

Scrutiny comments on examination of Review of Mining Plan in respect of Jonnagiri Gold Mine of M/s Geo Mysore Services (India) over an extent of 597.82 Ha. located in Jonnagiri, Pagadrayi & Erragudi Village, Tugalli Mandal Kurnool District of AP State submitted under Rule 17(2) of MCR, 2016.

TEXT

1. The document should have been prepared as per the prescribed format of IBM manual for appraisal of mining plan 2014.
2. In cover page, Sy nos of the lease area, village, Name of the qualified persons with address etc. should be submitted. Further the validity period of lease should be submitted as per the document available only as there is no deemed extension of lease period unless any formal correspondence from state government.
3. Person signing the document should be authorized by the board of directors of the company.
4. Details of board of directors of the company should be submitted.
5. Consent letter, undertaking, certificates submitted by the authorized person should be furnished on company's original letter head duly dated and signed. Since the qualified persons are also company's employees the certificates from them is also from company's letter head duly dated and signed.
6. Copy of the photo identity proof and address proof of the person who signs the document should be submitted.
7. Minerals intends to mine is stated to be Gold with associated minerals in page no.2, but details of the associated minerals should be furnished.
8. List of RP/ PL/ML held by the lessee should be furnished in tabular form with present status in introduction chapter.
9. Surface right area held by the lessee should be furnished, further mode of acquiring the land should also furnished. Also the status of area proposed for the proposed plan period should be submitted with supporting document.
10. In the last approved mining plan it was proposed to carry out mining operations by underground and opencast method but in the present submission only opencast method is proposed, which needs justification.
11. Documentary evidence towards purchase of GSI exploration report for Dona temple block(west) and East block should be submitted.

Review of mining plan

12. Review of earlier approved proposals should be submitted in to-to in tabular form incorporating proposal, actual achievement, deviations if any with justifications, for easy reference. For example it was approved for underground as well as opencast method of mining, but no such details are furnished.
13. Refer page no.6, no proved reserves (111) were estimated in the earlier approved mining plan, but in the present submission reserves under this category is furnished which is contradictory, such type of contradictory statements should be rectified.
14. Progressive mine closure plan review should be submitted.

15. Review of entire exploration carried out so far in the lease area should be submitted.

Geology and exploration

- 16. Bench mark be established in the lease area and the level in mRL with co-ordinates be marked there, also in plans and photographs be submitted.
- 17. Regional Geological map should be submitted. Type of mineralization in the regional geology section be discussed.
- 18. As there exist old working pits in the lease area, details of the same with dimensions and locations should be submitted in addition to the pits trenches made by the lessee and should be demarcated in the geological plan.
- 19. Block wise controls of Gold mineralization (Lithology, Geological structure) be discussed with demarcating the controls of mineralization on the geological plan. Based on the exploration, mapping etc. carried out so far in the lease area, the dimension / structure of the ore body in block wise should be discussed.

Mineralized zone identified on the basis of exploration work already carried out, outcrops along with geological structures, Lithology, controls of gold mineralization (Lithology, Geological Structure) etc. be plotted on the geological plan.

Further part geological plan for different blocks should be submitted on 1:1000 scale for easy reference incorporating mineralized zone identified on the basis of exploration work already carried out, UPL, UNFC code, outcrops, Lithology, geological structures, controls of gold mineralization (Lithology, Geological structure) etc.

- 20. Details of exploration carried out by GSI should be furnished in chronological order in tabular form for easy reference.
- 21. It is stated that exploration has been carried out in different phases at different grid interval. The details of all the exploratory works like geological mapping, soil sampling, litho geo chemical sampling, geo physical survey, trenching, petrographic study, mineragraphic study. geo technical study. bore hole deviation survey, drilling carried out block wise/phase wise be submitted in tabular form.
- 22. The item wise exploratory operation carried out so far in the lease area since from beginning should be furnished incorporating the details in tabular form as below,

Block	Phase	Year	Type of exploratory operation (If bore hole then mention type, of bore hole and angle of bore holes Core / RC)	Nos	Grid interval	Dimensions / Total meterage	Angular/ vertical
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23. Exploration expenditure should have incorporated from drilling up to the analysis, Geo-physical survey, soil sampling, bore hole deviation survey, trenching, GSI report purchase etc. accordingly table in page no.15 should be modified.

24. Methods of reserve / resource estimation as per GSI, approved MP and Current submission with reserve/ resources estimated, grade details be submitted in tabular form for easy reference. For major deviations if any justification be submitted.
25. The detail of study carried out for correlating RC bore holes with Diamond core bore holes should be submitted for considering RC bore hole data for reserves/resources estimation.
26. Sampling method adopted has not been discussed for different type of exploratory operation. Further exploratory operation wise sample quantity should be submitted in tabular form.
27. Meterwise assay details of each bore holes for Gold and associated minerals should be furnished.
28. Gist of bore hole wise encountered mineralized zone assay data should be furnished.
29. The reserve /resources details furnished in annual returns submitted for the years 2014-15, 2015-16 & 2016-17 are not matching and also with the submission made in the present review of mining plan, which may be clarified. Further Metal content has been on lower side in comparison to the earlier approved mining plan document, which should be clarified.
30. Para 1.e.3. details pertaining to total meterage drilled, no. of samples collected, analysed with no. of radicals should be furnished for easy reference.
31. Ore zone is considered with mineral content of 0.6 g/t, but on discussion it was come to know that mineralized zone is considered up to 0.3 g/t accordingly reserves/ resources should be re-estimated block wise and submitted. As the cutoff is 0.6g/t, the ore with mineral content between 0.3 to 0.6 g/t should be considered as part of ROM and assessed separately.
32. Details of exploration carried out should be furnished in the tabular form as below
- | SL no. | Area explored under | | | | Total lease area |
|--------|---------------------|---------------|---------------|----------------------|------------------|
| | G1 level (ha) | G2 level (ha) | G3 level (ha) | Unexplored area (ha) | |
| | | | | | |
33. Modifying factors considered for reserves/resources estimation be submitted.
34. The UPL considered based on bench height of 7.5m and width 6m arriving at pit slope of more than 45 degree is not acceptable as this type of operations are not scientific and safe as per statute. The pit slope should be as per statute. Accordingly the reserves/resources should be reestimated.
35. Details of east block and west block lodes having gold mineralization has not been discussed. The details should include structure of ore body, dimension of ore body, dimension of mining block identified with grade, grade of gold and associated minerals.
36. Grade variation within the east and west block has not been discussed, for which level wise assay map should be submitted.
37. Recovery details of metallurgical study and beneficiation study be submitted.

38. The UNFC axis wise justification is general in nature and not of site specific and also not as per MEMC Rules-2015. Justification for Reserves/resources should have been furnished as per UNFC guidelines, initially it should be brought under measured (331), indicated (332), inferred (333) and reconnaissance (334) and then upgraded to proved, probable, prefeasibility etc. based on application of modifying factors. The details furnished are sketchy which cannot be acceptable.

In the feasibility axis justification the costing and economic viability information, information related to environmental clearance (EC) and Consent for Operation, information related to recovery of metal in respect of metallurgical and beneficiation process and other factors like statutory provision relating to land be submitted.

39. Reserves/ resources should be submitted as on date with grade of ore. Further parameters of reserves/resources estimation like cut off grade, threshold limit etc be submitted. Reserves as per earlier approved document has to be submitted and additional reserves estimated based on exploration carried out during earlier plan period should have been incorporated for easy reference.

40. All the potential mineralized area be shown on the geological plan and exploration proposal be given for exploring the entire potential mineralized area in G1 level of exploration within 5 years as per the provision of rule 12(4) of MCDR, 2017. The exploration proposal be submitted block wise and phase wise. Further then Geostatistical variogram study should be proposed for associated minerals in the five year plan period.

41. In the pit optimization (pg-24) the basis of categorization of resources under 221,222 in east block has not been furnished. Further while giving justification as per UNFC it is stated that these resources will be converted into reserves upon further detailed drilling. In this context it is to state that though the exploration has already been carried out in G1 level and not able to delineate the shape, dimension, grade of the ore body then the categorization as per UNFC should be modified as per the reduced grid spacing of exploratory bore holes.

42. Reserves should have been estimated separately for insitu ore and loose debris lying in the old working pits.

43. The mining lease was granted for Gold and other associated minerals. But reserves/resources, grade details only in respect of Gold has been submitted. Reserves / resources details of other associated minerals has not been submitted, which may be clarified.

44. The reserves / resources be estimated by cross sectional area method and for grade estimation geo statistical method may be used.

45. Sequence wise procedure adopted for reserves/resources estimation by block model has not been discussed.

46. Outcome of the geotechnical feasibility study be discussed.

47. Out come of bulk density study should discussed and be furnished with supporting documents.

48. The reserves/resources has been estimated by Geostatistical method, but the back up details has not been submitted. Therefore the reserves / resources be estimated by both the cross sectional area method and slice plan method. The method by which the reserves/ resources estimated are on lower side will be final and considered for estimation of reserves / resources and grade estimation.

Mining

49. There exist old workings in the lease area, as well as trenches. The details should be incorporated in surface plan and details with location should be furnished in para 2.A.a.

50. Bench width should have been defined as per the provision of MMR 1961 for safe and scientific mining.

51. On examination of core bore hole logs, it has been noticed that the gold mineralization starts from surface itself, on verification in the field it is found to be old mining debris and filled trenches. The details of quality and quantity of the same has not been estimated and furnished, though the area is proposed for exploitation during this plan period.

52. Suitability of East block for opencast mining is not furnished.

53. In the year wise tentative excavation plan there is a proposal of substantial quantity (3,18,600 m³) of generation of mineral reject, but the same has not been defined in geology chapter for its reserve/resources estimation purpose. In this regard basis of generation of mineral reject wrt ore should be furnished.

However as per the earlier approved plan there was proposal for generation of sub grade ore, but in the present submission no proposal for generation of sub grade has been submitted, which needs to be clarified.

54. Outcome of the feasibility study be discussed.

55. Extent of mechanization needs to be described in context of proposed production targets. The machine requirement should be supported by necessary calculations.

56. The bench wise grade of proposed mining block for each year needs to be furnished and the mechanism for the grade control for optimum utilization of mineral along with blending techniques needs to be furnished. Bench parameters needs to be mentioned in the text.

57. Section wise/bench wise Computation made for year wise production and development proposal should be furnished in details.

58. In the layout of mine working amount of advance to be made length wise, width wise, level to be mined (mRL), co-ordinates, Volume has not been furnished.

59. The generation, use and stacking of sub grade, mineral rejects should be discussed.

60. Box cut details for opening of the mine be submitted.

61. In the year wise development and production plan the year wise area to be mined should be demarcated by coloured line. The ramps are not proposed.

62. The conceptual plan prepared is sketchy and has not been prepared as per the guidelines. The UPL has not been defined as per statute and reserves

have not been estimated as per UNFC guidelines. Life of mine has not been calculated.

Conceptual status of mine at the end of lease period be discussed for exploration, waste and sub grade generation, pit development, land use pattern, afforestation, reclamation and rehabilitation.

63. Area proposed for waste dumping, tailing pond and processing plant should be proved for its barrenness before brought into use. The backup calculation of the area required for waste dumping, tailing pond, processing plant etc. should be furnished.
64. The built up of dumps from year to year to be shown in yearly plans and sections. Designed capacity & height of individual dump and precautions envisaged for confinement of the dumps alongwith protective works, needs to be described in the text. The arrangements for top soil dump its storage needs to be furnished in the text and plan.
65. The waste dump slope should be maintained as per the statute.
66. Hydro-geological study of the lease area from a institute of national repute like CGWB should be carried out and submitted. The UPL should be decided based on outcome of the above study and subject to statutory permission from competent authority.
67. Contradictory statement regarding final pit limit is furnished in Mine drainage chapter and in conceptual plan as 120m and 220m respectively, which should be clarified. Further UPL related information submitted is also contradictory with comparison to EC condition.
68. No separate stacking of mineral reject has been proposed in plans and section, though proposal of substantial quantity generation has been furnished.
69. It is furnished in pg-43 that the mineral reject will be processed either by blending or as separate feed upon its viability, but the ore which can be blended can not be considered as mineral reject. In this regard the ore/mineral reject which is blendable has to be estimated and furnished separately than that one which is not blendable. Accordingly year wise blending proposal should be submitted.
70. Use of Minerals-In page no-46, it is stated that the ore to be mined from the subject mine is having a grade of 1.41g/t of Gold. It is to be clarified that the average grade of gold from this mine is 1.41g/t or not, with justification.

Processing of ROM-

71. The precautionary measures to be taken in respect of processing plant based on environment impact assessment and environment management plan should be furnished.
72. The material balance sheet incorporating quantity and percentage in respect of processing of ROM should be furnished.
73. Engineering details of tailing dam should be submitted.
74. Water balance chart of the processing should be submitted incorporating drawal of fresh water, re use and loss. Source of water requirement of processing plant be furnished.

Progressive Mine Closure Plan

75. The area put to use at the start of plan period is furnished as nil, but there are old workings, trenches, exploratory work have already been carried out. The area degraded due to above activity should be considered and

submitted. Further in the annual return submitted for the year 2014-15 the area degraded was reported to be 90 Ha.

Plans and sections

76. All the plans should be prepared based lease sketch approved by the competent authority of the State Govt of Andhra Pradesh.
77. All the plans and sections should be submitted as per the provision of rules 31, 32, 33 & 34 of MCDR, 2017.
78. Standard color code should be used in respect of litho units for easy reference.
79. Lease map with Geo-co ordinates of lease boundary pillars authenticated by state government authority should be submitted.
80. Cadastral plan should be submitted.
81. The qualified person should furnish certificate duly signed by them stating that "Certified that this plans and sections area prepared based on the lease map authenticated by state government".
82. Co-ordinates of grid lines should be submitted in 'WGS 84' in addition to local co-ordinates in all the plans and sections, for easy reference.
83. Surface features have not been incorporated in Geological plan, which needs to be included.
84. Outcrops should be shown on the surface plan.
85. Standard colour code should be used for depicting various activities.

Enclosures

86. Copy of EIA/EMP approved by MOEF should be submitted.
87. Copy of ground water table study from a institute of national repute should be submitted.



GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Office of the Regional Controller of Mines

No. AP/KNL/MP/Gold-1/Hyd

Room No.603, 6th Floor,
CGO Towers,Kavadiguda,
Secunderabad.-50008

Date: 19.01.2018

To
Sri. M Hanuma Prasad,
Nominated Owner,
GEO MYSORE SERVICES (INDIA) PVT. LTD.,
627, Trinity, 3rd Cross, 3rd Block,
Koramangala,
Bengaluru – 560 034

Sub: Submission of Review of Mining Plan in respect of Jonnagiri Gold Mine of M/s Geo Mysore Services (India) over an extent of 597.82 Ha. located in Jonnagiri, Pagadrayi & Erragudi Village, Tugalli Mandal Kurnool District of AP State submitted under Rule 17(2) of MCR, 2016.

Ref: Your letter no. Nil, dated.08.12.2017.

Sir,

With reference to your letter cited above on the subject, the site inspection was carried out on 11.01.2018 by Shri. Ibrahim Sharief, Sr. ACOM and Shri S.K. Muduli, JMG accompanied by Shri Sunder Singh and Dr. Devarajan M.K., Qualified persons the draft Review of Mining Plan has since been examined and found certain deficiencies as given in Annexure. The same scrutiny comments have already been forwarded on e mail id of your Qualified Person as submitted in the document. reception@geomysore.com

02. You are advised to attend the deficiencies as per the annexure and resubmit the document, complete in all respects, in three bound copies along with soft copy in the form of CD (2Nos.) within 15 days from the date of issue of this letter. In this regard you are also advised s to submit the Financial Assurance in the form of Bank Guarantee for the area put on use for Mining and allied activities @ Rs.Three lakhs/hectare for category 'A' mines provided that the minimum amount shall be Rs.Ten lakhs and @ Rs.Two Lakhs/hectare for category 'B' mines provided that the minimum amount shall be Rs.Five lakhs as per the provision of Rule 27(1) of MCDR, 2017 at the time of submission of final copies of the document within 15 (fifteen) days from the date of issue of this letter, failing which the document will be disposed without giving any further opportunity.

03. The para-wise clarification & the manner in which the deficiencies are attended should be given while forwarding modified document.

Yours faithfully,

Sd/-

(Pankaj Kulshrestha)
Controller of Mines

Copy to Shri Sunder Singh and Dr. Devarajan M.K., Qualified persons for information & necessary action.

Sd/-

Encl:a/a

(Pankaj Kulshrestha)
Controller of Mines

मूल पति पर नही
खान नियंत्रक (द), भारतीय खान ब्यूरो, बेंगलुरु।

(पंकज कुलश्रेष्ठ)
खान नियंत्रक

