

**STATEMENT SHOWING PEER REVIEWER'S COMMENT AND COMPLAINE ON THE DRAFT GEOLOGICAL REPORT OF
CHITRANGI BLOCKS (G3 STAGE), SINGRAULI DISTRICT, ODISHA**

| SL No | Peer Reviewer's Comments | Response |
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| 01 | The report lacks some components such as work pertaining to geophysical survey, drilling, topographic contours superimposed on Detailed Map, trial excavation in form of pits and trenches, check sample analyses data and geological cross sections etc. | Exploration in the block pre-closed on the basis of outcomes of the 1 st phase of work which are not encouraging at present. In future, the area can be taken up for further studies and the same has been recommended in the report. |
| 02 | The exploration was carried out over BIF with a few promising iron ore minerals, such as hematite, magnetite and goethite-limonite, rich bands alternate with jasper, quartzite and / or chert with variable thickness. Comparatively thick iron ore bands are to be traced for economic viability. | In the present exploration, two promising iron ore enriched areas have been established only on the basis of surface samples. Future work in the block may establish the iron ore enriched areas. |
| 03 | As folding results in multiple exposures and repetition (page-22) of same BIF band, a geological cross section may be attempted to elucidate the view as interpreted geological map does not show any such repetition on plan not any structural data to explain such repetition. | In the block two long linear nearly parallel BIF ridges occur in the central part of the block. In the surrounding areas towards north and south of the block many linear BIF ridges occurs nearly parallel to each other (Regional Geological Map Plate II). This setup in a green schist belt indicates a stratiform BIF horizon that has been laterally compressed across the present strike direction of the BIF and produced tight isoclinal folds. Axial |

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| | | regions which are weak zones got weathered and eroded. Fold limbs are preserved as parallel ridges due to differential weathering and resistance to erosion. |
| 04 | S-planes corresponding to phases of folding may be defined and described with field and laboratory studies and plotted on map. | Structural features have been described in the paragraph 7.6.0 of Chapter 7. |
| 05 | <u>It</u> may be better to give a local stratigraphy of the area mapped followed by description of litho units. | Local stratigraphy of the area has been described in the paragraph 7.4.4 (Chapter-7) |
| 06 | It is usually described as BHQ with occasional mention as BMQ, BMJ or as BHC. The ore band is feebly magnetic. But to say that magnetite is the primary iron mineral phase later martitised and oxidised to hematite, a few photomicrographs of pseudomorph of hematite after magnetite or intergranular relationship is required. | Mineragraphic examination of samples CTRMN-7 reveals that magnetite has undergone martitisation, being progressively replaced by hematite. Additionally, goethite is observed as very fine infillings cutting across the magnetite/hematite bands in certain areas. These features collectively indicate oxidative alteration of magnetite to hematite and subsequently to goethite. Representative photomicrographs are provided in Plates Pmg-7.2 |
| 07 | Photomicrographs of same portion under plane polarised light and cross- nichol (cross polarised light) may be given in side by side. Same procedure may be adopted for section study in transmitted and reflected light. | In the project approval there was a limited scope for the same samples to be studied in both transmitted and reflected light. |

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| 08 | <p>The mafic dyke (dolerite) contains biotite. Petrography study may be revisited to ascertain the nomenclature. Carbonatised basalt or dyke was used instead of carbonated rock. Calcite is reported as disseminations. The primary phase of carbonatite are to be identified. The mafic and ultramafic plutons may be thoroughly sampled for PGE giving due emphasis on local differentiation. Ideas may be kept open for identifying Magnesite and REE.</p> | <p>Biotite is present as very fine flakes in association with chloritic patches, which may be the hydrothermal alteration product of possible primary pyroxene or amphibole. Although the relicts of pyroxene are not observed in the section. Again, the calcite is present mostly as fine dissemination, segregated patches and fillings, often replacing plagioclase laths. No such interlocking texture is noted in calcite grain contacts. Thus, the calcite is most likely to be secondary in origin rather than primary. Thus, calcified/ carbonatised dolerite dyke nomenclature seems to be justified.</p> <p>In the next phase of work in the block, enriched mafic and ultramafic bodies will be sampled closely for PGE and REE. The same has been included in the recommendation part of the report.</p> |
| 09 | <p>The values of Silica wt% and P wt% are interchanged in table placed in the running text. It may be corrected.</p> | <p>The table has been corrected.</p> |
| 10 | <p>Minor corrections are suggested in the body of the report including placing the scale (linear), part of SOI sheet no at the top of map etc. These may be attended to.</p> | <p>Attended</p> |