

SCRUTINY COMMENTS ON THE DRAFT REVIEW OF MINING PLAN AND PMCP OF RAJABERA IRON ORE MINE (41.697 HA.) OF SHRI PADAM KUMAR JAIN LOCATED IN SINGHBHUM (WEST) DISTRICT, JHARKHAND SUBMITTED UNDER RULE 17(2) OF MCR, 2016.

A. TEXT:

1. On the cover page: (a) Lease period should be from 29/02/1988 to 28/02/2038. Date of expiry should be 28/02/2038. Accordingly, may be corrected.
- (c) For PMCP, submitted under Rule 23 of MCDR, 2017 instead of Rule 23B(2) of MCDR, 1988.
- (2) The consent letter and the declaration/undertaking may have uniform signature of the lessee.
- (3) The consent letter/declaration/undertaking may have uniform signature of the lessee.
- (4) In case of individual, the declaration/affidavit indicating whether the lessee is working in other firm/company/organization etc. has not been enclosed.
- (5) Introduction: Page (vii)(a): Now there is no existence of Manoharpur-Chiria Railway. The nearest siding is at Manoharpur, 36 km. away from the mine may be written, as given in the DGPS report.
(b) Approach road should be 1.55 km. instead of 4 km.
(c) The status of the leases held by the lessee should be no working for want of EC & F.C.
5. (a) Introduction, Page VIII: (Status of EC): Annexure number given is not correct.
6. Page 1-I, Para 1.0(a): (a) E-mail id of the lessee has not been given.
(b) Correct mobile number may be given.
7. Page 1 vi (a): Same as scrutiny comment no. 5 above.
(b) Plate no. 1 has not been mentioned.
8. Part-A, page 1A-(iii) (a) Name of prospecting/exploration agency not given.
b) Depth of quarry Block A, Block B, Block, C & Block D not given.
9. Page 1A- XVI: The life of the mine may be calculated on the basis of 1,25,595 TPA.
10. Page 2A (ii): (a) In the first para, instead of excavation, execution has been written, which should be corrected. (b) Table 2.1: Since the ROM contains both saleable and sub-grade mineral may be given which shall not be more than 1,25,595 TPA/its equivalent in m³.
11. Page 2A-iii, Table 2.2: The year wise sub-grade generation in MT may be given and the total of saleable and subgrade mineral should not exceed the proposed E.C. limit i.e. 1,25,595 TPA.

12. Page 2A V to 2A XI(Table 2.3 to 2.8): Yearwise production of saleable and sub-grade mineral should not be more than 1,25,595 TPA.
13. Page 2A –Xii, para 2.0 A(g)(2): Loading Equipment: There are al lot of typographical mistakes, which may be corrected. Puri material (-20 mm) is not clear.
14. Page 2A-Xiii: The dumper capacity may be given in Tonnes.
15. Page 7A-I, para 7(b) (i) & (ii): Number of local employees may be given.
16. Page 8A-ixi- para 8.3: Sweating of soil is not clear.
17. Page 8A-Xviii: Financial assistance of Rs. 42,96,300/-(Rupees Forty Two Lakh Ninety Six Thousand and Three Hundred) validity upto 31.03.2023 has not been submitted.
18. Page 8A-ii, para 8: Instead Rule 22, Rule 23 of MCDR,2017 may be written.
19. Annexure XI: (i) The NABL certificate of SGS India (Pvt.) Ltd. has expired. Valid certificate of Accreditation w.r.t. SGS India (Pvt.) Ltd. may be enclosed.
20. **General:** Numerous spelling mistakes have been observed in the document that shows the document have not been revised thoroughly before submission.

B. (GEOLOGICAL PART):

1. The Jungle-Jhari area shown in plot no. 279, 200 & 466 as per lease deed (Annexure-2) have not been shown on authenticated cadastral map (Plate no. 2), Surface Plan (Plate no. 3) and on Environment Plan (Plate no. 10).
2. Cover Page: The type of Non-Forest land should be specified and bifurcated, i.e G.M land, Raiyati land etc. On the cover page the Non-Fores land has been given as 36.967 whereas in Para 2.(b) under Chapter Location & Accessibility the total of Non-Forest land has been given as 36.969 Ha. The same may be reconciled.
3. The DGPS surveyed lease map showing boundary pillar co-ordinates needs to be submitted along with the document. All the plates/maps submitted, should be based on DGPS surveyed map showing grid in UTM mode. As per Rule-35(2) of MCDR, 2017, high resolution satellite images obtained from CARTOSAT-2 satellite LISS-IV sensor on the scale of cadastral map, covering the mining lease and an area of two Kilometers from the lease boundary, should be submitted along with the document.
4. An Area plan is also required to be submitted showing type of land with plot nos. and the access route to the area under reference with approach to major locations on either end of the road.
5. Introduction: Under status of leases, the mine under reference has been shown as working, which needs to be corrected.
6. Chapter-1.0(General): (a) Name & address of applicant- Complete postal address of the lessee along with the Registration no. obtained from IBM and e-mail id have not been furnished.

7. Chapter-2.0(Location & Accessibility): (a) Lease details- The Lat/Long given for which Boundary Pillar has not been furnished. As per guideline, the Lat/Long for any boundary point can be given under the para. The further details as required under the para as per guideline have not been given.
 - (b) Details of applied/lease area- (i) Date of grant of lease should be given in previous para no. (a).
 - (ii) Coastal Regulation Zone(CRZ): The para needs to be properly mentioned.
 - (iii) Existence of public road: The distance of un-metalled road to the metalled road running from Barajamda to Manoharpur, needs to be corrected as per enclosed DGPS report and Key Plan (Plate no. 1).
 - (iv) Land use pattern: Annexure number is missing.
8. Para 2(c) i. General Location Map: Para no. should be corrected. Plate no. of general location map has not been given. In the enclosed Key Plan (Plate no. 1), the Topo sheet no. is missing in the Key Plan. The new Topo Sheet no. in open series should also be mentioned on the Key Plan as well as in the Para. The location of area i.r.o Lat/Long should also be given on the Key Plan. The location of adjoining leases should also be marked on the plan. No railway track has been shown on the Key Plan. In the Key Plan, the corner pillar co-ordinates of the Eastern part of the lease area are missing. Atleast two co-ordinates each for Lat & Long should be given on the Key Plan for better understanding of location of lease area.
9. Chapter 3.0, Details of approved Mining Plan: (i) The referred Annexure-V is not correct. The Annexure no. of approval letter dated 23.04.2015 should be mentioned.
 - (ii) Para no. 3.2 & 3.5 should be reconciled properly in light of Annexure-XV.
 - (iii) Para no. 3.3.1(Exploration): The first line regarding grid of of DTH drilling needs to be corrected as no regular grid pattern has been followed which can be envisaged from the submitted Geological Plan (Plate no. 4).
10. In the submitted BH log in Annexure-XIV, under the column “Lithology”, “Lumpy ore Laterite” has been mentioned. Whether it is lateritic lumpy iron ore or else may be clarified. The collar RL of BHs should be should be reconciled properly with Geological Plan(Plate no. 4). Date of commencement & completion of drilling for BH-10 should be reconciled. In DTH, the core recovery has been shown, which is not proper. The same needs to be corrected. The recovery length of every run, in all the BHs are shown as same, the same may also be clarified. Analysis result of BH samples has not been incorporated. The same needs to be incorporated in Annexure-XIV. In all the BHs Lumpy ore Laterite and Shale have been encountered except in DTH-1, where only Lumpy ore has been shown to occur for 20m. The reason for the same may be explained.
11. Part-A, Para no. 1.0(Geology & Exploration): (a) Topography, Drainage pattern, vegetation etc.:
 - (i) Topography- The elevation mentioned in the para needs to be reconciled from the submitted Geological Plan(Plate no. 4).
 - (ii) Drainage- The Koina river runs along Western & Northern edge of the lease area and not only along the Western edge. The three nalas as mentioned in the para, have not been shown in the Surface Plan, Geological Plan etc.
The last para of the sub heading “Drainage Pattern” is irrelevant; it should be given under para “Regional Geology”.

- (iii) Climate- The Max. & Min. temp. of Summer and Winter season should be given along with the month involved.
- (b) Regional Geology: The GSI bulletin no. and date given as reference for stratigraphic succession needs to be given. The stratigraphic succession given should be reconciled properly.
- (c) Detailed description of Geology of lease area: The description of local geology does not match with enclosed geological plan (Plate no. 4). Under this para, the description should be area specific and not on regional basis.
- (d) Name of exploration agency: Name of exploration agency with its details has not been given since 10 DTH have been given in the area.
- (e) Details of prospecting: (i) No. of Pits/Trenches: Depth of quarry in all 4 blocks have not been given.
- (iii) Sampling: Annexure no. of sample analysis result is missing. Sample analysis points have not been marked on the Geological Plan(Plate no. 4). Sampling analysis in Annexure-XI shows Block no. 1, 2, 3 whereas in para 1. (e)(i) of Part-A, block no. has been given as A, B, C & D. The same needs to be reconciled. The NABL accreditation certificate i.r.o Superintendence Co. India (P) Ltd needs also to be submitted.
- (f) Surface Plan(Plate no. 3): (i) The Jungle-Jhari area shown in plot no. 279, 200 & 466 as per lease deed (Annexure-2) have not been shown on Surface Plan (Plate no. 3).
- (ii) The Koina river runs along Western & Northern edge of the lease area and not only along the Western edge. The three nalas as mentioned in the para 1.0(a) of Part-A(Geology & Exploration), have not been shown in the Surface Plan (Plate no.3).
- (iii) The water flow direction in the nalla should be shown with arrow mark.
- (iv) The UTM grid value should be given on the plan instead of local grid.
- (v) Photographs of three nos. of sub-grade stack should be submitted as Annexure.
- (vi) On the Northern part of lease the Koina river bed has touched the lease boundary. The same should be shown properly on the plan. The plantation over dump on the Northern part of lease area has not been shown. It should be shown on all the plans.
- (g) Geological Plan(Plate no.4): (i) The Jungle-Jhari area shown in plot no. 26, 200, 279 & 466 as per lease deed (Annexure-2) have not been shown on Geological Plan (Plate no. 4).
- (ii) The three nalas as mentioned in the para 1.0(a) of Part-A(Geology & Exploration), have not been shown in the Geological Plan (Plate no.4).
- (iii) The Geological axis G1 & G3 as shown in the Index have not been shown on the plan. The G1 and G3 zones should be marked clearly on the plan using different colour code for prominence. The basis for delineating G1 and G3 zone should also be explained in the text part.
- (iv) Some parts of lease area, especially on the Eastern part of lease, where Float ore has been shown to occur, but G3 has been assigned on the area. The reason for the same may be clarified.
- (v) The UTM grid value should be given on the plan instead of local grid.
- (vi) Top RL of temporary sub-grade stack should be given on the plan and corresponding section.
- (vii) The necessity of proposed DTH no. 3, 5, 8, 23, 26 etc. which are either close to safety zone of river/7.5m safety barrier needs to be explained. Further, the PDTH-27 has been proposed near DTH-1, the reason for the same may be explained.
- (viii) A ore stack of about 4000 MT has not been shown in Block-A of the plan.
- (ix) No weigh bridge was found on the date of inspection near Block-D, on the Southern part of lease and on West of mine road.

(x) Within and near the “Excluded area for Sarna Sthal” G3 has been marked, the same should be corrected since the area is excluded from the lease area as per enclosed lease map (Plate no.2). On the southern part of Sarna Sthal, a block has been marked with 96. What does it indicate may be explained.

(xi) The ultimate pit limit (UPL) should be marked clear bold line using suitable colour scheme.

(xii) No zone of consideration for Reserve & Resource estimation have been shown on the Geological Plan.

(h) Geological Section(Plate no. 5): (i) Every Sections should be reconciled properly with the plan, viz. (a) Section 100S, where sub-grade stack has not been shown with RL, (b) Section 150S, bottom RL of dump has not been given on the section, (c) what does the green line indicates has not been marked in the Index etc.

(ii) In all sections, there is mismatch of symbol of float ore with the index.

(iii) The proposed BHs should be marked on the sections along with location of pits.

(iv) Both Top and bottom RLs of every surface features viz. quarry, dump, stack yard should be given on the sections along with its number.

(v) UNFC code for area considered for different categories of reserve/resource estimation should also be marked on the geological sections.

(vi) Except sections 150S & 250S no other section shows Probable category of reserve estimation zone. In reserve assessment table, both 121 and 122 category of reserve estimation has been shown but in section only 121 zone has been marked. The may be reconciled properly.

(vii) In some sections, no UNFC code for area considered for different categories of reserve/resource have been marked like section 200S, 250S, 300S, 600S etc. although Iron ore formation (float) has been shown to occur in the area covered under those sections, in the Geological Plan.

(viii) For better clarity, the vertical scale should be taken as 1:1000, so that benches could be shown clearly along with other geological features.

(ix) The longitudinal sections should also be incorporated for better coverage of Jungle-Jhari area.

(i) Future exploration programme: The year wise proposed exploration schedule be supplemented with location of BHs (Lat/Long) and size of core to be used.

(j) & (k) Reserve & Resource as per UNFC: (i) Reserve/Resource as per previous approved document should also be furnished in the para.

(ii) The submitted Feasibility study report does not include the Financial analysis for economic viability of the deposit under Para 11.

(iii) Thickness of ore body: It has been mentioned that, 5m of actual thickness of ore body as observed in BH has been considered as proved depth. But in DTH-1, 20m thickness of ore body has been shown in the BH log. The same needs to be reconciled properly. Further, since no proved Reserve has been calculated, hence it should not be considered as “Proved depth”.

(iv) The ore body depth persistence has been considered has been considered as 5m, whether it is for in-situ or float ore should be mentioned clearly and accordingly, the reserve/resource assessed for type of ore should also be spelt clearly.

(v) The determination of Bulk Density (BD) and Recovery factor should be based on field test (Ref. para 4.1.4.1(ii) of chapter-4 of IBM manual for appraisal of Mining Plan) and not on reference basis. The calculation for these two factors should also be incorporated in the relevant para of the text.

(vi) Under sub para (d) “Recovery”, it has been mentioned that 50% is saleable grade & 20% is sub-grade while remaining is ICW/Waste. What constitutes ICW & Waste, should be spelt clearly. Further, the chemical analysis of both the materials need also to be incorporated for confirmation.

(vii) Classification of resource as per UNFC system: Page no. 1A-vii, in the table detailed exploration, item no. 4.iv (Sampling), it has been mentioned that, 138 nos. of core samples has been analyzed and attached as Annexure-XII. There is no analysis report of 138 nos. of core samples as mentioned. Moreover, when there is no core drilling, how core sample analysis will be available. Further, the referred Annexure- XII, is also not correct. The same should be taken care of.

(viii) In the above table on the page no. 1A-viii, item no. 6-9, the referred Annexure- XVII is missing.

(ix) Estimation of Measured Mineral Resources (331) of Forest land: The section 1200S should also be taken into account for calculation.

(x) The reserve under Forest has been taken under Probable reserve of 121 category. The same needs clarification as how the reserve under Forest area can be mineable.

(xi) Total calculation shown for reserve/resource estimation estimation is not clear. The same needs clarity as how the total resource has been brought under Probable reserve category. The category of reserve should be spelt clearly, whether it is 121 or 122.

(xii) The resource blocked under 7.5m safety barrier, bench, under sub-grade (SG) stack and Forest cover should be spelt clearly and separately along with calculation.

(xiii) The reserve/resource as per UNFC w.r.t threshold value has not been furnished in tabular form.

(l) Mineral Reserve/Resource: (i) Mineral resource may be estimated purely based on level of exploration w.r.t threshold value. The information in this context should be given as per format given below as per guideline:

Level of exploration (G1, G2, G3 & G4)	Area covered under exploration (hect.)	Mineral Resource assessed
--	--	---------------------------

(ii) The final reserve/resource figure should be given under this para as per guideline.

(iii) The finalization of reserve/resource calculation part is subject to verification of Auto Cad file (soft copy).

12. Para no. 2.0(Mining): (i) The proposed production of saleable ore given in table no. 2.1 do not match with that of table no. 2.2. The same needs to be reconciled properly.

(ii) The proposed year wise SG production should also to be incorporated in table no. 2.2. The total of saleable and SG production should not exceed 125595 MT per annum.

(iii) The finalization of tentative excavation schedule calculation part is subject to verification of Auto Cad file (soft copy).

13. **General:**

(i) All tables and annexures should be properly numbered. (ii) All enclosed photographs should be clear and legible & (iii) All Plans should bear UTM grid and BP co-ordinates.

Contd. to7/-

C. PLATES:

1. CCOM's circular no. 2/10 has not been complied. High resolution satellite images obtained from CARTOSAT 2 satellite LISS-IV sensor on the scale of cadastral map covering the mining lease and area of 2 Kms. from the lease boundary has not been enclosed.
2. Key Plan (Plate no. 1): a) Toposheet number has not been given.
(b) On the northern side instead of road going to Manoharpur, Dodri has been written.
(c) Flow direction of Koira river has not been given.
3. Surface plan (Plate no. 3): Three ground control points and its latitude and longitude not given.
4. Dump plan and section (Plate no. 7): Section along BB'(S-N) shown is not correct.
5. Environment management plan (plate no. 11): Yearwise plantation in 2018-19, 2019-20 etc. have not been shown in the Index as well as on plan.
