

By Speed Post

No. J-11015/90/2009-IA.II (M)
Government of India
Ministry of Environment, Forest & Climate Change
Impact Assessment Division

3rd Floor, Vayu Wing,
Indira Paryavaran Bhawan,
Jorbagh Road, Aliganj,
New Delhi-110 003

Dated: 17th April, 2015

To,

M/s Trimex Heavy Minerals Pvt. Ltd.
Plot No. 56, Telugu Musalayya Layout,
Adithya Nagar, Arasavilli Road,
Srikakulam-532001
Andhra Pradesh

Subject.: Bhavanapadu Mineral Sand Project of M/s Trimex Heavy Minerals Pvt. Ltd. for Heavy Mineral Beach Sand Mining with proposed production of 10.0 Million TPA and Pre-concentration Plant (1525 TPH) & Mineral Separation Plant (270 TPH), located at Village(s) Rajapuram & Bhavanapadu in Santhabommali Mandal, and Devunalthada, Suryamanipuram, Komarlathada, Sainooru, URK puram, Amalapadu, & Pallivuru villages in Vajrapukothuru Mandal, in Srikakulam District in Andhra Pradesh -Environment Clearance regarding.

This has reference to your letter nos. TRIMEX/BP/EC/Mar/2013-001, dated 28.03.2013 & TRIMEX/BP/EC/June/2013-001, dated 12.06.2013 on the subject mentioned above. The project was prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 25.05.2009 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal was considered in the 7th Meeting of the Reconstituted Expert Appraisal Committee held during May 15th-17th, 2013 and 8th Meeting of the Reconstituted Expert Appraisal Committee held during June 26th-28th, 2013 wherein the Committee recommended the proposal for environmental clearance.

2. The proposal is for Heavy Mineral Beach Sand Mining with proposed production capacity of 10.0 million TPA (ROM), Pre-concentration Plant (PCP) with production capacity of 1525 TPH and Mineral Separation Plant (MSP) with production capacity of 270 TPH. The site is located at Village(s) Rajapuram & Bhavanapadu in Santhabommali Mandal, and Devunalthada, Suryamani puram, Komarlathada, Sainooru, URK puram, Amalapadu, & Pallivuru villages in Vajrapukothuru Mandal, in Srikakulam District in Andhra Pradesh. The Latitudes and Longitudes of the site are 18° 30' 18.50" N to 18° 39' 49.05" N and 84° 17' 05.84" E to 84° 26' 19.35" E respectively.

3. The mine lease area is 1788 ha which is Government, Patta & D Patta land. No forest land is involved within the Mine lease area. The Mining Plan including Progressive Mine Closure Plan) has been approved by Indian Bureau of Mines, Ministry of Mines vide Letter No. MP/AP/SRK/GNT& SILLIMANITE-227-SZ/446 dated 21/22.02.2013. The Mining Plan is approved by Atomic Minerals Directorate for Exploration and Research, Department of Atomic Energy vide Letter No. AMD/MPA/3M/TRIMEX/1788 Ha/2011, dated May 18th 2011. Life of the mine is 20 years. Total Geological Reserves are about 177.26 million tonnes with mineable reserves 168.33 million tonnes.

4. No drilling and blasting or sorting of the material at mine site are involved. Run-off mine ore will be mined and concentrated. The ore is excavated with the help of Excavators/Dumpers/Front-end loaders and/or dredgers taking care that the water table of the area is not disturbed and water level is maintained above the MSL with water gradient always towards the sea. Excavator will be utilized to mine the heavy mineral sand above the water table and conveyed or pumped. The clean sand will be mixed with water and pumped to the pre-concentration plant to concentrate minerals in the ROM into three to four mineral rich concentrates viz., Concentrate-1 containing very heavy minerals (others), Concentrate-2 containing predominately Sillimanite and Concentrate-3 & 4 containing mainly Garnet. The concentrates from the re-locatable/floating Pre-concentration plant (PCP) will be further transported with the help of tippers or pumped to a Mineral Separation plant (MSP) from the PCP and the tailings devoid of minerals will be simultaneously pumped back to the mined out areas. Slime separated in the slime removal plant or PCP plant will be used to cover the back filled tailings to support plantation in the currently barren sandy coastal deposit. The excavated area will be simultaneously refilled with tailings generated from pre-concentration plant and afforested with local suitable plant species and make the ecological balance of the area. The solid waste generation will be about 22.958 million tonnes of silica sand which form the reject quantity during the first five years when 27.65 million tonnes of ROM will be handled.

5. The mining will be intersecting the ground water table. A comprehensive hydrogeological study has been carried out by Andhra University. The water requirement is estimated as 1400 m³/hr, out of 900m³/hr will be from sea water and 500 m³/hr from Vamsadhara River.

6. No Wildlife Sanctuary/Tiger Reserve /National Park/Endangered species /Forest lands/ Protected Areas/ reported are reported in core and buffer zones of the Mine Lease area. However, the site is located 7.0 km from the Telineelapuram Village which is a Nesting Site for Migratory Birds, the feeding site is 3.0 km away from the project site. Naupada Salt Pans are at a distance of 1.5 km SW of lease area and Nuvvularevu is at a distance of 1.0 km from the lease boundary on the Northern side. A detailed study on Status of the Sea Turtle Nesting at Bhavanapadu ML area and Impacts of the Beach Sand Mining on

Ecology and Migratory birds of Bhavanapadu coast has been carried out by ENVID Group of Andhra University.

7. The Project Proponent reported that the entire stretch of area is classified as CRZ-III as per the approved Coastal Zone Management Plan (CZMP) of the area. The State CZMA, Andhra Pradesh has examined the proposal in its meeting held on 26.04.2012 and opined that mining of rare minerals such as Garnet, Illmenite, Sillimanite Rutile, Leucosine and Zircon is a permitted activity within CRZ. The State CZMA Authority has recommended to issue the No Objection Certificate. The CRZ clearance from Ministry has been obtained vide letter no. 11-88/2013-IA.III dated 03.09.2014.

8. The Baseline studies were carried out during summer season 2009. All the parameters for water and air quality were reported to be within permissible limits. Additional one season data of summer 2012 is also submitted. It was reported that the baseline condition of Ambient Air Quality on comparison with 2009 data and 2012 data are in-line and are within the permissible limits.

9. The Public Hearing (PH) was held on 11.08.2011 which was chaired by Sri E. Sridhar, District Joint Collector & Addl. District Magistrate, Srikakulam. The issues raised during public hearing were also considered and discussed during the meeting, which inter-alia, included that there should not be any environmental pollution due to proposed activities, air pollution control measures to be adopted, raising of plantation, sprinkling of water etc. As per the villager's requirements, it was informed by the Proponent that they would take care of local employment; health issues, providing education, and assistance in vocational training etc. These have been incorporated in the Project Plan with budgetary provisions.

10. The total cost of the project is Rs 790 crore. Proponent has reported that an amount of Rs. 525 lakhs has been earmarked for Environmental Protection Measures towards capital cost and Rs 100 Lakhs towards Annual Recurring cost. Proponent has earmarked Rs 1000 Lakhs towards CSR activities for a period of 10 years and Rs 100 Lakhs as annual recurring cost. It is reported by the Proponent that there is no court case/litigation pending against the project.

11. The Ministry of Environment, Forest & 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 Trimex Heavy Minerals Pvt. Ltd. for Heavy Mineral Beach Sand Mining with proposed production capacity of 10.0 million TPA (ROM), Pre-concentration Plant (PCP) with production capacity of 1525 TPH and Mineral Separation Plant (MSP) with production capacity of 270 TPH in the mining lease areas of 1788ha and are located at Village(s) Rajapuram & Bhavanapadu in Santhabommali Mandal, and Devunalthada, Suryamanipuram, Komarlathada, Sainooru, URK puram, Amalapadu, & Pallivuru villages in Vajrapukothuru Mandal, in Srikakulam District in Andhra Pradesh subject to implementation of the following conditions and environmental safeguards:

A. Specific Conditions

- (i) All the safeguard stipulated in the CRZ clearance by this Ministry vide letter no.11-88/2013-IA.III dated 03.09.2014 shall be satisfactorily implemented and six montly compliance report submitted at the regional office of MoEFCC.
- (ii) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.
- (iii) Necessary AERB clearance shall be obtained under the Atomic Energy (Radiation Protection) Rules, 2004 for operation of BSM (Beach Sand Minerals) facility.
- (iv) The mining activity will commence only after taking necessary approval of water drawl from the concerned Authority of State Government.
- (v) Implementation of Wildlife Conservation plan for Schedule-I species. The Conservation Plan should be species specific, should have allocation of budget, time frame and agencies to be responsible for the implementation for each of the target species. Conservation plan shall be approved by the State Government before starting work.
- (vi) No mining shall be carried out in the inter-tidal zone and within 100 m from HTL towards landward side.
- (vii) Identification of sand dunes shall be done prior to undertaking mining activities and their conservation shall be as per MoEF 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.
- (viii) Fencing of entire lease area, barrier of 100 meters towards sea to prevent olive turtle nesting ground.
- (ix) 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.

- (x) 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.
- (xi) 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.
- (xii) Tapping of ground water is expressly prohibited in CRZ area. A network of ground water observation wells within and outside the lease area shall be established for regular monitoring of ground water quality and water levels in the surrounding area. These analysis as per norms much be documented and sent regularly (every three month) to the Regional Office MoEF.
- (xiii) The fresh water gradient towards the sea will be maintained by close monitoring of water table. Piezometer wells to be constructed and monitored.
- (xiv) 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.
- (xv) 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.
- (xvi) Occupational health and safety measures, especially concerning radiation to be enhanced for workers who are having some ailments like hypertension, diabetes etc. should have health check-up once in six months.
- (xvii) The project proponent shall obtain Consent to Operate from the State Pollution Control Board, Andhra Pradesh and effectively implement all the conditions stipulated therein.
- (xviii) Implementations of the conditions laid down by the Andhra Pradesh Pollution Control Board vide their letter no. 294/PCB/CFE/RO-VZM/HO/2012/1673, dated 25.07.2012.
- (xix) Implementation of conditions laid down in the Mining Plan along with Progressive Mine Closure Plan which has been approved by Indian Bureau of Mines, Ministry of Mines vide Letter No. MP/AP/SRK/GNT& SILLIMANITE-227-SZ/446 dated 21/22.02.2013.

- (xx) Implementation of conditions laid down in the Mining Plan which has been approved by Atomic Minerals Directorate for Exploration and Research, Department of Atomic Energy vide Letter No. AMD/MPA/3M/TRIMEX/1788 Ha/2011, dated May 18th 2011.
- (xxi) Implementation of the Conditions, if any, as laid down by Andhra Pradesh State Coastal Zone Management Authority
- (xxii) Effective safeguard measures such as conditioning of material with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xxiii) 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 installing new piezometers during the mining operation. 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 Chennai, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.
- (xxiv) The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any operations.
- (xxv) 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 and Forests, its Regional Office, Chennai, Central Groundwater Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.
- (xxvi) As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analysed for their mineralogical composition and records maintained.
- (xxvii) Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Chennai on six monthly basis.

- (xxviii) Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM and RPM such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (xxix) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of ores and others shall have valid permissions as prescribed under Central Motor Vehicle Rules, 1989 and its amendments. The vehicles shall be covered with a tarpaulin and shall not be overloaded.
- (xxx) 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 and Forests and its Regional Office, Chennai.
- (xxxii) Implementation of Action plan on issues rose during Public Hearing. As committed by the project proponent during the public hearing 75% employment will be given to local people on priority. Hospitals, schools will be provided as part of the CSR activities with rupees ten crore. The report shall be submitted to the Regional Office of the Ministry every year.
- (xxxiii) During initial mining stages, a green belt of 7.5m barrier all around the mine lease boundary shall be made. Subsequently to develop 50m barrier zone with 5-tier plantation inside mine lease in a progressive way near the active mining sites. Adequate plantation shall be raised in the ML area, haul roads, vacant area etc. Green belt development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO. Herbs and shrubs shall also form a part of afforestation programme besides tree plantation. The density of the trees shall not be less than 2500 plants per ha. The company shall involve local people with the help of self-help group for plantation programme. Details of year wise afforestation programme including rehabilitation of mined out area shall be submitted to the Regional Office of the Ministry every year.
- (xxxiv) Adequate air monitoring stations shall be installed in areas of human habitations near the mine and the results of ambient air quality shall be maintained and regularly submitted to the Regional Office of the Ministry. The monitored data for criteria pollutants shall be regularly uploaded on the company's website and also displayed at project site.
- (xxxv) The waste water from the mine shall be treated to conform to the prescribe standards before discharging in to the natural stream. The discharged water shall be regularly monitored and report submitted to the

Ministry of Environment & Forests, Central Pollution Control Board and the State Pollution Control Board.

- (xxxv) A final mine closure plan, along with other details shall be submitted to the Ministry of Environment & Forests, 5 years in advance of final mine closure for approval.

B. General Conditions

- (i) No change in technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.
- (ii) No change in the calendar plan including excavation, quantum of beach sand mineral i.e. Illemnite, Rutile, Zircon, Monozite and Garnet and waste should be made.
- (iii) At least 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 10 micron i.e., PM₁₀) and NO_x monitoring. Location of 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. The data so recorded should be regularly submitted to the Ministry including its Regional office located at Chennai and the State Pollution Control Board / Central Pollution Control Board once in six months.
- (iv) 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.
- (v) There will be zero waste water discharge from the plant.
- (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.
- (vii) 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.
- (viii) 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.
- (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 Chennai.

- (x) The project authorities should inform to the Regional Office located at Chennai regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (xi) The Regional Office of this Ministry located at Chennai 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.
- (xii) 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 Chennai, the respective Zonal Office of Central Pollution Control Board and 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, Chennai, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.
- (xiii) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ 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.
- (xiv) 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.
- (xv) The environmental statement for each financial year ending 31st 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 respective Regional Office of the Ministry of Environment and Forests, Chennai by e-mail.
- (xvi) The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and 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 Chennai.

12. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

13. 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.

14. 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.

15. 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 Andhra Pradesh/ National Green Tribunal and any other Court of Law relating to the subject matter.

16. 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. U. Sridharan)
Scientist 'F'

Copy to:

- 1). **The Secretary**, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
- 2). **The Secretary**, Department of Atomic Energy, Atomic Minerals Directorate for Exploration and Research, Government of India, 1-10-153-156, Begumpet, Hyderabad-500 016
- 3). **The Secretary**, Department of Environment, Government of Andhra Pradesh, Hyderabad.
- 4). **The Secretary**, Department of Forests, Government of Andhra Pradesh, Hyderabad.

- 5). **The Secretary**, Department of Mines and Geology, Government of Andhra Pradesh, Hyderabad.
- 6). **The Secretary**, Department of Industries and Commerce (M-III), Govt. of Andhra Pradesh, Hyderabad.
- 7). **The Additional Principal Chief Conservator of Forests**, Regional Office Chennai, Ist and IInd floor handloom export promotion council, 34, Cathedral Garden Road, Nungambakkam, Chennai-34.
- 8). **The Chairman**, Andhra Pradesh State Pollution Control Board, Paryavaran Bhawan, A-3 Industrial Estate, Sanath Nagar, Hyderabad - 500 018
- 9). **The Member Secretary**, Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- 10). **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur- 440 001.
- 11). **The District Collector**, District Srikakulam, State of Andhra Pradesh.
- 12). **Guard File**
- 13). **MoEF Website.**


(Dr. U. Sridharan)
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