

Inspection report cum Scrutiny comments on the review of mining plan of Hemadri Limesone Mine of M/s Hemadri Cements Limited at Vedadri village, Jaggayyapeta Mandal, Krishna District, Andhra Pradesh over an extent of 38.68 hectare, Date of inspection-24/01/2018

As per the last approved mining plan document the lease is having common boundary joined by BP No-01 and BP-29 with Sri Venkateswara Limestone Mine of M/s Hemadri Cements Limited. But in this submission the lease sketch submitted is showing no common boundary but only a common boundary pillar no-01 based on the DGPS survey carried out and informed that the Lease sketch authentication is due at State DMG office. The mining activity has been extended in the North of boundary joined by BP-29 and 01. Further the precise mining lease area as per the earlier approved mining plan and current submission is not matching and the major deviation in the lease sketch has been observed in the SW part of the lease area. The assumed co-ordinates and near by countour pattern with levels pertaining to BP No-29,27,26,25,24,23,22,21,20,19,18,17,16,15,14,13 as per the earlier approved plan is not matching with that of the corresponding BP position in the current submission. The lease sketch authenticated by competent authority of state government should be submitted along with the original lease sketch at the time of grant for verification by this office. The lessee has not submitted any back filling proposal in the current submission but during the inspection the lessee's representatives are of the opinion of proposing for backfilling in the area between sections F-F' and G-G' in this submission.

1. General

- a) Reason for modification has not been furnished and in the cover page the rule under which the submission is made should be mentioned correctly as per MCR-2016.
- b) Date of execution should be mentioned correctly.
- c) The mining proposal document submitted is not as per the guidelines. So the review of mining plan should be prepared and submitted as per the guidelines issued by IBM on this behalf.
- d) Board resolution in respect of nominated owner has not been enclosed. Nominated owner's identity proof and permanent and present address proof having clear photograph should be enclosed.
- e) List of board of directors should be enclosed.
- f) Company's registered address should be mentioned.
- g) The lease sketch authenticated by competent authority of state government should be submitted along with the original lease sketch at the time of grant for verification by this office.
- h) All the plans should be prepared based on the lease sketch authenticated by competent authority of the state government, having mining lease boundary pillar coordinates.
- i) The lease deed should be enclosed and documentary evidence for inclusion of clay as a mineral in addition to limestone for the mining lease should be enclosed.
- j) DMG proceedings No 4251/M/2000 dated 30.10.2008 towards renewal of the mining lease should be submitted.
- k) Cement plant capacity vis-à-vis Limestone requirement and feeding mines capacities be furnished as per approved document. Further justify the production capacity of this mine. The details of cement plant EC capacity be submitted.

2. Review

- a) Review of exploration, production and development, reclamation and rehabilitation, afforestation be submitted for 2015-16, 2016-17 and 2017-18.
- b) Details of the earlier approved mining plan/scheme of mining/review of mining plan/modification are incomplete.
- c) Reason for modification is not justified.
- d) In the year wise review of waste development the waste has been produced against no proposal for waste development, which should be justified. Further review of year wise top soil generation, utilization, storage has not been discussed.
- e) The review of volitions has not been dealt properly. Nothing has been mentioned regarding appointment of Geologist.
- f) In year wise review of exploration is not complete in all respect and further justification be submitted for short fall. In the review of exploratory work the year wise, series wise core and DTH bore holes drilled with total meterage should be furnished in tabular form, Mining pits details like pit name, location co-ordinates, depth has not been furnished in tabular form.
- g) Review of year wise environmental parameter quality, reclamation, plantation proposal and others be submitted.

3. *Geology & Exploration*

- a) Source of climate and rainfall data be submitted. The max and min level within the lease should be mentioned correctly.
- b) In the details of prospecting/exploration carried out furnish phase wise details of sampling, phase wise drilling details with borehole number with series, collar RL, date of commencement, date of completion, latitude, longitude, total drilled depth be submitted. Mining pits details like pit name, location co-ordinates, depth has not been furnished in tabular form.
- c) The bore hole wise thickness of mineralized zone encountered with average grade and depth of mineralization encountered be furnished in tabular form.
- d) All the Bore holes should be shown in the Geological plan and projected on the geological section.

Lithological contact boundary be corrected as per the bore hole logs. Geological plan should be modified based on the exploration results and Geological sections be prepared as per the geological plan. Geological level of exploration should be mentioned in the geological sections. Geological sections prepared are not correct as lithological projection have been made without any exploratory bore hole input, no of bore holes are not projected, bore hole collar level has not been projected correctly and the indexes are not marked correctly.

- e) The local lithological succession be drawn as per the lithology encountered in the core bore holes.
- f) Potential mineralized area be shown on the geological plan and be mentioned on the text. Area explored under different level of explorations has not been furnished along with the reserves/resources estimated with the grade of Limestone.
- g) Incongruity has been observed in the BH Nos mentioned in the Geological plan and with that of Form-J submitted. Bore hole lithologs are not as per format of Form-J of MCDR-2017 and further chemical analysis of samples pertaining to new core bore holes has been pending for analysis as on date of inspection. Exploratory bore hole logs of earlier drilled

bore holes be submitted. Further the some mistake has been observed in the bore hole log sheets and intimated during the inspection which should be corrected. All the new core bore hole lithologs be signed by the incharge geologist and chemist also.

The geological sections should be prepared by correlating the local geology, exposure in the pit and lithology encountered in bore hole and their extrapolation. The year wise production and development section be modified accordingly.

- h) During inspection it was informed that the lessee is proposing for backfilling between F-F' and G-G' after complete mineral exhaustion. Further the core bore holes CBH-5 and 7 drilled for proving the exhaustion of limestone are stopped at a vertical depth of only 6m BGL in both the cases. Further the bore holes drilled for proving the exhaustion of limestone are of low recovery. Further as observed from the bore hole log sheet core samples has not been collected and analysed in respect of shale, clay which should be chemically analysed.

Backfilling be proposed after complete exhaustion of ore and proving barrenness by drilling of bore holes upto 10m in the base of the mineralised zone i.e within shale and logged, sampled, analysed in the year 2018-19 or by justifying properly with proper documentation.

Exploratory core bore hole drilling in combination with DTH drilling be proposed in the existing waste dump area for proving its barrenness and the drill hole samples be logged and analysed meter wise within 2018-19.

Proposal be submitted for carrying out back log of exploratory core drilling operation in the year 2018-19 as per the provision of rule of 12(4) of MCDR-2017.

In addition to the above exploration proposal be given for proving the entire potential mineralised area in G1 level of exploration within 2018-19.

- i) The geology has not been reconciled with the bore holes drilled which be corrected and submitted.

Interburden clay patch which have encountered while mining in benches should be shown on the geological plan and projected in the geological cross section. Reserves/resources be estimated for clay. The year wise incidental clay generation/ production proposal be assessed and proposed, based on the experience of earlier mining and current exploration data and its separate stacking, records and its utilization should be furnished. The generation of clay should be considered as a part of ROM.

- j) The 10% check samples should be analysed from an NABL accredited lab or similar accredited lab and details of Samples analyzed by NABL laboratory has not been furnished. The 10% check samples to be analyzed with NABL laboratory should be collected from each bore hole. Further NABL accreditation certificate in respect of the laboratory be enclosed.

- k) The average grade of the deposit be mentioned. The depth/level in mRL of the deposit for which the average grade is estimated and details for arriving at the average grade should be submitted.
- l) The category of the deposit as per MEMC Rules-2015 has not been justified and mentioned accordingly.
- m) The parameters considered for reserves/ resources be submitted in tabular form.
- n) The axis wise justification be submitted in tabular format. Geological axis justification should be as per the geological parameters of exploration as per MEMC Rules-2015. Further the Justification for Geological axis has not been dealt properly. The feasibility axis justifications the status of environmental clearance and economic viability have not been submitted.
- o) In the prospecting expenditure details of expenditure towards exploratory drilling (type wise), trenches, sampling and analysis be furnished year wise.
- p) The ultimate pit slope should not be more than 45 degree or less. Ultimate pit limit depth has not been analysed and furnished. Thus the ultimate pit limit (UPL) should be shown correctly in the Geological plan and section. UNFC code and exploration level considered for different categories of reserves/ resources estimation needs to be marked correctly on the Geological cross section. Assess the ultimate pit limits for the explored mineral and identify the blocked mineral and assign the code to it as per UNFC.
- q) The cut off grade of Limestone is mentioned differently at one place in the text as CaO%-44.33%, SiO₂-14.44% and CaO%>40% and SiO₂%<13%. The cut off grade should be mentioned clearly. As the cut off is of higher grade in comparison to the threshold value of limestone, generation of sub grade limestone and mineral rejects should be estimated and its stacking, handling should be proposed year wise. The sub grade mineral, mineral rejects should be shown in geological plan and geological section and estimation of both should be done.
- r) The section wise, bench wise reserves/resources table be annexed.

Thus the reserves /resources are not estimated correctly. In light of the above comments the total mineral resources, reserves need to be assessed along with grade and categorized correctly as per MEMC rules-2015.

4. Mining

- a) The area where mining is to be done within the last two months of 2017-18 be marked on a surface plan.
- b) Dimensions of working pits as per text and surface plan should match.
- c) Proposed production bench height and width should be as per statute and the pit slope should be 45 degree or less than that.
- d) Mining should not cross the UPL boundary both laterally and depth wise.
- e) Sections of yearly production and development should be drawn on the corrected geological plan.
- f) Bench height, width proposed and drilling basting are not matching with each other. How the powder factor has been arrived should be commented upon. Sub grade drilling has not

been considered while calculating the drilling requirement. Type of explosives to be used with % has not been furnished.

The drilling and blasting requirement should be corrected as per the bench height and width proposed.

Permission nos with date pertaining to deep hole drilling and blasting, ANFO mixing, Explosive Magazine should be mentioned in text.

- g) The calculation for mining machineries in respect haulage and transport equipment has not been done correctly. Lead distance given is not correct. ROM size required and its availability % for breaking by rock breaker has not been furnished.
- h) Mine drainage chapter has not been dealt correctly. Max & min depth of water table and proposed workings has not been furnished in the text. Year wise sump planning with co-ordinates, dimension and capacity has not been furnished in text and shown in plan. Two nos seasonal nala flowing within the lease towards south, thus the environmental protection measures should be proposed.
- i) In the lay out of mine working amount of advance to be made length wise, width wise, height, co-ordinates, from –to level(in mRL), Volume has not been furnished.
- j) The year wise layout of production and development has not been given properly. In the year wise production and development plans year wise in ward and out ward road and ramp provision with gradient, level should be shown in YPD plan. The proposed year wise bench wise development should be shown by light coloured hatching with bench bottom level in the P & D plan.
- k) The production and development sections are not correct. The production and development section should be drawn across the dip and also on the same geological sections which have been used for estimating reserves and resources.
- l) The bench wise weighted average 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.
- m) The year wise section wise, bench wise production of limestone and development of waste, mineral reject, sub grade be annexed.
- n) Waste generated in other mines is not allowed to be stored in this mine. Quantity of waste to be generated vis-à-vis its disposal scheme along with the rehabilitation scheme, of the proposed and existing dumps should be discussed. Summary of all existing waste dumps with details like area, co-ordinates, its height, existing volume.

Dumping of waste should be proposed in terraced manner. Future plan for its disposal and rehabilitation be discussed. 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 along with protective works, needs to be described. Requirement of two nos of waste dump be justified. Before proving the barrenness of the area the waste dump should be mentioned as temporary waste dump.

Environmental protection measures for the existing dump and proposed dump be discussed.

- o) The year wise generation of subgrade mineral and rejects should be discussed and 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 along with protective works, needs to be described. The quantity of top soil likely to be generated during the ensuing five years needs to be furnished along with the arrangements for its storage.
- p) The conceptual plan and section is not correct as it contains only the ensuing proposal. 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 be discussed correctly taking in to account of the safety zone area, bench height and width, bench slope and ultimate pit slope as per statute. Conceptual plan and section be prepared and submitted and the conceptual status of mine should be same in the text and with submission in plates.

5. *Progressive mine closure*

- a) The net area put to use for mining and allied activities is on lower side as the approach road made for drilling of bore holes and bore hole drilling platform has not been taken into consideration while calculating net area put to use for mining and allied activities. Thus the calculation of financial assurance is not correct and be modified.
- b) Summary of baseline environmental information should be furnished.
- c) Gist of last quarter environmental monitoring has not been furnished. Environmental monitoring reports should be furnished on the Environmental monitoring agency's letter head.
- d) The year wise proposal for development of garland drain, retention wall, gully checks, retaining bund for top-soil, siltation pit, check dam has not been discussed in text and shown in the reclamation –rehabilitation plan. Details like location, co-ordinates, and dimensions should be submitted.
- e) The year wise plantation be proposed along the 7.5m safety zone giving details like location, co-ordinates.
- f) The environmental monitoring should be proposed for Air, Noise, Water, Soil as per the statutory requirement within the core and buffer zone and should be furnished in tabular format with details like location name, co-ordinates, frequency of sampling in text and locations in key plan, reclamation-rehabilitation plan.
- g) Environmental protection measures for waste dump and monsoon season rainfall be discussed and proposed.

6. *Plates*

- a) The bench mark should be established and its co-ordinates and mRL should be furnished in text and shown in the plans. The surface plan submitted is not upto date.
- b) The plans and sections should be prepared as per rule 31 and 34 of MCDR-2017. All the plans Date of survey should be mentioned.
- c) All the plans should be prepared and submitted in UTM co-ordinate grid (WGS 84 mode) along with marking the earlier approved mining plan assumed grid co-ordinates in different colour. The method adopted for linking the assumed co-ordinates to national grid (UTM) along with the permanent structures (common GCP points) be submitted.
- d) Conceptual plans and section be prepared and submitted upto the lease expiry.

- e) In general it has been observed the indexing are not made properly.
- f) In the key plan the ambient air quality station, water monitoring stations, and noise monitoring station should be shown.
- g) Features outside lease area be avoided except environmental plan. The boundary of adjacent mining lease area of Sri Venkateswara Limestone Mine of M/s Hemadri Cement Limited and others mines be shown on the environmental plan.

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GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES
Office of the Regional Controller of Mines

No. AP/KNL/MP/Lst-32/Hyd

Room No.603, 6th Floor,
CGO Towers,Kavadiguda,
Secunderabad.-500080.
Date: 05.02.2018

To
Shri.P.Ramakrishna Rao,
Nominated Owner,
M/s Hemadri Cements Limited
Vedadri Village,
Jaggayyapeta Mandal,
Krishna District,
A.P.-508 246.

Sub: Submission of Review of Mining Plan in respect of Hemadri Limestone Mine of M/s Hemadri Cement Limited over an extent of 38.68 Ha. located in Vedadri Village, Jaggayyapeta Mandal ,Krishna District of AP State submitted under Rule 17(2) of MCR, 2016.

Ref: Your letter no. Hcl/Mines/IBM-MP/HLM/2017/824, dated.08.01.2018.

Sir,

With reference to your letter cited above on the subject, the site inspection was carried out on 24.01.2018 by Shri. S.K.Muduli, AMG and Shri.Y.M.Shiva Prasad, AME accompanied by Shri Ponnu Swamy , Shri.Naresh, Mine representatives & P.R.Mishra, Qualified person 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. hemadricements.limited@gmail.com & earth_environment2008@yahoo.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.). 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,

(Pankaj Kulshrestha)
Controller of Mines

Copy to Shri P.R.Mishra, Qualified person for information & necessary action.

Encl:a/a

(Pankaj Kulshrestha)
Controller of Mines

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

(पंकज कुलश्रेष्ठ)
खान नियंत्रक