

F. No: J-11015/418/2008-IA.II (M)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

2nd Floor, Prithvi Wing,
Indira Paryavaran Bhavan,
Jor Bagh Road, Aliganj,
New Delhi-110 003

Dated: 19th September, 2022

To

M/s Steel Authority of India Limited,
Rourkela Steel Plant,
Boiani Ores Mines, P.O.: Boiani,
District: Keonjhar – 758037, Odisha.

Subject: - Amendment in EC's dated 30.07.2020 and 05.08.2021 for extension of validity of Environmental Clearance for further period of one year w.e.f 05.08.2022 to sell 0.5 MTPA Fresh Fines by road and liquidate entire Iron Ore Dump Fines from Bolani Ores Mines [ML Area 1321.45 ha] keeping total production within approved EC Capacity of 12.0 MTPA of M/s Steel Authority of India Limited, located at Village Bolani, Tehsil- Barbil, District Keonjhar, Odisha - Amendment in Environment Clearance - regarding.

Sir,

This has reference to the online proposal no. IA/OR/MIN/283567/2022 of M/s Steel Authority of India Limited for Amendment in EC's dated 30.07.2020 and 05.08.2021 for extension of validity of Environmental Clearance for further period of 3 years w.e.f 05.08.2022 to sell 0.5 MTPA Fresh Fines by road and liquidate entire Iron Ore Dump Fines from Bolani Ores Mines [ML Area 1321.45 ha] keeping total production within approved EC Capacity of 12.0 MTPA, located at Village Bolani, Tehsil- Barbil, District Keonjhar, Odisha. The mine lease area is located between Latitude 22°05'11.65848"N - 22°07'46.2869"N and Longitude 85°16'52.81330"E - 85°20'13.85260"E. The mine lease area falls under the Survey of India Toposheet no: 73 F/8 (F45H/8). The Project Proponent presented the KML file during the presentation to indicate the location of mine lease on Google Earth.

2. The Project Proponent has made an online application vide proposal no. IA/OR/MIN/283567/2022 dated 30.07.2022 and submitted Form 4 under the provisions of the EIA Notification, 2006. The proposed project activity is listed at schedule no. 1(a) Mining of Minerals under Category "A" of the schedule of the EIA Notification, 2006 as the mining

lease area is greater than 250 ha and appraised at Central level.

3. The Project Proponent submitted the chronology of the Environmental Clearance (EC) as mentioned below:

- i. Initially, the Project Proponent obtained Environmental Clearance (EC) on 21.12.2012 for enhancement of production of iron ore from 5.65 million TPA to 12.0 million TPA (ROM) in Bolani Iron Ore Mine (5.1 Sq. mile) along with installation of a new beneficiation plant of 12 million TPA throughput and pellet plant of 4.0 million TPA capacity of M/s SAIL, located at village Bolani, Tehsil Barbil, District Keonjhar, Odisha.
- ii. Subsequently, the Project Proponent obtained amendment in EC dated 21.12.2012 on 17.02.2014 w.r.t Para 6 (iii) and in addition the following was added to the EC letter "There are two adjacent mining leases in 'Bolani Ore Mines viz Bolani 5.1 Sq. miles lease' 'Bolani 6.9 Sq. miles lease'. Bolani 5.1 Sq. miles lease is the iron ore bearing area whereas Bolani 6.9 Sq. miles lease is manganese ore bearing. Common infrastructure facilities for both the mines viz. railway siding & loading yard township, tailing pond, water intake point etc. are located in 6.9 Sq. miles lease" and that the mine working will be open cast fully mechanized instead of semi-mechanized.
- iii. Thereafter, PP obtained EC on 30th July, 2020 under para 7(ii) of EIA Notification 2006 (as amended) for change in excavation & dispatch pattern by increasing excavation and dispatch of iron ore fines from existing Fines Dumps up to 3.0 MTPA (from present 0.5 MTPA) and Modification of Mining parameters including updating of reserves and waste generation keeping total production within approved EC capacity of 12 MTPA. Bolani Iron Ore Mine (1321.45 ha) is located at Villages Boiani&Balagoda and Karo Reserve Forest (R.F.) in Barbil Tehsil, Champua Subdivision, Keonjhar District of Odisha with one of the specific condition that *"This amendment is valid for a period of one year and the same may be extended after the site visit or compliance monitoring by Regional Office, whichever is earlier"*.
- iv. Further, PP obtained EC vide letter dated 05.08.2021 for amendment/extension of validity of EC dated 30.07.2020 for one year along with permitting dispatch of 8.5 MTPA ROM Iron Ore from mines, 1.5 MTPA from fines dump by SAIL's Bolani Rly. Siding and dispatch of 0.5 MTPA from Iron Ore from Mines and 1.5 MTPA from fines dump by Public Sidings Bolani/Barbil or by Road keeping total production within approved EC Capacity 12 MTPA under Para 7(ii) of the EIA Notification 2006.

4. The Project Proponent submitted that subsequent to the amendment in EC dated 05.08.2021, it was planned to sell 2.0 MT of dump fines during FY 2021-22. However, during FY 2021-22, only 4.4 lakh tonnes of dump fines could be sold as the sale of dump fines was affected due to the following reasons:

- 1) MMDR Amendment Act, 2021 was notified on 28.03.2021 imposing additional statutory payment @ 150 % royalty on sale of iron ore from the captive mines including on dump fines from Bolani.

- 2) Hence, for want of clarification from Ministry of Mines, Govt. of Odisha on applicability of provisions of MMDR Amendment Act 2015 on sale of dump fines, Govt. of Odisha had suspended all the iron ore dispatches against the sale w.e.f. 17.05.2021. Consequent upon clarification issued by Ministry of Mines, Govt. of Odisha vide letter dated 25.05.2021, Govt. of Odisha vide letter dated 26.05.2021 allowed resumption of dispatches against sale of dump fines from Bolani by paying royalty applicable for highest grade of lump i.e. Fe > 65% as Bolani Mine has permission for exemption of stacking & sampling for fresh production. This had resulted in significant increase in statutory payments on sale of dump fines. Due to increase in statutory payments coupled with fall of iron ore prices, several auctions for sale of low grade dump fines failed till Nov'2021,
- 3) Keeping in view of successive failures of auction for sale of dump fines, SAIL-BOM took up the matter with Govt. of Odisha and then, permission was granted by Govt. of Odisha on 17.11.2021 to charge royalty at actual grade of Fe applicable for fines. Since then, PP able to sell the dump fines from Bolani Mine. Till 01.07.2022 only a meager quantity to the tune of 0.9032 MT out of 7.07 MT Fines from old Fines dumps located inside both the leases of Bolani Ores Mines, SAIL, could be sold in open market from the start of selling process. Keeping in view, the same trend and present market scenario, it can be expected that around 6.17 MT of low grade dump fines will be left unsold till the expiry of the existing amended EC dated. 05.08.2021.

In view of the above, Project Proponent has requested to extend the validity of the EC amendment dated 30.07.2020 with further amendment on 05.08.2021 for further period of 03 (three) more years to completely liquidate the iron ore dump fines stored at Bolani Ores Mines of M/s SAIL within the already permitted EC capacity of 12 MTPA under Para 7(ii) of EIA Notification 2006.

5. The 5.1 Sq. mile mining lease was granted for a period of 30 years with validity from 11.04.1960 to 10.04.1990. 1st renewal of mining lease was granted by Govt. of Odisha, Steel & Mines Department vide Lr No. III(A)SM-1/97-10731/SM, dated 25.11.1999 for a period of 20 years with effect from 10.04.1990 to 09.04.2010. The 2nd renewal of mining lease has been granted by Govt. of Odisha, Steel & Mines Department vide express order no: III(A)SM-1/97-10731/SM dt 29.05.2014 for a period of 20 years with effect from 10.04.2010 with validity upto 09.04.2030.

6. The Project Proponent submitted that the total mine lease area is 1321.45 ha, out of which 1312.86 ha is Forest Land and 8.59 ha is Non-Forest Land. The Forest Clearances for the forest land within the ML over an area of 1225.77 ha has been accorded by MoEF (FC Division) vide letter no. F.No. 8- 17/1997-FC (pt.) dated 11.12.2012, F.No. 8- 17/1997-FC (pt.) dated 09.07.2013 and F.No. 8-17/1997- C (vol.) dated 12.11.2014. Further, Stage-II Forest Clearance for 87.09 ha Sabik forest land (Non-forest land recorded as forest as on 25.10.1980) has also been obtained vide MoEF&CC, Govt. letter no. F. No. 8-17/2016-FC

dated 06.11.2019. Stage-II Forest Clearance exists for the total forest land within the mining lease area.

7. The Project Proponent submitted the Approval of Modification of Review of Mining Plan along with Progressive Mine Closure Plan over an area of 1321.45 ha approved by Indian Bureau of Mines vide Lr No. MRMP/A/12-ORI/BHU/2020-21 dated 08.09.2020 for the period 2020-21 to 2024-25.

8. The Project Proponent submitted that the ambient air quality monitoring has been carried out at four locations i.e. A1 to A4 from March to May 2022 (Summer Season). PP reported that the maximum PM_{10} values ranged from 64.5 to 69.7 $\mu g/m^3$ and $PM_{2.5}$ varies from 35.2 to 37.7 $\mu g/m^3$ but the C_{98} concentration for PM_{10} varied from 61.5 to 68.6 $\mu g/m^3$ and $PM_{2.5}$ varies from 33.5 to 37.7 $\mu g/m^3$. The results were compared with National Ambient Air Quality Standards (NAAQS), 2009 of Central Pollution Control Board (CPCB) and indicated that the ambient air quality for PM_{10} , $PM_{2.5}$, SO_2 , NO_2 and CO are within the norms for "Industrial, Residential, Rural & Other Areas". PP also submitted that the monthly averages of Suspended Particulate Matter (SPM) from April 2021 to March 2022 are well within the prescribed norms of 1200 $\mu g/m^3$. The depth to water level at three locations in August 2021 ranged from 3.76 to 14.07 m below ground level (bgl), November 2021 ranged from 4.02 to 14.47 m bgl, February 2022 ranged from 4.4 to 15.1 and May 2022 ranged from 4.2 to 15.37. Among the monitoring locations, a rise in water level is seen during August and November 2022 as compared to other months.

9. The Project Proponent reported that a scientific study has been conducted by IIT Kharagpur to estimate the particle size distribution of fugitive emissions that is likely to emerge from Handling of Dump Iron Ore Fines and Fresh Iron Ore Fines including Storage at Sites and Railway Sidings at Bolani Ores Mines. The study revealed that in terms of contribution to mass concentration, the particle size distribution of dump fines (PM_{10} : 14-23 %, $PM_{1-2.5}$: 12-24 %, and $PM_{2.5-10}$: 59-70 %) were similar to that of distribution of fresh fines (PM_{10} : 13-22 %, $PM_{1-2.5}$: 14-18 %, and $PM_{2.5-10}$: 60-70 %). Therefore, the fugitive dust has comparable distribution of mass percentage with respect to size range of the particles in the case of fresh fines as well as in the case of dump fines. In terms of particle number concentration, a similar result was obtained. The smallest size particles (up to 0.275 μm) accounted for 48.3- 52.9% of the total fugitive emissions in dump fines and 42.2- 51.3% in fresh fines. The proportion gradually decreased with increase in particle size. For both the cases, 99% of the particles were smaller than 1 μm .

10. The Project Proponent has submitted that the Traffic Density was carried out on the proposed haul routes at 3 locations at hourly intervals continuously for 10 days from 1st May 2021 to 10th May 2021 such as TD-1: Bolani – Barbil Road near Karo River Bridge, TD-2: Bolani – Barbil Road near W. Huttings and TD-3: Road to Bolani Public Siding near W. Huttings. PP also submitted that the present maximum traffic on the Bolani – Barbil Road is ~5900 PCUs/day, which includes dispatch of dump fines from Bolani Ores Mines by road as

compared to its recommended design service volume of 13800 PCUs/day. Therefore, the Bolani – Barbil Road is further having additional capacity to the tune of 7900 PCUs/day, i.e. can handle about additional 7 MTPA road traffic. PP reported that present maximum traffic volumes (at TD1, TD2 & TD-3) are within the design service volumes of the roads. Therefore, proposed continuation of the road transport to the tune of 2 MTPA from Bolani Ores Mines will not have any adverse impact on the traffic infrastructure at Bolani.

11. The Project Proponent submitted the Certified Compliance Report (CCR) issued by the Integrated Regional Office, Bhubaneswar on 25.07.2022. The site visit was conducted by the Integrated Regional Office, Bhubaneswar on 15.06.2022. PP also submitted the Consent to Operate issued by the Odisha State Pollution Control Board, Bhubaneswar vide letter no. 5128/IND-I-CON-242 dated 30.03.2022 which is valid till 31.03.2023 or till the validity of the Environmental Clearance Order, whichever is earlier. PP also submitted an undertaking vide letter dated 16.08.2022 stating that the all conditions stipulated in the EC letter dated 21.12.2012, with amendments on 30.07.2020 and 05.08.2021 shall be complied and further additional conditions if any, to be stipulated by the MoEF&CC, to liquidate remaining 6.17 million tonnes dump iron ore fines within the mining leases of Bolani Ores Mines through selling in open market.

12. Observation and Recommendation of the Committee:

The EAC noted that the instant proposal is for amendment in EC's dated 30.07.2020 and 05.08.2021 for extension of validity of Environmental Clearance for a further period of 3 years w.e.f 05.08.2022 to completely liquidate the iron ore dump fines stored at Bolani Ores Mines of M/s SAIL within the already permitted EC capacity of 12 MTPA under Para 7(ii) of EIA Notification 2006. The EAC also noted that during the meeting, PP has informed the EAC that there is no change in scope of work from earlier EC amendment granted on 05.08.2021.

The EAC deliberated on the Certified Compliance report issued by the Integrated Regional Office, Bhubaneswar on 25.07.2022. The EAC reviewed the air quality monitoring along the transportation route, particle size analysis of the emissions that are likely to emerge from the dumps and storage at the site and railway sliding and the standard dispatch practices being followed during transportation of the mineral. The EAC noted that the air quality in and around the transportation route is well within the norms of National Ambient Air Quality Standards (NAAQS).

Project Proponent has informed the EAC that the Bolani – Barbil Road is designed to handle an additional carrying capacity of about 7900 PCUs/day, i.e. can handle about 7.0 MTPA road traffic as per IRC:64 "Guidelines for Capacity of Roads in Rural Areas". Project Proponent also informed the EAC that the liquidation of fines will not only result in effective utilization of these low grade minerals, but also eliminates environmental hazards associated due to storage of fines. Based on the above discussions held, the EAC **recommended** the proposal of M/s SAIL for amendment in EC's dated 30.07.2020 and 05.08.2021 for extension of validity of EC for a further period of one year along with permitting dispatch of 8.5 MTPA

ROM Iron Ore from mines, 1.5 MTPA from fines dump by SAIL's Bolani Rly. Siding and dispatch of 0.5 MTPA from Iron Ore from Mines and 1.5 MTPA from fines dump by Public Sidings Bolani/Barbil or by Road keeping total production within approved EC Capacity 12.0 MTPA located at village Boiani, Tehsil- Barbil, District Keonjhar, Odisha along with the additional specific conditions.

13. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto hereby accords the above mentioned amendment in EC after accepting the recommendation of EAC during its 2nd EAC (Non-Coal Mining) Meeting held during 16th – 18th August, 2022 for amendment in EC's dated 30.07.2020 and 05.08.2021 of M/s Steel Authority of India Limited for extension of validity of EC for a further period of one year along with permitting dispatch of 8.5 MTPA ROM Iron Ore from mines, 1.5 MTPA from fines dump by SAIL's Bolani Rly. Siding and dispatch of 0.5 MTPA from Iron Ore from Mines and 1.5 MTPA from fines dump by Public Sidings Bolani/Barbil or by Road keeping total production within approved EC Capacity 12.0 MTPA located at village Boiani, Tehsil- Barbil, District Keonjhar, Odisha along with the additional specific conditions.

- i. The Project Proponent should restore the mine lease area by planting with native species only.
- ii. The Project Proponent shall take adequate measures to prevent the washout of fines during monsoon season. Project Proponent shall also ensure that the desilting should be carried out at regular intervals.
- iii. Project Proponent shall conduct Bio-assay test of Karo River and Jhinkaria Nallah on half yearly basis and submit the status of quality of river to Ministry's IRO with six monthly compliance report.
- iv. Project Proponent shall restrict seepage of water from Tailing Pond and plan of action shall be submitted to Ministry's IRO and measure concentration of heavy metals regularly.
- v. Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent".

- vi. PP shall deploy only 40-50 tones covered trucks/dumper to reduce fleet size till railway siding.
 - vii. PP shall deploy of atleast 10 nos of fog cannon with adequate throw length for mitigation of fugitive dust on the haul road, storage yard, crushers, during handling at fines loading unit and transportation route in addition of already proposed Fugitive Dust Mitigation Measures implemented at BOM.
 - viii. No village road shall be used for transportation of mineral and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc.
 - ix. Yearly plantation scheme and three tire green belt development scheme to be done by PP and a record of which must be submitted to IRO with satellite imagery showing the progressive change in land use with six monthly compliance report.
 - x. All other terms and Conditions mentioned in earlier EC dated 21.12.2012, 17.02.2014, 30.07.2020 and 05.08.2021 shall remain unchanged.
13. This issues with the approval of Competent Authority.

Yours faithfully,

Pankaj Verma

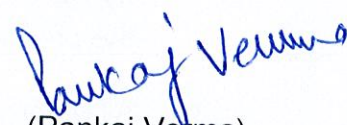
(Pankaj Verma)

Scientist 'E'

Copy to:

- i. **The Secretary**, Ministry of Mines, Government of India Shastri Bhawan, New Delhi.
- ii. **The Chief Secretary**, Government of Odisha, Secretariat, Bhubaneswar.
- iii. **The Secretary**, Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.
- iv. **The Secretary**, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
- v. **The Secretary**, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
- vi. **The Secretary**, Department of Steel and Mines, Government of Odisha, Secretariat, Bhubaneswar.
- vii. **The Member Secretary**, Odisha Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- viii. **The Deputy Director General of Forests (C)**, Ministry of Environment, Forest and Climate Change, Integrated Regional Office, A/3, Chandersekharpur, Bhubaneswar – 751023.

- ix. **The Chief Wildlife Warden**, Prakurti Bhawan, 5th floor, BDA Apartment, Nilakanthanagar, Nayapalli, Bhubaneswar-751012, Odisha.
- x. **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
- xi. **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440001.
- xii. **The Member Secretary**, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001.
- xiii. **The District Collector**, Keonjhar District, Govt. of Odisha.
- xiv. **Guard File.**
- xv. **PARIVESH Portal.**


(Pankaj Verma)
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