including 5.660 ha of DLC forest land in safety zone in favour of M/s Indian Rare Earths Ltd, Orissa Sand Complex (OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand within total ML area of 2464.054 ha located in mouza Humuri Bana, Agasti Nuagaon and Arjipalli under Chhatrapur Tahasil of Ganjam District (Odisha), subject to fulfillment of the following conditions:

**A. Conditions which need to be complied prior to handing over of forest land by the State Forest Department**

1. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all

P/36264/2022

requisite details before handing over the forest land to the user agency.

**B. Conditions which need to be complied on field after handing over of forest land to the user agency by the State Forest Department**

1. Legal status of the diverted forest land shall remain unchanged
2. The approval for diversion of forest land shall be subject to CRZ clearance, if applicable;

**3. Compensatory Afforestation:**

- i. The Compensatory afforestation over degraded forest land, double in extent to the forest land being diverted i.e. 320 ha shall be raised by the State Forest Department at the project cost;
- ii. The compensatory afforestation scheme, as approved, shall be implemented by the State Forest Department. The CA will be maintained for 10 years and the CA scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- iii. Compensatory afforestation over degraded forest land, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval;
- iv. The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species; accordingly, the existing thorny/ shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.

**4. NPV:**

- i. The State Government has realized the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of CAMPA account of the State. NPV, if any, becomes due in future shall be realized in accordance with the relevant guidelines issued by the Ministry;
  - ii. At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.
5. Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>);
  6. The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 km length of sea shore is the location of nesting, out of this 5 km length of sea shore with large sand beds on both sides of Rushikulva River is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance (2.5 km on both sides of Rushikulva river mouth) to be rigorously conserved without any disturbance as per the Plan approved by the Chief Wildlife Warden, Odisha.
  7. The State Govt. shall ensure that User Agency shall implement the R&R Plan as per the R&R Policy of State Government in consonance with National R&R

4/36264/2022

- Policy, Government of India before the commencement of the project work and implementation. The said R&R Plan will be monitored by the State Government/Regional Office of MoEF&CC along with indicators for monitoring and expected observable milestones;
8. The State Government shall ensure that the activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area 7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 shall be implemented within three year at the project cost from the issue of Stage-II Clearance;
  9. **Safety Zone Management:** The following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:
    - i. User agency shall ensure demarcation of safety zone (7.5 meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department;
    - ii. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;
    - iii. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department;
    - iv. Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department. The degraded forest land (DFL) so selected will be informed to the MoEF & CC and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department; and
    - v. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.
  10. Period of diversion of the said forest land under this approval shall be for a period co-terminus with the validity of lease granted under the MMDR Act, 1957;
  11. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
  12. No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
  13. The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;
  14. The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed & the User Agency from the very first year, and an annual report on

- implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed.
15. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;
  16. The State Govt. and the user agency shall ensure that the forest land shall not be used for any purpose other than that specified in the proposal;
  17. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
  18. No damage to the flora and fauna of the adjoining area shall be caused;
  19. State Government shall ensure that process for settlement of rights, in terms of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, has been completed in accordance with the relevant guidelines prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013;
  20. The User Agency shall regularly undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per plan submitted along with the compliance of Stage-I approval, so as to mitigate the impact of project on such tanks/water bodies;
  21. The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;
  22. Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;
  23. The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department;
  24. The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may be disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;
  25. The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly;
  26. Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife;
  27. The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project; and
  28. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest

1/36254/2022

(Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.

Yours faithfully,  
Signed by Preetpal Singh  
Date: 20-12-2022 10:28:11  
Reason: Approved

(Preet Pal Singh)  
Dy. Inspector General of Forests

**Copy to:**

1. The PCCF (HoFF), State Forest Department, Government of Odisha, Bhubaneswar
2. The PCCF & Nodal Officer (FCA), O/o PCCF, State Forest Department, Government of Odisha, Bhubaneswar
3. The Regional Officer (Central), Integrated Regional Office of MoEF&CC at Bhubaneswar
4. User Agency
5. Monitoring Cell, FC Division, MoEF&CC, New Delhi
6. Guard File

- 2/05 -  
Annexure - III

**LAND SCHEDULE**  
**MOUZA : HUMURI BANA**  
Area coming under D.L.C Forest

Plot No.	Khata No.	Name of the Tenants	Kissam	Full Extent	Forest Area
136	22	ABAD AJOGYA ANABADI (AAA)	PATITA	8.880	8.880
136/156					
137				8.650	3.375
138				2.380	2.380
150				7.400	7.400
151				7.700	7.700
151/157				2.520	2.520
35				1.420	0.975
36/53				31.230	30.880
37				22.680	5.113
38				10.800	10.800
38/154				1.640	1.640
39				8.180	3.358
41				3.240	3.240
42				24.000	24.000
43				14.500	14.500
43/155				57.700	57.700
Total				52.350	31.900
					218.149

**MOUZA : AGASTINUAGAON**

Plot No.	Khata No.	Name of the Tenants	Kissam	Full Extent	Forest Area
1142	309	ABAD AJOGYA ANABADI (AAA)	PATITA	7.740	7.740
1284					
128/1314				30.643	30.643
1285				24.650	18.360
1285/1315				35.350	35.360
191/1284				13.425	10.307
964				11.799	11.799
965				19.750	17.200
Total				43.300	32.980
					164.379

**MOUZA : ARJIPALLI**

Plot No.	Khata No.	Name of the Tenants	Kissam	Full Extent	Forest Area
154	45	ABAD AJOGYA ANABADI (AAA)	PATITA	7.300	7.155

Total DLC Forest Area within the RML area of IREL (OSCOM):  
389.683 Ac.  
Or  
157.702 Ha

Verified with  
DLC & Forest  
Committee  
Sourav  
13/11/2

*[Signature]*  
Divisional Forest Officer  
Bansapur Forest Division

*[Signature]*

only for the work this schedule  
mentions 389.683 Ac. of  
land out of the DLC (OSCOM)  
schedule. It is covered by forest

*[Signature]*  
TAKASILDAR  
CHATEAPUR



आईआरईएल (इंडिया) लिमिटेड

IREL (India) Limited

(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)

(A Government of India Undertaking)

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



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

Ref.: IREL (O)/ FC/Stage-II compliances/2022-23/.....562A'

Dated. 13.03.2023

To

The Divisional Forest Officer, Berhampur  
Ganjam, Odisha  
Pin: 760001

Sub: Requesting handover of 157.702 ha DLC forest land including 5.660 ha of DLC forest land in safety zone to M/s IREL (India) Limited for undertaking mining operation after grant of final approval by Central Govt. under section 2 of FC Act, 1980.

Ref.: 1) Stage-II grant order by MoEF & CC, Govt. of India under section 2 of the Forest Conservation Act, 1980 vide its letter dated 15.12.2022  
2) Letter received from Govt. of Odisha, Forest, Environment & Climate Change Department vide Ref. no.: FE-DIV-FLD-0026-2022-2485/FE & CC, Dtd.08.02.2023

Sir,

This has reference to the subject cited as above. In this context, it is to be noted that, in pursuance to the final forest clearance granted by MoEF & CC, Govt. of India under section 2 of the Forest Conservation Act, 1980 for non-forestry use of 157.702 ha of DLC forest land in favour of M/s IREL(India) Limited located in the Mouza: Arjipalli, Humuribana & Agastinuagaon including 5.660 ha of DLC forest land in safety zone for mining and separation of heavy minerals from beach sand within total ML area of 2464.054 ha vide letter no.8-15/2018 FC, dtd.15.12.2022, Govt. of Odisha has allowed the use of 157.702 ha of DLC forest land by M/s, IREL(India) Limited for non-forestry purpose vide letter ref. FE-DIV-FLD-0026-2022-2485/FE & CC, Dtd.08.02.2023 upon compliance of certain conditions read as follows

Condition by Central Govt. prior to handing over of forest land

1. The KML files of the diverted forest area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details before handing over of the forest land to User Agency  
Compliance: The KML files of the diverted forest area, the CA areas, the proposed SMC treatment area and the WLMP area have already been uploaded on e-Green watch portal on 20.02.2023

Condition by State Govt. prior to handing over of forest land

1. The user agency shall publish the entire forest clearance granted in verbatim along with conditions and safeguards imposed by the Central Government in Stage-I/II forest clearance in two widely circulated daily news papers, one in vernacular language and the other in English language so as to make people aware of the permission granted to the project for use of forest land for non-forest purposes.

Compliance by User Agency: User Agency has published the entire forest clearance grant order of both Stage-I & Stage-II in verbatim along with the conditions and safeguard imposed by the Central Govt in widely circulated daily Oriya newspaper i.e 'The Samaj', 'The Sambad' & 'The

उडीसा रीणइस कांप्लेक्स, माटिबानो (डाक) खनपुर (गंजाम), ओडिशा - 761045, भारत



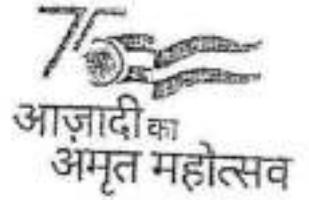
Retained 2/2023  
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आईआरईएल (इंडिया) लिमिटेड  
IREL (India) Limited  
(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)  
(A Government of India Undertaking)

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



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

Dharitri' on 10.03.2023 in vernacular language & the English version was published in 'The Indian Express' and 'The Times of India' on 10.03.2023.

- The user agency shall submit the copies of forest clearance orders granted by the Central Government/State Government to the heads of local bodies, Panchayats and Municipal bodies along with the relevant offices of the State Government, who in turn shall display the same for 30 days from the date of receipt.

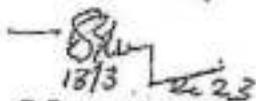
**Compliance by User Agency:** The copies of forest clearance grant order is already submitted to the office of the Sarpanch of Arjipalli, Podepadar & Agastinuagaon and it was displayed in their notice board for public awareness. Apart from that the order copies were submitted to various officers of State Govt. i.e Collector & DM, Ganjam, S.P. Ganjam, S.P. Berhampur, ADM (General), ADM (Revenue), CDO-cum-Executive Officer, Zilla Parishad, Ganjam, Commissioner, Berhampur Municipal Corporation, Berhampur, Ganjam, Project Director, D.U.D.A, Sub-Collector, Berhampur, Sub-Collector, Chatrapur, Deputy Collector (Revenue), Tahasildar, Chatrapur, BDO, Chatrapur, BDO, Khallikote, Executive Officer, NAC, Chatrapur.

- Detail action taken in compliance to the above order of State Government shall be intimated to the DFO, Berhampur Division / RCCF, Berhampur Circle, PCCF & HoFF, Odisha / Forest, Environment & Climate Change Department for reference

**Compliance by User Agency:** Complied as above

In view of the aforesaid development, your good office is kindly requested to hand over DLC forest land of 157.702 ha located in the Mouza: Arjipalli, Humuri Bana & Agastinuagaon including 5.660 ha in the safety zone to M/s IREL for undertaking mining operations at an earliest.

Yours Truly

  
18/3/23  
S.Surya Kumar

Executive Director, OSCOM

एस.सुर्य कुमार / S. SURYA KUMAR

कार्यकारी निदेशक, ओरिशा सांड्स कॉम्प्लेक्स / Executive Director, OSCOM

आईआरईएल (इंडिया) लिमिटेड / IREL (India) Limited

(Formerly Indian Rare Earths Limited)

उड़ीसा सांड्स कॉम्प्लेक्स / Orissa Sands Complex

बालासाहिब - 751045 / PO: Matikela-751045

G.C to: RCCF, Berhampur Circle, Berhampur for kind information please

PCCF (Nodal), Bhubaneswar for kind information please

PCCF & HoFF, Odisha for kind information please

Addl. Chief Secretary, Forest, Environment & Climate Change Department, Govt. of Odisha  
for kind information please









3/22/23, 9:58 AM

SambadEpaper

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28.03.23  
[Signature]



**आईआरईएल (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

Ref.: IREL (OY FC/ Stage-II compliances/2022-23) ६१३ 'A'

Dt: 27.03.2023

To  
The Divisional Forest Officer,  
Berhampur, Ganjam  
Odisha-760001

Sub: [Submission of compliance report in respect of the conditions stipulated in the Stage-II (Final approval) Forest Clearance order issued vide File no. 8-15/2018FC dtd. 15.12.2022-Reg]

Sir,

Inviting kind reference on the subject cited above, we are furnishing herewith the point wise compliance report of Stage -II Forest Clearance of M/s IREL (India) Limited, Orissa Sands Complex (OSCOM).

**A. Conditions which need to be complied prior to handing over of forest land by the State Forest Department**

1. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details before handing over the forest land to the user agency.

Compliance status:

The KML files of the diverted forest area, the CA areas, the proposed SMC treatment area and the WLMP area have been uploaded on e-Green watch portal on 20.02.2023.

**B. Conditions which need to be complied on field after handing over of forest land to the user agency by the State Forest Department**

1. Legal status of the diverted forest land shall remain unchanged

Compliance status:

M/s IREL (India) Limited do hereby undertake that the legal status of the diverted forest land shall remain unchanged.

2. The approval for diversion of forest land shall be subject to CRZ clearance, if applicable;

Compliance status:

CRZ clearance has been granted to M/s Indian Rare Earth Limited for capacity expansion of mining and mineral separation units (CEMMU) project at Matikhalo under Chatrapur Tahasil of Ganjam district from the State Coastal Zone Management Authority (OSCZMA) vide letter no.13718/F & E dated 24.07.2012.

**3. Compensatory Afforestation:**

1. The Compensatory afforestation over degraded forest land, double in extent to the forest land being diverted i.e. 320 ha shall be raised by the State Forest Department at the project cost;

उद्देश्य सैन्ट्रल कॉम्प्लेक्स, माटिखालो (डानक), छत्रपुर (गंजाम), ओडिशा - 761045, भारत

Orissa Sands Complex, Matikhalo (R.O.), Chatrapur (Ganjam), Odisha - 761 045

फोन / Tel. : 06811 - 257890 - 95 फैक्स / Fax : 06811 - 257988

पंजीकृत कार्यालय : प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028

Regd. Office : Plot No. 1207, Veer Savarkar Marg, Near Siddhivinayak Temple, Prabhadevi, Mumbai - 400 028

- ii. The compensatory afforestation scheme, as approved, shall be implemented by the State Forest Department. The CA will be maintained for 10 years and the CA scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;
- iii. Compensatory afforestation over degraded forest land, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval;
- iv. The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species; accordingly, the existing thorny/ shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.

**Compliance status:**

*CA and ACA schemes over the area 320 ha and 120 ha are approved by CCF (FD & NO, FC Act) at the revised wage rate of Rs 315/ per MD and the cost of CA and ACA are deposited in the CAMPA fund by the user agency. (Details of payment enclosed in Annexure -I).*

*User agency undertakes that, necessary support will be extended to State Govt. so that the eco-system of the proposed compensatory land will be maintained without any alteration, prioritizing soil and moisture conservation with possible creation of water bodies and planting thorny shrubs and indigenous fruit bearing species only.*

**4. NPV:**

- i. The State Government has realized the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of CAMPA account of the State. NPV, if any, becomes due in future shall be realized in accordance with the relevant guidelines issued by the Ministry;
- ii. At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.

**Compliance status:**

*M/s IREL has deposited full NPV in Ad-hoc CAMPA using e-payment module through web portal of Ministry of Environment, Forest & Climate Change, Government of India. The user agency has furnished an undertaking to pay the additional amount of NPV, if so determined in case of hike of present rate of NPV as per the final decision of the Hon'ble Supreme Court of India (The copies of NPV payment details are enclosed in Annexure-I). Further M/s IREL do hereby undertake to pay the additional amount of NPV if so determined in case of the present rate of NPV as per the final decision of the Hon'ble Supreme Court of India.*

5. Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>).

**Compliance status:**

*The user agency do hereby undertake that Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>).*

6. The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtle. While the 52 km length of sea shore is the location of nesting, out of this 5 km length of sea shore with large sand beds on both sides of Rushikulya River is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance (2.5 km on both sides of Rushikulya a river mouth) to be rigorously conserved without any disturbance as per the Plan approved by the Chief Wildlife Warden, Odisha.

**Compliance status:**

*The 5 km zone has been clearly demarcated as NO GO AREA / NO DEVELOPMENT ZONE. The user agency do hereby undertake that no Mining activities or Sand Extraction or habitat alteration or activities of similar nature will be carried out within (five) km zone of the nesting/mass nesting of endangered Olive Ridley sea turtle from Rushikulya river mouth as prescribed by Chief Wildlife Warden.*

7. The State Govt shall ensure that User Agency shall implement the R&R Plan as per the R&R Policy of State Government in consonance with National R&R Policy, Government of India before the commencement of the project work and implementation. The said R&R Plan will be monitored by the State Government/Regional Office of MoEF&CC along with indicators for monitoring and expected observable milestones;

**Compliance status:**

*Rehabilitation and resettlement plan (R&R) has been prepared for the project affected families (PAFs) as per the directive issued by the expert appraisal committee (Mining) of MoEF & CC in line with ORRP 2006 AND NRRP 2007 and is duly approved by Collector & District Magistrate, Ganjam. The recommendations of Rehabilitation & Periphery Development & Advisory Committee (RPDAC) headed by RDC 9SD, Berhampur will be implemented in co-ordination with District Administration & Village Panchayat in due course of time.*

8. The State Government shall ensure that the activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area 7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 shall be implemented within three year at the project cost from the issue of Stage-II Clearance;

**Compliance status:**

*User agency do hereby undertake that activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area, 7.5 m strip will be maintained within the lease boundary, so that safety zone will be part of the total area of the mining lease as per the Ministry's guidelines dated 27.05.2015. (Copy of Scheme of treatment of SZ area is enclosed in Annexure-II for reference).*

9. Safety Zone Management: The following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:
- i. User agency shall ensure demarcation of safety zone (7.5 meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department;

**Compliance status:**

*The user agency do hereby undertake to demarcate the safety zone (7.5 meter strip all along the inner boundary of the mining lease area) exploring the ground feasibility all along the ML area and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing by deploying adequate number of watchers under the supervision of the State Forest Department after handing over of the 157.702 Ha of DLC forest land to the user agency by DFO, Berhampur.*

- ii. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;

**Compliance status:**

*The user agency do hereby undertake that the boundary of the safety zone of the mining lease, adjacent to habitation/roads, will be properly fenced off.*

- iii. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department;

**Compliance status:**

*The user agency do hereby undertake to maintain green belt around mining lease and regeneration shall be taken up in this area at project cost under supervision of State Forest department to ensure dense canopy over the area.*

- iv. Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department. The degraded forest land (DFL) so selected will be informed to the MoEF & CC and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department; and

**Compliance status:**

*The Scheme for undertaking afforestation over 1.5 times of Safety Zone i.e. 55 ha in Anantapur DPF has been technically approved by the Regional Chief Conservator of Forests, Berhampur Circle and M/s IREL has deposited Rs.81,52,309/- in Orissa CAMPA Fund and the scheme will be implemented within a period of three years from the date of approval of Stage-II Forest Clearance by the State Forest Department. (Copy of payment enclosed as Annexure-I for reference).*

- v. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.

**Compliance status:**

*The user agency do hereby undertake that safety zone will be maintained as per the prescribed norms in consultation with State Forest department.*

10. Period of diversion of the said forest land under this approval shall be for a period co-terminus with the validity of lease granted under the MMDR Act, 1957;

**Compliance status:**

*The Forest Clearance granted by MoEF & CC is valid till the existence of Mining Lease i.e. up to 31.03.2047.*

11. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;

**Compliance status:**

*The user Agency has obtained the Environment Clearance from MoEF & CC vide letter dated 11.01.2019 (The copy of EC granted in favor of IREL is enclosed in Annexure-III for reference).*

12. No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;

**Compliance status:**

*The user agency do hereby undertake that no labour camp will be established on the forest land. The user agency will ensure alternate fuel supply to the laborers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas.*

13. The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;

**Compliance status:**

*The user agency hereby undertake to demarcate the boundary of the diverted forest land, Mining Lease and Safety Zone as applicable, on ground at the project cost, by erecting four feet high reinforced cement concrete pillars each inscribed with its serial number, distance from pillar to pillar and GPS coordinates.*

14. The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed & the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed.

**Compliance status:**

*The user agency is undertaking Mining activities & concurrent reclamation in adherence to the approved Mining Plan. We further undertake that all mining operations and the concurrent reclamation will be done as per the approved mining plan only.*

15. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;

**Compliance status:**

*The user agency do hereby undertake that the layout plan of the mining plan/ proposal will not be changed without the prior approval of the Central Government and the forest land will not be used for any purpose other than that specified in the proposal.*

16. The State Govt. and the user agency shall ensure that the forest land shall not be used for any purpose other than that specified in the proposal;

**Compliance status:**

*The user agency do hereby undertake that the forest land shall not be used for any purpose other than that specified in the proposal.*

17. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;

**Compliance status:**

*The user agency do hereby undertake that the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.*

18. No damage to the flora and fauna of the adjoining area shall be caused.

**Compliance Status:**

*The user agency do hereby undertake not to cause any damage to the flora and fauna of the adjoining area.*

19. State Government shall ensure that process for settlement of rights, in terms of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, has been completed in accordance with the relevant guidelines prescribed by this Ministry's letter No. 11-9/1998-FC (Pt.) dated 03.08.2009 read with 05.07.2013.

**Compliance Status:**

*The user agency will ensure the compliance in coordination with State Forest Department.*

20. The User Agency will regularly undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per plans submitted along with the compliance of Stage-I approval, so as to mitigate the impact of project on such tanks/water bodies;

**Compliance status:**

*The user agency do hereby declare to undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per plans submitted along with the compliance of Stage-I approval, so as to mitigate the impact of project on such tanks/water bodies. The ponds are identified and proposal is going to be initiated for undertaking desilting of 05 nos of village ponds in Sriramchandrapur, Kanamana, Arjyapalli & Kalipalli GP which is located at a distance of 02 KM from mine lease boundary.*

21. The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;

**Compliance status:**

*The user agency do hereby undertake that the cost of felling of trees will be deposited by the User Agency with the State Forest Department. A request letter has been sent to DFO, Berhampur vide letter no.619'A', dtd.23.03.2023 for conducting a co-ordination meeting between IREL, State Forest Dept. & District Administration to finalize the schedule of tree enumeration, fix tree felling cost and mode of disposal prior to undertake mining operation over the DLC land.*

22. Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;

**Compliance status:**

*M/s IREL do hereby undertake that the tree felling will be done in a phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.*

23. The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department;

**Compliance status:**

*The user agency do hereby undertake it would explore the possibilities of translocation of maximum number of trees identified to be felled and will ensure that tree felling would be done only when it is unavoidable and it will be carried out under strict supervision of the State Forest Department;*

24. The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may be disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;

**Compliance status:**

*M/s IREL do hereby undertake that it will comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may be disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.*

25. The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly;

**Compliance status:**

*M/s IREL do hereby undertake to submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly.*

26. Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife;

**Compliance status:**

*The user agency do hereby undertake that it will comply with any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife.*

27. The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project; and

**Compliance status:**

*The user agency do hereby undertake to comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.*

28. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.

**Compliance status:**

*The user agency do hereby undertake that all the conditions stipulated in Stage-II FC would be complied.*

Yours Truly

*Gurpreet Singh*  
23/3  
GM & Head, OSCOM  
*to file*

आईआरईएल (इंडिया) लिमिटेड  
IREL (India) Limited

(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)

(A Govt of India Undertaking)

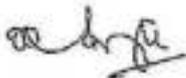
CIN : U15100MH1950GOI009187 Website : www.irel.co.in

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

**UNDERTAKING**

The user agency do hereby undertake to abide the following conditions stipulated in Stage-II Forest Clearance order:

1. Legal status of the diverted forest land will remain unchanged.
2. To pay the additional amount of NPV if so determined as per the final decision of the Hon'ble Supreme Court of India.
3. Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<https://parivesh.nic.in/>).
4. The area involving 5 km distance (2.5 km on both sides of Rushikulya river mouth) will be rigorously conserved without any disturbance as per the Plan approved by the Chief Wildlife Warden, Odisha.
5. The activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area 7.5 meters strip will be kept within the mining lease boundary and area of the safety zone will be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015. The activities will be implemented within three year at the project cost from the issue of Stage-II Forest Clearance;
6. Safety Zone Management: The following activities, at project cost, will be undertaken by the user agency for the management of safety zone:
  - i. Demarcation of safety zone (7.5 meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department;
  - ii. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, would be properly fenced.
  - iii. Maintenance of green belt around mining lease and ensuring dense canopy in the area, regeneration at project cost under the supervision of the State Forest Department.
  - iv. Maintenance of safety zone as per the prescribed norms in coordination with State Government.
7. No labour camps will established on forest land and to provide alternate fuels to the labourers and staff working at the site.
8. To demarcate the diverted forest land, mining lease and safety zone, as applicable, on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates.



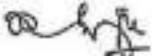
उड़ीसा सैंड्स कॉम्प्लेक्स, माटिखालो (डाक), चत्रपुर (गंजम), ओड़िशा - 761045, भारत

Orissa Sands Complex, Matikhalo (P.O.), Chatrapur (Ganjam), Odisha - 761 045

फोन / Tel : 06811 - 257890 - 95 फैक्स / Fax : 06811 - 257988

पंजीकृत कार्यालय : प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी भंबर्ड - 400 028

9. To carryout mining and the concurrent reclamation plan as per the approved mining plan.
10. The layout plan of the mining plan/ proposal will not be changed without the prior approval of the Central Government and the forest land will not be used for any purpose other than that specified in the proposal.
11. The forest land will not be used for any purpose other than that specified in the proposal.
12. The proposed diverted forest land will not be transferred to any other agency, department or person without prior approval of the Central Government.
13. To not cause any damage to the flora and fauna of the adjoining area.
14. Desilting of village tanks and other water bodies, located within five km from the mine lease boundary in a regular manner.
15. To deposit the cost of felling of trees with the StateForest Department.
16. To fell the trees in phased manner as per the requirement with prior permission of concerned DFO.
17. To explore the possibility of translocation of maximum number of trees identified to be felled and ensuring any tree felling will be done only when it is unavoidable and that too under strict supervision of the State Forest Department.
18. To the comply with the order of Hon' ble Supreme Court on re-grassing of the mining area and any other areas disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.
19. To submit the annual self compliance report in respect of Stage-II conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year.

  
GM & Head, OSCOM  


V-325

**SCHEME FOR  
FENCING, PROTECTION AND REGENERATION OF THE  
SAFETY ZONE AREA  
OVER 36.34 HA.**

In compliance  
with  
Condition No. 2(xx) of  
Stage-I Forest Clearance granted vide  
Letter No.8-15/2018-FC, Dated 18.10.2018  
of Govt. of India, Ministry of Environment, Forests & CC,  
New Delhi.

for  
Diversion of 157.702 Ha of DLC Forest Land  
(including 5.66 Ha of forest land in safety zone)  
within total Mining Lease area of 2464.054 Ha  
in favour of

**M/s IREL (India) Limited**  
(formerly INDIAN RARE EARTHS LTD)  
**ORISSA SANDS COMPLEX (OSCON) MINE**

**SCHEME FOR FENCING, PROTECTION AND REGENERATION OF THE SAFETY ZONE AREA OVER 34.36 HA AT ORISSA SANDS COMPLEX MINE OF M/s IREL (India) Limited.**

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**INTRODUCTION**

Government of India in the Ministry of Environment, Forests & Climate Change (MoEF&CC) has approved Stage - I forest clearance vide Letter No. 8-15/2018-FC, dated 18.10.2018 for diversion of 157.702 ha forest area in Orissa Sands Complex Mine (OSCOM) of M/s IREL (India) Ltd. In this approval, MoEF &CC has stipulated some conditions to be complied before getting accorded of Stage - II clearance. The condition no. 2 (xx) of the Stage - I forest clearance is read as under:

*"Fencing, protection and regeneration of the safety zone area (7.5 meters strip shall be kept within the mining lease area and the area of the safety zone shall be part of the total mining lease as per the Ministry guideline dated 27.05.2015) shall be done at project cost within three years and maintained thereafter as per the approved working plan of the State Govt."*

In order to comply the above condition, the current scheme is prepared for fencing, protection and regeneration of safety zone area within OSCOM lease area by taking ANR gap plantation mode by planting 400 seedlings per hectare. The length of the outer periphery of safety zone required to be fenced is 16465 mtr and the area of safety zone is 36.34 hectare.

**TOPOGRAPHY AND EXISTING VEGETATION:**

The area under safety zone is flat sandy terrain with coastal plains. The soil type of the area is sandy loam and major vegetation in this area is casuarina co-exists with cashew topes and kewda bushes including sporadic growth of Neem & Acacia.

**PROPOSED TECHNIQUE FOR PLANTATION/ REGENERATION:**

It is proposed to take up ANR plantation with 400 plants per hectare over the entire area of 36.34 hectares.

**OBJECTIVE OF THE SCHEME:**

The main objective of the scheme is to create & maintain a green belt along the mining lease boundary which will serve the following purpose:

- i) It will be a permanent distinguishable demarcated zone for the ML area.
- ii) It will help in controlling air and noise pollution to some extent near the mine.

Name of the Species	Common Name
<i>Casuarina equisetifolia</i>	Casuarina
<i>Anacardium occidentale</i>	Cashew
<i>Acacia auriculiformis</i>	Acacia
<i>Azadirachta indica</i>	Neem
<i>Cesiasiumea</i>	Chakunda
<i>Simarouba glouca</i>	Simarouba

**PROTECTION OF PLANTATION:**

7 Straight strands & 2 diagonal strands of barbed wire fencing with RCC pillars along the outer periphery of the ML area will be provided which certainly prevent the biotic interference. In addition to this few watchers will be engaged for protection of plantations.

**TOTAL COST OF THE PROJECT:**

Total cost of the project will be Rs 1,90,00,211.00 (Rupees One Crore Ninety Lakh Two Hundred Eleven Only) as detailed in Annexure - III

**EXECUTING AGENCY :**

Since the work will be done inside the Mining lease of OSCOM, M/s IREL (India) Limited will execute the work at the project cost.

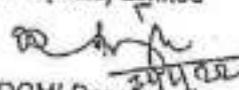
This is prepared in consultation with the DFO, Berhampur

Countersigned by

  
Divisional Forest Officer

Berhampur Division

For IREL (India) Limited

  
DGM (Resources)

- iii) It will provide an alternate habitat to birds and animals.
- iv) It will help in maintaining ecological health of the region.

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#### ITEMS OF WORKS TO BE TAKEN UP:

To achieve the above objectives the following item of works are prescribed to be taken up

1. Survey & Demarcation of Boundary
  2. Fencing
  3. Plantation & Post Planting Operations
1. **Survey & Demarcation of Boundary:** The outer periphery of Mining Lease area and Safety Zone has already been surveyed and demarcated on the field.
  2. **Fencing:** To protect the plantation from grazing and other biotic interference, it will be provided with barbed wire fencing along the outer periphery over 16465 mtr. There will be provision of one RCC pillar to be erected at every 2.5mtr distance with provision of two strut pillars at every 10<sup>th</sup> pillar and corner pillar. There will be 7 straight strands with 2 diagonal strands of barbed wire fencing for better protection purpose. The cost estimate of barbed wire fencing has been provided in Annexure -I. There will be no fence in the inner side.
  3. **Plantation & Post Planting Operations:** ANR plantation with gap planting of 400 seedlings per hectare over 36.34 ha shall be taken up. All planting and post planting measures like casualty replacement, soil working, manuring, fire protection etc. will be undertaken as given in cost norm for ANR 400 gap plantation mode which is furnished as Annexure-II.

While taking up plantation the following points shall be taken in to consideration.

- ❖ Care to be taken to raise healthy seedlings of minimum 60 cm height. Further 10% extra seedling are to be raised for casualty replacement.
- ❖ Pitting shall invariably be done during November-February i.e. before onset of monsoon. Planting shall be done on the onset of monsoon to get the full benefit of rain.
- ❖ In case of any mortality of planted seedlings, it should be replaced with good seedlings as soon as possible for better success rate.
- ❖ Complete weeding in proper time will be done. Strap weeding will not be permitted.

Since the area is provided with barbed wire fence, watch & ward will be easier. Watchers may be engaged in weeding in problematic area along with watch and ward.

#### CHOICES OF SPECIES:

Considering the prevalent climatic condition of the region, topography and soil type the following indigenous species are to be planted.

ESTIMATE FOR BARBED WIRE FENCING

01) 02 ply barbed wire ( 5Rmt per kg)	
7 straight strand x 1000 Mt	= 7000 Mt
2 diagonal strand = $2 \times \sqrt{(6.5)^2 + (8.2)^2} = 2 \times 10.5$ ft	
= 21.00 ft x 400 nos = 8400 ft or	= 2560 Mt
	<u>= 9560 Mt</u>
Requirement of Barbed wire per Km	
= 9560/5 = 1912 Kg	
Cost of Barbed wire @ Rs.80/- per Kg	Rs. 1,52,960.00
02) Construction of RCC pillars of size	
Length - 8 ft, Bottom 6" x 6" & Top 4" x 4"	
Reinforcement with 6 mm rods with proper curing	
$8' \times \{(6" \times 6") + (4" \times 4")\} / 2 = 1.34$ cft or 0.038 cum	
i) Cost of c.c. work 1:2:4 = 0.04 cum @ Rs. 5262.57 / cum = Rs. 199.98	
ii) Cost of rod including cutting, bending & binding	
0.038 cum x 0.90qtl = 0.0342qtl @ Rs. 10595.8/ qtl = Rs. 362.38	
iii) Contingency (15%) including curing, stacking, provision of hooks etc	= Rs. 81.05
	<u>Rs. 643.41 say Rs 644.00</u>
Requirement of pillars per KM	
Spacing = 2.5 mt x 2.5 mt	
Requirement = 1000 / 2.5	= 400
Strut pillars at every 10 <sup>th</sup> pillar = (400/10) x 2	= 80
	<u>480 Nos</u>
Cost of pillar per Kilometer = 480 x Rs. 644/-	= Rs 3,09,120.00
03) Fixing of RCC pillars in position with hbg metal ( 4cm) in C.M. ( 1:4:8)	
i) Digging of pits 1.5' x 1.5' x 1.5' = 3.375 cft/ pit	
For 480 pits 480 x 3.375 = 1620 cft or 45.86 cum @ Rs 120.40per cum = Rs 5521.54	
ii) Fixing of pillars with 4 cm hbg metals in C.M 1:4:8	
Pit size 1.5' x 1.5' x 1.5'	= 3.375 cft
Deduct 1/3 <sup>rd</sup> of bed of pillar i.e. 3.375/3	= (-) 1.125 cft
Total cc work per pillar	<u>= 2.25 cft</u>
For 480 pillars = 480 x 2.25 = 1080 cft or 30.577 cum @ Rs3529 / cum = Rs. 1,10,978.00	
04) Labour for straightening the barbed wire and fixing & clipping with pillars	
70 MD per KM @ Rs. 315.00 per MD	= Rs. 22,050.00
05) Carriage of Barbed wire & pillars to the site	= <u>25,000.00</u>
Approximate cost= Rs 25000.00	
06) Provision of two iron gate of size ( 4' x 5' on LS	= Rs. 20,000.00
	<u>Rs. 6,45,630.00</u>
Total	= Rs. 6,45,630.00

LabourCess 1%

= Rs. 6456.00.00

Expenditure per 1 KM of barbed wire fencing

= Rs 6,52,086.00

07) Expenditure towards maintenance in three year circle ( 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup> year)

@ 2% of cost per KM = 3 x 2% x Rs. 6,52,086 = Rs. 39,125.00

Expenditure per 1 KM of barbed wire fencing including maintenance = Rs. 6,91,211.00

So, expenditure per running metre for fencing = Rs. 691.21 / Mtr or say Rs. 691/- per Mtr

( Rupees Six Hundred Ninety One Only)

3/15

COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 400 PLANTS PER HECTARE

Wage rate of Rs. 315.00/day.

1317

Sl. No.	Items of work	Preferable period of Execution	Labour in Mandays	Labour Cost (In Rs.)	Material cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
<b>Previous Year (ADVANCE WORK) NURSERY RAISING</b>						
1	Nursery Cost ( 18 months Old Seedlings) @ Rs.38.37 part (Rs 9.55 to be released ) for 440 seedlings ( 400+40)	Nov-March	11	3465.00	737.00	4202.00
	Sub Total		11	3465.00	737.00	4202.00
	Monitoring & Supervision charge 5% of the total cost					210.10
	Grand Total		11	3465.00	737.00	4412.10
<b>0<sup>th</sup> YEAR (ADVANCE WORK) PRE-PLANTING CONDITION</b>						
1	Survey, Demarcation and Pillar Posting, GPS Reading with mapping	Nov/Dec	2	630	0	630
2	Site preparation	Nov/Dec	2	630	0	630
3	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc	Jan/Feb	5	1575	0	1575
4	Nursery cost (18-months old seedling) @Rs.38.37 per seedling part @ Rs.13.77/- seedling (Rs. 24.35 for 440 seedlings ( 400+40)	Jan-Mar	28	8820	1694	10714
5	Contingency & Unforeseen Expenditures			0	165	165
	SUB TOTAL		37	11655	2059	13714
6	Monitoring & Supervision charge 5% of the total cost					685.7
	GRAND TOTAL		37	11655	2059	14399.7
<b>1<sup>st</sup> YEAR OPERATION</b>						
1	Nursery cost (18 months old seedling) balance Rs. 4.47 for 440 seedlings	Apr-Jun	5.5	1732.5	234.3	1966.8
2	Pitting 45 cm cube size	Feb/Mar	18	5670	0	5670
3	Carriage and planting including casualty replacement	Jul/Aug	10	3150	0	3150
4	Complete weeding, Soil working & manuring	Aug/Sep	12	3780	0	3780
5	Cost of Vermi compost @ 200 gms/plant @ Rs. 20/- per kg = Rs. 1600.00 and Granular Insecticide 5 gms/plant @ Rs. 80/- per kg = Rs. 160.00	Jul/Aug	0	0	1760	1760
6	Cost of Chemical fertilizer (a) Urea 70 gms/plant in two subsequent doses @ Rs. 6/- per kg = Rs. 168.00 (b) NPK 50 gms/plant @ Rs.24.00 per kg = Rs. 480.00 as basal dose	Jul/Aug	0	0	648	648
7	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc	Sep/Oct	15	4725	0	4725

	Fireline Tracing & Inspection Path	Feb/Mar	3	945	0	945
9	Watch & Ward	Aug-Mar	7	2205	0	2205
10	Contingency and Unforeseen Expenditure		0	0	319	319
	SUB TOTAL		70.5	22207.5	2951.3	25169.1
11	Monitoring & Supervision charge 5% of the total cost					1258.44
	GRAND TOTAL		70.5	22207.5	2951.3	26427.24
2 <sup>nd</sup> YEAR OPERATION						
1	Casualty Replacement including cost of seedling, carriage and planting	Jul/Aug	2	630	1534.8	2164.8
2	Complete weeding and cultural operations	Sep/Oct	4	1260	0	1260
3	Soil Working & Manuring	Sep/Oct	4	1260	0	1260
4	Cost of fertilizer & insecticide (a) Vermil Compost @ 200 gms/plant @ Rs. 20/- per kg = Rs. 1500.00 and (b) Granular Insecticide 5 gms/plant @ Rs. 80/- per kg = Rs. 16.00	Sep/Oct	0	0	1616	1616
5	Fire Line tracing and inspection Path	Feb/Mar	1	315	0	315
6	Watch & Ward (whole year)	Apr-Mar	7	2205	0	2205
7	Contingency & Unforeseen Expenditure			0	362	362
	SUB TOTAL		18	5670	3512.8	9182.8
8	Monitoring & Supervision charge 5% of the total cost					459.14
	GRAND TOTAL		18	5670	3512.8	9641.94
3 <sup>rd</sup> YEAR OPERATION						
1	Complete weeding and cultural operations	Aug/Sep	2	630	0	630
2	Soil Working	Aug/Sep	2	630	0	630
3	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
4	Watch & Ward (Whole Year)	Apr-Mar	7	2205	0	2205
	SUB TOTAL		12	3780	0	3780
6	Monitoring & Supervision charge 5% of the total cost					189
	GRAND TOTAL		12	3780	0	3969
4 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
5 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
6 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
7 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315

2	Watch & Ward and cultural operations	Aug/Sep	2	630	-0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
8 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
9 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB-TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992
10 <sup>th</sup> YEAR OPERATION						
1	Fireline Tracing & Inspection Path	Feb/Mar	1	315	0	315
2	Watch & Ward and cultural operations	Aug/Sep	2	630	0	630
	SUB TOTAL		3	945	0	945
3	Monitoring & Supervision charge 5% of the total cost					47
	GRAND TOTAL		3	945	0	992

## ABSTRACT

Sl. No	Item of work	No of person day	Labour cost @ Rs. 315/- per day	Material cost (in Rs.)	Monitoring & Supervision charge 5% of the total cost	Total cost (in Rs.)
1	Previous Year	10	3150	1052	210.1	4412.1
	0 <sup>th</sup> Year	37	11655	2059	685.7	14399.7
2	1 <sup>st</sup> Year	70.5	22207.5	2961.3	1258.44	26427.24
3	2 <sup>nd</sup> Year	18	5670	3512.8	459.14	9641.94
4	3 <sup>rd</sup> Year	12	3780	0	189	3969
5	4 <sup>th</sup> Year	3	945	0	47	992
6	5 <sup>th</sup> Year	3	945	0	47	992
7	6 <sup>th</sup> Year	3	945	0	47	992
8	7 <sup>th</sup> Year	3	945	0	47	992
9	8 <sup>th</sup> Year	3	945	0	47	992
10	9 <sup>th</sup> Year	3	945	0	47	992
11	10 <sup>th</sup> Year	3	945	0	47	992
	TOTAL	168.5	53077.5	9585.1	3131.38	65793.98

Checked

Assst. Coservator of Forests  
Berhampur Forest Division

Annexure - III

TOTAL FINANCIAL OUTLAY

Sl. No	Work to be done	Estimated Expenditure
1.	Barbed wire fence along outer boundary of safety zone over 16465 mtr @ Rs. 691.00 per mtr	Rs. 1,13,77,315.00
2.	ANR plantation @ 400 plants / ha over 36.34-ha @ 65,794.00 per ha	Rs. 23,90,954.00
	Sub - Total	Rs. 1,37,68,269.00
	Inspection and monitoring and evaluation @ 15% of the total project cost	Rs. 20,65,240.00
	Total	Rs. 1,58,33,509.00
	Price Escalation @ 20%	Rs. 31,66,702.00
	Grand Total	Rs. 1,90,00,211.00

( Rupees One Crore Ninety Lakh Two Hundred Eleven Only)

This is prepared in consultation with the DFO, Berhampur

For IREL(India) Limited

DGM( Resources)

Countersigned by

  
 Divisional Forest Officer  
 Berhampur Division  
 Divisional Forest Officer  
 Brahmapur Division

Checked  
 Asst. Conservator of Forests  
 Berhampur Forest Division  
 29/01/2023

## PROFORMA FOR VERIFICATION OF DEPOSITS IN COMPENSATORY AFFORESTATION FUND

1	Name of the Regional Office	Integrated Regional Office, MoEF & CC, Bhubaneswar
2	State/District/Forest Division to which the proposal relates	Odisha/Ganjam/Brahmapur Forest Division
3	Name of the User Agency, Nature of Proposal	M/s IREL ( India) Limited, OSCOM ( formerly INDIAN RARE EARTHS LIMITED) Proposal for diversion of 157.702 ha. of DLC forest land including 5.66 ha of DLC forest land in safety zone in mouza Humurbana, Agastinuaagon and Ajipalli within total ML area of 2464.054 ha under Chairapur Tahasil of Ganjam District, Odisha in favour of IREL(India) Limited, Orissa Sands Complex(OSCOM) for mining and separation of heavy minerals like Ilmenite, Rutile, Zircon, Sillimanite, Garnet and Monazite from beach sand
4	Category of proposal	Mining
5	Proposal Number	FP/OR/MIN/6524/2013
6	Extent of forest area involved	157.702 Ha.
7	Whether original or extension	NA
8	If extension of lease, please clarify if proposal involves additional forest area and if so, specify	NA
9	Date of 1 <sup>st</sup> Stage Clearance	18.10.2018
10	Extent of C.A.M.P.A charges head wise viz :	
	(a) Compensatory Afforestation	₹ 5,03,84,900.00
	(b) Additional Compensatory Afforestation	₹ 2,89,24,300.00
	(c) Penal Compensatory Afforestation	Nil
	(d) Catchment Area Treatment	Nil
	(e) Wildlife Management Plan	
	i) Site Specific Wildlife Conservation Plan	₹ 37,94,332.00
	(ii) Regional Wildlife Management Plan	₹ 20,20,52,428.00
	(f) Additional charges for diversion of area falling under notified / protected areas	Nil
	(g) Net Present Value	₹ 11,51,22,460.00
	(h) Safety Zone	Nil
	(i) 1.5 times Safety Zone	₹ 81,52,308.00
	(j) ANR Plantation in 500 metre of dispatch areas	Nil

11 Whether payment is made through challan or other means, In case of online payment, Details of challan/deposits

Sl. No	Head of Deposit	Mode of Payment	UTR / DD No	Amount Deposited (Rs.)	Date of Deposit	Name of Bank from which amount transferred to account of CAF	Bank account managed by C which fund d
(i)	Site Specific Wildlife Conservation Plan	RTGS	SBINR52015052215290250	37,94,332/-	22.05.2015	SBI, IRE Campus Branch, Matikhalo	A/c No 344902010 IFSC-UBINJ Union Bank Sundar Naga New D
(ii)	NPV	DD	Draft No.489157, Dated 10.08.2010	9,87,21,452/-	10.08.2010	SBI, IRE Campus Branch, Matikhalo	CAF ORISSA CA15 Corporation E Road, CGO New C
(iii)	Regional Wildlife Management Plan	online	SBINR52020012300063480	14,29,15,132/-	23.01.2020	SBI, IRE Campus Branch, Matikhalo Orissa	A/c No 150825861 Corporation E Complex Br 11 CGO C Phase- I, Lt new Delhi
(iv)	CA	online	SBINR52020022500045314	3,20,79,400/-	25.02.2020	SBI, IRE Campus Branch, Matikhalo	A/c 150825861 Corporation Complex Br Complex, I 110

(v)	CA & Addl. CA	online.	SBINR52021030314019324	3,40,13,800/- (which includes Rs.1,34,23,200/- for CA & Rs. 2,05,90,600/- for Addl. CA)	03.03.2021	SBI, IRE Campus Branch, Matikhalo	AV 150825 Corporatio Complex E 11, CGC Phase-II New De
(vi)	1.5 times Safety Zone	online	SBINR52021072634407838	56,26,777/-	26.07.2021	SBI, IRE Campus Branch, Matikhalo	AV 150825 Union B Lodhi Con Blc CGO Com Lodhi Roa
(vii)	Diff. CA plus Diff. ACA	online	SBINR52021081637657721	73,77,500/- ( which includes Rs.48,82,300/- for CA & Rs. 24,95,200/- for Addl. CA)	18.08.2021	SBI, IRE Campus Branch, Matikhalo	AV 150825 Union B Lodhi Car Blk CGO Cor Lodhi Roa
(viii)	Diff. NPV	online	SBINR52021122257989681	1,64,01,008/-	22.12.2021	SBI, IRE Campus Branch, Matikhalo	ORISSA No 1508 Union B Lodhi Car Blk CGO Cor Lodhi Roa
(ix)	Diff. Regional Wildlife Management Plan	online	SBINR52022021166751487	5,91,37,296/-	11.02.2022	SBI, IRE Campus Branch, Matikhalo Orissa	ORISSA No 1508 Union B Lodhi Co Bl CGO Cor Lodhi Ro

(x)	Diff. ACA plus Diff. 1.5 times of Safety Zone	online	SBINR52022030671090762	83,64,032/- (which includes Rs. 58,32,500/- for Diff. ACA & Rs. 25,25,532/- for Diff. 1.5 times SZ)	08.03.2022	SBI, IRE Campus Branch, Matikhalo Orissa	ORISSA CAMPA, A/ No. 508258852404 Union Bank of India Lodhi Complex (G.O.) Block-11, CGO Complex, Phases Lodhi Road, New Delhi 110003
12	Any Other Remarks if any :						

  
Divisional Forest  
Borhampur C

  
Principal Chief Conservator of Forests  
(Forest Division & Nodal Officer FC Act)  
O/o. the P.C.C.F Odisha, Bhubaneswar



# आईआरईएल (इंडिया) लिमिटेड IREL (India) Limited

(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)

(A Govt of India Undertaking)

CIN : U15100MH1950GOI000187 Website : www.irel.co.in

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

Ref.: IRE (O) FC/ compliances/2022-23/ 683 'A'

DI: 01.04.2023

आज़ादी का  
अमृत महोत्सव

To,

The Divisional Forest Officer,  
Berhampur, Ganjam  
Odisha- 760001

Sub: Annual Self Compliance report of Stage -II Forest Clearance of M/s IREL (India) Limited, Orissa Sands Complex (OSCOM) for mining and separation of heavy minerals.

Ref: MoEF& CC File no.8-15/2018 FC, dated 15<sup>th</sup> December, 2022 .

Dear Sir,

This has reference to the above subject & reference, we are herewith enclosing the point wise annual self compliance report of Stage -II Forest Clearance of M/s IREL (India) Limited, Orissa Sands Complex (OSCOM) for the period December 2022 to March 2023 for your kind information.

With regards.

Yours truly,

GM & Head, OSCO:-

Cc: RCCF, Berhampur, Berhampur Circle: for kind information.

Cc: Deputy Director General of Forests (Central), Govt. of India, MoEF&CC, Integrated Regional office, A/3, Chandrasekharapur, Bhubaneswar-751023.

Cc: Deputy Inspector General of Forests, Govt. of India, MoEF&CC, Indira Paryavaran Bhawan, Jorbagh Road, Aliganj, New Delhi-110003.

इंडिया सैंड्स कॉम्प्लेक्स, माटिखालो (डाक), छत्रपुर (गंजाम), ओडिशा - 761045, भारत

Orissa Sands Complex, Matikhalo (R.O.), Chatrapur (Ganjam), Odisha - 761 045

फोन / Tel. : 06811 - 257890 - 95 फेक्स / Fax : 06811 - 257998

पंजीकृत कार्यालय : प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028

Regd. Office : Plot No. 1207, Veer Savarkar Marg, Near Siddhivinayak Temple, Prabhadevi, Mumbai - 400 028

Annual Self Compliance Report

Name of the project: 1. Mining & Mineral Separation of OSCOM, IREL (India) Limited

Forest Clearance letters No and Date:

i) MoEF File no.8-15/2018 FC, dated 15<sup>th</sup> December,2022 .

Period of Compliance Report: (15<sup>th</sup> December, 2022 to 31<sup>st</sup> March, 2023)

Sub: Compliance of various conditions of Stage-II Forest Clearance by MoEF File no.8-15/2018 FC, dated 15<sup>th</sup> December,2022 for Mining & Mineral Separation of IREL, OSCOM.

S.No.	Description of Conditions	Status
A. 1.	Conditions which need to be complied prior to handing over of forest land by the State Forest Department. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details before handing over the forest land to the user agency	The KML files of the diverted forest area, the CA areas, the proposed SMC treatment area and the WLMP area have been uploaded on e-Green watch portal on 20.02.2023.
B. 1.	Conditions which need to be complied on field after handing over of forest land to the user agency by the State Forest Department Legal status of the diverted forest land shall remain unchanged	Agreed upon.
2.	The approval for diversion of forest land shall be subject to CRZ clearance, if applicable;	CRZ clearance has been granted to M/s IREL (India) Limited for capacity expansion of mining and mineral separation units (CEMMU) project at Matikhalo under Chatrapur Tahasil of Ganjam district from the State Coastal Zone Management Authority (OSZMA) vide letter no.13716/F & E dated 24.07.2012.

*[Signature]*

S.No	Description of Conditions	Status
3.	<p><b>Compensatory Afforestation:</b></p> <p>i. The Compensatory afforestation over degraded forest land, double in extent to the forest land being diverted i.e. 320 ha shall be raised by the State Forest Department at the project cost;</p> <p>ii. The compensatory afforestation scheme, as approved, shall be implemented by the State Forest Department. The CA will be maintained for 10 years and the CA scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;</p> <p>iii. Compensatory afforestation over degraded forest land, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval;</p> <p>iv. The proposed compensatory land is found to be a natural habitat of Peafowl and other shrub dwelling species; accordingly, the existing thorny/ shrubby vegetation ecosystem should be maintained, without any attempt to alter by undue over planting. However, soil moisture conservation should be given prime focus with possible creation of small water bodies and planting shall also be limited and confined to local thorny, fruit bearing species only.</p>	<p>CA and ACA schemes over the area 320 ha and 120 ha are approved by CCF (FD &amp;NO, FC Act) at the revised wage rate of Rs 315/ per MD and the cost of CA and ACA are deposited in the CAMPA fund by the user agency.</p> <p>User agency agreed upon that, necessary support will be extended to State Govt. so that the ecosystem of the proposed compensatory land will be maintained without any alteration, prioritizing soil and moisture conservation with possible creation of water bodies and planting thorny shrubs and indigenous fruit bearing species only.</p>

*Rahala*

S.No.	Description of Conditions	Status
4.	<p>NPV :</p> <p>i. The State Government has realized the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of CAMPA account of the State. NPV, if any, becomes due in future shall be realized in accordance with the relevant guidelines issued by the Ministry.</p> <p>ii. At the time of payment of the Net Present Value (NPV) at the then prevailing rate, the User Agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.</p>	<p>M/s IREL has deposited full NPV in Ad-hoc CAMPA using e-payment module through web portal of Ministry of Environment, Forest &amp; Climate Change, Government of India. The user agency has furnished an undertaking to pay the additional amount of NPV, if so determined in case of hike of present rate of NPV as per the final decision of the Hon'ble Supreme Court of India (The copies of NPV payment details are enclosed in Annexure-I). Further M/s IREL do hereby undertake to pay the additional amount of NPV if so determined in case of the present rate of NPV as per the final decision of the Hon'ble Supreme Court of India.</p> <p>The User Agency agreed upon to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.</p>
5.	<p>Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a>);</p>	<p>The user agency agreed upon to pay the Compensatory levies, if any, realized in future under the extant project, shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (<a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a>).</p>
6.	<p>The user agency's work involves seashore sand mining, which is also the site for nesting of endangered Olive Ridley turtles. While the 52 km length of sea shore is the location of nesting, out of this 5 km length of sea shore with large sand beds on both sides of Rushikulya River is the mass nesting site, other areas are sporadic nesting sites. So, the area involving 5 km distance (2.5 km on both sides of Rushikulya a river mouth) to be rigorously conserved without any disturbance as per the Plan approved by the Chief Wildlife Warden, Odisha.</p>	<p>The 5 km zone has been clearly demarcated as NO GO AREA / NO DEVELOPMENT ZONE. The user agency do hereby undertake that no Mining activities or Sand Extraction or habitat alteration or activities of similar nature will be carried out within (five) km zone of the nesting/mass nesting of endangered Olive Ridley sea turtle from Rushikulya river mouth as prescribed by Chief Wildlife Warden.</p>

*K. K. Sahoo*

S.No.	Description of Conditions	Status
7.	The State Govt. shall ensure that User Agency shall implement the R&R Plan as per the R&R Policy of State Government in consonance with National R&R Policy, Government of India before the commencement of the project work and implementation. The said R&R Plan will be monitored by the State Government/Regional Office of MoEF&CC along with indicators for monitoring and expected observable milestones.	Rehabilitation and resettlement plan (R&R) has been prepared for the project affected families (PAFs) as per the directive issued by the expert appraisal committee (Mining) of MoEF & CC in line with ORRP 2006 and NRRP 2007 and is duly approved by Collector & District Magistrate, Ganjam. The recommendations of Rehabilitation & Periphery Development & Advisory Committee (RPDAC) headed by RDC, Berhampur will be implemented in co-ordination with District Administration & Village Panchayat in due course of time.
8.	The State Government shall ensure that the activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area 7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015 shall be implemented within three year at the project cost from the issue of Stage-II Clearance.	User agency agreed upon that activities proposed in the approved scheme for fencing, protection and regeneration of the safety zone area, 7.5 m strip will be maintained within the lease boundary, so that safety zone will be part of the total area of the mining lease as per the Ministry's guidelines dated 27.05.2015.
9.	<p>Safety Zone Management: The following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:</p> <p>i) User agency shall ensure demarcation of safety zone (7.5 meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the State Forest Department.</p>	The user agency agreed upon to demarcate the safety zone (7.5 meter strip all along the inner boundary of the mining lease area) exploring the ground feasibility all along the ML area and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing by deploying adequate number of watchers under the supervision of the State Forest Department after handing over of the 157.702 Ha of DLC forest land to the user agency by DFO, Berhampur.

*Binak*

S.No.	Description of Conditions	Status
	<p>ii) Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;</p> <p>iii) Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department.</p> <p>iv) Afforestation on degraded forest land to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost under the supervisions of the State Forest Department. The degraded forest land (DFL) so selected will be informed to the MoEF &amp; CC and afforestation will be done within three years from the date of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department;</p> <p>v) The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms.</p>	<p>Agreed upon.</p> <p>Agreed upon.</p> <p>The Scheme for undertaking afforestation over 1.5 times of Safety Zone i.e. 55 ha in Anantapur DPF has been technically approved by the Regional Chief Conservator of Forests, Berhampur Circle and M/s IREL has deposited Rs.81,52,308/- in Orissa CAMPA Fund and the scheme will be implemented within a period of three years from the date of approval of Stage-II Forest Clearance by the State Forest Department.</p> <p>Agreed upon.</p>
10.	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the validity of lease granted under the MMDR Act, 1957;	The Forest Clearance granted by MoEF & CC is valid till the existence of Mining Lease i.e. up to 31.03.2047.
11.	The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;	The user Agency has obtained the Environment Clearance from MoEF & CC vide letter dated 11.01.2019 (The copy of EC granted in favor of IREL is enclosed in Annexure-III for reference).
12.	No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas.	Agreed upon.



9.	State Government shall ensure that process for settlement of rights, in terms of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, has been completed in accordance with the relevant guidelines prescribed by this Ministry's letter No. 11-9/1998-FC. (Pt.) dated 03.06.2009 read with 05.07.2013.	The user agency will ensure the compliance in coordination with State Forest Department.
20.	The User Agency will regularly undertake desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per plan submitted along with the compliance of Stage-I approval, so as to mitigate the impact of project on such tanks/water bodies.	The user agency agreed upon that desilting of village tanks and other water bodies, located within five km from the mine lease boundary, as per plan submitted along with the compliance of Stage-I approval, so as to mitigate the impact of project on such tanks/water bodies. The ponds are identified and proposal is going to be initiated for undertaking de-siltation of 05 nos of village ponds in Sriramchandrapur, Kanamana, Arjyapali & Kalipali GP which is located at a distance of 02 KM from mine lease boundary.
21.	The cost of felling of trees shall be deposited by the User Agency with the State Forest Department.	The user agency agreed upon that the cost of felling of trees will be deposited by the User Agency with the State Forest Department. A request letter has been sent to DFO, Berhampur vide letter no.619'A', dtd.23.03.2023 for conducting a co-ordination meeting between IREL, State Forest Dept. & District Administration to finalize the schedule of tree enumeration, fix tree felling cost and mode of disposal prior to undertake mining operation over the DLC land.
22.	Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO.	Agreed upon.
23.	The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department.	The user agency agreed upon that it would explore the possibilities of translocation of maximum number of trees identified to be felled and will ensure that tree felling would be done only when it is unavoidable and it will be carried out under strict supervision of the State Forest Department.
24.	The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may be disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.	The user agency agreed upon that it will comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may be disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner.

*Dhali*

13.	The boundary of the diverted forest land, mining lease and safety zone, as applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;	Agreed upon.
14.	The User Agency shall undertake mining as per approved mining plan and the concurrent reclamation plan as per the approved mining plan shall be executed & the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry: If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed.	The user agency is undertaking Mining activities & concurrent reclamation in adherence to the approved Mining Plan. We further undertake that all mining operations and the concurrent reclamation will be done as per the approved mining plan only.
15.	The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal.	Agreed upon.
16.	The State Govt. and the user agency shall ensure that the forest land shall not be used for any purpose other than that specified in the proposal.	The user agency agreed upon that the forest land shall not be used for any purpose other than that specified in the proposal.
17.	The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.	The user agency agreed upon that the forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government.
18.	No damage to the flora and fauna of the adjoining area shall be caused.	The user agency agreed upon that not to cause any damage to the flora and fauna of the adjoining area.

*Kishor*

25.	The User Agency shall submit the annual self-compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly.	Agreed upon.
26.	Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife.	The user agency agreed upon that it will comply with any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife.
27.	The user agency shall comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	The user agency agreed upon to comply all the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.
28.	Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.	The user agency agreed upon that all the conditions stipulated in Stage-II FC would be complied.

*Prakash*



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Website : [www.ospboar](http://www.ospboar)

Central Lab  
Annexure

**STATE POLLUTION CONTROL BOARD, ODISHA**  
[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]  
Paribesh Bhawan, A/118, Nilakanthnagar, Unit-VIII,  
Bhubaneswar - 751 012  
[ CENTRAL LABORATORY ]

No. 9095

VISC (LEM) Proj-311/23-24

DI. 05-06-2023

To

The Regional Officer  
State Pollution Control Board, Odisha  
2<sup>nd</sup> Floor, New Division Office, IDCO, Berhampur Division  
Industrial Estate, Berhampur  
Dist- Ganjam-760008

Sub : Submission of Interpretation of Test Reports-Reg

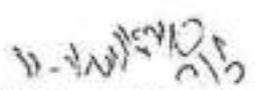
Ref : (1) Your letter No. 1172/ Legal/54/2022 dated 20.4.2023  
(2) Your letter No. 1174/ Legal/58/2023 dated 20.4.2023  
(3) Your letter No. 1176/ Legal/58/2023 dated 20.4.2023

Sir,

With reference to above cited letters, this is to inform that Interpretation of test reports issued by this office in respect of Baulabandha pond, village ponds in Badaputi, Kanamana, Kallipali and K Arjipali villages; and 12 ground water samples are enclosed herewith for your kind information and necessary action.

Yours faithfully,

Encl : As above

  
Chief Environmental Scientist

APSL (20th) Plz DZ (2023)  
  
27/06/23







Opinion on water quality test report for Pond near entrance to Badaputi village, Ganjam

Water samples collected on Dt. 19.04.2023 from Badaputi village in Ganjam district, by Regional Office, Berhampur was submitted to the Central Laboratory of State Pollution Control Board, Odisha on 21.4.2023 for analysis vide letter No. 1174 Legal/ 58/2023 dated 20.04.2023 (Annexure-1).

Test reports of the pond with respect to the parameters pH, Electrical Conductivity, Total Dissolved Solids, Biochemical oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrite-N, Nitrate, ammonia-N, Total Kjeldahl Nitrogen (TKN), Sulphate, Phosphate, Sodium, Potassium, Chloride, Total Coliform, Fecal Coliform, Chromium (hexavalent) and Total iron was submitted to the Regional Office, Berhampur vide Test Report No. OS/251/04/2023 dated 27.4.2023 (Annexure-2). After rectification of the problems in Atomic absorption Spectrophotometer installed in Central Laboratory, the Heavy metal concentrations (such as, Copper (Cu), Cadmium (Cd), Lead (Pb), Zinc (Zn), Nickel (Ni)) could be analysed on Dt. 17.5.2023 and a separate analysis report was issued for these metals vide Test Report No. OS/276/05/2023 dated 20.5.2023 (Annexure-3).

Compiled analysis report of the pond water alongwith the prescribed limits is presented in Table-1. As the pond water is being mostly used for bathing purpose, to assess the existing water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated Best Use Classification for Class B (Outdoor Bathing (Organised) (IS :2296 (1982)) and primary water quality criteria for outdoor bathing laid down by Ministry of Environment, Forests and Climate Change vide Notification No. GSR 742 (E) dated 25.09.2000. In absence of tolerance limit for the metals in Class-B and MOEF standards, tolerance limits prescribed under Class-C (Drinking Water after conventional treatment and after disinfection) has been used for assessment of the pond water quality. Copy of the standards referred is given in Annexure-4.

From the data it has been observed that the water quality did not conform to the criteria limit specified for Biochemical Oxygen Demand (BOD), Total Coliform bacteria (TC), Fecal Coliform (FC) bacteria. High values of Dissolved Oxygen (7.8 mg/L) observed in the analysis results may be ascribed to eutrophic condition of the pond. All tested heavy metals conform to the respective specified limits.

Such non-conformance with respect to BOD, TC and FC values prescribed for Class-B indicates that the water is not fit for bathing purpose.

U. S. S. S. S.  
02.06.23

Table-1 Water quality of Pond near entrance to Badaputi village, Tahasil : Borhampur, Ganjam district

(a) With respect to physico-chemical and bacteriological parameters

Parameter with Unit	Test Results	Primary Water quality Criteria for Class B * (Organized outdoor bathing)	GSR 742 (E) dated 25.9.2000 (Organized outdoor bathing)
Test Report No. 05/251/04/2023 Dt. 27/04/2023			
pH	7.8	6.5 to 8.5	6.5 to 8.5
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	469.0	-	-
Total Dissolved Solids (TDS), mg/L	272.0	-	-
Dissolved Oxygen (DO), mg/L	7.8	5 mg/L or more	5 mg/L or more
Biochemical Oxygen Demand (BOD), mg/L	5.9	3 mg/L or less	3 mg/L or less
Chemical Oxygen Demand (COD), mg/L	48.0	-	-
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	0.060	-	-
Nitrate-N ( $\text{NO}_3^-$ -N), mg/L	1.405	-	-
Ammonical Nitrogen as N ( $\text{NH}_3$ -N), mg/L	1.12	-	-
Total Kjeldahl Nitrogen (TKN), mg/L	6.16	-	-
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	11.36	-	-
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	0.082	-	-
Sodium (Na), mg/L	43.2	-	-
Potassium (K), mg/L	6.97	-	-
Chloride (Cl), mg/L	60.0	-	-
Total Coliform (TC), MPN/100 ml)	54000	500 or less	-
Fecal Coliform (FC), MPN/100 ml)	24000	-	500 (Desirable) 2500 (max permissible)

\* Designated Best Use Classification (IS : 2296-1982)

3/2/2023  
25/2/2023  
Addl. S.D.O. Borhampur  
District: Ganjam  
S.O. Borhampur

*[Handwritten signature]*



Opinion on water quality test report for pond near entrance to Kanamana village, Ganjam

Water samples collected on Dt. 19.04.2023 from Kanamana village in Ganjam district, by Regional Office, Berhampur was submitted to the Central Laboratory of State Pollution Control Board, Odisha on 21.4.2023 for analysis vide letter No. 1174 Legal/ 58/2023 dated 20.04.2023 (Annexure-1).

Test reports of the pond with respect to the parameters pH, Electrical Conductivity, Total Dissolved Solids, Biochemical oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrite-N, Nitrate, ammonia-N, Total Kjeldahl Nitrogen (TKN), Sulphate, Phosphate, Sodium, Potassium, Chloride, Total Coliform, Fecal Coliform, Chromium (hexavalent) and Total iron was submitted to the Regional Office, Berhampur vide Test Report No. OS/251/04/2023 dated 27.4.2023 (Annexure-2). After rectification of the problems in Atomic absorption Spectrophotometer installed in Central Laboratory, the Heavy metal concentrations ( such as, Copper (Cu), Cadmium (Cd), Lead (Pb), Zinc (Zn), Nickel (Ni)) could be analysed on Dt. 17.5.2023 and a separate analysis report was issued for these metals vide Test Report No. OS/276/05/2023 dated 20.5.2023 (Annexure-3).

Compiled analysis report of the pond water alongwith the prescribed limits is presented in Table-1. As the pond water is being mostly used for bathing purpose, to assess the existing water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated Best Use Classification for Class B (Outdoor Bathing (Organised) (IS :2296 (1982)) and primary water quality criteria for outdoor bathing laid down by Ministry of Environment, Forests and Climate Change vide Notification No. GSR 742 (E) dated 25.09.2000. In absence of tolerance limit for the metals in Class-B and MOEF standards, tolerance limits prescribed under Class-C (Drinking Water after conventional treatment and after disinfection) has been used for assessment of the pond water quality. Copy of the standards referred is given in Annexure-4.

From the data it has been observed that the water quality did not conform to the criteria limit specified for Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Total Coliform bacteria (TC). All tested heavy metals conform to the respective specified limits.

Such non-conformance with respect to BOD and TC values prescribed for Class-B indicates that the water is not fit for bathing purpose.

16/04/23  
02.6.2023

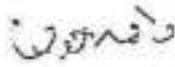
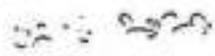
M. Hanumanth  
02/6/23

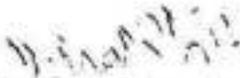
Table-1 Water quality of Pond near entrance to Kanamana village, Tahasil : Berhampur, Ganjam district

(a) With respect to physico-chemical and bacteriological parameters

Parameter with Unit	Test Results	Primary Water quality Criteria for Class B * (Organized outdoor bathing)	GSR 742 (E) dated 25.9.2000 (Organized outdoor bathing)
Test Report No. OS/251/04/2023 Dt. 27/04/2023			
pH	8.5	6.5 to 8.5	6.5 to 8.5
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	827.0	-	-
Total Dissolved Solids (TDS), mg/L	488.0	-	-
Dissolved Oxygen (DO), mg/L	2.4	5 mg/L or more	5 mg/L or more
Biochemical Oxygen Demand (BOD), mg/L	21.0	3 mg/L or less	3 mg/L or less
Chemical Oxygen Demand (COD), mg/L	109.0	-	-
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	<0.02	-	-
Nitrate-N ( $\text{NO}_3^-$ -N), mg/L	1.452	-	-
Ammonical Nitrogen as N ( $\text{NH}_4$ -N), mg/L	1.12	-	-
Total Kjeldahl Nitrogen (TKN), mg/L	5.04	-	-
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	28.77	-	-
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	<0.05	-	-
Sodium (Na), mg/L	92.95	-	-
Potassium (K), mg/L	24.8	-	-
Chloride ( $\text{Cl}^-$ ), mg/L	139.9	-	-
Total Coliform (TC), MPN/100 ml)	7900	500 or less	-
Fecal Coliform (FC), MPN/100 ml)	2200	-	500 (Desirable) 2500 (max permissible)

\* Designated Best Use Classification (IS : 2296-1982)

  
  
 Addl. C. S. & D. Officer  
 Central Laboratory  
 S.P.O. Bardi, Odisha

  
 Addl. C. S. & D. Officer  
 Central Laboratory  
 S.P.O. Bardi, Odisha

(b) With respect to heavy metals

Parameter with Unit	Test Results	Primary Water quality Criteria for Class C * (Drinking water source with conventional treatment and after disinfection)
Test Report No. OS/251/04/2023 dated 27.04.2023		
Chromium (Hexavalent) (Cr <sup>6+</sup> ), mg/L	0.008	0.05, max
Total Iron (Fe), mg/L	0.249	50, max
Test Report No. OS/276/05/2023 dated 20.05.2023		
Copper (Cu), mg/L	0.005	1.5, max
Cadmium (Cd), mg/L	0.0016	0.01, max
Lead (Pb), mg/L	0.011	0.1, max
Nickel (Ni), mg/L	0.011	-
Zinc (Zn), mg/L	0.006	15, max

\* Designated Best Use Classification (IS : 2296-1982)

(Cr<sup>6+</sup>)  
 0.008  
 Addl. Chief Eng. Scientist  
 Central Laboratory  
 S.P.C. Board, Mysore

11.05.2023  
 S.P.C. Board, Mysore

Opinion on water quality test report for the pond near rehabilitation colony of Kalipalli village, Ganjam

Water samples collected on Dt. 19.04.2023 from the pond near rehabilitation colony of Kalipalli village in Ganjam district, by Regional Office, Berhampur was submitted to the Central Laboratory of State Pollution Control Board, Odisha on 21.4.2023 for analysis vide letter No. 1174 Legal/ 58/2023 dated 20.04.2023 (Annexure-1).

Test reports of the pond with respect to the parameters pH, Electrical Conductivity, Total Dissolved Solids, Biochemical oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrite-N, Nitrate, ammonia-N, Total Kjeldahl Nitrogen (TKN), Sulphate, Phosphate, Sodium, Potassium, Chloride, Total Coliform, Fecal Coliform, Chromium (hexavalent) and Total iron was submitted to the Regional Office, Berhampur vide Test Report No. OS/251/04/2023 dated 27.4.2023 (Annexure-2). After rectification of the problems in Atomic absorption Spectrophotometer installed in Central Laboratory, the Heavy metal concentrations ( such as, Copper ( Cu), Cadmium (Cd), Lead (Pb), Zinc (Zn), Nickel (Ni)) could be analysed on Dt. 17.5.2023 and a separate analysis report was issued for these metals vide Test Report No. OS/276/05/2023 dated 20.5.2023 (Annexure-3).

Compiled analysis report of the pond water alongwith the prescribed limits is presented in Table-1. As the pond water is being mostly used for bathing purpose, to assess the existing water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated Best Use Classification for Class B (Outdoor Bathing (Organised) (IS :2296 (1982)) and primary water quality criteria for outdoor bathing laid down by Ministry of Environment, Forests and Climate Change vide Notification No. GSR 742 (E) dated 25.09.2000. In absence of tolerance limit for the metals in Class-B and MOEF standards, tolerance limits prescribed under Class-C (Drinking Water after conventional treatment and after disinfection) has been used for assessment of the pond water quality. Copy of the standards referred is given in Annexure-4.

From the data it has been observed that the criteria parameters like pH, Dissolved Oxygen and Biochemical Oxygen Demand conform to the tolerance limit for Class B. However, higher values of Total coliform value (1300 MPN/100 ml) than the stipulated tolerance limit (500 MPN/ 100 ml) has been observed in the Pond water. Whereas, Fecal coliform values (230 MPN/ 100ml) in the pond water remained within the desirable limit (500 MPN/ 100ml) prescribed by MOEF. Such marginal deviation in total coliform values may be ascribed to the human activities in the pond. All tested heavy metals conform to the respective specified limits.

*Signature*  
02.6.2023  
Addl. Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

*Signature*  
02.6.2023  
Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

Table-1 Water quality of pond near rehabilitation colony of Kalipalli village, Tahasil : Berhampur, Ganjam district

(a) With respect to physico-chemical and bacteriological parameters

Parameter with Unit	Test Results	Primary Water quality Criteria for Class B * (Organized outdoor bathing)	GSR 742 (E) dated 25.9.2000 (Organized outdoor bathing)
Test Report No. OS/251/04/2023 Dt.27/04/2023			
pH	8.3	6.5 to 8.5	6.5 to 8.5
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	342.0	-	-
Total Dissolved Solids (TDS), mg/L	200.0	-	-
Dissolved Oxygen (DO), mg/L	9.1	5 mg/L or more	5 mg/L or more
Biochemical Oxygen Demand (BOD), mg/L	2.8	3 mg/L or less	3 mg/L or less
Chemical Oxygen Demand (COD), mg/L	24.0	-	-
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	0.462	-	-
Nitrate-N ( $\text{NO}_3^-$ -N), mg/L	0.405	-	-
Ammonical Nitrogen as N ( $\text{NH}_3$ -N), mg/L	1.68	-	-
Total Kjeldahl Nitrogen (TKN), mg/L	7.28	-	-
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	10.37	-	-
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	0.188	-	-
Sodium (Na), mg/L	31.11	-	-
Potassium (K), mg/L	2.9	-	-
Chloride (Cl), mg/L	34.0	-	-
Total Coliform (TC), MPN/100 ml)	1300	500 or less	-
Fecal Coliform (FC), MPN/100 ml)	230	-	500 (Desirable) 2500 (max permissible)

\* Designated Best Use Classification (IS : 2296-1982)

*L. B. Mohanta*  
02.05.2023  
Addl. Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

*M. Kalpana*  
7/6  
Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

(b) With respect to heavy metals

Parameter with Unit	Test Results	Primary Water quality Criteria for Class C* (Drinking water source with conventional treatment and after disinfection)
Test Report No. OS/251/04/2023 dated 27.04.2023		
Chromium (Hexavalent) (Cr <sup>6+</sup> ), mg/L	0.003	0.05, max
Total Iron (Fe), mg/L	2.588	50, max
Test Report No. OS/276/05/2023 dated 20.05.2023		
Copper (Cu), mg/L	0.008	1.5, max
Cadmium (Cd), mg/L	0.0008	0.01, max
Lead (Pb), mg/L	0.008	0.1, max
Nickel (Ni), mg/L	0.009	-
Zinc (Zn), mg/L	0.012	15, max

\* Designated Best Use Classification) (IS : 2296-1982)

*Uatman*  
*04-6-2023*  
 Addl. Chief Exec. Officer  
 Central Laboratory  
 S.P. Board, Odisha

*P. K. Singh*  
 Addl. Chief Exec. Officer  
 S.P. Board, Odisha

Opinion on water quality test report for the pond near K Arjipalli village, Ganjam

Water samples collected on Dt. 19.04.2023 from the pond near K Arjipalli village in Ganjam district, by Regional Office, Berhampur was submitted to the Central Laboratory of State Pollution Control Board, Odisha on 21.4.2023 for analysis vide letter No. 1174 Legal/ 58/2023 dated 20.04.2023 (Annexure-1).

Test reports of the pond with respect to the parameters pH, Electrical Conductivity, Total Dissolved Solids, Biochemical oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrite-N, Nitrate, ammonia-N, Total Kjeldahl Nitrogen (TKN), Sulphate, Phosphate, Sodium, Potassium, Chloride, Total Coliform, Fecal Coliform, Chromium (hexavalent) and Total Iron was submitted to the Regional Office, Berhampur vide Test Report No. OS/251/04/2023 dated 27.4.2023 (Annexure-2). After rectification of the problems in Atomic absorption Spectrophotometer installed in Central Laboratory, the Heavy metal concentrations (such as, Copper (Cu), Cadmium (Cd), Lead (Pb), Zinc (Zn), Nickel (Ni)) could be analysed on Dt. 17.5.2023 and a separate analysis report was issued for these metals vide Test Report No. OS/276/05/2023 dated 20.5.2023 (Annexure-3).

Compiled analysis report of the pond water alongwith the prescribed limits is presented in Table-1. As the pond water is being mostly used for bathing purpose, to assess the existing water quality status of the pond, comparison has been made with respect to the primary water quality criteria for Designated Best Use Classification for Class B (Outdoor Bathing (Organised) (IS :2296 (1982)) and primary water quality criteria for outdoor bathing laid down by Ministry of Environment, Forests and Climate Change vide Notification No. GSR 742 (E) dated 25.09.2000. In absence of tolerance limit for the metals in Class-B and MOEF standards, tolerance limits prescribed under Class-C (Drinking Water after conventional treatment and after disinfection) has been used for assessment of the pond water quality. Copy of the standards referred is given in Annexure-4.

From the data it has been observed that the criteria parameters like pH, Dissolved Oxygen, Biochemical Oxygen Demand, Fecal Coliform values conform to the tolerance limit for Class B. However, higher values of Total coliform value (2200 MPN/100 ml) than the stipulated tolerance limit (500 MPN/ 100 ml) has been observed in the Pond water. Such non-conformance with respect to total coliform values may be ascribed to the human activities in the pond. All tested heavy metals except cadmium (0.07 mg/L) in comparison to the specified limit 0.01 mg/L conform to the respective specified limits.

*Chaitanya*  
02.6.2023  
Addl. Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

*H. Lakshmi*  
Chief Env. Scientist  
Central Laboratory  
S.P.C. Board, Odisha

Table-1 Water quality Pond near K Arjipalli village, Tahasil : Berhampur, Ganjam district  
(a) With respect to physico-chemical and bacteriological parameters

Parameter with Unit	Test Results	Primary Water quality Criteria for Class B * (Organized outdoor bathing)	GSR 742 (E) dated 25.9.2000 (Organized outdoor bathing)
Test Report No. OS/251/04/2023 Dt. 27/04/2023			
pH	7.7	6.5 to 8.5	6.5 to 8.5
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	405.0	-	-
Total Dissolved Solids (TDS), mg/L	252.0	-	-
Dissolved Oxygen (DO), mg/L	9.1	5 mg/L or more	5 mg/L or more
Biochemical Oxygen Demand (BOD), mg/L	2.2	3 mg/L or less	3 mg/L or less
Chemical Oxygen Demand (COD), mg/L	24.0	-	-
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	0.090	-	-
Nitrate-N ( $\text{NO}_3^-$ -N), mg/L	0.299	-	-
Ammonical Nitrogen as N ( $\text{NH}_3$ -N), mg/L	0.56	-	-
Total Kjeldahl Nitrogen (TKN), mg/L	1.68	-	-
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	15.06	-	-
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	0.244	-	-
Sodium (Na), mg/L	40.85	-	-
Potassium (K), mg/L	4.40	-	-
Chloride (Cl), mg/L	70.0	-	-
Total Coliform (TC), MPN/ 100 ml	2200	500 or less	-
Fecal Coliform (FC), MPN/ 100 ml	1100	-	500 (Desirable) 2500 (max permissible)

\* Designated Best Use Classification (IS : 2296-1982)

Learn  
02.06.2023

Andhra Pradesh State  
Water Laboratory  
S.P.O. Board, Odisha

11/04/2023  
S.P.O. Board, Odisha

(a) With respect to heavy metals

Parameter with Unit	Test Results	Primary Water quality Criteria for Class C* (Drinking water source with conventional treatment and after disinfection)
Test Report No. OS/251/04/2023 dated 27.04.2023		
Chromium (Hexavalent) (Cr <sup>6+</sup> ), mg/L	<0.002	0.05, max
Total Iron (Fe), mg/L	1.314	50, max
Test Report No. OS/276/05/2023 dated 20.05.2023		
Copper (Cu), mg/L	0.009	1.5, max
Cadmium (Cd), mg/L	0.0747	0.01, max
Lead (Pb), mg/L	0.007	0.1, max
Nickel (Ni), mg/L	0.084	-
Zinc (Zn), mg/L	0.005	15, max

\* Designated Best Use Classification (IS : 2296-1982)

Lakshmi  
 06-6-2023  
 Addl. Chief Env. Scientist  
 Central Laboratory  
 S.P.C. Board, Odisha

Mayank K. Singh  
 Chief Env. Scientist  
 Central Laboratory  
 S.P.C. Board, Odisha

Annexure - 1

REGIONAL OFFICE OF THE  
 STATE POLLUTION CONTROL BOARD, ODISHA,  
 (DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA)

2<sup>nd</sup> Floor, New Division Office, IDCO, Berhampur Division,  
 Industrial Estate, Berhampur, Dist. Ganjam-760008, Odisha, India

No. 1174 / Legal/58/2023

DI. 20/04/2023

By hand/E-mail

To

The Chief Environmental Scientist (Lab),  
 Central laboratory, State Pollution Control Board, Odisha  
 Plot No. B-59/2 & 3, Chandaka Industrial Estate, Patia, Bhubaneswar-  
 751024.

Sub: Submission of surface water samples (04 nos.), jointly collected by  
 SPCB, Berhampur & Health physics unit of BARC, Chatrapur from  
 Konamana, Arjyapalli & Kalipalli Grampanchayats of Ganjam District -  
 Reg

Ref: Head Office Letter No. 2899 Dated 27.02.2023

Sir,

With reference to the subject cited above, I am deputing Sri Trilochan Senapati, JSA of this office to submit the surface water samples for analysis parameters like pH, DO, BOD, COD, TDS, EC, NO<sub>2</sub>-N, NO<sub>3</sub>-N, Amomical Nitrogen, TKN, Sulphate, Orthophosphate, Na, K, Cl, Cu, Cd, Zn, Ni, Cr(VI), Fe, Pb, Total Coliform and Fecal Coliform bacteria at Central Laboratory Bhubaneswar which were collected on 19.04.2023 from Konamana, Arjyapalli & Kalipalli Grampanchayats of Ganjam district as per proceeding of the joint committee members held on 12.04.2023 for compliance of order dtd. 21.02.2023 of the Hon'ble NGT, PB, New Delhi in the matter of O.A. No. 05/2023/PB- Surendra Panigrahi vs. State of Odisha- Indian Rare Earth Ltd.. He will submit the collected samples on 21.04.2023. The sampling locations is enclosed as Annexure-I. This is for favour of kind information and necessary action.

Yours faithfully,

Encl: As above

  
 REGIONAL OFFICER

Memo. No. \_\_\_\_\_ / DI \_\_\_\_\_

Copy to Sri Trilochan Senapati, JSA for information and necessary action.

Acted  
 M. Anand 21/4

REGIONAL OFFICER

130 (G. N. S. / 4. 2023)

Leathale  
 21.4.2023

Smile Nayak  
 21/4/23

**CENTRAL LABORATORY  
STATE POLLUTION CONTROL BOARD, ODISHA**

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024

E-mail: [centrallab@ospcboard.org](mailto:centrallab@ospcboard.org)

**TEST REPORT**

Page 1 of 2

1. ULR No. : ----
- 2 (i). Report No. : OS/251/04/2023
- 3 (i) Date : 27.04.2023
- 2(ii). Amendment No : ---
- 3(ii) Amendment Date : ---
4. Sample Submitted By : Sri Trilochan Senapati, JSA,  
(Name and address) Regional Office, SPCB, Odisha, Berhampur
5. Reference Letter No. : 1174 Legal/ 58/2023 dt.20.04.2023
6. Date of sample receipt : 21.04.2023
7. Sample Description :
- (i) Discipline : Chemical Testing and Biological Testing (Biological Testing, Chemical testing) -
- (ii) Group: Water  
(Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste)
- (iii) Sub Group : Surface water  
(Surface water/ Ground water/ Wastewater Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)
8. Analysis Starting Date-Analysis Completion Date : 21.04.2023 - 27.04.2023
9. If uncertainty is desired by Customer : No
10. Analysis Results :  
(Attach separate sheet if necessary)

Sl No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Surface water sample from Kanamana , Arjipalli & Kalipalli Grampanchayats of Ganjam district			
		IS:2296 - 1982 *	G.S.R. 742 (E) **		Others/Apr - 23/SW /536	Others/Apr - 23/SW /537	Others/Apr - 23/SW /538	Others/Apr - 23/SW /539
					Pond near entrance to Badapuli village Lat- 19.301619° N, Long- 84.942624° E	Pond near entrance to Kanamana village Lat- 19.321747° N, Long- 84.962781° E	Pond near rehabilitation colony of Kalipalli village Lat- 19.293905° N, Long- 84.935852° E	Pond near K Arjipalli village Lat- 19.315875° N, Long- 84.977023° E
					<b>Results</b>			
1.	pH	6.5-8.5	6.5-8.5	4500-H <sup>+</sup> -B, APHA, 23 <sup>rd</sup> Edn., 2017	7.8	6.5	8.3	7.7
2.	Electrical Conductivity (EC), $\mu$ S/cm	-	-	2510 B, APHA, 23 <sup>rd</sup> Edn., 2017	469.0	827.0	342.0	405.0
3.	Total Dissolved Solids (TDS), mg/L	-	-	2540 C, APHA, 23 <sup>rd</sup> Edn., 2017	272.0	488.0	200.0	252.0
4.	Dissolved Oxygen (DO), mg/L	5 mg/L or more	5 mg/L or more	4500-O-C, APHA, 23 <sup>rd</sup> Edn., 2017	7.8	2.4	9.1	9.1
5.	Biochemical Oxygen Demand (BOD), mg/L	3 mg/L or less	3 mg/L or less	IS 3025, Part 44 (1999)	5.9	21.0	2.8	2.2
6.	Chemical Oxygen Demand (COD), mg/L	-	-	5220 B APHA, 23 <sup>rd</sup> Edn 2017	48.0	109.0	24.0	24.0
7.	Nitrite Nitrogen as N ( $\text{NO}_2\text{-N}$ ), mg/L	-	-	4500-NO <sub>2</sub> -B, APHA, 23 <sup>rd</sup> Edn 2017	0.060	<0.02	0.462	0.090

(Cont.)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits		Test Method	Surface water sample from Kanamana, Arjil Kalipalli Grampanchayats of Ganjam district			
		IS:2296 - 1982 *	G.S.R. 742 (E) **		Others/Apr - 23/SW /536	Others/Apr - 23/SW /537	Others/Apr - 23/SW /538	Others/Apr - 23/SW /539
					Pond near entrance to Badapuli village	Pond near entrance to Kanamana village	Pond near rehabilitation colony of Kalipalli village	Pond near K Arjipalli village
					Results			
8.	Nitrate Nitrogen as N ( $\text{NO}_3^- \text{-N}$ ), mg/L	-	-	4500 - $\text{NO}_3^- \text{-B}$ , APHA, 23 <sup>rd</sup> Edn., 2017	1.405	1.452	0.408	0.299
9.	Ammonical Nitrogen as N ( $\text{NH}_3\text{-N}$ ), mg/L	-	-	4500- $\text{NH}_3\text{-B}$ followed by 4500- $\text{NH}_3\text{-C}$ , APHA, 23 <sup>rd</sup> Edn., 2017	1.12	1.12	1.68	0.56
10.	Total Kjeldahl Nitrogen (TKN), mg/L	-	-	4500-Norg B, APHA, 23 <sup>rd</sup> Edn., 2017	6.16	5.04	7.28	1.68
11.	Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	-	-	4500- $\text{SO}_4^{2-}\text{-E}$ , APHA, 23 <sup>rd</sup> Edn., 2017	11.36	28.77	10.37	15.06
12.	Phosphate ( $\text{PO}_4^{3-}\text{-P}$ ), mg/L	-	-	4500-P-D, APHA, 23 <sup>rd</sup> Edn., 2017	0.062	<0.05	0.188	0.244
13.	Sodium (Na), mg/L	-	-	3500-Na B, APHA, 23 <sup>rd</sup> Edn., 2017	43.2	92.95	31.11	40.85
14.	Potassium (K), mg/L	-	-	3500 K -B, APHA, 23 <sup>rd</sup> Edn., 2017	6.97	24.8	2.9	4.40
15.	Chloride (Cl), mg/L	-	-	4500 Cl B, APHA, 23 <sup>rd</sup> Edn., 2017	60.0	139.9	34.0	70.0
16.	Hexavalent Chromium ( $\text{Cr}^{6+}$ ), mg/L	0.05	-	3500-Cr-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.003	0.008	0.003	<0.002
17.	Total iron (Fe), mg/L	-	-	3500 Fe-B, APHA, 23 <sup>rd</sup> Edn., 2017	1.628	0.249	2.588	1.314
18.	Total Coliform (TC), MPN/100 ml	500	-	9221-B APHA, 23 <sup>rd</sup> Edn., 2017	54000	7900	1300	2200
19.	Faecal Coliform (FC), MPN/100 ml	-	500 (Desirable) 2500 (max. Permissible)	9221-E, APHA, 23 <sup>rd</sup> Edn., 2017	24000	2200	230	1100

\*Tolerance limit for inland surface water subject to pollution (IS : 2296-1982), for Class B - organised outdoor bathing.

\*\* MOEF & OC Notification vide GSR No.742 (E) dtd.25.09.2000 for outdoor bathing

11. Deviation from Test Method, if any :

12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
If Yes,

(a) Date of Sampling :

(b) Method Used\* :

(c) Name of Sampler with Designation :

-----End of Test Report-----

Authorised Signatory  
(Biological)

Authorised Signatory  
(Water/wastewater)

Board Analyst

(Mrs. N. Shrivrava Pattnaik, SSA) (Dr. (Mrs) Usharani Pattnaik, Addl. Chief Env. Scientist)

(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :  
i) The results stated above relate only to the items tested.  
ii) This report shall not be reproduced in full or in part without written approval from the in-charge of the Central Laboratory.  
iii) The Laboratory is not responsible for the authenticity of photocopied Test Reports.  
iv) The Test item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.  
Head Office: State Pollution Control Board, Utkala Pariksha Bhawan, V/116, Nilakantapur, East-751 004, Bhubaneswar, Orissa.  
Tel: 2564633/2562294 FAX: 2561996/2562847 E-mail: spcb@nic.nic.in Website: www.spcb.orissa.gov.in



## MINISTRY OF ENVIRONMENT AND FORESTS

## NOTIFICATION

New Delhi, the 25th September, 2000

G.S.R. 742(E).— In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely.

1. (1) These rules may be called the Environment (Protection) Amendment Rules, 2000.
- (2) Save as otherwise provided in this notification, they shall come into force on the date of their publication in the Official Gazette.
2. In the Environment (Protection) Rules, 1986,—
  - (1) In Schedule I, after serial number 89 relating to Noise standards for fire crackers and the entries relating thereto, the following serial numbers and entries shall be inserted, namely:—

“90. Standards for coal mines

1. Air Quality Standards

The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating sources shall not exceed the standards specified in the Tables I, II and III given below:

**Dust Generating Sources**

Loading or unloading, Haul road, coal transportation road, Coal handling plant (CHP), Railway siding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road etc.

## 93. Primary Water Quality Criteria for Bathing Waters.

In a water body or its part, water is subjected to several types of uses. Depending on the types of uses and activities, water quality criteria have been specified to determine its suitability for a particular purpose. Among the various types of uses there is one use that demands highest level of water quality or purity and that is termed as "Designated Best Use" in that stretch of water body. Based on this, water quality requirements have been specified for different uses in terms of primary water quality criteria. The primary water quality criteria for bathing water are specified along with the rationale in table 1.

Table 1.

**PRIMARY WATER QUALITY CRITERIA FOR BATHING WATER**  
(Water used for organised outdoor bathing)

CRITERIA		RATIONALE
1. Fecal Coliform MPN/100 ml:	500 (desirable) 2500 (Maximum Permissible)	To ensure low sewage contamination. Fecal coliform and focal streptococci are considered as they reflect the bacterial pathogenicity.
2. Fecal Streptococci MPN/100 ml:	100 (desirable) 500 (Maximum Permissible)	The desirable and permissible limits are suggested to allow for fluctuation in environmental conditions such as seasonal change, changes in flow conditions etc.
2. pH:	Between 6.5 - 8.5	The range provides protection to the skin and delicate organs like eyes, nose, ears etc. which are directly exposed during outdoor bathing.
3. Dissolved Oxygen:	5 mg/l or more	The minimum dissolved oxygen concentration of 5 mg/l ensures reasonable freedom from oxygen consuming organic pollution immediately upstream which is necessary for preventing production of anaerobic gases (obnoxious gases) from sediment.
4. Biochemical Oxygen demand 3 day, 27°C:	3 mg/l or less	The Biochemical Oxygen Demand of 3 mg/l or less of the water ensures reasonable freedom from oxygen demanding pollutants and prevent production of obnoxious gases".

IS 12296 - 1982

*Indian Standard*  
TOLERANCE LIMITS FOR  
INLAND SURFACE WATERS SUBJECT  
TO POLLUTION

( *Second Revision* )

0. FOREWORD

1 This Indian Standard ( Second Revision ) was adopted by the Indian Standards Institution on 25 January 1982, after the draft finalized by the Water Sectional Committee had been approved by the Chemical Division Council.

2 Inland surface waters are rivers (including rivers liable to seasonal drying), estuaries, streams, lakes, impounded reservoirs, canals, and man-made or natural drains leading to the above listed water bodies. Pollution of inland surface waters with sewage, effluents and industrial wastes is an important problem associated with industrial development and concentration of population in cities. As a first step in the prevention and control of pollution, it is necessary to prescribe certain standards for the purity of waters into which effluents have been discharged, so that such receiving water sources could be safely used for various purposes.

3 This standard was first published in 1963 and revised in 1974. Major changes made in the first revision were as follows:

In the waters used as raw water for public water supply, requirements were added for nitrates, oils and grease, and insecticides; the phenol limit was raised to 0.005 mg/l. In waters used for fish culture the requirement for ammoniacal nitrogen was termed as that for free ammonia. In water for irrigation, requirement for pH was added.

0.3.1 The second revision has been necessitated in view of the classification of waters and primary quality criteria of various classes of fresh water adopted by the Central Board for the Prevention and Control of Water Pollution. The Board has classified fresh waters into five categories, namely, drinking water source without conventional treatment or after disinfection; outdoor bathing (organized); drinking water source

IS : 2296 - 1982

with conventional treatment followed by disinfection; fish culture and wild life propagation; and irrigation, industrial cooling or controlled waste disposal. Major changes introduced in this revision are given below:

- a) Based upon the best use, a new table has been introduced for drinking water source without conventional treatment but after disinfection and the existing three tables have been split into four.
- b) End uses of different categories of waters have been elaborated.
- c) Requirements of pH value, dissolved oxygen, biochemical oxygen demand and total coliforms for classes A, B and C, requirements of pH value, dissolved oxygen and free ammonia for class D, and requirements of pH value, electrical conductance and sodium absorption ratio for class E specified in this standard are the same as the primary quality criteria adopted by the Central Board for the Prevention and Control of Water Pollution for the respective classes.
- d) At the time of formulation of IS : 2296, limits for mercury and suspended solids were not prescribed for want of adequate data. The limit for mercury is now being laid down in this revision. Further, the Committee decided that it was not desirable to prescribe limit for suspended solids in view of uncontrollable natural variations.

0.4 This standard is intended essentially to help the state governments and the local authorities in deciding on restrictions that may be required on the discharge of industrial and sewage effluents into inland surface waters. Pollution of such waters beyond tolerance limits prescribed in this standard should not be allowed. This standard is also expected to assist the governments and the local authorities in deciding on the siting of the industrial units, the degree of concentration of industry at a given place and the mode of discharge of effluents. The authorities should bear in mind that concentration of industry can give rise to situations where although each industrial effluent complies with the relevant standard, the combined effect of all the effluents may pollute the water course beyond limits given in this standard. Discharge of effluents on land for irrigation or into public sewers, wherever available and feasible, offers a very desirable alternative to the discharge into inland surface waters and should be encouraged by the local authorities. Necessary criteria for regulating these alternative modes of disposal have been published [see IS : 2490 (Part I)-1981\*].

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value observed or calculated,

\*Tolerance limits for industrial effluents: Part I General limits (second revision).

IS : 2296 - 1982

expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## 1. SCOPE

1.1 This standard prescribes the tolerance limits for inland surface waters (see 0.2) subject to pollution which are used for the following purposes:

- a) Drinking water source without conventional treatment but after disinfection;
- b) Outdoor bathing;
- c) Drinking water source with conventional treatment followed by disinfection;
- d) Fish culture and wild life propagation; and
- e) Irrigation, industrial cooling and controlled waste disposal.

## 2. CLASSIFICATION OF WATERS

2.1 Generally the inland surface water sources are put to multiple uses. However, depending on the best use, inland surface waters subject to pollution shall be classified as given below. In the case of multiple uses, the quality criteria of the water shall be governed by the requirement for the best use.

*Class A* — Drinking Water Source without Conventional Treatment but after Disinfection.

The quality of inland surface water under this category shall be such that it will be fit for human consumption without any treatment, except disinfection by approved methods. This classification is intended primarily for waters having water shed which are uninhabited and otherwise protected, which requires approved disinfection with additional treatment when necessary to remove naturally present impurities. This water is considered safe for drinking, culinary and food processing purposes.

*Class B* — Outdoor Bathing

This water is useful for bathing. The waters under proper sanitary supervision by the controlling authorities will meet accepted standards of water quality for outdoor bathing places and considered safe and satisfactory for bathing purposes.

\*Rules for rounding off numerical values (revised).

IS : 2296 - 1982

**Class C** — Drinking Water Source with Conventional Treatment Followed by Disinfection

This is a source of water supply for drinking, culinary and food processing purposes after it is subjected to approved treatment such as coagulation, sedimentation, filtration and disinfection, with additional treatment, if necessary, to remove naturally present impurities.

**Class D** — Fish Culture and Wild Life Propagation

The water is fit for fish and wild life propagation.

**Class E** — Irrigation, Industrial Cooling or Controlled Waste Disposal

This water is suitable for agriculture, industrial cooling or process water supply, fish survival, etc. The waters without treatment, except for natural impurities which may be present therein, will be suitable for agricultural uses and will permit fish survival. The waters are also usable after special treatment by the users as may be needed under each particular circumstance for industrial purposes, including cooling and process water.

### 3. TOLERANCE LIMITS

**3.1 Inland Surface Waters for Use as Drinking Water Source Without Conventional Treatment but After Disinfection** — Inland surface waters for this use shall satisfy the tolerance limits prescribed in Table 1 when tested as prescribed in col 4 and 5 of the table.

**3.2 Inland Surface Waters for Bathing** — Inland surface waters for this use shall satisfy the tolerance limits prescribed in Table 2 when tested according to the methods prescribed in col 4 and 5 of the table.

**3.2.1** In the inland surface waters used for bathing, no visible floating matter of sewage or industrial waste origin, including oil, and no unpleasant odour shall be present.

**3.3 Inland Surface Waters for Use as Drinking Water with Treatment** — Inland surface waters for this use shall satisfy the tolerance limits given in Table 3 when tested as prescribed in col 4 and 5 of the table.

**3.4 Inland Surface Waters Used for Fish Culture and Wild Life Propagation** — Inland surface waters for these uses shall satisfy the tolerance limits given in Table 4 when tested as prescribed in col 4 and 5 of the table.

TABLE 2 TOLERANCE LIMITS FOR INLAND SURFACE  
WATERS, CLASS B

(Class 3.2)

Sl. No.	CHARACTERISTIC	TOLERANCE LIMIT	METHOD OF TEST	
			Ref to Cl No. in IS : 3025-1964*	Other Method of Test
(1)	(2)	(3)	(4)	(5)
i)	pH value	6.5 to 8.5	8	—
ii)	Dissolved oxygen, mg/l, <i>Min</i>	5	50	—
iii)	Biochemical oxygen demand (5 days at 20°C), <i>Max</i>	3	53	—
iv)	Total coliform organisms, MPN/100 ml, <i>Max</i>	500†	—	3.3 of IS : 1622-1981‡
v)	Fluorides (as F), mg/l, <i>Max</i>	1.5	23	—
vi)	Colour, Hazen units, <i>Max</i>	300	5	—
vii)	Cyanides (as CN), mg/l, <i>Max</i>	0.05	27	—
viii)	Arsenic (as As), mg/l, <i>Max</i>	0.2	40	—
ix)	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, <i>Max</i>	0.005	54	—
x)	Chromium (as Cr <sup>++</sup> ), mg/l, <i>Max</i>	0.05	38	—
xi)	Anionic detergents (as MBAS), mg/l, <i>Max</i>	1	—	Methylene blue-extraction method
xii)	Alpha emitters, µc/ml, <i>Max</i>	10 <sup>-4</sup>	58	—
xiii)	Beta emitters, µc/ml, <i>Max</i>	10 <sup>-4</sup>	58	—

NOTE — Discharges into the inland surface waters shall be so regulated that the water at the bathing places is not toxic and does not cause irritation, discomfort or infection.

\*Methods of sampling and test (physical and chemical) for water used in industry.

†If MPN count is noticed to be more than 500, regular tests should be carried out. The criteria shall be satisfied if during a period of time, not more than 5 percent of the samples show more than 2 000 MPN and not more than 20 percent of samples show more than 500 MPN.

‡Methods of sampling and microbiological examination of water (first revision).

TABLE 3 TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS C

( Clause 3.3 )

Sl. No.	CHARACTERISTIC	TOLERANCE LIMIT	METHOD OF TEST	
			Ref to Cl No in IS : 3025-1964*	Other Method of Test
(1)	(2)	(3)	(4)	(5)
i)	pH value	6.5 to 8.5	8	—
ii)	Dissolved oxygen, mg/l, <i>Min</i>	4	50	—
iii)	Biochemical oxygen demand (5 days at 20°C), mg/l, <i>Max</i>	3	53	—
iv)	Total coliform organisms, MPN/100 ml, <i>Max</i>	5 000†	—	3.3 of IS : 1622-1981‡
v)	Colour, Hazen units, <i>Max</i>	300	5	—
vi)	Fluorides (as F), mg/l, <i>Max</i>	1.5	23	—
vii)	Cadmium (as Cd), mg/l, <i>Max</i>	0.01	—	9 of IS : 2488 (Part II)-1968§
viii)	Chlorides (as Cl), mg/l, <i>Max</i>	500	24	—
ix)	Chromium (as Cr <sup>6+</sup> ), mg/l, <i>Max</i>	0.05	36	—
x)	Cyanides (as CN), mg/l, <i>Max</i>	0.05	27	—
xi)	Total dissolved solids, mg/l, <i>Max</i>	1 500	12	—
xii)	Selenium (as Se), mg/l, <i>Max</i>	0.05	28	—
xiii)	Sulphates (as SO <sub>4</sub> ), mg/l, <i>Max</i>	400	20	—
xiv)	Lead (as Pb), mg/l, <i>Max</i>	0.1	37	—
xv)	Copper (as Cu), mg/l, <i>Max</i>	1.5	36	—
xvi)	Arsenic (as As), mg/l, <i>Max</i>	0.2	40	—
xvii)	Iron (as Fe), mg/l, <i>Max</i>	50	32	—
xviii)	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, <i>Max</i>	0.005	54	—

\*Methods of sampling and test (physical and chemical) for water used in industry.

†If MPN count is noticed to be more than 5 000 MPN then regular tests shall be carried out. The criteria shall be satisfied if during a period of time not more than 5 percent of the samples show more than 20 000 MPN and not more than 20 percent of the samples show more than 5 000 MPN. Further the faecal coliforms should not be more than 40 percent of the total coliforms.

‡Methods of sampling and microbiological examination of water (*first revision*).

§Methods of sampling and test for industrial effluents, Part II.

( Continued )

Opinion on Ground water quality test report for samples collected from Kalipalli, Badaputi, Basanaputi, Bada Arjipalli, K Arjipalli, Sana Arjipalli, Takiria, Kanamana and Matikhalo Villages of Ganjam district

Groundwater samples collected on Dt. 19.04.2023 from twelve numbers of hand pumps in Kalipalli, Badaputi, Basanaputi, Bada Arjipalli, K Arjipalli, Sana Arjipalli, Takiria, Kanamana and Matikhalo Villages of Ganjam district, by Regional Office, Berhampur were submitted to the Central Laboratory of State Pollution Control Board, Odisha on 21.4.2023 for analysis vide letter No. 1176 Legal/ 58/2023 dated 20.04.2023 (Annexure-1).

Test reports submitted by the Central Laboratory for the parameters pH, Electrical Conductivity, Total Dissolved Solids, Biochemical oxygen Demand (BOD), Chemical Oxygen Demand (COD), Nitrite-N, Nitrate, ammonia-N, Total Kjeldahl Nitrogen (TKN), Sulphate, Phosphate, Sodium, Potassium, Chloride, Total Coliform, Fecal Coliform, Chromium (hexavalent) and Total Iron, vide Test Report No. OS/252/04/2023 dated 27.4.2023 is given in Annexure-2. After rectification of the problems in Atomic absorption Spectrophotometer installed in Central Laboratory, the Heavy metal concentrations ( such as, Copper (Cu), Cadmium (Cd), Lead (Pb), Zinc (Zn), Nickel (Ni)) could be analysed on Dt. 17.5.2023 and a separate analysis report was issued for these metals vide Test Report No. OS/277/05/2023 dated 20.5.2023 (Annexure-3).

Compiled analysis report of these twelve ground water samples alongwith drinking water specification IS 10500: 2012 are given in Table-1 to Table-4. Copy of the Drinking water Specification and its 1<sup>st</sup> amendment (2<sup>nd</sup> Revision dated 01.6.2015) is given in Annexure-4.

Water quality status of ground water samples collected from three Hand pumps in Kalipalli village are given in Table-1. From the Table it is observed that the ground water quality of Hand Pump No. 1 conform to the drinking water specification for all tested parameters except Nitrate content (73.403 mg/L in comparison to the stipulated limit of 45 mg/L). Non-compliance with respect to ammonia, total iron, cadmium, lead and nickel, are observed in Hand Pump No. 2 and non-compliance with respect to ammonia, lead and nickel, has been observed in ground water samples collected from Hand Pump No. 3 of the Village. Total iron content (1.090 mg/L) in Hand pump No. 3 is marginally higher than the stipulated limit (1.0 mg/L).

Water quality status of ground water samples collected from one hand pump in each of Badaputi and Basanaputi villages are given in Table-2. From the Table it is observed that the ground water quality of Hand Pump in Badaputi village conform to the drinking water specification for all tested parameters

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excepting ammonia (0.56 mg/L) with a marginal deviation from the stipulated limit (0.5 mg/L). Whereas, ground water quality of Hand Pump in Basanaputi village conform to the drinking water specification for all tested parameters.

Water quality status of ground water samples collected from one hand pump in each of Bada Arjipalli and Sana Arjipalli villages and two hand pumps in K Arjipalli village are given in Table-3. From the Table it is observed that the ground water quality of Hand Pump-1 in K Arjipalli conform the drinking water specification with respect to all tested parameters except nitrate content. Very high values of nitrate content (112.082 mg/L) is observed in comparison to the stipulated limit of 45 mg/L. Whereas, ground water quality of Hand Pump-2 in K Arjipalli village conform to the drinking water specification with respect to all tested parameters except Total coliform and Fecal Coliform bacteria values.

Ground water quality of the hand pump in Bada Arjipalli village conform the drinking water specification with respect to all tested parameters except ammonia content. Whereas, ground water quality of the hand pump in Sana Arjipalli village conform to the drinking water specification with respect to all tested parameters except iron content.

Water quality status of ground water samples collected from one hand pump in each of Takiria, Kanamana and Matikhalo villages are given in Table-4. Non-compliance to drinking water specification with respect to nitrate, sulphate, cadmium, lead and nickel content are observed in the ground water sample collected from the hand pump in Takiria village. Similarly, non-compliance with respect to nitrate, total iron, lead, Total coliform and Fecal Coliform bacteria values are observed in the ground water samples collected from the hand pump in Kanamana village. Cadmium and nickel concentration are very much close to the stipulated limits of 0.003 mg/L and 0.02 mg/L respectively. Whereas, ground water quality of the hand pump in Matikhalo villages conform to the drinking water specification except iron content.

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Table-1 Water quality of Ground water sample collected from Hand pumps in Kalipalli village, Ganjam

Parameter with Unit	Drinking water specification, IS 10500: 2012		Hand pump No.-1, (Kalipalli village)	Hand pump No.- 2, (Kalipalli village)	Hand pump No.- 3, (Kalipalli village)
	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source			
Test Report No. OS/252/04/2023 Dt.27.04.2023					
pH	6.5-8.5	No Relaxation	7.1	7.1	7.2
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	-	-	708.0	483.0	627.0
Total Dissolved Solids (TDS), mg/L	500	2000	412.0	320.0	364.0
Biochemical Oxygen Demand (BOD), mg/L	-	-	< 1.0	1.6	1.8
Chemical Oxygen Demand (COD), mg/L	-	-	7.2	11.0	15.0
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	-	-	<0.02	<0.02	0.316
Nitrate ( $\text{NO}_3^-$ ), mg/L	45	No Relaxation	73.403	4.402	35.058
Ammonia-N ( $\text{NH}_3$ -N), mg/L	0.5	No Relaxation	<0.4	2.24	0.56
Total Kjeldahl Nitrogen (TKN), mg/L	-	-	2.52	10.08	6.72
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	200	400	10.12	5.06	13.46
Phosphate-P( $\text{PO}_4^{3-}$ -P), mg/L	-	-	0.063	<0.05	0.173
Sodium (Na), mg/L	-	-	41.75	33.39	42.8
Potassium (K), mg/L	-	-	5.35	3.27	3.88
Chloride ( $\text{Cl}^-$ ), mg/L	250	1000	60.0	38.0	70.0
Total Coliform (TC), MPN/ 100 ml)	Shall not be detectable in any 100 ml sample		<1.8	<1.8	<1.8
Fecal Coliform (FC), MPN/ 100 ml)			<1.8	<1.8	<1.8
Chromium (Hexavalent) ( $\text{Cr}^{6+}$ ), mg/L	-	-	0.005	0.006	0.006
Total Iron* ( $\text{Fe}$ ), mg/L	1.0	No Relaxation	0.742	2.061	1.090
Test Report No. OS/277/05/2023 Dt. 20.05.2023					
Copper (Cu), mg/L	0.05	1.5	0.007	0.138	0.109
Cadmium (Cd), mg/L	0.003	No Relaxation	0.0021	0.0093	0.0018
Lead (Pb), mg/L	0.01	No Relaxation	0.008	0.022	0.029
Nickel (Ni), mg/L	0.02	No Relaxation	0.014	0.030	0.069
Zinc (Zn), mg/L	5	15	0.064	0.228	0.229

\* IS 10500 (2012) 2<sup>nd</sup> Revision dated 01.06.2015

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Table-2 Water quality of Ground water sample collected from Hand pumps in Badaputi, Basanaputi villages, Ganjam

Parameter with Unit	Drinking water specification, IS 10500: 2012		Hand pump, (Badaputi village)	Hand pump, (entrance of Basanaputi village)
	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		
Test Report No. OS/252/04/2023Dt. 24.04.2023				
pH	6.5-8.5	No Relaxation	7.3	7.8
Electrical Conductivity (EC) ( $\mu\text{S/cm}$ )	-	-	789.0	792.0
Total Dissolved Solids (TDS), mg/L	500	2000	488.0	496.0
Biochemical Oxygen Demand (BOD), mg/L	-	-	< 1.0	< 1.0
Chemical Oxygen Demand (COD), mg/L	-	-	7.2	7.2
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	-	-	<0.02	0.092
Nitrate ( $\text{NO}_3^-$ ), mg/L	45	No Relaxation	38.152	1.637
Ammonia-N ( $\text{NH}_3$ -N), mg/L	0.5	No Relaxation	0.56	<0.4
Total Kjeldahl Nitrogen (TKN), mg/L	-	-	6.16	2.24
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	200	400	6.67	18.03
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	-	-	0.066	<0.05
Sodium (Na), mg/L	-	-	44.85	75.95
Potassium (K), mg/L	-	-	14.35	2.79
Chloride ( $\text{Cl}^-$ ), mg/L	250	1000	70.0	80.0
Total Coliform (TC), MPN/100 ml)	Shall not be detectable in any 100 ml sample		<1.8	<1.8
Fecal Coliform (FC), MPN/100 ml)			<1.8	<1.8
Chromium (Hexavalent) ( $\text{Cr}^{6+}$ ), mg/L	-	-	<0.002	0.005
Total Iron* ( $\text{Fe}$ ), mg/L	1.0	No Relaxation	0.314	0.214
Test Report No. OS/277/05/2023 Dt. 20.05.2023				
Copper (Cu), mg/L	0.05	1.5	0.006	0.073
Cadmium (Cd), mg/L	0.003	No Relaxation	0.0018	0.0018
Lead (Pb), mg/L	0.01	No Relaxation	0.007	0.009
Nickel (Ni), mg/L	0.02	No Relaxation	0.015	0.014
Zinc (Zn), mg/L	5	15	0.193	0.074

\* IS 10500 (2012) 2<sup>nd</sup> Revision dated 01.06.2015

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Water quality of Ground water sample collected from Hand pumps in Bada Arjipalli, K Arjipalli, Sana Arjipalli Villages in Ganjam

Parameter with Unit	Drinking water specification, IS 10500: 2012		Hand pump, (Bada Arjipalli village)	Hand pump -1, K Arjipalli village	Hand pump - 2, K Arjipalli village	Hand pump, Sana Arjipalli village
	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source				
Test Report No. OS/252/04/2023Dt. 24.04.2023						
pH	6.5-8.5	No Relaxation	8.2	7.6	8.2	8.0
Electrical Conductivity (EC) ( $\mu\text{S}/\text{cm}$ )	-	-	493.0	665.0	1155.0	1182.0
Total Dissolved Solids (TDS), mg/L	500	2000	288.0	392.0	716.0	688.0
Biochemical Oxygen Demand (BOD), mg/L	-	-	< 1.0	< 1.0	1.6	1.4
Chemical Oxygen Demand (COD), mg/L	-	-	7.2	7.2	11.0	11.0
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	-	-	0.881	0.233	<0.02	<0.02
Nitrate ( $\text{NO}_3^-$ ), mg/L	45	No relaxation	32.895	112.082	4.332	1.345
Ammonia-N ( $\text{NH}_3$ -N), mg/L	0.5	No relaxation	* 1.68	<0.4	<0.4	<0.4
Total Kjeldahl Nitrogen (TKN), mg/L	-	-	5.6	3.92	2.24	2.8
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	200	400	22.35	33.21	56.17	26.54
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	-	-	<0.05	<0.05	0.205	<0.05
Sodium (Na), mg/L	-	-	44.25	81.8	74.85	168.5
Potassium (K), mg/L	-	-	8.06	9.19	3.44	28.2
Chloride ( $\text{Cl}^-$ ), mg/L	250	1000	70.0	109.9	90.0	299.9
Total Coliform (TC), MPN/ 100 ml	Shall not be detectable in any 100 ml sample		<1.8	<1.8	540	<1.8
Fecal Coliform (FC), MPN/ 100 ml			<1.8	<1.8	130	<1.8
Chromium (Hexavalent) ( $\text{Cr}^{6+}$ ), mg/L	-	-	<0.002	0.010	0.008	0.009
Total Iron* (Fe) mg/L	1.0	No relaxation	0.622	0.777	0.702	* 1.772
Test Report No. OS/277/05/2023 Dt. 20.05.2023						
Copper (Cu), mg/L	0.05	1.5	0.004	0.009	0.016	0.005
Cadmium (Cd), mg/L	0.003	No relaxation	0.0008	0.0014	0.0017	0.0009
Lead (Pb), mg/L	0.01	No relaxation	0.006	0.009	0.009	0.005
Nickel (Ni), mg/L	0.02	No relaxation	0.009	0.019	0.015	0.009
Zinc (Zn), mg/L	5	15	0.013	0.131	0.039	0.013

\* IS 10500 (2012) 2<sup>nd</sup> Revision dated 01.06.2015

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Water quality of Ground water sample collected from 206 pumps in Takiria Berhampur, Kanamana and Matikhalo Villages, Ganjam

Parameter with Unit	Drinking water specification, IS 10500: 2012		Hand pump, ( Takiria, Berhanipur village)	Hand pump - 1, (Kanamana village)	Hand pump, (Matikhalo village)
	Requirement (Acceptable limit)	Permissible limit in the absence of alternate source			
Test Report No. OS/252/04/2023Dt. 24.04.2023					
pH	6.5-8.5	No Relaxation	7.3	7.3	7.4
Electrical Conductivity (EC) ( $\mu\text{S/cm}$ )	-	-	2978.0	1760.0	645.0
Total Dissolved Solids (TDS), mg/L	500	2000	1980.0	1360.0	368.0
Biochemical Oxygen Demand (BOD), mg/L	-	-	<1.0	<1.0	<1.0
Chemical Oxygen Demand (COD), mg/L	-	-	7.2	7.2	7.2
Nitrite-N ( $\text{NO}_2^-$ -N), mg/L	-	-	<0.02	0.240	0.182
Nitrate ( $\text{NO}_3^-$ ), mg/L	45	No Relaxation	<del>88.04</del>	77.271	38.134
Ammonia-N ( $\text{NH}_3$ -N), mg/L	0.5	No Relaxation	<0.4	<0.4	<0.4
Total Kjeldahl Nitrogen (TKN), mg/L	-	-	1.68	3.92	4.48
Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	200	400	<del>824.1</del>	82.72	25.06
Phosphate-P ( $\text{PO}_4^{3-}$ -P), mg/L	-	-	0.065	<0.05	0.051
Sodium (Na), mg/L	-	-	393.6	422.0	64.65
Potassium (K), mg/L	-	-	27.0	57.0	3.82
Chloride ( $\text{Cl}^-$ ), mg/L	250	1000	539.7	539.7	70.0
Total Coliform (TC), MPN/100 ml)	Shall not be detectable in any 100 ml sample		<1.8	11	<1.8
Fecal Coliform (FC), MPN/100 ml)			<1.8	11	<1.8
Chromium (Hexavalent) ( $\text{Cr}^{6+}$ ), mg/L	-	-	0.005	0.008	0.009
Total Iron* (Fe), mg/L	1.0	No Relaxation	0.622	1.374	2.439
Test Report No. OS/277/05/2023 Dt. 20.05.2023					
Copper (Cu), mg/L	0.05	1.5	0.013	0.011	0.011
Cadmium (Cd), mg/L	0.003	No Relaxation	<del>0.0046</del>	0.003	0.002
Lead (Pb), mg/L	0.01	No Relaxation	<del>0.036</del>	0.018	0.009
Nickel (Ni), mg/L	0.02	No Relaxation	<del>0.032</del>	0.019	0.015
Zinc (Zn), mg/L	5	15	0.051	0.014	0.046

\* IS 10500 (2012) 2<sup>nd</sup> Revision dated 01.06.2015

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Sl No	Parameter, Unit	Standards/ Regulatory Limits *		Test Method	Ground water sample from Kanamana , Arijipalli & Kalipalli Grampanchayats of Ganjam district			
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Others/ Apr -23/ GW /540	Others/ Apr -23/ GW /541	Others/ Apr -23/ GW /542	Others/ Apr -23/ GW /543
					Hand pump No.-1, (Kalipalli village)	Hand pump No.- 2, (Kalipalli village)	Hand pump No.- 3, (Kalipalli village)	Hand pump , (Badaputi village)
Results								
7.	Nitrate Nitrogen (NO <sub>3</sub> <sup>-</sup> ), mg/L	45	No relaxation	4500 - NO <sub>3</sub> <sup>-</sup> -B, APHA, 23 <sup>rd</sup> Edn., 2017	<u>73.403</u>	4.402	35.058	38.152
8.	Ammonical Nitrogen as N (NH <sub>3</sub> -N), mg/L	0.5	No relaxation	4500-NH <sub>3</sub> -B followed by 4500-NH <sub>3</sub> -C, APHA, 23 <sup>rd</sup> Edn., 2017	<0.4	<u>2.24</u>	0.56	0.56
9.	Total Kjeldahl Nitrogen (TKN), mg/L	-	-	4500-Norg B, APHA, 23 <sup>rd</sup> Edn., 2017	2.52	10.08	6.72	6.16
10.	Sulphate (SO <sub>4</sub> <sup>2-</sup> ), mg/L	200	400	4500-SO <sub>4</sub> <sup>2-</sup> -F, APHA, 23 <sup>rd</sup> Edn., 2017	10.12	5.06	13.46	6.67
11.	Phosphate (PO <sub>4</sub> <sup>3-</sup> -P), mg/L	-	-	4500-P-D, APHA, 23 <sup>rd</sup> Edn., 2017	0.083	<0.05	0.173	0.066
12.	Sodium (Na), mg/L	-	-	3500-Na B, APHA, 23 <sup>rd</sup> Edn., 2017	41.75	33.39	42.8	44.85
13.	Potassium (K), mg/L	-	-	3500 K -B, APHA, 23 <sup>rd</sup> Edn., 2017	5.35	3.27	3.88	14.35
14.	Chloride (Cl), mg/L	250	1000	4500 Cl B, APHA, 23 <sup>rd</sup> Edn., 2017	60.0	38.0	70.0	70.0
15.	Hexavalent Chromium (Cr <sup>6+</sup> ), mg/L	-	-	3500-Cr-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.005	0.008	0.006	<0.002
16.	Total Iron (Fe), mg/L	1.0	No relaxation	3500 Fe-B, APHA, 23 <sup>rd</sup> Edn., 2017	0.742	<u>2.061</u>	<u>1.090</u>	0.314
17.	Total Coliform (TC), MPN/100 ml	Shall not be detectable in any 100 ml sample		9221-B APHA, 23 <sup>rd</sup> Edn., 2017	<1.8	<1.8	<1.8	<1.8
18.	Fecal Coliform (FC), MPN/100 ml			9221-C, APHA, 23 <sup>rd</sup> Edn., 2017	<1.8	<1.8	<1.8	<1.8

(Cont..)

Dt: 27/04/2023  
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Parameter, Unit	Ground water sample from Kanamana, Arjipalli & Kalipalli Grampanchayats of Ganjam district							
	Others/ Apr-23/ GW-544	Others/ Apr-23/ GW-545	Others/ Apr-23/ GW-546	Others/ Apr-23/ GW-547	Others/ Apr-23/ GW-548	Others/ Apr-23/ GW-549	Others/ Apr-23/ GW-550	Others/ Apr-23/ GW-551
	Hand pump (entrance of Besanaputi village)	Hand pump, (Bada Arjipalli village)	Hand pump -1 K Arjipalli village	Hand pump - 2 K Arjipalli village	Hand pump Sana Arjipalli village	Hand pump (Takiria Berhampur village)	Hand pump - 1 (Kanamana village)	Hand pump (Malikhalo village)
Results								
1. pH	7.8	8.2	7.6	8.2	8.0	7.3	7.3	7.4
2. Electrical Conductivity (EC), $\mu\text{S}/\text{cm}$	792.0	493.0	655.0	1155.0	1182.0	2978.0	1760.0	645.0
3. Total Dissolved Solids (TDS), mg/L	496.0	288.0	392.0	716.0	688.0	1980.0	1360.0	368.0
4. Biochemical Oxygen Demand (BOD), mg/L	<1.0	<1.0	<1.0	1.5	1.4	<1.0	<1.0	<1.0
5. Chemical Oxygen Demand (COD), mg/L	7.2	7.2	7.2	11.0	11.0	7.2	7.2	7.2
6. Nitrite Nitrogen as N ( $\text{NO}_2\text{-N}$ ), mg/L	0.092	0.881	0.233	<0.02	<0.02	<0.02	0.240	0.182
7. Nitrate Nitrogen ( $\text{NO}_3\text{-N}$ ), mg/L	1.637	32.895	112.082	4.332	1.345	88.04	77.271	38.134
8. Ammonical Nitrogen as N ( $\text{NH}_4\text{-N}$ ), mg/L	<0.4	1.88	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
9. Total Kjeldahl Nitrogen (TKN), mg/L	2.24	5.8	3.92	2.24	2.8	1.68	3.92	4.48
10. Sulphate ( $\text{SO}_4^{2-}$ ), mg/L	18.03	22.35	33.21	56.17	26.54	82.11	82.72	25.08
11. Phosphate ( $\text{PO}_4^{3-}\text{-P}$ ), mg/L	<0.05	<0.05	<0.05	0.205	<0.05	0.065	<0.05	0.051
12. Sodium (Na), mg/L	75.95	44.25	81.8	74.85	168.5	393.6	422.0	64.65
13. Calcium (Ca), mg/L	2.79	8.06	9.19	3.44	28.2	27.0	57.0	3.82
14. Chloride (Cl), mg/L	80.0	70.0	109.9	90.0	299.9	539.7	539.7	70.0
15. Hexavalent Chromium ( $\text{Cr}^{6+}$ ), mg/L	0.005	<0.002	0.010	0.008	0.009	0.006	0.008	0.009
16. Total Iron (Fe), mg/L	0.214	0.622	0.777	0.702	1.772	0.722	1.374	2.439
17. Total Coliform (TC) (P/100 ml)	<1.8	<1.8	<1.8	540	<1.8	<1.8	11	<1.8
18. Fecal Coliform (FC) (P/100 ml)	<1.8	<1.8	<1.8	130	<1.8	<1.8	11	<1.8

As per IS 10500: 2012

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10/11

11. Deviation from Test Method, if any :  
 12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
 If Yes,  
 (a) Date of Sampling : (b) Method Used\* :  
 (c) Name of Sampler with Designation :

-----End of Test Report-----

*N. Pattnaik*  
*27/07/2023*  
 Authorised Signatory  
 (Biological)  
 (Mrs. Nishiprava Pattnaik, SSA)

*U. Pattnaik*  
*27.4.2023*  
 Authorised Signatory  
 (Water/wastewater)  
 (Dr. (Mrs) Usharani Pattnaik, Addl. Chief Env. Scientist)

*N. Mallick*  
 Board Analyst  
 (Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

- (i) The results stated above relate only to the items tested.  
 (ii) This report shall not be reproduced in full or in part without written approval from the in-charge of the Central Laboratory.  
 (iii) The laboratory is not responsible for the authenticity of photocopied Test Reports.  
 (iv) The Test Item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakanthnagar, Unit-VIII, Bhubaneswar - 751 012, FAX : 2562822/2560955  
 Tel. : 2561053/2563294 EPABX : 2561909/2562847, E-mail : [psrbesh1@spcb.oda.org](mailto:psrbesh1@spcb.oda.org) Website : [www.spcb.oda.org](http://www.spcb.oda.org)

**CENTRAL LABORATORY**  
**STATE POLLUTION CONTROL BOARD, ODISHA**

Plot No. B-59/2 & 59/3, Chandaka Industrial Estate, Patia,  
Bhubaneswar - 751 024  
E-mail: [centrallab@spcbboard.org](mailto:centrallab@spcbboard.org)

TEST REPORT

Page 1 of 2

1. LLR No. : ---  
2 (i) Report No. : OS/277/05/2023  
3 (i) Date : 20.05.2023  
2 (ii) Amendment No : ---  
3 (ii) Amendment Date : ---  
4. Sample Submitted By : Sri Trilochan Senapati, JSA,  
(Name and address) Regional Office, SPCB, Odisha, Berhampur  
5. Reference Letter No. : 1176 Legal/ 58/2023 dt.20.04.2023  
6. Date of sample receipt : 21.04.2023  
7. Sample Description :  
(i) Discipline : Chemical Testing (ii) Group: Water (iii) Sub Group : Ground water  
(Biological Testing, Chemical testing) (Water/ Pollution and Environment / Atmospheric Pollution/ Soil and Hazardous Waste) (Surface water/ Ground water/ Wastewater Effluent/ Ambient Air/ Stack/ Soil and Hazardous Waste)  
8. Analysis Starting Date-Analysis Completion Date : 27.04.2023 - 17.05.2023  
9. If uncertainty is desired by Customer : No  
10. Analysis Results :  
(Attach separate sheet if necessary)

Sl. No.	Parameter, Unit	Standards/ Regulatory Limits *		Test Method	Ground water sample from Kanamana , Arjipalli & Kalipalli Grampanchayats of Ganjam district			
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source		Others/ Apr -23/ GW /540	Others/ Apr -23/ GW /541	Others/ Apr -23/ GW /542	Others/ Apr -23/ GW /543
1.	Copper (Cu), mg/L	0.05	1.5	3111 A, APHA, 23 <sup>rd</sup> Edn., 2017	0.007	0.132	0.109	0.006
2.	Cadmium (Cd), mg/L	0.003	No relaxation		0.0021	0.0093	0.0018	0.0018
3.	Lead (Pb), mg/L	0.01	No relaxation		0.008	0.022	0.029	0.007
4.	Nickel (Ni), mg/L	0.02	No relaxation		0.014	0.030	0.069	0.015
5.	Zinc (Zn), mg/L	5	15		0.064	0.228	0.229	0.193

(Cont..)

Sl. No.	Parameter, Unit	Ground water sample from Kanamana, Arjipalli & Kalipalli Grampanchayats of Ganjam district							
		Others/ Apr -23/ GW /544	Others/ Apr -23/ GW /545	Others/ Apr -23/ GW /546	Others/ Apr -23/ GW /547	Others/ Apr -23/ GW /548	Others/ Apr -23/ GW /549	Others/ Apr -23/ GW /550	Others/ Apr -23/ GW /551
		Hand pump (entrance of Basanaputi village)	Hand pump, (Bada Arjipalli village)	Hand pump -1 K Arjipalli village	Hand pump - 2 K Arjipalli village	Hand pump Sand Arjipalli village	Hand pump ( Takiria Berhampur village)	Hand pump - 1 (Kanamana village)	Hand pump (Matikhaio village)
		Results							
1.	Copper (Cu), mg/L	0.073	0.004	0.009	0.016	0.005	0.013	0.011	0.011
2.	Cadmium (Cd), mg/L	0.0018	0.0008	0.0014	0.0017	0.0009	0.0046	0.003	0.002
3.	Lead (Pb), mg/L	0.009	0.006	0.009	0.009	0.005	0.036	0.018	0.009
4.	Nickel (Ni), mg/L	0.014	0.009	0.019	0.015	0.009	0.032	0.019	0.015
5.	Zinc (Zn), mg/l	0.074	0.013	0.131	0.039	0.013	0.051	0.014	0.046

\* Drinking water specification, IS 10500: 2012

11. Deviation from Test Method, if any :  
12. If Sampling Conducted by the Central Laboratory, Yes/ No. - No  
If Yes,

(a) Date of Sampling :

(b) Method Used\* :

(c) Name of Sampler with Designation :

-----End of Test Report-----

*Usharani*  
00.5.2023

Authorised Signatory  
(Water/wastewater)

(Dr. (Mrs) Usharani Patnaik, Addl. Chief Env. Scientist)

*Niranjan Mallick*  
20/5

Board Analyst  
(Mr. Niranjan Mallick, Chief Env. Scientist)

Note :

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(ii) This report shall not be reproduced in full or in part without written approval from the in-charge of the Central Laboratory.  
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(iv) The Test item will not be retained for more than 15 days from the date of issue of Test Report except in case as required by applicable Regulation.

Head Office: State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantnanagar, Unit-VIII, Bhubaneswar - 751 012, FAX: 2562822/2560955  
Tel: 2561833/2563294 EPAHX: 2561909/2562817. E-mail: [spcb.oda@nic.in](mailto:spcb.oda@nic.in) Website: <http://spcb.oda.nic.in>

Annexure - 4

AMENDMENT NO. 1 JUNE 2015  
TO  
IS 10500 : 2012 DRINKING WATER — SPECIFICATION

*(Second Revision)*

[Page 2, Table 2, Sl No. xii), col 3] — Substitute '1.0' for '0.3'.

[Page 3, Table 3, Sl No. x), col 4] — Substitute 'No relaxation' for '0.05'.

(FAD 14)

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Publication Unit, BIS, New Delhi, India

## Indian Standard

## DRINKING WATER — SPECIFICATION

( Second Revision )

## 1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for drinking water.

## 2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

## 3 TERMINOLOGY

For the purpose of this standard the following definition shall apply.

3.1 Drinking Water — Drinking water is water intended for human consumption for drinking and cooking purposes from any source. It includes water (treated or untreated) supplied by any means for human consumption.

## 4 REQUIREMENTS

Drinking water shall comply with the requirements given in Tables 1 to 4. The analysis of pesticide residues given in Table 3 shall be conducted by a recognized laboratory using internationally established test method meeting the residue limits as given in Table 5.

Drinking water shall also comply with bacteriological requirements (see 4.1), virological requirements (see 4.2) and biological requirements (see 4.3).

## 4.1 Bacteriological Requirements

## 4.1.1 Water in Distribution System

Ideally, all samples taken from the distribution system including consumers' premises, should be free from coliform organisms and the following bacteriological quality of drinking water collected in the distribution system, as given in Table 6 is, therefore specified when tested in accordance with IS 1622.

## 4.2 Virological Requirements

4.2.1 Ideally, all samples taken from the distribution

Table 1 Organoleptic and Physical Parameters  
(Foreword and Clause 4)

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remark
					(1)
01	Colour, Hazen units, Max	5	15	Part 4	Exceeded to 15 units, if toxic substances are not suspected in absence of alternate sources a) Test only and when tested b) Test at several situations
02	Taste	Agreeable	Agreeable	Part 5	
03	pH value	6.5-8.5	No restriction	Part 11	Test to be conducted only after safety has been established
04	Odour	Agreeable	Agreeable	Parts 7 and 8	
05	Turbidity, NTU, Max	1	5	Part 10	--
06	Total dissolved solids, mg/l, Max	500	2 000	Part 16	

01-04 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' make the water not suitable, but still may be tolerated in the absence of an alternate source but up to the limits mentioned under 'permissible limit in the absence of alternate source' in col 3, above which the source will have to be rejected.

Table 3 Parameters Concerning Toxic Substances  
(Foreword and Clause 4)

No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Cadmium (as Cd), mg/l, Max	0.003	No relaxation	IS 3025 (Part 41)	—
ii)	Cyanide (as CN), mg/l, Max	0.05	No relaxation	IS 3025 (Part 27)	—
iii)	Lead (as Pb), mg/l, Max	0.01	No relaxation	IS 3025 (Part 47)	—
iv)	Mercury (as Hg), mg/l, Max	0.001	No relaxation	IS 3025 (Part 43) Mercury analyser	—
v)	Methylcopper (as Mo), mg/l, Max	0.07	No relaxation	IS 3025 (Part 2)	—
vi)	Nickel (as Ni), mg/l, Max	0.02	No relaxation	IS 3025 (Part 54)	—
vii)	Pesticides, µg/l, Max	See Table 5	No relaxation	See Table 5	—
viii)	Polychlorinated biphenyls, mg/l, Max	0.0005	No relaxation	ASTM 5175*	—
ix)	Polynuclear aromatic hydrocarbons (as PAH), mg/l, Max	0.0001	No relaxation	APHA 6440	or APHA 6630
x)	Total arsenic (as As), mg/l, Max	0.01	0.05	IS 3025 (Part 37)	—
xi)	Total chromium (as Cr), mg/l, Max	0.05	No relaxation	IS 3025 (Part 52)	—
xii)	Trihalomethanes:				
a)	Bromoform, mg/l, Max	0.1	No relaxation	ASTM D 3973-85* or APHA 6232	—
b)	Dibromochloromethane, mg/l, Max	0.1	No relaxation	ASTM D 3973-85* or APHA 6232	—
c)	Bromodichloromethane, mg/l, Max	0.06	No relaxation	ASTM D 3973-85* or APHA 6232	—
d)	Chloroform, mg/l, Max	0.2	No relaxation	ASTM D 3973-85* or APHA 6232	—

## NOTES

1 In case of dispute, the method indicated by "\*" shall be the reference method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

Table 4 Parameters Concerning Radioactive Substances  
(Foreword and Clause 4)

Sl.No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 14194	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Radioactive materials:				
a)	Alpha emitters Bq/l, Max	0.1	No relaxation	Part 2	—
b)	Beta emitters Bq/l, Max	1.0	No relaxation	Part 1	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.

IS 10500 : 2012

Table 5 Pesticide Residues Limits and Test Method  
(Foreword and Table 3)

Sl No.	Pesticide	Limit µg/l	Method of Test, Ref to	
			USHPA (4)	AOAC/ISO (5)
(1)	(2)	(3)		
i)	Aldicarb	20	525.2, 507	—
ii)	Azinphos	2	525.2, 8141 A	—
iii)	Aldicarb Dichloro	0.03	508	—
iv)	Alpha HCH	0.01	508	—
v)	Beta HCH	0.04	508	—
vi)	Datathion	125	525.2, 8141 A	—
vii)	Chlorpyrifos	30	525.2, 8141 A	—
viii)	Delta HCH	0.04	508	—
ix)	2,4-Dichlorophenoxyacetic acid	30	515.1	—
x)	DDT (o, p and p, p - isomers of DDT, DDE and DDD)	1	508	AOAC 990.06
xi)	Endosulfan (alpha, beta, and sulphate)	0.4	508	AOAC 990.06
xii)	Ethion	1	1637 A	—
xiii)	Carbonyl — HCH (Lindane)	2	508	AOAC 990.06
xiv)	Isoptorazin	9	532	—
xv)	Malthion	150	8141 A	—
xvi)	Methyl parathion	0.3	8141 A	—
xvii)	Monocrotophos	1	8141 A	ISO 10695
xviii)	Phosce	2	8141 A	—

NOTE — Test methods are for guidance and reference for testing laboratory. In case of two methods, USHPA method shall be the reference method.

Table 6 Bacteriological Quality of Drinking Water<sup>1)</sup>  
(Clause 4.1.1)

Sl No.	Organism	Requirements
(1)	(2)	(3)
i)	All water intended for drinking.	
ii)	<i>E. coli</i> or thermotolerant coliform bacteria <sup>2)</sup>	Shall not be detectable in any 100 ml sample
iii)	Treated water entering the distribution system	
a)	<i>E. coli</i> or thermotolerant coliform bacteria <sup>2)</sup>	Shall not be detectable in any 100 ml sample
b)	Total coliform bacteria	Shall not be detectable in any 100 ml sample
iv)	Treated water in the distribution system:	
a)	<i>E. coli</i> or thermotolerant coliform bacteria	Shall not be detectable in any 100 ml sample
b)	Total coliform bacteria	Shall not be detectable in any 100 ml sample

<sup>1)</sup> Immediate investigative action shall be taken if either *E. coli* or total coliform bacteria are detected. The minimum action in the case of total coliform bacteria is repeat sampling; if these bacteria are detected in the repeat sample, the cause shall be determined by immediate further investigation.

<sup>2)</sup> Although, *E. coli* is the more precise indicator of faecal pollution, the count of thermotolerant coliform bacteria is an acceptable alternative. If necessary, proper confirmatory tests shall be carried out. Total coliform bacteria are not acceptable indicators of the sanitary quality of rural water supplies, particularly in tropical areas where many bacteria of no sanitary significance occur in almost all untreated supplies.

<sup>3)</sup> It is recognized that, in the great majority of rural water supplies in developing countries, faecal contamination is widespread. Under these conditions, the national surveillance agency should set medium-term targets for progressive improvement of water supplies.

Date: 27/4/23

Berhampur

To

Regional Officer, SPCB, Berhampur.

Sub: submission of report required by Joint  
committee members in connection to NGT.  
OA/No - 05/2023/PB.

Dear Sir,

Hereby we are submitting the report  
that covers required action plans decided  
by the joint committee members on the meeting  
of 12/4/23. Thanking you.

With regards.

Anapurna Pant

HPO, OSCOM.

RPS/HPD/BARC, Mumbai.

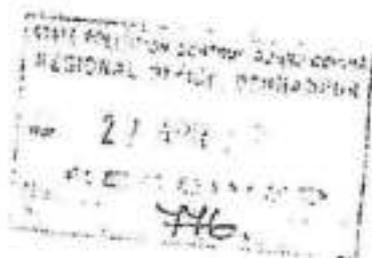
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27/4/23

D.R.S. JA

CS

06/5/23





Government of India  
Bhabha Atomic Research Centre  
Health Physics Division (RPS, NF)  
Health Physics Unit, OSCOM

Ref: HPU/01(67)/400

Date: 27<sup>th</sup> Apr 2023

**Sub:** Response towards the action points decided by the joint committee members in the meeting held on 12.04.23 at 10.30 am in the Sadbhabana Conference Hall of Collectorate, Ganjam constituted by Hon'ble NGT, PB, New Delhi vide order dated. 21.02.2023 in O.A No. 5/2023.

(Ref: "OA No. 05/2023/PB – Surendra Panigrahi vs. State of Odisha – IRE Ltd. Matter)

With reference to the above-cited subject, the joint committee members have assigned the following action plans for HPU (OSCOM), HPD, BARC:

(1) Point No 2. Ground and Surface water contamination -:

(a) Ground and surface water samplings will be carried out jointly by SPCB, Odisha and Health Physics Unit of BARC, Chatrapur to ascertain the current water quality standards in alleged to be affected Gram panchayat i.e. Kanamana, Arjyapalli and Kalipalli. Health Physics Unit of BARC, Chatrapur will undertake analysis w.r.t radioactivity in the ground and surface water bodies.

Action: SPCB, Odisha and Health Physics unit of BARC, Chatrapur.

(c) Dr. S.K. Jha, Scientific Officer (H), Health Physics Division, BARC, Mumbai has apprised that BARC is conducting regular monitoring of surface and ground water in the vicinity. Accordingly BARC is requested to submit the analysis report of past five years. The reports shall be submitted by 25/04/23.

Action: Health Physics Unit of BARC, Chatrapur.

**Report :**

Orissa Sands Complex (OSCOM) is one of IREL's flagship units located at Chatrapur in the district of Ganjam, which is about 150 kilometers from Bhubaneswar, the Capital of Odisha. At present, Mining and Mineral separation activity are carried out over the mining lease area of 2464 hectares to produce 2,65,400 tonnes per annum (tpa) of Ilmenite and other associated minerals such as Rutile, Zircon, Sillimanite, Monazite and Garnet. Mining is taken up by dredging operation in OSCOM. Simultaneously, dry-mining activities are also adopted for supplementing the production requirement for the mineral separation plant. Mining and Mineral separation activities are carried out in an environment friendly and sustainable manner.

Rare Earth processing unit (formerly monazite processing plant) having installed capacity of 11200 tpa mixed Rare Earth Chlorides was commissioned in the year 2015-16. Being a responsible part of Dept. Atomic Energy, it pays a great attention towards all possible safety aspects.

The general safety is carried out by the plant management whereas the radiological safety aspects are being looked after by Radiation Protection Section, HPD, BARC. The Health Physics Unit of Radiation Protection Section (Nuclear Fuels), HPD located at IREL (India) Ltd., OSCOM, is engaged for radiological surveillance of the Dredge and Wet Up Gradation plant (DWUP), Supplementary Mining Plant (SMP), Mineral Separation Plant (MSP), Monazite Up gradation Section (MUS), Rare earths extraction plant (REEP). Off-site environmental radiological surveillance programme around Orissa Sands Complex (OSCOM) also being carried out. The activities of the unit are divided into: -

- a) On-site radiological surveillance,
- b) Industrial hygiene and safety measurements within the plant, and
- c) Off-site environmental surveillance.

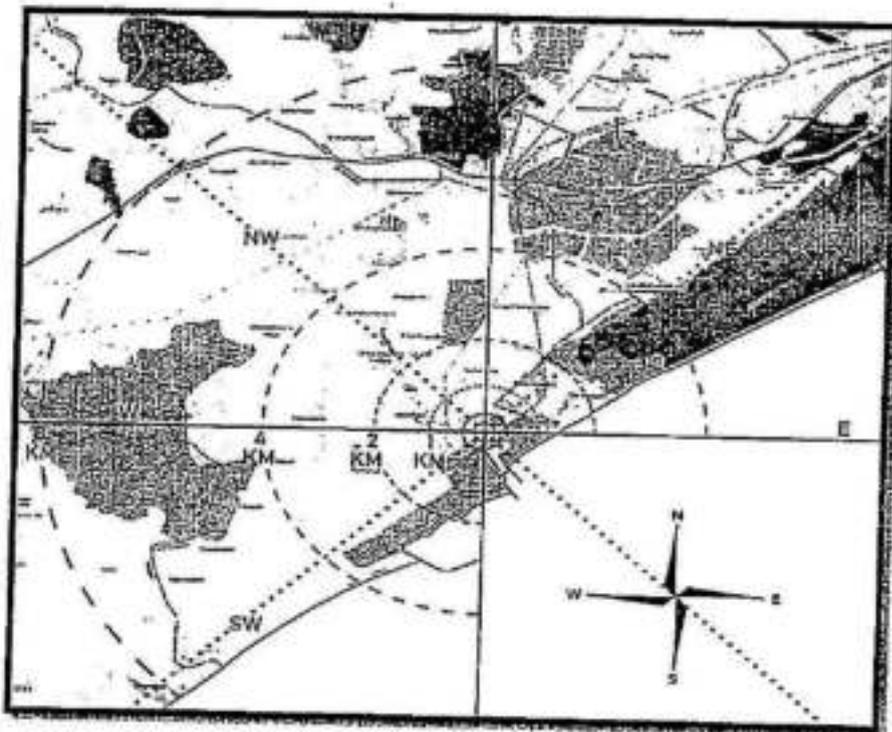


Fig 1. Total Environmental sampling coverage area (the plant is at the center)

#### Off-site environmental surveillance.

The following works are being carried out as far as radiological safety is concerned.

1. Environmental Water samples & radiological parameters monitoring.
2. Environmental TLD monitoring.
3. Environmental Soil samples activity monitoring.

4. Environmental Radon concentration monitoring.
5. Environmental external gamma field monitoring.
6. Environmental ambient air activity monitoring.

#### In response to the MOM of Joint Committee meeting point no- 2 (a)

A joint sampling of ground and surface water was carried out by HPU, OSCOM and SPCB, Odisha on 19/04/2023. The radioactivity analysis was carried out at HPU, OSCOM and the results thereof are mentioned below:

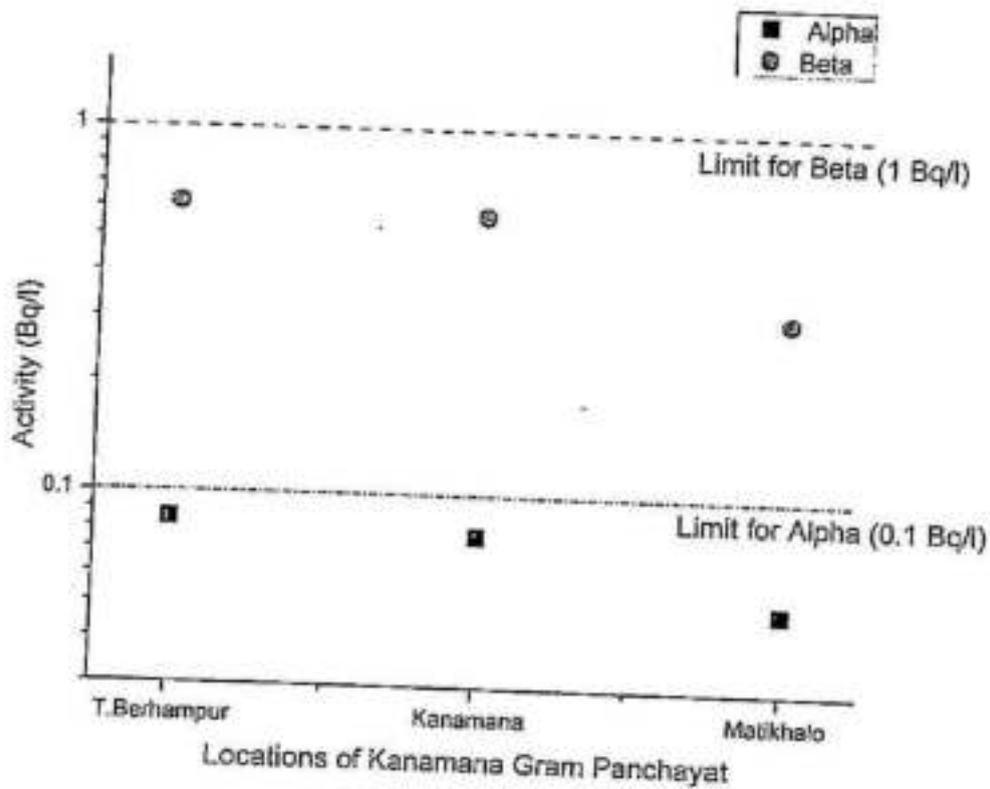


Fig.2. Radioactivity present in ground water samples of Kanamana Gram Panchayat

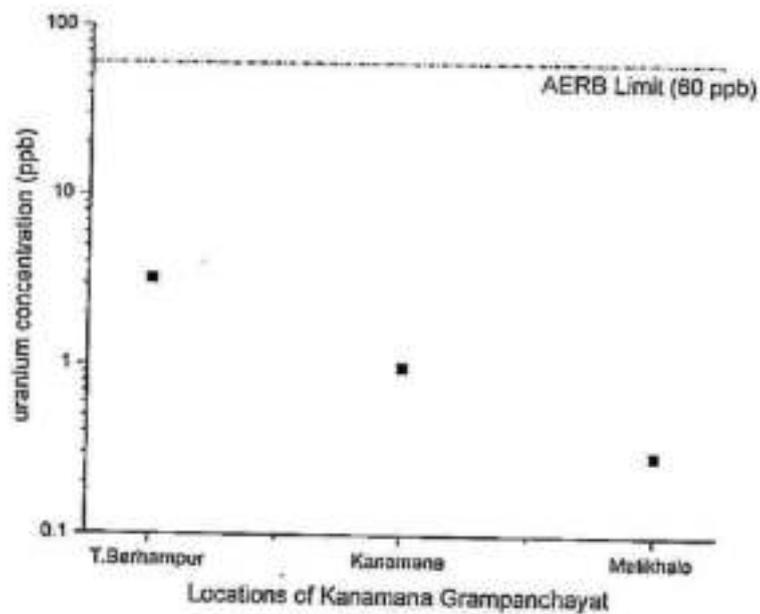


Fig.3 Uranium concentration in ground water samples of kanamana Gram Panchayat

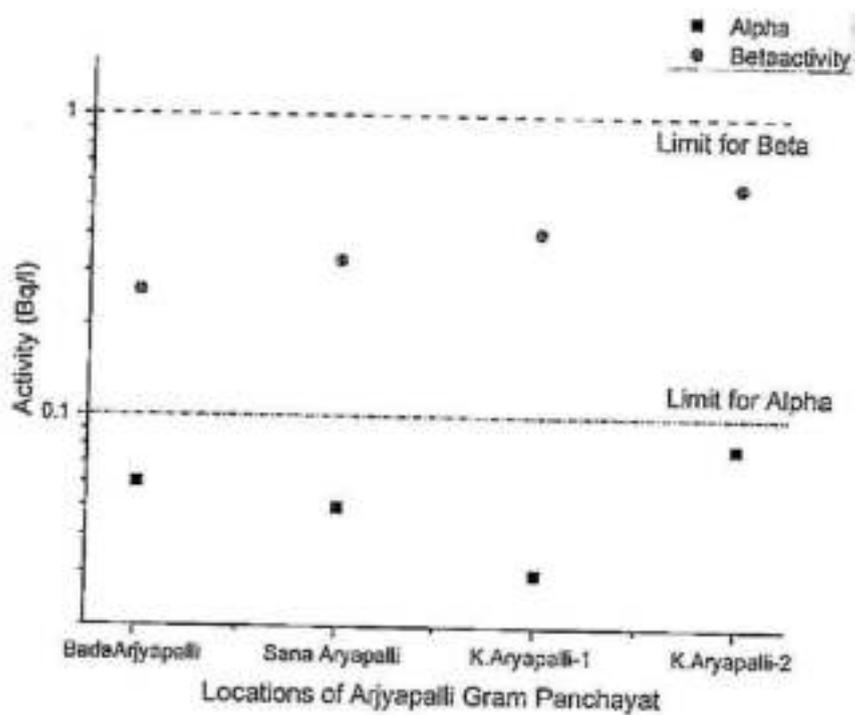


Fig. 4. Radioactivity present in ground water samples of Arjyapalli Gram Panchayat

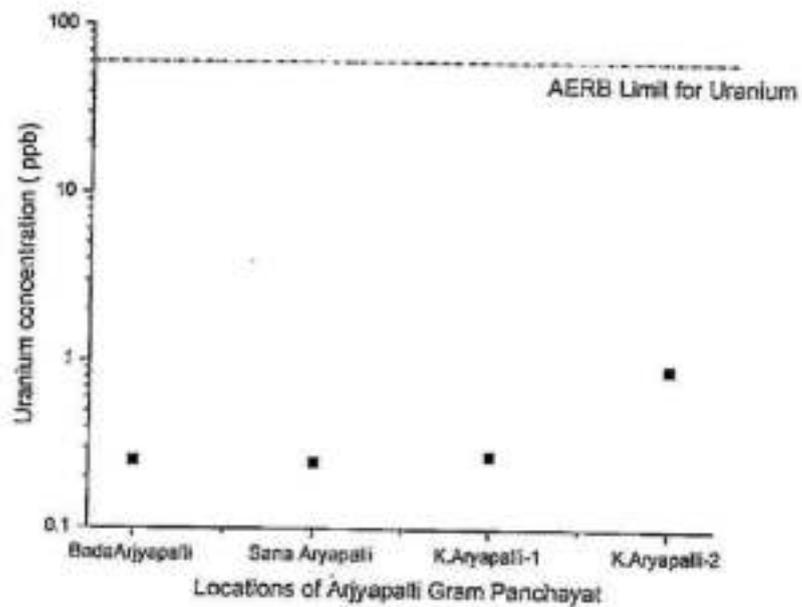


Fig. 5. Uranium concentration in ground water samples of Arjyapalli Gram Panchayat

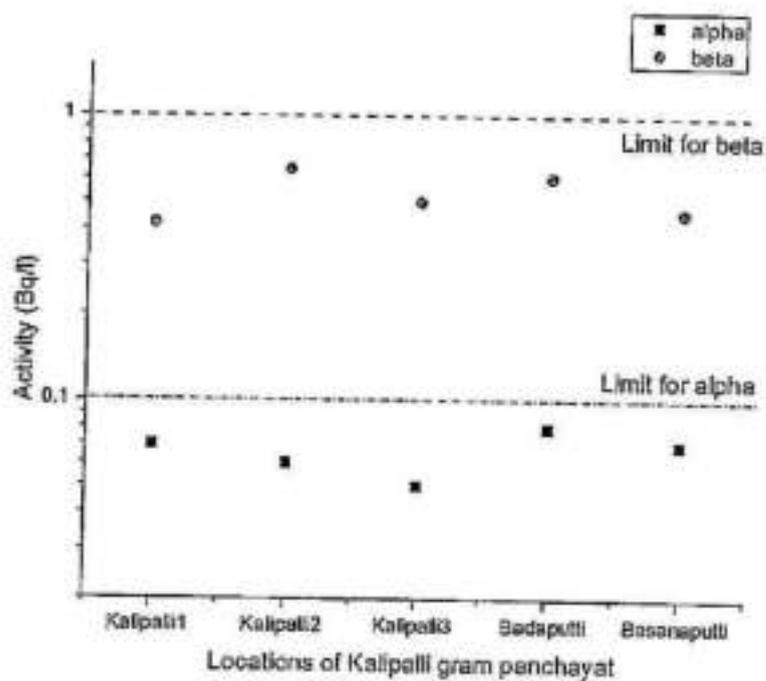


Fig. 6. Radioactivity present in ground water samples of Kalipalli Gram Panchayat

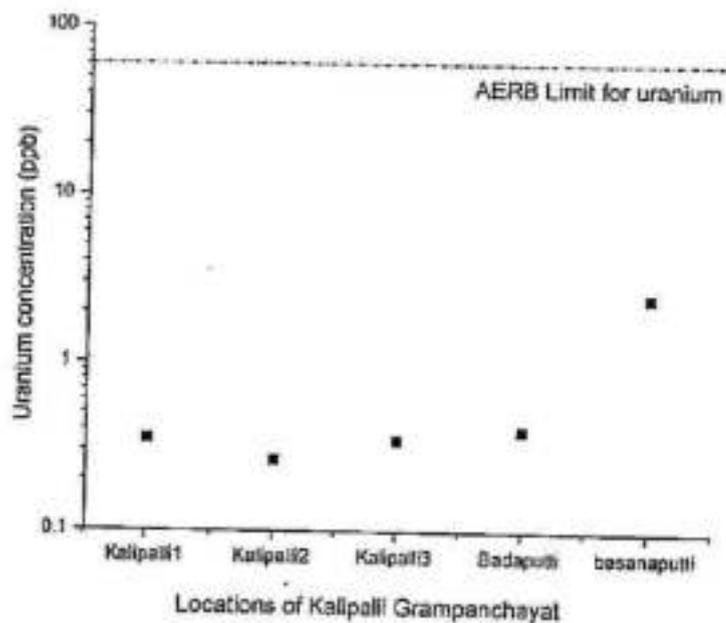


Fig.7. Uranium concentration in ground water samples of Kalipalli Gram Panchayat

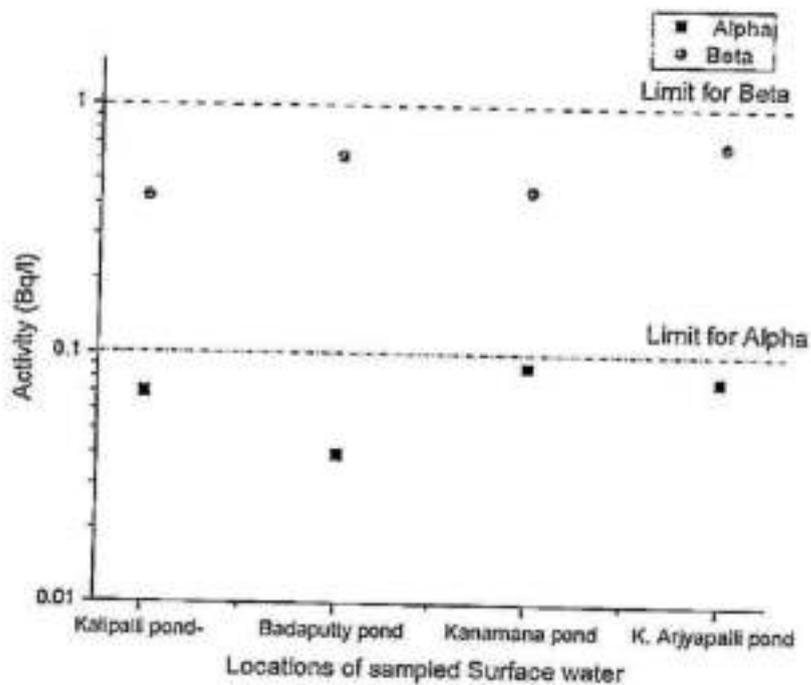


Fig.8. Radioactivity present in surface water samples of three alleged Gram Panchayat

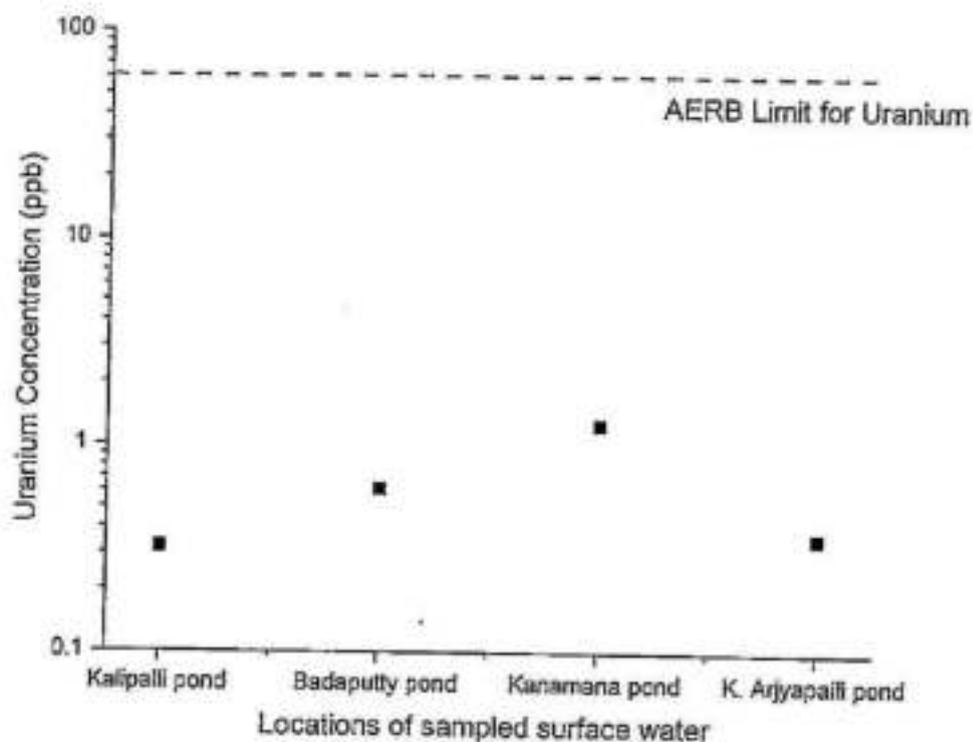


Fig. 9. Uranium concentration in surface water samples of alleged Gram Panchayats

#### Summary:

The above-mentioned data shows that, the present radioactivity in the environmental water samples are within the permissible limit as prescribed by the national regulatory bodies AERB, and BIS. Although the study area is one of the natural high background radiation areas, but still there is no such evidence found regarding the elevated level of radioactivity in water samples. Again, traces of the activities present in the environmental water samples is natural & not related to anthropogenic activities.

Response to the point no 2 (c)

Radioactivity analysis report for the past five years of alleged Gram Panchayat:

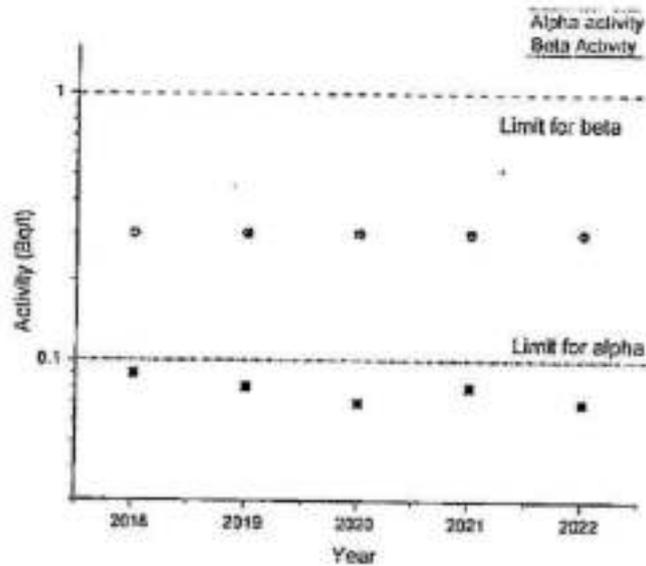


Fig. 10. Radioactivity in ground water of Arjyapalli Gram Panchayat

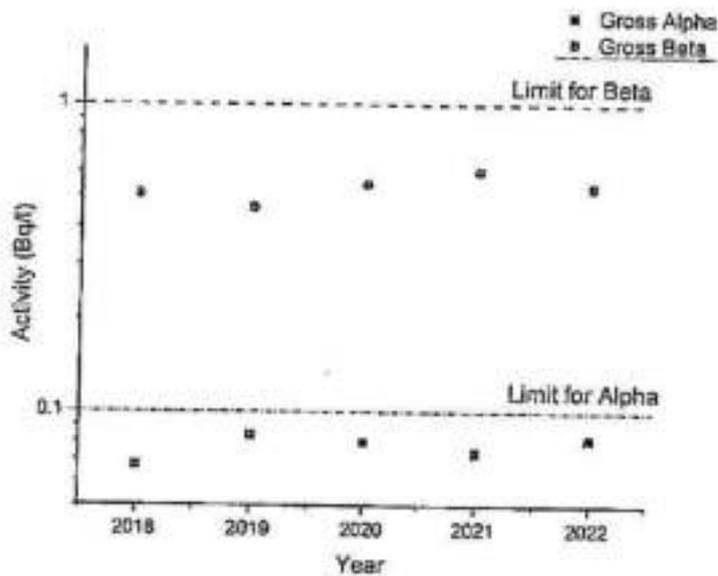


Fig. 11. Radioactivity in ground water of Kanamana Gram Panchayat

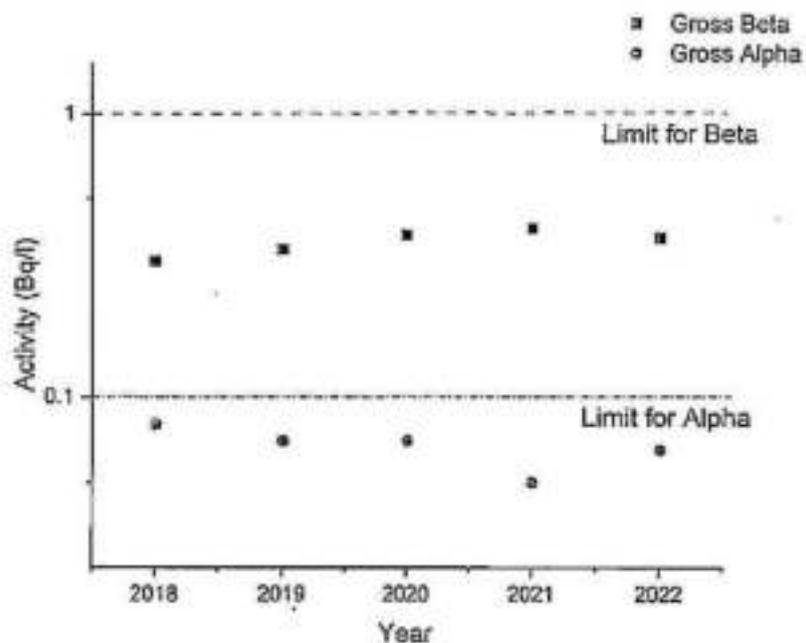


Fig. 12. Radioactivity in ground water of Kalipalli Gram Panchayat

Samples collected & analyzed by

*Annapurna Rout*  
Annapurna Rout  
SO/E, HPU, OSCOM  
27/4/23.

*Rajendra Prasad Patra*  
Rajendra Prasad Patra  
SA/E, HPU, OSCOM  
27/4/2023

*Abinash Sastry*  
Abinash Sastry  
Officer-In-Charge,  
HPU, OSCOM  
27/4/2023



आईआरईएल (इंडिया) लिमिटेड  
**IREL (India) Limited**  
(Formerly Indian Rare Earths Limited)

(भारत सरकार का उपक्रम)  
(A Government of India Undertaking)

CIN : U15100MH1960GOI000187 Website : www.irel.co.in

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

75  
जवाहरलाल  
नेहरू  
अमृत महोत्सव



भारत  
भारत - 2023

IREL/OSCOM/REEP/ 909'A'

25.04.2023

To,  
The Additional District Magistrate (General),  
Ganjam, Chatrapur, Odisha

Dear Sir,

**Sub:** Compliance report of REEP, IREL (India) Limited.

**Ref.:** Proceedings of the meeting of the joint committee members held on 12.4.2023 at 10.30 AM in the Sadhabana conference hall of Collectorate, Ganjam constituted by Hon'ble NGT, New Delhi vide order dated 21.2.2023 in O.A No 05/2023.

As desired, we are furnishing herewith the details in **Enclosure No.1** with respect to the point no 2 (b) of proceedings of meeting of the Joint Committee held on 12.4.2023 for kind information.

With regards,

STATE POLLUTION CONTROL BOARD, ODISHA  
REGIONAL OFFICE, BERHAMPUR  
24 JUL 2023  
RECEIVED  
No. ....  
Dt. 13/7/23

Yours truly,  
*[Signature]*  
GM & HEAD, OSCOM  
25/4/2023

ASL (RKS)  
24/07/23

copy submitted to the regional office  
spcb, berhampur for information.

*[Signature]*  
25/7/23

Orissa Sanda Complex Matikhalo (P.O) Chatrapur (Ganjam) Odisha-751046  
Regd Office Plot no:1207, Veer Savarkar Marg, Near Siddhi Vinayak Temple Prabhadevi Mumbai-400 029

Enclosure No.1

## Information sought

Point no: 2(b)

IREL to submit the safety audit reports for undertaken by AERB at Rare Earths Processing Plant(REEP), Matikhalo, IREL,OSCOM with respect to health of lining of effluent treatment plant and radioactive waste disposal sites of past five years as per the guidelines of Atomic Energy Regulatory Board to prevent ground water contamination.

## Our Compliance

1. We wish to mention that AERB officials have been carrying out multitier inspections to REEP regularly towards ensuring the radiological safety & related measures. Based on the same, Operational License and Authorization for safe disposal/transfer of radioactive wastes are issued for REEP. Copies of supporting documents received from AERB are enclosed herewith as Annexure-1 to 7 for kind reference. As on date, the Operational License No.AERB/OPSD/55222/ 2021/478A, dated 19<sup>th</sup> April 2021 and Authorization for handling/disposal of Radioactive wastes (solid, liquid & gaseous) Authorization No.0021 issued by AERB of REEP are valid upto 30.4.2025.

2. The effluent treatment ponds (No.1,2 & 3) at REEP are lined with acid resistance bricks and mastic lining which makes the effluent holding ponds impervious. The same are inspected by AERB officials during their periodical visit to REEP and accordingly, Operational licence and Authorization for safe disposal of radioactive wastes are issued.

During periodical review at REEP, these ponds are cleaned/emptied and the surface conditions of side walls & bottom linings of the ponds are checked/inspected internally by departmental Civil Engineers and the status is maintained.

3. With regard to radioactive waste disposal sites, Solid Waste Trenches are constructed as per AERB guidelines and utilized for the storage of the radioactive wastes. These Trenches are regularly inspected by AERB and the status is maintained. These Trenches are impervious and constructed as per the designs approved by AERB. As per the approved design only, the construction of Solid Waste disposal trenches are carried out.

In this context, we would like to intimate that the satisfactory observations of AERB with respect to safety compliance on operation and authorization for disposal/transfer of Radioactive Waste of REEP from the year 2017 onwards are published in Annual Reports of AERB every year and available in Public Domain (<https://aerb.gov.in/english/annual-report-archives>). Relevant pages of annual reports are attached as Annexure-8

AERB has been inspecting REEP for all its processes at regular intervals and issues the Licence and Authorization for sustainable operations based on the compliance status. The water and soil analysis in the near vicinity of REEP has been undertaken by a NABL Accredited and MoEF & CC authorized agency covering Kalipalli, Arjipalli and Kanamana Panchayats which confirms the parameters are within the norms. These analysis reports are submitted to MoEF & CC and OSPCB regularly.

*[Handwritten signature]*  
21/02/2021

*[Handwritten signature]*  
21/02/2021

*[Handwritten signature]*  
21/02/2021

List of Annexures:

Annexure No.	Description
1	Copy of AERB letter No. AERB/IPSD/VVP/PG/15/ACPSR-FCF/2013/4263 dated 7 <sup>th</sup> November 2013 on Consent for Commissioning of the Monazite Processing Plant (MoPP) at IREL, OSCOM (2 pages)
2	Copy of the letter from AERB on Operational License for MoPP vide No. AERB/CN/IPSD/VVP/PG/15/2015/1412 dated 24.04.2015 (3 Pages)
3	Copy of the Authorization for safe disposal/Transfer of Radioactive wastes from AERB vide No. CH/AERB/WD/55/2015/4273 dated 30.12.2015 (2 Pages)
4	Copy of the letter from AERB on extension of License for operation of REEP vide No. AERB/CN/OPSD/IRE-O/55222/2020/382 dated 22.04.2020 (2 Pages)
5	Copy of the AERB Authorization for disposal transfer of radioactive wastes at REEP vide letter no- AERB/OPSD/IREL-O/61011/2020/398 dated 28.05.2020 (3 Pages)
6	Copy of the License from AERB for operation of BSM facilities at IREL, OSCOM vide letter no- AERB/CN/OPSD/IREL/BSM-O/13311/2019/876 dated 06.08.2019 (6 Pages)
7	Copy of the AERB letter No. AERB/OPSD/55222/ 2021/478 dated 21.04.2021 regarding renewal of License for operation and Radioactive wastes- Authorization of REEP ( 9 pages)
8	Relevant Pages of AERB annual reports from 2017 to 2021 ( 5 years) - 15 pages extracted from public domain ; <a href="https://aerb.gov.in/english/annual-report-archives">https://aerb.gov.in/english/annual-report-archives</a> .

*S. S. S.*  
25/4/2021

*(m) K. P. S.*  
22/4/2021

*K. S. S.*  
21/4/21



परमाणु  
ऊर्जा  
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परिषद्



भारत सरकार

GOVERNMENT OF INDIA

Atomic  
Energy  
Regulatory  
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अध्यक्ष  
CHAIRMAN

No. AERB/IPSD/NVP/PG/15/ACPSR-FCF/2013/1263

November 7, 2013

**Subject: Consent for Commissioning of the Monazite Processing Plant (MoPP) at IREL, OSCOM**

**References:**

1. Authorization for construction of 10,000 tpa Monazite Processing Plant (MoPP) at Indian Rare Earths Limited (IREL), OSCOM (Ref. No. CHAERB/PSD/IREL/2007/14010 dated October 24, 2007).
2. Construction of 10,000 tpa Monazite Processing Plant (MoPP) retrofitting with 150 tpa Thorium Nitrate Plant at IREL, OSCOM (Ref. No. AERB/PSD/ISB/IREL/75A (2)/2012/1041 dated February 29, 2012).
3. Application for Commissioning Consent of MoPP at OSCOM, IREL along with Commissioning schedule and Technical Specifications (Ref. No. Project/MoPP/AERB/7432A dated September 5, 2012).
4. Minutes of Meeting of 32<sup>nd</sup> DSRC-UEP held on January 22, 2013 (Ref. No. AERB/IPSD/DSRC-UEP/RK/75A/2013/468 dated February 5, 2013).
5. Minutes of Meeting of 33<sup>rd</sup> DSRC-UEP held on May 10, 2013 (Ref. No. AERB/IPSD/DSRC-UEP/AB/75A/2013/1539 dated May 30, 2013).
6. Minutes of Meeting of 34<sup>th</sup> DSRC-UEP held on August 07, 2013 (Ref. No. AERB/IPSD/DSRC-UEP/ARV/75A/2013/5234 dated August 26, 2013).
7. Minutes of Meeting of 35<sup>th</sup> ACPSR-FCF held on October 21, 2013 (Ref. No. AERB/PSD/ACPSR-FCF/PG/63/2013/159 dated October 31, 2013).

Authorisation for Construction of 10,000 TPA (Tonnes Per Annum) Monazite Processing Plant (MoPP) at Odisha Sands Complex (OSCOM) was granted by AERB with certain stipulations upto October 2012 (Reference 1). The MoPP project which was planned initially to be a separate facility was later combined with the existing facilities at IREL, OSCOM and Authorisation for Construction of 10,000 TPA MoPP retrofitting with 150 TPA thorium nitrate plant at IREL, OSCOM was granted by AERB with certain stipulations (Reference 2). However due to delay in completion of construction activities, Authorisation for Construction was extended thrice and is valid upto December, 2013.

IREL submitted an application for Consent for Commissioning of MoPP along with the required documents in September, 2012 (Reference 3). The application along with the required documents was reviewed in 32<sup>nd</sup>, 33<sup>rd</sup> and in 34<sup>th</sup> meetings of Design Safety



20 2001, 2013  
7-jan-2013

भारतीय परमाणु ऊर्जा आयोग  
भारतीय परमाणु ऊर्जा आयोग, दिल्ली-110046

फोन : 26109111, 26109112, 26109113, 26109114  
फैक्स : 26109115, 26109116, 26109117, 26109118  
ईमेल : aerb@nic.nic.in  
वेबसाइट : www.aerb.gov.in

परमाणु ऊर्जा विनियमन बोर्ड  
ATOMIC ENERGY REGULATORY BOARD

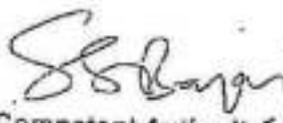
Review Committee for Uranium Extraction Projects (DSRC-UEP) and in 35<sup>th</sup> meeting of Advisory Committee for Projects Safety Review of Fuel Cycle Facilities (ACPSR-FCF) (Reference 4, 5, 6 & 7). ACPSR-FCF in its 35<sup>th</sup> meeting recommended for grant of Consent for Commissioning of the Monazite Processing Plant (MoPP) at IREL, OSCOM with certain stipulations.

Based on the above, Consent for Commissioning of the Monazite Processing Plant (MoPP) at IREL, OSCOM, is hereby granted with the following stipulations:

- 1) All the recommendations of DSRC-UEP and ACPSR-FCF shall be complied with by end of December, 2013. Smoke detectors in the control room shall be installed by April, 2014.
- 2) IREL shall integrate the Emergency Preparedness Plan for entire IREL, OSCOM facilities and submit to AERB for approval.
- 3) All industrial & fire safety aspects, radiation protection aspects and waste management aspects shall be followed as per the statutes in this regard.
- 4) All other Statutory Clearances shall be obtained from the other regulatory authorities.
- 5) The provisions in the Atomic Energy (Factories) Rules, 1996 shall be strictly complied with.

Consent for Commissioning is valid till the end of November, 2018.

Chairman & Managing Director  
Indian Rare Earths Ltd.  
Plot No. 1207, Veersavarkar Marg  
Opp. Siddvinayak Temple  
Prabhadevi, Mumbai-400028

  
(Competent Authority)

श. उ. म. बाजाज / S. S. BAJAJ  
अध्यक्ष / Chairman  
परमाणु ऊर्जा विनियमन बोर्ड  
Atomic Energy Regulatory Board

Copy to:

AERB:  
Vice-Chairman, AERB  
Secretary, AERB  
Director, IPSD, AERB  
Chairman, ACPSR-FCF & Member-Secretary, ACPSR-FCF  
Chairman, DSRC-UEP & Member-Secretary, DSRC-UEP

IREL:  
Director (Technical), IREL  
Chief General Manager, IREL, OSCOM



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नियामक  
परिषद



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Board



अध्यक्ष  
CHAIRMAN

No.AERB/CN/PSD/VVP/PG/15/2015/ 1412

April 24, 2015

Subject: Operation Licence to Monazite Processing Plant (MoPP) for 10,000 TPA Monazite processing at IREL, OSCOM, Odisha.

References:

1. Consent for Commissioning of MoPP at IREL, OSCOM (Ref. no. AERB/PSD/VVP/PG/15/ACPSR-FCF/2013/4263 dated November 7, 2013).
2. Application from CGM, IREL, OSCOM on Operation consent of MoPP at IREL, OSCOM (Ref.no. Project/MoPP/AERB-3579A dated May 17, 2014).
3. Minutes of 36th meeting of Design Safety Review Committee for Uranium Extraction Projects (DSRC-UEP) (Ref.No.AERB/PSD/DSRC-UEP/DD/AB/PMG/75A/2014/2453 dated July 24, 2014).
4. Minutes of 37th meeting of Design Safety Review Committee for Uranium Extraction Projects (DSRC-UEP) (Ref.No.AERB/PSD/DSRC-UEP/DD/75A/2014/4204 dated December 23, 2014).
5. Minutes of 39th meeting of ACPSR-FCF held on April 13, 2015 (Ref. No. AERB/OTH/PSD/PG/63/2015/1303 dated April 20, 2015).

Consent for commissioning of the Monazite Processing Plant (MoPP) at IREL, Odisha Sand Complex (OSCOM) was granted by AERB with certain stipulations on November 7, 2013 (Ref.1) based on the review of proposal in 32<sup>nd</sup>, 33<sup>rd</sup> & 34<sup>th</sup> meeting of Design Safety Review Committee for Uranium Extraction Projects (DSRC-UEP) and in 35<sup>th</sup> meeting of Advisory Committee for Project Safety Review of Fuel Cycle Facilities (ACPSR-FCF). This commissioning Consent is valid upto November, 2018.

After successful completion of commissioning activities, IREL, OSCOM submitted an application for grant of operation Licence to MoPP for 10,000 TPA monazite processing at IREL, OSCOM along with the required documents in May, 2014 (Ref.2). The application along with the required documents was reviewed in 36<sup>th</sup> & 37<sup>th</sup> meeting of Design Safety Review Committee for Uranium Extraction



ISO 9001:2008  
CERTIFIED

परमाणु नियामक परिषद, टी १ - ४०९ ०१४  
RIVAJAN BHAVAN, ANUSHAKTI NAGAR, MUMBAI - ४०० ०१४

दूरध्वनि / TELEPHONE : ३१-२३-२६९ २३३३, २६९० ००४  
दूरध्वनि / FAX : ३१-२३-२६९१ २३४६, २३६६ ०११७, २३६६ ३३३९  
E-mail: chairman@aerb.gov.in  
वेबसाइट / WEBSITE : www.aerb.gov.in

परमाणु ऊर्जा नियामक परिषद  
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Projects (DSRC-UEP) held on July 3, 2014 & November 25, 2014 respectively (Ref. 3 & 4) and in 39<sup>th</sup> meeting of Advisory Committee for Projects Safety Review of Fuel Cycle Facilities (ACPSR-FCF) held on April 13, 2015 (Ref. 5). During meeting, detailed deliberations were made on revised safety report, technical specification for operation of MoPP, and on Commissioning results. The Compliance status of DSRC-UEP, ACPSR-FCF & that of regulatory inspection was also reviewed. Finally, based on the detailed review & deliberation, ACPSR-FCF in its 39<sup>th</sup> meeting observed that the safety status of MoPP at IREL, OSCOM is satisfactory and recommended for grant of Operation Licence to MoPP for 10,000 TPA monazite processing at IREL, OSCOM with certain stipulations.

Based on the above, Operation Licence to Monazite Processing Plant (MoPP) for 10,000 TPA Monazite processing at IREL, OSCOM, Odisha, is hereby granted with the following stipulations:

- 1) The prime responsibility for the safe operation of the plant shall be vested with the occupier.
- 2) Minimum requirement of fire staff & firefighting equipment shall be maintained as per AERB Safety Standard, 'Fire Protection Systems for Nuclear Facilities', (AERBNF/SS/FPS (Rev.1)).
- 3) Authorisation for radioactive waste disposal shall be obtained from AERB.
- 4) Minimum requirement of health physics staff in round the clock shift shall be maintained as per the Technical Specifications for operation of MoPP.
- 5) All pending recommendations of regulatory inspection shall be complied with by the end of July, 2015.
- 6) The Technical Specifications for Operation shall be strictly followed and any deviation shall be informed to AERB.
- 7) IREL, OSCOM shall recalculate the material balance based on commissioning trial of 700 Te monazite and submit the interim commissioning report to AERB for review within one month.
- 8) IREL, OSCOM shall revise safety analysis report, Technical Specification for Operation of MoPP and material balance after processing 2000 Te of monazite and resubmit the revised reports to AERB for review.
- 9) All other Statutory Clearances shall be obtained from the other regulatory authorities.

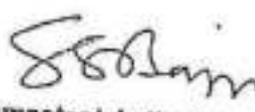
परमाणु ऊर्जा नियामक परिषद  
ATOMIC ENERGY REGULATORY BOARD

10) The provisions in the Atomic Energy (Factories) Rules, 1996 shall be strictly complied with.

Operation Licence is valid till April 30, 2020.

Shri T. Bhattacharya  
Head, OSCOM  
Indian Rare Earths Ltd.  
Orissa Sands Complex, Matikhal (P.O)  
Chatrapur (Ganjam), Odisha- 761020

डॉ. ए. एस. बाजा / Dr. S. BAJAJ  
अध्यक्ष / Chairman  
परमाणु ऊर्जा नियामक परिषद  
Atomic Energy Regulatory Board

  
(Competent Authority)

डॉ. ए. एस. बाजा / Dr. S. BAJAJ  
अध्यक्ष / Chairman  
परमाणु ऊर्जा नियामक परिषद  
Atomic Energy Regulatory Board

Copy to:

AERB:  
Chairman, SARCOP  
Vice-Chairman, AERB  
Head, IPSD, AERB  
Chairman, ACPSR-FCF & Member-Secretary, ACPSR-FCF  
Chairman, DSRC-UEP & Member-Secretary, DSRC-UEP

IREL:  
CMD, IREL  
Director (Technical), IREL



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GOVERNMENT OF INDIA

अध्यक्ष  
CHAIRMAN

No. CH/AERB/WD/55/2015/127

December 30, 2015

Sub: Authorisation for safe disposal/ transfer of radioactive waste

Ref: Authorisation No.0021 dated 31.03.1992

ORISSA SANDS COMPLEX (OSCOM), IREL

Pursuant to the Atomic Energy Act, 1982 and the enabling rules made thereunder, and specially the "Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987" G.S.R. 125 and on assessment of the information furnished by the applicant in (i) application No.0029 dated 05.02.1992, (ii) annual returns of the radioactive waste disposed/ transferred during the period 2010 to 2014 and (iii) request for renewal of authorisation vide letter No. OSCOM/MoPP/AERB/Waste disposal-9203A dated 21.10.2015, the authorisation No.0021 dated 31.03.1992 issued to dispose/ transfer radioactive wastes in conformity with (a) the terms and conditions specified therein and (b) reauthorisation issued vide letter No. CH/AERB/WD/55/2012/1107 dated 13.12.2012 is modified and revalidated in favour of the authorised officer named below for the period upto 31.12.2016 for safe disposal / transfer of radioactive wastes listed overleaf.

*Shardulaj*  
Competent Authority

श्री अशोक ए. ए. शर्दुलाज  
अध्यक्ष, परमाणु  
ऊर्जा नियंत्रण परिषद्  
Atomic Energy Regulatory Board

The Authorised Officer  
Shri A.K. Mohapatra  
Chief General Manager,  
OSCOM, IREL  
P.O. Chatrapur  
Dist. Ganjam  
Orissa-761 045



ISO 9001:2008  
Organization

पिपुलसरी, अणुसंशोधन भवन - 400 081  
BHAVAN BHAVAN ANUSANATH VAGAR, MUMBAI 400081

TELEPHONE 31-22-2554 2548 2559 2564  
FAX 31-22-2558 2544 2559 2577 2554 2531  
E-MAIL: info@areb.gov.in  
WWW: WWW.AERB.GOV.IN

ATOMIC ENERGY REGULATORY BOARD

Authorised Installation: INDIAN RARE EARTH LTD ORISSA SANDS COMPLEX (ORCOM)  
 Authorisation No. 0021 Date of Expiry: 31/12/2016  
 Authorised Particulars for Disposal or Transfer of Radioactive Waste

PARTICULARS	SOLID WASTE	LIQUID WASTE	GASEOUS WASTE
(a) Physical form / packaging	Assorted wastes, insoluble sludge, filter cakes after neutralisation and drying filled in laminated HDPE bags.	Aqueous alkaline and ammonium nitrate radioactive waste.	Ventilation exhaust air.
(b) Chemical Characteristics	Calc containing moisture 30-50%, ThO 0.5-3%, RSO 2.4%, Na <sub>2</sub> NO <sub>3</sub> 75-85%, Iron carbonate 40-60% & and traces of P, Ti and monazite.	Water contaminated with radionuclides and chemicals like Thorium nitrate and ammonium nitrate, pH. 6 to 8.	Air containing thoron and its decay products
(c) Annual volume of waste permitted for	(i) 79.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>1a</sub> 200.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>2</sub> 100.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>3</sub>	(i) 4000.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>1a</sub> (Alkaline) 350.0 Cat. B <sub>1</sub> A <sub>1a</sub> (Ammonium Nitrate)	(i) 230.4 x 10 <sup>3</sup> m <sup>3</sup> Cat. A <sub>2a</sub>
(i) Disposal by installation itself	(ii) Not Applicable	(ii) Not Applicable	(ii) Not Applicable
(ii) Transfer to Waste Management Agency			
(d) Radionuclide permitted for	(i) Ra <sup>226</sup> and Th <sup>232</sup>	(i) Th <sup>232</sup> & Ra <sup>226</sup>	(i) Th <sup>232</sup> and its decay products
(i) Disposal by installation itself	(ii) Not Applicable	(ii) Not Applicable	(ii) Not Applicable
(ii) Transfer to Waste Management Agency			
(e) Total annual activity of waste permitted for	(i) Cat. B <sub>1</sub> A <sub>1a</sub> 3x10 <sup>6</sup> MBq-Gross α 25x10 <sup>6</sup> MBq-Gross β Cat. B <sub>1</sub> A <sub>2</sub> 12.0x10 <sup>6</sup> MBq-Gross α 18.0x10 <sup>6</sup> MBq-Gross β Cat. B <sub>1</sub> A <sub>3</sub> 60.0x10 <sup>6</sup> MBq-Gross α 7.2x10 <sup>6</sup> MBq-Gross β	(i) 160.0 MBq-Gross β 16.0 MBq-Gross α	(i) 230.0 MBq-Th <sup>232</sup> 161.0 MBq-Th.D
(i) Disposal by installation itself	(ii) Not Applicable	(ii) Not Applicable	(ii) Not Applicable
(ii) Transfer to Waste Management Agency			
(f) Permitted method for	(i) Packed in HDPE bags and stacked in covered RCC trenches.	(i) After neutralisation and dilution disposed to effluent pond.	(i) After scrubbing with caustic soda solution discharged through 25m high stack
(i) Disposal by installation itself	(ii) Not Applicable	(ii) Not Applicable	(ii) Not Applicable
(ii) Transfer to Waste Management Agency			
(g) Location of site authorised for disposal of waste by installation itself	Near the western side of the plant perimeter wall.	Effluent pond near the southern perimeter wall.	At the northern side of the process building of NTP.
(h) Short term activity limit permitted for disposal by installation itself	(i) Not Applicable	(i) .	(i) .
(i) Maximum activity	(ii) -Do-	(ii) 370.0 Bq/l-Gross β 17.0 Bq/l-Gross α	(ii) .
(ii) Maximum concentration			

*H. S. Sharma*  
 Competent Authority

Dr. Suresh Kumar S A SHARMA  
 Joint Chairman  
 Solid and Liquid Waste  
 Atomic Energy Regulatory Board



भारत सरकार Government of India  
परमाणु ऊर्जा नियामक परिषद Atomic Energy Regulatory Board  
प्रचालित संयंत्र संरक्षा पभाग Operating Plants Safety Division

डॉ. पी. गर्ग A. P. Garg  
प्रमुख, ओपीएसडी Head, OPSD  
दूरभाष Tel: 022 25990511  
दूरभाष Tel: 022 25580436  
फैक्स Fax: 022 25552879  
इमेल email: apgarg@aerb.gov.in

नियामक भवन Niyamak Bhavan  
अणुशक्तिनगर Anushaktinagar  
मुंबई Mumbai-400 094

No. AERB/CN/OPSD/IRE-O/55222/2020/ 362

April 22, 2020

Sub: Extension of License for Operation of Rare Earths Extraction Plant (REEP),  
IREL (India) Ltd., OSCOM

References:

- i. Operation license of MoPP for 10000 TPA Monazite Processing at IREL OSCOM vide no. AERB/CN/OPSD/VVP/PG/15/2015/1412 dated April 24, 2015
- ii. Application from IREL OSCOM vide OS/REEP/AERB/Op.Licence20-254575A dated November 30, 2019 & revised copy of application duly signed by occupier on Dec 06, 2019
- iii. Application for renewal of authorisation for waste disposal for 10,000 TPA Rare Earth Extraction Plant (REEP) vide OS/MoPP/AERB/WD, dated Jan 03, 2020
- iv. DRP&E review comments on license application vide AERB/DRP&E/RDRC/ 25125/2020/06/ dated Jan 08, 2020
- v. OPSD review Note on renewal of license for operation of REEP, IREL (India) Ltd., OSCOM, vide AERB/OPSD/5517/2020/82, dt. 16.01.2019.
- vi. Minutes of Meeting of Nuclear Facility safety Committee - 1 (NFSC-1), held on Jan 31, 2020 vide AERB/OPSD/6225-1/2020, dt. 19.02.2020.
- vii. MOM of 739<sup>th</sup> meeting of SARCOP held during January 22-23, 2019 at OSCOM site
- viii. Amendment request for revision of Tech. Spec. incorporating 739<sup>th</sup> SARCOP comments vide OS/REEP/AERB/Tech. Spec./327A dated Jan 23, 2020
- ix. IREL Submission of Form 11 & 12 and investigation report of the Dangerous occurrence (occurred on Dec 27, 2019) dated Feb 12, 2020
- x. Letter from Head OPSD on Dangerous occurrence of collapse of concrete platform holding FRP acid tank at active plant of REEP at OSCOM, IREL vide AERB/OPSD/55221/2020/200 dated Feb 13, 2020
- xi. Letter from Head OPSD on SSES review observation on dangerous occurrence vide AERB/OPSD/IREL-O/61011/2020 dated Feb 28, 2020
- xii. IREL submission of compliance to AERB recommendations pertaining to Renewal of License for operation of REEP, IREL (India) Ltd., OSCOM vide OS/REEP/OPSD/Licence Dt. March 07, 2020
- xiii. IREL response on OPSD and SSES recommendations pertaining to dangerous occurrence vide OS/REEP/OPSD/Licence dated March 07, 2020
- xiv. OPSD letter on waste disposal authorization comments vide AERB/OPSD/IREL-O/61011/2020/305, dated March 11, 2020
- xv. IREL response on waste disposal authorization vide OS/REEP/AERB/OPSD/WD dated March 25, 2020 (submitted through e-mail)
- xvi. E-mail to IREL from OPSD reviewer dtd 13.03.2020, seeking additional information on license renewal identified during review of submitted IREL compliance
- xvii. Submission from IREL (through e-mail) on additional information on license renewal (response to OPSD e-mail dated 13.03.2020) vide OS/REEP/AERB/OPSD/DREPE dtd. 01.04.2020
- xviii. MOM of SARCOP meeting no. 750 held on Sep 11, 2019 vide AERB/SARCOP-91022/2020/337 dated April 16, 2020

- ix. RI report of special RI conducted for the structural safety aspects of REEP, OSCOM during March 12-13, 2020 vide AERB/DR/RI/2020/176 dated April 11, 2020
- xi. IREL response based on draft special RI report, submitted through e-mail dated April 12, 2020
- xxi. E-mail to IREL from OPSD reviewer on March 27, 2020, seeking clarification w.r.t. waste disposal compliance submitted by IREL
- xxii. IREL response to E-mail from OPSD reviewer on waste disposal query (sent on March 27, 2020) received through e-mail dtd. March 28, 2020
- xxiii. MOM of 5th meeting of OHSC (held on Nov 14, 2019) vide AERB/OPSD/OHSC/62227/2019/1219 dated November 18, 2019
- xxiv. Approval of Chairman AERB vide AERB/CN/OPSD/IRE-O/55222/2020/373 dated April 20, 2020

This is with reference to the application for renewal of license for operation of Rare Earths Extraction Plant (REEP), IREL (India) Ltd., OSCOM under Sec. 6 of the Factories Act 1948 in conjunction with Sec. 23 of Atomic Energy Act, 1962 and Rule 3 of the Atomic Energy (Radiation Protection) Rules 2004 [Ref. ii]. Based on review of your application at AERB, Chairman AERB has agreed to extend the validity of the License for Operation of REEP for a period of one year i.e. upto April 30, 2021.

Further, it is stipulated that continuation of operation of facility beyond October 2020 would be subjected to satisfactory compliance to the commitment made by facility w.r.t. (i) health assessment of civil structures & implementation of corrective actions, (ii) storage of radioactive waste, (iii) assessment of adequacy of bore wells, (iv) root cause for increase in radioactivity in bore wells, (v) control of radioactivity contamination and (vi) obtaining license from DAE under the Atomic Energy (working of mines, minerals & handling of Prescribed Substances) Rules, 1984.

Chairman AERB has also approved the authorization for disposal of radioactive wastes for a period of one year i.e. upto April 2021. Formal letter in this regard will follow.

*A.P. Garg*  
(A.P. Garg)  
Head, OPSD

Shri A. J. Janarthanan  
CGM & Head, Orissa Sands Complex (OSCOM)  
M/o IREL (India) Ltd.  
PO:- Matikhalo, Chatarpur (Ganjam)  
Orissa - 761045 India

Director (Technical), IREL (India) Ltd.

Cc to: Chairman, AERB  
Executive Director, AERB  
CMD, IREL (India) Ltd.  
Director, NFRG, AERB  
Head, DRP&E, AERB  
Lead Reviewer and Reviewers, IREL facilities, AERB  
OPSD Databank



भारत सरकार Government of India  
 परमाणु ऊर्जा नियामक परिषद Atomic Energy Regulatory Board  
 प्रचालित संयंत्र संरक्षा प्रभाग Operating Plants Safety Division

ए. पी. गर्ग A. P. Garg  
 प्रमुख, ऑपीएसडी Head, OPSD  
 दूरभाष Tel: 022 25990511  
 दूरभाष Tel: 022 25580436  
 फैक्स Fax: 022 25552879  
 ईमेल email: apgarg@aerb.gov.in

नियामक भवन Niyamak Bhavan  
 अणुसंश्लेषण Anushaktinagar  
 मुंबई Mumbai-400 094

No. AERB/OPSD/IREL-O/61011/2020/398

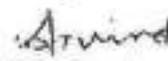
May 28, 2020

Sub: Authorization for disposal/transfer of radioactive wastes at REEP, IREL(India)Ltd. OSCOM

Ref:

- i. Application for renewal of authorisation for waste disposal for 10,000TPA Rare Earth Extraction Plant (REEP) vide OS/MoPP/AERB/WD, dated Jan 03, 2020
- ii. Extension of License for Operation of REEP, IREL (India) Ltd. OSCOM vide AERB/CN/OPSD/IRE-O/55222/2020/382 dated April 22, 2020

This is with reference to the above application for renewal of authorization for disposal/transfer of radioactive wastes under Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987 for REEP, IREL (India) Ltd., OSCOM Please find enclosed the formal approval of Chairman AERB on the same.

  
 (A.P. Garg)  
 Head, OPSD

Shri A. J. Janarthanan  
 CGM & Head, Orissa Sands Complex (OSCOM)  
 M/s IREL(India)Ltd.,  
 PO:- Matikhalo, Chatarpur (Ganjam)  
 Orissa - 761045 India

Cc to: Chairman, AERB  
 Executive Director, AERB  
 Director, NFRG, AERB  
 Director (Technical), IREL  
 Head DRP&E, AERB  
 Lead Reviewer and Reviewer, IREL facilities, AERB  
 OPSD Databank



परमाणु  
ऊर्जा  
नियामक  
परिषद



भारत सरकार

Atomic  
Energy  
Regulatory  
Board



अध्यक्ष  
CHAIRMAN

GOVERNMENT OF INDIA

**AUTHORISATION FOR DISPOSAL OR TRANSFER OF RADIOACTIVE WASTE  
Under G.S.R.125 Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987, Rule-5**

Pursuant to the Atomic Energy Act, 1962 and enabling rules made thereunder, and specifically the "Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987" G.S.R. 125, and on assessment of the information furnished by the applicant in (i) application vide OS/MoPP/AERB/W/D dated January 03, 2020 and (ii) annual returns of the radioactive waste disposed/ transferred during past five years, the existing authorisation no 0021 is hereby renewed in favour of the applicant to dispose off or transfer of radioactive wastes listed overleaf and in conformity with the terms and conditions specified alongside.

**TERMS AND CONDITIONS OF AUTHORISATION**

1. Authorisation No. : 0021
2. Authorization valid from : 01.05.2020
3. Date of Expiry : 30.04.2021
4. Name, designation and address of authorised person : Shri A. J. Janarthanan  
CGM & Head  
IREL, OSCOM  
Chatarpur  
Ganjam,  
Odisha-761045
6. Location and address of the Authorised installation(s) : REEP, IREL  
OSCOM  
Chatarpur, Ganjam,  
Odisha-761045
7. Name and address of the Waste Management Agency to which transfer of waste is authorised : -NA-
8. Details of radioactive waste Authorised to be disposed : As per overleaf

1. The person authorised shall abide by all the provisions concerning disposal of radioactive waste and radiation protection laid down in-  
(i) The Atomic Energy Act, 1962(33 of 1962).  
(ii) The Radiation Protection Rules, 2004 and  
(iii) The Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987
2. The person authorised shall dispose off or transfer of radioactive wastes strictly in accordance with the limits specified overleaf.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the radioactive waste without obtaining prior permission of the competent authority.
4. Any unauthorised change in personnel, equipment, working conditions from that given in his application by the person authorised shall constitute a breach of this authorisation.
5. This authorisation is for normal waste disposal / transfer operations only. Separate application shall be submitted for special waste disposal/transfer campaign in Form I-A.
6. The authorised person shall take prior permission of the competent authority for shut down of the waste disposal installation and shall provide institutional controls as may be stipulated by the Competent Authority.
7. Records shall be maintained in the installation in Form-III for regulatory inspection from time to time by AERB staff.
8. Quarterly return and a consolidated annual return (within one month of completion of the period) of radioactive wastes disposed / transferred shall be submitted in Form-IV by the installation to the Competent Authority.

Signature and Seal of the  
Competent Authority (A. J. Janarthanan)



अध्यक्ष, परमाणु ऊर्जा नियामक परिषद  
RISYAMAK BHAVANI, ANANDAPURAM, CHENNAI - 600 094

Any violation of the limits specified overleaf shall be intimated to the Competent Authority within 5 days.

सूचना TELEPHONE : 080-25501013, 2550004  
फैक्स FAX : 080-25501014, 25501015, 25501016  
ईमेल E-MAIL : aerb@airtel.net, aerb@rediffmail.com  
वेबसाइट WEBSITE : www.aerb.gov.in





परमाणु  
ऊर्जा  
नियामक  
परिषद



Atomic  
Energy  
Regulatory  
Board



भारत सरकार

GOVERNMENT OF INDIA

अध्यक्ष  
CHAIRMAN

LICENCE

No. AERB/CN/OPSD/55222/TREL/BSM-O/2019/875

August 2, 2019

Ref.:

- (i) License for operation of MSP at IREL OSCOM vide no. AERB/IPSD/BSM License/IRE O/65A/2014/2747 dated August 19, 2014
- (ii) Application for renewal of Licence for operation of MSP at IREL, OSCOM vide IREL/OSCOM/S&T'S-19/1495A dated April 15, 2019
- (iii) Minutes of 5<sup>th</sup> meeting of NFSC-1 (held on May 09, 2019) vide AERB/CN/OPSD/62225-1/2019/606 dated May 27, 2019
- (iv) Deliberations during SARCOP meeting no. 746 held on June 26, 2019

Name & Address  
of the Beach Sand  
Minerals Facilities

M/S IREL (INDIA) LTD.,  
ORISSA SANDS COMPLEX (OSCOM), ODISHA  
PO: MATIKHALO, CHATRAPUR (GANJAM)  
ORISSA - 761 045

Name &  
Designation of the  
Employer/  
Licensee

SHRI DIPENDRA SINGH  
CHAIRMAN & MANAGING DIRECTOR,  
IREL (INDIA) LTD.

Name &  
Designation of the  
Applicant

SHRI A. J. JANARTHANAN  
CHIEF GENERAL MANAGER & HEAD  
IREL (INDIA) LTD. OSCOM

Licence validity

AUGUST 20, 2019 TO AUGUST 31, 2024




नियामक भवन, अनुष्णकटिबन्धन, कुरु - 400 084  
NIYAMAK BHAVAN, ANUSHAKTI NAGAR, BOMBAY - 400 084

दूरभाष : TELEPHONE : 01-22-2556 2343, 2556 0004  
फैक्स : FAX : 01-22-2556 2341, 2556 5717, 2556 3230  
ई-मेल : chairman@aerb.gov.in  
वेबसाइट : WEBSITE : www.aerb.gov.in

गुजरा नलरुडर डरररुडर  
Atomic Energy Regulatory Board

: 2 :

With reference to above and in exercise of the power conferred under sections 16 and 17 of The Atomic Energy Act, 1962 read in conjunction with Rule 3 of The Atomic Energy (Radiation Protection) Rules, 2004 and The Atomic Energy Regulatory Board (AERB) notification S.O.1210 dated 24th April 2009 on Beach sand Minerals (BSM) processing facilities, AERB hereby grants the Licence to operate the following plant:

Plant	Capacity
Beach sand Minerals (BSM) processing facilities at M/s IREL (India) Ltd., OSCOM	Handling of 6,000 TPA of Monazite

CONDITIONS OF LICENCE FOR M/S IREL (INDIA) LTD., OSCOM, ODISHA

(1) Employer/Licensee shall:

- (a) ensure that provisions of The Atomic Energy (Radiation Protection) Rules, 2004 are implemented,
- (b) provide facilities and equipment to the Radiological Safety Officer and other worker(s) to carry out their functions effectively in conformity with the regulatory constraints,
- (c) prior to employment of a worker, procure from his former employer, where applicable, the dose records and health surveillance reports,
- (d) upon termination of service of worker provide to his new employer on request his dose records and health surveillance reports,
- (e) furnish to each worker dose records and health surveillance reports of the worker in his employment annually/ as and when requested by the worker/ at the termination of his service,
- (f) inform the competent authority if the Radiological Safety Officer leaves the employment, and
- (g) arrange for health surveillance of workers as specified under Rule 25 of The Atomic Energy (Radiation Protection) Rules, 2004.

(2) The employer/licensee shall be the custodian of radiation sources in his possession and shall ensure physical security of the sources at all times.

(3) The employer/licensee shall inform the competent authority, within twenty four hours, of any accident involving a source or loss of source of which he is the custodian.

*Handwritten signature*

एणु ऊर्जा नियामक परिषद  
Atomic Energy Regulatory Board

: 3 :

- (4) The responsibility for implementing the terms and conditions of the licence shall rest with the employer/licensee.
- (5) The employer/licensee shall comply with the surveillance procedures, safety codes and safety standards specified by the competent authority.
- (6) The employer/licensee shall establish written procedures and plans for controlling, monitoring and assessment of exposure for ensuring adequate protection of workers, members of the public and the environment and patients, wherever applicable.
- (7) The employer/licensee shall comply with the provision of rules for safe disposal of radioactive waste issued under the Act.
- (8) Without prejudice to the generality of the above, the licensee shall:
  - (a) not allow workers, other than those specified in sub-clause (ii) of clause (e) of sub-rule (2) of rule 7 and already dealt with under rule 17 of The Atomic Energy (Radiation Protection) Rules, 2004,
  - (b) maintain records of workers as specified under rule 24 of The Atomic Energy (Radiation Protection) Rules, 2004,
  - (c) arrange for preventive and remedial maintenance of radiation protection equipment, and monitoring instruments,
  - (d) in consultation with the Radiological Safety Officer, investigate any case of exposure in excess of regulatory constraints received by individual workers and maintain records of such investigations,
  - (e) inform competent authority promptly of the occurrence, investigation and follow-up actions in cases of exposure in excess of regulatory constraints, including steps to prevent recurrence of such incidents,
  - (f) carry out physical verification of radioactive material periodically and maintain inventory,
  - (g) inform appropriate law enforcement agency in the locality of any loss of source,
  - (h) investigate and inform the competent authority of any accident involving source and maintain record of investigations,
  - (i) verify the performance of radiation monitoring systems, safety interlocks, protective devices and any other safety systems in the radiation installation,



ॐ ऊर्जा नियामक परिषद  
Atomic Energy Regulatory Board

: 4 :

- (j) in consultation with Radiological Safety Officer, prepare emergency plans, as specified in rule 33 of The Atomic Energy (Radiation Protection) Rules, 2004, for responding to accident to mitigate their consequences and ensure emergency preparedness measures.
- (k) conduct or arrange for quality assurance tests of structures, systems, components and sources and related equipment.
- (9) The licensee shall ensure that the workers are familiarised with contents of the relevant surveillance procedures, safety standards, safety codes, safety guides and safety manuals issued by the competent authority and emergency response plans.

Other Consenting Conditions

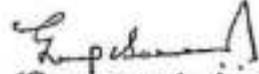
- (1) The employer/licensee shall not operate the plant beyond the license capacity.
- (2) The employer/licensee shall ensure the submission of Quarterly and Annual Health Physics reports to AERB in the prescribed format.
- (3) Duly qualified Radiological Safety Officer (RSO) approved by Atomic Energy Regulatory Board (AERB) shall be available at the site
- (4) Transport of Monazite shall be in accordance with the guidelines prescribed by the AERB.
- (5) Full facilities shall be accorded to authorised representative(s) of AERB to inspect the installation at any time.
- (6) The employer/licensee shall comply with all the recommendations made by AERB with respect to radiological safety
- (7) Any change in the information listed in the application shall be intimated forthwith to AERB.
- (8) Application for renewal of license as per the prescribed format shall reach AERB before 180 days of the date of expiry.
- (9) Any plan for decommissioning of the facility shall be intimated forthwith to AERB.
- (10) This license is valid subject to availability of all other necessary statutory/regulatory clearances.

*h*

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Omic Energy Regulatory Board

: 5 :

- (11) The license may be suspended/or cancelled, if any declaration made or information given in the application thereof is found to be false or if any undertaking given in such application is not carried out.

  
(Competent Authority)

ଗୁଣ୍ଡୁଚ ନାଗେଶ୍ଵର ରାଓ / G. NAGESWARA RAO

ଅଧ୍ୟକ୍ଷ / Chairman

ଓମିକ୍ ଊର୍ଜା ନିୟାମକ ପରିଷଦ

Omic Energy Regulatory Board

- Chairman & Managing Director, IREL
- Shri A. J. Janarthanan  
CGM & Head  
M/s Indian Rare Earths Ltd.,  
Orissa Sands Complex (OSCOM)  
PO: Matikhala, Chatrapur (Ganjam)  
Orissa - 761 045



भारत सरकार Government of India  
परमाणु ऊर्जा नियामक परिषद Atomic Energy Regulatory Board  
प्रचालित संयंत्र संरक्षा प्रभाग Operating Plants Safety Division

ए. पी. गर्ग A. P. Garg  
प्रमुख, ओपीएसडी Head, OPSD  
दूरभाष Tel: 022 25990511  
दूरभाष Tel: 022 25580436  
फैक्स Fax: 022 25552879  
ईमेल email: head.opsd@aerb.gov.in

नियामक भवन Niyamak Bhavan  
अणुशक्तिनगर Anushaktinagar  
मुंबई Mumbai-400 094

No. AERB/OPSD/55222/2021/478

April 21, 2021

Sub: RENEWAL OF LICENSE FOR OPERATION AND RADIOACTIVE WASTE  
AUTHORIZATION OF RARE EARTH EXTRACTION PLANT (REEP) AT  
OSCOM, IREL (INDIA) LTD.

**References:**

- i Application from IREL OSCOM vide OS/REEP/AERB/Op License 20-25/4575A dated November 30, 2019 & revised submission dated December 06, 2019
- ii Application from IREL OSCOM for renewal of authorization for disposal/transfer of radioactive waste vide OS/NoPP/AERB/WD dated January 03, 2020
- iii Deliberations during SARCOP meeting no. 768, held on October 28, 2020
- iv Response from IREL vide OS/REEP/OPSD/MDT Report dated December 23, 2020
- v Response from IREL vide OS/REEP/AERB/OPSD/Op. license dated January 09, 2021
- vi Minutes of 12<sup>th</sup> meeting of NFSC-1 (held on March 19, 2021) vide AERB/OPSD/62225-1/2021/421 dated March 31, 2021

This is with reference to the applications submitted by IREL (India) Ltd. for renewal of license for operation and renewal of radioactive waste authorization of Rare Earth Extraction Plant (REEP) at OSCOM [refs. i & ii]. Based on the reviews carried out in AERB [refs. iii & iv], Competent Authority has accorded his consent for renewal of the license for operation and radioactive waste authorization of REEP up to April 30, 2025. The License and Authorization are enclosed

*A.P. Garg*  
(A.P. Garg) 21/04/2021

- Chairman & Managing Director, IREL (India) Ltd.
- CGM & Head, OSCOM, IREL (India) Ltd,  
PO - Matikhala, Chetrepur (Ganjam), Odisha - 761 045

Cc: Chairman, AERB  
Executive Director, AERB  
Director (T), IREL (India) Ltd  
Head, DRP&E, AERB  
Head, NPSD, AERB  
Member-Secretary, Corporate dRC, IREL (India) Ltd  
All Section Heads, OPSD, AERB  
Lead Reviewer & Reviewers of IREL facilities, AERB  
OPSD Database



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GOVERNMENT OF INDIA

अध्यक्ष  
CHAIRMAN

LICENCE

No. AERB/OPSD/55222/2021/478A

April 19, 2021

References:

- i. Application from IREL, OSCOM vide OS/REEP/AERB/Op. License 20-25/4575A dated November 30, 2019 & revised submission dated December 06, 2019
- ii. Minutes of 12<sup>th</sup> meeting of MFSC-1 (held on March 19, 2021) vide AERB/OPSD/62225-1/2021/421 dated March 31, 2021

Name & Address of the facility	RARE EARTHS EXTRACTION PLANT (REEP), OSCOM, IREL (INDIA) LTD. CHATRAPUR, GANJAM, ODISHA - 761 045
Name & Designation of the Employer/Occupier/Licensee	SHRI D SINGH CHAIRMAN & MANAGING DIRECTOR, IREL (INDIA) LTD.
Name & Designation of the Applicant/Factory Manager	SHRI A. J. JANARTHANAN CGM & HEAD OSCOM, IREL (INDIA) LTD.
Licence validity	APRIL 30, 2025

With reference to above and in exercise of the powers conferred under section 16, 17 and 23 of The Atomic Energy Act, 1962 read in conjunction with Rule 3 of The Atomic Energy (Radiation Protection) Rules, 2004 and Section 6 of the Factories Act, 1948 (as amended in 1987), AERB hereby grants the Licence to operate the following plant:



परमाणु ऊर्जा नियंत्रण परिषद  
भारत सरकार

परमाणु ऊर्जा नियंत्रण परिषद  
भारत सरकार

ଓମ୍ବୁ ଉପକ୍ରମ ନିୟନ୍ତ୍ରଣ କମିଶନ  
Atomic Energy Regulatory Commission

: 2 :

Plant	Capacity
Rare Earths Extraction Plant (REEP), OSCOM, IREL (India) Ltd. Chatrapur, Gunjam, Odisha - 761 045	10,000 TPA of Monazite Processing

A. General Conditions of License

- (1) The prime responsibility for the safe operation of the plant shall be vested with the Occupier/Employer/Licensee. Obtaining a license from AERB does not exonerate the person or organization responsible for the facility or activity from the responsibility for safety.
- (2) The License may be suspended or cancelled, if any declaration made or information given in the application is found to be false or if any undertaking given in such application is not carried out.
- (3) The licensee/applicant shall ensure the submission of Quarterly and Annual Health Physics reports to AERB in the prescribed format.
- (4) The licensee shall comply with all the recommendations made by AERB.
- (5) Any plan for decommissioning/closure of the facility shall be intimated forthwith to AERB.
- (6) This license is valid subject to availability of all other necessary statutory/regulatory clearances.
- (7) Application for renewal of license as per the prescribed format shall reach AERB before 180 days of the date of expiry.

B. Conditions of License under The Atomic Energy Act, 1962 and applicable rules framed thereunder

- (1) Employer/ Licensee shall:
  - (a) ensure that provisions of The Atomic Energy (Radiation Protection) Rules, 2004 are implemented.
  - (b) provide facilities and equipment to the Radiological Safety Officer (RSO) and other worker(s) to carry out their functions effectively in conformity with the regulatory constraints.
  - (c) prior to employment of a worker, procure from his former employer, where applicable, the dose records and health and welfare records.

राष्ट्र राजी नियामक परिषद  
Atomic Energy Regulatory Board

(3)

- (d) upon termination of service of worker provide to his new employer on request his dose records and health surveillance reports,
  - (e) furnish to each worker dose records and health surveillance reports of the worker in his employment annually, as and when requested by the worker and at the termination of his service,
  - (f) inform the competent authority if the RSO or any worker leaves the employment, and
  - (g) arrange for health surveillance of workers as specified under Rule 25 of The Atomic Energy (Radiation Protection) Rules, 2004.
- (2) The employer/licensee shall be the custodian of radiation sources in his possession and shall ensure physical security of the sources at all times.
- (3) The employer/licensee shall inform the competent authority, within twenty four hours, of any accident involving a source or loss of source of which he is the custodian.
- (4) The responsibility for implementing the terms and conditions of the license shall rest with the employer/licensee.
- (5) The employer/licensee shall comply with the surveillance procedures, safety codes and safety standards specified by the competent authority.
- (6) The employer/licensee shall establish written procedures and plans for controlling, monitoring and assessment of exposure for ensuring adequate protection of workers, members of the public and the environment and patients, wherever applicable.
- (7) The employer/licensee shall comply with the provision of rules for safe disposal of radioactive waste issued under the Act.
- (8) Without prejudice to the generality of the above, the licensee shall:
- (a) not allow workers, other than those specified in sub-clause (ii) of clause (e) of sub-rule (2) of rule 7 and already dealt with under rule 17 of The Atomic Energy (Radiation Protection) Rules, 2004,
  - (b) maintain records of workers as specified under rule 24 of The Atomic Energy (Radiation Protection) Rules, 2004,
  - (c) arrange for preventive and remedial maintenance of radiation protection equipment, and monitoring instruments,
  - (d) in consultation with the RSO, investigate any case of exposure in excess of regulatory constraints received by individual workers and maintain records of such investigations,

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: 4 :

- (e) inform competent authority promptly of the occurrence, investigation and follow-up actions in cases of exposure in excess of regulatory constraints, including steps to prevent recurrence of such incidents.
  - (f) carry out physical verification of radioactive material periodically and maintain inventory.
  - (g) inform appropriate law enforcement agency in the locality of any loss of source.
  - (h) inform the employer and the competent authority of any loss of source;
  - (i) investigate and inform the competent authority of any accident involving source and maintain record of investigations.
  - (j) verify the performance of radiation monitoring systems, safety interlocks, protective devices and any other safety systems in the radiation installation.
  - (k) in consultation with RSO, prepare emergency plans, as specified in rule 33 of The Atomic Energy (Radiation Protection) Rules, 2004, for responding to accident to mitigate their consequences and ensure emergency preparedness measures.
  - (l) conduct or arrange for quality assurance tests of structures, systems, components and sources and related equipment.
  - (m) inform the competent authority if the RSO or a worker leaves the employment; and
  - (n) inform the competent authority when he leaves the employment.
- (9) Duly qualified Radiological Safety Officer (RSO) approved by Atomic Energy Regulatory Board (AERB) shall be available at the site.
- (10) The licensee shall ensure that the workers are familiarised with contents of the relevant surveillance procedures, safety standards, safety codes, safety guides and safety manuals issued by the competent authority and emergency response plans.

C. Conditions of License under the Factories Act, 1948 and applicable rules framed thereunder

- (1) The Occupier/Manager shall comply with all the relevant provisions of the Factories Act, 1948 and the Atomic Energy (Factories) Rules, 1996.
- (2) The Occupier shall ensure the availability of Safety Organization and Welfare Organization in the Facility in compliance with the provisions of the Atomic Energy (Factories) Rules, 1996.

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- (3) The Occupier/ Manager shall provide to the persons working in the plant with the information, training and equipment including antidotes necessary to ensure their safety while handling hazardous chemicals.
- (4) The Occupier/Manager shall take adequate steps to prevent accidents and to limit the consequences to persons and the environment with regard to handling of hazardous chemicals.
- (5) The Occupier/ Manager shall send notice of accidents, dangerous occurrences and notifiable diseases in the prescribed forms within the duration stipulated in the Rule 89 and Rule 90 of the Atomic Energy (Factories) Rules, 1996.
- (6) The Facility shall maintain records in the relevant forms as prescribed in the Appendix of the Atomic Energy (Factories) Rules, 1996.
- (7) The Occupier shall comply with all the recommendations made by the Atomic Energy Regulatory Board in respect of Safety, Health and the Environment.

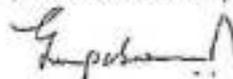
D. Conditions of License as per Safety Guide AERB/SC/G-7

i. Licensing Conditions

- (1) The Occupier/ Manager shall ensure that
  - a) Plant is not operated in excess of the licensed capacity authorized by AERB.
  - b) Approved modification procedure is available to ensure that no part of the approved plant important to safety will be modified without the prior approval of the Regulatory Body.
  - c) Plant is subjected to in-service inspection and testing to be carried out as specified for systems, components and structures important to safety on a time schedule, approved by the Regulatory Body.
  - d) Maintenance of safety-related equipment and plant is carried out to meet the reliability requirements.
  - e) No changes shall be made to the programmes, procedures or technical specifications, which have been approved by the Regulatory Body without such changes being given prior approval by the Regulatory Body;
  - f) Plant is operated only under the control and supervision of authorized personnel in adequate numbers acceptable to the Regulatory Body.

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- g) Quality Assurance Programme is implemented laid down as per requirements of the Quality Assurance Code AERB/NPP/SC/QA (Rev. 1), and any other requirements stipulated by the Regulatory Body in this regard from time to time;
- (2) No right to own, handle, utilize or transfer of the prescribed substances is conferred to licensee, except as stated explicitly in the License;
- (3) Neither the License or any right there under, nor any right to utilize or procure prescribed substances shall be transferred, assigned or disposed of in any manner, either voluntarily or involuntarily, directly or indirectly, through transfer or control of the consent to any person, unless AERB shall after securing full information, find that the transfer is in accordance with the provisions of the Atomic Energy Act, and the rules made there under, give the consent in writing.
- (4) The License is subject to revocation, suspension, modification or amendment for causes as provided in the Atomic Energy Act and rules made there under in accordance with the procedures laid down in the Act;
- (5) The Terms and Conditions of the License can be amended, revised or modified as considered necessary by AERB in the interest of Safety.
- (6) The Occupier/ Manager shall ensure implementation and maintenance of its emergency preparedness program;
- (7) The Occupier/ Manager may take reasonable action that departs from a consent condition or a technical specification in an emergency if such action is immediately needed to protect the public health and safety and it is apparent that no action consistent with consent conditions and technical specifications can provide adequate or equivalent protection. Such of these actions shall be reported to the Regulatory Body within 24 hours, followed by a detailed report within 20 days
- ii. Other Conditions
- (8) No activity or operation shall be carried out for purposes other than those mentioned;
- (9) Full access & facilities shall be accorded to authorized representative(s) of AERB;
- (10) Any changes in authorized personnel should be duly notified to the Regulatory Body;
- (11) No modification in site shall be carried out without prior approval of the Licensing authority;
- (12) Information on Significant Events, industrial accidents or fatalities should be promptly reported to AERB;
- (13) Medical facilities and industrial safety provisions shall be provided to the employees;

  
(Competent Authority)

Shri D Singh  
Chairman & Managing Director,  
IREL (India) Ltd.

शुद्ध ऊर्जा नियामक परिषद  
AERB  
अणु ऊर्जा विभाग  
भारत सरकार  
नयी दिल्ली



परमाणु  
ऊर्जा  
नियामक  
प्राधिकरण



Atomic  
Energy  
Regulatory  
Board



भारत सरकार

GOVERNMENT OF INDIA

सं १११  
CHAIRMAN

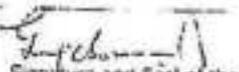
**AUTHORISATION FOR DISPOSAL OR TRANSFER OF RADIOACTIVE WASTE**  
Under G.S.R.125 Atomic Energy (Safe Disposal of Radioactive Wastes) Rules 1987, Rule-5

Pursuant to the Atomic Energy Act, 1962 and enabling rules made thereunder, and specifically the 'Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987' G.S.R. 125, and on assessment of the information furnished by the applicant in (i) application vide OS/No PPI/AERB/WO dated January 03, 2020 and (ii) annual returns of the radioactive waste disposed/ transferred during past five years, the existing authorization no 0021 is hereby renewed in favour of the applicant to dispose off or transfer of radioactive wastes listed overleaf and in conformity with the terms and conditions specified alongside

**TERMS AND CONDITIONS OF AUTHORISATION**

- The person authorised shall abide by all the provisions concerning disposal of radioactive waste and radiation protection laid down in-
  - The Atomic Energy Act, 1962(33 of 1962);
  - The Radiation Protection Rules, 2004 and
  - The Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987
- The person authorized shall dispose off or transfer of radioactive wastes strictly in accordance with the limits specified overleaf
- The person authorized shall not rent, lend, sell, transfer or otherwise transport the radioactive waste without obtaining prior permission of the competent authority
- Any unauthorized change in personnel, equipment, working conditions from that given in his application by the person authorised shall constitute a breach of this authorization.
- This authorization is for normal waste disposal / transfer operations only. Separate application shall be submitted for special waste disposal/transfer campaign in Form I-A.
- The authorised person shall take prior permission of the competent authority for shut down of the waste disposal installation and shall provide institutional controls as may be stipulated by the Competent Authority
- Records shall be maintained in the installation in Form-III for regulatory inspection from time to time by AERB staff
- Quarterly return and a consolidated annual return (within one month of completion of the period) of radioactive wastes disposed / transferred shall be submitted in Form-IV by the installation to the Competent Authority
- Any violation of the limits specified overleaf shall be reported to the Competent Authority within 5 days

- |   |   |
|---|---|
| 1. Authorization No   | 0021  |
| 2. Authorization valid from   | 01.05.2021  |
| 3. Date of Expiry   | 30.04.2025  |
| 4. Name, designation and address of authorised person                                       | Sri A. J. Janarthanan<br>CGM & Head<br>OSCOM, IREL<br>Chatrapur<br>Ganjam<br>Odisha - 761 045 |
| 6. Location and address of the Authorised Installation(s)                                   | REEP,<br>OSCOM, IREL<br>Chatrapur, Ganjam,<br>Odisha - 761 045                                |
| 7. Name and address of the Waste Management Agency to which transfer of waste is authorized | -NA-  |
| 8. Details of radioactive waste Authorised to be disposed                                   | As per overleaf   |

  
Signature and Seal of the  
Competent Authority



CHAIRMAN, AERB

Atomic Energy Regulatory Board

1, Rajawade Road, New Delhi - 110011

Phone: 011-26109111, 26109112, 26109113

Fax: 011-26109114, 26109115, 26109116

Website: www.aerb.gov.in

E-mail: aerb@nic.gov.in

Director General, AERB

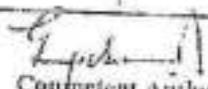
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Authorized Installation: Rare Earths Extraction Plant, IREL (India) Ltd. OSCOM

Authorisation No. 0021 Date of Expiry: 30/04/2025

Authorized Particulars for Disposal or Transfer of Radioactive Waste

PARTICULARS	SOLID WASTE	LIQUID WASTE	GASEOUS WASTE
(a) Physical form/ packaging	Lead Barium cake (LBC), ETP cake insoluble muck, Iron carbonate cake, Sod. nitrate crystals, Deactivation sludge after neutralisation and drying filled in laminated HDPE bags.	Aqueous alkaline radioactive waste stored in M.S. tanks.	Ventilation exhaust air.
(b) Chemical Characteristics	Containing moisture, Barium sulphate, lead sulphide, $P_2O_5$ , Th-oxide, iron carbonate, Sodium Nitrate, Insoluble	Alkaline (pH 7 to 8)	Air containing Thoron and its daughter products.
(c) Annual volume of waste permitted for (i) Disposal by installation itself (ii) Transfer to Waste Management Agency	(i) Cat. B <sub>1</sub> A <sub>2</sub> : 300 m <sup>3</sup> Iron Carbonate cake, 5 m <sup>3</sup> Deactivation sludge Cat. B <sub>1</sub> A <sub>1</sub> : 900 m <sup>3</sup> LBC, 250 m <sup>3</sup> ETP cake, 750 m <sup>3</sup> Insoluble Muck, 150 m <sup>3</sup> Sodium Nitrate crystals (ii) Not Applicable	(i) 2000.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>2</sub> (Ammonium Nitrate effluent) (ii) 30000.0 m <sup>3</sup> Cat. B <sub>1</sub> A <sub>2</sub> Treated Non-nitrate effluent from ETP to MSP for disposal	(i) $350.4 \times 10^3$ m <sup>3</sup> Cat. A <sub>2</sub> (ii) Not Applicable
(d) Radionuclide permitted for (i) Disposal by installation itself (ii) Transfer to Waste Management Agency	(i) Naturally occurring radionuclides like $^{226}\text{Ra}$ , $^{232}\text{Th}$ and their decay products. (ii) Not Applicable	(i) & (ii) Traces of naturally occurring radionuclides like $^{226}\text{Ra}$ , $^{232}\text{Th}$ and their decay products.	(i) $^{222}\text{Rn}$ and its daughter product (Th.B) (ii) Not Applicable
(e) Total annual activity of waste permitted for (i) Disposal by installation itself (ii) Transfer to Waste Management Agency	(i) Cat. B <sub>1</sub> A <sub>2</sub> : $1.77 \times 10^{11}$ MBq - Gross $\alpha$ $2.98 \times 10^{11}$ MBq - Gross $\beta$ Cat. B <sub>1</sub> A <sub>1</sub> : $8.64 \times 10^{12}$ MBq - Gross $\alpha$ $11.08 \times 10^{12}$ MBq - Gross $\beta$ (ii) Not Applicable	(i) Nitrate: 74 MBq - Gross $\alpha$ 74 MBq - Gross $\beta$ (ii) Non-nitrate: 1110 MBq - Gross $\alpha$ 1100 MBq - Gross $\beta$	(i) $^{222}\text{Rn}$ - 200 MBq Cat. A <sub>2</sub> Th.B - 2430 MBq Cat. A <sub>2</sub> (ii) Not Applicable
(f) Permitted method for (i) Disposal by installation itself (ii) Transfer to Waste Management Agency	(i) Transfer LBC through road tankers and others waste packed in HDPE bags. All disposed in FRP lined RCC underground trenches (ii) Not Applicable	(i) Ammonium Nitrate effluent - Reuse/Storage (ii) Non-nitrate- Transfer through pipelines from ETP to MSP	(i) After scrubbing with alkaline water, discharged through 25m high stack (ii) Not Applicable
(g) Location of site authorised for disposal of waste by installation itself	Near the western side of the plant perimeter wall	Effluent pond located near southern perimeter wall of the factory	Northern side of the process building
(h) Short term activity limit permitted for disposal by installation itself (i) Maximum activity (ii) Maximum concentration	(i) Not Applicable (ii) -Do-	(i) Not Applicable (ii) $3.7 \text{ Bq/l}$ - Gross $\alpha$ $37.0 \text{ Bq/l}$ - Gross $\beta$ (after diluting with tails pumping liquid of MSP)	(i) Not Applicable (ii) -Do-

  
Competent Authority

30/04/2025

Table 3.3: Regulatory Inspections of Industrial and Fuel Cycle Facilities

Facility	No. of Inspections	
	Routine	Special
HWE-Kota	2	-
HWP-Thal	4	-
HWP-Hazira	2	-
HWP-Manuguru	3	-
HWP-Baroda	1	-
HWP-Tuticorin	1	-
TRC-Chembur	1	-
NFC-Hyderabad	3	-
ZC-Pazhayakalay	2	-
UCIL-Jaduguda mill	1	-
UCIL-Turamdih mill	1	-
UCIL-Bagjata mine	-	1 (unannounced)
UCIL-Tummalapalle mine	2	-
UCIL-Tummalapalle mill	1	-
IREL-Chavara	1	-
IREL-Udyogamandal	1	-
IREL-OSCOM	2	1 (unannounced)
VECC	1	-
BRIT/SOMED	1	-
BSM&NORM Facilities	17	-
ECIL Hyderabad	1	-
RRCAT	1	-
<b>Total</b>	<b>49</b>	<b>2</b>

once in a year. The details of inspection during the year for nuclear and fuel cycle facilities is given in Table 3.4 below.

Table 3.4: Regulatory Inspections (Security Aspects)

Facility	No. of Inspection
FRFCF	1
DFRP	1
GHAVP	1
RAPP-7&8	1
MAPS	1
IGCAR (CORAL)	1
IGCAR (FBTR & IFSB)	1
TAPS-1&2	1
TAPS-3&4	1
NAPS	1
KKNPP-Site	2
PFBR	1
HWP-Kota & HWEAC	1
KAPP-3&4	1
<b>Total</b>	<b>15</b>

### 3.3 REGULATORY INSPECTIONS OF RADIATION FACILITIES

The information on the routine and special regulatory inspections carried out by AERB during the year for the radiation facilities is given in Table 3.5.

#### Enforcement Actions against Errant Medical Diagnostic X-Ray Facilities

As part of the nation-wide campaign to ensure increased compliance and regulatory

Table 1.7: Meetings of Safety Review Committee of Fuel Cycle Facilities

Name of the Committee	No. of meetings
Design Safety Review Committee for Nuclear Fuel Complex (DSRC-NFC)	3
Design Safety Review Committee for Uranium Extraction Projects (DSRC-UEP)	2
Design Safety Review Committee for Diversified Projects (DSRC-DP)	1
UCIL-AMD Safety Committee	2
BSM-NORM Safety Committee	2
NFC Safety Committee	5
HWR Safety Committee	3
IGCAR Safety Committee (Other Facilities)	2
<b>Total</b>	<b>20</b>

The highlights of safety review of the operating fuel cycle and other industrial facilities are given below:

(i) Uranium Corporation of India Limited (UCIL)

The mines at Narvapahar, Turamdih, Banduhurang, Bagjata, Mohuldih and Tummalapalle were under normal operation. Operations at Jaduguda and Bhatin Mine are under shutdown. The mills at Jaduguda and Turamdih were in operation during the year. Tummalapalle mill is in trial operation during the span.

During the year, following proposals were reviewed:

- Renewal of licence for operation of Banduhurang Mine was reviewed and the licence was extended up to June 30, 2018 subject to compliance of pending recommendations.
- Setting up of Magnetite (as by-product) plant at Turamdih Mill was reviewed and consent for construction and commissioning of magnetite plant was granted.
- Licence for operation of Tummalapalle Mill was reviewed and the licence for trial

operation was extended up to December 31, 2019 subject to resolution of certain issues.

- Renewal of licence for operation of Turamdih Mill is under review.

(ii) Indian Rare Earths Limited (IREL)

Rare Earth Division at IREL Udyogamandal and Mineral Separation Plants (MSP) of IREL at Chavara, Manavalakurichi and Chatrapur operated safely during the year. Monazite up-gradation operations were under progress in Monazite up-gradation plants at IRELOSCOM, Manavalakurichi and Chavara. Monazite Processing Plant (MoPP) at IREL, Orissa Sand Complex (OSCOM), Chatrapur were in operation.

The following proposals were reviewed:

- Proposal for permanent storage of Thorium Oxalate available at RED, Udyogamandal in transit storages.
- Proposal for processing of crude SDU (Sodium Di Uranate) received from Technology Demonstration Plant (TDP) of Heavy Water Board using the existing facilities at RED, Udyogamandal as one time campaign.

**Table 1.7: Meetings of Safety Review Committee of Fuel Cycle Facilities**

Name of the Committee	No. of Meetings
NFSC-1 (erstwhile, UCIL-AMD Safety Committee and BSM-NORM Safety Committee)	3
NFSC-2 (erstwhile, NFC Safety Committee)	1
NFSC-3 (erstwhile, HWP Safety Committee and ECIL Safety Committee)	4
Total	8

industrial facilities during this period is given in Table 1.7

The highlights of safety review of the operating fuel cycle and other industrial facilities are given below:

**(i) Uranium Corporation of India Limited (UCIL)**

The uranium mines at Narwapahar, Turamdih, Bagjata, Mohuldih, Banduhurung and Tummalapalle were under normal operation. Jaduguda and Bhatin mine are under shutdown. The mills at Jaduguda and Turamdih were under normal operation while Tummalapalle mill is in trial operation during the span.

During the year, applications for renewal of licence for operation of Narwapahar Mine, Tummalapalle mine, Banduhurung mine, Bhatin mine, Turamdih mine and Turamdih mill were reviewed and the licences for operation were renewed.

UCIL mines at Jaduguda and Bhatin are presently under shut down for ore production due to non-availability of clearances by State Government and Ministry of Environment & Forests (MoEF). AERB has issued licenses for handling (processing) radioactive material at Jaduguda and Bhatin mines which are valid till January 31, 2023 and April 30, 2023 respectively. UCIL had submitted applications to AERB for restarting the ore production from these two mines on receipt of necessary clearance from MoEF and State Government. Review of these applications are under progress.

**(ii) Indian Rare Earths Limited (IREL)**

Rare Earth Division (RED) at IREL Udyogamandal and Mineral Separation Plants (MSP) at Chavara, Manavalakurichi and Chatrapur operated safely during the year. Monazite up-gradation plants at IREL Orissa Sand Complex (OSCOM), Manavalakurichi and Chavara were operational. Monazite Processing Plant (MoPP) at IREL, Orissa Sand Complex (OSCOM), Chatrapur were in operation.



During the year, AERB reviewed the application for renewal of licence for operation of various facilities at IREL, Udyogamandal. Based on the satisfactory review, AERB renewed the licence for operation of IREL, Udyogamandal up to November 11, 2023. However, in view of limited space for storage of radioactive waste, AERB decided to carry out midterm review by December 2019 for continued operation for remaining licence period.

(iii) Nuclear Fuel Complex (NFC) & Zirconium Complex (ZC)

All the plants of NFC, Hyderabad and ZC, Pazhayakayal operated safely during the year.

(iv) Heavy Water Plants (HWP)

The Heavy Water Plants operated safely during the year. Heavy water plants at Kota, Manuguru, Thal and Hazira were operational. Heavy water plants at Baroda, Talcher and Tuticorin were non-operational due to unavailability of feed synthesis gas from fertilizer plant. Presently, HWP, Baroda is engaged in production of potassium metal, sodium metal and Tri-butyl Phosphate (TBP) solvent. Diversified projects namely, Versatile Solvent Production Plant (VSPP) at HWP, Talcher and Versatile Solvent Synthesis Plant (VSSP) at HWP, Tuticorin are operational. Technology Demonstration Plant (TDP), Chembur is under trial operation.

During the year, following proposals were reviewed:

• Renewal of licence for operation of VSSP at HWP-Tuticorin

HWP-Tuticorin submitted application for renewal of licence for operation of VSSP, HWP-Tuticorin. The application was reviewed and based on review, AERB renewed licence up to July 31, 2023.

• Licence for Operation of HWP-Hazira

Licence for operation of HWP-Hazira to produce 110 MT/year of reactor grade heavy

water was valid up to July 31, 2018. HWP-Hazira submitted application for renewal of licence. During review, it was noted that though the operating performance of the plant during the licence period has been satisfactory, the important aspects such as testing of the two tubes of a main cracker removed for mechanical testing, detailed study on consequence analysis of the cracker tube failure, revision of ISI Code of Practice, scheme for improvement in safety management system and retrofitting of control room at HWP-Hazira need to be addressed in a time bound manner. Based on the review, the licence for operation of HWP-Hazira was extended for limited duration of 6 months i.e. up to January 31, 2019. AERB decided that the renewal of licence for the remaining period (4.5 years) would be considered based on the review of effectiveness of the actions taken by HWP/HWP-Hazira for improvement in safety management system, availability of the revised code of practice for ISI and measures taken for strengthening of mechanism for head office level review of submissions to AERB.

(v) Renewal of License for Operation of Compact Reprocessing of Advanced Fuel in Lead mini Cell (CORAL), IGCAR

The reprocessing of FBTR spent fuel is being carried out at CORAL facility of IGCAR. AERB had extended the licence for Operation of CORAL under the Atomic Energy Act, 1962 up to March 2018 subject to keeping the facility in safe shutdown condition and not carrying out reprocessing operation during this period for completion of activities related to ageing management, residual life assessment of major component & dose reduction.

After completion of pending activities, CORAL had submitted an application for relicensing of facility for reprocessing of FBTR fuel. During review, it was noted that CORAL had submitted all the documents as per the requirement for a regular facility and also complied with the

AERB recommendations with respect to nuclear and radiological safety aspects and the requirements specified for 'Regular Plant' as in AERB NF SG/G-2. Based on review, AERB renewed licence for operation of CORAL under the Atomic Energy Act, 1962 for reprocessing of FBTR fuel for next 5 years with effect from September 1, 2018 and up-to August 30, 2023.

(vi) Atomic Minerals Directorate for Exploration and Research (AMD)

Exploration work at various sites of AMD in northern, southern, eastern, western, central and south-central regions was in progress. Considering the low hazard potential these sites are inspected once in two years.

(vii) Beach Sand Minerals (BSM) & Naturally Occurring Radioactive Materials (NORM) Facilities

Periodic radiological reports submitted by the facilities were reviewed by AERB. No abnormality was observed during review.

## 1.5 OVERALL SAFETY PERFORMANCE OF THE NUCLEAR FACILITIES IN CONSTRUCTION AND OPERATION

### 1.5.1 Safety Performance of Nuclear Facilities in Construction

(a) KKNPP-3&4

There was one accident of serious nature that occurred at KKNPP- 3 & 4. On July 09, 2018 an accident resulting in crushing of right hand fingers of a contract person occurred during fixing of excavator bucket near the New Jetty Construction area. AERB reviewed this accident and measures to prevent recurrences of such incidents in future were recommended and conveyed to the site for compliance.

(b) KKNPP-5&6

Excavation activities are being performed safely at Site and Job Hazard Analysis (JHA) for the same was reviewed and found to be acceptable.

(c) PFBR

Pre-commissioning/commissioning activities at PFBR are in progress. There were no major reportable incidents at PFBR.

(d) KAPP-3&4, RAPP-7&8 and GHAVP-1&2

On May 10, 2018, a worker fell down from a height of approximately 2-3 m while descending down through the scaffolding resulting in an injury to the contract worker at KAPP-3 & 4 construction site. Details of the incident are given in section 1.8.

There were no major reportable incidents calling for enforcement actions at RAPP-7&8 during major equipment erection and GHAVP-1&2 during excavation activities.

(e) DFRP and FRFCF

There were no major reportable incidents calling for enforcement actions during equipment erection at DFRP.

One fatal accident took place at FRFCF project site on August 29, 2018. Details of the incident are given under section 1.8.

(f) NFC-Kota

Construction of the plant buildings is under progress at NFC-Kota Site. There were no major reportable incidents at NFC-Kota.

### 1.5.2 Safety Performance of Nuclear Facilities in Operation

The operational performance and significant events are reviewed and the required modifications are implemented. The operational performance of all the NPPs has remained satisfactory during last year. One significant event at MAPS-1. Details of the incident are given under section 1.8.

All the 33 significant events occurred at operating NPPs were reviewed in detail in AERB to see the adequacy of investigations, corrective actions, lessons learned and the need for any further regulatory actions.

All fuel cycle facilities operated safely during the period. However, there were few fatal

AERB follows-up the implementation of all the actions for resolution of the reported deviations. Orange and Red findings are reviewed for appropriate follow-up or enforcement actions. The closure of the Green, Orange and Red findings are considered by AERB after review and acceptance of the corrective actions. The Licensee has its own internal mechanism for resolution of White findings, which is checked by AERB inspectors on sample basis during subsequent inspections.

During the year 2018, AERB conducted 159 regulatory inspections in under construction and operating nuclear facilities. The number of inspections conducted in each of these facilities are given in Table 3.1, 3.2 and 3.3 respectively.

#### Details of Special Inspections

KGS Unit-1 had continuous operation of 962 days. AERB conducted additional inspections (special as well as unannounced) to observe the status of various safety related system and the additional administrative measures taken by the station to ensure safety during the operation of the unit. AERB also conducted a special inspection of FRFCF, IGCAR to assess the accident scenario and the measures taken by facility, after the fatal accident leading to death of a worker on August 29, 2018. A special inspection of M/s Trimex Sands Pvt Limited was carried out to cover the radiological safety aspects. One special inspection each of Jaduguda and Bhatin mines was carried out to check the preparedness for restart of production / operation after 4 years of suspension and one special inspection of Jaduguda mill to check the aspects related to effluents management and tailing ponds. AERB carried out one special unannounced inspection to cover radiological safety aspects at IREL, OSCOM.

In addition to the continuously deployed onsite observers at Kakrapar site, AERB deputed additional inspectors to observe activities during commissioning and start-up of KAPS Unit-2

after completion of the en-masse coolant channel replacement activities.

**Table 3.1: Regulatory Inspections of Nuclear Facilities under Construction and Commissioning**

Project	No. of Inspections
KKNPP-3&4	3
KAPP-3&4	5
RAPP-7&8	5
GHAVP-1&2	2
PFBR	5
DFRP	3
FRFCF	4*
NFC-Kota	3
Total	30

\* Including one special RI

**Table 3.2: Regulatory Inspections of Operating Nuclear Facilities**

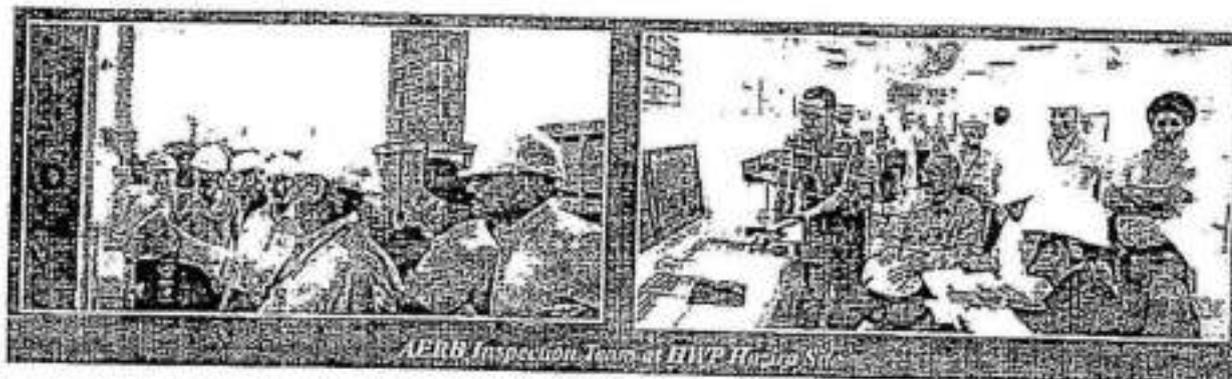
NPP	No. of Inspections	
	Announced	Unannounced
TAPS-1&2	7	1
TAPS-3&4	5	2
RAPS-1&2	5	-
RAPS-3&4	5	-
RAPS-5&6	5	-
MAPS-1&2	5	-
NAPS-1&2	8	2
KAPS-1&2	2	-
KGS-1&2	6*	3
KGS-3&4	6	2
KK-NPP-1&2	6	-
IGCAR (FBTR, KAMINI, IFSB)	3	-
IGCAR, CORAL	2	-
IGCAR, RMI	1	-
IGCAR, RCL	1	-
IGCAR, FRTG	1	-
Total	68	10

\* Including one special RI

Table 3.3: Regulatory Inspections of Industrial and Fuel Cycle Facilities

Facility	No. of Inspections	Facility	No. of Inspections
HWP-Kota	3	UCIL-Mohuldih Mine	1
HWP-Bidai	2	UCIL-Bhatin Mine	2*
HWP-Talchar	2	UCIL-Narwapahar Mine	1
HWP-Hazim	2	UCIL-Banduhuraag Mine	1
HWP-Managuru	3	IREL-Chevaas	1
HWP-Boroda	1	IREL-Udyagamandal	1
HWP-Tuticorin	1	IREL-OSCOM	2*
TEP/RGP	1	IREL-Maanvalakurichi	1
NFC-Hyderabad	2	BSM&NORM Facilities	12*
UCIL-Jaduguda Mill	2*	ECIL Hyderabad	2
UCIL-Jaduguda Mine	2*	ECIL-Tirupati	1
UGL-Turandih Mill	1	RRCAT	1
UCIL-Turandih Mine	1	MPIL-Taloja	1
		RAPPCOF, BRIT	1
<b>Total</b>			<b>51</b>

\* Including one special RI, # Including one unannounced RI



### 3.3 REGULATORY INSPECTIONS OF RADIATION FACILITIES

While planning the inspection of radiation facilities, the priority of inspection was to the facilities having reported cases of excessive radiation exposures and the facilities from where periodic reports were not received particularly inactive nucleonic gauge institutions as per the specified requirements. As an innovative measure,

awareness programmes on radiological safety aspects were added to routine inspection activities to improve compliance to regulatory requirements. While AERB has been effectively regulating the high hazard nuclear facilities and other radiation applications, it is facing challenges in bringing the widely spread medical diagnostic radiology (X-ray) facilities under its regulatory control. Although, X-ray facilities are of low hazard potential, they need to be operated in accordance with AERB's

safely during the year. Monazite up-gradation plants at IREL Orissa Sand Complex (OSCOM), Manavalakurichi and Chavara were operational. Monazite Processing Plant (MoPP) at IREL OSCOM Chatrapur were in operation.

**(a) Renewal of Licences for Operation of Beach Sand Minerals (BSM) Facilities**

The licences for operation of Beach Sand Minerals (BSM) Facilities at IREL Manavalakurichi (MK), Chavara and OSCOM issued under the Atomic Energy Act, 1962 (and rules framed thereunder) were valid up to August 19, 2019. Safety review indicated that during the licence period, the operational & radiological status of these facilities was satisfactory. No significant variation was observed in the background radiation level and air activity. Average individual dose to the radiation workers was well within the AERB prescribed limit. Based on satisfactory review, AERB renewed the licence for operation of BSM facilities at IREL, Manavalakurichi (MK), Chavara and OSCOM under the Atomic Energy Act, 1962 (and rules framed thereunder) up to August 31, 2024.

**(b) Renewal of Licence for Operation of M/s KMML, Chavara**

The licence for operation of M/s Kerala Minerals and Metals Limited (KMML), Chavara, Kerala under the Atomic Energy Act, 1962 (and rules framed thereunder) was valid up to August 19, 2019. Safety review indicated that during the licence period, the operational & radiological status of this facility was satisfactory. The average individual dose of the mine workers were well

within the regulatory limit. The facility has adequate space for storage of monazite enriched tailings for next 5 years. Based on satisfactory review, AERB renewed the licence for operation of M/s Kerala Minerals and Metals Limited (KMML), Chavara, Kerala up to August 31, 2024.

**(iii) Nuclear Fuel Complex (NFC) & Zirconium Complex (ZC)**

All the plants of NFC, Hyderabad and ZC, Pazhayakayal operated safely during the year.

**(a) Capacity Enhancement of Zirconium Complex (ZC), Pazhayakayal**

Licence for operation issued under the Factories Act, 1948 of Zirconium Complex (ZC), Pazhayakayal to produce 250 MT of Zirconium Sponge per year is valid up to June 30, 2021. AERB had reviewed the application from ZC, Pazhayakayal for enhancement of Zirconium Sponge production capacity from 250 MT to 300 MT per year. Safety review indicated that enhancement in sponge production capacity would be achieved by process modifications and improvement in recovery of the product. Based on review, AERB permitted for enhancement in sponge production capacity at ZC, Pazhayakayal from 250 MT to 300 MT per year.

**(iv) Heavy Water Plants (HWP)**

Heavy water plants at Koda, Manuguru, Hazira and Thal were operational, whereas HWPs at Baroda, Tuticorin and Talcher were non-operational due to unavailability of feed synthesis gas from fertilizer plant. Presently, HWP, Baroda is engaged in production of potassium metal.



Table 3.3: Regulatory Inspections of Industrial and Fuel Cycle Facilities

HWP-Kota	2	UCIL-Bhatn Mine	2
HWP-Thal	1	UCIL-Narvapahar Mine	1
HWP-Hazira	1	UCIL-Banduhurang Mine	1
HWP-Manuguru	2	UCIL-Bagjata Mine	1
HWP-Baroda	1	IREL-Udyogamandal	1
TDP/RCF-Mumbai	1	IREL-QSCOM	1
NFC-Hyderabad	2	IREL-Manavalakurichi	1
ZC-Pazhayatayal	2	BSM & NORM Facilities (KMML)	1
UCIL-Jaduguda Mill and Mine	4 (2 each)	ECIL-Hyderabad	1
UCIL-Turamdih Mill and Mine	2 (1 each)	ECIL-Tirupati	1
UCIL-Tummalapalle Mill and Mine	4 (2 each)	NPIL-Taloja	1
UCIL-Mohuldih Mine	1	RAPPCOF BRIT, Kota	2
<b>Total</b>	<b>37</b>		



Consent to Kaiga-5&6 on November 15, 2018.

AERB reviewed pre-commissioning test reports of DFRP. Fabrication and erection work was in progress for head-end facility. Commissioning activities w.r.t. Acid-Tri-butyl phosphate (TBP) runs have been completed.

Construction consent to NFC-Kota was granted on February 05, 2018 with certain stipulations. Currently, construction of PHWR Fuel Fabrication Facility (PFFF) and Zircaloy Fabrication Facility is under progress.

#### Safety Surveillance of Nuclear Power Plants (NPPs) and Research Reactors (RRs)

AERB continued its regulatory supervision of 22 operating NPPs in India. The radiation exposure to occupational workers in these plants was below the prescribed limit. The station's submissions were extensively reviewed in multi-tier systems as per the established mechanism in AERB.

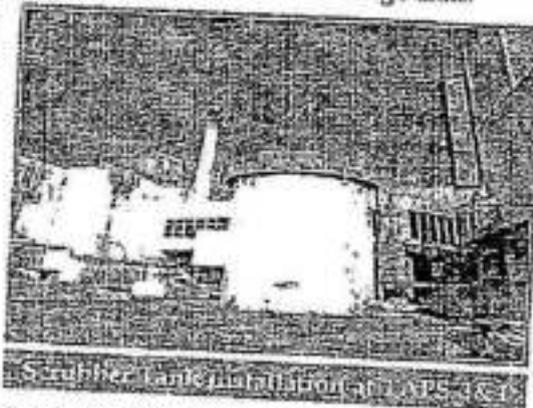
AERB renewed the licences for operation under the Atomic Energy Act, 1962 (and rules framed thereunder), the Factories Act, 1948 (and rules framed thereunder) and authorization for safe disposal/transfer of radioactive waste under GSR-125 of RAPS-5&6, KKNPP-1&2 and MAPS-1&2. AERB had also renewed the licence for operation of KAMINI under the Atomic Energy Act, 1962 (and rules framed thereunder).

In this year, total 34 significant events were reported from the operating NPPs. The event reports were reviewed in AERB to see the adequacy of investigations, corrective actions, lessons learnt and the need for any regulatory actions. The events were rated on INES scale.

The radioactivity releases from all the NPPs were below the AERB specified limits. Effective dose to member of public in the vicinity of NPP sites was far less than the annual dose limit of 1 mSv.

Implementation of identified long term enhancements based on Post Fukushima such as provision for management of hydrogen,

construction of Onsite Emergency Support Centre (OESC), installation of Containment Filtered Venting System (CFVS) are in progress at various NPP sites. As a part of hydrogen management provisions, out of 17 operating PHWR units, Passive Catalytic Recombiners (PCR) have been completely installed at 9 units and partially installed at remaining 8 units.



Safety Surveillance of Nuclear Fuel Cycle Facilities and other related Industrial Facilities

AERB continued to review the safety aspects of the Nuclear Fuel Cycle facilities under its purview. During this year, AERB renewed licences for operation of Bagjata Mine, Jaduguda Mill and Rare Earths Extraction Plant (REEP) at IREL (India) Ltd., OSCOM. AERB also renewed the licences for operation of Heavy Water Plants at Kota, Talcher and Manuguru. AERB granted the consent for

Siting of solvent extraction plant at HWP, Tuticorin; consent for Siting and Construction

AERB is responsible for administration of the Factories Act, 1948 and the Atomic Energy (Factories) Rules, 1996 in all the units of DAE under its purview.

for setting up 24kA prototype sodium cell at HWP, Baroda and approval for setting up New Extrusion and Fuel Tube Facility at NFC, Hyderabad. AERB renewed the licence for operation of ECIL, Hyderabad and extended Stage-1 commissioning approval of Medical Cyclotron at VECC, Kolkata. Also granted commissioning consent for Stage-2 of INDUS Linc-2 to RRCAT, Indore.

Table 1: Summary of Safety Committees  
as of 31st Dec 2020

Name of the Committee	No. of Meetings
NFSC-1 (erstwhile, UCIL-AMD Safety Committee and BSPM-NORM Safety Committee)	3
NFSC-2 (erstwhile, NFC Safety Committee)	4
NFSC-3 (erstwhile, HWP Safety Committee and E.A.IL Safety Committee)	4
Industrial and Fire Safety Committee (I & FSC)	1
Occupational Health Safety Committee (OHS/C)	2
Total	11

trial operation and authorization for disposal/transfer of radioactive waste under the Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987 of Tummalapalle mill for one year i.e. up to June 30, 2021 to enable UCIL to resolve the pending issues satisfactorily.

#### (c) Renewal of Licence of Jaduguda Mill

The licence for operation of Jaduguda Mill issued under the Atomic Energy Act, 1962 (and rules framed thereunder) and the authorization for disposal/transfer of radioactive waste under the Atomic Energy (Safe Disposal of Radioactive Waste) Rules, 1987 were valid till December 31, 2020. UCIL application for renewal of the licence was reviewed in AERB following multi-tier review process. During review, it was noted that tests / surveillance of SSCs were carried out periodically and results were found to be satisfactory. The average occupational doses to the mill workers & radioactive waste discharged/transferred from mill were well within the AERB authorized limits. Based on satisfactory safety review, AERB renewed the licence for operation and authorization for disposal/transfer of radioactive waste of Jaduguda mill for next five years i.e. till December 31, 2025.

#### (ii) Indian Rare Earths Limited (IREL)

Rare Earth Division (RED) at IREL Udyogamandal and Mineral Separation Plants (MSP) of IREL at Chavara, Manavalakurichi and Chatrapur operated safely during the year. Monazite up-gradation plants at IREL Orissa Sand Complex (OSCOM), Manavalakurichi and Chavara were operational. Operations of all these facilities were suspended during the period of nation-wide lockdown due to COVID-19 pandemic. However, all essential and emergency services continued during this period.

#### (a) Extension of Licence for operation of Rare Earths Extraction Plant, IREL (India) Ltd., OSCOM

The licence for operation of Rare Earth Extraction Plant (KEEP) [earlier named as Monazite Processing Plant (MoPP)] of IREL (India) Ltd., OSCOM, Orissa were valid till April 30, 2020. The application for renewal of licence submitted by IREL was reviewed in AERB following multi-tier review process. Safety review indicated IREL had complied with most of the recommendations made by AERB and has initiated actions for resolution of the pending recommendations. In view of above, AERB extended the validity of existing licence for operation and authorization for disposal/transfer radioactive waste for one year i.e. up to April 30, 2021.

#### (iii) Nuclear Fuel Complex (NFC) & Zirconium Complex (ZC)

All the plants of NFC, Hyderabad and ZC, Puzhayakayal operated safely during the year. However, operation of all these facilities were suspended during the period of nation-wide lockdown due to COVID-19 pandemic.

#### (a) Approval for Setting up New Extrusion and Fuel Tube Facility at NFC, Hyderabad

NFC Hyderabad had submitted a proposal for setting up New Extrusion and Fuel Tube Facility-Hot Working (NEFTF-HW) in order to increase the extrusion capacity from existing 14,000 to 27,000 extrusions per year to meet the requirements. During review, it was noted that NFC has suitably addressed the safety aspects related to building design and layout of the facility. NFC has further committed to comply with the equipment safety requirements during the equipment erection. Based on the safety review AERB accorded the permission for setting up NEFTF-HW at NFC, Hyderabad.

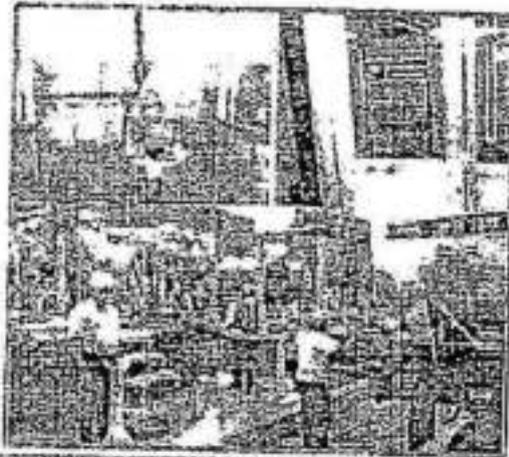
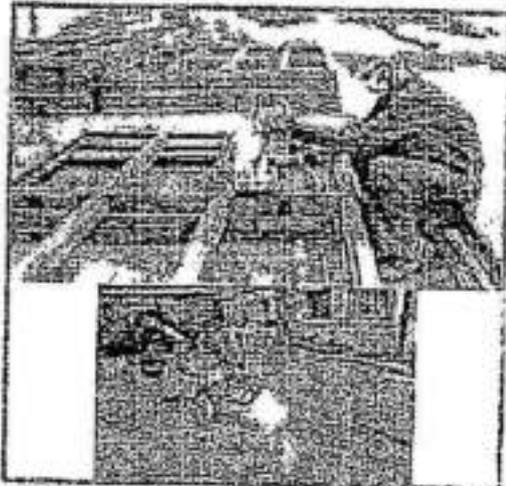
#### (iv) Heavy Water Plants (HWP)

Heavy water plants at Kota, Manuguru, Hazira and Thal were operational. Heavy water production at HWPs-Baroda and Talcher were suspended due to unavailability of feed synthesis gas from fertilizer plant. Heavy water production facility at HWP-Talcoirn has been declared as 'CLOSED'. Diversified activities at HWP-Hazira, Talcher and Tuticorin were operational. Technology Demonstration Plant

Operating NPP	
TAPS-1&2	5
TAPS-3&4	4
RAPS-1&2	2
RAPS-3&4	2
RAPS-5&6	3
MAPS-1&2	2
NAPS-1&2	3
KAPS-1&2	1
KGS-1&2	5
KCS-3&4	6
KKNPP-1&2	2
IGCAR Facilities	
FBTR, KAMINI, IF5B	1
Total	36

HWP-Kota	2
HWP-Thal	1
HWP-Hazir	1
HWP-Manguru	2
NPC-Hyderabad	2
UCIL-Jaduguda Mill	2
UCIL-Jaduguda Mine	1
UCIL-Turamdih Mill and Mine	2(1 each)
UCIL-Mohudih Mine	1
UCIL-Bagata Mine	2
UCIL-Bhasin Mine	2
UCIL-Narwapahar Mine	2
UCIL-Banduhurang Mine	1
IREL-Udvganaridai	1
IREL-OSCOM	2
Total	24

Includes virtual in the virtual in the



Verifications of Industrial Safety Aspects



**(a) Renewal of Licence for Operation of Rare Earth Extraction Plant (REEP), IREL (India) Ltd., OSCOM**

The Licence for operation of Rare Earth Extraction Plant (REEP) [earlier named as Monazite processing plant (MoPP)] of IREL (India) Ltd. OSCOM, Odisha was valid till April 30, 2021. IREL (India) Ltd. submitted applications for renewal of the licence/authorization. The applications were reviewed in AERB following multi-tier review process. Safety review indicated that IREL (India) Ltd. had addressed most of the regulatory pending issues. Operational & radiological status of the facility was satisfactory. Based on satisfactory review, AERB renewed the Licence for operation and authorization for disposal/transfer of radioactive waste of REEP for remaining 4 years i.e. up to April 30, 2025.

**(b) Permission for Setting Up a Separate Facility for Processing Lean Rare Earth (RE) Chloride Solution at Rare Earth Extraction Plant (REEP), at IREL (India) Ltd., OSCOM**

IREL (India) Ltd. had submitted proposal for setting up of a separate facility for processing Lean Rare Earth (RE) Chloride solution at Rare Earths Extraction Plant (REEP) of OSCOM. The proposal was reviewed in AERB. Based on satisfactory review AERB granted the permission for setting up of a separate facility for processing lean Rare Earth (RE) Chloride solution at Rare Earth Extraction Plant (REEP) at IREL (India) Ltd., OSCOM.

**(iii) Nuclear Fuel Complex (NFC) & Zirconium Complex (ZC)**

All the plants of NFC, Hyderabad and ZC, Puzhayakayal operated safely during the year.

**(a) Renewal of Licence for Operation of Zirconium Complex, Puzhayakayal**

Licence for operation of ZC, Puzhayakayal under The Factories Act, 1948 (and rules framed thereunder) was valid up to June 30, 2021. ZC, Puzhayakayal submitted application for renewal of Licence for operation beyond this period. This application was reviewed in AERB following multi-tier review process. Safety review indicated that during the Licence period, ZC has operated within the licensed

capacity and operational & safety performance has been satisfactory. In-Service Inspections of plant SSCs and civil structures are being carried out as per the requirements. Based on satisfactory review, AERB renewed the Licence for operation of ZC, Puzhayakayal for five years i.e. June 30, 2026.

**(b) Extension of validity of Consent for Construction of Pilot Plant at New Uranium Oxide Fuel Plant (NUOFP), NFC, Hyderabad**

Consent for construction of pilot plant for process parameter optimization of Uranium Ore Concentrates at NUOFP-NFC was valid up to March 31, 2021. NFC had submitted application for extension of existing consent of construction up to May 31, 2022 for completion of the pending construction activities. NFC submitted that construction and receipt of some equipment got delayed due to lockdown imposed in view of outbreak of COVID-19. Based on satisfactory review of application, AERB extended the consent for construction of pilot plant at NUOFP-NFC up to May 31, 2022.

**(c) Extension of validity of Clearance for Siting & Construction of Magnesium Recycling Technology Development & Demonstration Facility (MRTDDF) at Zirconium Complex (ZC), Puzhayakayal**

The clearance for siting & construction of Magnesium Recycling Technology Development & Demonstration Facility (MRTDDF) at Zirconium Complex (ZC), Puzhayakayal was valid up to September 30, 2021. In order to complete the pending activities, ZC had submitted application for extension of existing clearance to AERB. Based on the satisfactory review of ZC application, AERB had extended the validity of existing clearance for siting & construction of MRTDDF at Zirconium Complex, Puzhayakayal initially up to December 31, 2021 and then March 31, 2023.

**(iv) Heavy Water Plants (HWP)**

Heavy water plants at Kota, Manguru, Thal and Hazira were operational. HWPs at Baroda and Talcher remained under shutdown due to unavailability of feed synthesis gas from fertilizer plant. Heavy water production facility at HWP-Tattorian has been declared as 'CLOSED'. Diversified activities at HWP-Baroda, Talcher and

Table 3.21. Regulatory Inspections of Operating Nuclear Facilities

Facilities	No. of Inspections	Facilities	No. of Inspections
<b>Operating NPP</b>			
TAPS-1&2	3	NAPS-1&2	3
TAPS-3&4	3	KAPS-1&2	4
RAPS-1&2	4	KGS-1&2	2
RAPS-3&4	4	KGS-3&4	2
RAPS-5&6	6	KGS Site*	1
RR Site*	1	KKNPP-1&2	3
MAPS-1&2	5	KK Site*	1
<b>IGCAR Facilities</b>			
FBTR, KAMINI, IPSB	2	FRTG, RCL, RML	3
CORAL	2		
<b>Total Inspections*</b>			<b>49</b>

\* Inspection covering nuclear security aspects of whole site.

Table 3.22. Regulatory Inspections of Coal and Lignite Processing Plants

Facilities	No. of Inspections	Facilities	No. of Inspections
HWP-Kota	1	UCIL-Turamdih Mine	1
HWP-Thal	1	UCIL-Turamdih Mill	2
HWP-Hazira	1	UCIL-Mohuldih Mine	1
HWP-Manuguru	1	UCIL-Bagjata Mine	1
HWP-Baroda	1	UCIL-Bhatin Mine	1
HWP-Talcher	1	UCIL-Narwapahar Mine	1
HWP-Tuticorin	1	UCIL-Banduhurang Mine	1
TDP- Chembur	1	UCIL- Tummalapalle Mine	1
NFC-Hyderabad	1	UCIL- Tummalapalle Mill	1
ZC- Hyderabad	1	IREL (India) Ltd., Udyogmandal	1
ECIL- Hyderabad	1	IREL (India) Ltd., OSCOM	1
ECIL- Tirupathi	1	IREL (India) Ltd., Manavalakurichi	1
UCIL-Jaduguda Mill	1	IREL (India) Ltd., Chavara	1
UCIL-Jaduguda Mine	1	KMML - Chavara	1
<b>Total Regulatory Inspections</b>			<b>29</b>

## OFFICE OF THE CHIEF DISTRICT MEDICAL &amp; PUBLIC HEALTH OFFICER, GANJAM, BERHAMPUR

Letter No. 10380 /PHS.IDSP36/37Date - 24-07-23

To

The Collector and District Magistrate  
Ganjam, Chatrapur

Sub: Regarding submission of information on kidney disease as per the action point mentioned in proceeding of the jointcommittee meeting.

Ref: Proceeding of the meeting of the joint committee members held on 12.04.23 at the conference hall of collectorate, Ganjam constituted by Hon'ble NGT, PB New Delhi

Sir,

With reference to the subject cited above, I do hereby submit the detailed prevalence of kidney disease in comparison to affected GP i.e. Kanamana, Badaarjyapalli, Kalipalli with Berhampur, Chatrapur & Ganjam urban area. the details report is attached in annexure

This is in favour of your kind information and necessary action

Enclosed: As above

Yours faithfully,

Chief District Medical & Public Health Officer,  
Ganjam, Berhampur

Memo No- 10881

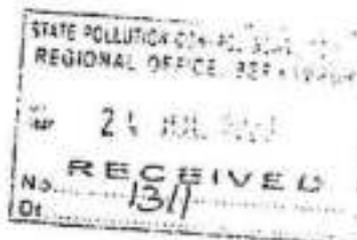
Date - 24-07-23

Copy forwarded to Regional Officer, State Pollution control Board, Berhampur, Ganjam for information &amp; necessary action.

Chief District Medical & Public Health Officer,  
Ganjam, Berhampur

ABR (DKG)  
24/07/2023

P. B. S.  
25/07/23



The chronic kidney disease cases (New & Old) are presently under treatment at GP Kanamana, GP Kalipalli, GP Bada Arjapalli and NAC Chatrapur, NAC Ganjam, BeMC Berhampur.

Name of the GP/Urban area	Population	Cases	Prevalence (per 100 population)
GP Kanamana	8530	2	0.02
GP Bada arjapalli	10889	6	0.05
GP Kalipalli	7796	35	0.45
NAC Chatrapur	23610	22	0.09
NAC Ganjam	12875	5	0.04
BeMC, Berhampur	356598	63	0.02

It has been observed from above table that, the burden of prevalence of the chronic kidney disease is less than 1% (one) in rural area and less than 0.5 % in urban area which has Low indicator with reference to the data on disease burden given below  
So the estimated burden of chronic kidney disease is less than 1% (one percent) in urban as well as in rural areas.

SR

24/7/23

District Public Health Officer  
Ganjam, Berhampur

Chief District Medical & Public Health Officer  
Ganjam, Berhampur

#### Reference (Data source)

Simplified from report of the working group on disease burden for 12<sup>th</sup> five year plan  
(Table 1:1 Indicative burden for major Non- communicable Disease, Training Manual for NCD Programme Manager at state & District level, 2017)

Indicator	Rural			Urban		
	Low	Medium	High	Low	Medium	High
Previous chronic kidney Disease (%)	1	2	2.5	0.5	1	1.5

Table 1: Indicative burden for major Non-communicable diseases

Indicators	Rural			Urban			Data Source
	Low	Medium	High	Low	Medium	High	
Assumption of Burden	Low	Medium	High	Low	Medium	High	Simplified from Report of the Working Group
Prevalence of Hypertension (%)	10	15	20	20	25	30	
Prevalence of Diabetes mellitus (%)	2	6	10	5	10	15	Simplified from Report of the Working Group
Previous Chronic Obstructive Pulmonary Disease (%)	M-4 F-2	7 4	10 6	M-2 F-1	5 2	7 3	
Prevalence of Coronary Artery Disease (%)	2	4	7	6	9	13	12th Five Year Plan
Annual Incidence of Myocardial Infarction per 1000	2	4	6	4	6	8	Conducted from major ad-hoc studies
Annual Incidence of Stroke per 1000	1.0	1.5	2	1.0	1.5	2.0	Conducted from major ad-hoc studies
Annual Incidence of Cancer per							
Oral	5	11	25	1	4	9	
Cervical	15	20	25	5	10	20	Conducted from major ad-hoc studies
Breast	7	23	31	11	33	40	

Prevalence indicates all cases (both new and old) living at a given time in the population whereas incidence indicates "new" cases occurring in a given time period (annual) in this example.

OFFICE OF THE SUPERINTENDING ENGINEER:RWSS DIVISION:BERHAMPUR  
Near Jarada Bunglow, Pin - 760004, Ph. 0680-2296344  
eerwss bam@nic.in rwssbam@gmail.com

No. 173<sup>(1st)</sup> /Dated the 27-07-23

To -

The Collector & District Magistrate,  
Ganjam , Chatrapur.

Sub: O.A. No. 05/2023/PB - Surendra Panigrahi - Vrs - State Odisha  
IRE Ltd. matter - regarding.

Sir,

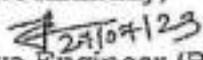
With reference to above cited subject, I am submitting herewith the test report of different water quality parameters during 2016-17 and 2017-18 . Water supplied from the bore wells and tube wells those water quality was within permissible limit as per IS-10500-2012. Periodically District Laboratory have been testing the water samples of tube wells and production wells from Kanamana , Arjipalli and Kalipalli. Recently water samples from the above GPs are sent to State Laboratory ,Khandagiri, Bhubaneswar for testing.

A mega water supply scheme work is going on, taking river Rushikulya as source of water to provide safe drinking water to all the villages of Kanamana , Arjipalli and Kalipalli GPs.

This is for favour of your kind information and necessary action.

Encl: Water sample test report.

Yours faithfully,

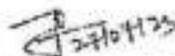
  
Executive Engineer (RWS&S)

Memo No. 174 / Dt. 27-07-23 for

Copy along with copy of water samples test reports submitted to the Regional Office, State Pollution Board, Odisha, 2nd floore, New Division office, IDCO , Berhampur Division, Industrial Estate , Berhampur-760008 for kind information .

Encl: Water sample test report.

STATE POLLUTION BOARD, BERHAMPUR REGIONAL OFFICE, BERHAMPUR
27 JUL 2023
RECEIVED
No. 1344
01

  
Executive Engineer (RWS&S)

f  
P  
27/07/23

ES (RWS)  
IDCO  
27/07/2023



STATE WATER TESTING LABORATORY, RWS&S (O), KHANDAGIRI, BHUBANESWAR.  
e-mail : [rwscentral@odisha@gmail.com](mailto:rwscentral@odisha@gmail.com), Ph. No: 0674 - 2386380

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**Analytical Report**

Ref. Report No: SWTL-TR/28/2018/S-1-23 Date of Issue :- 03.03.2018

Name of Customer : Executive Engineer, RWSS Division, Berhampur

Sample Registration Details	
Type of Source :	Ground Water
Date of Sample Collection :	Not specified
Sample Receive Date :	29.01.2018 (11.30 AM) Vide letter No. 317/dated 27.01.2018
Sample Registration Date :	29.01.2018
Quantity of Sample Received :	01 ltr. (each Sample)
Sample collected by	Not specified.
Location of the Sample :	As per letter under reference(above)
Sampling Protocol :	Samples are not collected by this laboratory.
Period of Analysis :	Di. 27.02.2018 to 28.02.2018



Cert. No. TC-6094  
In No. of T-4653  
NABL Accredited Lab.

Sl	Test Parameters	Units	Results	Requirements IS 10500 : 2012		Test Method
				Acceptable Limit	Permissible Limit in absence of alternate source	
1	Temperature*	°C	25.6 for each Sample	---	---	Instrumental Method
2	pH	pH Unit	1- 8.66	6.5 to 8.5	No relaxation	Electrometric Method (APHA 22 <sup>nd</sup> Ed: 4500-H+ B)
			2- 8.58			
			3- 8.87			
			4- 8.84			
			5- 8.40			
			6- 8.62			
			7- 8.66			
			8- 8.71			
			9- 8.79			
			10- 8.52			
			11- 8.66			
			12- 8.95			
			13- 8.66			
			14- 8.80			
			15- 8.98			
			16- 8.80			
			17- 8.33			
			18- 8.77			
			19- 9.02			
			20- 8.64			
			21- 8.72			
			22- 8.73			
			23- 8.80			
			1- 808			
			2- 535			
			3- 414			
			4- 562			
			5- 417			
			6- 552			
			7- 332			

3	Elect. Conductivity	µmho/cm	8- 662 9- 533 10- 388 11- 318 12- 568 13- 407 14- 332 15- 474 16- 322 17- 458 18- 351 19- 392 20- 483 21- 352 22- 488 23- 420	-	-	Instrumental Method (APHA 22 <sup>nd</sup> Ed 2510 B)
4	TDS*	mg/l	1- 523.91 2- 347.70 3- 289.11 4- 365.3 5- 271.0 6- 385.3 7- 215.8 8- 378.3 9- 348.4 10- 237.9 11- 205.7 12- 309.2 13- 264.5 14- 215.8 15- 308.1 16- 209.3 17- 286.4 18- 228.1 19- 254.8 20- 300.9 21- 228.8 22- 317.2 23- 273.0	500	2000	Calculation Method
5	Chloride	mg/l	1- 108.0 2- 64.0 3- 44.0 4- 68.0 5- 40.0 6- 40.0 7- 40.0 8- 48.0 9- 40.0 10- 38.0 11- 44.0 12- 40.0 13- 40.0 14- 40.0 15- 40.0 16- 40.0 17- 40.0 18- 44.0 19- 44.0 20- 48.0 21- 44.0 22- 44.0 23- 38.0	250	1000	Argentometric Method (APHA 22 <sup>nd</sup> Ed 4500 Cl- B)

			18-	0.34			
			19-	0.32			
			20-	0.31			
			21-	0.80			
			22-	0.57			
			23-	0.22			
9	Lead (Pb)	ppb	1-	<1.0	3	No relaxation	Electrothermal Atomic Absorption Spectrometric Method
			2-	<1.0			
			3-	<1.0			
			4-	<1.0			
			5-	<1.0			
			6-	<1.0			
			7-	<1.0			
			8-	<1.0			
			9-	<1.0			
			10-	<1.0			
			11-	<1.0			
			12-	<1.0			
			13-	<1.0			
			14-	<1.0			
			15-	<1.0			
			16-	<1.0			
			17-	<1.0			
			18-	<1.0			
			19-	<1.0			
			20-	<1.0			
			21-	<1.0			
			22-	<1.0			
			23-	<1.0			
10	Cadmium (Cd)	ppb	1-	<1.0	10	No relaxation	Electrothermal Atomic Absorption Spectrometric Method
			2-	<1.0			
			3-	<1.0			
			4-	<1.0			
			5-	<1.0			
			6-	<1.0			
			7-	<1.0			
			8-	<1.0			
			9-	<1.0			
			10-	<1.0			
			11-	<1.0			
			12-	<1.0			
			13-	<1.0			
			14-	<1.0			
			15-	<1.0			
			16-	<1.0			
			17-	<1.0			
			18-	<1.0			
			19-	<1.0			
			20-	<1.0			
			21-	<1.0			
			22-	<1.0			
			23-	<1.0			

Note - The samples were tested with dilution.

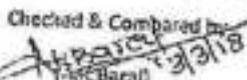
Information on Test Report:

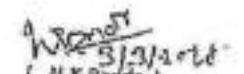
Results relates only to samples received in the Laboratory.

The test report shall not be reproduced except in full without written approval of SWTL.

APHA - American Public Health Association

\*The parameters are not accredited by NABL.

Checked & Compared by  
  
 (A.K. Baral)  
 Technical Manager

  
 (N.K. Panda)  
 Analyst (Chemist) & Quality Manager  
 State Water Testing Laboratory  
 Authorised Signatory

6	Total Hardness (as CaCO <sub>3</sub> )	mg/l	1-	204.0	200	600	EDTA Titrimetric Method (APHA 22 <sup>nd</sup> Ed 2340 C)
			2-	140.0			
			3-	112.0			
			4-	172.0			
			5-	132.0			
			6-	104.0			
			7-	104.0			
			8-	90.0			
			9-	78.0			
			10-	104.0			
			11-	100.0			
			12-	80.0			
			13-	97.0			
			14-	102.0			
			15-	100.0			
			16-	80.0			
			17-	122.0			
			18-	108.0			
			19-	110.0			
			20-	150.0			
			21-	98.0			
			22-	101.0			
			23-	87.0			
7	Total Alkalinity (as CaCO <sub>3</sub> )	mg/l	1-	120.0	300	600	Titration Method (APHA 22 <sup>nd</sup> Ed. - 2320 B)
			2-	124.0			
			3-	156.0			
			4-	160.0			
			5-	120.0			
			6-	200.0			
			7-	88.0			
			8-	198.0			
			9-	199.0			
			10-	124.0			
			11-	112.0			
			12-	228.0			
			13-	135.0			
			14-	138.0			
			15-	192.0			
			16-	120.0			
			17-	124.0			
			18-	118.0			
			19-	140.0			
			20-	42.0			
			21-	120.0			
			22-	174.0			
			23-	140.0			
8	Iron	mg/l	1-	0.10	1.0	No relaxation	Phenanthroline Method (APHA 22 <sup>nd</sup> Ed 350. - Fe B)
			2-	0.32			
			3-	<u>6.49</u>			
			4-	<u>3.88</u>			
			5-	<u>1.58</u>			
			6-	0.98			
			7-	0.20			
			8-	<u>1.68</u>			
			9-	0.39			
			10-	<u>1.38</u>			
			11-	<u>5.87</u>			
			12-	0.96			
			13-	<u>11.82</u>			
			14-	<u>12.80</u>			
			15-	<u>1.55</u>			
			16-	<u>5.14</u>			
			17-	0.33			

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OFFICE OF THE ANALYST (CHEMIST)  
RWS&S CENTRAL LABORATORY, ODISHA  
KHANDAGIRI, BHUBANESWAR -751030

Email: [rsarsl@bhel.co.in](mailto:rsarsl@bhel.co.in), Tel.No.0674-2386288

No. 47 (acc) Dt. 03/03/2018

To

The Executive Engineer,  
RWSS Division, Barhampur.

Sub: Test report of water samples.

Ref: Your office letter No.317 /Dt. 27.01.2018.

Sir,

The test report of the water samples sent to this Laboratory for testing of Chemicals Parameter & Heavy Metal analysis is enclosed herewith for your kind information and necessary action.

Enclosed: - As above.

Yours faithfully,

*W.D. Singh*  
3/3/2018  
Analyst (Chemist)

RWS&S Central Laboratory,  
Khandagiri, Bhubaneswar.

C.C. Submitted to :

- Engineer-in-Chief, RWS&S(O), Bhubaneswar for favour of kind information and necessary action.
- Chief Engineer-II RWS&S/Chief Engineer -III RWS&S Odisha, Bhubaneswar for favour of kind information and necessary action.
- Superintending Engineer (WQ)RWSS Circle, Cuttack for favour of kind information and necessary action.

## LIST OF WATER SAMPLES

Sl. No.	Bottle No.	Name of the G.P.	Name of the rehabilitated village	Location
1	Red -2	Kalipalli	P.Laxmipur	Near Tataya Rao House
2	Red - 3	Kalipalli	P.Laxmipur	Production wells PWS to Laxmipur
3	Black T-3	Kalipalli	P.Laxmipur	Near pump house
4	Red T-3	Kalipalli	P.Laxmipur	Inside school
5	Red 5	Badaputi	Badaputi	Nua sahi
6	Red 6	Badaputi	Badaputi	Near mandapa
7	Red 7	Badaputi	Badaputi	Infront AWC 1
8	Red 8	Badaputi	Badaputi	Infront AWC 2
9	Red 9	Badaputi	Badaputi	Middle of village
10	Red 10	Badaputi	Badaputi	Gandhi Padara Pry. School
11	White 86	Badaputi	Badaputi	Main road side 1 <sup>st</sup> bore
12	White 85	Badaputi	Badaputi	Mainroad side 2 <sup>nd</sup> bore
13	Red 11	Badaputi	Badaputi	Near community center corner
14	Red 12	Badaputi	Badaputi	Right side 2 <sup>nd</sup> row middle
15	Black 25	Badaputi	Badaputi	UP school
16	Red 13	Badaputi	Badaputi	Tini chhaka
17	Red 14	Badaputi	Badaputi	G.Babu Rao (Private)
18	Red 15	Badaputi	Badaputi	D.Simandri (Private)
19	Red 16	Badaputi	Badaputi	Tera basa
20	Red 17	Badaputi	Badaputi	Back side of Hanuman statue
21	Red 18	Badaputi	Badaputi	G.Somaya (Private)
22	Black 29	Badaputi	Badaputi	Near chaura
23	Red 19	Badaputi	Badaputi	New street 2

K. S. S. S. S.

Executive Officer  
R.W.S. & S.D. Division  
Bachchan, 2010

3	Fluoride (as F <sup>-</sup> )	Mg/l	1. - 0.324 2. - 0.465 3. - 0.488 4. - 0.320 5. - 0.271 6. - 0.278 7. - 0.265 8. - 0.381 9. - 0.274 10. - 0.205 11. - 0.210 12. - 0.519 13. - 0.200 14. - 0.240 15. - 2.45 16. - 2.32 17. - 0.401 18. - 0.454 19. - 0.342 20. - 0.692 21. - 0.391 22. - 0.521 23. - 0.357 24. - 0.798 25. - 0.912	0.5	1.5	Ion-Selective Electrode Method (APHA 4500 - F <sup>-</sup> C)
2	Cadmium (Cd)	ppb	1. - 0.071 2. - 0.071 3. - 0.032 4. - 0.072 5. - 0.037 6. - 0.074 7. - 0.019 8. - 0.034 9. - 0.055 10. - 0.071 11. - 0.047 12. - 0.074 13. - 0.050 14. - 0.014 15. - 0.073 16. - 0.078 17. - 0.073 18. - 0.058 19. - 0.049 20. - 0.066 21. - 0.051 22. - 0.038 23. - 0.065 24. - 0.052 25. - 0.062	3	No relaxation	AAS method
2	Lead(Pb)	ppb	1. - <1.0 2. - <1.0 3. - <1.0 4. - <1.0 5. - <1.0 6. - <1.0 7. - <1.0 8. - <1.0 9. - <1.0 10. - <1.0 11. - <1.0 12. - <1.0 13. - <1.0 14. - <1.0 15. - <1.0 16. - <1.0 17. - <1.0 18. - <1.0 19. - <1.0 20. - <1.0 21. - <1.0 22. - <1.0 23. - <1.0 24. - <1.0 25. - <1.0	10	No relaxation	AAS method

Note :- The samples were tested with dilution.

Information on Test Report :

Results relate only to the item tested.

The test report shall not be reproduced except in full without written approval of SWTC.

\* APHA - American Public Health Association

Analyst (Chemist)  
 RWS&S Central Laboratory,  
 Khandagiri, Bhubaneswar

STATE WATER TESTING LABORATORY, RWS&S (D), KHANDAGIRI, BHUBANESWAR.  
 email : rwscentralbhub@sfha@gmail.com , Ph. No: 0674 - 2386250

Sl. No	Test Parameters	Units	Results	Requirements IS 10500 : 2012		Test Method
				Acceptable Limit	Permissible Limit in absence of alternate source	
1	Alkalinity	Mg/l	1. - 140.0 2. - 148.0 3. - 420.0 4. - 472.0 5. - 295.0 6. - 392.0 7. - 164.0 8. - 235.0 9. - 280.0 10. - 188.0 11. - 148.0 12. - 176.0 13. - 200.0 14. - 208.0 15. - 168.0 16. - 148.0 17. - 176.0 18. - 280.0 19. - 236.0 20. - 256.0 21. - 336.0 22. - 300.0 23. - 304.0 24. - 376.0 25. - 380.0	200	600	Titration Method (2323 B)
2	Total Dissolved Solid	Mg/l	1. - 269.45 2. - 285.0 3. - 1173.90 4. - 1345.50 5. - 503.10 6. - 596.70 7. - 245.70 8. - 519.45 9. - 735.15 10. - 287.30 11. - 280.80 12. - 447.65 13. - 470.60 14. - 297.70 15. - 300.95 16. - 414.05 17. - 310.05 18. - 600.60 19. - 661.20 20. - 647.60 21. - 1052.35 22. - 859.95 23. - 764.55 24. - 1758.00 25. - 1534.0	500	2000	By Calculation

			21. - 368.0 22. - 544.0 23. - 438.0 24. - 498.0 25. - 408.0			
6	Iron	Mg/l	1. - 0.30 2. - 0.22 3. - 0.82 4. - 0.36 5. - 0.48 6. - 2.32 7. - 0.70 8. - 0.84 9. - 0.30 10. - 8.22 ✓ 11. - 11.04 ✓ 12. - 0.18 13. - 1.32 14. - 11.04 ✓ 15. - 31.08 ✓ 16. - 0.66 17. - 5.30 18. - 0.44 19. - 0.22 20. - 1.26 21. - 1.72 22. - 0.44 23. - 0.58 24. - 0.30 25. - 0.52	1.0	No relaxation	Phenanthroline Method (APHA 3500 - Fe B)

Note 1- The samples were tested with dilution.

Information on Test Report :

Results relates only to the item tested

The test report shall not be reproduced except in full without written approval of SWTL.

\* APHA - American Public Health Association

*Alexand*  
Analyst (Chemist),  
BWSSS Central Laboratory,  
Khandagiri, Bhubaneswar.

3	Elect. Conductivity	µmhos/cm	1. - 413.0 2. - 440.0 3. - 1896.0 4. - 2070.0 5. - 774.0 6. - 918.0 7. - 378.0 8. - 953.0 9. - 1131.0 10. - 442.0 11. - 432.0 12. - 889.0 13. - 724.0 14. - 458.0 15. - 453.0 16. - 537.0 17. - 477.0 18. - 924.0 19. - 1048.0 20. - 1394.0 21. - 1619.0 22. - 1323.0 23. - 1207.0 24. - 2720.0 25. - 2360.0			Isotomewal Method (APHA 2113)
4	Chloride	Mg/l	1. - 44.0 2. - 40.0 3. - 284.00 4. - 324.0 5. - 40.0 6. - 48.0 7. - 24.0 8. - 144.0 9. - 188.0 10. - 28.0 11. - 40.0 12. - 84.0 13. - 92.0 14. - 32.0 15. - 52.0 16. - 88.0 17. - 44.0 18. - 104.0 19. - 128.0 20. - 232.0 21. - 248.0 22. - 228.0 23. - 180.0 24. - 696.0 25. - 496.0	250	1000	Argentometric Method (APHA 4500 - C - E)
5	Total Hardness (as CaCO <sub>3</sub> )	Mg/l	1. - 124.0 2. - 84.0 3. - 80.0 4. - 100.0 5. - 176.0 6. - 120.0 7. - 80.0 8. - 228.0 9. - 248.0 10. - 136.0 11. - 124.0 12. - 220.0 13. - 236.0 14. - 240.0 15. - 132.0 16. - 136.0 17. - 184.0 18. - 204.0 19. - 312.0 20. - 432.0	200	600	EDTA Titrimetric Method (APHA 214)



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STATE WATER TESTING LABORATORY, RWS&S (O), KHANDAGIRI, BHUBANESWAR.  
 email : [rwsscentrallabodisha@gmail.com](mailto:rwsscentrallabodisha@gmail.com) , Ph. No: 0674 - 2386230

### Analytical Report

Test Report No. SWTL-TR/28/2017-18/S-1-25 Date of Issue :- 22/3/2017

Name of Customer : Executive Engineer, RWSS Division, Berhampur.

Sample Registration Details	
Type of Source :	Ground water
Date of Sample Collection :	Not specified
Sample Receive Date :	09.02.2017 (10.30 AM) Vide letter No. 416 dated 07.02.2017.
Sample Registration Date :	09.02.2017
Quantity of Sample Received :	1000 ml each
Sample collected by	Not specified
Location of the Sample :	As enclosed
Sampling Protocol :	IS: 3025-(P-1)-1987-R-1998 Amdt-1
Period of Analysis :	From Dt. 14.03.2017 to Dt. 17.03.2017
Testing Protocol :	



	Test Parameters	Units	Results	Requirements IS 10500 : 2012		Test Method
				Acceptable Limit	Permissible Limit in absence of alternate source	
1	Temperature	°C	25.2 each sample	---	---	Instrumental Method
2	pH	-	1. - 7.68 2. - 7.89 3. - 7.86 4. - 7.75 5. - 7.61 6. - 8.07 7. - 7.43 8. - 7.55 9. - 7.61 10. - 8.09 11. - 8.72 12. - 7.43 13. - 8.98 14. - 7.91 15. - 7.93 16. - 6.85 17. - 7.88 18. - 7.45 19. - 7.31 20. - 7.46 21. - 7.57 22. - 7.83 23. - 7.91 24. - 7.72 25. - 7.90	6.5 to 8.5	No relaxation	Electrometric Method, APHA, 4500-H+

OFFICE OF THE ANALYST (CHEMIST)  
RWS&S CENTRAL LABORATORY, ODISHA  
KHANDAGIRI, BHUBANESWAR -751030

Email: [rwsscentralbhubaneswar@gmail.com](mailto:rwsscentralbhubaneswar@gmail.com), Tel.No.9674-336280

No. 61 (MC) Dt. 21/3/2017

To

The Executive Engineer,  
RWSS Division, Berhampur.

Sub: Test report of water samples.

Ref: Your office letter No.416 / Dt. 07.02.2017.

Sir,

The test report of the water samples sent to this Laboratory for testing of Chemicals and heavy metal is enclosed herewith for your kind information and necessary action.

}} Enclosed: - As above - 5 sheets

Yours faithfully.

*[Signature]*  
Analyst (Chemist)  
RWS&S Central Laboratory,  
Khandagiri, Bhubaneswar.

C.C to :

- Chief Engineer, RWS&S( Sanitation ) ,Odisha, Bhubaneswar, for favour of kind information and necessary action.
- Superintending Engineer, RWS&S PMD & Investigation Circle, Bhubaneswar for favour of kind information and necessary action.
- Superintending Engineer, RWSS Circle, Berhampur, for favour of kind information and necessary action.

### List of Watersample of Chatrapur Block

S. NO	NAME OF GP	NAME OF VILLAGE	LOCATION
1	Kaliapalli	upalapati	water supply tank (near kiaphul bhati)
2	Kaliapalli	upalapati	main road isde
3	Kaliapalli	basanaputi	near village entrance
4	Kaliapalli	basanaputi	nayak sahi last
5	Kaliapalli	basanaputi	water supply tank (near school)
6	Kaliapalli	basanaputi	main road side
7	Kaliapalli	kaliaplli	near village entrance
8	Kaliapalli	kaliaplli	village middle (near Hanuman statue)
9	Kaliapalli	kaliaplli	village last
10	Kaliapalli	kaliaplli	odrp site tubewll (near pump house)
11	chamkhandi	ramaya palli	village middle
12	chamkhandi	ramaya palli	water supply tank
13	chamkhandi	p.laxmipur	village entrance
14	chamkhandi	p.laxmipur	village last (near pump house)
15	chamkhandi	p.laxmipur	inside Raghunathpur U.P. school
16	chamkhandi	bhaginipenta	village entrance
17	chamkhandi	bhaginipenta	inside school
18	kanamana	matikhala	village entrance
19	kanamana	matikhala	inside up school
20	kanamana	kanamana	village last
21	kanamana	kanamana	village middle
22	kanamana	kanamana	infront of panchayat office
23	kanamana	kanamana	inside up school
24	kanamana	T.berhampur	village entrance (infront of school)
25	kanamana	T.berhampur	narijana sahi

2	Cadmium (Cd)	ppb	1. - <1.0 ppb	3	No relaxation	Electrothermal Atomic Absorption Spectrometry Method
			2. - <1.0 ppb			
			3. - <1.0 ppb			
			4. - <1.0 ppb			
			5. - <1.0 ppb			
			6. - <1.0 ppb			
			7. - <1.0 ppb			
			8. - <1.0 ppb			
			9. - <1.0 ppb			
			10. - <1.0 ppb			
			11. - <1.0 ppb			
			12. - <1.0 ppb			
			13. - <1.0 ppb			
			14. - <1.0 ppb			
			15. - <1.0 ppb			
			16. - <1.0 ppb			
			17. - <1.0 ppb			
			18. - <1.0 ppb			
			19. - <1.0 ppb			
			20. - <1.0 ppb			

**Information on Test Report:**

Results relates only to the item tested.

The test report shall not be reproduced except in full without written approval of SWT.

\* APHA - American Public Health Association

*Handwritten:*  
 How  
 3/21/2008  
 Standard 11.1.1.1.1.1



Page: 1/2

STATE WATER TESTING LABORATORY, RWS&S (O), KHANDAGIRI, BHUBANESWAR.  
 email : [rwscentrallabodisha@gmail.com](mailto:rwscentrallabodisha@gmail.com) , Ph. No: 0674 - 2386280

### Analytical Report

Test Report No. SWTL-TR/14/2017-18/S-1-20				Date of Issue : 02.02.2017		
Name of Customer : Executive Engineer RWSS Division, Berhampur.						
Sample Registration Details						
Type of Source :		Ground water				
Date of Sample Collection :		Not specified				
Sample Receive Date :		21.01.2017 (10.30 AM) Vide letter No. 219 dated 20.01.2017				
Sample Registration Date :		21.01.2017				
Quantity of Sample Received :		1000 ml each				
Sample collected by :		Not specified				
Location of the Sample :		As enclosed				
Sampling Protocol :		IS 3025-(P-1)-1987-R-1996 Amend-1				
Period of Analysis :		From Dt. 28.01.2017 to Dt. 29.01.2017				
Testing Protocol :		As per Bureau of Indian Standard (BIS)				
	Test Parameters	Units	Results	Requirements IS 10500 : 2012		Test Method
				Acceptable Limit	Permissible Limit in absence of alternate source	
1	Lead (Pb)	ppb	1 - <1.0 ppb 2 - <1.0 ppb 3 - <1.0 ppb 4 - <1.0 ppb 5 - <1.0 ppb 6 - <1.0 ppb 7 - <1.0 ppb 8 - <1.0 ppb 9 - <1.0 ppb 10 - <1.0 ppb 11 - <1.0 ppb 12 - <1.0 ppb 13 - <1.0 ppb 14 - <1.0 ppb 15 - <1.0 ppb 16 - <1.0 ppb 17 - <1.0 ppb 18 - <1.0 ppb 19 - <1.0 ppb 20 - <1.0 ppb	NO	no relaxation	Each 100 ml Method

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**OFFICE OF THE ANALYST (CHEMIST)**  
**RWS&S CENTRAL LABORATORY, ODISHA**  
**KHANDAGIRI, BHUBANESWAR -751030**

Email: [rsrcentral@odisha.gov.in](mailto:rsrcentral@odisha.gov.in), Tel.No.0674-244630

No. 17 Dt. 3.2.17

To

**The Executive Engineer,**  
**RWS&S Division, Berhampur.**

Sub: Test report of water samples.

Ref: Your office letter No.219/ Dt. 20.01.2017

Sir,

The test report of the Water samples sent to this Laboratory for heavy metal is enclosed herewith for your kind information and necessary action. To intimate you that Arsenic and Mercury testing could not be possible due to water samples

Enclosed: - As above - 2 sheets

Yours faithfully,

*W.S.*  
 Analyst  
 RWS&S Central Lab  
 Khandagiri, Bhubaneswar

C.C. to :

- Chief Engineer, RWS&S( Sanitation ) .Odisha. Bhubaneswar for information and necessary action.
- Superintending Engineer, RWS&S PMD & Investigation, Cuttack, for favour of kind information and necessary action.
- Superintending Engineer, RWS&S. Circle. Berhampur. for favour of information and necessary action.

*J. S. Singh*  
*07*  
*09/02/17*



STATE WATER TESTING LABORATORY, RWS&S (O), KHANDAGIRI, BHUBANESWAR,  
 e-mail: [rwscentrallabodisha@gmail.com](mailto:rwscentrallabodisha@gmail.com), Ph. No: 8674 - 3386280

Test Report No. SWTL-TR/23/2018/S-1-23  
 Analytical Report  
 Date of Issue - 03.03.2018  
 Name of Customer : Executive Engineer, RWSS Division, Berhampur

Sample Registration Details	
Type of Source :	Ground Water
Date of Sample Collection :	Not specified
Sample Receipt Date :	29.01.2018 (11.30 AM) Vide letter No. 5177 Dated 27.01.2018
Sample Registration Date :	29.01.2018
Quantity of Sample Received :	01 ltr. (each Sample)
Sample collected by :	Not specified
Location of Sample :	As per letter under reference (above)
Sampling Method :	Samples are not collected by this laboratory
Period of Analysis :	Dt. 27.02.2018 to 28.02.2018



Cert. No. TC - 60/4  
 (in lieu of T - 40/4)  
 NABL Accredited Lab.

Sl	Test Parameters	Units	Results	Requirements IS 10500 : 2012		Test Method
				Acceptable Limit	Permissible Limit in absence of alternate source	
1	Temperature*	°C	25.6 for each Sample			Introduction Part
B	Fluoride (as F)	mg/l	1- 0.177 2- 0.252 3- 0.284 4- 0.223 5- 0.0925 6- 0.455 7- 0.0503 8- 0.430 9- 0.404 10- 0.249 11- 0.305 12- 0.511 13- 0.196 14- 0.153 15- 0.312 16- 0.271 17- 0.152 18- 0.192 19- 0.242 20- 0.190 21- 0.147 22- 0.246 23- 0.183	1.0	1.5	Ion-Selective Electrode Method (APHA 22 <sup>nd</sup> Ed. - 4500 F <sup>-</sup> Cl)

Note :- The samples were tested with @/vion.  
 Information Test Results :-  
 Results shown only to samples received in the laboratory.  
 These reports shall not be reproduced except in full without written approval of lab.  
 APHA - American Public Health Association  
 \*The parameters are not accredited by NABL.

Checked & Compared by  
  
 (A.K.Sural)  
 Technical Manager

13/03/2018  
 N. K. Panda  
 Analyst (Chemist) & Quality Manager,  
 State Water Testing Laboratory  
 Authorized Signatory

Handwritten notes and signatures at the bottom of the page, including a large '0' or 'O' mark.