NLC India Limited

(formerly Neyveli Lignite Corporation Limited)

Office of the Chief General Manager

ADMINISTRATIVE OFFICE, MINE-II, NEYVELI-607 802.

Ph: 04142 262252,FAX: 04142 262394

Lr NO: CGM/MII/MoEF&CC/Compliance/2022-23(1) Dt: 20.12.2022

To

The Director,

Ministry of Environment, Forest & Climate Change,

34, HEPC Building,

Cathedral Garden Road,

MoEF&CC office, Nungambakkam,

Chennai -600 034

E mail:eccompliance-tn@gov.in

Respected Sir,

Sub:- Mine II (15.0 MTPA) – Half yearly Report – 39 on the Status of Compliance of MoEF& CC Conditions for the Period 01.04.2022 to 30.09.2022 – reg.

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As per the Environmental clearance conditions for Mine II (15.0 MTPA) of NLCIL , the half yearly Compliance Status Report-39 for the period 01.04.2022 to 30.09.2022 is submitted along with corresponding Annexure via Hard copies & soft copies for your good office for kind perusal.

Thanking You,

Yours faithfully,

for NEYVELI LIGNITE CORPORATION LIMITED,

20/12/22.

CHIEF GENERAL MANAGER / MINES-II

20/12/22 ACM/Env

20/12/22 DGM K

Copy submitted to

1) The District Environmental engineer, Cuddalore
   E-Mail: deetnpcbcud@gmail.com
2) The member Secretary, TNPCB, Chennai
   E-Mail: tnpcb_chn@gov.in
3) The Director, MoEF&CC, Govt. of India, New Delhi
   E-Mail: info@vigyanprasar.gov.in

DESPATCHED
DATE 22.12.2022

Compliance Report -39

Mine II (15.00 MTPA) Status Report on Compliance of MoEF& CC conditions and Implementation Schedule
(Vide reference No. J – 11015/30/2001-1AII (M), Dt: 24.12.2002)
Reporting Period 01.04.2022 to 30.09.2022

A. SPECIFIC CONDITIONS:

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
1)	Top soil should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for rehabilitation of mined out area.	Top soil is properly stacked in the reclamation area, further it is used for afforestation purpose progressively. **Top soil conserved** : (April-22 to Sept-22) : 2.33 LCM Since inception: 138.87 LCM Photographs showing top soil conservation is enclosed in **Annexure-1** **Reclaimed Area** : (April-22 to Sept-22) : 33.00 Ha Since inception : 1117.50 Ha **Tree saplings planted** : (April-22 to Sept-22) :21250 Nos Since inception : 15, 22,200Nos. **(Annexure- 2 B)**
ii)	a) OB should be stacked scientifically at earmarked dump site(s). The total height of the external dump(s) should not exceed 65 m in two or three stages. Overall slope of the dump should not exceed 28°. Concurrent back filling and rehabilitation should start from the 5th year of operation. Monitoring and management of rehabilitated areas should continue until vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on yearly basis. b) NLC should speed up reclamation of de-coaled areas in their mines at Neyveli and must complete the task positively by the end of 2005. A comprehensive revised plan should be prepared indicating locations of such sites, deployment/redeployment of equipment and machinery, source of fill material, allocation of funds and a dedicated team to ensure compliance. c) Super dumps should not be used for further dumping of OB and inter burden from any of the	a) External dump is completed. The total height of the external dump(s) has not exceeded 65 m and overall slope of the dump is less than 26 deg. b) Concurrent back filling to ground level and rehabilitation work are being continuously carried out/monitored. c) A comprehensive Mine closure plan was prepared and submitted to MOC, it was approved during *2011. Provision was created to deposit an amount of Rs.*1.72 Crores towards mine closure activity on monthly basis. A dedicated team is ensuring compliance. d) No super dumping is carried out in Mine-II and outside dumping is completed. The external dumps which are inactive at present, are being reclaimed continuously and also progressive reclamation is being carried out in the active dumping area. **(Annexure-2 B & 2 C)** Time bound rehabilitation programme has been prepared as per mine closure plan & implemented. Periodically compliance report is submitted to MOEF&CC. e) 59 Nos. of artificial ponds/ lakes/ silt traps are developed with appropriate sizes in the reclaimed area as shown in the plan. These water bodies are maintained to collect rain water for developing the green belt around the mines. .**(Annexure- 2 D)** The plan showing artificial ponds/lakes is enclosed in **Annexure -2 D1.** The drains are regularly desilted. f)The garland canals for a total length of 60.0 KM with a cross sectional area of 68.75 Sq.mt. (Eastern garland, Western garland, North & South and chord

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
	Mine except where the voids and gorges are to be contoured for the purpose of rehabilitation. These dumps should be declared as inactive dumps and their time bound rehabilitation programme should be chalked out. The required action plan should be submitted to MOEF for consideration by January 2003. A competent institute like CMRI, Dhanbad should be engaged for rehabilitation for all the external as well as internal dumps under intimation to the Ministry. d) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB, and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained properly. e) Garland drains (size, gradient & length) and sump capacity should 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 should also provide adequate retention period to allow proper settling of slit material.	canal) are maintained to course the peak rainfall water which is designed by keeping 50% safety margin over and above the peak sudden rainfall. Though the rainfall for the months of April-22 to Sept-22 is 991.5 mm in 54 days ,it is submitted that all canal are maintained and functioning well . The plan & cross section of garland canal is enclosed in **Annexure -2 E**
iii)	Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rain fall data.	The retaining walls at vulnerable places are constructed in Mine-II considering rain fall data and characteristics of OB Soil and the same will be continued in future. A Drain cum bund was established on the toe of the external dump to arrest soil erosion/sliding wherever necessary. **(Annexure – 3)**
iv)	Amended condition vide Lr. No.J-11015 /30/2001-IA –II M dated 19th Feb. 2003 Specific Condition: Ground water pumping should be maintained within 149.73 MCM per annum till commissioning of the Mine-II Expansion project. In addition, the project proponent should supply treated storm water to the town ship and power Plants and complete switch over to dry disposal fly ash system in their Power Plants be implemented before the commencement of	A detailed integrated water management action plan indicating allocation of funds have been prepared and submitted already. The following steps were taken to maintain the Ground water pumping with in 149.73 MCM per annum 1. As against ground water pumping limit fixed by MoEF&CC ie. 149.73 MCM per annum. NLCIL present pumping quantity is 71.81 MCM per annum only and the water balance report for the period July-2021 - June-22 was submitted to MoEF&CC during October-2022 is enclosed as **Annexure-4A**. 2. Water treatment Plant for the treatment of Storm

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
	Lignite Production under Mines-II Expansion. A detailed integrated Water Management Action Plan indicating allocation of funds for implementing various water conservation Schemes and compliance schedule should be submitted to MOEF in two months time. Water quantity measuring devices should be installed at appropriate sites to measure total ground water pumping by NLC its all installations and discharge.	Water pumped from Mine-I, Mine-IA (8000 GPM) was commissioned and functioning since Mar-2005 to meet the drinking water requirement of Township area partially. 3. 15000 GPM of storm water from Mines-II is being treated in the water treatment plant constructed at TSP-II Expn and treated water is being supplied to TPS-II & TPS-II Expansion for power generation. 4. Modern Dry ash Collection and disposal system with silos has been implemented and working in all TPS units. Water quantity measuring devices have been procured and installed . Annexure-4B
v)	A network of existing wells and new piezometers should be established in consultation with the Central Ground Water Board, Chennai for regular monitoring of ground water level quality. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August) post- monsoon (November) and winter (January) seasons. Data thus collected should be submitted to Ministry of Environment Forests& CC the Central Ground Water Board (Chennai), and the Central Ground Water Authority (Delhi) every quarter.	NLCIL, under regional Hydro-geological studies is monitoring dug wells and tube wells spread over the Neyveli region. The data gap areas in the Neyveli region were studied and 14 nos new observation wells were constructed during the year 2017. All the wells drilled by CGWB including 9 nos of piezometers wells for ground water mapping study have been taken in to monitoring network by NLCIL. (Total 161 nos.). Collected water level data is being sent to CGWB Chennai every month and water quality results are also sent to MOEF&CC every six months.
vi)	Monitoring of confined aquifer surface should be continued at adequate intervals in consultation with the Regional Director, Central Ground Water Board, Chennai and half yearly compliance report should be submitted to MOEF Regional office and Member Secretary, Central Ground Water Authority, Delhi.	Monthly Monitoring of confined aquifer surface is being carried out regularly. The same are being reported and submitted to CGWB, Chennai and MoEF&CC Regional office on half yearly basis. **a)** Details of water level in dug wells (Water table aquifer) for the period May-22 & August -2022 are given in **Annexure-6 A**. The water level varies between 1.40 m to 15.00m for May-2022 and 0.60m to 12.10m for August- 2022. **b)** Details of water quality collected from dug wells for the period June- 2022 is given in **Annexure-6-BI**. The water Samples collected for quality analysis from the dug wells appropriate planned locations falling in the Neyveli region are given in **Annexure-6B-II**. All the analytical results are well within the permissible limits of BIS 10500 Drinking water standards. Confined aquifer water levels for May-22 & August-2022 are given in **Annexure-6C-I** and location plan in **Annexure-6C-II**. Water quality for June-2022 for coastal observation wells given in **Annexure-6D-I**. The locations of coastal observation wells are given in **Annexure-6D-II**. All

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
		the chemical parameters of the water analysis are well within the BIS standards for Drinking water. The conductivity and Chloride parameters of these wells are ranging as low as 181 micromhos/cm to 1125 micromhos/cm. and 16.5 ppm to 221 ppm respectively.
vii)	Artificial recharge measures should be implemented in consultation with the Regional Director, Central Ground Water Board, Chennai and a long term study should be undertaken to work out a future plan in augmenting the ground water resource in the area.	a) Under GOI Coal S&T grant, a pilot study on artificial recharge was taken up in two villages ie. Nadiyapattu & Maligampattu falling in the recharge area of Neyveli aquifer basin during May-2002 for a period of four years. All activities were completed. As the result of this study the percolation ponds with percolation wells were found to be more effective in recharging the surface water into the aquifer. Subsequently de-silting work carried out during October-2017 and completed. Monitoring is being continued in the study area. b) Similarly in the downstream side, NLCIL has experimented with expertise from RWE-Germany and IIT-Madras on artificial recharge through injection techniques to the deep seated confined aquifers. c) NLCIL in consultation with CGWB is developed an artificial recharge structure within NLCIL lease hold area i.e. North west of Mine-II area at a cost of 1.24 Crore. The above artificial recharge structure is consist of one check dam, 3 observation wells and 8 percolation wells to recharge the run-off water into water table aquifer & confined aquifer in the up dip direction. The construction work of one check dam length 94.00 m and height 2.04m and 8 percolation wells are completed to all respect the monsoon runoff water is filled up in its full capacity of recharge structures and recharging is being continued through percolation wells to enhance the ground water resources in the region. Monitoring of observation well tube well & dug well is being continued. Director/Mines, NLCIL has sent letter to Chairman CGWB on 04.03.2016 to take up study of satellite data for the identification of suitable sites in the Neyveli Hydro-geological basin for the construction of artificial recharge structure to enhance the ground water potential. d) Identification of suitable water bodies for de-silting and restoration in Neyveli basin using Geospatial technology with special reference to sustainable management of ground water in the lignite mining environment studies were given to Annamalai University Department of Earth Science during the period September-2016 and work was completed in March-2018. Suitable water bodies were identified to develop recharge structures in future. e) Another study on identification of suitable sites

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
		through remote sensing & GIS for construction of recharge studies to capture and divert the runoff water from north west flowing streams of recharge area in to Neyveli Hydro-Geological basin was awarded to Dept. of Earth Science, Annamalai University during June-2020 and the work was completed in June-2021.. For construction of check dams, 10 locations were identified in the study area to develop recharge structures in future for augmenting the ground water resources in the recharge area. **Annexure-7**
viii)	A detailed mine decommissioning plan should be submitted to the Ministry of Environment & Forests 5 years in advance for approval. Similar action should also be taken in respect of Mine I & IA.	Mine decommissioning plan of Mines of NLCIL was already prepared and submitted to Ministry of Coal and same has been Approved Vide letter no:43012(272010.CPAM Dt 31.03.2011) **(Annexure – 8)**
ix)	A green belt of adequate width should be raised by planting, the native species around the ML area, roads, OB dumps sites etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.	Native species like pungai, vengai,subabul trees were raised in the Overburden dumps and roads in consultation with TNAU. The density of trees maintained around 2500 plants per ha. **(Annexure- 9)**
x)	A copy of the report on ground model study carried by IIT, Chennai to estimate under flow of water to the sea should be submitted to MoEF&CC along with an action plan to comply with the recommendation made therein.	The regional ground water modeling study was carried out by IIT, Chennai during 2003. The flow of water towards the sea is found to continue. The summary and recommendations of the report were already submitted to MoEF&CC and furnished in Annexure-10. Action completed.
xi)	A copy of study report on "Development of optimal plan for ground water pressure control for the existing and future mines and a comprehensive regional ground water simulation model for Neyveli basin" should be submitted along with a reliable prognostic pumping plan.	The study was completed for development of optimal pumping plan and for ground water pressure control in mines. Already NLCIL is adopting ground water pumping schedule by taking wells as close as to the line of deep cut of lignite and operating the wells as and when the depressurization is required for safe mining of lignite. The summary and recommendation of the report were submitted to MoEF&CC during November-2019. (Annexure-11)
xii)	The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine.	For the safe mining, depressurization is being done only from deep confined aquifers in NLCIL mines and so far no well has been reported dry. However, necessary water supply arrangements have already made to give water to the nearby villages. **(Annexure – 12)**
xiv)	A report on completion of rehabilitation of the project affected families should be submitted to the Ministry and its Regional Office at Bangalore.	Land acquisition for Mine-II Expansion (from 10.5 to 15.0 MTPA) is under process and only around 50% of the lands have been acquired so far. The final report will be submitted for the Ministry and its regional office at Bangalore, on completion of rehabilitation and resettlement of all the land affected families.

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
xv)	Sewage treatment plant should be installed for the colony. ETP should also be provided for all the workshops being operated by NLC.	A Sewage treatment plant of 30MLD capacity in Township has been commissioned in March 2004 and is in operation. Also a sewage treatment plant of 75 KLD for Industrial canteen has been commissioned in the year 2005 and is in operation. ETP 25 KLD has also been provided for Auto service Station of Mine and is in operation. **(Annexure-15)**
xvi)	Digital processing of all the mining leases using remote sensing technique should be done regularly once in 2 years for monitoring land use pattern and hydro-geomorphology and report submitted to MOE & F and its Regional Office regularly. A copy of the report for the year 2002 should be submitted within two months.	Digital processing of all mining lease area using remote sensing technique study once in two years were carried out regularly. For the year 2016-18 the Land use Land cover study was completed by Annamalai University. Project completion report was submitted to MoEF&CC during April-19 compliance report. Since beginning, NLCIL is carrying out the study through educational institutes in Tamilnadu. Covid-19 lockdown delayed the process of obtaining budgetary offer and tender process for the study period 2018 -2020. After Covid-19 lockdowns, Satellite imageries were procured from NRSC and for interpretation and preparation report study period 2018 & 2020, work order was awarded to NITTT&R, Chennai on 10.10.2022
xvii)	Ambient air quality around the storage bunkers in residential areas should be monitored on weekly basis and appropriate corrective measures should be taken as and when needed to ensure compliance with the national ambient air quality standards.	Ambient air quality is being monitored once in two days around the storage bunker in the residential areas of Umangalam & Periyakurichi villages and the air quality is within permissible limits. **Annexure-GC-3**
XVIII	Other project specific environmental protection measures suggested in the environmental management plan should also be implemented.	Optimised ground water pumping and land reclamation with afforestation, Dense green belt, water sprinkling over lignite, etc are being carried out. **(Annexure – 17)**
XIX	"Consent to operate" from the Tamil Nadu Pollution Control Board should be obtained before starting development work relating to expansion of the mine, besides other statutory clearances from the concerned authorities.	"Consent to operate" was accorded by Tamil Nadu Pollution Control Board in Mar.2005 and is being renewed every year. The renewal of consent is valid up to **31st March 2027** issued by TNPCB vide consent order Number 2208142715347 DATED: 31/10/2022 under Air Act 1981 2208242715347 DATED: 31/10/2022 under water Act 1974 **(Annexure – 18)**
XX	A special Monitoring Committee comprising representatives from the Ministry of Environment & Forests, Regional Director, Central Ground Water Board (Chennai based) and Shri H.V. Paliwal (Member, Expert Committee – Delhi based) to oversee the implementation of the environmental protection measures as indicated in this letter and	The Committee extended full cooperation. NLCIL is extending full cooperation whenever committee members visiting Neyveli Mines. **(Annexure – 19)**

Sl.No	CONDITIONS	IMPLIMENTATION STATUS As on 30.09.2022
	technical guidance. The Committee should be extended full cooperation.	

B . GENERAL CONDITIONS:

I	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Any change in mining technology and scope of working will be made with prior approval of the Ministry of Environment & Forests.
II	No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.	There is no change in the calendar plan including excavation, quantum of lignite and waste. **(Annexure – GC 2)**
III	Five ambient air quality-monitoring stations should be established in the core zone (Mine-II Expansion area) as well as in the buffer zone for RPM, SPM, SO_2& NO_x monitoring . Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	In Buffer Zones, five AAQ Stations were established on East, West, South, North side of Mines-II as suggested. In core zone, five AAQ stations have already been established as suggested and are being monitored in consultation with TNPCB. **Annexure – GC 3**
IV	Data on ambient air quality (RPM,SPM,SO_2&NO_x) should be regularly submitted to the Ministry including its Regional office at Bangalore and the State Pollution Control Board/ Central Pollution Control Board once in six months.	Ambient air quality (PM10, SO2, NOx) survey are being monitored in available stations earmarked for Mines-II and results are being submitted regularly to the Ministry including its Regional office at Chennai and the State Pollution Control Board once in six months. **Annexure-GC 3.**
V	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	The condition is Being adhered strictly by NLCIL. **Annexure – GC 5**
VI	Fugitive dust emissions from all the sources should be controlled, regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading& unloading) should be provided and properly maintained.	Fugitive dust emissions from all the main sources are being controlled. Water spraying in haul road and lignite stock is being regularly done. **Annexure GC 6**
VII	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs / muffs.	Adequate measures are being adopted to control noise levels below 85 dBA in the work environment. Workers engaged in drilling & blasting operation area provided with ear plugs. **Annexure – GC 7**

VIII	Industrial waste water (workshop and waste water from the mine) should be properly collected, treated so as to confirm to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Effluents from the service points and waste water from canteen are being utilized for gardening only after proper treatment and are within the norms prescribed by SPCB. This is extended to Expansion Project also. Oil and grease trap is provided before discharge. **Annexure – GC 8**
IX	Acid mine water, if any, has to be treated and disposed of after conforming to the standard prescribed by the competent authority.	There is no case of acid water occurring in Mines-II.
X	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	At present a well established laboratory is available (Centre for Applied Research And Development) for NLC at Neyveli for pollution monitoring. . **Annexure – GC 09**
XI	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to coal and take corrective measures, if needed.	At present all the protective respiratory devices are being provided to the employees working in dusty areas and they are being provided with adequate training on safety and on health aspects regularly. All the employees are being sent for medical examinations once in five years. This is extended to the Expansion project also. All the Mines are certified as per OSHAS 18001 **Annexure – GC 10**
XII	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	A separate Environment management Cell is already formed under the chairmanship of Unit Head, to whom a qualified personnel holding Masters Degree in Environment Engineering is reporting.
XIII	The funds earmarked for the environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bangalore.	Provision was created to deposit an amount of Rs.1.72 Crores towards mine closure activity on monthly basis. The funds earmarked for the environmental protection measures has been kept in separate account and is not being diverted for other purpose Year wise expenditure is reported to the Ministry and its Regional Office located at Chennai. . **Annexure – GC 13**
XIV	The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full	NLCIL will extend full cooperation to the officers of the Regional Office by furnishing requisite data / information / monitoring reports.

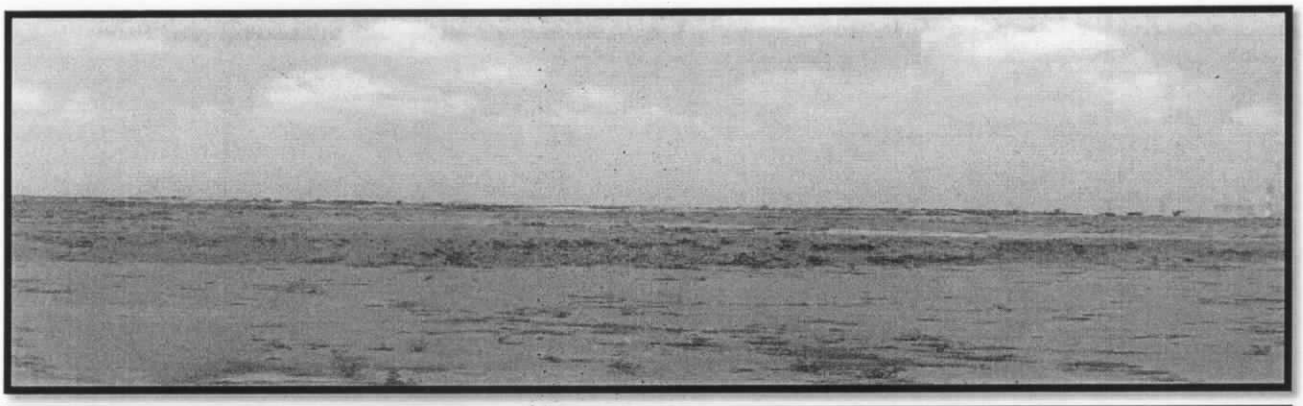
	cooperation to the officer(s) of the Regional Office by furnishing requisite data / information/ monitoring reports.	**Annexure – 19**
XV	A copy of the clearance letter will be marked to concerned Panchayat / Local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.	EC letter copy has been sent to concerned panchayat. **Annexure – GC 15**
XVI	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office / Thasildar's Office for 30 days.	EC letter copy has been sent to TNPCB. **Annexure – GC 16**
XVII	The project authorities should 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 issue 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 web site of the Ministry of Environment & Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bangalore.	Advertised on 30.12.2002 in The Hindu and Daily Thanthi (Tamil)**Annexure -GC 16**

Yours faithfully,

For NLC India Limited

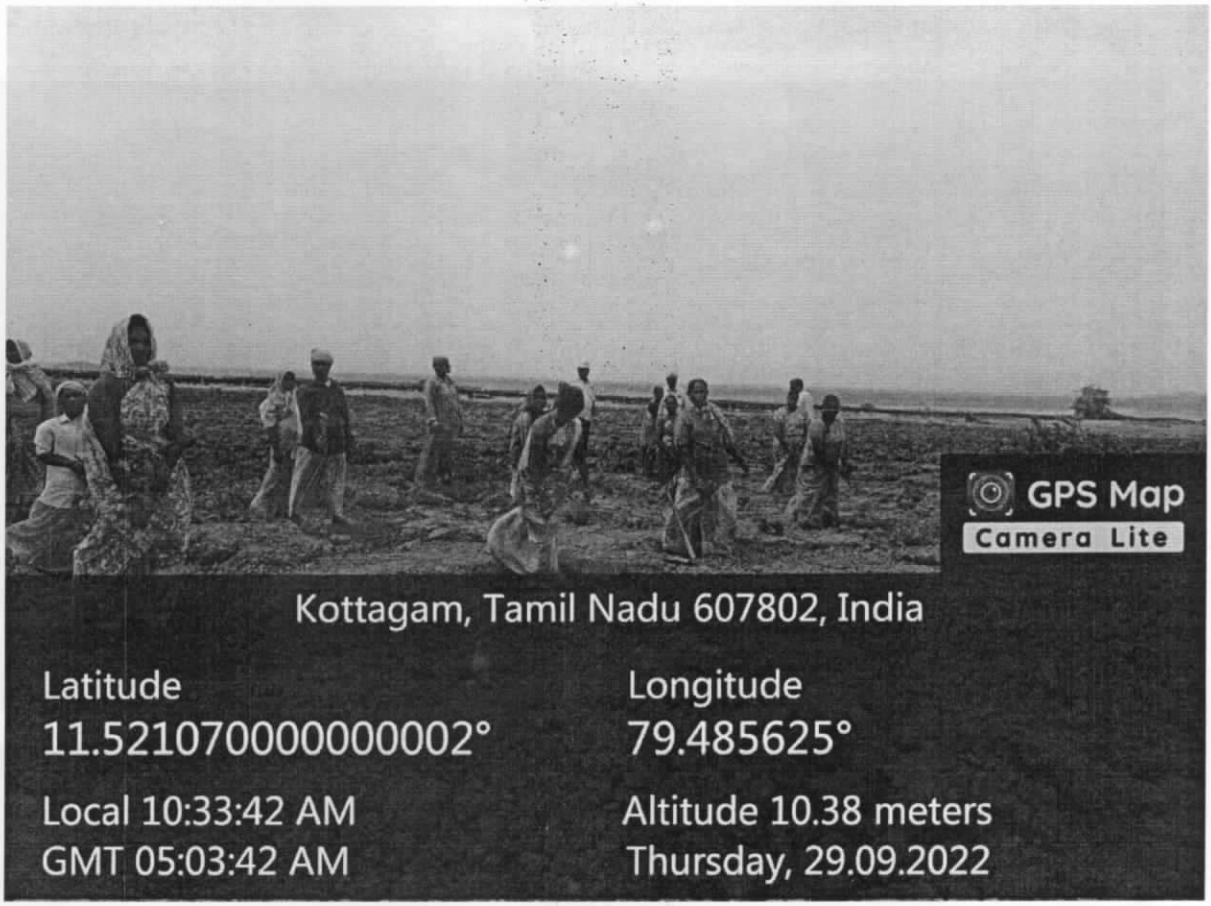
CHIEF GENERAL MANAGER / MINES-II

Top Soil Conservation at Backfilled Areas-Annexure-1



Annexure - 2B

Tree Saplings Planted

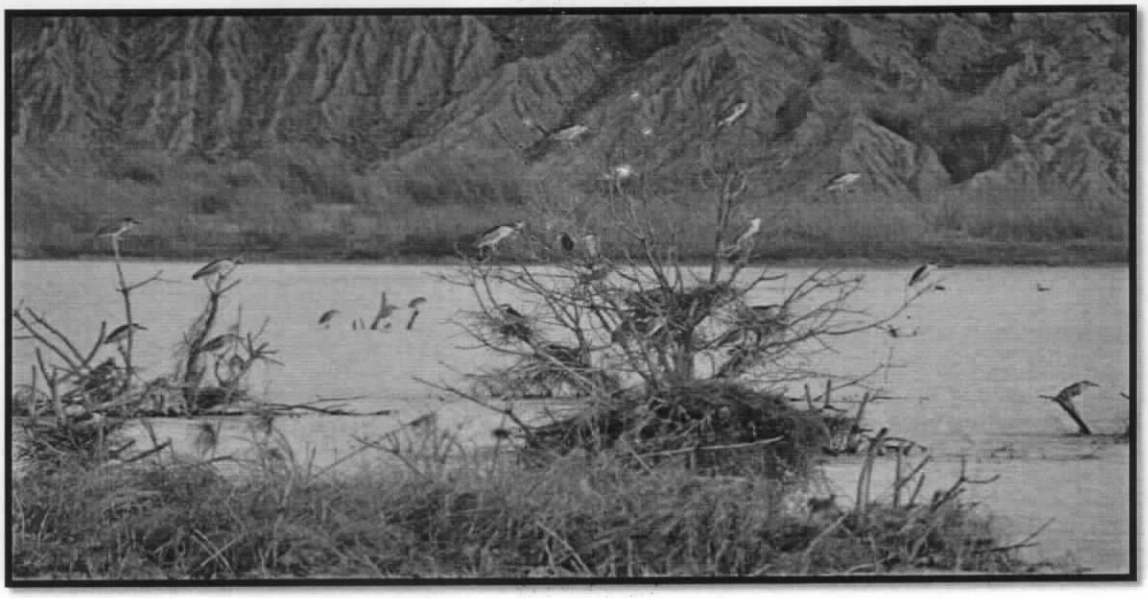

GPS Map
Camera Lite
Kottagam, Tamil Nadu 607802, India
Latitude
11.521070000000002°
Longitude
79.485625°
Local 10:33:42 AM
GMT 05:03:42 AM
Altitude 10.38 meters
Thursday, 29.09.2022

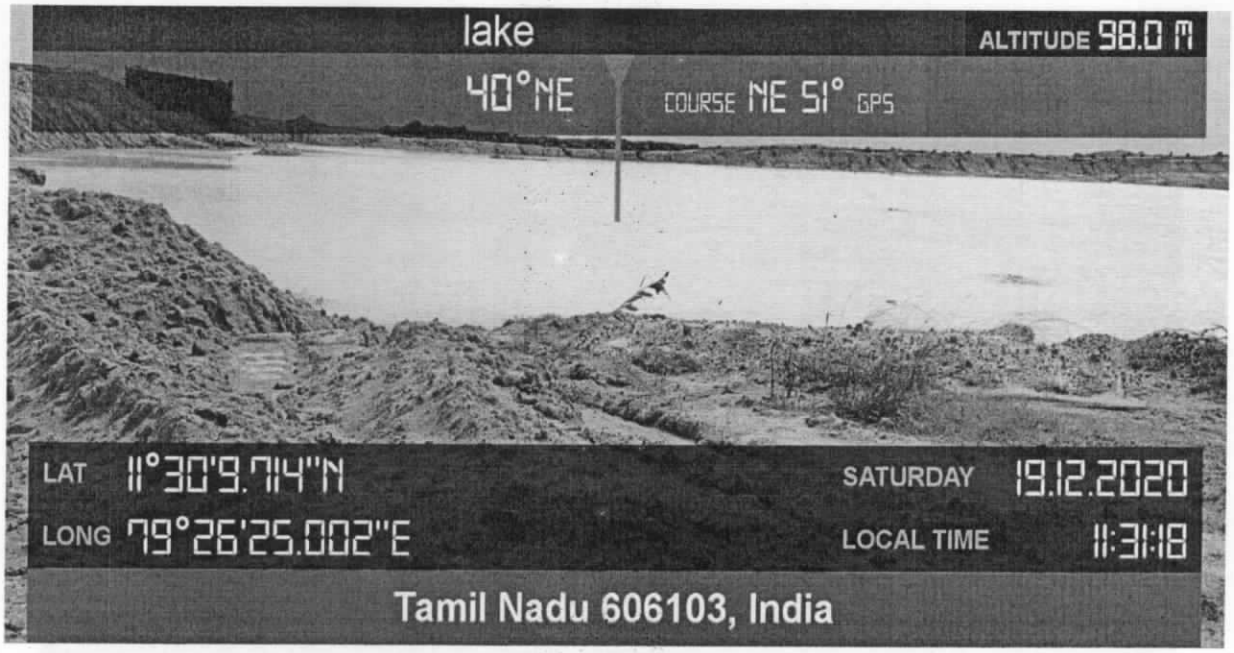
Annexure-2C

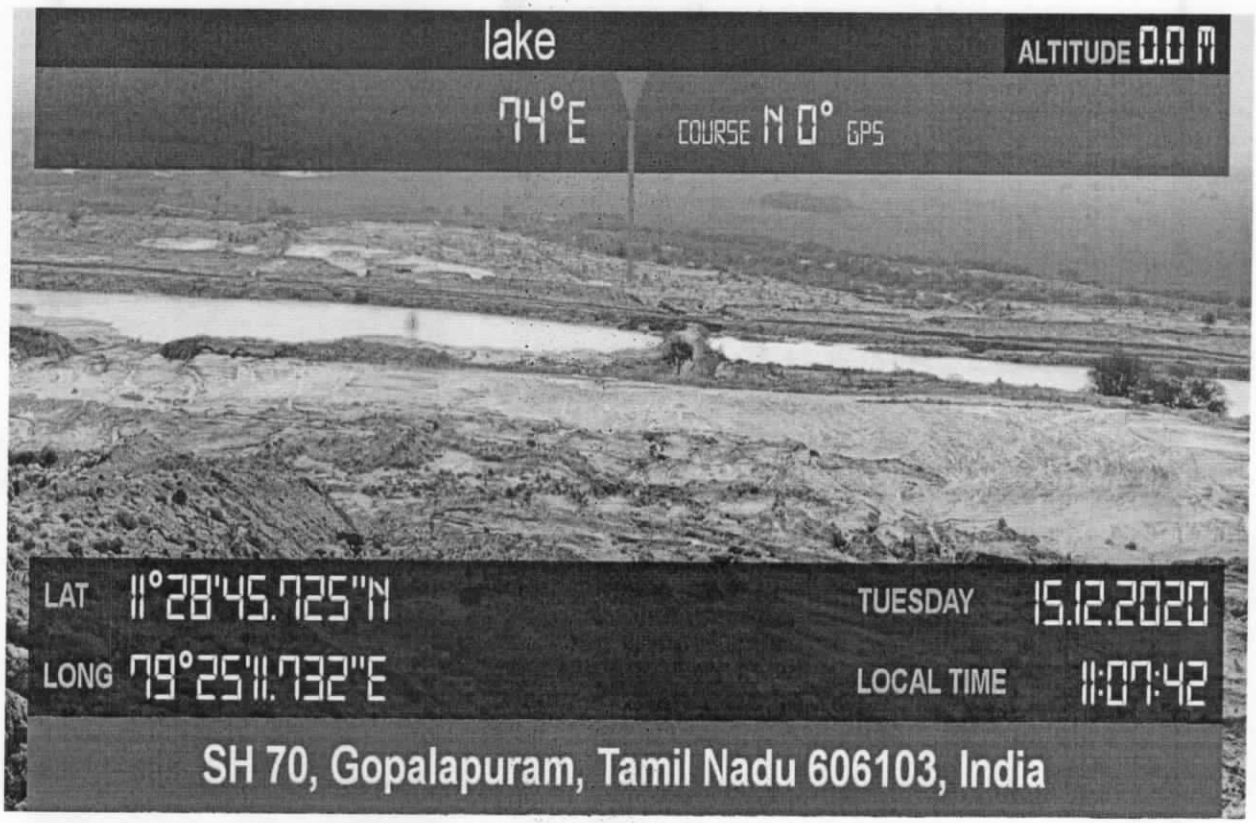
Reclamation Area

ARTIFICIAL POND

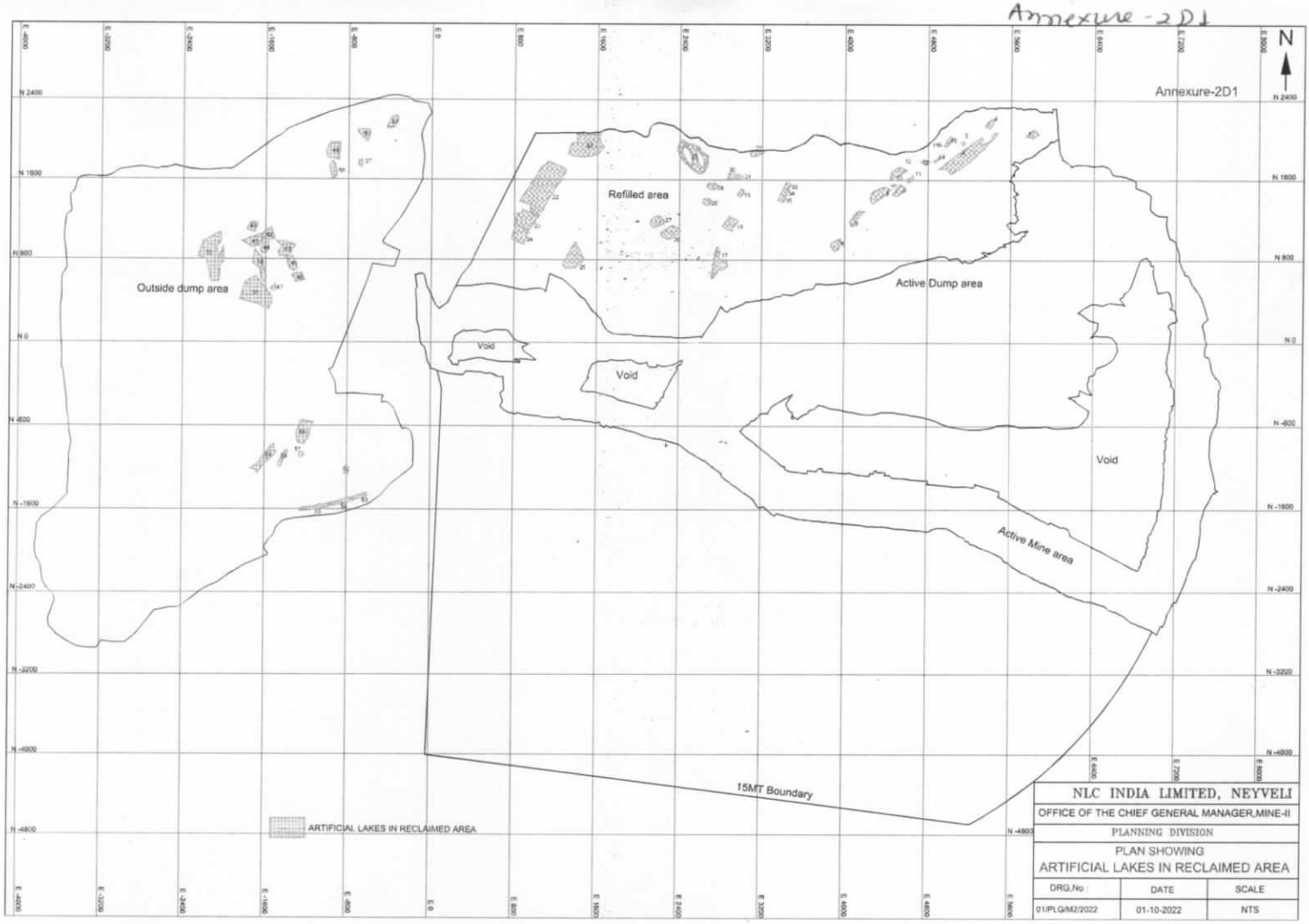
ANNEXURE 2D




lake
ALTITUDE 98.0 M
40° NE
COURSE NE 51° GPS
LAT 11°30'9.714"N
LONG 79°26'25.002"E
SATURDAY 19.12.2020
LOCAL TIME 11:31:18
Tamil Nadu 606103, India

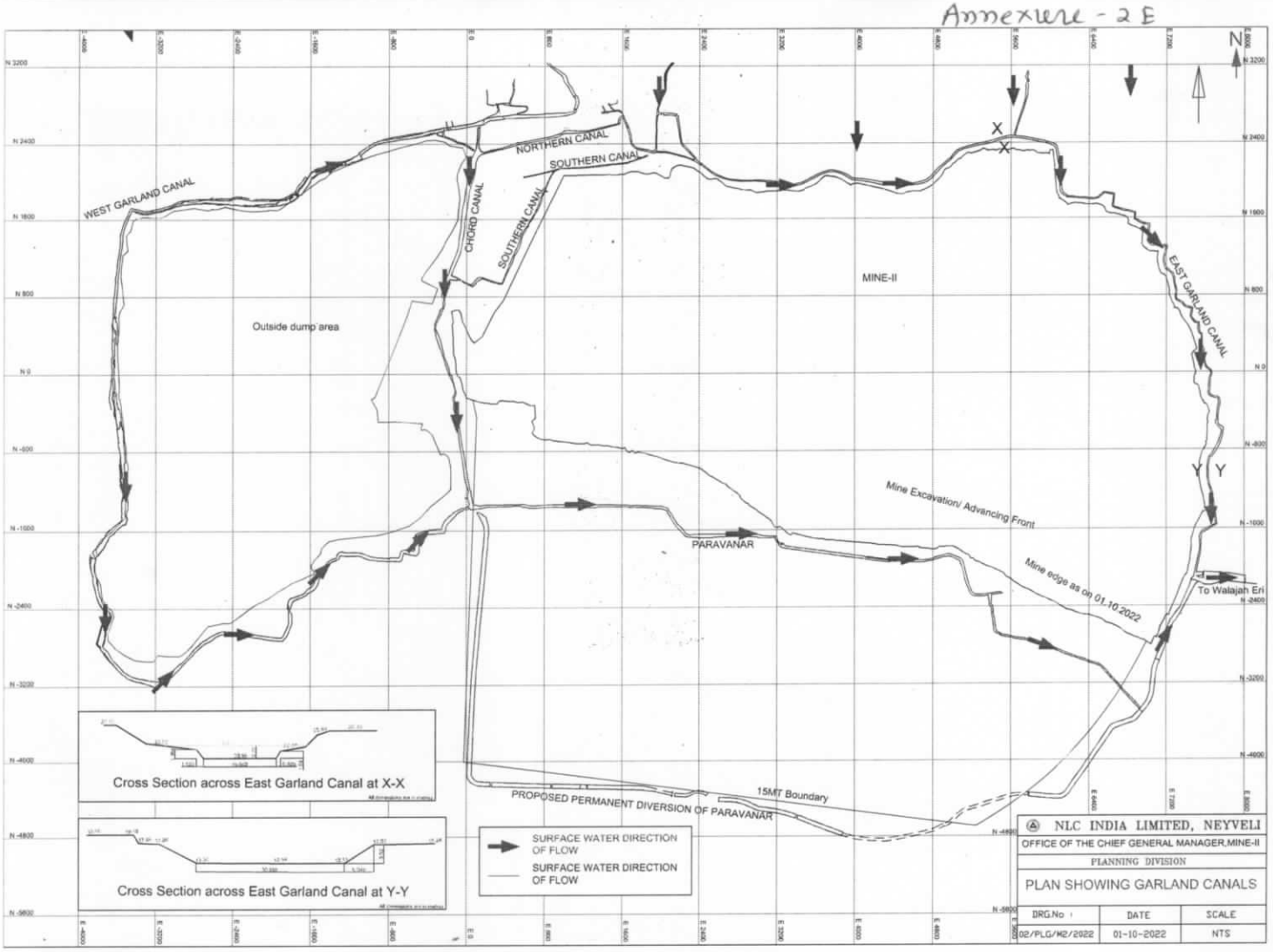

lake
ALTITUDE 0.0 M
74° E
COURSE N 0° GPS
LAT 11°28'45.725"N
LONG 79°25'11.732"E
TUESDAY 15.12.2020
LOCAL TIME 11:07:42
SH 70, Gopalapuram, Tamil Nadu 606103, India

Annexure-2D1



NLC INDIA LIMITED, NEYVELI		
OFFICE OF THE CHIEF GENERAL MANAGER,MINE-II		
PLANNING DIVISION		
PLAN SHOWING ARTIFICIAL LAKES IN RECLAIMED AREA		
DRG.No :	DATE	SCALE
01/PLG/M2/2022	01-10-2022	NTS

Annexure - 2E



NLC INDIA LIMITED, NEYVELI

OFFICE OF THE CHIEF GENERAL MANAGER,MINE-II

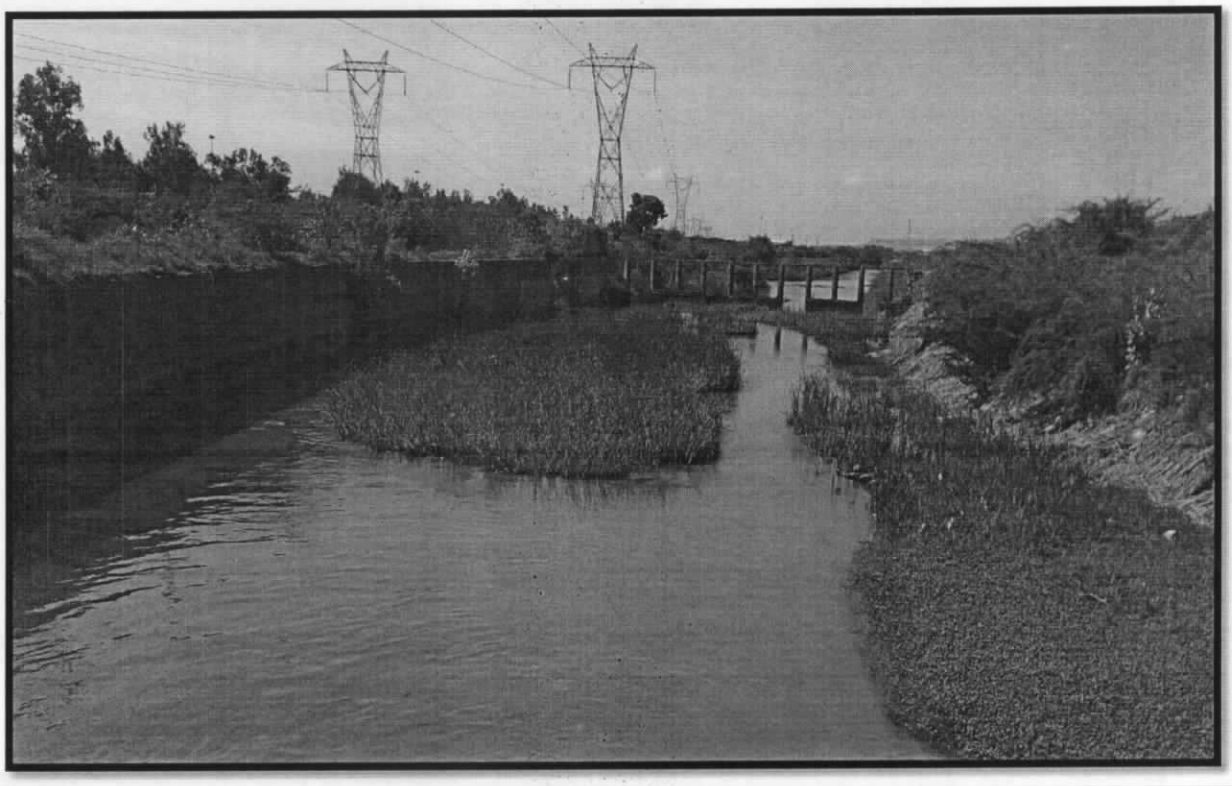
PLANNING DIVISION

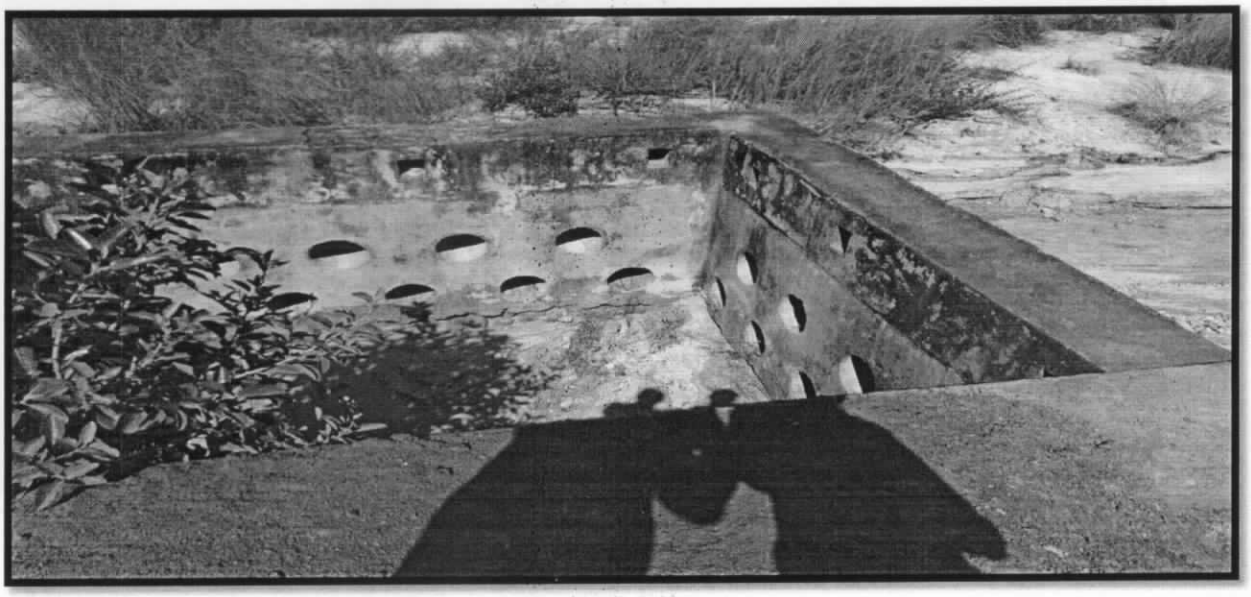
PLAN SHOWING GARLAND CANALS

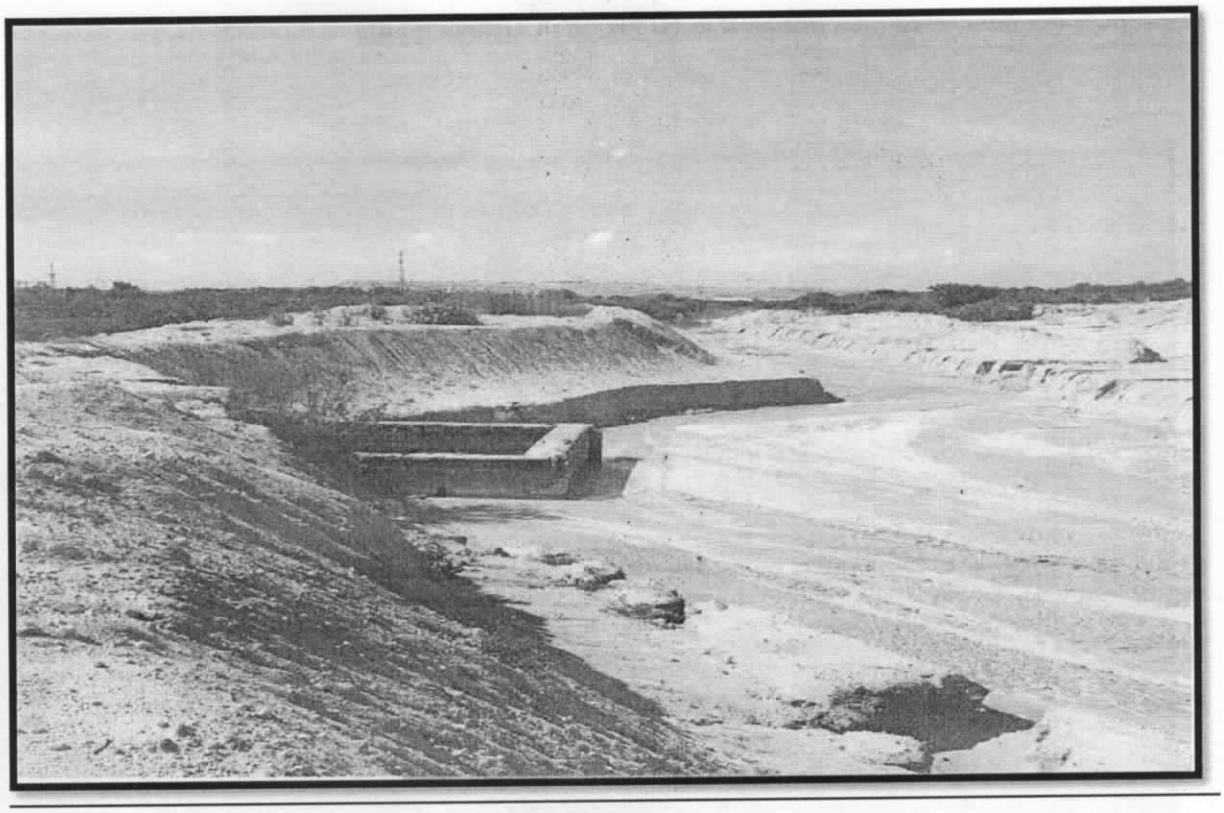
DRG.No :	DATE	SCALE
02/PLG/M2/2022	01-10-2022	NTS

Annexure-3

Mine-II Retaining Wall Arrangements








L&T-KOMATSU
L&T-KOMATSU
200

Annexure-4A

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

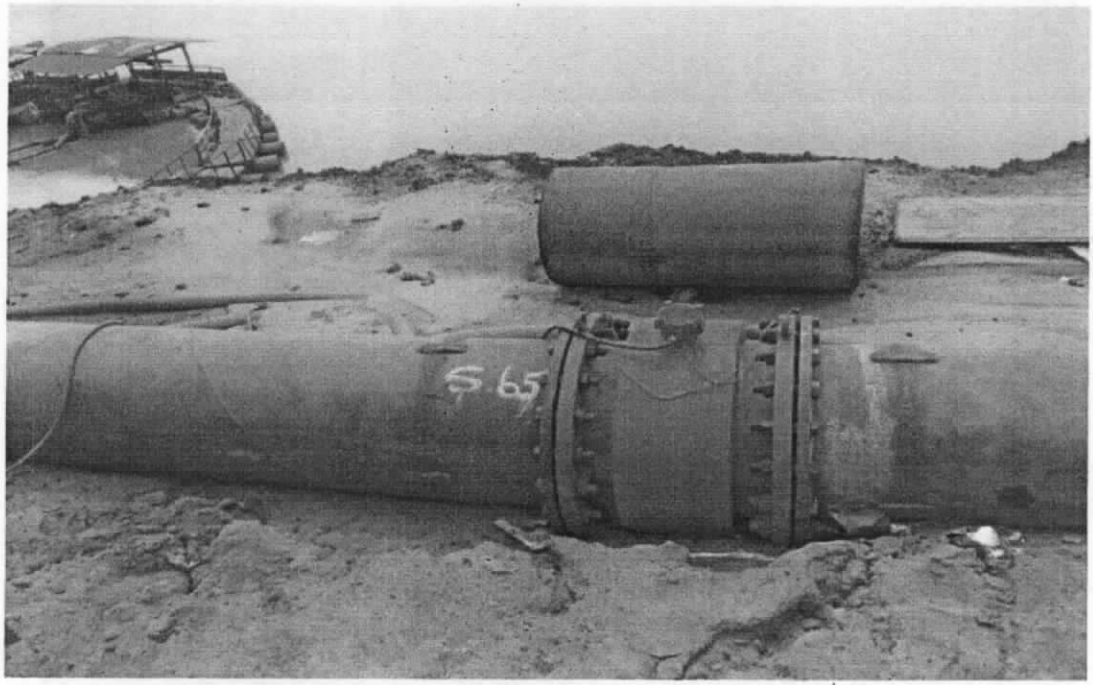
Input	MCM/A	Output/Extraction of ground water in MCM/Annum		Total MCM/A
Recharge due to rainfall	135.64	Mine-I pumpage	16.08	
Recharge due to Downward leakage	90.00	Mine-IA pumpage	08.13	
		Mine-II pumpage	17.04	
Southwest inflow	30.00	Neyveli township	12.73	
		Industrial pumpage	17.83	
		Total by NLCIL		**71.81**
		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	
Total Input	**255.64**	**Total by others**		**103.73**
		Grand total		**175.54**

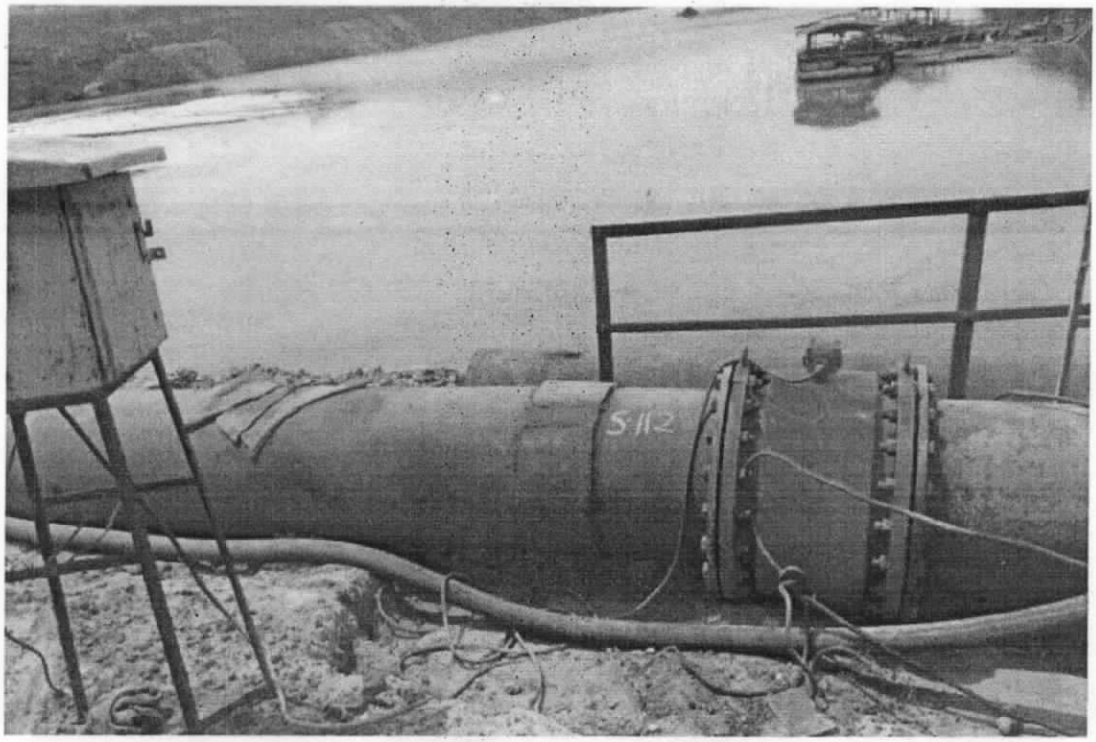
** For a period of 6 months only

Annexure IV B

WATER QUANTITY MEASURING DEVICE

WATER QUANTITY MEASURING DEVICE





Annexure-6A

MONITORING OF WATER TABLE- (Special Condition V & VI)

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	KARUNKUZHI	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)

Annexure-6-B1

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

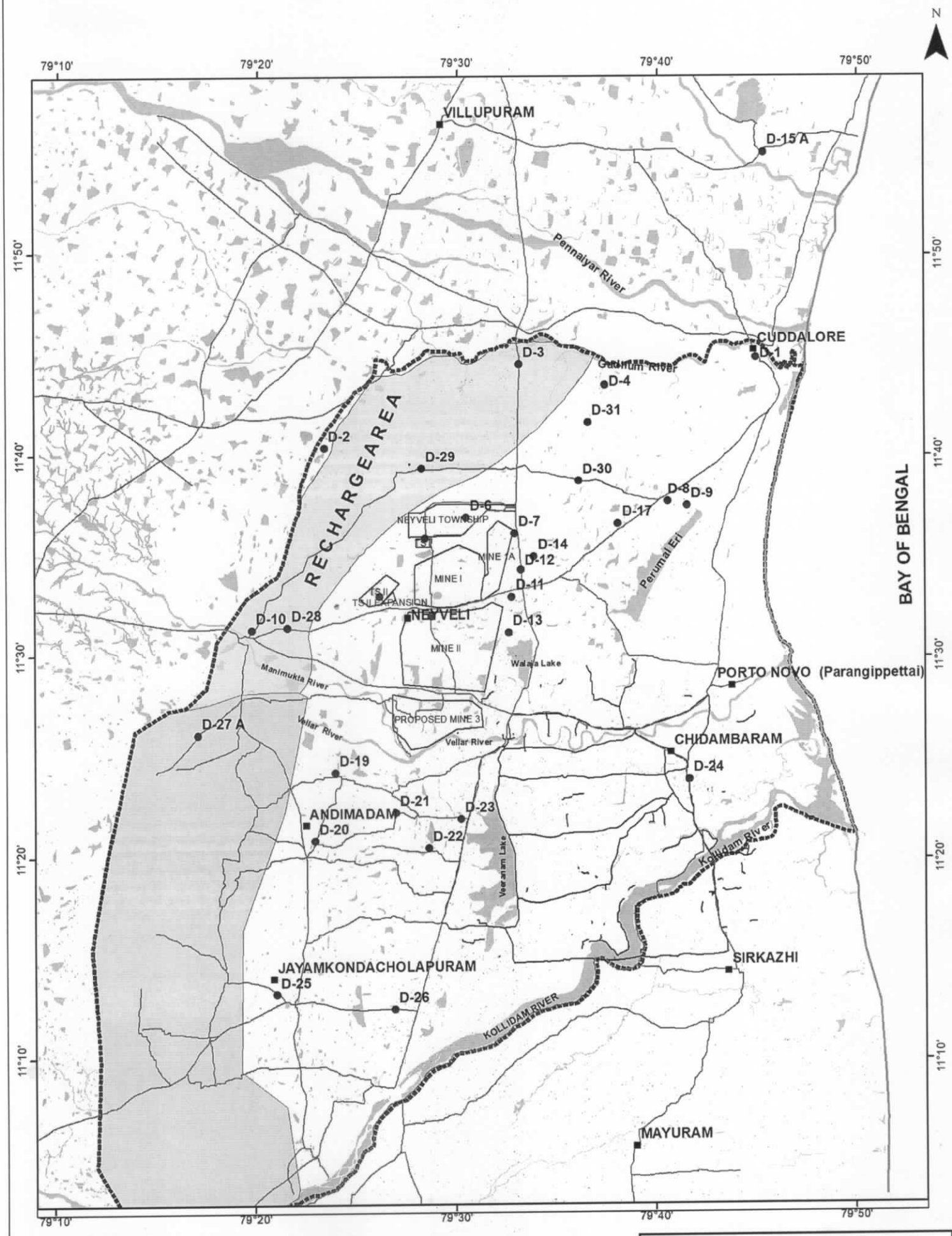
Sl. No.	Parameters	Location Code										BIS Permisible limit
		D-15	D-16A	D-17	D-18A	D-24	D-25	D-28	D-29	D-30	D-31	
1	Calcium as Ca	56	104	76	120	128	88	96	20.8	24	4.8	200
2	Magnesium as Mg	31.6	29.2	19.4	26.7	43.5	12.2	19.4	9.7	9.7	2.4	50
3	Sodium as Na	74.2	90	72	131.5	283	62	93	32	22	17	-
4	Iron & Aluminium oxide as R_2O_3	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_2	49	48.8	48.8	47.6	50.4	50.8	51.2	47.6	47.2	46.4	
7	Chloride as Cl^-	139	108	102.8	123.4	380	80	108	45.2	46	21	1000
8	Sulphate as SO_4^{--}	70	150	52.5	262	46.9	32.6	123.2	30	29	21.4	400
9	Free CO_2	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 $CaCO_3$	129	290	247	215	512	263	252	65	56	11	600
15	Carbonate Alkalinity as $CaCO_3$	34	0	0	43	120	0	0	0	0	0	
16	Hydroxide Alkalinity as $CaCO_3$	0	0	0	0	0	0	0	0	0	0	
17	Total Hardness as $CaCO_3$	270	380	270	410	540	270	320	92	100	22	600
18	Temp.Hardness as $CaCO_3$	163	290	247	258	540	263	252	65	56	11	
19	Permanent Hardness as $CaCO_3$	107	90	23	152	0	7	68	27	44	11	
20	Conductivity in micromhos @ 25^0 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_3	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	

Annexure-6-B1

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

Sl. No.	Parameters	D-01	D-03	D-04	D-05	D-06	D-07	D-08	D-09	D-11	D-13	D-14	BIS Permisible limit
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_2O_3	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_2	46.8	47.6	46.8	49.6	47.6	46.8	48.4	46.8	50	49	47.2	
7	Chloride as Cl^-	189	20.6	46	55	11.4	16	102.8	78.2	50	99	144	1000
8	Sulphate as SO_4^{--}	101.8	23	36.3	166.2	3	3	48	10.6	176.2	105	72	400
9	Free CO_2	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 $CaCO_3$	188	30	34	64	27	64	305	86	86	208	215	600
15	Carbonate Alkalinity as $CaCO_3$	43	0	0	0	0	0	0	34	0	0	43	
16	Hydroxide Alkalinity as $CaCO_3$	0	0	0	0	0	0	0	0	0	0	0	
17	Total Hardness as $CaCO_3$	260	70	120	250	38	64	270	132	240	250	350	600
18	Temp.Hardness as $CaCO_3$	231	30	34	64	27	64	270	120	86	208	258	
19	Permanent Hardness as $CaCO_3$	29	40	86	186	11	0	0	12	154	42	92	
20	Conductivity in micromhos @ 25^0 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_3	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	

MAP SHOWING THE DUG WELLS IN THE PART OF NEYVELI BASIN, CUDDDALORE DISTRICT, TAMILNADU



Legend

● DUG WELLS

SCALE

Kilometers

0 3 6 12 18

NLC INDIA LTD., NEYVELI

REGIONAL GEOLOGY DIVISION

Location Plan of Dug Wells

Annexure-6C-1

Mine-II Expansion (15.0MTPA) Spefic condition (v&vi)				
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	Kirumambakkam- East	5.55	5.20
25	CGWB-49B	Kirumambakkam-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

SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
45	CGWB-11	Melkudirrupu	78.78	78.75
46	CGWB	Melur-UC2	49.40	69.60
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	Vadalur 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

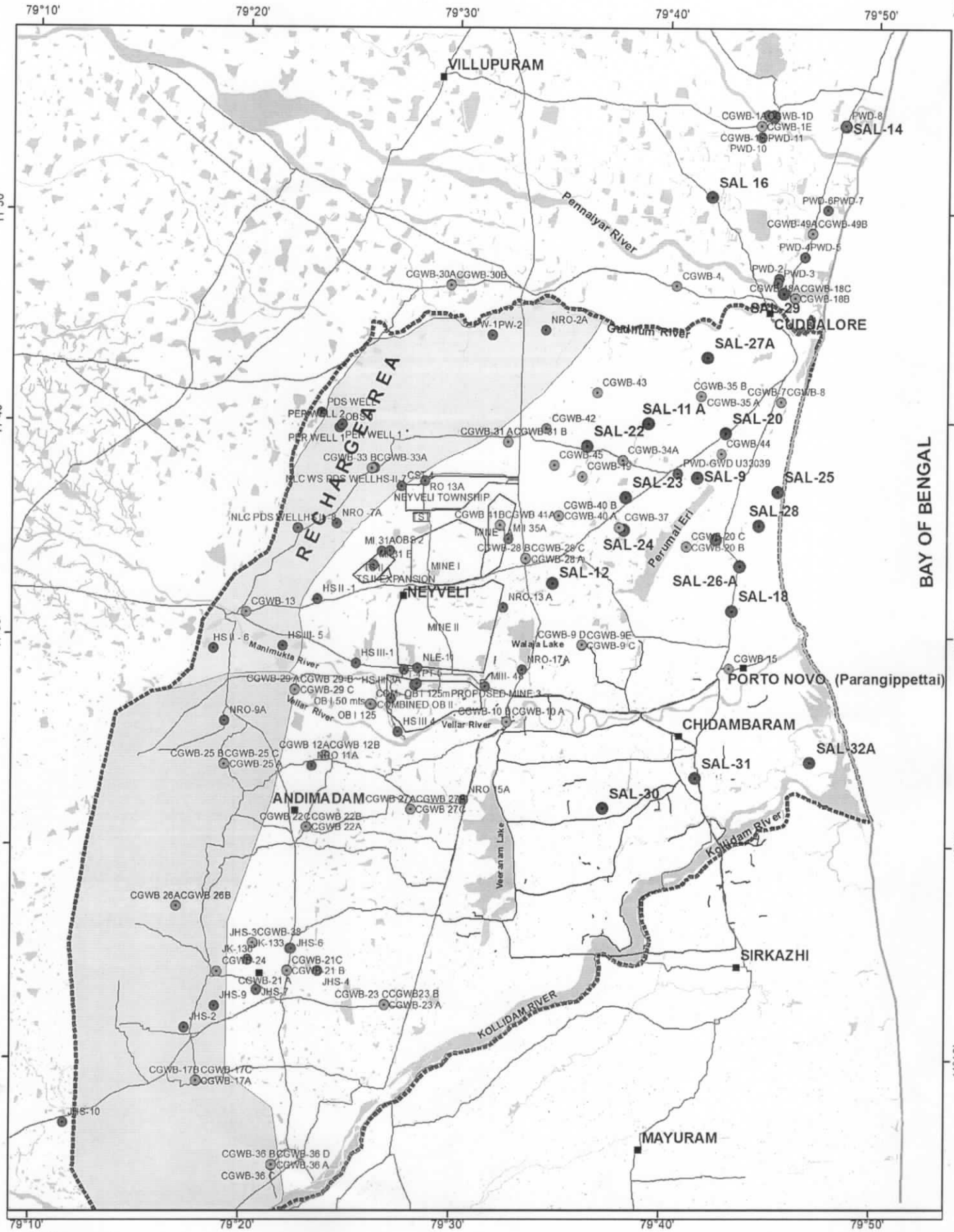
SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
90	SAL-11A	Kattusagipuliyur	55.28	56.55
91	SAL-11B	Kattusagipuliyur	Box fixed	Box fixed
92	SAL-12	Rajakuppam	22.06	25.60
93	SAL-15	Villiyanur	19.30	19.60
94	SAL-16	Thukkanambakkam	27.90	28.80
95	SAL-20	Thondamanatham	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	Kodiyalam	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	Maligampttu	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

SL-No	Piezometer Well ID	Piezometer well Location	DTW at MP May-2022	DTW at MP Aug-2022
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	-	-
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 Expn	111.7	-
161	OBSE-9	Mine-II	76.9	77.50

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

Annexure - 6 C-II

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



NLC INDIA LTD., NEYVELI
REGIONAL GEOLOGY DIVISION

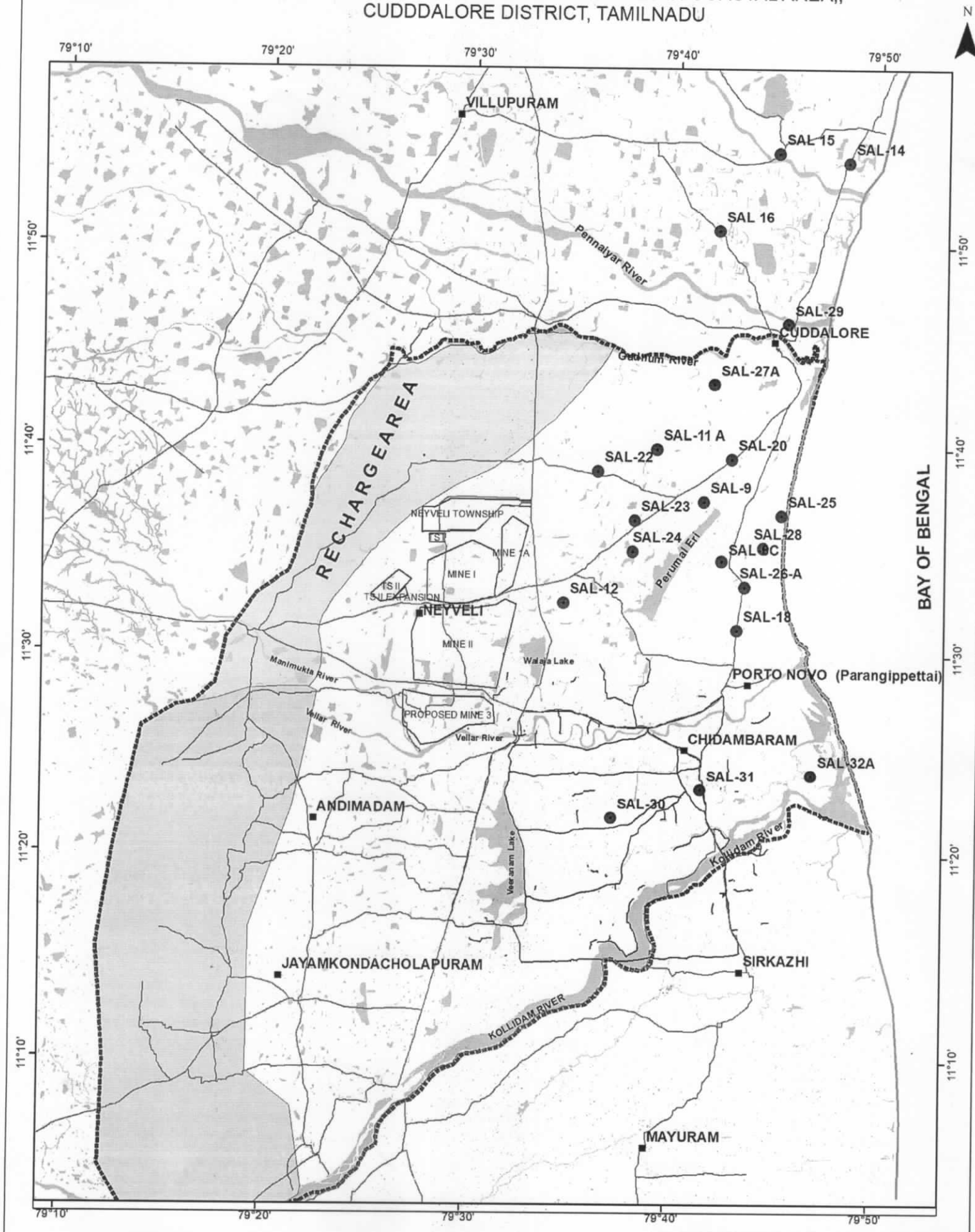
ANALYTICAL RESULTS OF WATER SAMPLES (TUBE WELLS) COLLECTED FROM COASTAL AREA, CUDDALORE DISTRICT, TAMIL NADU (Pre Monsoon June-2022)

Sl. No.	Parameters	Metupalayam	Ramanathan kuppam	Kattusagi puliyur	Raja Kuppam	Madana gopala	T.Palayam	Thaiyal kunam	BIS-Permisible 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 R_2O_3	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_2	47.2	46.8	48	48	48	48	48	
7	Chloride as Cl^-	68	60	41	103	26	89	108	1000
8	Sulphate as SO_4^{--}	40.6	20.7	22	63.4	34	38	49.25	400
9	Free CO_2	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 $CaCO_3$	142	52	151	269	52	123	163	600
15	Carbonate Alkalinity as $CaCO_3$	43	34	0	0	0	43	36	
16	Hydroxide Alkalinity as $CaCO_3$	0	0	0	0	0	0	0	
17	Total Hardness as $CaCO_3$	172	116	200	310	70	210	260	600
18	Temp.Hardness as $CaCO_3$	172	86	151	269	52	166	198	
19	Permanent Hardness as $CaCO_3$	0	30	49	41	18	44	62	
20	Conductivity in micromhos @ 25^0 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_3	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	

Sl. No.	Parameters	Periyapattu	S.Pudur	Poochimedu	Cuddalore	Kodiyalam	Chidam baram-school	BIS-Permisible 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 R_2O_3	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_2	48	48.8	46.8	50	48.4	48	
7	Chloride as Cl^-	27	62	16.5	104	221	93	1000
8	Sulphate as SO_4^{--}	21	22.5	56	44.7	35.36	10	400
9	Free CO_2	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 $CaCO_3$	65	47	99	268	312	275	600
15	Carbonate Alkalinity as $CaCO_3$	34	0	34	214	0	17	
16	Hydroxide Alkalinity as $CaCO_3$	0	0	0	0	0	0	
17	Total Hardness as $CaCO_3$	112	120	188	210	390	260	600
18	Temp.Hardness as $CaCO_3$	99	47	133	210	312	260	
19	Permanent Hardness as $CaCO_3$	13	73	55	0	78	0	
20	Conductivity in micromhos @ 25^0 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_3	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	

Annexure-6D-II

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



Legend

SAL Borehole

SCALE

Kilometers

0 3 6 12 18

NLC INDIA LTD., NEYVELI

REGIONAL GEOLOGY DIVISION

TUBE WELLS FOR SALINITY MONITORING

Annexure VII

Under GOI Coal S&T grant, a pilot study on artificial recharge was taken up in two villages ie. Nadiyapattu & Maligampattu falling in the recharge area of Neyveli aquifer basin during May-2002 for a period of four years. All activities were completed. As the result of this study the percolation ponds with percolation wells were found to be more effective in recharging the surface water into the aquifer. Action is being taken for desilting the check dam and pondage area. Desilting work carried out during October-2017 and completed. Monitoring is being continued in the study area.

Similarly in the downstream side, NLC has experimented with expertise from RWE-Germany and IIT-Madras on artificial recharge through injection techniques to the deep seated confined aquifers.

NLC in consultation with CGWB is developed an artificial recharge structure with in NLC lease hold area ie. North west of Mine-II area at a cost of 1.24 crore. The above artificial recharge structure is consist of one check dam, 3 observation wells and 8 percolation wells to recharge the run-off water into water table aquifer & confined aquifer in the up dip direction. The construction work of one check dam length 94.00 m and height 2.04m and 8 percolation wells are completed to all respect the monsoon run off water is filled up in its full capacity of recharge structures and recharging is being continued through percolation wells to enhance the ground water resources in the region. Monitoring of observation well tube well & dug well is being continued.

Director/Mines has sent letter to Chairman CGWB on 04.03.2016 to take up study of satellite data for the identification of suitable sites in the Neyveli Hydro geological basin for the construction of artificial recharge structure to enhance the ground water potential.

Identification of suitable water bodies for de-silting and restoration in Neyveli basin using Geospatial technology with special reference to sustainable management of ground water in the lignite mining environment studies were given to Annamalai University Department of Earth science during the period September-2016 and work was completed in March-2018.suitable water bodies were identified to develop recharge structure in future.

Annexure - VIII

FROM R. DEIVAM
2011 10:21 From: DGM/Olg To:04142262394 P.1/1
01-2011 14:56 From: Mine II & EXPN To:04142252619 P.1
Sr. To R.M/Delhi

DIRECTOR (P & P) N.L.C. LTD., NEYVELI 02 APR 2011 435

Mr. R. DEIVAM, DGM/MP(MII & Expn)

DIRECTOR (MINES) No. 1368 Dt. 01.04.11

No. 43012(27)2010-CPAM
Government of India
Ministry of Coal
(CPAM Section)

New Delhi, the 31st March, 2011

To

Shri B. Surander Mohan,
Director (Mines),
Neyveli Lignite Corporation Limited,
Corporate Office Block-1, Neyveli
Cuddalore District (Tamil Nadu).

Subject	Approval of Mine Closure Plans in respect of i) Mine-I (July 2010), (ii) Mine-IA (July 2010), (iii) Mine II (July 2010) and (iv) Barsingsar Lignite Mine (July 2010) for approval of the Central Govt, submitted by M/s. Neyveli Lignite Corporation Limited.

Sir,

I am directed to refer to your letter No.422/NLC/D(M)/MCP/2010 dated 15.9.2010 thereby submitting Mine Closure Plans in respect of i) Mine-I (July 2010), (ii) Mine-IA (July 2010), (iii) Mine II (July 2010) and (iv) Barsingsar Lignite Mine (July 2010) for approval of the Central Govt. to be read along with the respective addendum(s) dated March 2011 submitted by the NLC vide their letter dated 21.3.2011 and to say that the above mentioned Mine Closure Plans have been considered in this Ministry and the approval of the competent authority is hereby conveyed under the Section 5(2)(b) of the Mines and Minerals (Development & Regulations) Act, 1957 subject to the following conditions:-

i) The mining company shall take all necessary precautions regarding safety of mine workings, persons deployed therein during the implementation of the Mine Closure Plan;

ii) The approval of the mine closure plan is without prejudice to the requirement of approvals from competent/prescribed authority under the relevant rules/regulations, etc.

2. Two copies of each of the above mentioned approved Mine Closure Plans, duly signed by the competent authority, are returned herewith, with the request that a copy of the approved mine closure plan may be submitted to the concerned State Government for necessary action and a photocopy of the approved Mine Closure Plan may be sent to the Coal Controller for monitoring the Mine Closure Plan.

Yours faithfully,

(Sandeep Gupta)
Under Secretary to the Govt. of India.

Encl. As above.

Copy to CA-II Section.

Copy submitted to CMD - for kind information

PLANTATION

Annexure IX

Annexure-10		
Sl no	Recommendations	Action taken & completed
1.	Since the extent of confined aquifer is very vital for the total region including NLC a detailed study on its disposition and extent into the sea needs to be undertaken.	Necessary action has been taken for collection of available data from off shore drilling division by ONGC. It is inferred that usually ONGC starts logging beyond 500 to 600m deep only
2	While lot of data in past has been generated for the upper confined aquifer, the information data on the behaviour of lower confined aquifer is significantly limited. It is therefore recommended that the pumping test at certain locations, preferably in lignite areas may be planned for lower confined aquifer, and regular monitoring of lower confined aquifer needs to be undertaken.	As recommended, pumping tests in the lower confined aquifer in the lignite bearing area (east of Mine-II) was conducted during May-June-2006 and monitoring of lower confined aquifer is being carried out. Similarly in the region with the deep wells established by CGWB & NLCIL. pumping tests were conducted in Jayamkondam , Devangudi & Mine-III -Block in lignite bearing areas for hydro-geological studies.
3.	In the case of phreatic and semi confined aquifers, the water is mostly pumped out in villages both for domestic as well as for agricultural use. It is gathered that NLCIL is undertaking studies on regional ground water variation through the monitoring of dug wells and tube wells which should be continued so as to have a comprehensive regional assessment on the contribution of ground water from the two aquifers.	Monthly water level monitoring from Dug wells and tube wells are being carried out which also includes the wells established by CGWB. Monthly report period October-21 to March -2022 was already sent to the Regional Director, Central Ground Water Board, South Eastern Coastal Region, Chennai.
4.	The results of simulation studies indicate that there is no sea water intrusion towards land side. However it is essential that studies	The Studies were undertook in coastal region of Neyveli Hydro-geological basin for tracing of salt water /fresh water interface position through deep resistivity soundings survey by GSI during 2005. The results indicate there is no ingress of saline water landwards in

	leading to isolation of salt water /fresh water interface position need to under taken. In addition, the artificial recharge experiments through injection wells or by other methods could also be carried out in the field. Advanced preparedness would help in meeting the requirement of expansion programmes for lignite mining in the region by NLCIL.	confined aquifers. To study the variation for a period of 5 years next phase of resistivity work for the period 2010/2012 was carried out by GSI which also reveals that there is no sea water ingression towards land. At present work of coastal resistivity survey covering 50km length along the coast and 10km towards inland from shoreline is awarded to a firm by NLCIL at cost of Rs.49 Lakhs and resistivity survey filed work completed and report preparation under progress The artificial recharge experiments through injection wells were carried out near the coast with the technical assistance of M/s. Rhein Braun Engineering Germany, and IIT-Madras and the study was completed during Dec-08. The artificial recharge through injection to deep confined aquifers more than 200m deep was successful.
5	It is also observed that the pumping for the industries near the sea coast area from the confined aquifer. It is recommended that concerned authorities may be informed that further pumping from the confined aquifer may result in sea water ingress and the coastal zone near the Cuddalore area needs to be protected. If the pumping is not reduced in the coastal area, then the industries may have to be asked to implement artificial recharge methods so as to control sea water ingression	This issue has been discussed with the CGWB South Eastern Coastal Region Chennai.
6.	The detailed analysis of the pumping scenarios in the NLCIL mines reveal that the optimal pumping lies around 170 MCM/annum. Therefore NLCIL pumping and pumping for other purpose namely agriculture, industrial, and domestic in this region are to be maintained not exceeding the current rate which is	NLCIL's annual pumping for all purposes is maintained well within the stipulated quantity 149.73MCM/ Annum. Water balance statement for the period July-2020-June-2021 is 65.92 MCM is submitted herewith in **Annexure-4A**. NLCIL do not have any control of others pumping ie. Agriculture, sugar mills, Chennai Metro & Industrial in this region.

	around 300 MCM/annum	
7.	Regional Hydro geological studies on a regular basis covering all available observation well in confined aquifer and dug wells should be continued by NLCIL. For the observation wells and dug wells suitable provision should be made for their replacement in case of collapse of wells. Such regional studies over a period would positively help in the prediction of ground water model from time to time. In addition number of old wells which can be brought to use should be cleaned and developed to have an effective use of all data.	Regional Hydro geological studies are being carried out with the available observation wells and dug wells in Neyveli basin. During the period June-2015, 7 nos of new observation wells and cleaning of 24 Nos of existing observation wells completed. In addition to the above, additional 14 nos of observation wells were planned in the regional Neyveli Hydrogeological basin. All the 14 nos of boreholes drilling and construction were completed in November 2017. Now all the 14 wells, water levels also being monitored along with other wells.

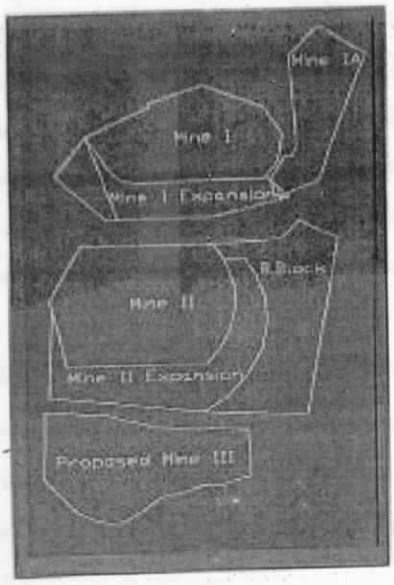
Annexure -11

Development of optimal plan for ground water pressure control

FINAL REPORT

ON

DEVELOPMENT OF OPTIMAL PUMPING PLANS FOR GROUND WATER PRESSURE CONTROL FOR THE EXISTING AND FUTURE MINES AT NEYVELI



PROJECT COORDINATORS

Shri. K.P AGRAWAL
GENERAL MANAGER
NLC LTD., NEYVELI

Prof. S. MOHAN
IIT MADRAS

REGIONAL GEOLOGY DIVISION
NEYVELI LIGNITE CORPORATION Ltd.
NEYVELI

ENVIRONMENTAL & WATER RESOURCES ENGG DIVISION
DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS
CHENNAI 600 036

DECEMBER 2003

CHAPTER 7

SUMMARY AND RECOMMENDATIONS

7.1 SUMMARY

Starting from 1986 this is the fifth study of numerical modeling for Neyveli aquifer. This aquifer is attracted by the ground water specialists since it is a complex system compared to the other aquifers in open cast mines. This is because in all the other open cast mines pumping is taking place from the aquifers above the mineral deposits for easy removal of overburden. But the Neyveli aquifer is unique since depressurizing the aquifer below the mineral deposit.

During the past 46 years (1957 to 2003) piezometric head has declined considerably due to pumping for different purposes like mining, agricultural, industrial and drinking water etc. This necessitates the need to adopt better ground water control strategies to Neyveli aquifer in order to avoid land subsidence, sea water intrusion etc. Saline water intrusion in confined aquifers and land subsidence have not been reported till now.

VISUAL MODFLOW was used as the simulation model which is the widely accepted three dimensional ground water modeling software. Three separate mine models were developed to predict the ground water control pumpages in the existing mines. For the three models simulation runs were done for three scenarios. The first model includes Mine I, I expansion, Mine IA and surrounding area which constitute an area of 68.2 km^2. The second model Mine II, Mine II Expansion and surrounding covers an area of 91.56 km^2. The third model include all the mines and covers 258.4 km^2. Models were calibrated for three years taking 2000 January as initial condition. Transient analysis was performed since pumping location and quantity are changing year by year.

6. For the mine modelling the Jayamkondam area has not been taken into account. However, a detailed geohydrolacial model need to be developed to assess the effect of mining in the Jayamkondam area on Neyveli mines.

7. It is recommended that in Mine I, the lignite mining from southern flank may be taken up and completed in preference to western flank as mining in the southern flank requires more pumping when compared to western flank. In the subsequent years this will reduce the total quantity of pumping from Mine I

8. It was found from the study that when the total quantity of pumping is restricted to 150 MCM there was a positive pressure of 8-12m. However for the case when the quantum of pumping is 170 MCM the pressure head is found to be around 8m. Hence it is recommended that the total quantity of pumping may be fixed to 170 MCM/annum from the point of view of safe mining. Also it is found that the total quantity of pumping required to bring the pressure surface to lignite bottom is around 285 MCM/a and thus is not desirable.

9. Various artificial recharge structures have been planned to be constructed in the recharge area and the possible effects of these artificial recharge structures on the mine pumping need to be studied later. Similarly the effect of rivers on the pumping of mine water needs to be established.

10. It is strongly recommended that the feasibility of artificial pressurised injection of all the pumping water from the proposed Mine-III operations directly into the confined aquifer system in a nearby suitable location needs to be studied in order that the further decline in the pressure surface could be minimized.

From the model study it was found that the ground water control pumpage can be restricted to 149 MCM/Annum after allowing a maximum positive pressure of 13m. But for getting zero positive pressure the pumpage requirement is around 285 MCM/Annum. By restricting the pumpage to 149 MCM, Mine III can start by the year 2014.

7.2 RECOMMENDATIONS

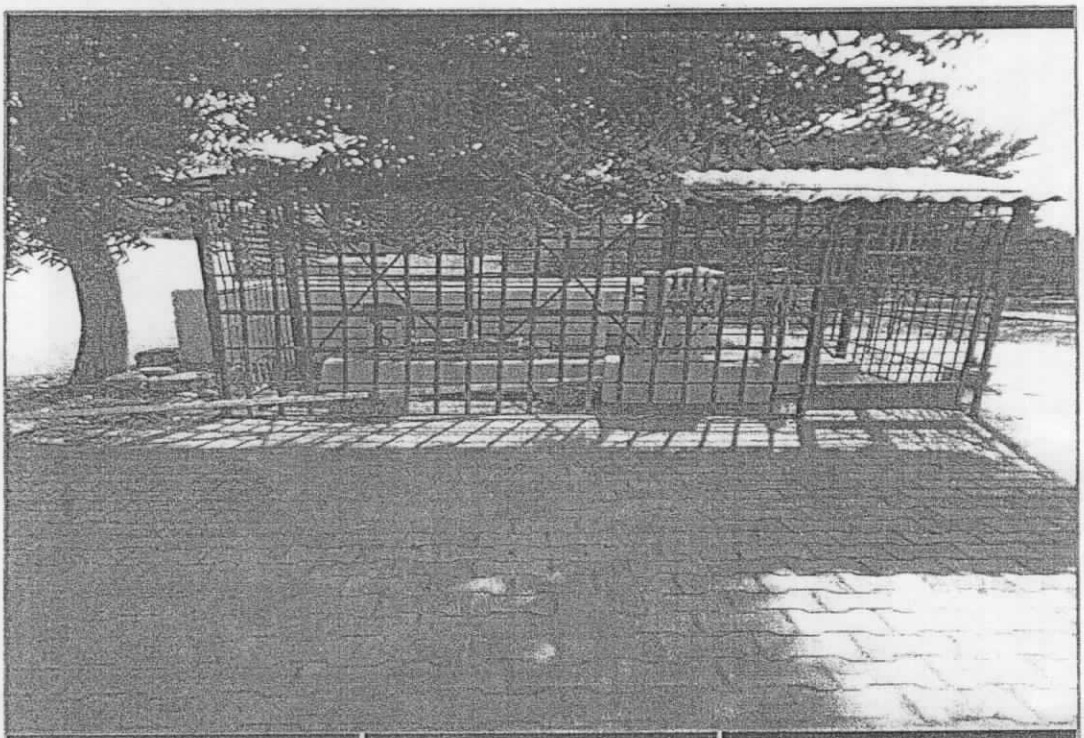
1. It is found that the observation wells are scanty or not available in the semi confined aquifer and lower confined aquifer within the lignite boundary. It is recommended about 4 to 5 observation wells may be drilled along the periphery of each mine and this may also be established in pivot point inside each mine.
2. In this model the behavior of the back filled area in mines could not be studied in detail due to lack of observation wells. It is recommended that one well for every 500 meters distance may be established in the spoil bank in each mine.
3. It is recommended that a separate study is to be carried on the hydrology of the spoil bank area in order to understand the behaviour and its interactions with other aquifers.
4. It is recommended that the open area in all the mines should be kept minimum such that the distance between the deepcut position and dumping side should be restricted to a maximum of 300 meters. This will enable the open area in the mines remains almost constant.
5. It is suggested that the Water Quality Assessment in the mine area need to be carried out in the systematic way to evaluate any change in quality due to mining process.

Annexure - XII

Mines-II Water Supply Arrangements to Near by Villages

Annexure XV

STP - CANTEEN



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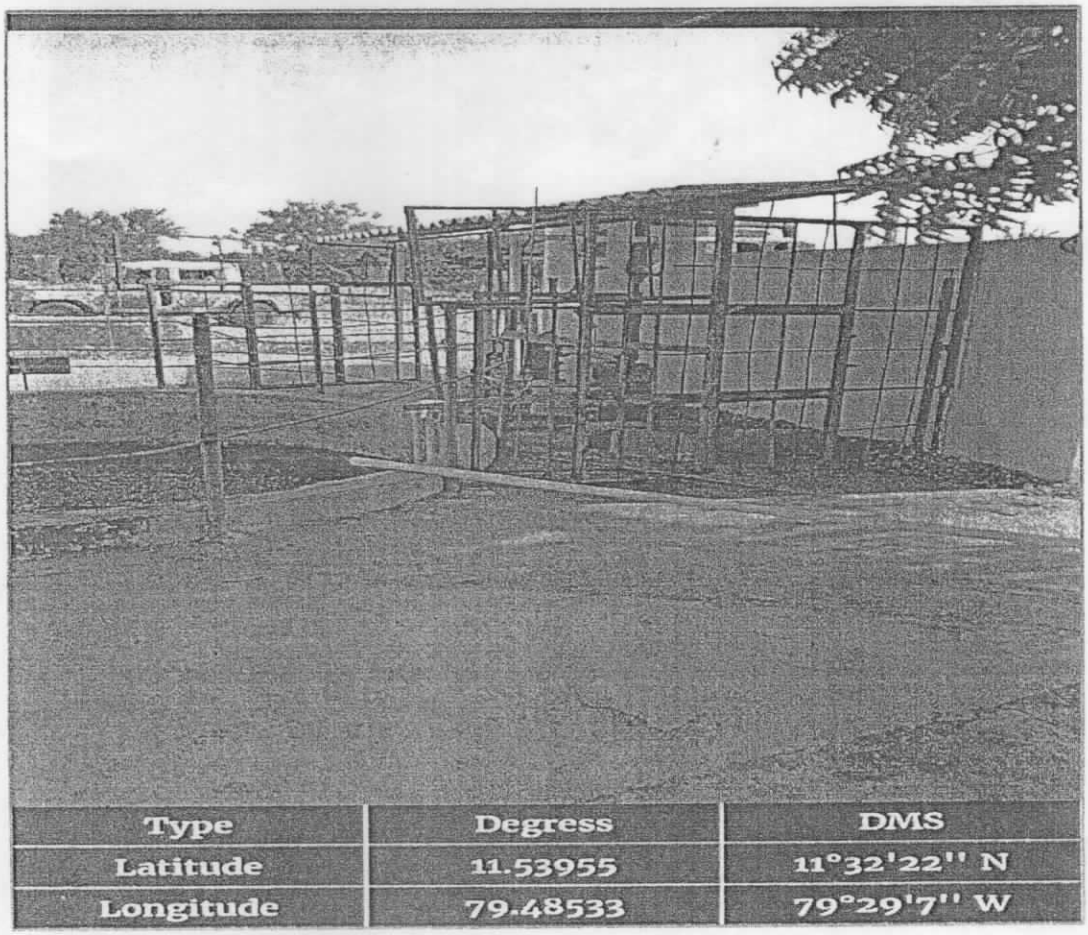
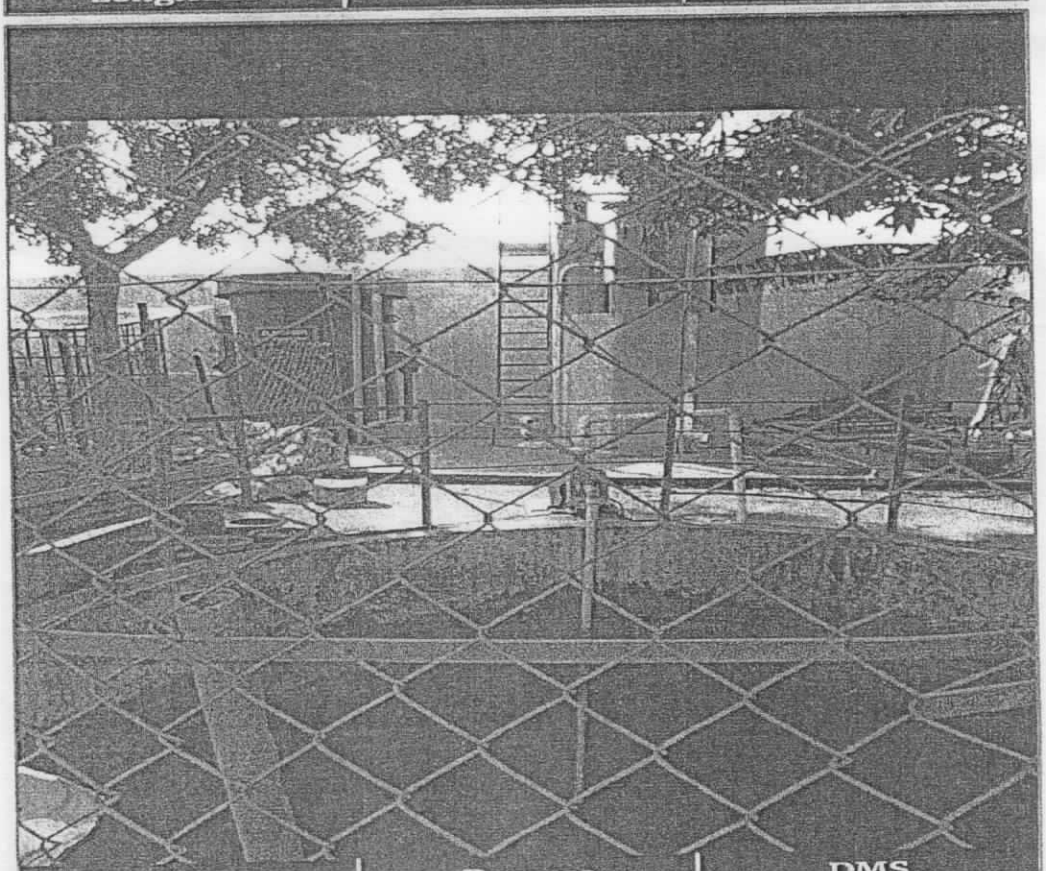
Latitude	11.53955	11°32'22'' N
Longitude	79.48533	79°29'7'' W



Type	Degress	DMS
Latitude	11.53955	11°32'22'' N
Longitude	79.48533	79°29'7'' W

ETP – Mini Auto Service Point

Type	Degress	DMS
Latitude	11.53955	11°32'22'' N
Longitude	79.48533	79°29'7'' W



Type	Degress	DMS
Latitude	11.53835	11°32'18'' N
Longitude	79.48146	79°28'53'' W

Annexure – XVI

Digital processing of all the mining lease

Project Completion Report

Study on Land use Land cover and Hydro Geomorphology through Satellite Imageries for NLC Mining Lease area, Neyveli

Dr. S. VASUDEVAN

Principle Investigator

Department of Earth Sciences

ANNAMALAI UNIVERSITY

Annamalainagar-608002

Tamil NAdu

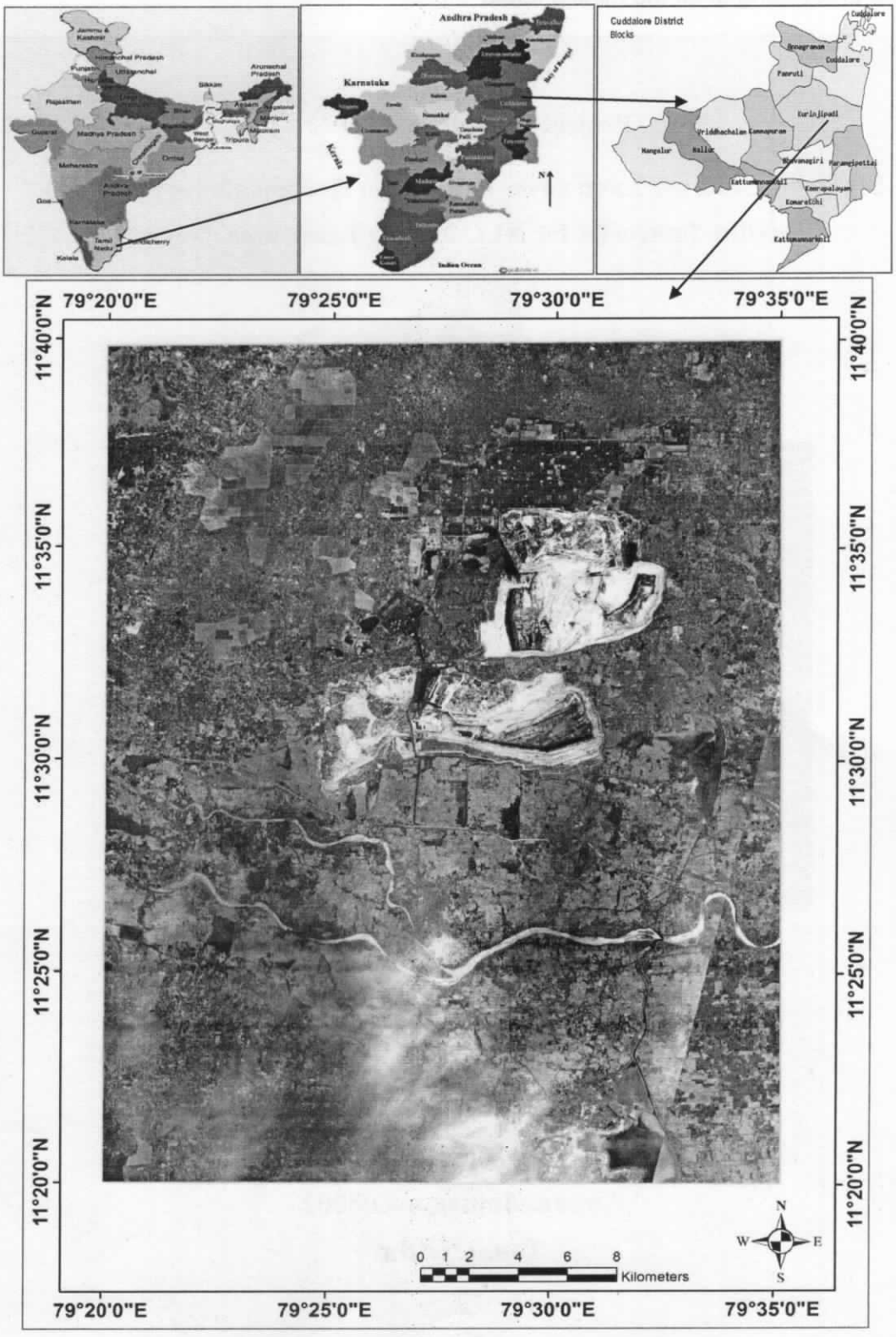


Fig. 2.1. Location map of the study area

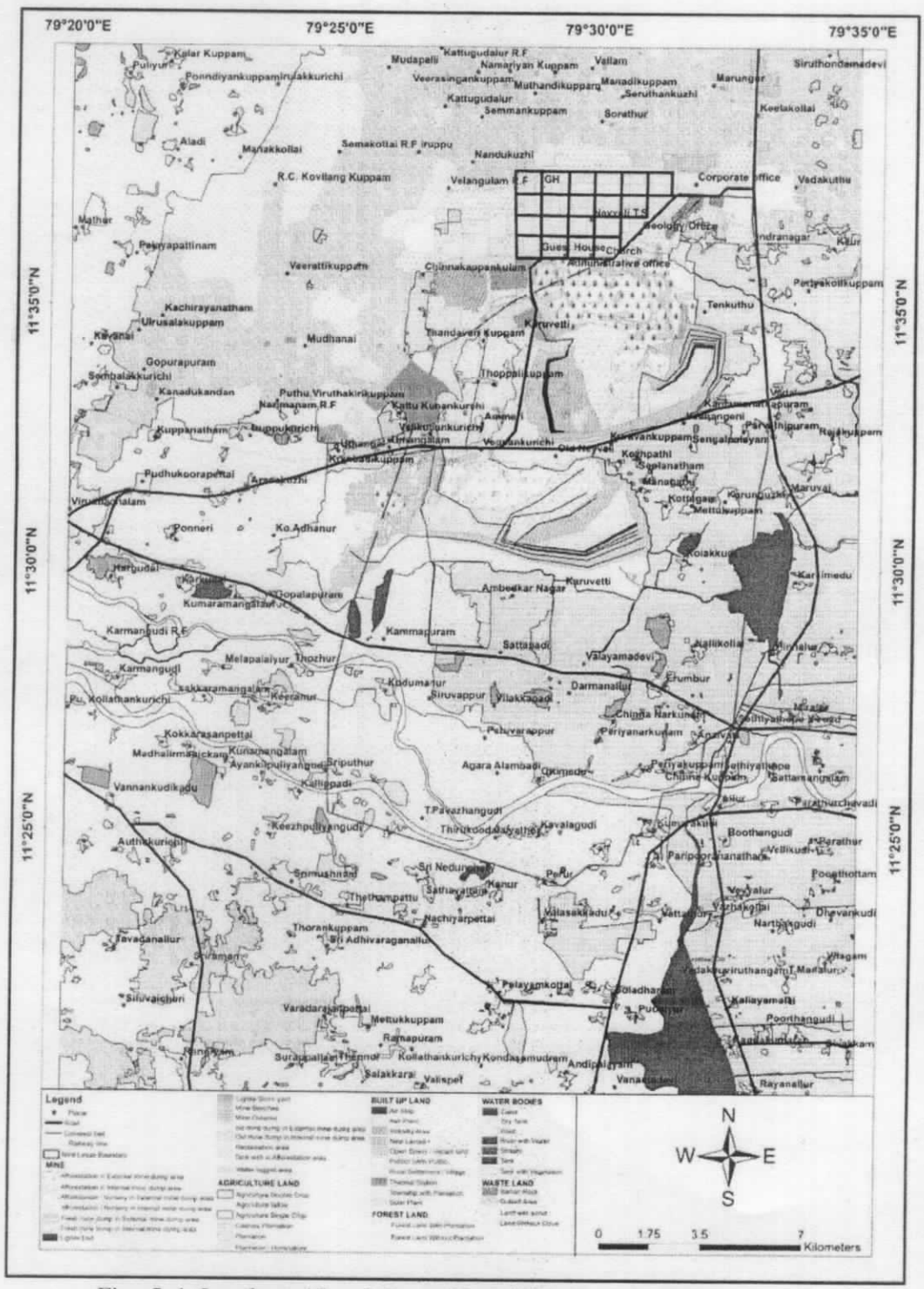


Fig. 5. 1. Land use / Land Cover Map of Study Area (2016)

RECLAMATION& AFFORESTATION

Annexure 17

Annexure - XVIII - 1

Category of the Industry :

RED

CONSENT ORDER NO. 2208242715347 DATED: 31/10/2022.

PROCEEDINGS NO.T4/TNPCB/F.0054CUD/RL/CUD/A/2022 DATED: 31/10/2022

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT –M/s. NLC INDIA LIMITED,MINE-II , S.F.No. Kammapuram SF.No.16-30,Managathy SF.No.1-177,Melpapanapattu SF.No.10-102,Melpathy SF.No. 10-65, etc, KAMMAPURAM village, Virudhachalam Taluk and Cuddalore District - Renewal of Consent for the operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) –Issued- Reg.

REF: 1. Proc.No. T2/TNPCB/F.0054CUD/RL/CUD/W&A/2021 DATED: 05/03/2021
2. IR.No : F.0054CUD/RL/AE/CUD/2022 dated 13/10/2022

RENEWAL OF CONSENT is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

THE CHIEF GENERAL MANAGER
M/s.NLC INDIA LIMITED,MINE-II,
S.F.No. Kammapuram SF.No.16-30,Managathy SF.No.1-177,Melpapanapattu SF.No.10-102,Melpathy SF.No. 10-65, etc,
KAMMAPURAM village,
Virudhachalam Taluk,
Cuddalore District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending March 31, 2027

RAGUPATHI SANGANAN
Digitally signed by RAGUPATHI SANGANAN
Date: 2022.10.31 17:57:25 +05'30'

For Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	LIGNITE	15.00	MILLION TON PER ANNUM
	By-Product Details		
1.	NIL	0.00	NA
	Intermediate Product Details		
1.	NIL	0.00	NA

2. This renewal of consent is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

I	**Point source emission with stack :**			
Stack No.	**Point Emission Source**	**Air pollution Control measures**	**Stack height from Ground Level in m**	**Gaseous Discharge in Nm3/hr**
0.0	NA	NA	0.00	NA
II	**Fugitive/Noise emission :**			
Sl. No.	**Fugitive or Noise Emission sources**	**Type of emission**	**Control measures**	
1.	LIGNITE STORAGE YARD	Fugitive	Water sprinkler system	
2.	LIGNITE TRANSFER POINTS	Fugitive	Water sprinkler system	
3.	TRANSPORT BY TRUCKS	Fugitive	Water sprinkler system	

Special Additional Conditions:

i. The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No. TNPCB/Labs/DD(L)02151/2019 dated 10.06.2020 issued by TNPCB.

ii. The unit shall obtain No Objection Certificate (NOC) from the Tamil Nadu Bio Diversity Board /National Bio Diversity Authority if the unit is using any Biological resources or knowledge associated thereto as per the provisions of Biological Diversity Act 2002.

Additional Conditions:

1. The unit shall operate APC measures continuously and efficiently so as to satisfy the AAQ standards prescribed by the Board.
2. The unit shall maintain the acoustic measures so as to satisfy the Ambient Noise Level standards prescribed by the Board.
3. The unit shall operate and maintain the online continuous Air Quality Monitoring station provided at the Centre for Applied Research and Development (CARD) with computer recording arrangements with display at 5 locations.
4. The unit shall continue to provide dense tree belt around the lignite bunker for arresting the fugitive dust generated in the lignite stock.
5. The unit shall develop and maintain Green belt inside the unit premises continuously so as to compensate the afforestation activities carried out for acquiring land for mining activity. The unit shall furnish exact greenbelt area earmarked/developed as per norms in the unit premises and furnish photographs along with Latitude and Longitude co-ordinates.

RAGUPATHI SANGANAN

Digitally signed by RAGUPATHI SANGANAN
Date: 2022.10.31 17:57:57 +05'30'

For Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai

To
THE CHIEF GENERAL MANAGER,
M/s.NLC INDIA LIMITED,MINE-II,
FIRST FLOOR,No.8,Mayor Sathiyamurthy Road, FSD,Egmore Complex of Food Corporation of India,
CHETPET
CHENNAI.
TAMILNADU
PINCODE:600031,
Pin: 600031

Copy to:

1.The Commissioner, KAMMAPURAM-Panchayat Union, Virudhachalam Taluk, Cuddalore District .
2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, CUDDALORE.
3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Cuddalore.
4. File

Annexure - XVIII -2

Category of the Industry :

RED

CONSENT ORDER NO. 2208142715347 DATED: 31/10/2022.

PROCEEDINGS NO.T4/TNPCB/F.0054CUD/RL/CUD/W/2022 DATED: 31/10/2022

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT – M/s. NLC INDIA LIMITED,MINE-II , S.F.No. Kammapuram SF.No.16-30,Managathy SF.No.1-177,Melpapanapattu SF.No.10-102,Melpathy SF.No. 10-65, etc, KAMMAPURAM village, Virudhachalam Taluk and Cuddalore District - Renewal of Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

REF: 1. Proc.No. T2/TNPCB/F.0054CUD/RL/CUD/W&A/2021 DATED: 05/03/2021
2. IR.No : F.0054CUD/RL/AE/CUD/2022 dated 13/10/2022

RENEWAL OF CONSENT is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

THE CHIEF GENERAL MANAGER
M/s.NLC INDIA LIMITED,MINE-II,
S.F.No. Kammapuram SF.No.16-30,Managathy SF.No.1-177,Melpapanapattu SF.No.10-102,Melpathy SF.No. 10-65, etc,
KAMMAPURAM Village ,
Virudhachalam Taluk ,
Cuddalore District .

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending March 31, 2027

RAGUPATHI SANGANAN
Digitally signed by RAGUPATHI SANGANAN
Date: 2022.10.31 17:56:20 +05'30'

For Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products/byproducts (Col. 2) at the rate (Col 3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	LIGNITE	15.00	MILLION TON PER ANNUM
	By-Product Details		
1.	NIL	0.00	NA
	Intermediate Product Details		
1.	NIL	0.00	NA

2. This renewal of consent is valid for operating the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	SEWAGE-1	25.0	On Industrys own land
2.	SEWAGE-II(CANTEEN WASTEWATER)	75.0	Discharged into Eastern Garland Cannal which is used for Irrigation Purposes
Effluent Type : Trade Effluent			
1.	TRADE EFFLUENT-1	78450.0	Discharged into nearby Channel which is having the confluence point at Walajah Tank
2.	TRADE EFFLUENT-2(Mini Auto Service Unit)	25.0	Discharged into Eastern Garland Cannal which is used for Irrigation Purposes

Special Additional Conditions:

The unit shall obtain No Objection Certificate (NOC) from the Tamil Nadu Bio Diversity Board /National Bio Diversity Authority if the unit is using any Biological resources or knowledge associated thereto as per the provisions of Biological Diversity Act 2002.

Additional Conditions:

1. The unit shall ensure that the trade effluent (mine water) after settlement of silt etc in the mine sump so as to achieve the standard prescribed by the Board.
2. De-silting of settling basins shall be done regularly and corrective neutralization of settling pond water shall be done through frequent tests.
3. The unit shall test the pumped out water at the mine water outlet, water canals, inlet and out let point of Walajah tank once in six months from authorized laboratory approved by MoEF & CC and the report shall be submitted once in six months for the presence of any undesirable elements and appropriate measures are taken in case of elements is found exceeding the limit prescribed by CPCB.
4. The unit shall maintain and operate the leachate collection with check wall arrangement in the lignite storage area so that the out flow should be free from lignite particles.
5. The unit shall continue to provide dense tree belt around the lignite bunker for arresting the fugitive dust generated in the lignite stock.
6. The unit shall operate and maintain Electro Magnetic Flow meters (EMFM) with totaliser provided at all the outlets of Ground water and seepage water discharge lines and furnish the water returns every month based on the EMFM readings only.
7. The unit shall maintain safety stone pitching and settling chambers where the mined water is discharged into Natural Nallah to avoid erosion of the canal and also to remove the suspended solids in the mined out water.
8. The unit shall comply with the provisions of HOW (M & TM) Rules, 2016 at all times.
9. The unit shall not use 'use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastic flags irrespective of thickness, within the industry premises. Instead it shall encourage use of eco friendly alternative such as banana leaf, areca nut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, Jute bag etc.,

RAGUPATHI SANGANAN

Digitally signed by RAGUPATHI SANGANAN
Date: 2022.10.31 17:56:52 +05'30'

For Member Secretary,
Tamil Nadu Pollution Control Board,
Chennai

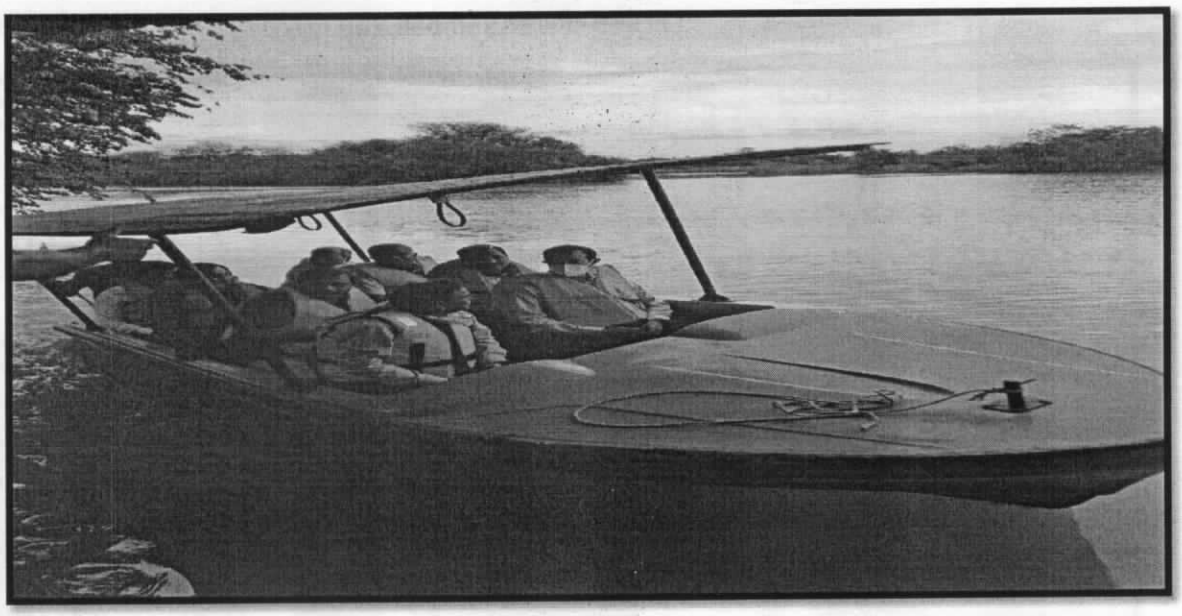
To
THE CHIEF GENERAL MANAGER,
M/s.NLC INDIA LIMITED,MINE-II,
FIRST FLOOR,No.8,Mayor Sathiyamurthy Road, FSD,Egmore Complex of Food Corporation of India,
CHETPET
CHENNAI.
TAMILNADU
PINCODE:600031,
Pin: 600031

Copy to:

1.The Commissioner, KAMMAPURAM-Panchayat Union, Virudhachalam Taluk, Cuddalore District .
2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, CUDDALORE.
3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Cuddalore.
4. File

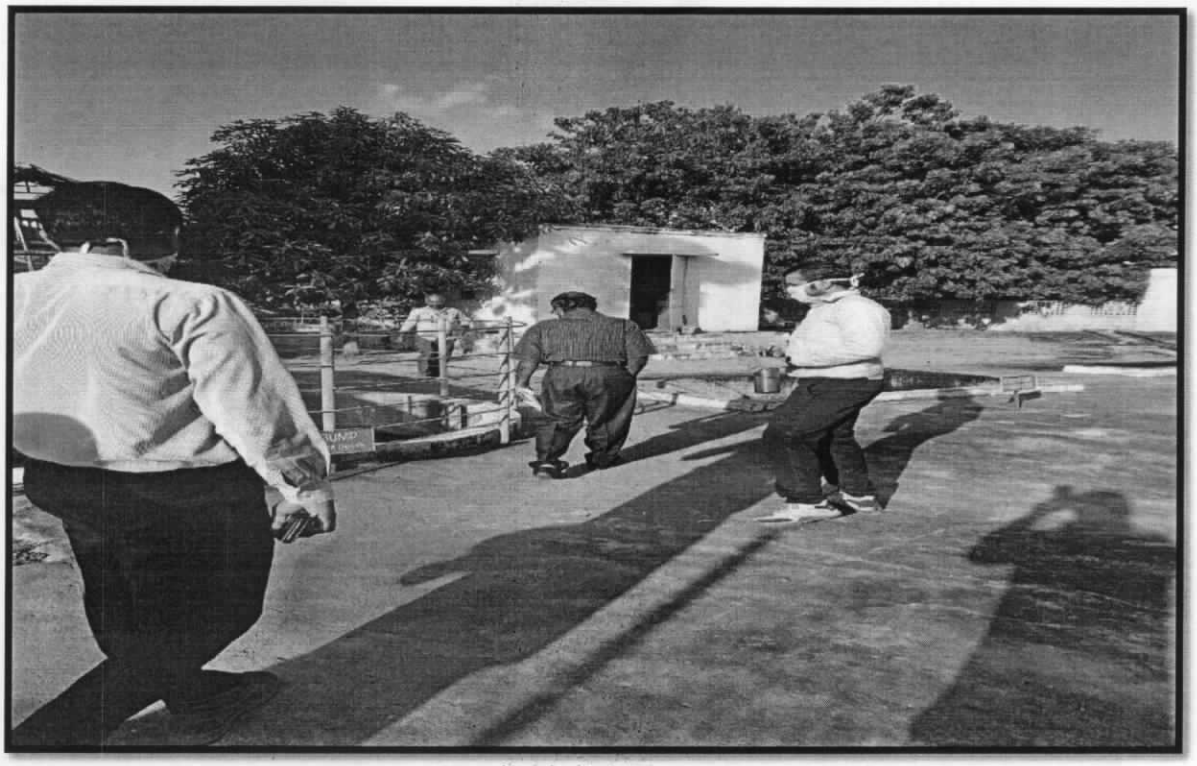
During Regional Director, MoEF&CC , visit on 29.07.2021

TNPCB Trichy Zone Joint Chief Env Eng, DEE's,AEE's,AE's Visited Mine-II

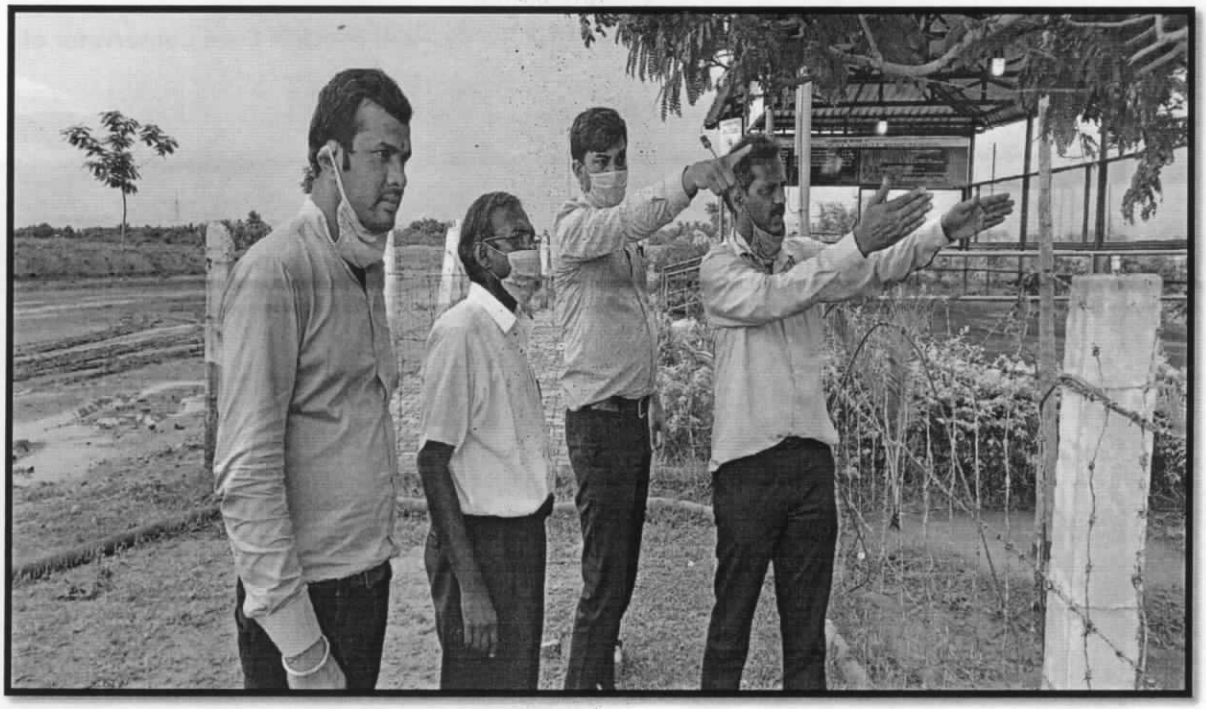


TNPCB Trichy Zone Joint Chief Env Eng, DEE's,AEE's,AE's Visited Mine-II

TNPCB Trichy Zone Joint Chief Env Eng, DEE's,AEE's,AE's Visited Mine-II

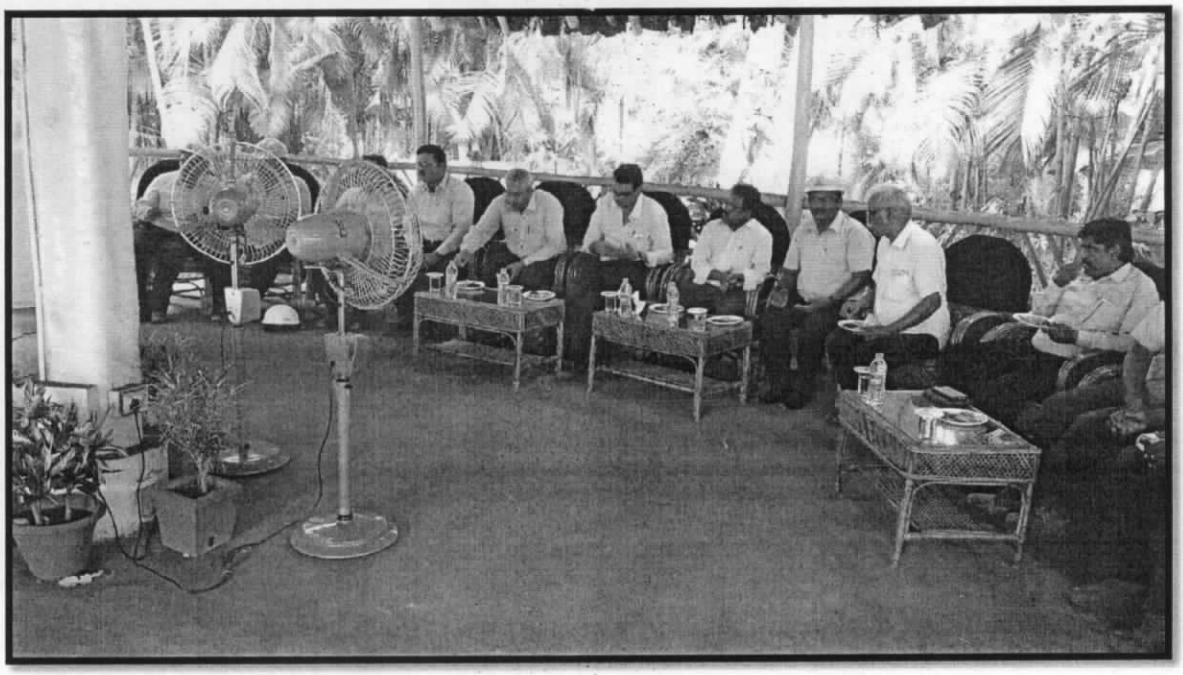


AEE TNPCB Cuddalore Inspecting ETP & STP

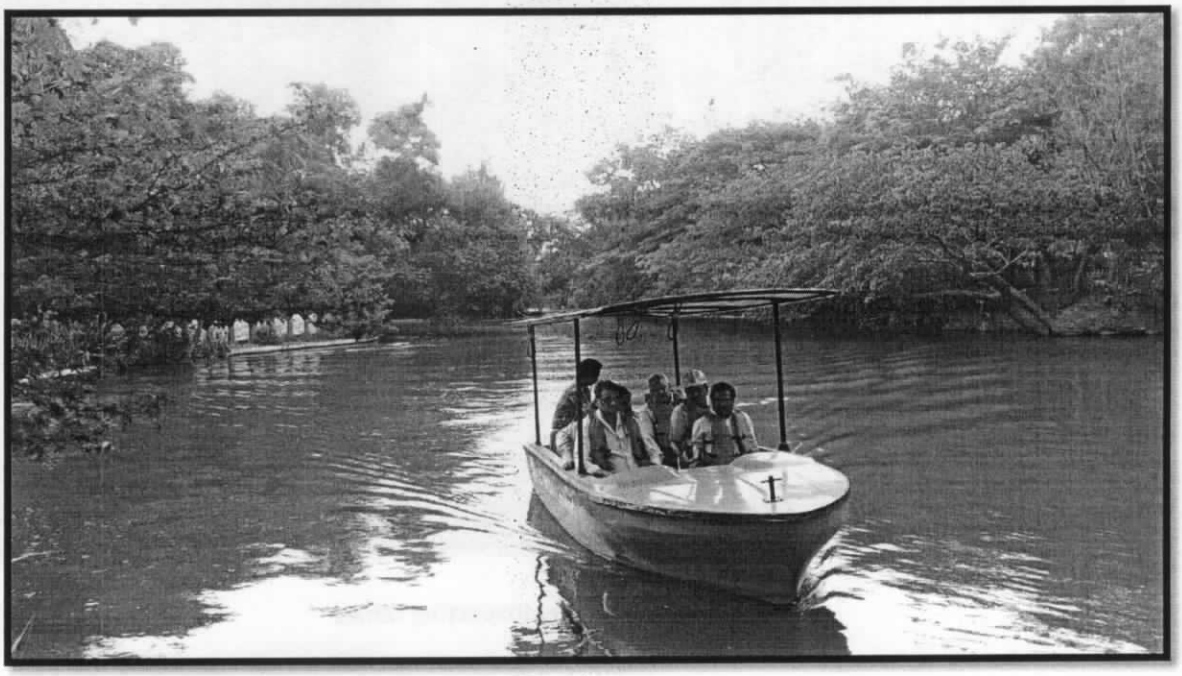


AEE TNPCB Cuddalore Inspecting Mines

ShriDr.Kaliaperumal, Director MoEF&CC and Shri T.R Reddy, Addl Principal Chief Conservator of Forest.

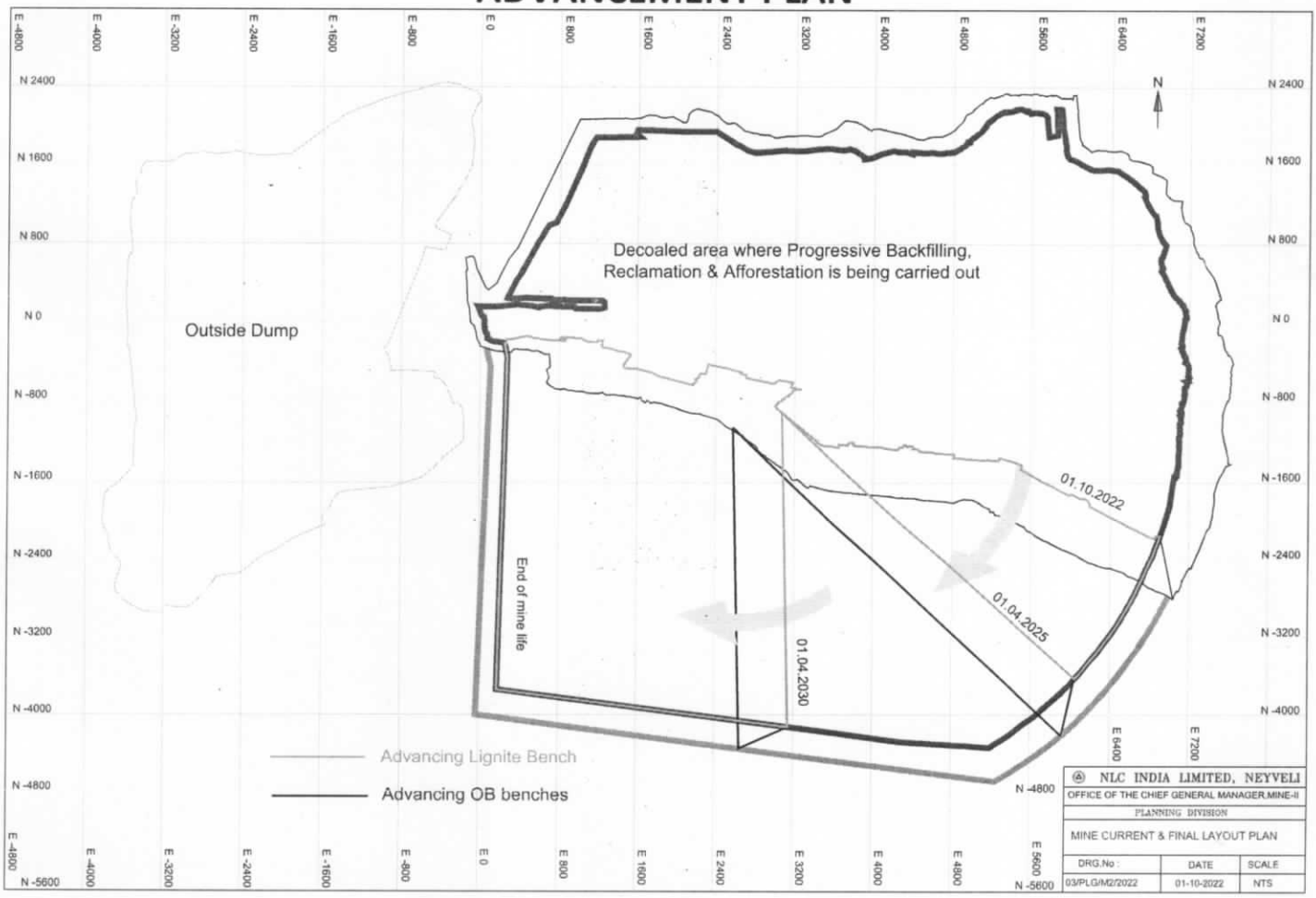


ShriDr.Kaliaperumal, Director MoEF&CC and Shri T.R Reddy, Addl Principal Chief Conservator of Forest.



Annexure-G

MINE- II: CURRENT LAYOUT AND EXCAVATION FRONT ADVANCEMENT PLAN



Annexure-GC-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

TC-6175

कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10357/22-23 Dt: 31 May 2022

परीक्षण परिणाम/ TEST RESULT

ग्राहक / Customer : M/s.CGM Mine II	रिपोर्ट सं./दिनांक / Report No / Date	TR/526/22-23 Dt-21 Jun 2022
	उपभोक्ता सं./ दिनांक / Customer Ref. / Date	AAQM at corezone Mine II Dt-31 Ma
	नमूने का विवरण/Description of the Sample	AAQM
	नमूनों की संख्या/ No. of Samples	11
	परीक्षण की तिथि / Date of Testing	31 May 2022 - 21 Jun 2022
	नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures & Done by	
	कोई विशिष्ट जानकारी / Any Specific Information	

नमूने का ब्यौरा **Sample particulars : First aid Centre ,** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		85.79	
	Sulphur Dioxide (µg/m³)		4.65	
	Nitrogen Oxides (µg/m³)		15.50	

नमूने का ब्यौरा **Sample particulars : Water booster North** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		118.83	
	Sulphur Dioxide (µg/m³)		4.2	
	Nitrogen Oxides (µg/m³)		20.11	

नमूने का ब्यौरा **Sample particulars : Training centre** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		77.72	
	Sulphur Dioxide (µg/m³)		4.63	
	Nitrogen Oxides (µg/m³)		20.58	

नमूने का ब्यौरा **Sample particulars : Geology Lab** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		113.84	

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, पुन: 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/526/22-23 Dt-21 Jun 2022

	Sulphur Dioxide (µg/m³)		4.99	
	Nitrogen Oxides (µg/m³)		29.20	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		74.98	
	Sulphur Dioxide (µg/m³)		4.87	
	Nitrogen Oxides (µg/m³)		24.70	

नमूने का ब्यौरा **Sample particulars : First aid Centre ,** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		66.22	
	Sulphur Dioxide (µg/m³)		2.96	
	Nitrogen Oxides (µg/m³)		21.2	

नमूने का ब्यौरा **Sample particulars : Water booster North** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		73.78	
	Sulphur Dioxide (µg/m³)		3.21	
	Nitrogen Oxides (µg/m³)		17.52	

नमूने का ब्यौरा **Sample particulars : Training centre** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		83.30	
	Sulphur Dioxide (µg/m³)		3.80	
	Nitrogen Oxides (µg/m³)		15.93	

नमूने का ब्यौरा **Sample particulars : Geology Lab** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		80.82	
	Sulphur Dioxide (µg/m³)		3.94	
	Nitrogen Oxides (µg/m³)		20.75	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :27.05.2022**

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, पुन: 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/526/22-23 Dt-21 Jun 2022

	Sulphur Dioxide (µg/m³)		4.99	
	Nitrogen Oxides (µg/m³)		29.20	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :12.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		74.98	
	Sulphur Dioxide (µg/m³)		4.87	
	Nitrogen Oxides (µg/m³)		24.70	

नमूने का ब्यौरा **Sample particulars : First aid Centre ,** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		66.22	
	Sulphur Dioxide (µg/m³)		2.96	
	Nitrogen Oxides (µg/m³)		21.2	

नमूने का ब्यौरा **Sample particulars : Water booster North** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		73.78	
	Sulphur Dioxide (µg/m³)		3.21	
	Nitrogen Oxides (µg/m³)		17.52	

नमूने का ब्यौरा **Sample particulars : Training centre** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		83.30	
	Sulphur Dioxide (µg/m³)		3.80	
	Nitrogen Oxides (µg/m³)		15.93	

नमूने का ब्यौरा **Sample particulars : Geology Lab** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		80.82	
	Sulphur Dioxide (µg/m³)		3.94	
	Nitrogen Oxides (µg/m³)		20.75	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :27.05.2022**

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, पुन: प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए है।

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/526/22-23 Dt-21 Jun 2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		79.47	
	Sulphur Dioxide (µg/m³)		3.02	
	Nitrogen Oxides (µg/m³)		19.83	

नमूने का ब्यौरा **Sample particulars : Therkkuvellore** **Sample Dated :27.05.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	AAQM (--)	--		
	PM10 (µg/m³)		72.33	
	Sulphur Dioxide (µg/m³)		2.78	
	Nitrogen Oxides (µg/m³)		18.92	

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, पुन: 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- GC-III

AMBIENT AIR QUALITY REPORT OF N.L.C INDIA LTD., NEYVELI.

MAY '2022

Concentration in Microgram per Normal Meter cube(µgm/m³)

PERIYAKURICHI

DATE	PM10 (µg/m3)	PM2.5 (µg/m3)	SOX (µg/m3)	NOX (µg/m3)
02.05.22	75.73	31.69	3.01	28.51
04.05.22	62.67	19.93	3.94	18.70
06.05.22	76.87	25.69	3.53	16.90
08.05.22	67.36	21.00	3.71	19.25
10.05.22	63.21	23.26	4.09	21.30
12.05.22	69.54	24.56	4.17	20.40
14.05.22	54.16	20.19	3.84	17.90
16.05.22	66.88	27.03	3.99	24.83
18.05.22	61.26	19.25	4.69	25.89
20.05.22	54.45	21.05	3.45	18.34
22.05.22	76.55	29.65	3.99	19.86
24.05.22	65.36	28.83	3.24	27.10
26.05.22	57.58	21.26	3.19	21.07
28.05.22	58.85	25.90	3.15	25.34
30.05.22	68.35	28.69	4.09	29.36

	PM10	PM2.5	SO2	NOX
Max	76.9	31.7	4.7	29.4
Min	54.2	19.3	3.0	16.9
Average	65.3	24.5	3.7	22.3

UMANGALAM

DATE	PM10 (µg/m3)	PM2.5 (µg/m3)	SOX (µg/m3)	NOX (µg/m3)
02.05.22	63.26	33.55	3.33	19.19
04.05.22	59.68	22.64	4.18	18.93
06.05.22	55.36	19.02	3.94	21.13
08.05.22	61.25	28.13	5.59	24.10
10.05.22	69.27	34.28	3.79	21.95
12.05.22	63.66	29.09	4.89	24.20
14.05.22	52.93	21.06	4.56	19.55
16.05.22	57.47	28.12	3.98	28.66
18.05.22	58.04	16.09	3.08	26.58
20.05.22	60.83	27.68	3.73	19.56
22.05.22	62.35	21.25	3.67	21.15
24.05.22	67.34	26.83	3.29	18.78
26.05.22	54.00	23.05	3.19	26.35
28.05.22	67.98	24.47	4.42	21.85
30.05.22	61.21	19.04	5.61	22.36

	PM10	PM2.5	SO2	NOX
Max	69.3	34.3	5.6	28.7
Min	52.9	16.1	3.1	18.8
Average	61.0	25.0	4.1	22.3

KOLAKUDI

DATE	PM10 (µg/m3)	PM2.5 (µg/m3)	SOX (µg/m3)	NOX (µg/m3)
02.05.22	60.78	21.36	3.24	19.25
04.05.22	53.59	22.97	3.05	23.65
06.05.22	51.29	20.98	3.89	21.26
08.05.22	57.26	25.36	3.78	23.58
10.05.22	58.59	28.16	3.55	21.65
12.05.22	63.24	26.78	3.01	26.25
14.05.22	56.67	19.70	3.70	18.25
16.05.22	61.72	22.47	3.98	19.78
18.05.22	60.56	24.28	3.56	22.42
20.05.22	62.37	27.65	4.02	27.22
22.05.22	52.78	21.57	3.44	21.48
24.05.22	57.27	25.35	3.14	19.89
26.05.22	61.78	26.89	3.82	21.25
28.05.22	57.43	23.06	3.67	26.68
30.05.22	63.78	27.78	3.21	28.93

	PM10	PM2.5	SO2	NOX
Max	63.8	28.2	4.0	28.9
Min	51.3	19.7	3.0	18.3
Average	58.6	24.3	3.5	22.8

SATHAPADI

DATE	PM10 (µg/m3)	PM2.5 (µg/m3)	SOX (µg/m3)	NOX (µg/m3)
02.05.22	59.49	21.78	3.87	19.48
04.05.22	48.66	19.55	3.01	20.82
06.05.22	47.09	17.55	3.25	16.80
08.05.22	59.01	21.37	3.92	18.61
10.05.22	49.85	15.46	3.16	19.72
12.05.22	58.25	23.24	3.78	24.78
14.05.22	56.21	21.58	3.26	20.10
16.05.22	51.25	18.87	3.89	22.55
18.05.22	54.36	19.57	3.91	21.65
20.05.22	63.25	24.59	4.22	28.66
22.05.22	59.88	23.65	3.65	18.07
24.05.22	56.55	26.47	3.24	19.73
26.05.22	62.23	21.66	3.15	25.71
28.05.22	53.78	19.37	3.04	23.21
30.05.22	57.58	18.57	3.74	22.19

	PM10	PM2.5	SO2	NOX
Max	63.3	26.5	4.2	28.7
Min	47.1	15.5	3.0	16.8
Average	55.8	20.9	3.5	21.5

KAMMAPURM

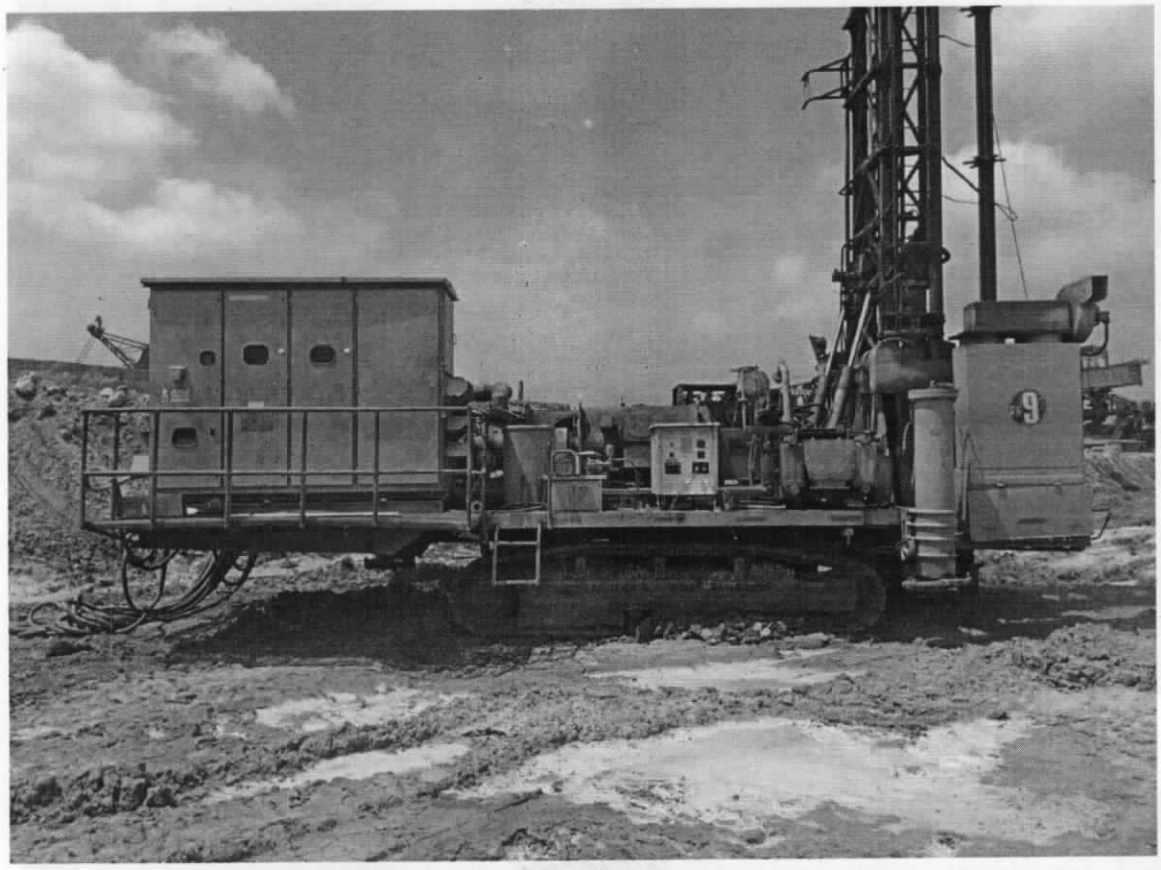
DATE	PM10 (µg/m3)	PM2.5 (µg/m3)	SOX (µg/m3)	NOX (µg/m3)
02.05.22	54.79	22.47	3.22	19.25
04.05.22	59.22	24.32	3.68	21.66
06.05.22	58.44	22.14	3.48	20.18
08.05.22	64.94	27.64	4.15	23.25
10.05.22	56.78	21.25	3.06	21.66
12.05.22	62.28	26.98	3.99	27.36
14.05.22	53.27	24.15	3.83	17.79
16.05.22	55.66	19.87	3.63	24.63
18.05.22	57.85	24.21	3.48	22.31
20.05.22	63.23	25.36	3.53	24.39
22.05.22	50.08	18.25	3.15	23.27
24.05.22	54.20	20.78	3.66	19.50
26.05.22	46.54	17.68	3.81	16.79
28.05.22	NA	NA	NA	NA
30.05.22	48.17	17.98	3.48	17.09

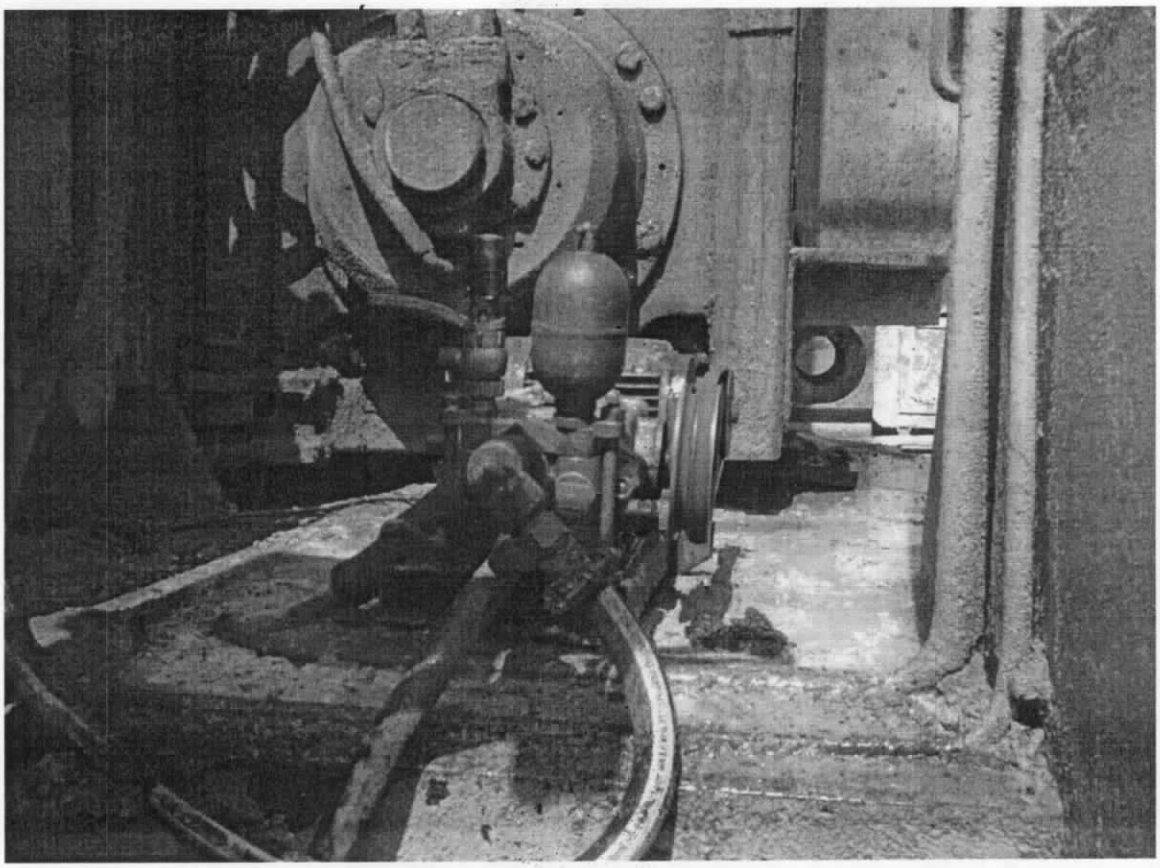
	PM10	PM2.5	SO2	NOX
Max	64.9	27.6	4.2	27.4
Min	46.5	17.7	3.1	16.8
Average	56.1	22.4	3.6	21.4

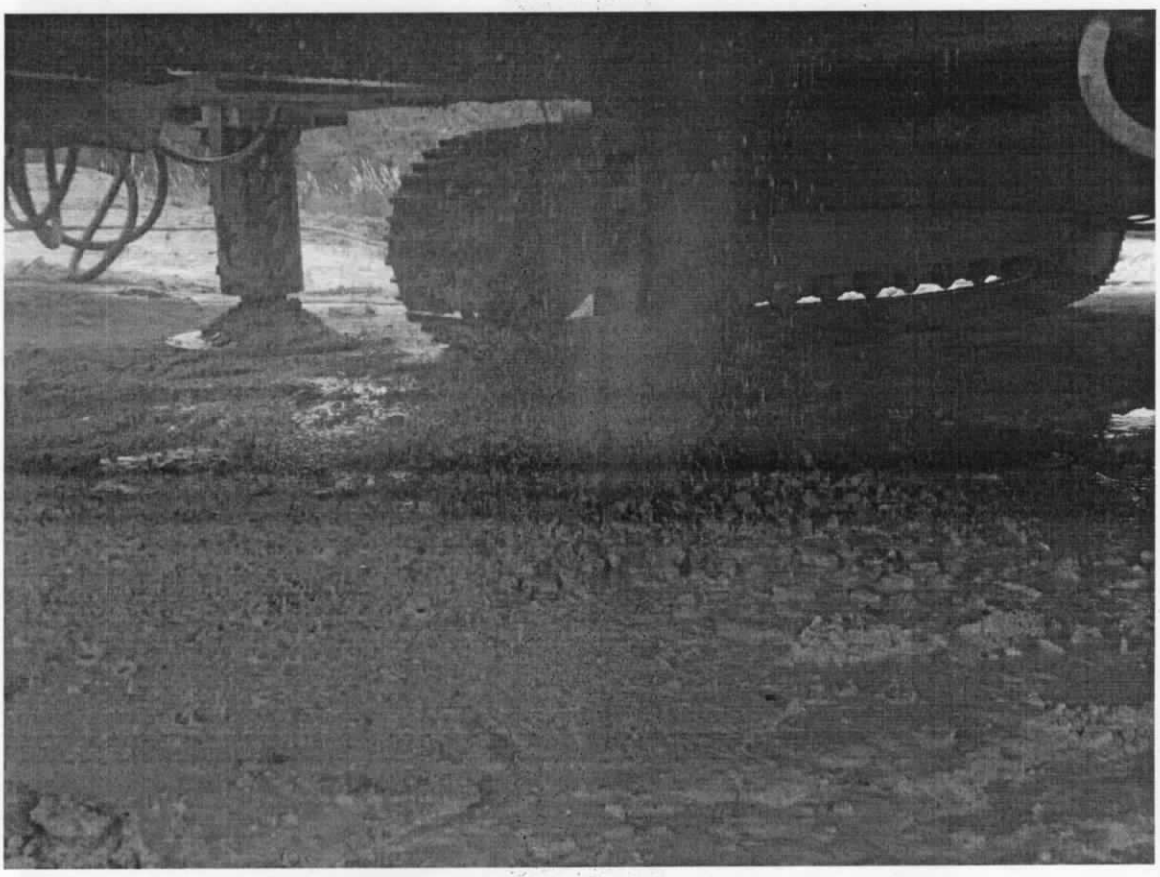
NO DATA IS REPORTED AS ' NA'

Annexure GC-V

MINE-II BLAST HOLE DRILL - WET DRILLING

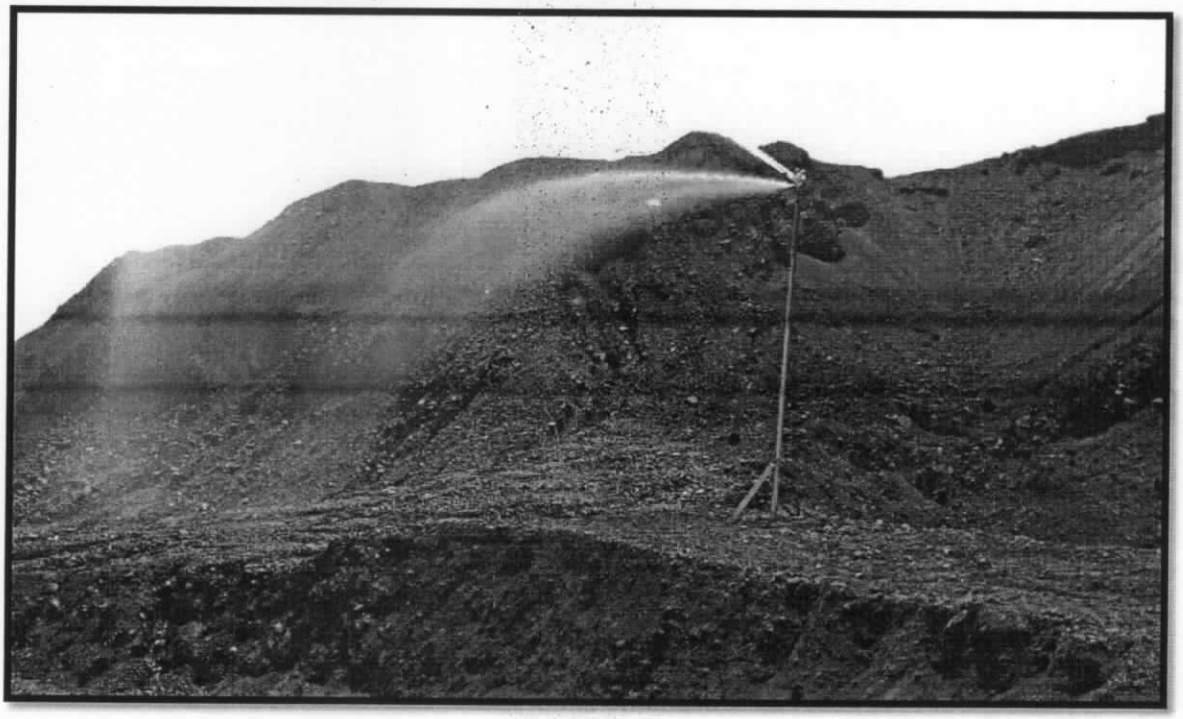






Water Sprinkling Arrangement in Haulage Roads of Mine-II Annexure-GC-6-1

water spray arrangement (Fixed points) to control Dust/smoke/fumes at Mine II - lignite stock yard Annexure-GC-6-2



Water spraying system in BWE's developed in-house to prevent dust generation at source

Annexure-GC VII

Acequate measures as listed below are being taken for control of noise levels below 85 dBA in the work environment

1. The moving / rotary parts of the machineries are period cally checked and lubricated wherever found necessary.
2. The rotating parts of the machineries are properly balanced to reduce the noise.The noise created by the machineries is muffed with silencers to modulate the noise to tolerable level.
3. Providing thick tree belt around the periphery of mine to screen the noise.Planting of trees on both sides of the roads to arrest noise.
4. Confining the noise levels by isolating the noise and also by provision of sound proof chamber.
5. Checking of noise level in the machineries periodically ie. twice in a year to ensure that the noise leve is within the threshold limit value of 85 dbA for a continuous period of 8 Hrs. working.
6. In the case of blasting, the effect of the shock/vibration is controlled at the mine surface level itself by restoring to the use of millisecond delay action detonators and millisecond detonating relays.

The noise levels are monitored twice in a year. Workers engaged in blasting and drilling operations and operators are provided with ear plugs / muffs. This is extended to Expansion Project also. (Annexure-GC-VII)

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

TC-6175

कार्ड /संदर्भ सं. एवं दिनांक/ CARD /Ref No & Date : Reg.No :10882/22-23 Dt: 30 Aug 2022

परीक्षण परिणाम/ TEST RESULT

ग्राहक / Customer : M/s.CGM Mine II	रिपोर्ट सं./दिनांक / Report No / Date	TR/1057/22-23 Dt-14 Sep 2022
	उपभोक्ता सं./ दिनांक / Customer Ref. / Date	Noise Level measurement at MII Dt-
	नमूने का विवरण/Description of the Sample	Noise Level
	नमूनों की संख्या/ No. of Samples	11
	परीक्षण की तिथि / Date of Testing	30 Aug 2022 - 14 Sep 2022
	नमूने की प्रक्रिया तथा के द्वारा किया गया / Sampling Procedures & Done by	
	कोई विशिष्ट जानकारी / Any Specific Information	

नमूने का ब्यौरा **Sample particulars : First aid Centre ,** **Sample Dated :05.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	75.0	

नमूने का ब्यौरा **Sample particulars : Water booster North** **Sample Dated :05.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	80.6	

नमूने का ब्यौरा **Sample particulars : Training centre** **Sample Dated :05.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	78.2	

नमूने का ब्यौरा **Sample particulars : Geology Lab** **Sample Dated :05.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	76.6	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :05.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	75.5	

नमूने का ब्यौरा **Sample particulars : First aid Centre ,** **Sample Dated :22.08.2022**

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, पुन: 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/1057/22-23 Dt-14 Sep 2022

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	76.4	

नमूने का ब्यौरा **Sample particulars : Water booster North** **Sample Dated :22.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	78.8	

नमूने का ब्यौरा **Sample particulars : Training centre** **Sample Dated :22.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	77.9	

नमूने का ब्यौरा **Sample particulars : Geology Lab** **Sample Dated :22.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	76.2	

नमूने का ब्यौरा **Sample particulars : Control Tower** **Sample Dated :22.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	77.1	

नमूने का ब्यौरा **Sample particulars : Therkkuvellore** **Sample Dated :22.08.2022**

क्र.सं. SINo	परीक्षण मापदंड Test Parameter	विधि Method	परीक्षण परिणाम Test Results	स्वीकार्य सीमा Acceptable range
1	Noise level 85 (dBA)	IS 9989-1981 reaffirmed 2001	66.6	

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/1057/22-23 Dt-14 Sep 2022

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

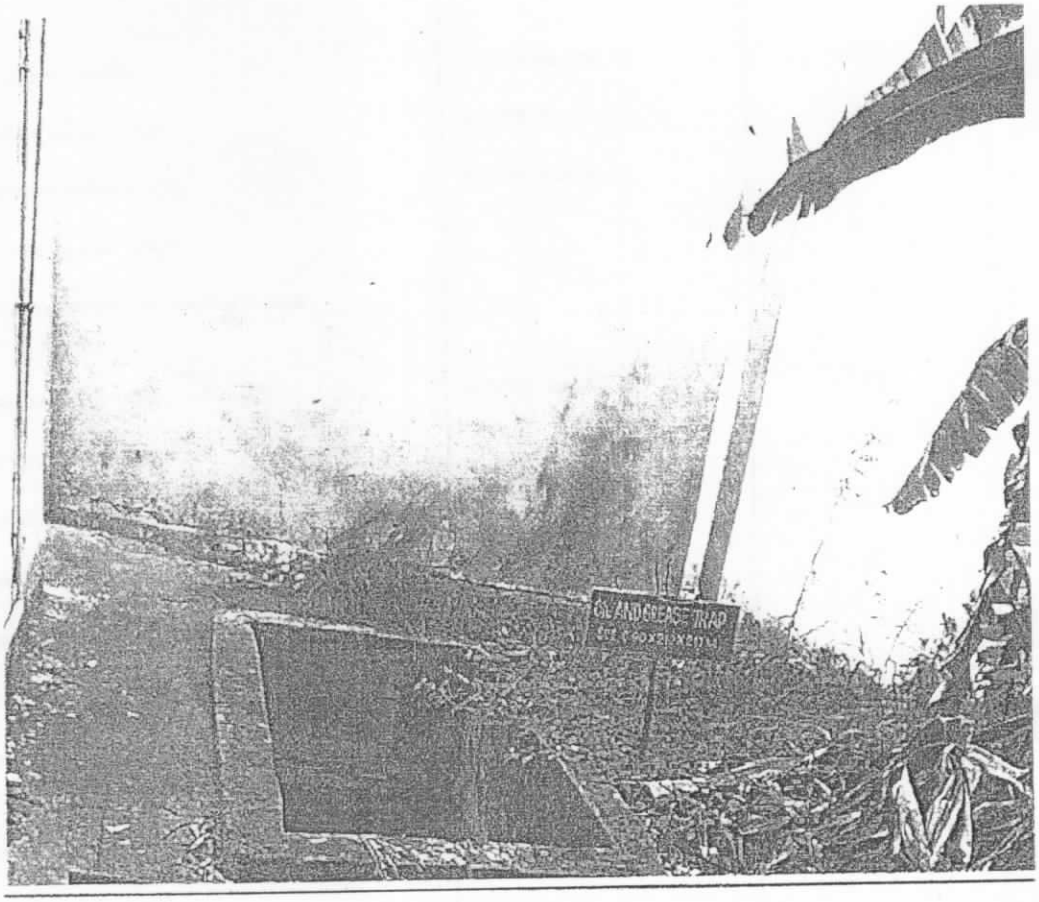
अधिकृत हस्ताक्षरकर्ता / Authorized Signatory

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, पुन: 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 GC VIII

MINE-II-ETP- OIL and Grease trap



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/714/22-23 Dt-20 Jul 2022

नमूने का ब्यौरा **Sample particulars : STP CANTEEN OUTLET**

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 soilds		Passes 850 micron IS sieve	Shall Passes 850 micron IS sieve
4	Total solids* (mg/l)	IS 3025 Part No.15	358	-
5	Dissolved solids (mg/l)	IS 3025 Part No.16	341	2100
6	Suspended solids (mg/l)	IS 3025 Part No.17	17	100
7	Dissolved oxygen (mg/l)		7.19	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		9	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	125.0	250
10	Oil & Grease (mg/l)		0.8	10
11	Total nitrogen as N (mg/l)		1.12	100
12	Ammoniacal nitrogen as N (mg/l)		NIL	50
13	Organic Nitrogen as N (mg/l)		1.12	-
14	Free Ammonia as NH3 (mg/l)		NIL	5.0
15	Phosphates as P (mg/l)	4110 B APHA 21ST EDITION	2.24	5.0
16	Phenolic compounds (mg/l)		NIL	1.0
17	Sulphides as S (mg/l)		0.2	2.0
18	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	88	1000
19	Total residual chlorine (mg/l)		NIL	1.00

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/714/22-23 Dt-20 Jul 2022

20	Flourides (mg/l)	4110 B APHA 21ST EDITION	0.25	2.00
21	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	48	1000
22	Potassium as K (mg/l)		1.4	-
23	Percent sodium as Na (mg/l)		41.1	-
24	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.039	2
25	Barium as Ba (mg/l)	3120 B APHA 21ST EDITION	-	-
26	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2
27	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.012	0.10
28	Hexavalent chromium as Cr (mg/l)		BDL	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	0.025	3
31	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	-	0.05
32	Silver Ag (mg/l)	3120 B APHA 21ST EDITION	0.011	-
33	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.014	1.00

नमूने का ब्यौरा **Sample particulars : ETP SERVICE POINT OUTLET**

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

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, पुन: 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/714/22-23 Dt-20 Jul 2022

3	Particle size of total suspended soilds		Passes 850 micron IS sieve	Shall Passes 850 micron IS sieve
4	Total solids* (mg/l)	IS 3025 Part No.15	430	-
5	Dissolved solids (mg/l)	IS 3025 Part No.16	416	2100
6	Suspended solids (mg/l)	IS 3025 Part No.17	14	100
7	Dissolved oxygen (mg/l)		6.88	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		8.0	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	93.8	250
10	Oil & Grease (mg/l)		0.2	10
11	Total nitrogen as N (mg/l)		0.56	100
12	Ammoniacal nitrogen as N (mg/l)		NIL	50
13	Organic Nitrogen as N (mg/l)		0.56	-
14	Free Ammonia as NH3 (mg/l)		NIL	5.0
15	Phosphates as P (mg/l)	4110 B APHA 21ST EDITION	2.52	5.0
16	Phenolic compounds (mg/l)		NIL	1.0
17	Sulphides as S (mg/l)		0.10	2.0
18	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	126.9	1000
19	Total residual chlorine (mg/l)		NIL	1.00
20	Flourides (mg/l)	4110 B APHA 21ST EDITION	0.2	2.00
21	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	60	1000
22	Potassium as K (mg/l)		0.46	-

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, पुन: 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/714/22-23 Dt-20 Jul 2022

23	Percent sodium as Na (mg/l)		28.7	-
24	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.041	2
25	Barium as Ba (mg/l)	3120 B APHA 21ST EDITION	-	-
26	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2
27	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.016	0.10
28	Hexavalent chromium as Cr (mg/l)		BDL	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	0.028	3
31	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	-	0.05
32	Silver Ag (mg/l)	3120 B APHA 21ST EDITION	0.010	-
33	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.018	1.00

नमूने का ब्यौरा **Sample particulars : SEEPAGE WATER**

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 soilds		Passes 850 micron IS sieve	Shall Passes 850 micron IS sieve
4	Total solids* (mg/l)	IS 3025 Part No.15	659	-
5	Dissolved solids (mg/l)	IS 3025 Part No.16	643	2100
6	Suspended solids (mg/l)	IS 3025 Part No.17	16	100

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, पुन: 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/714/22-23 Dt-20 Jul 2022

7	Dissolved oxygen (mg/l)		7.11	-
8	Biological Oxygen Demand for 3 days @ 27 C (mg/l)		7.0	30
9	Chemical Oxygen Demand (mg/l)	IS 3025 Part No.58	31.3	250
10	Oil & Grease (mg/l)		1.2	10
11	Total nitrogen as N (mg/l)		1.12	100
12	Ammoniacal nitrogen as N (mg/l)		NIL	50
13	Organic Nitrogen as N (mg/l)		1.12	-
14	Free Ammonia as NH3 (mg/l)		NIL	5.0
15	Phosphates as P (mg/l)	4110 B APHA 21ST EDITION	2.3	5.0
16	Phenolic compounds (mg/l)		NIL	1.0
17	Sulphides as S (mg/l)		0.30	2.0
18	Sulphates as SO_4 (mg/l)	IS-3025 Part No.24/ 4110 B APHA 21ST EDITION	235.6	1000
19	Total residual chlorine (mg/l)		NIL	1.00
20	Flourides (mg/l)	4110 B APHA 21ST EDITION	0.22	2.00
21	Chlorides as Cl (mg/l)	IS-3025 Part No.32/ 4110 B APHA 21ST EDITION	84	1000
22	Potassium as K (mg/l)		0.12	-
23	Percent sodium as Na (mg/l)		32.7	-
24	Boron as B (mg/l)	3120 B APHA 21ST EDITION	0.04	2
25	Barium as Ba (mg/l)	3120 B APHA 21ST EDITION	-	-

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, पुन: 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/714/22-23 Dt-20 Jul 2022

26	Cadmium as Cd (mg/l)	3120 B APHA 21ST EDITION	BDL	2
27	Lead as Pb (mg/l)	3120 B APHA 21ST EDITION	0.014	0.10
28	Hexavalent chromium as Cr (mg/l)		BDL	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	0.025	3
31	Selenium as Se (mg/l)	3120 B APHA 21ST EDITION	-	0.05
32	Silver Ag (mg/l)	3120 B APHA 21ST EDITION	0.013	-
33	Zinc as Zn (mg/l)	3120 B APHA 21ST EDITION	0.02	1.00

प्रयोगशाला द्वारा कोई विशेष उल्लेख, यदि हो तो / Special mention if any by the Laboratory	ACCEPTABLE RANGE AS PER TNPCB NORMS

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, पुन: 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/714/22-23 Dt-20 Jul 2022

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 एनाएबीएल क्षेत्र में नहीं है।

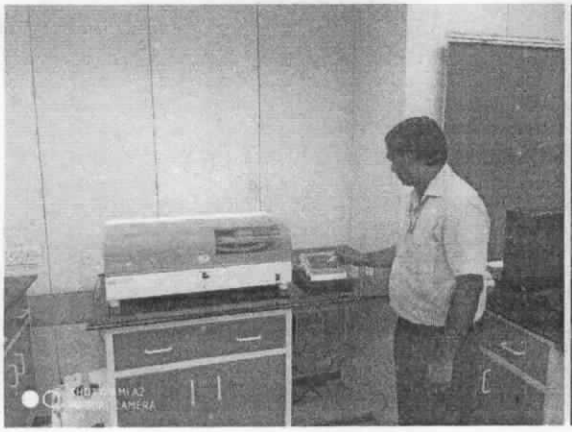
Note : This result relates to the particular sample submitted for the test. Report shall not be reproduced, unless in full, without consent of the laboratory. Sample description is given by the Customer. Samples are not drawn by us unless otherwise stated. Marked # is not in our NABL Scope.

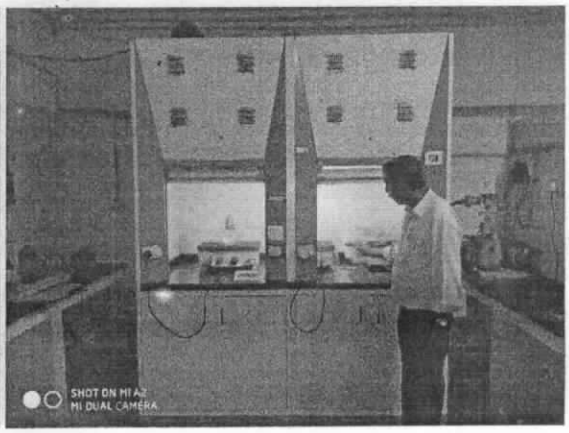
CARD/QF/5.10/02-Rev,Dt.22.12.15

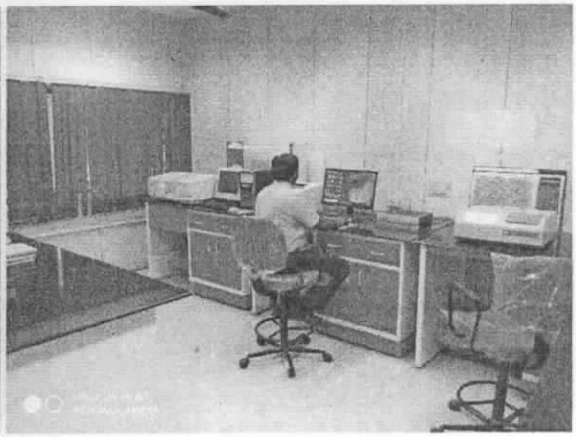
नोट : यह परिणाम परीक्षण के लिए प्रस्तुत विशेष नमूने से संबंधित है। प्रयोगशाला की सहमति के बिना, जब तक पूर्ण रूप से रिपोर्ट नहीं की जाएगी, पुनः प्रस्तुत नहीं किया जाएगा। नमूना विवरण ग्राहक द्वारा दिया गया है। जब तक अन्यथा न कहा जाए, नमूने हमारे द्वारा नहीं लिए गए हैं।

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.

NLCIL – CARD – Environmental Laboratory







ANNEXURE – 9C
– 9C – X

MINE-II-Using Personal Protective Equipment

(Dust Respirator, Ear Plug)

NLC India Limited

NLC INDIA HOSPITAL : NEYVELI - 607 803

(FORM 0)

(See Rule 29 F (2) and 29 L)

Report of Medical Examination under rule 29 B

(To be issued in triplicate)

Certificate No ...44559.....

Certified that Shri / Smt.....IC.GUNASEKARAN.....employed as Jr.SME.Opr.....S.B.S.Mine II...in Neyveli Form B No.....

has been examined for an Initial / Periodical Medical Examination. He/she appears to be ....51.....

years of age. The findings of the examing authority are given in the attached sheet. It is considered that Shri/Smt ...IC.GUNASEKARAN.....

a) Is medically fit for any employment in Mines.

b) Is suffering from .....and is medically Unfit for

(i) any employment in Mine; or

(ii) any employment below ground; or

(iii)any employment or work .....

c) Is suffering from .....should get this disability cured/controlled and should be again examined within a period of.....months. He/she will appear for re-examination with the result of test of ..... and the opinion of .....Specialist from.....He/she may be permitted/not permitted to carry on his duties during this period.

44559

Signature of the Examining Authority

Industrial Medical Officer
NLC General Hospital, Neyveli

.....

.....

Name and Designation in Block letters.

Place : PME Centre, NLCIH, Neyveli-3.

Date :

(FORM 0) (Contd.)

Report of the examination authority

(to be filled in for every Medical Examination Whether initial or periodical or re-examination or after cure / control of disability), Annexure to certificate.

No ....44559.....as a result of Medical Examination on....21-10-2022.....

Identification Marks 1. A SMALL MOLE ON THE LEFT SIDE FORE HEAD

2. A SCAR ON THE LEFT LEG

Left Thumb Impression

The Candidate

1. General development : Good / Fair / Poor ✓
2. Height .....161..... Cms.
3. Weight .....66..... Kgs.
4. Eyes :
   - (i) Visual acuity - Distant Vision (with or without glasses) — Right Eye 6/6, Left Eye 6/6 with glasses
   - (ii) Any organic disease of Eyes.
   - (iii) Night Blindness
   - (iv) Colour Blindness
   - (v) Squint

   (to be tested in special cases) / nil
5. Ears :
   - (i) Hearing Right ear.....N.....Left ear.....N.....
   - (ii) Any organic disease. NAD
6. Respiratory system :

   Chest measurement :
   - (i) After full inspiration..... cms.
   - (ii) After full expiration..... cms.

7. Circulatory system : N
   Blood Pressure : 140/90 mm Hg
   Pulse : 81/mt
8. Abdomen : Soft
   Tenderness : Nil
   Liver :
   Spleen : N
   Tumour : Nil
9. Nervous system : N
   History of fits or epilepsy :
   Paralysis : Nil
   Mental health :
10. Locomotor system : N
11. Skin :
12. Hernia :
13. Hydrocele : Nil
14. Any other abnormality : NAD
15. Urine :
    Reaction :
    Albumin : +
    Sugar : + +
16. Skiagram of chest : N
17. Any other test considered necessary by the examining authority :
18. Any opinion of specialist considered necessary :

DM

Place :

Signature of the Examining Authority

Report of Medical Examination under Mines Rule 29 B

(To be used in continuation with Form O)

Certificate No :

Name : C. Gunasekaran

Identification Marks :

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FEV)	2.96	3.68	124.3
Forced Vital Capacity 1 FEVI	2.21	3.44	155.7
FEVI / FVC	78.79	93.33	118.5
Peak Expiratory Flow	6.54	9.95	152.1

Spirometry Report enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : C. Guna Sekaran

Identification Marks :

1. Cardiological Assessment

Auscultation	S1	N
	S2	N
	Additional Sound	Nil
Electrocardiograph (12 leads) findings :		Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	N
Deep Reflexes	N
Peripheral Circulation	N
Vibrational Syndromes	Nil

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
~~Present~~ / Absent		

Enclosed Chest Radiograph

4. Audiometry Findings :

Conduction Type	Left Ear	Right Ear
Air Conduction	Normal / ~~Abnormal~~	Normal / ~~Abnormal~~
Bone Conduction	Normal / ~~Abnormal~~	Normal / ~~Abnormal~~

Enclosed Audiometry Report

5. Pathological / Microbiological Investigations :

Sl.No.	Tests	Findings
1.	Blood-Tc, Dc, Hb, ESR, Platelets	WNL / ~~Abnormal~~
2	Blood Sugar - Fasting & PP	WNL / ~~Abnormal~~
3.	Lipid Profile	WNL / ~~Abnormal~~
4.	Blood Urea, Creatinine	WNL / ~~Abnormal~~
5.	Urine Routine	WNL / ~~Abnormal~~
6.	Stool Routine	WNL / ~~Abnormal~~

Enclosed Investigation Report

6. Special Test for Mn exposure

Behavioral Disturbance		~~Present~~ / Not Present
Neurological Disturbances	Speech Defect	~~Present~~ / Not Present
	Tremor	~~Present~~ / Not Present
	Adiadocokinesia	~~Present~~ / Not Present
	Emotional Changes	~~Present~~ / Not Present

7. Any other Special Test Required : Nil

Signature of the Examination Authority

NLC India Limited
NLC INDIA HOSPITAL : NEYVELI - 607 803
(FORM 0)
(See Rule 29 F (2) and 29 L)

CREATING WEALTH FOR WELLBEING

Report of Medical Examination under rule 29 B
(To be issued in triplicate)

Certificate No ......18825......

Certified that Shri / Smt......Manikandan. R......employed as ......St/Smc04/m.V......in Neyveli Form B No...................................... has been examined for an Initial / Periodical Medical Examination. He/she appears to be ......31...... years of age. The findings of the examing authority are given in the attached sheet. It is considered that Shri/Smt ......Manikandan. R......

a) Is medically fit for any employment in Mines.

b) Is suffering from ....and is medically Unfit for

(i) any employment in Mine; or

(ii) any employment below ground; or

(iii)any employment or work ....

c) Is suffering from ....should get this disability cured/controlled and should be again examined within a period of..............................months. He/she will appear for re-examination with the result of test of .... and the opinion of ....Specialist from.......................................He/she may be permitted/not permitted to carry on his duties during this period.

Signature of the Examining Authority

Industrial Medical Officer
NLC General Hospital, Neyveli.

....

....

Name and Designation in Block letters.

Place : PME Centre, NLCIH, Neyveli-3.

Date :

(FORM 0) (Contd.)

Report of the examination authority

(to be filled in for every Medical Examination Whether initial or periodical or re-examination or after cure / control of disability), Annexure to certificate.

No ....18825....as a result of Medical Examination on....27.10.22....

Identification Marks 1. DBM on the (L) Ring Finger.

2.

R. Mani

Left Thumb Impression

The Candidate

1. General development : Good / Fair / Poor
2. Height ....170.... Cms.
3. Weight ....61.... Kgs.
4. Eyes :
   - (i) Visual acuity - Distant Vision (with or without glasses) — Right Eye 6/6, Left Eye 6/6
   - (ii) Any organic disease of Eyes.
   - (iii) Night Blindness
   - (iv) Colour Blindness
   - (v) Squint

   (to be tested in special cases) — NIL
5. Ears :
   - (i) Hearing Right ear....B/L Normal Hearing....Left ear....
   - (ii) Any organic disease. NAD
6. Respiratory system :

   Chest measurement :
   - (i) After full inspiration..... cms.
   - (ii) After full expiration..... cms.

7.	Circulatory system	: N
	Blood Pressure	: 100/60 mmhg
	Pulse	: 64/mt
8.	Abdomen	: Soft
	Tenderness	: NIL
	Liver	: N
	Spleen	: N
	Tumour	: NIL
9.	Nervous system	: N
	History of fits or epilepsy	: NIL
	Paralysis	: NIL
	Mental health	: N
10.	Locomotor system	: N
11.	Skin	: N
12.	Hernia	: NIL
13.	Hydrocele	: NIL
14.	Any other abnormality	: NAD
15.	Urine	:
	Reaction	:
	Albumin	: NIL
	Sugar	: NIL
16.	Skiagram of chest	: N

17. Any other test considered necessary by the examining authority :

18. Any opinion of specialist considered necessary :

Signature of the Examining Authority

Place :

Report of Medical Examination under Mines Rule 29 B

(To be used in continuation with Form O)

Certificate No :

Name : Manikandan

Identification Marks :

Result of Lung Function Test (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FEV)	3.79	4.84	127.7
Forced Vital Capacity 1 FEVI	2.96	4.69	158.4
FEVI / FVC	81.88	96.89	118.3
Peak Expiratory Flow	7.66	9.01	117.6

Spirometry Report enclosed

Signature of the Examination Authority

Report of Medical Examination as per the recommendations of National Safety Conferences in Mines

(To be used in continuation with Form O)

Certificate No :

Name : Manikendan

Identification Marks :

1. Cardiological Assessment

Auscultation	S1	N
	S2	N
	Additional Sound	Nil
Electrocardiograph (12 leads) findings :		Normal / Abnormal

Enclosed ECG

2. Neurological Assessment

Findings	Normal / Abnormal
Superficial Reflexes	N
Deep Reflexes	N
Peripheral Circulation	N
Vibrational Syndromes	Nil

3. ILO Classification of Chest Radiograph :

Profusion of Pneumoconiotic Opacities	Grades	Types
Present / Absent		

Enclosed Chest Radiograph

4. Audiometry Findings :

Conduction Type	Left Ear	Right Ear
Air Conduction	Normal / Abnormal	Normal / Abnormal
Bone Conduction	Normal / Abnormal	Normal / Abnormal

Enclosed Audiometry Report

5. Pathological / Microbiological Investigations :

Sl.No.	Tests	Findings
1.	Blood-Tc, Dc, Hb, ESR, Platelets	WNL / Abnormal
2	Blood Sugar - Fasting & PP	WNL / Abnormal
3.	Lipid Profile	WNL / Abnormal
4.	Blood Urea, Creatinine	WNL / Abnormal
5.	Urine Routine	WNL / Abnormal
6.	Stool Routine	WNL / Abnormal

Enclosed Investigation Report

6. Special Test for Mn exposure

Behavioral Disturbance		Present / Not Present
Neurological Disturbances	Speech Defect	Present / Not Present
	Tremor	Present / Not Present
	Adiadocokinesia	Present / Not Present
	Emotional Changes	Present / Not Present

7. Any other Special Test Required : Nil

Signature of the Examination Authority

Annexure-GC-XIII

Account Centre/Mine-II

Dt: 06.10.2022

MINE II - Provisional Cost Statement - September -2022

PARTICULARS	Sep-22		Sep-21	CUMM September 2022		CUMM September 2021	CUMM Mar 2022	CUMM Jun 22	CUMM Jun 21
PHYSICAL DATA	TARGET	ACTUAL	ACTUAL	TARGET	ACTUAL	ACTUAL	ACTUAL	% of Cost on Cost of Production	
OVERBURDEN LM3	**65.00**	53.51	57.36	**396.00**	335.35	359.65	712.62		
OB OUTSOURCING LM3	**6.50**	6.71	5.40	**38.50**	41.33	33.22	58.94		
TOTAL OB IN LM3	**71.50**	60.23	62.76	**434.50**	376.68	392.87	771.56		
LIGNITE - L.T.	**11.50**	7.43	10.28	**68.50**	54.96	59.27	125.48		
CAPACITY UTILIZATION %	**92%**	59%	82%	**91%**	73%	79%	84%		
LIGNITE CONSUMED BY THERMALS									
TSII (LAKH TONS)		**8.16**	**9.11**		**53.62**	**57.10**	**107.01**		
TSIIE (LAKH TONS)		**1.84**	**1.35**		**11.32**	**11.11**	**19.77**		
FINANCIAL DATA	Rupees (In Crore)								
EXPLOSIVES	0.22	0.25	0.49	1.34	1.52	1.03	1.86	0.15%	0.10%
POWER VARIABLE	9.11	7.39	8.13	55.34	47.05	52.95	101.72	4.60%	5.29%
TEETH	0.33	0.09	1.24	2.00	0.43	1.43	2.78	0.04%	0.14%
ROYALTY (INCL. DMF, NMET & GST ON ROY,NMET&DMF)	20.96	13.39	18.42	124.83	100.35	108.01	228.57	9.81%	10.80%
MINE CLOSURE	1.81	1.81	1.72	10.86	10.86	10.34	20.68	1.06%	1.03%
VARIABLE COST	**32.43**	**22.93**	**30.00**	**194.37**	**160.20**	**173.76**	**355.61**	**15.66%**	**17.37%**
STORES & SPARES	14.00	17.41	34.11	84.00	128.58	61.09	170.38	12.57%	6.11%
REMUNERATION	38.84	31.22	36.26	233.07	224.68	219.26	462.42	21.97%	21.92%
POWER FIXED	4.70	3.98	4.38	28.23	25.33	28.51	54.77	2.48%	2.85%
OUTSIDE SERVICES	12.77	17.51	36.24	76.63	85.71	137.02	279.36	8.38%	13.70%
OB OUTSOURCING	9.27	7.95	6.69	54.91	49.43	36.89	70.78	4.83%	3.69%
GENERAL CHARGES	3.52	2.40	1.52	21.13	10.74	7.76	15.45	1.05%	0.78%
INTERNAL SERVICES	21.45	20.95	23.05	128.71	105.52	89.72	234.67	10.32%	8.97%
COMMON CHARGES	18.44	16.28	16.22	110.65	100.66	112.77	261.67	9.84%	11.27%
GUARANTEE FEE	-	0.02	-	0.07	0.09	0.08	0.08	0.01%	0.01%
INTEREST	5.74	3.47	6.52	34.44	18.89	36.40	59.63	1.85%	3.64%
DEPRECIATION	15.70	17.59	15.57	94.21	101.88	93.17	229.71	9.96%	9.32%
AMORTISATION	1.33	2.17	1.33	8.00	13.00	8.00	25.99	1.27%	0.80%
GROSS FIXED COST	**145.78**	**140.94**	**181.88**	**874.05**	**864.50**	**830.68**	**1864.92**	**84.52%**	**83.05%**
LESS: RECOVERY	-	0.46	0.97	-	1.92	4.22	23.79	0.19%	0.42%
NET FIXED COST	**145.78**	**140.47**	**180.91**	**874.05**	**862.59**	**826.46**	**1841.13**	**84.34%**	**82.63%**
COST OF PRODN. (COP)	**178.21**	**163.41**	**210.91**	**1068.42**	**1022.79**	**1000.22**	**2196.74**	**100.00%**	**100.00%**
OPENING STOCK	249.43	100.99	92.18	214.78	194.35	266.89	269.40		
CLOSING STOCK	257.92	58.53	81.42	257.92	58.53	81.42	194.35		
COST OF SALES	**169.72**	**205.87**	**221.67**	**1025.28**	**1158.61**	**1185.69**	**2271.79**		
SALES & OTHER RECEIPTS	0.07	-12.03	4.59	0.41	-6.81	9.22	19.92		
TRANSFER TO UNITS (LIGNITE)	232.26	213.24	223.06	1,405.44	1384.49	1454.31	2702.99		
IUSS-POWER SURRENDER	-	0.00	0.00	-	0.00	0.00	0.00		
TOTAL RECEIPTS	**232.33**	**201.21**	**227.65**	**1405.84**	**1377.68**	**1463.53**	**2722.91**		
PROFIT/(LOSS) (BEFORE REGULATORY DEFERRAL)	**62.61**	**-4.66**	**5.98**	**380.57**	**219.07**	**277.84**	**451.12**		
Add/LESS: REGULATORY DEFERRAL	-	-	-	-	-	-	-		
CSR EXPENDITURE	-	-	-	-	-	-	**0.02**		
PROFIT / (LOSS) (AFTER REGULATORY DEFERRAL)	**62.61**	**-4.66**	**5.98**	**380.57**	**219.07**	**277.84**	**451.10**	15.82%	19.10%
COST OF PRODUCTION Rs. PER TON OF LIGNITE	**1549.64**	**2199.63**	**2051.47**	**1559.73**	**1861.03**	**1687.69**	**1750.66**		
O&M/Rs.Lakh (Incl. OB Outsourcing)	134.00	127.15	168.68	804.07	790.82	752.29	1658.15		
OB+LIG(LM3) (Incl OB Outs.)	81.50	66.69	71.70	494.07	424.47	444.40	880.67		
Total O&M Cost Rs. per M3 (Incl. OB Outsourcing)	164.42	190.67	235.25	162.75	186.31	169.28	188.28		
Total O&M Cost Rs. per M3 (Excl. OB Outsourcing)	166.30	198.76	244.32	164.45	193.50	173.98	193.17		
OBOS COST Rs. Per M3	**142.63**	**118.43**	**123.92**	**142.63**	**119.60**	**111.07**	**120.09**		
OB : LIGNITE RATIO	6.22	8.11	6.10	6.34	6.85	6.63	6.15		
COST OF PRODUCTION Rs. PER TON (EXCL. ROYALTY, DMF, NMET & CESS)	**1367.40**	**2019.39**	**1872.35**	**1377.49**	**1678.44**	**1505.44**	**1568.51**		

Annexure-Enc-15
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No.J-11015/30/2001-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhavan
C.G.O. Complex, Lodi Road
New Delhi-110 003

Dated: the 24th December 2002

To

Director (Planning & Project),
M/s. Neyveli Lignite Corporation Limited,
Block 26, Field Office,
NEYVELI-607 803
Tamil Nadu

Subject: Expansion of Neyveli Mine-II opencast project [5321.99 ha to 7193.975ha and 10.5 MTPA to 15.0 MTPA] by M/s. Neyveli Lignite Corporation Ltd. in Village Neyveli, Tehsil Vridhachalan, District Cuddalore, Tamil Nadu - environmental clearance reg.

Sir,

This has reference to the Ministry of Coal & Mines, Department of Coal's letter No.43011/5/98-LIG dated 23.08.2001 and your letters dated 6.08.2001, 10.8.2001, 5.01.2002, 3.02.2002, 10.02.2002, 12.04.2002, 9.05.2002, 21.05.2002, 5.06.2002, 10.07.2002, 5.08.2002 and 16.09.2002 on the subject mentioned above. The Ministry of Environment and Forests has examined the application. It has been noted that the proposal for mine-II expansion involves increase in lignite production capacity to 15.0 million TPA and acquisition of additional 1871.985 ha of land of which 1646.985 ha is for mining and safety zone and the balance 225.0 ha is for dump yard. No forestland is involved. 8 villages will be partially affected. Expansion from 10.5 MTPA to 15.0 MTPA involves displacement of 2135 families from the project site. Additional 159.645 ha. of land will also be acquired for resettlement of displaced families. Approval from the Tamil Nadu Pollution Control Board has been obtained. Public hearing was held on 11.06.2001. Water requirement of 1050 m^3/day will be met from de-pressurising wells operating in the NLC mines. Approximately 22 lakhs m^3/month of over burden will be generated and back filled. The capital cost of the project is Rs.1753.74 crores.

2. The Ministry of Environment and Forests hereby accords environmental clearance to the above mentioned lignite mine of M/s Neyveli Lignite Corporation Limited for expansion of lignite production from 10.5 MTPA to 15.0 MTPA by opencast mechanised method (BWE) involving 7193.975 ha of land

Submitted
PS to concerned

under the provisions of the Environmental Impact Assessment Notificatio 1994 as amended on 04.05.1994 and 10.04.1997 subject to strict compliance of following terms and conditions:

A. Specific conditions

(i) Top soil should be stacked properly with proper slope at earmarked site(s) with adequate measures and should be used for rehabilitation of mined out area.

(ii) OB should be stacked scientifically at earmarked dump site(s). The total height of the external dump(s) should not exceed 65 m in two or three stages. Overall slope of the dump should not exceed 28°. Concurrent back filling and rehabilitation should start from the 5th year of operation. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on yearly basis.

NLC should speed up reclamation of decoaled areas in their mine at Neyveli and must complete the task positively by the end of 2005. A comprehensive revised plan should be prepared indicating locations of such sites, deployment / redeployment of equipment and machinery, source of fill material, allocation of funds, and a dedicated team to ensure compliance.

Superdumps should not be used for further dumping of OB and interburden from any of the mines except where the voids, and gorges are to be contoured for the purpose of rehabilitation. These dumps should be declared as inactive dumps and their time bound rehabilitation programme should be chalked out. The required action plan should be submitted to MOEF for consideration by January, 2003. A competent institute like CMRI, Dhanbad should be engaged for carrying out slopes stability studies and technical advise for scientific rehabilitation for all the external as well as internal dumps under intimation to the Ministry.

Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted and maintained properly

Garland drains (size, gradient & length) and sump capacity should 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 should also provide adequate retention period to allo proper settling of silt material.

(iii) Dimension of the retaining wall at the toe of dumps and OB benche within the mine to check run-off and siltation should be based on th rain fall data.

(iv) Ground water consumption by NLC should be brought down from th present level 141.85 MCM per annum to below 100 MCM per annu within a period of eighteen months by supplying treated storm water t the township and power plants and complete switch over to dry disposa fly ash system in their power plants. A detailed integrated wate management action plan indicating allocation of funds for implementin various water conservation schemes and compliance schedule shoul also be submitted to MoEF in two months time.

Water quantity measuring devices should be installed a appropriate sites to measure total ground water pumping by NLC fror its all installations and discharge.

(v) A network of existing wells and new piezometers should be established i consultation with the Central Ground Water Board, Chennai for regula monitoring of ground water level and quality. The monitoring should b done four times a year in pre-monsoon (April / May), monsoon (August post-monsoon (November) and winter (January) seasons. Data thu collected should be submitted to the Ministry of Environment an Forests, the Central Ground Water Board (Chennai), and the Centra Ground Water Authority (Delhi) every quarter.

(vi) Monitoring of confined aquifer pressure surface should be continued a adequate interval in consultation with the Regional Director, Centra Ground Water Board, Chennai and half yearly compliance report shoul be submitted to MOEF Regional office and Member Secretary, Centra Ground Water Authority, Delhi.

(vii) Artificial recharge measures should be implemented in consultation wit the Regional Director, Central Ground Water Board, Chennai and a lon term study should be undertaken to work out a future plan i augmenting the ground water resource in the area.

(viii) A detailed mine decommissioning plan should be submitted to th Ministry of Environment & Forests 5 years in advance for approval Similar action should also be taken in respect of Mine I & IA.

(ix) A green belt of adequate width should be raised by planting the native species around the ML area, roads, OB dump sites etc. in consultatio

with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.

(x) A copy of the report on ground model study carried by IIT, Chennai to estimate under flow of water to the sea should be submitted to MoEF along with an action plan to comply with the recommendations made therein.

(xi) A copy of study report on "Development of optimal plan for ground water pressure control for the existing and future mines and a comprehensive regional ground water simulation model for Neyveli basin" should be submitted along with a reliable prognostic pumping plan.

(xii) The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine.

(xiv) A report on completion of rehabilitation of the project affected families should be submitted to the Ministry and its Regional Office at Bangalore

(xv) Sewage treatment plant should be installed for the colony. ETP should also be provided for all the workshops being operated by NLC.

(xvi) Digital processing of all the mining leases using remote sensing technique should be done regularly once in 2 years for monitoring land use pattern and hydro-geomorphology and report submitted to MOEF and its Regional Office regularly. A copy of the report for the year 2001 should be submitted within two months.

(xvii) Ambient air quality around the storage bunkers in residential areas should be monitored on weekly basis and appropriate corrective measures should be taken as and when needed to ensure compliance with the national ambient air quality standards.

(xviii) Other project specific environmental protection measures suggested in the environmental management plan should also be implemented.

(xix) "Consent to operate" from the Tamil Nadu Pollution Control Board should be obtained before starting developmental work relating to expansion of the mine, besides other statutory clearances from the concerned authorities.

(xx) A special Monitoring Committee comprising representatives from the Ministry of Environment & Forests, Regional Director, Central Ground Water Board (Chennai), Shri K. Venkatesan [Chairman, Expert Committee (Mining) – Chennai based] and Shri H.V. Paliwal (Member, Expert Committee – Delhi based) to oversee the implementation

of the environmental protection measures as indicated in this letter and technical guidance. The Committee should be extended full cooperation.

B. General conditions

(i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.

(ii). No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.

(iii) Five ambient air quality-monitoring stations should be established in the core zone (mine-II expansion area) as well as in the buffer zone for RPM, SPM, SO_2 & NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

(iv) Data on ambient air quality (RPM, SPM, SO_2 & NOx) should be regularly submitted to the Ministry including its Regional office at Bangalore and the State Pollution Control Board / Central Pollution Control Board once in six months.

(v) Drills should be wet operated or with dust extractors and controlled blasting should be practised.

(vi) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading & unloading) should be provided and properly maintained.

(vii) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs / muffs.

(viii) Industrial waste water (workshop and waste water from the mine) should 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. Oil and grease trap should be installed before discharge of workshop effluents.

(ix) Acid mine water, if any, has to be treated and disposed of after conforming to the standard prescribed by the competent authority.

(x) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

(xi) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to coal and take corrective measures, if needed.

(xii) A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

(xiii) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bangalore.

(xiv) The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.

(xv) A copy of clearance letter will be marked to concerned Panchayat/local NGO, if any, from whom and suggestion/ representation has been received while processing the proposal.

(xvi) The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.

(xvii) The project authorities should 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 issue 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 web site of the Ministry of Environment & Forests at **http://envfor.nic.in**. and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bangalore.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance.

5. The above conditions will be enforced, inter alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

(Dr. T.Chandini)
Additional Director

Annexure-GC-XVI

பொது அறிவிப்பு

மத்திய சுற்றுச்சூழல் மற்றும் வனத்துறை அமைச்சகம் (MOE&F) இந்திய அரசு, நெய்வேலி பழுப்பு நிலக்கரி நிறுவனத்தின் இரண்டாம் சுரங்க விரிவாக்கத் திட்டத்தை (சுரண்டும் திறன் 10.5 மில்லியன் டன்னிலிருந்து 15.0 மில்லியன் டன்னாக) 24.12.2002 அன்று அனுமதி வழங்கியுள்ளது, என்பதை இதன் மூலம் தெரிவிக்கப்படுகிறது. இந்த அனுமதியின் நகல் தமிழ்நாடு மாசு கட்டுப்பாட்டு வாரியத்தில் உள்ளது. மேலும் சுற்றுப்புறச்சூழல் மற்றும் வனத்துறை அமைச்சகத்தின் இணைய தளமான (Web site) http://envfor.nic.in என்ற முகவரியிலும் காணலாம்.

Daily Thanthi 30/12/02

NEYVELI LIGNITE CORPORATION LTD.
(A Government of India Enterprise)
Regd. Office : Neyveli House, No.135, Periyar EVR High Rd, Chennai-600 010
CORP. OFFICE : BLOCK-1, NEYVELI 607 801, TAMIL NADU

PUBLIC NOTICE

It is hereby informed that the Ministry of Environment and Forests/Government of India, has accorded Environmental Clearance for the Mine-II Expansion Project (from 10.5 MTPA capacity to 15.0 MTPA) of Neyveli Lignite Corporation Ltd., Neyveli on 24.12.2002. A copy of the clearance letter is available with the Tamil Nadu State Pollution Control Board. It may also be seen at web site of the Ministry of Environment & Forests at http://envfor.nic.in

PUBLIC SECTOR IS YOURS : HELP IT TO HELP YOU

Hindu 30.12.02.