PROCEEDINGS OF THE MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE, ODISHA HELD ON 17TH AUGUST, 2019

The SEAC met on 17th August, 2019 at 11:00 AM in the Conference Hall of Odisha State Pollution Control Board, Bhubaneswar under the Chairmanship of Sri. B. P. Singh. The following members were present in the meeting.

1. Sri. B. P. Singh - Chairman
2. Prof. (Dr.) P.K. Mohanty - Member
3. Sri. J. K. Mahapatra - Member
4. Prof.(Dr.) B.K. Satpathy - Member

The agenda-wise proceedings and recommendations of the committee are detailed below:

ITEM NO. 1

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR NISCHINTA QUARTZ & QUARTZITE MINES OF SRI S. K. BEHERA FOR PRODUCTION OF MAXIMUM UPTO 24,024 T/ANNUM OF QUARTZ AND QUARTZITE AND INSTALLATION OF 5 TPH CRUSHER PLANT OVER AN MINING LEASE AREA OF 5.419 HA AT VILLAGE NISCHINTA, DIST-MAYURBHANJ - REGARDING ENVIRONMENTAL CLEARANCE SUBMITTED UNDER VIOLATION CASE (TOR)

1. Nischinta Quartz & Quartzite mines over an area of 5.419 hectares are located in the village of Nischinta of Mayurbhanj district, Odisha. The lease was executed on 07.09.2000 for a period of 20 years in favor of Sri Santanu Kumar Behera, Mayurbhanj. The project comes under the purview of EIA notification as Category B projects. The mining activity has been initiated in the ML area since last 12 years. There are one existing dump and six existing quarry. The total production of the mines Maximum up to 24,024 TPA, the life of mines has been estimated as 30 years.
2. As per the recent estimation the geological and Mineable reserve is found to be 1,022,713 T and 8,58,512 T respectively. During the proposed scheme period the total excavation from the lease area will be 39410 m3. A total volume of 11260 m3. Waste is to be generated during the five years. Total area of dumping site is 1126 m2 and the height of the dump will be 10m. During the conceptual period the waste generated may be 94,342 m3. During the conceptual period the area occupied by these dump will be 0.269 Ha.
3. Drilling, blasting, excavation, loading, sizing and transportation etc. are various mining operations doing in the lease area. Drilling and blasting is being conducted once in a week and for drilling 32 mm dia jack hammer associated with compatible size compressor used for shot holes up to 1.5m depth. Power gel explosive in conjunction with safety fuse and ordinary detonator is blasted to loosen the hard rock mass for ease in excavation.
4. Excavation is done manually with the help of the common equipments like hand shovel, crowbar, hammer, pick axe etc. Total requirement of water for domestic as well as non-

domestic use is at 2700 litres per day. For mining activities a total of 94numbers of employee are required.

5. There are 110 no of village present in the buffer zone. Total house hold of the area is 15085 nos. with total population of 64026. Total male population is 31647 and female population is 32379.
6. As per baseline study report of the mines all the environmental parameters like air, water, soil, noise are within the specified standards prescribed by CPCB.
7. For abatement of pollution the lease has develop environmental management plan, disaster management plan, rain water harvesting, green belt development plan and waste disposal management plan.
8. Application for approval of ToR for carrying out EIA/EMP Studies for Nischinta Quartzite mines was made to SEIAA, Odisha, vide letter no. NM/10/12 dated 7.09.2012.
9. Presentation of the TOR was held on 27.11.2012 before the SEAC, Odisha for approval of ToR. The ToR was issued vide letter No. 182/SEAC-16 dated 28th December, 2012 and considering the very small project public hearing was waved out by SEAC and the final EIA/EMP report has been submitted for Environment clearance to SEIAA, Odisha. The presentation for Environmental Clearance before SEAC, Odisha was conducted on 20.08.2014 and during the presentation the fact was brought into the notice that there is an enhanced production during the financial year 2004 -05 which come under violation to E(P) Act,1986.
10. The SEAC observed a case of violation and had requested SEIAA to initiate necessary action in accordance with MoEF&CC, Govt. of India OM dated 12.12.2012 & 27.6.2013. SEIAA vide letter no. 2025/SEIAA dated 05.09.2014 had issued following directions:
    - All mining activities should be suspended till Environmental Clearance is obtained
    - Resolution by the lessee to ensure that violation will not be repeated to be submitted to SEIAA, Odisha.
    - The State Govt. will initiate credible action on violation by invoking powers under section 19 of the Environment (Protection) Act, 1986 for taking necessary legal action
11. SEIAA, Odisha requested the District Administration to initiate the case against the Lessee and a case has been registered at SJDM, Baripada and Summon has been issued. SEIAA, Odisha sought a clarification regarding the violation case from Collector, Mayurbhanj and collector submitted the proper clarification regarding the court case. Based on the clarification SEAC, Odisha in its meeting held on 19.07.2016 recommended to grant Environmental Clearance valid from the date of Environmental Clearance accorded upto the lease period with conditions as applicable for Quartz and Quartzite Mines.
12. The proposal was placed in the 161st meeting of SEIAA and was decided to ascertain if the location of this mine is within or outside the eco sensitive zone of the Similipal Sanctuary by appropriate reference to the concerned DFO. DFO submitted his report that

the mine is located within the Eco-Sensitive Zone (default 10 kms) of Similipal Wild life sanctuary. The proposal was again placed in 172nd meeting of SEIAA, Odisha dated 7th-9th March 2017 and proposal transmitted to SEAC for re-examination in the light of the said location. Further the application for Environmental Clearance under violation case was submitted to EAC, New Delhi as per MoEF&CC, Govt. of India OM dated 14.03.2017 and with reference to MoEF&CC, OM dated 15.03.2018 the project has been transferred to SEIAA, Odisha for further appraisal.

13. The consultant **M/s Kalyani Laboratories Pvt. Ltd., Plot No. 78/944, Pahala, Bhubaneswar** along with the proponent made a detailed presentation on the proposal.

14. The SEAC observed the following :

    a) The mine is located within Eco-Sensitive Zone (default 10 kms) of Similipal Wildlife Sanctuary and requires Wild Life Clearance from National Board for Wild Life (NBWL).

    b) The quartz and quartzite mine is presently coming under minor mineral category and the lease area is less than 25 ha. and hence, public hearing for the proposal is not required.

15. The SEAC in its meeting held on Dt: 13.12.2018 decided to take decision on the proposal after receipt of the following information / documents from the proponent w.r.t to the provisions of the MoEF&CC, Govt. of India Notification dated 14th March, 2017

    (i) The production details of the mine from the inception of the mine till the date of closure duly authenticated by the Steel & Mines Department, Govt. of Odisha.

    (ii) Details of violation.

    (iii) Supportive documents w.r.t application made in violation portal of MoEF&CC, Govt. of India within the due date and same has been transferred to SEIAA, Odisha if they have made violation.

    (iv) Copy of the documents in support of the fact that the Proponent is the rightful lessee of the mine should be given.

    (v) Land schedule with kissam of land.

    (vi) Copy of application made to National Board for Wild Life (NBWL) for Wild Life Clearance.

16. Now the project proponent had furnished compliances as desired by the committee on 26.03.2019 as follows.

Sl. No.	Query Raised	Clarification
(i)	The production details of the mine from the inception of the mine till the date of closure duly authenticated by the Steel & Mines Department, Govt. of Odisha.	Certified copy of the Production details of the mines till the date of closure duly authenticated by Steel and Mines department, Govt. of Odisha has been furnished.

Sl. No.	Query Raised	Clarification
(ii)	Details of violation.	Copy regarding violation has been furnished.
(iii)	Supportive documents w.r.t application made in violation portal of MoEF&CC, Govt. of India within the due date and same has been transferred to SEIAA, Odisha if they have made violation.	Acknowledgement of application in violation portal of MoEF&CC, Govt. of India has been furnished.
(iv)	Copy of the documents in support of the fact that the Proponent is the rightful lessee of the mine should be given.	Copy of the lease deed has been furnished.
(v)	Land schedule with kissam of land.	Land scheduled has been furnished.
(vi)	Copy of application made to National Board for Wild Life (NBWL) for Wild Life Clearance.	Copy of application made to National Board for Wild Life (NBWL) for Wild Life Clearance has been furnished.

17. SEAC in its meeting held on 10.07.2019 observed that most of the members in the SEAC are new and not aware about the project, hence, decided to ask the proponent to make a presentation on compliance furnished for consideration of their proposal.

18. The consultant **M/s Kalyani Laboratories Pvt. Ltd., Plot No. 78/944, Pahala, Bhubaneswar** along with the proponent made a detailed presentation on the compliances furnished by the project proponent on SEAC meeting held on Dt: 17.08.2019

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC decided to take decision on the proposal after receipt of the following information / documents from the proponent.

1. Status of land as on 25.10.1980 w.r.t. Forest Conservation Act, 1980.
2. Copy of District Survey Report.
3. Certificate from the concerned DFO about exact distance of the mine from boundary of the Similipal Sanctuary and Biosphere Reserve.

ITEM NO. 2

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR MODIFICATION OF THE EXISTING ENVIRONMENTAL CLEARANCE FOR PROPOSED CONSTRUCTION OF 2 BLOCKS (G&H) OF B+S+9 STORIED RESIDENTIAL APARTMENT BUILDING WITH ONE BLOCK OF G+1 STORIED NEIGHBOURHOOD SHOPPING BUILDING OVER REVENUE PLOT NO. 417, 416, 412, 415, 418, 414/376 AT MOUZA – NARANPUR, PS – CUTTACK SADAR, DIST – CUTTACK OF M/S DION INFRATECH (PVT.) LTD.

1. M/s Dion Infratech Pvt. Ltd. has obtained Environmental Clearance from SEIAA, Odisha vide letter no. 7422/SEIAA, dated 09.10.2013 for construction of a multi-storied

residential complex of 6 Blocks with club area at - Mouza- Naranpur, Tehsil-Cuttack Sadar, Dist.- Cuttack in the State of Odisha with total built-up area of 43830.54 m2.

2. The proponent has constructed Block D and F. They have not constructed other Blocks due to current market scenario. Now, they have applied for modification in Environmental Clearance for exclusion and additional building. However, the total built up area for the modified project will be 26798.27 m2 i.e. less than the built up area as approved in environmental clearance.

3. The site is coming under developmental Plan of Cuttack Development Authority. The building plan was approved by Cuttack Development Authority vide letter no. 7426, dated 26.03.2013 for the earlier project and vide letter no. 107, Dt. 4th Jan, 2017 for the modified project.

4. The following table shows comparison between the earlier project and modified project.

Description	**EC Granted for the project (vide letter no. 7**/422**SEIAA on dated** 09.10.2013	**Existing building constructed as per EC**	**Additional building proposed**	**Total project (Existing+ Additional) i:e modification of EC**
Blocks	A,B,C,D,D1,E & F	D & F (Other blocks are not constructed due to current market scenario)	G,H, Society room area, Club area, Shop Area	D,F,G,H, Society room area, Club area, Shop Area. *)A,B,C , D1, E is deducted from Existing EC.)*
Built-up area	43830.54 m^2	10400.15 m^2.	16398.12 m^2.	26798.27 m^2.
Area of plot	Acres5.387 (21808 m^2.)	1556.95 m^2.	2285.72 m^2.	Acres3.31 (13399.96 m^2.)
Ground coverage	8782.4 m^2.	1556.95 m^2.	2285.72 m^2.	3842.67 m^2.
Greenbelt area	4361.68 m^2.	NA	NA	3162.19 m^2.
F.A.R	1.9956	NA	NA	2.00 (26798.27 m^2.)
Revenue Plot No.	425, 424,423/318/423/317, 423/316, 417,416,412,415, 414/860, 411/858,410/859, 421(P)	415,414(P), 416(P), 417(P)	414(P), 413,418,417(P), 416(P), 411/858(P)	412,414/860,415,416,417, 418 413/329,413,411/858,418/330
Dwelling Unit	312 (248 3BHK + 64 2BHK)	80 (62 3BHK+18 2BHK)	142 (60 3BHK+82 2BHK)	222 (122 3 BHK+100 2 BHK)
Fresh water requirement	196 KLD	36 KLD	64 KLD	100 KLD

Description	EC Granted for the project (vide letter no. 7/422SEIAA on dated 09.10.2013	Existing building constructed as per EC	Additional building proposed	Total project (Existing+ Additional) i:e modification of EC
(KLD)				
Power requirement	1720 KW	509.4 KW	954.2 KW	1464 KW
STP (KLD)	210 KLD	50 KLD	80 KLD	130 KLD
Height of the building	Tallest building Block D 36 mtrs.	Tallest building Block D 36 mtrs.	Tallest building Block H 36 mtrs.	Tallest building Block D & H 36 mtrs.
No. of DG Set	4 Nos. 350 KVA	1 Nos. 125 KVA	1 Nos. 140 KVA	2 Nos. 165 KVA
Project cost	` 60 Crores	` 15 Crores 67 Lakhs	` 24 Crores 70 Lakhs	` 40 Crores 37 Lakhs

5. During construction stage daily requirement of water will be about10KLD, which will be sourced from surface water through water tankers. During operation stage the total water requirement will be approx. 150 KLD (domestic + flushing), out of which total domestic water requirement is 100 KLD & Flushing water requirement is 50 KLD. The treated water recovered from STP will be 117 KLD. The wastewater will be treated in 2 nos. of STP having capacity of 130 KLD (50 KLD & 80 KLD). During dry season, 47 KLD treated waste water will be discharged into external drain and during rainy days, 67 KLD treated waste water will be discharged into external drain.

6. Solid waste generation will be approximately 0.4TPD which will be supplied to Cuttack Municipal Corporation for further disposal. During the operational stage, operation of Standby DG Sets and Vehicular Movements are main source for air pollution. Low Sulfur Diesel Oil (LDO or HSD) will be used in DG sets. Water will besprinkled to suppress dust, while cleaning and sweeping the road sand pavements. Proper traffic management and provision of acoustic enclosure for silent type DG sets will control noise level. Plantation along the peripheral boundary walls will also act as acoustic screen or vegetative barrier against the propagation of noise and pollutants.

7. The Consultant M/s Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar made a detailed presentation before the SEAC on behalf of the project proponent. The committee in its meeting held on 08.08.2017 decided to consider the proposal after receipt of certain information/ documents from the proponent. The proponent furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of the SEAC
1.	Percentage of energy used from solar / non-conventional source	5% of the total energy used from solar / non-conventional source.	Complied.
2.	Copy of building plan approval for the modified	Copy of building plan approval for the modified proposal has been	Complied.

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of the SEAC
	proposal	furnished.	
3.	Certified copy of the latest Monitoring Report of the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar as per circular dated 30thMay, 2012 on the status of compliance of conditions stipulated in the previous Environmental Clearance shall be provided.	Certified copy of the latest Monitoring Report of the Regional Office of the MoEF & CC, Govt. of India, Bhubaneswar as per circular dated 30thMay, 2012 on the status of compliance of conditions stipulated in the previous Environmental Clearance has been furnished.	Complied.
4.	Distance from the River Kuakhai	Project River Front's distance is 0.8 Kms from river Kuakhai.	Complied.
5.	Drainage plan and waste water discharge point	Drainage plan and waste water discharge point has been furnished.	To be verified during site visit.
6.	Land conversion documents	Land conversion documents have been furnished.	Complied.
7.	Proposal for Organic Waste Convertor	Organic Waste Converter proposal has been furnished.	Complied.
8.	Project brochure published by the builder to maintain STP for a period of 5 years as per conditions stipulated in Environmental Clearance (General Condition no. ix)	Project brochure published by the builder to maintain STP for a period of 5 years as per conditions stipulated in Environmental Clearance has been furnished.	Project brochure published by the builder has been furnished. But, assurance to maintain the STP for 5 years has not been indicated in the Brochure.

8. The proposed site was visited by the sub-committee of the SEAC on 22.11.2017 and as per observations of the sub-committee; the proponent was requested to furnish certain information/ documents. The proponent furnished the compliance and the SEAC verified the same as follows:

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of the SEAC
1.	The details of the STP already constructed / under construction and the new STP	Currently, they are constructing a 50 KLD STP for Block-D & F and details of the same has been furnished. They will provide another 100KLD STP for Block-G & H and details of the same has been furnished.	Complied
2.	Status of the planned / proposed drain of CMC as submitted / shown earlier. The status shall be supported by	At Present the Project area is not coming under Cuttack Municipal Corporation (CMC). The letter of CMC in this regard has been furnished. But the area is coming under Cuttack Development authority (CDA).The Cuttack Development Authority proposed a drainage	Status of the planned / proposed drain as shown by the proponent earlier . The status shall be supported by

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of the SEAC
	authenticated map of CMC showing drainage of the area with certified documents if any by CMC	system in Comprehensive Development Plan for Cuttack Development Plan Area, the same is available in the official website of CDA (http://www.cdacuttack.nic.in). The proposed drainage system is based on the existing drainage line, the project is located very close to main drain No-1 of Baranga zone of CDA. Presently, the internal drains have been planned on the periphery of the project area & internal drain covered with RCC slab has been constructed of length of 219 mtr, which will be connected to the discharge pit and fall into the main drain no-1. The downloaded drainage map of CDA from official website has been furnished.	authenticated map of CDA showing drainage of the area with certified documents if any by CDA. If the proponent proposes to construct a drain of its own, the status of land on which the drain is planned.
3.	Details of the plantation area (other than lawn/ landscape) for green belt to be spelt out clearly in terms of area and numbers of plants	As per CDA Bylaw 20% of the site area should be covered with plantation, area to be covered with trees comes to 2679.99 m^2 considering 3399.96 m^2 of plot area, they are providing 90 nos. of big trees in the periphery area inside their campus. The plant spices includes *Alstonia scholaris, Terminalia catappa, Mangifera indica, Terminalia arjuna, Syzygium cumin, Lagerstroemia speciosa and Bauhinia blakeana*. Average spreading of each plant comes to around 8 mtr. The landscape plan has been furnished. Out of which they have planted total 30 nos. of plant in first phase. Area covered with trees after planting 90 nos of trees comes to 4521.6 m^2 which is almost 33.74% of total land area. Other than big trees they are also providing small shrubs, ground covers and hedges this also adds to the overall greenery of the total site. The purchase Invoice of above mentioned plant has been furnished.	Complied.

9. The SEAC in its meeting held on 09.03.2018 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	Views of the SEAC
1.	Status of the planned / proposed drain of CDA. The status shall be supported by authenticated	The Cuttack Development Authority has proposed a drain system in its comprehensive development plan and the same has been authenticated by CDA vide letter no. 6055/CDA, dated 17.04.2018. The proposed drainage system is based	It seems from the proposed drainage system in Cuttack Development Plan under proposed CDP. Since, such proposal

Sl. No.	Information Sought by SEAC	Compliance furnished by the proponent	Views of the SEAC
	map of CDA showing drainage of the area with certified documents if any by CDA.	on the existing drainage line showed on the toposheet has been furnished. The project is located close to the main drain no. 1 of Baranga zone of CDA. Presently the internal drains of the project have been constructed of 219 meter length on the periphery of the project are covered with RCC slab and is connected to the discharge pit and will fall into the Main Drain No. 1.	will not serve the immediate issue raised; the project proponent may submit an alternate feasible proposal for consideration.

10. The SEAC in its meeting held on 05.05.2018, decided to take decision on the proposal after the proponent submit an alternate feasible proposal for consideration as it seems from the proposed drainage system in Cuttack Development Plan under proposed CDP and such proposal will not serve the immediate issue raised.

11. The proponent has intimated that after detail survey of the area they have planned to discharge the treated water in the below mentioned ways till the proposed drain planned on the CDP is constructed

    a) Discharge the treated water through the natural nala available near to the site.

    b) Discharge the treated water to the river Kuakhai without affecting the embankment through a diesel pump from the storage tank after filtering the same twice.

12. The SEAC in its meeting held on 29.09.2018, decided to take decision on the proposal after receipt of the following information / document from the proponent:

    i) Certified copy of the latest Monitoring Report of the Regional Office of the MoEF&CC, Govt. of India, Bhubaneswar on the status of compliance of conditions stipulated in the previous Environmental Clearance.

13. The proponent has furnished certified copy of the latest Monitoring Report of the Regional Office of the MoEF&CC, Govt. of India, Bhubaneswar on the status of compliance of conditions stipulated in the previous Environmental Clearance.

14. The MoEF&CC, Govt. of India notification vide S.O. 5733 (E), 14th Nov, 2018 stipulates that local bodies such as Municipalities, Development Authorities, District Panchayats as shall stipulate environmental conditions while granting building permission in respect of building or construction projects with built-up area >20,000 m^2 to 50,000 m^2 and industrial sheds, educational institutions, hospitals and hostels for educational institutions 20,000 m^2upto 1,50,000 m^2.

15. The MoEF&CC, Govt. of India notification vide S.O. 5736 (E), 15th Nov, 2018, exempted Environmental Clearance for building and construction project < 50, 000 m^2 and industrial sheds, educational institutions, hospitals and hostels for educational institutions < 1,50,000 m^2.

16. The SEAC in its meeting held on 03.12.2018 opined that Environmental Clearance is not required for this project as per the MoEF&CC, Govt. of India notification vide S.O. 5736 (E), 15th Nov, 2018 as the total builtup area is< 50, 000 m^2. Hence, proposal was returned to SEIAA.

17. Moreover, the Hon'ble NGT, Principal Bench, New Delhi in O.A. No. 1017/2018, dated 03.12.2018 has stayed the above notifications of MoEF&CC, Govt. of India.

18. The SEAC in its meeting held on dated 13.12.2018 recommended that the SEIAA, Odisha may consider to request the MoEF&CC, Govt. of India regarding the operational part of the above notifications of MoEF&CC, Govt. of India in view of directions of Hon'ble NGT, Principal Bench, New Delhi before taking a decision on the proposals under the above category.

19. During the last meeting of SEIAA held on 05.04.2019, the authority had decided to send the building and construction projects under above category to SEAC, Odisha for appraisal as per the OM No. 3-150/2017-IA-III dated 03.04.2018. This decision of SEIAA, Odisha was communicated by the SEIAA office to SEAC office vide letter no. 6621/SEIAA, dated 17.04.2019.

20. The SEAC decided to appraise building and construction projects of above category as per above decision of the SEIAA, Odisha.

21. The SEAC observed that the proponent has already furnished the information / documents as desired by the SEAC as per para-13 above.

22. The SEAC in its meeting held on Dt: 27.04.2019 decided to take decision on the proposal after receipt of compliance to the letter of MoEF&CC, Govt. of India w.r.t corrective measures taken by the proponent on the non-compliance Environmental Clearance conditions as mentioned in the certified compliance report.

23. The proponent has furnished the compliance to the letter of MoEF&CC, Govt. of India w.r.t corrective measures taken by the proponent on the non-compliance Environmental Clearance conditions as mentioned in the certified compliance report on dated 01.07.2019.

24. SEAC in its meeting held on 10.07.2019 observed that most of the members in the SEAC are new and not aware about the project, hence, decided to ask the proponent to make a presentation on compliance furnished for consideration of their proposal.

25. The consultant **M/s Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar** along with the proponent made a detailed presentation on the compliances furnished by the project proponent on SEAC meeting held on Dt: 17.08.2019

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC recommended for modification of the existing environmental clearance for proposed construction of 2 blocks (G&H) of B+S+9 storied residential apartment building with one block of G+1 storied neighbourhood shopping building over revenue plot no. 417, 416, 412, 415, 418, 414/376 at Mouza – Naranpur, Ps – Cuttack Sadar, Dist – Cuttack.

ITEM NO. 3

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR ALANDA – KUKUDA LIMESTONE & DOLOMITE MINES FOR PRODUCTION OF LIMESTONE OF CAPACITY 252558 M3 AND DOLOMITE OF CAPACITY 51729 M3 OVER MINING LEASE AREA OF 45.555 HA AT VILLAGE – ALANDA & KUKUDA, DIST-SUNDARGARH OF M/S B. D. PATNAIK MINERALS PVT. LTD – REGARDING SUBMISSION UNDER VIOLATION CASE (TOR).

The project proponent didn't attend the meeting. Therefore, the proposal was deferred.

ITEM NO. 4

PROPOSAL FOR ENVIRONMENTAL CLEARANCE FOR JORURI IRON ORE MINES FOR PRODUCTION OF IRON ORE UP TO 0.5 MTPA (ROM) ALONG WITH THE CRUSHER & SCREEN PLANTS OVER MINING LEASE AREA OF 27.17 HA LOCATED AT VILLAGE(S) JALAHARI, TAHASIL- BARBIL, DIST- KEONJHAR OF M/S KALINGA MINING CORPORATION- TOR UNDER VIOLATION CASE.

1. This proposal is for Environment Clearance for Joruri Iron Ore Mines (27.170 Ha) of M/s Kalinga Mining Corporation for production of Iron ore up to 0.5 MTPA (ROM) along with Crusher & Screen plants located at village(s) Jalahari, Sub division- Champua, Tahasil - Barbil in the District- Keonjhar, Odisha.
2. The mine had been operating since June 1953. Out of the total ML area of 27.17 Ha, 9.39 Ha are non- forest land, 16.67 ha of DLC forest land and 1.11 Ha under sabik kisam jungle. As per Section 8A (6) of the MMDRA Act 2015, the lease is valid up to 31st March 2020. At present, mine is not in operation mode since April 2007 due to want of statutory clearance i.e. Forest Clearance.
3. The project is located in:

   Latitude: 21° 57' 45.10" N; Longitude- 85° 24' 34.15"E
   Latitude: 21° 57' 51.07" N; Longitude- 85° 25' 31.12"E
   Toposheet No. 73 G/5
4. The mine site is approachable from Joda by road which is at a distance of 8 km from Joda on the Joda – Bamebari Express Highway. The nearest railway station Bansapani is at a distance of 3 km. Paradeep is nearest port situated at a distance of 330 km.
5. Mining Plan for 0.50 MTPA (ROM) capacity is approved by IBM vide letter no MP/OTFM/07-ORI/BHU/2013-14/1779 dated 07.08.2014. Next Review of mining plan is in process. Application to divert 17.78 ha of forest land including 11.431 broken up forest land prior to 1980, safety zone of 3.163 ha for non - forest use under F.C. act 1980 is made & the grant of Stage-I clearance is still awaiting. NPV of Rs. 1,19,40,610 lakhs paid for the entire forest land . Site specific wild life conservation plan approved by the PCCF (Wild Life) & Chief Wild Life Warden. Clearance from CGWA for drawl of 120 m^3/day of water for the project is obtained on 10.06.2011.

6. The project proponent informed that, the Hon'ble Supreme Court of India passed the order on 2nd August 2017 in the case of WP(C) No. 114 of 2014 i.e. Common Cause Vs Union of India and Ors deal with EC violation under E (P) Act 1986 (which is production without environmental clearance & exceeding the granted environmental clearance) and directed to State Govt. to raise the demand on the erring lessees in this regard and it should be paid before December 31st, 2017. The mine had exceeded the production quantity in the year 2004-05 and 2005-06. The Lessee has paid the total demand amount i.e. **Rs 1,69,04,954/- on 27.12.2017.**

7. The project proponent informed that EIA/EMP report was prepared on the basis of the **TOR issued by MOEF on 09th November, 2012** and baseline data collected during October 2012-Dec 2012. Public hearing for this project was held on **21.08.2014.** Final EIA/EMP with other details was submitted at SEIAA, Odisha vide letter dated **04.11.2014.** Project was presented before SEAC in its meeting on dated 29.5.2015 and the committee **recommended** the project for environmental clearance and **mentioned that Environmental Clearance will be issued subject to receipt of Stage-I forest Clearance from the proponent.**

8. Whereas, In the meantime Gazette Notification published by MoEF&CC, Govt. of India vide letter dated 14.03.2017; where it is mentioned that "violated cases even category 'B' projects need take environmental clearance from Expert Appraisal Committee central level and have to apply for environmental clearance under this notification only within six months from the date of this notification".

9. As per the above notification, they have applied in MoEF&CC, Govt. of India violation portal under violation category on dated 07.06.2017.

10. Further, as per the MoEF&CC Office Memorandum dated 16th March 2018 it is suggested that "B" category project will be considered at respective SEIAA. Further, as per the MoEF&CC Office Memorandum dated 16th March 2018 it is suggested that "B" category project will be considered at respective SEIAA. So they have re-applied to SEIAA accordingly.

11. The project proponent informed that action was taken by F&E Department, Govt. of Odisha responding to the direction of MoEF&CC, Govt. of India, requested the Collector Keonjhar to take legal action against the mining project vide letter dated 16.01.2014. The case regarding EC violation under E (P) Act 1986 has been filed on the name of proposed mine by Sub-divisional Magistrate (S.D.M), Champua, Keonjhar in the court of J.M.F.C., Barbil vide No. 2(C) C.C.No. 12/2014 dated 06.03.2014 which is sub-judice at the said Court.

12. The project proponent submitted the Affidavit in compliance with the MoEF&CC, Govt. of India OM no. 3-50/2017-IA-III (Pt.) dated 30th May 2018.

13. The project proponent along with the consultant **M/s Creative & Consultants, Chennai - 600059** made a detailed presentation on the proposal.

14. The project proponent requested to issue specific ToR as per MoEF&CC, Govt. of India notification dated 14.03.2017 "for preparing an independent chapter comprising

assessment of ecological damage, remediation plan and natural & community resource augmentation plan through accredited consultants" and for submitting the same along with the Final EIA / EMP report already prepared and submitted with the public hearing held on 21.08.2014 for grant of Environmental Clearance.

The SEAC after detailed presentation by the project proponent along with consultant noted that the proponent has gone for excess production of Iron Ore without prior Environmental Clearance under EIA Notification, 2006. The SEAC, after detailed deliberations on the proposal in terms of the provisions of the MoEF&CC, Govt. of India Notification dated 14th March, 2017, confirmed the case to be of violation of the EIA Notification, 2006 and **recommended for issuing Standard Term of Reference as per Annexure- I along with the following specific Term of Reference and additional specific conditions as recommended by CSIR-NEERI on carrying capacity study as per Annexure - II** for undertaking EIA and preparation of Environmental Management Plan (EMP):

(i) The State Government to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no Consent to Operate to be issued till the project is granted Environmental Clearance.

(ii) The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of Environmental Clearance. The quantum shall be recommended by the SEAC and finalized by the regulatory authority i.e. SEIAA, Odisha. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the SEAC and approval of the regulatory authority i.e. SEIAA, Odisha.

(iii) Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.

(iv) Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.

(v) The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.

(vi) Public hearing has already been conducted for the proposal earlier on 21.08.2014, a copy of which is also furnished with EIA/EMP. For this reason, conducting a fresh Public Hearing has been exempted.

(vii) One season fresh base line data to be generated for EIA/EMP preparation.

(viii) To submit the lease sketch approved by DMG, at the time of presentation before SEAC.

(ix) Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.

(x) Detailed hydrological study to be carried out in core and buffer zone of the project as per the recent GEC guidelines 2015.

(xi) Approved mining plan is to be submitted.

(xii) Recent compliance report from the regional office of MoEF&CC, Govt. of India, Bhubaneswar for the existing Environmental Clearance, if any.

ITEM NO. 5

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. VASUNDHARA POWER AND INFRASTRUCTURE PRIVATE LIMITED FOR PRODUCTION OF 9,60,000 TPA COAL WASHERY OVER AN AREA OF 23.02 ACRES AT MOUZA - KALOBAHAL, TAHASIL – HEMGIRI, DIST- SUNDARGARH (TOR).

1. The proposal was considered by the Committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.
2. M/s. Vasundhara Power and Infrastructure Pvt. Ltd. has proposed for a coal washery of capacity 9,60,000 TPA (throughput) over an area of 23.02 acres, at Mouza - Kalobahal, Tahasil – Hemgiri, Dist- Sundargrah. The company is promoted by Shri. K. P. Dalmia & Shri. Ghanashyam Dalmia.
3. As per EIA Notification dated 14th Sep, 2006 as amended from time to time, the project falls under Category "B", Project or Activity 2(b) – 4 (EIA Notification dated 25th June, 2014).
4. The project is located in:

   Latitude: 22° 01' 37.84" N; Longitude- 83° 49' 59.28"E
   Latitude: 22° 01' 40.93" N; Longitude- 83° 49' 65.37"E
   Khata no.- 72/105 & 72/108 of Mouza - Kalobahal.
5. Raw material is Bituminous coal and the end product is fine coal.
6. The washery feed conveyor carrying crushed coal (50-0mm) will discharge on to a De-sliming Vibrating screen for wet-removal of coal below 0.63mm.
7. 60 KL/ Day of Water is required for washing and domestic purpose, which will be met through ground water sources.

8. The area assigned for Green belt and a forestation is 6.846 acres which is 35% of plant area and will be carried along the periphery of the project boundary and inside the plant premises.
9. The estimated project cost is about ` 560.00 Lakhs.
10. The environment consultant **M/s Cognizance Research India Pvt. Ltd. GT-20, Sector-117, Noida** along with the proponent made a detailed presentation.

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC decided to defer the proposal and take decision on the proposal after receipt of the following information / documents from the proponent.

1. Quantity of raw material to be used, source of raw material and its composition, copy of MoU signed with the party for raw material linkage.
2. Status of land as on 25.10.1980 w.r.t. Forest Conservation Act, 1980.
3. To the scale map showing topography of the area in A1 size.
4. Simplified flow chart of process mentioning each step.
5. Corrected Water Balance diagram.
6. Details of land use break up area used for Raw Coal, Clean Coal, Middling & Rejects Stock Yards out of 5.053 Acres.
7. To the scale plant layout map (in A1 size) showing area for each facilities as well as plantation area..
8. Detailed material balance showing input and output.
9. Certificate from the State Pollution control Board showing exact distance of the proposed site from the boundary of Critically Polluted area of Ib Valley.
10. Status of permission from Water Resources Department, Govt. of Odisha for drawal of Ground Water.

ITEM NO. 6

PROPOSAL FOR ENVIRONMENTAL CLEARANCE OF M/S. VASUNDHARA POWER AND INFRASTRUCTURE PRIVATE LIMITED FOR PRODUCTION OF 9,60,000 TPA COAL WASHERY OVER AN AREA OF 23.02 ACRES AT VILLAGE-TAPARIA MOUZA -GAINKAPALLI, TAHASIL –HEMGIRI, DIST- SUNDARGRAH (TOR).

1. The proposal was considered by the Committee to determine the "Terms of Reference (ToR)" for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of the EIA Notification, 2006 and amendment thereafter.
2. M/s. Vasundhara Power and Infrastructure Pvt. Ltd. has proposed for a coal washery of capacity 9,60,000 TPA (throughput) over an area of 23.02 acres at Village-Taparia, Mouza- Gainkapalli, Tahasil – Hemgiri, Dist- Sundargrah. The company is promoted by Shri. K. P. Dalmia & Shri. Ghanashyam Dalmia.

3. As per EIA Notification dated 14th Sep, 2006 as amended from time to time, the project falls under Category “B”, Project or Activity 2(b) – 4 (EIA Notification dated 25th June, 2014).
4. The project is located in:

   Latitude: 22° 02’ 28.32” N; Longitude- 83° 35’ 19.76”E
   Latitude: 22° 02’ 40.43” N; Longitude- 83° 35’ 25.87”E
   Khata no.- 69/33,69/38,69/82 of Village- Taparia, Mouza- Gainkapalli
5. Raw material is Bituminous coal and the end product is fine coal.
6. The washery feed conveyor carrying crushed coal (50-0mm) will discharge on to a De-sliming Vibrating screen for wet-removal of coal below 0.63mm.
7. 60 KL/ Day of Water is required for washing and domestic purpose, which will be met through ground water sources.

8. The area assigned for Green belt and a forestation is 3.260 Ha. which is 35% of plant area and will be carried along the periphery of the project boundary and inside the plant premises.
9. The estimated project cost is about ₹ 560.00 Lakhs.
10. The environment consultant **M/s Cognizance Research India Pvt. Ltd. GT-20, Sector-117, Noida** along with the proponent made a detailed presentation.

Considering the information / documents furnished by the proponent and presentation made by the consultant, the SEAC decided to take decision on the proposal after receipt of the following information / documents from the proponent.

1. Quantity of raw material to be used, source of raw material and its composition, copy of MoU signed with the party for raw material linkage.
2. Status of land as on 25.10.1980 w.r.t. Forest Conservation Act, 1980.
3. To the scale map showing topography of the area in A1 size.
4. Simplified flow chart of process mentioning each step.
5. Corrected Water Balance diagram.
6. Details of land use break up area used for Raw Coal, Clean Coal, Middling & Rejects Stock Yards out of 6.906 Acres.
7. To the scale plant layout map (in A1 size) showing area for each facilities as well as plantation area.
8. Detailed material balance showing input and output.
9. Certificate from the State Pollution control Board showing exact distance of the proposed site from the boundary of Critically Polluted area of Ib Valley.
10. Status of permission from Water Resources Department, Govt. of Odisha for drawal of Ground Water.

Sri. B. P. Singh	Prof. (Dr.) P.K. Mohanty	Sri. J. K. Mahapatra	Prof. (Dr.) B.K. Satpathy
Chairman, SEAC	Member, SEAC	Member, SEAC	Member, SEAC

Approved

Chairman, SEAC

ANNEXURE - I

STANDARD TERMS OF REFERENCE (ToR) FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT FOR NON-COAL MINING PROJECT.

1. The ToR will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors .
2. Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
3. Year-wise production details since 1993-94 should be given, clearly stating the highest production achieved in any one year prior to 1993-94. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994. The production details need to submit since inception of mine duly authenticated by Department of Mines & Geology, State Government.
4. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
5. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
6. Certificate from Mining Officer that mining pits which are existing within lease area have been done illegally prior to sanction of lease in favour of lessee.
7. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
8. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
9. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
10. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process / procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given.The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at

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large, may also be detailed in the proposed safeguard measures in each case should also be provided.

11. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

12. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/ lease period.

13. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

14. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

15. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

16. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

17. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

18. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

19. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

20. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

21. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey,

clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

22. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.

23. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

24. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

25. One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season); December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PMlO, particularly for free silica, should be given.

26. Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

27. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

28. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

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29. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

30. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

31. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

32. Details of any stream, seasonal or otherwise, passing through the lease area and modification/ diversion proposed, if any, and the impact of the same on the hydrology should be.

33. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.

34. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

35. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

36. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

37. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

38. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

39. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

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40. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

41. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

42. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

43. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

44. A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.

45. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

46. The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 and the action plan on the activities proposed under CER shall be submitted at the time of appraisal of the project included in the EIA/EMP Report.

47. The Action Plan on the compliance of the recommendations of the CAG as per Ministry's Circular No. J-11013/71/2016-IA.I (M), dated 25.10.2017 needs to be submitted at the time of appraisal of the project and included in the EIA/EMP Report.

48. Compliance of the Ministry's Office Memorandum No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the judgment of Hon'ble Supreme Court, dated the 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India needs to be submitted and included in the EIA/EMP Report.

49. Mitigation measures as per the Ministry's OM no Z-11013/57/2014-IA.II(M) dated 29.10.2014-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.

50. Besides the above, the below mentioned general points are also to be followed:-

    a) All documents to be properly referenced with index and continuous page numbering.

    b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

    c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

    d) Where the documents provided are in a language other than English, an English translation should be provided.

    e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

    f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O. M. No. J-

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11013/41/2006- IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

g) The consultants involved in the preparation of EIA/EMP report should be an accredited with Quality Council of India (QCI) / National Accreditation Board of Education and Training (NABET) and a certificate in this regard should be annexed in the EIA/EMP reports. Data provided by other organization/Laboratories including their status of approvals etc. should be specified. The consultant, while presenting the project should be equipped with relevant data and information relating to the project and make a qualitative presentation.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. Process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

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ANNEXURE – II

RECOMMENDATION OF CSIR-NEERI REPORT ON "CARRYING CAPACITY STUDY FOR ENVIRONMENTALLY SUSTAINABLE IRON AND MANGANESE ORE MINING ACTIVITY IN KEONJHAR, SUNDARGARH AND MAYURBHANJ DISTRICTS OF ODISHA STATE"

1. Department of Steel & Mines, Govt, of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.') in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.
2. The expansion or opening of new manganese ore mines may be considered only when the actual production of about 80% is achieved. Further, the mines that have not produced Mn ore for last two years and have no commitment in the current year as well: EC capacity in such cases may be reviewed. The Department of Steel & Mines. Govt, of Odisha shall submit the Annual Report on this issue to the MoEF&CC for further necessary action.
3. Analysis of baseline environmental quality data for the year 2014 and 2016 indicates that existing mining activities appear to have little / no potential impact on environmental quality, except on air environment, which was mainly due to re-suspension of road dust. Therefore, all the working mines can continue to operate with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO conditions of the respective mine, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable acts.
4. Considering the existing environmental quality, EC capacity, production rate, iron ore resources availability and transport infrastructure availability, the share of Joda and Koira sector works out to be 70% and 30% respectively for the existing scenario for the year 2015-16. However, for additional EC capacity, it can be 50:50 subject to commensurate infrastructure improvement (viz. SOTM. pollution free road transport, enhancement of rail network etc.) in the respective regions.
5. Continuous monitoring of different environmental quality parameters as per EC and CTE/CTO conditions with respect to air, noise, water (surface and ground water) and soil quality in each region shall be done. The environmental quality parameters should not indicate any adverse impact on the environment. Monitoring within the mines should be done by individual mine lease holders, whereas outside the mine lease area, monitoring should be done by the Govt, of Odisha through various concerned departments/ authorized agencies. Various monitoring/ studies should be conducted through national reputed institutes, NABET/ MoEF&CC accredited laboratories/organizations. The reports submitted by individual mine lease holders and study reports prepared by other concerned departments/agency for each of the regions should be evaluated and examined by SPCB/ MoEF&CC.

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6. Construction of cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road minimum 300 m inside the mine should be done. This should be done within one year for existing mines and new mine should have since beginning. The concerned departments should extend full support; wherever the land does not belong to the respective mine lease holders. The Department of Steel & Mines, Govt, of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested above.

7. In view of high dust pollution and noise generation due to road transport, it is proposed to regulate/guide the movement of iron and manganese ore material based on the EC capacity of the mines. Accordingly, ore transport mode has been suggested, as given below in Table.

Table : EC Capacity based Suggested Ore Transport Mode (SQTM)

Code	EC	Suggested Ore Transport Mode
SOTM 1	> 5 MTPA	100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines
SOTM 2	Between 3 and <5 MTPA	Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option
SOTM 3	Between 1 and < 3 MTPA	Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options
SOTM 4	<1 MTPA	100 % by 10/17 Ton Trucks or above options

It is mentioned by State Govt, of Odisha that currently about 45% of the iron ore is despatched using rail network and progressively it will be increased to about 60% by rail/slurry over a period of 5 years, taking into account time required to set up more railway sidings.

In view of present ore transport practices and practical limitations, all the existing mines should ensure adoption of SQTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years. However, the State Govt, of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha.

Transportation of iron & manganese ore through river (jetty) to nearest Sea port (Sea cargo option) may be explored or connecting Sea ports witn Railway network from the mines to be improved further so that burden on existing road and rail network and also pollution thereof can be minimized. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to MoEF&CC and SEIAA, Odisha.

Responsibility: Department of Steel & Mines, Govt. of Odisha; Time Period: 5 Years for developing railway/ conveyor belt facilities

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8. Development of parking plazas for trucks with proper basic amenities/ facilities should be done inside mine. This should be done within one year for existing mines and new mines should have since beginning. Small capacity mines (in terms of lease area or production) not having enough space within the mine lease areas should develop parking plaza at a common place within the region with requisite facilities. Responsibility: Individual Mine Lease Holders; Time Period: 1 Year

9. Construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. Responsibility: Department of Steel & Mines with PWD / NHAI Time Period: 2 Years.

10. Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Resuspension" may be considered. Responsibility: PWD / NHAI/ Mine Lease Holders; Time Period: 3 months for existing roads.

11. Expansion of existing mines and new mines should be considered after conducting recent EIA Study fas per the provisions of EIA Notification 2QQ6, as amended time to time1) with proper justification on demand scenario for iron ore requirement and availability of pollution free transport network in the region. Responsibility: IBM, Department of Steel & Mines and MoEF&CC, New Delhi.

12. **Mine-wise Allocation of Annual Production:** In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept, of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario as suggested in Table, so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.

Table: Allocation of Production to Different Mines for 5 Years (as per approved Mining Plan)

Mine Lease	EC Capacity (MTPA)	Suggested Annual Production (MT)				
		2016-17	2017- 18	2018-19	2019-20	2020-21
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Mine 1	XI					
Mine 2	X2					
Mine 3	X3					
Mine n	Xn					
Total	160 +	105	129	153	177	201
Next year allocation = Average of EC Capacity and Last year production						

13. Expansion of Existing Mines having Validity up to 2020: In view of implementation of MMDR Act 2015, wherein many non-captive mines are expected to be closed by March 2020, total iron ore production scenario has been. It is expected that the non-captive mines having validity till 2020 shall try to maximize their production (limited to EC capacity) in the remaining period. Further, depending upon availability of iron ore resources, these mines may also seek expansion of EC capacity. It may be noted here that total EC capacity of existing 25 working mines having validity upto 2020 is about 85 MTPA, whereas actual

production from these mines has been only 44.677 MT (52.6%) during 2015-16 and 57.07 MT (67.1%) during 2016-17. Also, it is expected that these mines would not even be able to achieve ore production as per existing EC capacity till March 2020. Therefore, these existing mines should go for production to the fullest extent to meet the requisite demand from the State. However, where EC limit is exhausted, application for expansion may be considered. Further, the EC process (i.e. Grant of TOR, Baseline data collection, Mining plan/ scheme approval, Public hearing, preparation of EIA/EMP Report. Appraisal by the EAC and grant of EC) takes about one year time. Under such circumstances, it is suggested that further applications for grant of TOR or grant of EC for expansion of production capacity of the mine should be considered for those existing mines, which have exhausted their capacity subject to consideration of all environmental aspects. Responsibility: Department of Steel & Mines and MoEF&CC, New Delhi.

14. **Sustained Iron Ore Production beyond 2020:** Considering the implementation of MMDR Act 2015, total production of iron ore in Odisha State is anticipated to be about 111 MT during 2016-17 (actual production was - 102.663 MT), 136 MT during 2017-18, 146 MT during 2018-19 and 146 MT during 2019-20. Then there will be substantial drop in total production (to the tune of 73 MT during 2020-21 onwards) due to closure of mines, which are valid up to 2020. Therefore, in order to maintain operation/sustained growth of downstream industries, iron ore mining in the region needs to be continued at a sustainable rate. The State Govt. through Department of Steel and Mines should initiate appropriate action to ensure continued availability of iron ore from the region, as per suggested sustainable annual production

15. **Reserves Estimation**-Mining Plan and Exploration; Appropriate actions (geo- technical investigation for qualitative and quantitative resource estimation & other preparations for auction of mines), may be initiated taken into account the existing working mines, and the mines which were operational at some point of time (but closed presently due to various reasons). The total iron ore reserves/ resources available within the total lease area of each mine should be estimated by State Govt./NMET/ GSI (or any other approved agency) with respect to: (i) Total lease area of mine (surface), (ii) Maximum depth to which resources could be available, (iii) Resources below the ground water table (if intersected), (iv) Reserves are to be estimated as per UNFC code with respect to quantity and quality (% Fe content), (v) Maximum mining rate and area for auction (after 2020) will be calculated based on total resources available and proposed life of mine leading to closure of mine in a stipulated time period. Responsibility: Department of Steel & Mines, IBM and GSI; Time frame: 1 year for the mines to be auctioned for next 2 years. The above mentioned organizations shall ensure the compliance with respect to timelines for implementations.

16. Depending upon availability of extractable iron ore resources within a mine, mining below the ground water table may be permitted after conducting necessary geological and hydro-geological study by GSI and requisite approval from the CGWB/CGWA (Central Ground Water Board/Authority). This can be explored at least in few mines on trial/pilot basis. Further, within a mine, it will be desirable to operate one pit at a time, and next pit should be opened after extracting maximum possible resources from the first pit, so that the exhausted pit can be used for back filling/ storing of low grade iron ore. However, depending upon the quantity and/or quality of iron/ manganese ore, other mine pits in the same mine lease may also be opened for sustainable scientific mining, as per approved mining plan/scheme of mining by IBM. The Department of Steel & Mines, Govt.

of Odisha should initiate the pilot project so that minerals are fully utilized.

17. **Commercial Utilization of Low Grade Ore:** R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept, of Steel & Mines, Individual Mine Lease Holders.

18. The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept, of Steel & Mines, Govt, of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines. Govt, of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.

19. State Govt, of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.

20. Large and medium mine leases contribute to better implementation of reclamation and rehabilitation plans to sustain the ecology for scientific and sustainable mining. The small leases do not possess scientific capability of environmentally sustainable mining. Therefore, new mine leases having more than 50 ha area should be encouraged, as far as possible. This will ensure inter-generational resource availability to some extent. Responsibility: Dept, of Steel & Mines, Govt, of Odisha.

21. **Mining Operations/Process Related:** (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste, e.g. drills should either be operated with dust extractors or equipped with water injection system, (ii) After commencement of mining operation, a study should be conducted to assess and Quantify emission load generation (in terms of air pollution, noise, waste water and solid wasted from each of the mining activity (Including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders, (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers,

screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders, (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

22. **Air Environment Related:** (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the GPCB in this regard, (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM10. PM2.5, SQ2, NCb^ and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity, (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PMiO, PM2.5, S02, NOx and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. Further, 11 continuous air quality monitoring systems may be installed in Joida and Koira regions and one in Baripada/ Rairangpur region, (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral, (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of 3 using closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate).Responsibility: Individual Mine Lease Holders and SPCB.

23. **Noise and Vibration Related:** (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented, (ii) Appropriate measures (detailed in Section 5.4) should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the

noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.

24. **Water/Wastewater Related :** (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately, (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis, (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis, (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region, (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable, (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable, (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization, (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls.(xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis, (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls

roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

25. **Land/ Soil/ Overburden Related** : (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately, (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for longperiod. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc, (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals, (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating, (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.

26. **Ecology/Biodiversity (Flora-Fauna) Related:** (i) As per the Red List of IUCN (International Union for Conservation of Nature), six floral species and 21 faunal species have been reported to be under threatened, vulnerable & endangered category. Protection of these floral and faunal species should be taken by the State Forest & Wildlife Department on priority, particularly in the mining zones, if any, (ii) The mines falling within 5-10 km of the Karo- Karampada Elephant corridor buffer need to take precautionary measures during mining activities. The forest and existing elephant corridor routes are to be protected and conserved. Improvement of habitat by providing food, water and space for the elephants is required to be ensured to avoid Man- Elephant conflicts. Though as per the records of State Forest Department, movement of elephants in the Karo-Karampada elephant corridor within 10 km distance from the mines in Joda and Koira is not observed, the Forest Department shall further record and ensure that elephant's movement is not affected due to mining activities, (iii) All precautionary measures should be taken during

mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department, (iv) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner, (v) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded, (vi) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation, (vii) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value, (viii) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details, (ix) Similarly, Wildlife Department is also required to record and document annual status of wildlife in the region and should identify the need for wildlife management on regional level, (x) Maintenance of the ecology of the region is prime responsibility of the State Forest and Wildlife Department. They need to periodically review the status and identify the need for further improvement in the region. The required expenditure may be met from the funds already collected in the form of compensatory afforestation and wildlife management. Further, additional fund, if required can be sought from DMF. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

27. **Socio-Economic Related:** (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region, (ii) Land outees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation, (iii) The socioeconomic development in the region should be focused and aligned with the guidelines/initiatives of Govt, of India/ NITI Aayog / Hon'ble Prime Minister's Vision centring around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for *"Samagra Vikas"* of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by

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Ministry of Mines, Govt, of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

28. **Road Transport Related:** (i) All the mine lease holders should follow thesuggested ore transport mode (SOTM\ based on its EC capacity within next 5 years, (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the miner as suggested in Chapter 10. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport, (iii) Transportation of ore should be done bv covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PMin should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Flolders and Dept, of Steel & Mines.

29. **Occupational Health Related:** (i) 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 periodically, (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed, (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer),

30. **Reporting of Environmental Sustainability Achievement:** All the mines should prepare annual environmental sustainability report (ESR), highlighting the efforts made towards environmental protection with respect to different environmental components vis-a-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The mines performing high with effective environmental safeguards may be suitably recognized/rewarded. "Star Rating Format" formulated by the Ministry of Mines along with environmental sustainability report may be used,

31. **Environmental Monitoring Requirements at Regional Level:** Apart from strict compliance and monitoring by individual mine lease holder, there is a need for simultaneous monitoring in each of the regions by competent expert agencies under the guidance/ supervision of concerned regulatory agency. Details of the studies required to be done on regular basis (continuously for 5 years) through responsible agency (organization of national/state repute) and time frame are suggested in Table.

Table: Suggested Environmental Monitoring Requirements and Action Plans at

Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
1.	Environmental Quality Monitoring with respect to Air, Water, Noise and Soil Quality in each region (Joda, Koira and Baripada/Rairangpur) as per specified frequency shall be done by a third party (preferably Govt.) and/or laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC. All the water bodies (rivers, nalias, ponds etc.) shall be monitored. National/State level research/ academic institutes may be involved initially for couple of years to streamline the activity. The report shall be brought out annually by June each year. The study shall be conducted in consultation with MoEF&CC-RO.	SPCB	Continuous Annually
	Installation of online ambient air quality monitor for PM1 0. PMP.S, SOx and NOx within the mine havina more than 3 MTPA EC Caoacitv	Respective Mine Lease Holders	Continuous Annually
	Installation of online ambient air quality monitor for PM_{10}, $PM_{2.5}$, SOx and NOx in the Joda and Koira Region (total 11 locations.	SPCB	Continuous Annually
2.	Status of flora and fauna in each of the regions shall be assessed on annual basis. Changes, if any, taking place in the region shall be brought out clearly. The study shall be conducted in consultation with State Forest and Wildlife Department.	State Forest & Wildlife Dept.	Annually in mining zone and once in 3 years in the region
3.	Socio-economic study incorporating developments taking place in each of the region, CSR initiatives made by the mining companies shall be conducted on annual basis. Further, micro level developmental needs shall be clearly brought out in the report for each region. The study shall be conducted in consultation with district administration.	Respective District Administration	Annually
4.	A detailed hydro-geological study in each of the regions shall be	SPCB	Once in 2 years

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Sl. No.	Study component / Action Plan	Responsibility	Monitoring and Reporting Time Frame (Approx.)
	conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation measures to augment ground water resources in the area.		
5.	The State Govt. shall ensure construction and maintenance of dust free common roads/ appropriate rail network for transport of ore from mines to the consumer end.	Dept. of Steel & Mines	12 months for road network and 5-7 years for rail network
6.	Construction and maintenance of dust free roads from respective mine to the main road	Respective Mine Lease Holders	Continuous 6 months
7.	Traffic/road inspection study addressing the condition of traffic/roads leading to different mines and connecting to different railway sidings shall be undertaken on annual basis. Further, detailed traffic study shall be undertaken on every 5 yearly basis to ensure adequacy of road/rail infrastructure in each of the regions. The study can be undertaken through national/ state level research/ academic institute (such as CSIR-CRRI, New Delhi).	Dept. of Steel & Mines	Continuous 6 months
8.	Assessment of land use/ land cover changes in each of the regions, with particular focus on mining areas, afforestation activities, variation in flow path of various water bodies etc. using remote sensing data	ORSAC	Annually
9.	R&.D Studies for utilization of low-grade iron ore	Dept. of Steel & Mines through R&D / Academic Institutes	Upto 45% by 2020 and upto 40% by 2025

The data so generated for the region should be made available on the website of Department of Steel & Mines and also at MoEF&CC website, so that it can be effectively utilized by Individual Mine Lease Holders for preparing EIA/ EMP reports. This will meet the requirement for separate one season baseline environmental quality data collection by the individual proponents, if the mine proposed is in the same study region. Further. MoEF&CC fthrouah EAC1 can also utilize the data base available in evaluating the proposals for expansion of existing mines or new mines while granting

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ToR or EC to the mine, taking an holistic view of the region. State Govt, of Odisha should bring out an integrated environmental sustainability report for each of the regions (mainly for Joda and Koia region) incorporating ESR of individual mines and data collected in the region through various agencies, once in 5 years, to plan level of scientific and sustainable mining for the next 5 years.

32. Institutional Mechanism for Implementation of Environmentally Sustainable Mining: The present study is not a one-time study, but a process to ensure environmentally sustainable mining activities in the region on long term basis. Looking into the large-scale mining activities and long term perspective for mining vis-a-vis environmentally sustainable mining and upiiftment of people of the region, there is a need to create an agency, who will integrate all the aspects relating to sustainable mining in the region on long term basis. It could be a SPV of Govt, of Odisha or a cell within the overall control and supervision of Dept, of Steel & Mines, with members from

    IBM, GSI, OSPCB, MoEF&CC-RO and other concerned Departments and Mine Owners (EZMA), District Administration. It is found that the strong database available for the region needs to be taken into account to map and establish environmental quality of the region on daily, monthly, seasonal and annual basis. Further, the efforts and initiatives of the mines towards environmental protection as well as upliftment of the people of the region are required to be integrated, and a systematic plan at the block/regional level needs to be framed for the overall benefit of the local society, region, district, state and the country as a whole. It will be desirable to have proper environmental quality data management and analysis by NEERI or any other agency for next 5 years (six monthly compliance reports followed by field verification) ensuring sustainable mining practices in the region leading to an overall development of the region. District Mineral Funds should be utilized appropriately for various developmental activities/needs of the region. Further, an environmental sustainability report incorporating environmental status of region coupled with social upliftment may be brought out by SPCB or any other authorized agency on annual basis. This report can be used for supporting the regional EIA study, and also need for environmental quality monitoring by individual mine seeking environmental clearance for new mine/ expansion of mine, including public hearing. Since, outcome of the above study reports shall be in the overall interest of all the stakeholders (including local population) of the region, further planning for the region shall warrant cooperation and assistance of all the stakeholders (mine operators, industries, transporters, State & Centra! Government Offices, MoEF&CC, CPCB, SPCB, Dept, of Steel & Mines, IBM, IMD, NGOs and local people) in sharing the relevant data/information/ reports/documents etc. to continuously improve upon the environmentally sustainable development plan for economic growth in mining sector as well as for improvement in quality of life of the people of the region.

Secretary, SEAC