

Report cum scrutiny comments on examination of Review of Mining Plan with Progressive Mine Closure Plan in respect of Pachhtar Limestone Mine, Survey No-160/P over an area of 116.0544 hectares in village- Pachhtar, 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 two years excavation proposals from 2017-18 to 2018-19.

1. The period of proposal is given for 2 years from 2017-18 to 2018-19 is incorrect and it should be given for 1 year period only from 2018-19 as the financial year 2017-18 has already over.
2. As per the Ministry of Ministry of Env. Forest & Climate change Notification dtd 28<sup>th</sup> 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 demarcation of this Eco-sensitive Zone 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 for withdrawing this approved FMCP 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-** Mining operations were temporary closed since 24.02.14 as the whole ML area was falling under Barada Sanctuary Wildlife Zone and due to non-Environmental clearance but this facts neither discuss in the chapter not any relevant documents have been furnished in this regard. Further, 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:**
  - a. 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. Block 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 19 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. During the year 2012-13 production was proposed as 222220 MT whereas the actual production was carried out as 255350 which clearly indicate deviation in achieved production but the reasons for the same has not been addressed. Under the PMCP proposals justification for deviations in proposed Vs actuals on different heads are not given.
  - b. During temporary discontinuous environmental protection measures including fencing for the year 2015-16 & 2016-17, etc. not carried out though it was proposed for the year 2015-16. Necessary justification may be given in this regard.
  - c. 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. Given dimensions of existing pits needs to be checked thoroughly and there should not be any deviation with respect to the plan area. Further, it was observed during the inspection that most of worked out lease area lying with scattered Granophyre waste material boulders, quantity of this waste material need to be assessed.

- 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. 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.
- d. Under future exploration programme, no exploration has been proposed in spite of some of the area along NE 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.
- e. Parameters considered for reserves & resources estimation including ultimate depth up to 132mRL (to be mention in Mts), recovery is given as 80% (to be clarified why this much only when it is proposed to use both chemical as cement grade limestone), reason for considering the entire mineralized area under proved category (III) category may also be given.
- f. Basis for awarding UNFC codes appears to be incorrect as whole mineralized area put into the proved (III) category without adequate exploration and not meeting the criteria of provision of MEMC Rules,2015. Further, feasibility & economic axis aspects are not discussed in detailed manner considering the different grades of minerals, statutory barriers, encroachment, embed waste Granophyre material, etc.
- g. Page-25: In re-estimation reserves thickness of (Chemical & upper cement grade) limestone is considered as 20m which completely incorrect because as per the sections & BHs depth, this much depth of mineralization is not encountering. Further, total geological reserves of chemical grade Lst have been reported as 3.02 million tonnes which seems to be incorrect as the depth of mineralization considered is incorrect.
- h. Consideration of 20% at Geological reserves estimation and 20% at mineable reserves estimation for losses appears to be incorrect. Justification may be given in this regard. Further, detailed calculations of blocked reserves also not given separately.
- i. In whole revised estimation exercise, nowhere it is discussed about the quality of chemical grade, upper cement grade & lower cement grade limestone. Further, in case of upper cement grade limestone what will be excavation proposals to win the chemical grade limestone below this upper cement grade limestone?
- j. As the limestone categorized into chemical grade, upper cement grade & lower 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 be considered & their separate calculations are also to be given.
- k. 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.
- l. Re-estimated Mineable reserves of chemical grade limestone (3.02 million tonnes) and Upper cement grade Lst (0.60 million tonnes) should be supported with detailed sectional area wise calculations considering entire blocked reserves & other constraints need to be given in final submission.
- m. 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 Granophyre 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, non-drilling and blasting restriction may also be adopted.
- c. The detailed location of registered plot where ROM is proposed to transport for manual sorting/sizing may be given.
- d. In tentative in-situ ROM excavation 20% is considered as mining losses. So is it mining losses or losses to be occurred due crushing of ROM. This may be clarified and what will be the grade of this material.
- e. Tentative excavation programme is given for the year 2017-18 to 2018-19 which need to be corrected. Further, 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.

- 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. Under the year wise development planning, difficulties may be raised due to presence of inter-burden waste material embedded in chemical grade limestone and its systematic handlings/disposals are not discussed. Further, detailed blasting practices to be adopted are also not discussed.
  - h. First year development along section line A-A' is proposed from 54-48mRL which is completely incorrect because contour values ranges from 152-160mRL over the plan then how it is possible. Justify the same.
  - i. 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.
  - j. 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.
  - k. Four to five nallas are flowing through mining lease but the statutory barriers and ultimate limits are not derived taking into consideration of these constraints.
  - l. Page-34-36: Conceptual mine planning is not given as per the guideline because incorrect narration is given about no waste will be generated whereas Granophyre as waste material found during site inspection. OB existing in the lease area but its generation at conceptual stage not exercised. 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:**  
During site inspection, there were several small stacks of undersized limestone & inferior grade of limestone and waste Granophyre 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 be given.
  15. **Chapter 5: Use of Mineral and Mineral rejects: (a)** As mentioned, reserves of upper and lower cement grade limestone reserves has been reported but its systematic utilization neither discuss during the proposed 1 yr of production planning nor at the conceptual stage. **(b)** Total 0.60 million tonnes of cement grade limestone reserves have been reported but its subsequent mining proposals are not given.
  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-47-52: Land use pattern should be given as on date and proposed plan period up to 31.03.19 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. are also not mentioned.
    - b. Additional area required during plan period is given as 1.4011 Ha which need to be reviewed thoroughly. Further, area covered under already existing road, waste dumps are also mentioned as "Zero" which may be checked precisely.
    - c. Page-53-58, 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 16.0 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 1 yr. 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.

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. Further, co-ordinates are not legible marked over map.
19. **Key Plan:** Index is defective as various prominent features are not marked, village wise demographic details not given, nallahs flowing through ML are not marked, village boundary, ROM sorting yard, etc. are also not marked.
20. **Surface plan:** Projections/workings marked outside the ML area shall not be considered for the approval, different Nallah flowing through ML area should also provide some its bottom mRLs, 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 canal, dam not marked.
21. **Surface geological plan & Sections:** area under (III) level of exploration not marked, statutory barriers all along canal, dam are not marked, waste material Granophyre stocks not marked correctly, structural features strike & dip not marked, sections are not given on natural scale, intersection of litho-units not marked correctly over sections, section E-E' completely incorrect, ultimate limit not marked, demarcation for proved (III) category, etc. not marked correctly over sections.
22. **Year wise working part plan:** proposed mRL projections as given are completely incorrect & mismatching with contour values, Only 1 yr. (2018-19) excavation planning may be given, development/excavation planning are not given in align with actual grade of limestone encountered in BH logs, sections are completely incorrect as 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, wind rose diagram not shown. Year wise development projections are also not marked.
24. **Conceptual plan:** ultimate depth of the pits at conceptual stage appears to be incorrect as it mismatching with the same given text report as 132mRL, section A-A' not marked over plan & sections are also incomplete, environmental protective works like fencing at ultimate stage is not marked correctly, ultimate pit limit also not marked correctly, scale of plan 1:5000 & section 1:1250 are incorrect & not accepted & avoid such big mistakes in final submission.
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, area which is fully reclaimed & rehabilitated if any may also be shown separately, over & above cement grade limestone zone cannot be considered fully reclaimed & rehabilitated.
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. Mining Lease deed copy is not legible. Photographs of mining lease boundary pillars not enclosed.
  - c. Surface plan updated on last occasion when the mine closed need to be submitted.
  - d. Drilled boreholes logs for all the BHs are not provided.
  - e. Latest environmental monitoring analysis reports from NABL accredited lab not provided.
  - f. Copy of original bank guarantee for extended period should be deposited in further submission for approval of this ROMP.

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