

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

**MCDR inspection REPORT
Chennai regional office**

Mine file No : TN/ALR/LST-13.MDS

Mine code : 38TMN38036

- (i) Name of the Inspecting : 275) V.JAYA KRISHNA BABU
Officer and ID No.
- (ii) Designation : Controller of Mines
- (iii) Accompanying mine : R.Ravikumar, DGM (Mines)
Official with
Designation
- (iv) Date of Inspection : 07/09/2023
- (v) Prev.inspection date : 05/09/2022

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : KARUPPUR-KEELAPALUR
- (b) **Registration NO.** : IBM/170/2011
- (c) **Category** : A Mechanised
- (d) **Type of Working** : Opencast
- (e) **Postal address**
- State : TAMIL NADU
- District : ARIYALUR
- Village : KARUPPUR-KEELAPALUR
- Taluka : ARIYALUR
- Post office : KEELAPALUR
- Pin Code : 621707
- FAX No. : 04329-250011
- E-mail : arymines@chettinadcement.co
- Phone : 04329-250011
- (f) **Police Station** : Kilapaluvur
- (g) **First opening date** : 01/01/2015
- (h) **Weekly day of rest** : SUN
2. **Address for
correspondance** : Shri. L.Muthukrishnan,
3. (a) **Lease Number** : TMN1596
- (b) **Lease area** : 4
- (c) **Period of lease** : 20
- (d) **Date of Expiry** : 21/04/2033
4. **Mineral worked** : LIMESTONE Main

5. Name and Address of the

Lessee : CHETTINAD CEMENT CORPORATION LIMITED
 4TH FLOOR, RANI SEETHAI
 HALL BLDG 603, ANNA SALAI
 CHENNAI CITY TAMIL NADU
 Phone:044-28292727, 42149955
 FAX :044 - 28291558

Owner : Mohan Muthukaruppan
 M/s. Chettinad Cement Corpn
 (P) Ltd 4th Floor, Sigappi
 Aachi Building 18/3
 RukmaniLakshipathyRoad, Egmo
 re CHENNAI CITY TAMIL NADU
 Phone:
 FAX :

Agent : V. KRISHNAN
 Chettinad Cement Corp Pvt
 Ltd Ariyalur Works,
 Keelapalur Post Ariyalur
 Taluk & Distt ARIYALUR
 TAMIL NADU
 Phone: 9788858216
 FAX :

Mining Engineer

Name : P ALAGUKANNAN, Full Time
 Qualification : B E (MINING ENGINEERING)
 Appointment/ : 02/08/2021
 Termination date

Geologist

Name : R RAVIKUMAR, Full Time
 Qualification : M SC (GEOLOGY)
 Appointment/ : 02/08/2021
 Termination date

Manager

Name : R.Ravi Kumar
 Qualification :
 Appointment/ : 02/08/2021
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Fresh under rule 22 MCR1960 25/04/2012
 MP modif under 17(3) MCR 2016 11/11/2016
 MP review under 17(1) MCR 2016 15/12/2017
 MP review under 17(1) MCR 2016 10/12/2020

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	Nil
1b	Exploration over lease area for geological axis 1 or 2	Nil	Nil	Mine is fully Explored in G1 Level in the past.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	--	--	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	Nil
1e	Balance reserve as on 01/04/20	--	Lst - 360677 Tons Marl-296251 Tons	As per AR- 2022-23 submitted. Lst - 360677Tons Marl-296251 Tons
1f	General remarks of inspecting officers on geology, exploration etc	--	The entire mining lease is proved to be mineralized with limestone with thickness ranging from 4 to 12m overlaid by Marl varying from 2-5m thick, Kankar 3-5m thick and black cotton soil 1-3m thick. The mine area is fully explored under G1 level with 10 core boreholes over 184 m drilling carried out during March-April: 2017.	184 m drilled with 10 Boreholes

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	N-1223270 to N-1223410 E-289840 to E-290100	N-1223270 to N-1223650 E-289840 to E-290302	Development carried out beyond the proposed grid intervals. Violation is being issued

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	1stBench in Topsoil, 2nd bench in OB, 3rdBench in Limestone and Marl.	1stBench in Topsoil, 2nd bench in OB, 3rd Bench in Limestone and Marl.	--
2c	Stripping ratio or ore to OB ratio	1:0.65	1:0.56	Nil
2d	Quantity of topsoil generation in m3	54175	54030.15	Topsoil considered as a overburden for calculation of Ore to OB ratio.
2e	Quantity of overburden generation in m3	54175	54030.15	Topsoil considered as a overburden for calculation of Ore to OB ratio.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	--	Development carried out beyond the proposed grid intervals. Violation is being issued.	--

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2	2	The proposed workings in two separate pits have been merged into one single pit with lateral excavation extending beyond the approved grid intervals. Violation is being issued
3b	Quantity of ROM mineral production proposed	199375 Ts LSt - 167200 Ts Marl -32175 Ts	143252 Ts LSt - 117361.26Ts Marl - 25890.66Ts	Only 72 % of the proposed quantity of production is achieved thereby deviating from the proposed stripping ratio.

3c	Recovery of sailable/usable mineral from ROM production	100%	100%	--
3d	Quantity of mineral reject generation	Nil	Nil	No Mineral
3e	Grade of mineral rejects generation and threshold value declared.	NA	NA	No Mineral reject generation
3f	Quantity of sub grade mineral generation.	--	--	No Sub grade Mineral generation
3g	Grade of sub grade mineral generation	NA	NA	No Sub grade Mineral generation
3h	Manual / Mechanised method adopted for segregating from ROM	NA	NA	The ROM from the mine faces is directly transported to their Captive Cement plant where it is crushed and suitably blended with the limestone from other mines.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	NA	NA	--
3j	Provision of drilling and blasting in mineral benches	NA	NA	No drilling- blasting in the Mine. Mining is carried out by excavator and Rock breaker only

3k	Provision of mining machineries in mineral benches	Back hoe - 1.5 Cu.m-3Nos Rock Breaker - 1 Nos Tipper -20 T- 8 Nos	Back hoe - 0.9 Cu.m-1 Nos Rock Breaker -1 Nos Tipper -25 T- 3 Nos	Proposed Machineries for based on the peak production for the year 21-22 (759500 T). From 2022-23 proposed production 199375 T only. So, production achieved with less number of machineries.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	In Pit In 1st bench) Top Soil - 3.0 m Waste -3.0 m 3rd bench Lst -5.5 m Marl - 5.5 m	Actual Provided	Height of the benches is suitable for the method of mining and deployed machineries
3m	Total area covered under excavation/pits	18.43 Ha (Till 2025-2026)	9.56 Ha	--
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.65	1:0.56	Only 72 % of the proposed quantity of production is achieved thereby deviating from the proposed stripping ratio.
3o	Total area put in use under different heads at the end of year	24.765 Ha	20.93 Ha	--
3p	Production of ROM mineral during the last five year period as applicable	2017-18 - Nil 2018-19 - Nil 2019-20-758517 Ts 2020-21-707890 Ts 2021-22-759500 Ts 2022-23-199375	2017-18-Nil 2018-19- Nil 2019-20-596157.06 Ts 2020-21-680742.07 Ts 2021-22-581138 Ts 2022-23-143252 Ts	--

3q	General remarks -- of inspecting officers on method of mining etc.	Open pit mining is carried out by deploying excavator-tipper combination with Rock Breaker. No provision of drilling and blasting is made.	--
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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	1.No External Top Soil & Over Burden dumps were proposed	1.No External Top Soil & Over Burden dumps present. 2. Top Soil utilized for spreading over the back filled area for Afforestation and remaining utilized for bund formation	Top soil temporarily stacked in 2 locations for utilization in plantation as and when required
4b	Location of topsoil, OB and mineral reject dumps	1.No External Top Soil & Over Burden dumps were proposed	1.No External Top Soil & Over Burden dumps present. 2. Top Soil utilized for Afforestation and remaining utilized for bund formation	Top soil temporarily stacked in 2 locations for utilization in plantation as and when required.
4c	Number of dumps within lease area and outside of lease area	NA	NA	--
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	NA	NA	--
4e	Number of active and alive dumps.	NA	NA	--
4f	Number of dead dumps.	NA	NA	--

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.	Will be Fully Extracted	Will be Fully Extracted	Full extraction of mineral is ensured before backfilling into the mined-out pits.
5b	Area under backfilling of mined out area	1.26 Ha	1.376 Ha	To full fill of back log of 2021-22 proposals
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Top soil used for restoration and rehabilitation of area at pit-1	Top soil used for restoration and rehabilitation of area at pit-1	Some Quantity of Top soil is temporarily stacked in 2 locations for utilization in plantation as and when required.
5d	Total area fully reclaimed and rehabilitated	0.45 Ha	1.10 Ha	(Cumulative area till 2022-23 6.63 Ha)
5e	General remarks of inspecting officers on backfilling and reclamation etc.	--	Full extraction of mineral is ensured before backfilling into the mined-out pits. Cumulatively an extent of 6.63 Ha is reclaimed by way of back filling.	--

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).	Periodically Submitted	Submitted	--
6b	Area available for rehabilitation (ha) .	Nil	Nil	--
6c	afforestation done (ha).	3.05 Ha	3.15 Ha	--

6d	No. of saplings planted during the year	5250	5300	Appears to be correct.
6e	Cumulative no .of plants	15550	15720	The reported numbers appear to be correct.
6f	Any other method of rehabilitation	Nil	Nil	-
6g	Cost incurred on watch and care during the year	75000	142500.00	The reported cost appears to be correct.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.26 Ha	1.376 Ha	The increase in extent of back filling is to comply with the back filling proposals of previous year.
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on on backfilled area	0.45 Ha	1.10 Ha	Total 6.63 ha area reclamation & Rehabilitation done. In compliance of the Violation during 2021 -22, the backlog in backfilling made up during the year 2022-23 resulting in increased Afforestation over the backfilled area also.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nil	Nil	--
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Nil	Nil	--

6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Nil	Nil	--
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	Nil	--
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Nil	Nil	--
6p	Compliance of environmental monitoring (core zone and buffer zone)	Periodically Monitored	Periodically Monitored	Periodically environmental monitoring done by the SMS labs services private limited, Chennai.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	--	The proposed Progressive Closure activities are satisfactorily carried out during the reporting year.	--

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	ROM Mineral Dispatched	ROM Mineral Dispatched to Captive plant of M/s Chettinad Cement Corporation private ltd.	The ROM from the mine faces is directly transported to their Captive Cement plant where it is crushed and suitably blended with the limestone from other mines.

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Nil	Nil	--
7c	Different grade of mineral sorted out at mines.	Nil	Nil	--
7d	Any beneficiation process at mines	Nil	Nil	--
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	--	The entire mineral quantity produced is dispatched to the Captive Cement Plant where it is crushed and blended with limestone from other mines to achieve the cement grade thereby taking care of Mineral Conservation aspect.	--

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Afforestation and bund formation	Top Soil utilized for Afforestation and remaining utilized for bund formation	-
8b	Concurrent use or storage of topsoil	Top Soil utilized for afforestation and remaining utilized for bund formation.	Top Soil utilized for afforestation and remaining utilized for bund formation and temporary stocking in Mines for further afforestation program.	Some Quantity of Top soil is temporarily stacked in 2 locations for utilization in plantation as and when required.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	NA	NA	--

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	For backfilling	1.376 Ha	Reclamation done 1.376 Ha in the year 2022-23
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	For Backfilling	6.63 Ha	Cumulative reclamation Area Given
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Saplings planted Following native species are selected for plantation. a. Neem b. Pongan c. Vembu d. Pouvarasa e. Illupai f. Teak g. Tamrind Greenbelt development is being carried out progressively. Herbs and shrubs will also be developed.	Totally 15720 Nos of Plantation done	The reported numbers appear to be correct.
8g	Survival rate	80%	90%	The reported survival rate appears to be correct.
8h	Water sprinkling -- on roads to control airborne dust		Water sprinkling on haul roads. Proposed complied	Yes. Dust suppression activities are carried out as proposed.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	--	The aesthetic beauty in and around the mine is maintained well by reclaiming the mined out pits by way of backfilling and rehabilitating by way of afforestation	--
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto July-23. Date.08.08.202 3 Annual Returns- 27.06.2023	M.R. Submitted upto July-23. Date.08.08.2023 Annual Returns- 27.06.2023	--
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Manager Shri. R Ravikumar, DGM(Mines) Mining Engineer Shri.G.Raghavendra Geologist Shri.R.Ravikumar.Geologist,	The reported officials were present on the day of Inspection.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Pit Area-9.8 Ha Reclaimed area-6.63Ha Dumps- Nil Buildings & Roads-1.00 Ha Safety zone area (Afforestation & buffer zone)- 5.21 Ha Progressive mine closure plan (Settling tank -0.27 Ha)	--	--

9d	Scrutiny of Annual return on afforestation	Afforestation- 5400 trees planted	Appears to be correct.	--
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral Reject-Nil	--	--
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM-143252 Ts LSt - 117361.26Ts Marl - 25890.66Ts	--	--
9g	Scrutiny of Annual return on & sale value, Ex. Mine price and production cost	Ex-Mine Price & Production Cost-290.02	--	--
9h	Scrutiny of Annual return on fixed assets	GFA-871633642	--	--
9k	Scrutiny of Annual return on mining machineries	--	Type of Machinery Capacity of each unit No.of Units Back Hoe 0.900 CUM 1 Other HEM Machinery 120 1 Tipper 14.0 CUM 3	--

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

Violation observed			Show couse position		
Rule NO.	Issued on	Compliance on	Rule NO.	Issued on	Compliance on
MCDR17	Rule 11(1)	17/11/2023			

Date :

(V. JAYA KRISHNA BABU)

Indian Bureau of Mines