

**Government of Odisha
Steel and Mines Department**

VESTING ORDER

No. 4212 /SM
IV(B)SM-21/2020

Dated the 30 May 2020

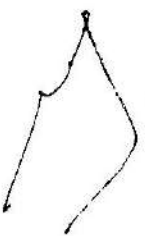
Whereas a mining lease of the following description, which was held by M/s Aryan Mining & Trading Corporation Pvt. Ltd. (hereinafter referred to as the previous lessee) with validity period upto 31.03.2020 has been auctioned and M/s JSW Steel Ltd., has been declared as the preferred bidder of the said mine.

Description of the Mining Block

- Name of Mineral(s) – Iron & Manganese
- Name of Mining lease - Narayanposhi Iron & Mn Block.
- Address/location of mining lease - Village Koira, Kashira and Kathamala RF under Koira Tahasil of Sundergarh district.
- Area of lease – 347.008 hecets (As per DGPS)/ 349.254 hecets(As per ROR).

And whereas, a letter of intent bearing no 2288 dated 02.03.2020 has been issued in favour of the preferred bidder for grant of mining lease for the above mentioned mining block;

And whereas, in terms of section 8B(2) of the MMDR Act, 1957 read with rule 9A(4) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 [herein after called the Rules'2016], the holder of the letter of intent for the said mining block shall be deemed to have acquired all valid rights, approvals, clearances, licenses and the like vested with the previous lessee.



Now therefore, the undersigned being the Nodal Officer for the State of Odisha having been nominated under rule 9A(1) of the Mineral (Other than Atomic and Hydrocarbon Energy Minerals) Concession Rules, 2016 [herein after called the Rules,2016], do hereby, pursuant to the provisions contained in rule 9A(2) of the Rules,2016 order that all the valid rights, approvals, clearances, licenses and the like vested in the previous lessee in respect of the aforementioned mining block are deemed to have vested in favour of the holder of the letter of intent on the same terms and conditions of every rights, approvals, clearances, licenses, and the like which vested with previous lessee.

Without prejudice to the generality of the provisions of section 8B(2) of the MMDR Act, 1957, the details of the valid rights, approvals, clearances, licenses, and the like held by the previous lessee and vested in favour of the holder of the Letter of Intent are given in the Annexure-I to this order.

This vesting order is valid for a period of two years from the date of execution of lease deed or till the date of getting fresh approvals, clearances, licenses, permits, and the like, whichever is earlier

(S. K. Popli)

Nodal Officer-cum-Special Secretary to Government

Memo No. 4213 / SM

Dated: 30 May 2020

Copy to alongwith Annexure-I forwarded to M/s JSW Steel Ltd, JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai- 400051 for information and necessary action. It is requested that one copy each of the documents mentioned in the Annexure-I may be collected from the office of the Director Mines, Odisha, Bhubaneswar during office working hours.

Memo No. 4214 / SM

Dated: 30 May 2020

Copy to alongwith Annexure-I forwarded to M/s Aryan Mining & Trading Corporation Pvt. Ltd., Aryan House, 8th Floor, P1- Hide Lane, Kolkata- 700073 for information and necessary action.

Memo No. 4215 / SM

Dated: 30 May 2020

Copy alongwith Annexure-I forwarded to Indian Bureau of Mines, Bhubaneswar/ MoEF & CC, 534, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi 110003/ MoEF & CC (FC Divison), Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi 110003/ SPCB, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar, Odisha, 751012/ Director General of Mines Safety, Chaibasa Regiona, Chaibasa, 833201 /Ministry of Water Resource, River Development and Ganga Rejuvenation, West Block-2, Wing 3, Sector-1, R.K. Puram, New Delhi-110066 for information and necessary action.

Nodal Officer

Memo No. 4216 / SM

Date: 30 May 2020

Copy alongwith Annexure-I forwarded to Director of Mines, Odisha, Bhubaneswar for information and necessary action. He is requested to provide one copy each of the documents described in the Annexure-I to the authorized representative of the LoI holder with proper acknowledgement and forward a copy of acknowledgement to the Department for record.

Nodal Officer
30/5/20

Memo No. 4217 / SM

Date: 30 May 2020

Copy alongwith Annexure-I forwarded to Collector, Sundergarh/ Deputy Director of Mines, Koira / DFO, Bonai for information and necessary action.

Nodal Officer
30/5/20

Memo No. 4218 / SM

Date: 30 May 2020

Copy alongwith Annexure-I forwarded to Forest and Environment Department/ PCCF(Nodal), Bhubaneswar for information and necessary action.

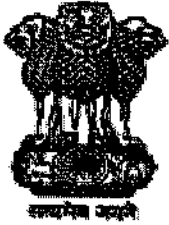
Nodal Officer
30/5/20

Name of the Block : Narayanposhi Iron & Manganese ore Block
LoI Holder : JSW Steel Ltd.
Area of the Lease : 349.254 Hects (As per ROR)
 347.008 hecets (As per DGPS)

SL No	Nature of approval clearance etc	Issuing officer/authority	Reference No./ Date of Issue
1	Mining Plan	Regional Controller of Mines, Bhubaneswar, Govt. of India	MSM/FM/40/ORI/BHU/2015-16, Dated 02.06.2016
2	EC	MoEF & CC, Govt. of India	J-11015/288/2008-IA.II(M), Dtd 18.06.2019
3	FC	MoEF & CC, Govt. of India,	F. No. 8-34/2000-FC (Vol-I), Dtd. 15.11.2007 over 244.327 hecets
4	Consent to Establish	State Pollution Control Board, Odisha	536/IND-II-CTE-6207, Dated 14.01.2019
5	Consent to Operate	State Pollution Control Board, Odisha	6785/IND-I-CON-2258, Dated 08.07.2019
6	Surface Right	District Collector, Sundargarh	Surface Right granted over 324.800 hecets
7	Deep Hole Blasting & use of HEMM	Directorate General of Mines Safety, Chaibasa Region, Chaibasa, Govt. of India	[29020/45/2014/RC(SEZ)] No. 2410, Dated 23.12.2015
8	Ground Water Withdrawal	Member Secretary (CGWA), Central Ground Water Authority, Govt. of India	CGWA/NOC/MIN/REN/1/2019/5586 Dtd. 09.10.2019

- Vesting of clearances/approvals/licences/permissions /rights as above does not have the effect of transfer of ownership of infrastructure established and the ore & minerals raised by the ex-lessee which shall be governed by the provisions of the rules 12(1)(gg) and 12(1)(hh) of the Minerals Concession Rules, 2016. However, on acquisition of such infrastructure from the ex-lessee and submission of evidence thereof, the new lessee may be vested with related clearances/ approvals etc at the relevant time.
- Vesting of Forest Clearance is subject to payment of NPV as prescribed in letter dtd. 31.03.2020 of Government of India, Ministry of Environment, Forest & Climate Change.

39/5/19



No. J-11015/288/2008-IA.II (M)
Government of India
Ministry of Environment, Forest and Climate Change
Impact Assessment Division

By Speed Post/Online

Indira Paryavaran Bhavan,
Vayu Wing, 3rd Floor, Aliganj,
Jor Bagh Road, New Delhi-110 003

Dated: 18 June 2019

To,

M/s Aryan Mining & Trading Corporation Pvt. Ltd.

Aryan House 8th Floor,
P1-Hide Lane,
Kolkata - 700 073

Email: contact@aryanmining.in

Sub:- Narayanposhi Iron and Manganese Ore Mine of M/s Aryan Mining & Trading Corporation Pvt. Ltd. for enhancement of Iron Ore from 3.0 Million TPA to 6.0 Million TPA (ROM) and existing 0.036 Million TPA Manganese ore and establishment of Beneficiation Plant with capacity of 2.0 Million TPA along with crusher and screening plant within the mine lease area, located at villages of Koira&Kashira and Kathamala RF, Tehsil Koira, District Sundargarh, Odisha (MLA 349.254 ha)-Environmental Clearance regarding

**Ref.: Project proposal no. IA/OR/MIN/8345/2008;
(IA/OR/MIN/41936/2016 in TOR)**

Sir,

This has with reference to your above mentioned proposal of M/s Aryan Mining & Trading Corporation Pvt. Ltd. (AMTC) for expansion of iron ore production from 3.0 MTPA to 6.0 MTPA (ROM) and existing 0.036 MTPA Manganese ore and establishment of Beneficiation Plant with capacity of 2.0 Million TPA along with crusher and screening plant within the mine lease area. The mine lease area is located in the villages of Koira&Kashira and Kathamala RF, TehsilKoira, district Sundargarh, Odisha. The lease area is falls under latitude 21° 54' 46.07" - 21° 56' 23.13" North and Longitude 85° 13' 41.16" - 85° 14' 56.56" East and falls under 73 G/1 & 73 G/5. The area is marked by undulating hills with altitudes varying from 545m to 640m above MSL. General slope of the area is towards north. The lease area is easily approachable. NH-215 is passes through the lease area; one side connected to Rajamunda& other side to Panikolli. Barbil is 37 km from the lease area and Koira is only 1.2 Km form lease area. Barsuan, the nearest railway siding, is located at a distance of 30 km from the lease area. The PP also presented the KML file during the presentation to indicate the location of mine lease on Google Earth/ DSS.

2. The proposal of TOR was earlier considered by the Expert Appraisal Committee in its meeting held during April 23-24, 2018 to determine the Terms of Reference (TOR) for undertaking detailed EIA study. The TOR was issued by the Ministry vide letter no. J-11015/288/2008-IA.II (M) dated 17th July, 2018. The Proponent submitted the EIA/EMP Report online to Ministry for seeking environmental clearance. The Proposal of EC was earlier considered by the EAC in its meeting held during November 15-16, 2018 wherein

the EAC deferred the proposal and sought certain requisite information. In this context, the Project Proponent has submitted the information and accordingly the proposal was reconsidered by the EAC in its meeting held during **January 22-23, 2019** wherein the EAC **recommended** the proposal for grant of Environmental Clearance for enhancement of Iron Ore from 3.0 Million TPA to 6.0 Million TPA (ROM) and existing 0.036 Million TPA Manganese ore and establishment of Beneficiation Plant with capacity of 2.0 Million TPA along with crusher and screening plant within the mine lease area. The Committee has also deliberated the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendations which need to be implemented by the State Govt. of Odisha and Project Proponent. The Committee deliberated the recommendations of the carrying capacity study report and its compliances, and accordingly the EAC has also recommended the specific conditions which are included in the EC.

3. The total lease area is 349.254 Ha. Out of total mine lease area, 259.191 ha is forest land and rest 90.063 ha is the non-forest land comprising Government land and private land. Forest clearance for 244.327 ha has already been obtained by the Ministry, vide letter F.No.8-34/2000-FC, dated 15th November 2007 excluding the safety zone forest area of 14.864 Ha. General approval of Forest clearance for safety zone has been obtained. The Environmental Clearance has earlier been obtained from the Ministry for enhancement of production of Iron ore from 0.018 to 0.6 MTPA and Manganese ore from 0.001 to 0.0078 MTPA vide letter no. J-11015/388/2005-IA.II (M), dated 28-03-2007. Subsequently, EC from the Ministry for the production of 3.0 MTPA of Iron Ore & 0.036 MTPA of Manganese Ore, vide letter no. J-11015/288/2008-IA.II (M), dated 21.02.2011. CTO was also obtained with validity up to 31-03-2020. The supplementary leased deed was executed on 17th December, 2015 as per the Amended MMDR Act, 2015 and the Lease validity is extended up to 31st March 2020.

4. The Modified Mining Scheme was approved by IBM vide letter No- MS/FM/40-ORI/BHU/2015-16/518, dated 02.06.2016 for expansion of Iron Ore Production from 3.0 MTPA to 6.0 MTPA. Approval of Final Mine Closure Plan has been obtained from IBM vide letter No-FMCP/FM/38-ORI/BHU/2018-19/1611, dated 03.10.2018 under Rule-24 of Mineral Conservation and Development Rules, 2017. The lessee has paid Rs. 5,75,72,100/- (Rupees Five Crore seventy-five lakhs seventy-two thousand one hundred) as financial Assurance in the form Bank Guarantee during approval of Review of the Mining Plan for implementation of FMCP. NOC of CGWA for intersection of ground water table and drawl of 1715 cum per day of water has been obtained from CGWA, vide NOC No. CGWA/NOC/MIN/ORIG/2017/2415, dated 16.02.2017.

5. Project Proponent (PP) reported that the mining operations will be through mechanized opencast mining method, involving shovel-dumper combinations, deep hole drilling and blasting. Beneficiation plant will be adopting latest wet technology comprising drum scrubbers, double deck wet screens, jigs, dewatering screens, thickening cyclones, Thickener, Filter press. The total water requirement will be 1715 m³ per day comprising 690 m³ per day for mining, green belt, dust-suppression and drinking water purposes and 1025 m³ per day for Beneficiation plant make up. The water required will be sourced from the bore well and mine pit water. Permission for 1715 m³ per day of ground water has already been obtained. The power demands for the integrated mine and beneficiation plant is estimated to be 4000 KVA. Comprising 2000 KVA for mines and 2000 KVA for beneficiation plant. The power requirement will be met from the State grid and backup power from DG Sets. All required amenities / facilities required for the mining activities like site office, rest shelter, Canteen etc., are available at the site. These facilities will be suitably upgraded for the expansion. The proposed mine expansion and beneficiation plant is expected to generate about 620 number of direct and 1500 number of indirect employment. The total project cost for the mine expansion for plant and machinery and pre- operative expenses are expected to be

Rs. 55.0 crores where as for the proposed beneficiation plant the capital cost is estimated to be Rs. 30.0 Crores (Stream #1 & 2).

6. Project Proponent reported that the total geological resource as on 31.03.2016 for iron is 197.844 million tonnes and the mineable reserve is 185.00 million tonnes. The total geological resource for Manganese is 0.542 million tonnes and the mineable reserve is 0.534 million tonnes. There will be about 31.82 Mt (14.46 Mm³) of waste from mines is to be likely generated during the life of the mine from iron ore production. It estimated that about 13.15 Mm³ mineral rejects will be generated during life of the mine, out of which 50% i.e. 6.58 Mm³ will be blended with high grade iron ore. The remaining 50% i.e. 6.57 Mm³ will be fed to the beneficiation plant and about 10% i.e. 1.44 Mt (0.65 Mm³) of waste will be generated during life of the mine. Hence, total waste generation from mine and plant will be 33.267 Mt (15.12 Mm³) [31.82 Mt + 1.44 Mt]. Out of this, about 1.661 Mm³ of waste to be generated shall be dumped at existing dump-1, 0.500Mm³ of waste shall be used for road formation/maintenance and balance 12.96 Mm³ will be backfilled in Quarry-3. As per the field position the iron ore has been exhausted within the part of quarry-3 and accordingly dumping has been carried out in the exhausted part of the quarry-3 area from 2016-17 onwards as a part of the reclamation. There will be about 3.74 Mt (1701694 m³) waste during the life of the mine from Manganese ore production. Out of this, 507872 m³ will be dumped in external waste dump (Dump 2 – 127208 m³ + Dump 3 - 380664 m³), about 89625 m³ of waste shall be used for road formation/maintenance and the balance 1104197 m³ waste will be backfilled. Existing depth of working is up to RL 546m in Iron zone and RL 541m in Manganese zone (as on 31.03.2016). Ultimate depth of working will be 408m RL. Intersection of ground water table is expected in the conceptual stage for iron ore quarry and for Manganese it has already touched. Necessary clearance from CGWA is already been granted. The life of the iron ore mine is estimated to be 31 years and that of manganese ore to be 16 years. An area of 147.538 hectares land is already degraded / utilized for mining, dumping, office, road, green belt etc. An area of 271.985 hectares is anticipated to be degraded / utilized at the end of the conceptual planning period. In the post mining stage out of 152.896 ha of mined out area, Reclamation of 52.53 ha (back-filling & plantation) and 100.366 ha by rehabilitation /plantation will be carried out.

7. PP reported that the mine is already well developed and can be expanded immediately after obtaining Environmental Clearance and Consent to Operate from State Pollution Control Board. PP submitted the proposed detail month wise calendar plan for 6.00 MTPA productions with drilling, blasting, excavation and machineries details:

Year	Month	Quantity (MT)
2019-20	April	606818
	May	606818
	June	606818
	July	381818
	August	381818
	September	381818
	October	606818
	November	606818
	December	606818
	January	606818
	February	606818
		Total

Table 2: Proposed Calendar Year production	
Total Maximum Excavation as proposed in the approved Mining Plan per annum	Total Excavation per day
6.0 Million Tonne (ROM)	0.02 Million Tonne (20000 Tonne)
Note: The production will be under taken on pro-rate basis to facilitate the implementation of the FMCP	

8. Project Proponent reported that out of 6.00 MTPA ROM to be produced after expansion, it is expected that about 66.5% of the material amounting to 4.00 MTPA will be of +61% Fe grade and are easily marketable. The balance 2.00 MTPA of sub grade and low-grade material is proposed to be beneficiated for improving its quality to +64% Fe. Hence, a beneficiation plant with 2.0 MTPA capacity is planned within in the mine lease area. This plant will have 2 streams each of 185 TPH capacities and will be within the same mine lease area. The iron ore of size 5 - 18mm/18 - 40mm with +45 to -62 % Fe will be feed to the scrubber followed by hopper with simultaneously receiving the required quantity of water. By the combined action of attrition and scrubbing the adherent clay and silicate contents are washed away from the surface of ore particles. The latest State of Art technology with drum scrubbers, double deck wet screens, jigs, dewatering and rinsing screens, thickening cyclones, Hi-frequency screens, filter press will be installed in the unit. The circuit proposed is a totally closed circuit with zero effluent discharge. PP reported that construction of beneficiation plant will commence after obtaining all the necessary statutory clearances. In this context, PP has submitted the schedule for installation of beneficiation plant and mentioned that they will take 14 weeks towards completion of installation; in this regard an affidavit is submitted by the proponent. With regard to flow Sheet of the beneficiation plant, PP submitted the detail flow sheet of Beneficiation plant along with mass & water balance. The Committee deliberated the issues. PP submitted the proposed beneficiation plant's process is totally closed circuit with zero effluent discharge. Nearly 95-97% water can be recovered from the circuit and will recirculate in the circuit. PP submitted the details of rain water harvesting process already adopted and will adopt in future. PP also informed that they have the proposal to use additives towards effective dust suppression on the mines haulage road.

9. Project Proponent reported that the there is no National Park, Wildlife Sanctuary, Elephant Reserve, Biosphere Reserve, Ramsar site or Tiger Reserve in the study area. Karo - Karampada elephant corridor is located at about 18.0 km from the mine lease area in North direction. Elephant, Sloth bear, Python and Monitor Lizard are placed under Schedule-I as per Wild Life (Protection) Act, 1972 is found in the Study area, for which Site-Specific Wild life conservation plan was prepared and got approved from PCCF (Wildlife) & Chief Wildlife Warden, Odisha. The PP also presented the KML file during the presentation to indicate the location of mine lease on Google Earth/ DSS. The Committee deliberated the issues.

10. Project Proponent reported that the baseline data have been carried out during Winter Season (December 2017 - February 2018). PP submitted that, the ambient air quality data for PM₁₀, PM_{2.5}, SO₂, NO₂ and CO were studied at 9 locations. From the study it is seen that, in the ambient air, in the buffer zone, the PM₁₀ values were in the range of 45.7 to 84.7 µg/m³. PM_{2.5} values were in the range of 19.4 to 45.7 µg/m³. SO₂ levels were ranging from BDL (DL-3.0) to 7.6 µg/m³. NO₂ levels were ranging from 6.1 to 18.6 µg/m³. In the Core zone, the PM₁₀ values were in the range of 50.6 to 71.2 µg/m³. PM_{2.5} values were in the range of 24.4 to 36.4 µg/m³. SO₂ levels were ranging from 3.7 to 5.1 µg/m³. NO₂ levels were ranging from 6.7 to 12.8 µg/m³. The CO values

in the all locations found to be below detectable limit (DL – 1144 µg/m³). Silica values in the study area are found to be below detectable limit. (Detectable limit – 0.05 mg/m³) which is well within the prescribed limit of 5mg/m³. PP submitted that, 5 Ground water and 2 surface water samples were collected. The pH values of 5 bore well water samples were ranging in between 6.55 – 6.82. TDS values were in the range of 9.0-70.0 mg/L. Chloride values were ranging from 3.4-11.3 mg/L. Iron content was found to be in the range 0.03 – 0.21 mg/L. The pH values of 2 Surface water samples were ranging in between 6.70-7.47. TDS values were in the range of 65.0-70.0 mg/L. Chloride value was 7.8mg/L. Iron content was found to be 0.10-0.20mg/l. PP submitted that the presently they are adopting best environmental practice towards management of Air, water, Noise, Surface run-off etc. and same will extend after the expansion. Effective Rain Water Harvesting (RWH) systems are already implemented and methods such as RWH from roof tops of buildings, Storm water drainage system along the roads, staggered trenches, RWH from the valley, recharge wells etc., are being and will be implemented. PP submitted that, traffic study has been carried out by Central Road Research Institute, New Delhi and the existing road & Railway network is adequate enough for expansion. The PP submitted the revised Air quality modelling where Ground level concentration predication is carried out for mining & allied activities within the lease area include the ore transportation from the stack yard and also due to mineral transportation outside the lease area. PP also submitted the parameters used in the model, emission sources, emission rate, results of the Peak GLC's for various environmental parameters without and with control measures. PP submitted that the predicted maximum incremental GLC after expansion, ranged from <1.0 to 8.0 micro gram per cubic meter for PM10, <1.0 to 4.0 micro gram per cubic meter for PM2.5, <1.0 micro gram per cubic meter for SO2, <1.0 to 12.5 micro gram per cubic meter for NOx, <1.0 to 7.5 micro gram per cubic meter for CO.

11. The Public Hearing was conducted by State Pollution Control Board on 15.10.2018 at playground of Kashira village, under Koira tehsil of Sundargarh District. The Public Hearing was chaired by the Shri Bhaskar Chandra Turuk, Additional District Magistrate, Sundargarh. About 800 participants had attended the public hearing meeting and 557 persons have put their signature in the attendance sheet. 36 persons took part in the deliberation. In total, 63 written statements have been received from various stake holders. The major points raised by the public are environmental pollution & its control, drinking water facility & sanitation, education facility, lively hood generation, peripheral development, health care, Agricultural promotion etc. The lessee has submitted the detail point wise compliance with budgetary provision and time bound action plan. The Committee deliberated the issues raised during the PH and its action plan and is of the view that the action plan is adequate and PP shall complete all the tasks as provided in the action plan in time.

12. The MoEF&CC Regional Office Bhubaneswar, vide letter no. 101-729/EPE/3317, dated 24.10.2018, has submitted the certified compliance report of earlier EC no. J-11015/288/2008-IA. II (M), dated 21.02.2011. The Committee has deliberated the point wise compliance of Environmental Clearance. The report, inter-alia, mentioned that the project authority has complied or are in process of complying with the conditions stipulated by the Ministry. The certain information /action plan have been sought on the following points (i) It is required to increase the green belt area by planting more plants during ongoing monsoon period and also put stress to achieved optimum plantation density i.e. 2500 plant per ha in plantation area/non-plantation area including safety zone. (ii) It is required to clean the all rain water harvesting structure/ pit before and after the monsoon, (iii) It is required to maintained the garland drain, settling tank etc. all around the OB area etc. on regular basis. In this context, the PP submitted that, subsequent to inspection of Regional office of MoEF&CC, they have prepared action plan

as desired by the inspection officer and the same was submitted on 09.11.2018, viz. (i) PP has reported that so far 153803 Nos. of saplings were planted over an area of 40.971ha within the ML area including dump & safety zone with a plantation density of about 2500 plant per ha. In addition, 76464 Nos. of saplings were planted over an area of 10.305 ha outside the ML area & 8085 Nos. of saplings were planted/distributed to nearby villages, schools etc. Further it is ensured that PP will do plantation @2500 saplings in upcoming monsoon in line with approved mining plan. (ii) PP reported that there is general practice to clean the rain water harvesting structures/pit before & after monsoon. It will be continued as suggested. (iii) PP also reported that they have been maintaining the garland drain, settling tank around the dump by way of de-silting before & after monsoon, stone pitching on regular basis and the same will be continued as suggested.

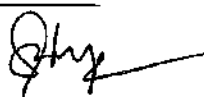
13. The Committee noted that the Ministry of Mines, vide Notification No.S.O.2817 (E) dated 22nd November, 2010 had appointed a Commission of Inquiry consisting Justice M.B. Shah, retired Judge of the Supreme Court of India, for the purpose of making an inquiry in to mining of iron ore and manganese ore in contravention of the provision of various Statues and the rules and regulations issued there under, in various States including the State of Odisha. In view of Justice Shah Commission report (2013), the Ministry of Environment, Forest and Climate Change (MoEF&CC) has entrusted the work to CSIR-NEERI to conduct a Carrying Capacity Study. In this context, CSIR-NEERI conducted the study encompassing collection of primary data for various environmental components (viz. air, noise, water, soil/land, biological and socio-economic aspects), collection and analysis of environmental quality data by different mines in the region, modeling for transport scenario and infrastructure need assessment, and meetings/workshops with different stakeholders. NEERI has submitted the report along with the recommendations.

14. The PP has made the point-wise presentation w.r.t. the recommendations of CSIR-NEERI report on carrying capacity study may be included in the TOR condition w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendations which needs to be implemented by the State Govt. and Project Proponent. PP informed that since 3 years Dept. of Steel & Mines, Govt. Odisha fixing the annual production capacity of each mine both in Joda & Koira sector considering different limiting factors like requirement, environment, infrastructure etc., in coming years they will abide by the sustainable production limit of State Govt. They are operating the mines with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO. PP informed that, they will abide the State Govt. decision towards production from mine in line to commensurate infrastructure improvement (viz. SOTM, pollution free road transport, enhancement of rail network etc.). PP submitted that NH-215 passes through the lease area and is under four laning. The road is being constructed as per the IRC guidelines. Beside this they have provision to make proper drainage system with fencing & plantation the stretch of the road passes within the lease area. Also they have made cement concrete road from the exit gate to inside the lease area. PP stated that, they will abide by the SOTM system as and when guideline formed by the Department of Steel & Mines, Govt. of Odisha in this regard. PP stated that Collector Sundergarh called a meeting on 03.07.2018 to discuss with all lessees regarding safe transportation and prevention of pollution of minerals during transportation from mining area to main road and railway sidings. PP submitted that they have already made two parking area inside the mine lease with Rest room & toilet facility. Sweeping on the mineral transport road is presently under practice by Lessee. Further, vacuum cleaning will be adopted with permission from Authorities.

15. The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. With regard to implementation of the recommendations and necessary arrangement to be made to arrest "zero dust re-suspension, the PP has informed that, NH-215 passes through the lease area and is under four lanning. The road is being constructed as per the IRC guidelines with proper drainage system with fencing & plantation. Apart from that 200m concrete road has been made from the exit gate towards stack yard. PP submitted that, for the effective dust suppression in haulage road fixed - auto water sprinkling arrangement system installed for 2.4 Km. Further additional 3.0 KM length has been proposed. Also 4 numbers of mobile water tankers engaged for sprinkling on the mine benches, mine haul road, loading and unloading and transfer points. Additional 1 no water tanker is proposed for expansion. PP informed that they have proposal to use additives towards effective dust suppression on the mines haulage road. This will further help towards reduction in water consumption. PP informed that vacuum cleaning will be adopted as per the instruction from Authorities. After all whatever the instructions or recommendations will come from MoEF&CC/State Govt. of Odisha, they will abide by it. With regard to the recommendations of NEERI report on implementations to complete the SOTM within 5 years, PP informed that, the first meeting was conducted by all the Govt. respective Departments on dated 21.06.2018 under chairmanship of Chief Secretary, Odisha. All the recommendations of NEERI towards its implementation were widely discussed among team. In the meeting it has been decided to form District level Committees for the implementation of Suggested Ore Transport Mode (SOTM) under the chairmanship of District Collectors to decide on the modalities for implementation. It is also decided that, Constraints, if any, in implementation of such recommendations may be reported by the DLC's to the Steel & Mines department. In the meeting recommendation with regard to new railway lines and railway sidings was forwarded to the Ministry of Railway/Railway Board through Commerce & Transport Department for appropriate action. PP informed that, a meeting was conducted by Collector Sundargarh on 03.07.2018 with all lessees regarding safe transportation and prevention of pollution of minerals during transportation from mining area to main road and railway sidings.

16. PP submitted the past production details from 1993-94 till current year duly authenticated by DDM, Koira, vide memo No. 1069, dated 14.03.2018. In pursuance to the judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Others, the DDM, Koira has raised the demand notices no. 5072 Dated 02.09.2017 and 5091 dated 24.10.2017 and the project proponent has made the payment as demand raised based on the Hon'ble Supreme Court order with an amount of INR 143,95,00967.42 vide online Treasury Challan Ref. No. 27DDEF51C9 dated 27.12.2017 and INR 707453.70 vide online Treasury Challan Ref. 27DDEF527B Dated 27.12.2017. The mine is working in compliance of the Common Cause judgment dated 02.08.2017.

17. Total project cost is Rs. 8500 lakhs. PP submitted that, a financial provision of Rs. 344.0 lakhs are made for various environmental control measures proposed under capital cost and recurring cost of Rs. 209.12 lakhs per year. PP submitted that they have carried out various CSR activities in the region. So far, AMTC has spent more than Rs. 6676.608 lakhs for various CSR program between 2007-08 to 2017-18. AMTC will also ensure that the planned CSR activities are effectively implemented through a monitoring team who can also discuss with the locals and get their feedback for future planning and improvement. Apart from CSR, M/s AMTC will contribute substantially to the overall economy and social development of the area through Enterprise Social Commitment (ESC)/ Corporate Environmental Responsibility (CER) activities. Need assessment was



done by AISD, Ranchi in 12 villages which are falling within Project Impact Zone (PIZ). Based on the need assessment, the total cost estimation for CER indicators is Rs. 755.93 lakhs.

18. The PP has submitted that the court case has been filed before the court of SDJM, Bonai by the Collector, Sundargarh vide case no. 43/2013. Interim stay order passed by the Hon'ble High Court of Odisha, dated 31.10.2014. The matter already discussed in Common Cause and as per the order of the judgment made by the Hon'ble Supreme Court dated 02.08.2017 in the matter of W.P.(C) 114/2014, dated, DDM, Koira has raised the demand under section 21(5) of MMDR Act, 1957 on EC and FC violations and the same has been complied by the PP. PP has also mentioned that with regard to CTO violation, Revision petition has been filed before the Ministry of Mines, Govt. of India against the notice served by DDM, Koira, Odisha vide no. 5542/Mines, dated 26.09.2017 for excess production of approved limit under Mining Plan and Consent to Operate in pursuance to judgment made by the Hon'ble Supreme Court vide case no. 114/2014, dated 02.08.2017. As per the Hearing held on 30.10.2018 and the order was reserved and finally disposed as per the order dated 26.11.2018. The Revision Authority has set-aside the State Govt.'s order and directed the State Govt. to hear the matter afresh and pass a detailed and reasoned order.

19. The Ministry of Environment, Forest and Climate Change has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto and hereby accords the environmental clearance under the provisions thereof to the above mentioned proposal of **M/s Aryan Mining & Trading Corporation Pvt. Ltd. for expansion of iron ore production from 3.0 MTPA to 6.0 MTPA (ROM) and existing 0.036 MTPA Manganese ore and establishment of Beneficiation Plant with capacity of 2.0 Million TPA along with crusher and screening plant within the mine lease area, located in the villages of Koira & Kashira and Kathamala RF, Tehsil Koira, District Sundargarh, Odisha in the MLA of 349.254 ha. with the following Specific conditions** (viz. recommendations of carrying capacity study report) and **Standard conditions** subject to compliance of the followings terms and conditions and environmental safeguards mentioned below:

A. Specific conditions: The Committee has deliberated the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendations which shall be implemented by the State Govt. of Odisha and Project Proponent. Based on detailed deliberations on the recommendations of the carrying capacity study report, the EAC has **recommended the following specific conditions viz.**

- 1) **The enhance production shall be on pro-rata basis for the effective period of valid environment clearance granted herein. The PP shall ensure its compliance by getting concurrence in mining plan approved by concern authority in this regard.**
- 2) **This EC for expansion proposal (iron ore production from 3.0 MTPA to 6.0 MTPA (ROM) and existing 0.036 MTPA Manganese ore and establishment of Beneficiation Plant with capacity of 2.0 Million TPA along with crusher and screening plant within the mine lease area) shall be operational after submission of an undertaking through affidavit to MoEF & CC within 15 days of receipt of this letter, for compliance of all the conditions prescribed herein.**

- 3) **Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.**
- 4) 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.
- 5) Project Proponent shall construct the 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 with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. 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. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.**
- 6) The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.**
- 7) Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, 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.
- 8) Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All 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.
- 9) 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. 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 Regional office of the MoEF&CC.
- 10) Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. **This Environmental**

Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.

- 11) Department of Steel & Mines shall ensure the 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. This shall be completed within 2 Years.
- 12) Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re-suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. **This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.**
- 13) 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 so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.
- 14) 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.
- 15) 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.
- 16) 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.

- 17) **Mining Operations/Process Related:** Project Proponent shall implement the following mitigation measures: (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.
- 18) **Air Environment Related:** Project Proponent shall implement the following mitigation measures: (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. (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 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.

- 19) **Noise and Vibration Related:** Project Proponent shall implement the following mitigation measures: (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 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 at least once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.
- 20) **Water/Wastewater Related:** Project Proponent shall implement the following mitigation measures: (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.

- 21) **Land/ Soil/ Overburden Related:** Project Proponent shall implement the following mitigation measures: (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.

- 22) **Ecology/Biodiversity (Flora-Fauna) Related:** Project Proponent shall implement the following mitigation measures: (i) 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. (ii) 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. (iii) 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. (iv) 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. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) 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. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.
- 23) **Socio-Economic Related:** Project Proponent shall implement the following mitigation measures: (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 outtees 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 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),

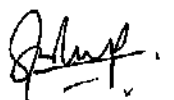
notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

- 24) **Road Transport Related:** Project Proponent shall implement the following mitigation measures: (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. 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.
- 25) **Occupational Health Related:** Project Proponent shall implement the following mitigation measures: (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).

B. Standard conditions

I. Statutory compliance

- 1) **This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.**
- 2) **This EC is valid up to 31.03.2020 as the lease validity is valid up to 31st March 2020 as per the Amended MMDR Act, 2015**
- 3) **The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors. before commencing the mining operations.**
- 4) **The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal**



mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.

- 5) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- 6) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- 7) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- 8) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- 9) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- 10) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- 11) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- 12) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- 13) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- 14) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.

- 15) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- 16) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- 17) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- 18) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- 19) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

- 20) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- 21) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- 22) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- 23) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
- 24) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- 25) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- 26) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- 27) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- 28) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining plan

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

VI. Land reclamation

- 32) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- 33) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- 34) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- 35) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- 36) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- 37) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- 38) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- 39) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the


stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- 40) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- 41) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

- 42) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- 43) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- 44) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land



shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

- 45) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- 46) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- 47) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.
- 48) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- 49) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminum, Iron, Manganese, Chromium, Lead, Uranium need to be


handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

- 50) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.
- 51) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- 52) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- 53) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)


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

XI. Miscellaneous



- 56) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEFCC.
- 57) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- 58) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- 59) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- 60) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.
20. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
21. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attracts action under the provisions of Environment (Protection) Act, 1986.
22. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Odisha and any other Court of Law relating to the subject matter.
23. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,



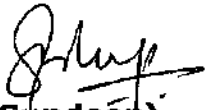
(Sundeep)

Director/Scientist 'F'

Copy to:-

- 1). **The Secretary**, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
- 2). **The Secretary**, Ministry of Steel, Government of India, Udyog Bhavan New Delhi - 110011
- 3). **The Chief Secretary**, Government of Odisha, Secretariat, Bhubaneswar.
- 4). **The Secretary**, Department of Environment, Government of Odisha, Secretariat, Bhubaneswar.

- 5). **The Secretary**, Department of Mines and Geology, Government of Odisha, Secretariat, Bhubaneswar.
- 6). **The Secretary**, Department of Forests, Government of Odisha, Secretariat, Bhubaneswar.
- 7). **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- 8). **The Additional Principal Chief Conservator of Forests (C)**, Ministry of Environment, Forest and Climate Change, Regional Office (EZ), A/3, Chandrasekharpur, Bhubaneswar – 751023.
- 9). **The Chief Wildlife Warden**, Prakruti Bhawan, 5th floor, BDA Apartment Nilakanthanagar, Nayapalli, Bhubaneswar-751012, Odisha
- 10). **The Member Secretary**, Odisha State Pollution Control Board, Parivesh Bhawan, A/118 Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012.
- 11). **The Controller General**, Indian Bureau of Mines, Indira Bhavan, Civil Lines, Nagpur-440 001.
- 12). **The Member Secretary**, Central Ground Water Board Ministry of Agriculture and Irrigation, 12/1 Jam Nagar House, Shahjahan Road, New Delhi 110011.
- 13). **The District Collector**, District- **Sundargarh**, State of Odisha.
- 14). **Guard File.**
- 15). **Parivesh Portal.**


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