

Report cum scrutiny comments on examination of Review of Mining Plan with Progressive Mine Closure Plan in respect of Mokhana Limestone Mine, Survey No-51/P over an area of 107.69 hectares in village- Mokhana, Taluka- Bhanvad, District –Devbhumi Dwarka, Gujarat State submitted by the Shri R. Mukundan, Nominated Owner of M/s. Tata Chemicals Ltd under rule 17(2) of MCR,2016 & 23 of MCDR 2017 for Five years excavation proposals from 2018-19 to 2022-23.

1. Year wise development proposals/projections as marked over plans and sections are completely incorrect and not accepted because development planning is not given with respect to existing pits, scales used for sectional representations also not as per the standard provisions/guidelines.
2. As per the Ministry of Ministry of Env. Forest & Climate change Notification dtd 28th April, 2017, the extent & boundaries of Eco-sensitive Zone shall be the peripheral area of 65.58 square km with an extent up to 4.76km around the boundary of Barda Wildlife Sanctuary. In this regard, appropriate map showing clear demarcation of this Eco-sensitive Zone related to this ML area may be given.
3. Final mine closure plan was submitted by the lessee and it was approved by the IBM on dtd 02.09.2015 but, these facts are not discussed in the text report. Copy of FMCP approval letter may also be enclosed. Moreover, copy of letter applied by the lessee for withdrawing this approved FMCP in last occasion may also be given.
4. State Govt. had issued a letter on dtd 01.06.2013 to the lessee for closing the mining operation as the whole mining lease area was falling under the Barada Wildlife Sanctuary Zone and not having the valid Environmental clearance. In this regard, necessary letter/permission may be sought from State Govt. in order to restart the mining operations & copy of the same may be enclosed in final submission.
5. Lessee had initiated for surrendering the mining lease after the State Govt. decision for closing the lease. What is the current status of this, as the matter is still pending at State Govt. Further, updates may be given in this regard.
6. Projection marked outside the ML area shall not be considered for the approval of this document except the projections shown on Environmental plan.
7. **Cover page-** Excavation proposals is incorrectly mentioned as “Period of proposals” which needs to be corrected. Further, excavation proposals may be reviewed in light of previous execution of mining lease period & subsequent blocks period. As this is captive mining lease, hence this fact needs to be highlighted on cover page.
8. **Introduction-** It is mentioned that TOR for getting EC was issued on 14.09.07 but further action taken by the lessee in this regard is not discussed. Under the details of existing mining leases held by the applicant, reasons for non-working of leases may also be given.
9. **General:**
Under the contact details email ID appears to be incorrect & need to be rectified. Workplace/mining lease correspondence address is may be provided in relevant paras. (b) Cadastral map showing mining lease with DGPS co-ordinates of all BP as per the CCOM circular 02/2010/MCR/2016 duly authenticated by the CGM/SG need to be submitted for final approval of this document.
10. **Chapter-2: Location and Accessibility:**
 - a. Land wise ownership of mining lease area as per Govt. revenue records is not given. Further, consolidated representation in term of “Land Schedule” for land type, ownership of land, etc. may be given separately.
 - b. Total 16 mining lease boundary pillars co-ordinates have been given. But, as pointed during site inspection very few BP have been found existed in the ML area. It may be stated that why all the BP not erected at site. Further, photographs of these BP may be enclosed.
11. **Chapter-3: Details of approved Mining Plan/Scheme of Mining:**
 - a. Para-3.1: Under the summary of earlier approved MPs, the period of excavation proposals of approved document is not mentioned. Under para-3.3 exact date of temporary discontinuance of mine is not furnished. Further copy of Form-D may also be attached.
 - b. A mine was inspected on dtd 19.09.15 by IBM officer but its details including violation pointed out & subsequent its compliance status is not given.
12. **Part A: Geology & Exploration:**
 - a. Pit-1, 2 & 4 is mentioned as backfilled pits. Necessary clarification in respect of material used for this reclamation may be given in detailed manner.
 - b. In local geology depth of mineralization for Miliolite Limestone formation is furnished as (10.0m). Basis for reporting this depth of limestone formations should be justified. Mineralization established in working pits only may be considered for this purpose.
 - c. Page-13: Under the description of rocks units, necessary analysis test report of limestone, trap rock/Granopyre existing in the mining lease area may be given.

- d. Exploration carried out in the past should be given in tabulated manner incorporating with date of commencement of drilling operation, recovery percentage, total numbers of samples generation, co-ordinates of drilled BHs. Further, necessary BHs lithology logs may also be attached.
- e. Under future exploration programme, no exploration has been proposed in-spite of some of the area along NW part of the lease appears to be unexplored. Some BHs need to be proposed close to ML boundary in view of criteria of rule 12(3) of MCDR,2017 with an objective of bringing entire mineralized area under G1 category.
- f. Page-20: ultimate depth of pits consideration for reserves & resource estimation is furnished as 17. So this is either mRL or depth in Mts. clarify the same.
- g. Under the re-estimation of Limestone Reserves & Resources, the limestone is categorized into Chemical, Marginal and Cement grade limestone. So why this classification was not considered in previous approved plan. Proper justification for adopting this criterion in present documents may be given.
- h. Page-23- Total reserves as 01.042013 were reported as 2889010 tonnes whereas as per present re-estimation total chemical grade limestone of 1.9558 million tonnes, 1.93 million tonnes of Marginal grade Lst & cement grade Lst of 9.74 million tonnes are reported. Hence, there is huge enhancement of reserves under proved category. Justify the same with actual facts & figures.
- i. Table given on page no-27 shows mineable reserves & non mineable reserves but as per the UNFC there is no criteria of mineable & non-mineable reserves.
- j. In whole revised estimation exercise, nowhere it is discussed about the quality of chemical grade, marginal grade & cement grade limestone. Further, detailed sectional calculations for blocked reserves have not been given separately.
- k. Sectional area given for chemical grade reserves re-estimation are completely seems to be incorrect because as per the BH logs & given sections nowhere the chemical grade limestone is seen/encountered. Therefore, this has to be clarified correctly.
- l. As the limestone categorized into chemical grade, Marginal grade & Cement grade limestone, separate analysis report from NABL accredited laboratory of sufficient samples may be given separately. For reserves & resources estimation various parameters/constraints like Eco sensitive zone, power transmission line, canal and other statutory barriers if exist any in the lease area may also be considered & their separate calculations may be given.
- m. Reserves and resource re- estimation have not been done systematically as without adequate exploration the whole ML area cannot be considered under proved (III) category of reserves as per the provisions of MEMC Rules,2015. Further, R&R calculation as per sectional area method also not given correctly. Hence, whole exercise of re-estimation needs to be reviewed.
- n. Feasibility report is not prepared as per the standard guidelines as necessary justification for awarding UNFC codes not given in detailed manner, grade criteria of non-useable cement grade limestone not addressed, in presence of embedded waste material Granophyre in limestone also not highlighted under feasibility criteria.

13. Mining:

- a. It was noticed during site inspections that all the mining lease boundary pillars were not available/erected. Whatever pillars were available are not found as per the statutes as BP nomenclature were not mentioned over it.
- b. It is mentioned that there is no OB but at the same time there is ample quantity of inter-burden waste material is observed during site inspection but this is not highlighted. Further, as the ML area in close proximity of Barda Sanctuary Wildlife Zone. Hence, drilling and blasting operations are to be avoided.
- c. The detailed location of registered plot where ROM is proposed to transport for manual sorting/sizing may be given. Further, on page-31, ROM recovery is mentioned as 90% & mining losses considered as 10% but reasons for giving 10% as mining losses are not given.
- d. Compare to the last approved MP/SOM, proposed production target has been enhanced at the tune 388896 MT/annum from 215702 tonnes/annum. But, necessary proposals for deployment excess nos. of HEMM to achieve this excess production target not given.
- e. ROM: Waste ratio is given as 1:0.00 which appears to be incorrect as good amount of inter-burden waste material is present. Justify the same. Further, drilling & blasting proposals including total explosive requirement, its handling, deployment competent manpower, etc. not dealt precisely.
- f. It is observed during mine inspection that, mining operations are being carried out unsystematically as undersized cement grade material & waste material stacks lying in the lease area. Quantity of mineral stacks available in mine and closing stock reported in returns should be discussed & justify with supporting documents.

- g. Adequacy of man and machinery, calculation and its capacity should be discussed in very correct manner and justify. Moreover, it is also noticed that lead factor is not considered while calculating the total required machineries. Requirement & calculation of all HEMM may be given tabulated manner.
 - h. The quantity of undersized limestone generated so far within lease area & outside ML area in stack yard should be given. Further, its preservation and handling also to be discussed separately.
 - i. Page-38-40: Conceptual mine planning is not given as per the guideline because incorrect narration is given about no waste will be generated whereas waste material found during site inspection. Justification for furnished ultimate depth is not given. Present land use pattern, pit reclamation & rehabilitation aspects, conceptual land use pattern, etc. are also not discussed.
14. **Chapter 4: Stacking of Mineral Rejects/Sub-grade Material & Disposal of Waste:**
- a) During site inspection, there were several small stacks of undersized limestone & inferior grade of limestone and waste material have been found but its systematic disposal & utilization are not discussed in the chapter. Further, present quantity of cement grade limestone, waste material lying inside working pits may also be quantified
 - b) Most of working pit areas covering with waste material and some of the area backfilled also. But, nowhere in the chapter, is it mentioned about from where this waste material derived/generated.
15. **Chapter 5: Use of Mineral and Mineral rejects:** (a) As mentioned, reserves of cement grade and marginal grade limestone reserves has been reported but its systematic utilization neither discuss during the proposed production planning nor at the conceptual stage. (b) Total 1.93 million tonnes of marginal grade limestone & 9.74 million tonnes reserves have been reported but subsequently its future mining proposals at conceptual stage are not discussed.
16. **Others, Page-45:** Under the employment potential requirement skilled, semi-skilled persons and technical and non-technical persons are not given in detailed manner as per the prescribed rules. Appointments of mines manager, foreman, blaster, etc. are also not discussed.
17. **Chapter: 8, PMCP**
- a. Page-49-52: Land use pattern should be given as on date and proposed plan period up to 31.03.23 and till the mining lease period. Further, existing and proposed environmental protective measures should be given in tabulated form with supporting analysis reports. Further, in existing land use, area covered under waste dump, road, crusher, explosive magazine, etc. if any may also be mentioned.
 - b. Additional area required during plan period is given as 4.4260 Ha which need to be reviewed thoroughly. Further, area covered under already waste dumps are also mentioned as “Zero” which may be checked precisely.
 - c. Page-57-61, Item No-8.3: Afforestation proposed under the heading “management of worked out benches” need to be clarified more precisely in view of availability of cement grade limestone once chemical mineralization exhausted. Further, looking into huge proposed production target, proposed afforestation target of 100 sapling/annum appears to be unjustified. Environmental monitoring proposals are also seems to be inappropriate.
 - d. Extent of degraded land is 13.0 Ha but an effective proposal for restoration of degraded land due to mining has not been made.
 - e. Under the disaster management, risk assessment should be discussed specifically in relation to the area in question. Further, contact details of personnel’s at mine site in case of emergency not given correctly.
 - f. Financial area should be assessed correctly based on the actual area put to use as on date and subsequent additional area requirement during plan period. The copy of original bank guarantee for extended period of 5 yrs. for the A-other category mine as per the provision of MCDR,2017 should be submitted to IBM Gandhinagar Regional office.

Plates:

- All plan and sections, text & tables should be modified based on above scrutiny.
 - Plans & sections are prepared on different scale without maintaining uniformity which is not acceptable.
 - Updated/ latest updated plans & sections may be provided.
 - In view of given production target, year wise development plans & sections may be given separately.
 - Folding of plans are not done correctly.
18. **Cadastral maps:** Original copy of cadastral map marked with all co-ordinates of mining lease BP duly authenticated by the State Govt. authority should be submitted for checking its authenticity.
19. **Key Plan:** Index is defective as various prominent features are not marked, village wise demographic details not given, registered stock yard for manual ROM sorting, village boundary, etc. are also not marked.

20. **Surface plan:** Projections/workings marked outside the ML area shall not be considered for the approval, waste dumps are also not marked with its top mRLs, year of proposed plantation not mentioned, permanent features like mine site office, temple, etc. should also be marked, plan is not signed by the surveyor, statutory barrier all along nallah not marked, date of survey is not updated.
21. **Surface geological plan & Sections:** area under (111) level of exploration not marked, statutory barriers all along nallah is not marked, waste material stocks not marked correctly, structural features strike & dip not marked, sectional horizontal scale 1:2000 & vertical scale 1:200 is completely incorrect. Sections may be prepared on natural scale only, intersection of litho-units not marked correctly over sections, check the section C-C, D-D' for litho contacts, ultimate limit not marked, demarcation for proved (111) category, etc. not marked over sections.
22. **Year wise working part plan:** Proposed development projections over plan & sections are not marked correctly as the reference existing pits limits are not taken, development/excavation planning are not given in align with actual grade of limestone encountered in BH logs, sections are completely incorrect as given mRL projection are wrong, lithology also found incorrect, sections are not given on natural scale.
23. **Environment plan:** Land use pattern within 500m zone not shown correctly, proposed afforestation/plantation not shown, monitoring stations in core & buffer zone not marked, Year wise development projections are also not marked.
24. **Conceptual plan:** Scale of plan & sections are incorrect, ultimate depth of the pits at conceptual stage appears to be incorrect as it mismatching with the same given text report as 75mRL, conceptual representation by showing reclamation by water reservoir not shown, no benching pattern marked over section, sections are also incomplete, environmental protective works like fencing at ultimate stage is not marked correctly, ultimate pit limit not marked, already backfilled/reclaimed area also not shown.
25. **Reclamation plan:** Para 8.3: the details of progressive mine closure plan is not depicted on the plan. The year wise fencing not marked, ultimate pit limit not marked, monitoring stations not marked, restoration of worked out benches & its proposals are not marked.
26. **Financial Area Assurance Plan:** Pit wise broken up area not mentioned in hectares, area under proposed excavation planning also not marked in hectares, area which is fully reclaimed & rehabilitated if any may also be shown separately.
27. **Annexure:**
 - a. Cadastral map of each block showing granted ML area and its boundary pillars DGPS co-ordinates duly authenticated by concerned SG authority need to be submitted in final submission.
 - b. Copy of mining lease order is incorrect & not legible.
 - c. Mining Lease period extension letter issued from IMD is appears to be incorrect as the period is mentioned upto 23/12/2023.
 - d. Photocopy enclosed for Borehole logs are not legible.
 - e. Mining Lease deed copy is not legible. Photographs of mining lease boundary pillars not enclosed.
 - f. Surface plan updated on last occasion when the mine closed need to be submitted.
 - g. Latest environmental monitoring analysis reports from NABL accredited lab not provided.
 - h. Photographs of mining lease boundary pillars may be provided.
 - i. Copy of original bank guarantee for extended period should be deposited in further submission for approval of this ROMP.
