



**NLC India Limited**  
(formerly Neyveli Lignite Corporation Limited)  
**Office of the Chief General Manager,**  
**Environmental Cell/Mine IA**  
**ADMINISTRATIVE OFFICE, MINE-I&IA, NEYVELI-607803.**



Lr. No. 1978/GM/Mine-IA/MoEF/2022-23/1

Date: 12.12.2022

**To**  
**The Director,**  
**Ministry of Environment, Forests & Climate Change,**  
**34, HEPC Building, Nungambakkam,**  
**Chennai- 600 034.**

Sir,


Sub: Mine-IA (7.0 MTPA) – Lignite Mine – Compliance Report No.10 for the Environmental Clearance conditions of MoEF&CC – reg.

Ref: Lr.No.J-11015/02/2012-IA-II(M), dt: 02-09-2015 from MoEF&CC, GOI.

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Please find the enclosed **Compliance Report No.13** of Mine-1A (7.0 MTPA) for the period from **April - 2022 to September - 2022** as per the Environmental Clearance conditions issued by MoEF&CC vide letter cited under reference cited above.

Yours faithfully,  
For NLC India Limited.,

  
**General Manager**  
**Unit Head/Mine-1A**  
महा प्रबंधक / खान-IA  
**General Manager/Mine-1A**  
एनएलसी इंडिया लिमिटेड, नेयवेली.  
**NLC India Ltd., Neyveli.**

Encl: Half Yearly Compliance Report

Copy to: The District Environmental Engineer, TNPCB, Cuddalore.



## **Compliance report for Environmental Clearance**

Name of the Industry: Mine-IA (7.0 MTPA) of NLC India Ltd. Neyveli, Tamil Nadu.  
(Formerly Neyveli Lignite Corporation Ltd.).

Compliance Report- No.13

Compliance Period – From 01.04.2022 to 30.09.2022

Ref: EC Lr.No.J.11015/02/2012-IA-II (M) dated 02.09.2015 from MoEF&CC, GoI.

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### **General details about Mine-IA**

#### **Introduction:**

NLC India Ltd (Formerly Neyveli Lignite Corporation Ltd.) is operating three lignite opencast mines viz Mine-I, Mine-IA and Mine-II & Expansion at Neyveli, Tamil Nadu. The unit Mine-IA of 3.0 MTPA is situated on the Northern part of the Neyveli lignite field, adjacent to and south of Neyveli Township. The mine was commissioned in 2001 with mining of 3.0 MTPA of lignite. The lignite mined is supplied to the private Power Plant (M/s TAQA) nearby for generation of power. The mine is expanded to mining of lignite of 7.0 MTPA to supply lignite to New Neyveli Thermal Power Station at Neyveli.

#### **Area of EC:**

The EC area for 7.0 MTPA is 2005.8 Ha. The Lignite mined out area is 342.52 Ha as on 30-09-2022.

MoEF&CC has issued EC on 02.09.2015 for the expansion area.

#### **Overburden:**

The overburden formation is soft sedimentary formation comprising of sandy clay inter bedded with clay layers having 70 m to 90 m thick.

#### **Lignite:**

The Lignite, being a buried woody matter, enriched with carbon matter due to natural conditions and is being mined out and mainly used for power generation. It occurs as more or less flat seam around 70.0 m below ground level.

#### **Method of Mining:**

The formation is mined using specialized Mining equipment i.e., Bucket wheel excavators, belt conveyors and Spreaders. The overburden excavated is again filled back in the void area of mine. The ground water pumped out for depressurization in the mine is sent to Thermal power generation use. The seepage water from mines is disposed at nearby natural canal for irrigation.

#### **Mineral mined and use:**

The Lignite, being a buried woody matter, got compressed & enriched with carbonaceous material due to natural conditions, is being mined out and is used for power generation. It occurs as more or less a flat seam. Thickness of lignite varies from 8.0 to 26.0 m. The overburden to Lignite ratio in this mine is 1:5.5 to 1:7.0 (Tons: M<sup>3</sup>).The mined out Lignite feeds TAQA, a private power plant and NNTPP (New Neyveli Power Plant).

**Environmental aspects and Pollution Control measures:**

- a) The OB formation excavated is filled back in the void area of mines.
- b) Part of overburden dumped in the dump area of Mine-I is reclaimed and vegetated.
- c) Reclamation and Plantation maintained up to September-2022 is 340.27 Ha and 274.34 Ha respectively.
- d) The ground water is pumped out for depressurization in the mine and sent to Thermal power station required by conserving ground water.
- e) The seepage water and rain water, together called storm water collected in the mine sump is pumped out after settlement of silt in the mine is used for irrigation in the nearby villages. The storm water pumped out is tested for its quality by NLCIL as well as TNPCB and it confirms to the norms fixed by TNPCB.
- f) The dust generated in the mines is effectively controlled by water spraying at the dust emanating sources. The AAQ is monitored by NLCIL, TNPCB and also by lab authorised by MoEF &CC around the mine and the parameters are well within the limits.
- g) The generation of noise from machineries are controlled by suitable noise control measures such as maintenance of equipment, green belt, providing enclosures etc,. The noise level in the ambience of mine environment is monitored and is well within the TNPCB norms.
- h) All the environmental aspects involved in mining activities are monitored as per the schedule and the parameters measured are within the limits prescribed.
- i) 5 nos. of rain water harvesting ponds have been developed and the rain water collected is used for plantation purposes.
- j) Slope stabilisation is continuously carried out by planting suitable tree species.
- k) Due to dense afforestation, about 250 species of birds are noticed in this area.

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**The Compliance Status of the conditions stipulated under EC cited above is furnished below:**

<b>Con. No</b>	<b>Specific Conditions.</b>	<b>Status as on 30.09.2022</b>
i.	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.	The maximum production limit will not exceed 7 MPTA as prescribed in the EC.  Production in 2018-19 is 29.97 LT, 2019-20 is 29.70 LT, 2020-21 is 25.74 LT and 2021-22 is 40.82 LT.
ii.	The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.	As per EC & EIA Mine life is 27 years. Validity up to September 2042.
iii.	Four villages/hamlets on the border have to be relocated.	At present Mine IA is advancing towards western direction, for which land is in NLCIL's possession. Villages/hamlets are not available at present in the advancing direction.
iv.	Mine should be restricted to 500m.	The mining activities carried out are restricted to 500m as per the mining plan approved by Ministry of Coal.
v.	A research study to be undertaken to delineate the recharge zone in this area. Preliminary study is to be taken up to conduct the electrical resistivity survey, possibly with the help of GSI and modelling study may be taken up by IIT Madras.	A research study on Delineation of recharge zone has been carried out by IIT, Chennai for tracing of salt water /fresh water interface position through deep resistivity soundings with the help of GSI and modeling study.  The result indicates that there is no ingress of saline water landwards in confined aquifers.
vi.	Adequate number of observation wells may be made in the eastern boundary of recharge zone and also on the south western part of the study area to monitor the water fluctuations both in upper-confined and lower-confined aquifers. Similarly, more number of wells at closer interval, with the existing GW monitoring system, may be required in the coastal area to delineate the flux.	Additional 14 Nos of observation wells were established during 2017 in the data gap areas identified in Eastern boundary of recharge zone, in the south western part of the study area and coastal area and which are brought under Ground water monitoring network  Wells location plan in <b>Annexure-I</b>

vii.	Detailed study on the estimation of subsidence using remote sensing - SAR interferometry may be taken up to accurately estimate the subsidence due to mining, along with field monitoring. Differential interferometry using SAR data over several time periods may be used to assess the potential of L -band repeat-pass SAR for these applications.	Estimation of subsidence using remote sensing is being carried out by IIT.
viii.	Method may be implemented to prevent the encroachment of seawater in case it is needed at any point of time, if it is predicted that there may be a threat of seawater intrusion in the future years.	Periodic monitoring of water level and water quality are being continued in dug wells and in coastal observation wells (Tube wells). The water levels and quality parameters tested indicate that there is no encroachment of saline water in the coastal zone. The ground water model study has been carried out by IIT, Chennai which reveals that fresh water flow is continuing towards sea.
ix.	A scientific study using Remote sensing techniques on identification of location of potential sites for artificial recharge and also to assess the suitability of rainwater harvesting structures may be taken up.	The scientific study was done by the department of Earth Sciences, Annamalai University in February 2018. Suitable water bodies were identified to develop recharge structures for harvesting rain water.
x.	Field research study may be taken up to understand the hydrology of the back filled soils so that necessary methods for enhancing the water storage and further utilization of available water in these dumping sites may be planned effectively.	The Study to understand the hydrology of the back filled soil has been carried out by Annamalai university in December 2017 and necessary methods for enhancing the water storage and further utilization of available water in these back filled sites has been clearly identified and study completed.
xi.	Mine-1A is relatively small and contiguous with Mine-1 and therefore, an integrated approach should be followed in the mining operations as well as management of environmental impacts due to mining activities.	An integrated approach has been followed. Part of overburden excavated is dumped in the dump yard of Mine-I.
xii.	Proponent will not alter the major channels all around the site.	There are no major channels around the site.
xiii.	Efforts be made to explore the availability of mechanically covered trucks.	The trucks are fully covered with Tarpaulin.

xiv.	All Statutory permissions / MoU from Sate Govt. shall be obtained for transportation of coal by road.	The lignite is moved away from lease hold only after obtaining requisite permission from State Govt as stated.
xv.	Coal transportation in pit by Tippers, Surface to Siding by Tippers and siding to loading by pay loaders into rail wagons.	Part of the mined out Lignite is transported to the pit head power station and Bunker through conveyors. Remaining Lignite in the surface area done by tippers to silos. The rail wagons are loaded through silos.
xvi.	The production shall be within the same Mining Lease area.	The production is within the same Mining Lease area.
xvii.	The OB shall be completely re-handled at the end of the mining.	OB will be completely re-handled at the end of mining
xviii.	Final mine void depth will not be more than 40 m. The void area will be converted into water body. The rest of the area will be back filled up to the ground level and covered with about a meter thick top soil and put to use.	The stipulated methodology will be followed while final closure of mine as per final mine closure plan.
xix.	Garland drains to be provided.	Adequate Garland drains are provided.
xx.	Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine.	No river/nallah is flowing near or adjacent to the mine.
xxi.	The land after mining shall be brought back for agriculture purpose.	The land after mining will be brought back for agriculture purpose. In the existing mined out area: Area reclaimed as on 30.09.2022 is 340.27 Ha
xxii.	Mine water should be treated for discharge in to the lagoon. The quality of lagoon water shall be regularly monitored and mitigation measures taken.	The Mine water is allowed to flow to the lagoons (sumps) for settlement. The clear water alone is pumped out into the drains. The quality of mine water let out from mines is as per norms and is being monitored by in-house lab (CARD) and also at Advanced laboratory and TNPCB. RoA of Lab analysis is attached in <b>Annexure-II.</b>
xxiii.	The CSR cost should be Rs 5/- Per Ton of Coal produced which should be adjusted as per the annual inflation.	NLCIL CSR plan is prepared and implemented. Provisional expenditure during the Year 2021-22 is Rs.40.80 Crs.

xxiv.	Everybody in the core area should be provided with masks for protection against fugitive dust emissions.	All the employees and contract workmen working in core area are provided with dust masks for protection against fugitive dust emissions.
xxv.	Dust masks to be provided to everyone working in the mining area.	Dust masks are provided to everyone working in the mining area. Number of face masks provided is 535 from April'22 to September'22.
xxvi.	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust masks in the core area.	Supervisory staff is made personally responsible for ensuring masks in the core area.
xxvii.	People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.	All the employees including contract workmen are subjected to periodical health check up on occupational diseases including lung diseases periodically through an established system of Periodical Medical Examination (PME) at NLCIL Hospital. For the year 2022-23, up to 30.09.2022 persons examined for PME is 432 and IME is 204.
xxviii	The mining area should be surrounded by green belt having thick closed canopy of the tree cover.	The refilled/backfilled area in the mine is reclaimed and vegetated continuously. Total number of trees/saplings planted as on 30.09.2022 are 1,79,225 no. of trees. The green belt development work is being continued.
xxix.	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.	No river is available nearby mine boundary.

xxx.	<p>There shall be no overflow of OB into the river and into the agricultural fields and massive Plantation of native species shall be taken up in the area between the river and the project.</p>	<p>There is no river close by. The flow of sediments from OB is controlled by plantation in the dump area and by constructing check walls in the water course. Massive tree plantation programmes with native species are taken up continuously on backfilled areas. So far an extent of 274.34 Ha (Up to 30.09.2022) of area in mine dump is vegetated.</p>
xxxii.	<p>OB shall be stacked at two earmarked external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the MoEF &amp; CC and its concerned Regional office on yearly basis.</p>	<p>There is no external OB dumping earmarked for Mine IA. Presently dumping of OB is being carried out in the de-coaled area of Mine I &amp; IA. The Compliance report is submitted to the MoEF &amp; CC, RO, Chennai on half yearly basis.</p>
xxxiii.	<p>Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly de-silted and maintained properly. Garland drains (size gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material</p>	<p>Catch drains are regularly constructed in the dump to cope with the dump advancement and de-silted regularly. The water is utilised for watering the mine area, roads, green belt development, etc The rain water harvesting structures were already constructed in the dump and the work will be continued. At present 6 lakes are available for rain water harvesting covering an area of 48.78 Ha. Garland drains with more than 50% (Length: 6500m, Width: 20mts &amp; depth: 2mts) safety margin over and above the peak rainfall are established and maintained. Sumps are established in the mine with adequate capacity to retain the suspended solids and new sumps will be created as and when mine advances further. At present 6 sumps of total area of 86.90 Ha.</p>

xxxiii.	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Retaining wall and garland drains at the toe of the dumps are provided to arrest siltation.		
xxxiv.	Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	No Crusher is at CHP available in the mines		
xxxv.	Drills shall be wet operated.	The drills are wet operated.		
xxxvi.	The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	Repairing and tarring of roads used for mineral transportation are undertaken regularly. A 3-tier green belt comprising of a mix of native species is developed all along the major approach roads.		
xxxvii.	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	For controlled blasting, delay detonators are used. Blasting is done during day time only. For controlling ground vibration and fly rocks, delay detonators and muffled blasting techniques are used.		
Xxxviii	A Progressive afforestation plan shall be implemented covering an area of 2006 ha at the end of mining, which includes reclaimed External OB dump area (Nil ha), Internal OB dump area (1709.04 ha) and Green belt (91.80 ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue	Plantation is taken up as per the progressive afforestation plan and the area reclaimed and maintained is 340.27 Ha. As on 30.09.2022. The area in which reclamation in the mine dump and compensatory progressive plantation to be made is furnished below:		
			Physical Reclamation in Mine Dump (Ha)	Reclamation with Plantation (Ha)
		Year		
		2022-23	19.5	19.5
		2023-24	19.5	19.5
		2024-25	21.5	21.5
2024-25	21.5	21.5		
2025-26	21.5	21.5		

	plantation along the main approach roads to the mine.	In the township-located outside the lease-planting of native species is being done. Massive plantation is carried out in open spaces in and around the mine and surrounding villages. 3-tier avenue plantation along the main approach roads to the mine is maintained.
xxxix.	There is no external Dump planned for Mine-IA. An estimated total 1193.50 Mm <sup>3</sup> of OB will be generated during the entire life of the mine. Out of which 1193.50 Mm <sup>3</sup> of OB will be dumped in one internal OB Dumps in an earmarked area covering 1709.04ha of land. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self- sustaining and compliance status shall be submitted to MoEF & CC and its Regional Office on yearly basis.	Plantation work is being taken up. Monitoring and management of reclaimed dump sites are being done and compliance status is being submitted to the MoEF & CC, RO, Chennai on half yearly basis.
xl	The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.	The reclamation plan was already prepared and incorporated in the EMP. The land is used in a productive and sustainable manner by cultivation of paddy, vegetables, fruit bearing trees and planting native species etc.
xli	Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.	Compensatory Ecological & Restoration of waste land, other degraded land in and around the township is being done. The refilled area and dump area are reclaimed continuously and vegetated.
xlii	The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.	The excavated OB is dumped only in the void area of the mine synchronous with mine advancement in a phased manner. No extra OB dumping area is required.
xliii	No groundwater shall be used for mining operations.	Groundwater is not used for mining operations.

<p>xliv</p>	<p>Of the total quarry area of 1849.67 ha the backfilled quarry area of 1709.04 ha shall be reclaimed with plantation and a void of 140.63 ha with a depth of 15 m proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.</p>	<p>The stipulated methodology will be followed during final closure of mine by taking in to consideration of the condition stipulated and as per the final mine closure plan approved by MoC.</p> <p>The total Physically reclaimed area since inception is 340.27 Ha. The total biologically reclaimed area since inception is 274.34 Ha. The total number of trees planted was 179225 nos.</p>
<p>xlvi</p>	<p>Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post.-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment, Forests &amp; Climate Change and to the Central Pollution Control Board quarterly within one month of monitoring.</p>	<p>Monthly water level monitoring from dug wells (30 Nos) and peizometers (166 Nos) are being carried out regularly. Water quality is being monitored for quarterly basis and reports are being submitted along with Compliance reports.</p> <p>Details attached in <b>Annexure-III</b>.</p>
<p>xlvi.</p>	<p>The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>	<p>Water requirement of nearby 6 villages are being taken care. Artificial ground water recharge structures have been developed in and around Neyveli in the following locations:</p> <ol style="list-style-type: none"> <li>1.Nadiyapattu,</li> <li>2. Maligampattu</li> <li>3. South of Neyveli Airstrip</li> <li>4. North west of NNTPS</li> <li>5. West of NNTPS- Nainarkuppam lake</li> <li>6. North of TPS-II -Kaikilaikuppam,</li> </ol>
<p>xlvi.</p>	<p>Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.</p>	<p>A modern sewage plant of 30 MLD capacity is under operation. An ETP (Capacity-25KL/day) is provided for the waste water generated from Workshop (Mini Auto service station of Mine 1A).</p>

xlvi.	Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialized agency/institution within the District /State and the results reported to this Ministry and to DGMS.	All the employees including contract workmen are subjected health check up on occupational diseases and hearing impairment and other conditions as per the statutory provisions through periodical medical check-up at IMC, GH of NLCIL. In the year 2022-23 up to 30.09.2022, 618 (IME:204 & PME:432) employees was checked.
xlix.	Land oustees shall be compensated as per the norms laid out R & R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.	The land oustees will be compensated as per the policy applicable, while taking up acquisition.
1.	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF&CC and its concerned Regional office.	Digital processing of all mining lease area using remote sensing technique study once in three years and it is being carried out regularly.
li.	A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental Clearance.	The EC has been granted vide Lr. dated 02.09.2015. Ministry of Coal has approved the Mine Closure Plan vide MoC Lr. dated 16.06.2015. The Mine closure fund is periodically deposited in Escrow Account and the details are submitted to the Coal Controller Kolkata. The copies of the Mining Plan and Mine closure plan have been furnished to MoEF&CC, Integrated Regional Office (SEZ) Chennai vide our letter No. 432.ED/Mines/GM/MP/Mines/2016, dated 08.04.20216.

lii.	The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.	CSR activities are being carried out and it will be continued over the balance life of the mines. Expenditure during the year 2021-22 is Rs.40.80 Crs.
liii.	Corporate Environment Responsibility: <b>a)</b> The Company shall have a well laid down Environment Policy approved by the Board of Directors. <b>b)</b> The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any Infringements / deviation / violation of the environmental or forest norms/conditions. <b>c)</b> The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring Compliance with the environmental clearance conditions shall be furnished. <b>d)</b> To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	<b>a)</b> The Company has a well laid down Environment Policy approved by the Board of Directors. In <b>Annexure-IV</b> <b>b)</b> The policy prescribes practices towards prevention and control of pollution and provide clean environment. The policy is formulated taking in to account of the guidelines issued by MoEF&CC, CPCB and SPCB, notifications etc., <b>c)</b> The hierarchical system of the company to deal with environmental issues and for ensuring compliance with the environmental clearance is furnished. In <b>Annexure-V</b> <b>d)</b> The Corporate Environmental cell, a centralized body at Corporate level, is taking care of monitoring the environmental activities carried out at Unit level and coordinating between units and Top Management. The activities are published in the Annual Report of the Company for the understanding of all stake holders. A portal has been developed at corporate level to monitor the compliance of environment statutory requirements in <b>Annexure-VI</b>
<b>Con No.</b>	<b>B. General Conditions</b>	<b>Status as on 30.09.2022</b>
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forest & Climate Change.	No change in mining technology and scope of working.
ii.	No change in the calendar plan of production for quantum of mineral coal shall be made.	No change in annual calendar plan higher than quantum stipulated in the EC i.e., 7.0 MTPA.

iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM 2.5, SO2 and NOx monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and Environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	Five number of AAQ monitoring stations are established in Core Zone and in Buffer Zone.												
		<table border="1"> <thead> <tr> <th>Core Zones</th> <th>Buffer Zones</th> </tr> </thead> <tbody> <tr> <td>1) Afforestation</td> <td>1)Block-6</td> </tr> <tr> <td>2) Track Shifting</td> <td>2)Block-8</td> </tr> <tr> <td>3) Vanadirayapuram</td> <td>3)Vadakkuthu</td> </tr> <tr> <td>4) Parvathipuram</td> <td>4)Vadalur</td> </tr> <tr> <td>5) Thenkuthu</td> <td>5)Periyakurichi</td> </tr> </tbody> </table>	Core Zones	Buffer Zones	1) Afforestation	1)Block-6	2) Track Shifting	2)Block-8	3) Vanadirayapuram	3)Vadakkuthu	4) Parvathipuram	4)Vadalur	5) Thenkuthu	5)Periyakurichi
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Heavy metal in ambient air is monitored in once in 6 months by in house and IIT Madras. Location Map showing the AAQ monitoring locations in the Buffer Zone of Mine-IA is enclosed in <b>Annexure-VII.</b>														
iv.	Data on ambient air quality (PM10, PM2.5 , SO2 and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.	In core zone 5 numbers of AAQ stations are being monitored every fortnight by in house lab (CARD) accredited with NABL (ISO/IEC:17025:2005) and the analysis reports enclosed in <b>Annexure-VIII</b> Monitoring data of heavy metals enclosed as <b>Annexure-IX.</b> Once in six months AAQ survey is done by TNPCB analysis report is enclosed in <b>Annexure-X.</b> In Buffer zone 13 Number of AAQ stations are being monitored every Six months by Hubert Enviro Care Systems (P) Ltd, Chennai and the analysis reports enclosed in <b>Annexure-XI.</b> The data on AAQ is submitted as stipulated.												
v.	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Workers engaged in blasting and drilling operations, operation of HEMM, etc are provided with ear plugs/muffs. Noise levels monitored by TNPCB and levels are within the limits. The RoA of TNPCB noise is enclosed in <b>Annexure-XII.</b>												
vi.	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	The Work shop (Mini auto service Station) is provided with ETP and the treated water is sent to TNPCB lab every month for analyzing. Oil traps are installed in the ETP. Analysis report enclosed in <b>Annexure-XIII</b>												

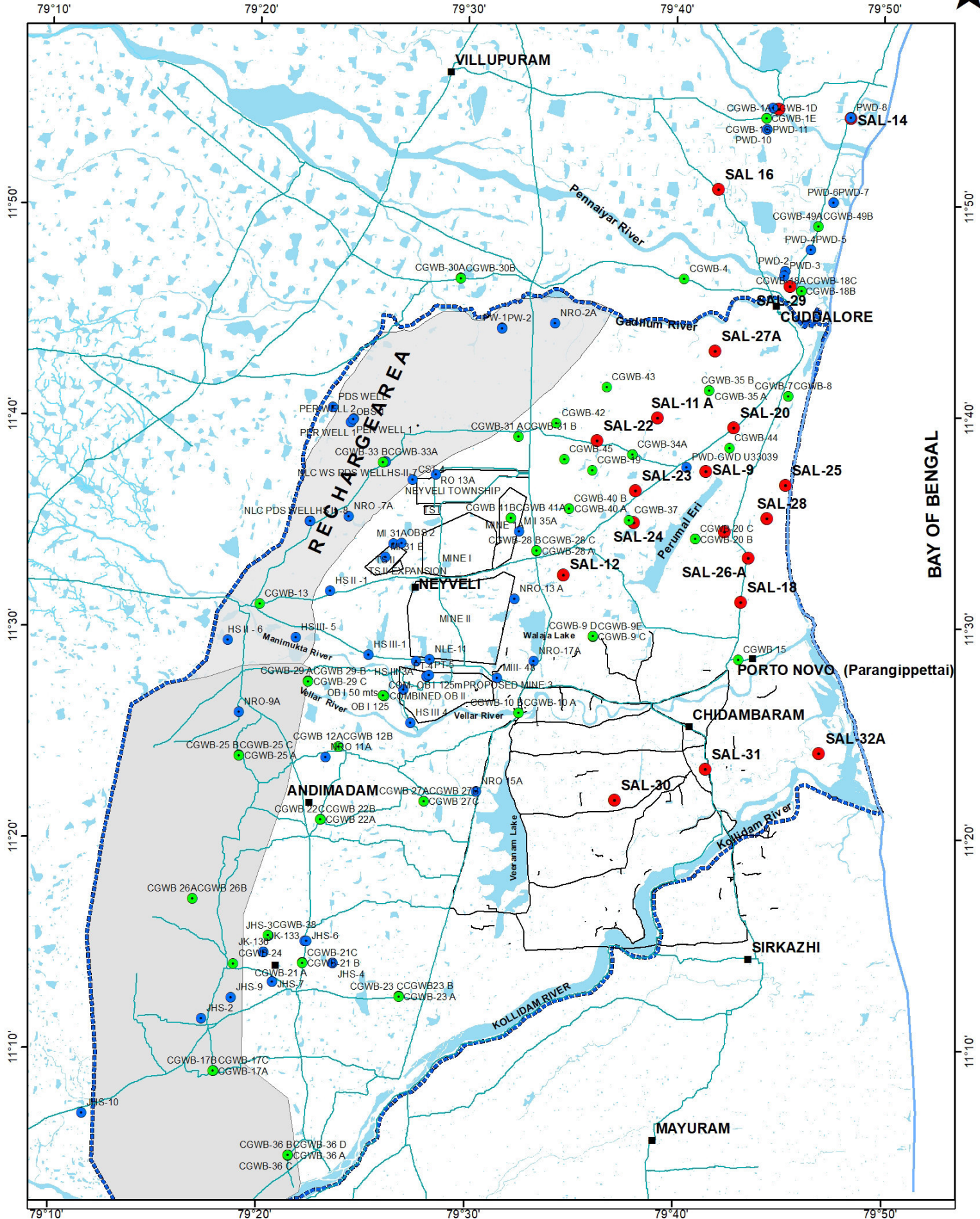
vii.	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Vehicular emission is periodically tested and monitored and corrective measures are taken if required. Tarpaulin is covered in all the Vehicles transporting lignite away from mines and it is optimally loaded.
viii.	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EPA Rules, 1986.	A in-house lab (CARD) accredited with NABL (ISO/IEC:17025:2005) with adequate number of pollution monitoring devices is available at NLCIL. The monitoring also done by TNPCB. Air Monitoring is being done by MoEF&CC authorized lab (IIT-M)
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Personnel, working in dusty areas are provided with protective respiratory devices. No of face masks provided is 535 nos up to 30.09.2022 in 2022-23. Training is given to the employees on safety and health aspects.
x.	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	The Occupational Health surveillance programme is being undertaken through periodical medical examination (PME) and initial medical exam (IME) at NLCIL General Hospital. The outcome of the results are scrutinised and corrective measures are taken up. Records are maintained at GH, NLCIL. In the year 2022-23 up to 30.09.2022, 618 (IME:204 & PME:432) employees was checked.
xi.	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	Environmental cell for Mine-1A is established under the guidance of Unit head and reporting to the Owner of the mines (Director Mines). At Corporate level, a Corporate Environmental cell is functioning under Board level Executive, Director (Planning & Projects) who is reviewing the environmental control activities.
xii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	The funds earmarked for environmental protection measures are kept in separate account and are not diverted for other purposes. Year-wise expenditure is reported to MoEF&CC and its Regional Office.

xiii.	<p>The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the Ministry of Environment, Forests &amp; Climate Change at <a href="http://envfor.nic.in">http://envfor.nic.in</a>.</p>	<p>The advertisements were given in two local news papers in English (Hindu) and in Tamil (Thinamani) on 8th Sep' 2015.</p>
xiv	<p>A copy of Environment Clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.</p>	<p>A Copy of the clearance is marked to The District Collector, Cuddalore. A copy of the EC is displayed on NLC India website.</p>
xv.	<p>A copy of the Environmental Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.</p>	<p>The copy of the EC marked to State Pollution Control Board and to the District Collector, Cuddalore.</p>
xvi.	<p>The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM10 PM2.5, SO2, and NOx (ambient)</p>	<p>The EC was uploaded in the company's website (<a href="http://www.nlcindia.in">www.nlcindia.in</a>), The monitoring data displayed at the entrance of project premises such as Corporate Office, Mines Office and on company website.</p>

	and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	
xvii.	The project proponent shall submit Half Yearly Compliance Reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of this Ministry, respective Zonal Offices of CPCB and the SPCB.	Half Yearly Compliance Reports are regularly submitted to the respective Regional Office of this Ministry, respective Zonal Offices of CPCB and the SPCB.
xviii.	The Regional office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The project authorities shall extend full co-operation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	The project authorities will extend full co-operation to the Regional office during monitoring compliance of the stipulated conditions.
xix.	The Environmental Statement for each financial year ending 31 March in Form-V is mandated to be submitted by the project proponent of the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.	Environmental Statement for each financial year ending 31 March in Form-V is being submitted to State Pollution Control Board and Respective Regional offices of MoEF&CC by email.

# LOCATION MAP OF THE TUBE WELLS IN NEYVELI HYDROLOGICAL BASIN, CUDDALORE & ARRIYALUR DISTRICT, TAMILNADU

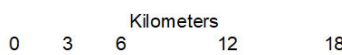
Annexure-I



### Legend

- Wells drilled by CGWB
- NLC Observation wells
- SAL wells for Saline water intrusion studies

### SCALE



**NLC INDIA LTD., NEYVELI  
REGIONAL GEOLOGY DIVISION**



**एनएलसी इंडिया लिमिटेड**  
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)  
नेयवेली - 607807  
**NLC INDIA LIMITED**  
**CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)**  
**NEYVELI – 607 807**

Annexure-II



कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10806/22-23 Dt: 18 Aug 2022

**परीक्षण परिणाम/ TEST RESULT**

<b>ग्राहक / Customer :</b> <b>M/s.ACM/GEO/M-IA</b>	<b>रिपोर्ट सं./दिनांक / Report No / Date</b>	TR/1048/22-23 Dt-14 Sep 2022
	<b>उपभोक्ता सं./ दिनांक / Customer Ref. / Date</b>	AS-II /TNPCB Dt-18 Aug 2022
	<b>नमूने का विवरण/Description of the Sample</b>	WATER
	<b>नमूनों की संख्या/ No. of Samples</b>	1
	<b>परीक्षण की तिथि / Date of Testing</b>	18 Aug 2022 - 14 Sep 2022
	<b>नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures &amp; Done by</b>	
	<b>कोई विशिष्ट जानकारी / Any Specific Information</b>	

**नमूने का ब्यौरा Sample particulars : AS-11**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	pH @ 25 C (--)	IS-3025 Part No.11	6.76	5.5 TO 9.0
2	Calcium as Ca (mg/l)	IS-3025 Part No.40/ 3120 B APHA 21ST EDITION	43.2	-
3	Magnesium as Mg (mg/l)	3500-Mg B APHA 21ST EDITION	16.5	-
4	Sodium as Na (mg/l)	IS-3025 Part No.45/ 3120 B APHA 21ST EDITION	61	-

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	ACCEPTABLE RANGE AS PER TNPCB NORMS
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नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

Note : This result relates to the particular sample tested. The results apply to the sample as received. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated



Annexure-II

एनएलसी इंडिया लिमिटेड  
अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)  
नेयवेली - 607807  
NLC INDIA LIMITED  
CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)  
NEYVELI – 607 807



रिपोर्ट सं./दिनांक / Report No / Date TR/1048/22-23 Dt-14 Sep 2022

परीक्षण परिणाम का अंत/ End of the test result

1कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED

A. Francis Xavier  
DCM/Sci/CARD

S.Prabakaran  
ACM/Sci/CARD

द्वारा सत्यापित किया गया / Verified By

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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रिपोर्ट सं./दिनांक / Report No / Date TR/1048/22-23 Dt-14 Sep 2022

नमूने का ब्यौरा Sample particulars : AS-11

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Colour in Hazen (--)	--	-	-
2	Temperature (--)	--	30	40
3	Particle size of total suspended solids		Passes 850 micron IS sieve	Shall Passes 850 micron IS sieve
4	Total solids* (mg/l)	IS 3025 Part No.15	337	-
5	Dissolved solids (mg/l)	IS 3025 Part No.16	323	2100
6	Suspended solids (mg/l)	IS 3025 Part No.17	14	100
7	Dissolved oxygen (mg/l)		6.65	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		8	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	111.1	250
10	Oil & Grease (mg/l)		1	10
11	Total nitrogen as N (mg/l)		0.56	-
12	Ammoniacal nitrogen as N (mg/l)		NIL	50
13	Organic Nitrogen as N (mg/l)		0.56	-
14	Free Ammonia as NH <sub>3</sub> (mg/l)		NIL	5.0
15	Phenolic compounds (mg/l)		NIL	1.0
16	Sulphides as S (mg/l)		0.30	2.0
17	Sulphates as SO <sub>4</sub> (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	119.3	1000
18	Total residual chlorine (mg/l)		NIL	1.00
19	Flourides (mg/l)	4110 B APHA 21ST EDITION	0.18	2.00

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अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)  
नेयवेली - 607807  
**NLC INDIA LIMITED**  
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**NEYVELI – 607 807**

Annexure-II

रिपोर्ट सं./दिनांक / Report No / Date TR/1048/22-23 Dt-14 Sep 2022

20	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	29	1000
21	Potassium as K (mg/l)		3.88	-
22	Percent sodium as Na (mg/l)		42.3	-
23	Residual sodium carbonate (mg/l)		-	-
24	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.038	2.00
25	Barium as Ba (mg/l)	3120 B APHA 21ST EDITION	-	-
26	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2.00
27	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.008	0.10
28	Hexavalent chromium as Cr (mg/l)		0.01	0.10
29	Mercury as Hg (mg/l)	3120B APHA 21st Edition	0.002	0.01
30	Nickel as Ni (mg/l)	3120 B APHA 21ST EDITION	0.01	3.00
31	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	-	0.05
32	Silver Ag (mg/l)	3120 B APHA 21ST EDITION	-	-
33	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.021	1.00
34	Phosphates as P (mg/l)	4110 B APHA 21ST EDITION	2.26	5.0

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Annexure-II

रिपोर्ट सं./दिनांक / Report No / Date TR/1048/22-23 Dt-14 Sep 2022

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	ACCEPTABLE RANGE AS PER TNPCB NORMS
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परीक्षण परिणाम का अंत/ End of the test result

1कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED

A. Francis Xavier  
DCM/Sci/CARD

S. Prabakaran  
ACM/Sci/CARD

द्वारा सत्यापित किया गया / Verified By

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम ब्यौरेवार प्रस्तुत नमूनों के परीक्षण से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण न हो, रिपोर्ट को दोबारा नहीं दिखाया जाएगा।

नमूने का विवरण उपभोक्ता द्वारा दिया गया है। जब तक अन्यथा न कहा गया हो तब तक नमूनों का आहरण हमारे द्वारा नहीं किया जाता है। नमूना विवरण ग्राहक द्वारा दिया गया है। नमूने हमारे द्वारा तैयार नहीं किये जाते हैं जब तक कि अन्यथा नहीं कहा जाता है। # चिह्नित आइटम हमारे एनएवीएल क्षेत्र में नहीं है।

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CARD/QF/5.10/02-Rev,Dt.22.12.15

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### Monitoring of Water Table

Sl.No	Well No.	Locations	DTW at MP May-2022	DTW at MP Aug-2022
1	D-01	CUDDALORE	5.60	4.30
2	D-02	PALAKOLLAI	Dry	Dry
3	D-03	SATTIPATTU	15.00	Dry
4	D-04	NADUVEERAPATTU	10.20	10.40
5	D-05	MARIAMMANKOVIL	3.60	3.50
6	D-06	RAGHAVENDRA KOVIL	12.00	12.10
7	D-07	VADAKUTHU	10.50	8.90
8	D-08	KULLANCHAVADI	4.90	4.20
9	D-09	RAMANATHANKUPPAM	1.60	0.60
10	D-10	VIRDHACHALAM	3.00	4.00
11	D-11	VADALUR SABAI	4.40	4.00
12	D-12A	VADALUR SANDAI	3.80	4.25
13	D-13	KARUNKUZHAI	1.90	1.95
14	D-14	MEENASHIPETTAI	8.50	6.90
15	D-15	VILLIYANALLUR	1.80	2.70
16	D-16A	VEPANKURICHI	1.40	2.30
17	D-17A	T.PALAYAM	1.60	1.00
18	D-18A	KUNAMKURICHI	1.55	2.30
19	D-19	SRIMUSHNAM	3.25	2.90
20	D-20	KAVARAPALAYAM	6.30	2.75
21	D-21	KUZHAI	6.20	3.00
22	D-22	KONDASAMUDRAM	-	-
23	D-23	SOLATHARAM	2.10	1.20
24	D-24	CHIDAMBARAM	4.30	4.60
25	D-25	JAYAMKONDAM	3.40	2.05
26	D-26	GANGAI KONDACHOLAPURAM	3.00	5.40
27	D-28	PUDUKOORIPETTAI	10.90	11.30
28	D-29	VEERASINGAKUPPAM	5.20	6.10
29	D-30	CHATHRAM X ROAD	8.05	8.25
30	D-31	SILAMBINATHANPETTAI	8.30	8.35

MP\* - Measuring point

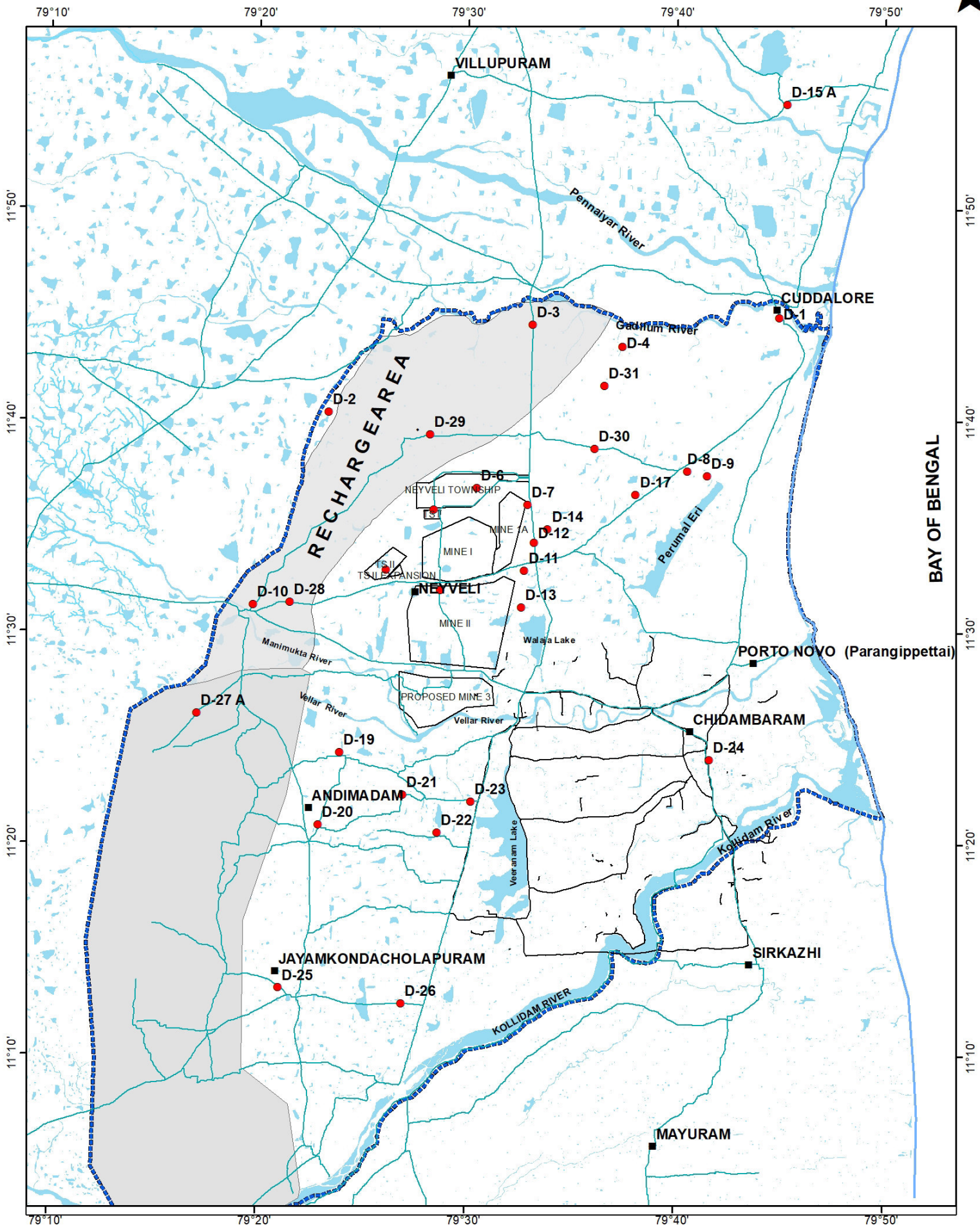
DTW\* - Depth to water (in meters)

**ANALYTICAL RESULTS OF WATER SAMPLES (DUG WELLS) CUDDALORE & ARIYALUR DISTRICT, TAMIL NADU  
(Pre Monsoon June-2022)**

Sl. No.	Parameters												BIS Permissible limit
		D-01	D-03	D-04	D-05	D-06	D-07	D-08	D-09	D-11	D-13	D-14	
1	Calcium as Ca	44	12	28	72	11.2	20	80	35.2	76	64	68	200
2	Magnesium as Mg	36.5	9.7	12.2	17	2.4	3.4	17	10.7	12.15	21.9	43.7	50
3	Sodium as Na	152	13.3	11.3	24	9.3	6.6	104	52.5	41.02	88	76	-
4	Iron & Aluminium oxide as R <sub>2</sub> O <sub>3</sub>	3.6	4	4.4	4.4	4	3.6	6.4	4	4	5.2	4.8	
5	Iron as Fe	0.2	0.2	0.1	0.5	0.2	0.2	0.2	0.3	0.4	0.4	0.5	1.0
6	Silica as SiO <sub>2</sub>	46.8	47.6	46.8	49.6	47.6	46.8	48.4	46.8	50	49	47.2	
7	Chloride as Cl <sup>-</sup>	189	20.6	46	55	11.4	16	102.8	78.2	50	99	144	1000
8	Sulphate as SO <sub>4</sub> <sup>--</sup>	101.8	23	36.3	166.2	3	3	48	10.6	176.2	105	72	400
9	Free CO <sub>2</sub>	0	10	12	21.2	22.4	25.2	12	0	34.4	20.8	0	
10	Total Solids	671	100	181	412	61	81	547	258	428	523	582	2000
11	Dissolved Solids	663	88	169	398	52	73	533	244	415	507	567	
12	Suspended Solids	8	12	12	14	9	8	14	14	13	16	15	
13	Total Alkalinity	231	30	34	64	27	64	305	120	86	208	258	
14	Bicarbonate Alkalinity as CaCO <sub>3</sub>	188	30	34	64	27	64	305	86	86	208	215	600
15	Carbonate Alkalinity as CaCO <sub>3</sub>	43	0	0	0	0	0	0	34	0	0	43	
16	Hydroxide Alkalinity as CaCO <sub>3</sub>	0	0	0	0	0	0	0	0	0	0	0	
17	Total Hardness as CaCO <sub>3</sub>	260	70	120	250	38	64	270	132	240	250	350	600
18	Temp.Hardness as CaCO <sub>3</sub>	231	30	34	64	27	64	270	120	86	208	258	
19	Permanent Hardness as CaCO <sub>3</sub>	29	40	86	186	11	0	0	12	154	42	92	
20	Conductivity in micromhos @ 25 <sup>0</sup> C	1105	147	282	664	86	121	889	406	691	846	946	
21	pH @ room temperature	7.41	6.9	6.84	7.05	6.9	6.65	7.5	8.43	6.85	7.49	8.4	6.5-8.5
22	Temperature	29	30	30	30	30	30	30	30	30	30	30	
23	Dissolved Oxygen	5.85	6.32	6.12	6.28	6.18	6.1	6.12	6.16	6.08	6.21	6.18	
24	Flouride as F	0.3	0.16	0.18	0.2	0.21	0.24	0.24	0.2	0.2	0.22	0.24	1.5
25	Nitrate as NO <sub>3</sub>	0.51	18	23.59	1.76	15.57	2.12	24	10.75	3.65	6.98	1.61	100
26	Copper as Cu	BDL	0.009	0.012	BDL	BDL	BDL	0.024	BDL	BDL	BDL	BDL	1.5
27	Manganese as Mn	0.054	0.021	0.023	0.09	0.068	0.074	0.08	0.064	0.08	0.098	0.078	0.3
28	Zinc as Zn	0.062	0.217	0.224	0.064	0.062	0.052	0.062	0.06	0.054	0.062	0.056	15
29	Pottassium as K	0.12	1.11	1.51	0.08	0.1	0.12	5.8	4.2	0.04	6.78	7	
30	Depth to water Level (in m)	5.60	10.20	3.60	12.00	10.50	4.90	0.60	3.00	3.80	1.90	8.50	

**ANALYTICAL RESULTS OF WATER SAMPLES (DUG WELLS) CUDDALORE & ARIYALUR DISTRICT, TAMIL NADU  
(Pre Monsoon June-2022)**

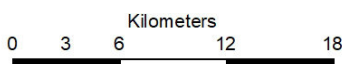
Sl. No.	Parameters	Location Code										BIS Permissible limit
		D-15	D-16A	D-17	D-18A	D-24	D-25	D-28	D-29	D-30	D-31	
1	Calcium as Ca	56	104	76	120	128	88	96	20.8	24	4.8	200
2	Magnesium as Mg	31.6	29.2	19.4	26.7	43.5	12.2	19.4	9.7	9.7	2.4	50
3	Sodium as Na	74.2	90	72	131.5	283	62	93	32	22	17	-
4	Iron & Aluminium oxide as R <sub>2</sub> O <sub>3</sub>	4.8	4.8	7.6	4.8	8	4.4	5.6	4	4.4	4.4	
5	Iron as Fe	0.6	0.4	0.2	0.1	0.8	0.2	0.3	0.3	0.3	0.2	1.0
6	Silica as SiO <sub>2</sub>	49	48.8	48.8	47.6	50.4	50.8	51.2	47.6	47.2	46.4	
7	Chloride as Cl <sup>-</sup>	139	108	102.8	123.4	380	80	108	45.2	46	21	1000
8	Sulphate as SO <sub>4</sub> <sup>2-</sup>	70	150	52.5	262	46.9	32.6	123.2	30	29	21.4	400
9	Free CO <sub>2</sub>	0	20	38	0	0	39	36	8	14	7.6	
10	Total Solids	499	649	462	793	1255	438	615	210	157	52	2000
11	Dissolved Solids	487	636	447	778	1240	426	600	197	148	44	
12	Suspended Solids	12	13	15	15	15	12	15	13	9	8	
13	Total Alkalinity	163	290	247	258	632	263	252	65	56	11	
14	Bicarbonate Alkalinity as CaCO <sub>3</sub>	129	290	247	215	512	263	252	65	56	11	600
15	Carbonate Alkalinity as CaCO <sub>3</sub>	34	0	0	43	120	0	0	0	0	0	
16	Hydroxide Alkalinity as CaCO <sub>3</sub>	0	0	0	0	0	0	0	0	0	0	
17	Total Hardness as CaCO <sub>3</sub>	270	380	270	410	540	270	320	92	100	22	600
18	Temp.Hardness as CaCO <sub>3</sub>	163	290	247	258	540	263	252	65	56	11	
19	Permanent Hardness as CaCO <sub>3</sub>	107	90	23	152	0	7	68	27	44	11	
20	Conductivity in micromhos @ 25 <sup>o</sup> C	812	1060	745	1298	2067	710	1000	328	247	126	
21	pH @ room temperature	8.2	8.13	7.34	8.4	8.29	7.09	6.98	7.38	6.79	6.97	6.5-8.5
22	Temperature	30	30	30	30	30	29	29	30	30	30	
23	Dissolved Oxygen	6.32	6.21	6.04	6.14	6.32	4.92	4.85	6.56	6.28	6.02	
24	Flouride as F	0.21	0.24	0.18	0.22	0.02	0.2	0.22	0.18	0.22	0.18	1.5
25	Nitrate as NO <sub>3</sub>	27.96	4.48	13	1.63	12	1.58	24.6	10.75	17.9	11.15	100
26	Copper as Cu	BDL	BDL	BDL	BDL	BDL	0.064	0.062	BDL	0.016	0.012	1.5
27	Manganese as Mn	0.98	0.078	0.066	0.066	0.094	0.025	0.028	0.068	0.021	0.022	0.3
28	Zinc as Zn	0.07	0.066	0.056	0.061	0.068	0.412	0.512	0.061	0.232	0.224	15
29	Pottassium as K	6.2	8.8	8.8	5.23	40	6.14	4	1.2	1.76	0.56	
30	Depth to water Level (in m)	1.80	1.40	1.00	1.55	4.30	3.40	10.90	5.20	8.05	8.30	



**Legend**

- DUG WELLS

**SCALE**



**NLC INDIA LTD., NEYVELI  
REGIONAL GEOLOGY DIVISION  
Location Plan of Dug Wells**

MONITORING PIEZOMETER WELLS				
SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
1	CGWB-17A	T Cholankurichi-OW-I	65.28	70.70
2	CGWB-17B	T Cholankurichi-OW-II	24.70	24.5
3	CGWB-24	Elaiyur- Kandiyankollai - N	63.75	64.20
4	CGWB-24A	Elaiyur- Kandiyankollai - S	66.10	67.50
5	CGWB-24B	Elaiyur- Kandiyankollai-EW	66.68	67.85
6	CGWB-23A	Gangaikonda cholapuram EW	Box fixed	Box fixed
7	CGWB-23B	Gangaikonda cholapuram-OW-I	Box fixed	Box fixed
8	CGWB-23C	Gangaikonda cholapuram-OW-II	Box fixed	Box fixed
9	CGWB-33A	Irrupu-N	52.70	52.80
10	CGWB-33B	Irrupu-S	27.30	39.00
11	CGWB-36A	Karaikurichi-Exploratory	4.80	5.07
12	CGWB-36B	Karaikurichi-M	4.72	4.95
13	CGWB-36C	Karaikurichi-W	4.75	5.08
14	CGWB-36D	Karaikurichi-House	4.92	5.17
15	CGWB-34A	Kattiyankuppam-N-EW-2	Box fixed	Box fixed
16	CGWB-34B	Kattiyankuppam-M-EW-1	63.75	71.10
17	CGWB-34-C	Kattiyankuppam-S-Ew	Box fixed	Box fixed
18	CGWB-22B	Kavarapalayam-Ow-I	Box fixed	Box fixed
19	CGWB-22C	Kavarapalayam-Ow-II	Box fixed	Box fixed
20	CGWB-22A	Kavarapalayam EW	88.70	88.90
21	CGWB-29A	Keeranur-EW	52.75	51.50
22	CGWB-29B	Keeranur-OW-I	43.62	41.75
23	CGWB-29C	Keeranur-OW-II	Box fixed	Box fixed
24	CGWB-49A	Kirumbakkam- East	5.55	5.20
25	CGWB-49B	Kirumbakkam-West	7.20	6.90
26	CGWB-44	Kothandaramapuram	Box fixed	Box fixed
27	CGWB-7	Kudikadu-east	19.60	20.70
28	CGWB-8	Kudikadu-west	5.26	6.40
29	CGWB-26B	Kovagam north	67.25	67.30
30	CGWB-21B	Mahimaipuram-Ex	66.00	69.25
31	CGWB-21C	Mahimaipuram-OW-II	Box fixed	Box fixed
32	CGWB-1A	Mangalm-EW	22.40	21.60
33	CGWB-1D	Mangalm-Pz-IV	23.60	23.90
34	CGWB-1E	Mangalm-Pz-III	24.70	24.70
35	CGWB-1F	Mangalm-Pz-II	19.60	19.30
36	CGWB-1G	Mangalm-Pz-I	20.40	19.90
37	CGWB-18A	Manjakuppam Middle	18.20	17.75
38	CGWB-18B	Manjakuppam west	17.90	14.50
39	CGWB-18C	Manjakuppam east	14.50	17.70
40	CGWB-31A	Marungur-East	Box fixed	Box fixed
41	CGWB-31B	Marungur-West	107.15	107.10
42	CGWB-9A	Maruthur pumpwell	52.00	51.95
43	CGWB-9B	Maruthur-Piezometer-I	Box fixed	Box fixed
44	CGWB-9E	Maruthur-Piezometer-IV	Box fixed	Box fixed
45	CGWB-11	Melkudirrupu	78.78	78.75
46	CGWB	Melur-UC2	49.40	69.60

SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
47	CGWB	Melur-LC-3	40.70	41.60
48	CGWB	Melur-SC	38.80	51.00
49	CGWB-4	Nellikuppam	24.20	23.90
50	CGWB-25A	Olaiyur-II	Box fixed	Box fixed
51	CGWB-25B	Olaiyur-I	Box fixed	Box fixed
52	CGWB-25C	Olaiyur-EW	Box fixed	Box fixed
53	CGWB-40A	Pacharapalayam-E	Box fixed	Box fixed
54	CGWB-40B	Pacharapalayam-W	75.56	75.15
55	CGWB-16A	Padanilai OBS	31.50	38.10
56	CGWB-16B	Padanilai-Pw	56.00	61.80
57	CGWB-27A	Palayamkottai-Ow-I M	72.80	72.90
58	CGWB27B	Palayamkottai-EW	Box fixed	Box fixed
59	CGWB-27C	Palayamkottai-Ow-II	76.80	76.70
60	CGWB-15A	Parangipettai-West	25.05	29.30
61	CGWB-32A	Parathur-N	Box fixed	Box fixed
62	CGWB-32B	Parathur-M	Box fixed	Box fixed
63	CGWB-32C	Parathur-S	Box fixed	Box fixed
64	CGWB-47A	Periyakarukai-OW-I	71.60	73.30
65	CGWB-47B	Periyakarukai-OW-II	71.80	73.50
66	CGWB-35A	Ramapuram-N	41.84	42.00
67	CGWB-35B	Ramapuram-S	Box fixed	Box fixed
68	CGWB-30A	Semakottai-N	47.10	25.70
69	CGWB-30B	Semakottai-S	45.00	24.50
70	CGWB-10A	Sethiyathope-E	58.30	58.90
71	CGWB-10B	Sethiyathope-W	31.50	31.65
72	CGWB-43A	Silambinathanpettai-North	Box fixed	Box fixed
73	CGWB-43B	Silambinathanpettai-South	64.40	64.95
74	CGWB-42	Siruthondamadevi	Box fixed	Box fixed
75	CGWB-12B	Srimushnam-East	Box fixed	Box fixed
76	CGWB-20A	Thirtanagiri-North	35.85	40.65
77	CGWB-20B	Thirtanagiri-Middle	22.85	24.50
78	CGWB-20C	Thirtanagiri-South	Box fixed	Box fixed
79	CGWB-37	Thiyalkunampattinam	Box fixed	Box fixed
80	CGWB-28A	Vadalar Uzhavar sandai-E	15.46	24.40
81	CGWB-28B	Uzhavar sandai-M	Box fixed	Box fixed
82	CGWB-28C	Uzhavar sandai-W	16.95	25.50
83	CGWB-41A	Vanathirayapurm- East	25.10	27.35
84	CGWB-41B	Vanathirayapurm-West	Box fixed	Box fixed
85	CGWB-45	Vegakollai	65.00	66.15
86	CGWB-19	Vengatanpettai	62.68	59.15
87	CGWB-13	Virdhachalam	49.90	52.40
88	SAL-8C	Mettupalayam	17.55	22.20
89	SAL-9	Ramanathankuppam	42.47	44.40
90	SAL-11A	Kattusagipuliyur	55.28	56.55
91	SAL-11B	Kattusagipuliyur	Box fixed	Box fixed
92	SAL-12	Rajakuppam	22.06	25.60
93	SAL-15	Villianur	19.30	19.60
94	SAL-16	Thukkanambakkam	27.90	28.80

SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
95	SAL-20	Thondamanatham	31.80	30.50
96	SAL-23	T.Palayam	29.00	32.00
97	SAL-24	Thiyalkunampatinam	47.05	46.10
98	SAL-25	Trichopuram	20.50	21.80
99	SAL-26A	Periyapattu-I	15.50	4.00
100	SAL-26B	Periyapattu-II	4.00	4.30
101	SAL-27A	S.Pudur	42.40	42.30
102	SAL-28	Poochimedu	13.85	14.50
103	SAL-29	Cuddalore-Agri	17.90	12.50
104	SAL-30	Kodialalam	36.40	36.90
105	SAL-31	Chidambaram	41.00	42.50
106	SAL-32A	Pichavaram-N	6.00	4.90
107	SAL-32B	Pichavaram-S	5.00	4.80
108	SV-31A	Ambujavallipettai	61.10	53.45
109	NRO-2A	Sattipattu	52.70	53.25
110	NRO-7A	Veeraredikuppam	106.70	106.70
111	NRO-9A	TV.Puthur	28.30	31.55
112	NRO/11A	Reddipalayam	5.40	-
113	NRO-15A	Solatharam	25.45	24.50
114	NRO-18	Manakollai	29.80	31.00
115	NRO-19	Thoppaiyakulam-Confined	44.20	44.50
116	NRO-19A	Thoppaiyakulam-SC	31.25	32.40
117	NRO-21	Silambur	78.13	78.80
118	NRO-22	Periyapurangani	88.10	87.80
119	MI/31A	TS-II Out side	Dry	Dry
120	MI-31B	TS-II-Notrh east- Inside	98.00	97.65
121	MI-35A	Vanathirayapuram	92.74	93.10
122	RO/13A	Block-7	108.25	108.60
123	Block-24	Near 8 Road	91.20	94.35
124	Block-16	Horticulture	90.00	90.30
125	HS-II/6	Alichikudi	25.4	22.30
126	HS-II/7	Irrupu	117.75	117.85
127	HS-II/8	Kotteri	52.60	53.50
128	HS-II/8A	Kotteri	52.70	53.55
129	HS-III/1	Kammapuram	66.00	61.40
130	HS-III/5	Sottavanam	52.50	50.90
131	CST-2	Maligampattu	78.10	77.50
132	CST-4	Block-14	112.00	112.10
133	Xo-34A	Block-3	100.48	100.60
134	JK-133	Kallathur(South)	63.54	65.65
135	JK-136	Pudukudi	64.45	66.95
136	JHS-1	Irumbulikurichi	49.60	50.00
137	JHS-2	Udayarpalayam	75.53	75.95
138	JHS-3	Melur LC pump well	63.54	41.60
139	JHS-5	Vizhapallam	51.20	61.95
140	JHS-6	Kallathur	-	47.00
141	JHS-8	Senguntapuram	82.10	87.85
142	JHS-10	Vilangudi	49.60	48.75
143	JHS-11	Pudukudi	54.00	58.40
144	PWD-4	Manapattu North	-	-

SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
145	PWD-5	Manapattu south	Box fixed	Box fixed
146	PWD-6	Reddichavadi	Box fixed	Box fixed
147	PWD-6A	Reddichavadi	-	-
148	PWD-8	Murugampakkam-W	14.70	15.40
149	PWD-8A	Murugampakkam-E	3.20	3.40
150	PWD-9	Ariyanpalayam(Madagadipattu)	18.40	19.50
151	PWD-10	Mangalm-west	-	-
152	PWD-11	Mangalm-East	-	-
153	OB-I/50	Devangudi	-	10.45
154	PZ-I/125	Devangudi	-	13.8
155	Combined	Devangudi	-	59.75
156	PZ-I/125	Perumal Eri	34.70	37.00
157	OBS-3	Mine-II	82.25	-
158	OBSE-3	Mine-II	74.45	71.70
159	OBSE-1	Mine-II	71.20	-
160	TS-I Exp	TS-I Exprn	111.7	-
161	OBSE-9	Mine-II	76.9	77.50

MP\* - Measuring Point  
DTW\*-Depth to water (in meters)

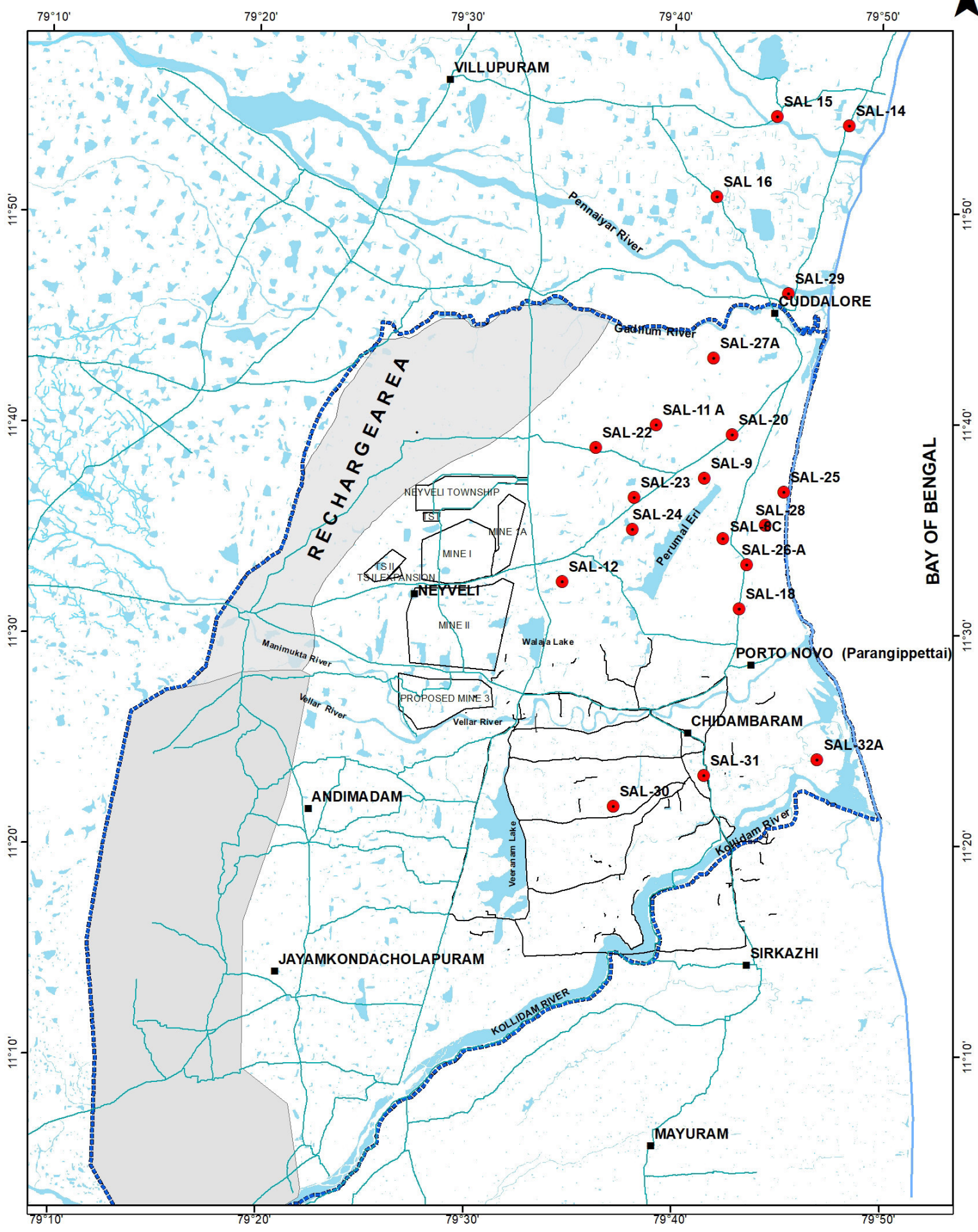
**ANALYTICAL RESULTS OF WATER SAMPLES (TUBE WELLS) COLLECTED FROM COASTAL AREA,  
CUDDALORE DISTRICT, TAMIL NADU (Pre Monsoon June-2022)**

Sl. No.	Parameters	Metupalayam	Ramanathan kuppam	Kattusagi puliyur	Raja Kuppam	Madana gopala	T.Palayam	Thaiyal kunam	BIS-Per misible limit
		SAL-8C	SAL-9	SAL-11A	SAL-12	SAL-22	SAL-23	SAL-24	
1	Calcium as Ca	36.8	33.6	48	68	12	56	76	200
2	Magnesium as Mg	19.4	7.8	19.44	34	9.72	17	17.01	50
3	Sodium as Na	64.5	32	12.18	74	19	48	60	-
4	Iron & Aluminium oxide as F <sub>2</sub> O <sub>3</sub>	4.4	3.6	5.2	4	4	4	4.4	
5	Iron as Fe	0.5	0.3	0.3	0.4	0.3	0.4	0.3	1.0
6	Silica as SiO <sub>2</sub>	47.2	46.8	48	48	48	48	48	
7	Chloride as Cl <sup>-</sup>	68	60	41	103	26	89	108	1000
8	Sulphate as SO <sub>4</sub> <sup>++</sup>	40.6	20.7	22	63.4	34	38	49.25	400
9	Free CO <sub>2</sub>	0	0	10	10.8	6	0	0	
10	Total Solids	355	233	227	519	128	368	456	2000
11	Dissolved Solids	340	218	214	505	120	353	441	
12	Suspended Solids	15	15	13	14	8	15	15	
13	Total Alkalinity	185	86	151	269	52	166	198	
14	Bicarbonate Alkalinity as CaCC <sub>3</sub>	142	52	151	269	52	123	163	600
15	Carbonate Alkalinity as CaCC <sub>3</sub>	43	34	0	0	0	43	36	
16	Hydroxide Alkalinity as CaCC <sub>3</sub>	0	0	0	0	0	0	0	
17	Total Hardness as CaCO <sub>3</sub>	172	116	200	310	70	210	260	600
18	Temp.Hardness as CaCO <sub>3</sub>	172	86	151	269	52	166	198	
19	Permanent Hardness as CaCO <sub>3</sub>	0	30	49	41	18	44	62	
20	Conductivity in micromhos @ 25 <sup>o</sup> C	567	364	356	843	181	593	736	
21	pH @ room temperature	8.25	8.3	7.72	8.03	7.84	8.3	8.25	6.5-8.5
22	Temperature	30	30	30	30	30	30	30	
23	Dissolved Oxygen	6.21	6.24	6.2	6.22	6.17	6.2	6.12	
24	Flouride as F	0.22	0.18	0.2	0.2	0.2	0.21	0.19	1.5
25	Nitrate as NO <sub>3</sub>	2.71	11.5	19.41	15.82	3.16	1.68	19.87	100
26	Copper as Cu	BDL	BDL	0.016	BDL	0.018	BDL	BDL	1.5
27	Manganese as Mn	0.072	0.09	0.024	0.092	0.024	0.096	0.082	0.3
28	Zinc as Zn	0.058	0.066	0.216	0.064	0.228	0.066	0.052	15
29	Pottassium as K	3.74	3.62	1.58	8.34	1.67	8.6	10.92	
30	Depth drilled (in m)	300	300	300	300	241	250	260	
31	Depth to water Level (in m)	22.20	44.40	56.55	25.60	-	32	46.1	


**ANALYTICAL RESULTS OF WATER SAMPLES (TUBE WELLS) COLLECTED FROM COASTAL AREA,  
CUDDALORE DISTRICT, TAMIL NADU (Pre Monsoon June-2022)**

Sl. No.	Parameters	Periyapattu	S.Pudur	Poochimedu	Cuddalore	Kodiyalam	Chidam baram-school	BIS-Per misible limit
		SAL-26A(S)	SAL-27	SAL-28	SAL-29	SAL-30	SAL-31	
1	Calcium as Ca	25.6	32	43.2	36	100	68	200
2	Magnesium as Mg	11.66	9.7	19.4	29.16	34.02	21.9	50
3	Sodium as Na	16.39	21.7	10.2	210	113.68	80	-
4	Iron & Aluminium oxide as F <sub>2</sub> O <sub>3</sub>	4	4.8	3.6	4	5.6	5.2	
5	Iron as Fe	0.3	0.3	0.4	0.4	0.5	0.4	1.0
6	Silica as SiO <sub>2</sub>	48	48.8	46.8	50	48.4	48	
7	Chloride as Cl <sup>-</sup>	27	62	16.5	104	221	93	1000
8	Sulphate as SO <sub>4</sub> <sup>---</sup>	21	22.5	56	44.7	35.36	10	400
9	Free CO <sub>2</sub>	0	26	0	0	7.2	0	
10	Total Solids	185	212	258	688	689	464	2000
11	Dissolved Solids	170	199	244	675	674	447	
12	Suspended Solids	15	13	14	13	15	17	
13	Total Alkalinity	99	47	133	482	312	292	
14	Bicarbonate Alkalinity as CaCC <sub>3</sub>	65	47	99	268	312	275	600
15	Carbonate Alkalinity as CaCC <sub>3</sub>	34	0	34	214	0	17	
16	Hydroxide Alkalinity as CaCC <sub>3</sub>	0	0	0	0	0	0	
17	Total Hardness as CaCO <sub>3</sub>	112	120	188	210	390	260	600
18	Temp.Hardness as CaCO <sub>3</sub>	99	47	133	210	312	260	
19	Permanent Hardness as CaCO <sub>3</sub>	13	73	55	0	78	0	
20	Conductivity in micromhos @ 25 <sup>o</sup> C	284	331	405	1125	1124	745	
21	pH @ room temperature	8.4	6.52	8.25	8.49	7.94	8.04	6.5-8.5
22	Temperature	30	30	30	29	30	30	
23	Dissolved Oxygen	6.18	6.04	6.56	5.98	6.56	6.4	
24	Flouride as F	0.24	0.16	0.22	0.26	0.2	0.23	1.5
25	Nitrate as NO <sub>3</sub>	3.27	27.7	7.34	3.16	3.27	27.96	100
26	Copper as Cu	BDL	0.018	BDL	BDL	BDL	BDL	1.5
27	Manganese as Mn	0.08	0.02	0.072	0.068	0.088	0.097	0.3
28	Zinc as Zn	0.054	0.212	0.064	0.057	0.064	0.074	15
29	Pottassium as K	1.67	1.26	6.29	0.02	4.68	6.2	
30	Depth drilled (in m)	100	245	300	180	180	171	
31	Depth to water Level (in m)	4.00	42.30	14.50	12.50	36.90	42.50	

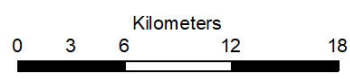
MAP SHOWING THE LOCATION OF TUBE WELLS IN COASTAL AREA,, CUDDALORE DISTRICT, TAMILNADU



**Legend**

 SAL Borehole

**SCALE**



**NLC INDIA LTD., NEYVELI**  
**REGIONAL GEOLOGY DIVISION**  
 TUBE WELLS FOR SALINITY MONITORING

## Water balance statement for the period from July-2021 to June- 2022

Input	MCM/A	Output/Extraction of ground water in MCM/Annum		Total MCM/A
Recharge due to rainfall	135.64	Mine-I pumpage	16.08	<b>71.81</b>
Recharge due to Downward leakage	90.00	Mine-IA pumpage	08.13	
		Mine-II pumpage	17.04	
Southwest inflow	30.00	Neyveli township	12.73	
		Industrial pumpage	17.83	
		<b>Total by NLCIL</b>		
		By outside agencies:		
		Irrigation pumpage	80.00	
		Chennai Metro**	0.73	
		Outflow towards North & Sea	5.00	
		Drinking water	6.00	
		Pumping at SIPCOT	12.00	
<b>Total Input</b>	<b>255.64</b>	<b>Total by others</b>		<b>103.73</b>
		<b>Grand total</b>		<b>175.54</b>

\*\* For a period of 6 months only

## **Corporate Environment Policy**

### **Policy Statement**

NLCIL Limited is committed to environment friendly mining and power generation by adopting latest pollution control devices, best land reclamation practices, waste minimisation cum utilisation techniques to conserve natural resources, integrated water management system, introducing clean and energy efficient technologies, complying with statutory requirement and work proactively to conserve biodiversity, maintaining ecological balance thereby bringing long term positive impact on the employees and surrounding community to achieve the goal of Sustainable Development.

### **Background**

Lignite Mining and Thermal power generation are NLCIL's prime activities. Besides, NLCIL diversifies into coal mining, acquisition of coal assets abroad and renewable energy. NLCIL affirms its commitment to produce quality fuel and power with focus on customer satisfaction, pollution control, maintaining a clean and green Environment, conservation of bio diversity and continual improvement of the environment. NLCIL gives top priority towards sustainable development as it leads to economic development in harmony with nature while meeting the needs of present generation without the compromising the requirements of future generations. As socially responsible Corporate citizen though NLCIL was implementing Best environment practices since inception and was bestowed with number of prestigious Environment awards such as Indira Gandhi Vishwamitra Award, Paryavaran Puraskar awards etc in recognition of its achievement in Environment Field, it came out with a formal 'Corporate Environmental Policy' in July' 2011 as required by MoEF&CC. However the present policy is the amendment of the earlier 2011 Policy and is complimentary to the National Environmental Policy.

This modification in the present policy is the outcome of the experience gained since past five decades, keeping in view the modifications / amendments made from time to time in environmental policies and rules and regulations imposed by MoEF&CC (Ministry of Environment Forests & Climate Change) and other organisations concerning mine closure, energy conservation, extraction of ground water etc. and also with the objective of revisiting the corporate policy.

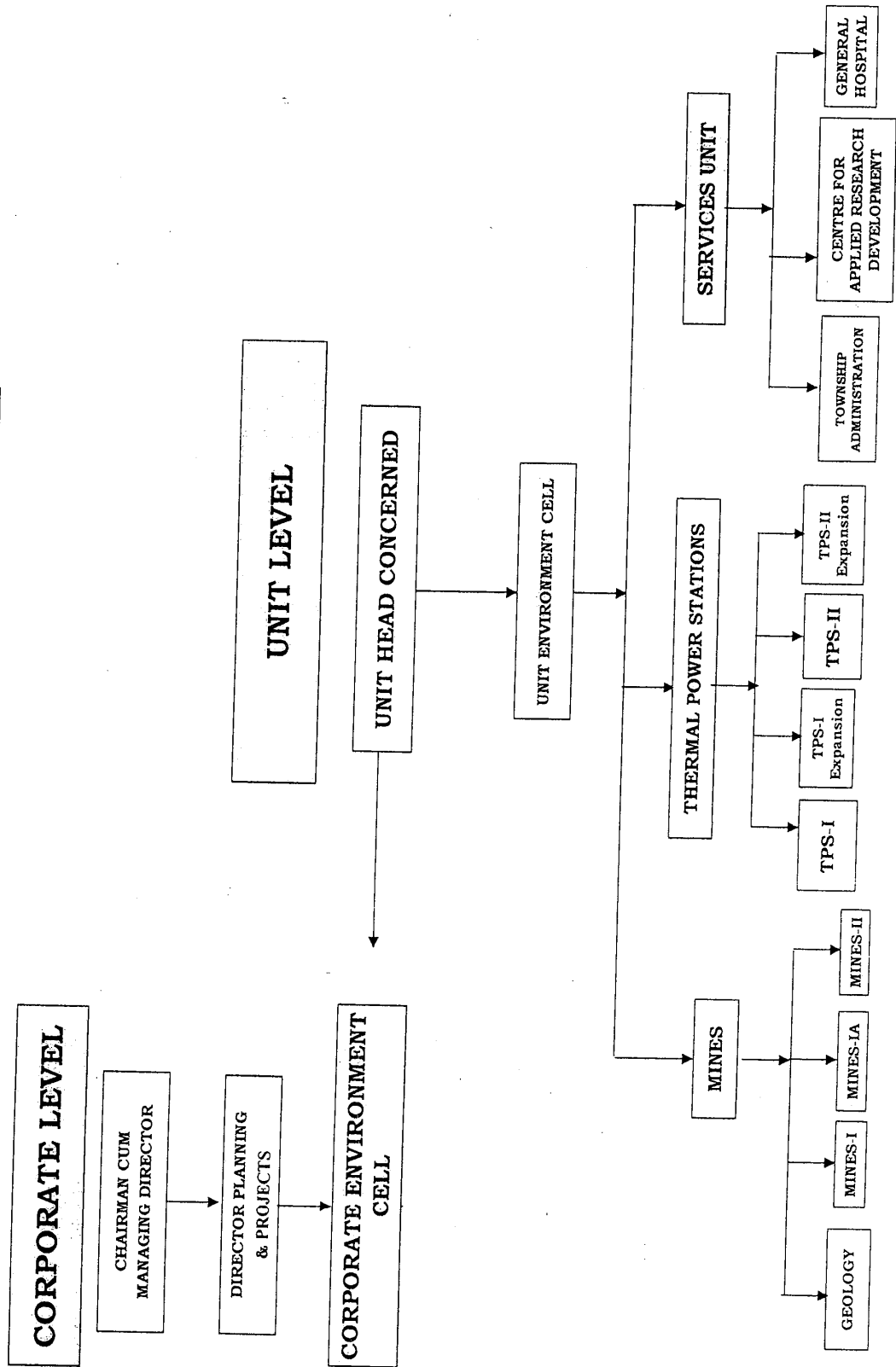
NLCIL has dedicated team of Specialised Mining Department and Environmental cell that meticulously plans and implements Eco Restoration activities to convert the deserted mine spoils into green Oasis. The untiring efforts and outstanding achievements of these dedicated team was seen by prominent personalities like Honourable Dr. A.P.J. Abdul Kalam, Former President of India, Additional Secretary, Ministry Coal and Senior CIL officials during their recent visit and they lauded the efforts and innovative methods adopted by the team in bringing back the derelict land near to original status. In recognition of its outstanding contribution to Eco restoration, Eco care and Environment Protection, Govt of India and other Environment Authorities like MOEF, Council of Power Utilities, KP Goenka Memorial team, Golden Peacock and SCOPE team has bestowed meritorious Environment awards to NLCIL in recognition of its world class standard Eco restoration activities viz, reclamation of the mined out area into afforestation, agriculture, Horticulture, fish culture, Bird sanctuary, Zoo etc. With these efforts, NLCIL has earned a name of Green and reliable mining cum power company in the eyes of the general public and stock holders. NLCIL will continue its efforts in these directions to break its previous records not only in mining and power generation but also in the field of Eco restoration , eco care and environment protection. The present policy is

prepared with the aim of sustainable mining and power generation for a better clean and green environment at NLCIL.

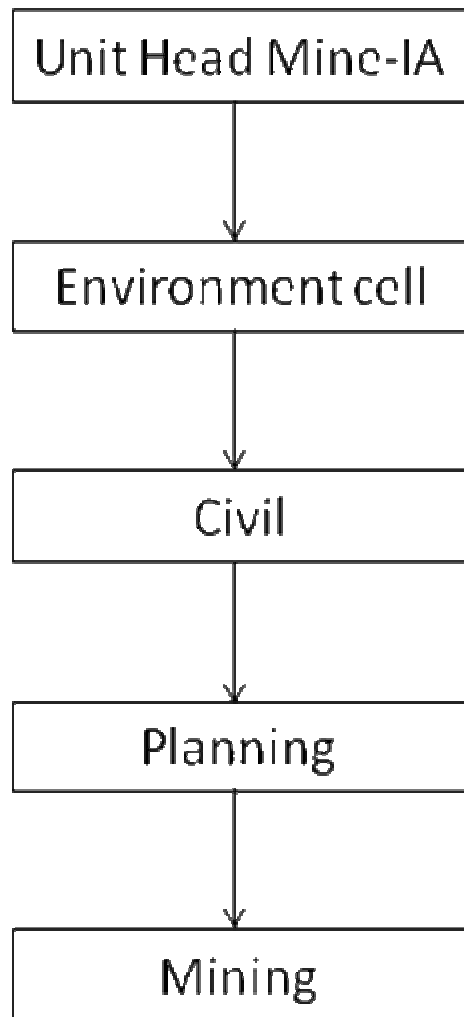
NLCIL is committed to:

- (i) Integrate the interest of the business with environment concern towards sustainable mining and power generation.
- (ii) Implement best Environment Management Practices towards prevention and control of pollution and provide clean environment.
- (iii) Filling the de-coaled area scientifically in accordance with the guidelines of Ministry of Coal.
- (iv) Combat climate change by increasing green cover and taking up CO2 sequestration projects.
- (v) Integrate Water Management system based on the principle Reduce, Recycle, Reuse waste water, harvesting of rain water and artificial recharge for a sustainable water resource.
- (vi) Maximize utilization of fly ash, bottom ash, pond ash and reclaim abandoned ash ponds to green cover.
- (vii) Progressively adopt cleaner and energy efficient technologies.
- (viii) Promote Conservation of biodiversity and natural resources.
- (ix) Regular monitoring to comply with regulatory standards and compliance of statutory requirements.
  
- (x) Provide significant contribution to social and economic development of surrounding community under Corporate Social Responsibility (CSR).
  
- (xi) Encourage R&D activities to find innovative solutions for continuous improvement in the Environment and related field.
  
- (xii) Transparency in reporting system by publishing compliance status in the electronic media.
  
- (xiii) Providing adequate funds and qualified personnel in the environment subject for successful Environment Management of Units.
  
- (xiv) Adequate training to employees and public creating awareness and measures to protect health of employees.
  
- (xv) Strive for continual improvement in our environment performance by setting challenging targets, measuring progress, taking corrective action and communicating environmental information to all concerned.

**ORGANISATIONAL STRUCTURE OF NLC CORPORATE AND  
UNIT LEVEL ENVIRONMENTAL DEPARTMENT**



## Mine-IA Environment cell organisation Chart



**Annexure-VI****Environment Compliance Measures**

Your Company practices and promotes the best environment management plan since its inception and is committed to environment friendly mining and power generation. The Environmental Policy of your Company is in line with the Vision and Mission Statement.

Mass tree plantations have been undertaken during the year. Slope stabilisation of the Mines Overburden dumps have been undertaken to convert the mine spoil into cultivable soil making it fit for habitation. The ambient air quality is being monitored regularly by TNPCB, IIT Madras & the Company in the surrounding villages and is well within the prescribed norms.

Consequent to the amendments to Environment (Protection) Act, 1986, the norms for water consumption and emissions from Power Plants [Particulate Matter (PM 2.5 & PM10), Sulphur dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) & Mercury (Hg)] have been made stringent for the existing as well as new Thermal Power Plants. In order to comply with the applicable new environmental norms notified by MOEF & CC vide gazette notification dated 07.12.2015 pertaining to SO<sub>2</sub>, FGD system is required to be installed in the existing as well as under construction lignite /coal fired power plants. Your Company's 2X125 MW Barsingsar TPP and 2X250 MW TPSII Expansion TPP (Neyveli) units adopting Circulating Fluidized Bed Combustion (CFBC) Technology are built with in-situ lime addition facility along with main plant to control SOX emission. ESP modification for the 2X125 MW Barsingsar TPP was taken up for compliance of MoEF emission norms on SPM. Tendering for the FGDs adopting wet limestone based FGD technology for the pulverized lignite fired TPS I Expansion (2X210 MW), TPSII (7X210 MW) and Neyveli New Thermal Power Station (NNTPS-2X500 MW) Neyveli are in advanced stages. For these 210 MW Units, special measures are also being undertaken to reduce the specific water consumption and these Units comply with the revised NoX emission norms. Your Company is taking appropriate steps that are required to install emission control equipment as deemed fit to comply with the MoEF's revised emission norms.

**Insurance**

During the year, your Company had taken Mega Insurance Policy for the Assets and Stocks of Production Units viz. Mines, Thermals & Renewable Energy (RE). It broadly covers, Material damage (MD) of all Mine assets and Material damage (MD), Machinery Breakdown (MBD), Fire Loss of Profit (FLOP) & Machinery Loss of Profit (MLOP) of all Thermal & RE assets. Assets of Service units are covered under Standard Fire and Special Peril Policy (SFSP).

**Rehabilitation & Re-settlement**

Your Company takes good care of the Project Affected Persons (PAPs) through R&R Policy measures thereby minimizing the trauma of displacement. The guidelines issued by the Government of India, from time to time on R&R for the on-going projects are being duly complied with. Your Company develops the Re-settlement Centres (RCs) and also provides good infrastructure facilities thereby helping the affected families to re-settle in the RCs. In addition to this, legal compensation is also being paid with the co-operation of the District Administration.

**Land Acquisition Act**

The Tamil Nadu Government has revived the "TN acquisition of land for Industrial Purposes Act, 1997" through the "Tamil Nadu Land Acquisition Laws (Revival of operation, Amendment and Validation) Act, 2019." The Provisions for compensation and R&R as per Schedule-I, II & III of "Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act – 2013" (RFCTLARR) are applicable since 01.01.2014 to your Company.

**Research and Development (R & D)**

Centre for Applied Research & Development (CARD) is the in-house R&D Centre of the Company and has been recognized by the Department of Science & Technology. CARD has been granted NABL accreditation by National Accreditation Board for Testing and Calibration Laboratories (NABL) based on the international standard ISO/IEC 17025:2005.

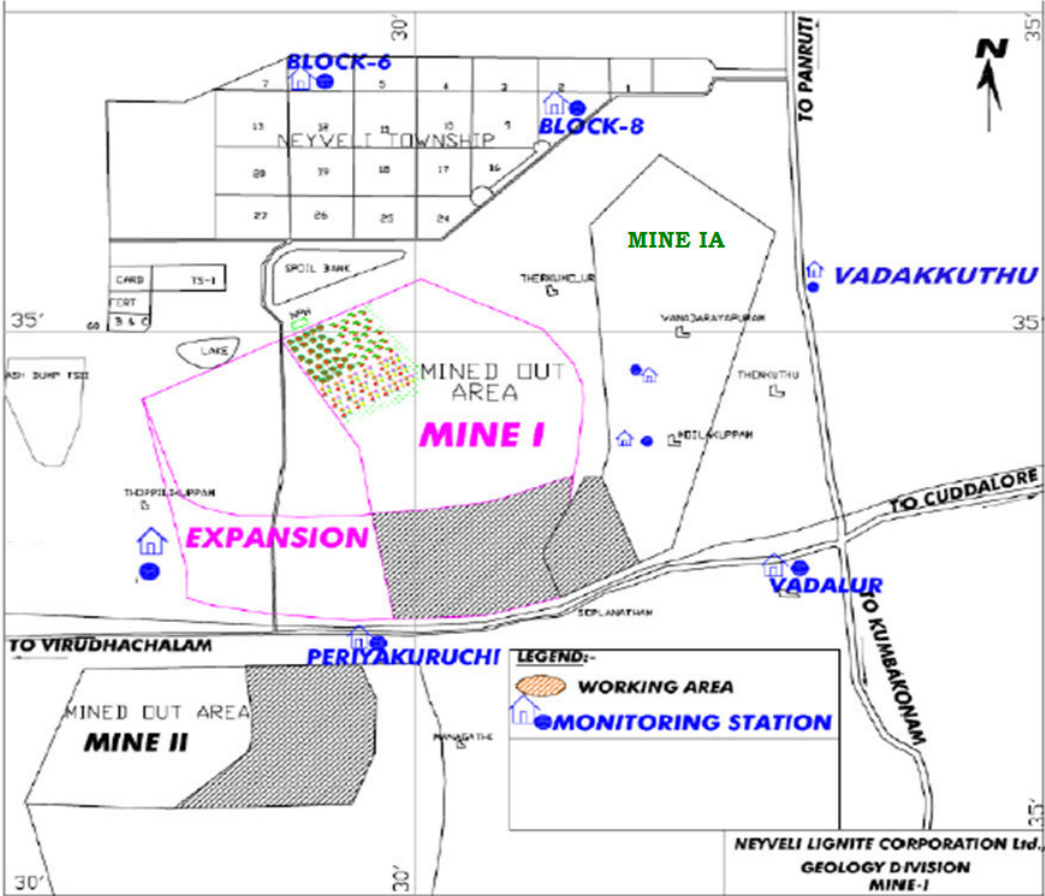


## Annexure-VI

### The major functions of CARD include:

- Carrying out Science & Technology (S&T) Research Projects,
- Environmental monitoring,
- Pollution level measurements,
- Quality Control Testing & Consultancy, Technical Services.
- Technology development, patenting and commercialization based on the R&D and Pilot Plant outcome,
- Co-ordinating for S&T Projects undertaken by the Company, institutional services to students, special studies for operation & new schemes and new initiatives etc.
- Rendering analytical services towards quality control of various products / materials used in mines, Power stations and other service units as well as outside agencies on chargeable basis.
- R&D works on lignite utilization, diversification, product development, by-product utilization, solid waste management, wasteland reclamation and introduction of real time monitoring facilities etc.
- CARD has successfully implemented three pilot studies viz., 1. Conversion of lignite to Diesel, 2. Separation of Iron particles from bottom slag, 3. Extraction of sand from mines overburden as a part of Business Diversification Plan - an innovation for sustainable development.

CARD has undertaken the formation of Innovation Incubation Centre (IIC) in collaboration with premier Institutions to promote innovation leading to start up / entrepreneurship.





**एनएलसी इंडिया लिमिटेड**  
 अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)  
 नेयवेली - 607807  
**NLC INDIA LIMITED**  
**CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)**  
**NEYVELI – 607 807**



कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10531/22-23 Dt: 30 Jun 2022

**परीक्षण परिणाम/ TEST RESULT**

<b>ग्राहक / Customer :</b> <b>M/s.CGM Mine IA</b>	<b>रिपोर्ट सं./दिनांक / Report No / Date</b>	TR/643/22-23 Dt-09 Jul 2022
	<b>उपभोक्ता सं./ दिनांक / Customer Ref. / Date</b>	AAQM at corezone Mine IA Dt-30 Ju
	<b>नमूने का विवरण/Description of the Sample</b>	AAQM
	<b>नमूनों की संख्या/ No. of Samples</b>	10
	<b>परीक्षण की तिथि / Date of Testing</b>	30 Jun 2022 - 09 Jul 2022
	<b>नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures &amp; Done by</b>	
	<b>कोई विशिष्ट जानकारी / Any Specific Information</b>	

**नमूने का ब्यौरा Sample particulars : Afforestation ,Sample Dated :06.06.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--) PM10 (µg/m³) Sulphur Dioxide (µg/m³) Nitrogen Oxides (µg/m³)	--	68.66 12.23 26.94	

**नमूने का ब्यौरा Sample particulars : Track shifting ,Sample Dated :06.06.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--) PM10 (µg/m³) Sulphur Dioxide (µg/m³) Nitrogen Oxides (µg/m³)	--	84.30 6.63 26.45	

**नमूने का ब्यौरा Sample particulars : Vanathirayapuram ,Sample Dated :06.06.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--) PM10 (µg/m³) Sulphur Dioxide (µg/m³) Nitrogen Oxides (µg/m³)	--	116.54 8.17 34.94	

**नमूने का ब्यौरा Sample particulars : Parvathipuram ,Sample Dated :06.06.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--) PM10 (µg/m³)	--	76.37	

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

Note : This result relates to the particular sample tested. The results apply to the sample as received. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated

रिपोर्ट सं./दिनांक / Report No / Date TR/643/22-23 Dt-09 Jul 2022

	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		5.22	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		20.34	

नमूने का ब्यौरा **Sample particulars : Thenkuthu** ,Sample Dated :06.06.2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 ( $\mu\text{g}/\text{m}^3$ )		83.56	
	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		14.04	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		24.38	

नमूने का ब्यौरा **Sample particulars : Afforestation** ,Sample Dated :24.06.2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 ( $\mu\text{g}/\text{m}^3$ )		96.78	
	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		2.01	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		20.46	
	PM2.5 ( $\mu\text{g}/\text{m}^3$ )		18.30	

नमूने का ब्यौरा **Sample particulars : Track shifting** ,Sample Dated :24.06.2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 ( $\mu\text{g}/\text{m}^3$ )		92.36	
	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		2.21	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		18.12	
	PM2.5 ( $\mu\text{g}/\text{m}^3$ )		20.48	

नमूने का ब्यौरा **Sample particulars : Vanathirayapuram** ,Sample Dated :25.06.2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 ( $\mu\text{g}/\text{m}^3$ )		106.20	
	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		2.34	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		18.64	
	PM2.5 ( $\mu\text{g}/\text{m}^3$ )		21.48	

नमूने का ब्यौरा **Sample particulars : Parvathipuram** ,Sample Dated :25.06.2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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अनुप्रयुक्त अनुसंधान एवं विकास केंद्र(कार्ड)  
नेयवेली - 607807  
**NLC INDIA LIMITED**  
**CENTRE FOR APPLIED RESEARCH AND DEVELOPMENT (CARD)**  
**NEYVELI – 607 807**

Annexure-VIII



रिपोर्ट सं./दिनांक / Report No / Date TR/643/22-23 Dt-09 Jul 2022

	PM10 ( $\mu\text{g}/\text{m}^3$ )		77.90	
	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )		2.89	
	Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ )		19.63	
	PM2.5 ( $\mu\text{g}/\text{m}^3$ )		20.48	

नमूने का ब्यौरा **Sample particulars : Thenkuthu** , Sample Dated : **25.06.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--) PM10 ( $\mu\text{g}/\text{m}^3$ ) Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ ) Nitrogen Oxides ( $\mu\text{g}/\text{m}^3$ ) PM2.5 ( $\mu\text{g}/\text{m}^3$ )	--	 77.41 2.97 24.34 20.98	

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो /  
Special mention if any by the Laboratory

परीक्षण परिणाम का अंत/ End of the test result

**1कृते एनएलसी इंडिया लिमिटेड / For NLC INDIA LIMITED**

Ambati Basava Rao  
DM/Sci./CARD

K. Elangovan  
DCM/Sci./CARD

द्वारा सत्यापित किया गया / Verified By

अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

Note : This result relates to the particular sample tested. The results apply to the sample as received. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated

Heavy metal analysis report-Ambient air-Mine IA

S.No.	Name of the sampling location	Date of sample collection	Test parameter	Afforestation	Track shifting	Vanadhiraya puram	Thenkuthu	Parvathipuram	CPCB standard for Ambient Air in ng/m3.
1	Mine-IA	23 & 25.07.2022	Mercury as Hg (ng/m3)	0.0048	0.0052	0.0046	0.0064	0.0060	NA
2			Arsenic as As (ng/m3)	BDL	BDL	BDL	BDL	BDL	6 ng/m3 (Annual*)
3			Cadmium as Cd (ng/m3)	BDL	BDL	BDL	BDL	BDL	NA
4			Chromium as Cr (ng/m3)	1.28	0.81	BDL	BDL	1.64	NA
5			Nickel as Ni (ng/m3)	3.86	6.24	2.88	4.08	6.44	20 ng/m3 (Annual*)



**TAMIL NADU POLLUTION CONTROL BOARD**  
**REPORT OF ANALYSIS.**

1. Name of the Industry : NLC India Limited,  
Mine-IA,
2. Address of the Industry : Administrative Office (Mine I & IA),  
Block – 26, Neyveli – 607 803.
3. Date of Survey : 28.7.2022
4. Duration of Survey : 24 Hours.
5. Category : Red/Large.
6. Land use classification : Industrial

**Meteorological Conditions.**

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	29	36		42	91
Weather condition	Clear sky		Rain Fall(mm)	Nil	
Predominant Wind Direction	SW -NE		Mean Wind Speed (Km/hr.)	9.3	

**Fugitive Emission Monitoring Results**

Sl. No.	Location	Direction	Pollutants Concentration ( $\mu\text{g}/\text{m}^3$ )			
			PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
			Mines Standard for 24 hrs 300	National Standard for 24 hrs 60	Mines Standard for 24 hrs 120	Mines Standard for 24 hrs 120
1	Lignite Storage yard	NE	262	40	18	20
2	Lignite Transfer Point – 1	E	256	-	16	18
3	Lignite Transfer Point – 1	SE	250	-	15	16
4	Lignite Transfer Point – 1	SW	252	32	12	14
5	Lignite Transfer Point – 1	W	250	-	11	13
6	Lignite Transport by Trucks	NW	248	-	10	13

  
 Deputy Chief Scientific Officer,  
 TNPCB/AEL/Cuddalore.

**Hubert Enviro Care Systems (P) Ltd.**

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**Laboratory Services Division**  
**(Chemical & Biological Testing)**  
**FSSAI Notified Laboratory**  
**ISO 9001, 14001 & 45001 Certified.**

**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/1/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Vadalur  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	9.35	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	19.08	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	52.62	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	28.30	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.23	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	6.12	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification;  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*(Signature)*  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

**Hubert Enviro Care Systems (P) Ltd.**

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**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/2/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Vadakuthu  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	10.22	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	19.91	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	51.90	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	27.41	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.45	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.21	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*(Signature)*  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

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**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/3/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Block-8  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022


S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	11.07	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	21.92	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	53.68	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	29.25	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	13.19	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Aramonia	$\mu\text{g}/\text{m}^3$	6.45	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

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**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/4/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Block-6  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022


Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	8.11	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	18.74	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	54.14	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	28.55	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.16	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	6.67	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.  
\*\*\*End of Report\*\*\*



  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

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**TEST REPORT**

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/5/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Block-29  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	11.10	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	20.57	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	51.21	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	26.32	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	11.26	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	6.32	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*(Signature)*  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

**Hubert Enviro Care Systems (P) Ltd.**

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**TEST REPORT**

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/6/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Periyakurichi  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	9.15	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	22.45	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	54.79	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	27.02	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	13.19	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.56	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*(Signature)*  
Authorized Signatory

D. ANUSUYA  
Deputy Quality Manager

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**TEST REPORT**

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/7/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Vadaku Vellore  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 - 12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	10.34	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	20.60	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	55.41	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	28.59	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.87	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	8.52	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*(Signature)*  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

**Hubert Enviro Care Systems (P) Ltd.**

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TC-5786

**Laboratory Services Division**  
(Chemical & Biological Testing)  
FSSAI Notified Laboratory  
ISO 9001, 14001 & 45001 Certified.

**TEST REPORT**

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/8/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Umangalam  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	11.66	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	22.32	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	53.02	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	26.76	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.64	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.47	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.  
\*\*\*End of Report\*\*\*



*[Signature]*  
Authorized Signatory  
D. ANUSOYA  
Deputy Quality Manager

# Hubert Enviro Care Systems (P) Ltd.

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Guindy, Chennai - 600 032.  
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TC-5786

Annexure-XI

Laboratory Services Division  
(Chemical & Biological Testing)  
FSSAI Notified Laboratory  
ISO 9001, 14001 & 45001 Certified.

## TEST REPORT

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/9/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Kammapuram  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	10.49	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	20.57	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	52.70	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	29.06	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	10.51	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.18	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.  
\*\*\*End of Report\*\*\*



Authorized Signatory

D. ANUSUYA  
Deputy Quality Manager\*

**Hubert Enviro Care Systems (P) Ltd.**

TC-5786

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**Laboratory Services Division**  
(Chemical & Biological Testing)  
FSSAI Notified Laboratory  
ISO 9001, 14001 & 45001 Certified.

**TEST REPORT**

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Page : 1 of 1  
Report No. : HECSL/AA/10/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Sathapadi  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	11.27	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	21.29	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	54.52	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	28.90	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.59	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	5.97	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.  
\*\*\*End of Report\*\*\*



*(Signature)*  
Authorized Signatory

D. ANUSUYA  
Deputy Quality Manager\*

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**Laboratory Services Division**  
(Chemical & Biological Testing)  
FSSAI Notified Laboratory  
ISO 9001, 14001 & 45001 Certified.

**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/11/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Kolakudi  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	10.31	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	21.76	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	53.19	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	27.96	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	12.71	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.56	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



*[Signature]*  
Authorized Signatory  
D. ANUSUYA  
Deputy Quality Manager

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**Laboratory Services Division**  
**(Chemical & Biological Testing)**  
**FSSAI Notified Laboratory**  
**ISO 9001, 14001 & 45001 Certified.**

**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/12/120922  
Report Date : 18/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Mudhanai  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	µg/m <sup>3</sup>	8.79	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	µg/m <sup>3</sup>	20.66	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 µm	µg/m <sup>3</sup>	51.79	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 µm	µg/m <sup>3</sup>	27.25	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	mg/m <sup>3</sup>	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	µg/m <sup>3</sup>	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	µg/m <sup>3</sup>	12.40	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	µg/m <sup>3</sup>	5.55	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	µg/m <sup>3</sup>	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	ng/m <sup>3</sup>	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	ng/m <sup>3</sup>	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	ng/m <sup>3</sup>	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification, µg/m<sup>3</sup>- Micrograms per cubic meter, mg/m<sup>3</sup>- Milligrams per cubic meter, ng/m<sup>3</sup>- Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



Authorized Signatory

D. ANUSUYA  
Deputy Quality Manager

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TC-5780

**Laboratory Services Division**  
**(Chemical & Biological Testing)**  
**FSSAI Notified Laboratory**  
**ISO 9001, 14001 & 45001 Certified.**

**TEST REPORT**

Page : 1 of 1

Name of the Client : M/s. NLC India Ltd.,  
Address of the Client : Neyveli.

Report No. : HECSL/AA/13/120922  
Report Date : 17/09/2022

Sample Description : Ambient Air Quality  
Sampling Location : Chinnakappankulam  
Sample Drawn By : Hubert Enviro Care Systems (P) Ltd  
Sampling/received Date : 10/09/2022 -12/09/2022  
Analysis Commenced On : 12/09/2022

Completed On : 17/09/2022

S.No.	Parameters	Units	Results Obtained	Test Method	NAAQ Standards : 2009	
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	8.28	IS: 5182 (Part - 2)	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	19.66	IS: 5182 (Part - 6)	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	52.13	IS: 5182 (Part - 23)	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 $\mu\text{m}$	$\mu\text{g}/\text{m}^3$	25.77	IS: 5182 (Part - 24)	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	$\text{mg}/\text{m}^3$	BLQ(LOQ 0.05)	IS : 5182 (Part - 10)	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 0.05)	HECS-G/INS/SOP/ 041	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	11.16	IS : 5182 (Part - 9)	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.56	IS 5182 Part 25	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 11)	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	$\text{ng}/\text{m}^3$	BLQ( LOQ 1)	IS: 5182 (Part - 12)	1 (Annual)	1 (Annual)
11	Arsenic	$\text{ng}/\text{m}^3$	BLQ( LOQ 2)	HECS-G/INS/SOP/041	6 (Annual)	6 (Annual)
12	Nickel	$\text{ng}/\text{m}^3$	BLQ( LOQ 10)	HECS-G/INS/SOP/041	20 (Annual)	20 (Annual)

Note:- BLQ - Below the Limit of Quantification, LOQ- Limit of Quantification,  $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter,  $\text{mg}/\text{m}^3$ - Milligrams per cubic meter,  $\text{ng}/\text{m}^3$ - Nanograms per cubic meter.

Remarks:- The Tested Parameters as above were within the limits of NAAQ Standard 2009.

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



Authorized Signatory

D. ANUSUYA  
Deputy Quality Manager



**TAMIL NADU POLLUTION CONTROL BOARD**

Report of Analysis.

1	Name of the Industry	M/s. NLC India Limited Mine-IA		
2	Address of the Industry	Administrative Office (Mine I & IA), Block-26, Neyveli – 607 803.		
3	Date of Survey	28.7.2022		
	Category	R-L	Land use Classification	Industrial
	Type of Survey	Ambient	Time of Survey	Day
	Meteorological conditions	Calm		

Logging Parameters

Instrument Used	Casella Serial No. 5007321		
Logging Interval	10 Minutes at each point	Measuring Range 50 dBA – 110 dBA	
Weighting	"A"	Time Weighting	"FAST"
Sound Incidence	Frontal	Time in hrs.	10.00-12.00

Report of Noise Level Monitoring

Sl. No.	Location	Duration (Min)	Direction	Distance (Km)	Sound Level in dB(A)		
					Leq	Min	Max
1	Near Fire Station	10	N	550	56.5	52.9	61.8
2	CME Yard	10	NE	1600	51.5	49.7	59.3
3	Mine-I Bunker	10	E	1650	55.2	49.2	59.9
4	Near Booster to metro water	10	SE	1600	61.8	57.8	64.3
5	Veenankeni Village	10	S	3500	62.9	58.0	68.5

  
 Deputy Chief Scientific Officer,  
 TNPCB/AEL/Cuddalore.