

**INDIAN BUREAU OF MINES
MINERALS DEVELOPEMMENT AND REGULATION DIVISION**

Mining Plan Modification REPORT

Chennai regional office

Mine file No : TN/ALR/LST-33.MDS

Mine code : 38TMN38048

- (i) Name of the Inspecting : **K08**) **G.SORNADURAI KANNAN**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Thiru. K.Shankar, QP & Thiru.Ramesh, GM-Mines
Official with
Designation
- (iv) Date of Inspection : 28/05/2023
- (v) Prev.inspection date :

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **PERIYATHIRUKONAM**
- (b) **Registration NO.** : **IBM/170/2011**
- (c) **Category** : A Fully Mechanised
- (d) **Type of Working** : Opencast
- (e) **Postal address**
- State : TAMIL NADU
- District : ARIYALUR
- Village : PERIYATHIRUKONAM
- Taluka : ARIYALUR
- Post office : PERIYATHIRUKONAM
- Pin Code : 621704
- FAX No. : 914329-250011
- E-mail : ariyalur@chettinadcement.co
- Phone : 914329-250009
- (f) **Police Station** : ARIYALUR
- (g) **First opening date** : 30/01/2020
- (h) **Weekly day of rest** : SUN
2. **Address for correspondance** : Chettinad Cement Corp Pvt Ltd
Ariyalur Works, Keelapalur Post
Ariyalur Taluk & Distt - 621704
3. (a) **Lease Number** :
- (b) **Lease area** :
- (c) **Period of lease** :
- (d) **Date of Expiry** :
4. **Mineral worked** : LIMESTONE Main

5. Name and Address of the

Lessee : M/s CHETTINAD CEMENT CORPN. LTD
 4TH FLOOR, RANI SEETHAI
 HALL BUILDING 603, ANNA
 SALAI CHENNAI CITY TAMIL
 NADU
 Phone:044 - 8272727
 FAX :044 - 8241416

Owner : L.Muthukrishnan
 PO.No748, 603 Annasalai,
 Chennai CHENNAI CITY
 TAMIL NADU
 Phone: 044 28292727
 FAX : 044 28291558

Agent : R.P.MUTHIAH
 M/s. Chettinad Cements Corp
 Pvt Ltd Ariyalur ARIYALUR
 TAMIL NADU
 Phone:
 FAX :

Mining Engineer

Name : T. Balagokul, Full Time
 Qualification : B.E., (Mining Engineering)
 Appointment/ : 01/11/2022
 Termination date

Manager

Name : E.Ganesamoorthy
 Qualification : BE(MINING)
 Appointment/ : 01/10/2022
 Termination date

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|-------------------------------|---|--------------------------------|------------|
| 6. Date of approval of Mining | : | Fresh under rule 22 MCR1960 | 09/01/2017 |
| Plan/Scheme of Mining | | MP modif under 17(3) MCR 2016 | 13/11/2019 |
| | | MP review under 17(1) MCR 2016 | 15/12/2020 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|---|---|---|
| 1a | Backlog of previous year | No Boreholes has been proposed during 2022-2023. | No Boreholes has drilled during 2022-2023. | No Proposal has been given for 2022-2023 |
| 1b | Exploration over lease area for geological axis 1 or 2 | No additional exploration was proposed during 2022-2023 in the lease area for Geological axis - 1. | No additional exploration was carried out in the lease area for Geological axis - 1 during 2022-2023. | Entire lease area 32.295 hectares are under G-1 category. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | No Proposal for exploration during 2022-2023. | No Exploration during 2022-2023. | So far 22 boreholes have been drilled with 793 meterage in the lease upto 2022-2023 By State Govt of Tamilnadu. |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | Exploration was not proposed during 2022-2023. | No Exploration has been carried out during 2022-2023. | Entire area has been explored under G-1 category with 100m X 100m grid interval. |
| 1e | Balance reserve as on 01/04/20 | Limestone & Marl as on 01.04.2023 Proved Mineral Reserves (111) = 1045267 tons Feasibility Mineral Resources (221) = 1721000 tons | Limestone & Marl as on 01.04.2023 Proved Mineral Reserves (111) = 1048373 tons Feasibility Mineral Resources (221) = 1629329 tons | The available grade of Limestone in this lease area is Cement Grade. |
| 1f | General remarks of inspecting officers on geology, exploration etc | It is part of Cretaceous formations | Limestone deposits are of sedimentary origin of marine transgressional series of Maestrichtian age. | Shell Limestone is yellowish colour with predominant well preserved Gryphaea shells and highly fossiliferous. |

Development :

| Sl.No. | Item | Proposals | Actual work | Remarks |
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|----|---|--|---|--|
| 2a | Location of development w.r.t.lease area | During 2022-2023, it is proposed to work along DD' between co-ordinates N-1223180 to N-1223320 and E-300394 to E-300584. | Development is not carried out as per proposal. | Mining plan is Modified for the remaining year. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | Topsoil - 1 bench, OB - 2 bench & Minerals - 3 Benches proposed in Lease. | OB & Mineral benches are formed as per proposal. | Mining plan is Modified for the remaining year. |
| 2c | Stripping ratio or ore to OB ratio | 1 : 0.40 | 1 : 0.52 | Due to less development quantity the Stripping Ratio is increased. |
| 2d | Quantity of topsoil generation in m3 | There is proposal of 39810 cu.m of Topsoil generation during 2022-2023 | No topsoil has generated during 2022-2023. | Mining plan is Modified for not achieving proposal. |
| 2e | Quantity of overburden generation in m3 | There is proposal of 84210 cu.m of OB generation during 2022-2023 | 84483 cu.m of OB has been generated during 2022-2023 | Nil |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | During 2022-2023, it is proposed to work along DD' between co-ordinates N-1223180 to N-1223320 and E-300394 to E-300584. | 84483 cu.m of OB has been generated against 84210 cu.m during 2022-2023. No topsoil has generated against the proposal. | Mining plan is Modified for not achieving proposal. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|------|-----------|-------------|---------|
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| 3a | Number of pit proposed for production | During 2022-2023, it is proposed to work along DD' between co-ordinates N-1223180 to N-1223320 and E-300394 to E-300584. | Productions are not carried out as per proposal in Lease. | Mining plan is Modified for not achieving proposal. |
| 3b | Quantity of ROM mineral production proposed | The total target of Limestone & Marl production proposed was 770725 tons during 2022-2023. | Achieved Limestone Production is 354833 tons during 2022- 2023. | Mining plan is Modified for not achieving proposal. |
| 3c | Recovery of sailable/usable mineral from ROM production | 90% Recovery | 90% Recovery | Nil |
| 3d | Quantity of mineral reject generation | There is proposal of Mineral Reject generation during 2022-2023 is 55545 tons. | 35483 tons of Mineral Reject generated during 2022- 2023. | Mining plan is Modified for not achieving proposal. |
| 3e | Grade of mineral rejects generation and threshold value declared. | High silica is considered as mineral rejects. | High silica is considered as mineral rejects. | Nil |
| 3f | Quantity of sub grade mineral generation. | No Sub Grade Generation | No Sub Grade Generation | Nil |
| 3g | Grade of sub grade mineral generation | There is No Generation of Subgrade Mineral | There is No Generation of Subgrade Mineral | Nil |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised method | Mechanised method | Entire ROM is useable and sent to crusher. |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | No Beneficiation Study is Proposed | Nil | Outside the lease area beneficiation plant is present. |

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| 3j | Provision of drilling and blasting in mineral benches | No Drilling & Blasting are proposed. | Drilling & Blasting are not done. | Rock breakers are used for production. |
| 3k | Provision of mining machineries in mineral benches | Excavators Tippers Rock Breakers Dozer | As per proposal the machineries are there during inspection. | Available machinery are shown in Annual Returns |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | In 2022-2023, Bench height of 5m was proposed in Mineral. | As per proposal benches are formed. | Nil |
| 3m | Total area covered under excavation/pits | 8.00 hect area is proposed for Pit during 2022-2023 | 7.86 hect areas are under Pit only. | Due to less development proposed area is not achieved. |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1 : 0.40 | 1 : 0.52 | Due to less development quantity the Stripping Ratio is increased. |
| 3o | Total area put in use under different heads at the end of year | Land use Pattern as on 01.04.2023. Mines = 8.0 hect Dump = 6.50 hect Road = 0.10 hect | Land use Pattern as on 01.04.2023. (Lease-I) Mines = 7.86 hect Dump = 6.35 hect Road = 0.10 hect | Mining plan is Modified for not achieving proposal. |
| 3p | Production of ROM mineral during the last five year period as applicable | 2022-2023 = 770725 tons 2021-2022 = 1004008 tons 2020-2021 = 478094 tons 2019-2020 = 3998973 tons 2018-2019 = 429933 tons | 2022-2023 = 354833 tons 2021-2022 = 426371 tons 2020-2021 = 496555 tons 2019-2020 = 61100 tons 2018-2019 = Nil | Mining plan is Modified for not achieving proposal. |
| 3q | General remarks of inspecting officers on method of mining etc. | During 2022-2023, it is proposed to work along DD' between co-ordinates N-1223180 to N-1223320 and E-300394 to E-300584. | Achieved ROM Production is 354833 tons during 2022- 2023 against proposal of 770725 tons. | Mining plan is Modified for not achieving proposal. |

Solid Waste Management - Dumping:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|--|---|---|
| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | There is proposal for dumping of OB on southern side of lease area during 2022-2023. | As per proposal the dumping was not carried out during 2022-2023. | Mining plan is Modified for not achieving proposal. |
| 4b | Location of topsoil, OB and mineral reject dumps | There is proposal for dumping on southern side of lease area during 2022-2023. | As per proposal the dumping was not carried out during 2022-2023. | Mining plan is Modified for not achieving proposal. |
| 4c | Number of dumps within lease area and outside of lease area | Lease area = 4 Non Lease area = Nil | Lease area = 5 Non Lease area = Nil | Mining plan is Modified for not achieving proposal. |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | Outside UPL | Outside UPL | Nil |
| 4e | Number of active and alive dumps. | Active Dump= 4 Alive Dump = Nil | Active Dump= 5 Alive Dump = Nil | Mining plan is Modified for not achieving proposal. |
| 4f | Number of dead dumps. | No Proposal | Nil | Nil |
| 4g | Number of dumps established. | No Dumps have been established. | No Dumps have been established. | Nil |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | No Proposal | Nil | Nil |
| 4i | Length of Retaining wall or garland drain all along dumps | No Proposal | Nil | Nil |
| 4j | Number of settling ponds | No Proposal | Nil | Nil |
| 4k | Specific comments of inspecting officer on waste dump management | There is proposal for dumping of OB on southern side of lease area during 2022-2023. | As per proposal the dumping was not carried out during 2022-2023. | Mining plan is Modified for not achieving proposal. |

Solid Waste Management - Backfilling:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|------|-----------|-------------|---------|
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| 5a | Status of part or full extraction of mineral from mined out area before starting backfilling. | No Backfilling has been proposed in the lease area during 2022-2023 | Backfilling has done partly during 2022-2023 | Mining plan is Modified for not achieving proposal. |
| 5b | Area under backfilling of mined out area | No Proposal during 2022-2023 in Leases. | Backfilling has been done on western side of lease area. | Mining plan is Modified for not achieving proposal. |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | Rehabilitation use of topsoil | Rehabilitation use of topsoil | Topsoil has been dumped separately for using in backfilled area. |
| 5d | Total area fully reclaimed and rehabilitated | No Proposal during 2022-2023. | Backfilling has done partly during 2022-2023 | Mining plan is Modified for not achieving proposal. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | No Backfilling has been proposed in the lease area during 2022-2023 | Backfilling has done partly during 2022-2023 | Mining plan is Modified for not achieving proposal. |

Progressive Mine Clousre Plan:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|--|---------------------------------------|---|
| 6a | Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2). | It should be on or before 1st July every year. | Not Submitted for the year 2022-2023. | Till time is there for submission. |
| 6b | Area available for rehabilitation (ha) . | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6c | afforestation done (ha). | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6d | No. of saplings planted during the year | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6e | Cumulative no .of plants | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |

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| 6f | Any other method of rehabilitation | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6g | Cost incurred on watch and care during the year | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | No Proposal | Nil | Mining plan is Modified for not achieving proposal. |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | 4000 saplings proposed in safety zone 2022-2023. | Total 4020 saplings has achieved during 2022-2023 along safety zone. | Cumulatively 8120 saplings have been planted in last two years. |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | Proposed 0.80 hect in safety zone for 2022-2023. | 1.64 hect achieved in safety zone area during 2022-2023. | Nil |

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| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Green Belt development along 7.5m safety barrier for 2022-2023. | Plantation has been done as per proposal along the safety barrier for 2022-2023. | Nil |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | Bi-Annually Survey | Environment monitoring is carried out through Government as well as private agency. | Lessee is conducting Environmental monitoring and all are within permissible limit |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | 4000 saplings proposed in 0.80 hectares along the safety zone for 2022-2023. | Total 4020 saplings has achieved in 1.86 hectares of safety zone during 2022-2023. | Cumulatively 8120 saplings have been planted in last two years. |

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|--|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | The total target of Limestone & Marl production proposed was 770725 tons during 2022-2023. | Achieved Limestone Production is 354833 tons during 2022- 2023. | Mining plan is Modified for not achieving proposal. |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | There is no proposal for grade wise mineral sorting in the lease area. | Entire ROM is useable and marl is blended with high grade limestone. | The available grade of Limestone in this lease area is cement grade. |
| 7c | Different grade of mineral sorted out at mines. | The Limestone of the lease area varies from 35% CaO. | The Limestone of the lease area is 35% CaO | Grade of Marl Mineral is CaO +25% and SiO2 +18% |
| 7d | Any beneficiation process at mines . | Crushing & Screening process at outside the lease area | Inside the lease area there is no beneficiation process. | Entire ROM is useable and Marl is blended with high grade limestone. |

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| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | The available grade of Limestone in this lease area is cement grade. | Achieved ROM Production is 354833 tons during 2022- 2023 against proposal of 770725 tons. | Entire ROM is useable and Marl is blended with high grade limestone to get the desired plant feed materials. Mining plan is Modified for not achieving proposal. |
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Environment:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|---|---|
| 8a | Separate removal and utilization of topsoil (Rule 32) | 39810 m3 of topsoil is Proposed to generate during 2022-2023 | No topsoil has generated during 2022-2023. | Mining plan is Modified for not achieving proposal. |
| 8b | Concurrent use or storage of topsoil | Concurrent use | Nil | Mining plan is Modified for not achieving proposal. |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | There is proposal for dumping of OB on southern side of lease area during 2022-2023. | As per proposal the dumping was not carried out during 2022-2023. | Mining plan is Modified for not achieving proposal. |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No Backfilling has been proposed in the lease area during 2022-2023 | Backfilling has done partly during 2022-2023 | Mining plan is Modified for not achieving proposal. |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | No Backfilling has been proposed in the lease area during 2022-2023 | Backfilling has done partly during 2022-2023 | Mining plan is Modified for not achieving proposal. |

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| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | 4000 saplings proposed in safety zone for 2022-2023. | Total 4020 saplings has achieved during 2022-2023 along safety zone. | Plantation has been done as per proposal along the safety barrier. |
| 8g | Survival rate | No Proposal in the document. | 70% | Plantation has been done as per proposal along the safety barrier. |
| 8h | Water sprinkling on roads to control airborne dust | Yes, it is proposed for water sprinkling on haul roads. | Daily Water tanker is spraying water on mines roads side to control airborne dust. | During Inspection, water sprinkling on mines roads has been noticed. |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | Scanty vegetation, bushes, neem are observed in lease area | There is no prominent river or stream running in this area. | Outside lease area, River, seasonal nalla is running. |

Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|---|
| 9a | Status of submission of Monthly and Annual returns | MR Submitted up to = April 2023 AR Submitted up to = 2021-2022. | Returns are submitted within time limit. | Both Annual & Monthly returns are submitted in online. |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Annual Return for 2022-2023 is not submitted. | During inspection Mining Engineer, Geologist is present. | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Annual Return for 2022-2023 is not submitted. | Nil | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |
| 9d | Scrutiny of Annual return on afforestation | Annual Return for 2022-2023 is not submitted. | Lessee has planted 4020 saplings during 2022-2023. Plantation has been done as per proposal along the safety zone. | Cumulatively 4120 saplings have been planted in last two years. |

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| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Annual Return for 2022-2023 is not submitted. | Nil | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | Annual Return for 2022-2023 is not submitted. | Mine has produced 354833 tons of production during 2022-2023. | It is captive mine of M/s. Chettinad Cements Corporation Pvt Limited. |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Annual Return for 2022-2023 is not submitted. | It is captive mine of M/s. Chettinad Cements Corporation Pvt Limited. | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |
| 9h | Scrutiny of Annual return on fixed assets | Annual Return for 2022-2023 is not submitted. | Nil | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |
| 9k | Scrutiny of Annual return on mining machineries | Annual Return for 2022-2023 is not submitted. | Nil | Annual Return for the year 2022-2023 yet to submit. Mining plan is Modified for not achieving proposal. |

Details of violations observed during current inspection and compliance position of violation pointed out

| Violation observed | | Show cause position | |
|--------------------|-------------------------|---------------------|-------------------------|
| Rule NO. | Issued on Compliance on | Rule NO. | Issued on Compliance on |

Date :

(G.SORNADURAI KANNAN)

Indian Bureau of Mines