

**REPORT ON CHECK INSPECTION OF PERIYATHIRUKONAM LIMESTONE MINE OF M/S THE INDIA CEMENTS LIMITED, DALAVOI WORKS IN ARIYALUR DISTRICT OF TAMILNADU STATE [PREPARED IN THE FORMAT, PRESCRIBED VIDE CCOM'S LETTER NO. 11013/35/MP/MISC/89-CCOM (Vol. III)]**

Name and designation of inspecting officer : G.C.Sethi, RCOM, IBM, Chennai  
Date of Inspection : 02.01.2022

**1. General information of the mine**

(i) Name of the mine : Periyathirukonam Limestone Mine  
(ii) Owner : The India Cements Limited  
(iii) Nominated owner : Lakshmi Aparna Sreekumar  
(iv) Mining Engineer : R.Balamurugan  
(v) Agent : T.Balasubramanian  
(vi) Mine Manager : R.Balamurugan  
(vii) Lease area : 74.81.0 Ha  
(viii) Location : Periyathirukonam, Reddipalayam & Edaiyathankudi villages, Ariyalur taluk & district.  
(ix) Lease period : 50 years  
(x) Date of Expiry : 09.01.2067  
(xi) Date of approval of Mining Plan : MP-12.04.2017/MMP-04.04.2019 (2019-20 to 2020-21)  
(xii) Date of approval of Review of Mining Plan : 08.12.2020  
(xiii) Period of Review of Mining Plan : 2021-22 to 2026-27  
(xiv) Production (Year....) : 2020-21  
ROM - 910675.55 Ts  
LST - 893110.30 Ts

**2. Brief description of the mine:**

(a) A brief description of the mine covering location, geology, problems associated with mining of the deposit etc.

(1) Location:

Periyathirukonam Limestone Mine is located in the part of revenue villages of Periyathirukonam, Reddipalayam and Edaiyattankudi, Ariyalur Taluk and District. This area is accessible from V.Kaikatti, which is located at a distance of 11 Km. from Ariyalur on Ariyalur – Jayankondam State High way. The area is accessible through the metal /tar road branching off from V.kaikatti and it is situated about 8 km. Toposheet Number: 58M/4.

Latitude: 11°03' 39.4'' N to 11°04' 18.5'' N, Longitude: 79°09'01.0'' E to 79°09'56.4'' E.

(2) Geology:

**Local Geological Set-up**

The youngest limestone band belonging to the Niniyur Formation and also known as the Eastern band extends from south of Anandavadi to Alathiyur in the North, for a length of 17.7 km. The contact of Niniyur Formation with the underlying Ariyalur stage is mostly concealed by Recent Alluvium, but is exposed east of Niniyur and southeast of Anandavadi.

The general trend of the limestone deposit in this study area is North – South direction, with dipping towards East with 2 to 3 degrees. The limestone deposits occurring in the area are grouped under Kallankurichi formation of Ariyalur stage of upper cretaceous sedimentary formations. The area is covered with black cotton soil and followed by sandy clay. The limestone is not exposed on the surface but it is seen in the adjacent mine works and well sections. The Shell limestone is buff, yellowish brown in colour with prominent and well preserved shells of lamellibranches, gastropods and microscopic identified fossils and algae are found in Limestones.

The deposit is covered by 1.0 to 6.0 mts of top soil, followed by Sandy clay and followed by Shell limestone , Conglomeratic Limestone, sandstone/Sand.

Order of Succession:

↑	Top soil (Black cotton)	-	0.50 to 6.00 m
	Sandy Clay	-	1.50 to 21.50 m
	Shell Limestone	-	3.5 to 27.0 m
	Conglomeratic Limestone	-	0.20 to 1.20 m
	Sandstone / Sand		

Top Soil:

The top surface of the area covered with black cotton soil. The thickness of the black cotton soil varies from 0.5 m–6.0m.

**Sandy Clay:**

Top soil is followed by sandy clay, which is of Buff and grey in colour. Sandy clay is soft, sticky, and fine to medium grained sand with clayee matrix. The thickness of sandy clay is ranging from 1.50-21.50m.

**Shell limestone:**

Underlined by topsoil and sandy clay is shell limestone., Which is of buff, yellow to pale brown in colour, fine to medium grained, medium hard to hard, with abundance of shell fragments such as gastropods, Lamellibranches and Foraminifera fossils. The thickness of the shell limestone ranges from 3.50 m to 27 m. Generally ferruginous and calcareous clay contents in shell limestone horizons occurs in various proportions and sometimes it causes lowering of the purity percentage of CaO in shell limestone with increased iron and silica content. Occasional presence of chert is found in two boreholes within shell limestone and sandy clay.

**Conglomeratic Limestone:**

Underlies the Shell limestone is Conglomeratic limestone, which is of buff colour and embedded with conglomerate bubbles.

**Sandstone /Sand:**

Bottom most layer is sandstone and sand. The bottom sandstone is grayish white in colour, fine to medium grained and friable to medium hard.

(3) Problems associated with mining of the deposit etc. -----

**(b) Description on deployment of mining machinery**

Sl. No.	Machineries deployed	Capacity	Number of units	In use	Idle	Percentage of utilization	Brief description	Remarks
1	2	3	4	5	6	7	8	9
1	Dipper Shovels	---	----	---	---	---	---	---
2	Back Hoes	2.0 m <sup>3</sup>	1	1	0	98%		
		1.0 m <sup>3</sup>	1	1	0	98%		
3	Front End Loader	2.5 m <sup>3</sup>	1	1	0	57%	---	---
4	Water Sprinkler	10 KL	1	1	0	73%		
5	Tippers	8.0 m <sup>3</sup>	5	5	0	91%		
6	Drills / Blast Holes	---	----	---	---	---	---	---
7	Bull Dozers	134 HP	1	1	0	82%		
8	Motor Graders	---	----	---	---	---	---	---
9	Crushers	---	----	---	---	---	---	---
10	Cranes	---	----	---	---	---	---	---
11	Air Compressor	---	----	---	---	---	---	---

**3. Implementation of Mining Plan or Review of Mining Plan:**

Sl.No.	Proposal in the approved Mining Plan or Scheme of Mining (period from 2013-14 to 2017-18)	Observations regarding implementation of proposals given in approved Mining Plan or Review of Mining Plan.	Remarks/ Reason for deviation
1	2	3	4
(1)	<b>CONSERVATION OF MINERALS</b>		
(a)	Exploration	Exploration done upto G1 Level. 29 exploration boreholes were drilled with total merage of 907.30m with 200m*200m grid interval, during the year 2016.	
(b)	Utilization of sub-grade mineral	NIL	
(c)	Any other proposal for monitoring	---	
(2)	<b>SCIENTIFIC MINING</b>		
(a)	Mine Development	Mechanized method. Overburden-5m, Limestone-5m.	

	and method of mining	One Top Soil Bench, One overburden bench, Two ore benches.	
(b)	Handling of Waste/ sub-grade material	ROM : 910675.55 Ts Usable Limestone : 893110.30 Ts Mineral Reject : 17565.25 Ts	
(c)	Area reclamation & restoration	Backfilled area : 1.00.0 Ha Fully reclaimed & rehabilitated : NIL	
(d)	Any other proposal for monitoring	----	

(3)	<b>PROTECTION OF ENVIRONMENT</b>		
(a)	Afforestation	Number of trees planted during the year: 3350 Nos, Extent: 1.00.0 ha Survival rate in percentage: 91.00%	
(b)	Quality of air	Monitoring and all values are within the limit.	
(c)	Quality of Water	Monitoring and all values are within the limit.	
(d)	Noise level	Monitoring and all values are within the limit.	
(e)	Vibration	Monitoring and all values are within the limit.	
(f)	Any other proposal for monitoring.	---	

#### 4. History of Violations after approval of Mining Plan or Review of Mining Plan: 2016-17 to 2020-21.

SL No.	Date of Inspection	Name of inspecting officer	Violations of MCDR, 2017 observed and pointed out	Rectification of violations	Remarks
1	2	3	4	5	6
1	29.09.2020	Matual Islam	<b>Rule 11(1):</b> (a) A total of 7900 nos.of saplings were proposed to be planted during the year but only 5800 nos of saplings have been planted thus far.	There was a shortfall in the 2019-20 due to delay in preparing the area for plantation. For the year 2020-21, about 1200 saplings were proposed and we have planted 3350 saplings till now which covered the shortfall of 2100 saplings in the year 2019-20.	

#### 5. Socio-Economic Development Plan:

Sl. No.	Proposed Action Plan towards socio-Economic Development	Expenditure proposed ( In Rs. Lakh )	Expenditure Incurred ( In Rs. Lakh)	Remarks
1	2	3	4	5
(1)	General Development in the area			
	(i) Housing	---	---	
	(ii) Water Supply	0.900	0.940	
	(iii) Sanitation	0.100	0.100	
	(iv) Health safety and Medical Facilities	0.300	0.300	
(2)	Education and Training	0.100	0.100	
(3)	Employment to local inhabitants	---	---	
(4)	Public Transportation and communication	0.250	0.250	
(5)	Recreation and other sports activities	0.400	0.440	
(6)	Expenditure for environment management	---	---	
(7)	Other	7.000	7.810	
	<b>Total</b>	<b>9.050</b>	<b>9.940</b>	

Name of the Officer:  
Designation