



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF
MINES



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BHUBANESWAR-751020

No. MSM/FM/07-ORI/BHU/2019-20

Date: 17.07.2019

To

✓ Shri Prasanna Kumar Panda, Constituted Attorney,
M/s Essel Mining & Industries Ltd,
HIG-51, Jaydev Vihar, Opp. Pal Heights,
Bhubaneswar-751013

Sub: Approval of modification of Review of Mining Plan of Kasia Iron & Dolomite Mine along with Progressive Mine Closure Plan (PMCP), over an area of 194.196 ha in Keonjhar district of Odisha State, submitted by M/s Essel Mining & Industries Ltd under Rule 17(3) of MCR, 2016.

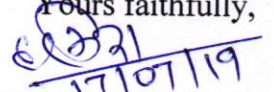
Ref: - i) Your letter No. EMIL/GEOL/249/2019-20 dated 03.07.2019 received on 12.07.2019.
ii) This office letter of even no. dated 12.07.2019.
iii) This office letter of even no. dated 12.07.2019 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

This has reference to the letter cited above on the subject. The draft of modification of Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on earlier site inspection carried out on 06.05.2019 by Shri Ramkishan R, Senior Assistant Controller of Mines & Shri S R Mazumdar, Senior Mining Geologist. The deficiencies observed are enclosed herewith as Annexure- I.

You are advised to carry out the necessary modifications in the draft modification of Review of Mining Plan in the light of the contents vide Annexure- I and submit **three (3) firm bound and two (2) soft copies of the document text in CD in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format or JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR 2017 of the Modification of Review of Mining Plan within 15 (Fifteen) days from the date of issue of this letter, for further necessary action. If the total page of annexures exceeds 50 (Fifty) then it should be submitted as separate volume. But reference of these annexures must appear in the modification of Review of Mining Plan document. The plates are also to be submitted in separate volume.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the modification of Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the modification of Review of Mining Plan will be considered for rejection if not submitted within above due date. It may also be noted that if the deficiencies are not attended completely, the submission would be liable for rejection without further correspondence.

Yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

Copy for kind information and further necessary action to Shri V Srikanth & Shri Khageswar Mahanta, M/s Essel Mining & Industries Ltd, At/P.o – Barbil, Dist – Keonjhar, Odisha – 758035.

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

15/10/17
PHT/01/17

DGA

Scrutiny comment on Modification of Review of Mining Plan including PMCP in respect of Kasia Iron & Dolomite Mine of M/s Essel Mining & Industries limited

GENERAL:

1. Summary of proposal furnished is incorrect with reference to proposal for the year 2019-20. Rectify the same. It should be in tabulated format. Sequence of paragraph, formats and its numbering as per IBM Manual Appraisal MP 2014 has not been covered in text. All the headings as mentioned in the IBM Manual Appraisal MP 2014 should be furnished in all chapters in the text.
2. Introductory notes regarding the mining lease should be furnished before general chapter. All the certificates/annexures should bear dated signature. Name of nominated owner and constituted attorney if any should be furnished under applicant name. The status of mine operations should be furnished whether working or non-working with exact time periods in introductory notes alongwith reason for non-working. MCDR, 1988 should be replaced with relevant rules of MCDR, 2017. Status of all statutory clearances should be furnished with documentary evidence. The exact area of diverted and non-diverted forest area details with stage of permission with documentary evidence should be furnished.
3. The term "subgrade" has not been replaced with "mineral reject" in text and plates. The surface right area granted should be furnished with documentary evidence. The same should be furnished in surface plan, geological plan and development plan. All the boundary pillars DGPS coordinates should be furnished in tabular format in para 2(b).
4. Details of nominated owner (name and address) of the company along with Photo Identity Card and permanent address proof have not been furnished. Need to furnish the same.

GEOLOGY AND EXPLORATION:

5. In para 1(d) Details of exploration agency, qualification, experience of associated technical persons engaged in exploration should be furnished for the entire year wise exploration carried out.
6. In para 1(e) (ii) borehole diameter should be rechecked and corrected. In para 1(e) (iii), the details of borehole numbers with sample details analyzed from SGS India Private Limited, Inspectorate Griffith India Private Limited and QSS respectively have not been furnished in tabulated format. The original chemical analysis reports from these laboratories have not been furnished. Also the chemical analysis reports of 10% check samples analyzed from Mitra S.K.Pvt Ltd have not been furnished. Further, correlation of primary samples and check samples has not been done for assessing the acceptable levels of accuracy. NABL accreditation certificates of above laboratories except for Mitra S.K.Pvt Ltd have not been furnished.
7. The documentary evidence to be enclosed in support of expenditure incurred Rs 1.05 crores as claimed for various exploration operations have not been furnished. No documentary evidence has been submitted for drilling carried out by ACC Exploration division. The respective Form J and Form K of already drilled boreholes should be annexed with detailed litholog. Need to provide necessary documentary evidences.
8. Exploration proposal is not adequate for G2 level of exploration to make 200m x 200m square grid interval of boreholes. Further, new boreholes have not been proposed where existing boreholes have been terminated in ore zones or closed prematurely without intersecting entire ore zone in depth. As per rule 12 (4A) of MCDR 2017 (as amended up to 27th March, 2018) the depth of proposed boreholes have not been proposed for 300 meters or up to discontinuance of ore body, whichever is earlier. The proposal should be submitted for completion of exploration within 3 months from the date of resumption of mining operation. The same should be mentioned in table in page 22 under summary of exploration proposal. Also, the format specified in IBM manual 2014 for exploration proposal has not been furnished in addition to already submitted information. Necessary corrections to be made at all relevant places in text and plates.
9. The lease area explored under different category of UNFC norms as shown in table in page no 39 is incorrect and should be recalculated as per the provision of Part II point no.4 and part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC, Rule 21015). The justification for area considered

for G1/G2/G3 etc. have not been furnished as per the provision of MEMC Rules'2015. Necessary corrections to be done at all relevant places of the document and resource estimation.

10. The lithology shown in geological plan does not corroborate with lithology shown in sections for example in section no 24. Need to correlate borehole logs, surface geology and lithology of plan and sections. Need to recheck all sections and necessary corrections to be done wherever required. In Geological sections, the litho correlation has not been done scientifically and the lateral extent has not been considered as per the provision of MEMC Rules 2015.
11. in the parameter considered for reserve/resource estimation, determinations of bulk density and recovery factor based on field test have not been addressed. In page 33 and page 40, cutoff grade mentioned is 54% Fe and 55% Fe respectively. Need to correct and mention the correct cutoff grade at all places.
12. Reserves and resources have not been calculated as per the provision of MEMC Rules, 2015. In Geological sections, UNFC codes such as 211, 222 above UPL and in the area proposed for development is incorrect. The resource under 331 and 332 as furnished in table in page 23 is incorrect. Further, there is significant increase in the reserve/resources reported than last approval of review of mining plan dated 05.09.17 without any further exploration. The average grade of the resources under G1 and G2 has not been furnished in the table in page 39. The backup calculation to arrive at average grade of resources has also not been furnished. Resources and reserves have to be estimated grade wise by cross sectional method under different UNFC codes. In section wise reserve and resource calculation, the length of influence for G1 and G2 has been kept same which is incorrect. Further, instead of mentioning measured mineral resource (331), section wise reserve (331) has been mentioned and there is no mention about Indicated Mineral Resource (332). Further, the justification of recovery factor measured as mentioned in annexure -28 is not reflected in section wise reserve/resource calculation. From page 34-38, all the tables need to be rechecked as cross sectional area has not been calculated at all places and also the unit of measurement of length of influence, volume etc. is not mentioned in some tables. The resources calculated are incorrect and need to do necessary correct at all places.
13. Copy of prefeasibility report has not been submitted by addressing all the parameters mentioned in part-V of MEMC rules 2015. Need to submit the same. Accordingly UNFC codes of for reserves and resources have to be modified accordingly.
14. Reserves and resources of Dolomite have not been furnished. Proper estimation as per the provision of MEMC Rules 2015 has to be done. Details of section wise calculation of reserves and resources also need to be furnished. Reserves and resources have to be estimated by cross sectional method.

MINING:

15. The proposed development location for the year 2019-20 in north block is extended over subgrade stack and old quarry dumps and temporary waste dump near south block. However, no proposal has been proposed subgrade stacks handling. Review the same and modify accordingly at relevant places of text and plates.
16. The description of the existing pits/waste dumps/Mineral rejects stacks in the following table to be furnished. Temporary and permanent waste dump details should also be furnished. Their nomenclature should be also reflected in relevant plans and sections.

Existing Pits:

Location (Grid)	Block	Size of Pit (in m)		Surface area covered (in Ha)	Top RL (m)	Bottom RL (m)	No of benches
		Length	Breadth				

Existing waste Dumps/mineral reject:

Name of the dump	Block	Location (Grid)	Length (max) in mts	Breadth (max) in mts	Area occupied		Grade
					(m ²)	(ha)	

17. Production proposal should be revised as per the revised estimation of reserves. The location proposed for mining should be properly justified with respect to exploration, mineral conservation and subsequent development.
18. In para 2.A (b)(1), the total of in-situ excavation figs have not been furnished in the format specified in IBM appraisal of MP 2014 both in cum and in tones in separate table.
19. Geological Section wise of proposed ROM excavation quantity in for every year shall be provided. Sections may be equally spaced so that the entire area proposed for excavation may cover. In annexure-32, in situ excavation of OB/IB/waste, Ore, Mineral reject have not been calculated both RL wise and section wise considering cross section area, volume, bulk density, tonnage and recovery factors. The estimation should be carried out by cross sectional method.
20. Total excavation quantity considered for calculation of machinery should be rechecked and rectified considering the time period left during the proposed year whereas in the submitted draft document it has been calculated with 300 days of operation. Equipment fleet strength should be in line with present haul road and quarry configuration for safe movement of the machineries with proper justification by addressing the transportation of mineral from mine benches to dispatch. Existing and proposed equipment/machinery with quantity and capacity should be furnished.
21. The proposed areas for various mine activities like waste dumping sites, mineral storage areas, mineral rejects area, any other should be addressed in detail with nomenclature of the same in relevant plans and section either temporary or permanent. The same should be reflected in FA calculation.
22. In conceptual planning the life of the mine, ultimate pit limits should be recalculated considering the end of lease period only.

MINE DRAINAGE

23. Considering the topography of the lease area, it appears that the slope is towards East. Hence, a mine drainage plan to be submitted showing catchment area, flow direction of the water, location of final discharge, arrangement for arresting of solid waste etc. showing retaining wall, garland drain, settling tank, check dam etc.

STACKING OF MINERAL REJECT/SUB GRADE AND DISPOSAL OF WASTE:

24. The disposal of waste and mineral reject and soil to be furnished as per table furnished in IBM Manual appraisal MP 2014.
25. The details of all the existing waste dumps temporary and permanent, Mineral reject dumps/stacks to be furnished in tabulated form.
26. The proposal for dumping may be given in tabulated format as shown below: Further, Build-up of dumps from year to year to be mentioned in text w.r.t. designed capacity of dumps, bottom and top mRL of individual terrace, dump slope, individual terrace height and slope with description of method & manner of disposal of waste should be mentioned. The method of waste dumping should be in retreating manner. The year wise buildup of dump should be described.

Year	Waste to be dumped (in m3)	Dump No	Location of dumping (coordinates)	Proposed area (m2)	Proposed dumping mRL.	No of terrace proposed.	Individual Terrace height	Slope of the terrace

27. In page no 58 it is proposed to store the waste material, whereas no location is shown in the concerned plans for dumping the waste generated during the year. In page no 59 it is proposed to backfill the dolomite quarry with the waste generated from mines during the year which is contradictory. The backfilling site should be properly assessed for absence of mineral by justifying with detailed exploration carried out in the proposed area, otherwise waste dumping should be proposed in other non -mineralized area. The temporary waste dump near the south quarry should also be removed and shifted to the proposed waste dump. Protective and stability measures for proposed new waste dump should be furnished in tabulated format.
28. Existing as well as proposed protective measures like retaining wall, garland drain, check dams etc., should be furnished in tabular format with details of location, length, dimensions etc., a separate table

should be given showing the year wise construction of retaining wall, garland drain and settling tank having specific proposal. Details of year wise proposal for construction of retaining wall, garland drain, settling tank etc. to be given with their location.

PROCESSING OF ROM AND MINERAL REJECTS:

29. A material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery, and its grade at each stage of processing has not been furnished. The arrived percentage of recovery of saleable ore and sub grade ore should be justified properly with documentary evidence.

OTHERS:

30. Information in respect to the existing and proposed manpower right from management level to unskilled labour both on role and contractual has to be mentioned separately in the text.

PROGRESSIVE MINE CLOSURE PLAN:

31. All the paragraphs should be addressed in detail under PMCP chapter as per IBM Manual Appraisal MP 2014. the present land use pattern should be furnished as per the format of FA table of different heads under 8.2 (i). the reclaimed area furnished under mining 7.099 ha should be shown under area put on use at the start of review of mining plan under waste dump site head. The area should not be considered reclaimed and rehabilitated area.
32. Existing base line information to be furnished on the basis of environment monitoring parameter carried out. The environment monitoring data of last one year to be enclosed for ready reference. Further, base line information to be furnished for surrounding 500 meter form lease boundary.
33. The proposal of fencing should be given for entire Excavations/ pits endangering fall of persons/cattle etc. Proposal of geo-textile/coir matting with plantation to be given for matured terraces/slope of the proposed/existing waste dump. If the Sub-grade material is not utilized fully by the end of lease period, proposal of coir matting over such dumps to be given in the interest if protection of environment. Garland drain and retaining wall to be proposed along the proposed sub-grade stack. Accordingly progressive mine closure plan to be revised. All the proposals should be clearly shown on reclamation plan.
34. The details of all existing infrastructure available in the lease area should be furnished in tabular form and their present value and value at the end of lease period to be given after depreciation. The decommissioning cost and final value of the decommissioned infrastructural facilities, if any, may be furnished.
35. Time scheduling for proposed activity like waste dump management (Garland drain, retaining wall, settling tanks, plantation), safety and security (fencing of pits, dumps etc.), disposal of machineries, reclamation & re-habilitation, infrastructure, protective measures of environment should be supplemented by PERT (programme evaluation review technique) or Bar chart and these activities should be clearly shown on reclamation plan. All the proposals regarding decommissioning should be with in 31.03.2020.
36. The lease is expiring in 31.03 2020, therefore PMCP proposals submitted in instant document should in line with the IBM Manual for appraisal of FMCP
37. In FA table the different heads should be kept as per the format specified in IBM manual appraisal 2014. The reclaimed area furnished under mining 7.099 ha should be shown under area put on use at the start of review of mining plan under waste dump site head. The area should not be considered reclaimed and rehabilitated area.. The area under different heads should be rechecked and calculated properly for both at the start of review of mining plan period and additional requirement during the plan period. If backfilling proposal is justified and proposed then the same area should be considered in area under mining put on use at the start of review of mining plan period. If waste dumping is proposed in virgin area it should be shown under additional area requirement for the plan period. Additional bank guarantee has to be submitted if the net considered area is more than the area shown under FA calculation. The area under different heads of FA table should be properly shown in different hatching with present area and additional area in FA plan.

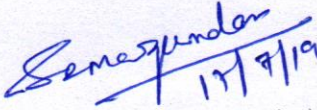
38. Plantation should be proposed over existing backfilled area and should be shown in relevant plans. Also the existing stabilized area by plantation should be shown in all relevant plans.

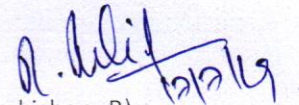
PLATES (GENERAL):

1. Magnetic Meridian and date of observation should be given on all relevant plans. Date of survey should be given on all plans and sections and signature should bear date of signature. All plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager, Mining Engineer and Mining Geologist as per provisions of MCDR, 2017 and MMR, 1961. All plans & sections prepared should follow the conventions mentioned under MMR 1961. All plans and sections shall show a scale a scale of the plan at least twenty five centimeters long and suitably subdivided. The plans and sections submitted should bear the certificate that -the plans and sections are prepared based on the lease map authenticated by the state government. The x-axis coordinates have not been shown in the plates. The old dumps/stacks that have been stabilized by plantation should be shown relevant plans. List of plates to be updated with the reference of DGPS survey map. Need to do necessary corrections at relevant places.
2. The area shown as reclaimed area should be removed from all the plan and sections.
3. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The prominent wind direction to be shown by rose diagram in key plan and other relevant plans. The approach road to the lease area should be shown with Co-ordinates of extremity of lease area.
4. **SURFACE PLAN:** All the boundary pillars to be given in UTM too. All the updated boundaries of Fines stack, Waste dump, Mineral reject dumps to be shown on the plan. Surface right area to be shown on the plan with different type of land schedules. All the features have not been shown in the index. Common boundary with other lessees if any should be shown on the plan. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017. The distance and bearing from GCP should be shown in map.
5. **GEOLOGICAL PLAN & SECTION:** (i) The lithology shown in geological plan and section do not corroborate with each other. (ii) Geo structural information has not been furnished adequately. (iii)The redefined UNFC boundaries and UPL to be shown in Geological Plan and sections. (iv) Section lines with nomenclature should be further highlighted on the plan. Proposed boreholes should be shown in dotted line. Iron ore mineralization area should be clearly demarcated on the Geological plan. The Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017. Plan and section should be drawn on same scale. (v). UNFC codes shown in the section are incorrect. (vi). the blank space above UPL should be filled with relevant lithology (vii) Grade wise sections have to shown (viii) mineralized and non-mineralized area should be recalculated considering the dip of the ore body and same should be shown in geological plan and surface plan.
6. **DEVELOPMENT PLAN & SECTION:** (i) present pit profile configuration with UPL to be shown with red color and proposed development with some other color. All development section to be submitted for which development is proposed. (ii) The layout of the haul road for present and future excavation proposal should be properly addressed in line with safe movement of fleet of the machinery. The proposed and existing haul road to be depicted on the development plan. (iii) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections. (iv) Geological information to be furnished on development plan and sections. Plan and section should be drawn on same scale.
7. **RECLAMATION PLAN:** The existing and all revised proposal for 2019-20 as per comments in PMCP chapter have not been depicted in the plan.
8. **ENVIRONMENT PLAN:** The environment plan has not been prepared as per the provision laid down in rule 32 (5) (b) of MCDR'2017.
9. **Financial Assurance Area Plan:** The area degraded due to mining and allied activity to be considered in FA calculation. It should be re-calculated and submitted accordingly. The existing area and additional area under different heads should be shown properly under different coloured hatching.

ANNEXURES:

1. The updated list of all the directors to be enclosed and same to be given in the text. The latest copy of board resolution about nominated owner to be enclosed.
2. Copy of latest lease deed executed with copy of authenticated land schedule should be enclosed. The lapse order of ML issued by state government and Revision Authority orders should be enclosed.
3. Copy of quality of air, water, soil, noise and other environmental a parameters monitoring report of the last year should be enclosed.
4. All the annexure to be properly numbered/paged and relevant annexure to be signed by Geologist/surveyor/QP etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
5. The details of all the BH to be annexed year wise BH wise. The lithology of the borehole logs should match with the lithology shown in Geological sections.
6. Copy of bank guarantee should be enclosed. Photographs of boundary pillars should be enclosed.
7. Copies of Form J and Form K of all drilled boreholes have not been submitted.
8. The chemical analysis results of borehole samples from NABL accredited laboratory have not been submitted.
9. Indexing of borehole logs with page numbers have not been done in sequence


(Sudip Ranjan Mazumdar)
Senior Mining Geologist


(Ramkishan. R)
Sr. Assistant Controller of Mines