

**PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL  
COMMITTEE, ODISHA HELD ON 12<sup>TH</sup> APRIL 2023**

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The SEAC met on 12<sup>th</sup> April 2023 at 10:30 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri Sashi Paul. The following members were present in the meeting.

- |                              |   |                       |
|------------------------------|---|-----------------------|
| 1. Sri Sashi Paul            | - | Chairman (through VC) |
| 2. Dr. K. Murugesan          | - | Member Secretary      |
| 3. Dr. Rabi Narayan Patra    | - | Member (through VC)   |
| 4. Dr. Chittaranjan Panda    | - | Member                |
| 5. Prof. (Dr.) H.B. Sahu     | - | Member (through VC)   |
| 6. Er. Fakir Mohan Panigrahi | - | Member (through VC)   |
| 7. Prof. (Dr.) B.K. Satpathy | - | Member                |
| 8. Dr. K.C.S Panigrahi       | - | Member (through VC)   |
| 9. Shri Jayant Kumar Das     | - | Member                |

Draft proceeding of the meeting was finalized by the members through e-mail and final proceeding of the meeting was confirmed by the members through e-mail. The agenda-wise proceedings and recommendations of the committee are detailed below.

**CONSIDERATION OF OLD PROPOSALS (COMPLIANCE RECEIVED): 04 NOS.**

**ITEM NO. 01**

**PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR SARUABIL CHROMITE BLOCK (ML AREA: 246.858 HA) WITH A PRODUCTION OF 1.0 MTPA CHROMITE ORE (ROM) WITH MAXIMUM EXCAVATION OF 6.48 MILLION CUM PER ANNUM THROUGH OPENCAST MINING AT VILLAGES SARUABIL, KAMARDA, & TAILANGI UNDER SUKINDA TEHSIL, JAJPUR DISTRICT FOR M/S. TATA STEEL MINING LIMITED OF SRI BIBHU DUTTA NANDA - EC**

1. The proposal is for Environmental Clearance for Saruabil Chromite Block (ML Area: 246.858 Ha) with a production of 1.0 MTPA Chromite Ore (ROM) with maximum excavation of 6.48 Million Cum per Annum through Opencast Mining at villages Saruabil, Kamarda, & Tailangi under Sukinda Tehsil, Jajpur District for M/s. Tata Steel Mining Limited of Sri Bibhu dutta Nanda.
2. The project falls under Category-B ( $\leq 250$  ha in respect of major minerals other than Coal) as per MoEF&CC Notification No. S.O. 1886(E) Dated 20<sup>th</sup> April, 2022.
3. The M/s Misrilall Mining Pvt. Ltd. operated in Saruabil Chromite Block from 15.05.1954 till 31.03.2020. Odisha Government had issued the Letter of Intent (LOI) for Chromite ore mining in Saruabil Chromite Block to Tata Steel Mining Limited (formerly known as M/s T S Alloys Limited) over an area of 246.858 Ha for a period of 50 years vide letter no. 223/SM dated 6th January 2020. In terms of section 8B(2) of MMDR Act, 1957 read with rule 9A(4) of MCR, 2016, the bidder is deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee for a period of two years from the date of execution of the lease deed or till the date of getting fresh approvals, clearances, licenses, permits and the like whichever is earlier vide letter no. 4174/SM dated 29th May 2020. Lease deed for the Saruabil Chromite Block was executed on 26th June 2020.

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

4. Terms of Reference was granted by MoEF & CC dated 29.12.2020. Public Hearing was conducted on 22.12.2021.
5. The proponent has applied to SEIAA, Odisha for EC as category B as per MoEF&CC Notification No. S.O. 1886(E) Dated 20<sup>th</sup> April, 2022.
6. **Location and Connectivity:** The Saruabil Chromite Block is spread over an area of 246.858 Ha and it falls in Survey of India Topo Sheet Open Series Map No. F45N16 (73G/16) with co-ordinates Latitude: N 21°02'42.64" to 21°03'49.65" and Longitude: E 85°48'35.38" to 85°49'49.92". Saruabil Chromite Block is situated in Jajpur district. Tomka Mangalpur State Highway passes through the lease area. The nearest National highway, NH – 200, is situated about 10.5 Km aerial distance from the proposed area and the Chromite block is at about 23 Km Road distance from Daitari Railway Station and 136 km distance from Biju Patnaik airport, Bhubaneswar.
7. The previous Environment Clearance for the project was granted in the name of M/s Mishrilall Mines Pvt. Ltd. for production of 0.35 MTPA Chromite Ore with expansion of Chromite Ore beneficiation plant from 20 TPH to 30 TPH by MoEF vide letter no. J-11015/72/2010-IA. II(M), dated 20.07.2018.
8. Mining Plan approved by IBM, Bhubaneswar dated 18.05.2018. Mining Plan of TSML was approved on 10.11.2020.
9. Environmental Clearance for production of 0.35 MTPA Chromite Ore and enhancement of Chrome Ore beneficiation plant from 20 TPH to 30 TPH from MoEF&CC dated 20.07.2018. However, COB plant has been dismantled by previous lessee.
10. Forest Diversion over 224.63 Ha of entire forest land involved from MoEF&CC dated 16.01.1997, (As per Sabik settlement application for diversion of 17.14 ha is in process)
11. The proponent has obtained Consent to Establish from SPCB, Odisha dated 29.11.2016 and Consent to Operate from SPCB, Odisha dated 16.03.2022.
12. Surface right from District Collector, Jajpur over 242.581 Ha has been obtained.
13. Ground water with drawl permission has been obtained from CGWA, (Gol) dated 16.07.2019.
14. Deep hole blasting & use of HEMM has been obtained from DGMS, (Gol) dated 19.03.2019 (TSML has also obtained the fresh 106 (2) (B) on 28.05.2021).
15. **Method of Mining** - The current project involves mining of Chrome Ore (Chromite) through a Fully Mechanized Opencast mining method with HEMM and deep hole blasting. The proposed production capacity is 1.0 Million Tonnes Per Annum of Chromite Ore (ROM) with total excavation of 6.48 Million Cubic Meters per Annum. The bench height will be about 6 m with width of 10 m. Bench slope has been designed at 70°. Maximum Overall Pit Slope angle 30°. Study of further slope steepening has been initiated under the guidance of CIMFR, Dhanbad. For Drilling and blasting - 150 mm diameter holes are drilled with depth of 6 to 8 m in ore body. Holes will be charged with SME with booster. Powder factor of 7 MT/kg in Ore. For Transportation - Dumpers (44 nos of 35 tonne capacity) are being used to transport the ore from quarry to stack yard.
16. **Production Details for the plan period (2020-21 to 2024-25)**

<b>Ore &amp; OB Excavation during the plan period (2020-21 to 2024-25)</b>
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Proceedings of the SEAC meeting held on 12.04.2023  
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Environmental Scientist, SEAC

Year/ Pit No.	Total ROM Production (MT)	Total ROM Production (CuM)	OB/Waste Volume from Development of Pits (CuM)	Total Excavation (CuM)
1 <sup>st</sup> year (2020-21)/ B & C	150000	44200	1,195,000	12,39,200
2 <sup>nd</sup> year(2021-22)/ B & C	400000	117800	1,491,000	16,08,800
3 <sup>rd</sup> year (2022-23)/ B & C	450000	132500	2,007,000	21,39,500
4th year (2023-24)/ B & C	700000	206100	3,639,000	38,45,100
5th year (2024-25)/ B & C	900000	264900	5,571,000	58,35,900
5th year (2024-25)/ D	100000	29400	619,000	6,48,400
<b>Sub Total (5<sup>th</sup> Year)</b>	<b>1000000</b>	294300	6,190,000	64,84,300
<b>Total</b>	<b>2700000</b>	794900	14,522,000	1,53,16,900

17. **Power Requirement:** The fully mechanized mining will be done in a three shift of 8 hours each. The use of electricity will be for lighting/illumination/pumping purposes in mining operations and will be obtained from CESU/ Tata Power/ Any other. The electricity/DG power will be provided at the office, camp, and mines. Power requirement of ~1000 KVA would be met from local grid maintained by Central Electricity Utility Services (CESU)/ Tata Power/ Any other.

18. **Water Requirement:** Total water requirement has been estimated to be 330 KLD. There are 2 borewells located inside the mine lease area. As the mine workings has intersected the groundwater table, seepage of groundwater is expected. Dewatering of mine will be undertaken and the water will be utilized for various purposes. Water requirement and usage has been detailed in table.

Activities	Daily Water Requirement, KLD	Effluent Generation, KLD	Losses, KLD	Treatment	Source of water
Drinking & Domestic Use, Canteen	40.00	32.00	8.00	Septic tank/ Soak Pit	Ground water from Borewell
Dust suppression	250.00	0.00	250.00	--	Mine pit water
Plantation & Gardening	100.00	0.00	100.00	--	Mine pit water
Workshop, Wheel wash & Vehicle wash	10.00	8.00	2.00	Treatment in Oil & Grease trap, recycled for wheel wash & dust suppression	Mine pit water
ETP wash water	20.00	0.00	20.00	--	Mine Pit water
<b>Total</b>	<b>420.00</b>	<b>40.00</b>	<b>380.00</b>		

19. Baseline study was conducted during October – December, 2020. The observations are Ambient air quality monitoring carried out in 8 different sampling locations. During the study period, the concentration of PM10 = 29 to 64.1 µg/m<sup>3</sup>, PM2.5 = 17 to 38.5 µg/m<sup>3</sup>, SO<sub>2</sub> = <4 to 8.1 µg/m<sup>3</sup>, NO<sub>x</sub> = <9 to 13.6 µg/m<sup>3</sup>.
20. The ground water samples were collected from 8 different sampling stations and analyzed as per IS 10500:2012 to assess the portability of the ground water. As Per the data it has been observed that the pH ranges from 5.06 to 7.78, total hardness varies from 14 to 180 mg/l, chloride ranges from 3.8 to 38 mg/l, TDS ranges from 20 to 316 mg/l.
21. The surface water samples were collected from 8 different sampling stations. As Per the data it has been observed that the pH ranges from 7.21 to 7.84, DO ranges from 4.4 to 6.3 mg/l, COD ranges from 6.0 to 20 mg/l.
22. The ambient noise levels were measured in 8 sampling locations. As Per the data it has been observed that Ambient noise ranges from 36.7 dBA to 60.4 dBA.
23. The soil samples were collected from 12 different sampling stations. As Per the data it has been observed that pH ranges from 7.03 to 7.24, SAR ranges from 2.6 to 4.4 %, clay percent ranges from 59.8 to 73, all the metals are below detectable level.
24. **Employment Potential** - The project will generate 650 manpower in the mine.
25. Total Cost of the proposed project will be ` Rs 179.91 crore with a recurring cost of 66.93 crores and EMP cost is ` Rs 26.75 crore with a recurring cost of 1.79 crores.
26. The project proponent along with the consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar** made a detailed presentation on the proposal on 03.08.2022.
27. The SEAC in its meeting held on dated 03-08-2022 decided to take decision on the proposal after receipt of certain information / documents from the proponent.
28. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent																
1.	Comparative statement of salient physical features and salient features with reference to environmental parameters, pollution load of the existing mines and proposed expansion shall be submitted.	<p>Air Environment</p> <p><b>Table 1 Comparison in pollution load for existing and proposed production (µg/m<sup>3</sup>)</b></p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Parameters</th> <th style="text-align: center;">Existing</th> <th style="text-align: center;">Proposed</th> <th style="text-align: center;">% Increase</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Air Pollution</td> <td style="text-align: center;">61.2</td> <td style="text-align: center;">67.2</td> <td style="text-align: center;">4.67</td> </tr> </tbody> </table> <p>Water Environment</p> <p><b>Table 2 Water Requirement for existing and proposed production (KL/T)</b></p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Parameters</th> <th style="text-align: center;">Existing</th> <th style="text-align: center;">Proposed</th> <th style="text-align: center;">% Increase</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Parameters	Existing	Proposed	% Increase	Air Pollution	61.2	67.2	4.67	Parameters	Existing	Proposed	% Increase				
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Proceedings of the SEAC meeting held on 12.04.2023  
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Environmental Scientist, SEAC

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2.	Tailing pond and its design existing and proposed and how it will contribute to zero discharge concept.	The previous Environmental Clearance was granted for production of 0.35 MTPA Chromite Ore with expansion of Chromite Ore beneficiation plant from 20 TPH to 30 TPH by MoEF&CC vide letter no. J-11015/72/2010-IA. II(M), dated 20.07.2018 to M/s Misrilall Mines Pvt. Ltd. After TSML leased in Saruabil Chromite Block during the auction process, the same EC was vested to TSML for fifty (50) years as per MMDR Amendment Act, 2021. TSML has not proposed any beneficiation plant within the lease area during Mining Plan approval. Previous lessee has dismantled the COB plant and cleared the area. As reported by previous lessee the EC was approved on 2018 and they have not operated COB plant a single day, thus no tailing was generated, which was also confirmed by TSML during the inspection of ground condition. It is also evident from the below photographs																					
3.	Approval letter for 33KLD usage of ground water and application made for proposed expansion to be submitted.	Previous approval letter from Central Ground Water Authority (CGWA) vide letter No.21- 4(73)/CGWA/SER/2008-686 dated 16.07.2019 for withdrawal of ground water of 147,045 CuM/ year consisting of 12,045 CuM/ year through two existing bore wells and 1,35,000 CuM/ year through dewatering the mine seepage from mine pit ( <b>Annexure- I</b> ). The same has also been vested to TSML as per the MMDR Amendment Act, 2021  <b>(Annexure - II).</b>  Fresh application for withdrawal of 50KLD ground water is attached as <b>Annexure – III.</b>																					
4.	Detailed plan for controlling hexavalent	Major hexavalent Chromium concentration is observed from the mine quarry water and run-off from ore stack yard. There are some traces of hexavalent																					

Proceedings of the SEAC meeting held on 12.04.2023  
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Environmental Scientist, SEAC

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	Chromium in ground water, surface water and soil surface.	chromium is found in run-off from overburden dumps. As it is an open cast mines, the seepage water is stored in sumps of quarry floor and is simultaneously pumped to Effluent Treatment Plant (ETP) for treatment. During rainy days the surface run-off from ore stack yard and overburden dumps are channelized through garland drains with check dam & settling pit to mine quarry for storage and afterward pumped to ETP for treatment of Cr+6 and Total Suspended Solid (TSS). The treated water is then used for different process such as dust suppression, vehicle washing, plantation and garden use. On monthly basis the ground water quality is being investigated from bore wells to know any contamination of ground water through MoEF&CC & SPCB certified laboratory. At any point of time, no contaminated water from mines is discharged to any soil surface without treatment. The construction activities for installation of 1200 m3/Hr ETP to treat all the surface run off and mine quarry water without any storage, is in progress.															
5.	Suggestions for adaptation/evaluation of new technologies like Ion Exchange Technology, Membrane technology for removal of hexavalent chromium.	<p>Considering the quality and contamination of the inlet water (high TSS and low Cr+6 concentration) and the previous technical research report from IIT, Kharagpur, the mine quarry water and surface run-off is treated with FeSO4 at acidic pH for faster the Cr+6 to Cr+3 reduction process.</p> <p>Other treatment technologies used for Cr+6 contaminated water have some limitations which is given below.</p> <table border="1" data-bbox="496 1032 1422 1930"> <thead> <tr> <th data-bbox="496 1032 735 1155">Process Name</th> <th data-bbox="735 1032 963 1155">Type of Process</th> <th data-bbox="963 1032 1214 1155">Description</th> <th data-bbox="1214 1032 1422 1155">Comments/Remarks</th> </tr> </thead> <tbody> <tr> <td data-bbox="496 1155 735 1644">Liquid – Liquid Reduction</td> <td data-bbox="735 1155 963 1644">Physical</td> <td data-bbox="963 1155 1214 1644">Amine-based extractants  (Hard bases) preferably  long-chain quaternary  ammonium or tertiary  amine-based compounds</td> <td data-bbox="1214 1155 1422 1644">Not feasible for large volume of water</td> </tr> <tr> <td data-bbox="496 1644 735 1930">Chemical Reduction</td> <td data-bbox="735 1644 963 1930">Chemical</td> <td data-bbox="963 1644 1214 1930">Reduction to Cr(III) using  bisulphate/ Ferrous  sulphate &amp; subsequent</td> <td data-bbox="1214 1644 1422 1930"> <ul style="list-style-type: none"> <li>• Used in the existing ETP plant</li> <li>• Comparatively high sludge Generation</li> <li>• Treatment of large volume</li> </ul> </td> </tr> </tbody> </table>				Process Name	Type of Process	Description	Comments/Remarks	Liquid – Liquid Reduction	Physical	Amine-based extractants  (Hard bases) preferably  long-chain quaternary  ammonium or tertiary  amine-based compounds	Not feasible for large volume of water	Chemical Reduction	Chemical	Reduction to Cr(III) using  bisulphate/ Ferrous  sulphate & subsequent	<ul style="list-style-type: none"> <li>• Used in the existing ETP plant</li> <li>• Comparatively high sludge Generation</li> <li>• Treatment of large volume</li> </ul>
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				precipitation using Lime and Alkali.	ofwater
		Adsorption	Physical	Costly chemical used such as titanium dioxide, Zeolite, Goethite etc	<ul style="list-style-type: none"> <li>• Cost very high</li> <li>• Due to high TSS, technology will not be feasible</li> </ul>
		Membrane Filtration Technology	Physicochemical	Different membranes like inorganic membrane, liquid membrane, polymeric membrane etc.	<ul style="list-style-type: none"> <li>• Cost very high</li> <li>• Generation of high reject</li> <li>• Short life of membrane</li> <li>• Filter bed chock due to high TSS</li> </ul>
		Ion Exchange Technology	Physicochemical	Different ion exchange Resins used	<ul style="list-style-type: none"> <li>• High cost</li> <li>• Selectivity high</li> <li>• Not feasible for high volume of effluent and high TSS</li> </ul>
		Electrochemical Process	Physicochemical	Electrocoagulation can remove heavy metals from effluents using electromotive force	<ul style="list-style-type: none"> <li>• pH dependent</li> <li>• High electricity consumption</li> <li>• High silt deposition on electrode and efficiency is low</li> </ul>
		Phytoremediation	Biological	Aquatic plant used for extraction of Cr(VI)	<ul style="list-style-type: none"> <li>• Large area needed</li> <li>• Retention time more than 15 days</li> <li>• Not feasible for large volume of effluent</li> </ul>

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		The present treatment process/technology is quite viable while treating huge amount of water. However, latest treatment process has been designed by civil department of IIT, Kharagpur for the upcoming ETP and we will continuously explore new technologies for treatment of same in near future.
6.	Effective measures taken safety of Damsala Nala.	It is ensuring that no single contaminated water is being discharge to the Damsala Nalla from the mining area. Water from mine quarry, surface run-off from ore stack yard and overburden dump is being treated at ETP and the excess water from ETP is discharged to the Damsala Nala. Online continuous Effluent Monitoring station is installed at ETP in-let and Out-let to monitor the water quality, which connected to the SPCB server without any intermediated server. We are also continuously analyzing the quality Damsala Nala before and after of the lease area. Quarterly, the flow rate of the Damsala Nala is being monitored and reported to SPCB, Odisha MoEF&CC.
7.	Cross-sectional dimension of retaining wall, check dam and garland drain shall be furnished.	<p>At the toe of the overburden dumps approximately 2804 mtrs of retaining wall, 4159 mtrs of garland drain and 15 nos of settling pits are maintained. As per approved mining plan, protective measures shall also be undertaken during conceptual period and maintained regularly. The details of protective measures to be constructed around proposed dump during the plan period will be as follows (Table 6):</p> <p>At the base of dumps 7 &amp; 8, retaining walls over 2078 m &amp; 1088 m lengths respectively along with garland drains over 1730 m &amp; 1080 m respectively shall be constructed. During the plan period, these retaining walls shall be maintained/ reconstructed. Table 6 shows the details of construction to be undertaken for retaining walls to check rolled down debris from side wall of the dump in a phased manner during the plan period of 5 years (2020-21 to 2024-25). Retaining walls will be 1.5m visible height and 1.0 m thick (Table-1)</p> <p>Followed with retaining wall garland drain shall be constructed which will be 1 m wide x 1.0 m deep to channelize water being drained from dumps phase wise during 5 years (2020-21 to 2024-25) plan period. Check dams at every 300 m in the garland drain shall also be constructed during construction of garland drain. This will help in accumulation of sediments during flow of water which shall be cleaned regularly for easy flow of water to the settling tank.</p>
8.	Report on mining activity done on forest and non-forest area.	Mining activity is being carried out only in diverted forest area (224.63ha) out of total forest land of 241.77Ha as per Mining Plan approved by Indian Bureau of Mines, Govt. of India. During the plan period (2020 – 2025) Mining activity will be carried out in 90.7 ha and waste dump in 100ha. In non-forest land of 5.088 ha, no mining activity is proposed during the plan period. The diversion of non-diverted forest area of 17.14 ha is under process for diversion and the area was kept intact in as is condition. Land details are given below:
9.	Details of Solar generation to be used.	Presently, we are conducting the Energy Audit with the Power Tech Consultants, K-8-82, Kalinganagar, Ghatikia, Bhubaneswar, Odisha-751029. After getting the recommendations we will further working it to reduce the consumption. As per our Sustainability target as “PLAN – A”, we have

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		installed the solar lights in mines haul road and a plan is under process to produce about 30% of the energy requirement from solar installations. In this regard, TSML is involved Tata and Reliance solar power to finalize the work contract for solar installation in both roof top and open areas.
10.	Nature of 5ha. Non forest land present in mining area.	Nature of 5 ha of Non Forest land is Patita and Gharabari kisam in our mining lease area.
11.	Copies of compliance to all ADS by the MoEF&CC, Govt. of India and copies of minutes of all meetings of EAC of MoEF&CC, Govt. of India.	No ADS was requested by MoEF&CC after TOR presentation, copy of EAC meeting is attached as Annexure – IV.
12.	Compliance to earlier EC conditions duly certified by the Regional Office, MoEF&CC, Bhubaneswar and Compliance to CTE & CTO conditions duly certified by the SPCB, Odisha.	Certified copy of the previous EC condition and compliance is attached as <b>Annexure – V</b> . Also, Compliance to CTE & CTO conditions duly certified by the SPCB, Odisha is attached as <b>Annexure VI</b> .
13.	Tailings pond and ETP management with flow diagram and water balance.	<p>M/S. TSML has not proposed any COB plant during the plan period, thus tailing generation will be zero.</p> <p>Pumped out mine water is allowed in to the Effluent Treatment Plant (ETP) designed by the department of Civil Engineering, IIT, Kharagpur in May, 2013 where dissolved Cr6+ is precipitated as Chromium hydroxide (Cr(OH)3) along with Iron hydroxide (Fe(OH)3) after mixing with ferrous sulphate (FeSO4) solution and lime (Ca(OH)2)/ sodium hydroxide (NaOH). The precipitates are settled out in the sludge pond and clear supernatant water is discharged for dust suppression on haul roads and green belt development and excess water from ETP water is discharged to Damsal nala. The project design for Chromium Effluent Treatment Plant (ETP) at Saruabil Chromite Mines has been designed and modified by IIT, Kharagpur.</p> <p><b>Basic Process Methodology</b></p> <p>The existing treatment technology adopted for hexavalent chromium containing mine drainage water is reduction of hexavalent chromium to trivalent chromium using Ferrous Iron in the form of Ferrous Sulphate. The reduced Chromium is precipitated as Hydroxide form [Cr(OH)3]. Ferrous Iron added for reduction of Hexavalent Chromium is being oxidized to Ferric Iron</p>

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Environmental Scientist, SEAC

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		<p>&amp; subsequently precipitated as Hydroxide [Fe(OH<sub>3</sub>)].</p> <p><b>Process Design comprises of the following units:</b></p> <ol style="list-style-type: none"> <li>i. Rapid mixing unit for chemical dosing: The mine drainage water is directly pumped to the inlet chamber of baffle units where Ferrous Sulphate dosing is done.</li> <li>ii. Collection tank 1 for chemically treated water: The chemically treated water is stored in the existing settling tank. A pump is installed at the sump which is the part of the tank to deliver waste water along with solids to the Flash mixing unit.</li> <li>iii. Flash mixer unit: The waste water is mixed with Polyelectrolyte in the flash mixing unit prior to the clariflocculation. The Flash mixing unit is attached to the clarifloculator with the tank dimension 1.5m (L) x 1.5m (W) x 1.5m (D).</li> <li>iv. Clarifloculator: The flocculator well is designed for a detention time of 20 minutes. The diameter of flocculator unit is 5.6m and depth is 2.5m and 0.5m free board. The clarifier unit is designed for surface overflow rate around 30m<sup>3</sup>/m<sup>2</sup>/d. The diameter of clarifier is 15m and side water depth is 3m with 0.5m free board.</li> <li>v. Collection tank 2 for clarified water: The clarified water required storage &amp; the existing lamella clarifier tank serves the purpose of storage.</li> <li>vi. Pressure Sand Filter unit: The pressure sand filter unit operates at a rate of filtration 15m<sup>3</sup>/m<sup>2</sup>/h. The treated water from the treated collection tank is further passed through sand filter tanks with high pressure to filter extra TSS in treated water.</li> <li>vii. Filter press: The settled sludge in the bottom of the clarifier is dewatered to sludge chamber from where it is pumped to Filter press achieving a consistency of 40% and then to drying beds &amp; to dispose to hazardous waste management facilities. Filter press containing plate size 1.2m x 1.2m x 0.5m &amp; 36 nos. of chambers is for sludge dewatering.</li> <li>viii. Chemical dosing &amp; electrical panel room: All the dosing work i.e. Ferrous Sulphate, Lime, Polyelectrolyte, etc. are made through dosing pumps. These chemical dosing, electrical work &amp; chemical storing are done from separate buildings. The first floor has dosing solution preparation facility &amp; ground floor has MCC area for Ferrous Sulphate, Polyelectrolyte and lime/NaOH storage.</li> </ol>

29. The SEAC in its meeting dated 05-11-2022 recommended for grant of Environmental Clearance with stipulated conditions and following specific conditions.

- i) The mine shall explore implementation of membrane-based technology for removing Hexavalent Chromium from Surface run off & mine drainage water.
- ii) The mine shall take adequate measures to minimize the discharge of treated water to Damsala nallah.

30. The proposal was placed in the meeting of SEIAA held on 13.12.2022 for consideration of EC. The Authority deliberated on the matter and observed the following:

- (i) The present proposal relates to grant of EC for a production capacity of 1.0MTPA from the ML area of 246.858Ha, out of which 17.14Ha is forest land.
- (ii) Further, the proposal involves a violation case of FC involving 17.14Ha of forest land as per Sabik Settlement.

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

(iii) As per MoEF & CC, GoI OM dated 09.09.2011, Stage-1 Forest Clearance is a pre requisite for issue of EC.

31. Hence, the Authority decided that the SEAC may re-examine the proposal in light of MoEF & CC, GoI OM dated 09.09.2011. The proposal is referred back to SEAC through online.

32. The SEAC in its meeting held on 14.02.2023 decided to take decision on the proposal after receipt of the following clarification from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
1.	The present proposal relates to grant of EC for a production capacity of 1.0MTPA from the ML area of 246.858Ha, out of which 17.14Ha is forest land.	The prior lessee had made NPV payment of a total amount of Rs. 17,64,92,100/- towards NPV (Net Present Value) for the total forest area of 241.77 Ha (i.e., 16,39,79,900/- on 27.05.2014 & 1,25,12,200/- on 20.02.2016) within 1 year of the MoEF & CC notification F. No. 8-78/1996-FC, dated 10.03.2015. Out of the total block area of 246.858 Ha area, forest diversion over an area of 224.63 Ha Forest Land (as per HAL settlement) has been accorded from Ministry of Environment & Forest (MoEF& CC), Govt. of India on 30.01.1997 vide Letter No 8-100/95-FC dated 16.01.1997.
2.	Further, the proposal involves a violation case of FC involving 17.14Ha of forest land as per Sabik Settlement.	As per the condition of Vesting Order & recent MoEF & CC, Govt. of India guidelines, Tata Steel Mining Limited has also paid the NPV of Rs 18,13,29,750/- over entire forest land of 241.77 Ha. Therefore, the proposal is not a violation of FC act.
3.	As per MoEF & CC, GoI OM dated 09.09.2011, Stage-1 Forest Clearance is a pre requisite for issue of EC.	Application has been made for the diversion of forest land. The details have been attached with EIA/EMP report as Annexure F. Same has been attached with as <b>Annexure 1</b> .
4.	The air, water and soil quality data should be provided in tabular format along with Indian Standards.	Attached as <b>Annexure 2</b> .

Considering the information furnished by the proponent at para 32, the SEAC reiterates its earlier recommendations in its meeting held on 05-11-2022 for grant of Environmental Clearance with following additional condition:

- i) The proponent shall not carry out any activity including mining in non-diverted Forest area of 18.34 ha. till they obtained Forest Clearance. The proponent shall strictly follow the procedure laid down in guidelines for diversion of forest land issued by MoEF&CC, Govt of India vide F. No. 11-599/2014-FC, dated 01.04.2015 (copy enclosed as **Annexure - A**).

## **ITEM NO. 02**

### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR MANGANESE ORE 0.04 MTPA AND IRON ORE 0.3 MTPA AT KOLMONG IRON & MANGANESE BLOCK OVER AN AREA OF 218.481 HA (AS PER DGPS)/218.530 HA (AS PER ROR) (FOREST: 155.326 HA & NON-FOREST: 63.204 HA) IN VILLAGE-KOLMONG UNDER KOIRA TAHASIL OF SUNDARGARH DISTRICT FOR YAZDANI STEEL & POWER LIMITED OF SRI BINODA KUMAR ACHARYA – EC**

1. The proposal is for Environmental Clearance of M/s Yazdani Steel & Power Limited for Manganese Ore 0.04 MTPA and Iron Ore 0.3 MTPA at Kolmong Iron & Manganese Block over

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

an area of 218.481 ha (as per DGPS)/218.530 ha (as per RoR) (Forest: 155.326 Ha & Non-Forest: 63.204 Ha) in village-Kolmong under Koira Tahasil of Sundargarh District.

2. The project falls under category "B" or activity 1 (a) - Mineral of Minerals under EIA Notification dated 14th September 2006 as amended from time to time.
3. Yazdani Steel & Power LTD. (YSPL) was awarded the Kolmong Iron & Manganese Block over an area of 218.481 ha (as per DGPS)/218.530 ha (as per RoR) in village-Kolmong under Koira Tahasil of Sundargarh district of Odisha being the successful bidder the lease was granted under Non captive category for 50 years.
4. The vesting Order issued by the **Nodal Officer**, Steel and Mines Department, Government of Odisha vide No-4369/SM, dated 02.06.2020. Pursuant to the provisions contained in Rule 9A(2) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rule, 2016 order that all the valid rights, approvals, clearances, licenses and the like vested in the previous lessee in respect of the Kolmong Iron & Manganese Block are deemed to have vested in favour of the holder of the letter of intent on the same terms and conditions of every rights, approvals, clearances, licenses and the like which vested with previous lessee.
5. Modified Mining Plan along with Progressive Mine Closure plan was obtained under Rule 23 of MCDR, 2017 form IBM, Bhubaneswar vide letter no MP/A/26-OR/BHU/2020-21 date 20.11.2020 for production of 0.04 MTPA Manganese Ore and 0.3 MTPA Iron Ore with Opencast Fully Mechanized Mining Method. for the period of 2021-2024-25 .In order to regularize the statutory provisions, it is proposed to obtain Environmental Clearance for proposed production as per approved mining plan and ToRs Vide no F.No.J11015/05/2021-Ia.II(M) dated 4th March, 2021 to prepare EIA/EMP report as requirement of Environmental Clearance. Baseline data for environmental parameters was collected during October to December, 2020 and public hearing was held on 20th December, 2021
6. Kolmong Iron & Manganese Block spreads over an area of 218.481 ha (as per DGPS)/218.530 ha (as per RoR) (Forest: 155.277 Ha & Non-Forest: 63.204 Ha) in village-Kolmong under Koira Tahasil of Sundargarh district of Odisha, The lease area is moderately flat, though there are occasional mounds within the area, studded with flat topped low ridges, reassembling a relict type of topography controlled by differential hardness of rocks. The maximum RL of the area is 654m at the southern part of lease area and the minimum RL of the area is 576m. The area falls in Survey of India Toposheet no.73 G/5. The area is bounded by latitude 21°56'20.01" to 21°57'32.24" N Longitude 85° 18'24.54" to 85°19'22.72"E. The Nearest railway station Barbil is 28 Kms from the lease, to connect Tata Nagar, Kolkata & Bhubaneswar.
7. The nearest important public road is National Highway-215 connecting Panikoili to Rajamunda at an distance of 5 km . Bhubaneswar airport (340 km away) is the nearest airport from the area. There is an airstrip/helipad near Bhadrasahi, Barbil which is around 18 km from the lease area
8. There is no perennial river or water body in the project area. The major drainage channel of the area is kundra nala which is located in the eastern and south-eastern side of the lease hold area.
9. Date of execution of Lease is 30.06.2020 and valid for 50 years upto 30.06.2070.
10. ML area: 218.481 ha( as per DGPS)/218.530 ha( as per RoR) (Forest: 155.277 Ha & Non-Forest: 63.204 Ha)

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

11. Capital cost of the project is estimated to be Rs. 68.50 Crore, and Capital cost for EMP is estimated to be 3.16 Crore and annual recurring cost is 0.53 Crore
12. Mining operation is semi mechanized opencast with both mechanized and manual excavation of manganese ore, manual breaking, sorting & sizing of manganese ore. Development work will be done by excavator (0.9 m<sup>3</sup>) and tipper combination. Similarly for iron ore, the production of ROM will be carried out by dumper shovel configuration and the processing will be carried out by mechanized method. During the proposed mining operation period, total maximum ROM of Iron Ore will be handled 1.0498 Million Ton from in-situ ore zone and Maximum 0.2 Million Ton ROM for Manganese Ore. The mining operation will be of one shift.
13. Total 64.633 ha. Land will be proposed to be excavated to mine the Manganese ore. So, it is estimated that from 2020-21 to end of life of mine 1,03,02,939m<sup>3</sup> of waste will be generated during mining operation. Out of total waste generation of waste 95,22,919 m<sup>3</sup> will be used for backfilling the exhausted quarry. The balance 7,80,020m<sup>3</sup> will be dumped on external dumps.
14. Electricity requirement: The electricity is supplied to the project by WESCO through 1 nos. transformers of capacity 1500 KVA /day inside the lease hold. Solar system shall be installed for lighting at admin building and other mining area. 500KVA of DG Set available in the mine for stand by purpose.
15. H.S.D. requirement: Requirement of H.S.D is 11.0 KLD
16. Manpower requirement of project is 316 nos
17. Peak Water Requirement of the project is 173 KLD and average water requirement of the project is 86 KLDB
18. Before auction and total 53.540 ha of area has been already utilized and as per present mining plan additional 26.417 ha shall be utilized and 138.573 ha shall be remain unutilized
19. Based on the Geological Report as supplied by the State Govt., the total resources of ROM (under G2 Level) for both high grade & low grade of Mn ore as on 01.01.2019 was 37,23,658 (MT) and Iron Ore 13,97,650 (MT). After depletion upto 31.03.2020 by the previous lessee, the resource of Manganese Ore was 3722397 MT and the Iron Ore was 1397650 MT (no depletion of iron ore).
20. As on 01.10.2020, the residual reserved Manganese Ore is 34,24,605 MT and considering the target production of 40,000 MT per year, the life of mine will be 85.66 year.
21. As on 01.10.2020, the residual reserved Iron Ore is 12,57,585 MT and considering the target production of 3,00,000 MT per year, the life of mine will be 4.19 year.
22. The life of mine will be increased, If the reserve will increase due to proposed future exploration
23. The Kolmong Iron & Manganese Ore Mine is 'A'-OTFM category mine and mining operation is semi-mechanized open cast.
24. Manganese ore is soft in nature and generally occurs in small pockets. Grade of the ore also varies widely within the ore pockets. The iron ore deposit has also been proposed for semi-mechanized open cast mining. Excavator (0.9m<sup>3</sup>) and dumpers combination will be used for development of benches in both waste and ore.

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

25. Deep hole drilling & blasting will be occasionally used to dislodge the hard strata. Rock breaker has been utilized in the area where blasting is not possible. As the manganese ore occurs in the form of small and big pockets in this area, mining operation is of mixed type.
26. In this mine, Manganese ore pockets and iron ore (ROM) will be excavated out by excavator (0.9m<sup>3</sup>). Then the excavated ROM (Mn) ore material goes to manual ore sorting / sizing yard for sorted out the manganese ore lumps from ROM ore material and the iron ore (ROM) shall be crushed and screened in different size and grade as per the nature.
27. These manganese ore lumps will be then stacked separately as per the grade. The sub grade/ low grade manganese ore are stacked separately. Manganese ore fines are also stacked separately. Then the sized manganese ore are loaded into truck either manually or through machine for dispatch to buyer's destination.
28. The waste material is dumped in Dump-D1 & D3 as well as utilized for the backfilling of part of Quarry-6 & 7.
29. Regarding mining operation, excavator of capacity 0.9m<sup>3</sup> and tippers of capacity 20 MT will be used for excavation and transportation of wastes & ROM ore. In the quarry bench height will vary from 3 to 4 m and width will vary from 6-10 m. If necessary, 4 m bench will be divided into small benches. Dump leveling and dump terracing will be done through dozer as per requirement. During the proposed plan period maximum annual production of Manganese ore will be 40,000 MT & Iron Ore will be 3,00,000 MT per annum
30. During proposed period of mining operation total handling of Iron Ore (ROM) from the mine will be around 3,00,000 (MT) and the production of Manganese ore will be around 40,000 MT obtained from insitu body.
31. During the proposed period of mining operation four nos of quarry will operate namely New Pit, Quarry 6 & 7, Dhandariya Pit & Magazine Pit for Mn Ore & Quarry namely New Pit & Dhandariya Pit for Iron Ore. The mining operation will be carried out by Sovel & Tipper combination for excavation of both Ore & Waste.
32. The excavator of capacity 0.9 m<sup>3</sup> will be used for feeding of ROM to screening & crushing plant for Iron Ore & the Mn ore will be processed manually.
33. Rock breakers are used to avoid secondary blasting as per the requirements. .
34. There will be no change in proposed method of mining.
35. This working mine shall bring tremendous benefits in the area like:
36. Direct employment opportunities for more than 500 persons.
37. Indirect employment for more than 3000 persons through various service related activities connected with the project operations
38. Improvements in infrastructure in the area Road Network, Water supply to villages through Water tankers & overhead tanks with pipe lines, Electricity facilitation, Healthcare, Education, Other Social Welfare Activities Providing certain facilities for the local panchayats.
39. Financial gains for the state and central Governments, through collection of various taxes like royalty, GST, DMF and NMET (National Mineral Exploration Trust) etc., Increase in General Awareness of the People

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

40. Improvement of the General Living Standard of the People in the Vicinity.
41. Generation of self-employment through self-help groups.
42. Improvement in Per Capita Income.
43. The user agency as well as Govt of Odisha will be benefitted financially due to the commencement of project
44. Environmental protection as well as the development of the people will be worked in a systematic manner at the block/regional level for overall benefit of the society, region, district and state. The Company will extend their co-operation and assistance in sharing the relevant data/ information/ reports/ documents etc. for continuous improvement of Sustainable Environment Development Plan for economic growth in the mining sector.
45. The Environment Consultant **M/S Ardra Consulting Services Pvt. Ltd., A/79, Sahidnagar, Bhubaneswar, Odisha-751007** along with the proponent made a detailed presentation on the proposal before the Committee on 02.09.2022. The SEAC decided to take decision on the proposal after receipt of certain information / documents from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
i)	Detail of different grades of Iron from 45+ Fe to 55+ Fe to be used, and of non utilised ore and its management. Complete material balance including source, end use and storage and its moving inventory with layout map.	Brief note on mineable reserve and pre-feasibility resource of Iron ore, grades of ore processing and end use products for different industries has been submitted.
ii)	Details of 1100KLD HSD, its procurement and storage.	HSD requirement of the proposed project is 7 KLD, which will be procured from the local filling station. There will be no storage of HSD at Mines.
iii)	Complete water balance	Total quantity of water required for mining and processing is 86 cum/day. The required quantity is being fulfilled from ground water source. The purpose and requirement of water are as follows:
iv)	Water Balance details with focus on rain water harvesting and use, lesser drawl of ground water.	Project had developed four rain water harvesting pits and a pond in the mine lease area. A rainwater harvesting pond is already constructed within the lease area to accumulate the rainwater with dimension 40x40x5 (in meter). The rainwater during the monsoon has tendency to discharge into the natural drainage system of the area. There will be no discharge from the mine. It is required to ensure runoff water quality during rainy season before it joins the seasonal nalla in the core zone. Precautionary measures by constructing check dams & settling sumps at appropriate places will help in making the discharge water free from any silt during rains. Toe walls & garland drains around dumps will be provided to check the run-off. <ul style="list-style-type: none"> <li>• Presently, during rainy season, the water collected in the mine</li> </ul>

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
		<p>area is drained to the sump floor of each quarry. The sump acts as a good rainwater recharge structure and the collected rainwater normally seeps into the ground within few days</p> <ul style="list-style-type: none"> <li>• Rain water harvesting at mine site is important to conserve the rainwater for reuse and thus reducing the overall raw water consumption for mine requirements. The following methods of water harvesting are carried out:</li> <li>• The mine sump itself acts as a good rain water harvesting pond. Sump is created at the bottom of the working pit and the rainfall directly falling in the mine area is drained towards the sump in the bottom of the mine pit for harvesting it.</li> <li>• Construction of settling pond/percolation pond at various strategic locations across the mine.</li> <li>• Suitable storm water drainage system along the roads are provided to dispose storm water effectively. The surface runoff collected in the storm water drains are channelized through a series of settling cum percolation ponds before discharged. Staggered trenches are proposed to be constructed along the contours so that during sudden storm, good amount of runoff can be harvested which will maintain a good amount of soil moisture</li> </ul>
v)	There should be atleast 50% of ground water recharge as per the total water requirement for the project. So design and dimensions of rain water harvesting pond with its capacity that will be put up in the project to hold the rain water.	Total Water requirement for the project will be 20640 KLA, it is proposed to harvest 19285 KLA of rainwater through surface rain water harvesting methods. (Detail report attached as <b>Annexure -1</b> )
vi)	Silt management practice measures to be followed for protecting nala nearby.	Compliance Details given in report prepared for Nala Management (Attached as <b>Annexure-2</b> )
vii)	Compliance to Additional ToR point no. 7 with detail chemical composition of different grades including silica.	<p>Kolmong Manganese Mine supplies mainly two types of ore;</p> <ol style="list-style-type: none"> <li>a. Low grade ore to Ferro Alloys Plants &amp; Steel Plants.</li> <li>b. Medium grade ore to Ferro Alloys Plants.</li> </ol> <p>The specification (both mechanical &amp; chemical) is as follows:</p> <ol style="list-style-type: none"> <li>i) Low grade ore: <ul style="list-style-type: none"> <li>Mn. - 24% Max.</li> <li>Fe - 15% Max.</li> <li>Al<sub>2</sub>O<sub>3</sub> - 7% Max.</li> <li>SiO<sub>2</sub> - 13% (Max)</li> <li>P - 0.15% (Max)</li> <li>Size - 10-40 mm</li> </ul> </li> <li>ii) Medium grade ore: <ul style="list-style-type: none"> <li>Mn. - 38% Min.</li> <li>Fe - 16% Max.</li> </ul> </li> </ol>

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC



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		<p>A12O3 - 8% Max. SiO2 - 6% Max. P - 0.1% Max. Size - 10-75 mm</p> <p>Kolmong Iron &amp; Manganese Mine dispatches Manganese ore of different size &amp; grade to different industries of the country and abroad. Following processed Manganese ore will be dispatched to different Manganese industries.</p> <p style="text-align: center;">Processed Mn ore:</p> <table border="1" data-bbox="560 488 1257 945"> <thead> <tr> <th>Sl. No.</th> <th>Mn%</th> <th>Fe%</th> <th>SiO2%</th> <th>Size (mm)</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>28-30</td> <td>24-22</td> <td>5-2</td> <td>10-40</td> <td>Will be utilized for ferromanganese production</td> </tr> <tr> <td>2</td> <td>30-35</td> <td>22-20</td> <td>5-2</td> <td>10-40</td> <td>Will be utilized for ferromanganese production</td> </tr> <tr> <td>3</td> <td>35-40</td> <td>18-16</td> <td>5-2</td> <td>10-40</td> <td>Will be utilized for ferromanganese production</td> </tr> </tbody> </table> <p>IRON ORE: The intermediate industries involved in the up-gradation of mineral before its end use is crushing and screening unit, etc. ROM iron ore will be crushed and screened in the M.L area to cater the need of buyers in respect of size and grade. Manganese ore is not supplied to intermediate industries for up-gradation. DRI Plant, palletization plant etc are considered as Intermediate industries for iron ore. The YSPL Steel Plant is situated in Odisha.</p> <p><b>Sponge iron plant Palletization Plant</b></p> <table border="1" data-bbox="560 1317 1257 1626"> <tbody> <tr> <td>Fe</td> <td>:60-62%</td> <td>Fe</td> <td>:55-65%</td> </tr> <tr> <td>Sj02</td> <td>:4.0-2.6 %</td> <td>Sj02</td> <td>:3.40-2.98%</td> </tr> <tr> <td>P</td> <td>:0.02-0.045%</td> <td>P</td> <td>:0.011-0.03%</td> </tr> <tr> <td>S</td> <td>:0.005%</td> <td>S</td> <td>:0.005-0.006%</td> </tr> <tr> <td>LOI</td> <td>:3%</td> <td>LOI</td> <td>:3%</td> </tr> <tr> <td>Size</td> <td>:3-15mm/5-</td> <td>Size (fines)</td> <td>:0-10mm</td> </tr> </tbody> </table>	Sl. No.	Mn%	Fe%	SiO2%	Size (mm)	Remarks	1	28-30	24-22	5-2	10-40	Will be utilized for ferromanganese production	2	30-35	22-20	5-2	10-40	Will be utilized for ferromanganese production	3	35-40	18-16	5-2	10-40	Will be utilized for ferromanganese production	Fe	:60-62%	Fe	:55-65%	Sj02	:4.0-2.6 %	Sj02	:3.40-2.98%	P	:0.02-0.045%	P	:0.011-0.03%	S	:0.005%	S	:0.005-0.006%	LOI	:3%	LOI	:3%	Size	:3-15mm/5-	Size (fines)	:0-10mm
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viii)	Layout plan showing Iron and Manganese reserves, its mining areas, storage and dump areas.	Compliance: On account of exposures of Iron & Mn ore and its limited depth of occurrence, opencast method of mining will be continued on three shift basis with the deployment of Pneumatic drills, associated compressors, dumpers, excavators and other auxiliary equipment for development, production, processing, protection of environment and safety. Separate year wise development plan and composite development plans showing pit layouts, dumps, stacks of mineral rejects along with sections are attached with mining plan. Copies of same attached as <b>Annexure-3</b> .																																																

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

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ix)	Layout map of total broken up area existing and proposed to be broken.	<p><b>Compliance: Land use Pattern of lease area:</b></p> <ul style="list-style-type: none"> <li>➤ The Kolmong Iron &amp; Manganese Mine over 218.481 ha in Kolmong village under Koira Tahasil of Sundargarh district of Odisha.</li> <li>➤ The Mines is located in Sundargarh District of Odisha. The NH-215 is about 9 KM from Mine. Koira &amp; the distance of other important towns is Koira- 9 KM, Joda- 25 KM, Barbil- 32 KM. The nearest railway station and International Air Port are at Barbil &amp; Bhubaneswar at a distance of 32 KM &amp; 310 KM, respectively.</li> <li>➤ There are 4 quarries has been exposed by the previous lessee viz. New Pit, Quarry-6 &amp; 7, Dhandaria Pit and Magazine Pit as on 31.03.2020.</li> <li>➤ The lease area is an moderately flat, though there are occasional mount within the area studied with flat topped low ridged, re-assembling a relict type of topography controlled by a differential hardness of law. The maximum RL of the area is 654 m at the southern part of the lease area and the minimum RL of the area is 567 m.</li> </ul> <p><b>a. Existing land use pattern:</b> The area occupies low to medium range hill surrounded by plain country. Within the lease, the area occupied by quarries, dumps, roads and structures etc. are as follows:</p> <table border="1" data-bbox="603 936 1230 1518"> <thead> <tr> <th>Sl. No.</th> <th>Head</th> <th>Existing Area (ha)</th> </tr> </thead> <tbody> <tr><td>1.</td><td>Area under mining</td><td>34.479</td></tr> <tr><td>2.</td><td>Storage for top soil</td><td>--</td></tr> <tr><td>3.</td><td>OB Dump Site</td><td>6.660</td></tr> <tr><td>4.</td><td>Mineral storage</td><td>3.560</td></tr> <tr><td>5.</td><td>Infrastructure, workshop, Admin Building etc.</td><td>0.051</td></tr> <tr><td>6.</td><td>Roads</td><td>1.740</td></tr> <tr><td>7.</td><td>Railways</td><td>--</td></tr> <tr><td>8.</td><td>Green Belt</td><td>4.950</td></tr> <tr><td>9.</td><td>Tailing pond</td><td>--</td></tr> <tr><td>10.</td><td>Effluent treatment plant</td><td>--</td></tr> <tr><td>11.</td><td>Mineral separation plant</td><td>--</td></tr> <tr><td>12.</td><td>Mine camp</td><td>2.100</td></tr> <tr><td>13.</td><td>Others(to Specify)</td><td>--</td></tr> <tr><td colspan="2"><b>Total</b></td><td><b>5.540</b></td></tr> </tbody> </table> <p>The existing land use pattern of the leasehold area and approx.500m around the lease area as under</p> <p><b>b. Lease area:</b> The approx. land use pattern within the lease area may be summarized as under:</p> <p style="text-align: center;"><b>Land use pattern within the ML area</b></p> <table border="1" data-bbox="603 1749 1257 1928"> <thead> <tr> <th>Sl. No.</th> <th>Particulars</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>1.</td><td>Pahar/Jungle/Dungri</td><td>64.30</td></tr> <tr><td>2.</td><td>Quarry/Dump cover</td><td>6.27</td></tr> <tr><td>3.</td><td>Waste land</td><td>3.83</td></tr> </tbody> </table>	Sl. No.	Head	Existing Area (ha)	1.	Area under mining	34.479	2.	Storage for top soil	--	3.	OB Dump Site	6.660	4.	Mineral storage	3.560	5.	Infrastructure, workshop, Admin Building etc.	0.051	6.	Roads	1.740	7.	Railways	--	8.	Green Belt	4.950	9.	Tailing pond	--	10.	Effluent treatment plant	--	11.	Mineral separation plant	--	12.	Mine camp	2.100	13.	Others(to Specify)	--	<b>Total</b>		<b>5.540</b>	Sl. No.	Particulars	Percentage	1.	Pahar/Jungle/Dungri	64.30	2.	Quarry/Dump cover	6.27	3.	Waste land	3.83
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Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

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		4.	Cultivated Land	16.76		
		5.	Settlement	6.4		
		6.	Quarry road/water body	2.44		
		<b>Proposed Land use Plan</b>				
		Sl. No.	Item	Existing (Ha)	At the end of Plan period(2019-20) (Ha)	Proposed for Conceptual period
		1.	Quarry	34.479	57.916	57.916
		2.	Dump	6.66	10.000	10.000
		3.	Storage pf top soil	--	--	--
		4.	Area for mineral storage	3.560	3.560	3.560
		5.	Infrastructure	0.051	0.051	0.051
		6.	Roads	1.740	2.380	2.380
		7.	Railways	--	--	--
		8.	Green Belt	4.950	4.950	4.950
		9.	Mineral separation plant/crushing plant	--	--	--
		10.	Mine camp	2.100	2.1	2.1
		<b>Total</b>		53.540	79.957	79.957
x)	Compliance to NEERI recommendation for Manganese mine expansion to be submitted.	Compliance to NEERI recommendation for proposed expansion is attached a <b>Annexure-4</b> .				
xi)	Detailed plan for Dump management, dust suppression and mitigation measures suggested.	Breif note on Dump present and management has been submitted in compliance report.				
xii)	Cross-sectional dimension of retaining wall and garland drain shall be furnished.	Dimension of retaining wall and garland drain has been submitted in compliance report.				
xiii)	Specific measures taken for Manganese poisoning in that area.	<b>MANGANESE POISONING:</b> Manganese poisoning is referred to as manganism, the result of excessive or prolonged exposure to manganese dust. When the human body absorbs a large amount of manganese there is a toxic effect, resulting in serious health conditions and diseases. Sometimes people use manganism and Parkinson's disease to describe the same adverse manganese effect due to the similarity of the conditions. Manganese has a very long elimination from the central nervous system so the effects of manganism are not always immediately evident. The time weighted average concentration of Mn				

Proceedings of the SEAC meeting held on 12.04.2023  
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Environmental Scientist, SEAC

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		<p>should not be more than 5mg/cum in 8 hours exposures.</p> <p><b>MANGANISM SYMPTOMS:</b></p> <p>Miners are considered to be at the highest risk for developing manganism. There are three different stages that are differentiated in manganism, including behavioural changes, parkinsonian features, and dystonia and gait disturbances. The onset of manganism can be observed through symptoms of fatigue, headache, muscle cramps, loss of appetite, apathy, insomnia, and a diminished libido.</p> <p><b>Other symptoms of manganese may include:</b></p> <ul style="list-style-type: none"> <li>➤ Muscle stiffness</li> <li>➤ Weakness</li> <li>➤ Tremors</li> <li>➤ Breathing and swallowing problems</li> </ul> <p><b>PREVENTIVE MEASURES BY YSPL AT KOLMONG IRON &amp; MN MINES:</b></p> <p>To prevent manganese within miners, YSPL is taking care of all the miners and has adopted various preventive measures like:</p> <ul style="list-style-type: none"> <li>➤ Wet drilling arrangement</li> <li>➤ Periodic air monitoring to recognize the content of manganese in the core as well as buffer zone.</li> <li>➤ Periodic health examination</li> <li>➤ Change of cloth after coming from the work place</li> <li>➤ Provision of Nose mask to all the miners.</li> <li>➤ Provision of bath head room and washing room for cleanliness.</li> <li>➤ Provision of clean and hygienic room for taking food.</li> <li>➤ Water sprinkling for dust suppression at manganese handling points.</li> </ul>
xiv)	Reclamation Plan for Dump after conceptual plan.	<p>Already carried out by earlier lessee</p> <p>As this mine is operating since last few decades, for the purpose of mining and allied activity and considerable initiatives are already carried out in this mines by earlier Lessee.</p> <ol style="list-style-type: none"> <li>1. Inactive &amp; non-operational, stabilization will be carried out.</li> <li>2. Terrace will have developed in all the dumps</li> <li>3. Plantation is already carried out on the existing 03 nos of waste. Further dump slopes are also planted</li> <li>4. Boulder retaining wall and garland drain have been provided along all the existing dump toes</li> <li>5. 03 nos. of settling tanks and 03 nos. of catch drains have been constructed</li> <li>6. In all the dumps terraces are made inwardly sloping.</li> <li>7. All the existing retaining walls shall be maintained in good condition and shall be repaired if required.</li> <li>8. Causality replacement i.e gap plantation will be carried out (if required) on the dump slopes for proper rehabilitation and restoration of flora &amp; fauna.</li> <li>9. Already 2.5 ha is exhausted and is reclaimed by backfilling in quarry 6 &amp; 7.</li> <li>10. All along the boundary of mining area (where possible) safety zone green belt of width 7.5 m is developed</li> </ol> <p><b>Proposed during plan period</b></p>

Proceedings of the SEAC meeting held on 12.04.2023  
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		<p>During the plan period an area of 3.27 Ha will be backfilled. It has been planned to reclaimed the mined out area by Back-filling and plantation. The details of reclamation will be as follows:</p> <p><b>(a) Back-filling</b>  <b>During plan period</b></p> <p style="text-align: center;"><b><u>Details of backfilling proposal</u></b></p> <table border="1"> <thead> <tr> <th>Year</th> <th>Volume of waste to be backfilled (m<sup>3</sup>)</th> <th>Backfilling RL</th> <th>TRL &amp; BRL</th> <th>Location</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>2020-21</td> <td>25,694</td> <td>TRL-590</td> <td>TRL-590</td> <td>326300E TO326550E &amp; 2428710N</td> <td>Increase in height and extended</td> </tr> <tr> <td>2021-22</td> <td>37,932</td> <td>TRL-590</td> <td>TRL-590</td> <td>TO 2428900N</td> <td>Extended towards S-W</td> </tr> <tr> <td>2022-23</td> <td>69,620</td> <td>TRL-590</td> <td>TRL-590</td> <td></td> <td>Extended towards S-W</td> </tr> <tr> <td>2023-24</td> <td>65,579</td> <td>TRL-590</td> <td>TRL-590</td> <td></td> <td>Extended towards S-W</td> </tr> <tr> <td>2024-25</td> <td>1,26,906</td> <td>TRL-590</td> <td>TRL-590</td> <td></td> <td>Extended towards S-W</td> </tr> <tr> <td>Total</td> <td>3,24,921</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The gap plantation will be carried out in the waste dump, safety zone etc area. The aea said area will be covered by plantation / regressing during the plan period by planting 4000no: of saplings.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Dump/ Safety Zone</th> <th>Area of Plantation (Ha)</th> <th>No of saplings/re-grassing</th> <th>Name of the species</th> </tr> </thead> <tbody> <tr> <td>2021-22</td> <td>Dump/Safety Zone</td> <td>Nil</td> <td>1000</td> <td>Neem, Mango,</td> </tr> <tr> <td>2022-23</td> <td>Dump/Safety Zone</td> <td>Nil</td> <td>1000</td> <td>Chakunda, Krishnachuda,</td> </tr> <tr> <td>2023-24</td> <td>Dump/Safety Zone</td> <td>Nil</td> <td>1000</td> <td>Radhachuda, Sissom,</td> </tr> <tr> <td>2024-25</td> <td>Dump/Safety Zone</td> <td>Nil</td> <td>1000</td> <td>Shrubs etc Further dump</td> </tr> </tbody> </table>					Year	Volume of waste to be backfilled (m <sup>3</sup> )	Backfilling RL	TRL & BRL	Location	Remarks	2020-21	25,694	TRL-590	TRL-590	326300E TO326550E & 2428710N	Increase in height and extended	2021-22	37,932	TRL-590	TRL-590	TO 2428900N	Extended towards S-W	2022-23	69,620	TRL-590	TRL-590		Extended towards S-W	2023-24	65,579	TRL-590	TRL-590		Extended towards S-W	2024-25	1,26,906	TRL-590	TRL-590		Extended towards S-W	Total	3,24,921					Year	Dump/ Safety Zone	Area of Plantation (Ha)	No of saplings/re-grassing	Name of the species	2021-22	Dump/Safety Zone	Nil	1000	Neem, Mango,	2022-23	Dump/Safety Zone	Nil	1000	Chakunda, Krishnachuda,	2023-24	Dump/Safety Zone	Nil	1000	Radhachuda, Sissom,	2024-25	Dump/Safety Zone	Nil	1000	Shrubs etc Further dump
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(Old Proposals – ADS received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent				
		Total			4000	slopes will be covered with grass
xv)	Revalidation the Site specific wildlife Management plan for entire area duly approved by PCCF wildlife and contribution to Regional Wildlife plan details.	Site specific conservation plan was prepared and approved by Forest department during previous lease period, which is vested in favor of the new Lessee, however we New Lessee also undertakes to pay the cost of Site specific conservation plan freshly prepared by the DFO, Bonai and also contribute the towards Regional Wildlife plan if demand raised by the DFO, Bonai. Copy of SWLP and payment details attached as <b>Annexure-5</b> and Undertaking regarding same attached as <b>Annexure-6</b> .				
xvi)	Plot wise kissam of land in tabulated form for non-forest land (63.204ha.) duly certified by concerned Tahasildar and its conversion to mining/industrial use.	Land schedule showing plot wise kissam of Land authenticated by Tahsildar is attached as <b>Annexure-7</b> .				
xvii)	Unexplored area of 138Ha. can be utilised for installation of solar panels to meet power requirement partially/fully.	Unexplored area of 138 ha shall be utilized for installation of solar panels to meet power requirement partially/fully, if same found to be non-mineralized zone. Undertaking regarding same is attached as <b>Annexure -8</b> .				
xviii)	No. of check dams/settling ponds with capacity to be constructed for protection of the Nala.	Details of check dams /settling ponds to be constructed for protection of Nala is given Nala Management Plan attached as <b>Annexure-2</b> .				
xix)	Latest Compliance Report for Previous EC Conditions.	Compliance report of previous EC condition is attached as <b>Annexure-9</b>				
xx)	Proposed R & R plan.	Proposed R& R Plan is attached as <b>Annexure-10</b> .				

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
xxi)	Identification of sources of fluoride and its control.	<p>It may be noted that in this region, Overburden disposal is being carried out in some of abandoned quarries and mines sumps. It is the possible leaching of different hazardous pollutants, including fluoride. However as per it is envisaged there is less chance of fluoride. However it is planned to, removal of fluoride by coagulation process using Alum and 100% of fluoride can be removed with 0.3gm/l of fluoride. In order to reduce the cost, the treatment can also be carried out with 0.1 gm/l of alum, since the fluoride concentration usually comes below the permissible limit after 1 hour of treatment.</p> <p>Fluoride is also found in natural water at some concentration level. In seawater, fluoride is found 1 mg/l. In river and lakes, less than 0.5 mg/l. of fluoride is found and high concentration of fluoride occurs in groundwater. The occurrence of fluoride in groundwater is due to weathering and leaching of fluoride bearing minerals from rocks and sediments. Fluoride when ingested in small quantities (&lt;0.5 mg/L) is beneficial in promoting dental health by reducing dental caries, whereas higher concentrations (&gt;1.5 mg/L) may cause fluorosis. Therefore, an attempt has been made to investigate the concentration of fluoride in the selected location and to find out their source. Additionally an attempt has been made to find out an effective treatment method as well as optimum dose for removal of fluoride from the collected samples.</p>
xxii)	Incremental concentration of PM <sub>2.5</sub> and PM <sub>10</sub> and their control.	Details has been submitted in compliance report
xxiii)	Regular monitoring of the water quality of discharge and also that of Kundra nana. Since the water is proposed to be discharged to kundra nala, at no pint of time the water quality parameters should exceed the standard limits.	Details has been submitted in compliance report
xxiv)	Bench and dump Slope stability studies	Study on dump slope stability has been carried out by CIMFR, Dhanbad ,Copy attached as <b>Annexure-10.A</b> .
xxv)	Protection measures against hazards arising out of vibration and fly rocks.	Details has been submitted in compliance report
xxvi)	Certificate from the Mining Department regarding the mineralised zone.	Total Mineralized zone is 78.620 Ha, as per Mineral Block Summary published by Govt of Odisha 06.12.2019 as per Directorate of Mines Steel & Mines Department Government of Odisha notification dated December 06, 2019. Copy attached as <b>Annexure-11</b> .
xxvii)	NoC from CGWA for ground water and	Necessary permission was obtained by previous Lessee for drawl of requisite quantity of surface water and groundwater. The same has

Proceedings of the SEAC meeting held on 12.04.2023  
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Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	permission/ Agreement with State Government Water Resource Department.	been vested in favor of M/s YAZDANI Steel Pvt Ltd. Copies of CGWA NOC and surface water permission are attached as <b>Annexure: 12</b> and vesting order for same is attached as <b>Annexure-12. A.</b>
xxviii)	Biodiversity register for the ML area as per Biodiversity Conservation Act, 2003.	Register shall be maintained on status of plantation carried out by the project, the project will also abide by the any directives as per Biodiversity Conservation Act, 2002. Undertaking regarding same is attached as <b>Annexure-13.</b>
xxix)	Energy Conservation as per BEE and Energy Conservation Act, 2002.	Regular audit shall be carried out engaging accredited energy auditor and necessary steps shall be taken up as per the recommendation in audit report after commencement of the project. Necessary undertaking is attached as <b>Annexure-14.</b>
xxx)	On site Emergency plan, Off site Emergency plan linked with District Administration and Disaster Management Plan as per Disaster Management Act, 2005.	Onsite emergency plan and Disaster Management plan is attached as <b>Annexure- 15.</b>
xxxi)	Permission of District Collector with respect to Forest Right Act, 2006 and compliance of its condition.	Certificate under FRA ACT,2006 was issued in favor of previous Lessee M/s Rungta Mine Ltd for 85.567 ha which is diverted an disused Stage-II clearance under scetion-2 of F.C Act,1980 of forest land involved in the lease area vide letter no F.No 8-94/2003-FC date 25th October,2011 for utilization for mining purpose. The same permission has been vested in favor of M/s YSPL and for balance forest area, application is under active consideration with District collector.
xxxii)	Compliance of condition of Forest Clearance as per Forest Conservation Act, 1980.	Status of compliance to the stage-II clearance accorded is attached as <b>Annexure-16.</b>
xxxiii)	Site specific, Wildlife Conservation and Management plan as per Wildlife Protection Act, 1972 and Odisha State Government Rule, 2006 along with proof of deposit of funds with respective Authorities.	Site specific conservation plan was prepared and approved by Forest department during previous lease period, which is vested in favor of the new Lessee, however we New Lessee also undertakes to pay the cost of Site specific conservation plan freshly prepared by the DFO, Bonai and also contribute the towards Regional Wildlife plan if demand raised by the DFO, Bonai. Copy of SWLP and payment details attached as <b>Annexure-5</b> and Undertaking regarding same attached as <b>Annexure-6.</b>
xxxiv)	To submit a Fire Safety Clearance Certificate for the project.	Fire Safety Clearance Certificate for the project shall be submitted after commencement of project. Undertaking regarding same attached as <b>Annexure-17</b>

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC



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xxxv)	Compliance of Hazardous Waste Rule, 2016, SWM, Hazardous Chemical Rule, Battery Rule, DG Rule, C&D Rule, Electrical & Electronic Rule compliance reports duly Certified by Regional Officer SPCB, Odisha.	There will be no generation of any hazardous waste during mining activity, hence necessary permission has not been obtained for OSPCB, however necessary compliance report regarding Hazardous Waste Rule, 2016, SWM, Hazardous Chemical Rule, Battery Rule shall be submitted to OSPCB. At present there is no DG set present at mines Necessary permission shall be taken from appropriate authority during installation of DG set before commencement of the project. Undertaking regarding same is attached as <b>Annexure-18</b> .												
xxxvi)	Permission of use of explosives from Chief Controller of Explosives and its condition compliance report.	There will be storage of explosive inside mines, hence no permission is required. Undertaking regarding same is attached as <b>Annexure-19</b> .												
xxxvi)	Status of installation of Weather Monitoring System	Weather monitoring system shall be installed after commencement of project. Undertaking regarding same is attached as <b>Annexure-20</b> .												
xxxvi)	Status of Occupational health services for Mine employees and peripheral villagers.	<p>Following measures shall be taken for management of Occupational Health</p> <ul style="list-style-type: none"> <li>• Rules and Safety guidelines will be followed. Dedicated Safety Officer will be employed in the mine.</li> <li>• Awareness creation by displaying banners, posters, slogans etc. awareness for use of the safety equipment will be done.</li> <li>• First-aid boxes shall be kept in the mine office at proposed mine for easy and quick access.</li> <li>• On the regular basis for the proposed mine Occupational Risk assessment will be carried out and the main of the assessment will be to identify hazards, and to determine the risk ratings. On the basis on risk assessment an Annual Plan will be regularly revised to eliminate the risks which are identified. Implementation of safety in the proposed mine for all workers, the safety experience which are followed by nearby mines.</li> <li>• Regular monitoring of environmental parameters shall be done in the work zone.</li> </ul> <p>Details of IME/PME don so far is given below</p> <p style="text-align: center;"><b>Details of IME/PME</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>IME</th> <th>PME</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>2021</td> <td>0</td> <td>NIL</td> <td></td> </tr> <tr> <td>2022</td> <td>27</td> <td>NIL</td> <td></td> </tr> </tbody> </table> <p>Regular health camp shall be arranged for local persons.</p>	Year	IME	PME	Remark	2021	0	NIL		2022	27	NIL	
Year	IME	PME	Remark											
2021	0	NIL												
2022	27	NIL												
xxxix)	Organogram for Management of Pollution control,	Inorder to systematic management of the Pollution control, Environment Management, Forest Management and afforestation, Wildlife Management, Safety Management, Occupational Health												

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Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent
	Environment Management, Forest Management and afforestation, Wildlife Management, Safety Management, Occupational Health services and social accountability	services and social accountability as separate management cell shall be established
xi)	Clarification on applicability of PESA Act for this project	The project does not involve any issues like customary resources, minor forest produce, minor minerals, minor water bodies, selection of beneficiaries, sanction of projects, and control over local, hence applicability of PESA is not envisaged.

46. The SEAC in its meeting held on 20.02.2023 observed that the **Annexures** as mentioned in the ADS have not been furnished and decided to take decision on the proposal after the proponent upload the ADS once again along with all the **Annexures** as mentioned in ADS. The proponent has furnished the **Annexures** and the SEAC verified the same.
47. Stage – II clearance already approved by previous lessee Rungta and it will be transferred to Yazdani as mentioned in **Annexure 16**.

Considering the information furnished and the presentation made by the consultant **M/S Ardra Consulting Services Pvt. Ltd., A/79, Sahidnagar, Bhubaneswar, Odisha-751007** along with the project proponent, the SEAC recommended for grant of Environmental Clearance with stipulated conditions as per **Annexure – B** and following specific conditions.

- a) The proponent shall utilize different grades of iron ore (ROM) and Manganese ore (ROM) and waste generated according to IBM guidelines.
- b) The proponent shall carryout compensatory afforestation for the project site.
- c) The proponent shall adopt additional measures for dust suppression.
- d) Conversion of Gochar / Grazing land involved if any in lease area shall be made before going for mining activity.
- e) Rainwater harvesting structures shall be implemented.
- f) The lessee shall take adequate safeguard measures to ensure the free flow of the 3 nearby tributaries/nallahs.
- g) Only shrubs can be planted in between stone patching.**
- h) The EC is limited to secondary crushing and screening operations (dry process) as per approved mining plan. Under no circumstances, the lessee shall carry out any beneficiation activity (wet process) of low-grade ore.
- i) All the ores (45-55) and +55 grades shall be used and ores & rejects shall be transported as per approved mining plan for their use. Only temporary stacks shall be operated. The mine shall avoid segregation & generation of fines and flow of silt during rainy session.
- j) Green processes like Controlled drilling, Environment friendly blasting, safe transportation and conveying, silt-management shall be followed as per guidelines.

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

- k) **Compliance Report specific to water balance as per actual and layout plan as per progressive mining plan shall be submitted periodically and obtain compliance report.**
- l) **Proper settling pond of adequate capacity shall be provided and water quality of settling pond shall be monitored regularly.**

### **ITEM NO. 03**

#### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR RAJNAGAR SAND MINE WITH PROPOSED EXCAVATION OF 40,002 m<sup>3</sup>/year OF SAND, AT SUBARNAREKHA RIVER BED HAVING AN AREA OF 5.48 HA LOCATED AT KHATA NO. - 377, PLOT NO - 1295/1300 VILLAGE - RAJNAGAR, TAHASIL - JALESWAR, DISTRICT - BALASORE OF SMT LAXMIPRIYA PRUSTY- EC**

1. This proposal is for environmental clearance for Rajnagar sand mine at Subarnarekha River bed, over a mining lease area of 5.48ha. located at khata no. - 377, plot no - 1295/1300, village - Rajnagar, Tahasil - Jaleswar, District Balasore with proposed excavation of 40,002 m<sup>3</sup>/year of sand of Smt. Laxmipriya Prusty.
2. **Category:** This proposal falls under Category "B1", 1(a) - Mining of Minerals as the Mining lease area is more than 5.0 Ha. as per the EIA notification 2006 and its subsequent amendments.
3. The mining lease has been granted to Smt. Laxmipriya Prusty, W/o-Ratikant Rout, resident of Balaramprasad village, P.S-Motanga of Dhenkanal district from Tahsildar cum-Competent Authority, Jaleswar, Dist-Baleswar, Odisha vide letter no. 5056 dated 20.11.2019.
4. Mining Plan has been approved by the Directorate of Geology & Mining, Bhubaneswar vide letter No.1061 dated 18.04.2018 for a period of 5 years.
5. The quarry has no other mines within 500 meters. It is a new sand quarry.
6. Mining lease is an identified sairat source in the DSR - page no. 35, sl.no. 23 of Annexure I.
7. **Location:** Rajnagar Sand Mine is at bank of Subarnarekha river on Khata No.377, Plot No.1295/1300 at village - Rajnagar, Tahasil – Jaleswar, District - Balasore (Odisha). The geo coordinates are Latitude: 21°48'30.9" N to 21°48'20.9"N & Longitude: E87°12'52.2" to 87°12'43.2"E. The area falls in Survey of India Topo sheet No.73O/1(F45P1).
8. **Connectivity:** The area is approachable by fair weather road. The nearest National Highway is NH – 60 about 3.25km, nearest railway station is at Jaleswar about 1.30km and nearest Airport is Netaji Subhas Chandra Bose International Airport, Kolkata at about 150 km from the mining site.
9. **TOR Details:** SEIAA has issued the Terms of Reference to quarry vide Proposal No SIA/OR/MIN/54634/2020 & letter no.9237/SEIAA, dated 14.10.2020 & File no: 54634/38-MINB1/09-2020.
10. **Public hearing:** Public hearing was conducted on date 11.05.2022 at 10:00AM, in the locality of the sand quarry, near Shikharpur Gram Panchayat Office, under Jaleswar Block under Balasore district.
11. **Issues raised during public hearing for this project –** Operation of the sand quarry as per the Environmental Rules and Regulation, Dust suppression, safety and protection of road during

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

transportation, mode of transportation, cost of Sand, timing of mining and restriction of transportation of sand during night time.

12. **Topography** - The lease area is almost flat land covered with sand, during monsoon season due to heavy flow of water; sand dunes are formed within the lease area. Mining will be carried out at 18mRL upto an maximum depth of 3m; 15 mRL will be the quarry floor at the end of the plan period. The river flows towards NE - SW direction.
13. **Total Reserves and Mining method:** Geological Reserves of project site is 164400m<sup>3</sup> and mineable reserves are 139563m<sup>3</sup>. As per the mining plan, mining will be by means of opencast manual mining method. The proposed annual production capacity is 40,002cum and total production is 200010cum during the plan period.
14. **Water Requirement:** The total water requirement for the project estimated to be 5KLD i.e., for dust suppression (2KLD), greenbelt development (1.5KLD) and domestic uses (1.5KLD) and will be sourced from nearby available water resource and for drinking water it will be sourced from tanker.
15. **Waste water generation:** No liquid waste will be generated from mining activities. A small amount of domestic waste water from office toilet will be discharged into the soak pits/septic tank.
16. **Manpower:** Total manpower of 46 persons will be required for the proposed project.
17. **Power requirement:** No electricity required for operations of the mining, the mining will be worked out during day time only. The power required for office is minimal, shall be taken from the General Electric supply of the area.
18. **Greenbelt:** The plantation will be developed in the haul roads and other places. During plan period, it has been proposed by the lessee to plant 200 nos. of saplings, covering 1000sqm. of area.
19. **Baseline study** has been conducted during Post Monsoon Season of 2020 i.e., 01 October 2020 to 31 December 2020. Ambient Air Quality Monitoring made in 8 locations & the results shows the values of PM10 ranges from – 61.2µg/m<sup>3</sup> to 89.8µg/m<sup>3</sup>, PM2.5 – 19.6µg/m<sup>3</sup> to 27.8µg/m<sup>3</sup>, SO<sub>2</sub> – 5.8µg/m<sup>3</sup> to 9.9µg/m<sup>3</sup>, NOx – 9.2µg/m<sup>3</sup> -13.9 µg/m<sup>3</sup>. Water Quality Monitoring made in 6 locations for ground water and 4 locations for surface water. For ground water all parameters like TDS (322 to 405mg/l), pH (7.24 to 7.86), Chloride (84 mg/l to 101 mg/l), Fluoride (0.21mg/l to 0.40mg/l) etc. are found within permissible limits & fit for consumption and for surface water values of pH (7.24 to 7.56), Chloride (37– 41 mg/l) DO (6.8 to 7.1 mg/l) etc. are found within permissible limits & fit for consumption. Similarly, noise was monitored at 6 locations and value ranges from 34.2dB(A) – 50.5dB(A) during day time and 40.5dB(A) – 67.8dB(A) during night time.
20. **Project cost:** The estimated cost of the project is 10 lakhs. Cost for implementation of EMP is - Capital cost - Rs 145000 and Recurring cost - Rs 75000/annum. The CER budget allotted – Rs. 20,000.
21. **Environment Consultancy:** The proponent along with the consultant **M/s Green Circle Inc, Gujarat**, made a detailed presentation before the SEAC.

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

22. The SEAC in its meeting held on 29.11.2022 decided to take decision on the proposal after receipt of the following from the proponent:

23. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
i)	Replenishment Study Report details i.e., photographs, co-ordinates of pits, depth and volume of sand before and after monsoon period and correlate the result with the values obtained.	a) Photographs are attached as <b>Annexure-1</b> . b) Co-ordinates of pits are attached as <b>Annexure -2</b> . c) Depth of Sand is 1m. d) Volume of Sand before and after monsoon is 15950cum.	
ii)	Kissam details of land and NOC from Tahasildar for usage of approach road from proposed quarry to main road.	Kissam details & NOC from Tahasildar is attached as an <b>Annexure-3</b> .	complied
iii)	An undertaking that plantation shall be carried out both the side of haulage road.	Undertaking is attached as an <b>Annexure -4</b> .	complied
iv)	Authorization letter of the project proponent for engagement of Environmental Consultant for execution and monitoring of Environment Management Plan.	Authorization letter is attached as an <b>Annexure -5</b> .	complied
v)	Since, school and village are nearby, detailed guideline for plying of vehicles on the haulage road near village & school area for safety of school students and nearby habitation.	Authorization Letter as an <b>Annexure-6</b> .	Undertaking by PP to follow the guideline for plying of vehicles on the haulage road near village & school area.

24. The SEAC in its meeting held on 20.02.2023 **opined that this proposal needs further examination. Applied quantity is 40002 cum/annum. Figure given for replenishment in compliance letter is 15950 cum/annum. The Committee could not find replenishment study details in uploaded documents. Quantity to be allowed need to be confirmed. Secondly, there is a NGT case pending for Balasore dist. on DSR. It needs to be examined from that angle also.**

25. The SEAC in its meeting held on 20.02.2023 decided to defer the proposal and take decision on the proposal after receipt of the following clarification / documents from the proponent; The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Applied quantity is 40002 cum/annum. Figure given for replenishment in compliance letter is 15950 cum/annum. The Committee could not find replenishment study details in uploaded documents. Quantity to be allowed need to be confirmed. Secondly, there is a NGT case pending for Balasore dist. on	I. The Mining plan was prepared on the basis of OMMC Rule -2016, having applied quantity of 40002 cum/ annum. But it is not following the Guidelines prepared for sustainable sand mining under MOEF. The Replenishment study report which was prepared in the	As per Replenishment study the project proponent has requested for extraction of 11,612cum/

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	DSR.	<p>year 2022 taking all the aspects of advance UAV/Drone survey method. As per the recent replenishment study report which has been prepared on the basis of advance UAV/Drone survey method comes to 11,612cum/ annum may kindly be allowed.</p> <p>II. When the Proposal for EC was applied, at that time there was no NGT Case pending. As the Proposal for EC was applied for a long time kindly consider our case and issue the EC at an earlier date. We have never violated any rules and regulations of MOEF and assure you to not to violate any rules and regulations framed under MOEF.</p>	annum.

Considering the information furnished and the presentation made by the consultant, **M/s Green Circle Inc, Gujarat**, along with the project proponent, the SEAC recommended the following:

- A.** Environmental Clearance may be granted for the proposal valid upto lease period for extraction of 11,612cum/ annum of sand as per the replenishment study report with stipulated conditions as per **Annexure – C** and following specific conditions:
- (i) Amended EIA Notification dated 25th July, 2018, Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India shall be adhered to in execution of Mining.
  - (ii) **Extraction should be limited to annual replenished quantity in workable area only subject to exclusion of safety zone as per Guidelines for sustainable sand mining, 2016 and Enforcement and Monitoring Guidelines for Sand Mining, January 2020 of MoEF&CC, Govt. of India.**
  - (iii) Regular replenishment study to be conducted and report to be submitted.
  - (iv) Provision of Bio-toilet shall be made at the site.
  - (v) Avenue plantation and plantation on both sides of the haulage road in consultation with/ on the advice of concerned Forest Department, Government of Odisha & W.R. Department Government of Odisha as well.
  - (vi) Stone patching with plantation in between along the stretch of the bank associated with sand mining and necessary ramp construction shall be made.
- B.** **Mining Plan has been approved by the Directorate of Geology & Mining, Bhubaneswar vide letter No.1061 dated 18.04.2018 for a period of 5 years. The validity period of mining plan to be expired on 17.04.2023. The SEIAA may consider to issue Environmental Clearance after the lessee submits valid approved mining plan beyond 17.04.2023.**

#### **ITEM NO. 04**

#### **PROPOSAL OF ENVIRONMENTAL CLEARANCE FOR TURKEL SAND QUARRY-1 & 2 (UNDER CLUSTER APPROACH) OVER AN AREA OF 24.70 ACRES OR 10.00 HA. HAVING KHATA NO.221, PLOT NO. 270 IN VILLAGE TURKEL UNDER KALAHANDI TAHASIL OF KALAHANDI DISTRICT OF TAHASILDAR KALAHANDI - EC**

1. This proposal is for Environmental Clearance for Turkel Sand Quarry-1 & 2 (Under Cluster Approach) over an area of 24.70 Acres or 10.00 Ha having Khata No.221, Plot No. 270 in village Turkel under Kalahandi Tahasil of Kalahandi District of Tahasildar Kalahandi.
2. **Category:** As per EIA Notification,2006, and subsequent amendments, the project falls under category B1 of Schedule 1(a)-Mining of minerals as the lease area is more than 5.0 Ha.
3. Quarry lease for minor mineral (River sand) has been proposed to be granted by the Tahasildar, Kalahandi to the successful bidder for minor mineral (River Sand) for five years after auction.
4. Mining Plan with Progressive Mine Closure Plan has been approved by Geologist, O/o Joint Director Geology Zonal Survey, Balangir, Odisha vide letter no. Memo no.-850 dated 01/09/2021.
5. This project is a new proposed sand mine project with the excavation capacity of 34120 m<sup>3</sup> /year sand.
6. **TOR details:** Terms of Reference was granted by SEIAA vide File No. SIA/OR/MIN/68237/2022 on dated 22/02/2022 & SIA/OR/MIN/80758/2022 on dated 11/11/2022.
7. **Public hearing details:** Public hearing was held on dated 14.09.2022 at 10.00 AM near Chahagaon Gram Panchyat Office under Kalahandi block of Kalahandi District. During Public Hearing, about 80 local people participated and 33 suggestions/opinions were received by local citizens. Issues raised were regarding transportation of sand, transportation route, sand mining from river bed, control of vehicular emission during transportation, dust suppression measures, road development, provision of drainage facility in the village to avoid water logging problem, plantation, utilization of DMF fund for peripheral development of the village, road development and protection of environment. The amount incurred for action plan of public hearing is Rs. 50,000.
8. **Location and Connectivity:** The cluster lease area is on Khata No. 221, Plot no. 270, Village: Turkel, Tahasil - Kalahandi, District - Kalahandi, Odisha. The mine lease area falls under the Toposheet No. 64P/4. The geo coordinates of the proposed site ranges from Latitude N20° 08' 30.9" to N20° 08'39.8" and Longitude E83° 05' 18.6" to E83° 05' 40.9". Nearest state highway is SH – 16 about 0.7km, nearest village is Turkel about 1km. Nearest railway station is Kesinga at 15km and nearest airport is Biju Patnaik International Airport, Bhubaneswar about 287 km. Nearest reserve forest is Dhanupanchan Reserve Forest about 4 km.
9. **Seismic zone:** The proposed project site falls in Seismic Zone III. Kalahandi is in Zone III of the Bureau of institute of seismological Research (ISR), seismic zone map for India.
10. **Replenishment Study Report** – For Replenishment study, the survey was done by using UAV/Drone which indicates the mineable sand deposit is around 33525 cum. 60% of the above computed mineable reserve has been taken as available mineable reserve over the area as per MoEF Notification dated 25.07.2018. Maximum of 33525 cum of sand per annum may be allowed for mining activities. 60% of the mineable reserve is 20115 cum. The maximum extraction limit as per sustainable sand mining Rule of MoEF Guideline is 20115cum.

Proceedings of the SEAC meeting held on 12.04.2023

(Old Proposals – ADS received)

**Environmental Scientist, SEAC**

11. **Reserves:** Total geological and mineable reserves in the proposed project is 200038 cum and 108384 cum respectively.
12. **Rate of production:** Total production from cluster is 170600cum during the plan period as per the following table.

Name Of The Lease Cluster	Year	Surface Area m <sup>2</sup>	Thickness m	Production (m <sup>3</sup> )
Turkel sand Quarry-1	1 <sup>st</sup> Year	10000	1.8	18000
	2 <sup>nd</sup> Year	10000	1.8	18000
	3 <sup>rd</sup> Year	10000	1.8	18000
	4 <sup>th</sup> Year	10000	1.8	18000
	5 <sup>th</sup> Year	10000	1.8	18000
Total				90,000
Turkel sand Quarry2	1 <sup>st</sup> Year	8060	2	16120
	2 <sup>nd</sup> Year	8060	2	16120
	3 <sup>rd</sup> Year	8060	2	16120
	4 <sup>th</sup> Year	8060	2	16120
	5 <sup>th</sup> Year	8060	2	16120
Total				80,600
Turkel Cluster				1,70,600

13. **Mining method:** The mining is confined to extraction of sand from the bed of Tel River. The mining will be opencast, manual method in which the material will be collected in its existing form and transportation through 8 tipper sand 12 trucks. The depth of the mining will be maximum 1.0 meter. The mining will be undertaken on single shift basis.
14. **Baseline study:** Baseline study of the study area was conducted during pre-monsoon from 1st October 2021 to 31<sup>st</sup> December 2021 for Turkel Cluster Sand quarry-1&2.

**Air Quality Monitoring Results** - The concentrations of PM10 and PM2.5 for all the 8 AAQM stations were found between 52.30 to 73.8µg/m<sup>3</sup> and 16.70 to 23.60 µg/m<sup>3</sup> respectively. The concentrations of SO<sub>2</sub> and NO<sub>x</sub> were found to be in range of range of 6.4 to 9.1µg/m<sup>3</sup> and 9.7 to 13.60 µg/m<sup>3</sup> respectively.

**Noise Quality Monitoring Results** - Ambient noise levels were measured at 8 locations around the Mine site. Noise levels varied from 42.1dB (A) Leq to 44.6 Leq dB (A) during day time and 39.1 dB (A) Leq to 41.7 Leq dB (A) during night time.

**Ground water Quality Monitoring Results** - The ground water analysis for all the 7 sampling stations shows that pH varied from 7.14 to 8.10, total hardness varied from 224 mg/l to 382 mg/l & total dissolved solids varied from 376 mg/l to 514 mg/l. The water samples contain chloride 36 mg/L to 94 mg/L, Ca from 44.8 mg/L to 85.6 mg/L, Magnesium varies from 20.9 mg/L to 43.7 mg/L.

**Soil Quality Monitoring Results** - Samples collected from 8 identified soil locations indicate pH value ranging from 6.8.-7.7. Organic Matter ranges from 0.95 % -2.63 % in the soil samples. Nitrogen is found to be in moderate amount as it ranges from 1213 mg/kg -1628 mg/kg and Phosphorous in less amount i.e. from 241 mg/kg- 386mg/kg, whereas the Potassium is found to be ranging from 543 mg/kg -879 mg/kg.



15. **Water Requirement:** The total water requirement for the project estimated to be 5 KLD for mining, spraying, greenbelt development and domestic uses and will be sourced from the nearby available water source and drinking water will be sourced from tanker water.

S. No.	Particulars	Quantity (KLD)	Source
i)	Dust Suppression (On haul roads etc.)	3.0	Water requirement will be met from nearby available water resource and drinking water will be sourced from tanker.
ii)	Green Belt Development/ Plantation	1.0	
iii)	Drinking/Domestic & Sanitation	1.0	
<b>Total</b>		5.0	

16. **Wastewater Management:** Domestic wastewater so generated will be disposed-off in soak pit via septic tank.

17. **Greenbelt:** Greenbelt will be developed along safety zone of the lease area (river bank areas). Native species will be planted like Neem, Mango, Teak, Jhaun and Jammuetc. About 50 nos./year and 250nos. of saplings will be planted by individual mines and in total 500nos. of saplings will be planted by the cluster during the plan period.

18. **Manpower:** Total manpower of 40 people will be required for the proposed project.

19. **Project cost:** Total project cost is Rs. 50 lakhs. Capital cost for EMP is Rs. 2,90,000. Recurring cost of EMP is Rs. 1,50,000 per annum.

20. **Environment Consultant:** The Environment consultant **M/s Green Circle Inc.** along with the proponent made a presentation on the proposal before the Committee.

21. The SEAC in its meeting held on 17.02.2023 decided to take decision on the proposal after receipt of the following from the proponent. The proponent has furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
1.	Exact span of bridge and distance of the bridge from the lease area.	Length of Tel Bridge -1 k.m and Width- 10mtr. Turkel Tel Bridge - 0. 20km (Turkel-1) Turkel Tel Bridge – 0.51 km (Turkel-2) Bridge to Turkel-1 sand Quarry exact distance is 200m. After that PP has left area of 200m as restricted zone which is shown in approved mining plan. So total 400m distance is declared as restricted zone from bridge.	Complied
2.	Replenishment study report along with grid readings.	Replenishment study report is attached.	Complied
3.	Rectify the error in table no.2 of approved mining plan.	The Table No-2 of approved mining plan is rectified.	Complied.
4.	Justification for increase in production from 4000cum (previous production) to 18000cum (current proposed)	The PP has mentioned Turkel Sand Quarry 1 was running mines having production of 4000cum of sand. After lease period was	-

Proceedings of the SEAC meeting held on 12.04.2023  
(Old Proposals – ADS received)

Environmental Scientist, SEAC

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of SEAC
	production) from the Turkel Sand Quarry 1.	over, it was decided to hike production of 18160cum per annum.	
5.	Copy of previous EC and its compliance to EC conditions certificate.	The copy of EC compliance is attached.	Complied

**Considering the information / documents furnished by the proponent and presentation made by the consultant M/s Green Circle Inc, Gujarat on behalf of the proponent, the SEAC decided to take decision on the proposal after receipt of the following clarification from the proponent:**

- a) Bridge is of 1km length and about 200meter from the lease area. As per Enforcement and Monitoring Guidelines for Sand Mining 2020 "Sand and gravel shall not be extracted up to a distance of 5Xof the length of the bridge on the upstream side and 10X on downstream side". Taking this criteria sand extraction is not permissible as bridge length is 1km.

  
**Member Secretary, SEAC**

F. No. 11-599/2014-FC  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Forest Conservation Division)

Indira Paryavaran Bhawan  
Aliganj, Jorbagh Road  
New Delhi - 110 003  
Dated: 1<sup>st</sup> April, 2015

To

**The Principal Secretary (Forests)**  
All State / Union Territory Governments

**Sub:** Guidelines for diversion of forest land for non-forest purposes under the Forest (Conservation) Act 1980- Submission of proposals to obtain approval for diversion of entire forest land located within a mining lease.

Sir,

I am directed to refer to this Ministry's letter No. 11-362/2012-FC dated 1<sup>st</sup> February, 2013 on the above-mentioned subject, wherein this Ministry informed *inter-alia* that in case of mines where approval under the Forest (Conservation) Act, 1980 (FC Act) for diversion of only a part of forest land located within the mining leases has been obtained, after two years from the issue of the said letter mining will be allowed only if the user agency either obtains approval under the FC Act for the entire forest land located within the mining lease or surrenders such forest land for which approval under the FC Act has not been obtained and execute a revised mining lease for the reduced lease area.

2. This Ministry received representations wherein it has *inter-alia* been stated that it is practically not possible to obtain approval under the FC Act for diversion of the entire forest land in two years as the whole process takes more than two years. This Ministry was requested to issue the revised guidelines to prevent disruption in the ongoing mining operations.

3. This Ministry has examined the matter in consultation with the Department of Legal Affairs, Ministry of Law and Justice. After careful examination of the matter and the advice of the Department of Legal Affairs, Ministry of Law and Justice, this Ministry in supersession of the said letter No. 11-362/2012-FC dated 1<sup>st</sup> February, 2013, hereby decides as below:

- (i) Henceforth, in case of mining leases, including those of Government Authorities, having forest land in part or in full, approval of Central Government under Section-2 (iii) of the FC Act, for the entire forest land located within a mining lease shall be obtained before execution (including by way of renewal) of a mining lease in accordance with the provisions of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) and the Rules framed thereunder.



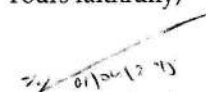
- (ii) User agencies while submitting application to obtain prior approval under Section 2 (iii) of the FC Act, if they so desire, may also seek prior approval of Central Government under Section 2 (ii) of the FC Act for use of the whole or a part of the forest land located within the mining lease for mining and allied non-forest activities. Area of forest land for which approval under Section 2 (ii) and 2 (iii) is sought shall separately be indicated in the proposals submitted by the user agencies. Where at the time of execution of the mining lease prior approval of Central Government under Section 2 (ii) to use the entire forest land falling in the mining lease for mining and allied non-forest activities is not obtained, the user agencies may submit proposal under Section 2 (ii) of the FC Act for the whole or a part of the remaining forest land falling within the mining lease, as and when such forest land is proposed to be utilised for mining and allied non-forest activities.
- (iii) Central Government after examination of a proposal and after such other enquiry as it may consider necessary, may accord approvals under Section 2 (iii) and 2 (ii) of the FC Act for assigning on lease and to utilize for mining and allied non-forest activities respectively, such areas of forest land, as it may consider expedient, or reject the same.
- (iv) Prior approval of Central Government under Section 2 (iii) of the FC Act shall be subject to payment of Net Present Value (NPV) of the forest land allowed to be assigned on mining lease. Similarly, prior approval of Central Government under Section 2 (ii) shall be subject to other usual conditions apart from realization of NPV of the forest land allowed to be utilised for mining and other allied non-forest activities.
- (v) In case of existing mining leases having forest land in part or in full, where approval under Section 2 of the FC Act for a part of the forest land has only been obtained, Central Government hereby accords general approval under Section 2 (iii) of the FC Act for the remaining area of the forest land falling within such mining leases, subject to following conditions:
  - (a) State Government shall, within a period of one year from the date of issue of this letter, realize from the user agency, NPV of the entire forest land falling in the mining lease, in case NPV of such forest land has not already been realised;
  - (b) In case State Government fails to realize from the user agency, NPV of the entire forest land falling in a mining lease within a period of one year from the date of issue of this letter, this general approval in respect of such mining lease, shall be kept in abeyance, and shall be deemed to have been kept in abeyance, and all mining activities in such mining lease shall be stopped, till such time, the NPV of such forest land is realised by the State Government;
  - (c) The general approval shall be valid for a period co-terminus with the period of mining lease in accordance with the provisions of the Mines and Minerals (Development and Regulation) Act, 1957, as amended, and the Rules framed thereunder;

2/01/2017

- (d) This general approval does not, in any manner, exempt a user agency from obtaining prior approval under Section 2(ii) of the FC Act in regard to such area of forest land which is to be used for non-forest purpose;
- (e) Grant of this general approval under Section 2 (iii) does not, in any manner, create any right or equity in favour of the user agency for grant of approval under Section 2 (ii) of the FC Act and decision on proposals under Section 2 (ii) will be taken purely on the merit of each case;
- (f) This general approval will not be applicable to the forest land for which Central Government before the issue of this letter has already declined approval under Section 2 of the FC Act; and
- (g) Grant of this general approval does not in any manner, exonerate the concerned authorities in the State Government or in any other Authority, from the proceedings under Section 3A and 3B of the FC Act, liable to be initiated for violation, if any, of the FC Act committed by them by assigning such forest land on mining lease without obtaining prior approval of Central Government under Section-2 of the FC Act.
- (vi) The user agency shall be responsible for protection of the forest land located in a mining lease for which prior approval of Central Government under Section 2 (iii) of FC Act, including by way of the afore-mentioned general approval, has only been obtained. However, administrative and management control of such forest land will remain with State Forest Department or other forest land owning agencies and the forests will be managed in accordance with the approved management plan till such time it is not diverted for non-forest purpose, *i.e.*, mining and remains unbroken.

This issues with approval of the Hon'ble Minister of State (Independent Charge) for Environment, Forest and Climate Change.

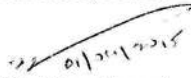
Yours faithfully,

  
(H.C. Chaudhary)  
Director

**Copy to:-**

1. Prime Minister's Office (*Kind attn.:* Shri Santosh D. Vaidya, Director).
2. Secretary, Ministry of Mines, Government of India.
3. Secretary, Ministry of Coal, Government of India.
4. Secretary, Ministry of Steel, Government of India.
5. Principal Chief Conservator of Forests, all States/UTs.
6. Nodal Officer, the Forest (Conservation) Act, 1980, all States/UTs.
7. All Regional Offices, Ministry of Environment, Forest and Climate Change (MoEFCC).
8. Joint Secretary, In-charge, Impact Assessment Division, MoEF.

9. PS to the Hon'ble Minister of State (Independent Charge) for Environment, Forest and Climate Change.
10. Chairman, State Environment Impact Assessment Authority, all States/UTs.
11. Member-Secretary, State Environment Impact Assessment Authority, all States/UTs.
12. All Directors/ Assistant Inspector General of Forests in Forest Conservation Division, MoEFCC.
13. All Advisors/ Directors/ Dy. Directors in the Impact Assessment Division, MoEFCC.
14. Director, Regional Office (Headquarters), MoEFCC. .
15. Sr. Director (Technical), NIC, MoEFCC with a request to place a copy of this letter on website of this Ministry.
16. Sr. PPS to the Secretary, Ministry of Environment, Forest and Climate Change.
17. Sr. PPS to Director General of Forests and Special Secretary, Ministry of Environment, Forest and Climate Change.
18. Sr. PPS to Addl. Director General of Forests (Forest Conservation), Ministry of Environment, Forest and Climate Change.
19. PS to Inspector General of Forests (Forest Conservation), Ministry of Environment, Forest and Climate Change.
20. Guard File.

  
**(H.C. Chaudhary)**  
Director

**CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR M/S YAZDANI STEEL & POWER LIMITED FOR MANGANESE ORE 0.04 MTPA AND IRON ORE 0.3 MTPA AT KOLMONG IRON & MANGANESE BLOCK OVER AN AREA OF 218.481 HA (AS PER DGPS)/218.530 HA (AS PER ROR) (FOREST: 155.326 HA & NON-FOREST: 63.204 HA) IN VILLAGE-KOLMONG UNDER KOIRA TAHASIL OF SUNDARGARH DISTRICT FOR OF SRI BINODA KUMAR ACHARYA - EC**

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**(I) Statutory compliance**

- (i) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (ii) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (iii) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, 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 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (iv) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project,
- (v) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the project.
- (vi) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.
- (vii) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (viii) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made thereunder in respect of lands which are not owned by it.
- (ix) The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-I1013/57/2014-IA.II (M), dated 29<sup>th</sup> 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".
- (x) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.

- (xi) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (xii) State Pollution Control Board shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- (xiii) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board and web site of the Ministry of Environment, Forest and Climate Change ([www.environmentclearance.nic.in](http://www.environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF&CC Regional Office for compliance and record.
- (xiv) The Project Proponent shall inform the MoEF&CC/SEIAA, Odisha for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

## **(II) Air quality monitoring and preservation**

- (i) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (ii) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM<sub>10</sub> and PM<sub>2.5</sub> are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

## **(III) Water quality monitoring and preservation**

- (i) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection



of ground water table shall essentially be based on detailed hydro-geological study of the area.

- (ii) 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. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iii) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (iv) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC / SEIAA, Odisha. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, SEIAA, Odisha, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- (v) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1 /2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.

- (vi) The project proponent shall construct retaining wall and settling pond within the lease area. Further, check dams shall be constructed at strategic locations in which rain water passes in rainy season. Finally, the excess supernatant after sedimentation shall be allowed to spill away through stone pitch structure to the nearby valley.
  - (vii) De-silting of agricultural lands in buffer zone and beyond including nearby Nalas/rivers perennially periodically and perpetually caused due to wash up of minerals/OB/dumps shall be done as per SOP submitted. A legal affidavit shall be submitted within 6 months from the date of issue of Environmental Clearance to this effect with periodicity of de-silting.
  - (viii) Detail design of the existing retaining wall and the proposed for the expansion from a chartered Civil Engineer shall be submitted within 6 months from the date of issue of Environmental Clearance to ensure that no silt after wash up is escaped from the core / buffer zone of the mines.
  - (ix) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office, MoEF&CC annually.
  - (x) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated in an ETP as proposed so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
  - (xi) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board.
- (IV) Noise and vibration monitoring and prevention**
- (i) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
  - (ii) 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 /night hours.
  - (iii) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The worker engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

**(V) Mining Plan**

- (i) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- (ii) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (iii) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(VI) Land reclamation**

- (i) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- (ii) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (iii) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (iv) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be

consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

- (v) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Bhubaneswar as well as SEIAA, Odisha.
- (vi) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and topsoil / OB / waste dumps to prevent runoff of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (vii) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the comers of the garland drains.
- (viii) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.
- (ix) 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.

**(VII) Transportation**

- (i) No Transportation of the minerals shall be allowed in case of roads passing through transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

- (ii) The Main haulage road within the mine lease should be provided with a permanent water arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.
- (iii) Traffic management shall be done as per recommendation of Traffic Management Study Report.
- (iv) The Project Proponent shall provide parking plaza for the heavy vehicles within the lease area as recommendation of NEERI.

**(VIII) Green Belt**

- (i) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- (ii) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- (iii) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (iv) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (v) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

**(IX) Public hearing and human health issues**

- (i) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
- (ii) A commitment in form of an undertaking for periodical occupational health checkup of the employee and the local people shall be done through an occupational health expert as per the detailed action plan submitted with the proposal within 6 months from the date of issue of Environmental Clearance.
- (iii) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- (iv) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x 14 inches and of good quality).
- (v) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one

second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

- (vi) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (vii) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- (viii) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.
- (ix) Issues raised and recorded in proceedings of public hearing w.r.t. environment / pollution / CER shall be complied by the Mining Authority as per OM F. No. 22-65/2017-IA.III, dated 30.09.2020 of MoEF&CC, Govt. of India.

**(X) Corporate Environment Responsibility (CER)**

- (i) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by SEAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- (ii) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office / SEIAA, Odisha.

**(XI) Miscellaneous**

- (i) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (ii) 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.

- (iii) The project proponent shall establish a solar power plant with 30KVA capacity within the lease area as proposed.
- (iv) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEF&CC & its concerned Regional Office, SEIAA, Odisha, Central Pollution Control Board and State Pollution Control Board.
- (v) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- (vi) The proponent shall comply all the specific conditions as recommended by CSIR-NEERI on carrying capacity study (as applicable) in time bound manner as proposed.
- (vii) The project proponent shall augment infrastructure on drinking water, health care and education in nearby villages as per time bound action plan submitted.
- (viii) The project proponent shall obtain permission from DGMS under 106(2b) to carry out blasting operation within the lease area.
- (ix) The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- (x) 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.



**STANDARD ENVIRONMENTAL CLEARANCE CONDITIONS TO BE STIPULATED IN ENVIRONMENTAL CLEARANCE FOR SAND MINING**

**Stipulated Conditions:**

1. The project proponent should carry out River bed sand mining manually by engaging local laborers in force to check over exploitation of sand at the source.
2. Any change in the plan or quantity to be produced shall require prior approval of SEIAA.
3. There shall be a 'no working zone' to protect the embankment on both sides, road or rail bridge in the vicinity, if any, dam, weir, water intake structure of irrigation or drinking water project, or any cross-drainage structure. 10 % of the width of river shall be left intact along the embankments on both sides as 'no mining zone'. Further, no mining shall be allowed within 200 m of any existing structures dam, weir, water intake structure of irrigation or drinking water project, or any cross-drainage structure. In case of River Bridge, this no mining zone shall extend upto a minimum stretch of 250 meters from the bridge on the upstream side and 500 meters on the downstream side. The lease area shall be accordingly curtailed to carve out the actual sand mining area within the leasehold. Exact map of the lease area, and the 'no mining zone' shall be drawn to scale, showing the DGPS coordinates of all corner points, and the location of the bridge, embankment, extraction route & other structures; and such map has to be submitted to SEIAA by the project proponent through the Tahasildar within three months of the date of issue of the EC. The quantum of sand allowed to be extracted will be worked out on the basis of the actual working area.
4. The lease area and the actual working area shall be demarcated on the ground by erecting durable masonry /concrete pillars by the project proponent.
5. The project proponent shall take prior statutory and regulatory clearance as required from the concerned authorities in respect of the project, before carrying out any operation.
6. Mining is not permissible within the water channel or stream flow area. No stream shall be diverted for the purpose of mining and no natural water course shall be obstructed. The mining or any ancillary activity shall not in any way disturb the flow pattern of the river water during the non-monsoon period. There shall be no sand mining in the river during the rainy season or when there is flow of water in the river.
7. Sand mining operations shall not affect the existing sources for irrigation / drinking water / industrial purpose.
8. The natural sand dunes, if any, near or surrounding the lease area shall not be disturbed.
9. No transportation of the minerals shall ordinarily be allowed on any road passing through villages/habitations/forest land without prior explicit permission. Transportation

of minerals through existing rural roads can be allowed only by the concerned Govt. Department/BDO and only after required strengthening, such that the carrying capacity of road is increased to handle the sand truck traffic. The project proponent shall bear the cost towards the widening and strengthening of existing public roads in case the same is proposed to be used for the project. No movement on any road is allowed on existing village road network without appropriately increasing the carrying capacity of such roads. Project proponent shall ensure that the road may not be damaged due to transportation of the mineral and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and traffic density. Plying of sand extraction trucks may be allowed on roads / path ways passing close to schools, temples, hospitals and such other public places only with prior written permission of competent authority.

10. Vehicles hired for transportation of sand from the site should be in good condition and should have pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.
11. The vehicles shall not be overloaded and shall be covered with Tarpaulin. The Tahasildar may collect an appropriate road maintenance levy from the lessee as part of the lease conditions on the basis of quantum of sand transported, and utilize the proceeds of the levy for proper maintenance of the extraction paths and roads to prevent their degradation on account of plying of sand trucks.
12. The project proponent shall take all precautionary measures against causing damage to flora and fauna of the locality. The PP shall plant and nurse to full establishment a minimum of 50 number of saplings of native tree species along the approach roads, river banks and in community areas in consultation with the Gram Panchayat.
13. Water spray should be made on the road/extraction paths to control dust emission during transportation of sand.
14. The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
15. Environmental Management Plan (EMP) shall be implemented by PP to ensure compliance with the environmental conditions specified above. The year wise funds earmarked for environmental protection measures shall be kept in separate account and shall be spent according to the plan proposed. Year wise progress of implementation of EMP shall be reported to the SEIAA, Odisha and OSPCB along with the compliance report.
16. The proponent shall take necessary measures to ensure that there is no adverse impact of the mining operations on the human habitation if any, existing nearby.
17. It shall be mandatory for the project management to submit quarterly compliance reports on the status of implementation of the above stipulated environmental safeguards to the SEIAA, Odisha / SPCB, Odisha/ Regional Office of the MoEF&CC, Bhubaneswar, in hard and soft copies on 1<sup>st</sup> day of January, April, July, October of each calendar year, failing which EC is liable to be revoked.

18. River Bank stabilization shall be made through stone patching. Plantation of adequate number native species on river banks and both sides of haulage roads shall be made.
19. Since NH200, Kuccha Road and temple are only at a distance of 800 mtr, 570 mtr and 500 mtr respectively, all traffic safety measures shall be taken to avoid any kind of accidents.
20. Bio - toilet provision shall be made.
21. As raised during public Hearing and committed by PP, Loknathpur Sasan village road shall not be used for transportation of sand.
22. Stone patching on river bank with plantation in-between and the ramp construction shall be done in consultation with and advice of concerned W.R. Deptt, Government of Odisha.
23. Necessary sprinkling on Haulage Road and Avenue plantation shall be done.
24. At the end of mine closure, the proponent shall immediately remove all the sheds put up in the quarry and all the equipment in the area before closure of the quarry.
25. The lessee shall mark the mining lease area boundary by DGPS survey and co-relate the satellite coordinates with the cadastral map.
26. The conditions stipulated in the environmental clearance will be closely monitored on the ground by the lease granting authority, i.e. the Tahasildar, who shall ensure compliance of the stipulated conditions and take corrective measures promptly in case of any non- compliance and also ensure that the project proponent submits quarterly compliance reports.
27. The concerned Regional Office of the MoEF&CC/ SPCB, Odisha shall periodically monitor compliance of the stipulated conditions as applicable for this project. The project authorities should extend full cooperation to the MoEF&CC officer(s)/SPCB officer(s) by furnishing the requisite data / information / monitoring reports.
28. A copy of the clearance letter shall be sent by the proponent to concerned Gram Panchayat /Panchayat Samiti /Zilla Parisad /Municipal Corporation / Urban Local Body as the case may be.
29. Project proponent shall obtain Consent to Operate from the OSPCB and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the State Pollution Control Board.
30. The SEIAA, Odisha may revoke or suspend this EC, if implementation of any of the above conditions is not satisfactory. The SEIAA, Odisha reserves the right to alter /modify the above conditions or stipulate any further condition in the interest of environment protection.
31. The Project Proponent (lease holder) shall inform the SEIAA of any change in ownership of the mining lease. In case, there is any change in ownership or mining lease is transferred, then mining operation can be carried out only after transfer of EC

as per provisions of the para 11 of EIA Notification, 2006, as amended from time to time.

32. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this environment clearance besides attracting penal provisions in the Environment (Protection) Act, 1986.
33. 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 and any other Court of Law relating to the subject matter.
34. This Environmental Clearance (EC) is subject to orders/judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
35. 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.