



**SEIL Energy India Limited**  
(Formerly Sembcorp Energy India Limited)  
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SEIL P2/APPCB/BZA/2024/007  
24<sup>th</sup> December 2024

To  
The Member Secretary,  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIIC Colony Road,  
Gurunanak Colony, Autonagar,  
Vijayawada– 520007.

**Sub: Submission of Half Yearly CTO Compliance Report of SEIL Energy India Limited Project-2 (Formerly known as Sembcorp Energy India Limited) for the period April 2024 to September 2024**

**Ref: CFO issued vide order: APPCB/VJA/NLR/182/HO/CFO/2016 dated 14.12.2021 valid till 28.02.2027.**

Dear Sir,

This has reference to the above subject, we here by submit the Half Yearly compliance report for the period from April 2024 to September 2024 against the conditions stipulated under CTO issued to SEIL Energy India Limited Project-2 (Formerly known as Sembcorp Energy India Limited), Nellore.

Hope the above is in order.

Thanking you,

Yours faithfully,  
For M/s. **SEIL Energy India Limited,**

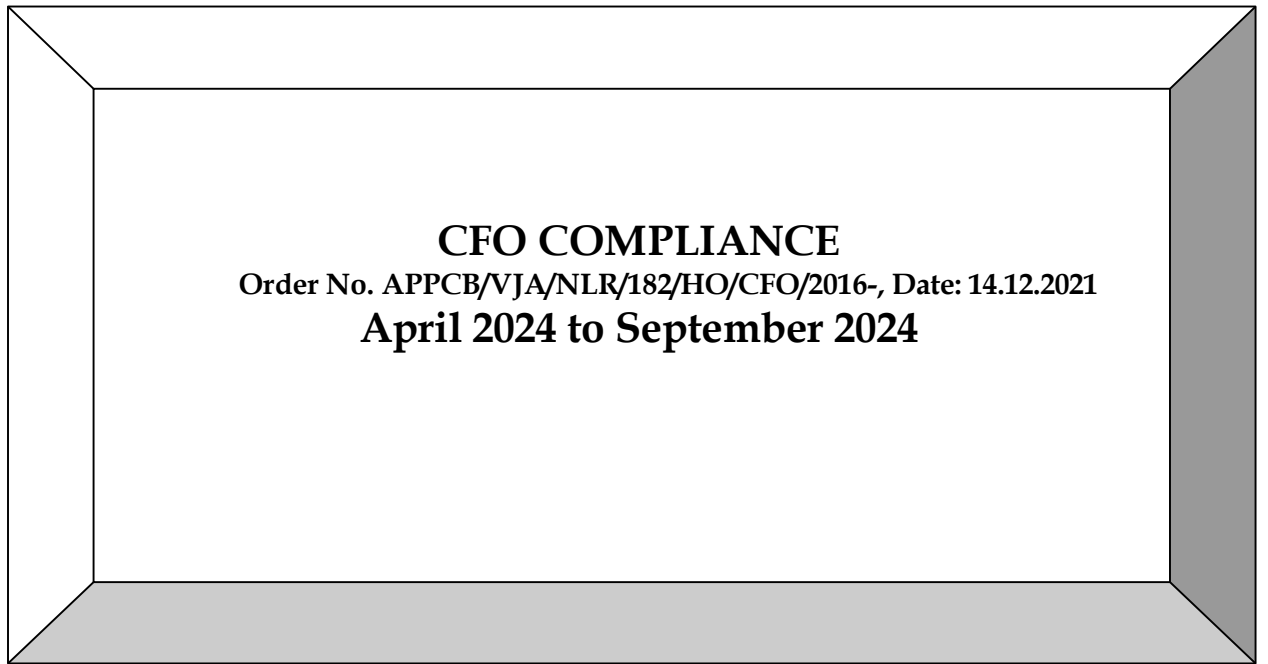
**Pavan Kumar Rao V**  
Head HSE - SEIL

Copy To: The Regional Officer, APPCB, Nellore

*M/s. SEIL Energy India Limited Project-2,  
Near Ananthavaram (V), Varakavipudi (P)  
TP Gudur (M),  
SPSR Nellore (Dist.)*


Order No. APPCB/VJA/NLR/182/HO/CFO/2016-, Date: 14.12.2021

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Compliance against CFO Conditions		
S. NO.	Condition	Compliance
SCHEDULE-A		
1.	Any up-set condition in any industrial plant/ activity of the industry, which result in, increased effluent/ emission discharge and / or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge/emission below the limits.	Complying.
2.	The industry shall carryout analysis of waste water discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.	Complying. Environment Monitoring Reports conducted by MoEF&CC approved third party are attached as Annexure-I, II, III & IV.
3.	All the rules & Regulations notified by Ministry of Law and Justice, Government of India regarding Public liability Insurance Act, 1991 shall be followed as applicable.	Complying. PLI Copy is attached as Annexure-V. (Policy Number: 03040050290400 Policy Effective from 18/04/2024 to 17/04/2025)
4.	Notwithstanding anything contained in this consent order the Board hereby reserves the right and powers to review/ revoke any and /or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.	Noted.
5.	The industry shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without prior approval from the Board.	Noted

S. NO.	Condition	Compliance
6.	The applicant shall submit Environment Statement in Form V before 30 <sup>th</sup> September every year as per Rule no.14 of E (P) Rules 1986 & amendments thereof.	Complying. Environment Statement for FY2023-24 in Form-V has been submitted to APPCB.
7.	The applicant should make applications through Online for renewal of Consent (Under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board.	Noted. Complying
8.	The industry shall immediately submit the revised application for consent to this Board in the event of any change in the raw material use, process employed, quantity of trade effluents & Quantity of emissions. Any change in the management shall be informed to the Board. The person authorize shall not let out the premises /lend/sell/transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.	Noted. Complying
9.	Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982 to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air (Prevention and Control of Pollution) Act 1981.	Noted.


S. NO.	Condition	Compliance
10.	The industry shall be liable to pay Environmental Compensation / Other Environmental Taxes, if any environmental damage caused to the surroundings, as fixed by the Collector & District Magistrate or any other component authority as per the Rules in vogue.	Noted.
11.	The industry may explore the possibility of tapping the solar energy for their energy requirements.	Noted for Compliance.
12.	The industry should educate the workers and nearby public of possible accidents and remedial measures.	Complying. Regular trainings are being given to workers. All the measures have been taken to avoid any mishap which may lead to harm outside the plant premises (Off site)
<b>SCHEDULE-B</b>		
1.	Concrete / asphalt internal roads shall be repaired/ laid within 3 months.	Complied. All internal roads were made concrete/ asphalt and being maintained. 

S. NO.	Condition	Compliance
2.	100 % fly ash utilization shall be achieved by March 2022.	<p>Complying.</p> <p>SEIL Project-2 has attained 100% fly ash utilization since November 2019. SEIL is making all out efforts to sustain 100% utilization of fly ash and achieved the same. MoUs are signed with brick manufacturers, traders, NHAI Contractors and cement plants for ash utilization.</p> <p>Dedicated Fly Ash Management Cell has been formed to have focused efforts and approach towards fly ash utilization.</p>

**Water Pollution:**

3.	The industry shall comply with the following effluent standards based on the disposal points permitted:		<p>Complying.</p> <p>ETP Outlet &amp; Marine Outfall, STP treated water analysis reports performed by MoEF&amp;CC approved third Party consultant are attached as Annexure-I.</p>		
	Outlet No.	Parameter		Limiting Standards	
	1 to 3	pH			6.5 to 8.5
		Suspended Solids			100.0 mg/L
		Oil & Grease			20.0 mg/L
		Temperature			Shall not exceeded 5 °C above the receiving water temperature
		Biochemical Oxygen Demand (3 days at 27 °C)			100 mg/L
		Chemical Oxygen Demand (COD)			250 mg/L
		Arsenic			0.01 mg/L
		Mercury			2.0 mg/L
		Lead			2.0 mg/L
		Cadmium			2.0 mg/L
	Hexavalent Chromium			1.0 mg/L	
	Bio essay test			90% survival fish after 95 hours in 100 % effluent	
	4 & 5	pH			5.5 to 9.0
Suspended Solids			200.0 mg/L		
Oil & Grease			10.0 mg/L		
Biochemical Oxygen Demand (3 days at 27 °C)			100 mg/L		



S. NO.	Condition	Compliance																						
4.	<p>The source of water is sea. The following is the permitted water consumption:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Purpose</th> <th>Quantity in m<sup>3</sup>/day</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>For Cooling Tower make up (Saline water)</td> <td>273728.0</td> </tr> <tr> <td rowspan="6">2.</td> <td>Non-cooling water – RO First pass</td> <td></td> </tr> <tr> <td>i) Clarifier</td> <td>27714.0</td> </tr> <tr> <td>ii) Misc. services</td> <td>6300.0</td> </tr> <tr> <td>RO Second pass</td> <td></td> </tr> <tr> <td>i) DM Plant</td> <td>1590.0</td> </tr> <tr> <td>ii) Domestic (Drinking Water)</td> <td>75.0</td> </tr> <tr> <td colspan="2">Total</td> <td>3,09,407.0</td> </tr> </tbody> </table>	Sl. No.	Purpose	Quantity in m <sup>3</sup> /day	1	For Cooling Tower make up (Saline water)	273728.0	2.	Non-cooling water – RO First pass		i) Clarifier	27714.0	ii) Misc. services	6300.0	RO Second pass		i) DM Plant	1590.0	ii) Domestic (Drinking Water)	75.0	Total		3,09,407.0	<p>As per the MoEF&amp;CC Notification dated 28<sup>th</sup> June 2018 under Serial No. 5B, the said water consumption limit is not applicable for sea water based Thermal Power Plants.</p> <p>However, the Sea Water withdrawal is well below the prescribed limits, i.e. 1,72,649 KLD during April 2024 to September 2024.</p>
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Total		3,09,407.0																						
5.	<p>The industry shall maintain separate digital water meters in the intake point of sea water (i.e. at sea coast) with totalizer facility unit wise to assess daily water consumption quantity instead of cumulative water consumptions.</p>	<p>Complying.</p> <p>Separate digital water meters with totalizer facility are provided for Cooling Tower make-up and Desalination system.</p> <p>Monthly totalizer readings are being captured jointly along with Port Conservator, Govt. of India in a separate log book.</p>																						
6.	<p>The industry shall maintain flow meter preferably Electro Magnetic Flow meters with totalizers for water and effluent quantity measurements for different streams of effluents and different categories of water usage stipulated in this order.</p>	<p>Complying.</p> <p>SEIL has provided separate flow meters with totalizers for quantity measurement:</p> <ul style="list-style-type: none"> <li>🚰 Sea Water Intake</li> <li>🚰 ETP Outlet</li> <li>🚰 Marine Out fall</li> <li>🚰 High Rate Solid Contact Clarifier (HRSCC) Outlet</li> <li>🚰 Cooling Tower Makeup</li> <li>🚰 Cooling Tower Blowdown</li> <li>🚰 ETP Inlet</li> <li>🚰 SPDS (Stock Pile Dust Suppression system)</li> <li>🚰 DFDS (Dry Fog Dust Suppression system)</li> </ul>																						


S. NO.	Condition	Compliance												
7.	The industry shall maintain leachate collection tank to collect the leachate from garland drain of ash pond.	<p>Complying.</p> <p>The Ash Pond is provided with garland drains all around to collect leachates, if any. Separate Leachate collection tank connected to all the garland drains of Ash Pond.</p> 												
8.	The industry shall maintain provision to collect the excess water from the ash pond into sea to control overflow of saline water from ash pond and to prevent contamination of irrigation tanks.	<p>Complying.</p> <p>SEIL has ensured adequate provision at ash pond having an overflow lagoon connected to decantation well of both lagoons and the water is recirculated back to ash handling system for reuse.</p>												
<b>Air Pollution:</b>														
9.	<p>The emissions shall not contain constituents in excess of the prescribed limits mentioned below:</p> <table border="1" data-bbox="311 1541 879 1727"> <thead> <tr> <th>Chimney No</th> <th>Parameter</th> <th>Emission standards</th> </tr> </thead> <tbody> <tr> <td rowspan="4">1&amp;2</td> <td>Particular Matter</td> <td>50 mg/Nm<sup>3</sup></td> </tr> <tr> <td>Sulphur Dioxide</td> <td>*200 mg/Nm<sup>3</sup></td> </tr> <tr> <td>Oxides of Nitrogen</td> <td>450 mg/Nm<sup>3</sup></td> </tr> <tr> <td>Mercury (Hg)</td> <td>*0.03 mg/Nm<sup>3</sup></td> </tr> </tbody> </table> <p>*The industry shall meet the SO<sub>2</sub> emission standard of 200 mg/Nm<sup>3</sup> by 31.12.2024, as per MoEF&amp;CC, GoI notification GSR No. 243 (E), dt.31.03.2021</p>	Chimney No	Parameter	Emission standards	1&2	Particular Matter	50 mg/Nm <sup>3</sup>	Sulphur Dioxide	*200 mg/Nm <sup>3</sup>	Oxides of Nitrogen	450 mg/Nm <sup>3</sup>	Mercury (Hg)	*0.03 mg/Nm <sup>3</sup>	<p>SEIL is complying with the Emission norms of Particulate Matter, NO<sub>x</sub> and mercury. Stack Emission Monitoring Reports performed by MoEF&amp;CC approved third Party consultant are attached as Annexure-II.</p> <p>SO<sub>2</sub>: SEIL is committed to commission Flue Gas Desulfurization System (FGD) to meet the SO<sub>x</sub> limits as per the latest Notifications/Directions issued as per times lines mentioned in latest notification.</p>
Chimney No	Parameter	Emission standards												
1&2	Particular Matter	50 mg/Nm <sup>3</sup>												
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	Oxides of Nitrogen	450 mg/Nm <sup>3</sup>												
	Mercury (Hg)	*0.03 mg/Nm <sup>3</sup>												





S. NO.	Condition	Compliance
10.	<p>The industry shall comply with ambient air quality standards of PM<sub>10</sub> (Particulate Matter size less than 10µm)- 100 µg/m<sup>3</sup>; PM<sub>2.5</sub> (Particulate Matter size less than 2.5 µm)- 60 µg/m<sup>3</sup>; SO<sub>2</sub>- 80 µg/m<sup>3</sup>; NO<sub>x</sub> - 80 µg/m<sup>3</sup>, outside the factory premises at the periphery of the industry.</p> <p>Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No. B-29016/20/90/PCI-I, dated 18.11.2009.</p> <p>Noise Levels:  Day time (6 AM to 10 PM)- 75 dB (A)  Night time (10 PM to 6 AM) - 70 dB (A)</p>	<p>Complying.</p> <p>SEIL is complying with Ambient Air Quality parameters as prescribed in NAAQMS Standards.</p> <p>Ambient Air Quality Monitoring reports and Noise Monitoring reports conducted by MoEF&amp;CC approved third party consultant are attached as Annexure-III.</p>
11.	<p>The industry shall comply with emission limits for DG sets of capacity up to 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.</p>	<p>Complying.</p> <p>SEIL is complying with the emission norms.</p> <p>DG stack Emissions is being monitored by MoEF&amp;CC approved third party consultant every quarter and reports attached as Annexure-VI.</p>

S. NO.	Condition	Compliance
12.	The industry shall maintain wind barriers/ wind breaking walls to the coal yards as temporary arrangement to control fugitive dust emissions on immediate surroundings.	<p>SEIL has provided wind barriers all around coal yard with 3-tier thick and tall Conocarpus trees. SEIL has transplanted adequate matured plants around coal yard as per directions given in Task force committee meeting.</p> 

S. NO.	Condition	Compliance
		<p>In addition, SEIL has installed adequate water sprinklers with water hydrant system in coal yard to mitigate fugitive emission.</p> 
13.	<p>The industry shall regularly operate water sprinklers provided to control stock yard to mitigate fugitive dust on the surroundings from coal handling area.</p>	<p>Complying.</p> <p>SEIL has installed adequate water sprinklers (<b>around 300 No's</b>) in coal yard to mitigate fugitive emission. Its Water consumption on monthly basis is being submitted to APPCB.</p> 

S. NO.	Condition	Compliance
14.	The industry shall provide & maintain necessary air pollution control systems at coal transfer points in coal conveyer system from port boundary to industry premises within 3 months.	Complying. Entire coal transportation from port boundary to industry premises is through closed pipe conveyors. All the coal transfer points (11 <b>No's</b> ) and one coal crusher are provided with bag filter (Dry Fog Dust Suppression (DFDS) System).
15.	The industry shall upgrade the air pollution control systems at coal crusher within 3 months.	Complying. Dry fog Dust suppression (DFDS) systems installed at coal crusher.  DFDS System
16.	The industry shall provide separate energy meters along with totalizer facility for each ESP.	Complying. SEIL has provided separate energy meters to monitor ESP Power Consumption.
17.	The industry shall provide FGD system to meet the SO <sub>2</sub> emission standard of 200 mg/Nm <sup>3</sup> by 31.12.2024, as per MoEF&CC, GoI notification GSR No. 243 (E), dt.31.03.2021.	SEIL is committed to commission Flue Gas Desulfurization System (FGD) to meet the SO <sub>x</sub> limits as per the latest Notifications/Directions issued.

S. NO.	Condition	Compliance												
<u>General:</u>														
18.	<p>The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board:</p> <p>a. Daily production details (ER-1 Central Excise Returns).</p> <p>b. Quantity of Effluents generated, treated, recycled/ reused and disposed.</p> <p>c. Log Books for pollution control systems.</p> <p>d. Characteristics of effluents and emissions.</p> <p>e. Hazardous/Non-Hazardous solid waste generated and disposed.</p> <p>f. Inspection book.</p> <p>g. Manifest copies of hazardous.</p>	<p>Complying.</p> <p>All such applicable records are being regularly maintained.</p>												
19.	<p>The industry shall dispose solid waste (Non-Haz) as follows</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Name of the Solid Waste</th> <th>Quantity</th> <th>Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Fly Ash</td> <td>1.50 Million Tons/ Annum</td> <td>To Cement / brick units</td> </tr> <tr> <td>2</td> <td>Bottom Ash</td> <td>0.40 Million Tons/ Annum</td> <td>To cement, brick manufacturing units. Unutilized bottom ash to ash pond in slurry mode</td> </tr> </tbody> </table>	S. No.	Name of the Solid Waste	Quantity	Disposal	1	Fly Ash	1.50 Million Tons/ Annum	To Cement / brick units	2	Bottom Ash	0.40 Million Tons/ Annum	To cement, brick manufacturing units. Unutilized bottom ash to ash pond in slurry mode	<p>Complying.</p> <p>SEIL Project-2 (Formerly Sembcorp Energy India Limited) has attained 100% fly ash utilization since November 2019.</p> <p>Wet Bottom ash is transported to ash pond in the form of slurry.</p> <p>SEIL is making all out efforts to sustain 100% utilization of fly ash and achieved the same. MoUs are signed with brick manufacturers, traders, NHAI Contractors and cement plants for ash utilization.</p> <p>Dedicated Fly Ash Management Cell has been formed to have focused efforts and approach towards 100% fly ash utilization.</p>
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2	Bottom Ash	0.40 Million Tons/ Annum	To cement, brick manufacturing units. Unutilized bottom ash to ash pond in slurry mode											


S. NO.	Condition	Compliance										
20.	<p>The industry shall operate CAAQM stations for monitoring SPM, SO<sub>2</sub>, and NO<sub>x</sub> with recording facility and maintain connectivity to PCB server.</p>	<p>Complying.</p> <p>The Ambient Air Quality of the plant area and surroundings is being continuously monitored by using 3 <b>No's of Continuous Air Quality Monitoring CAAQMS Stations</b>. The data is being uploaded to PCB server on real-time basis.</p> 										
21.	<p>The industry shall install &amp; maintain online effluent and stack monitoring systems for specified parameters as per CPCB directions dated 05.02.2014 &amp; 02.03.2015 and maintain connectivity to APPCB/CPCB websites.</p>	<p>Complying.</p> <p>SEIL has provided Online Stack Emission Monitoring system &amp; Effluent Quality Monitoring system and same is connected with the APPCB/CPCB website.</p>  <table border="1" data-bbox="1023 1711 1474 1787"> <thead> <tr> <th>Parameter</th> <th>Instantaneous Value</th> <th>Average</th> <th>Flag</th> <th>Permissible Range</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>41.00</td> <td>40.40</td> <td></td> <td>0 - 50</td> </tr> </tbody> </table>	Parameter	Instantaneous Value	Average	Flag	Permissible Range	PM10	41.00	40.40		0 - 50
Parameter	Instantaneous Value	Average	Flag	Permissible Range								
PM10	41.00	40.40		0 - 50								

S. NO.	Condition	Compliance
22.	The industry shall carryout regular calibration for the on-line stack monitoring systems and CAAQM stations with tamper proof mechanism.	Complying. Regular calibration of the CAAQMS stations along with OEM and third party is being done. Also, the CEMS system is provided with online Remote Calibration facility.
23.	The industry shall dispose 100% of fly ash generated as per the Fly ash Notification.	Complying. SEIL Project-2 has attained 100% fly ash utilization since November 2019. SEIL is making all out efforts to sustain 100% utilization of fly ash and achieved the same. MoUs are signed with brick manufacturers, traders, NHAI Contractors and cement plants for ash utilization.  Dedicated Fly Ash Management Cell has been formed to have focused efforts and approach towards 100% fly ash utilization.

24.	The industry shall develop & maintain thick green belt in an area of 315 acres all along the periphery of the industry and ash pond area.	<p>Complying.</p> <p>An area of 355 acres green belt/green cover development completed adopting scientific methods like establishment of mist chamber, drip &amp; sprinkler system, vermicompost production and application of bio pesticides. Peripheral plantation along inside of the compound wall has been taken up with 3 tier plantation.</p>    
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S. NO.	Condition	Compliance
25.	The industry shall submit a copy of policy of Public Liability Insurance (PLI) duly indicating the amount contributed towards Environmental Relief Fund (ERF) to the RO once in six months.	Complying. The copy of PLI is being submitted to APPCB Regional office on regular basis. (Policy Number: 03040050290400 Policy Effective from 18/04/2024 to 17/04/2025)  PLI Policy attached as Annexure-V.
26.	The industry shall comply with Board directions issued from time to time.	Noted.
27.	The industry shall comply with standards and directions issued by CPCB/MoEF&CC as and when notifications are issued.	Noted.
28.	The industry shall submit compliance report on the conditions mentioned in the consent order, safety audit reports, Fire NOC, Onsite/Offsite emergency plans (modification if any) every 6 months i.e. on 1 <sup>st</sup> of January and July of every year to the Regional Office/Zonal Office.	Complying. SEIL Project-2 (Formerly Sembcorp Energy India Limited) has submitted the six-monthly CFO compliance report to APPCB vide letter No. SEIL P2/APPCB/BZA/2024/003 dated 21-06-2024.

S. NO.	Condition	Compliance
<u>Special Conditions:</u>		
1.	The industry shall maintain a copy of the NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept., (APSDRFSD) at concerned Regional Office, APPCB.	Complied. Fire NOC attached as Annexure-VIII.
2.	The industry shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC, Rules, 1989 and get it approval by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit certificate at concerned Regional Office, APPCB.	Complied. Safety Audit report attached as Annexure-IX.
3.	The industry shall extend training to the working personnel for the prevention of accidents and necessary antidotes to ensure safety, as per MISHC Rules, 1989.	Complying. Safety training is being imposed to the working personnel.
4.	The industry shall carry out calibration of safety equipment and leak detection systems at regular intervals and shall certify the same with the Factories Department. That certified copy shall be submitted to the APPCB, Regional Office.	Not Applicable.
5.	The industry shall install fluorescent Wind Vane at the highest point in the industry premises.	Complied. 

S. NO.	Condition	Compliance
6.	The industry shall submit Risk analysis and risk assessment covering worst scenario clearly describing impact within the industry premises and outside the industry premises and emergency response system.	Noted and being complied.
7.	The industry shall submit the copy of the safety audit report and On-site / Off-site Emergency Plans as applicable after being certified by the Factories Department to the APPCB, Regional Office from time to time, if the storage quantity of hazardous chemicals is equal to or, in excess of the threshold quantities specified in schedule 2 & 3 of MISHC Rules, 1989.	Complying. Onsite Emergency Management Plan is in place to meet any eventuality.
SCHEDULE-C		
1.	The authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.	Complying.
2.	The authorization shall be produced for inspection at the request of an officer authorized by the state Pollution Control Board.	Noted for Compliance.
3.	The person authorized shall not rent, lend, shell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.	Noted.
4.	Any authorized change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorization.	Noted.

S. NO.	Condition	Compliance
5.	The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.	Complying. Onsite Emergency Management Plan is in place to meet any eventuality.  Periodic mock drills are being conducted.
6.	The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposed of Hazardous Waste and Penalty".	Noted for Compliance.
7.	It is duty of the authorised person to take prior permission of the pollution Control Board to close down the facility.	Noted.
8.	The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.	Complying. All the Hazardous Wastes generated are being disposed to authorized vendors through APEMC.
9.	An application for the renewal of an authorisation shall be made as laid down under these Rules.	Noted for Compliance.
10	Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.	Noted for Compliance.

S. NO.	Condition	Compliance
11.	Annual returns shall be filed by June 30 <sup>th</sup> for the period ensuring 31 <sup>st</sup> March of the year.	Complying. SEIL Project-2 has submitted the Hazardous Waste Annual returns in Form-4 to APPCB vide SEIL P2/APPCB/BZA/2024/002 dated 20-06-2024.
12.	The industry shall not store hazardous waste for more than 90 days as per the Hazardous Wastes (Management & Transboundary Movement) Rules, 2016.	Complying. Disposal of Hazardous wastes being done through APEMC Authorized Waste Receivers as per HWM rules.
13.	The industry shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.	Complying. SEIL Energy India Limited Project-2 (Formerly Sembcorp Energy India Limited) is storing the Used / Waste Oil and Used Lead Acid Batteries under a secured Hazardous Waste Storage shed and being disposed through APEMC Authorized Receivers. 

S. NO.	Condition	Compliance
14.	The industry shall maintain 7 copy manifest system for transportation of waste generated and a copy shall be submitted to concern Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.	<p>Complying.</p> <p>Hazardous wastes disposal is being done through APEMC online portal to authorized waste Receivers by following Manifest system as per HWM rules, 2016.</p> <p>Hazardous Waste Manifests are being submitted to RO, APPCB.</p> <p>TREM card is being issued to transporters during transportation.</p>
15.	The industry shall maintain proper records for Hazardous and Other Wastes stated in Authorisation in Form-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form- 4 as per Rule 20(2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.	<p>Complying.</p> <p>SEIL P-2 is maintaining Hazardous waste records in Form-3.</p> <p>SEIL Project-2 (Formerly Sembcorp Energy India Limited) has submitted the Hazardous Waste Annual returns in Form- 4 to APPCB vide SEIL P2/APPCB/BZA/2024/002 dated 20-06-2024.</p>



# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ANNEXURE-I

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: ETP OUTLET (Treated Effluent)**

**Date of Monitoring: 09.05.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0002**

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	pH	IS:3025(Part-11)1983	--	7.0	5.5-9.0
2.	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	289	2100
3.	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	45	200
4.	Chemical Oxygen Demand	IS:3025(Part-58)-1986	mg/l	40	250
5.	Biochemical Oxygen Demand (5 days at 20°C)	IS:3025(Part-44)-1993	mg/l	27	100
6.	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10

Note: IS- Indian Standard

*K.S. Raj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: ETP OUTLET (Treated Effluent)**

**Date of Monitoring: 22.08.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 28.08.2024**

**Issue Date: 28.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0002**

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	pH	IS:3025(Part-11)1983	--	6.9	5.5-9.0
2.	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	372	2100
3.	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	68	200
4.	Chemical Oxygen Demand	IS:3025(Part-58)-1986	mg/l	43	250
5.	Biochemical Oxygen Demand (5 days at 20°C)	IS:3025(Part-44)-1993	mg/l	26	100
6.	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10

Note: IS- Indian Standard

*K.S. Raj*  
Verified by



*Praveesh W.*  
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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Marine Outfall Water</b> <b>Date of Sampling: 09.05.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0001</b>

## TEST RESULT

S. NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	pH	IS:3025(Part-11)1983	--	7.7	6.5-8.5
2	Temperature Intake	--	°C	29.2	Shall not exceed 5°C above the Receiving temperature
3	Temperature Out Fall	--	°C	31.4	
4	Electric Conductivity	IS: 3025:1964	µs/cm	23568	--
5	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	18,614	--
6	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	42	100
7	Chemical Oxygen Demand	IS:3025(Part-58)-2006	mg/l	89	250
8	Biochemical Oxygen Demand (3 days at 27°C)	IS:3025(Part-44)-1993	mg/l	48	100
9	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10
10	Total Hardness as CaCO <sub>3</sub>	IS:3025(Part-21)-2012	mg/l	4201	--
11	Total Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-23)-2012	mg/l	757	--
12	P- Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-13)-1964	mg/l	Nil	--
13	Turbidity	IS:3025(Part-10)-2012	NTU	4.0	--
14	Calcium as Ca	IS:3025(Part-40)-2012	mg/l	1,290	--
15	Magnesium as Mg	IS:3025(Part-46)-2012	mg/l	221	--
16	Sodium as Na	IS:3025(Part-45)1993	mg/l	766	--

K.S.Laj  
Verified by



Praveesh W.  
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S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
17	Potassium as K	IS:3025(Part-45)1993	mg/l	289	--
18	Chloride as Cl	IS:3025(Part-32)-2012	mg/l	7,525	--
19	Sulphates as SO <sub>4</sub>	IS:3025(Part-24)-2012	mg/l	751	--
20	Nitrates as NO <sub>3</sub>	IS:3025(Part-34)-2012	mg/l	35.9	--
21	Carbonates as CO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	Nil	--
22	Bio Carbonates as HCO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	457	--
23	Iron as Fe	IS:3025(Part-53)-2012	mg/l	4.1	--
24	Fluoride as F	IS:3025(Part-60)-2012	mg/l	1.9	--
25	Copper as Cu	IS:3025(Part-42)-2012	mg/l	0.63	--
26	Manganese as Mn	IS:3025(Part-59)-2012	mg/l	0.47	--
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS:3025(Part-43)-2012	mg/l	<0.005	--
28	Cadmium as Cd	IS:3025(Part-41)-2012	mg/l	<0.005	2.0
29	Mercury as Hg	IS:3025(Part-48)-2012	mg/l	<0.001	0.01
30	Selenium as Se	IS:3025(Part-56)-2012	mg/l	<0.005	--
31	Arsenic as As	IS:3025(Part-37)-2012	mg/l	<0.01	0.2
32	Cyanide as CN	IS:3025(Part-27)-2012	mg/l	<0.01	--
33	Lead as Pb	IS:3025(Part-47)-2012	mg/l	<0.01	2.0
34	Zinc as Zn	IS:3025(Part-49)-2012	mg/l	0.44	--
35	Hexavalent Chromium as Cr <sup>+6</sup>	IS:3025(Part-38)-1964	mg/l	<0.001	1.0
36	Boron as B	IS:3025(Part-57)-2012	mg/l	0.001	--
37	Silica as SiO <sub>2</sub>	IS:3025(Part-35)-2019	mg/l	31.3	--

Note: IS- Indian Standard

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Marine Outfall Water (Fish Bio-Assay Test)</b> <b>Date of Sampling: 09.05.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0002</b>

## TEST RESULT

TEST SPECIES	SOURCE OF ORGANISM	LENGTH & WEIGHT (For Fish)	REMARKS
Zebra Fish	Through vendors	1. Length 4.7 cm 2. Weight 3.9 gm	1. Fish were not fed <u>Yes</u> 2. Temperature range in aquarium 25°C

## REFERENCE TEST DATA

START DATE: 11.05.2024 END DATE: 20.05.2024
<b>COMMENTS:</b>  The test species were undergone toxicity for about 96 Hrs.  RESULT: 97% survival of fish was noticed

**Testing:** As per M. L. Jackson & FAO –Food and Agriculture Organization

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

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<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Marine Outfall Water</b> <b>Date of Sampling: 22.08.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0001</b>

## TEST RESULT

S. NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	pH	IS:3025(Part-11)1983	--	7.2	6.5-8.5
2	Temperature Intake	--	°C	28.6	Shall not exceed 5°C above the Receiving temperature
3	Temperature Out Fall	--	°C	30.3	
4	Electric Conductivity	IS: 3025:1964	µs/cm	24174	--
5	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	17,735	--
6	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	49	100
7	Chemical Oxygen Demand	IS:3025(Part-58)-2006	mg/l	81	250
8	Biochemical Oxygen Demand (3 days at 27°C)	IS:3025(Part-44)-1993	mg/l	54	100
9	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10
10	Total Hardness as CaCO <sub>3</sub>	IS:3025(Part-21)-2012	mg/l	4423	--
11	Total Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-23)-2012	mg/l	664	--
12	P- Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-13)-1964	mg/l	Nil	--
13	Turbidity	IS:3025(Part-10)-2012	NTU	4.8	--
14	Calcium as Ca	IS:3025(Part-40)-2012	mg/l	1,174	--
15	Magnesium as Mg	IS:3025(Part-46)-2012	mg/l	256	--
16	Sodium as Na	IS:3025(Part-45)1993	mg/l	574	--

K.S.Laj  
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S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
17	Potassium as K	IS:3025(Part-45)1993	mg/l	275	--
18	Chloride as Cl	IS:3025(Part-32)-2012	mg/l	7,236	--
19	Sulphates as SO <sub>4</sub>	IS:3025(Part-24)-2012	mg/l	768	--
20	Nitrates as NO <sub>3</sub>	IS:3025(Part-34)-2012	mg/l	40.8	--
21	Carbonates as CO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	Nil	--
22	Bio Carbonates as HCO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	464	--
23	Iron as Fe	IS:3025(Part-53)-2012	mg/l	4.7	--
24	Fluoride as F	IS:3025(Part-60)-2012	mg/l	1.5	--
25	Copper as Cu	IS:3025(Part-42)-2012	mg/l	0.74	--
26	Manganese as Mn	IS:3025(Part-59)-2012	mg/l	0.53	--
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS:3025(Part-43)-2012	mg/l	<0.005	--
28	Cadmium as Cd	IS:3025(Part-41)-2012	mg/l	<0.005	2.0
29	Mercury as Hg	IS:3025(Part-48)-2012	mg/l	<0.001	0.01
30	Selenium as Se	IS:3025(Part-56)-2012	mg/l	<0.005	--
31	Arsenic as As	IS:3025(Part-37)-2012	mg/l	<0.01	0.2
32	Cyanide as CN	IS:3025(Part-27)-2012	mg/l	<0.01	--
33	Lead as Pb	IS:3025(Part-47)-2012	mg/l	<0.01	2.0
34	Zinc as Zn	IS:3025(Part-49)-2012	mg/l	0.47	--
35	Hexavalent Chromium as Cr <sup>+6</sup>	IS:3025(Part-38)-1964	mg/l	<0.001	1.0
36	Boron as B	IS:3025(Part-57)-2012	mg/l	0.001	--
37	Silica as SiO <sub>2</sub>	IS:3025(Part-35)-2019	mg/l	34.6	--

Note: IS- Indian Standard

K.S.Laj  
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P. Suresh W.  
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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Marine Outfall Water (Fish Bio-Assay Test)</b> <b>Date of Sampling: 22.08.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0002</b>

## TEST RESULT

TEST SPECIES	SOURCE OF ORGANISM	LENGTH & WEIGHT (For Fish)	REMARKS
Zebra Fish	Through vendors	1. Length 4.5 cm 2. Weight 3.8 gm	1. Fish were not fed <u>Yes</u> 2. Temperature range in aquarium 26°C

## REFERENCE TEST DATA

START DATE: 23.08.2024 END DATE: 29.08.2024
<b>COMMENTS:</b>
The test species were undergone toxicity for about 96 Hrs. RESULT: 98% survival of fish was noticed

**Testing:** As per M. L. Jackson & FAO –Food and Agriculture Organization

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: STP OUTLET</b> <b>Date of Monitoring: 09.05.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0002</b>

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	pH	IS:3025(Part-11)1983	--	7.2	5.5-9.0
2.	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	196	<2100
3.	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	46	<200
4.	Chemical Oxygen Demand	IS:3025(Part-58)-1986	mg/l	74	<250
5.	Biochemical Oxygen Demand (5 days at 20°C)	IS:3025(Part-44)-1993	mg/l	36	<100
6.	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	<10
7.	Free Residual Chlorine	APHA 23 <sup>rd</sup> Edition, 2017:4500 Cl-B	mg/l	0.1	<0.5
8.	Fecal Coliforms per 100 ml	IS:1622:1981	MPN/ 100 ml	Absent	Absent/ 100ml

**Note: IS-Indian Standard**

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## TEST REPORT

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<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: STP OUTLET</b> <b>Date of Monitoring: 22.08.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0002</b>

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	pH	IS:3025(Part-11)1983	--	7.6	5.5-9.0
2.	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	191	<2100
3.	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	53	<200
4.	Chemical Oxygen Demand	IS:3025(Part-58)-1986	mg/l	67	<250
5.	Biochemical Oxygen Demand (5 days at 20°C)	IS:3025(Part-44)-1993	mg/l	34	<100
6.	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	<10

**Note: IS-Indian Standard**

K.S.Laj  
Verified by



P. Suresh K.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD







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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ANNEXURE-II

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group: Atmospheric Pollution**

**Product: Stack Emission Monitoring- May 2024**

**Location: Unit#1 (Stack Attached to 660 MW Boiler)**

**Date of Monitoring: 09.05.2024**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0001**

## TEST RESULT

1. Time of Sampling ---- : 10:15 Hrs. to 11:10 Hrs.
2. Time Duration : 00:50 Hrs.
3. Ambient Temperature (°C) : 35.9
4. Flue gas Temperature (°C) : 147
5. Velocity of the flue gas (m/sec) : 24.58
6. C/s area of the duct (m<sup>3</sup>) : 44.17
7. Stack Diameter (m) : 7.5
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 3887843

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter (PM)	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	< 50	40.6
2.	Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	879
3.	Oxides of Nitrogen (NO <sub>x</sub> )	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	350	241
4.	Carbon Monoxide (CO)	NSPS Test Method-10	ppm	-	1.7
5.	Mercury as Hg	State of California Air Resources Board, Method10A	mg/Nm <sup>3</sup>	0.03	< 0.01

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : Sree Scientific Equipment  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram(V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group: Atmospheric Pollution**

**Product: Stack Emission Monitoring- May 2024**

**Location: Unit#2 (Stack Attached to 660 MW Boiler)**

**Date of Monitoring: 09.05.2024**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0002**

## TEST RESULT

1. Time of Sampling ---- : 11:25 Hrs. to 12:20 Hrs.
2. Time Duration : 00:55 Hrs.
3. Ambient Temperature (°C) : 35.1
4. Flue gas Temperature (°C) : 149
5. Velocity of the flue gas (m/sec) : 24.68
6. C/s area of the duct (m<sup>3</sup>) : 44.17
7. Stack Diameter (m) : 7.5
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 3873532

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter (PM)	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	< 50	36.8
2.	Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	725
3.	Oxides of Nitrogen (NO <sub>x</sub> )	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	350	321
4.	Carbon Monoxide (CO)	NSPS Test Method-10	ppm	-	1.4
5.	Mercury as Hg	State of California Air Resources Board, Method10A	mg/Nm <sup>3</sup>	0.03	<0.01

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : Sree Scientific Equipment  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



*P. Suresh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group: Atmospheric Pollution**

**Product: Stack Emission Monitoring- August 2024**

**Location: Unit#1 (Stack Attached to 660 MW Boiler)**

**Date of Monitoring: 22.08.2024**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 29.08.2024**

**Issue Date: 29.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0001**

## TEST RESULT

1. Time of Sampling ---- : 10:25 Hrs. to 11:15 Hrs.
2. Time Duration : 00:50 Hrs.
3. Ambient Temperature (°C) : 36.2
4. Flue gas Temperature (°C) : 148
5. Velocity of the flue gas (m/sec) : 24.88
6. C/s area of the duct (m<sup>3</sup>) : 44.17
7. Stack Diameter (m) : 7.5
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 3905334

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter (PM)	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	< 50	38.4
2.	Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	745
3.	Oxides of Nitrogen (NO <sub>x</sub> )	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	350	326
4.	Carbon Monoxide (CO)	NSPS Test Method-10	ppm	-	1.3
5.	Mercury as Hg	State of California Air Resources Board, Method10A	mg/Nm <sup>3</sup>	0.03	< 0.01

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : Sree Scientific Equipment  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Pavesh K.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group: Atmospheric Pollution**

**Product: Stack Emission Monitoring- August 2024**

**Location: Unit#2 (Stack Attached to 660 MW Boiler)**

**Date of Monitoring: 22.08.2024**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 29.08.2024**

**Issue Date: 29.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0002**

## TEST RESULT

1. Time of Sampling ---- : 11:35 Hrs. to 12:30 Hrs.
2. Time Duration : 00:55 Hrs.
3. Ambient Temperature (°C) : 37.5
4. Flue gas Temperature (°C) : 148
5. Velocity of the flue gas (m/sec) : 24.65
6. C/s area of the duct (m<sup>3</sup>) : 44.17
7. Stack Diameter (m) : 7.5
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 3891023

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter (PM)	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	< 50	40.2
2.	Sulphur Dioxide (SO <sub>2</sub> )	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	782
3.	Oxides of Nitrogen (NO <sub>x</sub> )	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	350	275
4.	Carbon Monoxide (CO)	NSPS Test Method-10	ppm	-	1.6
5.	Mercury as Hg	State of California Air Resources Board, Method10A	mg/Nm <sup>3</sup>	0.03	<0.01

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : Sree Scientific Equipment  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ANNEXURE-III

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Atmospheric Pollution

Product: Ambient Air Quality Monitoring – APRIL 2024

Location-1: Fire Station (Plant Site)

Sample Registration Date: 27.04.2024

Issue Date: 02.05.2024

Lab Ref: SEPL/ES/SEILEILP/04-24/0001

Sample collected person details: S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.04.2024	43.9	38.5	11.3	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.04.2024	35.1	31.8	15.9	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.04.2024	22.5	18.3	10.2	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.04.2024	36.7	34.6	17.4	7.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.04.2024	29.2	25.5	12.6	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.04.2024	34.8	32.7	19.7	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.04.2024	28.1	24.8	13.1	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.04.2024	33.6	27.4	16.5	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Min	22.5	18.3	10.2	7.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Max	43.9	38.5	19.7	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Avg.	33.0	29.2	14.6	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
98 Percentile	42.9	38.0	19.4	9.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due: 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due: 28.02.2025

K.S. Jay  
Verified by



DA  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Atmospheric Pollution

Product: Ambient Air Quality Monitoring – APRIL 2024

Location-2: Sivaramapuram village

Sample Registration Date: 27.04.2024

Issue Date: 02.05.2024

Lab Ref: SEPL/ES/SEILEILP/04-24/0002

Sample collected person details: S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.04.2024	32.6	29.1	15.9	10.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.04.2024	29.9	25.5	12.2	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.04.2024	35.3	31.8	19.5	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.04.2024	43.4	38.6	10.8	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.04.2024	34.2	27.7	9.4	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.04.2024	27.8	23.4	13.7	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.04.2024	31.7	26.9	14.3	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.04.2024	28.1	24.3	18.1	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>27.8</b>	<b>23.4</b>	<b>9.4</b>	<b>7.9</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>43.4</b>	<b>38.6</b>	<b>19.5</b>	<b>10.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>32.9</b>	<b>28.4</b>	<b>14.2</b>	<b>8.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>42.3</b>	<b>37.6</b>	<b>19.3</b>	<b>10.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



DA  
Authorized by  
Managing Director

**LABORATORY** : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035  
**Web** : www.spectraenviro.com | **E-mail**: sepl.sjn@gmail.com | info@spectraenviro.com  
**Cell**: 80199 55222, 111 | **BRANCHES**: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Atmospheric Pollution

Product: Ambient Air Quality Monitoring – APRIL 2024

Location-3: Chandrasekharapuram Village

Sample Registration Date: 27.04.2024

Issue Date: 02.05.2024

Lab Ref: SEPL/ES/SEILEILP/04-24/0003

Sample collected person details: S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.04.2024	25.4	21.1	9.2	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.04.2024	38.9	34.8	8.6	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.04.2024	31.2	28.5	7.4	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.04.2024	26.5	24.6	9.3	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.04.2024	39.7	36.4	8.1	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.04.2024	27.3	23.7	9.5	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.04.2024	33.1	27.9	8.8	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.04.2024	32.6	29.3	9.7	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Min	25.4	21.1	7.4	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Max	39.7	36.4	9.7	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
Avg.	31.8	28.3	8.8	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
98 Percentile	39.6	36.2	9.7	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due: 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



DA  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Atmospheric Pollution

Product: Ambient Air Quality Monitoring – APRIL 2024

Location-4: Varakavipudi Village

Sample Registration Date: 27.04.2024

Issue Date: 02.05.2024

Lab Ref: SEPL/ES/SEILEILP/04-24/0004

Sample collected person details: S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.04.2024	38.2	35.5	9.6	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.04.2024	35.6	28.9	8.2	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.04.2024	22.5	18.3	7.7	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.04.2024	36.7	27.4	8.5	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.04.2024	27.3	24.7	8.9	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.04.2024	29.8	19.8	9.4	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.04.2024	34.4	26.6	8.8	7.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.04.2024	23.1	17.2	9.1	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>22.5</b>	<b>17.2</b>	<b>7.7</b>	<b>7.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>38.2</b>	<b>35.5</b>	<b>9.6</b>	<b>9.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>31.0</b>	<b>24.8</b>	<b>8.8</b>	<b>8.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>38.0</b>	<b>34.6</b>	<b>9.6</b>	<b>9.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due: 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due: 28.02.2025

K.S. Iyengar  
Verified by



DA  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

Web : www.spectraenviro.com | E-mail: sepl.sjn@gmail.com | info@spectraenviro.com

Cell: 80199 55222, 111 | BRANCHES: VIJAYAWADA | HYDERABAD







# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-9903)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –APRIL 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	µg/m <sup>3</sup>	22.5	27.8	25.4	22.5
	Maximum		43.9	43.4	39.7	38.2
	Average		32.9	32.9	31.8	31.0
	98 Percentile		42.9	42.3	39.6	38.0
PM <sub>2.5</sub>	Minimum		18.3	23.4	21.1	17.2
	Maximum		38.5	38.6	36.4	35.5
	Average		29.2	28.4	28.3	24.8
	98 Percentile		38.0	37.6	36.2	34.6
SO <sub>2</sub>	Minimum		10.2	9.4	7.4	7.7
	Maximum		19.7	19.5	9.7	9.6
	Average		14.6	14.2	8.8	8.8
	98 Percentile		19.4	19.3	9.7	9.6
NO <sub>x</sub>	Minimum		7.5	7.9	8.4	7.3
	Maximum		9.9	10.3	9.7	9.2
	Average		8.7	8.7	8.9	8.4
	98 Percentile		9.8	10.1	9.6	9.1

K.S. Jay  
Verified by



DA  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035  
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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical  
**Group:** Atmospheric Pollution  
**Product:** Ambient Air Quality Monitoring – MAY 2024  
**Location-1:** Fire Station (Plant Site)

**Sample Registration Date:** 01.06.2024  
**Issue Date:** 07.06.2024  
**Lab Ref:** SEPL/ES/SEILEILP/05-24/0001  
**Sample collected person details:** S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
02.05.2024	41.9	36.4	17.5	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
03.05.2024	28.5	25.8	11.3	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.05.2024	32.1	29.2	14.9	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
10.05.2024	39.6	37.6	18.6	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.05.2024	25.4	21.9	15.4	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
17.05.2024	33.8	28.3	10.2	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.05.2024	26.2	23.1	16.7	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
24.05.2024	37.7	37.5	13.8	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.05.2024	39.3	34.7	19.2	10.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
31.05.2024	31.4	29.3	12.1	9.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>25.4</b>	<b>21.9</b>	<b>10.2</b>	<b>7.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>41.9</b>	<b>37.6</b>	<b>19.2</b>	<b>10.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>33.6</b>	<b>30.4</b>	<b>15.0</b>	<b>9.0</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>41.5</b>	<b>37.6</b>	<b>19.1</b>	<b>10.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – MAY 2024

**Location-2:** Sivaramapuram village

**Sample Registration Date:** 01.06.2024

**Issue Date:** 07.06.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULTS

Date Of Sampling	µg/m <sup>3</sup>				mg/m <sup>3</sup>	µg/m <sup>3</sup>				ng/m <sup>3</sup>		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
02.05.2024	35.1	31.8	17.2	9.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
03.05.2024	42.6	37.6	12.6	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.05.2024	33.9	28.1	15.9	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
10.05.2024	41.3	39.4	11.3	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.05.2024	37.2	34.5	9.8	7.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
17.05.2024	29.5	25.9	16.4	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.05.2024	36.4	33.2	10.1	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
24.05.2024	28.8	26.7	19.7	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.05.2024	34.7	32.5	18.5	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
31.05.2024	40.3	38.4	13.5	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>28.8</b>	<b>25.9</b>	<b>9.8</b>	<b>7.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>42.6</b>	<b>39.4</b>	<b>19.7</b>	<b>9.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>36.0</b>	<b>32.8</b>	<b>14.5</b>	<b>8.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>42.4</b>	<b>39.2</b>	<b>19.5</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – MAY 2024

**Location-3:** Chandrasekharapuram Village

**Sample Registration Date:** 01.06.2024

**Issue Date:** 07.06.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0003

**Sample collected person details:** S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
02.05.2024	29.3	27.9	9.8	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
03.05.2024	35.5	31.4	8.3	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.05.2024	24.4	22.7	7.6	9.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
10.05.2024	28.3	24.6	9.1	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.05.2024	37.6	36.2	8.7	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
17.05.2024	26.8	23.5	9.2	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.05.2024	36.4	28.1	8.5	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
24.05.2024	38.7	35.2	7.9	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.05.2024	32.1	29.8	10.4	7.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
31.05.2024	25.9	19.3	9.5	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>24.4</b>	<b>19.3</b>	<b>7.6</b>	<b>7.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>38.7</b>	<b>36.2</b>	<b>10.4</b>	<b>9.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>31.5</b>	<b>27.9</b>	<b>8.9</b>	<b>8.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>38.5</b>	<b>36.0</b>	<b>10.3</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

### ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – MAY 2024

**Location-4:** Varakavipudi Village

**Sample Registration Date:** 01.06.2024

**Issue Date:** 07.06.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0004

**Sample collected person details:** S. Ganesh

## TEST RESULTS

Date Of Sampling	µg/m <sup>3</sup>				mg/m <sup>3</sup>	µg/m <sup>3</sup>				ng/m <sup>3</sup>		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
02.05.2024	35.7	37.4	9.1	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
03.05.2024	39.2	35.6	7.5	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.05.2024	28.6	26.9	7.9	7.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
10.05.2024	33.3	29.2	8.3	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.05.2024	24.5	18.7	8.6	7.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
17.05.2024	27.9	24.1	7.2	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.05.2024	36.4	32.8	8.7	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
24.05.2024	25.8	22.3	9.4	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.05.2024	33.1	30.9	10.4	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
31.05.2024	21.2	21.5	9.8	9.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>21.2</b>	<b>18.7</b>	<b>7.2</b>	<b>7.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>39.2</b>	<b>37.4</b>	<b>10.4</b>	<b>9.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>30.6</b>	<b>27.9</b>	<b>8.6</b>	<b>8.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>38.7</b>	<b>37.1</b>	<b>10.2</b>	<b>9.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –MAY 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	μg/m <sup>3</sup>	25.4	28.8	24.4	21.2
	Maximum		41.9	42.6	38.7	39.2
	Average		33.6	36.0	31.5	30.6
	98 Percentile		41.5	42.4	38.5	38.7
PM <sub>2.5</sub>	Minimum		21.9	25.9	19.3	18.7
	Maximum		37.6	39.4	36.2	37.4
	Average		30.4	32.8	27.9	27.9
	98 Percentile		37.6	39.2	36.0	37.1
SO <sub>2</sub>	Minimum		10.2	9.8	7.6	7.2
	Maximum		19.2	19.7	10.4	10.4
	Average		15.0	14.5	8.9	8.6
	98 Percentile		19.1	19.5	10.3	10.2
NO <sub>x</sub>	Minimum		7.6	7.1	7.2	7.1
	Maximum		10.1	9.8	9.8	9.5
	Average		9.0	8.6	8.6	8.4
	98 Percentile		10.1	9.7	9.7	9.5

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)

Cell: 80199 55222, 111 | BRANCHES: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JUNE 2024

**Location-1:** Fire Station (Plant Site)

**Sample Registration Date:** 01.07.2024

**Issue Date:** 08.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/06-24/0001

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
06.06.2024	39.2	22.6	11.3	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
07.06.2024	41.9	24.4	13.5	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.06.2024	46.5	21.1	15.7	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
14.06.2024	38.1	25.7	12.2	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.06.2024	45.7	23.9	13.4	7.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
21.06.2024	47.6	22.5	10.9	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.06.2024	36.3	24.8	14.6	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
28.06.2024	44.4	21.2	12.1	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.3</b>	<b>21.1</b>	<b>10.9</b>	<b>7.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>47.6</b>	<b>25.7</b>	<b>15.7</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.5</b>	<b>23.3</b>	<b>13.0</b>	<b>8.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	39.2	22.6	11.3	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JUNE 2024

**Location-2:** Sivaramapuram village

**Sample Registration Date:** 01.07.2024

**Issue Date:** 08.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/06-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	µg/m <sup>3</sup>				mg/m <sup>3</sup>	µg/m <sup>3</sup>				ng/m <sup>3</sup>		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
06.06.2024	43.5	21.4	12.2	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
07.06.2024	39.2	24.7	14.5	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.06.2024	36.7	20.2	11.4	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
14.06.2024	48.4	23.6	15.7	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.06.2024	35.1	22.8	13.9	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
21.06.2024	44.3	23.5	10.3	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.06.2024	42.6	24.3	13.8	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
28.06.2024	37.8	25.9	11.1	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>35.1</b>	<b>20.2</b>	<b>10.3</b>	<b>8.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>48.4</b>	<b>25.9</b>	<b>15.7</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>41.0</b>	<b>23.3</b>	<b>12.9</b>	<b>8.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>47.8</b>	<b>25.7</b>	<b>15.5</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Iyengar  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD







# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JUNE 2024

**Location-3:** Chandrasekharapuram Village

**Sample Registration Date:** 01.07.2024

**Issue Date:** 08.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/06-24/0003

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
06.06.2024	36.8	24.6	13.3	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
07.06.2024	44.2	20.2	15.6	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.06.2024	41.6	25.9	11.1	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
14.06.2024	38.7	23.5	14.5	7.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.06.2024	47.5	23.3	13.8	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
21.06.2024	45.1	21.7	12.7	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.06.2024	42.9	22.1	15.4	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
28.06.2024	39.4	21.5	13.4	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.8</b>	<b>20.2</b>	<b>11.1</b>	<b>7.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>47.5</b>	<b>25.9</b>	<b>15.6</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.0</b>	<b>23.0</b>	<b>13.7</b>	<b>8.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>47.2</b>	<b>25.7</b>	<b>15.6</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JUNE 2024

**Location-4:** Varakavipudi Village

**Sample Registration Date:** 01.07.2024

**Issue Date:** 08.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/06-24/0004

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
06.06.2024	48.4	24.2	12.6	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
07.06.2024	46.6	22.8	14.5	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.06.2024	39.3	20.9	12.4	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
14.06.2024	42.5	23.5	13.7	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.06.2024	44.7	21.4	15.3	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
21.06.2024	35.8	23.7	11.2	7.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.06.2024	39.2	25.6	14.8	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
28.06.2024	43.1	21.3	13.9	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>35.8</b>	<b>20.9</b>	<b>11.2</b>	<b>7.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>48.4</b>	<b>25.6</b>	<b>15.3</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.5</b>	<b>22.9</b>	<b>13.6</b>	<b>8.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>48.1</b>	<b>25.4</b>	<b>15.2</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –JUNE 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	µg/m <sup>3</sup>	36.3	35.1	36.8	35.8
	Maximum		47.6	48.4	47.5	48.4
	Average		42.4	41.0	42.0	42.5
	98 Percentile		47.4	47.8	47.2	48.1
PM <sub>2.5</sub>	Minimum		21.1	20.2	20.2	20.9
	Maximum		25.7	25.9	25.9	25.6
	Average		23.3	23.3	23.0	22.9
	98 Percentile		25.6	25.7	25.7	25.4
SO <sub>2</sub>	Minimum		10.9	10.3	11.1	11.2
	Maximum		15.7	15.7	15.6	15.3
	Average		13.0	12.9	13.7	13.6
	98 Percentile		15.5	15.5	15.6	15.2
NO <sub>x</sub>	Minimum		7.2	8.1	7.5	7.3
	Maximum		9.7	9.6	9.7	9.7
	Average		8.6	8.8	8.6	8.5
	98 Percentile		9.7	9.6	9.7	9.6

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical  
**Group:** Atmospheric Pollution  
**Product:** Ambient Air Quality Monitoring – JULY 2024  
**Location-1:** Fire Station (Plant Site)

**Sample Registration Date:** 27.07.2024  
**Issue Date:** 31.07.2024  
**Lab Ref:** SEPL/ES/SEILEILP/07-24/0001  
**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	µg/m <sup>3</sup>				mg/m <sup>3</sup>	µg/m <sup>3</sup>				ng/m <sup>3</sup>		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.07.2024	49.5	23.9	12.5	7.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.07.2024	45.2	24.3	14.2	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.07.2024	35.1	22.2	13.3	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.07.2024	37.3	24.5	10.1	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.07.2024	48.9	23.1	12.6	7.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.07.2024	42.1	21.4	13.7	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.07.2024	44.6	23.6	14.8	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.07.2024	36.2	22.8	11.4	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>35.1</b>	<b>21.4</b>	<b>10.1</b>	<b>7.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>49.5</b>	<b>24.5</b>	<b>14.8</b>	<b>9.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.4</b>	<b>23.2</b>	<b>12.8</b>	<b>8.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>49.4</b>	<b>24.5</b>	<b>14.7</b>	<b>9.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



P. Suresh K.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),

Near Ananthavaram (V), Thotapalli Gudur (M),

SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JULY 2024

**Location-2:** Sivaramapuram village

**Sample Registration Date:** 27.07.2024

**Issue Date:** 31.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/07-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.07.2024	41.2	20.5	12.2	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.07.2024	38.4	24.7	14.5	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.07.2024	31.3	25.2	11.4	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.07.2024	45.7	21.6	15.7	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.07.2024	36.3	25.8	13.9	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.07.2024	42.1	23.5	10.3	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.07.2024	48.8	22.3	13.8	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.07.2024	35.6	25.9	11.1	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>31.3</b>	<b>20.5</b>	<b>10.3</b>	<b>8.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>48.8</b>	<b>25.9</b>	<b>15.7</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>39.9</b>	<b>23.7</b>	<b>12.9</b>	<b>8.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>48.4</b>	<b>25.9</b>	<b>15.5</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JULY 2024

**Location-3:** Chandrasekharapuram Village

**Sample Registration Date:** 27.07.2024

**Issue Date:** 31.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/07-24/0003

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.07.2024	45.1	21.9	18.6	7.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.07.2024	36.5	23.4	15.4	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.07.2024	46.8	22.2	11.7	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.07.2024	39.7	20.6	14.5	7.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.07.2024	44.2	24.1	13.3	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.07.2024	47.4	21.7	12.2	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.07.2024	41.1	23.3	15.8	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.07.2024	38.6	24.5	16.3	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.5</b>	<b>20.6</b>	<b>11.7</b>	<b>7.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>47.4</b>	<b>24.5</b>	<b>18.6</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.4</b>	<b>22.7</b>	<b>14.7</b>	<b>8.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>47.3</b>	<b>24.4</b>	<b>18.3</b>	<b>9.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – JULY 2024

**Location-4:** Varakavipudi Village

**Sample Registration Date:** 27.07.2024

**Issue Date:** 31.07.2024

**Lab Ref:** SEPL/ES/SEILEILP/07-24/0004

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
04.07.2024	44.6	23.2	10.9	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
05.07.2024	41.2	21.9	11.2	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
11.07.2024	35.4	23.4	13.7	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.07.2024	47.5	24.5	17.4	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
18.07.2024	40.8	22.1	14.5	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.07.2024	39.3	25.8	13.8	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
25.07.2024	44.1	20.3	11.3	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.07.2024	45.7	23.6	15.1	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>35.4</b>	<b>20.3</b>	<b>10.9</b>	<b>7.6</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>47.5</b>	<b>25.8</b>	<b>17.4</b>	<b>9.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.3</b>	<b>23.1</b>	<b>13.5</b>	<b>8.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>47.2</b>	<b>25.6</b>	<b>17.1</b>	<b>9.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –JULY 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	µg/m <sup>3</sup>	35.1	31.3	36.5	35.4
	Maximum		49.5	48.8	47.4	47.5
	Average		42.3	39.9	42.4	42.3
	98 Percentile		49.4	48.4	47.3	47.2
PM <sub>2.5</sub>	Minimum		21.4	20.5	20.6	20.3
	Maximum		24.5	25.9	24.5	25.8
	Average		23.2	23.7	22.7	23.1
	98 Percentile		24.5	25.9	24.4	25.6
SO <sub>2</sub>	Minimum		10.1	10.3	11.7	10.9
	Maximum		14.8	15.7	18.6	17.4
	Average		12.8	12.9	14.7	13.5
	98 Percentile		14.7	15.5	18.3	17.1
NO <sub>x</sub>	Minimum		7.3	8.1	7.5	7.6
	Maximum		9.2	9.6	9.7	9.3
	Average		8.4	8.8	8.5	8.8
	98 Percentile		9.2	9.6	9.6	9.3

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/S. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – AUGUST 2024

**Location-1:** Fire Station (Plant Site)

**Sample Registration Date:** 02.09.2024

**Issue Date:** 09.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0001

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
01.08.2024	43.6	22.3	12.3	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
02.08.2024	38.5	23.1	10.4	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
08.08.2024	31.2	20.1	13.6	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.08.2024	35.3	22.6	15.7	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
15.08.2024	37.4	23.7	12.8	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.08.2024	30.2	21.7	13.6	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
22.08.2024	46.8	24.5	15.7	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.08.2024	35.7	20.9	14.7	7.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
29.08.2024	37.3	21.7	12.3	9.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.08.2024	43.6	25.7	11.7	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>30.2</b>	<b>20.1</b>	<b>10.4</b>	<b>7.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>46.8</b>	<b>25.7</b>	<b>15.7</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>38.0</b>	<b>22.6</b>	<b>13.3</b>	<b>8.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>46.2</b>	<b>25.5</b>	<b>15.7</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – AUGUST 2024

**Location-2:** Sivaramapuram village

**Sample Registration Date:** 02.09.2024

**Issue Date:** 09.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
01.08.2024	39.5	22.4	15.9	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
02.08.2024	42.7	20.3	11.4	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
08.08.2024	49.8	24.5	14.5	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.08.2024	45.7	23.6	13.6	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
15.08.2024	38.2	20.5	12.7	7.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.08.2024	36.1	21.2	13.6	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
22.08.2024	39.8	24.7	11.2	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.08.2024	48.7	22.6	15.7	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
29.08.2024	37.4	21.7	13.1	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.08.2024	43.6	23.4	14.5	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.1</b>	<b>20.3</b>	<b>11.2</b>	<b>7.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>49.8</b>	<b>24.7</b>	<b>15.9</b>	<b>9.9</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.2</b>	<b>22.5</b>	<b>13.6</b>	<b>8.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>49.6</b>	<b>24.7</b>	<b>15.9</b>	<b>9.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



P. Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – AUGUST 2024

**Location-3:** Chandrasekharapuram Village

**Sample Registration Date:** 02.09.2024

**Issue Date:** 09.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0003

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
01.08.2024	39.8	23.6	15.2	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
02.08.2024	36.3	25.4	11.4	7.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
08.08.2024	41.7	20.2	14.6	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.08.2024	45.7	23.7	11.7	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
15.08.2024	39.6	21.5	13.7	8.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.08.2024	40.2	24.8	10.8	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
22.08.2024	37.5	20.3	12.4	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.08.2024	44.3	22.4	14.7	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
29.08.2024	48.7	23.2	13.6	7.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.08.2024	41.2	24.7	11.7	8.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.3</b>	<b>20.2</b>	<b>10.8</b>	<b>7.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>48.7</b>	<b>25.4</b>	<b>15.2</b>	<b>9.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>41.5</b>	<b>23.0</b>	<b>13.0</b>	<b>8.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>48.2</b>	<b>25.3</b>	<b>15.1</b>	<b>9.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S. Jay  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – AUGUST 2024

**Location-4:** Varakavipudi Village

**Sample Registration Date:** 02.09.2024

**Issue Date:** 09.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0004

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
01.08.2024	39.4	21.2	12.4	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
02.08.2024	45.7	23.2	14.3	9.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
08.08.2024	52.3	21.7	11.5	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
09.08.2024	47.1	25.6	13.9	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
15.08.2024	55.3	22.7	12.7	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
16.08.2024	48.9	24.6	15.1	7.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
22.08.2024	41.7	20.8	12.7	7.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
23.08.2024	46.3	22.7	11.2	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
29.08.2024	40.2	25.1	10.9	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
30.08.2024	48.8	24.9	14.6	9.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>39.4</b>	<b>20.8</b>	<b>10.9</b>	<b>7.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>55.3</b>	<b>25.6</b>	<b>15.1</b>	<b>9.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>46.6</b>	<b>23.3</b>	<b>12.9</b>	<b>8.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>54.8</b>	<b>25.5</b>	<b>15.0</b>	<b>9.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –AUGUST 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	μg/m <sup>3</sup>	30.2	36.1	36.3	39.4
	Maximum		46.8	49.8	48.7	55.3
	Average		38.0	42.2	41.5	46.6
	98 Percentile		46.2	49.6	48.2	54.8
PM <sub>2.5</sub>	Minimum		20.1	20.3	20.2	20.8
	Maximum		25.7	24.7	25.4	25.6
	Average		22.6	22.5	23.0	23.3
	98 Percentile		25.5	24.7	25.3	25.5
SO <sub>2</sub>	Minimum		10.4	11.2	10.8	10.9
	Maximum		15.7	15.9	15.2	15.1
	Average		13.3	13.6	13.0	12.9
	98 Percentile		15.7	15.9	15.1	15.0
NO <sub>x</sub>	Minimum		7.3	7.2	7.7	7.5
	Maximum		9.7	9.9	9.3	9.4
	Average		8.8	8.5	8.5	8.4
	98 Percentile		9.7	9.8	9.3	9.3

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – SEPTEMBER 2024

**Location-1:** Fire Station (Plant Site)

**Sample Registration Date:** 28.09.2024

**Issue Date:** 05.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/09-24/0001

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
05.09.2024	49.6	23.6	15.6	9.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
06.09.2024	36.5	25.9	13.8	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.09.2024	42.8	24.2	12.7	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.09.2024	46.2	20.1	14.9	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.09.2024	38.1	24.8	13.2	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.09.2024	45.7	22.3	14.1	9.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.09.2024	41.3	23.5	15.4	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.09.2024	37.4	21.7	13.5	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>36.5</b>	<b>20.1</b>	<b>12.7</b>	<b>7.9</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>49.6</b>	<b>25.9</b>	<b>15.6</b>	<b>9.9</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.2</b>	<b>23.3</b>	<b>14.2</b>	<b>8.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>49.1</b>	<b>25.7</b>	<b>15.6</b>	<b>9.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	20

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Details:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – SEPTEMBER 2024

**Location-2:** Sivaramapuram village

**Sample Registration Date:** 28.09.2024

**Issue Date:** 05.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/09-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
05.09.2024	44.2	22.5	11.9	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
06.09.2024	47.6	23.6	13.4	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.09.2024	39.4	22.7	15.8	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.09.2024	37.1	24.2	12.9	7.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.09.2024	46.3	21.4	14.6	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.09.2024	48.8	23.8	12.3	9.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.09.2024	41.5	22.1	13.1	8.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.09.2024	38.7	23.3	14.7	7.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>37.1</b>	<b>21.4</b>	<b>11.9</b>	<b>7.2</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>48.8</b>	<b>24.2</b>	<b>15.8</b>	<b>9.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>43.0</b>	<b>23.0</b>	<b>13.6</b>	<b>8.3</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>48.6</b>	<b>24.1</b>	<b>15.6</b>	<b>9.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220831  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQM-60/220518  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – SEPTEMBER 2024

**Location-3:** Chandrasekharapuram Village

**Sample Registration Date:** 28.09.2024

**Issue Date:** 05.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/09-24/0003

**Sample collected person details:** S. Ganesh

## TEST RESULT

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
05.09.2024	46.5	25.3	13.1	8.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
06.09.2024	41.6	21.9	10.7	8.2	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.09.2024	40.9	23.4	12.5	9.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.09.2024	44.1	21.7	14.7	7.4	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.09.2024	42.2	24.6	11.6	8.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.09.2024	43.4	23.8	12.8	9.7	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.09.2024	38.3	23.1	13.2	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.09.2024	45.7	25.5	15.4	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>38.3</b>	<b>21.7</b>	<b>10.7</b>	<b>7.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>46.5</b>	<b>25.5</b>	<b>15.4</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>42.8</b>	<b>23.7</b>	<b>13.0</b>	<b>8.5</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>46.4</b>	<b>25.5</b>	<b>15.3</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD







# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline:** Chemical

**Group:** Atmospheric Pollution

**Product:** Ambient Air Quality Monitoring – SEPTEMBER 2024

**Location-4:** Varakavipudi Village

**Sample Registration Date:** 28.09.2024

**Issue Date:** 05.09.2024

**Lab Ref:** SEPL/ES/SEILEILP/09-24/0004

**Sample collected person details:** S. Ganesh

## TEST RESULTS

Date Of Sampling	$\mu\text{g}/\text{m}^3$				$\text{mg}/\text{m}^3$	$\mu\text{g}/\text{m}^3$				$\text{ng}/\text{m}^3$		
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	Pb	O <sub>3</sub>	NH <sub>3</sub>	C <sub>6</sub> H <sub>6</sub>	BaP	As	Ni
05.09.2024	43.7	22.3	14.5	8.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
06.09.2024	46.2	23.4	11.1	9.8	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
12.09.2024	37.4	21.1	13.4	7.1	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
13.09.2024	45.5	24.6	12.9	8.5	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
19.09.2024	44.1	23.5	14.2	8.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
20.09.2024	46.2	22.7	13.3	7.9	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
26.09.2024	42.8	24.9	13.5	9.3	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
27.09.2024	38.6	20.8	12.8	7.6	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Min</b>	<b>37.4</b>	<b>20.8</b>	<b>11.1</b>	<b>7.1</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Max</b>	<b>46.2</b>	<b>24.9</b>	<b>14.5</b>	<b>9.8</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>Avg.</b>	<b>43.1</b>	<b>22.9</b>	<b>13.2</b>	<b>8.4</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
<b>98 Percentile</b>	<b>46.2</b>	<b>24.9</b>	<b>14.5</b>	<b>9.7</b>	<1.5	<0.04	<5	<5	<2	<0.5	<1	<10
NAAQ Standards	100	60	80	80	2.0	1.0	100	400	5.0	1.0	6.0	2.0

### Instruments Details:

Instrument : Fine Particulate sampler  
Model/SI NO : AAQ510 / 220830  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

### Instruments Detail:

Instrument : Respirable Dust sampler  
Model/SI NO : AAQ510 MFC / 220723  
Make : SSE (Shree Scientific Equipment)  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## SUMMARY OF AMBIENT AIR QUALITY –SEPTEMBER 2024

Pollutants	Description	Unit	Fire Station (Plant)-1	Sivaramapuram Village-2	Chandra sekharapuram Village-3	Varakavipudi Village-4
PM <sub>10</sub>	Minimum	μg/m <sup>3</sup>	36.5	37.1	38.3	37.4
	Maximum		49.6	48.8	46.5	46.2
	Average		42.2	43.0	42.8	43.1
	98 Percentile		49.1	48.6	46.4	46.2
PM <sub>2.5</sub>	Minimum		20.1	21.4	21.7	20.8
	Maximum		25.9	24.2	25.5	24.9
	Average		23.3	23.0	23.7	22.9
	98 Percentile		25.7	24.1	25.5	24.9
SO <sub>2</sub>	Minimum		12.7	11.9	10.7	11.1
	Maximum		15.6	15.8	15.4	14.5
	Average		14.2	13.6	13.0	13.2
	98 Percentile		15.6	15.6	15.3	14.5
NO <sub>x</sub>	Minimum		7.9	7.2	7.4	7.1
	Maximum		9.9	9.4	9.7	9.8
	Average		8.8	8.3	8.5	8.4
	98 Percentile		9.8	9.4	9.7	9.7

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.)-524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- May 2024  
**Sampling Location-1:** Main Gate

**Sample Registration Date:** 11.05.2024  
**Issue Date:** 20.05.2024  
**Lab Ref:** SEPL/ES/SEILEILP/05-24/0001

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	09.05.2024	00:00	42.5
2		01:00	39.6
3		02:00	35.8
4		03:00	33.2
5		04:00	36.8
6		05:00	41.4
7		06:00	59.3
8		07:00	42.5
9		08:00	38.7
10		09:00	52.4
11		10:00	55.1
12		11:00	57.6
13		12:00	53.8
14		13:00	54.1
15		14:00	51.5
16		15:00	50.9
17		16:00	48.8
18		17:00	52.7
19		18:00	47.0
20		19:00	55.4
21		20:00	44.7
22		21:00	46.6
23		22:00	43.3
24		23:00	38.2

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010  
Serial No : 11180097640  
Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.S.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





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Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- MAY 2024

**Sampling Location-2:** BTG Area

**Sample Registration Date:** 11.05.2024

**Issue Date:** 20.05.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0002

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	09.05.2024	00:00	31.3
2		01:00	39.5
3		02:00	35.7
4		03:00	41.9
5		04:00	46.2
6		05:00	30.1
7		06:00	46.6
8		07:00	53.8
9		08:00	48.2
10		09:00	57.5
11		10:00	52.9
12		11:00	48.1
13		12:00	55.4
14		13:00	44.7
15		14:00	51.6
16		15:00	49.2
17		16:00	45.3
18		17:00	56.8
19		18:00	47.6
20		19:00	41.9
21		20:00	48.4
22		21:00	46.1
23		22:00	41.0
24		23:00	35.7

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Standard/SC-05

Serial No : 200525272

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- MAY 2024  
**Sampling Location-3:** Coal Handling Plant

**Sample Registration Date:** 11.05.2024  
**Issue Date:** 20.05.2024  
**Lab Ref:** SEPL/ES/SEILEILP/05-24/0003

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	09.05.2024	00:00	33.7
2		01:00	31.5
3		02:00	40.9
4		03:00	39.6
5		04:00	36.3
6		05:00	37.2
7		06:00	49.5
8		07:00	56.4
9		08:00	47.1
10		09:00	44.6
11		10:00	41.8
12		11:00	59.3
13		12:00	54.9
14		13:00	44.2
15		14:00	55.4
16		15:00	51.5
17		16:00	45.9
18		17:00	41.8
19		18:00	46.3
20		19:00	44.1
21		20:00	47.0
22		21:00	49.5
23		22:00	54.2
24		23:00	41.6

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Lutron /SL-34001  
Serial No : Q6352440  
Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- MAY 2024  
**Sampling Location-4:** Varakavipudi Village

**Sample Registration Date:** 11.05.2024  
**Issue Date:** 20.05.2024  
**Lab Ref:** SEPL/ES/SEILEILP/05-24/0004

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	09.05.2024	00:00	28.6
2		01:00	32.3
3		02:00	39.2
4		03:00	36.4
5		04:00	27.7
6		05:00	31.8
7		06:00	32.6
8		07:00	35.2
9		08:00	44.5
10		09:00	49.1
11		10:00	42.4
12		11:00	48.3
13		12:00	45.0
14		13:00	41.2
15		14:00	50.5
16		15:00	45.9
17		16:00	47.6
18		17:00	40.8
19		18:00	44.4
20		19:00	38.6
21		20:00	31.3
22		21:00	35.8
23		22:00	43.4
24		23:00	39.1

**CPCB Standards (Residential Area)**

Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097641

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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# SPECTRA ENVIROTECH PVT LTD

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- MAY 2024  
**Sampling Location-5:** Sivaramapuram Village

**Sample Registration Date:** 11.05.2024  
**Issue Date:** 20.05.2024  
**Lab Ref:** SEPL/ES/SEILEILP/05-24/0005

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	09.05.2024	00:00	31.6
2		01:00	36.2
3		02:00	33.7
4		03:00	35.3
5		04:00	29.8
6		05:00	34.0
7		06:00	42.5
8		07:00	46.3
9		08:00	35.1
10		09:00	31.7
11		10:00	44.9
12		11:00	48.6
13		12:00	42.5
14		13:00	39.4
15		14:00	35.8
16		15:00	44.2
17		16:00	46.6
18		17:00	49.7
19		18:00	42.3
20		19:00	40.8
21		20:00	36.5
22		21:00	38.6
23		22:00	33.0
24		23:00	29.1

**CPCB Standards (Residential Area)**

**Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)**

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097642

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- MAY 2024

**Sampling Location-6:** Chandrasekharapuram Village

**Sample Registration Date:** 11.05.2024

**Issue Date:** 20.05.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0006

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (0)
1	09.05.2024	00:00	30.8
2		01:00	31.6
3		02:00	34.2
4		03:00	32.7
5		04:00	35.4
6		05:00	37.9
7		06:00	35.3
8		07:00	44.1
9		08:00	49.2
10		09:00	44.4
11		10:00	51.9
12		11:00	47.1
13		12:00	43.6
14		13:00	40.4
15		14:00	37.0
16		15:00	39.1
17		16:00	47.5
18		17:00	45.7
19		18:00	48.8
20		19:00	40.3
21		20:00	39.4
22		21:00	41.9
23		22:00	37.2
24		23:00	33.7

**CPCB Standards (Residential Area)**

**Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)**

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097643

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- MAY 2024

**Date of Sampling:** 09-05-2024

**Sample Registration Date:** 11.05.2024

**Issue Date:** 20.05.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0007

## TEST RESULT

Particulars	Main Gate dB (A)	BTG Area dB (A)	Coal Handling Plant dB (A)	Varakavipudi Village dB (A)	Sivaramapuram Village dB (A)	Chandra sekharapuram Village dB (A)
	Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)			Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)		
Minimum	33.2	30.1	31.5	27.7	29.1	30.8
Maximum	59.3	57.5	59.3	50.5	49.7	51.9
Average	46.7	45.6	45.5	39.6	38.6	40.3

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.)-524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024  
**Sampling Location-1:** Main Gate

**Sample Registration Date:** 23.08.2024  
**Issue Date:** 29.08.2024  
**Lab Ref:** SEPL/ES/SEILEILP/08-24/0001

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	22.08.2024	00:00	42.9
2		01:00	38.2
3		02:00	31.4
4		03:00	32.7
5		04:00	34.6
6		05:00	40.5
7		06:00	57.5
8		07:00	44.1
9		08:00	31.9
10		09:00	52.6
11		10:00	48.4
12		11:00	55.2
13		12:00	56.7
14		13:00	53.8
15		14:00	47.2
16		15:00	51.4
17		16:00	45.1
18		17:00	57.9
19		18:00	44.4
20		19:00	59.3
21		20:00	41.4
22		21:00	49.6
23		22:00	42.5
24		23:00	35.9

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010  
Serial No : 11180097640  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.S.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024  
**Sampling Location-2:** BTG Area

**Sample Registration Date:** 23.08.2024  
**Issue Date:** 29.08.2024  
**Lab Ref:** SEPL/ES/SEILEILP/08-24/0002

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	22.08.2024	00:00	37.5
2		01:00	34.9
3		02:00	32.4
4		03:00	35.7
5		04:00	36.8
6		05:00	33.1
7		06:00	41.9
8		07:00	50.5
9		08:00	45.7
10		09:00	52.4
11		10:00	50.6
12		11:00	47.2
13		12:00	53.8
14		13:00	46.1
15		14:00	54.9
16		15:00	47.5
17		16:00	43.2
18		17:00	55.7
19		18:00	48.1
20		19:00	44.6
21		20:00	46.2
22		21:00	45.7
23		22:00	40.9
24		23:00	39.7

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Standard/SC-05  
Serial No : 200525272  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.S.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

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(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution  
**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024  
**Sampling Location-3:** Coal Handling Plant

**Sample Registration Date:** 23.08.2024  
**Issue Date:** 29.08.2024  
**Lab Ref:** SEPL/ES/SEILEILP/08-24/0003

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	22.08.2024	00:00	32.9
2		01:00	37.3
3		02:00	46.4
4		03:00	38.1
5		04:00	35.6
6		05:00	32.7
7		06:00	48.9
8		07:00	52.1
9		08:00	45.4
10		09:00	43.9
11		10:00	40.5
12		11:00	56.6
13		12:00	51.1
14		13:00	46.7
15		14:00	52.3
16		15:00	56.2
17		16:00	49.7
18		17:00	43.4
19		18:00	47.6
20		19:00	47.8
21		20:00	44.2
22		21:00	48.9
23		22:00	51.6
24		23:00	44.4

**CPCB Standard:** Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)

**Instrument Details:** Sound Level Meter

Make/Model : Lutron /SL-34001  
Serial No : Q6352440  
Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

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**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024

**Sampling Location-4:** Varakavipudi Village

**Sample Registration Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0004

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	22.08.2024	00:00	28.4
2		01:00	34.9
3		02:00	35.4
4		03:00	32.1
5		04:00	29.5
6		05:00	30.6
7		06:00	38.4
8		07:00	32.6
9		08:00	42.5
10		09:00	47.2
11		10:00	40.3
12		11:00	45.7
13		12:00	49.2
14		13:00	44.4
15		14:00	52.7
16		15:00	48.3
17		16:00	46.1
18		17:00	43.5
19		18:00	41.2
20		19:00	39.4
21		20:00	32.2
22		21:00	34.5
23		22:00	40.6
24		23:00	35.6

**CPCB Standards (Residential Area)**

**Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)**

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097641

Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

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(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024

**Sampling Location-5:** Sivaramapuram Village

**Sample Registration Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0005

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (A)
1	22.08.2024	00:00	30.4
2		01:00	34.6
3		02:00	31.2
4		03:00	33.7
5		04:00	28.3
6		05:00	32.5
7		06:00	42.9
8		07:00	46.6
9		08:00	38.5
10		09:00	33.2
11		10:00	41.4
12		11:00	46.1
13		12:00	44.7
14		13:00	38.2
15		14:00	33.7
16		15:00	45.5
17		16:00	47.3
18		17:00	46.4
19		18:00	44.2
20		19:00	41.1
21		20:00	39.4
22		21:00	37.9
23		22:00	33.1
24		23:00	28.5

**CPCB Standards (Residential Area)**

**Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)**

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097642

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

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(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024

**Sampling Location-6:** Chandrasekharapuram Village

**Sample Registration Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0006

## TEST RESULT

S. NO	DATE	TIME (Hrs.)	dB (0)
1	22.08.2024	00:00	31.6
2		01:00	30.7
3		02:00	28.6
4		03:00	30.4
5		04:00	29.2
6		05:00	30.1
7		06:00	38.9
8		07:00	40.3
9		08:00	47.4
10		09:00	42.2
11		10:00	53.5
12		11:00	48.3
13		12:00	45.1
14		13:00	41.8
15		14:00	37.4
16		15:00	34.2
17		16:00	48.6
18		17:00	44.3
19		18:00	48.1
20		19:00	43.2
21		20:00	37.4
22		21:00	46.5
23		22:00	35.7
24		23:00	28.9

**CPCB Standards (Residential Area)**

**Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)**

**Instrument Details:** Sound Level Meter

Make/Model : Metravi/SL-3010

Serial No : 11180097643

Calibration Due : 28.02.2025

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

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**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Group:** Atmospheric Pollution

**Product:** Noise Monitoring (24 Hrs.)- AUGUST 2024

**Date of Sampling:** 22-08-2024

**Sample Registration Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0007

## TEST RESULT

Particulars	Main Gate dB (A)	BTG Area dB (A)	Coal Handling Plant dB (A)	Varakavipudi Village dB (A)	Sivaramapuram Village dB (A)	Chandra sekharapuram Village dB (A)
	Day Time: (6 AM-10 PM) < 75 dB (A), Night Time: (10 PM-6 AM) < 70 dB (A)			Day Time: (6 AM-10 PM) < 55 dB (A), Night Time: (10 PM-6 AM) < 45 dB (A)		
Minimum	31.4	32.4	32.7	28.4	28.3	28.6
Maximum	59.3	55.7	56.6	52.7	47.3	53.5
Average	45.6	44.3	45.5	39.3	38.3	39.2

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

ANNEXURE-IV

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Ground Water**

**Location-1: Ground Water – Ananthavaram Village (GW-1)**

**Location-2: Ground Water – Varakavipudi Village (GW-2)**

**Date of Monitoring: 09.05.2024**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0001**

**Sample Collected By: Ganesh**

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-1	GW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.8	7.4	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	1.00	1.00	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,651	1,458	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	674	623	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	181	178	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	162	175	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	45.6	49.4	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	21.7	17.1	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.11	0.13	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.02	0.04	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	159	155	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
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**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-1	GW-2	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	36	57	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	193	181	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	75.4	89.1	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	28.2	36.4	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.17	0.21	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.74	0.62	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.02	0.01	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.03	0.02	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.02	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	3.6	3.1	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Ground Water</b> <b>Location-3: Ground Water – Mittapalem Village (GW-3)</b> <b>Location-4: Ground Water – Chandrasekharapuram Village (GW-4)</b> <b>Date of Monitoring: 09.05.2024</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0002</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-3	GW-4	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.4	7.7	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	1.0	1.0	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,474	1,685	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	671	595	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	174	186	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	184	198	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	59.8	46.2	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	18.7	21.0	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.22	0.26	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	169	177	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-3	GW-4	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	29	35	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	198	144	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	71.2	82.6	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	32.7	35.3	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.02	0.01	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.62	0.64	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.03	0.04	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.02	0.01	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.3	4.2	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S. Jag  
Verified by



P. Suresh W.  
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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Ground Water**

**Location-5: Ground Water – Katepalli Village (GW-5)**

**Location-6: Ground Water – Sivaramapuram Village (GW-6)**

**Date of Monitoring: 09.05.2024**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0003**

**Sample Collected By: Ganesh**

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-5	GW-6	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.1	7.7	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	0.1	0.3	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,412	1,498	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	584	489	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	181	186	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	169	175	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	44.2	56.6	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	21.5	25.1	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.12	0.15	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.01	0.03	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	163	148	--	--

K.S.Laj  
Verified by



P. Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-5	GW-6	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	24	36	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	166	179	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	54.2	63.1	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	31.0	36.7	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.03	0.02	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.78	0.74	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.04	0.03	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.04	0.03	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.1	4.8	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/ 100 ml	ISO 9308-1	Absent	Absent	Absent/ 100 ml	Absent/ 100 ml
38	Total Coliforms	Per/ 100 ml	ISO 9308-1	Absent	Absent	Absent/ 100 ml	Absent/ 100 ml

K.S.Laj  
Verified by



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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Surface Water**

**Location-1: Surface Water – Varakavipudi Village (SW-1)**

**Location-2: Surface Water – Katepalli Village (SW-2)**

**Date of Monitoring: 09.05.2024**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0004**

**Sample Collected By: Ganesh**

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				SW-1	SW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.6	7.7	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	0.3	0.5	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,398	1425	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	765	845	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	163	172	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	223	195	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	31.4	45.2	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	23.7	22.1	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.2	0.1	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	<0.001	<0.001	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	165	176	--	--

K.S.Laj  
Verified by



P. Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				SW-1	SW-2	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	39	44	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	178	185	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	63.7	58.1	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	31.4	35.7	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.02	0.02	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.71	0.78	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.03	0.04	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	<5.0	<5.0	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.8	5.1	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/ 100 ml	ISO 9308-1	Absent	Absent	Absent/ 100 ml	Absent/ 100 ml
38	Total Coliforms	Per/ 100 ml	ISO 9308-1	Absent	Absent	Absent/ 100 ml	Absent/ 100 ml

K.S.Laj  
Verified by



Praveesh W.  
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LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Ground Water</b> <b>Location-1: Ground Water – Ananthavaram Village (GW-1)</b> <b>Location-2: Ground Water – Varakavipudi Village (GW-2)</b> <b>Date of Monitoring: 22.08.2024</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 28.08.2024</b> <b>Issue Date: 28.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0001</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-1	GW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.2	7.5	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	1.00	1.00	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,659	1,463	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	562	657	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	188	192	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	166	179	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	40.2	45.1	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	25.3	21.4	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.17	0.15	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.04	0.03	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	163	160	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-1	GW-2	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	32	48	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	198	171	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	78.6	86.7	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	35.8	38.5	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.19	0.14	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.68	0.66	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.02	0.01	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.03	0.01	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.02	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	3.9	3.5	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S.Lal  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Ground Water</b> <b>Location-3: Ground Water – Mittapalem Village (GW-3)</b> <b>Location-4: Ground Water – Chandrasekharapuram Village (GW-4)</b> <b>Date of Monitoring: 22.08.2024</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 28.08.2024</b> <b>Issue Date: 28.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0002</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-3	GW-4	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.6	7.8	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	1.0	1.0	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,485	1,674	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	684	581	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	168	175	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	193	182	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	63.5	42.1	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	14.4	19.5	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.28	0.22	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	174	181	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-3	GW-4	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	36	38	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	192	157	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	77.5	84.5	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	35.2	38.6	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.01	0.02	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.74	0.71	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.02	0.03	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.03	0.01	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.9	4.3	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S.Lal  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Ground Water**

**Location-5: Ground Water – Katepalli Village (GW-5)**

**Location-6: Ground Water – Sivaramapuram Village (GW-6)**

**Date of Monitoring: 22.08.2024**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 28.08.2024**

**Issue Date: 28.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0003**

**Sample Collected By: Ganesh**

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-5	GW-6	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	6.9	7.5	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	0.1	0.2	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,424	1,465	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	596	475	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	187	189	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	175	182	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	47.5	53.5	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	25.3	27.5	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.11	0.18	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	0.02	0.04	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	177	161	--	--

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				GW-5	GW-6	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	34	39	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	169	172	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	56.5	67.8	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	34.2	38.4	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.02	0.01	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.74	0.70	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.02	0.03	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	0.03	0.02	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.5	5.0	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Surface Water**

**Location-1: Surface Water – Varakavipudi Village (SW-1)**

**Location-2: Surface Water - Katepalli Village (SW-2)**

**Date of Monitoring: 22.08.2024**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 28.08.2024**

**Issue Date: 28.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0004**

**Sample Collected By: Ganesh**

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				SW-1	SW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.4	7.5	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Taste	--	IS-3025(P-8)	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	IS-3025(P-5)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS3025(P-10)1984	0.2	0.3	1.0	5.0
6	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,392	1468	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	775	756	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	168	192	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	229	182	200	600
10	P- Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	Nil	Nil	--	--
11	Calcium as Ca	mg/l	IS3025(P-40)1991	34.5	41.7	75	200
12	Magnesium as Mg	mg/l	IS3025(P-40)1991	21.8	20.4	30	100
13	Free Residual Chlorine	mg/l	IS3025(P-26)1986	0.1	0.1	0.2	No Relaxation
14	Boron as B	mg/l	IS3025(P-57)2021	<0.001	<0.001	0.5	1.0
15	Sodium as Na	mg/l	IS3025(P-45)1993	158	179	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				SW-1	SW-2	ACCEPTABLE	PERMISSIBLE
16	Potassium as K	mg/l	IS3025(P-45)1993	44	41	--	--
17	Chloride as Cl	mg/l	IS3025(P-32)1988	172	164	250	1000
18	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	65.6	55.9	200	400
19	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	35.9	31.2	45	No Relaxation
20	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	<0.1	<0.1	<0.2	<1.0
21	Mineral Oil	mg/l	IS 3025(Pt-39)	<0.5	<0.5	<0.5	No Relaxation
22	Iron as Fe	mg/l	IS3025(P-53)2003	0.03	0.01	<0.3	No Relaxation
23	Fluoride as F	mg/l	IS3025(P-60)2008	0.75	0.71	<1.0	<1.5
24	Copper as Cu	mg/l	IS3025(P-42)1992	0.02	0.03	<0.05	<1.5
25	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
26	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
27	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
28	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
29	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
30	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
31	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
32	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
33	Zinc as Zn	mg/l	IS3025(P-49)1994	<5.0	<5.0	<5.0	<15
34	Hexavalent Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.05	<0.05	<0.05	<1.0
35	Silica as SiO <sub>2</sub>	mg/l	IS3025(P-35)1988	4.2	5.1	--	--
36	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
37	E-Coli	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
38	Total Coliforms	Per/100 ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml

K.S.Laj  
Verified by



Praveesh W.  
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Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of Monitoring: 09.05.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0001**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Organoleptic &amp; Physical Parameters</b>						
1	pH	IS3025(P-11)2021	--	7.2	6.5-8.5	No relaxation
2	Color	IS3025(P-04)2021	Hazen	1.1	5.0 Max	15 Max
3	Electric Conductivity	IS3025(P-14)2013	µs/cm	142	--	--
4	Turbidity	IS3025(P-10)1984	NTU	<0.1	1.0 Max	5.0 Max
5	Total Dissolved Solids	IS3025(P-16)1984	mg/l	96	500 Max	2000 Max.
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>						
6	Aluminum as Al	IS3025(P-55)2003	mg/l	< 0.01	0.03 Max	0.2 Max.
7	Ammonia as N	IS3025(P-34)1988	mg/l	< 0.1	0.5 Max	No relaxation
8	Boron as B	IS3025(P-57)2021	mg/l	< 0.01	0.5 Max	1.0 Max
9	Barium as Ba	APHA-3120B	mg/l	< 0.01	0.7 Max	No relaxation
10	Calcium as Ca	IS3025(P-40)1991	mg/l	3.7	75 Max	200 Max
11	Chloramines	IS: 3025(Part-26)	mg/l	< 0.08	4.0 Max	No relaxation
12	Chlorides as Cl	IS3025(P-32)1988	mg/l	24	250 Max	1000 Max
13	Copper as Cu	IS3025(P-42)1992	mg/l	<0.01	0.05 Max	1.5 Max
14	Fluoride as F	IS3025(P-60)2008	mg/l	<0.1	1.0 Max	1.5 Max
15	Residual Free Chlorine	IS3025(P-26)1986	mg/l	< 0.1	0.2 Max	1.0 Max
16	Iron as Fe	IS3025(P-53)2003	mg/l	< 0.01	0.3 Max	No relaxation
17	Magnesium as Mg	IS3025(P-40)1991	mg/l	0.9	30 Max	100 Max

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**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
18	Manganese as Mn	IS3025(P-59)2006	mg/l	<0.01	0.1 Max	0.3 Max
19	Nitrates as NO <sub>3</sub>	IS3025(P-34)1988	mg/l	5.4	45 Max	No relaxation
20	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS3025(P-43)1992	mg/l	< 0.001	0.001 Max	0.002 Max
21	Selenium as Se	IS3025(P-56)2003	mg/l	< 0.01	0.01 Max	No relaxation
22	Silver as Ag	APHA-3120B	mg/l	< 0.01	0.1 Max	No relaxation
23	Sulphates as SO <sub>4</sub>	IS3025(P-24)1986	mg/l	4.4	200 Max	400 Max
24	Sulphide as H <sub>2</sub> S	IS-3025(Pt-29)	mg/l	< 0.05	0.05 Max	No relaxation
25	Total Alkalinity as CaCO <sub>3</sub>	IS3025(P-23)1986	mg/l	27	200 Max	600 Max
26	Total Hardness as CaCO <sub>3</sub>	IS3025(P-23)1986	mg/l	45	200 Max	600 Max
27	Zinc as Zn	IS3025(P-49)1994	mg/l	0.09	5.0 Max	15 Max

## Parameters Concerning Toxic Substances

28	Cadmium as Cd	IS3025(P-41)1992	mg/l	0.001	0.003 Max	No relaxation
29	Lead as Pb	IS3025(P-47)1994	mg/l	< 0.01	0.01 Max	No relaxation
30	Mercury as Hg	IS3025(P-48)1994	mg/l	< 0.001	0.001 Max	No relaxation
31	Nickel as Ni	IS3025(P-54)	mg/l	< 0.01	0.02 Max	No relaxation
32	Arsenic as As	IS3025(P-37)1988	mg/l	< 0.01	0.01 Max	No relaxation
33	Chromium as Cr	IS3025(P-52)2003	mg/l	< 0.05	0.05 Max	No relaxation

IS - Indian Standard, APHA-American Public Health Association

Detection limit: 0.00001 mg/l for Pesticides, PCB's, PAH & 0.0001 mg/l for Trihalomethanes, to be applicable only when water is chlorinated

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

<b>ISSUED TO:</b> <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Drinking Water</b> <b>Date of Monitoring: 09.05.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0002</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Organoleptic &amp; Physical Parameters</b>						
1	Odor	IS-3025(Pt-5)	--	Agreeable	Agreeable	Agreeable
2	Taste	IS-3025(Pt-8)	--	Agreeable	Agreeable	Agreeable
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>						
3	Anionic detergents as MBAS	Annex K of IS 13428	mg/l	<0.1	0.2 Max	1.0 Max
4	Mineral Oil	IS-3025(Pt-39)	mg/l	<0.01	0.5 Max	No relaxation
<b>Parameters Concerning Toxic Substances</b>						
5	Cyanide as CN	IS-3025(Pt-27)	mg/l	<0.01	0.05 Max	No relaxation
6	Molybdenum as Mo	APHA-3120B	mg/l	<0.01	0.07 Max	No relaxation

**Note:** IS-Indian Standard, APHA-American Public Health Association

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of Monitoring: 09.05.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0003**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
1	DDT	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a). o,p'-DDT	-	-	-	-	-
	b). p,p'-DDT	-	-	-	-	-
	c). o,p'-DDE	-	-	-	-	-
	d). p,p'-DDE	-	-	-	-	-
e). o,p'-DDD	-	-	-	-	-	
2	BHC (HCH)	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
3	Endosulfan	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
4	Monocrotophos	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
5	Ethion	EPA 1657A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
6	Chlorpyrifos	EPA 525A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Phorate	-	-	-	-	-
	b) Phorate Sulphoxide	-	-	-	-	-
	c) Phorate Sulphone	-	-	-	-	-
7	2,4-D	EPA 515.1	mg/l	ND	Not more than 0.0001	Not more than 0.0001

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S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
8	Butachlor	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
9	Isoproturon	EPA 532	mg/l	ND	Not more than 0.0001	Not more than 0.0001
10	Alachlor	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
11	Atrazine	EPA 525.208	mg/l	ND	Not more than 0.0001	Not more than 0.0001
12	Methyl Parathion	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a). Methyl Parathion	-	-	-	-	-
	b) Methyl Paraoxon	-	-	-	-	-
13	Malathion	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Malathion	-	-	-	-	-
	b) Malaoxon	-	-	-	-	-
14	Aldrin	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Aldrin	-	-	-	-	-
	b) Dieldrin	-	-	-	-	-

Note: ND- Non-Detectable

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of monitoring: 09.05.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 11.05.2024**

**Analysis Starting Date: 11.05.2024**

**Analysis Completed Date: 20.05.2024**

**Issue Date: 20.05.2024**

**Lab Ref: SEPL/ES/SEILEILP/05-24/0004**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Microbiology Analysis</b>						
1	Total Bacterial Count at 36° C	ISO 6222	CFU/ml	14	--	--
2	Coli forms	ISO 9308-1	Per/100ml	Absent	Absent/100ml	Absent/100ml
3	Escherichia. coli	ISO 9308-1	Per/100ml	Absent	Absent/100ml	Absent/100ml

**Note: ISO**-International Organization for Standardization

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of Monitoring: 22.08.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 28.08.2024**

**Issue Date: 29.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0001**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Organoleptic &amp; Physical Parameters</b>						
1	pH	IS3025(P-11)2021	--	7.5	6.5-8.5	No relaxation
2	Color	IS3025(P-04)2021	Hazen	1.2	5.0 Max	15 Max
3	Electric Conductivity	IS3025(P-14)2013	µs/cm	147	--	--
4	Turbidity	IS3025(P-10)1984	NTU	<0.1	1.0 Max	5.0 Max
5	Total Dissolved Solids	IS3025(P-16)1984	mg/l	92	500 Max	2000 Max.
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>						
6	Aluminum as Al	IS3025(P-55)2003	mg/l	< 0.01	0.03 Max	0.2 Max.
7	Ammonia as N	IS3025(P-34)1988	mg/l	< 0.1	0.5 Max	No relaxation
8	Boron as B	IS3025(P-57)2021	mg/l	< 0.01	0.5 Max	1.0 Max
9	Barium as Ba	APHA-3120B	mg/l	< 0.01	0.7 Max	No relaxation
10	Calcium as Ca	IS3025(P-40)1991	mg/l	3.3	75 Max	200 Max
11	Chloramines	IS: 3025(Part-26)	mg/l	< 0.08	4.0 Max	No relaxation
12	Chlorides as Cl	IS3025(P-32)1988	mg/l	24	250 Max	1000 Max
13	Copper as Cu	IS3025(P-42)1992	mg/l	<0.01	0.05 Max	1.5 Max
14	Fluoride as F	IS3025(P-60)2008	mg/l	<0.1	1.0 Max	1.5 Max
15	Residual Free Chlorine	IS3025(P-26)1986	mg/l	< 0.1	0.2 Max	1.0 Max
16	Iron as Fe	IS3025(P-53)2003	mg/l	< 0.01	0.3 Max	No relaxation
17	Magnesium as Mg	IS3025(P-40)1991	mg/l	0.5	30 Max	100 Max

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S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
18	Manganese as Mn	IS3025(P-59)2006	mg/l	<0.01	0.1 Max	0.3 Max
19	Nitrates as NO <sub>3</sub>	IS3025(P-34)1988	mg/l	5.9	45 Max	No relaxation
20	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS3025(P-43)1992	mg/l	< 0.001	0.001 Max	0.002 Max
21	Selenium as Se	IS3025(P-56)2003	mg/l	< 0.01	0.01 Max	No relaxation
22	Silver as Ag	APHA-3120B	mg/l	< 0.01	0.1 Max	No relaxation
23	Sulphates as SO <sub>4</sub>	IS3025(P-24)1986	mg/l	4.1	200 Max	400 Max
24	Sulphide as H <sub>2</sub> S	IS-3025(Pt-29)	mg/l	< 0.05	0.05 Max	No relaxation
25	Total Alkalinity as CaCO <sub>3</sub>	IS3025(P-23)1986	mg/l	38	200 Max	600 Max
26	Total Hardness as CaCO <sub>3</sub>	IS3025(P-23)1986	mg/l	52	200 Max	600 Max
27	Zinc as Zn	IS3025(P-49)1994	mg/l	0.05	5.0 Max	15 Max

## Parameters Concerning Toxic Substances

28	Cadmium as Cd	IS3025(P-41)1992	mg/l	0.001	0.003 Max	No relaxation
29	Lead as Pb	IS3025(P-47)1994	mg/l	< 0.01	0.01 Max	No relaxation
30	Mercury as Hg	IS3025(P-48)1994	mg/l	< 0.001	0.001 Max	No relaxation
31	Nickel as Ni	IS3025(P-54)	mg/l	< 0.01	0.02 Max	No relaxation
32	Arsenic as As	IS3025(P-37)1988	mg/l	< 0.01	0.01 Max	No relaxation
33	Chromium as Cr	IS3025(P-52)2003	mg/l	< 0.05	0.05 Max	No relaxation

IS - Indian Standard, APHA-American Public Health Association

Detection limit: 0.00001 mg/l for Pesticides, PCB's, PAH & 0.0001 mg/l for Trihalomethanes, to be applicable only when water is chlorinated

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

<b>ISSUED TO:</b> <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Drinking Water</b> <b>Date of Monitoring: 22.08.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0002</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Organoleptic &amp; Physical Parameters</b>						
1	Odor	IS-3025(Pt-5)	--	Agreeable	Agreeable	Agreeable
2	Taste	IS-3025(Pt-8)	--	Agreeable	Agreeable	Agreeable
<b>General Parameters Concerning Substances Undesirable in Excessive Amounts</b>						
3	Anionic detergents as MBAS	Annex K of IS 13428	mg/l	<0.1	0.2 Max	1.0 Max
4	Mineral Oil	IS-3025(Pt-39)	mg/l	<0.01	0.5 Max	No relaxation
<b>Parameters Concerning Toxic Substances</b>						
5	Cyanide as CN	IS-3025(Pt-27)	mg/l	<0.01	0.05 Max	No relaxation
6	Molybdenum as Mo	APHA-3120B	mg/l	<0.01	0.07 Max	No relaxation

**Note:** IS-Indian Standard, APHA-American Public Health Association

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SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of Monitoring: 22.08.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 29.08.2024**

**Issue Date: 29.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0003**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
1	DDT	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a). o,p'-DDT	-	-	-	-	-
	b). p,p'-DDT	-	-	-	-	-
	c). o,p'-DDE	-	-	-	-	-
	d). p,p'-DDE	-	-	-	-	-
e). o,p'-DDD	-	-	-	-	-	
2	BHC (HCH)	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
3	Endosulfan	EPA 508	mg/l	ND	Not more than 0.0001	Not more than 0.0001
4	Monocrotophos	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
5	Ethion	EPA 1657A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
6	Chlorpyrifos	EPA 525A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Phorate	-	-	-	-	-
	b) Phorate Sulphoxide	-	-	-	-	-
	c) Phorate Sulphone	-	-	-	-	-
7	2,4-D	EPA 515.1	mg/l	ND	Not more than 0.0001	Not more than 0.0001

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S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
8	Butachlor	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
9	Isoproturon	EPA 532	mg/l	ND	Not more than 0.0001	Not more than 0.0001
10	Alachlor	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
11	Atrazine	EPA 525.208	mg/l	ND	Not more than 0.0001	Not more than 0.0001
12	Methyl Parathion	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Methyl Parathion	-	-	-	-	-
	b) Methyl Paraoxon	-	-	-	-	-
13	Malathion	EPA 8141A	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Malathion	-	-	-	-	-
	b) Malaoxon	-	-	-	-	-
14	Aldrin	EPA 525.2	mg/l	ND	Not more than 0.0001	Not more than 0.0001
	a) Aldrin	-	-	-	-	-
	b) Dieldrin	-	-	-	-	-

Note: ND- Non-Detectable

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# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Drinking Water**

**Date of monitoring: 22.08.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 29.08.2024**

**Issue Date: 29.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0004**

## TEST RESULT

S. NO.	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	ACCEPTABLE LIMITS AS PER IS: 10500:2012	PERMISSIBLE LIMITS AS PER IS 10500:2012
<b>Microbiology Analysis</b>						
1	Total Bacterial Count at 36° C	ISO 6222	CFU/ml	26	--	--
2	Coli forms	ISO 9308-1	Per/100ml	Absent	Absent/100ml	Absent/100ml
3	Escherichia. coli	ISO 9308-1	Per/100ml	Absent	Absent/100ml	Absent/100ml

**Note: ISO**-International Organization for Standardization

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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b>  <b>Group: Water</b> <b>Product: Heavy Metal Analysis of Coal- MAY 2024</b> Sample Location: <b>Coal Feeder#1</b> Date of Monitoring: <b>09.05.2024</b> Sample Collected By: <b>Ganesh</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0001</b>

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	ppm	0.82	5.0
2	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	ppm	2.1	5.0
4	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	ppm	0.73	5.0

**Note: USEPA-** United States Environmental Protection Agency

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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Water

Product: **Heavy Metal Analysis of Coal- AUGUST 2024**

Sample Location: Coal Feeder#1

Date of Monitoring: 22.08.2024

Sample Collected By: Ganesh

Sample Registration Date: 23.08.2024

Analysis Starting Date: 23.08.2024

Analysis Completed Date: 29.08.2024

Issue Date: 29.08.2024

Lab Ref: SEPL/ES/SEILEILP/08-24/0001

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	ppm	0.64	5.0
2	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	ppm	1.28	5.0
4	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	ppm	0.62	5.0

**Note: USEPA-** United States Environmental Protection Agency

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## TEST REPORT

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**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Water

Product: Heavy Metal Analysis of Fly Ash- MAY 2024

Date of Monitoring: 09.05.2024

Sample Collected By: Ganesh

Sample Registration Date: 11.05.2024

Analysis Starting Date: 11.05.2024

Analysis Completed Date: 20.05.2024

Issue Date: 20.05.2024

Lab Ref: SEPL/ES/SEILEILP/05-24/0001

## TEST RESULT

S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.76	5.0
2	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	Ppm	<0.05	0.2
3	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.78	5.0
4	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.42	5.0

**Note: USEPA-** United States Environmental Protection Agency

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## TEST REPORT

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**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
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Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Water

Product: Heavy Metal Analysis of Bottom Ash- MAY 2024

Date of Monitoring: 09.05.2024

Sample Collected By: Ganesh

Sample Registration Date: 11.05.2024

Analysis Starting Date: 11.05.2024

Analysis Completed Date: 20.05.2024

Issue Date: 20.05.2024

Lab Ref: SEPL/ES/SEILELP/05-24/0002

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1.	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.56	5.0
2.	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	Ppm	<0.02	0.2
3.	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	ppm	0.41	5.0
4.	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	ppm	0.69	5.0

**Note: USEPA-** United States Environmental Protection Agency

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## TEST REPORT

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<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Heavy Metal Analysis of Fly Ash- AUGUST 2024</b> <b>Date of Monitoring: 22.08.2024</b> <b>Sample Collected By: Ganesh</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 28.08.2024</b> <b>Issue Date: 28.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0001</b>

## TEST RESULT

S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.44	5.0
2	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	Ppm	<0.05	0.2
3	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.62	5.0
4	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	Ppm	0.70	5.0

**Note: USEPA-** United States Environmental Protection Agency

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Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Heavy Metal Analysis of Bottom Ash- AUGUST 2024**

**Date of Monitoring: 22.08.2024**

**Sample Collected By: Ganesh**

**Sample Registration Date: 23.08.2024**

**Analysis Starting Date: 23.08.2024**

**Analysis Completed Date: 28.08.2024**

**Issue Date: 28.08.2024**

**Lab Ref: SEPL/ES/SEILEILP/08-24/0002**

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1.	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	ppm	0.66	5.0
2.	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3.	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	ppm	0.48	5.0
4.	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	ppm	0.65	5.0

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## TEST REPORT

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<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product Water</b> <b>Location-1: Piezo Well No-1- Water – North East Side (PW-1)</b> <b>Location-2: Piezo Well No-2- Water– South East Side (PW-2)</b> <b>Date of Monitoring: 09.05.2024</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0001</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-1	PW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.2	7.9	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.1	1.2	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.4	0.5	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,201	1,189	--	--
5	Temperature	°C	--	39.7	36.1	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	32	49	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	578	568	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	177	162	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	156	185	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	45.5	31.1	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	23.1	22.4	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	166	185	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	82	111	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	157	136	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	19	26	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	182	198	250	1000

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-1	PW-2	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	63.6	85.2	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	25.4	39.7	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.01	0.02	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.52	0.71	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.3	4.6	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	17.7	22.5	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	Absent	--	--

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## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product Water</b> <b>Location-3: Piezo Well No-3- Water – South West Side (PW-3)</b> <b>Location-4: Piezo Well No-4-Water– North West Side (PW-4)</b> <b>Date of Monitoring: 09.05.2024</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0002</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-3	PW-4	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.6	7.3	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.2	0.1	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,391	1,324	--	--
5	Temperature	°C	--	39.6	21.5	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	56	47	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	269	372	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	268	242	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	142	163	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	59	62	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	19	22	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	153	144	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	126	116	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	139	141	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	33	68	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	152	140	250	1000

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-3	PW-4	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	68.0	55.2	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	36.1	45.4	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.33	0.41	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.69	0.76	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.5	4.2	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	32.1	39.3	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	Absent	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product Water</b> <b>Location-5: Piezo Well No-5- Water –Near CAAQMS (PW-5)</b> <b>Date of Monitoring: 09.05.2024</b>	<b>Sample Registration Date: 11.05.2024</b> <b>Analysis Starting Date: 11.05.2024</b> <b>Analysis Completed Date: 20.05.2024</b> <b>Issue Date: 20.05.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/05-24/0003</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS AS PER IS:10500	
				PW-5	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.2	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.1	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,478	--	--
5	Temperature	°C	--	33.3	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	63	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	569	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	248	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	247	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	56	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	34	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	166	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	114	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	142	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	85	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	195	250	1000

K.S.Laj  
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Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS AS PER IS:10500	
				PW-5	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	45.6	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	35.5	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.35	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.42	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.3	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	29.7	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	--	--

K.S.Laj  
Verified by



Praveesh W.  
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Managing Director

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## TEST REPORT

ISSUED TO: <b>M/S. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Water</b> <b>Location-1: Piezo Well No-1- Water – North East Side (PW-1)</b> <b>Location-2: Piezo Well No-2-Water– South East Side (PW-2)</b> <b>Date of Monitoring: 22.08.2024</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0001</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-1	PW-2	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.6	7.4	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.1	1.0	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.2	0.3	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,212	1,178	--	--
5	Temperature	°C	--	32.9	31.9	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	36	42	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	562	498	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	174	164	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	132	168	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	49.3	36.8	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	26.3	22.3	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	168	175	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	89	96	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	163	131	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	24	21	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	171	152	250	1000

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-1	PW-2	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	59.5	76.4	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	28.4	35.8	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.02	0.03	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.62	0.76	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.7	4.3	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	19.6	24.8	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	Absent	--	--

K.S.Laj  
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## TEST REPORT

ISSUED TO: <b>M/S. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product: Water</b> <b>Location-3: Piezo Well No-3- Water – South West Side (PW-3)</b> <b>Location-4: Piezo Well No-4-Water– North West Side (PW-4)</b> <b>Date of Monitoring: 22.08.2024</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0002</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-3	PW-4	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.4	7.2	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.0	1.1	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.1	0.2	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,395	1,327	--	--
5	Temperature	°C	--	33.4	26.3	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	57	42	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	224	176	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	255	247	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	167	152	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	52	68	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	24	26	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	156	147	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	122	118	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	131	146	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	30	62	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	137	126	250	1000

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Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS:10500	
				PW-3	PW-4	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	45.6	42.7	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	38.7	47.8	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.37	0.46	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.65	0.71	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.8	4.4	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	36.3	32.9	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	Absent	--	--

K.S.Laj  
Verified by



Praveesh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035  
Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)  
Cell: 80199 55222, 111 | BRANCHES: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO: <b>M/S. SEIL ENERGY INDIA LIMITED PROJECT-2</b> (2x660 MW Coal Based Thermal Power Plant), Near Ananthavaram (V), Thotapalli Gudur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b> <b>Group: Water</b> <b>Product Water</b> <b>Location-5: Piezo Well No-5- Water – Near CAAQMS (PW-5)</b> <b>Date of Monitoring: 22.08.2024</b>	<b>Sample Registration Date: 23.08.2024</b> <b>Analysis Starting Date: 23.08.2024</b> <b>Analysis Completed Date: 29.08.2024</b> <b>Issue Date: 29.08.2024</b> <b>Lab Ref: SEPL/ES/SEILEILP/08-24/0003</b> <b>Sample Collected By: Ganesh</b>

## TEST RESULT

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS AS PER IS:10500	
				PW-5	ACCEPTABLE	PERMISSIBLE
1	pH	--	IS3025(P-11)2021	7.4	6.5- 8.5	No Relaxation
2	Color	Hazen	IS3025(P-04)2021	1.1	1.0	5.0
3	Turbidity	NTU	IS3025(P-10)1984	0.2	1.0	5.0
4	Electric Conductivity	µs/cm	IS3025(P-14)2013	1,471	--	--
5	Temperature	°C	--	36.3	--	--
6	Total Suspended Solids	mg/l	IS3025(P-17)1984	68	--	--
7	Total Dissolved Solids	mg/l	IS3025(P-16)1984	574	500	2000
8	Total Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	262	200	600
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS3025(P-23)1986	231	200	600
10	Calcium as Ca	mg/l	IS3025(P-40)1991	51	75	200
11	Magnesium as Mg	mg/l	IS3025(P-40)1991	24	30	100
12	Free Residual Chlorine	mg/l	IS3025(P-26)1986	<0.1	0.2	No Relaxation
13	Boron as B	mg/l	IS3025(P-57)2021	<0.1	0.5	1.0
14	Calcium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	153	--	--
15	Magnesium Hardness as CaCO <sub>3</sub>	mg/l	IS3025(P-40)1991	111	--	--
16	Sodium as Na	mg/l	IS3025(P-45)1993	147	--	--
17	Potassium as K	mg/l	IS3025(P-45)1993	80	--	--
18	Chloride as Cl	mg/l	IS3025(P-32)1988	191	250	1000

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS AS PER IS:10500	
				PW-5	ACCEPTABLE	PERMISSIBLE
19	Sulphates as SO <sub>4</sub>	mg/l	IS3025(P-24)1986	42.6	200	400
20	Nitrates as NO <sub>3</sub>	mg/l	IS3025(P-34)1988	32.8	45	No Relaxation
21	Chemical Oxygen Demand	mg/l	IS3025(P-58)2006	<5.0	--	--
22	Biochemical Oxygen Demand (3 days at 27°C)	mg/l	IS3025(P-44)1993	<3.0	--	--
23	Iron as Fe	mg/l	IS3025(P-53)2003	0.48	<0.3	No Relaxation
24	Fluoride as F	mg/l	IS3025(P-60)2008	0.44	<1.0	<1.5
25	Copper as Cu	mg/l	IS3025(P-42)1992	<0.01	<0.05	<1.5
26	Manganese as Mn	mg/l	IS3025(P-59)2006	<0.1	<0.1	<0.3
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	IS3025(P-43)1992	<0.001	<0.001	<0.002
28	Cadmium as Cd	mg/l	IS3025(P-41)1992	<0.001	<0.003	No Relaxation
29	Mercury as Hg	mg/l	IS3025(P-48)1994	<0.001	<0.001	No Relaxation
30	Selenium as Se	mg/l	IS3025(P-56)2003	<0.01	<0.01	No Relaxation
31	Total Arsenic as As	mg/l	IS3025(P-37)1988	<0.01	<0.01	<0.20
32	Cyanide as CN	mg/l	IS3025(P-27)1986	<0.01	<0.05	No Relaxation
33	Lead as Pb	mg/l	IS3025(P-47)1994	<0.01	<0.01	No Relaxation
34	Zinc as Zn	mg/l	IS3025(P-49)1994	<0.01	<5.0	<15
35	Total Chromium as Cr <sup>+6</sup>	mg/l	IS3025(P-52)2003	<0.01	<0.05	<1.0
36	Aluminium as Al	mg/l	IS3025(P-55)2003	<0.01	0.5	1.0
37	Pesticides	mg/l	As per STP	<0.01	--	No Relaxation
38	Dissolved Oxygen	mg/l	IS3025(P-38)1989	4.1	--	--
39	Oil & Grease	mg/l	IS3025(P-39)2021	<1.0	--	--
40	Phosphates as PO <sub>4</sub>	mg/l	IS3025(P-31)1998	<0.01	--	--
41	Percent Sodium	%	IS3025(P-45)1993	22.3	--	--
42	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100 ml
43	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100 ml
44	Fecal Coliforms	MPN/100ml	IS-1622-1981	Absent	--	--

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035  
**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com  
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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Wastewater

Sample Location: **Ash Pond Effluent Water**

Date of Monitoring: 09.05.2024

Sample Collected By: Ganesh

Sample Registration Date: 11.05.2024

Analysis Starting Date: 11.05.2024

Analysis Completed Date: 20.05.2024

Issue Date: 20.05.2024

Lab Ref: SEPL/ES/SEILEILP/05-24/0001

## TEST RESULT

S.NO	TEST PARAMETERS	UNIT	TEST METHOD	RESULT	STANDARD
1.	pH	---	IS:3025(Part-11)1983	7.5	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	Colorless	Colorless
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	64	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	85	250
6.	Biochemical Oxygen Demand (BOD) (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	65	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	2.1	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	<0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	<0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	<0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	<0.001	2.0
12.	Hexavalent Chromium as Cr <sup>6+</sup>	mg/l	IS:3025(Part-52)-2003	<0.001	1.0

IS-Indian Standard

K.S.Laj  
Verified by



P. Suresh W.  
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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Discipline: Chemical

Group: Wastewater

Sample Location: **Ash Pond Effluent Water**

Date of Monitoring: 22.08.2024

Sample Collected By: Ganesh

Sample Registration Date: 23.08.2024

Analysis Starting Date: 23.08.2024

Analysis Completed Date: 29.08.2024

Issue Date: 29.08.2024

Lab Ref: SEPL/ES/SEILEILP/08-24/0001

## TEST RESULT

S.NO	TEST PARAMETERS	UNIT	TEST METHOD	RESULT	STANDARD
1.	pH	---	IS:3025(Part-11)1983	7.6	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	Colorless	Colorless
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	78	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	61	250
6.	Biochemical Oxygen Demand (BOD) (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	54	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	2.4	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	<0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	<0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	<0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	<0.001	2.0
12.	Hexavalent Chromium as Cr <sup>6+</sup>	mg/l	IS:3025(Part-52)-2003	<0.001	1.0

IS-Indian Standard

K.S.Laj  
Verified by



P. Suresh N.  
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## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2X660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.)-524344.

**Discipline:** Chemical

**Group:** Water

**Product:** Water

**Location:** Boiler Feed Water

**Qty:** 1 Ltrs

**Packing:** Plastic Container

**Date Of Sampling:** 09.05.2024

**Sample Registration Date:** 11.05.2024

**Analysis Starting Date:** 11.05.2024

**Issue Date:** 20.05.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0001

**Sample collected person details:** S. Ganesh

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1.	Total Suspended Solids	IS3025(P-17)1984	mg/l	4.5	100
2.	Oil & Grease	IS3025(P-39)2021	mg/l	< 1.0	10
3.	Copper (Total)	IS3025(P-42)1992	mg/l	0.39	1.0
4.	Ferrous as Fe <sup>+</sup>	IS3025(P-53)2003	mg/l	0.41	1.0
5.	Free Available Chlorine	IS3025(P-26)1986	mg/l	< 0.1	0.5

*K.S. Jay*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2X660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.)-524344.

**Discipline:** Chemical

**Group:** Water

**Product:** Water

**Location:** Cooling Tower Blow Down

**Qty:** 1 Ltrs

**Packing:** Plastic Container

**Date Of Sampling:** 09.05.2024

**Sample Registration Date:** 11.05.2024

**Analysis Starting Date:** 11.05.2024

**Issue Date:** 20.05.2024

**Lab Ref:** SEPL/ES/SEILEILP/05-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	Zinc	IS3025(P-49)1994	mg/l	0.47	1.0
2.	Chromium (Total)	IS3025(P-52)2003	mg/l	BDL	0.2
3.	Phosphate	IS3025(P-31)1998	mg/l	3.1	5.0
4.	Free Available Chlorine	IS3025(P-26)1986	mg/l	0.3	0.5

*K.S. Jay*  
Verified by



*Praveesh W.*  
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Managing Director

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(2X660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.)-524344.

**Discipline:** Chemical

**Group:** Water

**Product:** Water

**Location:** Boiler Feed Water

**Qty:** 1 Ltrs

**Packing:** Plastic Container

**Date Of Sampling:** 22.08.2024

**Sample Registration Date:** 23.08.2024

**Analysis Starting Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0001

**Sample collected person details:** S. Ganesh

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1.	Total Suspended Solids	IS3025(P-17)1984	mg/l	4.9	100
2.	Oil & Grease	IS3025(P-39)2021	mg/l	< 1.0	10
3.	Copper (Total)	IS3025(P-42)1992	mg/l	0.42	1.0
4.	Ferrous as Fe <sup>+</sup>	IS3025(P-53)2003	mg/l	0.49	1.0
5.	Free Available Chlorine	IS3025(P-26)1986	mg/l	< 0.1	0.5

*K.S. Jay*  
Verified by



*Praveesh W.*  
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Managing Director

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SPSR Nellore (Dist.)-524344.

**Discipline:** Chemical

**Group:** Water

**Product:** Water

**Location:** Cooling Tower Blow Down

**Qty:** 1 Ltrs

**Packing:** Plastic Container

**Date Of Sampling:** 22.08.2024

**Sample Registration Date:** 23.08.2024

**Analysis Starting Date:** 23.08.2024

**Issue Date:** 29.08.2024

**Lab Ref:** SEPL/ES/SEILEILP/08-24/0002

**Sample collected person details:** S. Ganesh

## TEST RESULT

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	Zinc	IS3025(P-49)1994	mg/l	0.53	1.0
2.	Chromium (Total)	IS3025(P-52)2003	mg/l	BDL	0.2
3.	Phosphate	IS3025(P-31)1998	mg/l	3.2	5.0
4.	Free Available Chlorine	IS3025(P-26)1986	mg/l	0.2	0.5

*K.S. Jay*  
Verified by



*Praveesh W.*  
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**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD



Date: 23/04/2024

**SEIL ENERGY INDIA LIMITED**  
**PROJECT-2, ANANTHAVARAM VILLAGE, THOTAPALLI, GUDUR**  
**MANDAL, VARAKAVIPUDI PANCHAYAT, NELLORE**  
**INDIA**  
**MUTHUKUR - 524344**  
**NELLORE**  
**ANDHRA PRADESH**  
**INDIA**  
**37AACCT8413D1ZH(GSTIN Number)**

**ANNEXURE-V**

**Policy No : 0304005029**  
**Renewal : 04**  
**Endorsement : 00**

Dear Sir / Madam,

We thank you for choosing **Tata AIG General Insurance Company Ltd.** as your preferred insurer. Your Policy No. Is 0304005029 04 00.

We are glad that you have chosen our product **PUBLIC LIABILITY ACT** and given us an opportunity to be your risk carrier for this Product.

'Casualty Line' caters to most of the Enterprises / Industries in India, whether Large, Medium or Small. As one of the India's most established insurance companies, we understand these unique needs of coverage. At Tata AIG we care for you and would strive to offer convenience coupled with a range of products that cater continuously to your ever increasing needs.

Enclosed please find your policy docket based on the information furnished by you in the Proposal.

We look forward to a long and mutually beneficial relationship and providing you wider range of benefits in the years to come.

Yours Sincerely,  
For Tata AIG General Insurance Company Limited



**Authorized Signatory**

**PUBLIC LIABILITY ACT POLICY  
POLICY SCHEDULE**

**Attaching to and forming part of Policy No.** 0304005029 04 00  
**Name of Insured Owner:** SEIL ENERGY INDIA LIMITED  
**Business:** Thermal Power Plant with all supported infrastructure

**Address:** PROJECT-2, ANANTHAVARAM VILLAGE, THOTAPALLI, GUDUR  
MANDAL, VARAKAVIPUDI PANCHAYAT, NELLORE  
INDIA  
MUTHUKUR - 524344  
NELLORE  
ANDHRA PRADESH  
INDIA  
37AACCT8413D1ZH(GSTIN Number)  
Place of supply -ANDHRA PRADESH  
State code -37

**Territorial limits:** Anywhere in India

**Policy Period: From:** 18/04/2024 12:00 AM/ PM  
**To Midnight of:** 17/04/2025 12:00 AM/ PM

Indemnity limit: Rs 50,000,000.00 in respect of any one accident and not exceeding 3 times thereof in the aggregate during the policy period.

Service Tax Registration No:  
Premium ₹ 11,973.00  
IGST @18 % ₹ 2,155.00

**Contribution to the  
Environment Relief Fund: ₹ 11,973.00**

**Date of Proposal and declaration: 23/04/2024**

In witness whereof the undersigned being duly authorized by the company and on behalf of the company has hereto set his hand at HYDERABAD on 23/04/2024

The stamp duty of 0.25 paid in cash or demand draft or by pay order, vide Receipt/Challan no: LOA/ENF1/CSD/42/2024/1004 dated the 25/01/2024

**For Tata AIG General Insurance Company Limited**



**Authorized Signatory**

Date : 23/04/2024  
Place : HYDERABAD

**Policy Servicing Office**  
**Tata AIG General Insurance Company Limited**  
5TH AND 6TH FLOOR, IMPERIAL TOWERS,, H.NO 7-1-6-617/A, GHMC NO - 615,616,,HYDERABAD, TELANGANA, HYDERABAD-500016  
Tel No: 91-44-66864900

## RECEIPT

Receipt No. : 102001071109311

Receipt Date : 15/04/2024

Policy No : 0304005029 04 00

Received with thanks from SEIL ENERGY INDIA LIMITED a sum of ₹ 26,101.00 ( Rupees Twenty Six Thousand One Hundred One And Paise Zero Only)

Sr. No.	Policy Number	Total Premium (₹)	Utilized from the receipt for policy (₹)	Balance (₹)
1	0304005029 04 00	26,101.00	26,101.00	0.00

**Note:**

1. This is a computer generated receipt and does not require a signature.
2. Upon issuance of this Receipt, all previously issued temporary receipts, if any, related to this Policy shall be considered null and void.
3. Amounts received by cheque shall be subject to realisation.
4. Any amount received in excess of the Premium is being/shall be refunded by the Company.

**GSTIN : 36AABCT3518Q1ZX - TELANGANA Service Accounting Code : 997139**

Revenue (consolidated) Stamp Duty duly paid vide challan No.LOA/ENF1/CSD/25/2023/5069 date 18/12/2023 for applicable cases.

Insurance is the subject matter of the solicitation. For more details on risk factors, terms and conditions, please read sales brochure carefully before concluding a sale.  
TATA AIG General Insurance Company Ltd. Regd. Office: 15th floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Off Senapati Bapat Marg, Lower Parel, Mumbai-400 013.

IRDA Registration No.108, CIN No : U85110MH2000PLC128425, PAN : AABCT3518Q  
Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

**LIABILITY INSURANCE POLICY**  
(UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

**1. OPERATIVE CLAUSE**

Whereas the Insured Owner named in the schedule hereto and carrying on business described in the said schedule has applied to the Tata AIG General Insurance Company Limited (hereinafter called the Company) for the indemnity hereinafter contained and has made a written proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein and has paid the premium and statutory contribution towards the Environment Relief Fund as per the provisions of the Public Liability Insurance Act and the rules framed thereunder.

NOW THIS POLICY WITNESSETH that subject to the terms, exceptions and conditions contained herein or endorsed hereon, the company will indemnify the insured owner against the statutory liability arising out of accidents occurring during the currency of the policy due to handling hazardous substances as provided for in the said Act and the Rules framed thereunder.

**2. DEFINITIONS:**

- a) "ACT" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act 1991 as amended from time to time;
- b) "Accident" means an accident involving a fortuitous, sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radioactivity;
- c) "Handling" in relation to any hazardous substance means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance;
- d) "Hazardous Substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986, and exceeding such quantity as may be specified, by notification, by the Central Government;
- e) "Owner" means a person who owns, or has control over handling any hazardous substance at the time of accident and includes:
  - i) in the case of a firm any of its partners;
  - ii) in the case of an association, any of its members, and
  - iii) in the case of a company, any of its directors, managers, secretaries or other officers who is/are directly in charge of, and is/are responsible to the company for the conduct of the business of the company;
- f) "Turnover" shall mean
  - i) Manufacturing units-Annual Gross Sales of all goods including all levies and taxes
  - ii) Godowns/ warehouse owners-Total Annual rental receipts.
  - iii) Transport Operators-Total Annual freight receipts.
  - iv) Others-Total Annual gross receipts.

**3. EXCLUSIONS:**

- (1) arising out of wilful or intentional non-compliance of any Statutory provisions.
- (2) in respect of fines, penalties, punitive and/or exemplary damages.
- (3) arising under any other legislation except in so far as provided for in Section 8 Sub Section (1) and (2) of the Act.
- (4) in respect of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured Owner's control, care or custody.
- (5) directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power;
- (6) directly or indirectly caused by or contributed to by.
  - (a) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel
  - (b) the radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.

**4. CONDITIONS:**

- (1) The Insured owner shall give written notice to the Company as soon as reasonably practicable of any claim made against the Insured Owner or of any specific event or circumstance that may give rise to a claim. The Insured Owner shall immediately give to the Company copies of notice of applications forwarded by the Collector and all



such additional information and or assistance that the company may require.

- (2) No admission, offer, promise or payments shall be made or given by or on behalf of the Insured owner under this policy without the written consent of the Company.
  - (3) The Company shall not be liable for any claim for relief made after five years from the date of occurrence of the accident.
  - (4) The Insured Owner shall keep record of annual turnover, and at the time of renewal of insurance declare such turnover and all other details as may be required by the Company. The Company shall at all reasonable times have full rights to call for and examine such records.
  - (5) If at the time of happening of any accident resulting in a claim under this policy there be any other insurance covering the same liability, then the Company shall not be liable to pay or contribute more than its ratable proportion of such liability.
  - (6) This policy may be cancelled by the Insured Owner by giving 30 days notice in writing to the company in which event the Company will retain premium at short period scale subject to there not having occurred an accident during the policy period which may give rise to a claims(s), failing which no refund of premium shall be allowable.
  - (7) This Policy may also be cancelled by the Insurer by giving 30 days notice in writing to the Insured Owner in which event the Company shall be liable to repay on demand a ratable proportion of the premium for the unexpired term from the date of cancellation.
- If the Company shall disclaim liability to the Insured Owner for any claim hereunder and such claim shall not within 12 calendar months from the date of such disclaimer
- (8) have been made the subject matter of a suit in a competent court of law, then the claim for the practical purposes shall be deemed to have been abandoned and shall not thereafter be recoverable hereunder or be made the subject matter of any suit.
- The Company shall not be liable to make any payment in respect of any claim if such claim shall be in any manner fraudulent or supported, by any person on behalf of the
- (9) Insured Owner and/or if the insurance has been continued in consequence of any material misstatement or non-disclosure of any material information by or on behalf of the Insured Owner. In such a case if the Company pays any amount to the claimant due to any statutory provision such amount shall be recoverable from the Insured Owner.
- (10) The Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been assigned in the Act and the Rules framed thereunder or in this Policy shall bear such specific meaning.
  - (11) Any dispute regarding interpretation of the terms, conditions and exclusions of this Policy shall be determined in accordance with the law and practice of a court of competent jurisdiction within India.

## GRIEVANCE REDRESSAL POLICY

### Grievance Lodgment Stage

The Company is committed to extend the best possible services to its customers. However, if you are not satisfied with our services and wish to lodge a complaint, please feel free to contact us through below channels:

**Call us** 24X7 toll free helpline 1800 266 7780

**Email us** at customersupport@tataaig.com

**Write to us at :** Customer Support, Tata AIG General Insurance Company Limited

A-501 Building No.4 IT Infinity Park, Dindoshi, Malad (E), Mumbai - 400097

**Visit the Servicing Branch** mentioned in the policy document

### Nodal Officer

Please visit our website at [www.tataaig.com](http://www.tataaig.com) to know the contact details of the Nodal Officer for your servicing branch.

After investigating the grievance internally and subsequent closure, we will send our response within a period of 10 days from the date of receipt of the complaint by the Company or its office in Mumbai. In case the resolution is likely to take longer time, we will inform you of the same through an interim reply.

### Escalation Level 1

For lack of a response or if the resolution still does not meet your expectations, you can write to [manager.customersupport@tataaig.com](mailto:manager.customersupport@tataaig.com). After investigating the matter internally and subsequent closure, we will send our response within a period of 8 days from the date of receipt of your complaint.

### Escalation Level 2

For lack of a response or if the resolution still does not meet your expectations, you can write to the Head-Customer Services at [head.customerservices@tataaig.com](mailto:head.customerservices@tataaig.com). After examining the matter, we will send you our response within a period of 7 days from the date of receipt of your complaint. Within 30 days of lodging a complaint with us, if you do not get a satisfactory response from us and you wish to pursue other avenues for redressal of grievances, you may approach Insurance Ombudsman appointed by IRDA under the Insurance Ombudsman Scheme. Given below are details of the Insurance Ombudsman located at various centers.

**List of Insurance Ombudsman Offices**

Office of the Ombudsman	Address & Contact details	Jurisdiction of Office Union Territory, District
AHMEDABAD	Office of the Insurance Ombudsman, Jeevan Prakash Building, 6th Floor, Tilak Marg, Relief Road, Ahmedabad - 380 001. Tel.: 079 - 25501201/02/05/06 Email: <a href="mailto:bimalokpal.ahmedabad@ecoi.co.in">bimalokpal.ahmedabad@ecoi.co.in</a>	Gujarat, Dadra & Nagar Haveli, Daman and Diu.
BENGALURU	Office of the Insurance Ombudsman, Jeevan Soudha Building, PID No. 57-27-N-19 Ground Floor, 19/19, 24th Main Road, JP Nagar, Ist Phase, Bengaluru - 560 078. Tel.: 080 - 26652048 / 26652049 Email: <a href="mailto:bimalokpal.bengaluru@ecoi.co.in">bimalokpal.bengaluru@ecoi.co.in</a>	Karnataka
BHOPAL	Office of the Insurance Ombudsman, Janak Vihar Complex, 2nd Floor, 6, Malviya Nagar, Opp. Airtel Office, Near New Market, Bhopal - 462 003. Tel.: 0755 - 2769201 / 2769202 Fax: 0755 - 2769203 Email: <a href="mailto:bimalokpal.bhopal@ecoi.co.in">bimalokpal.bhopal@ecoi.co.in</a>	Madhya Pradesh Chattisgarh
BHUBANESHWAR	Office of the Insurance Ombudsman, 62, Forest park, Bhubneshwar - 751 009. Tel.: 0674 - 2596461 / 2596455 Fax: 0674 - 2596429 Email: <a href="mailto:bimalokpal.bhubaneswar@ecoi.co.in">bimalokpal.bhubaneswar@ecoi.co.in</a>	Orissa
CHANDIGARH	Office of the Insurance Ombudsman, S.C.O. No. 101, 102 & 103, 2nd Floor, Batra Building, Sector 17 - D, Chandigarh - 160 017. Tel.: 0172 - 2706196 / 2706468 Fax: 0172 - 2708274 Email: <a href="mailto:bimalokpal.chandigarh@ecoi.co.in">bimalokpal.chandigarh@ecoi.co.in</a>	Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Chandigarh
CHENNAI	Office of the Insurance Ombudsman, Fatima Akhtar Court, 4th Floor, 453, Anna Salai, Teynampet, CHENNAI - 600 018. Tel.: 044 - 24333668 / 24335284 Fax: 044 - 24333664 Email: <a href="mailto:bimalokpal.chennai@ecoi.co.in">bimalokpal.chennai@ecoi.co.in</a>	Tamil Nadu, Pondicherry Town and Karaikal (which are part of Pondicherry).
DELHI	Office of the Insurance Ombudsman, 2/2 A, Universal Insurance Building, Asaf Ali Road, New Delhi - 110 002. Tel.: 011 - 23239633 / 23237532 Fax: 011 - 23230858 Email: <a href="mailto:bimalokpal.delhi@ecoi.co.in">bimalokpal.delhi@ecoi.co.in</a>	Delhi
GUWAHATI	Office of the Insurance Ombudsman, Jeevan Nivesh, 5th Floor, Nr. Panbazar over bridge, S.S. Road, Guwahati - 781001(ASSAM). Tel.: 0361 - 2132204 / 2132205 Fax: 0361 - 2732937 Email: <a href="mailto:bimalokpal.guwahati@ecoi.co.in">bimalokpal.guwahati@ecoi.co.in</a>	Assam, Meghalaya, Manipur, Mizoram, Arunachal Pradesh, Nagaland and Tripura
HYDERABAD	Office of the Insurance Ombudsman, 6-2-46, 1st floor, "Moin Court", Lane Opp. Saleem Function Palace, A. C. Guards, Lakdi-Ka-Pool, Hyderabad - 500 004. Tel.: 040 - 65504123 / 23312122 Fax: 040 - 23376599 Email: <a href="mailto:bimalokpal.hyderabad@ecoi.co.in">bimalokpal.hyderabad@ecoi.co.in</a>	Andhra Pradesh, Telangana, Yanam and part of Territory of Pondicherry.
JAIPUR	Office of the Insurance Ombudsman, Jeevan Nidhi - II Bldg., Gr. Floor, Bhawani Singh Marg, Jaipur-302 005. Tel.: 0141 - 2740363 Email: <a href="mailto:Bimalokpal.jaipur@ecoi.co.in">Bimalokpal.jaipur@ecoi.co.in</a>	Rajasthan
ERNAKULAM	Office of the Insurance Ombudsman, 2nd Floor, Pulinatt Bldg., Opp. Cochin Shipyard, M. G. Road, Ernakulam - 682 015. Tel.: 0484 - 2358759 / 2359338 Fax: 0484 - 2359336 Email: <a href="mailto:bimalokpal.ernakulam@ecoi.co.in">bimalokpal.ernakulam@ecoi.co.in</a>	Kerala, Lakshadweep, Mahe-a part of Pondicherry
KOLKATA	Office of the Insurance Ombudsman, Hindustan Bldg. Annexe, 4th Floor, 4, C.R. Avenue, KOLKATA-700 072. Tel.: 033 - 22124339 / 22124340 Fax: 033 - 22124341 Email: <a href="mailto:bimalokpal.kolkata@ecoi.co.in">bimalokpal.kolkata@ecoi.co.in</a>	West Bengal, Sikkim, Andaman & Nicobar Islands
LUCKNOW	Office of the Insurance Ombudsman, 6th Floor, Jeevan Bhawan, Phase-II, Nawal Kishore Road, Hazratganj, Lucknow - 226 001. Tel.: 0522 - 2231330 / 2231331 Fax: 0522 - 2231310 Email: <a href="mailto:bimalokpal.lucknow@ecoi.co.in">bimalokpal.lucknow@ecoi.co.in</a>	Districts of Uttar Pradesh : Laitpur, Jhasi, Mahoba, Hamirpur, Banda, Chitrakoot, Allahabad, Mirzapur, Sonbhadra, Fatehpur, Pratapgarh, Jaunpur, Varanasi, Gazipur, Jalaun, Kanpur, Lucknow, Unnao, Sitapur, Lakhimpur, Bahraich, Barabanki, Raebareli, Sravasti, Gonda, Faizabad, Amethi, Kaushambi, Balrampur, Basti, Ambedkarnagar, Sultanpur, Maharajgang, Santkabirnagar, Azamgarh, Kushinagar, Gorkhpur, Deoria, Mau, Ghazipur, Chandauli, Ballia, Sidharathnagar

Insurance is the subject matter of the solicitation. For more details on risk factors, terms and conditions, please read sales brochure carefully before concluding a sale.

TATA AIG General Insurance Company Ltd. Regd. Office: 15th floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Off Senapati Bapat Marg, Lower Parel, Mumbai- 400 013.

IRDA Registration No.108, CIN No : U85110MH2000PLC128425, PAN : AABCT3518Q, UIN No : IRDAN108CP0058V01201819

Website: [www.tataaig.com](http://www.tataaig.com) 24X7 Tollfree Helpline 1800-266-7780 E-mail: [customersupport@tataaig.com](mailto:customersupport@tataaig.com)

MUMBAI	Office of the Insurance Ombudsman, 3rd Floor, Jeevan Seva Annexe, S. V. Road, Santacruz (W), Mumbai - 400 054. Tel.: 022 - 26106552 / 26106960 Fax: 022 - 26106052 Email : bimalokpal.mumbai@ecoi.co.in	Goa, Mumbai Metropolitan Region excluding Navi Mumbai & Thane
NOIDA	Office of the Insurance Ombudsman, Bhagwan Sahai Palace, 4th Floor, Main Road, Naya Bans, Sector 15, Distt: Gautam Buddh Nagar, U.P-201301. Tel.: 0120-2514250 / 2514252 / 2514253 Email : bimalokpal.noida@ecoi.co.in	State of Uttaranchal and the following Districts of Uttar Pradesh : Agra, Aligarh, Bagpat, Bareilly, Bijnor, Budaun, Bulandshehar, Etah, Kanooj, Mainpuri, Mathura, Meerut, Moradabad, Muzaffarnagar, Oraiyya, Pilibhit, Etawah, Farrukhabad, Firozbad, Gautambodhanagar, Ghazaibad, Hardoi, Shahjahanpur, Hapur, Sharnli, Rampur, Kashganj, Sambhal, Amroha, Hathras, Kanshiramnagar, Saharanpur
PATNA	Office of the Insurance Ombudsman, 1st Floor, Kalpana Arcade Building, Bazar Samiti Road, Bahadurpur, Patna 800 006. Tel.: 0612-2680952 Email: bimalokpal.patna@ecoi.co.in	Bihar, Jharkhand
PUNE	Bhagwan Sahai Palace , 4th Floor, Main Road, Naya Bans, Sector 15, G.B. Nagar, Noida. NOIDA – 201301 Tel: 0120-2514250/51/53 Email: bimalokpal.noida@gbic.co.in	Maharashtra, Area of Navi Mumbai and Thane excluding Mumbai Metropolitan Region



# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ANNEXURE-VI

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORING- MAY 2024**

Location: **DG SET STACK#1 (1500 KVA)**

Date of Monitoring: **09.05.2024**

Sample Registration Date: 11.05.2024

Analysis Starting Date: **11.05.2024**

Analysis Completed Date: **20.05.2024**

Issue Date: **20.05.2024**

Lab Ref: **SEPL/ES/SEILEILP/05-24/0001**

## TEST RESULT

1. Time of Sampling ---- : 10:05 Hrs. to 10:25 Hrs.
2. Time Duration : 00:20 Hrs.
3. Ambient Temperature (°C) : 38.6
4. Flue gas Temperature (°C) : 146
5. Velocity of the flue gas (m/sec) : 14.6
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0.129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10543

S.NO.	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	40.5
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	382
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	172
4.	Carbon Monoxide	Gas Chromatography	ppm	150	61
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	47

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY** : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web** : [www.spectraenviro.com](http://www.spectraenviro.com) | **E-mail**: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)

**Cell**: 80199 55222, 111 | **BRANCHES**: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORING- MAY 2024**

Location: **DG SET STACK#2 (1500 KVA)**

Date of Monitoring: **09.05.2024**

Sample Registration Date: 11.05.2024

Analysis Starting Date: **11.05.2024**

Analysis Completed Date: **20.05.2024**

Issue Date: **20.05.2024**

Lab Ref: **SEPL/ES/SEILEILP/05-24/0002**

## TEST RESULT

1. Time of Sampling ---- : 10:30 Hrs. to 10:55 Hrs.
2. Time Duration : 00:25 Hrs.
3. Ambient Temperature (°C) : 35.7
4. Flue gas Temperature (°C) : 147
5. Velocity of the flue gas (m/sec) : 14.8
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10813

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	41.3
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	458
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	167
4.	Carbon Monoxide	Gas Chromatography	ppm	150	86
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	55

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : Sem -150/220509  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORIN- MAY 2024**

Location: **DG SET STACK#3 (1500 KVA)**

Date of Monitoring: **09.05.2024**

Sample Registration Date: 11.05.2024

Analysis Starting Date: **11.05.2024**

Analysis Completed Date: **20.05.2024**

Issue Date: **20.05.2024**

Lab Ref: **SEPL/ES/SEILEILP/05-24/0003**

## TEST RESULT

1. Time of Sampling ---- : 11:00 Hrs. to 11:25 Hrs.
2. Time Duration : 00:25 Hrs.
3. Ambient Temperature (°C) : 36.2
4. Flue gas Temperature (°C) : 146
5. Velocity of the flue gas (m/sec) : 14.5
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0.129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10223

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	46.2
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	695
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	161
4.	Carbon Monoxide	Gas Chromatography	ppm	150	64
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	52

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : EI-106/21-F-16  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**

(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORING-- AUGUST 2024**

Location: **DG SET STACK#1 (1500 KVA)**

Date of Monitoring: **22.08.2024**

Sample Registration Date: 23.08.2024

Analysis Starting Date: **23.08.2024**

Analysis Completed Date: **29.08.2024**

Issue Date: **29.08.2024**

Lab Ref: **SEPL/ES/SEILEILP/08-24/0001**

## TEST RESULT

1. Time of Sampling ---- : 10:00 Hrs. to 10:25 Hrs.
2. Time Duration : 00:25 Hrs.
3. Ambient Temperature (°C) : 36.2
4. Flue gas Temperature (°C) : 145
5. Velocity of the flue gas (m/sec) : 14.6
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0.129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10324

S.NO.	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	42.3
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	363
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	164
4.	Carbon Monoxide	Gas Chromatography	ppm	150	78
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	50

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : Sem-150/220206  
Calibration Due : 28.02.2025

*K.S.Laj*  
Verified by



*Praveesh W.*  
Authorized by  
Managing Director

Form No : F-7.8-02

Issue No & Date 01& 20.06.2019

Amend. No & Dt.: 00 & 00

**LABORATORY** : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web** : [www.spectraenviro.com](http://www.spectraenviro.com) | **E-mail**: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)

**Cell**: 80199 55222, 111 | **BRANCHES**: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORING-- AUGUST 2024**

Location: **DG SET STACK#2 (1500 KVA)**

Date of Monitoring: **22.08.2024**

Sample Registration Date: 23.08.2024

Analysis Starting Date: **23.08.2024**

Analysis Completed Date: **29.08.2024**

Issue Date: **29.08.2024**

Lab Ref: **SEPL/ES/SEILEILP/08-24/0002**

## TEST RESULT

1. Time of Sampling ---- : 10:30 Hrs. to 10:55 Hrs.
2. Time Duration : 00:25 Hrs.
3. Ambient Temperature (°C) : 36.8
4. Flue gas Temperature (°C) : 145
5. Velocity of the flue gas (m/sec) : 14.3
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10944

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	46.2
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	414
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	149
4.	Carbon Monoxide	Gas Chromatography	ppm	150	73
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	48

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : Sem -150/220509  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



P. Suresh W.  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com) | [info@spectraenviro.com](mailto:info@spectraenviro.com)

Cell: 80199 55222, 111 | BRANCHES: VIJAYAWADA | HYDERABAD







# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-13099)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO :

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-2**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Ananthavaram (V), Thotapalli Gudur (M),  
SPSR Nellore (Dist.) -524344.

Group: Atmospheric Pollution

Product: **DG STACK EMISSION MONITORIN- AUGUST 2024**

Location: **DG SET STACK#3 (1500 KVA)**

Date of Monitoring: **22.08.2024**

Sample Registration Date: 23.08.2024

Analysis Starting Date: **23.08.2024**

Analysis Completed Date: **29.08.2024**

Issue Date: **29.08.2024**

Lab Ref: **SEPL/ES/SEILEILP/08-24/0003**

## TEST RESULT

1. Time of Sampling ---- : 11:05 Hrs. to 11:25 Hrs.
2. Time Duration : 00:20 Hrs.
3. Ambient Temperature (°C) : 37.6
4. Flue gas Temperature (°C) : 147
5. Velocity of the flue gas (m/sec) : 14.7
6. C/s area of the duct (m<sup>2</sup>) : 0.406
7. Stack Diameter (m) : 0.129
8. Flue gas Flow Rate (Nm<sup>3</sup>/hr) : 10149

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	STANDARDS	RESULTS
1.	Particulate Matter	IS 11255 (part-1)1985	mg/Nm <sup>3</sup>	75	48.7
2.	Sulphur Dioxide	IS 11255 (part-2)1985	mg/Nm <sup>3</sup>	-	628
3.	Oxides of Nitrogen	IS 11255 (part-7)1985	mg/Nm <sup>3</sup>	360	164
4.	Carbon Monoxide	Gas Chromatography	ppm	150	72
5.	Non-Methane Hydro Carbon (NMHC)	Gas Chromatography	mg/Nm <sup>3</sup>	100	55

### Instrument Details:

Instrument : Stack Monitoring Kit  
Make : SSE (Sree Scient Equipment)  
Model / SI No : EI-106/21-F-16  
Calibration Due : 28.02.2025

K.S.Laj  
Verified by



*Pavesh K.*  
Authorized by  
Managing Director

**LABORATORY :** Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

**Web :** www.spectraenviro.com | **E-mail:** sepl.sjn@gmail.com | info@spectraenviro.com

**Cell:** 80199 55222, 111 | **BRANCHES:** VIJAYAWADA | HYDERABAD



**Government of Andhra Pradesh**  
**A.P. State Disaster Response and Fire Services Department**

**ANNEXURE-VII**

**Periodical Renewal Fire Certificate**

From:  
Director General  
State Disaster Response & Fire Services  
Andhra Pradesh, Vijayawada.

To:  
The General Manager,  
District Industries Center, SPSR Nellore District

**File No: 18565/NLR/MSB/2023, Date:12/07/2023**

**Occupancy NoC RC Number: PNOC.RC.No:1018/RFO/SR/2016,Dt:10-08-2016 of the RFO,SR and**  
**ONOC.RC.No:1018/RFO/SR/2016,Dt:24-07-2017 of the RFO,SR**

Sir,

Sub: Andhra Pradesh State Disaster Response and Fire Services Department - Periodical Fire Certificate to the constructed Multi Storeyed Building of Sembcorp Energy India Ltd [Project-2], represented by Sri Sandeep Kumar Reddy Tikkavarapu, Located at Ananthavaram(V), Varakavipudi (P),T.P Gudur(M),SPSR Nellore District - Regarding.

- Ref:
1. G.O.Ms.NO.71 Home (Prisons-A) Department, Dated.01-04-2010 & G.O.Ms.NO.90 Home(Prison & Fire Services), Dt 13-08-2021 Á G.O.No 120 Home (Prisons & Fire), Dt 25-10-2021
  2. This Office Delegation of Powers Rc.No.3350/Audit/NOC/2012, Dated.02-05-2023.
  3. This Office NOC for Occupancy Rc No. PNOC.RC.No:1018/RFO/SR/2016,Dt:10-08-2016 of the RFO,SR and ONOC.RC.No:1018/RFO/SR/2016,Dt:24-07-2017 of the RFO,SR, Dt.10/08/2016
  4. Renewal NOC For Occupancy PNOC.RC.No:1018/RFO/SR/2016,Dt:10-08-2016 of the RFO,SR and ONOC.RC.No:1018/RFO/SR/2016,Dt:24-07-2017 of the RFO,SR, Dt.24/07/2020
  5. Online Application for Renewal NOC of Sri Sandeep Kumar Reddy Tikkavarapu, Located at Ananthavaram(V), Varakavipudi (P),T.P Gudur(M),SPSR Nellore District - Inspection report called for Regarding.
  6. Online Inspection Report submitted by Officers of this Department on 10-07-2023.

<< 0 >>

The Management of Sembcorp Energy India Ltd [Project-2], represented by Sri Sandeep Kumar Reddy Tikkavarapu, Located at Ananthavaram(V), Varakavipudi (P),T.P Gudur(M),SPSR Nellore District has requested to issue Periodical Fire Certificate duly remitting the Fire Precautionary fee for Rs.687750/- vide challan No. 71064040852023 & 71063807422023 & 71604042582023, Dated 03/05/2023 at SBI, Through CFMS Challana.

Control Room

,GIS Control Room

,Turbine & Generator Building

,Service Building

,Canteen Building

,8. Generator Transformer, Coal Yard,Coal Conveyor 1A/B (JNT1-JNT2) & (JNT2-JNT3)

## ,Boilers-2 No.s

## ,Coal Mill

1. This certificate is being issued as per G.O.Ms.No:90,Home(Prisons & Fire),Dt:13-08-2021 & GO.No:120,Home(Prisons & Fire),Dt-25-10-2021
2. The No Objection Certificate for Occupancy was issued vide reference cited (3) and the Management has also obtained Periodical Renewal Fire Certificate for vide reference 4th cited to the constructed Multi Storeyed Building.
3. The Officers of the department have recommended to issue The Periodical Renewal Fire Certificate **Sri Sandeep Kumar Reddy Tikkavarapu Located at Ananthavaram(V), Varakavipudi (P),T.P Gudur(M),SPSR Nellore District**, subject to the following conditions.

Sl	As Builder	As Occupant	As Security Personnel
1	All the fire protection arrangements shall be maintained in good condition as seen during inspection.	All the escape/exit routes shall not be kept locked/blocked or encroached	All the occupants must know the correct method of operation of the fire fighting system installed.
2	Any loss of life or property due to non-functioning of fire safety measures and other installations shall be the responsibilities of the management.	All occupants shall be trained to operate the fire safety equipments during emergency.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.
3	Addition / alteration, if any in the building may be verified by building authority.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.	All security personnel shall be trained to operate the fire safety equipments during emergency.
4	This is Only for Fire Safety Point of View.	Raise the alarm if the fire cannot be controlled; Evacuate the area completely at once with nearest safe exit.	Attack the fire using available fire equipment only if you feel capable of controlling. If not, take all steps to isolate the area by closing doors and windows.

4. This Periodical Renewal Fire Certificate is valid from 11/07/2023 to 10/07/2026.
  5. The Responsibility/liability of the owner/occupier or both to maintain Fire safety measures in good condition in all times, in accordance with AP Fire safety Act 1999 and Rules, 2006.
  6. The Applicant/Management has agreed to comply with proposed revision of fire safety measures, which were sent to government vide Rc No. /MSB/Section/2023 Dt. 11-05-2023 or any other fire safety measures as may be approved by the government from time to time.
- The following deficiencies are identified by the officers of the department and needs to be attended to by the management.

Nil

Your Sincerely,

Director General  
State Disaster Response & Fire Services  
Andhra Pradesh, Vijayawada.

Copy to Sri Sandeep Kumar Reddy Tikkavarapu, Sembcorp Energy India Ltd [Project-2] Located at Ananthavaram(V), Varakavipudi (P),T.P Gudur(M),SPSR Nellore District  
Copy to Chief Office for Record Purpose  
Copy to Regional Fire Officer Concerned  
Copy to District Fire Officer Concerned  
Copy to Assistant District Fire Officer Concerned



## EXTERNAL SAFETY AUDIT REPORT

**PROTOCOL: IS 14489:2018**

**Audit Period: 2023-24**

*For*

**M/s SEIL ENERGY INDIA LIMITED**

Nelaturu/Pyanampuram, Muthukur Mandal  
524344, SPSR Nellore, INDIA

*Prepared by*



**M/s GLOBAL FIRE AND SAFETY SOLUTIONS**

**(Safety Engineers & Consultants)**

**COMPETENT PERSON UNDER AP FACTORIES RULES & ACT**

**7-9/1, Ambedkar Colony, Karakambadi Road, Beside  
Mangalam Police Out Post, Tirupati, Tirupati District,  
Andhra Prades - 517501**

**Cell : 8919505529., Email : globalfireandsafety9@gmail.com**



**SEIL ENERGY INDIA LIMITED**

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



# FOREWORD



# SEIL ENERGY INDIA LIMITED

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



## **ACKNOWLEDGEMENT**

We express our whole hearted thanks to Management and Employees of M/s. SEIL Energy India limited situated at Krishanpatna, Muthukur Mandal SPSR Nellore District, Andhra Pradesh India, for their Co-operation and unstinted help without which the Safety Audit of M/s SEIL Energy India Limited, could not have been possible. The courtesy and Cordiality extended to the audit team is highly appreciated. We do appreciate the best planning and constant co-operation from Mr.Pavan Kumar Rao Head-HSE and their O&M team members and HODs of respective departments for speedy completion of this report.



For Global Fire and Safety Solutions



## DISCLAIMER

Nothing in this report shall be construed as taking the place of any Law, Rule or Regulation of the relevant Governmental Agencies.

Users of this report are informed that no publication of this type can be complete nor any written document of this type can be a substitute for qualified engineering analysis. The experts and their professional experience only base the observations recommendations mentioned in this report on physical visits of the plant sections.

**Global Fire and Safety Solutions** does not hold any legal obligation in case of occurrence of any incident / accident / emergency in the plant while implementing the recommendations in this report all the views are based on technical expertise and past experience of the auditors.

The validity of this report is one year from concluding date of the Audit or next External Safety Audit due as per Requirements.





**SAFETY IS A COMBINATION OF DISCIPLINE, COMPLIANCE, COMMON SENSE AND GOOD LUCK.....**

**Knowing is not enough, we must apply.  
Willing is not enough, we must do**

**Every incident is a notice that something is wrong with men, machine  
or method - Investigate**

A Safety Management System provides organizations with a framework to improve employee safety and health, reduce workplace risks and create better, safer working conditions. The development and implementation of a comprehensive Safety Management System will support continual improvement and enables an organization to develop and maintain a strong safety culture.

The formal and organization-wide approach to managing safety risk and guaranteeing the efficacy of safety risk controls is known as a safety management system (SMS). It consists of processes, practices, and policies for managing safety risks. In system safety and safety management, SMS presents an evolving process. It is a systematic procedure requiring businesses to treat safety with the same importance as other fundamental business activities.

Safety means not getting exposed to harm, safety is controlling of high risk in activities, so also safety is loss control. In totality, safety is a systematic approach in the control of activities, so as to avoid unwanted incidents and achieving good work environment. When systematic approach is practiced, it needs to be checked periodically for its effective functioning.

SEIL Energy India Limited (Formerly Sembcorp Energy India Limited) is a leading independent power producer (IPP) committed to India's energy security. The company has a successful track record of developing and operating thermal power generation assets in the country. It has a 2.64 GW supercritical thermal power generation complex located in SPSR Nellore district, Andhra Pradesh, India.

SEIL owns and operates 4 X 660 MW supercritical thermal power generation assets to provide reliable and essential electricity to consumers across the subcontinent. SEIL partners with the government and industry to support India's energy security and its urbanization and development goals. To ensure high performance and reliability, SEIL maintains high standards





of behaviour, integrity, and governance in its operations. With its efficient and reliable power generation, SEIL is well-positioned to offer a viable and best-in-class energy supply to meet the country's need for reliable and sustainable power.

Good safety practices of the organization are a very visible way of showing that the organization does value the people working with them; so also, it will be rewarded by a workplace that's not only safer but more productive as well.

Apart from implementing good safety practices, periodical checking of the performance of the practices or the systems is also required. Conducting safety audit is one such requirement.

Safety audits are intended to promote, improve and then maintain good safety performance.

Audits review safety programs, policies, and procedures to check that they cover employee job tasks and hazards. They are a structured and effective way of preventing incidents and controlling safety hazards.

Though several audits are being conducted by the organization, including internal audits of the systems being implemented, one of the requirements is conducting of the safety audit as per the statutory requirement.

In order to meet not only the statutory regulations under Factories Act, But also to self assess the implementation part of safety management systems and site specific safety improvement; HGL conducted External Safety Audit for this year by a reputed external agency followed by strict scrutiny.

So as to comply with the requirement, SEIL Management is engaging outside agency, for evaluating its occupational health and safety management system performance, followed by compliance of the observations and as part of it, engaged **Global Fire and Safety Solutions** for conducting the safety audit for the year 2023.

Global Fire and Safety Solutions feels it as an honor for getting the above assignment. **Global Fire and Safety Solutions** took this opportunity and carried out the audit, with an objective to review the various work practices and activities of the organization, such that the Occupational Health and Safety functioning of the organization is in line with the regulatory and other OHS system requirements.



# SEIL ENERGY INDIA LIMITED

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



Audit not only looks into the deviations or lacunae but also focuses on the best practices implemented by the organization. The recommendations given in the report are to be viewed as an aid to Management, for continual improvement and not as any faultfinding exercise.

**Global Fire and Safety Solutions** offers it's sincere thanks to the top management for providing the opportunity to Lumen in conducting the audit.

**GLOBAL FIRE AND SAFETY SOLUTIONS** extends its sincere thanks to all the HODs & other Plant Personnel for their cooperation to the audit team in carrying the audit successfully.

25<sup>th</sup> November 2023

Hyderabad



For **Global Fire and Safety Solutions**



**SEIL ENERGY INDIA LIMITED**

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



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**SEIL ENERGY INDIA LIMITED**

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



## 1.0 EXECUTIVE SUMMARY



- **M/s. SEIL Energy India Limited** is one of the best organizations in the field of Power generation in India. SEIL is an acknowledged as leading power producer in India
- The management of M/s SEIL Energy India Limited wanted to review of its Safety Management System by third party. So The task has awarded to “GLOBAL FIRE AND SAFETY SOLUTIONS”
- It is noted that usage of PPE made mandatory and strictly implemented in the organization
- It is observed that work permit system is implemented and adhere to the system always even for small works
- It is appreciable that Risk Assessment is done for all O&M activities and review the same again whenever any process change occurs.
- It is noted that Tool kit talks and PEP talks are being done in the organization
- It is good to note that pre-employment health is being checked for all employees and all employees are given Safety induction before going to his department allotted
- It is highly appreciable that Skill assessment is being for all Riggers, welders, grinder and electrical technicians before deploying them into the work jointly by Safety engineer, mechanical engineer and electrical engineer.
- It is very good to note that Vertigo and acrophobia test is carrying out for all the workers for height work.
- It is highly appreciable that SEIL is organizing “Surkshabandhan Program” to ensure commitment and care towards their associates
- It is good to note that safety perception survey is being conducted for very two years
- It is good note that organization has developed departmental Champions to ensure good implementation in all departments
- It is good to note that organization system has good Contractor Management system



- The organization has strongly believed that Training is one of the core elements in prevail the safety in the organization continuously. In view of that, a Training matrix for all level of employees is planned and being implemented. Training feedback is being taken for every training sessions to improve the system further
- It is highly appreciable that Organization is more committed for the health of the employees by providing availability of doctor in the OHC for 8 hours daily without fail
- Organization has “ MUTUAL AID “ agreement with neighbouring industries for risk mitigation in case of emergency situation
- Organization has defined and documented the occupational health safety Policy. The same policy is displayed in all conspicuous places in the factory premises.
- It is recommended to provide Auto Fire suppression system for all critical electrical panels in the operations to quick recovery and minimum damage when fire occurs due to short circuit of cables
- It is recommended to conduct Thermograph test for electrical cable trenches at least once in 5 years to know the integrity of electrical cables by third party having expertise to cross check the internal methodology
- It is highly appreciable that Organization has successfully implemented “BEHAVIOUR BASED SAFETY SYSTEM “ in the Organization and Got awards for 4 years continuously for successful implementation of behaviour Based Safety System in the organization.
- It is highly appreciable that organization is certified for 5’S’ work place management System by Quality Forum Of India
- It is very good to note that the Company has got following awards for Their EHS management system
  1. Indian 18th Green tech Environment Award, Gold Award in May 2018
  2. Indian Golden Peacock Award for Environment Management in July 2018
  3. Indian FICCI Safety Systems Excellence Awards in September 2018
  4. Indian Golden Peacock Award for Corporate Social Responsibility in January 2019
- It is observed that organization has been Conducting Mock drill as per ERP procedures. Statutory mock drill yearly twice and fire mock drill being conducted every month as per Onside Emergency procedure



- Earth pits monitoring is being done. But the Test date, Due date and Resistance value are not displayed on the Earth pit covers in some of the areas
- Near Missing capturing is very less. It is necessary to capture more near misses and analyse them to prevent incidents
- It is good to note about the implementation of motivational and promotional programs such as conducting safety competitions, celebrating safety day celebrations etc., so as to get the effective participation from employees in the OSH performance.
- Organization has elaborate Work permit formats and the system is being followed without any deviations.
- Walk through safety inspections are being conducted for identifying unsafe conditions / unsafe acts, a multi-functional team can be set up for carrying out the inspections section wise and to focus on process safety, structural safety, mechanical & electrical safety and about housekeeping aspects.
- Provision of PPE both respiratory and non-respiratory is in place. Hygiene of respiratory PPE may be strictly ensured.
- Monitoring of work environment, incident investigation, carrying of safety inspections is being followed.
- Periodical review, compliance of legal requirements, ensuring continual improvement; imparting education and training on OHS issues are found satisfactory.
- Site specific observations and recommendations are given in detail in this report for implementation as per the priority of SEIL ENERGY INDIA LIMITED.
- It is very impressive to note that organization has been conducting Skip Level Town Hall Meeting conducted by Business-Head and Plant-Head with Staff & Associates twice a year.





**SEIL ENERGY INDIA LIMITED**

**EXTERNAL SAFETY AUDIT REPORT-IS 14489:2018**



## 2.0 INTRODUCTION



SEIL Energy India Limited (Formerly Sembcorp Energy India Limited) is a leading independent power producer (IPP) committed to India's energy security. The company has a successful track record of developing and operating thermal power generation assets in the country. It has a 2.64 GW supercritical thermal power generation complex located in SPSR Nellore district, Andhra Pradesh, India.

SEIL owns and operates four 660 MW supercritical thermal power generation assets to provide reliable and essential electricity to consumers across the subcontinent.

SEIL partners with the government and industry to support India's energy security and its urbanization and development goals. To ensure high performance and reliability, SEIL maintains high standards of behavior, integrity, and governance in its operations. With its efficient and reliable power generation, SEIL is well-positioned to offer a viable and best-in-class energy supply to meet the country's need for reliable and sustainable power.

The SEIL employee count in Plant -1 is 323 whereas in Plant-2 is 267. The contractor employee count in Plant-1 is 819 whereas that in Plant-2 is 767. Around 46 contractors are listed to supply the associate employees for various Operations and Maintenance within the plant.

### **2.1 Products manufactured in the unit:**

Power generation in the plant

### **2.2 Process description- Process Flow Chart:**

#### **Process Description:**

SEIL Energy India Limited, Project -1 has 2 X 660-Megawatt Supercritical coal-fired units. And SEIL Energy India Limited Project -2 has same 2 X 660-Megawatt Supercritical coal-fired units.

SEIL has its own team for managing the operations and maintenance of the power plants. The two power Plants Project-1 and Project-2 are spread over 2750 acres area. The source of water for both the plants is the sea water as the plant is located near the Bay of Bengal. The coal is brought to the site through the sea route and transferred to the coal storage area through pipe conveyors. The belt conveyors are used to transfer coal from the coal yard to the bunker.

#### **List of Equipment:**

The Equipment is boilers, ESP (Electrostatic Precipitators), ash handling area, Coal mill area, Turbine area, warehouses, ETP (Effluent Treatment Plant)/WTP (Water Treatment Plant), sea water pump house, chemical storage area, fire water pump house, Transformer yard, Central



control Room, Battery room, mechanical workshop, clarifier, cylinder store area, hydrogen cylinder storage area, Fire station and OHC (Occupational Health Centre), etc.

### **Manpower:**

The SEIL employee count in Plant -1 is 313 whereas in Plant-2 is 267. The contractor employee count in Plant-1 is 819 whereas that in Plant-2 is 767. Around 46 contractors are listed to supply the associate employees for various Operations and Maintenance within the plant.

In Thermal Power Station heat energy is converted into electric power. Water is heated in a Boiler, comes out as dry super saturated steam and allows the high pressure steam into the turbine, spins the turbine shaft which drives an electric generator and produces electric power. The steam from the turbine is condensed in a condenser and recycled back to Boiler where it is heated. This is known as Rankine cycle.

The washed crushed coal is coming through Ship from Paradeep Port to Krishnapatnam port. Further, the coal is transported from the Krishnapatnam port to plant site through external coal pipe conveyor. The imported coal comes from Indonesia, and other countries through ship and it is transported through external coal conveyor. The coal plant having 3 nos. stock piles each is having storage. The coal from the coal yard is transported to Crusher house

The coal is crushed in Crusher house and converts into a powder form and is being transported to boiler for combustion through primary air. The primary air supplied by primary air fans and forced draft Fans are used for supplying combustion air to the boiler. 2nos. Induced draft fans are used to extract post combustion combustible products from the boiler and pass through regenerative Air Preheater and filtered out fly ash in the ESP (Electrostatic precipitator) and finally the flue gas is liberated into the atmosphere through a tall chimney. The combustion is taking place in a boiler which is slightly under below atmospheric pressure and produces heat at temperature of 1200°C. The Demineralized Water (DM) is circulated into the boiler through forced boiler circulation pump and absorbs heat from the boiler and converts into high dry super saturated pressure of 240 ksc and temperature of 565°C.

The high pressure and temperature steam is allowed to pass into the High pressure turbine through stop valves and control valves. The steam expands in the turbine blades and does useful work and spins the turbine. The exhaust steam from the HPT is reheated in the boiler pre-heater circuit and converts a pressure and required temperature. The medium pressure



steam is allowed to pass into pressure turbine (PT) where it does some useful work and pass into turbine and finally this steam is condensed in the condenser.

A huge amount sea water is circulated into the condensers through circulating pumps and it absorbs heat from the exhaust steam of Turbines and finally it passes into natural draft cooling tower for cooling. During the process of condensation in the condenser, the steam to water phase conversion is taking place and non-condensable gasses are liberated through this process. These gases are expelled to the atmosphere through 2nos. vacuum pumps for each condenser.

The condensed water is pumped to the de-aerator through 4 nos. of Low pressure heaters where the condensate water temperature is raised from 38°C to 154°C. High pressure pumps are used to pump the de-aerator water to the boiler through 3 nos. High pressure heater where the feed water is heated up to required temperature. Thus the process circulates (Boiler – Turbine-Boiler) on continuous basis to generate power of 600 MW.

During the production of 2x 600 MW power, it consumes nearly 400 tons of coal per day at different heating values of coal of 3000-4400 kcal/kg. Around 4000 tons of ash produced daily through the coal burning process, 80% of the ash is collected in the dry form and stored in the Silos and 20% of the ash collected in the wet mode and pumped to ash pond in required size. The dry fly ash is collected from the Silos and filled in closed truck ash tanker for utilization of Brick & Cement Small Scale Industries.

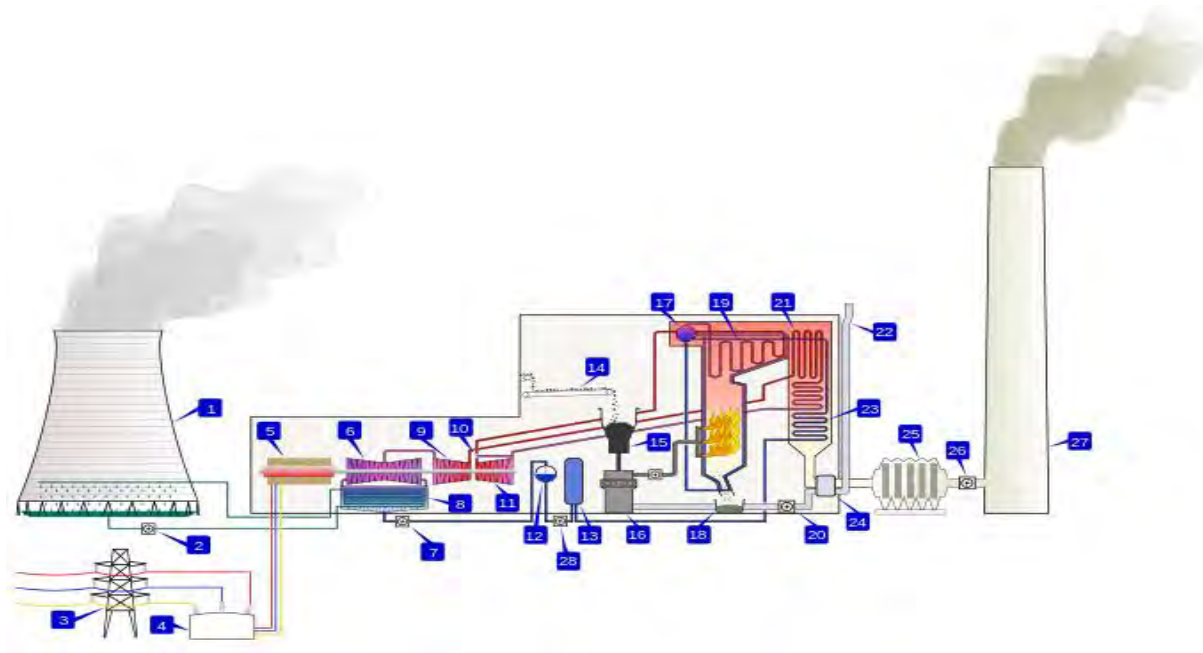
Sea water is the source for the above process. Sea water is drawn from the sea through pumps at open channel sea water pump house. The sea water is processed and converted into Service & DM water through Reverse Osmosis process.

The power is evacuated through transmission line with no of feeders connected to AP and Telangana Grid. The power generated in the alternator at a voltage of 24KV and stepped up to 400KV by step-up transformer called Generator Transformer of Single phase transformers of capacity 332MVA each.

Two numbers Service Transformers (ST) of capacity 400KV/11KV, 100MVA each were installed to draw power from grid to feed to 11KV station boards in addition to generated power.

The total process is controlled in centralized Central Control Room (CCR) with latest art of Super critical technology and it is one of the first of its kind in the Private sector as 4 x 660 MW Super Critical Power plant named as “SEIL Energy India Limited”

### TYPICAL PROCESS FLOW DIAGRAM OF THERMAL POWER PLANT:



### 2.3 Facility Capabilities and Features:

1. Cooling tower	10. Steam Control valve	19. Super heater
2. Cooling water pump	11. High pressure steam turbine	20. Forced draught (draft) fan
3. Transmission line (3-phase)	12. Deaerator	21. Re heater
4. Step-up transformer (3-phase)	13. Feed water heater	22. Combustion air intake
5. Electrical generator (3-phase)	14. Coal conveyor	23. Economizer
6. Low pressure steam turbine	15. Coal hopper	24. Air preheater
7. Condensate pump	16. Coal pulverizer	25. Electro Static Precipitator
8. Surface condenser	17. Steam separators	26. Induced draught (draft) fan
9. Intermediate pressure steam turbine	18. Bottom ash hopper	27. Flue-gas stack

## 2.4 LIST OF RAW MATERIALS/ CHEMICALS USED IN THE PLANT:

In the manufacturing process different raw materials are used to produce the Power. The list of raw materials and chemicals are shown below:

### SEIL P-1 Bulk Chemicals and Quantity:

SEIL P1 BULK CHEMICAL TANKS				
S.No	Description	Quantity	Capacity	Location
1	BULK FERRIC CHLORIDE STORAGE TANK - A	1	53.55 m3	PRE-TREATMENT PLANT
2	BULK FERRIC CHLORIDE STORAGE TANK - B	1	53.55 m3	PRE-TREATMENT PLANT
3	BULK ACID STORAGE TANK - A	1	12 m3	WATER TREATMENT PLANT
4	BULK ACID STORAGE TANK - B	1	12 m3	WATER TREATMENT PLANT
5	BULK CAUSTIC STORAGE TANK - A	1	12 m3	WATER TREATMENT PLANT
6	BULK CAUSTIC STORAGE TANK - B	1	12 m3	WATER TREATMENT PLANT
7	BULK LIQUID CO2 STORAGE TANK	1	20 m3	WATER TREATMENT PLANT
8	BULK ACID STORAGE TANK	1	20 m3	CPU
9	BULK CAUSTIC STORAGE TANK	1	20 m3	CPU

### SEIL P-2 Bulk Chemicals and Quantity:

SEIL P2 BULK CHEMICAL TANKS				
S.no	Description	Quantity	Capacity	Location
1	BULK FERRIC CHLORIDE STORAGE TANK	1	20 m3	PRE-TREATMENT PLANT
2	BULK ACID STORAGE TANK	1	14 m3	WATER TREATMENT PLANT
3	BULK ACID STORAGE TANK (Standby)	1	15 m3	WATER TREATMENT PLANT



4	BULK CAUSTIC STORAGE TANK	1	12 m3	WATER TREATMENT PLANT
5	BULK CAUSTIC STORAGE TANK (Standby)	1	12 m3	WATER TREATMENT PLANT
6	BULK ACID STORAGE TANK	1	20 m3	CPU
7	BULK CAUSTIC STORAGE TANK	1	20 m3	CPU

**2.5 LIST OF EQUIPMENT USED FOR MANUFACTURING PROCESS:**

The Equipment is boilers, ESP (Electrostatic Precipitators), ash handling area, Coal mill area, Turbine area, warehouses, ETP (Effluent Treatment Plant)/WTP (Water Treatment Plant), sea water pump house, chemical storage area, fire water pump house, Transformer yard, Central control Room, Battery room, mechanical workshop, clarifier, cylinder store area, hydrogen cylinder storage area, Fire station and OHC (Occupational Health Centre), etc.

### 2.5 GOOD EHS PRACTICES AT M/S SEIL ENERGY INDIA LIMITED:

#### Vertigo and Acrophobia Test for Working at Height Workers:

The aim of the project is to implement pre -employment assessment for employees working at heights through a vertigo test and a series of medical examinations. It helps us to confirm the workmen's capability in terms of height phobia, which is very important to avoid any untoward incident / accident



Briefing about process, Risks & Hazards during height test.



Initial BP & SPO2



Height Test



BP & SPO2 after Height Test



Vertigo





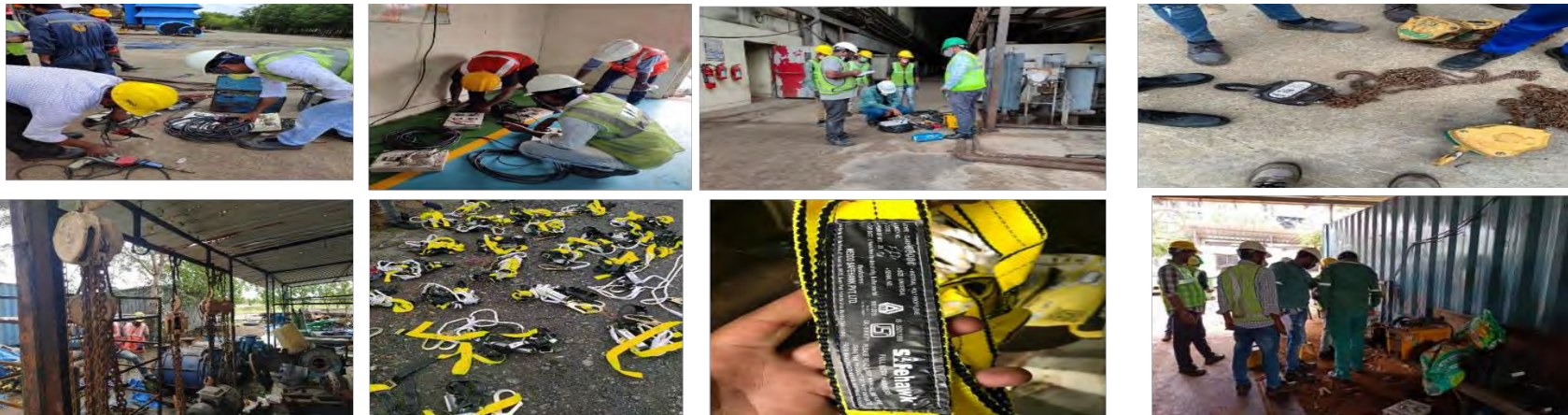


# SEIL ENERGY INDIA LIMITED



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### O&H Calendar Inspections – Lifting Tools Tackles, Colour coding T&P, Power Tools & safety belts:



### Mock Drills for different scenarios:





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### SKIP Level Town hall Meeting by CEO & Head-O&M:



### National Safety Day celebrations:



### Fire Fighting Training:



### Safety Training :





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### Mass PEP talks:



### Suraksha bandhan Celebrations:







**SEIL ENERGY INDIA LIMITED**

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## 3.0 REVIEW OF SAFETY MANAGEMENT SYSTEM



### 3.0 Safety Management System:

Based on the information collected and documents perused, report is made. An executive summary of the observations and recommendations are presented below:

**Note: Recommendations/comments are given in *Italics* for easy identification.**

#### 3.1 Safety Organization:

Safety department is set up with sufficient members of team in each unit and being headed by a qualified and experienced Managers. The team carries out plant safety inspections, conduct accident investigation, PTW inspection and organize safety committee meetings etc. as prescribed under the statute.

***Effective functioning of safety department is observed. Good practice***

#### 3.2 Safety Committees:

Safety committee is formed with equal proportion with Staff and workers as per the factory rules. The committee is meeting once in 3 months and discuss on unsafe conditions/unsafe acts in the factory. Action plan is being prepared to take mitigate measures. Meeting minutes are being circulated

***Safety Committee is formed, and meetings are convened Every month. MOM and action plan are also prepared and circulated – Good practice***

#### 3.3 Safety Budget:

***The safety budget is in place. Safety-related equipment is being purchased on a priority basis. Funds are being released immediately as and when necessary for safety-related issues.***

#### 3.4 Health and Safety Policy:

M/s SEIL Energy India Limited has EHS policy duly signed by their Managing Director

***A separate document detailing organizational set up to implement HS policies has be prepared.***

#### 3.5 Plant Safety Inspections

Plant safety inspections are regularly carried out by Safety Officers and jointly with plant personnel. Reports are generated.

***Safety Inspections are being carried out with suitable checklists.***



### **3.6 Safety Manual:**

Specific Safety manual is prepared for the activities in the organization.

### **3.7 Hot Work Permit System:**

Work permit system for hot work, height work, electrical permit, Excavation Permit, Confined space entry, lifting etc, is in place. The Safety department reviewing & sign all safety permits every day at work locations. All PTW copies are kept in Common Control Room.

*Ensure the system of keeping the record of work permits issued by each department and closing work permits issued are established and it is being monitored in SAP system.*

### **3.8 C , y y m:**

Contractors are engaged, mainly for housekeeping, maintenance works. The terms and conditions of work order include safety provisions / norms and clauses for violations, which is good.

*A Procedure for the evaluation of contractors is available - Already in place, and half yearly evaluation being conducted.*

### **3.9 Motivational and Promotional Measures for OHS:**

Various safety competitions are organized during national HSE campaigns such as National Safety Week, Road safety week, National Fire Service Week, World Environment Day, Monthly Mass Toolbox Talk etc. and prizes are awarded to winners.

*Good practice*

#### **3.9.1 Safety Education and Training:**

Safety training is being conducted in the organization periodically as per training Matrix.

*Trainings are being conducted periodically as per Training calendar*

#### **3.9.2 Accident Reporting, Investigation and Analysis:**

All accidents are reported and investigated.

*All accidents/incidents are being investigated – In place*

#### **3.9.3 Statutory Licenses and Approvals:**

All the necessary licenses and approvals have been obtained and renewed.



***A 3 Stages of Statutory compliance system of updating the applicable statutes and incorporating the latest amendments are strengthened***

**3.9.4 First Aid Appliances:**

Adequate number of first aid boxes is provided throughout the plants.

***Adequate First-aid boxes are available***

**3.9.5 OHC/First aid Center:**

The plant has tie up with nearby hospitals for the treatment of their employees whenever required.

***The plant is established OHC in the factory premises and having tie up with nearest hospital. Factory Medical Officers/Doctor has undergone for training on Industrial Health.***

**3.9.6 Medical Examinations:**

Pre-employment and employment medical examinations are conducted and records maintained.

***Periodical Health examination is being conducted as per the factory rules and periodicity mentioned in the rules.***

**3.9.7 Occupational Diseases:**

***No occupational diseases***

**3.9.8 Bio-Medical Waste Management:**

***Bio-Medical waste is generated and being disposed to authorized agency for its safe disposal***

**3.9.9 PPE:**

Wearing of safety helmet, safety shoes, safety goggles and reflective vest is mandatory for every worker. Special PPE are being supplied as per the requirements of the job. Contractors are responsible for issuing PPE to their workers. Workers found using PPEs at workplace.

There is a good system of selection, procurement and issue of PPE. Most of the PPEs are of standard quality.

***All nose masks and hand gloves are found IS marked.***

**3.9.9.1 Housekeeping:**

By and large, the standard of housekeeping is good inside the Plants. 5S system implemented.



*Housekeeping is good*

**3.9.9.2 HIRA:**

HIRA has been conducted for almost all regular activities.

*HIRA is being reviewed once in a year and risk assessment is been done for new process and activities.*

**3.9.9.3 Fire Prevention and Protection:**

About 1109 (project-1) and 1051(Project-2) fire extinguishers of various types and capacities and fire buckets are provided. These are regularly checked by the Safety department.

Fire hydrant system is provided for selected areas/plants and these are regularly inspected and checked. Fire alarms/smoke detection system is installed and this is also regularly checked and record maintained.

*Fire Hydrant system and Fire alarm/detection system is good*

**3.9.9.4 Emergency Preparedness:**

*M/s SEIL Energy India Limited has On-Site Emergency Plan*

**3.9.9.5 Electrical Safety:**

The report reflects the condition as observed in several areas visited during the audit Process and examination of relevant documents.

Documents are maintained as per the requirement for the maintenance departments. Preventive maintenance schedule is prepared and being followed;

In general, housekeeping is good

Substations, drive rooms are well maintained

- Panel doors locked
- Good housekeeping / illumination
- Rubber mats provided

Statutory clearances are in order.

*List of authorized persons (Holding Govt. certificates) for operating substations are to be displayed*

Testing & Calibration of instruments / protection relays are done every year

- Protection relays are tested through external agency
- Transformer oil testing is carried out through External agency

- Main transformers are also tested by Expert agency
- All master instruments are tested & calibrated by a Competent agency
- However, so far as electrical safety standards and basic safety rules are concerned, some grey areas are still there, which need management attention for improvement. One of the important criteria of improving safety standard is visible demonstration of company's objective through systems, policies and programmes.

***Important areas for improvement are –***

- ***As per electricity rules, earthing of electrical installations / equipment are ensured. All Portable equipment having single earthing unless provided with non-metallic cover and double insulation, while fixed and transportable equipment should have double earthing, separate and distinct. It is in place.***
- ***Earth pits are there and earth resistances are measured as per schedule. However, for not having proper identification, chances of incomplete / irregular measurement cannot be ruled out.***

***All Risers to be marked and surrounded by a small bund wall with cover to avoid damage. All earth pits to be marked for: Identification no., Resistance values / date of measurement and Next due date***

- ***Cleanliness / housekeeping of switch yard are implemented***

### **3.9.9.6 Testing & Examination of Pressure Vessels:**

Pressure vessels shall be tested as per the factory rules. Boiler is to be examined by Boiler inspectorate once in a year. The following observations are observed as under:

- ***Pressure vessels testing is being done periodically as per factory rules***
  - ***Boiler is being examined periodically by Boiler inspectorate.***
- Good observation***

### **3.9.9.7 Testing & Examination of Lifting Machines and Tackles:**

Material handling equipment like EOT cranes, electric hoists, chain pulley Blocks, etc. are to be tested and periodically examined by competent person and records are maintained in Form No.-32 as per statutory requirement. This is a good practice.

Lifting tackles like Wire Rope Slings, Chain Slings, D-shackles, are tested by competent person and records are maintained.

- ***Tested and SWL are displayed as per competent person load test certificate in all areas.***

**3.9.9.8 Material Handling:**

- *Manual material handling training is being given to all the employees & contractor men working in the stores.*

**3.9.9.9 Handling & Storage of Gas Cylinders:**

Oxygen, D.A. and Argon cylinders are stored at stores area. The cylinders are stored in separately. Names of the gas cylinders stored are displayed on the wall.

*Oxygen, DA, Argon cylinders are stored in a well-ventilated shed.*

- *All cylinders with valve cap being entered inside the plant premises.*

**3.9.9.10 Guarding of Machines and Dangerous Areas:**

- *Machine guarding is found to be good except in a few areas where it appears to be inadequate. However, adequacy may be ascertained by reviewing the machine guarding system.*

**3.9.9.11 Means of Access, Platforms & Railings :**

Most of the access / approach, floors, walkways / passages, gangways, etc. were found in good condition & maintained properly.

*Ensure Railings and toe guards are provided to high platforms and catwalks.*

**3.9.9.12 Ventilation, Illumination, Noise, Vibration & Ergonomics :**

Air conditioning is provided for comfort of the personal in the following area of the company, like Administrative building, all Control Rooms, T/G floor offices, etc. The general natural Ventilation system is good. Supplementary Ventilation like exhaust fans, Industrial fan has also been provided.

The general Illumination level of the entire Plant is good during day time. Illumination survey is carried out every six months by electrical Department.

Noise Level Monitoring is being done periodically. Reports shows that at some locations noise levels were above 85 dB(A) and at some locations below 85 dB(A). Noise may be controlled at these locations and/or workers should wear earplugs / earmuffs.

**3.9.9.13 Preventive Maintenance System:**

Preventive Maintenance schedule is prepared for all equipment. Periodicity of maintenance is given by considering the importance of equipment.

- *Root cause analysis is require for repeated breakdowns even after preventive maintenance system by adopting one of the QC tools*

#### **3.9.9.14 Work Permit System:**

Work Permit system is in order

#### **3.9.9.15 SOPs**

Standard Operating Procedures (in English) covering all major operations are used effectively. SOPs are available on line of the operational department.

#### **3.9.9.16 Process Plant Modification Procedures:**

There is a procedure for processes/ plant modifications but it is not available in documented form.

#### **3.9.9.17 Workplace Monitoring:**

Stack and AAQ monitoring is done once in 3 months. Noise levels are also being monitored once in 3 months.

#### **3.9.9.18 Statutory Warnings / Notices:**

Statutory warnings / notices, caution boards, safety instructions, etc. are found displayed in some places.

#### **3.9.9.19 Storage & Handling of Hazardous Chemicals**

- *All hazardous chemicals are stored by taking proper safety precautions – In place*

#### **3.9.9.20 MSDSs:**

MSDS of all the chemicals are available with the Safety Department and in the Laboratory.

- *All chemicals are stored as per their compatibility.*
- *Chemical Compatibility chart are displayed*
- *PPE required while doing analysis are displayed*

#### **3.9.9.21 Colour Code of Pipelines:**

*Colour coding of lines is to be displayed in some of the areas in factory premises*



### 3.9.9.22 Laboratory Safety

The laboratory is very well equipped with fire extinguishers and other PPE. The chemicals are stored in cup boards.

- *The chemicals are stored as per chemical compatibility*
- *Chemical Compatibility chart are displayed*

### 3.9.9 Fire Protection System:

M/s SEIL Energy India Limited is very well equipped with fire protection system. The details are as given below:

#### SEIL PlantNo1:

<b>FIRE WATER PUMP HOUSE</b>	
FIRE WATER RESERVE TANK CAPACITY 4075 M3	<b>02 Nos.</b>
<b>PUMPS FOR FIRE HYDRANT SYSTEM (PRESSURE 10.5 Kgf/Cm2)</b>	
ELECTRICAL DRIVEN PUMPS 410 M3 Capacity	<b>03 Nos</b>
DIESEL DRIVEN PUMPS 410 M3 Capacity	<b>02 Nos.</b>
<b>PUMPS FOR SPRAY SYSTEM (PRESSURE 10.5 Kgf/Cm2)</b>	
ELECTRICAL DRIVEN PUMPS 410 M3 Capacity	<b>01 No</b>
DIESEL DRIVEN PUMPS 410 M3 Capacity	<b>01 No.</b>
<b>PUMPS FOR MAINTAINING PRESSURE</b>	
ELECTRICAL DRIVEN JOCKEY PUMPS 40 M3 Capacity	<b>02 Nos.</b>
<b>BOOSTER PUMPS FOR TPs and BOILERS</b>	
ELECTRICAL DRIVEN PUMP 171 M3 Capacity	<b>01 No</b>
DIESEL DRIVEN PUMP 171 M3 Capacity	<b>01 No.</b>
<b>FIXED FIRE FIGHTING INSTALLATIONS</b>	
Deluge Valve Water Spray System (HVWS/MVWS )	<b>147 Nos</b>
Fire Water Hydrants	<b>207 Nos</b>
Fire Water Risers	<b>117 Nos</b>
Fire Water Monitors	<b>58 Nos</b>
IG55 Inert Gas Fire Protection System (For CCR) Argon 50%, Nitrogen 50% (300Bar)	<b>134 Cyl.</b>
Foam Tank @ 6000 Ltr (Foam Pourer system for FO Tank)	<b>2 Nos</b>
<b>FIRST-AID FIRE FIGHTING EXTINGUISHERS OF DIFFERENT TYPE &amp; CAPACITIES</b>	



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Foam 9Ltr	212 Nos
Foam 50Ltr	09 Nos
CO2 2KG	30 Nos
CO2 4.5KG	275 Nos
CO2 22.5KG	11 Nos
DCP 500 grm	04 Nos
DCP 1KG	12 Nos
DCP 2KG	10 Nos
DCP 4KG	134 Nos
DCP 6 KG	336 Nos
DCP 25KG	31 Nos
DCP 75KG	05 Nos
DCP Modular Type 15KG	20 Nos
Clean Agent Modular type 5kg	20 Nos
Total	1109 Nos
<b>FIRE DETECTION SYSTEM</b>	
MULTI SENSOR DETECTORS AT CABLE GALLERY, PANEL ROOM, WARE HOUSE AND BUILDINGS	814 Nos
HEAT DETECTORS FOR BATTERY ROOMS	83 Nos
IRD FOR Conveyor Galleries & TPs	38 Nos
LINEAR HEAT SENSOR CABLE (LHS)FOR CONVEYOR GALLERIEs AND CABLE GALLERIES	
QUARTZOID BULB DETECTOR(QBD ) FOR TRANSFORMERs AND OIL TANKS	
<b>FIRE / EMERGENCY WARNING SYSTEM</b>	
FIRE ALARM PANELS	10 Nos.
MANUAL CALL POINTS	183
HOOTER AND BLINKERS	117 Nos
EMERGENCY SIREN	7 Nos
<b>MAJOR FIRE FIGHTING APPLIANCES</b>	
Multipurpose Fire Tender With Equipment/Accesseries	2 Nos
Emergency Fire Jeep	1 No



<b>EMERGENCY AMBULANCES</b>	
Advanced Cardiac Life Support Ambulance Apollo	<b>1 No</b>
Ambulance SEIL	<b>1 No</b>
<b>FIRE FIGHTING AND RESCUE EQUIPMENTS</b>	
Portable Fire Pump	<b>1 No</b>
Floating Fire Pump	<b>1 No</b>
Mobile Foam Unit	<b>4 Nos</b>
High Expansion Foam Generator	<b>2 Nos</b>
DCP Trolley Mounted -150 Kg Capacity	<b>1 No</b>
Life Buoy	<b>10 Nos</b>
Life Jacket	<b>10 Nos</b>
Safety Net	<b>2 Nos</b>
Full Body Harness Safety Belt	<b>7 Nos</b>
Rope Ladder	<b>3 Nos</b>
Rescue Extension Ladder 10.5Mtr	<b>2 Nos</b>
Rescue Rope	<b>5 Nos</b>
Nomex Suit	<b>8 Nos</b>
Proximity Suit	<b>10 Nos</b>
Trolley Mount Breathing Apparatus Set 300 bar x 04Cylinders	<b>1 set</b>
SCUBA Set	<b>1 set</b>
Breathing Apparatus Spare Cylinders	<b>10 Nos</b>
Tripod Stand with Rope and Accessories	<b>1 Set</b>
Rolling Rescue Structure	<b>01 No</b>
Rescue Structure	<b>03Nos</b>
Advanced Firefighting Technology (Water/Foam)	<b>1 Set</b>
Long Range Water Cum Foam Monitor	<b>4 Nos</b>
Medium expansion Foam Generator	<b>1 No</b>
Foam Making Branch 10 X	<b>2 Nos</b>
Foam Making Branch-5X	<b>2 Nos</b>
Combi Tool (Pnumatic Cutter & Spreader)	<b>1 No</b>
Delivery Hose Pipe @15Mtr	<b>100 Nos</b>
Fire Man Safety Helmat	<b>6Nos</b>
Rubber Gum Boot	<b>20 Pairs</b>



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Firman Axe Type-B	10 Nos
Emergency Hand Operate Siren	1 No

CHEMICAL SPILLAGE & EMERGENCIES ARRANGEMENTS	
SCBA (Breathing Apparatus Set) 300 bar 35 min working duration	16 Nos
Emergency Escape Breathing Device 15min duration	06 Nos
Chemical Suit	10 Nos
Chemical Hand Gloves	04 Pair
Rolling Rescue Structure	01 No
Rescue Structure	3 Nos
Water Curtrain	02 Nos
Fast Action Spray Nozzles	02 Nos
Triple Purpose Nozzles	10 Nos

EMERGENCY STOCK FOR AFFF(FOAM) & DCP	
AFFF Foam (Aqueous Film Forming Foam)	5000 Ltr
Dry Chemical Powder	500Kg

PROFESSIONAL FIREFIGHTING/RESCUE DEPARTMENT	
Head Fire Safety (Both Plant)	1
Fire Officers (Both Plant)	4

FIREFIGHTING/RESCUE TEAM (OUTSOURCED MANPOWER)	
Leading Fireman	6
Driver Cum Pump Operator	6
Total	38

### SEIL plant No2:

FIRE WATER PUMP HOUSE	
FIRE WATER RESERVE TANK CAPASITY 1100 M3 Capacity	02 Nos.
PUMPS FOR FIRE HYDRANT AND SPRAY SYSTEM (PRESSURE 10.5 Kgf/Cm2)	
ELECTRICAL DRIVEN PUMPS 273M3 Capacity	04 Nos



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DIESEL DRIVEN PUMPS 273 M3 Capacity	02 Nos.
<b>PUMPS FOR MAINTAINING PRESSURE</b>	
ELECTRICAL DRIVEN JOCKEY PUMPS 40M3 Capacity	02 Nos.
<b>BOOSTER PUMPS FOR BOILERS</b>	
ELECTRICAL DRIVEN PUMP 137M3 Capacity	01 No
DIESEL DRIVEN PUMP 137 M3 Capacity	01 No.
<b>FIXED FIRE FIGHTING INSTALLATIONS</b>	
Deluge Valve Water Spray System (HVWS/MVWS/AV)	127 Nos
Fire Water Hydrants	196 Nos
Fire Water Risers	91 Nos
Fire Water Monitors	107 Nos
Foam Tank @2100 Ltr (Foam Pouter system for FO Tank)	2Nos
IG55 Inert Gas Fire Protection System (For CCR) Argon 50%, Nitrogen 50% (300Bar)	100 Cyl.
<b>FIRST-AID FIRE FIGHTING EXTINGUISHERS OF DIFFERENT TYPE &amp; CAPACITYs</b>	
Foam 9Ltr	143 Nos
Foam 50Ltr	11 Nos
CO2 2KG	30 Nos
CO2 4.5KG	220 Nos
CO2 22.5KG	25 Nos
DCP 1KG	20 Nos
DCP 2KG	22 Nos
DCP 4KG	150 Nos
DCP 6 KG	339 Nos
DCP 9 KG	41 Nos
DCP 25KG	20 Nos
DCP Modular Type 15KG	10 Nos
Clean Agent Modular type 5kg	20 Nos
Total	1051 Nos



<b>MAJOR FIRE FIGHTING APPLIANCES</b>	
Multipurpose Fire Tender With Equipment/Accessories	<b>2 Nos</b>
DCP tender with Equipment/Accessories (Cap.2000KG)	<b>1 No</b>
<b>EMERGENCY AMBULANCES</b>	
Advanced Cardiac Life Support Ambulance Apollo	<b>1 No</b>
Ambulance SEIL	<b>1 No</b>
<b>FIRE FIGHTING AND RESCUE EQUIPMENTS</b>	
Portable Fire Pump	<b>1 No</b>
Floating Fire Pump	<b>1 No</b>
Mobile Foam Unit	<b>3 Nos</b>
High Expansion Foam Generator	<b>1 No</b>
Medium Expansion Foam Generator	<b>1 No</b>
Rescue Extention Ladder 10.5Mtr	<b>2Nos</b>
Rope Ladder	<b>3 nos</b>
Full Body Harness Safety Belt	<b>5 Nos</b>
Rescue Ropes	<b>5 Nos</b>
Rescue Structure	<b>3 Nos</b>
Emergency Lights	<b>3Nos</b>
Life Buoy	<b>10 Nos</b>
Life Jacket	<b>6 Nos</b>
Nomex Suit	<b>6 Nos</b>
Proximity Suit	<b>4 nos</b>
Chemical Suit	<b>5 Nos</b>
SCBA (Breathing Apratus Set) 300 bar 35 min working duration	<b>14 Nos</b>
ELBA (Emergency life escape breathing appartus) 15 min duration	<b>6 Nos</b>
Trolley Mount Breathing Apratus Set (4Nos @300Bar)	<b>1 No</b>
Breathing Apratus Spare Cylinders	<b>4 Nos</b>
Tripod Stand with Rope and Accessories	<b>1 Nos</b>
Foam Making Branch 10 X	<b>2 Nos</b>



Foam Making Branch-5X	2 Nos
Combi Tool (Pnumatic Cutter & Spreader)	1 No
Fire Man Safety Helmat	6Nos
Rubber Gum Boots	10 Pair
Delivery Hose Pipe @15Mtr	100 Nos
Firman Axe Type-B	10 Nos
Emengency Hand Opearate Siren	1 No

<b>CHEMICAL SPILLAGE &amp; EMERGENCIES ARRANGEMENTS</b>	
SCBA (Breathing Apratus Set) 300 bar 35 min working duration	14 Nos
Emergency Escape Breathing Device 15min duration	06 Nos
Chemical Suit	05 Nos
Chemical Hand Gloves	04 Pair
Rescue Structure	03 Nos
Water Curtrain	02 Nos
Fast Action Spray Nozzles	02 Nos
Triple Purpose Nozzles	10 Nos

<b>EMERGENCY STOCK FOR AFFF(FOAM) &amp; DCP</b>	
AFFF Foam (Aqueous Film Forming Foam)	5500 Ltr
Dry Chemical Powder	500Kg
<b>PROFESSIONAL FIREFIGHTING/RESCUE DEPARTMENT</b>	
Head Fire Safety (Both Plant)	1
Fire Officers (Both Plant)	4
<b>FIREFIGHTING/RESCUE TEAM (OUTSOURCED MANPOWER)</b>	
Leading Fireman	6
Driver Cum Pump Operator	6
Fire Man	25
<b>Total</b>	<b>37</b>

### Some more Recommendations for arrangement of Fire extinguishers at the site:

Different fire extinguishers are like CO2, DCP, MF are placed near the equipment and Other areas where ever necessary

- Required numbers of fire extinguishers (different classes) are available in the site and servicing done by the internal safety team once in a month.

### 3.9.9.1 Emergency Preparedness and Response:

- Well drawn on site emergency plan is in place.
- Training programs are being organized periodically on “On site Evacuation Drill” periodically at least once in six months
- Mock drills are organized at regular intervals for different scenario’s.
- Assembly point/ECC/shift ECC are designated for specially
- Responsibilities of site controller, incident controller etc. are defined
- List of telephones, mutual aid scheme, Government officials etc are included
- Wind socks are provided
- Mutual aid scheme with neighboring industries is introduced

### 3.9.9.2 Material Handling

D ,

- Stacking of materials must never be against the wall and should be well within 3 meters height. At least 1.5 meters around the stacking must be kept clear for movement and inspection on regular basis.
- Yellow line discipline to be adhered where ever applicable.
- Ensure adequate firefighting equipment is available in the area.
- Adequate Firefighting equipment’s and water Hydrant system with Monitor to be installed.
- To maintain clean environment in the storage area and to avoid Oil/Liquid spillage.
- Authorized Operator only to handle Fork Lift trucks/ to follow instructions as per Equipment manual.
- No one is permitted to sit on the forklift truck other than the truck operator if it is engaged. To drive at safe speed with caution.
- Do not leave the Fork Lift Truck with engine on and do not load such that visibility is restricted. Recommended to tie the bunch of drums with tie band.
- Ensure proper Anchoring of the Load on Vehicles.





- Avoid using Fork Lift truck wherever trolley can be used.
- Use proper lifting tackles and associated tools and equipment such as Hoist, Chain Pulley blocks, Jacks etc., for handling heavy loads.
- Avoid swinging of Hoist chain with or without load and movement of personnel below the overhead load being carried.

**DON'**

- Do not carry load without properly balancing it.
- Don't carry load over persons and machines.
- Don't allow load to remain suspended.
- Don't overload the equipment beyond its capacity.
- Don't allow more than one person to give signals.
- Don't use the equipment for pulling the load.
- Don't create jerk while transferring the load.
- Don't ride on the load.

<b>ACCIDENTS –INCIDENTS REPORTING- RECOMMENDATIONS</b>	
<b>Observation</b>	<b>Recommendation</b>
<b>Accidents-Incidents record</b>	Site is maintaining accident-incident record and Every year trend analysis being prepared, and training & action plan prepared, and training needs being ensured.
<b>Mechanism for capturing the near Misses</b>	Multiple options provided for Near miss reporting and same communicated and ensured.
<b>Work Place Monitoring and exposure studies</b>	Process safety audit conducted. HAZOP study conducted and safety culture survey being conducted every two years.
<b>First-aid Cases</b>	First –aid cases are recorded and analyzed for root cause. Safety re-induction for the employee is alsodone for the employee taken first-aid. The Safety-re-induction record are maintained



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## **4.0 METHODOLOGY**



The site safety audit was conducted referencing to BIS 14489:2018. Audit is based on discussions with plant personnel, perusal of documents and records submitted by the company, field inspection, information data, clarifications & inputs provided by the company personnel, etc.

During the safety audit the audit team focused on the documents of the organization, related to the following practices:

An illustrative list of documents perused during the safety audit is given below:

- ◆ OS & H Policy
- ◆ Organization Chart
- ◆ Training records on safety, fire and first aid
- ◆ Record of tests and examinations of equipment and structures as per statutes
- ◆ Safe Operating Procedures for various operations
- ◆ Record of Work Permits
- ◆ Record of monitoring of flammable and explosives substances at work place
- ◆ Maintenance and testing records of fire detection and fire fighting equipment
- ◆ Material Safety Data Sheets
- ◆ On-site Emergency Plans and record of Mock Drills
- ◆ Housekeeping inspection records
- ◆ Minutes of Safety committee meetings
- ◆ Approval of layouts and other approval from Statutory Authorities
- ◆ Maintenance inspection records
- ◆ Calibration and testing records
- ◆ Shut down maintenance procedures
- ◆ Records of previous audits

The following elements of safety management system are elaborated in this report.

- ◆ Occupational Safety & Health Policy
- ◆ OS & H Organizational setup
- ◆ Education & Training

- ◆ Employees participation in OS&H management
- ◆ Motivational and promotional measures
- ◆ Safety manual and safety awareness
- ◆ Compliance with statutory requirements
- ◆ Hazardous area classification
- ◆ New equipment review / inspection
- ◆ Accident reporting, analysis, investigation & implementation of recommendations
- ◆ Risk Assessment including hazard identification
- ◆ Safety Inspections
- ◆ Health and Safety improvement plans / targets
- ◆ First aid facilities – Occupational Health Centre
- ◆ Personal Protective Equipment
- ◆ Housekeeping
- ◆ Machine and General area guarding
- ◆ Material handling equipment
- ◆ Electrical and Personal safeguarding
- ◆ Ventilation, Illumination and Noise
- ◆ Work environment monitoring system
- ◆ Prevention of occupational diseases including periodic medical examination
- ◆ Safe Operating Procedures
- ◆ Work Permit System
- ◆ Fire prevention, protection and fighting systems
- ◆ Emergency Preparedness Plans
- ◆ Process / Plant modification procedure
- ◆ Transportation of Hazardous Substances
- ◆ Contractor Safety System
- ◆ Safety for Customers
- ◆ Safety Checklists



#### **4.1. AUDIT GOALS AND OBJECTIVES**

##### **4.1.1. AUDIT GOALS**

1. Audit goal is decided based on documented Safety Management system and to verify the safety practices are in line with IS code ( IS 14489:2018) of safety practices
2. To verify and assess the Safety management system of the organization against the OH& S Standard and to identify the areas for improvement
3. To evaluate the capability of safety management system to ensure compliance with statutory, regulatory and contractual requirements

##### **4.1.2. AUDIT OBJECTIVES:**

The audit objectives are defined as follows:

- Identify design deficiencies and weaknesses, if any, that might have cropped up during modifications/ additions of facilities.
- Examine the existing operating/maintenance and other work practices, safety systems, fire protection facilities and control measures which might have degraded over the time.
- Identify potential Health & Safety (H&S) hazards not covered by the existing control procedures
- Recommend improvements for better effectiveness of the existing procedures, systems and control measures for H&S Hazards.
- Recommend Procedures, systems and control measures for the hazards identified.
- Study compliance with critical statutory provisions and relevant codes of practice and recommend actions to be taken wherever there is non-compliance

##### **4.1.3. AUDIT SCOPE:**

**Audit scope includes as follows:**

1. Physical Locations
2. Activities and Processes of organization
3. Organization activities performed by Company employees and Contract employees
4. Applicable Legal and Other requirements with respect to OH&S



#### **4.1.4 AUDIT TEAM:**

The audit is carried out as per IS 14489:2018 and requirements of Factories Act, 1948 and other safety Statutes on **9<sup>th</sup> and 10<sup>th</sup> November, 2023**

The audit is carried out by experienced persons from **M/s Global Fire and Safety Solutions** are as follows:

1. Mr. K.Suri Babu
2. Mr. Prakash

The team representatives on behalf of the organization are as follows:

1. Mr. Pavan Kumar Rao – Head-HSE
2. Mr. N.S.Venkatesan- Head- Fire Safety and Head-Safety P-2
3. Mr. Gnanadesigan N – Head-Safety, P-1
4. Mr. D.K.Panda- DGM- HSE, Project-1

#### **4.1.5 OPENING MEETING:**

The purpose of opening meeting is to introduce the audit team to Company Management and to restate the purpose of audit i.e the objective and scope, how it will be undertaken and how results are to be communicated back to the company. At the same time the company will introduce their team members to audit team

In this opening meeting –

- Members of the audit team and auditee teams were introduced.
- All department HODs and Head-O&M were present in the opening meeting.
- Audit plan, purpose of audit objectives and necessary documents to be maintained to implement the OH&S system were explained
- Methods and audit procedures were also explained
- Departmental heads are informed the timing of visit to their department
- Resources and facilities required for the auditor was confirmed
- Schedule of the audit is prepared and finalized

- Date and timing of closing meeting are also finalized and fixed in the meeting
- Opportunity for the organization members was given to clarify their queries regarding audit procedure and methodology
- Observations and Recommendations were recorded and summarized in the chapter no.5.0

#### **4.1.6 DOCUMENTS AND RECORDS VERIFIED:**

Documents and records verified for the purpose of examine the implementation of OH&S systems. The records verified during the audit are as follows:

1. Statutory licenses required to operate the industry like factory license, Explosive licenses form Chief Controller of Explosives and FSSI license (food license) from concerned authority were checked for their validities and compliance
2. Work permit system formats, Standard operating Procedures were checked
3. Safety training record and feedback given by the trainees were also checked
4. Accident/Incident record, Near misses capture record , accident/incident record were checked
5. Mock drill record was also checked
6. Following Elements of OH&S management systems and technical aspects as mentioned in annexure-A of the IS 14489:2018 were audited:

#### **OH & S MANAGEMENT**

1. OH & S Policy
2. OH & S organizational set-up
3. Safety Manual
4. Standard modification procedure
5. Plant modification procedure



6. Work permit System
7. Contractors Safety System
8. Plant design and layout
9. Medical management of accidents
10. Management of emergencies (natural/man-made)
11. Employee selection and placement
12. Safety culture
13. Statutory licenses, approvals and records
14. Motivational and promotional measures for OH&S
15. Hazard identification and job safety analysis
16. Product safety
17. Safety training record
18. Change management
19. Emergency preparedness
20. Mock drill record
21. Root cause analysis for incidents
22. Accidents and Incidents records





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## **5.0 FIELD OBSERVATIONS- RECOMMENDATIONS**



**SAFETY LAPSES –LOCATION WISE –RECOMMENDATIONS:**

**SEIL PLANT-1**

**A. WARE HOUSE:**


Department	Observations	Recommendations/Good Safety Practice	Photo documentation
<b>WARE HOUSE</b>	No fire detection and auto fire suppression system for the Diesel storage shed	Auto fire detection and suppression system is to be arranged at diesel storage area.	
	No display of load carrying capacity of pallet	Display load carrying capacity of pallet	
	No Thermograph test carried out for electrical cables in stores	Carry out thermograph test for electrical cables in stores	
	No O2 measurement for shelf life item storage room as it is closed position and also observed some shelf life chemicals are storing in the room	Provide O2 measurement system for the room and ensure sufficient O2 is available at the room	




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	No proper protection for the articles stored at the last row of the racks	Provide a belt for the last row of the racks to prevent fall down of articles	
--	---	---	---

### B. WTP, FIRE PUMP HOUSE AREA:

Department	Observations	Recommendations/Good Safety Practice	Photo documentation
<b>WTP, FIRE PUMP HOUSE AREA</b>	No display of storage tank thickness	Display of storage tank thickness test details	
	No arch flash study/auto fire suppression system for the electrical panel of WTP	Carryout the arch flash study and provide auto fire suppression system	
	No proper containment system to collect the leakage of SMBS	Provide proper conatimnet system for collecting the leakage s of SMBS	





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	Pumps should have interlocks with coupling guards	Provide an interlock system for pumps with coupling guards. It is good EHS practice	NA
--	---	---	----

### C. OHC, FIRE SERVICES AND CRUSHER HOUSE :

Department	Observations	Recommendations/Good Safety Practice	Photo documentation
<b>OHC, FIRE SERVICES AND CRUSHER HOUSE</b>	No Calibration for BP meter and stethoscope /weighing machine	All measuring equipment used for health checkup shall be calibrated	 
	It is observed that some of the fire hydrant lines are found below ground	Ensure all fire hydrant lines are above ground	
	It is found that housekeeping is very poor at C1-25 belt area. The area is completely with wet mud	Housekeeping is to be improved near the C1-25 belt area to prevent slips and falls. Due to rain, it was happened. Dedicated housekeeping team deployed.	
	No fall arrestor for monkey ladder near trolley parking area.	Provide a fall arrestor near monkey ladder near trolley parking area. It is being ensured during work. To be removed	
	Illumination levels are found poor near conveyor area at crusher house	Ensure illumination levels are meeting the norms. It is as per required lux. -----	




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### D. HSD AND FURNACE OIL STORAGE AREA :

Department	Observations	Recommendations/Good Safety Practice	Photo documentation
<b>HSD AND FURNACE OIL STORAGE AREA</b>	No NFPA and GHS labeling on FO storage tanks	Provide NFPA&GHS labeling on FO storage tanks	
	No display of Colour coding of lines at Unloading area	Display colour coding of lines at unloading area	
	No evidence for testing of containment provided at fuel tanks for any leakages	Carry out containment leakage test once in a year	
	No display of tanks and its roof thickness test details	Ensure oil storage tanks and their roof thickness test are carried out once in 5 years	




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### SEIL PLANT-2

#### A. FOPH AREA:

Department	Observations	Recommendations/Good Safety Practice	Photo documentation
FOPH AREA	No display of colour coding of lines at unloading area.	Display Colour coding of lines at unloading area	NA
	No display of GHS and NFPA labelling on the oil storage tanks	Work Place monitoring is to be done in Crusher house	NA
	No display of Storage tank thickness test details on the storage tank	Display thickness test details on the FO storage tanks	
	No leakage test for Storage tank bund wall of storage tanks	Leakage test is to be done for bund wall of storage tanks	






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### B. WATER TREATMENT PLANT AND ETP PLANT:

Department	Observations	Recommendations/Good Safety Practice	Photo documentation
<b>WATER TREATMENT PLANT AND ETP AREA</b>	No display of chemical compatibility chart display at chemical stores	Display Chemical Compatibility chart near Chemical stores	
	No Color coding display of HCL and NaOH lines	Display color coding of process lines for easy identification and traceability	
	No Leak proof pallets for NH3 solutions storage	Provide Leak proof pallets for NH3 solutions	



IS 14489:2018			
CODE OF PRACTICE ON OCCUPATIONAL SAFETY AND HEALTH AUDIT			
S.NO	SAFETY AUDIT ELEMENTS	SUMMARY OF OBSERVATIONS	Remarks
<b>OCCUPATIONAL HEALTH &amp; SAFETY POLICY</b>			
1.	Does the organization have a health and safety policy? (If yes, please attach one copy)	Health and safety policy is in place	Complied
2.	Do you have any corporate safety policy? (If yes, please attach one copy)	The policy is developed	Complied
3.	Who has signed the health safety policy? (Indicate his position)	-----	-----
4.	Whether it is prepared as per guidelines of the Statutory Provisions?	Policy is prepared as per guidelines of statutory provisions	-----
5.	When was the safety policy declared and adopted?	Policy is declared and implemented in the unit.	Complied
6.	How many times it has been updated till now?	Safety policy is reviewed in MRM	Complied
7.	Whether the policy is made known to all?	Not developed and to be displayed after developing	-----
8.	Whether the safety policy was scrutinized by outside expert agency?	No	---
9.	What was the last date of updation?	-----	-----
10.	Does it find a place in the annual report?	Yes	Complied
<b>SAFETY AND HEALTH ORGANIZATION SETUP</b>			
11.	Does the factory have a safety department?	Yes	Complied
12.	Whether the strength and qualifications of Safety Officers are as per the statutes?	Nearly 20 Yes all are qualified	Complied





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13.	Does the head of safety department /safety officer report to the chief executive?	Yes ,	Complied
14.	How often are the safety officers retained in the latest techniques of total safety management? What is the frequency of retaining?	As and when opportunity comes, Attending safety seminars and Training programs	Complied
15.	What additional duties the safety officer is required to do?	Nil	---
16.	What is the power of safety officer vis-à-vis unsafe condition or unsafe act?	Empowered to stop any unauthorized and unsafe activities	Complied
<b>Safety Committees</b>			
17.	Does the Factory has Safety Committee? Their types, structure and terms of reference	Safety committee is formed.	Complied
18.	Is the tenure of the SC as per statute?	Yes ,2 years	Complied
19.	Selection of SC elected or nominated	Nominated	Complied
20.	Frequency of SC meeting	Once in 3 months	Complied
21.	What are the subjects / or the problem discussed in the meeting.	Unsafe conditions/Unsafe acts	Complied
22.	How are recommendations of the committee(s) implemented?	First-priority	Complied
23.	Are the minutes of the safety committee(s) implemented?	Yes	Complied
24.	Are the minutes forwarded to the trade union(s) and chief executive and occupier?	There is union on the Site	-----
25.	How the management and trade union are play their active roles in supporting and accepting the committee(s) recommendations(s)?	Yes. Management is taking keen interest in safety.	-----
26.	How are the safety committee(s)	It is to be decided when it	-----



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	members apprised of the latest developments in safety health and environment?	forms.	
<b>Safety Budget</b>			
27.	What is the annual safety budget?	As of now, No separate budget, however any safety critical issues are funded.	Complied
28	How much percentage is this budget of the total turnover of the Company?	No limitation as far safety is concerned	Complied
29	How much budget has utilized till date?	NA	Complied
30	Is the safety budget adequate?	Yes	Complied
31	How is the safety budget arrived at?	NA	--
32	What is the pattern of expenditure for the last five years?	NA	---
33	What are approved sanctions for the expenditure in this budget?	NA	----
34	Does this budget get reflected in the annual report of the company?	NA	-----
<b>SAFETY MANUAL</b>			
35	What is the periodicity of updation / review of safety manual	Safety manual is there	Complied
36	Does the safety manual adequately address all the hazards in the plant?	Yes	Complied
37	Are the employee made aware of safety rules / instruction mentioned in the safety manual?	Yes	Complied
<b>STANDARD OPERATING PROCEDURES ( SOP )</b>			
38	Are written Standard / safe operating procedures available for all operations and processes?	Yes , Being followed the same	Being complied
39	Whether the written Standard / safe operating procedures are	Kept in work places for immediate reference	Complied



	displayed or made available and explained in the local language to the workers?		
40	Whether concerned section and safety department prepares standard / safe operating procedure jointly?	Yes ,.	Complied
41	Are standard / safe operating procedures reviewed and updated?	As per predefined procedure & any major changes.	Being followed
42	Have the workers been informed of the consequences of failure to observe the standard / safe operating procedures?	Will be Covered during in trainings	Being followed
<b>PLANT MODIFICATION PROCEDURES</b>			
43	What is the system for effecting any change in the existing plant, equipment or process?	Change control procedure in place.	Being Complied
44	Whether the P & I diagrams and other related documents are updated accordingly?	Yes	Being Complied
45	Whether hazard assessment done before implementation of modifications.	Yes	Being Complied
<b>WORK PERMIT SYSTEM</b>			
46	What types of work permits exist in the factory?	Work permit system is in place	General work, Hot work, Height work, Confined space, Tanker unloading & Electrical work permits are in place
47	Are the necessary forms detailing required safety precautions have been prepared and used for each type of work-permit?	Yes	complied



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48	Is the responsibility assigned to authorized person for issuing of safety work permit?	Yes	Complied
49	Is the copy of safe work permit sent to safety officer before execution of the job?	Yes	Yes
50	Is validity period specified in the safety work permit? Are the records of work permit available and maintained in proper order?	yes	Complied
<b>Control Measures for Work at Height</b>			
51	Is adequate safe access provided to all places where workers need to work?	yes	complied
52	Are all such access in good condition?	Yes	Complied
53	Are all scaffolds are properly designed and erected?	N.A	---
54	Are ladders securely clamped or lashed in place?	Yes , all ladders is in good condition	Complied
55	Are planks in good condition?	Yes	Complied
56	Are scaffold walkaways, platforms, runs or stairs free of debris, grease, any unnecessary obstruction and projecting nails?	Yes , all walkways are clear access.	Complied
57	Are the scaffolds higher than 20 m.? If yes, is a netting or intermediate railing provided between toe-boards and hand railings?	NA	---
58	Are folding stepladders properly used?	NA	--
59	Are ladders set up at the proper slope of about 1:4?	Yes	Complied
60	Do workers use hand lines to lift	Yes	Complied



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	tools or materials?		
61	Are proper ladders used around electrical hazards?	Yes	Complied
62	On sloping roofs, are crawling boards, lifelines, safety belts and edge protection provided where needed?	AS & when required provide the same.	Complied
63	Whether the weak spots, skylights, or deteriorated asbestos-cement boards through which a worker might fall while working in the roof has been identified and safety net provided appropriately?	Not having such type of buildings.	Complied
64	Are the workers being medically examined for their fitness to work at height?	Yes	Complied
<b>Work in Confined Space</b>			
65	Is work permit system followed for working in confined space?	Yes	Complied
66	Whether monitoring of the atmosphere inside the confined space is carried out and ensured that there is no flammable or toxic gas in the area?	Yes	Complied
67	Whether the person entering the confined space is using suitable personal protective equipment(PPE)?	Yes	Complied
68	Is rescue team available in case of any emergency?	Yes	Complied
<b>CON R C OR ' F Y Y M</b>			
69	Is there any system for selection of contractors?	Yes	Complied
70	Are there any guidelines on contractor's safety and training?	Yes	Complied
71	Whether contract document includes necessary safety and welfare clauses as per statutes?	Yes	Complied



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72	Is there any programme to ensure use of PPE by contractors personnel?	Company is being provided to all contract workmen	Complied
73	Do the contractors have their own safety organization?	No	--
74	Are the contractors reporting all accidents and injuries?	Yes	Complied
75	Are contractor workers trained to observe safety at work place?	Yes	Complied
76	Whether contractor workers are engaged in process / operations? If yes, are they aware of safe operating procedures?	Contract workers are engaged in housekeeping& helping activities.	Complied
<b>PLANT DESIGN AND LAYOUT</b>			
77	Whether hazardous operations in the plant are segregated?	Yes	Complied
78	Whether occupational health & safety aspects are considered during the design?	Yes	Complied
79	Is all the equipment provided with adequate space for working, maintenance etc.?	Yes	Complied
80	Are the storage tanks provided with enough space / clearance between them?	Yes	Complied
81	Whether the plant layout has taken care of the movement of firefighting equipment and emergency exits?	Yes	Complied
<b>MEDICAL MANAGEMENT OF ACCIDENTS</b>			
82	Are medical facilities available with trained first aid staff and equipment in round the clock shift for all including contractors?	Yes	Complied
83	Is the ambulance van available for round the clock basis with the dedicated driver?	Yes	Complied



84	Is there any mutual aid scheme available with the nearest hospitals to manage and treat injuries during emergency?	Yes	Complied
85	Are the workers / contractor workers aware of emergency medical facilities?	Yes	Complied

### MANAGEMENT OF EMERGENCIES

#### ( NATURAL / MAN-MADE )

86	Does the system exist to detect and control these Emergencies?	Fire alarm system & fixed detectors are available	complied
87	Does the system exist to detect and control these Emergencies?	The facility having auto operated fire hydrant system & portable fire extinguishers	complied

### EMPLOYEES SELECTION AND PLACEMENT

88	Whether norms are available for selection of different category of employees?	Recruitment policy in place. Preference is being given for the Safety Knowledge in the process	Complied
89	Whether pre-employment medical examination is being conducted for employees?	Yes	Complied
90	Is there any procedure to evaluate safety awareness and record of the employees during their promotion?	Yes	Complied

### SAFETY CULTURE{Attitudes of Managers}

91	Do the managers follow the plant safety rules at all times?	Yes	Complied
92	What are their attitudes towards safety reviews and audits?	They are accepted in positive way & will co-ordinate & support to implement the best safety practices.	Complied



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93	What is the response of management to safety violation?	Taking seriously & giving counseling to improve safety culture.	Complied
94	Whether safety related decisions are taken in consultation with the workers?	Yes	Complied
95	What is the attitude of the managers towards non use of personal protective equipment?	They are insisting to wear appropriate PPE in work place.	Complied
<b>Attitudes of Workers</b>			
96	Whether workers are aware of the consequences of their wrong actions?	Trainings conducted on importance of PPE at work place.	Complied
97	Are laid down safe working procedures followed strictly?	Yes	Complied
98	What is the attitude of the workers towards their own mistake, which can prejudice safety?	Given counseling to such type of personnel.BBS system is in place	Complied
99	Do the workers report near miss incidents and suggest safety improvements?	Yes	Complied
100	Are the workers aware of the system of rewards and sanctions relating to safety matters?	Yes	Complied
101	What is the attitude of workers towards use of personal protective equipment?	Wearing appropriate PPE while working without fail	Complied
<b>STATUTORY LICENSES, APPROVALS AND RECORDS</b>			
102	Whether all the safety related Acts / Rules (with latest amendments) applicable to your organization identified, informed to all employees and complied?	Yes	Complied
103	Whether the licences have been validated?	Factory license, CFO ,PESO license etc.	Complied
<b>MOTIVATIONAL AND PROMOTIONAL MEASURES FOR OH &amp; S</b>			





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104	Does the factory have occupational health and safety suggestion scheme?	They are planning not yet implemented	Complied
105	Are occupational health and safety contests organized in the factory?	Yes, conducted during NSD & WED celebrations.	Complied
106	Does the factory participate in National Awards?	No	---
107	Has the factory been awarded during last five years?	No	---
108	Does the organization publish safety bulletin / newsletters?	No	---
109	Whether the safety bulletins are widely distributed?	No	---
110	How is the occupational health and safety information including accident statistics disseminated in the factory? (Bulletin boards, Newsletter etc.)	safety information board is displayed	Complied
111	What are the activities conducted during National Safety day / week?	Safety quiz, elocution, firefighting drill, safety posters, safety quotations competition to all employees & contract employees.	Complied
112	What is the percentage of Workers participating in the various safety promotional activities?	More than 80% of the people participated in various safety promotional activities.	Complied

## HAZARD IDENTIFICATION AND JOB SAFETY ANALYSIS

113	Was an initial process hazard analysis (PHA) completed?	Completed	
114	What are the stages of PHA? Whether a dedicated group is identified for PHA?	Yes	Complied
115	Was the PHA appropriate for the complexity of the process and identify, evaluate, and control the hazards involved in the process?	Yes	Complied



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116	Does the hazard evaluation use one or more of the following PHA methodologies: What-If Anysis, Process Checklist, Hazard and Operability Study (HAZOP), Failure Mode and Effects Criticality Analysis (FMECA), Fault Tree Analysis (FTA) or any other appropriate equivalent methodology?	Will follow any one of the system mentioned	Complied
117	Does PHA assures addressing issues of inherent safety features with respect to material and their properties?	Yes	Complied
118	Does the PHA address the hazard identification, incidents history, consequences of failures (engineering and administrative controls), human factors, consequent analysis with respect to possible safety and health effects of failure of controls?	Yes	Complied
119	What are the stages of PHA? Whether a dedicated group is identified for PHA?	Yes	Complied
120	Does the system exists to promptly address findings and recommendations of PHA?	Yes	Complied
121	Are the PHA's updated and revalidated at least every five years by a qualified team to assure that the PHA is consistent with the current process?	Yes	Complied
122	Whether the activities requiring Job Safety Analysis have been identified?	yes	Complied
123	Whether the identified jobs for Hazard Identification have been carried out by trained and	being done	Complied



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	experienced persons?		
124	Whether the checklists have been prepared on each Job Safety Analysis and are being used while carrying out the job?	Prepared	Complied
<b>PRODUCT SAFETY</b>			
125	Whether hazards arising from use of the products are identified?	HAZOP study has done	Complied
126	Whether material safety data sheet prepared for the products?	Yes	Complied
127	Are all the products labeled and packed appropriately?	NA	----
128	Whether safety instructions are given along with products?	----	----
<b>SAFETY TRAINING</b>			
129	Whether training needs have been identified?	Yes	Complied
130	Is there any programme of induction training, its duration and topics covered?	Yes, General safety and Process safety	Complied
131	Whether the assessment of the trainees has been carried out?	Yes	Complied
132	What are the infra-structural facilities available for training?	Separate training hall & projector	Complied
133	Whether training is conducted by qualified person?	Yes	Complied
134	Whether trainers are being re-trained from time to time?	Yes, trainers being attended external trainings occasionally	Complied
135	Whether proper records of training program conducted are maintained?	Trainings are being conducted but records are available	Complied
136	How training programs are evaluated?	Through feedback from employees	Complied
137	Whether schedule for training on occupational health and safety is	Yes	Complied



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	available and maintained?		
138	Whether the training programmes are reviewed?	Yes	Complied
139	Are all the employees periodically trained / retrained and what is the frequency of such training?	Yes	Complied
140	Are the retraining needs identified whenever a new process / products and change in existing process introduced?	Yes	Complied
141	Whether training covers top management?	Yes	Complied
142	How many hours of safety training is given to different employees?	Being tracked.Nearly 10 hours /employee/annum	Complied
<b>CHANGE MANAGEMENT [Management of Change]</b>			
143	Are there written procedures for managing change to process chemicals, technology, equipment and procedures and changes to facilities that affect the plant process / system operation?	Yes	Complied
144	Do the procedures assure that the technical basis for the proposed change addressed prior to any change?	Yes	Complied
145	Do the procedures assure that the impact of the change on safety and health addressed prior to any change?	Yes	Complied
146	Do the procedures assure that modifications to operating procedures are addressed prior to any change?	Yes	Complied
147	Do the procedures assure that the necessary time period for the change is addressed prior to any change?	Yes	Complied
148	Do the procedures assure that the authorization requirements for the proposed change are addressed	Yes	Complied



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	prior to any change?		
149	Are employees involved in operating a process, and maintenance and contract employees whose job tasks will be affected by change informed of, and trained in, the change prior to the start-up of process or affected part of process / operations?	Yes	Complied
150	Is the safety information is reviewed and updated on changes?	Yes	Complied
151	Are the operating procedures or practices updated?	Yes	Complied
<b>Mechanical Integrity</b>			
152	Does the mechanical integrity program include for all mechanical equipment including pressure vessels and storage tanks, piping and components, relief devices and vent systems, emergency shutdown systems, pumps, control systems?	All equipment are covered in preventive maintenance schedule & SRV's & pressure vessels will be tested by competent person periodically.	Complied
153	Are there written procedures to maintain the ongoing integrity of process equipment?	yes	--
154	Whether training been provided to each employee involved in maintaining the on-going integrity of process equipment?	Training imparted to all functional HOD's	Complied
155	Are inspections and tests performed on each item of process equipment included in the program?	Yes, as per pre-defined schedule.	Complied
156	Does the inspection and test frequencies meet the manufacturer's recommendation and good engineering practice?	Yes	Complied



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157	Are inspections and tests performed more frequently if determined necessary by operating experience?	Yes, as per the defined schedule	Complied
158	Are deficiencies in equipment that are outside limits corrected before further use so as to assure safe operation?	Yes	Being followed
159	In the construction of new plants and equipment, whether quality assurance programme is implemented to ensure that equipment fabricated is suitable for the process?	No It will be done	-----
160	Are appropriate checks and inspections made during equipment installation stage?	Yes	Complied
161	Are the suitability of maintenance materials, spare parts and equipment ensured during maintenance	Yes	Ensured by Engineering dept.
<b>PHYSICAL HAZARD</b>			
162	Are all the passages, floors and the stairways in good condition?	Yes	---
163	Is glass door taped or otherwise marked to make it visible to workers?	Marked	Complied
164	Do you have the system to deal with the spillage?	Spill control procedure in place	Complied
165	Do you have sufficient disposable bins clearly marked and whether these are suitably located? Are containers of refuse (waste) and trash emptied at the end of every day or soon after they are full? Are the containers or bins regularly cleaned?	Yes , provided	Complied
166	Are drip trays positioned wherever necessary?	---	--



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167	Do you have adequate localized extraction and scrubbing facilities for dust, fumes and gases? Please specify	Exhaust fans & scrubbers are arranged	Complied
168	Whether walkways are clearly marked and free from obstruction?	clearly maintained	Complied
169	Do you have any inter-departmental competition for good housekeeping?	No	--
170	Has your organization elaborated good housekeeping practices and standards and made them known to the employees?	Dedicated Housekeeping team deployed under operation department	Complied
171	Are there any working conditions, which make the floors slippery? If so, what measures are taken to make them safe?	Generally maintained good condition & if any slippery conditions observed	Complied
172	Does the company have adequate measures to suppress polluting dust arising out of materials stored on the roadside?	Yes, Scrubbers & dust collectors are arranged	Complied
<b>Machine and General Area Guarding</b>			
173	Whether machinery and equipment which can cause physical injuries to operator have been identified?	Taken proper safety precautions such type of equipment.	Complied
174	Are all moving parts and point of operation of machinery adequately guarded?	Yes , provides guards.	Complied
175	Are all fixed guards securely bolted in position and in good condition?	Yes, properly fixed	Complied
176	Are all interlock guards for prevention of physical injury in good condition?	Maintained good condition.	Complied
177	Are all emergency stop buttons effective and clearly labeled?	Yes	Complied
178	Are the operators for machines having moving parts aware of the	Yes , covered during training programs.	Complied



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	danger of working with loose clothing?		
179	Are the openings where there is free fall hazard covered or fenced securely?	Yes , properly covered	Complied
<b>Material Handling</b>			
180	Are adequate equipment available for handling materials?	Yes	Complied
181	Are the workers aware of the hazards associated with material being handled?	Yes	---
182	Where manual handling is necessary, are the workers been trained? Do they practice this? Are workers warned for lifting of excessive weight? (Maximum weight of material for adult male and female are 55 Kg and 30 Kg respectively)	Trainings given on safe handling chemicals & ergonomically hazard	Complied
183	Do workers follow safe procedures for storage of materials?	Yes	---
184	Is the register maintained to record particulars of examination of all lifting machines, tools and tackles?	Register available	Complied
185	Are all the statutory examinations and tests carried out and certified by competent person(s)?	Yes	Complied
186	Are the operators of crane, lifts, hoists and other mechanized operations adequately qualified?	Work permit system in place.	Complied
187	Is the safe working load clearly marked?	Yes	Complied
188	Has the person employed to operate crane, forklift, or to give signals to crane been medically examined for eyesight and colour vision?	Yes	Complied





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189	Is the frequency of eyesight and colour vision examination as per the latest rules?	Yes	Complied
<b>Electrical Safeguarding</b>			
190	Are licensed electricians available for electrical work?	Yes	Complied
191	Whether area classification for electrical equipment has been carried out?	FLP electrical fittings are maintained wherever required .	Complied
192	Do the electrical fittings conform to area classification for electrical equipment?	NA	-----
193	Is a ground fault current interrupter system ( ELCB) in use?	Yes	----
194	Are all connections made by using appropriate plugs, receptacles or enclosures? Are fuses provided?	Yes	---
195	Are there any make shift connection bare wires or damaged cables?	No	---
196	Is there a system of ensuring periodical inspection of hand tools, extension boards used for electrical work?	yes	Complied
197	Do the workers use proper types of PPE during the working on live line?	Yes	---
198	Is the separate work permit issued for working on high voltage line?	Yes	---
199	Whether the process(s) and equipment that generate and accumulate static charge have been identified?	Yes and taking proper safety measures to dissipate the static electricity.	---
200	Whether all such equipment including pipelines for flammable materials are properly bonded	Yes ensured by user department & engineering dept.	---



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	and earthed?		
201	Whether earth pit resistance is measured and the record maintained?	Earth pit resistance measured and records are being maintained	.Complied
202	Whether lightning arrestor has been installed and is adequate?	Yes	Complied
<b>Safety in Storage and Ware housing</b>			
203	Whether the Material Safety Data Sheet for all chemicals is available?	Yes	Complied
204	Are the chemicals stored as per their hazardous properties including the incompatibility?	Yes	Complied
205	Are all containers clearly, indelibly labelled? Are all chemicals stored as per safety regulations?	Yes	---
206	Whether all racks and steel cages have sufficient load bearing capacity?	Yes	NA
207	Is adequate natural ventilation provided to store room? Is there any emergency exit?	Ventilation & emergency exit provided.	Complied
208	Whether adequate firefighting arrangement existing in flammable chemical storage?	Yes	Complied
209	Whether methodology for handling spillages of hazardous chemical available along with the equipment required handling the spillage?	Spill control procedure & spill control kits in place.	Complied
210	Whether aisles are marked and emergency exits displayed?	Yes	Complied
<b>Hazard Assessment for New Equipment</b>			
211	What is the system for effecting any change in the existing plant, equipment?	Change control procedure in place.	Complied
212	Is there system for evaluating	Through change control	Complied



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	hazards from new equipment?	system only.	
213	Whether the P and I diagrams and other related documents are updated accordingly?	Yes	Complied
214	Is any Job Hazard Analysis (JHA) carried out after installation of new equipment?	Yes	Complied
<b>Hazards from Radiation Sources</b>			
215	Whether licences have been obtained for storage / handling of radioactive material?	Yes.	Complied
216	Whether approved Radiological Safety Officer appointed?	NA	---
217	Whether appropriate PPEs are used against radiation hazards?	NA	---
218	Is the flooring of the radioactive material handling area amenable for proper decontamination?	NA	---
219	Is the storage room of radiation source as per the licence condition?	NA	--
220	Are all persons working in the facility have radiation safety training?	NA	--
221	Is the operators handling devices using radioactive materials qualified and possess the necessary certificate?	NA	--
222	Is the periodical radiation monitoring carried out?	NA	--
223	Are the records of inventory of radioactive material maintained in the standard format and submitted to the competent authority as per the period specified?	NA	--
224	Are emergency handling tools available?	NA	--
225	Are the personnel monitoring	NA	--



	badges (TLD, Pocket dosimeter etc.) assigned and worn by each radiation worker?		
226	Are the radiation symbol and red light displayed as required?	NA	--
<b>CHEMICAL HAZARD</b>			
<b>Transportation of Hazardous Substances</b>			
227	What potentially hazardous materials are transported to or from the site (including wastes)	Hazardous wastes only	--
228	What mode of transport are used? 1) Road, 2) Rail, and 3) Pipelines 1) Road	Road	---
229	Does the company employ licenced vehicle of its own / outside sources? ii) Are the loading / unloading procedures in place and safety precautions displayed? iii) Is there a provision to check the healthiness of road tanker with respect to explosives rules? iv) Are loaded tankers or trucks parked in a specific area on-site? v) Do all truck and tanker drivers carry transport emergency (TREM) card or instruction booklet? vi) Do all truck and tanker drivers get training in handling emergencies during transport? vii) Are all the tankers marked for proper Hazchem code?	Hired with third party transport TREM cards will also provide to drivers. All drivers will be trained on hazardous chemical handling. Ensure All storage tankers are having HAZ chem code.	All the points ensured during entry of vehicles in main gate. It was also clearly informed the vendor.
230	Rail 1.What hazardous materials are transported by rail?	NA	---



	2.Does the company have a direct siding on site? 3.Are tankers or other wagons used in transportation?		
231	Pipelines 1.What materials are transported to and from the site by pipelines? 2.Are the pipelines underground or over ground? 3.Are corrosion protection measures employed in pipelines? 4.Whether intermediate booster pumps are used?	NA	
<b>Handling of Hazardous Substances</b>			
232	What are the hazardous substance handled in the factory?	Used oil Chemical residue, ETP sludge etc	-----
233	Whether quantity of hazardous substances is above the threshold limit specified in the Manufacture, Storage and Handling of <i>Hazardous Substances Rule, 1989</i> ? If yes, then required documentation is available as per the rule.	NO	
234	Whether written procedure for handling the hazardous substance is available and operators are trained for handling such substances including actions required in case of leakages and spillages?	SOPs are prepared	Complied
235	Are the employees aware of the hazards arising from hazardous substances and safety precautions to be taken during handling of these?	Yes	Complied
<b>Material Safety Data Sheets (MSDS)</b>			
236	Are the material safety data	Yes , MSDS are available	Complied



	sheets available for all the chemicals handled, used and manufactured in the factory?	in work place.	
237	Whether the latest MSDS are displayed at strategic locations?	Yes , kept at work places.	Complied
238	Is it available in local language?	No but explained in local language	Complied
<b>Spill Control Measures</b>			
239	Whether spill control procedure is available?	Yes	Complied
240	Whether spill collection pit / sump is available at the workplace?	Yes	Complied
241	Whether methodology for recovery / disposal of collected material has been established?	Yes	Complied
<b>Storage of Hazardous Substances</b>			
242	Whether storage vessels are identified with the capacity as required under MSIHC, Rules 1989	NA	---
243	What are the storage pressure and temperature? Whether vessels are above ground / underground?	Ambient temp & atmospheric pressure only	--
244	If any of the tanks storing flammable material, whether electrical equipment and fittings are as per electrical area classification?	Yes	Complied
245	Is the bunded area takes into account the total quantity of the largest tank?	Yes	Complied
246	Whether the bund perimeter takes into consideration of trajectory of leak from tank?	Yes	Complied
247	Are the vessels properly bonded and earthed and whether periodically checked and record maintained?		



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248	Are the vessels fitted with remotely controlled isolation valves?	Yes	--
249	Are vessels provided with emergency vent, relief valve, bursting disc, level indicator, pressure gauge, and overflow line?	Yes	--
250	Where do such vents discharge?	Dump tanks & collection tanks.	--
251	Are the vessels provided with alarms for high level, high temperature and high pressure?	Yes	
252	Are standby empty tanks or any other alternate systems provided for emptying / transfer in case of emergencies?	Yes	
253	What are the provisions made for firefighting / tackling emergency situations around the storage vessels?	Hydrant network, deluged system & hydrant sprinkler system	--
254	Has any consequence analysis for loss of containment been carried out?	Not required	Consequences analysis to be done on storage tanks & HARA report to be revised.
255	Whether the vessels are tested as per statute?	Yes	--
256	Whether log sheets are filled up on daily basis for recording the parameters of these vessels?	Yes	-----
257	Whether monitors for detection of leakage of flammable / toxic material installed?	Yes	-----
258	Whether the chemicals stored are as per their compatibility?	Yes	--

### Gas Cylinders

259	What are the various gas	Nitrogen and Hydrogen	----
-----	--------------------------	-----------------------	------



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	cylinders used in the plant?		
260	Are valid licenses available for storing all these cylinders?	Yes	--
261	Are the cylinders stored and segregated as per their compatibility?	Yes	
262	What are the measures taken for combating any emergency in the cylinders storage area?	Properly secured , protective guards or caps provided, sensor provided and all firefighting system provided	--
263	Whether integrity test certificates are obtained from the suppliers of the cylinders?	Yes	
264	Are the cylinders chained and secured properly along with the valve caps and proper identification colour code?	Yes	
265	Are the cylinders protected from heat or sun and rain?	Yes	Complied
267	Whether monitors for detection of leakage of flammable / toxic gas installed?	Leak detection system is provided	Complied
<b>Labeling and Colour Coding</b>			
268	Are all the containers, vessels and storage tanks labeled for its content and capacity?	Yes	--
269	Whether the pipelines are colour coded as per IS 2379?	Yes	--
270	Is any plant specific colour code followed?	Yes	
271	Whether the colour codes are displayed conspicuously in the working areas?	Yes	
<b>Hazardous Waste Management</b>			
272	Is identification done for various types of hazardous wastes?	Yes, obtained license from APPCB.	Complied
273	Are these quantities less than those specified by the Hazardous Wastes (Management &	Yes	--





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	Handling) Rules, 1989?		
274	What are their disposal modes?	Authorized recyclers	--
275	What are the systems / measures adopted for controlling air / water / land pollution?	Complied all the conditions stipulated in the CFO.	--
276	Whether the solid waste like combustibles, plastic, metals etc. segregated?	Yes	--
<b>FIRE AND EXPLOSION HAZARD</b>			
	<b>Organizational Set-up for Fire Fighting</b>		
277	What is the total strength of fire station and fire crew?	04 fire officer, 01 Manager and 74 fire man	----
278	How many fire crews are available in each shift?	Nearly 20 persons	----
279	Is there fire squad identified in each shift?	yes	-----
280	Standing fire order is available with latest revision	Yes	-----
281	How is the communication with fire station?	By phone, walkie talkie and detection system	-----
282	Does fire safety inspections carried out?	Yes inspected by Fire authority	Complied
283	Does emergency procedure available for leakage or combustion of flammables?	Yes	Complied
284	What measures are available to control the fire load in the plant area?	Fire hydrant system, portable fire extinguishers, fire alarm system.	Complied
285	Whether technical knowledge and skills of the manager and staff responsible for overall fire safety of the plant is adequate?	Yes , qualified & technically sound EHS staff monitoring the fire safety activities.	Complied
286	How many major and minor incidents / fires were there in the factory during the last five years? Give department / plant wise.	No fire accidents were happened	Complied



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287	Have all the fires / incidents been investigated and corrective actions taken? Give break-up.	Yes	--
288	Resources: 1.Adequacy of protective clothing (coat, trouser, gloves, boots and helmets); 2.Availability of SCBA for firefighting operations and spare cylinders (at least 2 for each SCBA);	Yes	--
289	Adequacy of hose, nozzles, ladders, lighting equipment and pumps; and	Yes	--
290	Communication facility at fire station, walkie talkie sets during firefighting	Yes, Emergency telephone facility available.	--
<b>Built in Safety in Civil Design and Construction</b>			
291	Whether the two safe means of escape available? Are they in separate directions?	Yes	Complied
292	Is emergency exits provided to the building handling flammables?	Yes	Complied
293	Whether emergency lights are provided?	Yes	All area provided
294	Whether fire / smoke detectors are installed in fire prone areas?	Yes	Complied
295	Whether fire call points are provided in different areas?	Yes	Complied
296	Whether Fire hydrants are provide near the buildings?	Yes	Complied
297	Is ventilation system in plant handling flammables is adequate to prevent formation of flammable mixtures?	Yes	Complied
298	Is adequate separation is provided between combustible / flammable materials and other material to restrict the fire growth?	Separately stored all combustible & flammable materials	Complied
299	Access routes for firefighting	Yes	Complied



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	operations is available for areas having high fire load?		
300	Whether building changes interferes with fire detection and / or fire suppression systems?	Fire alarm system provided	Complied
301	Whether building changes cause unreasonable fire loading / openings in the fire rated walls?	No	--
<b>Built in Safety in Electric Circuits and Equipment</b>			
302	Are the electrical equipment in areas where flammables mixture is likely to be present of flame-proof type?	Yes	-----.
303	Are lightning arrestors are provided to the buildings / structures storing flammable materials?	Yes	.
304	Whether adequate bonding and grounding of electrical equipment / pipelines provided?	Yes	Complied
<b>Explosive Substances</b>			
305	Whether necessary license / approval taken from concerned statutory bodies?	Not required	-----
306	Whether systems for explosion suppression, high speed fire detection with deluge, sprinklers, explosion venting etc. are provided?	Yes	Complied
307	Whether explosion resistant walls or barricades are provided around explosive storage?	Yes	--
308	Whether explosive substance storage areas are restricted for entry?	NA	--
309	Whether only trained persons are handling explosive substances?	NA	--
310	Whether explosive substances	NA	--



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	are stored and transported in approved containers only?		
311	Whether electrical fixtures in areas handling explosives are explosion proof type?	NA	--
312	Whether adequate measures are taken to prevent any sources of ignition where explosive substances are handled?	NA	--
<b>Fire Safety in Handling Flammable and Explosive materials</b>			
313	Whether emergency procedure is available for control of leakage?	Covered in ERP	Complied
314	Whether emergency measures are displayed locally in case of accidental spillage / leakage?	Yes & explained in telugu language during trainings.	--
315	Whether facility is provided for safe drainage of combustibile or flammable liquids in case of leakages?	Yes, dyke facilities are amiable	--
316	Whether highly flammable liquids are stored under inert atmosphere?	Yes	--
317	Whether flammable storage tanks are provided with flame arrestors?	Yes	--
318	Whether suitable PPEs are provided?	Yes	--
<b>Fire Detection and Alarm System</b>			
319	What type of fire detection and alarm system provided?	Addressable fire alarm system	Complied
320	Whether all fire prone areas of the plant are covered with fire detection system?	Yes	Complied
321	Whether fire detection equipment and smoke alarms in good operating condition?	Yes	Complied
322	Whether the number of fire call points are adequate and free from obstruction?	Yes sufficient number of fire call points are arranged	Complied



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323	Whether regular inspection / maintenance / testing of fire detection and alarm system carried out and records maintained	Yes , third party inspections carried.	Complied
324	Whether emergency power supplies are provided to fire detection and fire alarm system?	Yes, Ups backup provided	Complied
325	Whether smoke detectors are located considering ventilation pattern?	Yes	Complied
326	Whether annunciation of fire is local or in the control room or in both places?	Provided emergency telephone numbers.	Complied
327	Whether any atmospheric monitoring is carried out for explosive mixture of gases or vapours?	Detection system is in place	Complied
328	Whether fire panel is constantly attended?	Yes	Complied
<b>Passive and Active Fire Protection System</b>			
329	What are the passive fire protection measures available? (barriers, doors, dampers etc.)	Fire dampers are provided to AHU system.	Complied
330	Are the areas requiring fire barriers identified?	NA	--
331	Whether the fire barrier provided is of adequate ratings?	NA	--
332	Whether ventilation ducts in flammable areas have been provided with isolation dampers of suitable fire rating?	Yes	--
333	Whether sprinklers / deluge are installed wherever necessary?		
334	Whether regular inspection / maintenance / testing of fire protection system carried out and records maintained?	Yes , inspection records are available	Its recommended to hydrant pumps flow rate to be



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			checked once in year
<b>Fixed Fire Extinguishing System</b>			
335	What are the sources of firewater and whether they are dedicated to the fire extinguishing system?	Yes , fire hydrant tank available	-----.
336	Whether the capacity of dedicated water reservoir is adequate to supply to hydrants for minimum 2 h? Whether un-interrupted power supply is provided to the firewater pumps?	Capacity available	----
337	Whether the extinguishing medium selected is appropriate to the class of fire (water, gaseous, foam, dry powder)?	Yes	Complied
338	Whether fire hydrants layout is available?	Yes	Complied
339	Whether additional (over minimum requirement) fire hoses, nozzles are available?	Yes	Available in ECC room
340	Whether the hydrants lines are kept pressurized?	Yes , maintained 6.5 to 7 Kg pressure.	Complied
341	Whether regular inspection / maintenance / testing of fixed fire extinguishing systems carried out and records maintained?	Yes	Complied
<b>Portable Fire Extinguishing System</b>			
342	Whether suitable type and numbers of fire extinguishers provided?	Yes , provided as per the requirement	Complied
343	Whether suitable type and numbers of fire extinguishers provided?	Yes , provided as per the requirement	Complied
344	Whether fire extinguishers periodically inspected, tested, refilled and records maintained?	Yes, once in three months third party inspections being carried.	Complied
345	Whether defective / unchecked	No	--



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	fire extinguishers present at site?		
346	Whether additional fire extinguishers are available?	Yes (95 numbers)	-----
<b>Fire Fighting Equipment and Facilities</b>			
347	Whether fire tenders (water / foam) are available?	Water foam is available	Complied
348	Whether the fire-fighting system and equipment approved, tested and maintained as per relevant standard?	Yes	Complied
349	Whether the SCBA / fire suit provided to fire fighting team for immediate action?	Yes	Complied
350	What is system for maintenance / recharge of SCBA?	Yes, Monthly	
351	Is proper access available for firefighting equipment?	Yes	Complied
352	Whether fire hose cabinets are in good condition, easily visible, and accessible?	Yes	Complied
353	Whether drill tower is available? Are fire personnel carrying out regular fire drill?	Yes , But it is to be done periodically	Complied
354	What is the communication facility at fire station? Is it adequate?	Dedicated telephone available	Complied
<b>Fire Drill</b>			
355	Whether mock fire drills are conducted? What is the frequency of drills?	Mock drill are to be conducted once six months & fire drills are to be conducted once in month	To be Complied
356	Whether fire drills are also performed in night shift	Yes	Complied
357	Whether feedback of fire drill is documented?	Yes	Complied
358	What is the system of mutual-aid scheme?	Yes, Mutual aid mock drill being conducted half yearly	



<b>Fire Fighting Training</b>			
359	Whether there is a system of providing firefighting training to plant personnel?	Yes , conducted	Complied
360	What is the frequency and duration of such training? Whether training records are maintained?	Given fire hydrant demonstration to all employees	Complied
360	Whether fire squads are identified for different areas for first-aid fire fighting and rescue, and suitably trained?	Yes	Complied
361	Are all personnel conversant with the fire prevention and protection measures? Whether the fire staff are sent for refresher / advanced training courses?	Yes	Complied
<b>Static Electricity and Lightning</b>			
362	Whether all vessels and pipes are provided with suitable bonding and grounding?	Yes ,earthing continuity given by provided earth jumpers.	Complied
363	Whether arrangement has been made for grounding the tanker containing flammable liquid during loading / unloading?	Yes , provided	Complied
364	Whether spark resistant tools are provided?	Yes.	Complied
365	Whether lightning protection is provided and is adequate?	Yes	Complied
366	Whether antistatic clothing, hand gloves and footwear are provided?	Yes	Complied
<b>Pressure Relief System</b>			
367	Whether the listing of all 'pressure plants' [as defined under <i>Factories Act</i> ] has been	Yes	Complied





	done?		
<b>INDUSTRIAL HYGIENE / OCCUPATIONAL HEALTH</b>			
<b>Ventilation, Illumination, Noise, Vibration, Heat stress and Non-ionizing Radiations</b>			
	<i>Ventilation</i>		
368	Whether any ventilation study has been carried out?	Yes	----
369	Whether natural ventilation is adequate or not?	Yes	----
370	Whether dust / fumes / hot air is generated in the process?	No	----
371	Is there any exhaust ventilation system in any section of the plant? Is periodic / preventive maintenance of ventilation system carried out and record is maintained?	Yes record available	-----
372	Does any ventilation system re-circulate the exhausted air in work areas?	Yes	-----
373	Is the work environment assessed and monitored for chemical and physical hazards?	Yes	----
374	Whether PPE are provided to workers exposed to dust / fumes and gases?	Yes	----
<i>Illumination</i>			
375	Whether illumination study has been carried out for the assessment of illumination level?	Yes (internally half yearly and externally every two years)	----
376	Is there any system of periodical cleaning and replacing the light fittings / lamps in order to ensure that they give the intended illumination levels?	Yes as per PM schedule and notification	-----



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377	Are the workers subject to periodic optometry tests and records maintained?	Yes	-----
378	Are emergency lighting available at first aid center.	Yes	-----
<b>Noise</b>			
379	Whether any noise study conducted?	Yes	-----
380	Are there any machines / processes generating high-noise?	No	-----
381	Whether engineering and administrative controls been implemented to reduce noise exposure below the permissible limits?	Yes	-----
382	Is there a system of subjecting all those employees to periodic audiometric test who work in highlevel noise areas?	Yes	-----
383	Whether the workers are made aware of the ill effects of high noise? Whether ear muffs / plugs are provided and used?	Yes	-----
<b>Vibration</b>			
384	Are there equipment which contribute excess level of vibrations and whether they are identified?	Not yet run	-----
385	Whether any vibration study has been carried out?	Yes	-----
386	Are the measures taken to combat vibration to acceptable levels?	Yes	-----
387	What is the frequency for measurements of vibration?	Monthly twice	-----
388	Are the records of measurements and maintenance of equipment /	Yes	-----



	system maintained?		
<b>Heat Stress / Cold stress (Extremes of Temperature)</b>			
389	Are there sources from equipment increasing the heat load in work places?	NA	--
390	Whether evaluation of heat stress is carried out?	NA	--
391	Whether natural ventilation is adequate to minimize the heat stress in work environment?	Yes	--
392	Are resources available to deal with very hot or very cold conditions (drinking water, lined gloves, insulated boots)?	Sufficient drinking water is available in canteen & other places.	--
393	Do workers know the symptoms of heat cramps / heatstroke or frost bite / hypothermia?	Yes	--
394	Are the personal protective equipment suitable for reducing the effects of heat stress available?	Yes	---
<b>Non-ionising Radiations</b>			
395	Does the work involve likely exposure to non-ionising radiations (ultraviolet, infrared, radiofrequency, microwaves, lasers, etc.)	NA	--
396	Whether risk assessment have been done for all work areas involving presence of non-ionising radiations?	NA	--
397	Are the work areas displayed with relevant safety signs?	NA	--
398	Are the employees aware about the hazards of non-ionising radiations?	NA	--
399	Does written procedures exists for working in non-ionising	NA	--



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	radiations?		
400	Is the work environment monitored periodically for physical hazards and control measures initiated whenever deviation from permissible values is observed?	NA	--
421	Whether suitable personal protective equipment are provided to workers exposed to non-ionising radiations?	NA	--

### Work Place Monitoring for Hazardous Chemicals

422	Whether the dust, fumes, smoke aerosols and mist are monitored as per statute and records maintained?	Yes	----
423	What are the types of detectors used for monitoring concentration of hazardous chemicals?	NA	-----
424	Is any alarm system installed for any leakage of hazardous chemicals?	NA	-----
425	Are antidotes available for toxic chemicals?	Yes	-----
426	Are control measures initiated whenever deviation from permissible values is observed?	Yes	-----

### First Aid Facilities and Occupational Health Centre (OHC)

427	Are adequate numbers of first aid boxes provided? Give location details?	Yes, enough number of first aid trainers are available	Complied
428	Are qualified / trained first aiders available in each shift?	Yes	-----
429	How many qualified / trained first aiders are available at each plant / department?	Each department 2-3 numbers available	Complied
430	How many persons are trained / given refreshers training in first aid in a year?	Refresher training program conducted	--
431	Whether occupational health	OHC /First aid center is	Yes



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	center is provided?	available	
432	Does OHC conform to the provisions of the existing statutes?	Yes	Complied
434	Are the Medical Attendants / Doctors available in each shift?	Yes available	Complied
435	What facilities are available for transportation of the injured to hospital?	Ambulance is available	Complied
436	Are the names of the trained first aiders displayed?	Yes	Complied
437	Are the name of nearest hospitals and its telephone number available in OHC?	Yes	Complied.
438	Does the plant have any special preventive medicine program?	No	--
439	Is ambulance posted in proper place and is it available whenever required?	Yes, round the clock	Complied
440	Are sufficient numbers of anti-dotes available in case of any emergency?	Yes	Complied
441	Are fire safety measures provided in first aid centre?	Yes	Complied
442	Are emergency lighting arrangements available at first aid centre?	Yes	Complied
<b>Periodic Medical Examination</b>			
443	Whether the periodical medical examination of employees, required under relevant statute is carried out?	Yes	Complied
444	Whether it is ensured that contractors employee are medically examined during pre-employment as well as during the course of employment?	Yes	----
445	During the periodical medical examination of the workers, are	Yes	-----



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	they examined as per the hazardous process in which they work? (First schedule of <i>The Factories Act, 1948</i> )		
446	Are the records of all such examination maintained?		
<b>Personal Protective Equipment and Emergency Equipment</b>			
447	Whether list of required PPE for each hazardous activity is available?	Yes, PPE boxes are arranged	Complied
448	Whether feedback from workers obtained during selection of PPE?	Yes , taking their concern also	Complied
449	Have the workers been trained in proper use of PPE including BA sets?	Yes	Complied
450	What is the system of procurement, inspection, issue, maintenance and replacement of PPE?	As & when requirement PPE are being issued to all employees & contract employees.	Complied
451	Whether qualitative and quantitative fit-check for respirators is ensured prior to use?	Yes	Complied
452	What are the arrangements for safe custody and storage of PPE?	PPE boxes & individual lockers.	Complied
453	Are the contractor's workers provided with the required PPE?	Yes	Complied
454	Do the PPE conform to any standard?	IS standard PPEs only using.	Complied
455	Are sufficient eye wash fountains and safety showers available?	Yes	Complied
456	Whether appropriate respiratory protective devices are available in accordance to the hazard potential?	Yes	Complied
457	Are the staff members trained in the right uses of respiratory protective devices?	Yes	Complied



<b>Occupational Diseases</b>			
458	Whether pre-employment medical checkup data available?	yes	Complied
459	During the medical checkup, is any person found having occupational diseases mentioned in 3 <sup>rd</sup> schedule of <i>The Factories Act, 1948</i> ?	No	Complied
460	Whether the medical practitioner informed the Chief Inspector of Factories about the occurrence of the occupational disease?	Whenever any case arises. Still no such case is raised	Complied
<b>ACCIDENT/INCIDENT REPORTING, INVESTIGATION AND ANALYSIS</b>			
<b>Accident Reporting and Database Management</b>			
470	What is the procedure for accident / incident / dangerous occurrence reporting?	Accident/Incident investigation procedure in place.	----
471	Whether the accident data for the last <i>five</i> years for reportable and non-reportable accidents are available?	Yes	-----
<b>Accident Investigation</b>			
472	Are all the accidents investigated?	Yes	----
474	Whether accident investigation procedure is documented?	Yes	----
475	Whether accident investigation reports are submitted to top management?	Yes	----
476	How are the findings from accident investigation reports communicated to workers?	All in toolbox talk and Alert	--
<b>Analysis of Accidents</b>			
477	Whether accident analysis is done as per IS 3786?	Yes	-----
478	Whether root causes of accidents are analysed?	Yes	-----



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479	Is the accident statistics effectively utilized? If yes, how?	Yes	-----
480	What nature of injuries occurred during the last five years?	Only minor first aid incidents	-----
<b>Implementation of Recommendations</b>			
481	How does the management ensure implementation of the recommendations to avoid recurrence of accidents and incidents?	Action plan & procedure available	
<b>Reporting and Investigation of Near-miss Incidents</b>			
482	Are all near-miss incidents reported and investigated?	Yes	
483	Is there any system of classifying and analyzing the near-miss incidents?	Yes	
<b>EMERGENCY PREPAREDNESS</b>			
<b>Site Specific Details</b>			
484	Are the site area maps (including layout, access roads and assembly points) available in control room / emergency control centre?	Yes	Complied
<b>Duties and Responsibilities of Key Personnel</b>			
485	Is the hierarchy of emergency response personnel right from site emergency controller downward, and alternative officials identified?	Covered in Onsite Emergency Plan(OSEP)& imparted training to all key personnel.	Complied
486	Are the duties and responsibilities assigned to the designated officials during emergency, both during and outside normal working hours clearly identified and understood by them?	Yes, Covered in OSEP & imparted training to all key personnel.	Complied
<b>Identification of Emergencies and Accident Scenario</b>			
487	Are the possible accident scenarios leading to emergency identified and known to the	Identified & listed in OSEP	Complied





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	operating personnel?		
488	Are approved emergency preparedness plans (onsite and off-site) in place?	Yes	
<b>Declaration and Termination of Emergency</b>			
489	Is the list of designated officials who are to be communicated about declaration and termination of emergency available in the control room / emergency control centre?	Yes, list available in ECC room	Complied
490	Are the methods of communication (siren, public address system etc.) for declaration and termination of an emergency known to all the workers?	Yes, explained during training programs	Complied
<b>Resources-evacuation/ Transport</b>			
491	Are the following resources (equipment, personnel and procedures) required to handle emergency available?		Complied
492	<ol style="list-style-type: none"> <li>1) Communications,</li> <li>2) Public announcement systems</li> <li>3) Monitoring of hazardous releases into the environment,</li> <li>4) Emergency shelters at the facility,</li> <li>5) Emergency exits with proper illumination, with uninterrupted power supply ,</li> <li>6) Direction for emergency exit / escape route marked in haulage / Alleyways,</li> </ol>	<p>Electrical operated emergency siren provided</p> <p>Emergency exits clearly marked with direction</p> <p>Ambulance is available for emergency transport</p> <p>OHC &amp; male nurse is available for first aid</p> <p>Security officer &amp; along with their staff controlling the local law order.</p>	Complied



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	7) Transport for evacuation of plant personnel, 8) Medical care including administration of antidotes, and 9) Security / maintenance of law and order.		
--	--	--	--

### Communication Facilities

493	Does the emergency control centre have direct communication links with the fire station and the plant control room?	Emergency telephone numbers & separate telephone is available	Complied
494	Are there adequate alarm points from which an emergency alarm can be raised?	Yes	Complied
495	Is there infrastructure available for ensuring backup electric power supply for communication links where required	DG sets & Ups backup available for emergency handling.	Complied

### Medical Care

496	Is the procedure for emergency medical care available?	Covered in OSEP.	Complied
497	Whether the system has been tested at regular frequency through mock drill / exercises for its adequacy?	Yes, conducted mock drills.	Complied
498	Does the system of periodic replacement of antidotes and medicines required in emergency exist?	Yes	Complied

### Updation of Emergency Plan

499	Is the emergency plan updated based on the feedback from the periodic drills / exercises?	Yes	--
500	Are the contact details of all concerned officials kept updated in the emergency plan?	Yes, available in ECC room & OSEP book	Complied

### Periodic Drills / Exercises



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501	Are mock-exercises conducted at stipulated intervals?	Yes, Mock drills are conducted in once in six months & fire drills are to be conducted in once in a month	Complied
502	Are the scenarios varied in the mock-exercises to ensure that all possible factors including meteorological conditions, affected plant personnel covered?	Scenarios taken from OSEP, which are identified and covered in OSEP .	Complied
503	Whether emergency preparedness Plans have been tested and reviewed at regular frequency through mock drill for its adequacy	Yes, reviewed once two years or any major emergency/ any facility change/ up-dations.	Complied
<b>Training of Plant Personnel</b>			
504	Are the plant personnel trained in handling emergency equipment?	Yes, fully trained	Complied
<b>Public Awareness Programmes</b>			
505	Are public awareness programs conducted for the people around the site regarding the actions to be taken in case of off-site emergency?	Yes	Complied
<b>Mutual-aid Programme</b>			
506	Are the types of accidents where external organizations would be involved in remedial actions identified? Are their responsibilities defined?	Yes	Complied
507	Is the plant responsible for rendering mutual aid assistance to any other external organizations? Does this assistance effect the plant's emergency preparedness?	Yes	Complied
508	Whether the communication channels for mutual assistance identified and known with and between two organizations	Yes	Complied



Emergency Control Centre			
509	Is the emergency control center located beyond the effective distances of identified emergency scenarios?	Yes	Complied
510	If the emergency control center is located within the effect distance, is it suitably protected that it will be available in case of emergency?	Yes	Complied
SAFETY INSPECTION			
511	Are checklists available for inspections? For example availability of checklists like: Handling, Storage and Transportation of hazardous chemicals;	Yes	Complied
512	Electrical hazards;	Prepared	
513	Fire safety;	Prepared	
514	Hand and portable power tools	Prepared	
515	Machine hazards	Prepared	
516	Lifting equipment	Prepared	
517	Ladders and scaffolding	Prepared	
518	Environmental Monitoring	Prepared	
519	Civil structure	Prepared	
520	Housekeeping	Prepared	
521	Emergency equipment	Prepared	
522	Gas cylinder and other pressure vessels used / available in the organization	Yes	
Safety Related Deficiency (SRD) Report			



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523	Are SRDs generated based on the area wise checklists?	Yes	
524	What is the procedure for resolving the SRDs?	HSE online tools & SAP	-----
525	Whether the procedure exists for notification and root cause analysis of non-conformities and action taken on them?	HSE online tools & SAP	-----
<b>Safety Inspection Records</b>			
526	Are the safety inspection records maintained?	maintained	-----
<b>Methodology and Inspection Team</b>			
527	Is there written procedure for safety inspection?	Yes	----
528	Whether safety inspection is carried out by a designated team?	Yes	
529	What is the frequency of safety inspections? c) Is compliance of recommendations sent to top management?	Being done once as per the laid down procedures reports are available	
530	Whether an inspection report is generated? d) Is compliance of recommendations reviewed by management?	Yes With Plant Head	
531	Compliance of Recommendations safety committee?	Available	
532	To whom the recommendations are submitted e) Does top management follows-up the compliance?	Unit Head and CEO	
533	Are recommendations of safety inspections complied in time?	Being complied	

