



TANCEM

TAMILNADU CEMENTS CORPORATION LIMITED

(A Government of Tamilnadu Undertaking)

ARIYALUR WORKS

ARASUNAGAR POST- 621 729, ARIYALUR DIST.

Corporate Office: IInd Floor, LLA Buildings, 735, Anna Salai, Chennai- 600 002.

Corporate ID: U40200TN1976SGC007081

TANCEM/ACW/ALSM/166/G.O.624/MoEF/2021

Date: 30-11-2021.

The Director,
Ministry of Environment, Forests & Climate Change,
Regional Office (SEZ),
Ist and IInd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Sir,

Sub: Tancem – Aiyalur Cement works – Anandavadi Limestone Mines – Mining Lease G.O.Ms.No.624 – Extent 110.68.5 Ha – Environmental Clearance obtained – Compliance report on Environmental Clearance – Submitted – Reg.

Ref: 1. ML G.O.Ms.No.624 dated 23.09.1998.
2. Environmental Clearance Letter No.J-11015/15/99 – IA II(M) dated. 22.11.1999.
3. MOEF & CC, New Delhi Lr.No. F.No. J-11015/173/2018-IA-II (M) dt 07-07-2021.

With reference to the above, we hereby submit the Compliance Report on Environmental Clearance for the period from April 2021 to September 2021 in respect of Anandavadi Limestone Mines of Tamilnadu Cements Corporation Limited (TANCEM) for the Mining lease G.O.Ms.No.624 dated 23.09.1998 for over an extent of 110.68.5 Ha in Sendurai Tk & Ariyalur District for the limestone extraction of 0.26 MTPA.

Moreover, we obtained the EC for the enhanced quantity of Limestone from 0.26 MTPA to 1.5 MTPA for the above said mining lease from MoEF & CC, New Delhi on 07-07-2021. Presently, we are in the process of obtaining Consent To Operate (CTO) from TNPCB for the enhanced quantity. We like to highlight that after obtaining CTO for the enhanced quantity of 1.5 MTPA the separate compliance report will be submitted for your kind perusal.

Thanking you,

Yours faithfully,
for Tamilnadu Cements Corporation Ltd,


Deputy General Manager / Mines Agent

Encl: a/a

TANCEM – ARIYALUR

COMPLIANCE REPORT ON ENVIRONMENTAL CLEARANCE

ISSUED BY MoEF, New Delhi

EC COMPLIANCE FOR THE PERIOD April 2021 – September 2021

Environmental Clearance No. J-11015/15/99 – IA II (M) dated. 22.11.1999

Mining Lease G.O.Ms.No. 624 dated: 23-09-1998

PROJECT NAME : ANANDAVADI LIMESTONE MINES, EXTENT: 110.68.5 HA.
VILLAGE: ANANDAVADI, TALUK : SENDURAI, DISTRICT: ARIYALUR

Specific Conditions:

S.No	Specific Conditions by MoEF, New Delhi	Tancem Compliance
1	The OB dumps should be stacked in earmarked dump sites only and should not be kept active for a long period inactive OB dumps should be scientifically vegetated with the suitable species to prevent surface run-off.	As per the Mining Plan approved by Indian Bureau of Mines OB dump stacked in an earmarked area and species were planted on the dump scientifically.
2	Top soil should be stacked properly with adequate measures at earmarked site it should be used for reclamation and rehabilitation of mined out areas.	Top soil is stacked in a proper manner and also it is used only for the reclamation and rehabilitation process.
3	Garland drains of appropriate size should be constructed, to collect surface run-off from the OB & waste dump sites. The collected run-off should be diverted to the sedimentation tank before final disposal.	Garland drains are already constructed to collect surface run-off water in the deepest mine area were main sump is located and collected run-off is being diverted to the sedimentation tank before final disposal.

4	A greenbelt of 30m width around the ML area by planting the native plant species in an area of 26.8 ha. Should be raised in consultation with the local DFO/agriculture department. The density of the trees should be around 2000 plants per ha.	Greenbelt development made in the Mining Lease area for about 81 ha. Plantation work carried out by TNPL under Memorandum Of Understanding. In addition to this, we had planted about 4700 Nos of plants during this period.
5	A detailed mine decommissioning plan should be submitted to the Ministry of Environment & Forest, 5 years in advance for approval in respect of this mine. Decommission mine plan should also be submitted in respect of the other three operating captive mines well in advance to the MoEF.	At present, there is no mine decommissioning plan and it would be prepared and submitted to the Ministry of Environment and Forest as per the conditions stipulated in Environmental Clearance.
6	Excavated open pits left unreclaimed after mining should be developed into water reservoir to harvest the rain water for pisciculture, green belt development and for irrigation by the local people.	Presently, there are two working pits which are in progress continuously for production activities. However, suitable arrangement will be made for rain water harvesting in future.
7	Drills should be operated with dust extractors only.	Drilling equipments were fitted with dust extractor system to suppress the dust. However, presently there is no drilling and blasting operation in this mine.
8	Mining plan should be modified as per letter dated 04.08.1998 of Indian Bureau of Mines and got approved before starting developmental work at site.	Mining Plan was modified for enhanced production of 0.26 to 1.5 million tonnes/annum for the period 2020-25 vide IBM letter no. TN/ALR/LST/ROMP-1654. MDS dated. 30.06.2021. (Approval letter copy enclosed).

General Conditions:

S.No	General Conditions by MoEF, New Delhi	Tancem Compliance
1	No change in mining technology and working plan should be made without prior approved of the Ministry of Environment & Forests.	No change is made in mining technology and working plan.
2	No change in the calendar plan including excavation, quantum of limestone and wastes/over burden dumps should be made.	No change is made in the calendar plan including exaction, quantum of limestone and wastes/over burden dumps.
3	Four ambient air quality monitoring stations should be established in the core zone as well as buffer zone for SPM, RPM SO ₂ , NOX and CO monitoring location of the ambient air quality should be decided based on the meteorological data	Ambient Air Quality monitoring survey was done. The Survey report is herewith enclosed.
4	Data on ambient air quality should be regularly submitted to the Ministry including its Regional Office at Bangalore and the State Pollution Control Board/Central Pollution Control Board once in six months.	Data on Ambient Air Quality is submitted herewith for your kind perusal.

5	Fugitive emissions should be controlled, regularly monitored and data recorded properly.	Water tanker with sprinkling system is being engaged regularly and controlled fugitive emissions/dust.
6	Adequate measures should be taken for control of noise levels below 85 dB in the work environment.	It is found that the noise level was well within the permissible limit of 85 dB in the work environment. The Survey report is herewith enclosed.
7	<p>Personnel working in dusty areas should wear personal protective equipment devices Adequate training and information on safety and health aspects should be provided.</p> <p>Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures. If needed.</p>	Personnel Protective Equipment (PPE) are provided to the working person in Mines as per the MMR, 1961 and occupational health survey surveillance is periodically conducted under the Mines Rules, 1955.
8	Funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purpose and year-wise expenditure should be report to the Ministry.	Adequate fund is being allotted in line with statutory provisions for the interest of protection of environment and it is strictly complied at the end of TANCEM. Tancem also allotted funds in the budget for the provision of environmental measures in Anandavadi Mines (G.O.624).

9.	The project will be monitored by the Regional office of this Ministry located at Bangalore. The project authorities should extend full co-operation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Project Authorities will extent maximum co-operation to the officials/Authority concerned of MoEF according to their statutory requirements.
10.	The project authorities should have valid "consent to operate" and mining plan approval.	CTO was obtained on 28-08-2020 which is valid upto 31-03-2022. Approved Mining Plan obtained as stated in the point no 8 of Specific condition.



Authorized Signatory

Name

: T. Ravichandran

Designation

: Deputy General Manager/Unit Head

Project Proponent: Tamilnadu Cements Corporation Limited
(TANCEM), Ariyalur.

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LIFE SHELL LABS INDIA PVT. LTD.

(The Complete Environmental Service Provider)

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Email: labs@lifeshell.in, lifeshelllabs@gmail.com
www.lifeshelllabs.com

TEST REPORT

Sample ID: 2109317	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.00 AM)	Closing Date & Time	01.10.2021 (8.00 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Air Quality (AAQ)
Test Completed on	05.10.2021	Sampling duration	24 hrs
Sampling Location	Near Loading Operator Cabin	Ambient Temp during sampling	33°C (Avg.)
Sampling Procedure	Prescribed as per Test Method	RH during sampling	62% (Avg.)
Instrument used for sampling Model/Make/Serial No.			AA5-127 mini-D17B057
Calibrated on	30.01.2021	Calibration due	29.01.2022
Latitude	11.191080	Longitude	79.181835

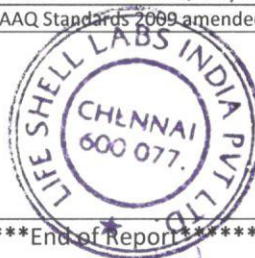
DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		ATMOSPHERIC POLLUTION			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	*NAAQ STANDARDS
1	Particulate Matter in (PM ₁₀)	µg/m ³	IS 5182 (Part 23)	57.9	100
2	Particulate Matter in (PM _{2.5})	µg/m ³	EPA-Appendix-L (Part-50)	24.6	60
3	Sulphur dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	7.65	80
4	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	18.3	80
5	Ozone as O ₃	µg/m ³	IS 5182 (Part 9)	6.80	180
6	Ammonia as NH ₃	µg/m ³	CPCB Manual-2013	10.8	400
7	Carbon Monoxide as CO (1hr)	mg/m ³	IS 5182 (Part 10)	BDL (DL:1.15)	4.0
8	Lead as Pb	µg/m ³	IS 5182 (Part 22)	BDL (DL:0.5)	1.0
9	Benzene as C ₆ H ₆	µg/m ³	IS 5182 (Part 11)	BDL (DL:1.0)	5.0
10	Arsenic as As	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	6.0
11	Nickel as Ni	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	20.0
12	Benzo(a)Pyrene in C ₂₀ H ₁₂	ng/m ³	IS 5182 (Part 12)	BDL (DL:1.0)	1.0

Note: BDL: Below Detectable Limit; DL: Detectable Limit, *NAAQ: National Ambient Air Quality.

Report Opinion: The above tested All Parameters are Meets with NAAQ Standards 2009 amended.

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****

Note:1) The results listed herewith are only for the items tested. 2) Endorsement of test item is neither inferred nor implied. 3) The report in full or part shall not be used for any promotional activity or publicity purpose without written consent by us. 4) Samples are not drawn by us unless otherwise mentioned. 5) Unless specifically requested by the customer, the test items will not be retained more than 7 days from the date of issue of the test report. 6) Under no circumstances, lab accepts any liability for loss/damage caused by use or misuse of test report. 7) Liability is limited to proven willful negligence and will in no case be more than the invoiced amount.



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NABL Accredited, ISO 9001 : 2015,
OSHAS 18001 : 2007 Certified Company

TEST REPORT

Sample ID: 2109318	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.10 AM)	Closing Date & Time	01.10.2021 (8.10 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Air Quality (AAQ)
Test Completed on	05.10.2021	Sampling duration	24 hrs
Sampling Location	Near Dumping Yard	Ambient Temp during sampling	32°C (Avg.)
Sampling Procedure	Prescribed as per Test Method	RH during sampling	64% (Avg.)
Instrument used for sampling Model/Make/Serial No.			17-F-720
Calibrated on	14.01.2021	Calibration due	13.01.2022
Latitude	11.187048	Longitude	79.188159

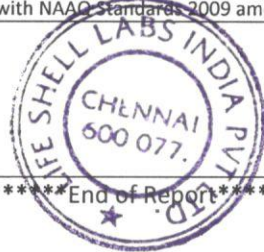
DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		ATMOSPHERIC POLLUTION			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	*NAAQ STANDARDS
1	Particulate Matter in (PM ₁₀)	µg/m ³	IS 5182 (Part 23)	53.8	100
2	Particulate Matter in (PM _{2.5})	µg/m ³	EPA-Appendix-L (Part-50)	23.2	60
3	Sulphur dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	7.20	80
4	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	16.9	80
5	Ozone as O ₃	µg/m ³	IS 5182 (Part 9)	5.80	180
6	Ammonia as NH ₃	µg/m ³	CPCB Manual-2013	9.60	400
7	Carbon Monoxide as CO (1hr)	mg/m ³	IS 5182 (Part 10)	BDL (DL:1.15)	4.0
8	Lead as Pb	µg/m ³	IS 5182 (Part 22)	BDL (DL:0.5)	1.0
9	Benzene as C ₆ H ₆	µg/m ³	IS 5182 (Part 11)	BDL (DL:1.0)	5.0
10	Arsenic as As	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	6.0
11	Nickel as Ni	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	20.0
12	Benzo(a)Pyrene in C ₂₀ H ₁₂	ng/m ³	IS 5182 (Part 12)	BDL (DL:1.0)	1.0

Note: BDL: Below Detectable Limit; DL: Detectable Limit, *NAAQ: National Ambient Air Quality.

Report Opinion: The above tested All Parameters are Meets with NAAQ Standards 2009 amended.

Verified by

M. BALAJI
Deputy Quality Manager



*****End of Report*****

For Life Shell Labs India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager



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TEST REPORT

Sample ID: 2109319	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.20 AM)	Closing Date & Time	01.10.2021 (8.20 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Air Quality (AAQ)
Test Completed on	05.10.2021	Sampling duration	24 hrs
Sampling Location	North East Corner	Ambient Temp during sampling	33°C (Avg.)
Sampling Procedure	Prescribed as per Test Method	RH during sampling	62% (Avg.)
Instrument used for sampling Model/Make/Serial No.			AAS 217 BL/17-D-542
Calibrated on	14.01.2021	Calibration due	13.01.2022
Latitude	11.189088	Longitude	79.183793

DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		ATMOSPHERIC POLLUTION			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	*NAAQ STANDARDS
1	Particulate Matter in (PM ₁₀)	µg/m ³	IS 5182 (Part 23)	55.1	100
2	Particulate Matter in (PM _{2.5})	µg/m ³	EPA-Appendix-L (Part-50)	21.9	60
3	Sulphur dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	5.95	80
4	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	15.4	80
5	Ozone as O ₃	µg/m ³	IS 5182 (Part 9)	6.20	180
6	Ammonia as NH ₃	µg/m ³	CPCB Manual-2013	14.3	400
7	Carbon Monoxide as CO (1hr)	mg/m ³	IS 5182 (Part 10)	BDL (DL:1.15)	4.0
8	Lead as Pb	µg/m ³	IS 5182 (Part 22)	BDL (DL:0.5)	1.0
9	Benzene as C ₆ H ₆	µg/m ³	IS 5182 (Part 11)	BDL (DL:1.0)	5.0
10	Arsenic as As	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	6.0
11	Nickel as Ni	ng/m ³	IS 5182 (Part 22)	BDL (DL:1.0)	20.0
12	Benzo(a)Pyrene in C ₂₀ H ₁₂	ng/m ³	IS 5182 (Part 12)	BDL (DL:1.0)	1.0

Note: BDL: Below Detectable Limit; DL: Detectable Limit, *NAAQ: National Ambient Air Quality.

Report Opinion: The above tested All Parameters are Meets with NAAQ Standards 2009 amended.

Verified by

M. BAJAJ
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

K. Kamalanathan
Authorized Signatory

K. KAMALANATHAN
Deputy Technical Manager

*****End Of Report*****



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TEST REPORT

Sample ID: 2109320	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.30 AM)	Closing Date & Time	01.10.2021 (8.30 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Air Quality (AAQ)
Test Completed on	05.10.2021	Sampling duration	24 hrs
Sampling Location	South West Corner	Ambient Temp during sampling	33°C (Avg.)
Sampling Procedure	Prescribed as per Test Method	RH during sampling	62% (Avg.)
Instrument used for sampling Model/Make/Serial No.			AAS 217 BL/17-F-556
Calibrated on	30.01.2021	Calibration due	29.01.2022
Latitude	11.189664	Longitude	79.181422

DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		ATMOSPHERIC POLLUTION			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	*NAAQ STANDARDS
1	Particulate Matter in (PM ₁₀)	µg/m ³	IS 5182 (Part 23)	52.9	100
2	Particulate Matter in (PM _{2.5})	µg/m ³	EPA-Appendix-L (Part-50)	23.1	60
3	Sulphur dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	5.60	80
4	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	15.2	80
5	Ozone as O ₃	µg/m ³	IS 5182 (Part 9)	5.95	180
6	Ammonia as NH ₃	µg/m ³	CPCB Manual-2013	11.6	400
7	Carbon Monoxide as CO (1hr)	mg/m ³	IS 5182 (Part 10)	BDL (DL: 1.15)	4.0
8	Lead as Pb	µg/m ³	IS 5182 (Part 22)	BDL (DL: 0.5)	1.0
9	Benzene as C ₆ H ₆	µg/m ³	IS 5182 (Part 11)	BDL (DL: 1.0)	5.0
10	Arsenic as As	ng/m ³	IS 5182 (Part 22)	BDL (DL: 1.0)	6.0
11	Nickel as Ni	ng/m ³	IS 5182 (Part 22)	BDL (DL: 1.0)	20.0
12	Benzo(a)Pyrene in C ₂₀ H ₁₂	ng/m ³	IS 5182 (Part 12)	BDL (DL: 1.0)	1.0

Note: BDL: Below Detectable Limit; DL: Detectable Limit, *NAAQ: National Ambient Air Quality.

Report Opinion: The above tested All Parameters are Meets with NAAQ Standards 2009 amended.

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory

K. KAMALANATHAN

Deputy Technical Manager

*****End of Report*****

Page 1 of 1



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TEST REPORT

Sample ID: 2109321	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.40 AM)	Closing Date & Time	01.10.2021 (8.40 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Air Quality (AAQ)
Test Completed on	05.10.2021	Sampling duration	24 hrs
Sampling Location	Anandavadi Village	Ambient Temp during sampling	33°C (Avg.)
Sampling Procedure	Prescribed as per Test Method	RH during sampling	62% (Avg.)
Instrument used for sampling Model/Make/Serial No.			AAS-127 mini-D17B057
Calibrated on	30.01.2021	Calibration due	29.01.2022
Latitude	11.188614	Longitude	79.175331

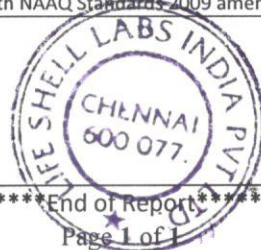
DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		ATMOSPHERIC POLLUTION			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	*NAAQ STANDARDS
1	Particulate Matter in (PM ₁₀)	µg/m ³	IS 5182 (Part 23)	52.9	100
2	Particulate Matter in (PM _{2.5})	µg/m ³	EPA-Appendix-L (Part-50)	23.1	60
3	Sulphur dioxide as SO ₂	µg/m ³	IS 5182 (Part 2)	5.60	80
4	Nitrogen Dioxide as NO ₂	µg/m ³	IS 5182 (Part 6)	15.2	80
5	Ozone as O ₃	µg/m ³	IS 5182 (Part 9)	5.95	180
6	Ammonia as NH ₃	µg/m ³	CPCB Manual-2013	11.6	400
7	Carbon Monoxide as CO (1hr)	mg/m ³	IS 5182 (Part 10)	BDL (DL: 1.15)	4.0
8	Lead as Pb	µg/m ³	IS 5182 (Part 22)	BDL (DL: 0.5)	1.0
9	Benzene as C ₆ H ₆	µg/m ³	IS 5182 (Part 11)	BDL (DL: 1.0)	5.0
10	Arsenic as As	ng/m ³	IS 5182 (Part 22)	BDL (DL: 1.0)	6.0
11	Nickel as Ni	ng/m ³	IS 5182 (Part 22)	BDL (DL: 1.0)	20.0
12	Benzo(a)Pyrene in C ₂₀ H ₁₂	ng/m ³	IS 5182 (Part 12)	BDL (DL: 1.0)	1.0

Note: BDL: Below Detectable Limit; DL: Detectable Limit, *NAAQ: National Ambient Air Quality.

Report Opinion: The above tested All Parameters are Meets with NAAQ Standards 2009 amended.

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****

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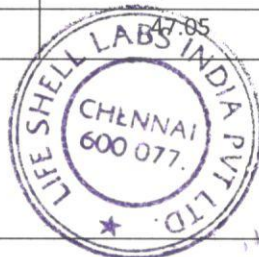
TEST REPORT

Sample ID: 2109322	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.00 AM)	Closing Date & Time	01.10.2021 (8.00 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Noise
Test Completed on	01.10.2021	Sampling Procedure	Prescribed as per Test Method
Sampling Location	Mentioned Below	Ambient Temp during sampling	32°C (Avg.)
Sampling Time	Every 60 Minutes	RH during sampling	64% (Avg.)
Calibrated on	19.10.2020	Calibration due	18.10.2021
Instrument used for sampling	SL-4001/DK836459		

DISCIPLINE			CHEMICAL TESTING				
PRODUCT GROUP			ATMOSPHERIC POLLUTION				
LOCATION NAME			N1-Loading Operator Cabin		N2- Dumping Yard		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)	Min dB(A)	Max dB(A)	Leq dB(A)
1	08.00	47.4	55.3	51.35	46.2	54.6	50.4
2	09.00	48.3	57.1	52.7	47.6	55.8	51.7
3	10.00	49.2	59.5	54.35	49.8	58.7	54.25
4	11.00	53.2	60.9	57.05	52.2	61.2	56.7
5	12.00	50.4	56.1	53.25	49.1	58.4	53.75
6	13.00	50.8	57.4	54.1	50.8	56.9	53.85
7	14.00	55.3	64.2	59.75	48.6	55.8	52.2
8	15.00	53.4	62.5	57.95	55.1	62.9	59
9	16.00	51.8	58.1	54.95	53.8	60.2	57
10	17.00	47.4	54.1	50.75	50.3	58.2	54.25
11	18.00	45.8	52.9	49.35	46.9	53.6	50.25
12	19.00	43.9	50.2	47.85	44.8	52.1	48.45

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager



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(The Complete Environmental Service Provider)

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Email: labs@lifeshell.in, lifeshelllabs@gmail.com

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TEST REPORT

Sample ID: 2109322			JOE: 957		Report Date: 05.10.2021		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)	Min dB(A)	Max dB(A)	Leq dB(A)
13	20.00	42.3	49.1	45.7	45.2	54.0	49.6
14	21.00	42.0	47.6	44.8	40.6	47.5	44.05
15	22.00	41.0	47.1	44.05	40.1	46.4	43.25
16	23.00	38.3	44.2	41.25	39.7	44.9	42.3
17	00.00	37.7	42.8	40.25	35.6	42.1	38.85
18	01.00	37.1	42.5	39.8	34.2	38.8	36.5
19	02.00	35.6	40.9	38.25	33.8	39.7	36.75
20	03.00	34.2	39.7	36.95	32.9	36.5	34.7
21	04.00	33.7	38.9	36.3	33.4	37.6	35.5
22	05.00	33.4	38.1	35.75	35.1	41.2	38.15
23	06.00	36.9	41.6	39.25	38.2	44.9	41.55
24	07.00	39.5	43.8	41.65	39.8	46.1	42.95
Day Mean dB(A)				50.1	Day Mean dB(A)		50.3
Night Mean dB(A)				43.6	Night Mean dB(A)		43.5
Limit as per The Noise Pollution (Regulation and Control) Rules 2010 of MoEFCC/CPCB industrial					Day Time:75dB(A)		
					Night Time:70dB(A)		
Note: MoEFCC-Ministry of Environment Forest and Climate Change: CPCB: Central Pollution Control Board							
Verified by M. BALAJI Deputy Quality Manager					For Life Shell Labs India Pvt. Ltd. Authorized Signatory K. KAMALANATHAN Deputy Technical Manager		

*****End of Report*****



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TEST REPORT

Sample ID: 2109323	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.10 AM)	Closing Date & Time	01.10.2021 (8.10 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Noise
Test Completed on	01.10.2021	Sampling Procedure	Prescribed as per Test Method
Sampling Location	Mentioned Below	Ambient Temp during sampling	32°C (Avg.)
Sampling Time	Every 60 Minutes	RH during sampling	64% (Avg.)
Calibrated on	19.10.2020	Calibration due	18.10.2021
Instrument used for sampling	SL-4001/DK836459		

DISCIPLINE			CHEMICAL TESTING				
PRODUCT GROUP			ATMOSPHERIC POLLUTION				
LOCATION NAME			N3-North East Corner		N4- South West Corner		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)	Min dB(A)	Max dB(A)	Leq dB(A)
1	08.00	46.5	54.3	50.4	45.8	52.8	49.3
2	09.00	48.1	56.8	52.45	46.9	53.1	50
3	10.00	48.6	58.2	53.4	50.4	57.6	54
4	11.00	52.6	60.2	56.4	51.2	58.8	55
5	12.00	53.4	61.8	57.6	50.4	57.4	53.9
6	13.00	51.2	59.6	55.4	50.6	59.2	54.9
7	14.00	54.3	61.1	57.7	52.8	60.4	56.6
8	15.00	52.9	60.3	56.6	51.3	59.1	55.2
9	16.00	50.8	59.4	55.1	49.6	56.2	52.9
10	17.00	45.5	52.7	49.1	44.8	51.8	48.3
11	18.00	46.5	54.3	50.4	45.8	52.8	49.3
12	19.00	48.1	56.8	52.45	46.9	53.1	50

Verified by 
M. BALAJI
Deputy Quality Manager



For Life Shell Labs, India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

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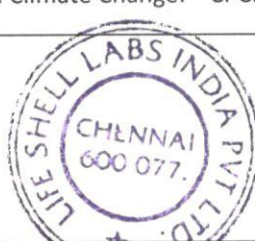

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TEST REPORT

Sample ID: 2109323			JOE: 957			Report Date: 05.10.2021					
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)	Min dB(A)	Max dB(A)	Leq dB(A)				
13	20.00	44.3	50.7	47.5	45.3	51.7	48.5				
14	21.00	43.9	48.5	46.2	44.9	50.1	47.5				
15	22.00	41.6	48.4	45	43.1	52.5	47.8				
16	23.00	41.1	46.3	43.7	42.0	48.6	45.3				
17	00.00	40.5	46.1	43.3	41.6	47.2	44.4				
18	01.00	36.4	41.6	39.0	40.2	46.8	43.5				
19	02.00	35.1	40.3	37.7	35.9	41.1	38.5				
20	03.00	34.6	39.1	36.85	34.5	39.7	37.1				
21	04.00	33.8	38.4	36.1	33.2	38.0	35.6				
22	05.00	32.6	37.3	34.95	32.4	36.8	34.6				
23	06.00	32.2	36.4	34.3	32.0	36.4	34.2				
24	07.00	33.0	37.8	35.4	35.3	41.7	38.5				
Day Mean dB(A)				49.0	Day Mean dB(A)		49.4				
Night Mean dB(A)				42.7	Night Mean dB(A)		42.9				
Limit as per The Noise Pollution (Regulation and Control) Rules 2010 of MoEFCC/CPCB industrial					Day Time:75dB(A)						
					Night Time:70dB(A)						
Note: MoEFCC-Ministry of Environment Forest and Climate Change: CPCB: Central Pollution Control Board											
Verified by  M. BALAJI Deputy Quality Manager								For Life Shell Labs India Pvt. Ltd.  Authorized Signatory K. KAMALANATHAN Deputy Technical Manager			

*****End of Report*****



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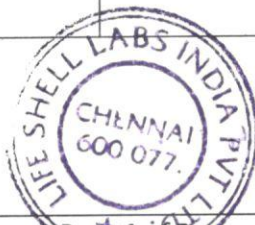
TEST REPORT


Sample ID: 2109324	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Starting Date & Time	30.09.2021 (08.20 AM)	Closing Date & Time	01.10.2021 (8.20 AM)
Sample Received on	01.10.2021	Sampled by	LSL
Test Commenced on	01.10.2021	Sample Description	Ambient Noise
Test Completed on	01.10.2021	Sampling Procedure	Prescribed as per Test Method
Sampling Location	Mentioned Below	Ambient Temp during sampling	32°C (Avg.)
Sampling Time	Every 60 Minutes	RH during sampling	64% (Avg.)
Calibrated on	19.10.2020	Calibration due	18.10.2021
Instrument used for sampling	SL-4001/DK836459		

DISCIPLINE			CHEMICAL TESTING	
PRODUCT GROUP			ATMOSPHERIC POLLUTION	
LOCATION NAME			N5-Anandavadi Village	
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	08.00	45.8	53.6	49.7
2	09.00	46.2	54.4	50.3
3	10.00	47.4	56.2	51.8
4	11.00	50.6	58.8	54.7
5	12.00	51.8	59.2	55.5
6	13.00	50.4	57.8	54.1
7	14.00	53.8	60.6	57.2
8	15.00	51.7	58.3	55
9	16.00	50.6	56.8	53.7
10	17.00	46.9	52.1	49.5
11	18.00	45.6	52.4	49
12	19.00	43.8	51.2	47.5

Verified by

M. BALAJI
 Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

 Authorized Signatory
K. KAMALANATHAN
 Deputy Technical Manager

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TEST REPORT

Sample ID: 2109324			JOE: 957	Report Date: 05.10.2021
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
13	20.00	42.8	48.3	45.55
14	21.00	39.4	45.2	42.3
15	22.00	37.9	44.2	41.05
16	23.00	35.6	41.8	38.7
17	00.00	34.4	41.2	37.8
18	01.00	34.6	40.4	37.5
19	02.00	33.2	39.6	36.4
20	03.00	32.4	38.2	35.3
21	04.00	32.0	36.8	34.4
22	05.00	34.3	37.6	35.95
23	06.00	36.4	41.2	38.8
24	07.00	37.2	43.4	40.3
Day Mean dB(A)				45.5
Night Mean dB(A)				48.7
Limit as per The Noise Pollution (Regulation and Control) Rules 2010 of MoEFCC/CPCB industrial				Day Time:75dB(A) Night Time:70dB(A)
Note: MoEFCC-Ministry of Environment Forest and Climate Change: CPCB: Central Pollution Control Board				
Verified by  M. BALAJI Deputy Quality Manager		 For Life Shell Labs India Pvt. Ltd.  Authorized Signatory K. KAMALANATHAN Deputy Technical Manager		

*****End of Report*****



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TEST REPORT

Sample ID: 2109325	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	Ground Water
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	Anandavadi Village	Sample Quantity	2 liters
Latitude	11.181157	Longitude	79.177603

DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		WATER			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	PERMISSIBLE LIMIT AS PER IS 10500-2012
1	Colour	Hazen	IS 3025-Part 4	5.0	15.0
2	Odour	--	IS 3025-Part 5	Agreeable	Agreeable
3	pH @ 25°C	--	IS 3025-Part 11	7.16	6.5-8.5
4	Electrical Conductivity	µmhos/cm	IS 3025-Part 14	962	--
5	Temperature	°C	IS 3025-Part 10	25.0	--
6	Total Dissolved Solids (TDS)	mg/l	IS 3025-Part 16	510	2000
7	Total Hardness as CaCO ₃	mg/l	IS 3025-Part 21	202	600
8	Total Alkalinity as CaCO ₃	mg/l	IS 3025 part-23	176	600
9	Chemical Oxygen Demand	mg/l	IS 3025-part 58	BDL(DL:4.0)	--
10	BOD @27°C for 3 days	mg/l	IS 3025-Part 44	BDL(DL:2.0)	--
11	Chloride as Cl	mg/l	IS 3025-Part 32	128	1000
12	Sulphate as SO ₄	mg/l	APHA-23rd Edn-2017	52.0	400

BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by

M. Balaji
M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

K. Kamalanathan
Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****

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TEST REPORT

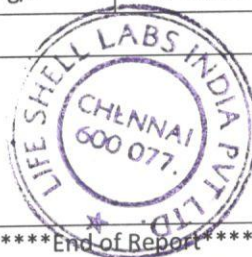
Sample ID: 2109326	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	Ground Water
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	Ayanathur Village	Sample Quantity	2 liters
Latitude	11.175451	Longitude	79.174229

DISCIPLINE		CHEMICAL TESTING			
PRODUCT GROUP		WATER			
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	PERMISSIBLE LIMIT AS PER IS 10500-2012
1	Colour	Hazen	IS 3025-Part 4	5.0	15.0
2	Odour	--	IS 3025-Part 5	Agreeable	Agreeable
3	pH @ 25°C	--	IS 3025-Part 11	7.33	6.5-8.5
4	Electrical Conductivity	µmhos/cm	IS 3025-Part 14	1259	--
5	Temperature	°C	IS 3025-Part 10	25.5	--
6	Total Dissolved Solids (TDS)	mg/l	IS 3025-Part 16	680	2000
7	Total Hardness as CaCO ₃	mg/l	IS 3025-Part 21	268	600
8	Total Alkalinity as CaCO ₃	mg/l	IS 3025 part-23	204	600
9	Chemical Oxygen Demand	mg/l	IS 3025-part 58	BDL(DL:4.0)	--
10	BOD @27°C for 3 days	mg/l	IS 3025-Part 44	BDL(DL:2.0)	--
11	Chloride as Cl	mg/l	IS 3025-Part 32	180	1000
12	Sulphate as SO ₄	mg/l	APHA-23rd Edn-2017	64.0	400

BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by

M. Balaji
M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

K. Kamalanathan
Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****

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TEST REPORT

Sample ID: 2109327	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	Surface Water
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	South Corner	Sample Quantity	2 liters
Latitude	11.186842	Longitude	79.180424

DISCIPLINE		CHEMICAL TESTING							
PRODUCT GROUP		WATER							
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	Surface Water Quality Standards (as per IS: 2296).				
					A	B	C	D	E
1	Taste	--	IS 3025-Part 5	Agreeable	None	--	--	--	--
2	Odour	--	IS 3025-Part 5	Agreeable	Unobj	--	--	--	--
3	Colour	Hazen	IS 3025-Part 4	20.0	10	300	300	--	--
4	pH @ 25°C	--	IS 3025-Part 11	7.30	8.5	8.5	8.5	8.5	8.5
5	Conductivity @ 25°C	uS/cm	IS 3025-Part 14	1330	--	--	--	1000	2250
6	Dissolved Oxygen	mg/l	IS 3025-Part 38	6.5	6	5	4	4	--
7	BOD @27°C for 3 days	mg/l	IS 3025-Part 44	BDL(DL:2.0)	2	3	3	--	--
8	Total Dissolved Solids (TDS)	mg/l	IS 3025-Part 16	720	500	--	1500	--	2100
9	Oil and Grease	mg/l	IS 3025-Part 39	BDL(DL:1.0)	--	--	0.1	0.1	--
10	Mineral Oil	mg/l	IS 3025-Part 39	BDL(DL:1.0)	0.01	--	--	--	--

BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager



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TEST REPORT

Sample ID: 2109327		JOE: 957			Report Date: 05.10.2021				
S.No	PARAMETERS	UNIT	TEST METHOD	RESULTS	Surface Water Quality Standards (as per IS: 2296).				
					A	B	C	D	E
11	Total Hardness as CaCO ₃	mg/l	IS 3025-Part 21	298	300	--	--	--	--
12	Chloride as Cl	mg/l	IS 3025-Part 32	246	250	--	600	--	600
13	Sulfate as SO ₄	mg/l	APHA-23 rd Edn	62.0	400	--	400	--	1000
14	Nitrates as NO ₃	mg/l	IS 3025-Part 34	2.90	20	--	50	--	--
15	Free CO ₂	mg/l	APHA-23 rd Edn	BDL(DL:1.0)	--	--	--	6	--
16	Free Ammonia as N	mg/l	IS 3025-Part 34	0.64	--	--	--	1.2	--
17	Fluorides as F	mg/l	APHA-23 rd Edn	0.39	1.5	1.5	1.5	--	--
18	Calcium as Ca	mg/l	IS 3025-Part 40	64.0	80.10	--	--	--	--
19	Magnesium as Mg	mg/l	IS 3025-Part 46	33.1	24.28	--	--	--	--
20	Copper	mg/l	IS 3025 Part 42	BDL(DL:0.2)	1.5	--	1.5	--	--
21	Iron as Fe	mg/l	IS 3025-Part 53	0.42	0.3	--	50	--	--
22	Manganese as Mn	mg/l	IS 3025-Part 59	BDL(DL:0.5)	0.5	--	--	--	--
23	Boron as B	mg/l	IS 3025-Part 57	BDL(DL:0.1)	--	--	--	--	2
24	Lead as Pb	mg/l	IS 3025 Part 47	BDL(DL:0.1)	0.1	--	0.1	--	--
25	Chromium Cr6+	mg/l	IS 3025-Part 52	BDL(DL:0.1)	0.05	0.05	0.05	--	--
26	Percentage Sodium	%	IS 11624	41.9	--	--	--	--	60
27	Sodium absorption ratio	meq/l	IS 11624	0.42	--	--	--	--	26
28	Total Coliforms	MPN/100ml	IS 1622:1981	110	50	500	5000	--	--

Note: Class A – Drinking water without conventional treatment but after disinfection. Class B – Water for outdoor bathing. Class C – Drinking water with conventional treatment followed by disinfection. Class D – Water for fish culture and wild life propagation. Class E – Water for irrigation, industrial cooling and controlled waste disposal. (Unobj = Unobjectionable) BDL: Below Detectable Limit – DL: Detectable Limit.

Verified by

M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****



LIFE SHELL LABS INDIA PVT. LTD.

(The Complete Environmental Service Provider)

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www.lifeshelllabs.com

NABL Accredited, ISO 9001 : 2015,
OSHAS 18001 : 2007 Certified Company

TEST REPORT

Sample ID: 2109328	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	Surface Water
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	Irumbulikurichi Road	Sample Quantity	2 liters
Latitude	11.184454	Longitude	79.172313

DISCIPLINE		CHEMICAL TESTING							
PRODUCT GROUP		WATER							
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS	Surface Water Quality Standards (as per IS: 2296).				
					A	B	C	D	E
1	Taste	--	IS 3025-Part 5	Agreeable	None	--	--	--	--
2	Odour	--	IS 3025-Part 5	Agreeable	Unobj	--	--	--	--
3	Colour	Hazen	IS 3025-Part 4	10.0	10	300	300	--	--
4	pH @ 25°C	--	IS 3025-Part 11	7.16	8.5	8.5	8.5	8.5	8.5
5	Conductivity @ 25°C	uS/cm	IS 3025-Part 14	1180	--	--	--	1000	2250
6	Dissolved Oxygen	mg/l	IS 3025-Part 38	6.8	6	5	4	4	--
7	BOD @27°C for 3 days	mg/l	IS 3025-Part 44	BDL(DL:2.0)	2	3	3	--	--
8	Total Dissolved Solids (TDS)	mg/l	IS 3025-Part 16	690	500	--	1500	--	2100
9	Oil and Grease	mg/l	IS 3025-Part 39	BDL(DL:1.0)	--	--	0.1	0.1	--
10	Mineral Oil	mg/l	IS 3025-Part 39	BDL(DL:1.0)	0.01	--	--	--	--

BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by

M. BALAJI
Deputy Quality Manager



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K. KAMALANATHAN
Deputy Technical Manager



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TEST REPORT

Sample ID: 2109328		JOE: 957			Report Date: 05.10.2021				
S.No	PARAMETERS	UNIT	TEST METHOD	RESULTS	Surface Water Quality Standards (as per IS: 2296).				
					A	B	C	D	E
11	Total Hardness as CaCO ₃	mg/l	IS 3025-Part 21	240	300	--	--	--	--
12	Chloride as Cl	mg/l	IS 3025-Part 32	202	250	--	600	--	600
13	Sulfate as SO ₄	mg/l	APHA-23 rd Edn	48.0	400	--	400	--	1000
14	Nitrates as NO ₃	mg/l	IS 3025-Part 34	3.60	20	--	50	--	--
15	Free CO ₂	mg/l	APHA-23 rd Edn	BDL(DL:1.0)	--	--	--	6	--
16	Free Ammonia as N	mg/l	IS 3025-Part 34	0.42	--	--	--	1.2	--
17	Fluorides as F	mg/l	APHA-23 rd Edn	0.45	1.5	1.5	1.5	--	--
18	Calcium as Ca	mg/l	IS 3025-Part 40	56.0	80.10	--	--	--	--
19	Magnesium as Mg	mg/l	IS 3025-Part 46	24.0	24.28	--	--	--	--
20	Copper	mg/l	IS 3025 Part 42	BDL(DL:0.2)	1.5	--	1.5	--	--
21	Iron as Fe	mg/l	IS 3025-Part 53	0.36	0.3	--	50	--	--
22	Manganese as Mn	mg/l	IS 3025-Part 59	BDL(DL:0.5)	0.5	--	--	--	--
23	Boron as B	mg/l	IS 3025-Part 57	BDL(DL:0.1)	--	--	--	--	2
24	Lead as Pb	mg/l	IS 3025 Part 47	BDL(DL:0.1)	0.1	--	0.1	--	--
25	Chromium Cr6+	mg/l	IS 3025-Part 52	BDL(DL:0.1)	0.05	0.05	0.05	--	--
26	Percentage Sodium	%	IS 11624	46.2	--	--	--	--	60
27	Sodium absorption ratio	meq/l	IS 11624	2.55	--	--	--	--	26
28	Total Coliforms	MPN/100ml	IS 1622:1981	80	50	500	5000	--	--

Note: Class A – Drinking water without conventional treatment but after disinfection. Class B – Water for outdoor bathing. Class C – Drinking water with conventional treatment followed by disinfection. Class D – Water for fish culture and wild life propagation. Class E – Water for irrigation, industrial cooling and controlled waste disposal. (Unobj = Unobjectionable) BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by
M. Balaji
M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.
K. Kamalanathan
Authorized Signatory
K. KAMALANATHAN
Deputy Technical Manager

*****End of Report*****

Note:1) The results listed herewith are only for the items tested. 2) Endorsement of test item is neither inferred nor implied. 3) The report in full or part shall not be used for any promotional activity or publicity purpose without written consent by us. 4) Samples are not drawn by us unless otherwise mentioned. 5) Unless specifically requested by the customer, the test items will not be retained more than 7 days from the date of issue of the test report. 6) Under no circumstances, lab accepts any liability for loss/damage caused by use or misuse of test report. 7) Liability is limited to proven willful negligence and will in no case be more than the invoiced amount.



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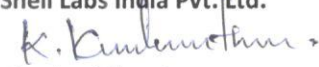
TEST REPORT

Sample ID: 2109329	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	SOIL
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	North East Corner	Sample Quantity	2 kgs
Latitude	11.187800	Longitude	79.174327

DISCIPLINE		CHEMICAL TESTING		
PRODUCT GROUP		POLLUTION & ENVIRONMENT		
S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS
1	pH Value	--	IS 2720:Part 26	8.61
2	Electrical Conductivity	µmhos/cm	IS 14767	180
3	Water Content	%	IS 2720 Part 2	7.2
4	Organic Matter	%	IS 2720:Part 22	2.15
5	Total Soluble Sulphate (as SO4)	%	IS 2720:Part 27	0.017
6	Chloride as Cl	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	22.0
7	Total Kjheldal Nitrogen as N	%	IS 14684	0.024
8	Total Phosphorus as P	%	IS 10158	BDL (DL:0.1)

Verified by

M. BALAJI
 Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

 Authorized Signatory
K. KAMALANATHAN
 Deputy Technical Manager



Certificate No.:TC-7602

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TEST REPORT

Sample ID: 2109329		JOE: 957		Report Date: 05.10.2021
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS
9	Soluble Potassium as K	meq /100g	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	1.02
10	Calcium Carbonate (as CaCO3)	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	38.0
11	Soluble Sodium (as Na)	meq /100g	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	1.76
12	Soluble Calcium (as Ca)	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	10.6
13	Soluble Magnesium (as Mg)	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	5.8
14	Soluble Chromium as Cr	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	BDL (DL:0.05)
15	Soluble Hexavalent chromium Cr6+	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	BDL (DL:0.05)

BDL: Below Detectable Limit; DL: Detectable Limit.

Verified by

M. BALAJI
Deputy Quality Manager



*****End of Report*****

For Life Shell Labs India Pvt. Ltd.

Authorized Signatory

K. KAMALANATHAN

Deputy Technical Manager



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TEST REPORT

Sample ID: 2109330	JOE: 957	Report Date: 05.10.2021	
Customer Name	M/s .Tamil Nadu Cements Corporation Limited		
Address	Ariyalur Works, Ariyalur Cement Factory Post, Ariyalur-621729.		
Date of Sampling	30.09.2021	Sampled by	LSL
Sample Received on	01.10.2021	Sample Description	SOIL
Test Commenced on	01.10.2021	Sampling Procedure	LSL/SOP/CHE/071
Test Completed on	05.10.2021	Sample Condition	Satisfactory
Sampling Location	Anandavadi Village	Sample Quantity	2 kgs
Latitude	11.189491	Longitude	79.181478

DISCIPLINE		CHEMICAL TESTING		
PRODUCT GROUP		POLLUTION & ENVIRONMENT		
S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS
1	pH Value	--	IS 2720:Part 26	8.76
2	Electrical Conductivity	µmhos/cm	IS 14767	224
3	Water Content	%	IS 2720 Part 2	6.60
4	Organic Matter	%	IS 2720:Part 22	2.04
5	Total Soluble Sulphate (as SO4)	%	IS 2720:Part 27	0.015
6	Chloride as Cl	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	16.0
7	Total Kjheldal Nitrogen as N	%	IS 14684	0.028
8	Total Phosphorus as P	%	IS 10158	BDL (DL:0.1)

Verified by

M. Balaji
M. BALAJI
Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

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TEST REPORT

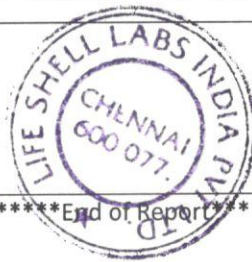
Sample ID: 2109330		JOE: 957		Report Date: 05.10.2021
S. No	PARAMETERS	UNIT	TEST METHOD	RESULTS
9	Soluble Potassium as K	meq /100g	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	1.05
10	Calcium Carbonate (as CaCO ₃)	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	22.0
11	Soluble Sodium (as Na)	meq /100g	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	1.81
12	Soluble Calcium (as Ca)	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	6.8
13	Soluble Magnesium (as Mg)	meq/l	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	4.0
14	Soluble Chromium as Cr	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	BDL (DL:0.05)
15	Soluble Hexavalent chromium Cr6+	%	Method of analysis for soils of arid and semi-arid Regions, FAO 2007	BDL (DL:0.05)

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Verified by

M. BALAJI

Deputy Quality Manager



For Life Shell Labs India Pvt. Ltd.

Authorized Signatory

K. KAMALANATHAN

Deputy Technical Manager

*****End of Report*****