

30th meeting of Expert Appraisal Committee for the proposal involving violation of EIA Notification, 2006 was held on 3rd - 4th February, 2020 at Conference Hall (Teesta), First Floor, Vayu Wing, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi - 110 003

Day 1: 3rd February, 2020

Time: 10:00 AM

30.1. Opening remarks of the Chairman

30.2. Confirmation of the minutes of the 29th meeting held on 30th - 31st December, 2019 at Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi

30.3. Proposal for consideration

30.3.1 Expansion of Jagannath Opencast Coal Mining project from 6 MTPA to 7.5 MTPA with increase in mine lease area from 430.76 ha to 553.946 ha of M/s Mahanadi Coalfields Limited, located in District Angul, Odisha - Further consideration for Environmental Clearance

[IA/OR/CMIN/108556/2018 dated 19.06.2019] [F. No. J-11015/177/2015-IA.II(M)]

Jagannath OCP is an old opencast mine of Mahanadi Coalfields Limited located in Talcher Coalfield, Angul District, Odisha. It was opened in January 1970. Initial capacity was 1 MTPA and gradually the capacity increased to 6 MTPA vide EC letter no. J/11015/177/2005-IA-II (M) on 29th September 2005 & then to 7.5 MTPA vide letter no. J-11015/177/2005-IA-II(M) dt:06-09-2018 till 31-03-2019 & extended by six months till 30-09-2019.

The coal from this project is linked to NTPC Talcher TPS through a dedicated 7.0 km conveyor belt corridor apart from other basket linkage. As per sl.no.4 (i) of the above EC, “there being excess coal production and non-compliance of the EC conditions, and thus violation of the EIA notification, 2006. The proposal was then considered by the EAC (Violation) in pursuance of the Ministry’s Notification, 14-03-2017”.

Brief details of the projects are as:

- 1 Name of the Project** Jagannath OCP Expansion (7.5 Mty)
- 2 Name of the Company, Address, Tele No & E-mail** Mahanadi Coalfields Limited, PO: JagrutiVihar, Burla, Sambalpur, 768020, Telephone: 0663-2542084, E-mail: gmenvt2018@gmail.com
- 3 If joint venture, the names & Address of the JV Partners including their share**
:- Not applicable
- 5 Whether the project is in the Critically Polluted Area (CPA)** Yes
- 6 Cost of the Project** Rs. 409.08 Crs. (337.66 Crs., Additional)
- 7 Employment generated/ to be generated:** -534(Existing) + 185 (Expansion) direct employment opportunity. Beside above indirect employments will also be generated.
- 8 Benefits of the Projects:-** The proposed Reorganization project will result in following benefits-(i) Improvement in physical and social infrastructure (ii) Improvement in Social Infrastructure (iii) Increase in employment potential (iv) Contribution to the Exchequer (both State and Central Govt.) (v) Post mining enhancement of Green covers (vi) Improvement of Electrical Power Generation and consequently rise in electric power consumption thereby improvement in overall economic growth of the country.
- 9 Whether new or Expansion Project:** EC has been granted vide letter no. J-11015/177/2005-IA-II(M) dt:06-09-2018 for expansion from 6.0 to 7.5 MTPA till 31-03-2019. As per sl.no. 4(i) of the above EC, the proposal shall be separately considered by EAC (Violation).EC extended till 31-09-2019 vide letter no. J-11015/177/2005-IA-II (M) dt: 20-03-2019 and further extended till 31.03.2020 vide letter dated 01.10.2019.

- 10 If for expansion, whether the application is under 7(ii) of the EIA Notification, 2006:-**
NA
- 11 If expansion, please indicate the number and date of the certified compliance report of Regional Office of the MoEF&CC-** Project has been inspected by the ERO office, MoEF&CC on 26.12.2019.
- 12 No. and Date of the ToR /and revised ToR, if any,** letter issued by the MoEF (if this is a case for EC) ToR issued vide letter J-11015/177/2005-IA-II(M) dated 10.12.2018.
- 13 If the Project was considered in EAC, Pl. gives dates of the meeting(s).** Yes, the proposal was considered in the 24th EAC (Violation) meeting held on 23.07.2019.
- 15 Type of Mine (Open cast/ Underground/ mixed)** Open Cast
- 16 Capacity of the mine applied for** 7.5 Mty
- 17 ML Area**
- (a) As per block allotment (Ha)
- (b) As per approved mine plan (Ha) :- 553.946 Ha
- 18 Date of approval of mine plans, mine closure plan, status &date:-**
Approved by MoC vide letter no. F.No.34012/(04)/2011-CPAM Dtd. 16th May 2017
- 19 Date of Board's Approval:-** The Mining Plan and Mine Closure Plan of Jagannath OCP Expansion (7.5 MTPA) was approved by MCL Board on 18-04-2017 (189th meeting)
- 20 Date of Ground water clearance and surface water approval.** Applied to CGWA on date 29.06.2018. Reply to the Query raised by CGWA, Delhi office on 02.01.2020 was submitted on 06.01.2020. For surface water withdrawal, an agreement has been made with State Govt on 08.06.2000 for lifetime of coalfields.

21 Existing Ground Water level

Pre monsoon	Min – 0.80 mbgl
	Max – 13.27 mbgl
Post monsoon	Min – 1.05 mbgl
	Max – 9.85 mbgl

- 22 Date of mine closure approval:-** Approved by MoC vide letter no. F.No.34012/(04)/2011-CPAM Dtd. 16th May 2017

23 Any river/ Nallah flowing adjacent to the proposed mine. If yes, please give details

- Bangarujhor is about 100 m (North)
- Brahmani river is about 7.5 km (East).
- Nandirajhor is about 6.0 km (South).
- Singharajhor is about 6.5 km (North-West).

Details of Mine lease

The Land acquired under Coal Bearing Areas (Acquisition and Development) Act, 1957 & The Land Acquisition Act, 1984

Technical Details

24 Geological Reserve

- | | |
|----------------------------|----------|
| i Total geological reserve | 82.97 Mt |
| ii Mineable reserve | 72.14 Mt |
| iii Extractable reserve | 72.14 Mt |

iv Percent (%) of extraction 100%

v Range of ground water level

Pre monsoon	Min – 0.80 mbgl
	Max – 13.27 mbgl
Post monsoon	Min – 1.05 mbgl
	Max – 9.85 mbgl

vi Total estimated water requirement 2219.30 Kld

vii Details of intersecting ground water level. For pheratic aquifer – 1.05 mbgl

For deeper aquifer – around 31 mbgl

25 Details of Seams

i No of Seams 6

ii Thickness of seams to be worked on (range in mt)

Particulars	Unit	Max	Min	Avg.
Seam Thickness				
i) Seam V A	m	4.29	2.40	2.01
ii) Seam IV	m	11.80	4.0	7.62
iii) Seam III Top	m	5.56	1.79	3.92
iv) Seam III Bottom	m	5.20	1.70	4.33
v) Seam III Combined	m	16.70	11.59	11.26
vi) Seam II	m	36.55	25.91	31.08

iii Grade of Coal G12

iv Stripping ratio 1.07

v Category of gaseousness Not Applicable

vi Average gradient 30 to 50

vii Maximum thickness of seams

Particulars	Unit	Max
Seam Thickness		
i) Seam V A	m	4.29
ii) Seam IV	m	11.80
iii) Seam III Top	m	5.56
iv) Seam III Bottom	m	5.20
v) Seam III Combined	m	16.70
vi) Seam II	m	36.55

- 26 Method of mining** Opencast Mining by Shovel – Dumper/ripper-dozer in OB/parting; surface miner, pay loader & tipper in coal
- 27 Life of mine** 09 years
- 28 Whether ambient air quality seasonal data has been monitored. If so, from which season to which season and whether the results are within the prescribed limits.** Baseline data has been generated for the period from 03-11-2017 to 02-02-2018. Results are within the prescribed limit.
- 29 Whether the monitoring report of earlier EC from MoEF Regional Office has been obtained, in case the proposal is for expansion.** :- Project has been inspected by the ERO office, MoEF&CC on 26.12.2019 and the Certified Compliance Report is awaited.
- 30 Details of O.B**
- i External OB dumps
 - ii No of OB dumps 2 (Existing)
 - iii Area of each dump 36.470 (Existing)
 - iv Height of each dump 30 m
 - v Quantity (in Mm³) of OB in each dump 5.51 Mm³ (as on 31-03-17)
 - vi Year of back filling At present, the OB of the existing mine is being dumped internally. The entire OB from proposed project (80.94 Mm³) will be dumped internally in continuation with present internal dumping.
- 31 Details of internal dumps**
- i Number of Internal dumps 2
 - ii Area of each dump 249.325 Ha
 - iii Height of each dump Up to ground level
 - iv Quantity of wastes filled 158.43 Mm³
- 32 Utilization Potential of Wastes Back filling of Solid waste (OB) in de-coaled area**
- i Within the mines Backfilling
 - ii Outside the mines NA
 - iii Efforts made by proponent OB generated is concurrently backfilled into the mine.
- 32 Details of final Mine Voids:**
- i Area 227.401 Ha
 - ii Depth Minimum 48 m to Maximum 165 m
- 33 Details of Quarry**
- i Total quarry area 476.726 Ha
 - ii Backfilled quarry area which shall be reclaimed with plantation 229.15 Ha –
Plantation 20.175 Ha (Public use/ To be converted to grass land (conceptual)
 - iii Area and depth of void which is proposed to be converted into water body
227.401 Ha Minimum 48 m to Maximum 165 m
 - iv Green belt created (in Ha) 158.35 Ha

34 Details of Land usage

Sl. No.	Type of Land	Within ML area (Ha)	Outside ML area (Ha)	Total Area (Ha)
1	Agricultural	106.75	0	106.75
2	Waste land	158.04	24.48	182.52
3	Forest Land	82.736	0	82.736
4	Grazing	0	0	0
5	Surface water bodies	55	0	55
6	Others (afforestation by Jagannath OCP) Settlement	151.42	0	151.42
Total:		553.95	24.48	578.426

(i) Pre-Mining land use:

Sl. No.	Particulars	Area (in ha)		
		Forest	Non-forest (Govt. & tenancy)	Total (ha)
A	Break-up of mining lease area:			
1	Quarry excavation	82.736	393.990	476.726
2	External Dumps (In old Jagannath OCM only)	0.000	36.470	36.470
3	Infrastructure like workshop, store, CHP & land between infrastructure (In old Jagannath OCM)	0.000	40.750	40.750
	Sub-total (A) (Mining lease area)	82.736	471.210	553.946
B	Break-up of area outside mining lease area (in ha):			
1	Land for rehabilitation colony	0.000	11.270	11.270
	Sub-total (B)	0.000	11.270	11.270
	Grand Total (A+B)	82.736	495.690	578.426

ii) Post-Mining/closure land use (Core zone)–

Sl. No.	Land use during Mining	Land Use (Ha)				
		Plantation	Water Body	Grass land	Undisturbed	Total
1	External OB dump	36.470	-	-	-	36.470
2	Top soil dump	will be spread over the backfilled area				
3	Excavation	229.15	227.401	20.175	--	476.726
4	Built up area	8.15	--	--	32.60	40.750
	Total	273.77	227.401	20.175	32.60	553.946

External dump will be re-handled during post closure & proposed to be converted into public use/grass land

iii) Core Area

Sl. No.	Particulars	Area (in ha)		
		Forest	Non-forest (Govt. & tenancy)	Total
1	Quarry excavation	82.736	393.990	476.726
2	External Dumps (In old Jagannath OCM only)	0.000	36.470	36.470
3	Infrastructure like workshop, store, CHP & land between infrastructure (In old Jagannath OCM)	0.000	40.750	40.750
	Mining lease area	82.736	471.210	553.946

35 Details of Forest Issues

- i) Total forest area involved (in ha) for mining lease 82.736 Ha
- ii) Total Broken Forest Area 82.736 Ha
- iii) Status of Forest Clearance and extend of forest land diverted: Forest clearance for 82.736 Ha (58.096 Ha & 24.64 Ha) have been obtained on 9th Nov, 2005 and 7th Feb, 2014 respectively.
- iii) Is there any National Park, eco- sensitive Zones, within 10KM radius? Is so, Give the details No
- iv) Extent of forest land in the project (including safety zone and all types of forest land) (in ha) 82.736 Ha
- v). Total forest land for which stage-I FC is available (give area in ha), Forest clearance for 82.736 Ha (58.096 ha & 24.64 Ha) have been obtained on 9th Nov, 2005 and 7th Feb, 2014 respectively.

Area (in ha)	Stage-1 FC issued vide letter no. & date	Validity period of earlier granted FC
58.096	8-70/2004-FC, Dt- 19.11.2004	
24.64	8-87/2012-FC dt: 15-03-2013	30 Years

35 Cost of project:

- i) Total Capital Costs Rs. 409.08 (including 337.66 crs., Additional)
- ii) Cost of production Estimated Rs. 853.01/tonne
- iii) Sale Price (Actual) Desired selling price Rs. 919.49/tonne
- iv) CSR Cost (Actual) Fund for CSR will be allocated based on 2% of the average net profit of the company for the three immediately preceding financial years or Rs. 2.00 per tonne of coal production of the previous year whichever is higher.
- v) R&R Cost Estimated Rs. 919.20 Lakh (Additional)
- vi) No of PAFs 230 (Additional)
- vii) Cost of implementing EMP Rs. 6.27 Crores (additional Capital cost)

36 Details of Villages/habitation in Mine lease Area

- i) Inside the lease Balanda, Purunia, Nakshetrapur, Chandpur, Padmabatipur, Rakas
- ii) Surrender by lease Acquired under Coal Bearing Areas (Acquisition and Development) Act, 1957 & The Land Acquisition Act, 1984
- iii) Extent of cropland acquired/ being acquired in ha.:- 31 Ha

37 Details of transportation of coal

- i) In Pit 7.5 MTPA Surface Miner coal through Tippers
- ii) Surface to siding Surface to TTPS : 2.0 Mty (through belt conveyer)
Surface to siding : 4.0 MTPA (Through Tippers)
Surface to Road sale : 1.5 MTPA
- iii) Siding to loading Through Pay loader
- iv) Quantity being transported by Road/Rail/conveyer /ropeway Conveyer belt:
2.0 MTPA
Rail: 3.0 MTPA
Road: 1.0 MTY

37 Details of reclamation

- i) Reclaimed external OB dump (in ha) 36.47 Ha, which will be re-handled back into quarry during mine closure.
- ii) Internal dump (in ha) 249.325 Ha (post closure). 229.15 Ha will be afforested and the remaining 20.175 Ha is proposed to be converted into grass land.
- iii) Green belt (in ha) 8.15 Ha
- iv) Density of tree plantation (in nos of plants) 2500 nos per Ha
- v) Void (in ha.) at a depth of (in m) which is proposed to be converted into water body
227.401 Ha :- Minimum 48 m to Maximum 165 m
- vi) Other in ha (such as excavation area along ML boundary, along roads and infrastructure, embankment area and in township located outside the lease etc.)
:- 4.90 Ha
- vii) Agriculture and horticulture :- Nil
- viii) Fisheries :- Nil
- ix) ECO Tourist/recreation spot :- Nil

38. Detailed status of Progressive Mining Closure Plan (For expansion projects only)

- a. Implementation of various activities as per approved progressive mine closure plan (in Bar chart) Backfilling has already been started in some part of the quarry as per the approved MCP.
External dumps are planted.
- b. Any deviation from the approved Progressive Mine Closure Plan No
- c. Total area excavated (in Ha) 358 (As on 31/03/19)
- d. Total area backfilled after excavation (in Ha) 199.65 (As on 31/03/19)
- e. Total area reclaimed (in Ha) 129.15 (As on 31/03/19)

LEGAL ISSUES: Any violation cases pending. If so, please provide a list with details as annexure: No, However demand notice for Rs. 95.03 Cr issued by Dy. Director of Mines under MMDR Act 1957 for excess production beyond EC capacity. has been set aside by Revisional Authority, MoC vide order dtd 11.11.2019

39 Give details of actual coal production vis-à-vis sanctioned capacity since the inception of mine in following format

Year	EC sanctioned capacity (MTPA)	Actual Production (MTPA)	Excess production beyond the EC sanctioned capacity
1970-71	--	0.00	--
1971-72	--	0.03	--
1972-73	--	0.06	--
1973-74	--	0.15	--
1974-75	--	0.21	--
1975-76	--	0.40	--
1976-77	--	0.39	--
1977-78	--	0.42	--
1978-79	--	0.62	--
1979-80	--	0.58	--
1980-81	--	0.89	--
1981-82	--	0.87	--
1982-83	--	1.17	--
1983-84	--	1.75	--
1984-85	--	2.21	--
1985-86	--	2.33	--
1986-87	--	2.02	--
1987-88	--	2.20	--
1988-89	--	2.50	--
1989-90	--	3.21	--
1990-91	--	4.30	--
1991-92	--	5.18	--

1992-93	--	5.50	--
1993-94	--	5.15	--
1994-95	--	5.51	--
1995-96	--	5.53	--
1996-97	--	5.60	--
1997-98	--	5.49	--
1998-99	--	5.40	--
1999-2000	--	5.02	--
2000-01	--	5.43	--
2001-02	--	5.69	--
2002-03	--	5.20	--
2003-04	--	4.34	--
2004-05	--	3.57	--
2005-06	6.0	4.45	Nil
2006-07	6.0	5.57	Nil
2007-08	6.0	5.31	Nil
2008-09	6.0	5.42	Nil
2009-10	6.0	5.70	Nil
2010-11	6.0	6.33	0.33
2011-12	6.0	6.00	Nil
2012-13	6.0	6.00	Nil
2013-14	6.0	6.00	Nil
2014-15	6.0	2.65	Nil
2015-16	6.0	4.36	Nil
2016-17	6.0	3.34	Nil
2017-18	6.0	3.61	Nil
2018-19	7.5	5.014	Nil
Total		168.684	0.33

Public Hearing Issues

- 43 Date and Place of Public Hearing :- 19/02/2019, 10:30 AM, Premises of JagannathKalakendra, Jagannath Area, Near Balanda.
- 44 The designation of officer presided over the PH :- Additional District Magistrate, Angul
- 45 Number of representations received in writing from the district and outside of district, please give details:- 21 representations within the district

Consultant:

- 46 Name of the consultant who prepared the EIA/EMP report :- CMPDI
- 47 Whether the consultant has been accredited by the QCI & National Accreditation Board of Education and Training (NABET) as per MoEF OM dated 2nd December 2009:- Yes vide letter no. NABET/EIA/01/12/002 Dt: 31/01/2012.

Observation and recommendations of the EAC

The project was considered by EAC violation in the 14th EAC meeting held on 23-10-2018 and ToR issued vide letter dated 10th December, 2018. Public hearing for the same was conducted on 19-02-2019. Final EIA/EMP complying all the conditions of ToR along with Natural and Community Resource Augmentation Plan (NCRAP) due to excess production has been prepared and submitted to MoEF&CC through Parivesh Portal on 30-04-19 and re-submitted on 19-06-2019.

Status of Credible legal Action: D(T/P&P) MCL vide letter dtd 23.12.2019 requested the Principal Secretary, (Dept of Forest & Environment), Govt of Odisha vide letter dtd 23.12.2019 to initiate legal credible action. Director, Environment -cum- Special Secretary, Govt of Odisha had vide letter dtd 05.02.2019 and 02.01.2020 requested the Collector and DM Angul to initiate Legal action. Collector and DM Angul issued Show Cause Notice to GM Jagannath vide letter dtd 21.01.2020. Reply to show cause notice had been submitted vide letter dtd 21.01.2020.

The proposal earlier has been considered in the 24th EAC Violation dtd 22-24.07.2019 and the 22-point compliance has been sought by EAC (Violation).

The proposal earlier has been considered in the 24th EAC Violation meeting held during 22-24.07.2019. Project proponent along with the consultant from CMPDI presented the case before the EAC in 24th meeting and apprised EAC that Jagannath OCP Expansion 7.5 MTPA is an opencast coal mine located in Talcher Coalfield in Angul district of Odisha. It is an old mine operating since 1970. Project has been granted EC for expansion from 6.0 Mty to 7.5 Mty, with EC validity till 31-03-2019. As per the EC letter J-11015/177/2005-IA-II(M) on 6th September 2018, there being excess coal production and non-compliance of the EC conditions (Coal production exceeded to 6.33 MTPA beyond EC capacity of 6.0 MTPA in the year 2010-11), and thus violation of the EIA notification, 2006.

EAC (Violation) in 24th meeting after detailed deliberation on the information as presented by the PP observed that the Consultant and the Proponent did not present full EIA report as the case was to be considered for grant of EC beyond Sept, 2019 as well the specific ToR present made was found to be grossly inadequate in terms of damage assessment where proper weighted to water quality and air quality was not properly addressed. The components of CER were not properly addressed with year wise activity. In view of above EAC **deferred** the project for want of following:

1. Revised quantification of damage assessment to all the environmental parameters.
2. Furnish full copy of EIA report adding chapter 13 before the committee.
3. General presentation on the standard ToR is to be made before the committee.
4. Benefit accrued during the violation period is to be submitted.
5. Worst case scenario considering total capacity/quantity under mining along with revised AQIP modelling.
6. Ground water intersection details along with clearance letter is to be submitted.
7. Hydrological studies as per the GEC 2015 is to be submitted and studies of micro water shed details of the mining area and ground water numerical and analytical model studies depicting the impact on ground water regime of the water shed area and the remedial plans to augment the damage due to mining shall be brought out.
8. Impact of mining dust on soil quality shall be studied.
9. Status of credible action as per the ToR is to be submitted.

10. Details of R & R implementation status is to be submitted.
11. EMP cost under capital and recurring head is to be submitted component wise.
12. Revised Form 2 application submitting details like OB management, details of final voids, legible copy of FC letter and PH advertisement
13. Garland drain, toe wall and slopes drains details with photograph is to be submitted.
14. Existing green belt with photographs shall be submitted.
15. Risk assessment and disaster management plan be submitted.
16. Coal linkage letter.
17. Status of credible action.
18. Whether mine is in critical polluted area?
19. An EMP indicating all environmental related features like Green Belt, surface water structures like garland drain, toe wall, check dam, settling ponds, safety zone. All the dumps including separate top soil dump, piezometers locations etc. and other features shall be submitted and also water danger plan with or without protection measures against inundation as per DGMS specified to be submitted.
20. Safety Management Plan of the mine being implemented to be submitted.
21. Compliance status of conditions enumerated in EC obtained in 2005/2006.
22. LULC analysis for the core and as well as buffer zone.

The reply to the above 22-point compliance along with revised EIA EMP has been uploaded through the Parivesh Portal on 16.12.2019. The Certified Compliance Report of ERO, MoEF&CC Bhubaneswar has been received vide File No. 1010-1063/18/EPE/265 dated 29.01.2020. Accordingly, proposal was reconsidered in the present meeting (30th EAC meeting).

Project proponent along with the consultant made the detailed presentation on the additional information sought by the EAC in the 24th meeting. EAC deliberated on the information submitted by the Project proponent and after detailed deliberation, **deferred** the proposal for want of following information:

1. Ionic balance of surface and ground water quality characterization be checked and produce revised quality or otherwise confirm by monitoring both surface and ground waters and Fluoride concentration levels seem to be high in some of the groundwater as mentioned in the EIA/EMP Report. It needs to be checked
2. Monitoring of river water quality (Brahmani river) (upstream and downstream) be carried out to observe the impact of Banjaru Jhor Nallah on river water quality.
3. Nitrate nitrogen, Ammonical nitrogen and total nitrogen in effluent be checked.
4. PH and electrical conductivity of soil be verified with soil water proportion.
5. Cation exchange capacity of soil be checked carefully and reported as per the texture of the soil (soil quality at kandhabarani village)
6. Proof of Status of credible action.
7. Protection measures taken against Banjaru Nallah about safety and Environmental points of view which flows in 100metres.
8. Pre mining landuse, present mining land use and conceptual mining land use (Post mining) and the analysis in the same format as briefed during the meeting and relevant change to be used for damages on prorata basis.

9. Time bound. Action plan for partially complied EC condition as reported by concerned regional office.
10. Stage wise water pumping details, pre mining during violation period and present as per mine progress and Impact of mining activity on Bangaru Nallah and Brahamani river.
11. Impact on Soil Quality comparison analysis in 2006 and 2019.
12. Submission of Copy of approved Public Hearing Minutes from concerned SPCB
13. In Rakesh village Air quality is very high, hence detailed Air pollution control plan to be submitted.
14. Justification for Air quality modelling that the maximum Air quality (Baseline plus predicted GLC) was 536.79 ug/m³, but after control measures it was reduced to 147.39 ug/m³
15. Air quality modelling to be done for SO_x and NO_x also.
16. Damage assessment for air shall be recalculated for the relevant violation period for PM₁₀, PM_{2.5}, SO_x and NO_x.
17. Revised Damage assessment cost for surface water and ground water extraction.
18. In case damages to crops and habitation shall be worked for total and agriculture loss @ a min 25% of the total assessed.
19. Clarification regarding mine is falling under critically polluted area with Justification.
20. Revised details of requirement of garland drain , Toe wall, toe drain length, No of check dams and settling ponds and so far provided as per the annexure to be submitted and damages assessed accordingly. Water danger plan and Safety management plan to be submitted.
21. Forest land diversion plan to be submitted showing forest land area involved in Jagnathpur OCP.
22. Study report about controlled blasting techniques with latest blast vibration measurement.
23. Revised CER cost with activities to be submitted.
24. Economic benefit accrued due to excess coal production during violation period with certification from finance department. 3% profit of excess production to be added for damage assessment cost in Community Resource Augmentation Plan.
25. Table of EMP with capital and recurring so far spent and planned.
26. In case of in-pit filling a quantity of 155 Mm³ occupies an area of 227 Ha needs to be justified.
27. In case of reclamation of mined out area, it has to be explained as to how it will satisfy the guidelines of SC judgement for creating grazing and community useful greenery.
28. Damage assessment, remediation, CRAP and NRAP shall be reworked and submitted as briefed in the meeting.
29. Impact due to ground water abstraction during mining operations shall be assessed and explain through analytical numerical modelling by micro water shed analysis covering core zone and catchment area of Bangaru Nala.

30.3.2 Production of Chlorinated Paraffin Plasticizer (125 TPD) and Hydrochloric Acid (250 TPD) at Survey No. 62/A Near Sree Rayalaseema Alkalies & Allied Chemicals (SRAAC) Ltd., Gondiparla, Kurnool, Andhra Pradesh of M/s Shivtek Industries Private Limited - Terms of Reference

[Proposal No. IA/AP/IND2/72163/2018] [F. No. J-11011/21/2018-IA-II(I)]

The project proponent along with the consultant made the detailed presentation and *inter-alia* provided the following information:

The project involves manufacturing of Chlorinated Paraffin Plasticizer & Hydrochloric Acid of existing production capacity of 50 MT/Day for Chlorinated Paraffin Plasticizer and 100 MT/Day for Hydrochloric Acid. Now PP, M/s Shivtek Industries Private Ltd. proposed to expand the production capacity of Chlorinated Paraffin Plasticizer to 125 TPD & Hydrochloric Acid to 250 TPD in the existing area of 10117.10 sqm at Survey No. 62/A, Part II, Village Gondiparla, Taluka/Mandal- Kurnool, District-Kurnool, Andhra Pradesh.

The said project/activity is covered under category A of item 5(f) of the Schedule to the EIA Notification, 2006, and requires prior EC from the MoEF&CC based on the appraisal by Expert Appraisal Committee. The unit earlier was in operation since 1992 in District Panna (M.P) and shifted to District Kurnool (AP) during 2011 due to various reasons and started operation with consent from APPCB.

The plant/unit was earlier set up with the consent to establish dated from 24.01.2011 from State Pollution Control Board, Andhra Pradesh vide grant order no. KNL-287/PCB/ZOK/C.Estt/2010-920. Subsequently, the unit is reported to be in operation with consent to operate renewed from time to time by the SPCB. The consent to operate is presently valid up to 30.11.2021 vide order no. KNL-287/APPCB/ZO-KNL/CFO&HWM/2017 dated 02.02.2018.

Earlier proposal was submitted to the Industry II sector by M/s Shivtek Industries Private Limited on 10th January, 2018, Standard terms of reference to the project was issued on 15th February, 2018. The project proponent vide letter dated 24th December, 2018 informed that the project required environmental clearance for its operations continuing since 2011 and requested to consider the proposal in accordance with the Ministry's Notification dated 14th March 2017 in view of the reported violation of the EIA Notification, 2006.

Project proponent informed EAC that manufacturing of Chlorinated Paraffin is an exothermic reaction of Hydrocarbons (Paraffin C9-C30, Olefins C9-C30). It evolves gaseous vapours, which is further diluted with water to produce HCL. The entire process takes place in graphite blocks. During the conversion of gaseous vapours into acid, excess amount of Chlorine is emitted, which is further neutralized in Caustic Soda solution, stored in towers, produces Sodium Hypo Chloride of commercial grade at M/s SRAAC Ltd. The entire process of neutralization is being carried out at M/s SRAAC Ltd. The sniffed Chlorine gas is washed in the wash tower for removal of traces of HCL prior sending to M/s SRAAC Ltd. Conc. HCL is formed by circulation process and it is passed in the gravity tank containing oil free HCL acid which is further sent to storage tank for sale purpose. Chlorinated Paraffin is sent to degasser through gear pump further treated with compressed air for cleaning. Cleaned end product is filled in HDPE drums and transported through containers and trucks.

Product details

Products	Capacity Per Day(Tons)
Chlorinated Paraffin Plasticizer	125
Hydro Chloric Acid (32-36%)	250

Raw material requirement

S. No.	Name of Raw Material	Quantity on 100% PM	Quantity on 75% utilization
1	Hydro Carbon Oils (Paraffin)	1500 MT	1125 MT
2	Chlorine	4800 MT	3600 MT
3	Epoxy Plasticizer	37.5 MT	28.125 MT
4	HDPE Drums	15000 Nos	11250 Nos

Water requirement

S. No.	Water Requirement	Quantity (KLD)
1	Domestic uses and green belt	12
2	HCL formation	165
3	Cooling (makeup water only)	23
Total		200 KLD

Total 33% area is to be developed as green belt which would be around 3338.64 Square Meters out of the total 10117.10 Square Meters plot area. The objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas.

No national park or eco sensitive areas are present in the 10 km radius of the project. Interstate boundary of Andhra Pradesh and Telangana is present at the distance of approx. 4 Km from the project site. Tungabhadra River is flowing about 1.5 km from the site.

Observation and recommendations of the EAC

EAC after detailed presentation on the project observed that production of above products (Chlorinated Paraffin Plasticizer and Hydrochloric Acid at the production rate of 50 tons per day of Chlorinated Paraffin and 100 tons per day of HCl) carried out on the basis of Consents issued by Andhra Pollution Control Board but without obtaining prior Environmental Clearance from Competent Authority, therefore is a violation case of EIA Notification 2006 and as amended thereof. EAC further noted that instant case was transferred from the Industry II sector for consideration under Ministry's Notification dated 14.03.2017. Also, the unit earlier was in operation since 1992 in District Panna (M.P) and shifted to District Kurnool (AP) and construction was started on 25.01.2011 and started operation with consent from APPCB from November 2011 onwards. The present proposal is proposed for production capacity 125TPD Chlorinated Paraffin and 250 TPD of HCl.

The EAC deliberated on the information submitted to the Ministry and as presented by the PP. The EAC, after detailed deliberations in the 30th meeting on the proposal in terms of the provisions of the MoEF&CC 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, applicable to such projects along with the following Specific Term of Reference for undertaking EIA and preparation of Environment Management Plan (EMP):

- i. The State Government/SPCB 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 EC.
- 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 EC. The quantum shall be recommended by the EAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.

- 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 (13) in the EIA report by the accredited consultants.
- vi. Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly.
- vii. Economic benefit accrued during violation period with certification from concerned finance department
- viii. The PP is required to conduct public hearing as per EIA notification, 2006.
- ix. One-season fresh base line data (BLD) to be generated for preparation of EIA/EMP report. PP may use the data already collected BLD, subject to its validity of three years at the time of submission of EC application.
- x. The PP should also address the all the issues raised during public hearing along with commitments made and with fund provision to address above issues in tabular form to be submitted along with EIA/EMP report.
- xi. 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.
- xii. Tungabhadra River is flowing about 1.5 km from the site therefore a plan for implementation of ZLD to be submitted.
- xiii. Source of water and its permission from concerned authority.
- xiv. CFO conditions compliance report from concerned region office of SPCB.
- xv. Please provide Justification of capital cost of the project with certification.
- xvi. Detailed Risk Assessment studies with modelling to be submitted in the EIA/EMP report.
- xvii. Water requirement, waste water generation, water balance and waste water treatment.
- xviii. Traffic density study to be carried out and impact prediction modeling to be submitted in the EIA/EMP report.
- xix. Layout plan earmarking space for 33% greenbelt with in Industrial area with 15 m thick green belt around the compound wall.
- xx. Details as per Annexure XI as mentioned in the agenda shall be submitted.

30.3.3 Expansion of Molasses based Distillery Plant from 30 KLPD to 60 KLPD at Survey No. 290, Village SainagarRanjani, Tehsil Kallam, District Osmanabad (Maharashtra) by M/s Natural Sugar & Allied industries Ltd. - Environmental Clearance

[IA/MH/IND2/129023/2002 dated 16.01.2020] [F. No. 23-103/2018-IA.III (V)]

The Project Proponent and the Accredited Consultant M/s.Equinox Environments (I) Pvt. Ltd. made a presentation and informed that:

The proposal is for grant of Environmental Clearance (EC) to the Expansion of molasses based distillery from 30 KLPD to 60 KLPD in the existing integrated project complex comprising of 5000 TCD Sugar Factory, 22 MW Co-gen Plant of Natural Sugar & Allied Industries. Ltd. (NSAIL), Survey No. 290,139, 291, 284, 286, 289, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 340, 347, 348, 365Sainagar Ranjani, Tal.: Kallam, Dist.: Osmanabad Maharashtra.

ToR recommended in EAC (Violation) meeting held on 17th – 18th May, 2018. ToRs issued vide letter No. 23-103/2018- IA. III (V)] dated 10th September 2018 by Ministry for Proposal no. **IA/MH/IND2/27630/2012**

There are no National Parks, Biosphere Reserves, Tiger/Elephant Reserves, and Wildlife Corridors etc within 10 Km study area. River Manjara is flowing at a distance of 4 Km in North-West to East direction.

Observation and recommendations of the EAC

Ministry had issued EC earlier vide letter no. J-11011/382/2006-IA II (I), dated 08.05.2007 to the existing 30 KLPD distillery project and State Environment Impact Assessment Authority had issued EC vide letter no. SEAC-2009/CR.24/T.C.2, dated 07th October,2010 to existing 5000 TCD sugar factory and 22 MW Cogeneration Plant in favour of M/s. Natural Sugar & Allied Industries. Ltd. (NSAIL).

EAC in the 30th meeting noted that as per EIA notification 2006, all molasses based Distillery Projects are listed at S.N. 5(g) and required appraisal at Centre Level as Category A project. Further, recently Ministry has published an amendment in EIA Notification vide No. S.O. 1960 (E) dated 13.06.2019 wherein, molasses based distilleries upto 100 KLPD is to be appraised at State Level as Category B project.

Instant project for 60 KLPD Molasses based Distillery Plant is now coming under Category B of EIA Notification 2006 and as amended thereof, therefore proposal was not appraised by the EAC and recommended to **transfer** the case to the SEIAA, Maharashtra for consideration of proposal for Environmental Clearance as per the Ministry's Notification dated 14.03.2017 & 08.03.2018.

30.3.4 Expansion of Common Effluent Treatment Plant (CETP) of 9 MLD located at Bhiwadi, Rajasthan by M/s Bhiwadi Jal PradushanNiwaran Association - Environmental Clearance

[IA/RJ/MIS/136726/2018 dated 13.01.2020] [F.No. 23-22/2019-IA.III (V)]

The Project Proponent and the Accredited Consultant made a presentation and informed the following:

Expansion of Common Effluent Treatment Plant (CETP) from 6 MLD to 9 MLD with addition of 100 KLD Common Acid Treatment Plant and 6 MLD Reject Management System at Village-Bhiwadi, Tehsil-Tijara, District-Alwar, Rajasthan by Bhiwadi Jal PradushanNiwaran Association.

Project is listed in S. No. 7(h) of Schedule, Category A as per EIA notification dated 14th Sep., 2006 and amendments till date. Project falls under category “A” as Haryana-Rajasthan State boundary is at a distance of approx. 1 km from project site.

Application was submitted online portal of MoEFCC Vide Proposal No:- IA/RJ/MIS/58979/2016 dated 13th September, 2016 for ToR. Terms of Reference (TOR) have been discussed and finalized by the Expert Appraisal Committee (Infrastructure -2) in its 10 meeting held on 24th - 25th October, 2016 for preparation of DEIA/EMP report. Terms of Reference (TOR) was granted on 28th Nov 2016. On the basis of Terms of Reference (TOR) Draft EIA report along with requisite fees were submitted RSPCB for conducting public hearing on 01.11.2017.

Public hearing was conducted on 22.03.2018 by Regional Officer, RSPCB and during Public Hearing violation was detected. Project was submitted under violation category on 13.04.2018 to MoEF&CC, New Delhi. Project listed in 25th meeting of Expert Appraisal Committee (violation) of EIA Notification, 2006 to be held on 30th August, 2019 for Terms of Reference. Terms of Reference (ToR) was granted by MoEF&CC vide File No: - 23-22/2019-IA-III dated: - 29.10.2019. Final EIA/EMP report Submitted to MoEFCC, on 16th Jan., 2020.

Observation and recommendations of the EAC

EAC in the 30th meeting while appraising the project observed the following:

- i. The 100 KLD Spent acid treatment plant was not informed at the time of seeking ToRs for expansion of CETP from 6 MLD to 9 MLD and also not mentioned in Form-1 application.
- ii. Effluent recycling plant of 6 MLD and reject management system leading to zero liquid discharge was also not included in Form -1 application and also not brought to the notice of Ministry as well as the EAC at the time of seeking ToR for the expansion of CETP from 6 MLD to 9 MLD.

EAC after detailed and in view of above observation, recommended that PP should first **seek amendment** to the earlier ToR granted under the provision of Ministry notification dated 14.03.2017 and also to submit the proposal for amendment of ToR. Hence present application submitted for environmental clearance shall be **returned in the present form**. Project proponent was advised to **withdraw** the present proposal submitted for EC.

30.3.5 Belkundi Iron & Manganese Mines (M.L. Area 1276.79 Ha) for enhancement of Iron ore production to 1.8 MTPA and Manganese ore to 0.3 MTPA at Villages Belkundi, Nalda, Karakolha, Karkhendra, Uliburu, Tehsil Barbil, District Keonjhar, Odisha by M/s Orissa Mineral Development Company Ltd. - Further consideration for Terms of Reference

[Old Proposal No. IA/OR/MIN/68062/2008 dated 07.09.2017] [F. No. 23-204/2018-IA.III (V)]

The Project Proponent and the Accredited Consultant made a presentation and informed the following:

Belkundi Iron and Manganese Ore Mining Lease is spread over 1276.79 ha in Barbil Tehsil of Keonjhar District of Odisha. The lease area is located adjacent to the Odisha - Jharkhand interstate boundary. The mine is spread over Uliburu Reserve Forest, Khesra Forest and Villages: Belkundi, Nalda, Karakolha, Kharkendra, Uliburu&Barbil. Belkundi Iron and Manganese Mine is one of the oldest operating mines of The Orissa Minerals Development Company Ltd.

Belkundi Mine is an open cast iron and manganese ore mine located on the outskirts of Barbil town in Keonjhar District of Odisha. The lease area is spread over 1276.79 ha, which comprises of Forest Land and Non-Forest Land. The mine is closed since 2009 for want of Forestry and Environmental clearances.

The said project/activity is covered under category-A of item 1(a) of the Schedule to the EIA Notification, 2006 as amended, and requires prior EC from the MoEF&CC based on the appraisal by Expert Appraisal Committee.

The sectoral EAC noted that it is a violation case as the PP started production of Iron and Manganese Ore without obtaining requisite prior Environment Clearance. The mine operation was closed since 2009.

Chronological submission of all the events with recommendation of the committee.

Sl. No.	Date	Letter No.	Description
1.	04.06.2008	Letter No. OMD/L-10/1426	OMDC submitted Form 1 for approval of Terms of Reference(TOR) for Rapid EIA/EMP
2.	24.03.2009	Letter No. J-11015/287/2008-IA-II(M)	MoEF prescribed TOR in meeting held on 17-19 Feb, 2009
3.	02.03.2010	Letter No.-Nil	OMDC submitted REIA/EMP report to SPCB, Odisha and requested to make necessary arrangements for conducting Public Hearing
4.	25.02.2011		Conductance of Public Hearing
5.	11.03.2011	Letter No. 365	Regional Officer OSPCB submitted the proceedings of Public Hearing held on 25.02.2011 to Member Secretary OSPCB
6.	28.03.2011	Letter No. 5232/IND-II-PH-412	Member Secretary Forwarded Proceedings of Public Hearing to Secretary MoEF, New Delhi
7.	08.12.2011	Letter No. OMDC/BBSR/EC/(BEL)-201	As per direction of MoEF OMDC submitted EIA & EMP
8.	24.01.2012		EAC Meeting at New Delhi
9.	25-27/07/2012		Final Presentation
10.	30/01/2019		17thEAC Meeting at New Delhi
11.	March, 2019		Minutes of 17 th meeting of Expert Appraisal Committee for the proposal involving violation of EIA Notification, 2006 to be held on 29-31 January, 2019.
12.	June 2019		Minutes of 23 rd meeting of Expert Appraisal Committee for the proposal involving violation of EIA Notification, 2006 to held on 25th -26th, June 2019

Details of Minerals:

Number of minerals- Whether mineral is major or minor. Status of same mineral before 2006 (major or minor): Two Major minerals named Iron & Manganese.

Letter of Intent (LoI)/Mining Lease Details:

Date	Lease status	Period	Remarks
16.08.1926 (Date of Execution)	The original lease deed was executed for 30 years in name of Bird & Co.	16.08.1926-15.08.1956	Granted
17.07.1984 (Date of Execution)	The 1st lease Renewal of mining lease (RML) was executed for 30 years	16.08.1956-15.08.1986	Renewal
12.11.2002 (Date of Execution)	The 2nd RML was executed for 20 years	16.08.1986-15.08.2006	Renewal
12.08.2005 (Date of Application)	The 3rd RML was applied	20 years w.e.f. 16.08.2006	As per Rule 24(A) (1) of Mineral Concession Rule, 1960.

Valid Lease Document: The following documents in support of the validity of OMDC leases:

- (i) Letter from Indian Bureau of Mines, Bhubaneswar, addressed to Director of Mines, Govt. of Odisha dated 07.01.2019 “requesting to communicate the present status of **Belkundi Iron Ore&Manganese Lease** of OMDC” .
- (ii) Reply from Director of Mines, Govt. of Odisha vide letter dated 08.02.2019 wherein it is mentioned that “Mining Lease can be treated as SUBSISTING”.
- (iii) Based on the letter received from Director of Mines, Govt. of Odisha, dated 08.02.2019 *“Mining Plans were approved by Indian Bureau of Mines for Belkundi Iron & Manganese Lease, Bhubaneswar letter NO- MPM/OTFM/31- ORI/BHU/2018-19 dated 19.02.2019”*
- (iv) The tripartite meeting with Govt. of Odisha was held on 15.02.2019. In the minutes of meeting issued on 16.03.2019 it is stated that:

“OMDC to submit a detail proposal including company profile, steps taken for resumption of its mining leases along with their payment plan for consideration of the State Government on further course of action. After receipt of these details from the OMDC, the matter shall be processed in the Department for further action”
- (v) Accordingly OMDC has made part payments towards compensation to the Govt. of Odisha and submitted detail resumption proposal to Govt. of Odisha on 25.03.2019.
- (vi) Letter stating revival of Belkundi Iron & Mn. Ore ML of OMDC Ltd. has been issued from, Department of Steel & Mines, Govt. of Odisha vide no. 10235 III(A)/SM-04/2010/SM, Bhubaneswar dated 20.12.2019.
- (vii) Letter dated 03.02.2020 from Steel and Mines department, Govt. of Odisha for extension of the mining Lease period as per mineral (Mining by Government company), Rule, 2015 upto 2026.

Method of Mining & Mining Plan Details:

- Belkundi is an open cast mine, where mining is carried out by drilling, blasting followed by excavation of loosened material by hydraulic shovels and loading them onto tipper trucks.

- The height & width of benches in case of iron ore mines will be 6m & 10m respectively in order to ensure the safety in the mining operations. Similarly, the height & width of the benches in case of Manganese ore will be 6m & 10 m respectively.
- This Belkundi mining project is working for both iron as well as manganese ore which is planned to mine out iron ore @ 1.8Mt/annum and manganese ore @0.3Mt/annum with the deployment of heavy earthmoving machines on single shift basis while manganese ore will be worked manually on single shift basis.
- Loosening of the hard rock mass will be effected by the blasting of jack-hammer as well as DTH drilled holes. Shovels of 0.9 m³ & 2.0 m³ capacity will be utilized for excavation & loading of blasted rocks. Rear dump trucks of 20MT & 35MT capacity will be used for transportation of ore and waste.

Other Waste Generation, if any:

Iron Ore:-

Year	Pit No.	Total Tentative Excavation (MT)(ROM)	Top Soil(Cum)	OB/SB/IB (Cum)	ROM/Waste Ratio
2019-20	Bottom West & Dadu Pit	1821012	0	250096	0.014
2020-21	Bottom West & Dadu Pit	1843030	0	253120	0.014
	Total	3664042	0	503216	

Manganese Ore:-

Year	Pit No.	Total Tentative Excavation (MT)	Top Soil(Cum)	OB/SB/IB (Cum)	ROM/Waste Ratio
2019-20	Hesaburu Quarry	21659	0	18378	0.85
	Club Pit	61093	0	51836	0.85
	Lunda Bhata	150196	0	127439	0.85
	Saiburu & Kusum Pit	76662	0	65046	0.85
	Sub-Total	309610	0	262699	0.85
2019-20	Hesaburu Quarry	20625	0	17500	0.85
	Club Pit	53625	0	45500	0.85
	Lunda Bhata	158400	0	134400	0.85
	Saiburu & Kusum Pit	68145	0	57820	0.85
	Sub-Total	300795	0	255220	0.85
Grand Total		610405	0	1035838	

Land Use (Forest/Agricultural/Waste):

R.F. - 182.556Ha
 K.F. - 265.720Ha
 Govt. Land - 341.331Ha
 Tenant Land -487.183Ha

Forest clearance:

- Stage II is granted on Dt.26.02.1998 vide letter No.8-88/96-FC over an area 384.54Ha excluding Safety zone forest Area which was valid up to Dt.14.08.2006. As per Rule, one year before expiry of Lease, Diversion of forest clearance proposal was applied.
- As per MoEF guide line, Diversion of forest proposal was applied for the entire forest area of 448.276 Ha. The proposal has been scrutinized by DFO & RCCF and forwarded to PCCF, Govt. of Odisha.
- The proposal was return back by the PCCF office Govt. of Odisha and advises to submit fresh on line application, which is under process.

Proposed Core Zone Land Use Pattern (Area in hectares)

Sr. No.	Type of land use	As at present (ha)	As at the end of scheme period (ha)	As at the end of Conceptual period (life of mine) (ha)
1	Area under excavation	142.854	178.854	477.079
2	Storage for Topsoil		0	
3	Overburden dump	31.08	36.3298	92.058
4	Mineral Storage	9.243	15.532	34.049
5	Infrastructure (office, rest shelter, hutting, blasting shelter etc.)	24.366	24.366	58.343
6	Road	9.905	9.905	9.905
7	Railways	3.124	3.124	3.124
8	Green belt (safety zone)	0	5	25
9	Tailing Pond	0	0	0
10	Effluent Treatment Plant	0	0	0
11	Mineral Separation Plant	0	0	0
12	Township area	0	0	0
13	Others (State Highway)	6.618	6.618	6.618

	Sub- Total	227.19	279.7288	706.176
14	Un-Disturbed Area	1049.6	997.0612	570.614
	Grand Total	1276.79	1276.79	1276.79

Details of past production since inception of mine authenticated by DMG

PRODUCTION FIGURE OF BELKUNDI IRON & MN. MINES OF M/S.OMDC. LTD. FOR THE PERIOD FROM 1992 TO 2017-2018.

Year	Production in MT	
	Iron ore	Manganese ore
1992	68115.500	33893.000
1993	28877.300	45831.229
1994	3695.000	107689.937
1995-96	9684.86	102641.886
1996-97	0	46164.251
1997-98	0	28391.400
1998-99	0	31285.000
1999-00	18185.000	31630.000
2000-01	8828.000	52820.000
2001-02	33135.000	31505.000
2002-03	260714.000	34035.000
2003-04	701550.000	17090.000
2004-05	438512.000	5555.000
2005-06	289140.000	2255.000
2006-07	223500.000	7285.000
2007-08	0	20367.000
2008-09	0	7556.000
2009-10	0	4800.000
2010-11	0	0
2011-12	0	0
2012-13	0	0
2013-14	0	0
2014-15	0	0
2015-16	0	0
2016-17	0	0
2017-18	0	0

Memo No. 474/Mines, Dtd. 20.02.19

Copy to M/S.OMDC. Ltd., Belkundi Iron & Mn. Mines for information and necessary action with reference to their letter No. OMD/Mines/07/2019 Dt.19.09.2018. The above figures are hereby provided to produce before the Environmental Appraisal Committee to obtain Environmental Clearance.

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20.2.19
Deputy Director Mines,
Joda, Cuttack District, Orissa.

Applicability of General Condition & Status of SEIAA:

- There is no location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife corridors, Tiger/Elephant reserves (existing as well as proposed) within 10 km of the mine lease.
- The site specific Wild Life Management Plan is also prepared by PP and approved by PCCF(Wild Life),Govt. of Orissa vide letter no-7495/1WL(C)SSP-266/2012 dated 30.09.2014

Project Cost & Employment: Total Project Cost is Rs. 121.08 Crores. Belkundi mine will employ 778 persons, majority of whom will be local villagers. Economic development package under different heads (example: education, skill development, health care, road network etc.) as per CER policy of the company.

Observation and Recommendation of the EAC

EAC in the present meeting observed that earlier project was considered in the 11th EAC meeting held on 31st July - 2nd August 2018; however, PP did not attend the meeting. Project was then considered in the 17th EAC meeting held on 29-31 January, 2019. EAC noted that PP had gone for excess production of Manganese ore and Iron ore of 1993-1994 base year during the year 1994-1995 (for Manganese ore) and 2001-2002 (for Iron ore) without prior Environmental Clearance under EIA Notification 1994. Hence instant mining proposal is under violation since

1994. PP made a detailed presentation before the EAC, EAC after detailed deliberation defer the proposal for want of submission of following information:

- i. Valid mine lease document.
- ii. Production details since inception of mine from state DMG.
- iii. Validity of Forest Clearance.
- iv. Details on R&R.
- v. Land use break up details.
- vi. Details of any litigation against the project.

Project proponent submitted the information to the ministry and accordingly proposal as taken up in the 23rd EAC meeting. Project proponent made the presentation on the information sought by the EAC in the 17th meeting. The EAC, after detailed deliberations in the 23rd meeting held on 25th -26th, June 2019 deferred the proposal for want of following information:

- i. Valid mining lease to be required for further consideration of the project.
- ii. Discrepancies observed in land use details and forest clearance letter regarding forest land. Hence revised land use details to be submitted

Project proponent submitted the ADS reply to the Ministry on 24.12.2019 and accordingly, proposal was considered in the present meeting (30th). EAC observed that PP had submitted a letter stating revival of Belkundi Iron & Manganese Ore ML of OMDC Ltd. has been received from, Department of Steel & Mines, Govt. of Odisha vide no. 10235 III(A)SM-04/2010/SM, Bhubaneswar dated 20.12.2019. Further PP informed EAC that Steel and Mines department, Govt. of Odisha has extended the mining Lease period as per mineral (Mining by Government company), Rule, 2015 upto 2026 vide letter dated 03.02.2020.

Project proponent informed the following on the land use :

- Total ML area for Belkundi mine is 1276.79 Ha. and out of it, Forest land is 448.276 Ha and Non-forest land is 828.514 Ha.
- Forest Clearance (FC) obtained for an area of 384.54 Ha. vide no. 8-88/96-FC dated 26.02.1998.
- Forest clearance does not include the safety zone & ecosystem area of 63.736 Ha. as per prevailing rule that time.
- A fresh application for Forest clearance (for the renewal period) was applied, vide State Sl. No.-156/05 dated 04.10.2005 and online application for Forest clearance was applied on dated 29-12-2016 vide proposal no-FP/OR/MIN/23300/2016 under FC Act 1980 for entire forest land i.e. 448.276 ha.
- As per MoEF&CC circular No- F. No.11-51/2015 FC dated 01.04.2015 period of validity of approvals accorded under section-2 of the FC Act shall be extended and shall be deemed to have been extended upto a period co-terminus with the period of Mining Lease in accordance with the provisions of the MMDR act-1957, as amended subject to the condition laid down thereof.
- Accordingly, the period of validity of the earlier FC approval is liable to the extended up to a period co-terminus with the proposed extension of mining lease period.

The EAC, after detailed deliberations in the present meeting (30th) on the proposal in terms of the provisions of the MoEF&CC 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 along with the following specific Term of Reference and additional specific conditions as recommended by CSIR-NEERI on carrying capacity study as per **Annexure I** for undertaking EIA and preparation of Environmental Management Plan (EMP):

- (i) The State Government/SPCB 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 EC

- (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 EC. The quantum shall be recommended by the EAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.
- (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 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 13 in the EIA report by the accredited consultants.
- (vi) Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly
- (vii) EIA/EMP report shall be prepared taking cognizance and impacts (Cumulative) of the adjacent mines leases, if any.
- (viii) In case of violation of undertaking by way of affidavit to comply with all the statutory requirements and judgment of Hon'ble Supreme Court dated, the ToR/Environmental Clearance shall be liable to be terminated forthwith.
- (ix) One season fresh base line data shall be collected for preparation of EIA/EMP reports.
- (x) The PP is required to conduct Public Hearing as per EIA notification, 2006.
- (xi) The PP should also address the all the issues raised during the already held public hearing along with commitments made and with fund provision to address above issues in tabular form to be submitted along with EIA/EMP report.
- (xii) 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.
- (xiii) Detailed hydrological study to be carried out in core and buffer zone of the project as per GEC 2015 guidelines.
- (xiv) 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.
- (xv) Details of benefit accrued during the violation period along with capital cost of the project are to be submitted.
- (xvi) Mine plan as approved by Indian Bureau of Mines to be submitted.
- (xvii) DGMS permission is to be submitted for blasting at project site, if any.
- (xviii) Details as per Annexure XI as mentioned in the agenda shall be submitted.

Day 2: 4th February, 2020

Time: 10:00 AM

30.4.1 Mining of Mica, Quartz and Feldspar of production capacity 1500 TPA of Mica, 1500 TPA of Quartz, 6000 TPA of Feldspar (Max) in a mining lease area of 116.428 Ha at Sy no. 153, 160/P, 161 & 165/P, Kalichedu Village, Sydapuram Mandal, S.P.S.R Nellore District, Andhra Pradesh by M/s SreeKalyana Rama Company - Further consideration for Environmental Clearance

[IA/AP/MIN/119099/2018 dated 10.10.2019] [F. No. 23-231/2018-IA.III (V)]

The Project Proponent along with the QCI-NABET accredited consultant (CSIR-Central Institute of Mining & fuel Research) made the detailed presentation and *interalia* provided the following information:

M/s. Sree Kalyanarama Company is producing Mica, Quartz and Feldspar at Sy. Nos. 153, 160/P, 161 & 165/P of Kalichedu Village, Sydapuram Mandal, S.P.S.R. Nellore District, Andhra Pradesh with lease area of 116.428 Ha.

The Environmental Impact Assessment and Environmental Management plan has been prepared for seeking Environmental Clearance for mining in the name of Sree Kalyanarama Mica Mine measuring 116.428 hectares falling under category “A”. Baseline data generation of existing environmental attributes are conducted in the month of January – March 2019 for evaluating Environmental impacts due to the proposed activities and formulating Environmental Management Plan (EMP).

The mining operation was started without obtaining prior EC under EIA Notifications - 1994/2006 and thus applied under violation category as per S.O.804 (E) dated 14.03.2017. Court case was filed in 2nd Addl. Judicial Magistrate of first class, Nellore vide CC. 30/2014 under section 19 of the EP Act.

Online vide proposal no. IA/TG/MIN/67985/2017 dated 06.09.2017 under violation category for Term of References (ToR) and submitted Form-1 and PFR. The proposal was considered in the 12th EAC (Violation) meeting held during 28th -29th August 2018 wherein the Committee recommended the proposal for grant of Standard Terms of Reference (TOR) along with Specific Terms of Reference and issued vide letter no. F. No: 23-231/2018-IA.III (V), Dt: 15th January, 2019.

The present proposal is for production of 1,500 TPA of Mica; 6,000 TPA of Feldspar and 1,500 TPA of Quartz. The method of mining is semi mechanized open cast and underground stoping method (cut and fill) for the production of Mica, Feldspar and Quartz

Brief of the project is as follows:

- 1. Name of the project:** Sree Kalyanarama Mica Mine
- 2. Name of the Company, Address Tele No. & E-mail** Head of organization M/s. SreeKalyanarama Company, VVSSKK Yachendra, Managing Partner, D. No. 19/176, Rajah's Palace, Venkatagiri Town – 524 132 SPSR Nellore District, AP. Phone : 98498 13007 Email: sreekalyanaramamicamine@gmail.com
- 3. If a Joint venture, the names & addresses of the JV partners including their share. :-** Not Applicable
- 4. Whether the project is in the Critically Polluted Area(CPA):** No
- 5. Cost of the project :-** Rs. 0.75 Crores (Rs. 75.00 Lakhs)
- 6. Employment generated/to be generated:-** Employment to be generated is 40 nos.
- 7. Benefits of the project:**

Social:

The project activity shall create awareness with the local people for preferring permanent services than seasonal agricultural activities. These activities will help them to analyze the importance of education. With the increased amount of income, people can send their children for higher education/professional courses. There will be some obvious changes in various environmental parameters due to mining activity. There will also be positive impact in socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better educational and health facilities. Lessee will also undertake awareness program and community activities like health camps, medical aids, family welfare camps, AIDS awareness program, etc.

Environmental:

Plantation/Afforestation will be done as per program i.e. along the road sides and near civic amenities. Post plantation, the area will be regularly monitored in every season for evaluation of success rate. For selection of plant species local people will also be involved. The management will provide free saplings of fruit and other trees, etc. to locals during rainy season for plantation.

Financial:

Mining operation in the state will get legalized and it will fetch income to the state exchequer by way of royalty, Contribution to DMF, GST, Income tax, etc. The PP has agreed to spend Rs. 49.30 Lakhs on CER activities in the next 3 years and has already spent Rs. 13.00 lakhs upto now. In addendum PP has also prepared Remediation and Community and Natural Resources Augmentation plan and has earmarked funds which shall help the society.

8. Whether new or expansion project: New (No previous Environmental Clearance)

9. No. and Date of the ToR /and revised ToR, if any, letter issued by the MoEF (if this is a case for EC) ToR obtained vide letter No. 23-231/2018-IA.III (V), Date: 15 Jan 2019.

10. No. and Date of the EC and the revised EC letter issued by the MoEF (if this is a case for reconsideration. If so, what specific reconsideration(s) being sought by the proponent) :- Not Applicable

11. If the project was considered in EAC, Pl. give dates of the meeting(s). Not Applicable

12. Type of Mine: (Opencast/ Underground / mixed): Mixed - Open cast and underground

13. **Capacity of the mine applied for :-**

Mica	: 1,500 Tons per annum
Quartz	: 1,500 Tons per annum
Feldspar	: 6,000 Tons per annum
RoM	: 34,327 Tons per annum (Max)

14. ML Area: Sy. Nos. 153, 160/P, 161 & 165/P of Kalichedu Village, Sydapuram Mandal, SPSR Nellore District, AP.Extent - 116.428 Hectares.

15. Date of approval of mine plan, mine closure plan, status &date

Date of approval of Mining Plan along with progressive mine closure plan : 29 June 2017 by the Dept. of Mines & Geology, Guntur vide approval letter No. 2055/MP/NLR/2017.

16. Date of Board's approval :- **Not Applicable**

17. Date of Ground water clearance and surface water approval. :-06 Jul 2019.

18. Existing Ground water level in(M) :- From 7 to 39 m below ground level (pre-monsoon)

19. Any river/Nallah flowing near or adjacent to the proposed mine. If yes, please give details.
:-Pinneru seasonal river stream located southwest side at a distance of 1.44 km from ML area.

Details of mine lease:-

1. Date of entering into original lease deed. 23.03.1959	1. Date of 1 st lease renewal 09.12.1977	1. Date of 2 nd lease renewal 09.12.1997	Date of 3 rd lease renewal LOI Date : 10.05.2017
2. Date of expiry of original lease deed 08.12.1977	2. Whether renewal or deemed renewal Renewal	2. Whether renewal or deemed renewal Renewal	& 06.11.2018
	3. Date of expiry of 1 st lease renewal /deemed Renewal 08.12.1997	3. Date of expiry of 2 nd lease renewal/ Deemed renewal 08.12.2017	

Technical Details

20. Geological Reserve:

- (i) Total geological reserve : 4.940 million tons
- (ii) Mineable reserve : 1.822 million tons
- (iii) Extractable reserve : 1.371 million tons
- (iv) Per cent (%) of extraction : 75.24
- (v) Range of ground water level : 39 to 7 m bgl (pre monsoon), 35 to 4 m bgl (post monsoon)
- (vi) Total estimated water requirement : 20 KLD
- (vii) Details of intersecting ground water level : At 30 mts level groundwater is intersected in the underground workings.

21. Details of Deposits:

- a. Depth of over body : 209 meters
- b. Grade of ore : Not Applicable
- c. Stripping ratio : 1: 0.45

24. Method of mining : Mixed (Opencast & underground)

25. Life of mine : 60 years

26. Whether ambient air quality seasonal data has been monitored. If so, from which season to which season and whether the results are within the prescribed limits.

Yes. Air quality monitoring was conducted during January 2019 - March 2019. All the monitoring results are within the prescribed range.

27. Whether the monitoring report of earlier EC from MoEF Regional Office has been obtained, in case the proposal is for expansion.: **Not Applicable**

28. Details of Internal Dumps

- a. Number of internal dumps : 1
- b. Area of each dump : 3.380 Hectares (for 5 years)
- c. Height of each dump : 12 meters
- d. Quantity of wastes filled(MCm) : 0.036 Million CuM (for 5 years)

29. Utilization potential of wastes

- (i) Within the mines : Dumping shall be within the mines
- (ii) Outside mines : No dumping shall be carried out outside the mines
- (iii) Efforts made by proponent : Dump stabilization measured as recommended in the EMP report shall be undertaken.

30. Details of final Mine Voids

- (i) Area : **4.817 Hectares**
- (ii) Depth : **30 meters**

31. Details of Quarry:

- (i) Total quarry area : **4.817 Ha (open cast workings)**
- (ii) Backfilled quarry area of **Nil** ha shall be reclaimed with plantation
- (iii) A void of **4.817** Ha at a depth of **30 m** which is proposed to be converted into a water body
- (iv) Green belt created in ha. **Nil**

32. Details of Land usage

Landuse Details

S. No.	Land Use	Within ML Area (Ha)	Outside ML Area (Ha)	Total (Ha)
1.	Agriculture land	Nil	Nil	Nil
2.	Forest land	Nil	Nil	Nil
3.	Wasteland	116.428	Nil	116.428
4.	Grazing Land	Nil	Nil	Nil
5.	Surface water bodies	Nil	Nil	Nil
6.	Settlements	Nil	Nil	Nil
7.	Other (Specify)	Nil	Nil	Nil
	TOTAL	116.428	Nil	116.428

Sl. No.	Land use during Mining	Land Use (Ha)				TOTAL
		Plantation	Water Body	Public Use	Undistributed	
1.	External OB Dump					
2.	Top soil Dump	3.380	Nil	Nil	Nil	3.380
3.	Excavation	0.469	4.817	Nil	Nil	5.286
4.	Roads	Nil	Nil	0.400	Nil	0.400
5.	Built up area	Nil	Nil	1.300	Nil	1.300
6.	Green Belt	106.062	Nil	Nil	Nil	106.062
7.	Undisturbed Area	Nil	Nil	Nil	Nil	Nil

TOTAL	109.911	4.817	1.700	Nil	--
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33. Details of Forest issues: Forest land is not involved

34. Is there any National Park, eco-sensitive Zones, within 10 km radius? If so, give the details:

Yes. Penusila Narasimha Wildlife Sanctuary falls at a distance of 9.279 Kms. from western side boundary of the ML. However, if measured from the centre of the lease area, the said sanctuary falls outside the 10 Km buffer zone.

35. Details of wild life issues involved, if any. If so, whether WL management plan has been prepared;

Biodiversity studies along with mitigative measures incorporated in the EIA-EMP Report. The PP has also applied for wildlife clearance from NBWL.

36. Whether schedule – I species, if yes conservation plan is approved by CWLW?

Not Applicable, since no Schedule – I species found in the core & buffer zone.

37. Costs of the project:

- (i) Total capital Cost : **Rs. 0.75 Crores**
- (ii) Cost of Production : **Mica Rs. 5,000 per ton; Feldspar – Rs. 400 per ton**
- (iii) Sale Price : **Mica Rs. 8,000 per ton; Feldspar – Rs. 500 per ton**

- (iv) R&R Cost : **Nil (Not Applicable)**
- (v) No of PAFs : **Nil (Not Applicable)**

(vi) Cost for implementing EMP: **Recurring cost Rs. 0.07 Crores. Capital cost Rs. 0.15 Crores.**

38. Details of villages/habitation in mine lease area

- (i) Inside the lease
 - (ii) Surrender by lease
 - (iii) Extent of cropland acquired/ being acquired in ha.
- } **Not Applicable**

39. Details of transportation of mineral

- (i) Inpit : **Tippers/ vertical shafts**
- (ii) Surface to siding : **Tippers/ tractors**
- (iii) Siding to loading : **Tippers/ tractors**
- (iv) Quantity being transported by Road/Rail/conveyer/ropeway: **Complete production quantities as said above shall be transported by road through tarpaulin covered trucks.**
- (v) Proposed change in transportation means it any, give details: **Not Applicable**

40. Details of reclamation:

a Afforestation shall be done covering an area of: **109.911** ha at the end of life of mining. This will include:

- (i) Reclaimed external OB dump (in ha) : **Not Applicable**
- (ii) internal dump (inha), : **3.380 Ha.**
- (iii) Green belt (inha) : **106.531 Ha.**
- (iv) Density of tree plantation (in no of plants) : **1,500 plants / Ha.**

(v) Void (in ha) at a depth of (in m) which is proposed to be converted into water body : **4.817 Ha. at a depth of 30 meters.**

(vi) Others in ha (such as excavation area along ML boundary, along roads and infrastructure, embankment area and in township located outside the lease etc).

Built-up area (office& colony) - 1.300 Ha and Roads - 0.400 Ha.

Legal Issues

41. Any court case pending. If so, please provide a list with details as annexure.: **Nil**
42. Any violation cases pending. If so, please provide a list with details as annexure: Case **heard and disposed of by levying penalty under EP Act (Section 19) in CC No. 30/2015**
43. Give details of actual production vis-à-vis sanctioned capacity since the inception of mine in following format or since 1993-94 as applicable:

Year	Production of mineral in MTs			
	Mica scrap	Mica crude	Quartz	Feldspar
1990-91	70	32.120	-	-
1991-92	115	25.530	-	-
1992-93	150	16.452	-	-
1993-94	160	17.350	-	-
1994-95	140	16.535	-	-
1995-96	220	18.740	-	-
1996-97	205	13.950	-	-
1997-98	210	16.742	-	-
1998-99			-	-
1999-00	350	18.520	-	-
2000-01	310	65.983	-	-
2001-02	550	112.791	-	-
2002-03	650	88.562	-	-
2003-04	600	133.145	-	-
2004-05	300	117.140	-	1000
2005-06	250	137.251	-	1500
2006-07	100	129.604	-	1530
2007-08	500	151.770	-	-
2008-09	100	129.820	-	-
2009-10	455	154.580	-	-
2010-11	920	127.640	-	-
2011-12	1435	101.020	-	-
2012-13	1580	41.600	-	-
2013-14	1450	72.279	-	4100
2014-15	370	-	-	-
2015-16	-	-	-	-
2016-17	-	-	-	-
2017-18	-	-	-	-
2018-19 (upto 02.11.2018)			-	-

Public Hearing issues

44. Date and Place of public hearing : **28.10.2017**
45. The designation of officer presided over the PH : **Joint collector, SPSR Nellore Dt, AP.**
46. Issues raised during Public Hearing and assurance given along with the financial provisions and action plan, if any, by the project proponent. **Public was very much in favour of the project.**
47. Number of representation received in writing from the district and outside of district, please give details : **No representation received in writing from any party within or outside the district. All oral representations have been incorporated in the PH proceedings therein.**

48. Name of the EIA consultant who prepared the EIA/EMP report: **CSIR - Central Institute of Mining and Fuel Research (CSIR - CIMFR).**
49. Whether the consultant has been accredited by the QCI and NABET as per the MoEF OM dated 2nd December, 2009 :**Yes.**
50. Whether the project was considered by the IMG of Ministry of Coal for any irregularities. If so the no. and date of the show cause notice and the response of the MoC. :**Not Applicable**

Observation and recommendations of EAC:

EAC observed that earlier the proposal for Environmental Clearance was considered in the 27th meeting held during **31st October - 1st November, 2019**. PP made the detailed presentation on the proposal before the committee and committee observed that credible action has been initiated and case was disposed of by levying penalty of Rs. One lakh under EP Act (Section 19) in CC No. 30/2015. NOC accorded to the project for withdrawal of 20 KLD of mine pit water (surface water) for carrying out mining operation in an area of 116.43 Ha. EAC further noted that application for wildlife clearance for Sri Penusila Narsihma Wildlife sanctuary has been submitted to the concerned department. Further, based on the information as presented and as submitted by the PP, **deferred** the project for want of following information:

1. Baseline Air Quality data to be given as min-max and predicted value to be added to the maximum value.
2. Total excavation details (mineral excavation including waste) to be submitted.
3. Year wise Mica excavation from old dumps, open cast mine and underground working to be submitted.
4. Revised land use and land cover pattern of mine lease area.
5. Damage Assessment with respect to all the environmental attributed to be revised and accordingly remediation plan to be prepared.
6. Revised EMP & CER cost to be submitted.
7. Surface water analysis with respect to pH and nitrate concentration to be revisited.
8. Economic benefit derived calculation shall be revisited based on the benefit accrued during violation period.
9. Annexure to be filled with all the required details and submitted.

Above information was submitted to the Ministry vide dated 16.01.2020; accordingly, proposal was taken for reconsideration for EC in the 30th EAC meeting. PP along with the consultant made the detailed presentation on the information sought in the 27th meeting. EAC on the basis of information submitted to the Ministry observed the following:

- The project was sanctioned mining lease originally for 20 years w.e.f. 09.12.1957 and subsequently was renewed twice cumulatively for 40 years for excavation of Mica, Quartz & Feldspar for an extent of 116.428 Hectares. Currently the PP has obtained Letter of Intent (LoI) from the Dept. of Mines & Geology for third renewal for a period of 20 years w.e.f. 09-12-2017 subject to obtaining EC, CFO, etc.
- Mica, Quartz & Feldspar were originally considered as major minerals upto 09-02-2015 and subsequently these minerals were designated as minor minerals by the Ministry of Mines, New Delhi w.e.f. 10.02.2015. Therefore, the PP has to comply with the provisions of the Andhra Pradesh Minor Minerals Concession Rules, 1966.
- The PP has got the Mining Plan approved from the Dept. of Mines & Geology, AP for the period 2017-18 through 2021 – 22 (5 years) and the EC proposals are made on the basis of the duly approved mining plan.

- As per the list of Accredited Consultant Organizations 20th Jan 2020 CIMFR Dhanbad, Consultant Central Institute of Mining and Fuel Research is valid for preparation of EIA/EMP report of mining proposals (Schedule 1a (i)).
- DSR submitted to the Ministry is not as per the Appendix X of the EIA Notification

The committee in the 30th meeting deliberated on the EIA/EMP report, Form 2, Public Hearing issues and information sought in the 27th EAC meeting. The Committee after detailed deliberations in 30th EAC meeting held on 04.02.2020 observed that PP had submitted Remediation plan and Natural and Community Resource Augmentation plan of Rs 103.76 lakhs and CER cost of Rs 1,50 000/-.

EAC advised PP to submit the revised Remediation plan and Natural and Community Resource Augmentation plan cost based on the total profit accrued (Savings on EMP & Profits gained during Violation period). EAC further advised PP to add 3 % of the total benefit accrued i.e Rs 1.74 lakhs to be added to the CRAP

Accordingly, PP has submitted revised Remediation plan and Natural and Community Resource Augmentation plan of Rs 105.50 lakhs and CER cost of Rs 1,60 000/-

After detailed deliberation EAC recommended a cost Rs. of 105.50 lakhs to be invested by PP towards Remediation plan and Natural and Community Resource Augmentation plan. In view of above, EAC **recommended the proposal for grant of Environmental Clearance** subject to the submission of DSR as per the Appendix X of the EIA Notification and as amended thereof and the following specific conditions in addition to all Standard conditions applicable for such projects:

1. EAC recommended for an amount of Rs. 105.50 lakhs towards Remediation plan and Natural and Community Resource Augmentation plan to be spend within a span of three years. The details are given below:

REMEDIATION PLAN AND COST					
Environment Component	Remediation measures for environmental damage	Total (Rs.)	2020 – '21 (Rs.)	2021 – '22 (Rs.)	2022 – '23 (Rs.)
Air Environment	1. Suppression of dust by sprinkling of water through water tankers on nearby areas.	6,50,000	2,00,000	2,00,000	2,50,000
	2. Monitoring of ambient air quality in nearby 4 villages (Kalichedu, Malichedu, Talupur, Utukuru)	6,49,000	2,17,000	2,16,000	2,16,000
	Total (A)	12,99,000	4,17,000	4,16,000	4,66,000
Water Environment	1. Rainwater harvesting pits shall be constructed in nearby 2 villages (Kalichedu&Malichedu) at INR 5 Lakhs per unit.	10,00,000	--	5,00,000	5,00,000
	2. Water Supply to nearby villagers by installing RO plants in nearby 2 villages (Kalichedu&Malichedu) at INR 3 Lakhs per unit.	6,00,000	--	3,00,000	3,00,000
	3. Maintenance of RO plant for 2 years.	12,000	--	6,000	6,000
	Total (B)	16,12,000	--	8,06,000	8,06,000
Waste Management	Distribution of Waste Collection bins of capacity 500 Litres to be kept in common areas in nearby villages (Kalichedu - 5 Nos, Malichedu - 5 Nos, Talupur - 5 Nos, Utukuru - 5 Nos) at INR 8,850 per unit.	1,77,000	88,500	44,250	44,250

	Total (C)	1,77,000	88,500	44,250	44,250
Ecological Environment & Soil Environment	1. Monitoring of Biological Bio-diversity index outside the ML area in nearby villages.	280,000	--	140,000	140,000
	2. Monitoring cost of soil quality in surrounding villages (Kalichedu&Malichedu).	1,08,700	37,000	35,850	35,850
	Total (D)	3,88,700	37,000	1,75,850	1,75,850
Grand Total (A) + (B) + (C) + (D)		34,76,700	5,42,500	14,42,100	14,92,100

Cost of Natural Resource Augmentation Plan

Environment components	Natural Resource Augmentation	2020 – '21 (Rs.)	2021 – '22 (Rs.)	2022 – '23 (Rs.)	TOTAL (Rs.)
Water Environment	Providing roof top rain water harvesting pits in nearby 4 Villages (Kalichedu, Malichedu, Talupur&Utukuru)	4,00,000	4,00,000	4,00,000	12,00,000
Land Environment	Renovation of community wells along with animal water troughs in nearby villages. (Kalichedu&Malichedu)	2,00,000	2,00,000	4,00,000	8,00,000
Ecological Environment	Reclamation of agriculture land to farmers in nearby villages (Kalichedu&Malichedu)	3,00,000	3,00,000	5,00,000	11,00,000
TOTAL					31,00,000

Cost of Community Resource Augmentation Plan

Sl. No.	Community Resource Augmentation Plan	2020 – ‘21 (Rs.)	2021 – ‘22 (Rs.)	2022 – ‘23 (Rs.)	Total (Rs.)
1	To build 2 common toilets in 3 villages in discussions with the village panchayats (Kalichedu, Malichedu & Talupur). Cost of each Toilet @ Rs. 50,000	1,50,000	1,50,000	1,50,000	4,50,000
2	Facilitation of computer facility center in 3 schools in 3 villages (Kalichedu, Malichedu, Talupur).	1,00,000	1,00,000	1,00,000	3,00,000
3	Renovation of Government School building in Kalichedu village.	1,00,000	1,00,000	1,00,000	3,00,000
4	To Support village level sports activities / library (Kalichedu & Malichedu).	2,00,000	2,00,000	2,00,000	6,00,000
5	Employment generation for local populace through skill development in Kalichedu & Malichedu Villages.	2,00,000	2,00,000	2,00,000	6,00,000
6	Conducting periodic medical check-up camps for general health in Kalichedu Village.	2,00,000	2,00,000	2,00,000	6,00,000
7	Creating awareness on hygiene and sanitation among Children & women in nearby villages by conducting programs via NGO / Self Help groups.	1,50,000	1,50,000	1,74,000	4,74,000

8	Attention in improvement of local infrastructure for agriculture purpose (Repair of irrigation canal, Bund around agriculture land, etc)	1,50,000	2,50,000	2,50,000	6,50,000
Total					39,74,000

Summary

Sl. No.	Description	Estimated cost (Rs. in Lakhs)
1	Remediation Plan	34.76
2	Natural Resources Augmentation Plan	31.00
3	(a) Community Resources Augmentation Plan	39.74
	(b) Profit Accrued – (i) Savings on EMP of Rs. 0.72 Lakhs (3% of Rs. 1,20,000 x 20 years) & (ii) Profits gained during Violation period of Rs. 1.02 Lakhs (3% of Rs. 33,85,568) The total profit of Rs 1.74 Lakhs (added to CRAP) against the benefit accrued by project proponent	
Total		105.50

2. Total budgetary provision with respect to Remediation plan and Natural & Community Resource Augmentation plan is Rs. 105.50 lakhs. Therefore, project proponent shall be required to submit a bank guarantee of an amount of Rs. 105.50 lakhs towards Remediation plan and Natural and Community Resource Augmentation plan with the SPCB prior to the grant of EC.
3. Remediation plan shall be completed in 3 years whereas bank guarantee shall be for 5 years. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.
4. Fund allocation for Corporate Environment Responsibility (CER) of Rs. 1,60, 000/- to be implemented.
5. Periodical health checkup of workers shall be carried out and also to submit the report to concerned regional office.
6. The Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
7. Department of mining & Geology, State Government concerned shall ensure that mining operation shall not commence till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
8. Project proponent shall take necessary other clearances/permissions under various Acts and Rules if any, from the respective authorities / department.
9. Project proponent shall comply with the specific conditions related to main haulage road, top soil preservation, regular water sprinkling, 7.5 mtr wide green belt in the safety zone around the mining lease, control of noise levels etc., apart from compliance to other standard conditions.
10. Protect the Mango plantation already existing in an area of 9.2979 Ha in the mining lease area .
11. Existing Eucalyptus plantation area 25Ha to be planted in future with native species
12. As Seasonal nallah is passing through mining lease area effective proection measures to be taken against this nallah for U/G workings.
13. No dumping shall be carried along boundary with in 7.5 m of lease boundary.

14. Conditions imposed while granting NOC by Government of AP for use of mine water to be implemented in toto and report shall be submitted to Concerned Regional Office, MoEF&CC.
15. The mining lease holder shall, after ceasing mining operations, under take re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to condition which is fit for growth of fodder, flora and fauna etc.

30.4.2 Mining of Limestone minerals at Village ChakduraBathyn, Khrew, Tehsil - Pampore , District Pulwama, Jammu and Kashmir by M/s Dawar Cement Pvt. Ltd over an area of 21.106 Ha. – Further consideration for Terms of Reference

[IA/JK/MIN/65104/2017 dated 02.06.2017] [F. No. 23-23/2019-IA-III(V)]

Project Proponent did not attend the earlier EAC meeting (29th). Proposal was again listed for consideration for ToR, PP again did not attend the meeting.

30.4.3 Modernization of Rourkela Steel Plant, SAIL by adding new 125 TPD Sulphuric Acid Plant in place of old 60 TPD plant in the State of Orissa by M/s SAIL Rourkela Steel Plant - Re-consideration for Environmental Clearance

[Old Proposal No. IA/OR/IND/63491/2017 dated 31.08.2017] [F. No. 23-104/2018-IA.III (V)]

The proposal was considered during the 7th meeting of **Expert Appraisal Committee (Violation Sector) held on 17-18th May, 2018**. After detailed deliberations, EAC recommended the project for grant of Environmental Clearance subject to the following specific conditions in addition to all generic conditions applicable for such projects:

- i. The PP shall submit a bank guarantee equivalent to the amount of rupees 50 lakhs towards remediation plan and natural and community resource augmentation plan with State Pollution Control Board and submit the proof for the same to the Ministry.
- ii. The PP shall submit the proof of credible action taken by the concerned state government/ state pollution control board under the provisions of the section 19 of the Environment Protection Act 1986 to the MoEF&CC.
- iii. The PP shall submit the certified compliance report of the existing EC conditions from the Ministry's regional office to the MoEF&CC.

Project proponent vide letter dated 11/11/2019 addressed to the Ministry requesting for the following:

- a. Issue a clarification stating that 125 TPD sulfuric acid plant is not coming under the purview of EIA Notification, 2006.
- b. Waiver off Bank Guarantee of INR 50 Lakhs.
- c. Withdrawal of case filed against the SAIL Officials

Accordingly the file was transferred from Industry-1 sector for re-consideration of Environmental clearance by EAC(Violation) on above request made by project proponent and

the project was again considered in 30th EAC (Violation) meeting held on 04.02.2020.

Project proponent made detailed presentation on the above points before EAC(Violation). After detailed deliberations by the EAC(Violation) deferred their decision for want of following clarification as mentioned below:

1. Project proponent has been asked to submit the proof of evidence that they have informed to Ministry about establishment of sulfuric acid plant (60TPD) at the time of grant of first EC to the proposed project by Ministry.
2. Justification for establishing that there will not be any increase in the pollution load with technical details
3. Further, the EAC (Violation) opined that since the proposal under consideration was originally appraised by the Sectoral EAC (Industry-1) in its 10th and 18th meetings held on 28-31st August 2016 and 5th May 2017 respectively and recommended the TORs under the provisions of the Ministry's Notification S.O.804 (E) dated 14.3.2017, it would be appropriate to obtain the comments of EAC (Industry-I) on the representation of PP vide letter dt. 11.11.2019 under reference.

30.4.4 Expansion of Surda Copper Mine from 0.39 million TPA to 0.9 million TPA (ROM) by M/s Hindustan Copper Ltd., located at village (s) - Surda, Sohada, Pathargora, Benashole villages and Forest Block No. 1098, Tehsil - Ghatsila, District - East Singhbhum, Jharkhand (MLA: 388.68 ha) - Terms of Reference

[Old Proposal No.IA/JH/MIN/26614/2012 dated 05.05.2016] [F.No. 11015/80/2012-IA.II (M)]

Project proponent along with the consultant made the detailed presentation before the EAC and inter alia provided the following information:

The proposal of M/s Hindustan Copper limited is for production of 0.9 Million Tonne per annum (MTPA) of Copper Ore from – Surda Mine- (ML Area 388.68 ha, located at Survey Nos.100,101,102, 160 &1098, at Villages Surda, Sohada, Benasole, Pathargora, Forest Block, Tehsil Mosaboni ,District East Singhbhum, State Jharkhand. The mining lease is located on Survey of India Topo-sheet no. **73 J/6** bounded between latitudes 22°32'42" N and 22°34'19" N and longitudes 86°25'41" E and 86°26'42" E.

The said project/activity is covered under **Category 'A'** [Sl.no. 1(a) of Schedule: "List of project or activities requiring prior environmental clearance"] of MoEF&CC notification dated 14th September, 2006 in connection with Environment (Protection) Rules 1986

Highest production achieved in any year preceding 1994-95 is 400008 tonnes in 1989-90 and accordingly CTO of 4 Lakh Tonne per year was issued by JSPCB. Now 2018-19 onwards CTO for 317238 tonnes has been issued by JSPCB considering production for the year 1993-

94 as base year.

Details of Minerals

Number of minerals: Whether mineral is major or minor. Status of same mineral before 2006 (major or minor): Major Mineral. Status of mineral before 2006 was also major mineral

Letter of Intent (LoI) / Mining Lease Details:

Letter from the Deputy Director of Mines and Geology, vide order no. 517 (M) dated 18.03.2015 and the lease deed was executed for 5 years w.e.f 15.07.2017 and is valid till 31.03.2020.

- Surda is part of Mosaboni Mining Lease. Mosaboni Mining Lease granted from 16.06.1939 to 15.06.1984. (6923 Ha).
- 1st renewal from 16.06.1984 to 15.06.2004.
- 2430 Ha was surrendered on 15.08.1994.
- Remaining areas was 4493.0 Ha.
- 2nd renewal granted from 16.06.2004 to 15.06.2014 for 388.68 Ha. 4104.32 Ha was surrendered vide Gazette notification dated 23.06.2004.
- 3rd Lease Renewal application submitted and Form D obtained on 18.03.2013 for 388.68 Ha.
- Matter further taken up with GOJ in view of the MMDR Amendment Ordinance 2015 and letters from Jt. Secretary, Ministry of Mines and Under Secretary, GOI for renewal of the lease till 31.03.2020.
- Lease extended till 31.03.2020 vide letter no. 517/M dated 18.03.2015
- Lease deed was executed on 15.07.2017

Other Waste Generation, if any: Around 82000 m³ of waste will be generated during sinking of vertical shaft which shall be used for filling of underground voids.

Land Use (Forest/Agricultural/Waste):

Agricultural Land : 111.048 ha

Forest land : 149.030 ha

Roads : 3.529 ha

Water Bodies : 3.504 ha

Barren Land : 118.696 ha

Settlements : 3.165 ha

Stage II forest Clearance- No. 8-64/93-FC, dated-15.05.1998. 189.74 ha (47.49 ha is for surface mining already broken up and 142.25 ha for underground mining).The forest area is released in favor of Hindustan copper Limited vide letter no. 3-1 Ban bhoomi-36/2008-4358 dated 04.12.2008

Details of past production since inception of mine authenticated by DMG

Year	Production (tonnes)
1992-93	3,14,255
1993 - 94	3,17,238
1994 - 95	3,08,464
1995 - 96	3,27,096
1996 - 97	3,18,517
1997 - 98	3,28,717
1998 - 99	2,87,217
1999 - 2000	2,03,364
2000 - 01	2,93,997
2001 - 02	2,70,429
2002 - 03	89,281
2007 - 08	49,466
2008 - 09	3,28,168
2009 - 10	3,87,843
2010 - 11	3,96,841
2011 - 12	3,95,745
2012 - 13	3,98,537
2013 - 14	3,98,569
2014 - 15	1,79,063
2015 - 16	2,67,262
2016-17	3,12,654
2017-18	1,75,391
2018-19	2,17,524
Mining was suspended between 2003-04 and 2006 -07 and again from 07-09-2014 till 15-06-15	

Aravalli/Doon Valley/ Western Ghats/Eco-Sensitive area:NA

Applicability of General Condition & Status of SEIAA: No Wildlife Sanctuaries or Habitat for any Specific Wildlife present within 10 km of Mine Lease.

Project Cost & Employment:

Project cost -203 cr. The total employment of Surda mine is 1500.

Status of DSR, in case of minor mineral: NA**Observation and recommendations of the EAC**

EAC based on the information submitted by the PP noted that instant PP had undergone mining without prior environmental clearance. The committee deliberated on the project Expansion of Surda Copper Mine from 0.39 million TPA to 0.9 million TPA and has observed that proposal has been appraised in 2015 by the sectoral EAC for the expansion of project but EC was not issued for want of clarity on forest clearance. It was also observed by the sectoral EAC that project has been operating prior to 1993. Taking into consideration of 1993 -94 base level (3,17,238 tonnes), PP had gone for expansion during 1995-96 (3,27,096 tonnes) without seeking prior environmental clearance hence PP is in violation since 1995-96.

EAC further observed that there is no clarity in Forest land involved in the proposed project. PP informed that Forest land involved in the proposed project is 149.03 Ha only against they mentioned during presentation 189.74 Ha. The non-forest land involved in proposed project area is 239.65 Ha out of total mining lease area of 388.68 Ha and remaining is forest land area of 149.03 Ha.

Further, EAC observed that Public hearing has been conducted on 15.12.2015 and sectoral EAC already recommended the proposal for EC. PP informed that the scope in the public hearing held has not at all changed in the proposal under review now by the EAC (violation). EAC therefore opined that one-time public hearing as per the Hon'ble Madras High Court has already been taken care, though it was conducted on 15.12.2015. Hence repeat Public Hearing will not be required in the instant case. However, PP is required to bring all the issues raised in the public hearing along with the compliance in the EIA/EMP report.

The EAC, after detailed deliberations in the present meeting (30th) on the proposal in terms of the provisions of the MoEF&CC 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 along with the following specific Term of Reference** for undertaking EIA and preparation of Environmental Management Plan (EMP):

- (i) The State Government/SPCB 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 EC
- (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 EC. The quantum shall be recommended by the EAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.
- (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 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 13 in the EIA report by the accredited consultants.
- (vi) Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to be prepared accordingly
- (vii) EIA/EMP report shall be prepared taking cognizance and impacts (Cumulative) of the adjacent mines leases, if any.
- (viii) In case of violation of undertaking by way of affidavit to comply with all the statutory requirements and judgment of Hon'ble Supreme Court dated, the ToR/Environmental Clearance shall be liable to be terminated forthwith.
- (ix) Public Hearing (PH) has been conducted on dated 15.12.2015 for the same capacity, covering all the issues, committee felt that one time PH as per the order of Hon'ble High Court of Madras has already taken care and hence repeat PH is not required. However Public Hearing issues raised and reply of the PP in tabular form along with the time bound action plan shall be submitted in the relevant chapter.
- (x) One-month fresh base line data to be generated for validation of the existing base line data collected for preparation of EIA/EMP report.
- (xi) The PP should also address the all the issues raised during the already held public hearing along with commitments made and with fund provision to address above issues in tabular form to be submitted along with EIA/EMP report.
- (xii) 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.
- (xiii) Detailed hydrological study to be carried out in core and buffer zone of the project as per GEC 2015 guidelines.
- (xiv) 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.
- (xv) Details of benefit accrued during the violation period along with capital cost of the project are to be submitted.
- (xvi) CFO conditions compliance report from concerned region office of SPCB

- (xvii) Plan showing total mining lease area showing non forest land involved and Non forest land involved in the proposed project with colour index.
- (xviii) Certificate from local DFO to be obtained that total forest land required for the Surda mine is 149.03 Ha out of total mining lease area of 388.68 Ha.
- (xix) Details of Forest land area diverted for proposed project for surface mining and underground mining operations showing on plan submitted to FC division with NPV payment details. Also submit the status of compliance of demand notice No 1928/mining dated 24.10.2018.
- (xx) Copy of Stage-1 Forest clearance for 149.03 Ha and also the status of Forest clearance for forest land involved in underground mining operations with support documents from state forest department.
- (xxi) Submit the under taking that no violation is involved in the proposed project against Forest clearance
- (xxii) Conservation plan shall be prepared for the Schedule I species and shall be submitted for the approval of Chief wildlife warden of State Government
- (xxiii) Subsidence management plan
- (xxiv) Copy of permission obtained from concerned state Ground water department /CGWA for Ground water with drawal
- (xxv) Mine plan as approved by Indian Bureau of Mines to be submitted.
- (xxvi) DGMS permission is to be submitted for blasting.
- (xxvii) Details as per Annexure XI as mentioned in the agenda shall be submitted.

Annexure I

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 & 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.

- 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 (SOTM)

Code	EC Capacity	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 SOTM 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 with 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.

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

- 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 Re-suspension” 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 (as per the provisions of EIA Notification 2006, as amended time to time) 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	X1					
Mine 2	X2					
Mine 3	X3					
Mine n	Xn					
Total	160 +	105	129	153	177	201
<u>Next year allocation = Average of EC Capacity and Last year production</u>						

- 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 waste) 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 CPCB 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, PM_{2.5}, SO₂, NO_x 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, PM₁₀, PM_{2.5}, SO₂, NO_x 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 long period. 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 socio-

economic 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 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 the suggested 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 mine, 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 by 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, PM₁₀ should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders 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-à-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 Regional Level

Sr. 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, nallas, 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
	<u>Installation of online ambient air quality monitor for PM10, PM2.5, SOx and NOx within the mine having more than 3 MTPA EC Capacity</u>	<u>Respective Mine Lease Holders</u>	<u>Continuous Annually</u>
	Installation of online ambient air quality monitor for PM10, PM2.5, 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	SPCB	Once in 2 years

	regions shall be 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.	<u>Construction and maintenance of dust free roads from respective mine to the main road</u>	<u>Respective Mine Lease Holders</u>	<u>Continuous 6 months</u>
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 (through EAC) can also utilize the data base available in evaluating the proposals for expansion of existing mines or new mines while granting 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-à-vis environmentally sustainable mining and upliftment 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 & Central 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.

Members of the EAC for the proposal involving violation of EIA Notification, 2006 present during 30th meeting held on 3rd – 4th February, 2020 at MoEF&CC, New Delhi and approved the above minutes.

Sl. No.	Name of the EAC member	Role/Designation	Signature
1.	Dr. S.R. Wate,	Chairman	
2.	Dr. G.V. Subrahmanyam	Member	
3.	Dr.A.L. Ramanathan	Member	
4.	Dr. M.V. Ramana Murthy,	Member	
5.	Shri K Gowarappan	Member	
6.	Dr.Dilip S. Ramteke,	Member	
7.	Dr. Poonam Kumria,	Member	
8.	Dr.Bharat Jain,	Member	
9.	Dr.Subrata Maity,	Member	
10.	Shri Ashok Agrawal	Member	
11.	Shri Raghu Kumar Kodali	Member Secretary	