

**Scrutiny comments on examination of Draft Review & updation of Mining plan including progressive mine closure plan in respect of Shivasandra Manganese ore mine (ML No. 2636) of Smt.Sunanda V Allum, Bellari over an area of 21.38 ha in Gubbi taluk, Tumkur district, Karnataka.**

1. **All the headings, subheadings and para nos. should be replicated as per the standard guidelines as given in "IBM Manual on Appraisal of Mining Plan 2014 in an orderly manner**

**Cover Page**

2. i)The Mine code and the Registration no to be added in the cover page.  
ii) Submitted under Rule 17(3) should be corrected to 17(1) of MCR 2016.

**Introduction**

3. Introductory note:- (Pg-1)- Under rule 17 should be corrected as 17(1).

**2.0 Location and Accessibility**

4. Table-4-Pg. (3)- Co-ordinates of pillar A in Table 4 and Plates (I/c, II/a) are different. This is to be checked and corrected

Para-2(b)- Toposheet No. with latitude & longitude of all corner boundary point/pillar- GCP-1, GCP-2 & GCP-3 pillar co-ordinates should also be mentioned.

**3.0 Details of approved mining Plan/scheme of Mining (if any)**

5. Para-3.3: Pg(6): The proposed Gully check dimension in SOM period is mentioned as 10mX1mX1m which should be corrected to 10mX3mX3m as per previous approved proposal.
6. Para-3.4: Pg (9): The referred Annexure is not numbered. Also status of compliance of IBM violation no KNT/TMK/Mn/55/BNG/RF/846 dated 29/11/19 & KNT/TMK/Mn-55/BNG/236 dated 10/2/2020 to be mentioned and the related documents to be added in Annexure.`

**PART-A**

**1.0 Geology and Exploration**

7. Para. -1(e)( I & ii) –Pg. (11-12)- The referred Annexure 7,8 & 9 is not numbered.
8. Para-1(f,g,h)-Pg. (13-14) - The scale mentioned is 1:2000 whereas plate shows scale of 1:1000. This should be checked & corrected.
9. Para-1(i)-Pg-14- The future proposed exploration program should be aligned as per Rule 12(4) of MCDR 2017 which requires in the case of existing mining leases detailed exploration (G1 level) over the entire potentially mineralised area under the mining lease shall be carried out within a period of five years from the date of commencement of these rules. The exploration proposal for the proposed plan period to be reviewed and prepared accordingly. Year-wise details of the core boreholes should be given in tabular format as mentioned below:

Proposed Exploration:

Year	No. of boreholes (Core/RC/DTH)	Grid interval	Total meterage	No of pits, dimensions volume	No of Trenches, dimensions and volume
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Details of Proposed boreholes (Year)

Borehole No	Sec No.	Block	Co-ordinates		Level (mRL)	Depth(m)
			Northing	Easting		

10. Para-1(k)-Pg-(15-16)- The manganese ore recovery is considered as 20 % for the current proposal whereas for the previous approved plan period the recovery is taken as 40 %. The detail justification for reduction of the recovery percentage from 40 % to 20 % to be given supported with the NABL accredited Lab test analysis for the same and the analysis results should be annexed. Table 19- The total figure of "18645" is not correct when checked with the figures in the recovery column. This should be checked and corrections to be made in all relevant portions of the document.
11. Para-1(l)-Pg-(16-17) Table-21 & 22 is not as per the universal format. The grade is not mentioned. These should be corrected as per the universal format.  
b)- No information given on Cut-off grade, ultimate pit depth proposed. The complete details & justification should be given on cut-off grade; ultimate pit depth etc. and the reference of the feasibility report should also be given here.

**2.0 Mining**

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12. Para-2(a) Pg.-(18-19)- i)The previous approved plan mentions bench height of 3m and width of more than 3m. The land use as reported in Annual return-2018-19 under Mining is 2.0 ha and the mine is suspended w.e.f. 11/3/19. The figures given under Extent (ha), Avg ht, Avg width, co-ordinates etc in Table 23 are not correct. This should be checked thoroughly and corrected.
- ii) Table-24 Pg. (19).- "The dump D1 as mentioned in Table 24 is not shown in plates. The bottom and top mRL as per previous approved plan is 893 mRL & 913 mRL respectively. The overall slope angle as per EC conditions should not be more than 27 degrees. The area under waste disposal as reported in AR 2018-19 is 0.5 ha. The figures of Table 24 to be checked thoroughly and corrected.
- iii) Table 25(pg-19) - 2000 tonnes of Mineral rejects has been reported in Annual return 2018-19. The detail grade analysis of these 2000 tonnes of Mineral rejects/subgrade ore reported are to be mentioned here in text and the analysis report from NABL accredited lab is to be attached as Annexure and annexure reference to be given. The position of this stack should be demarcated on the related plates and the location of this to be mentioned in the text. Table 25 should be corrected accordingly.
13. Para-2 (b)(l)In-situ Tentative excavation- Pg. (19-20)- i)During inspection it was found that some stock of subgrade manganese ore is present inside the mine and same has been reported as 2000 tonnes in AR 2018-19. Accordingly for this proposed plan period, it is recommended to analyse the sub grade ore generation quantity from the ROM quantity, based on the reserve assessment between Threshold value and cut-off grade for manganese ore and ratio to be calculated and detail justification for same to be given. The quantity to be distributed accordingly as per the above analysis in column (6 & 7) of below mentioned table. It should be noted that since EC is for 10,000 tonnes/annum of ROM, the total ROM quantity adding Column (6) & (7) should not be more than the EC capacity. Table-26 & 27 should also be corrected as per the universal format as mentioned below.

Year	Pit no	Total Tentative excavation (Cum)	Top Soil (Cum)	OB/SB/IB (Cum/tons)	ROM		Mineral Reject	Rom/Waste Ratio (by Volm)/ (by tons)
					Mn ore (Cum/tons)	Mineral Reject (cum /Subgrade(tons)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

- ii) The bulk density of manganese ore, iron ore float and waste to be mentioned.
- iii) The Mineral rejects in Column (7) shows generation of float iron ore. The average grade of the float ore proposed to be generated should be mentioned and also the details of the area for stacking should be given with co-ordinate extent. The proposed area of mineral reject dump is currently under G3 category. The area will be explored at G-1 level during this plan period as already mentioned in aforementioned scrutiny comment no 9. The Mineral reject dump should be proposed accordingly & the same should be demarcated on all the relevant plans & sections accordingly.
- iv) It mentions "However.... as per rule R.12(3)(1), Minerals (other than A & HCEM) MCR 2016. This should be corrected to" The information of the float iron ore to the State Government & related activities if any will be carried out as per Rule 12(2) of MCR-2016".
14. Para-2(c) – Pg. (20)- i) The plate reference is given as Plate III(a-e) which is not matching with the attached plates. This should be corrected both in text and the related plates. ii)The section has not been submitted separately for each year. These should be prepared and the plate references to be provided.
15. Para-2(d)-Pg. (20-22)-Salient features of the proposed method of working-i) The details of the mineral reject generated for float iron ore related to the quantity, area for stacking with co-ordinates extent, area, grade details etc. should be mentioned here.
- ii) The details of the subgrade ore related to the quantity, area for stacking with co-ordinates extent, area, grade details etc. should also be mentioned here.

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- iii). Its mentioned "Four stages of dumping in five years period & the maximum height of each stage of dumping will be 10 m. As per the EC conditions, the max height of dump should not exceed 30 m having 3 terraces of 10 m each. The overall slope of the dump shall not exceed 27 degrees. The above is not in compliance to the EC conditions. The dump should be redesigned for the proposed period, taking into all the parameters of EC conditions.
- iv).The back-up calculation for no of excavators' loaders etc. to be given in detail as per the total quantity to be handled.
16. Para 2 (e) - II Pg-(23-24)- Layout of Mine workings: i) It mentions "*However the same..... as per rule R.12(3)(1), Minerals (other than A & HCEM) MCR 2016.*". This should be corrected to" The information of the float iron ore to the State Government & related activities if any will be carried out as per Rule 12(2) of MCR-2016".
- ii) Table no 29- The UTM co-ordinates given and the sections are not matching. The complete table to be checked for all the years and corrections to be incorporated in table and also all the related plates.
- iii) Table No 30- The table shows overall height of dump 36 m and slope of 40 degree which is not permissible as per EC condition. The dump needs to be redesigned as per the EC conditions as already mentioned in aforementioned scrutiny comment no 15(iii). Table to be corrected accordingly. The UTM co-ordinates should also be checked and the text and related plates to be corrected.
- iv) Disposal of Mineral reject (Float iron ore) of 38,500 tons is proposed during planned period. The details of the float iron ore dumping as per Table-30 should also be given. The mineral reject dump slopes should be around 25 degrees as per the EC conditions and should be designed accordingly and the dump should be outside the proposed exploration area of this plan period & UPL as already mentioned in aforementioned scrutiny comment no 13(iii).
- v) Disposal of mineral reject (subgrade ore) should also be given as per table 30.
- vi) The plate reference no given is not correct. This is to be checked and related corrections to be done in both text and plate.
17. Para 2-(f) - Pg. (24-26) –Conceptual Mine Planning- i)Disposal of dumps- The area & dump details to be checked and corrected as per aforementioned scrutiny comment no 15(iii).
- ii) Details of the float iron ore mineral reject dump to be also given.
- iii)Reclamation & rehabilitation: **(a)** The steps & measures proposed to be taken to reclaim the mining lease area including re-grassing at the conceptual stage of mine should be enumerated in brief and the related plan & section to be enclosed as plates. **(b)** Table 33: Retaining wall dimension dimension as per EC condition is 2.5 mtr (height) X 3 mtr. (Width). The dimension of the retaining wall should be proposed accordingly and corrected in all related part of texts and plates. **(c)** Toe wall should also be provided at the bottom of mineral reject dumps as per the EC condition. Accordingly, retaining wall should also be proposed for the Mineral reject dump for float iron ore. **(d)** Table 32-Year wise afforestation programme as provided in Table 32 to be checked w.r.t aforementioned scrutiny comment no 15(iii) and necessary corrections w.r.t area, UTM co-ordinates to be made.
- iv) Land use pattern- Table 34- (a) The Mining, dumping area as reported in AR 2018-19 land use shows 2.0 ha for mining & 0.5 ha for waste dump. Also, the dumping area in the existing column of Table 34 has been shown as 0.28 ha which is less than the previous approved proposal where in existing land use for waste dump is 0.38 ha. The complete Land use for Existing period, plan period& conceptual period should be rechecked as per the aforementioned scrutiny comments related to mining, waste dump, mineral reject dump, subgrade dump etc. and corrections to be incorporated.
- (b) The table should include details for (1)Mining , (2)Dump, (3) mineral storage, (4)Top soil, (5)Infrastructures (Screening plant, work shop, buildings, weigh bridge etc.), (6)Road,(7)Green

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belt/afforestation, (8) Area for Engineering measures(Retaining wall, garland drain, Gully check, check dam etc.), (9) Others/untouched. All the area under the above headings should be recalculated properly w.r.t the above scrutiny comments and Table 34 to be corrected accordingly.

**3.0 Mine drainage**

18. Para 3.0(b)-Pg (27)- The minimum and maximum depth of working to be corrected.

**4.0 Stacking of Mineral Reject/sub grade material and disposal of waste**

19. Para 4.0(a)-Pg(28)-i)The corrections as mentioned in aforementioned scrutiny comment no 16, regarding Rule 12(2) of MCR 2016 should be incorporated. **ii**) The details of the quantity of Waste dump, mineral reject (Float iron ore) and subgrade ore along with the areas for disposal to be given here. **iii**)A table should be added as per the universal format as mentioned below.

Year	Top Soil (Cum)		Overburden/waste(cum)		Mineral Rejects (Cum)		
	Reuse/spreading	Storage	Backfilling	Storage	Blending	Storage	Beneficiation

20. Para 4.0(b)-Pg-28- The proposed waste dumping ground is proved for absence of mineral, the justification of the same should be mentioned with pit/boreholes details and analysis report.
21. Para 4.0(c)-Pg-29- **i**)The dump is to be redesigned as per the EC conditions as already mentioned in aforementioned scrutiny comment no 15(iii).  
**ii**) The mineral reject dump is also to be redesigned as per aforementioned scrutiny comment no 16(iv). The details of the mineral reject dump should also be given in tabular format as per table 35.

**5.0 Use of Mineral and Mineral Reject**

22. Para 5.0(a)-Pg-(30)-Requirement of end use industry-The end use industry is to be analysed in more details and information should be added in text. As already mentioned in aforementioned scrutiny comment no 13 subgrade stocks of Manganese ore was found whereas in the proposal it is mentioned that all Manganese ore 10 % and above is marketable.
23. Para 5.0(d)- Pg-(30)- Physical and chemical specification stipulated by buyers- Table 36 to be checked as per aforementioned scrutiny comment no 22.

**7.0 Other**

24. Para 7.0(a)- Pg-(32)-Site services & infrastructure: The proposed site services & infrastructures area to be clearly mentioned and the area to be clearly demarcated on all the relevant plates. The area proposed for statutory building (p) does not appear safe as it is just below the proposed waste dump which is a safety concern. This should be checked and all infrastructures including statutory buildings are to be planned and located in a proper safe place.

**Progressive Mine Closure Plan**

25. Para 8.0-Pg-(33)- MCDR "1988" to be corrected as MCDR "2017".
26. Para 8.1-Pg.(33)- The recent environmental monitoring data to be used in this section for Quality of air, Ambient noise level etc. for core & buffer zone and the related environmental report to be attached in annexure.
27. Para 8.3.5 Pg. (38)-Table 43-The Gully Check, garland drain, retaining wall is mentioned under the heading "Rehabilitation of waste land within lease". This should be removed from this section and added in "Others". The "others" section should include the R& R works (RW, GC, GD,CD etc.) in details column and the proposal for the plan period should be given year-wise.
28. Para 8.4-Pg. (39) - Disaster management and risk assessment- During inspection it was found, Mr Kenchappa is not possessing authorized Mines Manager certificate. Accordingly name, address along with contact no for the competent person should be given who will be contacted in case of any emergency.
29. Para 8.6-Pg. (39-40)-The area put on use at start, additional area requirement during plan period should be rechecked as per aforementioned scrutiny comments related to mining, waste dump, reclamation & rehabilitation works, Mineral storage, Infrastructure, others etc. & Table 44 & the financial assurance amount should be corrected accordingly.

**Part-B**

**Scrutiny comments on examination of Draft Review & updation of Mining plan including progressive mine closure plan in respect of Shivasandra Manganese ore mine (ML No. 2636) of Smt.Sunanda V Allum, Bellari over an area of 21.38 ha in Gubbi taluk, Tumkur district, Karnataka.**

30. Para 9.0-Certificate/undertaking/consents- Part-B- i) It is mentioned “under Rule 17 of MCR 2017” which should be corrected to “Rule 17(1) of MCR 2016. “I hereby undertake... to be corrected to “we” as per the universal format.

**Annexures:**

31. i) The annexures are not numbered as already mentioned in scrutiny comment no 6 & 7. It is to be numbered properly and accordingly to be updated in Index and the relevant portion of text.  
ii) Copy of Violation letters issued by IBM and its compliance thereof should be attached as per aforementioned scrutiny comment no 6.  
iii) Copy of analysis report from NABL accredited laboratory as per aforementioned scrutiny comment no 10, 12(iii), & 20 should be attached.  
iv) The Recent Environmental monitoring report to be attached as per Scrutiny comment no 26.  
v) Annexure-10- The Feasibility report should be checked w.r.t aforementioned scrutiny comments related to Geology & exploration, Mining, use of mineral & mineral reject, Others & PMCP and corrections to be incorporated.
32. All the Annexures should be properly numbered & provided Pg. No. and the page no to be added in the Annexures index.

**Plates:**

33. i) Plans should be enclosed in support of compliance of CCOM circular No- 2/2010(Geo-referenced mining lease map prepared using DGPS, superimposed on geo-referenced vectorised cadastral map & DGPS plan )  
ii) Plate-I/b-Key plan- The plan is not legible. The air, noise, water, soil sample location are not clearly visible on map. The predominant wind direction and other requirement as per rule 32(5) of MCDR 2017 should be incorporated and the plate should be corrected accordingly.  
iii) Plate-II/a-Surface plan- The existing mining, dump, subgrade area etc. to be rechecked as per aforementioned scrutiny comment no 12 and plate to be corrected accordingly.  
iii) Plate-II/b & II/c- Geological Plan & Sections- The plates should be checked and all corrections to be incorporated w.r.t aforementioned scrutiny comment no 8,9,10 &11. The area under G-1, G-2, G-3 category to be clearly demarcated on plan & section with different colours.  
iv) Plate-III/a(1-5) -Production & Development Plan.- The plates should be checked and all corrections should be incorporated as per the aforementioned scrutiny comments no 12, 13,14,15,16, 17,24,27 & 29. All the tables, index should also be corrected accordingly.  
v) Plate-III/b-Production section- Individual Year wise section should be submitted separately for each year.  
vi) Plate-IV-Reclamation plan- The reclamation plan should also be checked and corrected as per aforementioned scrutiny comment no 12, 13,15,16, 17,24, 27 & 29. All the tables, index as shown in plates should also be corrected accordingly.  
vi) Plate-V (Environmental plan)-The plan should be updated as per the aforementioned scrutiny comments and the proposed Engineering measures, Year wise afforestation details, plan period Land use etc. should also be corrected in plate.  
vii) Plate-VI- (Conceptual plan)- The Existing land use, plan period land use, and conceptual period land use to be rechecked as per the aforementioned scrutiny comments and all corrections to be incorporated in the plate. The plan & section for re-grassing at conceptual stage of mine should also be attached as plates as per aforementioned scrutiny comment no 17(iii)(a).  
ix) Plate-VII-Financial Area assurance plan- All corrections as per aforementioned scrutiny comment no 29 needs to be incorporated in the plate. The tables, index mentioned in plates also needs to be corrected accordingly.  
x) It should be ensured that all attached plates are prepared as per the content & scale specifications, of Rule 32 of MCDR 2017.