BEFORE THE NATIONAL GREEN TRIBUNAL, SOUTHERN BENCH, CHENNAI

(Under Section 19 (1) of the National Green Tribunal Act, 2010 read with Rule 24 of the National green Tribunal (Practice and procedure) Rules, 2011)

I.A. NO. 16 OF 2023

IN

ORIGINAL APPLICATION NO.105 OF 2021

IN THE MATTER OF :

Thermal Power Tech. Corporation India Ltd., (TPCIL),
... APPLICANT/9TH RESPONDENT

VERSUS

Yanati Srinivasalu Reddy & Others.
... RESPONDENTS

INDEX TO THE ADDITIONAL SUBMISSIONS PAPER BOOK ALONG WITH ANNEXURES FILED BY THE APPLICANT/NINETH RESPONDENT

7.	05.09.2022	**Annexure 5:** Notification dated 5th September 2022 bearing No. G.S.R. 682(E) issued by the MoEF.	**82**
8.	22.01.2021	**Annexure 6:** Certificate issued by the Indian Institute of Technology, Madras, certifying the standards of the Ash Pond.	**86**
9.	03.11.2022 to 02.02.2023	Annexure 7 *(Colly)*: Test reports of the Ambient Air Quality Monitory Test conducted by APPCB approved third party agency for the period between November 03, 2022 to February 02, 2023	**98**

Dated at Chennai on this the 8th day of February, 2023.

THROUGH

M/S. GAUTAM S. RAMAN,
COUNSEL FOR 9TH RESPONDENT

Chamber: No. 57, Law Chambers, High Court Buildings, Chennai – 600 104.

Office: No. 89, Kasthuri Avenue, MRC Nagar, RA Puram, Chennai – 600 028.

Mobile: 99400 71160

Email: gautam@ramanandassociates.in / juvraj.singh@cyrilshroff.com

BEFORE THE NATIONAL GREEN TRIBUNAL, SOUTHERN BENCH, CHENNAI

(Under Section 19 (1) of the National Green Tribunal Act, 2010 read with Rule 24 of the National green Tribunal (Practice and procedure) Rules, 2011)

I.A. NO. 16 OF 2023
IN
ORIGINAL APPLICATION NO.105 OF 2021

IN THE MATTER OF :

The Director,
Sembcorp Energy India Ltd (SEIL),
SPSR Nellore (Dt).
Ph.: 0861-23586063
Email: cs.india@sembcorp.com

... APPLICANT/9TH RESPONDENT

VERSUS

1. YanatiSrinivasalu Reddy,
   S/o. Ramachandra Reddy,
   Nelatur Village & Post,
   SPSR Nellore District,
   A.P. - 524 344.
   Phone: 9989773399

2. Magunta Krishna Reddy,
   S/o. Subbarami Reddy,
   Rep. by his Special Power of Attorney
   YanatiSrinivasalu Reddy.

   ... RESPONDENTS 1 AND 2/APPLICANTS

3. The Chief Secretary,
   Govt. of Andhra Pradesh,
   Scretariet, Velagapudi, Amaravathi,
   Andhra Pradesh.
   Ph.: 0863 2440631 Email: cs@ap.gov.in

Sign with seal

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4. Union of India,
   Rep. by The Secretary,
   Ministry of Environment, Forest & CC
   1st Floor Jal Block
   Indira Paryavaran Bhavan,
   Jorbagh Road, New Delhi - 110 003.
   Phone: 011-24695329
   Email ID: mefcc@gov.in, prakash.j@sansad.nic.in

5. Central Pollution Control Board,
   Rep. by its Chairman
   Parivesh Bhawan, CBDCum Office Complex
   East Arjun Nagar, Delhi.
   Phone: 22307233,
   Mail: ccb.cpcb@nic.in

6. The Secretary,
   Ministry of Power, Govt. of India,
   Shram Shakti Bhavan, Rafi Mag,
   New Delhi.
   Ph: 91-11-23710271
   Email: secy-power@nic.in

7. The Secretary (Environment)
   Forests and Environment Dept.,
   Amaravathi, Andhra Pradesh
   Ph: 0863-2444438
   Email: splcs-efst@ap.gov.in

8. The District Collector,
   Nellore, SPSR Nellore (Dt)
   Ph: 0861-2324374
   Email: nlr@ap.gov.in

9. The Chairman,
   Electricity Authority,
   Sewa Bhavan, R.K. Puram,
   New Delhi.
   Ph: 91-11-26752222 Email: chair@nic.in

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NELLORE

10. The Chairman,
Andhra Pradesh Pollution Control Board,
D.No.33-26-14/D2, Near Sunrise Hospital,
Pushpa Hotel Center, Chalamvari Street,
Kasturibaipet, Vijayawada,
Andhra Pradesh - 520010.
Mail: chairman@appc.gov.in

11. The Director,
Sri DamodaramSanjeevaiah Thermal Power Plant
M/s.A.P. Power Development Company Ltd.,
(A subsidiary of APGENCO & Govt. of A.P. undertaking),
Nelatur (V), Mutthukur (M), SPSR Nellore (Dt)
Ph: 0861-23586063
Email: sdstps.co@apgenco.gov.in

ADDITIONAL SUBMISSIONS ON BEHALF OF THE APPLICANTS/PETITIONERS IN THE APPLICATION BEARING NO. 16 OF 2023 FILED UNDER SECTION 19 (1) OF THE NATIONAL GREEN TRIBUNAL ACT, 2010 READ WITH RULE 24 OF THE NATIONAL GREEN TRIBUNAL (PRACTICES AND PROCEDURE) RULES, 2011 FOR INTERIM ORDERS

MOST RESPECTFULLY SHOWETH:

1. The Applicant/Petitioner hasfiled the referenced application bearing No. 16 of 2023 under Section 19(1) of the National Green Tribunal Act, 2010 read with Rule 14 of the National Green Tribunal (Practices And Procedure) Rules, 2011 (*hereinafter referred to as the* "**Respondent No.9'sApplication**") for the

grounds stated thereinseeking the urgent interference of this Hon'ble Tribunal *qua* restraining the Respondent No.7/APPCB from taking any coercive steps against the Respondent No.9 herein in lieu of arbitrary and unwarranted directions dated January 30, 2023 passed by the Respondent no.7 *vide* its order bearing No.001/APPCB/UH-II/TF/NLR/2023 under Section 33A of the Water (Prevention and Control of Pollution) Amendment Act, 1988 and Section 31A of the Air (Prevention and Control of Pollution) Amendment Act, 1987, *vide* (*hereinafter referred to as the* "**Order dated January 30, 2023**"). Words described but not specifically defined herein shall have the meaning so ascribed to them in the Application and the Reply to the Joint Committee Report.

2. Whilst the aforesaid application is pending adjudication before this Hon'ble Tribunal, the Respondent No.9 is filing this short additional submission to, *inter alia*, demonstrate how the aforesaid directions given by the Respondent No.7, vide its Order dated January 30, 2023 are arbitrary to the extent that the *lis* wherefrom the said directions are emanating is compositely pending

adjudication before this Hon'ble Tribunal and any directions issued by the Respondent No.7 *in limine* and without any application of mind are unfounded, unwarranted, arbitrary and against the due process of law. It is also noteworthy that the Respondent No.7 has passed directions vide its Order dated January 30, 2023 while completely ignoring the Respondent No.9's representation and particularly its Reply to the Joint Committee Report. Besides, without prejudice to any of the submissions of the Respondent No.9, whether made under the Respondent No.9's Application, the Respondent No.9's reply to the Original Application, the Respondent No.9's reply to the Report of the Committee and/or otherwise, the Respondent No.9 unequivocally in the paragraphs trailing hereafter is reiterating its reply to each direction issued by the Respondent No.7 vide its Order dated January 30, 2023 *in seriatim*. The Respondent No.9 submits that the contents of the aforesaid replies filed by the Applicant/Petitioner herein be read as part of this additional submissions, where the context may require. The contents of the foregoing replies are not being repeated here for the sake of brevity.

3. At the outset, the Respondent No.9 submits that the directions passed by the Respondent No.7 are in a sense a mere reproduction of the suggestions made by the Joint Committee in its Report. It is noteworthy that without any application of mind and in excess of its jurisdiction, particularly when the *lis* wherefrom the suggestion emanate are pending consideration / adjudication before this Hon'ble Tribunal, the Respondent No.7 has sought to make the suggestions of the Joint Committee directory *vide* its Order dated January 30, 2023. The Respondent No.7 has also filed its action taken report on February 2, 2023 wherein it has merely reproduced the contents of its Order dated January 30, 2023, in this regard, the Respondent No.9 seeks leave of this Hon'ble Tribunal to file any subsequent reply to the aforesaid action taken report dated February 2, 2023, if required.

Applicant/Petitioner's reply to each direction issued by the Respondent No.7 vide its Order dated January 30, 2023

4. The Respondent No.9 is setting out its specific reply to each direction issued by the Respondent No.7 vide its Order dated

January 30, 2023, however, the absence of a specific reply not being issued to any particular observation made by the Respondent No.7 in its Order dated January 30, 2023 should not be deemed an admission thereof.

5. **Direction No.1**: *The industry shall ensure to use of blended coal of Indian wash coal of 70% and imported coal of 30% to reduce particulate matter emissions.*

(i) It is submitted that the obligation to use blended coal emanates from *inter alia*the Consent for Operation issued by the Respondent No.7 to Respondent No.9 on November 16, 2021 (*hereinafter referred to as* "**CFO**"). In terms of the CFO, the Respondent No.9 was directed to use blended coal comprising 70% of indigenous and 30% of imported coal. The Respondent No.9 submits that it is complying with the requirement of using blended coal in line with the directions of the CFO.

(ii) In this regard, the Joint Committee vide its Report had suggested that blended coal comprising of 70% of

indigenous and 30% of imported coal be used by the Respondent No.9 to prevent pollution. Whilst the Respondent No. 9 is reiterating that it is already complying with the conditions of the CFO to the extent of usage of blended coal, the Respondent No.7 vide its Direction No.1, as contemplated under this broad head, has sought to place an additional requirement of using blended wash coal rather than blended coal which is directory in nature and which is in excess of what was originally contemplated in the CFO granted to the Respondent No.9.

(iii) The Respondent No.9 further submits that the foregoing direction is in absolute disregard to the underlying regulation *qua* the usage of blended wash coal as has been contemplated in the Notification dated May 21, 2020 bearing No.S.O.1561(E) issued by the Ministry of Environment, Forest and Climate Change*(hereinafter referred to as*"**MoEF**"), which *inter alia* contemplates that there is no requirement for thermal power plants to use wash coal subject to compliance of the specified emission norms for

particulate matters as per instruction of Central Pollution Control Board issued from time to time. In this regard, it is noteworthy that the Respondent No.9 has in its Reply to the Joint Committee's Report submitted that it is complying with all the instructions and notifications issued by the Central Pollution Control Board and other regulators from time to time including any instructions vis-à-vis emission norms for particulate matters. In this regard, the Respondent No.9 submits that it is operating its plant well within the required emission norms for particulate matters and it has also submitted reports of third parties approved by Respondent No.7 for ambient air quality inspection conducted at the Respondent No.9's plant from time to time. Such reports indicate that the AQQ level of the emissions emerging from the Respondent No.9's plant were well within the permissible limits. Accordingly, in complete disregard of the aforesaid notification and the Respondent No.9's detailed Reply to the Report, the direction No.1 under reply has been passed summarily and without any

application of mind. A copy of the said Notification dated May 21, 2020 bearing No.S.O.1561(E) issued by the Ministry of Environment, Forest and Climate Change is attached herewith and marked as **ANNEXURE-1**.

(iv) In this regard, the Respondent No.9 submits that it is placing on record its latest real time data showing compliance of the prescribed standards of ambient air quality. It is noteworthy that whilst the prescribed threshold for ambient air quality is 100 mg/meter cube, the Respondent No.9 is operating its plant well within the prescribed threshold. It is also noteworthy that whilst this data was also placed before the Respondent No.7, however, in absolute disregard of the compliance demonstrated by the Respondent No.9, it has sought to pass such arbitrary direction. A copy of the real time data acquisition report from 1st October 2022 to 31st January 2023 is attached herewith and marked as **ANNEXURE-2 (Colly)**.

6. **Direction No.2**:*The industry shall provide a closed shed/wind barriers/wind breaking wall in between Coal storage yard and existing greenbelt and shall implement appropriate MDSS in coal storage yard to reduce fugitive emissions.*

The Respondent No.9 is reiterating its compliance with respect to the foregoing directions as it has stated in its Reply to the Report of the Joint Committee:

(i) The Respondent No. 9 submits that the Joint Committee had in its recommendations in the Report suggested that "*Both units may asked to provide closed shed and wind barriers / wind breaking wall to coal storage yard to reduce the fugitive emissions*". In this regard, the Respondent No.9 submits that in its Reply, it had demonstrated how the foregoing recommendation was being complied with by it, the said submissions were on these broadlines. The Respondent No.9 submits thatit is committed to the protection of the environment and maintenance of the ecological balance by building afforestation. It further

submits that as opposed to developing a green belt of 395 acres in line with the conditions imposed on it, in terms of the latest statistics available with the Respondent No. 9 it has developed a green belt in an area running into around 455acres. The Respondent No. 9 submits that the said green belt and afforestation cover around the Respondent No. 9's Plant has been developed pursuant to in depth research and study carried out of the local geography. Further the species of the trees are selected based on their adaptability, growth characteristics, flowering pattern and canopy distribution.

(ii) In terms of the specific data available with the Respondent No. 9, it has near its Plant planted well over 4.7 lakh trees, thus so far. It is noteworthy that approximately, each tree on an average offsets 50 pounds of carbon dioxide per year. Further, in terms of the report of the Respondent No.9 on Green Belt Area Estimation, as per the application 'Google Maps', an area of over 455 acres has been calculated as the total area forming part of the Respondent No. 9's green belt development. Furthermore, even the CAD drawings indicate

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the said green belt to comprise an area of 455 acres approximately.

(iii) The Respondent submits that the underlying purpose of installing water sprinklers is to ensure that the coal dust from the coal yard and ash from the ash pond does not turn fugitive such that it contaminates the environment. The Respondent No. 9 unequivocally submits that it is complying with the corresponding condition, in the manner set out hereinbelow. The Respondent No.9 submits that it has installed water sprinklers at all coal yards, rotating wheels of stacker cum reclaimers. It has separately, installed ~~a dust extraction system and~~ improvised Dry Fog dust suppression system coupled with a 3-layer green belt to ensure that no coal dust or ash turns fugitive.

(iv) In this regard it is noteworthy that the Respondent No. 9, has in fact adapted a better mechanism than the water sprinklers by making provision for a water curtain that covers almost 70% to 80 % of the ash pond, thereby ensuring that coal dust

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does not become fugitive. Separately, water sprinklers are installed in the residual area to ensure that no fugitive ash gets into the environment.

(v) Further whilst the Committee has not alleged any non-compliance in this regard it has in its Report indicated that around 10 % of the area in the Ash Pond has been left dry. To bring the true facts into perspective, the Respondent No. 9 submits that the reason for doing so is to facilitate use of Pond Ash by excavating the pond ash for onward supply to brick manufacturers etc. Besides, the 10% area that has been left dry is effectively towards the side of the sea and not towards the village, thus there is no scope for any coal dust to turn fugitive.

(vi) In this background the Respondent No. 9 submits that it is well in compliance with the corresponding condition under this broad head.

(vii) The Respondent No. 9 also submits that the purpose for building covered shed is for preventing erosion of coal due

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to rain and wind. The Respondent No. 9 submits that it is common knowledge that the Respondent No. 9's Plant is geographically located in a terrain that experiences limited rainfall, thus, the Respondent No. 9 has complied with the foregoing condition by *inter alia* (a) providing a three layered thick green belt all around the circumference of the coal yard comprising of tall trees of a height of more than 12 meters to act as a natural wind barrier that ensures that no fugitive dust emerges from the coal yard due to high wind; (b) additionally, the Respondent No.9 has taken further preventive measures to ensure that no fugitive coal dust travels into the environment these measures are on these broadlines. The Respondent No.9 has provided coal yard sprinklers, improvised dry fog dust suppression systems in the coal handling plant. Besides wet coal, if any, is dried by the Respondent No. 9 by using an effective mechanism involving hot primary air for drying the wet coal before it is grinded. In this manner the Respondent No.9 has ensured an efficient mechanism to control fugitive coal dust.

(viii) It is noteworthy that in terms of the revised CFO, the requirement for maintaining coal shed has been omitted. The revised requirements to control air pollution from coal dust is as under:

> *"13. The industry shall maintain wind barriers/ wind breaking walls to the coal yards as temporary arrangement to control fugitive dust emissions on immediate surroundings.*
>
> *14. The industry shall regularly operate water sprinklers provided to control stock yard to mitigate fugitive dust on the surroundings from coal handling area.*
>
> *15. The industry shall provide necessary air pollution control systems at coal transfer points in coal conveyer system from port boundary to industry premises within 3 months.*
>
> *16. The industry shall upgrade the air pollution control systems at coal crusher within 3 months."*

(ix) In this regard it is noteworthy that the Compliance Report ratifies the Respondent No. 9's compliance under this broad head. The Compliance Report confirms that the Respondent No. 9 has provided bag filters for coal crushers, dust

extraction and dust suppression systems with auto mode in coal crushers and coal stack yard, dry fog dust suppression system is also installed at transfer points to minimize fugitive dust, water hydrant lines are provided to suppress to fugitive emissions whenever required, wind barriers with three to five layers of thick conocarpus trees (wind resistant plants) of 12 M height have been provided all around the coal yard which are designed to arrest spreading of fugitive dust emission. Thus, the Committee has confirmed compliance by the Respondent No. 9

(x) Furthermore, the Respondent No.9 places reliance on the Minutes of the Meeting dated 15th November 2015 (*hereinafter referred to as the* "**MoM**") vis-à-vis a meeting conducted by the APCCB, wherein representatives of Respondent No.9 were also attendees. A perusal of the MoM shall bring to fore that the Respondent No.9's representative have represented that a provision for coal shed is not viable at the Respondent No.9's plant and accordingly, the APCCB vide its directions as noted in the MoM had

noted that the Respondent No.9 was not required to make any specific provision for coal shed and further a suitable wind barrier was sufficient for controlling any fugitive dust. In this regard, a copy of the Minutes of the Meeting dated October 15, 2015 is annexed herewith and marked as **ANNEXURE-3**. The Respondent No.9 is collectively annexing some photographs that it would like place reliance during the course on the adjudication, which are collectively marked herein as **ANNEXURE-4 (Colly)**.

(xi) Against this background, the Respondent No.7 has sought to place additional burden on the Respondent No.9 without explaining any underlying reasons for it to the extent that vide the Direction No.2 as being responded to under this broad head, the Respondent No.7 has directed that a closed shed / wind barriers / wind breaking wall be provided between the coal storage yard and the existing green belt. It is noteworthy that the aforesaid direction although is in excess of the jurisdiction being exercised by the Respondent No.7 as the *lis* wherefrom the directions emanates is pending

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adjudication before this Hon'ble Tribunal yet even for the sake of arguments the said direction is in complete ignorance of the facts placed before the Board by the Respondent No.9 *inter alia* demonstrating how the Respondent No.9 is already suitably complying with the conditions qua provision for a wind barrier. The Respondent No.9 emphasizes that in line with its aforesaid submission and Reply to the Report, it has suitably demonstrated compliance with any requirement for a wind barrier, however, whilst the Respondent No.9's stance qua this is pending consideration before this Hon'ble Tribunal, the Respondent No.7 has arbitrarily made the suggestions of the Joint Committee as discussed herein, directory by passing the Direction No.2 under reply.

7. **Direction No.3**: *The industry shall maintain 100% utilisation of ash generated at the plant as per the Fly Ash notification dated. 31.12.2021.*

Whilst the Respondent No. 9 was required to comply with the revised timelines for 100% utilization of fly ash in terms of the

Revised Notification dated December 31, 2021, applicability whereof was to commence from April 01, 2022, such that the Respondent No. 9 was required to achieve 100% utilization of fly ash within three years from April 01, 2022. However, *per contra*the Respondent No.9 has achieved 100% utilization of fresh fly ash by September 2019 that is well within the aforesaid statutory timeline. The same was submitted by the Respondent No.9 vide the Reply to the Report of the Joint Committeeand also in its representation to the Respondent No.7. Yet, Respondent No.7 proceeded to issue a direction in this regard in the Order dated January 30, 2023.

8. **Direction No.4**: *The industry shall ensure the installation of the Flue Gas Desulphurisation (FGD) plant to achieve SO_2 norms as per the timeline stipulated by CPCB.*

It is submitted that *vide* Notification dated September 05, 2022 issued by the MoEF, the timeline stipulated for compliance with the SO_2 emission standards is December 31, 2026. Accordingly, the Respondent No.9 is on track to comply with the standard set

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out in the Notification dated September 05, 2022 within the stipulated time. A copy of the Notification dated 5th September 2022bearing No.G.S.R. 682(E) issued by the MoEF is annexed herewith and marked as **ANNEXURE-5**.

9. **Direction No.5**: *The industry shall ensure 100% recirculation of seepage generated from ash pond for slurry preparation and dust suppression to prevent water pollution, if any, in surrounding areas.*

(i) The Respondent No.9 submits that firstly there is no seepage from the Ash Pond maintained at the Respondent No.9's plant. It is further noteworthy that the integrity of the Ash Pond has been certified by the Indian Institute of Technology, Madras, hence, the Ash Pond has been built in compliance with the underlying construction standards and it is optimum for operation. Besides, the Respondent No.9 has ensured adequate provisions at its Ash Pond by having an overflow lagoon in the centre of the pond that is connected tothe decantation well of both lagoons. This mechanism

enables any excess water to immediately flow into the well avoiding any overflow of water, and further the water is recirculated back to ash handling system for re-use. It is also noteworthy that even for the sake of arguments any stagnation near the Ash Pond could *inter alia*be due to: (a) rains, as its elevation is below mean sea level, and/or (b) the proximity of the Respondent No.9's plant to the seashore and shallow water table. Further, there is a possibility of saltwater intrusion in the Ash Pondduring the high tide in the sea. A copy of the certificate issued by the Indian Institute of Technology, Madras, certifying the standards of the Ash Pond is annexed herewith and marked as **ANNEXURE-6**.

(ii) In this manner, the Respondent No.9 is unequivocally submits that it has the requisite provision at its Ash Pond to ensure not only 100% circulation of seepage but its complete avoidance and it is also suitably providing dust suppression mechanism to avoid water pollution.

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10. **Direction No.6**: *The industry shall switch over to using sweet water for ash slurry purposes instead of seawater to prevent aggregation of TDS concentration in the groundwater.*

(i) The Respondent No.9 submits that it has made several representations to APPCB regarding the viability of switching to sweet water for ash slurry. In this regard it is noteworthy that the Respondent No. 9's Plant was originally designed to only use salt water for ash slurry, thus at the outset it is fundamentally not viable for making design changes to a Plant at this stage pursuant to 7 years of its operation.

(ii) It is submitted that the Ash Pond of the Respondent No.9 are designed in a way that prevents concentration of any Ash Slurry into the ground water. In this regard, the Ash Pond are constructed with a HDPE lining to prevent any Ash Slurry from travelling to the ground thereby contaminating the ground water. Besides in any event, the Ash is being utilised completely by the Respondent No.9, therefore, this

additional direction in light of the fact that the Respondent No.9's plant is not designed to withstand fresh water for Ash Slurry purposes is absolutely arbitrary. It is also submitted that the Ash Pond of the Respondent No.9 is divided into Lagoon A and Lagoon B. Notably, since Lagoon B of Ash Pond is completely filled and Lagoon A is presently partially filled and contains sea water-soaked Ash, changing to fresh water for the Ash Pond will not be viable. Therefore, without there being any basis or original requirement for using sweet water for Ash Slurry, Respondent No.9 cannot be abruptly and without any sufficient cause or reason directed to create an additional capacity at great expense for a plant that was originally not designed with the same capacity.

(iii) The Respondent No. 9 also emphasises that it the Ash from the Respondent No. 9's existing ash pond is *inter alia* being utilised by for land filling in highway construction, after successful testing by several end users. Therefore, the residuary ash in the Respondent No. 9'e existing plant is suitable for consumption.

11. **Direction No.7**: *The industry shall explore the possibility of using treated sewage from the Municipal Corporation, Nellore, instead of treating the seawater in the desalination plant.*

(i) The Respondent No.9 submits that firstly it is apparent that a direction in the nature of exploring the possibility of using treated sewage water from the Municipal Corporation cannot logically be a ground for shutting down the plant of the Respondent No.9 for any alleged non compliance. At the outset, the Respondent No.9 submits that it is already maintaining an RO Plant to treat seawater for its internal consumption. In this regard, the said RO plant is operated under strict quality norms as per the instructions of the Original Equipment Manufacturer. The Respondent No.9 emphasizes that utilising any treated sewage water without regulating its quality in line with the standards/norms of the Original Equipment Manufacturer will pose high risk to the Respondent No.9's plant. Besides during the course of a recent meeting conducted at Nellore by the Member Secretary, APPCB, wherein the representatives of the

Respondent No.9 were also attendees, it was represented that the treated sewage water from proposed Municipal Corporation Sewage Treatment Plant will be just enough to cater to the water requirement of the Edible Oil Industries located near to Krishnapatnam Port and as such there will be no spare capacity left for the utilisation of the Respondent No.9. This being the case the Respondent No.9 has already communicated to Commissioner, Municipal Corporation that in view of the foregoing, it would not be in a position to utilise the treated sewage water for the purposes of its plant, however, it could explore the possibility of using any spare capacity available for its township.

(ii) The Respondent No.9 also emphasizes that the project of the Municipal Corporation is only at the stage of presentation of a detailed project report for its preparation. It defies logic as to how the Respondent No.9 can be put to strict compliance thereof.

12. **Direction No.8**: *The industry shall ensure proper operation of the Online Continuous Effluent Monitoring System, Online Continuous*

Emission Monitoring System and Continuous Ambient Air Quality Monitoring Stations and transmit the live data to the APPCB and CPCB servers. The industry shall submit calibration reports to the Board on a regular basis.

The Respondent No.9 is reiterating that it is complying with the foregoing direction, which is already a condition for operation of its plant.

13. **Direction No.9**: *The industry shall identify the possible sources contributing for higher concentrations of particulate matter in the ambient air quality in the surrounding villages; shall prepare comprehensive action plan in consultation with other industries operating in the surroundings to achieve & maintain compliance to prescribed NAAQ standards.*

(i) The Respondent No.9 submits that firstly, several Ambient Air Quality Monitoring Stations Reports and 3rd Party Monitoring Reports for inspections conducted around the Respondent No.9's plant indicate that particulate emissions from the Respondent No.9's plant are within limits andhave not exceeded the norms. In this regard, these reports were

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annexed along with Respondent No.9's Reply to the Report and certain additional reports have also been annexed as Annexure-2 to this Additional Submission.Further, the Respondent No.9 is additionally annexing the test reports of the Ambient Air Quality Monitory Test conducted by APPCB approved third party agency for the period between November 03, 2022 to February 02, 2023 and the same is annexed herewith and marked as **ANNEXURE- 7 (Colly)**.

(ii) Further, it defies logic as to why the Respondent No.9's plant will be shut down for any alleged non-compliance of a direction, which requires the Respondent No.9 to explore an action plan in consultation with other industries. The Respondent No.9 submits that it is already complying with the requisite conditions applicable and is not emitting emissions that could cause pollutions, therefore, any further action plan ought to be developed by the Respondent No.7 in consultation with other similarly placed industries and the Respondent No.9 cannot be burdened with a direction of this nature. That being said, the Respondent No.9 agrees to assist

the Respondent No.7 and other similarly placed industries in the best manner possible whenever called upon to do so. Therefore, the operation of this direction shall be arbitrary and against the legitimate expectationsof the Respondent No.9.

The Respondent No.9 submits that the operations of these directions in light of the pendency of the entire *lis* wherefrom these directions allegedly emanate is pending disposal / adjudication before this Hon'ble Tribunal shall be ex-facie erroneous and will cause great prejudice to the Respondent No.9 and will be in absolute abuse of the process of law. Moreover, when the Respondent No.9 is admittedly complying with all the conditions placed on it, there is no occasion for the Respondent No.7 to issue such arbitrary directions without any exhaustive investigation.

COUNSEL FOR RESPONDENT NO.9

SEMBCORP ENERGY INDIA LIMITED NELLORE

Respondent No. 9

VERIFICATION:

I, Pavan Kumar Rao, S/o Late Shri. J. C. Rao, the authorized representative of the Sembcorp Energy India Limited (Respondent No.9), do hereby verify that the contents of the present additional submissions have been read by me and I have understood the same. Further, that the contents of my above additional submissions are true and correct to the best of my knowledge and belief, and no part of it is false and no material facts have been concealed therefrom.

Verified at Chennai on this the 8th day of February, 2023.

SEMBCORP ENERGY INDIA LIMITED NELLORE

RESPONDENT NO.9

BEFORE THE NATIONAL GREEN TRIBUNAL, SOUTHERN BENCH, CHENNAI

(Under Section 19 (1) of the National Green Tribunal Act, 2010 read with Rule 24 of the National green Tribunal (Practice and procedure) Rules, 2011)

I.A. NO.16 OF 2023
IN
ORIGINAL APPLICATION NO.105 OF 2021

IN THE MATTER OF :

The Director,
Thermal Power Tech. Corporation India Ltd., (TPCIL),
... APPLICANT/9TH RESPONDENT

VERSUS

YanatiSrinivasalu Reddy & Others.
... RESPONDENTS

VERIFYING AFFIDAVIT

I, Pavan Kumar Rao, s/o Late Shri. J. C. Rao,aged about 56 years, residing at Pavani Pinnacle Apartment, Street-2, Jagadish Nagar, Children's Park Main Road, Nellore – 524002, being the authorized signatory of the Sembcorp Energy India Limited (Respondent No.9) herein, having its registered office at 5th floor, Tower C, Building No. 8, DLF Cybercity, Gurgaon-122002 Haryana, India,temporarily come down to Chennai, do hereby solemnly affirm and state as under:

1. That I am the authorized signatory of the Authorized Representative of Respondent No.9 and I am competent to sign and depose this Affidavit and am well conversant with the facts and circumstances of the present case.

SEMBCORP ENERGY INDIA LIMITED NELLORE

2. That the accompanying additional submissions has been drafted under my instructions and the contents in paragraphs to of the same have been read and understood by me in their correct perspective. The same are true and correct based on the records maintained by the Respondent No.9 as well as legal advice received and believed to be true, and may kindly be read as part and parcel of the present affidavit and are not being repeated herein for the sake of brevity.

3. That no part of this affidavit is false and no materials facts have been concealed there from.

Solemnly affirmed at Chennai on this]
the 8th day of February, 2023 and]
signed his name in my presence.]

Before me,

CM. VISHRANTH
No. 57, Law Chambers,
HCB, Chennai - 104

Advocate :: Chennai

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 21 मई, 2020

का.आ. 1561(अ).—जबकि केन्द्रीय सरकार ने पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 5 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3, धारा 6 और धारा 25 के तहत अपनी शक्तियों का प्रयोग करते हुए, ऐश सामग्री (ऐश कंटेंट) को 34% तक की सीमा सहित कोयले का उपयोग करने के लिए ताप विद्युत संयंत्रों की कतिपय श्रेणियों को अधिदेशित करते हुए भारत के राजपत्र, असाधारण में सा.का.नि. 02 (अ), तारीख 2 जनवरी, 2014 द्वारा पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 3 के उपनियम 8 का संशोधन प्रकाशित किया।

और जबकि सा.का.नि. 02 (अ), तारीख 2 जनवरी, 2014 द्वारा उक्त अधिसूचना द्वारा निम्नलिखित समय-सीमा तक कच्चे अथवा मिश्रित अथवा लाभकारी कोयले (बेनिफिसिएटिड कोल), जिसमें ऐश सामग्री चौंतीस प्रतिशत (34%) से अधिक ना हो, का उपयोग करने के लिए त्रैमासिक आधार पर कोयला आधारित ताप विद्युत संयंत्रों को अधिदेशित किया गया है :

क्रम सं.	विद्युत संयंत्र की श्रेणी	गर्तमुख(पिट-हैड)/कोयला खान से ताप विद्युत संयंत्र के अवस्थान की दूरी	समय-सीमा
(क)	एकल ताप विद्युत संयंत्र (किसी भी क्षमता के) और कैटिप्व ताप विद्युत संयंत्र (100 मेगावाट और अधिक क्षमता सहित)	गर्तमुख विद्युत संयंत्रों को छोड़कर गर्तमुख से दूरी पर ध्यान दिए बिना शहरी क्षेत्रों,या परिस्थितिकीय रूप से संवेदनशील क्षेत्रों या अत्यधिक प्रदूषित क्षेत्रों में अवस्थित	2 जून, 2014 से प्रभावी।
(ख)		1000 किमी से अधिक दूर	2 जून, 2014 से प्रभावी।
(ग)		750-1000 किमी के बीच	1 जनवरी, 2015 से प्रभावी।
(घ)		500-749 किमी के बीच	5 जून, 2016 से प्रभावी।

और जबकि, केंद्रीय सरकार ने पर्यावरण (संरक्षण) नियमावली के नियम 5 के उप-नियम (3) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 6 और धारा 25 के अधीन अपनी शक्तियों का प्रयोग करते हुए भारत के राजपत्र, असाधारण में स.का.आ. 3305 (अ), तारीख 7 दिसंबर, 2015 और सा.का.नि.593 (अ), तारीख 28 जून, 2018 द्वारा विद्युत उत्पादन की क्षमता और विद्युत संयंत्र की संस्थापना की तारीख और समय-बद्ध रीति से प्राप्त किए जाने के आधार पर ताप विद्युत संयंत्रों की विभिन्न श्रेणियों के लिए उत्सर्जन मानकों और विनिर्दिष्ट जल उपभोग को प्रकाशित किया था।

और जबकि, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ने विद्युत मंत्रालय द्वारा दिनांक 13 अक्तूबर, 2017 को प्रस्तुत की गई यथा संशोधित योजना के अनुसार विभिन्न ताप विद्युत संयंत्रों को वर्ष 2022 तक प्रदूषण नियंत्रण उपकरण संस्थापित करने के लिए पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 5 के तहत निर्देश जारी करने के लिए केंद्रीय प्रदूषण नियंत्रण बोर्ड को दिनांक 7 दिसंबर, 2017 के फा.सं. क्यू-15017/40/2007-सीपीडब्ल्यू द्वारा निदेश दिए।

और जबकि, विद्युत मंत्रालय ने अन्य बातों के साथ-साथ यह अभ्यावेदन किया है कि प्रदूषण नियंत्रण प्रौद्योगिकियों के उन्नत होने के साथ ही ताप विद्युत संयंत्र दहन प्रक्रिया से उत्पन्न फ्लाई-ऐश का पता लगाने में बेहतर उपकरणों से सुसज्जित हुए हैं और बिना धुला कोयला अधिक कुशलता और मितव्ययता से प्रयोग किया जा सकता है; ताप विद्युत संयंत्रों को राख अवयवों की विभिन्न किस्मों के साथ कोयले के लिए डिजाइन किया गया है और इनमें सूखी राख (ड्राई ऐश) निकालने, उसका रखरखाव करने और राख के उपयोग के लिए आपूर्ति प्रणालियों को उपलब्ध कराया गया है; धुले कोयले के उपयोग से बिजली उत्पादन महंगा हो जाता है; ताप विद्युत संयंत्रों में उत्पन्न फ्लाई-ऐश सीमेंट निर्माण, ईंटें बनाने, सड़क बिछाने, खनन के उपरांत रिक्त हुए स्थलों और निचले क्षेत्रों को भरने के लिए बैक-फिल सामग्री जैसे कई लाभकारी उपयोगों के लिए प्रयोग की जा रही है; औसतन ऐश की मात्रा 34% तक बनाए रखने की आवश्यकता उद्योगों को कोयले का आयात करने के लिए प्रेरित करती है जिससे विदेशी मुद्रा इत्यादि का बहिर्वाह (आऊटफ्लो) होता है।

और जबकि, कोयला मंत्रालय ने अन्य बातों के साथ-साथ अभ्यावेदन किया है कि कोयला खानें वर्षों से कच्चे कोयले की गुणवत्ता, आकार और बाहरी सामग्री में सुधार के लिए निरंतर कड़े प्रयास कर रही हैं जिससे सभी संबंधित उपकरणों की टूट-फूट में उल्लेखनीय कमी आई है, कोयला धुलाई प्रक्रिया में कई प्रकार का रखरखाव होता है और कोयला खानों से धुलाई-स्थलों (वाशरीज़) तक कोयले की बड़ी मात्रा को सड़क द्वारा ले जाने और फिर आगे

विद्युत संयंत्रों तक ले जाने के लिए रेल साइडिंग्ज़ तक ले जाने से बचना; धुलाई की प्रक्रिया केवल कोयले को धुले हुए कोयले और वाशरी अवशिष्ट में बाँटती है जबकि खनित कोयले की राख की मात्रा वही रहती है; निम्न श्रेणी कोयला वाशरी अवशिष्ट कई छोटे उपयोगकर्ता उद्योगों में, अधिक प्रदूषण आदि सृजित करते हैं।

और जबकि, कोयला मंत्रालय और विद्युत मंत्रालय ने इसलिए अनुरोध किया है कि दिनांक 2 जनवरी, 2014 की अधिसूचना पर पुन: विचार द्वारा, विद्युत संयंत्रों को धुले हुए कोयले के प्रयोग के लिए अधिदेशित करने पर गौर किया जाना अपेक्षित है जिससे पर्यावरण पर प्रतिकूल प्रभाव डाले बिना कोयले की लंबी दूरी की ढुलाई के लिए बिजली के उत्पादन में आसानी होगी।

और जबकि, नीति आयोग ने अपनी रिपोर्ट में वाशरीज़, कोयला खनन, परिवहन और विद्युत संयंत्रों में कोयले की खपत की दृष्टि से इस विषय का विश्लेषण करने के बाद अन्य बातों के साथ-साथ संक्षिप्त में यह अभ्यावेदन किया है कि समीपवर्ती उद्योगों में वाशरी अवशिष्ट का इस्तेमाल अधिक प्रदूषण पैदा करता है; चूंकि वाशरी अवशिष्ट अनेक छोटे उद्योगों में वितरित होते हैं, इसलिए विद्युत संयंत्र पर उत्पन्न प्रदूषण की तुलना में अनेक स्थलों पर उत्पन्न प्रदूषण को नियंत्रित करना अधिक कठिन होता है; धुलाई प्रक्रिया में उत्पन्न राख (ऐश) कोयला कणों के साथ-साथ पानी को भी प्रदूषित करती है और इसका लाभकारी उपयोग नहीं किया जा सकता, कोयला धुलाई प्रक्रिया में पानी का अधिक प्रयोग होता है, अपशिष्ट सृजन होता है; वाशरी अवशिष्ट के निपटान का पर्यावरण पर प्रतिकूल प्रभाव होता है क्योंकि इसमें बड़ी मात्रा में निम्न श्रेणी कोयला अवशिष्ट, तरल अपशिष्ट प्रवाह, कोयला भण्डारण, कोयला मिट्टी का रखरखाव, अपवाह और उड़ने वाली धूल का रखरखाव और निपटान करना होता है, कोयला धुलाई का स्थलाकृति, जल निकास स्वरूप और गुणवत्ता, जल निकायों, बड़े पैमाने पर प्रतिवेशी वायु गुणवत्ता पर भी प्रतिकूल प्रभाव पड़ता है; धुलाई प्रक्रिया से विद्युत उत्पादन की लागत में भी वृद्धि होती है जिसका कोई पर्यावरणीय लाभ इत्यादि भी नहीं होता।

और जबकि, नीति आयोग ने इसलिए सिफारिश की है कि पर्यावरणीय और प्रदूषण मानकों का निर्धारण करना और उन्हें लागू करना विवेकपूर्ण होगा, जिन्हें कोयले में ऐश की मात्रा प्रतिबंधित किए जाने के बजाए, परिवहन दूरी के आधार पर विद्युत उत्पादकों के साथ जोड़ा जाना चाहिए।

और जबकि, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ऊर्जा मंत्रालय, कोयला मंत्रालय के अभ्यावेदनों, नीति आयोग और कई हितधारकों की रिपोर्ट पर विवेचन करने तथा सावधानीपूर्वक विचार करने के बाद एवं जनहित में निम्नलिखित निष्कर्ष पर पहुंचा है—

i) खनित कोयले में ऐश सामग्री की मात्रा समान रहती है। वाशरी से ऐश सामग्री दो स्थानों (वाशरी और विद्युत संयंत्र) में विभाजित हो जाती है जबकि बिना धुला कोयला विद्युत संयंत्र में प्रयोग किया जाता है, ऐश सामग्री का निपटान केवल एक स्थान अर्थात विद्युत संयंत्र में किया जाता है;

ii) ताप विद्युत संयंत्र प्रदूषण नियंत्रण, ऐश प्रबंधन के लिए तकनीकी रूप से सुसज्जित होते हैं क्योंकि उनमें फ्लाई-ऐश का निराकरण करने के लिए उच्च क्षमता वाले उपकरण होते हैं, ड्राई ऐश निष्क्रमण और हैंडलिंग सिस्टम, ऐश उपयोग के लिए सप्लाई सिस्टम और फ्लू गैसों को तितर-बितर करने के लिए बड़े टाल (स्टैक) होते हैं;

iii) पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ने उत्सर्जन मानक अधिसूचित किए हैं जिनमें क्रमश: ताप विद्युत संयंत्रों को समयबद्ध रीति से इन मानकों का पालन करने के लिए अधिदेशित किया गया है;

और जबकि, फ्लाई ऐश प्रबंधन और विभिन्न स्तरों पर बिना धुले कोयले के संसाधन के दौरान उत्पन्न अन्य संबंधित पर्यावरणीय पहलुओं सहित बिना धुले कोयले की हैंडलिंग के लिए यथासंभव उत्कृष्ट कार्यढांचे को अपनाना समयोचित है।

और जबकि, कोयला मंत्रालय ने अभ्यावेदन किया है कि मौजूदा अप्रत्याशित कोविड-19 महामारी और इसके फलस्वरूप देश में ऊर्जा उत्पादन के लिए कोयला क्षेत्र की मांग को प्रोत्साहित कर घरेलू कोयले के उपयोग की तत्काल आवश्यकता को देखते हुए यह वांछनीय है कि तत्काल अधिसूचना जारी की जाए।

अब, इसलिए, केंद्रीय सरकार पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 5 के उपनियम (4) के साथ पठित पर्यावरण संरक्षण अधिनियम, 1986 (1986 का 29) की धारा 3, धारा 6 और धारा 25 के तहत अपनी शक्तियों का प्रयोग करते हुए, उक्त नियमावती के नियम 5 के उपनियम (3) के भाग (अ) के तहत सूचना देने की अनिवार्यता को हटा देने के उपरांत जनहित में पर्यावरण (संरक्षण) नियमावली, 1986 को आगे संशोधित करते हुए एतद्वारा निम्नलिखित नियम बनाती है, अर्थात्:

1. (1) इन नियमों को पर्यावरण (संरक्षण) संशोधन नियमावली, 2020 कहा जाएगा।

(2) ये सरकारी गज़ट में प्रकाशित होने की तारीख से लागू होंगे।

2. पर्यावरण (संरक्षण) नियमावली, 1986 में, नियम 3 में, उपनियम (8) के लिए निम्नलिखित उपनियम प्रतिस्थापित होगा, अर्थात् :-

"(8) ताप विद्युत संयंत्रों को, ऐश सामग्री अथवा दूरी संबंधी अनुबंधों के बिना, निम्नलिखित शर्तों के अध्याधीन कोयले के प्रयोग की अनुमति होगी:

(1) उत्सर्जन मानदण्डों के लिए प्रौद्योगिकीय समाधान निर्धारित करना:

i. वर्तमान अधिसूचनाओं और केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा समय-समय पर जारी अनुदेशों के अनुसार विविक्त सामग्री के लिए विनिर्दिष्ट मानदंडों का अनुपालन करना।

ii. वाशरी के मामले में मिडलिंग और अवशिष्टों का एफबीसी(तरलीकृत तल दहन) प्रौद्योगिकी आधारित विद्युत संयंत्रों में उपयोग किया जाए। एफबीसी संयंत्रों में मिडलिंग और अवशिष्टों के लिए वाशरी में संयोजन (लिंकेज) होना चाहिए।

2. ऐश पॉन्ड का प्रबंधन:

i. ताप विद्युत संयंत्र धुले हुए कोयले से बिना धुले हुए कोयले पर स्विच करने के कारण फ्लाई-ऐश पॉन्ड(मौजूदा विद्युत उत्पादन क्षमता) की अतिरिक्त क्षमता की पात्रता प्राप्त किए बिना, समय-समय पर जारी की गई अधिसूचनाओं में यथा-अधिसूचित शर्तों का पालन करें।

ii. ऐश प्रबंधन के लिए जल की खपत को अनुकूल करने हेतु समुचित प्रौद्योगिकी समाधान लागू हों;

iii. यदि आवश्यक हो तो फ्लाई-ऐश का अधिकतम उपयोग सुनिश्चित करने के लिए स्थल विशिष्ट स्थितियों के आधार पर ऐश का पृथक्करण इलैक्ट्रो-स्टेटिक अवक्षेपक (प्रेसीपिटेटर) स्तर पर किया जाए।

iv. ताप विद्युत संयंत्र उपर्युक्त 2(i) के अध्याधीन, छोड़ी हुई अथवा चालू खानों (वर्किंग माइन्स) में (खान मालिकों द्वारा सुविधाजनक बनाया जाए) पर्यावरणीय सुरक्षा उपायों के साथ फ्लाई-ऐश का निपटान करें।

3. परिवहन:

i. ढके हुए रेलवे वैगन (तिरपाल अथवा किसी अन्य माध्यम से ढके हुए रेलवे वैगन) और/अथवा खान-क्षेत्र से परे ढके हुए वाहक (कन्वेयर) द्वारा ही कोयले का परिवहन किया जाए। तथापि, जब तक रेल परिवहन/वाहक इन्फ्रास्ट्रक्चर उपलब्ध नहीं हो जाता, सड़क परिवहन ट्रकों द्वारा किया जाए जो तिरपाल अथवा किसी अन्य माध्यम से ढके हुए हों।

ii. ताप विद्युत संयंत्र द्वारा सुनिश्चित किया जाए कि

(क) रेल अथवा कन्वेयर द्वारा परिवहन के लिए विद्युत संयंत्र में अथवा इसके समीप रेल साइडिंग सुविधा अथवा कन्वेयर सुविधा स्थापित हो; और

(ख) यदि रेल अथवा कन्वेयर सुविधा की अनुपलब्धता के कारण परिवहन न हो पाए, तो यह सुनिश्चित किया जाए कि संबंधित खान के डिलीवरी स्थान से कोयले का परिवहन ढके हुए ट्रकों (तिरपाल अथवा किसी अन्य माध्यम द्वारा), अथवा किसी अन्य यंत्रीकृत बंद ट्रक से सड़क द्वारा हो।

(4) इसे वित्तीय वर्ष 2020-21 और उसके बाद के लिए संबंधित परियोजनाओं हेतु संगत पर्यावरणीय स्वीकृति की अतिरिक्त शर्तें भी समझा जाएगा। मौजूदा पर्यावरणीय स्वीकृतियों को संशोधित किया जाएगा ताकि संगत क्षेत्रों के लिए उपरोक्त शर्तों को प्रवर्तनशील बनाया जा सके। तदनुसार संबंधित राज्य प्रदूषण नियंत्रण बोर्ड द्वारा प्रचालन की अनुमति जारी की जाएगी।

[फा.सं. 13014/01/2020–आईए-I(टी)]

गीता मेनन, संयुक्त सचिव

टिप्पण—मूल नियम भारत के राजपत्र में सं.का.आ. 844(अ), तारीख 19 नवंबर 1986 द्वारा प्रकाशित किए गए थे और पश्चातवर्ती संशोधन सं.का.आ. 82(अ), तारीख 16 फरवरी, 1987; का.आ. 64(अ), तारीख 18 जनवरी, 1988; सा.का.नि. 931(अ), तारीख 27 अक्तूबर,1989; का.आ. 23(अ), तारीख 16 जनवरी, 1991; सा.का.नि. 95(अ), तारीख 12 फरवरी, 1992; सा.का.नि. 329(अ), तारीख 13 मार्च, 1992; सा.का.नि. 562(अ), तारीख 27 मई, 1992; सा.का.नि. 884(अ), तारीख 20 नवंबर, 1992; सा.का.नि. 386 (अ), तारीख 22 अप्रैल, 1993; सा.का.नि. 422 (अ), तारीख 19 मई, 1993; सा.का.नि. 801 (अ), तारीख 31 दिसंबर, 1993; सा.का.नि. 320 (अ), तारीख 16 मार्च, 1994; सा.का.नि. 560 (अ), तारीख 19 सितंबर, 1997; सा.का.नि. 378 (अ), तारीख 30 जून, 1998; सा.का.नि. 07 (अ), तारीख 22 दिसंबर, 1998; सा.का.नि. 407 (अ), तारीख 31 मई, 2001; सा.का.नि. 826 (अ), तारीख 16 नवंबर, 2009; सा.का.नि. 513 (अ), तारीख 28 जून, 2012; सा.का.नि. 02 (अ), तारीख 02 जनवरी, 2014; का.आ. 3305 (अ), तारीख 07 दिसंबर, 2015; सा.का.नि. 593 (अ), तारीख 28 जून, 2018; और का.आ. 236 (अ), तारीख 16 जनवरी, 2020 द्वारा किए गए।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 21st May, 2020

S.O. 1561(E).—Whereas the Central Government had, in exercise of its powers under Section 3, Section 6 and Section 25 of Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of Environment (Protection) Rules, 1986, published draft rules further to amend sub-rule (8) of rule 3 of Environment (Protection) Rules, 1986, in the Gazette of India, Extraordinary, *vide* number G.S.R. 02(E), dated the

2nd January, 2014 mandating certain categories of thermal power plants to use coal with ash content restricted to 34%.

And whereas, the said Notification *vide* number G.S.R. 02(E) dated the 2nd January, 2014, mandated coal based thermal power plants to use raw or blended or beneficiated coal with ash content not exceeding thirty-four percent (34%), on quarterly basis, by the time lines given below:

Sl. No.	Category of Power Plant	Distance of location of Thermal Power Plant from pit-head/coal mine	Time lines
(a)	Stand-alone Thermal Power Plants (any capacity), and Captive Thermal Power Plants (with capacity of 100 MW and above)	Located in urban areas, or ecologically sensitive areas or critically polluted areas, irrespective of distance from pit-head, except pit-head power plants.	With effect from 2nd June, 2014.
(b)		beyond 1000 km	With effect from 2nd June, 2014.
(c)		between 750-1000 km	With effect from 1st January, 2015.
(d)		between 500-749 km	With effect from 5th June, 2016.

And whereas, the Central Government had, in exercise of its powers under sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, in the Gazette of India, Extraordinary, *vide* number S.O. 3305 (E), dated the 7th December, 2015 and G.S.R. 593 (E), dated the 28th June, 2018 published the emission standards and specific water consumption for various category of thermal power plants, based on capacity of power generation and date of installation of power plant and to be achieved in time bound manner.

And whereas, the Ministry of Environment, Forest and Climate Change directed the Central Pollution Control Board vide F.No.Q-15017/40/2007-CPW dated the 7th December, 2017 to issue Directions under Section 5 of Environment (Protection) Act, 1986, to various Thermal Power Plants to install pollution control equipment as per the revised plan submitted by the Ministry of Power dated the 13th October, 2017 by 2022.

And whereas, the Ministry of Power has, *inter alia*, represented that with advancement in pollution control technologies, thermal power plants are better equipped to capture fly-ash generated in combustion process and unwashed coal can be used more efficiently and economically; thermal power plants are designed for coal with wide variety of ash content and are equipped with dry ash evacuation, handling and supply systems for ash utilisation; using washed coal makes power generation costlier; fly ash generated in thermal power plants is being used in several beneficial uses like cement manufacturing, brick making, road laying, back-fill material for reclamation of mine voids and low lying areas; requirement of maintaining average ash content to 34% prompts industries to undertake import of coal, resulting in outflow of foreign exchange etc.

And Whereas, the Ministry of Coal has, *inter alia*, represented that the coal mines are constantly striving to improve raw coal in terms of quality, size and extraneous material over the years which has considerably reduced wear and tear of all related equipment, coal washing process involves multiple handling and avoidable road transportation of huge quantities of coal from coal mines to washeries and then to rail sidings for onward transport to power plants; the washing process only divides the coal into washed coal and washery rejects while the ash content of mined coal remains the same; use of low grade coal washery rejects, in the multiple small user industries, generates more pollution etc.

And Whereas, the Ministry of Coal and Ministry of Power have, therefore, represented that the mandating power plants to use washed coal requires to be revisited by reconsidering the notification dated the 2nd January, 2014 which will help ease power generation for long distance haulage of coal without adverse impact on the environment.

And Whereas, the **NITI Aayog**, in its report after analysing the issue from the perspective of washeries, Coal mining, transportation and consumption of coal at power plants has, *inter alia*, summed up that use of washery rejects in nearby industries generates more pollution; since washery rejects are distributed in number of smaller industries, the pollution control at numerous points is more difficult than controlling the

pollution at power plant end; Ash generated in the washing process pollutes water along with coal particles and cannot be gainfully utilised; Coal washing process involves increased water use, effluent generation; Disposal of washery rejects has negative environmental impact as it has to handle and dispose huge quantity of low grade coal washery rejects, liquid effluent streams, coal storage, handling coal dust, runoff and fugitive dust; Coal washing also adversely impacts topography, water drainage pattern and quality, water bodies, surrounding air quality at large scale; Washing process increases the cost of power generation with no commensurate environmental advantages etc.

And Whereas, NITI Aayog has, therefore, recommended that it may be prudent to determine and enforce the environmental and pollution norms, to be complied with by the power generators, rather than restricting the ash content in coal, based on distance of transportation.

And Whereas, the Ministry of Environment, Forest and Climate Change, after deliberating the representations from Ministry of Power, Ministry of Coal, report of NITI Aayog and various stakeholders and after careful considerations & in larger public interest, arrived at the following:

(i) The extent of ash content in mined coal remains the same. With washeries, the ash content gets divided at two places (washeries and the power plant), whereas if unwashed coal is used in power plant, the ash content is handled at only one place viz. the power plant;

(ii) Thermal power plants are technologically equipped to address pollution control, ash management as they have high efficiency equipment to capture fly ash, dry ash evacuation and handling systems, ash supply systems for ash utilisation and tall stacks for wider dispersal of flue gases;

(iii) The Ministry of Environment, Forest and Climate Change has notified emission norms, mandating respective thermal power plants to adhere to such norms in a time bound manner;

And Whereas, it is expedient to adopt best possible framework towards handling of unwashed coal including management of fly ash and other associated environmental aspects arising out of processing of unwashed coal at different stages.

And Whereas, the Ministry of Coal has represented that in view of the existing unprecedented COVID-19 pandemic and the resultant immediate requirement of utilization of domestic coal by stimulating coal sector demand for power generation in the country, it is desirable to issue the notification at the earliest.

Now, therefore, in exercise of the powers conferred by Section 3, Section 6 and Section 25 of the Environment Protection Act, 1986 (29 of 1986) read with sub-rule (4) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government, after having dispensed with the requirement of notice under clause (a) of sub-rule (3) of rule 5 of the said rules, in public interest, hereby makes the following rules to further amend the Environment (Protection) Rules, 1986, namely :-

1. (1) These rules may be called the Environment (Protection) Amendment Rules, 2020

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in rule 3, for sub-rule (8), the following sub-rule shall be substituted, namely :-

"(8) Use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to following conditions:

(1) **Setting Up Technology Solution for emission norms:**

(i) Compliance of specified emission norms for Particulate Matter, as per extant notifications and instructions of Central Pollution Control Board, issued from time to time.

(ii) In case of washeries, Middling and rejects to be utilized in FBC (Fluidised Bed Combustion) technology based thermal power plants. Washery to have linkage for middling and rejects in Fluidised Bed Combustion plants.

(2) **Management of Ash Ponds:**

(i) The thermal powers plants shall comply with conditions, as notified in the Fly Ash notification issued from time to time, without being entitled to additional capacity of fly ash pond (for existing power generation capacity) on ground of switching from washed coal to unwashed coal.

(ii) Appropriate Technology solutions shall be applied to optimise water consumption for Ash management;

(iii) The segregation of ash may be done at the Electro-Static Precipitator stage, if required, based on site specific conditions, to ensure maximum utilization of fly ash;

(iv) Subject to 2(i) above, the thermal power plants to dispose flyash in abandoned or working mines (to be facilitated by mine owner) with environmental safeguards.

(3) **Transportation:**

(i) Coal transportation may be undertaken by covered Railway wagon (railway wagons covered by tarpaulin or other means) and/or covered conveyer beyond the mine area. However, till such time enabling Rail transport/conveyer infrastructure is not available, road transportation may be undertaken in trucks, covered by tarpaulin or other means.

(ii) It shall be ensured by the thermal power plant that

a. Rail siding facility or conveyor facility is set up at or near the power plant, for transportation by rail or conveyor; and

b. If transportation by rail or conveyor facility is not available, ensure that the coal is transported out from the Delivery Point of the respective mine in covered trucks (by tarpaulin or other means), or any mechanized closed trucks by road.

(4) This shall also be deemed to be additional conditions of the relevant Environmental Clearances for respective projects for financial year 2020-21 and onwards. The existing Environmental Clearances shall stand modified so as to make the above conditions operative for relevant sectors. The Consent to Operate shall be issued by respective State Pollution Control Boards accordingly."

[F.No.13014/01/2020-IA.I(T)]

GEETA MENON, Jt. Secy.

Note:-The principal rules were published in the Gazette of India *vide* number S.O. 844(E), dated the 19th November,1986 and subsequently amended *vide* numbers S.O. 82(E), dated 16th February, 1987; S.O. 64(E), dated18th January, 1988; G.S.R. 931(E), dated 27th October, 1989; S.O. 23(E), dated 16th January, 1991; G.S.R. 95(E), dated 12th February, 1992; G.S.R.329(E), dated 13th March, 1992; G.S.R. 562(E), dated 27th May, 1992; G.S.R. 884(E), dated 20th November, 1992; G.S.R. 386(E), dated 22nd April, 1993; G.S.R. 422(E), dated 19th May, 1993; G.S.R. 801(E), dated 31st December, 1993; G.S.R. 320(E), dated 16th March, 1994; G.S.R. 560(E), dated 19th September, 1997; G.S.R. 378(E), dated 30th June, 1998;G.S.R. 7(E), dated 22nd December, 1998; G.S.R. 407(E), dated 31st May, 2001; G.S.R. 826(E), dated 16th November, 2009; G.S.R. 513(E), dated 28th June, 2012; G.S.R. 02(E) dated 2nd January, 2014; S.O. 3305 (E), dated 7th December, 2015; G.S.R. 593(E), dated 28th June, 2018 and S.O. 236 (E), dated 16th January, 2020.

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Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/10/01 00:00:00 To Date : 2022/10/31 23:45:05

Description	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	61.32	38.9	30.34	53.51
Minimum Data	6.22	5.63	5.31	13.17
Geometric Mean	21.79	17.49	20.41	25.95
Median	19.3	14.89	22.84	24.51
Standard Deviation	12.52	9.49	6.14	9.59
Maximum Value At Time	2022-10-13	2022-10-25	2022-10-19	2022-10-02
Minimum Value At Time	2022-10-16	2022-10-17	2022-10-22	2022-10-26
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
1	2022-10-01	11.99	10.68	16.05	50.37
2	2022-10-02	13.03	10.13	15.30	53.51
3	2022-10-03	19.10	14.89	16.52	44.68
4	2022-10-04	21.10	10.24	15.06	24.84
5	2022-10-05	23.33	12.88	21.06	30.21
6	2022-10-06	15.87	24.68	24.31	31.31
7	2022-10-07	10.96	14.28	23.73	28.52
8	2022-10-08	24.42	24.39	25.11	27.75
9	2022-10-09	6.89	9.01	23.61	28.46
10	2022-10-10	6.26	5.97	24.08	27.00
11	2022-10-11	9.25	8.47	22.21	24.18
12	2022-10-12	10.18	10.65	22.61	24.51
13	2022-10-13	61.32	17.06	22.84	24.17
14	2022-10-14	19.30	8.68	26.57	27.36
15	2022-10-15	18.79	8.39	27.05	22.41
16	2022-10-16	6.22	7.09	25.39	22.95
17	2022-10-17	15.61	5.63	24.80	22.44
18	2022-10-18	14.44	11.62	27.66	19.67
19	2022-10-19	28.69	27.63	30.34	17.45
20	2022-10-20	22.94	17.52	28.66	17.18
21	2022-10-21	19.06	15.61	14.56	16.19
22	2022-10-22	40.06	34.63	5.31	15.93
23	2022-10-23	27.23	30.40	15.01	16.32
24	2022-10-24	28.74	35.21	14.17	16.91
25	2022-10-25	53.66	38.90	14.25	17.24
26	2022-10-26	30.76	32.28	23.35	13.17
27	2022-10-27	19.84	20.20	23.47	22.65

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/10/01 00:00:00 To Date : 2022/10/31 23:45:05

Description	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	57.21	23.9	11.18	27.64
Minimum Data	9.43	3.59	7.42	13.27
Geometric Mean	28.32	11.04	9.66	20.14
Median	27.07	9.22	9.86	20.33
Standard Deviation	13.3	6.32	1.02	4.28
Maximum Value At Time	2022-10-26	2022-10-26	2022-10-27	2022-10-27
Minimum Value At Time	2022-10-17	2022-10-10	2022-10-01	2022-10-22
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
1	2022-10-01	16.20	7.30	7.42	16.80
2	2022-10-02	22.25	7.26	7.54	16.18
3	2022-10-03	33.84	10.36	7.59	16.57
4	2022-10-04	37.15	11.98	7.89	16.70
5	2022-10-05	35.84	14.08	8.17	20.42
6	2022-10-06	27.85	10.01	8.91	21.14
7	2022-10-07	24.39	6.85	9.14	19.23
8	2022-10-08	27.07	7.76	9.44	22.86
9	2022-10-09	15.61	5.29	9.35	24.73
10	2022-10-10	9.60	3.59	9.58	21.45
11	2022-10-11	18.29	5.23	9.70	14.60
12	2022-10-12	18.76	9.22	9.86	22.19
13	2022-10-13	31.64	6.71	9.45	20.33
14	2022-10-14	14.31	4.19	9.69	23.99
15	2022-10-15	14.25	5.12	9.65	19.59
16	2022-10-16	26.85	4.42	9.73	19.58
17	2022-10-17	9.43	3.88	9.94	21.19
18	2022-10-18	13.01	5.50	10.02	22.50
19	2022-10-19	28.99	10.83	10.01	17.20
20	2022-10-20	15.95	5.95	10.19	15.28
21	2022-10-21	30.89	8.88	10.25	14.51
22	2022-10-22	46.17	17.30	10.24	13.27
23	2022-10-23	52.37	17.81	10.41	13.53
24	2022-10-24	45.84	20.66	10.20	16.89
25	2022-10-25	56.27	21.20	10.26	16.56
26	2022-10-26	57.21	23.90	10.36	23.58
27	2022-10-27	30.48	16.20	11.18	27.64

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/10/01 00:00:00 To Date : 2022/10/31 23:45:05

Description	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	72.59	37.24	43.74	135.24
Minimum Data	3.74	2.09	4.48	5.37
Geometric Mean	25.68	13.78	23.85	25.85
Median	21.97	11.85	23.96	22.43
Standard Deviation	15.73	8.9	7.07	22.23
Maximum Value At Time	2022-10-25	2022-10-25	2022-10-27	2022-10-01
Minimum Value At Time	2022-10-17	2022-10-17	2022-10-02	2022-10-06
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
1	2022-10-01	13.83	13.31	30.81	135.24
2	2022-10-02	23.20	9.50	4.48	6.01
3	2022-10-03	27.42	13.28	13.90	18.33
4	2022-10-04	21.97	11.09	19.86	13.07
5	2022-10-05	29.08	17.91	20.50	8.22
6	2022-10-06	17.92	10.79	21.03	5.37
7	2022-10-07	12.86	6.88	24.07	8.34
8	2022-10-08	28.98	13.29	25.91	22.43
9	2022-10-09	8.57	4.09	21.28	20.51
10	2022-10-10	10.11	5.47	22.51	24.94
11	2022-10-11	12.58	6.94	21.28	38.15
12	2022-10-12	9.41	4.70	21.59	20.66
13	2022-10-13	16.20	8.78	26.14	30.22
14	2022-10-14	13.68	6.01	20.82	17.51
15	2022-10-15	10.59	4.79	27.32	31.02
16	2022-10-16	10.99	6.51	24.39	21.02
17	2022-10-17	3.74	2.09	21.18	20.37
18	2022-10-18	19.44	9.82	25.28	25.43
19	2022-10-19	23.13	12.94	18.39	10.91
20	2022-10-20	19.86	12.07	26.19	32.46
21	2022-10-21	24.14	11.85	18.15	12.20
22	2022-10-22	43.85	28.41	23.96	30.24
23	2022-10-23	46.39	31.91	22.40	24.62
24	2022-10-24	41.80	13.46	25.57	35.75

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
25	2022-10-25	72.59	37.24	29.72	25.57
26	2022-10-26	45.55	19.63	40.89	27.38
27	2022-10-27	38.69	25.56	43.74	31.59
28	2022-10-28	21.45	8.55	17.00	22.05
29	2022-10-29	37.88	19.72	29.13	37.03
30	2022-10-30	52.11	27.99	24.97	17.58
31	2022-10-31	37.92	22.57	27.02	27.01

Report Details: TPCIL | 2022-11-16 11:51:54 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/11/01 00:00:00 To Date : 2022/11/30 23:45:36

Description	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	50.37	31.38	31.75	42.05
Minimum Data	9.72	3.99	14.1	5.77
Geometric Mean	29.47	18.21	20.17	15.15
Median	30.06	18.68	19.7	13.74
Standard Deviation	14.02	9.36	4.17	7.98
Maximum Value At Time	2022-11-18	2022-11-30	2022-11-29	2022-11-08
Minimum Value At Time	2022-11-02	2022-11-13	2022-11-24	2022-11-24
Valid Data Points	30	30	30	30
Total Data Points	30	30	30	30
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
1	2022-11-01	13.90	11.46	25.61	24.03
2	2022-11-02	9.72	5.66	22.80	12.19
3	2022-11-03	13.19	8.77	24.90	23.47
4	2022-11-04	15.83	9.84	23.50	16.17
5	2022-11-05	20.67	10.11	22.63	12.32
6	2022-11-06	50.34	27.69	25.25	20.50
7	2022-11-07	49.42	31.34	24.59	16.11
8	2022-11-08	42.80	28.25	27.10	42.05
9	2022-11-09	37.08	19.91	21.42	35.59
10	2022-11-10	23.29	12.69	20.06	17.59
11	2022-11-11	35.39	19.19	19.73	14.83
12	2022-11-12	14.94	4.32	19.69	16.74
13	2022-11-13	10.18	3.99	20.01	16.71
14	2022-11-14	24.73	16.74	19.70	15.29
15	2022-11-15	36.38	26.31	19.52	15.73
16	2022-11-16	43.42	29.79	19.04	14.97
17	2022-11-17	36.60	29.12	18.28	14.02
18	2022-11-18	50.37	27.99	17.99	13.18
19	2022-11-19	40.94	24.47	17.87	13.45
20	2022-11-20	40.53	28.43	17.37	13.24
21	2022-11-21	18.83	18.17	16.64	12.90
22	2022-11-22	17.90	14.10	15.63	11.68
23	2022-11-23	19.67	7.46	14.29	9.94
24	2022-11-24	12.29	6.66	14.10	5.77

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
25	2022-11-25	15.18	7.39	15.03	6.43
26	2022-11-26	18.14	10.38	15.14	6.40
27	2022-11-27	48.01	27.10	15.94	7.10
28	2022-11-28	36.28	23.72	20.19	6.61
29	2022-11-29	40.23	23.96	31.75	8.06
30	2022-11-30	47.75	31.38	19.45	11.40

Report Details: TPCIL | 2022-12-08 13:10:47 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/12/01 00:00:00 To Date : 2022/12/31 23:45:58

Description	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	64.4	33.54	27.13	12.97
Minimum Data	4.75	2.3	6.07	4.35
Geometric Mean	24.5	10.23	16.18	7.36
Median	17.52	5.53	15.36	6.2
Standard Deviation	16.52	9.4	4.13	2.41
Maximum Value At Time	2022-12-06	2022-12-05	2022-12-30	2022-12-02
Minimum Value At Time	2022-12-13	2022-12-13	2022-12-10	2022-12-08
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
1	2022-12-01	36.10	21.25	17.29	12.48
2	2022-12-02	17.03	8.46	16.51	12.97
3	2022-12-03	16.13	5.43	15.65	12.36
4	2022-12-04	34.20	19.34	15.43	11.07
5	2022-12-05	55.49	33.54	15.36	9.92
6	2022-12-06	64.40	32.92	15.38	6.38
7	2022-12-07	57.85	31.26	12.65	4.93
8	2022-12-08	41.86	25.90	10.85	4.35
9	2022-12-09	22.16	15.83	10.91	4.89
10	2022-12-10	9.46	5.20	6.07	5.59
11	2022-12-11	8.10	5.11	15.61	5.73
12	2022-12-12	8.93	5.42	15.00	6.03
13	2022-12-13	4.75	2.30	15.09	6.27
14	2022-12-14	9.60	4.41	14.98	6.05
15	2022-12-15	13.31	2.92	14.94	5.90
16	2022-12-16	15.53	3.45	14.59	5.70
17	2022-12-17	43.94	7.41	14.78	6.06
18	2022-12-18	29.46	4.81	14.84	6.24
19	2022-12-19	27.76	3.63	13.95	5.89
20	2022-12-20	26.92	5.90	12.88	5.38
21	2022-12-21	30.49	3.73	21.44	5.95
22	2022-12-22	37.47	4.17	17.75	5.78
23	2022-12-23	36.65	4.17	15.03	5.65
24	2022-12-24	35.79	6.01	15.01	6.20

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
25	2022-12-25	14.57	5.12	17.94	8.07
26	2022-12-26	6.16	3.17	17.14	7.89
27	2022-12-27	7.87	5.53	18.37	9.03
28	2022-12-28	8.17	5.79	20.94	9.61
29	2022-12-29	9.35	9.16	25.25	10.07
30	2022-12-30	12.39	10.78	27.13	8.06
31	2022-12-31	17.52	14.86	22.75	7.73

Report Details: TPCIL | 2023-02-01 16:59:09 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2023/01/01 00:00:00 To Date : 2023/01/31 23:45:00

Description	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	36.74	25.51	21.16	7.27
Minimum Data	13.94	2.85	8.78	2.4
Geometric Mean	26.09	15.5	14.94	5.13
Median	26.52	15.38	14.87	5.27
Standard Deviation	6.13	5.4	2.54	1.17
Maximum Value At Time	2023-01-07	2023-01-05	2023-01-01	2023-01-01
Minimum Value At Time	2023-01-02	2023-01-09	2023-01-15	2023-01-15
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
1	2023-01-01	16.72	15.29	21.16	7.27
2	2023-01-02	13.94	15.00	18.69	5.86
3	2023-01-03	24.76	20.37	17.63	5.01
4	2023-01-04	28.21	23.94	17.98	5.47
5	2023-01-05	30.43	25.51	16.60	5.23
6	2023-01-06	27.39	18.99	16.21	5.64
7	2023-01-07	36.74	19.23	14.91	5.00
8	2023-01-08	33.35	19.29	15.87	5.71
9	2023-01-09	27.23	2.85	13.25	4.16
10	2023-01-10	23.16	5.98	14.38	4.87
11	2023-01-11	21.88	6.91	13.97	4.13
12	2023-01-12	21.44	6.90	15.04	4.60
13	2023-01-13	16.01	11.92	12.69	3.87
14	2023-01-14	24.84	12.40	9.73	2.45
15	2023-01-15	21.09	16.50	8.78	2.40
16	2023-01-16	23.34	21.57	10.06	2.78
17	2023-01-17	18.19	14.10	14.28	4.45
18	2023-01-18	20.03	15.38	14.55	4.86
19	2023-01-19	25.78	15.30	14.87	5.44
20	2023-01-20	29.51	11.74	16.00	5.59
21	2023-01-21	28.57	16.14	17.30	6.37
22	2023-01-22	30.16	17.70	16.06	5.57
23	2023-01-23	26.52	11.78	16.21	5.80
24	2023-01-24	17.46	7.90	16.59	6.09

Sl No	Time	Village_AAQMS-PM10_U	Village_AAQMS-PM2.5_U	Village_AAQMS-SO2_U	Village_AAQMS-NOx_U
25	2023-01-25	25.80	14.61	14.67	5.15
26	2023-01-26	36.02	20.36	14.26	5.27
27	2023-01-27	33.35	18.35	16.36	7.21
28	2023-01-28	30.11	18.97	13.52	5.91
29	2023-01-29	33.90	20.34	14.06	6.18
30	2023-01-30	34.61	19.95	14.03	6.20
31	2023-01-31	28.23	15.27	13.32	4.62

Report Details: TPCIL | 2023-02-01 17:02:16 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/11/01 00:00:00 To Date : 2022/11/30 23:45:36

Description	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	40.79	71.34	14.99	30.04
Minimum Data	4.41	3.34	11.05	2.04
Geometric Mean	21.52	18.34	13.33	11.28
Median	21.9	16.46	13.3	8.62
Standard Deviation	10.49	13.49	0.59	7.74
Maximum Value At Time	2022-11-03	2022-11-02	2022-11-02	2022-11-03
Minimum Value At Time	2022-11-13	2022-11-03	2022-11-01	2022-11-11
Valid Data Points	30	30	30	30
Total Data Points	30	30	30	30
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
1	2022-11-01	7.96	52.61	11.05	27.90
2	2022-11-02	8.46	71.34	14.99	28.79
3	2022-11-03	40.79	3.34	14.32	30.04
4	2022-11-04	35.93	7.61	14.18	27.14
5	2022-11-05	13.62	16.37	13.42	9.36
6	2022-11-06	22.18	8.30	13.23	6.94
7	2022-11-07	14.86	16.56	12.93	9.51
8	2022-11-08	15.82	20.49	13.00	12.35
9	2022-11-09	32.47	21.52	13.41	8.69
10	2022-11-10	21.61	23.42	13.35	2.95
11	2022-11-11	28.04	13.28	13.26	2.04
12	2022-11-12	5.47	7.44	13.44	7.03
13	2022-11-13	4.41	9.23	13.28	8.44
14	2022-11-14	14.75	11.83	13.40	8.56
15	2022-11-15	25.20	20.15	13.57	11.25
16	2022-11-16	31.07	21.12	13.40	12.14
17	2022-11-17	30.57	22.06	13.42	10.41
18	2022-11-18	33.47	21.56	13.37	6.33
19	2022-11-19	35.23	18.47	13.41	6.68
20	2022-11-20	30.68	21.99	13.19	6.54
21	2022-11-21	17.72	15.16	13.23	4.24
22	2022-11-22	16.10	11.95	13.29	5.55
23	2022-11-23	9.33	7.64	13.40	6.13
24	2022-11-24	9.58	8.77	13.23	17.25
25	2022-11-25	9.61	7.18	13.28	17.38
26	2022-11-26	14.92	11.04	13.21	15.16
27	2022-11-27	28.51	16.05	13.32	9.19

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/12/01 00:00:00 To Date : 2022/12/31 23:45:58

Description	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	49.4	30.72	13.15	34.85
Minimum Data	2.93	2.57	11.98	0.49
Geometric Mean	19.24	8.18	12.73	15.99
Median	15.63	5.99	12.75	14.72
Standard Deviation	12.81	6.42	0.27	9.45
Maximum Value At Time	2022-12-07	2022-12-06	2022-12-01	2022-12-27
Minimum Value At Time	2022-12-13	2022-12-26	2022-12-31	2022-12-05
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
1	2022-12-01	26.24	16.95	13.15	6.63
2	2022-12-02	15.63	12.45	12.34	12.90
3	2022-12-03	8.27	4.94	13.07	4.15
4	2022-12-04	21.65	15.80	12.86	0.84
5	2022-12-05	33.63	23.53	13.01	0.49
6	2022-12-06	46.93	30.72	12.68	4.63
7	2022-12-07	49.40	16.82	12.81	8.80
8	2022-12-08	34.84	6.96	13.03	8.31
9	2022-12-09	14.38	5.07	12.73	7.60
10	2022-12-10	5.85	3.58	12.82	9.21
11	2022-12-11	6.85	3.83	13.14	13.11
12	2022-12-12	7.96	4.70	12.47	15.49
13	2022-12-13	2.93	4.47	12.75	21.29
14	2022-12-14	8.95	5.44	12.46	28.61
15	2022-12-15	10.86	5.26	12.65	32.52
16	2022-12-16	13.17	4.97	12.77	32.23
17	2022-12-17	21.28	5.99	12.71	27.96
18	2022-12-18	22.09	8.51	12.47	16.25
19	2022-12-19	19.69	8.57	12.59	14.00
20	2022-12-20	22.55	6.65	12.69	14.72
21	2022-12-21	25.45	6.83	12.72	16.07
22	2022-12-22	33.17	7.68	12.97	14.81
23	2022-12-23	38.35	5.30	12.93	13.22
24	2022-12-24	35.92	5.10	12.80	11.23
25	2022-12-25	8.96	2.88	12.89	12.43
26	2022-12-26	3.97	2.57	12.77	26.68
27	2022-12-27	5.11	2.62	12.68	34.85

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2023/01/01 00:00:00 To Date : 2023/01/31 23:45:00

Description	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	39.17	18.81	15.86	18.56
Minimum Data	15.39	7.02	11.8	8.46
Geometric Mean	27.5	11.56	12.75	12.97
Median	26.86	11.64	12.49	11.72
Standard Deviation	6.63	2.81	0.76	3.09
Maximum Value At Time	2023-01-28	2023-01-08	2023-01-31	2023-01-10
Minimum Value At Time	2023-01-01	2023-01-15	2023-01-09	2023-01-30
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
1	2023-01-01	15.39	7.83	12.16	15.78
2	2023-01-02	18.07	8.83	12.34	14.48
3	2023-01-03	18.96	8.29	12.06	17.87
4	2023-01-04	26.31	10.54	12.28	16.43
5	2023-01-05	24.16	11.17	12.45	14.31
6	2023-01-06	25.26	11.31	12.42	13.60
7	2023-01-07	33.15	15.68	12.46	15.50
8	2023-01-08	38.36	18.81	12.32	17.90
9	2023-01-09	25.35	11.79	11.80	18.11
10	2023-01-10	26.86	13.22	12.10	18.56
11	2023-01-11	28.20	13.05	12.27	16.09
12	2023-01-12	26.48	11.21	12.61	15.77
13	2023-01-13	22.33	8.38	12.35	13.98
14	2023-01-14	33.00	15.01	12.09	14.97
15	2023-01-15	17.18	7.02	12.22	11.72
16	2023-01-16	17.84	7.11	12.49	11.04
17	2023-01-17	26.78	9.97	12.25	11.13
18	2023-01-18	30.22	11.09	12.78	11.07
19	2023-01-19	31.33	11.64	12.90	11.51
20	2023-01-20	27.01	11.81	12.80	10.90
21	2023-01-21	28.92	12.03	13.04	9.65
22	2023-01-22	34.65	13.96	13.06	10.14
23	2023-01-23	23.41	9.67	13.09	8.88
24	2023-01-24	19.74	7.94	13.23	8.75
25	2023-01-25	31.86	12.37	12.99	10.77
26	2023-01-26	37.38	14.65	13.23	10.76
27	2023-01-27	34.34	11.88	13.13	9.77

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
28	2023-01-28	39.17	12.02	13.15	13.44
29	2023-01-29	33.67	16.72	13.18	10.49
30	2023-01-30	22.08	10.28	14.19	8.46
31	2023-01-31	35.10	12.95	15.86	10.11

Report Details: TPCIL | 2023-02-01 17:03:45 | Custom Report

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
28	2022-12-28	6.83	3.06	12.92	29.93
29	2022-12-29	15.31	9.02	12.62	19.17
30	2022-12-30	14.26	6.26	12.13	19.41
31	2022-12-31	16.01	6.99	11.98	18.21

Report Details: TPCIL | 2023-02-01 16:55:52 | Custom Report

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
28	2022-11-28	27.71	24.29	13.16	7.21
29	2022-11-29	26.69	17.85	13.06	7.12
30	2022-11-30	32.76	21.70	13.16	6.20

Report Details: TPCIL | 2022-12-08 13:05:14 | Custom Report

Sl No	Time	Field_Hostel-PM10_U	Field_Hostel-PM2.5_U	Field_Hostel-SO2_U	Field_Hostel-NOx_U
28	2022-10-28	20.33	10.95	10.95	26.04
29	2022-10-29	23.60	15.13	10.89	27.25
30	2022-10-30	40.31	21.41	10.71	26.55
31	2022-10-31	33.27	23.28	10.84	26.13

Report Details: TPCIL | 2022-11-16 11:44:49 | Custom Report

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
28	2022-10-28	21.50	13.91	22.90	37.47
29	2022-10-29	24.73	16.01	15.19	26.62
30	2022-10-30	31.95	23.10	12.14	26.80
31	2022-10-31	18.19	22.14	9.34	26.26

Report Details: TPCIL | 2022-11-16 11:42:30 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/11/01 00:00:00 To Date : 2022/11/30 23:45:36

Description	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	42.37	29.73	37.13	44.27
Minimum Data	3.04	4.18	4.86	20.27
Geometric Mean	17.41	16.71	26.48	33.05
Median	12.49	16.69	31.27	33.31
Standard Deviation	12.69	8.31	11.3	4.81
Maximum Value At Time	2022-11-17	2022-11-16	2022-11-16	2022-11-26
Minimum Value At Time	2022-11-22	2022-11-04	2022-11-06	2022-11-30
Valid Data Points	30	30	30	30
Total Data Points	30	30	30	30
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
1	2022-11-01	4.39	5.00	7.60	27.74
2	2022-11-02	6.27	5.57	6.21	26.63
3	2022-11-03	6.68	5.11	5.26	25.36
4	2022-11-04	7.16	4.18	4.87	33.15
5	2022-11-05	13.13	9.10	5.18	28.93
6	2022-11-06	27.70	22.63	4.86	29.46
7	2022-11-07	24.60	23.85	13.78	30.53
8	2022-11-08	30.74	25.96	30.94	37.16
9	2022-11-09	27.61	24.55	30.41	34.55
10	2022-11-10	11.85	13.88	29.97	33.21
11	2022-11-11	24.85	18.23	28.93	30.68
12	2022-11-12	24.80	8.02	29.66	33.41
13	2022-11-13	9.74	5.89	30.31	34.23
14	2022-11-14	18.81	15.15	29.47	33.42
15	2022-11-15	29.85	27.10	32.03	32.60
16	2022-11-16	40.75	29.73	37.13	32.57
17	2022-11-17	42.37	26.35	30.55	32.05
18	2022-11-18	41.25	23.31	32.41	31.98
19	2022-11-19	30.16	21.12	32.49	31.79
20	2022-11-20	7.16	19.05	31.60	33.56
21	2022-11-21	3.32	12.36	33.38	33.96
22	2022-11-22	3.04	10.92	34.40	35.15
23	2022-11-23	4.74	7.56	32.59	33.76
24	2022-11-24	4.16	9.46	33.06	34.88
25	2022-11-25	5.29	12.96	33.60	38.47
26	2022-11-26	5.94	13.36	34.80	44.27
27	2022-11-27	9.74	24.06	35.53	41.61

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
28	2022-11-28	8.99	24.02	35.22	41.42
29	2022-11-29	16.04	27.25	35.47	34.78
30	2022-11-30	31.14	25.66	32.73	20.27

Report Details: TPCIL | 2022-12-08 13:02:22 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2022/12/01 00:00:00 To Date : 2022/12/31 23:45:58

Description	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	32.28	36.44	29.33	20.57
Minimum Data	1.61	2.92	5.48	14.66
Geometric Mean	11.4	15.43	16.31	17.36
Median	12.17	11.03	13.25	17.19
Standard Deviation	7.81	10.28	7.92	1.64
Maximum Value At Time	2022-12-01	2022-12-07	2022-12-01	2022-12-16
Minimum Value At Time	2022-12-13	2022-12-13	2022-12-31	2022-12-29
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
1	2022-12-01	32.28	19.35	29.33	18.99
2	2022-12-02	26.39	11.03	28.57	18.70
3	2022-12-03	13.52	7.39	28.10	18.81
4	2022-12-04	9.03	19.49	28.73	16.48
5	2022-12-05	14.29	29.60	28.12	15.06
6	2022-12-06	17.81	36.07	28.89	15.32
7	2022-12-07	19.35	36.44	27.48	15.90
8	2022-12-08	14.66	25.77	24.67	16.74
9	2022-12-09	7.90	13.92	20.60	16.95
10	2022-12-10	2.25	6.82	18.46	16.50
11	2022-12-11	3.11	4.65	15.98	16.61
12	2022-12-12	2.48	5.73	14.38	16.72
13	2022-12-13	1.61	2.92	13.11	17.33
14	2022-12-14	4.26	6.73	13.51	18.13
15	2022-12-15	4.51	7.90	13.25	19.68
16	2022-12-16	5.53	9.52	12.74	20.57
17	2022-12-17	10.98	18.87	11.39	19.96
18	2022-12-18	15.98	23.74	12.26	19.58
19	2022-12-19	12.35	18.12	11.94	18.86
20	2022-12-20	12.17	18.66	10.95	18.83
21	2022-12-21	14.68	21.81	10.28	18.68
22	2022-12-22	16.95	26.18	21.32	17.67
23	2022-12-23	21.24	30.89	14.60	18.26
24	2022-12-24	19.97	29.70	12.75	17.19
25	2022-12-25	5.12	6.73	10.21	15.59
26	2022-12-26	2.36	3.48	9.69	15.36
27	2022-12-27	3.58	3.14	9.45	15.81

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
28	2022-12-28	2.99	7.48	7.90	14.69
29	2022-12-29	5.54	7.09	5.69	14.66
30	2022-12-30	12.77	8.70	5.66	16.95
31	2022-12-31	17.80	10.41	5.48	17.64

Report Details: TPCIL | 2023-02-01 16:53:49 | Custom Report

Real Time Data Acquisition And Monitoring

Site Name: Sembcorp Energy India Limited

Report: Custom Report

From Date: 2023/01/01 00:00:00 To Date : 2023/01/31 23:45:00

Description	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 80
Maximum Data	44.37	30.44	29.98	26.11
Minimum Data	12.92	9.35	2.65	17.49
Geometric Mean	27.62	17.76	8.33	22.11
Median	27.47	17.18	6.3	22.59
Standard Deviation	7.85	5.59	5.71	2.28
Maximum Value At Time	2023-01-26	2023-01-26	2023-01-31	2023-01-11
Minimum Value At Time	2023-01-16	2023-01-16	2023-01-16	2023-01-01
Valid Data Points	31	31	31	31
Total Data Points	31	31	31	31
Data Availability %	100.0%	100.0%	100.0%	100.0%

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
1	2023-01-01	23.86	10.84	5.51	17.49
2	2023-01-02	18.10	11.65	5.76	19.27
3	2023-01-03	19.27	12.25	6.17	21.28
4	2023-01-04	28.39	17.22	6.30	21.11
5	2023-01-05	27.47	18.56	5.84	20.47
6	2023-01-06	34.38	19.14	5.46	19.49
7	2023-01-07	37.94	25.84	5.56	20.78
8	2023-01-08	34.97	25.97	5.63	24.22
9	2023-01-09	32.45	16.78	4.99	25.20
10	2023-01-10	24.42	15.99	4.55	25.32
11	2023-01-11	25.87	17.18	5.00	26.11
12	2023-01-12	21.26	15.45	4.72	25.86
13	2023-01-13	18.59	13.08	3.27	20.55
14	2023-01-14	25.96	18.75	3.69	20.66
15	2023-01-15	16.70	9.63	2.98	22.84
16	2023-01-16	12.92	9.35	2.65	23.59
17	2023-01-17	16.10	10.15	7.22	22.59
18	2023-01-18	21.79	14.59	14.00	20.72
19	2023-01-19	22.90	15.72	12.91	21.60
20	2023-01-20	27.93	16.28	9.58	23.81
21	2023-01-21	31.32	18.81	10.17	23.34
22	2023-01-22	34.13	21.81	9.51	23.14
23	2023-01-23	30.37	17.96	9.17	22.57
24	2023-01-24	20.47	13.60	9.38	22.82
25	2023-01-25	33.99	22.80	9.42	23.68
26	2023-01-26	44.37	30.44	9.04	23.82
27	2023-01-27	39.40	27.31	8.83	23.31

Sl No	Time	Main_Gate-PM10_U	Main_Gate-PM2.5_U	Main_Gate-SO2_U	Main_Gate-NOx_U
28	2023-01-28	38.18	26.74	8.86	23.37
29	2023-01-29	36.10	23.45	8.59	19.31
30	2023-01-30	25.19	14.03	23.61	18.81
31	2023-01-31	31.56	19.26	29.98	18.17

Report Details: TPCIL | 2023-02-01 17:05:01 | Custom Report

Minutes of the TF Committee meeting held on 15.10.2015

AGENDA No. 11

Name and Address of the industry	:	M/s. Thermal Powertech Corporation (India) Ltd., Painampuram & Nelaturu Villages, Muthukur Mandal, SPS Nellore District
Current Status	:	In operation
Nature of the industry	:	Electric Power Generation
Capital investment	:	Rs.6900 Crores
Consent for Operation & present status	:	CFO & HWA is valid upto 30.11.2015 (unit-1 of stage-1) & 31.07.2016 (unit-2 of stage-1)
Whether the industry is closed earlier	:	--
Details of revocation of closure/stop production orders, if issued	:	--
Any un-consented product produced	:	--
Whether it s fresh case/old case and its status	:	Fresh case
Reasons for current review	:	Public complaints filed before Hon'ble A.P.Lokayukta against Thermal Power Plants
Recent inspection Conducted by	:	EE, RO, Nellore on 06.08.2015
Current status of pollution control equipment.	:	One ESP for 1 No. of Super Critical Boilers of capacity 2016 Tons/Hr, HSD oil fired Auxiliary Boiler 1 x 50 TPH capacity, Silencers for DG Set of capacity 3 x 1000 KVA
Bank Guarantee status	:	--

FACTS OF THE CASE:

9. M/s. Thermal Powertech Corporation (India) Ltd., located at Painampuram & Nelaturu Villages, Muthukur Mandal, SPS Nellore District in an extent of 1367 acres and is engaged in Electric Power Generation - 2 x 660 MW (Unit 1&2 of Stage-1).
10. The Board issued combined CFO & HWA Order to the industry on 27.08.2015 duly stipulating necessary standards and conditions with a validity period upto 31.07.2016.
11. The complaints were received from Sri Epuru Vivekananda Reddy, Muthukur Mnadal, Nellore Dist.; K.R.Reddy, Advocate Nellore Dist.; Alari Jayaram, Muthukur Village, Nellore Dist.; Vedicherla Srikanth, Muthukur Village, Nellore Dist.; S.Venkateswarlu, Chalivendra, Muthukur Village, Nellore Dist.,
12. The copies of complaints also were forwarded by CPCB, MoE&F., New Delhi and directed to take further necessary action.
13. A complaint received from Smt.M.Janaki., IAS., Collector & District Magestrate, Nellore Dist along with Hon'ble A.P.Lokayukta complaint No. 607/2015/B by Sri M.Rama Gopal Reddy, Marripadu Mandal, Nellore Dist.
14. The EE, RO, Nellore has submitted the detail report is as follows:

    The industry is located at Nelatur & Pynampuram Villages, Muthukur Mandal, Nellore District in an extent of 1367.0 Acres with an investment of Rs.6900.0 Cr.

    EC & Consent Status:

    The industry obtained Environmental Clearance from MoE&F, GOI vide Order dt. 04.11.2009 for 1980 MW (3 x 660 MW), the same was expired. The industry applied for extension of EC period, in MOEF. The industry obtained CRZ clearance for the construction of pump house, sea water intake and outfall vide lr. No.F. No.11-129/2010-1A.III Dt.05.12.2011 from MoE&F, GOI. Further, Govt. of A.P., Infrastructure & Investment (Ports-1) Department vide Lr. No.576/P.1(1)/2009-1 Dt.06.08.2009 accorded permission for use of 14000 Cum. Per hour for condenser cooling and 18000 Cum/day for desalination plant to M/s. Thermal Power Tech.

Also obtained permission from the O/o. Executive Engineer, Irrigation Department for drawal of 700 m3/day of sea/ brackish water from North Bucking ham canal vide Proceedings No.DB/ATO/B4/301M Dated 05.02.2011. But, Irrigation & CAD Department, Govt. A.P., has withdrawn the permission given to the industry for withdrawing water & discharging of waste water and directed to remove the pumping & let out arrangements vide letter No.487 Dt.04.08.2014.

The industry has obtained CFE for 1980 MW power generation (Stage- I - 2 x 660 MW & Stage- II -1 x 660 MW) vide order dt.15.05.2010. As part of implementing the project, the industry obtained CFO for Stage-1 – 1 x 660 MW power generation vide order dt.24.02.2015, which is valid up to 30.11.2015 and the industry has started commercial operations from April 2015 onwards.

Recently the industry has also obtained CFO order on 27.08.2015 for unit-2 of stage 1, which is valid upto 31.07.2016.

Water Pollution:

The source of water is Bay of Bengal, where intake and outfall of water is to the creek through submerged diffusers. For Stage – I, the industry has provided Desalination plant of capacity 543 M3/hr (3 x 181 M3/hr). The total water requirement is at about 1,16,423 KLD for 1 x 660 MW power plant. The industry is having Desalination plant were internal water consumption requirements except for cooling tower make-up. The industry is discharging cooling tower blow downs and rejects from the desalination and RO plants directly into the Sea and remaining waste water from other sections viz. boiler blow downs, DM plant and utilities, is treated by the fulfledged ETP provided by the industry before utilizing the same for on land applications and also the industry having STP for treating domestic waste water which is being utilized for land applications. The industry generates for 1 x 660 MW at about 73,159 KLD from Cooling tower blow down, clarifier blow down, boiler blow down etc. ETP consists of Flash Mixer, alum dosing system, caustic dosing system, flocculation tank, poly electrolyte dosing system, lamella clarifier, ,cid dosing system, alkali dosing system, air blower, air diffuser arrangement, Treated water transfer pumps, ETP sludge sump, sludge transfer pumps etc. 1 No. Central Monitoring Basin (CMB) in two compartments of 435m3 capacity is provided in ETP area and Sewage treatment plant consists of Sewage lifting stations, sewage catch pits, raw sewage sump, aeration feed pumps, stilling chamber, Bar screen chamber, Oil & Grease Trap, Extended Aeration tank, air diffuser system, aeration blowers, settling tank, sludge recirculation cum Disposal pumps, sludge drying bed, treated water tank, treated water disposal pumps, sodium hypochlorite dosing tank, hypo dosing pump etc.

The unit-2 of stage-1 is also having the same water consumption and waste water generation (unit-1&2).

Air Pollution:

In the Stage – I, the industry proposed to provide 2 Nos. of CFBC Coal Fired Boilers of capacity 2016 TPH each and proposed to provide Electrostatic Precipitator (ESP) for each Boiler to control dust emissions The ESP's are designed with outlet dust concentration of less than 50mg/NM3. A combined stack with two parallel flues having a height of 275 mtrs. is attached to the boilers after ESPs for dispersion of flue gases.

The latest status of the compliance report on the stipulated important/ time bound conditions in the CFO issued by the Board, which is valid up to 30.11.2015 vide order dt.24.02.2015, is as follows:

Conditio No.	Condition	Compliance
1.	The industry shall provide online temperature recording facility to record the temperature of water before discharging into sea marine outfall and maintain required temperature before discharging into sea marine outfall.	Complied

2.	The industry shall not store fly ash within the premises openly in dry condition. Efforts shall be taken to dispose fly ash in dry form as much as possible instead of diverting it to wet ash pond. Dry ash collection system shall be maintained properly	Not Complied. The industry has not taken any steps for disposal of fly ash and bottom ash to brick units/ cement plants in compliance with the provisions of the Fly Ash Notification and the industry is pumping the total fly ash and boiler ash to the ash pond.
3.	The industry shall comply with Fly ash Notification dated 03.11.2009 and its amendments thereof	
4.	The industry shall provide the garland drain to the ash pond with collection tank to pump the water for ash slurry preparation	The industry is recycling the supernatant water from the ash pond for ash slurry purpose. But, the industry has not provided leachate collection tank for collecting the waste water from the garland drain of the ash pond.
5.	The industry shall provide piezometric wells around the ash pond as per the CPCB guidelines	The industry has provided piezometric wells around the ash pond.
6.	Garland canal shall be maintained around the fly ash pond to collect water that is expected to leach out and monitoring of such leachates shall be carried out.	
7.	The industry shall construct closed shed for storage of coal and provide water sprinklers to control fugitive emissions.	Not provided
8.	The industry shall relocate the 3 Nos. of online AAQM stations from the existing locations to the following locations as directed by the RO, Nellore a)One AAQM station at coal yard b)One station at ash handling area c)One at security gate	Not relocated so far
9.	The industry shall develop thick greenbelt in an area of 396 Acres all along the periphery of the industry and ash pond area.	Allocated 396 Acres to develop green belt and at present, the industry has developed good green belt in an area of about 150 acres only. The industry has planted few saplings around the ash pond & coal yard area.

During monitoring conducted by the Board Officials, the SPM values of the Boiler stacks are exceeding the Board's standards.

Source	SPM Value	Board's Standard
Stack Attached to 2016 TPH Super Critical Boiler	76.4 mg/Nm^3	50.0 mg/Nm^3

During inspection, it was observed that the industry was not recycling supernatant water generates from Ash pond for Ash slurry making and the industry has not at all disposed the fly ash generated to the brick units / Cement plants and completely pumping the same to ash pond. Since, the online monitoring systems of both stack and AAQM stations, were not calibrated periodically which are generating the inconsistent SPM values when compared with the Board monitored SPM values. The industry has not provided any closed shed for storage of coal and also not provided wind barriers to control fugitive emissions on to the surroundings which generate from handling of coal. The industry has not yet developed green belt and not provided water sprinklers in the coal storage yard.

During inspection lot of coal dust emissions were observed while coal stacker machine was in operation for it was confirmed that it was due to the absence of dust suppression systems viz. water sprinklers.

CONCLUSION:

Hence, the Agenda is placed before Task Force External Advisory Committee for taking decision.

DECISION TAKEN:

The representative of the industry attended the hearing. The Committee has informed that No. of public complaints are received by the Board from the nearby villagers on pollution problems due to operation of Thermal Power Plants. The Thermal Power Plant have not provided closed sheds for storage of coal and also not handling the Boiler ash for re-utilization as per the Fly Ash Notification. The MS has directed all the power plant to calibrate online monitoring systems periodically for efficient functioning and shall submit the reports to the Board regularly.

The representatives of the industry has informed that provision of closed shed for entire coal yard is difficult, as the extent of coal yard is vast and hence, he requested the Board to exempt this condition for compliance.

The Committee after detailed discussions, recommended to issue the following directions :-

1. The power plant shall provide wind barriers along the coal yard area and also develop green belt with tall growing trees along periphery of the industry.
2. The power plant shall provide water sprinklers all along the coal yard area and to operate them so that coal would be in wet condition for fugitive dust control.
3. The power plant shall calibrate on line stack monitoring and AAQM monitoring system periodically and submit the reports to the RO, Nellore.
4. The power plant shall provide online AAQM stations and to connect to the Board's website immediately.
5. M/s. Thermal Powertech Corporation Ltd., shall provide online AAQM station at Nelatur (V) & connect to the APPCB Board's website.
6. The power plant shall comply the conditions stipulated in Fly Ash Notification for ash disposal to Brick units, Cement units and for construction projects.
7. The power plant shall not discharge the waste water outside the industry premises under any circumstances.
8. The power plant shall comply all the conditions specified in CFO order dated 27.08.2015.

Member	Member	Convener
Prof. J Karthikeyan,	Prof. S.V.Naidu,	Member Secretary
Sri S V University, Tirupathi	Dept. of Chemical Engg.,	APPCB
	Andhra University	
	Visakhapatnam.	


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HD
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COMET


MACCAFERRI
COMET

Annex- 5 Green Belt around Coal Yard & Coal Yard Water Sprinklers


79
Shot on OnePlus

Annex-10

Closed Coal Shed

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-05092022-238614
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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (i)
PART II—Section 3—Sub-section (i)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 5 सितम्बर, 2022

सा.का.नि. 682(अ).—केन्द्रीय सरकार, पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3, धारा 6 और धारा 25 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, पर्यावरण (संरक्षण) नियम, 1986 का और संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात् :-

1. (1) इन नियमों का संक्षिप्त नाम पर्यावरण (संरक्षण) दूसरा संशोधन नियम, 2022 है ।

(2) ये राजपत्र में उनके प्रकाशन की तारीख को प्रवृत्त होंगे ।

2. पर्यावरण (संरक्षण) नियम, 1986 की अनुसूची 1 के क्रम सं. 25 में, "*(i) सारणी 1" के स्थान पर निम्नलिखित रखा जाएगा, अर्थात् :--

सारणी-1

क्रम सं.	प्रवर्ग	अवस्थान/क्षेत्र	अनुपालन के लिए समय-सीमा (निवृत्त न होने वाली इकाईयां)		अनुपालन से छूट के लिए इकाईयों को निवृत्त करने की अंतिम तारीख	
			SO_2 उत्सर्जन से भिन्न पैरामीटर	SO_2 उत्सर्जन	SO_2 उत्सर्जन से भिन्न पैरामीटर	SO_2 उत्सर्जन
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	प्रवर्ग क	राष्ट्रीय राजधानी क्षेत्र या 10 लाख से	31 दिसंबर,	31 दिसंबर,	31 दिसंबर,	

		अधिक जनसंख्या वाले शहरों[1] की दस किलोमीटर की परिधि के भीतर।	2022 तक	2024 तक	2022 तक	31 दिसंबर, 2027 तक
2.	प्रवर्ग ख	गंभीर रूप से प्रदूषित क्षेत्रों[1] की या गैर-प्राप्ति शहरों[2] की दस किलोमीटर के अर्धव्यास के भीतर	31 दिसंबर, 2023 तक	31 दिसंबर, 2025 तक	31 दिसंबर, 2025 तक	
3.	प्रवर्ग ग	प्रवर्ग क और ख में सम्मिलित से भिन्न	31 दिसंबर, 2024 तक	31 दिसंबर, 2026 तक	31 दिसंबर, 2025 तक	

1 भारत की 2011 की जनगणना के अनुसार

2 केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा यथा-परिभाषित।

3. "*(ii)" के स्थान पर निम्नलिखित रखा जाएगा, अर्थात् :--

'(ii)(क) सारणी 1 के स्तंभ (6) में यथा-विनिर्दिष्ट तारीख से पूर्व निवृत्त होने के लिए घोषित तापीय विद्युत संयंत्र से, ऐसे संयंत्रों द्वारा केंद्रीय प्रदूषण नियंत्रण बोर्ड और केंद्रीय विद्युत प्राधिकरण को ऐसे संयंत्र द्वारा निवृत्त होने के आधार पर छूट के लिए वचनबंध प्रस्तुत करने की दशा में SO_2 उत्सर्जन से भिन्न पैरामीटर के लिए विनिर्दिष्ट मानकों को पूरा करने की अपेक्षा नहीं होगी:

परंतु ऐसे संयंत्रों पर सारणी 1 के स्तंभ (4) में यथा-विनिर्दिष्ट तारीख से उनके द्वारा वचनबंध में यथा-विनिर्दिष्ट तारीख से आगे जारी रहता है, उनके प्रचालन की दशा में जनित विद्युत की प्रति इकाई पर 0.40 रुपए की दर से पर्यावरण प्रतिकर उदग्रहित किया जाएगा;

(ii)(ख) सारणी 1 के स्तंभ (7) में यथा-विनिर्दिष्ट तारीख से पूर्व निवृत्त् होने के लिए घोषित तापीय विद्युत संयंत्र से, ऐसे संयंत्रों द्वारा केंद्रीय प्रदूषण नियंत्रण बोर्ड और केंद्रीय विद्युत प्राधिकरण को ऐसे संयंत्र द्वारा निवृत्त होने के आधार पर छूट के लिए वचनबंध प्रस्तुत करने की दशा में SO_2 उत्सर्जनों से भिन्न विनिर्दिष्ट मानकों को पूरा करने की अपेक्षा नहीं होगी:

परंतु ऐसे संयंत्रों पर सारणी 1 के स्तंभ (5) में यथा-विनिर्दिष्ट तारीख से उनके द्वारा वचनबंध में यथा विनिर्दिष्ट तारीख से आगे जारी रहता है, उनके प्रचालन की दशा में जनित विद्युत की प्रति इकाई पर 0.40 रुपए की दर से पर्यावरण प्रतिकर उदग्रहित किया जाएगा;'

4. "*(iii)" के स्थान पर निम्नलिखित रखा जाएगा, अर्थात्:--

"(iii) सारणी 1 के स्तंभ (4) और स्तंभ (5) में यथा-विनिर्दिष्ट तारीख के पश्चात् निवृत्त न होने वाले तापीय विद्युत संयंत्रों पर सारणी-2 में विनिर्दिष्ट दरों के अनुसार, पर्यावरण प्रतिकर उदग्रहित किया जाएगा, अर्थात्:--

सारणी-2

समय-सीमा से आगे अननुपालन प्रचालन	पर्यावरण प्रतिकर (प्रति इकाई जनित विद्युत)
0-180 दिन	0.20
181-365 दिन	0.30
366 दिन और उससे आगे	0.40"

[फा. सं. क्यू-15017/40/2007-सीपीडब्ल्यू]

नरेश पाल गंगवार, अपर सचिव

टिप्पण : मूल नियम, भारत के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (i) में संख्यांक का.आ. 844(अ), तारीख 19 नवंबर, 1986 द्वारा प्रकाशित किए गए थे और उनका अंतिम संशोधन अधिसूचना संख्यांक सा.का.नि. 143(अ), तारीख 22 फरवरी, 2022 द्वारा किया गया ।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 5th September, 2022

G.S.R. 682(E).—In exercise of the powers conferred by sections 3, 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:—

1. (1) These rules may be called the Environment (Protection) Second Amendment Rules, 2022.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in Schedule – I, in serial number 25 for "* (i) Table 1" the following shall be substituted, namely: -

Table-I

Sl. No.	**Category**	**Location/area**	**Timelines for compliance (Non-retiring units)**		**Last date for retirement of units for exemption from compliance**	
			parameters other than SO_2 emissions	**SO_2 emissions**	**parameters other than SO_2 emissions**	**SO_2 emissions**
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Category A	With 10 km radius of National Capital Region or cities having million plus population[1].	Up to 31st December 2022	Up to 31st December 2024	Up to 31st December 2022	Up to 31st December 2027
2	Category B	With 10 km radius of Critically Polluted Areas[2] or Non-attainment cities[2]	Up to 31st December 2023	Up to 31st December 2025	Up to 31st December 2025	
3	Category C	Other than those included in category A and B	Up to 31st December 2024	Up to 31st December 2026	Up to 31st December 2025	

[1] As per 2011 census of India.

[2] as defined by CPCB.

3. For "* (ii)" the following shall be substituted, namely: -

'(ii) (a) The thermal power plant declared to retire before the date as specified in column (6) of Table-I shall not be required to meet the specified norms for parameters other than SO_2 emissions in case such plants submit an undertaking to CPCB and CEA for exemption on ground of retirement of such plant:

Provided that such plants shall be levied environment compensation from the dates as specified in column (4) of table –I, at the rate of rupees 0.40 per unit electricity generated in case their operation is continued beyond the date as specified in the undertaking;

(ii) (b) The thermal power plant declared to retire before the date as specified in column (7) of Table-I shall not be required to meet the specified norms for SO_2 emissions in case such plants submit an undertaking to CPCB and CEA for exemption on ground of retirement of such plant:

Provided that such plants shall be levied environment compensation from the dates as specified in column (5) of table –I, at the rate of rupees 0.40 per unit electricity generated in case their operation is continued beyond the date as specified in the undertaking;'

4. For "* (iii)" the following shall be substituted, namely: -

"(iii) there shall be levied environment compensation on the non-retiring thermal power plants, after the date as specified in column (4) and (5) of Table-I, as per the rates specified in the Table-II, namely: -

Table-II

Non-Compliant operation beyond the Timeline	Environmental Compensation (Rs. per unit electricity generated)
0-180 days	0.20
181-365 days	0.30
366 days and beyond	0.40"

[F. No. Q-15017/40/2007-CPW]

NARESH PAL GANGWAR, Addl. Secy.

Note : The principle rules were published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i) vide number S.O. 844(E), dated the 19th November, 1986 and lastly amended vide notification G.S.R. 143(E), dated the 22nd February, 2022.

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Department of Civil Engineering
Indian Institute of Technology Madras
Chennai, India 600036
Tel No. (044) 2257-4297
FAX: (044) 2257-4252
E-mail: arnepalli@iitm.ac.in
http://www.civil.iitm.ac.in

22nd January 2021

From:
Dr. D. N. Arnepalli
Associate Professor, Geotechnical Engineering Division
Department of Civil Engineering, IIT Madras, Chennai-600036

To:
Shri. Gautam Nayan Upadrasta
Head, Maintenance
Sembcorp Energy India Limited
Pyanampuram/Nelaturu Village, Muthukur Mandal
SPSR Nellore, Andhra Pradesh, India-524 344

Dear Sir,

Subject: *Stability analysis of ash dykes of Lagoon-A & B of Project-1 Reg.*

Reference: *Your letter 4040013645 dated 8th June 2020.*

Thank you very much for your letter dated 8th June 2020. I am herewith enclosing the report on stability analysis of ash dyke sections of lagoon-A and lagoon-B of project-1 of Sembcorp Energy India Limited, SPSR Nellore, India. Based on the slope stability analyses performed, it can be observed that the ash dyke sections of project-1 are safe under both static and dynamic load conditions.

Further, it is certified that the stability of the dykes in their present conditions is found to be stable. The above inferences arrived based on the detailed stability analyses and the site visit on 11th September 2020.

Thanking you,

Yours sincerely,

22/01/2021

डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

Department of Civil Engineering
Indian Institute of Technology Madras
Chennai, India 600036
Tel No. (044) 2257-4297
FAX: (044) 2257-4252
E-mail: arnepalli@iitm.ac.in
http://www.civil.iitm.ac.in

22nd January 2021

From:
Dr. D. N. Arnepalli
Associate Professor, Geotechnical Engineering Division
Department of Civil Engineering, IIT Madras, Chennai-600036

To:
Shri. Gautam Nayan Upadrasta
Head, Maintenance
Sembcorp Energy India Limited
Pyanampuram/Nelaturu Village, Muthukur Mandal
SPSR Nellore, Andhra Pradesh, India-524 344

Dear Sir,

Subject: *Stability analysis of ash dykes of Project-2 Reg.*

Reference: *Your letter 4040013645 dated 8th June 2020.*

Thank you very much for your letter dated 8th June 2020. I am herewith enclosing the report on stability analysis of ash dyke sections of project-2 of Sembcorp Energy India Limited, SPSR Nellore, India. Based on the slope stability analyses performed, it can be observed that the ash dyke sections of project-2 are safe under both static and dynamic load conditions.

Further, it is certified that the stability of the dykes in their present conditions is found to be stable. The above inferences arrived based on the detailed stability analyses and the site visit on 11th September 2020.

Thanking you,

Yours sincerely,

22/01/2021

डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

Report on

Stability Analysis of Ash Dykes at SEMBCORP Krishnapatnam, Nellore, Andhra Pradesh, India

Submitted to

SEMBCORP, Krishnapatnam, Nellore

Coordinator

Dr. D. N. Arnepalli

Department of Civil Engineering
Indian Institute of Technology Madras
Chennai-600036

January 2021

24/01/2021
डॉ. दालि नायुडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

Stability Analysis of Ash Dykes of Project-1 and Project-2

Model Geometry and Boundary Conditions for Static and Pseudo-static Analyses

The ash dykes-model geometry is drawn to the scale, as depicted in Fig. 1, Fig. 2, and Fig. 3. The material properties of the individual layers are assigned based on the information available in the geotechnical report (submitted by IIT Madras dated February 2019). The units for length, force, and time are used as m, kN, and day, respectively. The report presents the stability analysis of the existing dykes by considering the three critical sections. The first analysis was made on the dyke with starter dyke of height 4.5 m and rising of 5.5 m (Project 1- Lagoon A). The second analysis was made on the dyke with a starter dyke having a height of 4.5 m (Project 1- Lagoon B). The third analysis was made on the dyke with a starter dyke having a height of 4.8 m (Project 2). The stability analysis was performed using a numerical tool called Plaxis. As considered in the stability analysis of the starter dykes, the compressibility characteristics of the foundation layer below the embankment are found to be quite comparable or significantly high when compared to that of embankment material; hence there will not be any possibility of deep-seated bearing failure of the foundation soil. With this in view, the foundation layer is not included while developing the numerical model for the static analysis. The base of the embankment is assumed as a fixed base; further, the standard fixities were employed to define the boundary conditions. For Pseudo-static analysis, a horizontal acceleration (as per IS1893, 2002, i.e., zone factors based on the intensity of shaking) of 0.16g was considered to analyze the overall response of the existing dykes. The lateral extent of the first dyke with starter and rising taken for the analysis is up to 50 m from the base of the envisaged rising. It is found that beyond this length, there is no effect from the backfill on the stability of the dyke. The geometry models of the dykes, with the forward construction, are presented in Fig. 1, Fig. 2, and Fig. 3.

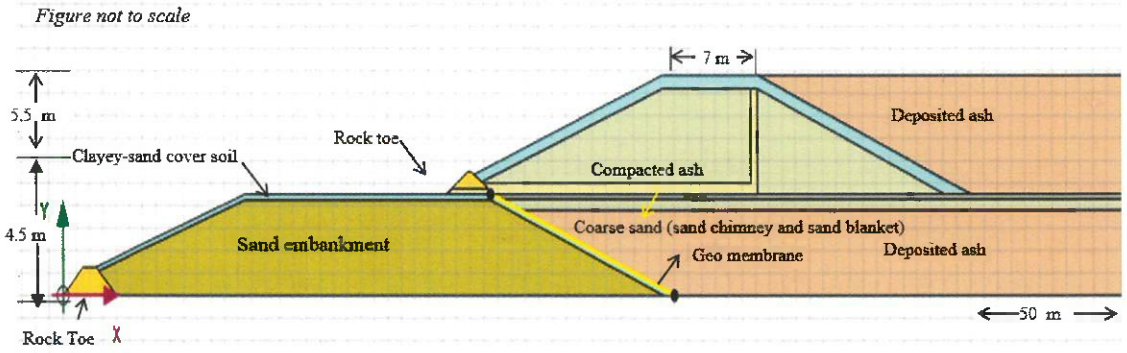

Fig. 1 Geometry model of Project 1-Lagoon A dyke comprising of starter dyke of height 4.5 m and rising of 5.5 m

27/01/2021
डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

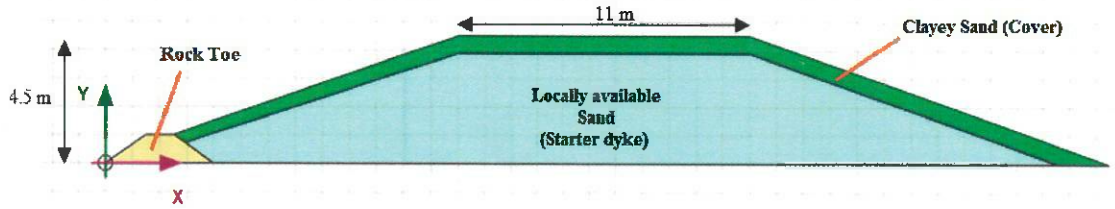

Fig. 2 Geometry model of Project 1-Lagoon B dyke comprising of starter dyke of height 4.5 m

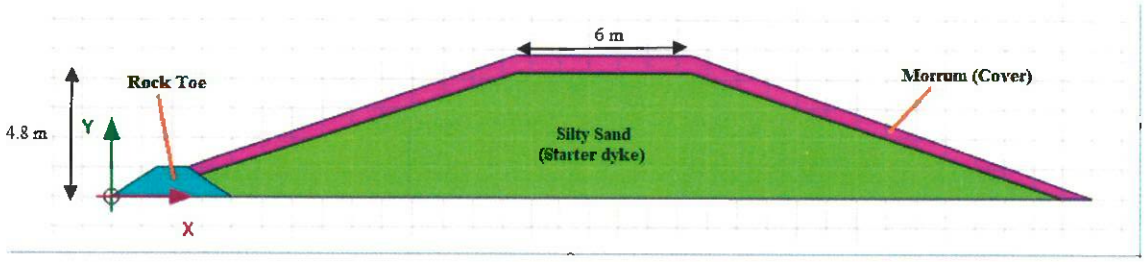

Fig. 3 Geometry model of Project-2 dyke comprising of starter dyke of height 4.8 m

Figs. 1 to 3 indicate that the significant portion of the embankment is made-up of locally available sand (starter dyke), compacted ash (forward rising), and clayey-sand (cover soil). The rising is carried out by compacting ash embankment and placing a clayey-sand soil cover of 0.6 m thick. The model embankment was divided into a finite number of elements using the mesh-refinement option, as illustrated in Figs. 4 to 6. For this purpose, the 15-node element has been employed. The Mohr-Coulomb constitutive model was considered to represent the shear strength response of various materials. The material properties such as Young's modulus, E; Poisson's ratio, μ; cohesion, c; friction angle, ϕ, and dilatancy angle, ψ, of various geomaterial are reported in Tables 1 to 3. Elastic material with properties stated as in Table 4 below represents the geomembrane's behavior placed on the upstream slope of the starter dykes.

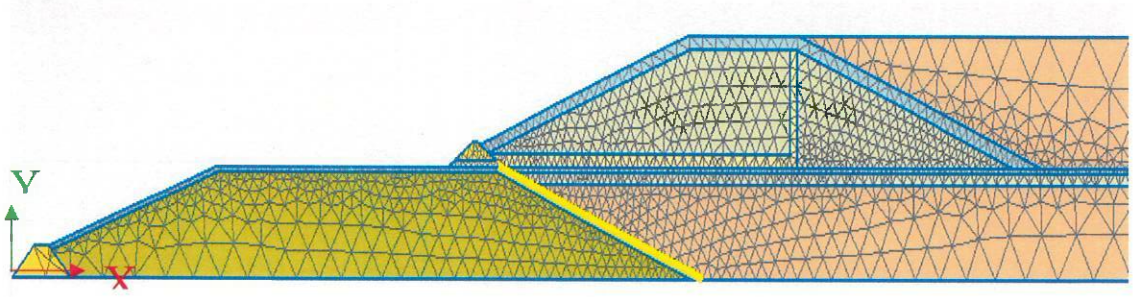

Fig. 4 Generated finite element mesh of Project 1-Lagoon A dyke

22/01/2021
डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

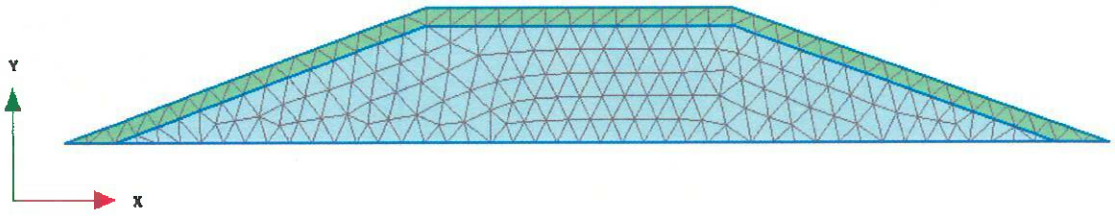

Fig. 5 Generated finite element mesh of Project 1-Lagoon B dyke

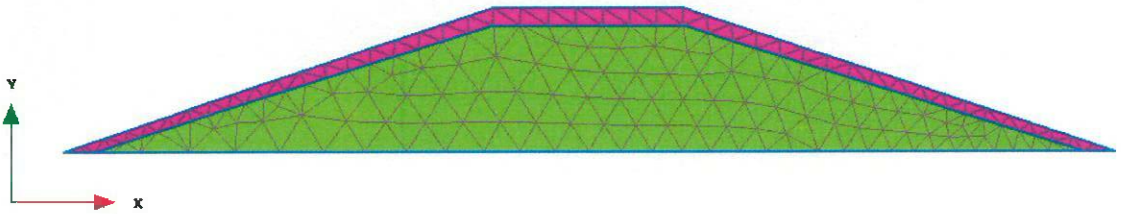

Fig. 6 Generated finite element mesh of Project-2 dyke

Table 1 Material properties used for static and pseudo-static analyses of Project 1-Lagoon A dyke

Material Property	Unit	Type of Materials					
		Clayey-sand (Murrum Cover soil)	Locally available soil (Starter dyke)	Coarse sand (Chimney and blanket)	Boulder (Rock toe)	Compacted ash (Dyke rising)	Deposited ash in the pond
γ_{unsat}	kN/m³	18	18	18.0	17.5	11	11
γ_{sat}	kN/m³	20	19	19	19.75	13	12
k_x	m/day	5×10^{-3}	10.36	5.19	864	0.05	0.1
k_v	m/day	5×10^{-3}	10.36	5.19	864	0.05	0.1
E	kPa	20000	50000	50000	65000	25000	20000
ν	---	0.35	0.3	0.3	0.3	0.3	0.3
c	kPa	30	0	0	0	0	0
ϕ	(°)	15	35	35	38	32	27
ψ	(°)	0	0	0	0	0	0

Table 2 Material properties used for static and pseudo-static analyses of Project 1-Lagoon B dyke

Material Property	Unit	Type of Materials	
		Clayey Sand (Murrum Cover soil)	Locally available Soil (Starter dyke)
γ_{unsat}	kN/m³	18	18
γ_{sat}	kN/m³	20	19
k_x	m/day	5×10^{-3}	10.36
k_v	m/day	5×10^{-3}	10.36
E	kPa	20000	50000
ν	---	0.35	0.3
c	kPa	30	0
ϕ	(°)	15	35
ψ	(°)	0	0

24/01/2024
डॉ. दालि नायुडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

Table 3 Material properties used for static and pseudo-static analyses of Project-2 dyke

Material Property	Unit	Type of Materials	
		Clayey Sand (Murrum cover soil)	Silty Sand (Starter dyke)
γ_{unsat}	kN/m³	18	18
γ_{sat}	kN/m³	20	19
k_x	m/day	0.01	10.36
k_v	m/day	0.01	10.36
E	kPa	30000	50000
ν	---	0.35	0.3
c	kPa	30	0
ϕ	(°)	15	35
ψ	(°)	0	0

Table 4 Properties of geomembrane liner used for static analysis

Material	γ (kN/m³)	E (kPa)
HDPE geomembrane of 1.0 mm thick (Impermeable liner on u/s face of the starter dyke)	9.8	167.85×10^6

Sequence of Steps Followed During Static and Pseudo-static Analyses

The global stability analysis of the ash dykes was carried out in a sequential manner with three distinct phases, the initial phase, plastic phase, and safety phase. The consecutive phases are taken for calculation as plastic and strength reduction, respectively. In the calculation sequence, initially, the weight of the geomaterial is only considered and then the initial pore pressures with their initial stresses are considered. To avoid ambiguity, the sequential steps followed during analysis are presented in Table 5.

Table 5 Sequential steps followed during the static and pseudo-static analyses

Phase	Phase No	Start phase	Calculation type	Load input
Initial phase	0	0	Gravity loading	Staged construction
Phase-1	1	0	Plastic	Staged construction
Phase-2	2	1	Strength reduction	Incremental multipliers

Results and Discussion of Static and Pseudo-static Analyses

The results of the static stability analysis carried out for the ash dyke is presented below. The static analysis was carried for both dry and saturated conditions. For the most critical saturated state, the backfill ash (deposited) is assumed to be saturated up to freeboard (0.5 m below the top bund level). Similarly, the analysis was performed for the other two dykes under dry conditions. The obtained results are presented in Table 6. For brevity, deformed

27/01/2021
डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

finite element mesh, total displacement diagram, and total strains that indicate potential failure slip surface for dykes are presented in Figs. 7 to 24.

It can be noted from these figures that the auto-scaling feature was employed to depict the deformed shape, total displacement, and total strains, as these magnitudes are relatively small when compared to the geometry of the model. The auto-scaling feature will facilitate the reader to appreciate the failure mechanism. The factors of safety of the three dykes were assessed, and the obtained results are presented in Table 6.

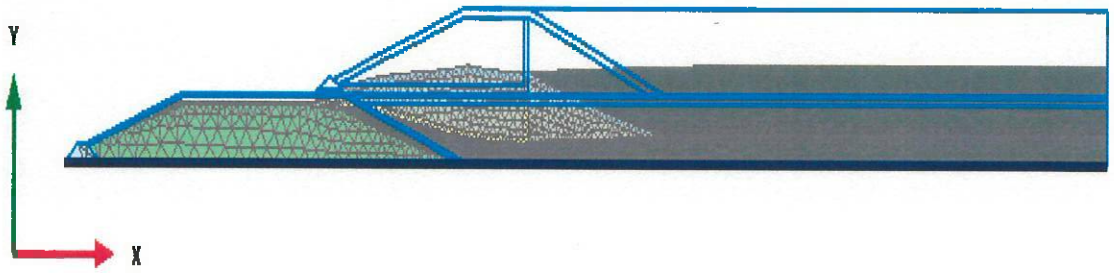

Fig. 7 Deformed finite element mesh of Project 1-Lagoon A dyke under static condition

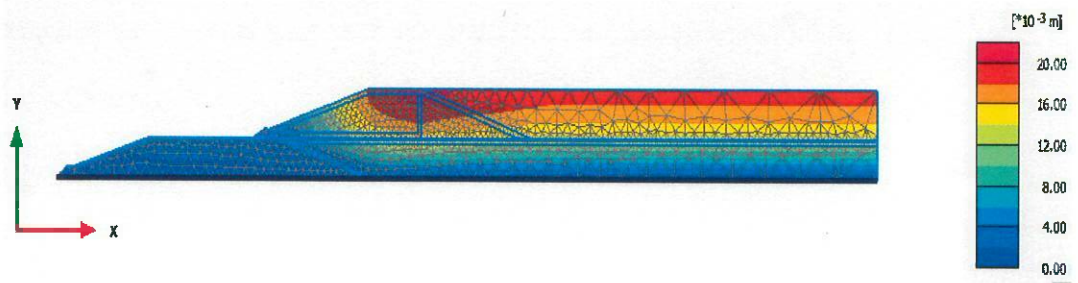

Fig. 8 Total Displacement of Project 1-Lagoon A dyke under static condition

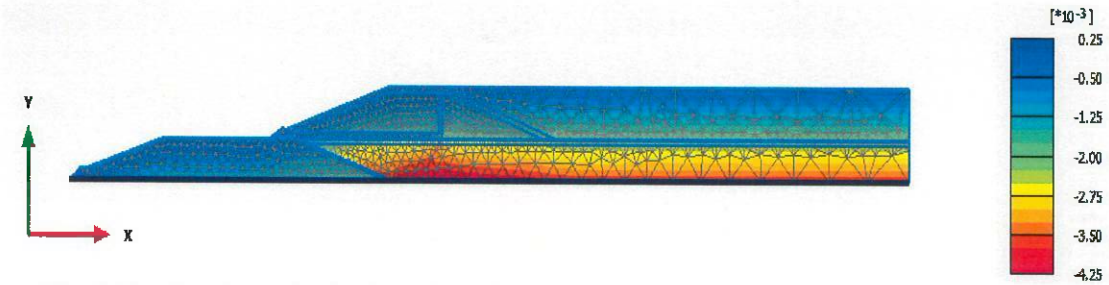

Fig. 9 Total major principal strains of Project 1-Lagoon A dyke under static condition

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डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
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चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

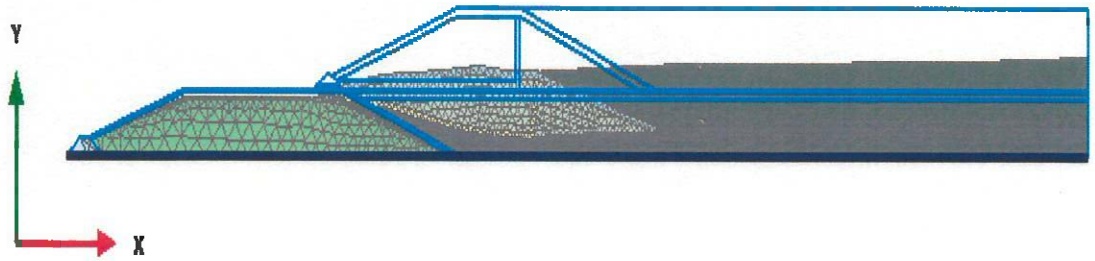

Fig. 10 Deformed finite element mesh of Project 1-Lagoon A dyke under pseudo-static condition

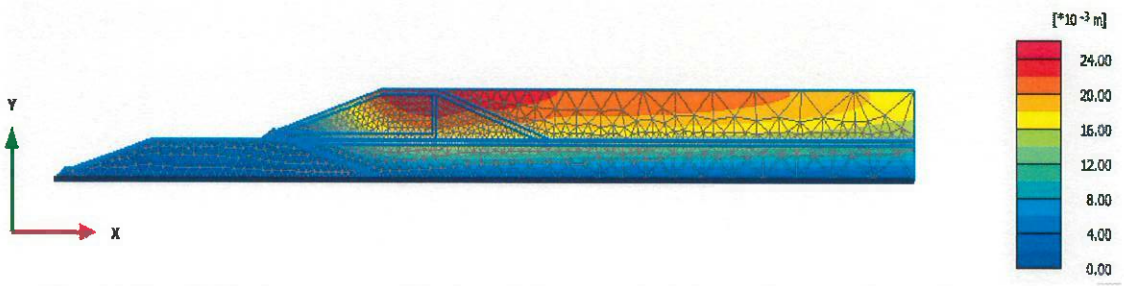

Fig. 11 Total Displacement of Project 1-Lagoon A dyke under pseudo-static condition

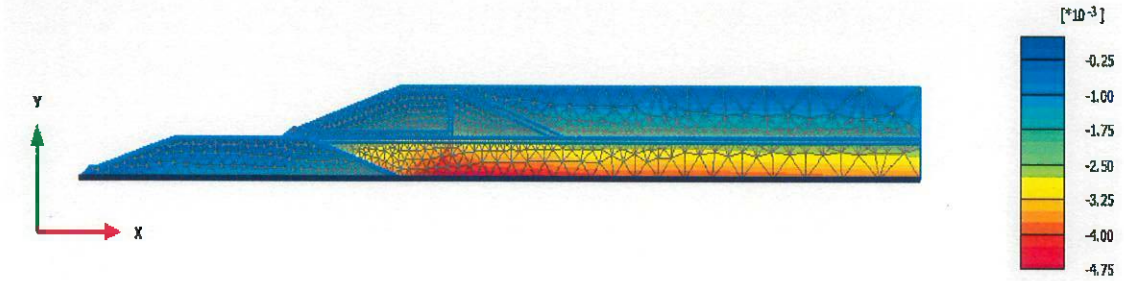

Fig. 12 Total major principal strains of Project 1-Lagoon A dyke under pseudo-static condition

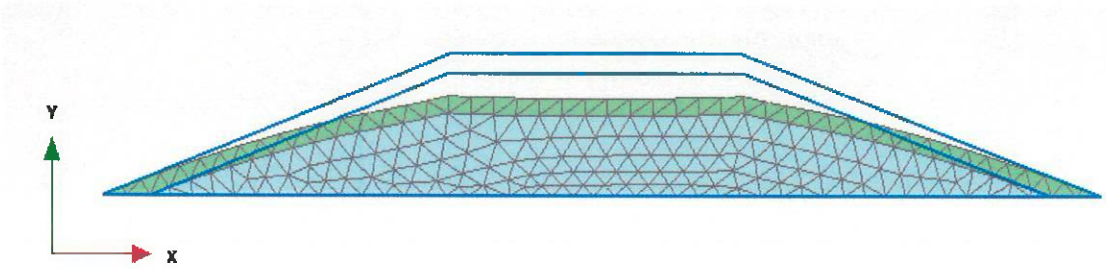

Fig. 13 Deformed finite element mesh of Project 1-Lagoon B dyke under static condition

24/01/2021
डॉ. दालि नायुडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

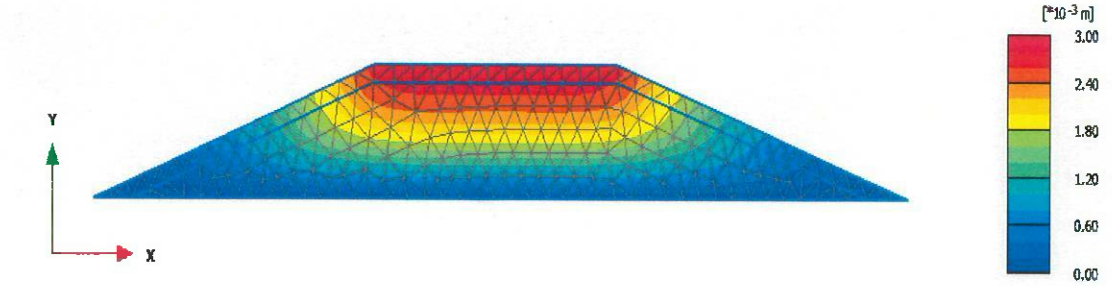

Fig. 14 Total Displacement of Project 1-Lagoon B dyke under static condition

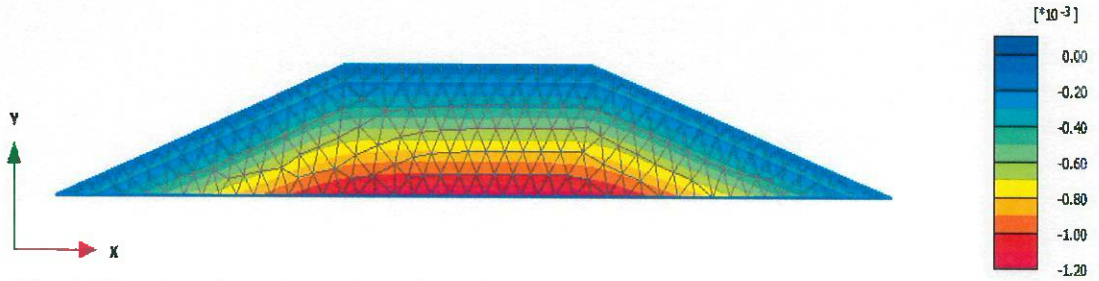

Fig. 15 Total major principal strains of Project 1-Lagoon B dyke under static condition

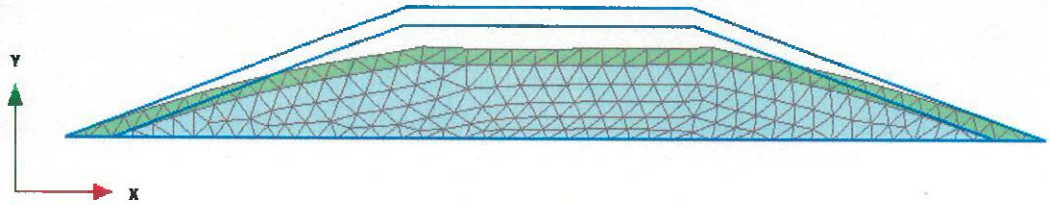

Fig. 16 Deformed finite element mesh of Project 1-Lagoon B dyke under pseudo-static condition

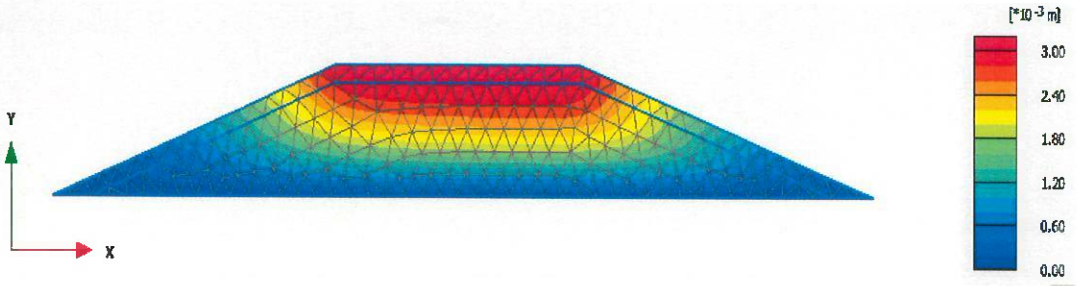

Fig. 17 Total Displacement of Project 1-Lagoon B dyke under pseudo-static condition

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डॉ. दालि नायुडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

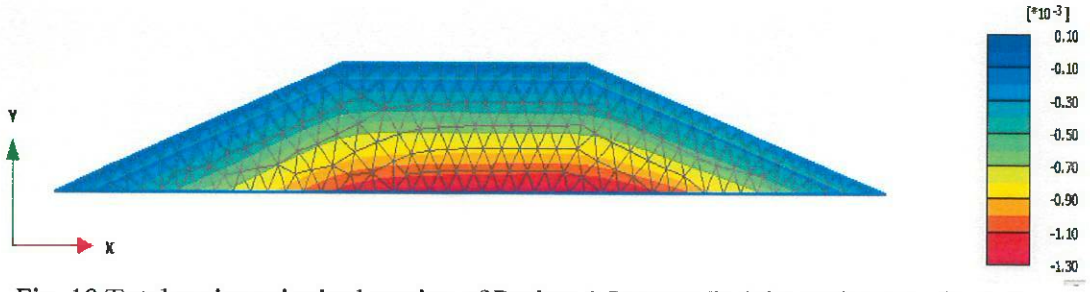

Fig. 18 Total major principal strains of Project 1-Lagoon B dyke under pseudo-static condition

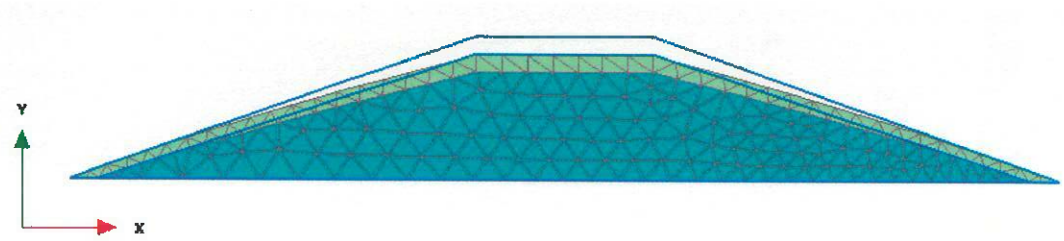

Fig. 19 Deformed finite element mesh of Project-2 dyke under static condition

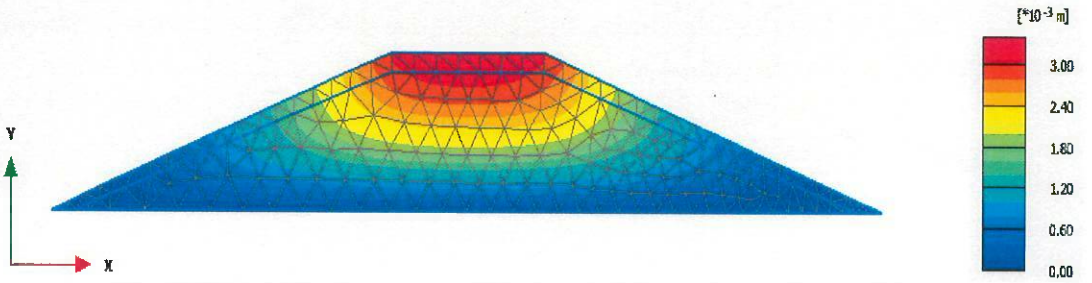

Fig. 20 Total Displacement of Project-2 dyke under static condition

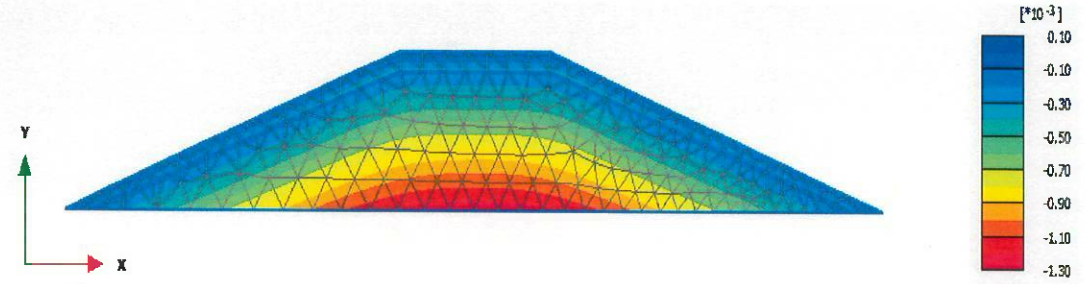

Fig. 21 Total major principal strains of Project-2 dyke under static condition

24/01/2024
डॉ. दालि नायुडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

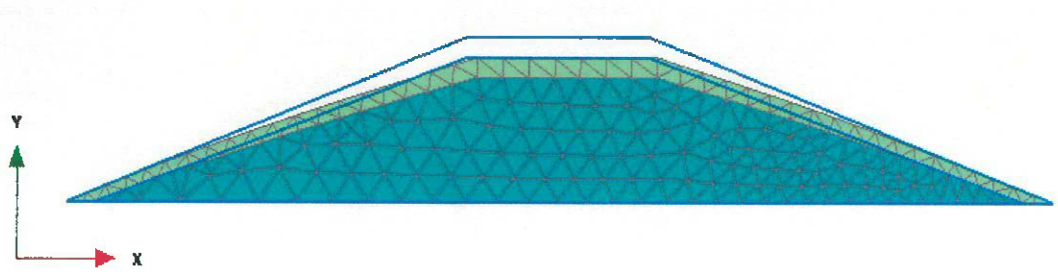

Fig. 22 Deformed finite element mesh of Project-2 dyke under pseudo-static condition

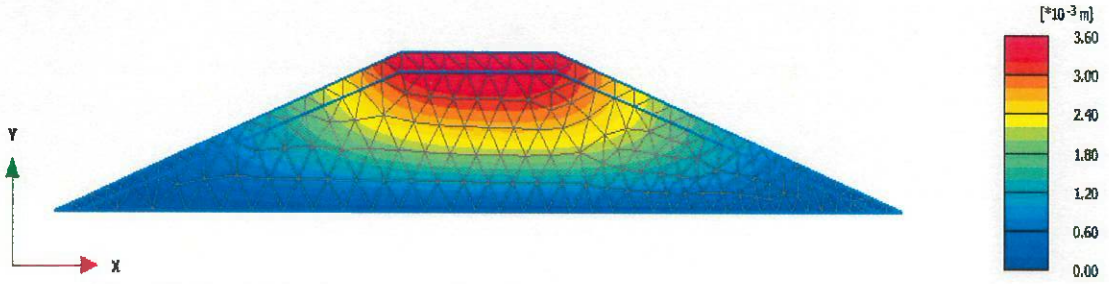

Fig. 23 Total Displacement of Project-2 dyke under pseudo-static condition

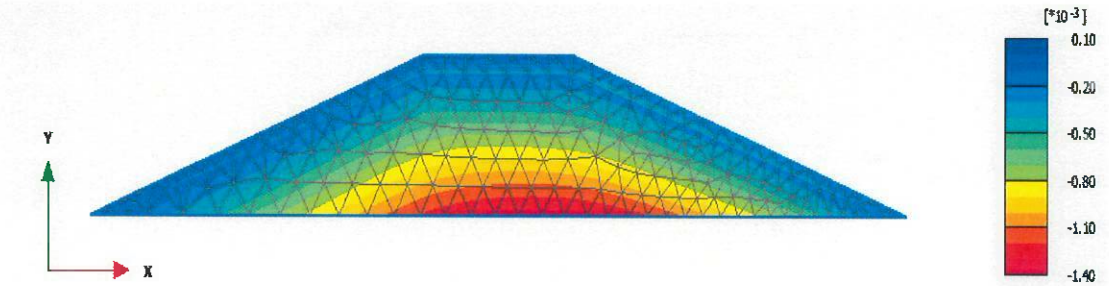

Fig. 24 Total major principal strains of Project-2 dyke under pseudo-static condition

Table 6 Results of static and pseudo-static stability analyses of ash dykes

S. No.	Description	Factor of Safety		Remarks
		Static	Pseudo-static	
1.	Ash dykes of Project 1-Lagoon A	2.2	1.7	Safe
2.	Ash dykes of Project 1-Lagoon B	2.6	1.8	Safe
3.	Ash dykes of Project-2	2.1	1.3	Safe

Summary and Recommendations

The slope stability analyses of ash dyke sections of Project 1-Lagoon A, Project 1-Lagoon B, and Project 2 were analyzed using a numerical tool called Plaxis, and results are presented in this report. Based on the material properties described in the geotechnical report and the present structural health condition of the dykes, the ash storage facilities at SEMBCORP are found to be stable under static and pseudo-static loading conditions.

22/01/2021

डॉ. दालि नायूडु आर्नेपल्लि/Dr. D. N. Arnepalli
सह प्राध्यापक/Associate Professor
सिविल इंजीनियरिंग विभाग
Department of Civil Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
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चेन्नै-६०० ०३६, भारत/Chennai-600 036, India.

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Corp. Off. : # 3-11-482/2, Plot No.1, 3rd Floor,
Sai Sadan Complex, Above Punjab National Bank,
Shiva Ganga Colony, L.B. Nagar, Hyd-500 074
Office Contact . : 9885436529
Mobile : +91 8019 58 8820
E-mail: mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram / Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.11.2022

Sample Registration No: 3052/10/22
Sample Registration Date: 01.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2022
Sampling location-1: Fire Station (Plant Site) **Lab Ref:** CL/AAQ/3052/10/22-001/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
03.10.2022	40.6	22.8	9.0	11.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	41.8	23.4	9.2	11.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	43.4	24.2	9.9	10.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	42.6	23.9	9.5	10.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	42.0	22.5	8.6	9.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	40.0	21.8	8.1	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	41.5	22.9	8.4	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	42.3	23.4	8.8	9.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**40.0**	**21.8**	**8.1**	**8.9**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**43.4**	**24.2**	**9.9**	**11.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**41.8**	**23.1**	**8.9**	**10.1**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details: -
Instrument : Fine Particulate sampler
Model / SI No : AAS-127/ 11-J-2008
Make : Ecotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

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Authorized Signatory
(P.Mamatha)
Technical Manager

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Corp. off. : # 3-11-482/2, Plot No.1, 3rd Floor,
Sadan Complex, Above Punjab National Bank,
va Ganga Colony, L.B. Nagar, Hyd-500 074.
fice Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
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SPSR Nellore (Dist.) – 524344.

Issue Date: 03.12.2022

Sample Registration No: 3493/11/22
Sample Registration Date: 30.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING – NOVEMBER 2022
Sampling location-1: Fire Station (Plant) **Lab Ref:** CL/AAQ/3493/11/22-001/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
01.11.2022	37.2	20.4	8.0	9.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.11.2022	34.5	19.6	7.8	8.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	33.2	18.4	8.2	9.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	34.4	19.0	8.7	9.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	36.5	20.7	8.8	9.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	37.2	21.5	9.8	9.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	35.4	23.2	9.5	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	36.1	22.8	9.2	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	34.2	20.6	8.6	9.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	35.9	21.8	9.0	9.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**33.2**	**18.4**	**7.8**	**8.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**37.2**	**23.2**	**9.8**	**9.9**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**35.5**	**20.8**	**8.8**	**9.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : 320-DTE-2010
Make : Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

Care Labs
assuring quality check
(Estd : 2005)
Recognized by Ministry of Environment Forest & Climate Change, Govt. of India
An NABL Accredited Laboratory, Chemical & Biological Scope.TC- 8067
Food Safety Standards Authority of India, Govt. of India
An ISO 45001 : 2018 Certified Laboratory

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Corp. off. : # 3-11-482/2, Plot No.1, 3rd Floor,
Sadan Complex, Above Punjab National Bank,
Ganga Colony, L.B. Nagar, Hyd-500 074.
Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.01.2023

Sample Registration No: 3826/12/22
Sample Registration Date: 28.12.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING – DECEMBER 2022
Sampling location-1: Fire Station (Plant) **Lab Ref:** CL/AAQ/3826/12/22-001/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
05-12-2022	33.7	21.5	8.7	9.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06-12-2022	33.2	20.9	8.2	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12-12-2022	32.4	20.0	7.9	8.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13-12-2022	31.5	21.0	7.7	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19-12-2022	31.8	20.7	7.2	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20-12-2022	29.6	19.2	6.8	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26-12-2022	30.0	19.9	7.5	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27-12-2022	29.7	19.3	7.0	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**29.6**	**19.2**	**6.8**	**7.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**33.7**	**21.5**	**8.7**	**9.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**31.4**	**20.3**	**7.6**	**8.1**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / Sl No : 320-DTE-2010
Make : Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

Care Labs
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Sai Sadan Complex, Above Punjab National Bank,
Shiva Ganga Colony, L.B. Nagar, Hyd-500 074.
Office Contact . : +91 98854 36529
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E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 02.02.2023

Sample Registration No: 4291/01/23
Sample Registration Date: 01.02.2023
Sample Particulars: AMBIENT AIR QUALITY MONITORING – JANUARY 2023
Sampling location-1: Fire Station (Plant) **Lab Ref:** CL/AAQ/4291/01/23-001/23

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
02-01-2023	30.5	20.4	7.4	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03-01-2023	31.2	22.0	7.7	8.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09-01-2023	32.0	22.4	7.2	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10-01-2023	30.6	20.4	7.0	7.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16-01-2023	30.2	19.2	7.3	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17-01-2023	31.0	20.3	7.5	8.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23-01-2023	31.5	21.0	7.9	8.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24-01-2023	30.9	20.5	7.2	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30-01-2023	31.3	20.9	7.7	8.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31-01-2023	31.1	20.6	7.0	8.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**30.2**	**19.2**	**7.0**	**7.3**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**32.0**	**22.4**	**7.9**	**8.4**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**31.0**	**20.7**	**7.3**	**8.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / Sl No : 320-DTE-2010
Make : Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

Care Labs
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(Estd : 2005)
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Corp. off. : # 3-11-482/2, Plot No.1, 3rd Floor, [illegible]adan Complex, Above Punjab National Bank, Shiva Ganga Colony, L.B. Nagar, Hyd-500 074.
Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 02.02.2023

Sample Registration No:4291/01/23
Sample Registration Date: 01.02.2023
Sample Particulars: AMBIENT AIR QUALITY MONITORING - JANUARY 2023
Sampling location-2: Pattapupalem Village **Lab Ref:** CL/AAQ/4291/01/23-002/23

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
02-01-2023	30.2	19.8	7.2	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03-01-2023	30.9	20.1	7.4	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09-01-2023	31.5	21.3	7.0	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10-01-2023	30.4	20.0	6.8	7.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16-01-2023	30.0	19.5	7.1	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17-01-2023	30.4	19.9	7.3	7.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23-01-2023	31.2	20.8	7.5	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24-01-2023	30.5	20.2	7.0	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30-01-2023	30.9	20.7	7.5	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31-01-2023	30.4	20.4	7.2	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**30.0**	**19.5**	**6.8**	**7.1**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**31.5**	**21.3**	**7.5**	**8.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**30.6**	**20.2**	**7.2**	**7.6**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**<100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/39-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

Care Labs
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Office Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 02.02.2023

Sample Registration No:4291/01/23
Sample Registration Date: 01.02.2023
Sample Particulars: AMBIENT AIR QUALITY MONITORING - JANUARY 2023
Sampling location-3: Painapuram Village **Lab Ref:** CL/AAQ/4291/01/23-003/23

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
02-01-2023	29.6	18.2	6.9	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03-01-2023	30.2	18.8	7.3	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09-01-2023	31.4	19.0	7.0	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10-01-2023	30.3	19.7	6.5	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16-01-2023	29.2	19.3	6.8	7.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17-01-2023	29.9	19.5	7.0	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23-01-2023	30.8	20.3	7.5	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24-01-2023	31.0	21.0	7.7	8.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30-01-2023	30.6	20.2	7.1	7.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31-01-2023	31.0	20.0	6.8	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**29.2**	**18.2**	**6.5**	**7.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**31.4**	**21.0**	**7.7**	**8.1**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**30.4**	**19.6**	**7.0**	**7.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/40-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 02.02.2023

Sample Registration No:4291/01/23
Sample Registration Date: 01.02.2023
Sample Particulars: AMBIENT AIR QUALITY MONITORING - JANUARY 2023
Sampling location-4: Nelaturu Village **Lab Ref:** CL/AAQ/4291/01/23-004/23

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
02-01-2023	29.1	18.8	7.1	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
03-01-2023	29.5	19.2	7.3	7.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09-01-2023	30.3	20.5	6.8	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10-01-2023	30.0	20.2	6.3	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16-01-2023	28.3	19.0	6.5	7.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17-01-2023	29.2	19.5	6.9	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23-01-2023	30.4	20.2	6.2	7.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24-01-2023	30.0	19.0	6.1	7.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30-01-2023	30.1	18.6	6.4	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31-01-2023	29.6	17.2	6.0	7.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**28.3**	**17.2**	**6.0**	**7.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**30.4**	**20.5**	**7.3**	**7.8**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**29.6**	**19.2**	**6.5**	**7.3**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/41-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

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Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

SUMMARY OF AMBIENT AIR QUALITY- JANUARY 2023

Pollutants	Description	Unit	Fire Station (Plant)-1	Pattapupalem Village-2	Painapuram Village-3	Nelaturu Village-4
PM_{10}	Minimum	µg/m³	30.2	30.0	29.2	28.3
	Maximum		32.0	31.5	31.4	30.4
	Average		31.0	30.6	30.4	29.6
	98 Percentile		31.9	31.5	31.3	30.4
$PM_{2.5}$	Minimum		19.2	19.5	18.2	17.2
	Maximum		22.4	21.3	21.0	20.5
	Average		20.7	20.2	19.6	19.2
	98 Percentile		22.3	21.2	20.9	20.5
SO_2	Minimum		7.0	6.8	6.5	6.0
	Maximum		7.9	7.5	7.7	7.3
	Average		7.3	7.2	7.0	6.5
	98 Percentile		7.9	7.5	7.7	7.3
NO_x	Minimum		7.3	7.1	7.0	7.0
	Maximum		8.4	8.0	8.1	7.8
	Average		8.0	7.6	7.5	7.3
	98 Percentile		8.4	8.0	8.1	7.8

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

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Ganga Colony, L.B. Nagar, Hyd-500 074.
Office Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.01.2023

Sample Registration No: 3826/12/22
Sample Registration Date: 28.12.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - DECEMBER 2022
Sampling location-2: Pattapupalem Village **Lab Ref:** CL/AAQ/3826/12/22-002/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
05-12-2022	33.0	20.3	8.3	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06-12-2022	32.8	20.0	7.7	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12-12-2022	32.0	19.8	7.5	8.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13-12-2022	31.1	20.1	7.4	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19-12-2022	30.9	20.5	7.0	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20-12-2022	29.0	19.3	6.5	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26-12-2022	29.4	19.0	7.0	7.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27-12-2022	29.2	18.6	6.6	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**29.0**	**18.6**	**6.5**	**7.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**33.0**	**20.5**	**8.3**	**9.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**30.9**	**19.7**	**7.2**	**7.9**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**<100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details: -
Instrument : Fine Particulate sampler
Model / SI No : APM-154/39-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.01.2023

Sample Registration No: 3826/12/22
Sample Registration Date: 28.12.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - DECEMBER 2022
Sampling location-3: Painapuram Village **Lab Ref:** CL/AAQ/3826/12/22-003/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
05-12-2022	32.4	20.0	8.0	8.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06-12-2022	32.0	19.6	7.8	8.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12-12-2022	31.6	19.1	7.2	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13-12-2022	31.0	20.0	7.3	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19-12-2022	30.5	19.6	6.9	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20-12-2022	28.6	18.2	6.4	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26-12-2022	29.0	18.8	6.7	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27-12-2022	28.8	17.9	6.3	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**28.6**	**17.9**	**6.3**	**7.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**32.4**	**20.0**	**8.0**	**8.8**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**30.4**	**19.1**	**7.0**	**7.6**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/40-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

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Authorized Signatory
(P.Mamatha)
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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.01.2023

Sample Registration No: 3826/12/22
Sample Registration Date: 28.12.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - DECEMBER 2022
Sampling location-4: Nelaturu Village **Lab Ref:** CL/AAQ/3826/12/22-004/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
05-12-2022	32.0	20.1	7.9	8.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06-12-2022	32.5	19.9	7.5	8.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12-12-2022	31.2	19.0	7.0	7.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13-12-2022	30.9	19.6	7.1	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19-12-2022	31.1	20.2	7.0	7.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20-12-2022	28.9	18.0	6.3	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26-12-2022	28.5	17.5	6.6	7.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27-12-2022	28.7	18.1	6.4	7.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**28.5**	**17.5**	**6.3**	**7.0**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**32.5**	**20.2**	**7.9**	**8.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**30.4**	**19.0**	**6.9**	**7.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/41-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

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SUMMARY OF AMBIENT AIR QUALITY- DECEMBER 2022

Pollutants	Description	Unit	Fire Station (Plant)-1	Pattapupalem Village-2	Painapuram Village-3	Nelaturu Village-4
PM_{10}	Minimum	$\mu g/m^3$	29.6	29.0	28.6	28.5
	Maximum		33.7	33.0	32.4	32.5
	Average		31.4	30.9	30.4	30.4
	98 Percentile		33.6	33.0	32.3	32.4
$PM_{2.5}$	Minimum		19.2	18.6	17.9	17.5
	Maximum		21.5	20.5	20.0	20.2
	Average		20.3	19.7	19.1	19.0
	98 Percentile		21.4	20.5	20.0	20.2
SO_2	Minimum		6.8	6.5	6.3	6.3
	Maximum		8.7	8.3	8.0	7.9
	Average		7.6	7.25	7.0	6.9
	98 Percentile		8.6	8.2	8.0	7.8
NO_x	Minimum		7.2	7.0	7.0	7.0
	Maximum		9.5	9.2	8.8	8.5
	Average		8.1	7.9	7.6	7.5
	98 Percentile		9.4	9.2	8.8	8.4

Reviewed By
(D.B.Laxmi)

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Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.12.2022

Sample Registration No: 3493/11/22
Sample Registration Date: 30.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - NOVEMBER 2022
Sampling location-2: Pattapupalem Village **Lab Ref:** CL/AAQ/3493/11/22-002/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
01.11.2022	33.6	19.1	7.5	8.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.11.2022	31.2	17.4	7.0	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	30.5	17.7	7.8	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	32.2	18.6	8.0	9.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	34.4	19.3	8.5	9.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	35.7	20.3	8.8	9.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	33.1	21.4	8.2	8.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	34.8	21.9	7.8	8.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	31.4	18.2	8.3	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	33.2	19.7	8.5	9.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**30.5**	**17.4**	**7.0**	**7.9**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**35.7**	**21.9**	**8.8**	**9.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**33.0**	**19.4**	**8.0**	**8.8**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**<100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/39-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2X660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.12.2022

Sample Registration No: 3493/11/22
Sample Registration Date: 30.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - NOVEMBER 2022
Sampling location-3: Painampuram Village **Lab Ref:** CL/AAQ/3493/11/22-003/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
01.11.2022	32.8	18.8	7.2	8.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.11.2022	31.5	18.0	6.8	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	29.9	17.1	7.0	8.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	31.8	18.0	7.7	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	33.5	19.0	8.2	9.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	36.0	20.8	9.1	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	34.1	22.0	8.9	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	35.3	22.3	8.1	8.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	33.2	18.8	8.0	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	31.5	17.6	7.8	8.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**29.9**	**17.1**	**6.8**	**7.4**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**36.0**	**22.3**	**9.1**	**9.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**33.0**	**19.2**	**7.9**	**8.6**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/40-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

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Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.12.2022

Sample Registration No: 3493/11/22
Sample Registration Date: 30.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING - NOVEMBER 2022
Sampling location-4: Nelaturu Village **Lab Ref:** CL/AAQ/3493/11/22-004/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
01.11.2022	34.1	19.6	7.7	8.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.11.2022	33.4	18.8	7.4	7.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	31.3	18.2	7.9	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	32.5	18.7	7.2	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	33.0	19.5	7.7	8.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	34.3	20.0	8.5	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	33.9	20.7	8.6	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	33.2	20.0	7.9	8.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	32.5	19.2	8.4	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	32.9	20.4	8.4	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**31.3**	**18.2**	**7.2**	**7.9**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**34.3**	**20.7**	**8.6**	**9.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg	**33.1**	**19.5**	**8.0**	**8.7**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**<60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details:-
Instrument : Fine Particulate sampler
Model / SI No : APM-154/41-DTB-2013
Make : Lata Envirotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

Care Labs
assuring quality check
(Estd : 2005)
Recognized by Ministry of Environment Forest & Climate Change, Govt. of India
An NABL Accredited Laboratory, Chemical & Biological Scope.TC- 8067
Food Safety Standards Authority of India, Govt. of India
An ISO 45001 : 2018 Certified Laboratory

Corp. off. : # 3-11-482/2, Plot No.1, 3rd Floor,
Sadan Complex, Above Punjab National Bank,
Shiv Ganga Colony, L.B. Nagar, Hyd-500 074.
Office Contact . : +91 98854 36529
Mobile : +91 80195 88820
E-mail : mail2carelabs@gmail.com
Web : www.carelabs.in

SUMMARY OF AMBIENT AIR QUALITY- NOVEMBER 2022

Pollutants	Description	Unit	Fire Station (Plant)-1	Pattapupalem Village-2	Painapuram Village-3	Nelaturu Village-4
PM_{10}	Minimum	$\mu g/m^3$	33.2	30.5	29.9	31.3
	Maximum		37.2	35.7	36.0	34.3
	Average		35.5	33.0	33.0	33.1
	98 Percentile		37.2	35.6	35.9	34.3
$PM_{2.5}$	Minimum		18.4	17.4	17.1	18.2
	Maximum		23.2	21.9	22.3	20.7
	Average		20.8	19.4	19.2	19.5
	98 Percentile		23.1	21.8	22.3	20.6
SO_2	Minimum		7.8	7.0	6.8	7.2
	Maximum		9.8	8.8	9.1	8.6
	Average		8.8	8.0	7.9	8.0
	98 Percentile		9.8	8.8	9.1	8.6
NO_x	Minimum		8.5	7.9	7.4	7.9
	Maximum		9.9	9.5	9.2	9.2
	Average		9.2	8.8	8.6	8.7
	98 Percentile		9.7	9.4	9.2	9.2

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

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Technical Manager

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Sai Sadan Complex, Above Punjab National Bank,
Shiva Ganga Colony, L.B. Nagar, Hyd-500 074
Office Contact . : 9885436529
Mobile : +91 8019 58 8820
E-mail: mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram / Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.) – 524344.

Issue Date: 03.11.2022

Sample Registration No: 3052/10/22
Sample Registration Date: 01.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2022
Sampling location-2: Pattapupalem Village **Lab Ref:** CL/AAQ/3052/10/22-002/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
03.10.2022	40.0	21.8	8.5	10.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	39.4	20.7	8.0	9.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	41.3	23.6	9.0	10.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	40.9	22.8	8.2	9.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	41.5	22.0	8.0	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	39.6	21.0	7.7	8.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	39.3	22.1	7.5	8.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	40.2	23.1	8.0	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**39.3**	**20.7**	**7.5**	**8.3**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**41.5**	**23.6**	**9.0**	**10.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**40.3**	**22.1**	**8.1**	**9.3**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details: -
Instrument : Fine Particulate sampler
Model / SI No : AAS-127/11-I-110
Make : Ecotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

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Mobile : +91 8019 58 8820
E-mail: mail2carelabs@gmail.com
Web : www.carelabs.in

17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)– 524344.

Issue Date: 03.11.2022

Sample Registration No: 3052/10/22
Sample Registration Date: 01.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2022
Sampling location-3: Painampuram village **Lab Ref:** CL/AAQ/3052/10/22-003/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
03.10.2022	39.3	20.3	7.7	9.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	38.6	20.9	8.2	9.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	40.2	23.1	8.9	10.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	41.7	24.0	9.3	9.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	41.0	21.7	8.3	8.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	39.2	20.9	7.7	8.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	40.2	21.3	8.0	8.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	41.1	22.7	8.5	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**38.6**	**20.3**	**7.7**	**8.1**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**41.7**	**24.0**	**9.3**	**10.5**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**40.2**	**21.9**	**8.3**	**9.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details: -
Instrument : Fine Particulate sampler
Model / SI No : AAS-127/11-H -105
Make : Ecotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

TEST REPORT

ISSUED TO:
M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)– 524344.

Issue Date: 03.11.2022

Sample Registration No: 3052/10/22
Sample Registration Date: 01.11.2022
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2022
Sampling location-4: Nelaturu Village **Lab Ref:** CL/AAQ/3052/10/22-004/22

TEST RESULTS

Date of Sampling	TEST PARAMETERS												
	µg/m³				mg/m³	µg/m³				ng/m³			
	PM_{10}	$PM_{2.5}$	SO_2	NO_2	CO	Pb	O_3	NH_3	C_6H_6	BaP	As	Ni	Hg
03.10.2022	39.7	20.5	8.0	9.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	39.0	21.0	8.5	9.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	42.1	23.5	9.5	10.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	41.9	23.1	9.1	9.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	41.0	21.6	8.3	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	39.3	21.5	7.9	8.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	40.7	23.0	8.2	9.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	41.7	22.9	8.1	9.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	**39.0**	**20.5**	**7.9**	**8.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Max	**42.1**	**23.5**	**9.5**	**10.2**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
Avg.	**40.7**	**22.1**	**8.5**	**9.4**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**	**BDL**
NAAQ Standards	**< 100**	**< 60**	**< 80**	**< 80**	**< 2.0**	**< 1.0**	**< 100**	**< 400**	**< 5.0**	**< 1.0**	**< 6.0**	**< 20**	**--**

Note: NAAQS: National Ambient Air Quality Standards

Instrument Details: -
Instrument : Fine Particulate sampler
Model / SI No : AAS-127BL/11-J -2009
Make : Ecotech
Calibration Due : 17.02.2023

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
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Technical Manager

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17 YEARS ANNIVERSARY
IN THE FIELD OF TESTING SERVICES

SUMMARY OF AMBIENT AIR QUALITY MONITORING- OCTOBER 2022

Pollutants	Description	Unit	Near Fire Station (Plant Site)-1	Pattapupalem Village-2	Painampuram Village-3	Nelaturu Village -4
PM_{10}	Minimum	$\mu g/m^3$	40.0	39.3	38.6	39.0
	Maximum		43.4	41.5	41.7	42.1
	Average		41.8	40.3	40.2	40.7
	98 Percentile		43.3	41.5	41.6	42.1
$PM_{2.5}$	Minimum		21.8	20.7	20.3	20.5
	Maximum		24.2	23.6	24.0	23.5
	Average		23.1	22.1	21.9	22.1
	98 Percentile		24.2	23.5	23.9	23.5
SO_2	Minimum		8.1	7.5	7.7	7.9
	Maximum		9.9	9.0	9.3	9.5
	Average		8.9	8.1	8.3	8.5
	98 Percentile		9.8	8.9	9.3	9.5
NO_2	Minimum		8.9	8.3	8.1	8.2
	Maximum		11.5	10.2	10.5	10.2
	Average		10.1	9.3	9.2	9.4
	98 Percentile		11.4	10.2	10.4	10.2

Reviewed By
(D.B.Laxmi)

CARE LABS Regd. No. 2461/05 HYDERABAD-500 074

Authorized Signatory
(P.Mamatha)
Technical Manager

BEFORE THE NATIONAL GREEN TRIBUNAL, SOUTHERN BENCH, CHENNAI

(Under Section 19 (1) of the National Green Tribunal Act, 2010 read with Rule 24 of the National green Tribunal (Practice and procedure) Rules, 2011)

I.A. NO. 16 OF 2023
IN
ORIGINAL APPLICATION NO.105 OF 2021

IN THE MATTER OF :

Thermal Power Tech. Corporation India Ltd., (TPCIL),
… APPLICANT/9TH RESPONDENT

versus

Yanati Srinivasalu Reddy & Others.
… RESPONDENTS

ADDITIONAL SUBMISSIONS PAPER BOOK ALONG WITH ANNEXURES FILED BY THE APPLICANT/NINETH RESPONDENT

THROUGH

M/s. Kapil Arora (D/1421/03),
Juvraj Singh Bindra,
Gautam S.Raman (Ms.1583/13) &
Palak Nagar (D/5755/18)

COUNSEL FOR APPLICANT / 9TH RESPONDENT

99400 71160

gautam@ramanandassociates.in /
juvraj.singh@cyrilshroff.com