SPIC
Nourishing growth

Ref: S&E/E-8B2/24 **Date: 27.05.2024**

The Director (S)
Ministry of Environment, Forest & Climate Change
Additional Office Block for GPOA, Ist Floor
Shastri Bhavan ,Haddows Road,
Nungambakkam,
Chennai – 600 006.

Sub: Half Yearly Compliance Status Report for Environmental Clearance M/S.SPIC Limited – Reg.

Ref: 1) Ministry's clearance Lr.No.J-11011/15/86/IA dated 28.07.87.

Dear Sir,

With reference to the above Environmental Clearances, we are herewith submitting the Compliance Status Report (Half yearly compliance report) for the period Oct 2023 to Mar 2024.

Thanking you,

Yours faithfully,

For "**M/s Southern Petrochemical Industries Corporation Limited**"

E.Baiu - E.
27/05/2024

E.Baiu,

Whole Time Director

Enclosure:

1. Half Yearly Compliance Report
2. Half yearly monitoring report

CC: The District Environmental Engineer,
Tamil Nadu Pollution Control Board,
Tuticorin.

SOUTHERN PETROCHEMICALS INDUSTRIES CORPORATION LIMITED
SPIC NAGAR, TUTICORIN – 628 005

Sub: Environmental clearance for substantial expansion of Di-Ammonium Phosphate by retrofitting.

Ref: Ministry's clearance Lr.No.J-11011/15/86/IA dated 28.07.87.

Specific conditions:

S.NO	Specific conditions:	Compliance Status
1	A two stage fluoride removal system must be instailed, to achieve fluoride concentration of 10 mg/l conform to the MINAS.	Two stage fluoride removal systems installed to recover fluorine in phosphoric acid plant and also to achieve fluoride concentration. We have achieved fluoride concentration of 10 mg/l to conform MINAS. Fluorine is recovered as Hydroflouro silicic acid and reacted with aluminum hydroxide to produce aluminum fluoride. (Now the unit is with Greenstar Fertilizers limited)
2	Thermal urea hydrolyser stripper must be instalied in case performance of the bio-hydrolyser system is not found satisfactory. Monthly report on the performance of the bio-hydrolyser should be made available to this Ministry and to the Central Pollution Controi Board.	Effluent from urea is completely recycled and reused and because of that bio-hydrolyser treatment system has been removed since 2000.
3	LSHS must be used in heaters/boiler/CPP. No fuei oil may be used.	We have started receiving natural gas from Ramanathapuram area through IOCL on 13th March 2021 and we are operating the plant with Natural Gas as Feed stock and Fuel in boiler and Heaters.
4	Existing lagoon outside the plant premises should not be used for effluent collection. The finally treated effluent should be discharged into the sea via guard ponds only.	Existing lagoon outside the plant premises is not used for effluent collection. The final treated effluent is reused in Greenstar plant for process. Occasionaliy it is discharged in to the sea via guard pond.
5	Sludge disposal site must be made impervious to prevent ground water contamination.	The generated Chromium and arsenic sludge are encapsulated in lined pit as per CPCB guidelines in the year 2006. We have adopted alternate technology and because of this chromium and arsenic are not used in the process at present.

6	Three fixed ambient air quality-monitoring stations should be set up in consultation with Tamilnadu Pollution Control Board for continuous monitoring of SO2, NH3 and SPM. Sensors should be provided to detect P2O5, SO2 and NH3 at vulnerable points within the battery limits of the plant.	Ambient Air Quality Monitoring is being carried out by our Environment Monitoring Cell at 9 locations manually. In addition to this Continuous Ambient Air Quality Monitoring station is available, one each in SPIC and Greenstar Fertilizers Ltd. Parameters such as PM10, PM2.5, NO, Nox, NO2, NH3 and SO2 are monitored. In addition to the above parameters HF is monitored in Greenstar Ambient Air Quality Monitoring station. The online data is connected to TNPCB. Sensors are provided to detect P_2O_5, SO_2 and NH_3 at vulnerable points within the battery limits of the plant.
7	The unit should install continuous waste water monitoring system for measuring the foilowing parameters: Flow, pH, Fluorine, AN, TKN and Arsenic.	Online meter for monitoring effluent flow, pH, Ammonical nitrogen, TSS are installed as per CPCB Guidelines. Arsenic is not used in our process now.
8	Ground water should be monitored regularly for pH, TDS, Arsenic, Nitrate nitrogen and Fluoride.	Ground water quality is monitored at 19 locations by our Environment Monitoring Cell on monthly basis. All the stipulated parameters are monitored.
9	Treated waste water samples should also be from upstream (100m) and downstream (100m) of the confluence point in the open channel before final discharge into sea for measuring pH, Ammoniacai nitrogen, Phosphate as P, Fluoride, Arsenic, Oil and grease.	The Treated effluent is fully recycled and reused in the Phosphatic Fertilizers plant of Greenstar fertiiizers Ltd. Because of this the treated effluent is discharged only occasionally in to the sea through a pipe line, due to which we do not have an open channel. The treated and untreated effluent is also monitored manually by our Environment Monitoring Cell lab on monthly basis in addition to the continuous online monitoring system. pH, Ammonical nitrogen, Phosphate as P, Fluoride, Arsenic, Nitrate nitrogen, Oil and grease are monitored manually every month. Effluent samples at the inlet and outlet are analyzed for all the stipulated parameter including arsenic by CPCB empanelled laboratory once in every six months. **(Annexure I)**
10	The project authorities should change over from vetrocoke system to any other system where arsenic is not used in the scrubbing solution. During such time as vetrocoke system is	From July 1998 onwards glycine is used as the scrubbing solution instead of arsenic and hence there is no generation of arsenic bearing sludge. As per supreme court monitoring committee the entire Arsenic bearing waste available (115.70MT) has been stabilized, solidified and encapsulated in

<table>
<tr><td></td><td>continuing, adequate measures must be adopted to fully control arsenical effluent discharge and sludge disposal.</td><td>a lined concrete pit.</td></tr>
<tr><td>11</td><td>A green belt must be developed within the battery limits of the SPIC</td><td>Tree plantation has been done covering almost all the vacant areas in and around the plant and township.

<table><tr><td>Area</td><td>SPIC</td><td>Greenstar</td><td>Township</td><td>Combined</td></tr><tr><td>Total area (Hectares)</td><td>47.11</td><td>56.43</td><td>118.723</td><td>222.113</td></tr><tr><td>Greenbelt Area (Hectares)</td><td>19.14</td><td>19.6</td><td>103.648</td><td>139.228</td></tr><tr><td>% Greenbelt area</td><td>40.62%</td><td>34.73%</td><td>87.30%</td><td>62.68%</td></tr></table>
Multi species saplings have been planted and are maintained. Every year during World Environment Day plantation drive is being organized to develop green belt.</td></tr>
<tr><td>12</td><td>All monitoring reports must be sent to the State Pollution Control Board and this ministry regularly without fail.</td><td>All monitoring Reports are being sent to Tamilnadu Pollution Control Board once in a month and Quarterly Reports are being sent to Central Pollution Control Board and Half yearly monitoring reports are regularly sent to MoEF, RO.</td></tr>
<tr><td>13</td><td>The ministry reserves the right to change the above stipulations or impose any additional condition(s) to protect the environment, if considered necessary at any time.</td><td>No additional conditions are stipulated.</td></tr>
</table>

SPIC
Nourishing growth

Ref: S&E/E-8B2/24

Date: 27.05.2024

The Director (S)
Ministry of Environment, Forest & Climate Change
Additional Office Block for GPOA, Ist Floor
Shastri Bhavan ,Haddows Road,
Nungambakkam,
Chennai – 600 006.

Sub: Half Yearly Compliance Status Report for Environmental Clearance M/S.SPIC Limited – Reg.

Ref: **1) F. No. J – 11011 / 171 / 2007 – IA II (I) Dated: March 5, 2008**
2) No J -11011/171/2007-IA II (I) dated May 20, 2019

Dear Sir,

With reference to the above Environmental Clearances, we are herewith submitting the Compliance Status Report (Half yearly compliance report) for the period October 2023 to March 2024.

Thanking you,

Yours faithfully,

For "**M/s Southern Petrochemical Industries Corporation Limited**"

E.Balu 27/05/2024

E.Balu
Whole Time Director

Enclosure:

1. Half Yearly Compliance Report
2. Half yearly monitoring report

CC: The District Environmental Engineer,
Tamil Nadu Pollution Control Board,
Tuticorin.

ENVIRONMENTAL CLEARANCE FOR ENHANCED PRODUCTION AT SPIC, TUTICORIN

F.No. J-11011/171/2007- IA II (I) Dated : March 5, 2008

Half Yearly Compliance Status Report

S.No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
1	There shall be no addition of 'Pollution Load' due to the expansion. The unit shall shift to Natural Gas as fuel within next three years.	There is no addition in the 'Pollution Load' due to enhanced production as per the study report of IIT professor. The following actions were taken a) Environmental clearance was obtained from MoEF for the changeover of feedstock from Naphtha to mixed feed stock (Naphtha and Natural gas) on 28.03.2017. b) We have obtained consent to operate for Natural gas conversion vide Consent Order No. 2007231068959 for Air Act and Consent Order No.. 1906127778730 for Water Act Dated: 26/05/2020 from Tamilnadu Pollution control Board. c) We have started receiving natural gas from Ramanathapuram area through IOCL on 13th March 2021 and NG is being used in our Ammonia plant.
2	The gaseous emission [SO_2, NO_x, NH_3, and Urea Dust & Fluoride] and particulate matter from various process units shall conform to the prescribed norms by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. The stack height shall be as per the CPCB guidelines. In the event of failure of pollution control system[s] adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Further, the company shall interlock the production system with the pollution control devices.	The gaseous emissions (SO2, NOx, NH3 and Urea Dust & Fluoride) and particular matter from various process units are monitored on monthly basis , and the emission levels are within limits. The unit will be put off in the event of failure of pollution control system and we will restart only after rectifying the control measures to achieve the desired efficiency. The stack height is as per CPCB guidelines. Interlocking system is provided in the pollution control devices. We have taken the following measures:- 1. Reformer burners 90 numbers were replaced with low NOx burners. 2. We have been using Natural Gas in

		ammonia plant which resulted in substantial reduction in Sox and NOx from reformer. 3. To reduce Ammonia and urea dust in Prilling tower, spray water system is arranged.
3	The limits for various pollutants should be within the prescribed limits. Set of dry and wet cyclones along with a stack shall be provided. The total Particulate emission from all the plants shall be within 50 mg/Nm^3.	we have provided two sets dry cyclone and one set of wet cyclone with stacks to limit the pollutant within 50 mg/Nm3.
4	SO_2 emission level shall be 2 kg/T of the 100% H_2SO_4 produced and Acid Mist concentration shall be within 10 mg/nm^3. Monitoring of Prilling Tower shali be carried out as per the CPCB Guidelines. Recovered Hydrofluro Silicic Acid from the Fluorine recovery unit shall be reused in the process.	The SO2 emissions from Sulphuric acid plant stack is below 1Kg/T of H2SO4 produced and acid mist concentration is within 10 mg/nm3. Sulphuric acid plant converter catalyst has been renewed at a cost of Rs.4.4 crores, which helped achieve less than 1.0 Kg/T of SO_2 emission. Online analyzers for particulate matter and ammonia have been installed in urea prilling tower and the real time data are connected to TNPCB and CPCB. Hydro-flurosilicic acid is recovered by operating the fluorine recovery unit and used for manufacturing of Aluminum Fluoride. **(Units – Sulphuric acid plant and ALF_3 are now with M/s. Greenstar Fertilizers)**
5	Regular monitoring of ambient air quality for SPM, RPM, SO_2, NO_x, NH_3, and Urea Dust & Fluoride shall be carried out. The location of existing ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board and additional stations shall be set up, if required. It shall be ensured that stations are in the downwind directions as well as where maximum ground level concentration are anticipated.	Ambient Air Quality monitoring is being carried out regularly for PM10, PM 2.5, SO_2, NO_X, NH_3, Urea Dust and Fluoride by their Environment monitoring cell manually twice a week at 9 locations, in which 5 locations are located inside the factory premises and 4 are outside the factory premises. The location of existing ambient air quality monitoring stations were set up in consultation with TNPCB and the predominant downwind direction as well as where maximum ground level concentrations are anticipated. In addition to this Continuous online ambient Air Quality Monitoring Stations are provided one each in M/s SPIC and M/s Greenstar, and the data PM 10, PM 2.5, SO_2, NH_3, and NO, NO_2 Nox, wind direction, wind speed, RH and temperature are transferred

		to Care Air Centre, TNPCB Chennai. Ambient air quality is monitored on bi Annual basis **(Annexure I)** by CBCB empaneled laboratory as per NAAQ standards.
6	Fugitive emissions in the bagging plant shall be controlled through two wet de-dusting systems. Urea dust laden air from various dust emission points will be sucked through and sent to the dust chambers and scrubbers. The scrubber liquor will be sent for urea recovery system and urea plant. Cyclone separators/Bag Houses will be provided at transfer points for controlling urea dust. Dust collected at these points will be reprocessed in the urea plant.	Urea from plant is directly sent to Urea Bagging plant for bagging. It is transported through rubber belt soft conveyors. Only one transfer point is provided. Closed SS duct is provided in transfer points to avoid fugitive emissions. Electronic Packer scale weighers are provided which eliminates manual handling and avoid fugitive emission. Urea dust laden air from various dust emission points are sucked through and sent to the dust chambers and scrubbers. The scrubber liquor is sent for urea recovery system of urea plant. Cyclone separators are provided at transfer points for controlling urea dust. Dust collected at these points are collected and reprocessed in the urea plant.
7	The fugitive emissions in the work zone environment, product, and raw material storage area shall be regularly monitored as per the guidelines of CPCB and data shall be submitted to the concerned authorities. The fugitive emissions shall be controlled and conform to the limits prescribed by the CPCB in future.	Adequate measures like routine maintenance, preventive maintenance of equipment etc. are taken to control fugitive emissions in the work zone environment, product raw material storage area. Regular monitoring of fugitive emission as per the guidelines of CPCB is carried out and data is submitted to the concerned authorities. The fugitive emission confirms to the limits prescribed by the CPCB.
8	There shall be no increase in the water consumption and waste water generation. Efforts shall be made for water conservation to achieve water consumption less than $8m^3$/ton of urea produced. All discharge of waste water shall be through the Marine outflow system. No effluent arising from the process plants and associated facilities shall be discharged to the storm water drain. The quality of storm water shall be regularly monitored.	There is no increase in water consumption and waste water generation. We have reduced water consumption by adopting various conservation measures and the present water consumption for Urea is less than 8 m3 per ton of urea produced. The effluent is treated in integrated effluent treatment plant. Some portion of the treated effiuent is discharged in to sea occasionally. Quality of Storm water is regularly monitored.
9	Regular monitoring of ground water by installing piezometric wells around the guard pond and sludge disposal sites for	Ground water quality is monitored at 19 locations by our Environment Monitoring Cell on monthly basis. All the stipulated

	all relevant parameters including pH, fluoride and ARSENIC shall be periodically monitored and report shall be submitted to the concerned RO of the Ministry, CPCB and State Pollution Control Board. Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the State Pollution Control Board.	parameters are monitored. 4 Peizometric wells are located around the arsenic encapsulation and 4 Peizometric wells are provided around chromium encapsulation locations. Parameters including pH, fluoride and arsenic are periodically monitored and the report is submitted to the RO of the Ministry, CPCB and State Pollution Control Board.
10	2.5 TPA of Sulphur Sludge, 14m^3/yr of Spent Nickel Catalyst, 3m^3/yr of Spent Co, Mo Spent Catalyst, 20m^3/yr of Spent Iron Catalyst, 4m^3/yr of Spent ZnO Catalyst & 5m^3/yr V_2O_5 catalyst and 250 Kg/d of Calcium Carbonate sludge shall be sent to the Secured Landfill site within the premises. 30 Kl/yr of Used oil shall be stored in leak proof steel drums for sale to registered recyclers ad 700 Used batteries shall be sold to authorized reprocesses.	The sulphur sludge is used as filler material in DAP Plant. Calcium carbonate sludge is completely reused (in house) as filler material in DAP plant. **(Units are now with M/s. Greenstar Fertilizers)** Spent nickel catalyst, and spent ZnO catalyst of M/s SPIC were sent to Authorized HW Recyclers – Rajkob Industries, Maharashrtra. Spent Co, Mo and spent iron catalyst of M/s SPIC were sent to Re Sustainability Industrial waste management Solutions Ltd. V2O5 catalyst of M/s Greenstar fertilizers Ltd, is sent to Re Sustainability Industrial waste management Solutions Ltd. Used oil is stored and disposed to authorized recyclers. Used batteries are given to the approved recyclers.
11	All safety precautions, as submitted to Ministry shall be installed and undertaken. Adequate protection measures for handling of Ammonia vapours in case of process upset condition shall be undertaken. Safety valve exhaust and drains shall be connected to a separate close header from which Ammonia vapours shall be vented from vent stack after diluting the stream.	All safety precautions as submitted to Ministry are implemented. Adequate protection measures for handling of Ammonia vapors in case of process upset condition are undertaken. Safety valves' exhaust and drains are connected to a separate closed header from which Ammonia vapor is vented from vent stack after diluting the stream.
12	The project authorities shall strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October 1994 and January 2000 and Hazardous Wastes [Management and Handling] Rules, 2003	All the rules and regulation under MSIHC Rules 1989 are being followed. On Site Emergency drills are being carried out as per approved plan. We have obtained separate authorization for M/s SPIC and M/s Greenstar Fertilizers Limited.

	along with Emergency Preparedness Rules. Authorization from the State Pollution Control Board must be obtained for collection / treatment / storage / disposal of hazardous wastes, if any.	
13	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection [CREP].	We have implemented CREP recommendations ✓ Water consumption of the unit per MT of Urea produced (Mixed feed Naphtha + Natural Gas based) is less than 10 m^3/MT. ✓ The unit has adopted glycine based technology for absorption system in Ammonia plant in June 1998. ✓ Cooling water systems were switched over to non-Chromate based treatment programme in 1998. ✓ There is no process effluent in urea plant as everything is recycled back to the process. ✓ The nitrogenous fertilizer plant effluent mainly the cooling tower blow down is collected in effluent sumps and then sent to integrated effluent treatment plant for treatment ✓ No effluent is discharged into storm water drain. ✓ The storm water quality is monitored during the time of monsoon. ✓ Urea Prilling tower is based on forced draft system. The air pollution control equipment have been installed to reduce the concentration of pollutants. • In M/s. Greenstar Fertilizers Limited phosphoric acid plant, four stage off gas recovery system has been installed in addition to turbulent contact absorber (TCA - 3) for scrubbing of fluoride present in emission gases The total fluoride concentration at the exit of TCA -3 and HH Off gas stack is maintained below 10 mg/Nm^3.

		✓ Tail gas scrubber is provided in sulphuric acid plant at a cost of 80 lakhs. ✓ Gypsum is disposed to cement manufacturing units and is also utilized in agriculture as a soil conditioner. ✓ The spent catalysts are collected in mild steel drum and disposed to Re Sustainability Industrial waste management Solutions Ltd or to authorized recyclers
14	The company shall install rainwater harvesting systems from the rooftops of the buildings and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.	We have provided Rain water harvesting system for storm water collection as well as for roof top collection to recharge the ground water
15.	33% of the total land area shall be developed as green belt in consultation with DFO. The Green Belt shall be as per the CPCB Guidelines.	We have taken up plantations within the project sites and the colony areas by covering more than 33 % of the total land area. The detailed are given below.

Area	SPIC
Total area (Hectares)	47.11
Greenbelt Area (Hectares)	19.14
% Greenbelt area	40.62%

B) General Conditions:

S.NO	GENERAL CONDITIONS	COMPLIACE STATUS
1	The project authorities shall strictly adhere to the stipulations made by the state pollution control board.	All the stipulations made by the state Pollution Control Board are strictly adhered.
2	No further expansion or modification in the plant shall be carried out without prior approval of the MoEF.	We ensure No further expansion or modification in the plant was carried out without prior approval of the MoEF. Environmental clearance was obtained from MoEF for the modernization cum expansion of fertilizer manufacturing unit by M/s SPIC on 07.01.2020 and

		Consent to operate has been obtained on 21.04.2022 .
3	The Project proponent shall also comply with all the Environmental protection measures and Safe guards recommended in the EIA / EMP report.	We have complied with all the Environmental protection measures and safe guards recommended in the EIA / EMP.
4	Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the EP Act 1986 for Marine discharge norms.	Cooling tower blow down water is collected and treated in Integrated Effluent Treatment Plant and reused in M/s Greenstar Fertilizers Limited and a small portion is discharged into sea after confirming its quality. The treated and untreated effluent is also monitored by our Environment Monitoring Cell on monthly basis. In addition to this continuous online effluent monitoring system also has been installed for pH, Ammonical nitrogen,TSS and flow and real time data is being uploaded on the web site of TNPCB and CPCB. The treated effluent is also analyzed by CPCB empanelled laboratory on bi Annual basis and the all the parameters area found within the stipulated norms.**(Annexure I)**
5	The overall noise level in and around the plant area shall be kept well within the standard by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generations	Noise level is monitored at 4 locations along the factory boundary at day and night time. The noise levels are within limit. We have provided noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generations.
6	Proper Housekeeping and adequate occupational health programmes shall be carried out and records shall be maintained for at least 30 – 40 years. The programmes shall include lung function and sputum test, besides the regular tests, once in 6 months, sufficient preventive measures shall be adapted to avoid direct exposure to dust etc.,	We are maintaining good housekeeping. We have an Occupational Health (OHC) Centre with a full time doctor and supporting staff. OH tests including lung function test, sputum tests, audiometry and regular tests are carried out for all employees as per the Factory's Act and records are maintained. Preventive measures are adopted to avoid direct exposure.
7	A separate environmental management cell equipped with full-fledged laboratory	A separate environmental management cell equipped with full-fledged laboratory facilities is available.

	facilities shall be set up under the control of a senior executive.	The Environment Management Cell is having 4 Environment engineers and Lab chemists and they are reporting to Head of Safety and Environment, who in turn is reporting to the Top Management.
8	Adequate funds shall be ear marked to meet the capital cost and recurring cost per annum for the Environmental protection measures. The amount so earmarked shall be used judiciously to implement the conditions stipulated by the MoEF as well as the state Government. The funds so provided shall not be diverted for any other purpose.	We have allocated adequate funds to implement the conditions stipulated by the Ministry of Environment and forest as well as the State government along with the implementation schedule for all the conditions stipulated. The funds are not diverted for other Purpose. Expenditure for environmental protection measures includes, a) Flameproof AAQMS Apparatus for tank farm area at the cost of 2.0 lakhs. b) Bio Assay study was carried out at the exit of IETP – Rs 40,000 c) Revamping of AAQ monitoring station with new analyzers to measure additional parameters and erection of new display board and uploading of the data to Care Air Centre, TNPCB, Chennai at a cost of Rs. 55 Lakhs. d) IETP online analyzer was installed at the cost of Rs.10 lakhs and TSS analyzer is installed at the cost of 2.5 lakhs. Old AN analyser was replaced by New AN analyser at the cost of Rs.5.785 Lakhs. e) Online continuous emission monitoring has been installed in Reformer stack SO2 analyzer at a cost of Rs.30 lakhs and NOx analyzer at the cost of 1 lakhs. SOx and NOx analyzers have been installed at a cost of 90 Lakhs. f) They have installed online monitoring in urea prilling tower for ammonia and dust at a cost of Rs.40 lakhs

		g) Online SO2 and NOx Analysers for Boilers stack has been installed at the cost of Rs. 17.7 lakhs. h) They have installed online continuous emission monitoring system for GT – HRSG stack for monitoring of SO2 and Nox analyzer at a cost of 80 lakhs i) Electromagnetic flow meter was installed at Sea disposal line in IETP at a cost of Rs. 1.6 lakhs. j) We have also installed online effluent monitoring system at STP for the parameters pH, TSS, BOD and COD at a cost of Rs 23 Lakhs
9	The company shall under take the welfare measures and the community development measures for the local people in the vicinity of the project area.	We have undertaken many measures for improving the socio economic condition of the local people in the surrounding area. Have undertaken CER Activities in the areas, including community welfare measures in the project area for the overall improvement of the environment such as infrasturctutre for drinking water supply, sanitation, Health, Efucation, Skill development, Roads, cross drains, electrification includind solar power, solid waste management facilities,Scientific supports Awareness to local farmers to increase yield of crop and fodder, Rain water harvesting, soil moisture conservation works, Avenue plantation in community area. The details of community welfare measures undertaken during the year 2023-2024 as below: • We contributed Rs. 27500 towards the World record submission for a 3 year old child Diyashika in Muthiahpuram. • We Donated Food for Kabbadi

		competition in Soosai nagar and Iyyan Kovil Street at a cost of Rs.65000. • We Donated Food for Kabbadi competition BAR association, thoothukudi at a cost of Rs.50000. • We provided drinking water to Soosai nagar at a cost of Rs.648000 . • We provided drinking water to Thangammalpuram at a cost of 648000 Lakhs. • We have donated 10LPH water filter to EB ASS. • Desilting of Paaimana Vaayikaal – Athimarapatti was carried out at a cost of Rs. 531000. • Desilting of Mullakadu Water canal was carried out at a cost of Rs.42500. • We distributed notebooks to 500 school children in Surrounding Villages at a cost of Rs.147500. • We distributed Uniforms to School children at a cost of Rs.40000. • Rs.8000 was donated as School Fees to under privileged students. • We donated food on Ramzan for Muslim community a cost of Rs.17466. • We Donated Rs.100000 towards Born to Win Trans awards ceremony . • Desilting of Canals were carried out at Athimarapatty canal and Mullakadu. • Schooi Buildings were constructed at Veeranayakkan Thattu.
10	Concerned regional office of this Ministry state pollution control Board / CPCB shall	Compliance status report is being submitted regularly by the unit to

	monitor the implementation of the stipulated conditions. Six monthly compliance status report and monitoring data along with statistical interpretation shall be submitted to them regularly and shall be placed on the web site of the company	MoEF, RO once in six months and for others on monthly basis. Compliance status report is uploaded on the Company's Website. https://www.spic.in/csr/
11	The project proponent should advertise in at least two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance by the ministry and copies of the clearance letter are available with the SPCB/ Committee may also be seen at the website of the ministry and forest at http/'enviro.nic/in. The advertisement should be made within seven days from the date of issue of the clearance letter and a copy of the same should be forwarded to the concerned regional office of the ministry.	Newspaper advertisements were given in two local newspaper and copies of the same were submitted to MoEF, RO.
12	The project authorities shall inform the regional office as well as the ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Information was provided and Project was completed.

SOUTHERN PETROCHEMICALS INDUSTRIES CORPORATION LIMITED
SPIC NAGAR, TUTICORIN – 628 005

Sub: Expansion of Urea and DAP at Southern Petrochemical Fertiiizer Compiex, Tuticorin, Tamii Nadu – Amendment/ Bifurcation of Environmentai Clearance - Reg

Ref: No J -11011/171/2007-IA II (I) dated May 20, 2019

CONDITIONS

S.NO	SPECIFiC CONDITION	COMPLIANCE STATUS
5	Based on recommendation of the EAC, the ministry of Environment Forest and climate change hereby accords approval to the amendment/ bifurcation of the environment clearance dated 5th march 2008, as stated in para 3 above, with additional terms and conditions as under:- a) Total Fresh water requirement shall not exceed 15178 cum/day to be met through Tamilnadu water supply and Drainage board from Thamiraparani river. Permission in this regard shall be obtained from the concerned regulatory authority.	The present water requirement is 15178 m3/day and it is drawn from Tamiraparani river through TWAD. Permission has been obtained from TWAD.
5.b)	Industrial effluent of 2160 cum/day shall be treated in ETP and treated effluent of 1344 cum/day shall be provided to M/s Greenstar Fertilizers Limited. Remaining treated effluent of 720 cum/day for disposal through marine outfall system shall conform to standards prescribed under the Environment (Protection) Rules, 1986.	The industrial effluent is within 2160 m3/day. We are providing 1455 cum/day of treated effluent to M/s Greenstar fertilizers Limited, as per the latest SPIC CTO for Expansion .Remaining treated effluent if any is disposed occasionally through marine out fall system conforming to the standards prescribed under the Environment (protection) Ruies, 1986.
6.	All the other terms and conditions stipulated in the environmental clearance dated 5th March 2008 remain unchanged.	This is a communication order informing the bifurcation of Environmental Clearance dated 5th March 2008 between M/s Greenstar Fertilizers Ltd. and M/s SPIC Ltd. And we have complied with all the conditions in the EC dated 05th March, 2008.

SPIC
Nourishing growth

Ref: S&E/E-8B2/24 **Date: 27.05.2024**

The Director (S)
Ministry of Environment, Forest & Climate Change
Additional Office Block for GPOA, Ist Floor
Shastri Bhavan ,Haddows Road,
Nungambakkam,
Chennai – 600 006.

Sub: Half Yearly Compliance Status Report for Environmental Clearance M/S.SPIC Limited – Reg.

Ref: F. No. J-11011/171/2007-IA-II (I) dated January 7, 2020

Dear Sir,

With reference to the above Environmental Clearances, we are herewith submitting the Compliance Status Report (Half yearly compliance report) for the period ending - **Oct 2023 to March 2024.**

Thanking you,

Yours faithfully,

For "**M/s Southern Petrochemical Industries Corporation Limited**"

E.Balu-E. 27/05/2024

E.Balu,

Whole Time Director

Enclosure:

1. Half Yearly Compliance Report
2. Half yearly monitoring report

Copy
(i) The District Environmental Engineer,
Tamil Nadu Pollution Control Board,
Tuticorin.

SOUTHERN PETROCHEMICALS INDUSTRIES CORPORATION LIMITED
SPIC NAGAR, TUTICORIN – 628 005

Sub: Modernization cum expansion of fertilizer manufacturing unit by M/s SPIC - Environmental Clearance - Reg

Ref: No J -11011/171/2007-IA II (I) dated January 7, 2020

S.NO	TERMS AND CONDITIONS	COMPLIANCE STATUS
10 a.	Necessary Permission as Mandated under the water (Prevention and control of pollution) Act 1947 and the Air (Prevention and control of pollution) Act 1981 as applicable from time to time, shall be obtained from the state pollution control Board	We have obtained CTO for expansion under water (Prevention and control of pollution) Act 1947 vide consent order no: 2207241530259 dt: 21/04/2022 and under Air (Prevention and control of pollution) Act 1981 vide consent order no: 2207141530259 dt: 21/04/2022 from Tamilnadu Pollution control Board.
10.b	No additional effluent shall be generated under the proposed Modernization project Treated effluent of 600 cum/day shall be discharged through existing marine outfall system after conforming the statutory standards. The Project Proponent shall achieve zero liquid discharge (ZLD) within five years of commissioning of expansion project.	There is no additional effluent generation under the modernization project. Treated effluent of 600 cum/day is discharged through the existing marine outfall system after confirming the statutory standards. We are in the process of installing the RO plant, after expansion proposal, zero liquid discharge will be achieved.
10.c	Necessary authorization required under the hazardous and other wastes (Management and Trans-Boundary movement) rules 2016 shall be obtained and the provisions contained in the rules shall be strictly adhered.	We have a valid hazardous waste authorization vide authorization no. **23HFC51011949 dt. 14/06/2023** valid till **31/03/2028** . Provisions contained in the rules are being adhered.
10.d	The gaseous emissions (SO2, Nox, NH3 and HC and particulate matter from various process units shall confirm to the norms prescribed by the CBCP/SPCB from time. At no time the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency .Stack emission shall be monitored regularly	The gaseous emissions (SO2, NOx, NH3 and HC and particular matter from various process units are monitored on monthly basis and the emission levels are within limits. The unit will be put off in the event of failure of pollution control system and we will restart only after rectifying the control measures to achieve the desired efficiency. The stack height is as per CPCB guidelines. Stack emissions are monitored regularly.

10.e	To control source and the fugitive emission suitable pollution control devices shall be installed to meet the prescribed norms and /or the NAAQS The gaseous emission shall be dispersed through stack of adequate height as per CPCB/ SPCB guidelines. Fugitive emission shall be controlled by providing closed handling and conveying system.	We have installed suitable pollution control devices to control source and the fugitive emission to meet the prescribed norms of the NAAQS. The gaseous emission was dispersed through stack of adequate height as per CPCB/ SPCB guidelines. We are conducting Regular monitoring of fugitive emission as per the guidelines of CPCB through NABL Lab.
10. f	Existing fresh water requirement Is 15178 cum/day which is met through Tamilnadu Water supply and drainage board. No additional water shall be required for the proposed modernization	The present water requirement of 15178 m3/day is met through Tamil Nadu water supply and drainage Board vide letter dated 04.12.2006. We ensure that no additional water is required.
10. g	Process effluent/any wastewater shall not be allowed to mix with storm water. The Storm water from the premises shall be collected and discharge through a separate conveyance system.	We have separate sewers for storm water and process effluent. The storm water from the premises were collected and discharged through a separate conveyance system.
10. h	Natural Gas shall be used as fuel in all the boilers.	We have started receiving Natural Gas from IOCL's Ramanathapuram – Thoothukudi Natural Gas Pipeline from 13th March 2021 onwards. Natural Gas being used in boiler and fired heaters.
10.i	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc., flame arresters shall be provided on tank farm, and solvent transfer through pumps.	Ammonia is stored in sphere. Since we have switched over to 100 % Natural Gas, the flammable storage tanks are not in operation at present. Flame arresters are also provided in flammable storage tanks.
10. j	The company shall strictly comply with the Rules and guidelines under Manufacture storage and import of Hazardous chemicals (MSIHC) Rules 1989 as amended time to time. All transportation of Hazardous chemical shall be as per the motor vehicle act 1989.	All the rules and regulation under MSIHC Rules 1989 are being followed. On Site Emergency drills are being carried out as per approved plan. Hazardous chemicals are transported in compliance with motor vehicle Act 1989.
10.k	The company shall under take waste minimization measures as below. i. More efficient use raw materials water and energy ii. Through an effective water management programme to reduce water consumption. Iii. Use of automated filling in bagging section to minimize spillages.	We are following several waste minimization measures in our premises. We ensure to use raw materials, water and energy more efficiently. We shall follow water management programme to reduce water consumption. Automatic filling is being done in bagging section to minimize spillages.

<table>
<tr><td>10. l</td><td>The green belt of least 5-10 m width shall be developed in nearly 35% of the total project area, mainly along the plant periphery, in downward wind direction and along road sides etc. selection of plant species shall be as per the CBCP guidelines in consultation with state Forest Department.</td><td>The greenbelt were developed in more than 35 % of the total project area which includes plantation made along the periphery. The details of green belt include.<table><tr><td>Area</td><td>SPIC</td></tr><tr><td>Total area (Hectares)</td><td>47.11</td></tr><tr><td>Greenbelt Area (Hectares)</td><td>19.14</td></tr><tr><td>% Greenbelt area</td><td>40.62%</td></tr></table></td></tr>
<tr><td>10.m</td><td>As committed Rs 10 crores shall be allocated towards corporate Environment responsibility (CER) item wise details along with time bound action plan shall be prepared and submitted to the ministry's regional Office.</td><td>The action plan in this regard has been submitted to the Regional office vide letter no. SE/E-8B2/22 dated 18.02.2022. We have spent Rs.25 crores for the installation of 22 MW floating solar power plant as renewable green energy towards our contribution to corporate Environmental responsibility. We have also spent Rs.1.5 crores towards the installation of 50Nm3/Hr Medical Oxygen unit</td></tr>
<tr><td>10.n</td><td>Safety and visual reality training shall be provided to employees</td><td>Safety and visual reality training has been provided to all employees through a systematic safety refresher training program.</td></tr>
<tr><td>10.o</td><td>For the DG sets emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines Acoustic enclosure shall be provided to DG set for controlling the noise pollution.</td><td>We have provided stack height in conformity as per CPCB guidelines for DG sets and enclosures are provided to control noise pollution.</td></tr>
<tr><td>10.p</td><td>The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms</td><td>We have arrangements such as fire protection system and a trained fire crew for fighting fire, and arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting systems are as per the TAC Act and Factories Act.</td></tr>
<tr><td>10.q</td><td>Occupational health surveillance of the workers shall be done on regular basis and records maintained as per the factories Act</td><td>Occupational Health surveillance is being carried out for employees on regular basis and records are maintained as per the Factories Act.</td></tr>
<tr><td>10 r.</td><td>Continuous online 24*7 monitoring system for stack emission shall be installed for measurement of fuel gas discharge and the pollutions concentration and the date to be</td><td>We have provided Online Continuous monitoring system in ammonia plant Reformer stack for SO2 and NOx parameters, NH3 and PM in urea Prilling</td></tr>
</table>

	transmitted to the CPCB and SPCB server. For online continuous monitoring effluent the unit shall install web camera with night version capability and flow meters in the channel /drain carrying effluent within the premises.	tower, SO2 and NOx in Aux Boiler III stack and in GT/HRSG stack. The data is transmitted to the CPCB and TNPCB server. There is no channel/drain carrying effluent within the premises.
10.s	Process Safety and risk assessment studies shall be further carried out using advanced models and the mitigating measures shall be undertaken accordingly	We have carried out process Safety and risk assessment study by using DNV Phast models and the mitigating measures are undertaken.

S.NO	GENERAL CONDITION	COMPLIANCE STATUS
11	The Project proponent shall strictly comply the sector specific conditions as mentioned in the ministry office memorandum no. 22-34/2018- IA. III. Dated 9th august 2018 The said OM is available at the ministry website the grant of environment clearance is further subject to compliance of other generic conditions as under.	We shall comply with all the applicable conditions mentioned in the ministry office memorandum no. 22-34/2018- IA. III. Dated 9th August 2018.
11 (i).	The project authorities must strictly adhere to the stipulation made by the state pollution control board (SPCB) state Government and /or any other statutory authority.	We are adhering to the stipulation made by the state pollution control board (SPCB) state Government and /or any other statutory authority.
11 (ii).	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment forest and climate change. In case of deviation or alterations in the project proposal from those submitted to this ministry for clearance, a fresh reference shall be made to the ministry to assess the adequacy of conditions imposed and to add additional Environmental protection measures required if any.	We ensure that no further expansion or modification was carried out without prior approval of the MoEF.
11 (iii).	The location of ambient air quality monitoring stations shall be decided in	We have provided ambient air quality stations in consultation with TNPCB in the

	consultation with the state pollution control board (SPCB) and it shall be ensured that at least one stations each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	predominant downwind direction and where maximum ground level concentrations are anticipated. In addition to that Continuous Online ambient Air Quality monitoring stations are provided one each in M/s SPIC and M/s Greenstar and the data of PM10, PM2.5, SO_2, NH_3, and NO, NO_2, NOx, wind direction, wind speed, RH and temperature are transferred to Care Air Centre, TNPCB Chennai.
11 (iv)	The Nation Ambient air quality Emission Standards by the ministry vide G.S.R No. 826(E) dated 16th November, 2009 shall be complied with.	Ambient Air Quality Monitoring is being carried out by our Environment Monitoring Cell at 9 locations manually. In addition to this Continuous Ambient Air Quality monitoring stations are also available and the parameters are maintained with in norms. Ambient air quality is monitored on bi Annual basis by CBCB empanelled laboratory as per NAAQ standard.**(Annexure I)**
11 (v)	The overall noise levels in and around the plant area shall be kept will within the standards by providing noise control measures including acoustic hoods, silencers enclosures etc. an all sources of noise generation. The ambient noise level shall conform to the standards prescribed under environment (protection) Act 1986 rules 1989 viz. 75dBA (day time) and 70dBA (night time)	Noise level is monitored at 4 locations along the factory boundary at day and night time. The noise levels are within limit. We have provided noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generations.
11(vi)	The company shall harvest rain water from the roof tops of the buildings to recharge ground water and to utilize the same for different industrial operations within the plant.	We have provided Rain water harvesting system for storm water collection as well as for roof top collection to recharge the ground water.
11 (vii)	Training shall be imparted to all employees on Safety and health aspects of chemical handling. Pre-employment and routine periodical medical examination for all employees shall be under taken on regular basis. Training to all employees on handling of chemicals shall be imparted.	We are imparting training on Safety and health aspects of chemical handling. Pre-employment and routine periodical medical examination for all is under taken on regular basis. Training is regularly given to all employees every month on handling of chemicals through safety refresher trainings, pep talks and on the spot trainings.
11	The company shall comply with all the	We shall comply with all the environmental

(viii)	environmental protection measures and safeguards proposed in the documents submitted to the ministry. All the recommendations made in the EIA/EMP in respect of environmental management risk mitigation measures and public hearing shall be implemented.	protection measures and safeguards proposed in the documents submitted to the ministry. We ensure fulfilling all the recommendations made in the EIA/EMP in respect of environmental management risk mitigation measures.
11(ix)	The company shall undertake all measures for improving socio-economic conditions of the surrounding area CSR activities shall be undertaken by involving local villagers administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.	We have undertaken many measures for improving the socio economic condition of the local people in the surrounding area. Have undertaken CER Activities in the areas, including community welfare measures in the project area for the overall improvement of the environment such as infrasturctutre for drinking water supply, sanitation, Health, Efucation, Skill development, Roads, cross drains, electrification includind solar power, solid waste management facilities,Scientific supports Awareness to local farmers to increase yield of crop and fodder, Rain water harvesting, soil moisture conservation works, Avenue plantation in community area. The details of community welfare measures undertaken during the year 2023-2024 as below: • We contributed Rs. 27500 towards the World record submission for a 3 year old child Diyashika in Muthiahpuram. • We Donated Food for Kabbadi competition in Soosai nagar and Iyyan Kovil Street at a cost of Rs.65000. • We Donated Food for Kabbadi competition BAR association, thoothukudi at a cost of Rs.50000. • We provided drinking water to Soosai nagar at a cost of Rs.648000 . • We provided drinking water to Thangammalpuram at a cost of 648000 Lakhs. • We have donated 10LPH water filter to EB ASS.

		• Desilting of Paaimana Vaayikaal – Athimarapatti was carried out at a cost of Rs. 531000. • Desilting of Mullakadu Water canal was carried out at a cost of Rs.42500. • We distributed notebooks to 500 school children in Surrounding Villages at a cost of Rs.147500. • We distributed Uniforms to School children at a cost of Rs.40000. • Rs.8000 was donated as School Fees to under privileged students. • We donated food on Ramzan for Muslim community a cost of Rs.17466. • We Donated Rs.100000 towards Born to Win Trans awards ceremony . • Desilting of Canals were carried out at Athimarapatty canal and Mullakadu. • School Buildings were constructed at Veeranayakkan Thattu.
11(x)	A separate Environmental Management cell equipped with full-fledged laboratory facilities shall be set up to carry out the environmental management and monitoring functions.	A separate environmental management cell having qualified Environmental Engineer specialization in the project area. With equipped with full-fledged laboratory facilities was set up to carry out the Environmental management and monitoring functions.
11(xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the ministry of Environment forest and climate changes well as the state Government along with the implementation schedule for all conditions stipulated herein. The funds so	We have allocated adequate funds are being provided to implement the conditions stipulated by the Ministry of Environment and forest as well as the State government along with the implementation schedule for all the conditions stipulated. The funds are not diverted for other purpose. Expenditures for Environmental protection

	earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	measures include a) Flameproof AAQMS Apparatus for tank farm area at the cost of 2.0 lakhs. b) Bio Assay study was carried out at the exit of IETP – Rs 40,000 c) CAAQ monitoring station was installed a cost of Rs. 55 Lakhs, and data being uploaded to Care Air Centre, TNPCB, Chennai d) IETP online analyzer was installed at the cost of Rs.10 lakhs and TSS analyzer is installed at the cost of 2.5 lakhs. Old AN analyser was replaced by New AN analyser at the cost of Rs.5.785 Lakhs. e) Online continuous emission monitoring SO2 analyzer at a cost of Rs.30 lakhs and NOx analyzer at the cost of 1 lakhs was installed in Reformer stack f) We have installed online monitoring in urea prilling tower for ammonia and PM at a cost of Rs.40 lakhs g) Online SO2 and NOx Analyzers for Boilers stack is being installed at the cost of Rs. 17.7 lakhs. h) We have installed online continuous emission monitoring system for the parameters So2 and Nox in GT/HRSG stack at a cost of 80 lakhs. i) Electromagnetic flow meter was installed at Sea disposal line in IETP at a cost of Rs. 1.6 lakhs. j) We have also installed online effluent monitoring system at STP for the parameters pH, TSS, BOD and COD at a cost of Rs 23 Lakhs

11 (xii)	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zila parisad/municipal corporation, urban local body and the local NGO If any from whom suggestions/representations, if any were received while processing the proposal	A copy of the clearance letter was communicated to concerned Municipal corporation.
11 (xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored date (both in hard copies as well as by e-mail) to the respective zonal office of CPCB and SPCB. A copy of Environmental clearance and six monthly compliance status report shall be posted on the website of the company.	We ensure to submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored date (both in hard copies as well as by e-mail) to the respective zonal office of CPCB and SPCB. We ensure copy of Environmental clearance and six monthly compliance status report is posted on the website of our company.
11 (xiv)	The Environmental statement for each financial year ending 31th March in form V as is mandated shall be submitted to the concerned state pollution control board as prescribed under the Environment (protection) Rules, 1986 as amended subsequently shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent respective regional offices of MoEF & CC by e-mail.	We have submitted Environmental statement for the last financial year ending 31th March in form V. And it has also been put on the website of our company along with the status of compliance of environmental clearance conditions. It will be sent to respective regional offices of MoEF & CC by e-mail.
11 (xv)	The project proponent shall inform the public that the project has accorded environmental clearance by the ministry and copies of the clearnace letter are available with the SPCB/committee and may also be seen at website of the ministry at http;//moef.nic. This shall be advertised with in sevendays from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the rigion of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned regional of the ministry.	We have made advertisements in the local newspaper given in two local newspaper i.e. Dinamani and the Indian Express date 10.08.2021. A copy of the same was forwarded to the Regional Office of the Ministry.

12.	The ministry reserves the right to stipulated additional conditions, if found necessary at subsequent stages and the projects proponent shall implement all the said conditions in a time bound manner. The ministry may revoke or suspend the environmental clearance if implementation of any of the above conditions is not found satisfactory	Noted. We assure to comply.
13.	Concealing factual date or submission of false/fabricated date and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (protection) Act 1986	Noted. We assure to comply.
14	Any appeal against this environmental clearance shall lie with the National Green Tribunal. If prepared within a period of 30days as prescribed under section16 of the National Green tribunal Act 2010.	Noted.
15	The above conditions will be enforced inter-alia under the provisions of the water Act (prevention & control of pollution) Act 1974 the Air (prevention & control of pollution) Act 1981. The Environment (protection) Act 1986, The Hazardous waste (Management, Handling and Transboundary movement) rules 2016 and the public liability insurance Act 1991 read with subsequent amendments therein.	Noted. We assure to comply.

SPIC
Nourishing growth

Ref: S&E/E-8B2/24 **Date: 27.05.2024**

The Director (S)
Ministry of Environment, Forest & Climate Change
Additional Office Block for GPOA, Ist Floor
Shastri Bhavan ,Haddows Road,
Nungambakkam,
Chennai – 600 006.

Sub Half Yearly Compliance Status Report for Environmental Clearance M/s.SPIC Limited – Reg.

Ref: J -11011/124/2015-IA II (I) dated 28.03.2017

Dear Sir,

With reference to the above Environmental Clearances, we are herewith submitting the Compliance Status Report (Half yearly compliance report) for the period October 2023 to March 2024.

Thanking you,

Yours faithfully,

For "**M/s Southern Petrochemical Industries Corporation Limited**"

E.Balu 27/05/2024

E.Balu,

Whole Time Director

Enclosure:

1. Half Yearly Compliance Report
2. Half yearly monitoring report

CC: i) Director, Ministry of Environment and Forest,
Regionai Office,
Chennai.
ii) District Environmental Engineer,
Tamil Nadu Pollution Control Board,
Tuticorin.

SOUTHERN PETROCHEMICALS INDUSTRIES CORPORATION LIMITED
SPIC NAGAR, TUTICORIN – 628 005

Sub: Changeover of feedstock and fuel from Naphtha to mixed feed stock Environmentai Clearance-Half Yearly Compliance Status Report

Ref: No J -11011/124/2015-IA II (I) dated 28.03.2017

A.SPECIFIC CONDITIONS

S.NO	SPECIFIC CONDITION	COMPLIANCE STATUS
1	All the other conditions in the environmental clearance letter no. J-1101/171/2007-IA.II (I) dated 5th March, 2008 remains the same. The PP shall comply with all the other conditions in the EC dated 05th March, 2008.	We have complied with all the conditions in the EC dated 05th March, 2008. Separate compliance of the EC date 5th March 2008 is attached.

Compliance of "Charter on Corporate Responsibility for Environmental Protection" by M/s. SPIC Ltd., Thoothukudi

I. WASTE WATER MANAGEMENT:

Sl.No.	Charter Condition	Status of Compliance
1.	Efforts will be made for conservation of water, particuiariy with a target to have consumption less than 8, 12 & 15 M^3/tonne of urea produced for plant based on gas, naphtha and fuel oil, respectively. In case of plants using Naphtha and Gas both as feed stocks, water consumption target of less than 10 M^3/tonne will be achieved. An action plan for this will be submitted by June 2003 and targets will be achieved by March 2004.	Water consumption per MT of Urea produced (Mixed feed - Naphtha and gas based) is less than 10 cu.m/MT urea production.
2.	Use of arsenic for CO_2 absorption in Ammonia Plants and chromate based chemicals for	We have adopted glycine-based technology for absorption system in Ammonia Plant in

Sl.No.	Charter Condition	Status of Compliance
	cooling systems, which is still continuing in some industries, will be phased out and replaced with non-arsenic and non-chromate systems by December 2003. In this regard, action plan will be submitted by June 2003.	June 1998. Cooling water systems were switched over to non-chromate based (Phosphate system) treatment programme since 1998.
3.	Adequate treatment for removal of oil, chromium (till non-chromate based cooling system is in place) and fluoride will be provided to meet the prescribed standards at the source (end of respective process unit) itself. Action plan will be firmed up by June 2003 for compliance by March 2004	Oil is skimmed from ammonia and urea effluent collection sump before the effluent is sent to treatment plant. The concentration of oil in treated effluent is well within the prescribed standards We have already adopted non-chromate treatment programme in cooling water system from June 1998.
4.	Proper and complete nitrification and de-nitrification will be ensured, wherever such process is used for effluent treatment, by September 2003.	Nitrification and denitrification process is not adopted for effluent treatment. An exclusive Integrated Effluent Treatment Plant is in operation to treat the generated effluents. pH of effluents is raised by addition of milk of lime in hydrotreater followed by air stripping. There is no process effluent in urea plant as everything is recycled back to the process.
5.	Ground water monitoring around the storage facilities and beyond the factory premises will be carried out at regular intervals particularly for pH, fluoride, CPCB will finalize the guidelines for groundwater monitoring by December 2003.	Regular Ground water monitoring is done in 19 no of wells once in a month both inside and outside factory premises. Samples are collected once in a month and analyzed for pH, Phosphate, Fluoride, Ammonical Nitrogen, Arsenic, Urea Nitrogen, Hexavalent chromium and Nitrate nitrogen. Regular monthly samples are collected and analyzed by us and once in three months by TNPCB
6.	No effluent arising from process plants and associated facilities will be discharged to the storm water drain. The quality of storm water will be regularly monitored by all the	The nitrogenous fertilizer plant effluent-mainly the cooling tower blow down, is collected in effluent sumps and then sent to Integrated Effluent Treatment Plant (IETP) for treatment. Similarly the phosphatic

Sl.No.	Charter Condition	Status of Compliance
	industries	fertilizer plant effluent is recycled back to the system. No effluent is discharged into storm water drain. The storm water quality is monitored at the time of rains
7.	The industries, where waste water/effluent flows through the storm water drains even during the dry season will install continuous systems for monitoring the storm water quality for pH, ammonia and fluoride. If required, storm water will be routed through effluent treatment plant before discharging. An action plan will be submitted by June 2003 and necessary action will be taken by June 2004.	In the Unit, waste water/effluent does not flow through the storm water drains. During rain, in Nitrogenous fertilizer plant, the storm water drain is diverted to Integrated effluent treatment plant for treatment and then reused/disposed. .

II. AIR POLLUTION MANAGEMENT

Sl.No.	Charter Condition	Status of Compliance
1.	All the upcoming Urea Plants will have urea prilling towers based on natural draft so as to minimize urea dust emissions.	Provision of natural draft system is applicable to new upcoming Urea Plants The Urea Plant was commissioned in 1975. We have taken several steps to reduce the pollution load below the prescribed norms. We have installed online continuous emission monitoring system for the measurement of Ammonia and PM and the data is being uploaded to TNPCB and CPCB since June 2018.
2.	The existing urea plants, particularly, the plants having forced draft prilling towers, will	In the Unit Urea prilling tower is based on forced draft system. The air pollution

Sl.No.	Charter Condition	Status of Compliance
	install appropriate systems (e.g.scrubber, etc.) for achieving existing norms of urea dust emissions. In this regard, industries will submit action plan by June 2003 and completion of necessary actions by June 2004.	control equipment has been installed to reduce the concentration of pollutants. • The conventional distribution system at the top of prilling tower has been converted to acoustic granulation in 1988 to bring down dust emission. With this improved urea melt spray system "Satellites" namely the fine dust particles are reduced. • The fluidizing dryer hot air used for carrying of urea crystals to the top of prilling tower is sent to a set of cyclones, consisting of dry cyclones (4 Nos.) and wet cyclones (2 Nos.). Since the dry cyclones are operated under negative pressure by an induced draft fan, urea crystals and the dust particles are effectively separated by centrifugal action in cyclones. The hot air is then sent to wet cyclones, where clear water is circulated to absorb fine dust particles and ammonia. The fluidizing cooler air, which is used for cooling of urea prills, is sent through 4 Nos. of dust chambers. At the bottom of dust chamber, water level is maintained by a circulation pump. The pollutants, ammonia and urea dust are absorbed in water and the pollutant level in the exit is reduced. The particulate matter at the exit of prilling tower is well below the stipulated standard . • We have installed online continuous emission monitoring system for the measurement of Ammonia and PM and the data is being uploaded to TNPCB and CPCB since June 2018.

Sl.No.	Charter Condition	Status of Compliance
3.	The sulphuric acid plants having SCSA system will switch over to DCDA system by March 2004 to meet the emission standard for SO_2 as 2 kg/tonne of H_2SO_4 produced. An action plan for this will be submitted by June 2003.	DCDA process is adopted since 1994. Now it is under M/s Greenstar Fertilizers we had completely renewed the old catalyst and achieved SO_2 emission less than 1.0 kg/ton of H_2SO_4 produced **(Now the unit with M/s Greenstar Fertilizers Ltd.)**
4.	Sulphuric acid plants having DCDA system will improve the conversion and absorption efficiencies of the system as weli as scrubbers to achieve SO_2 emissions of 2 kg/tonne of acid produced in case of plants having capacity above 300 tpd and 2.5 kg/tonne in case of plants having capacity upto 300 tpd. An action plan will be submitted by June 2003 and emission ievels will be complied with by September 2004.	In the Unit Sulphuric acid manufacturing process is based on DCDA system. In order to improve the conversion efficiency further, fresh V_2O_5 catalyst was charged in Sulphuric Acid Plant converter. By this, the stipulated 1.0 kg/ton of acid produced is complied with. **Now the unit is with M/s Greenstar Fertilizers ltd**
5.	Stack height for sulphuric acid plants will be provided as per the guidelines and on the basis of normal piant operations (and not when the scrubbers are in use) by June 2003. The scrubbed gases are to be let out at the same height of the stack.	In the Unit, the stack height provided in SA plant is 60M which is sufficient to meet the stringent standard of 1.0 kg/ton of 100% H_2SO_4. Tail Gas scrubber has been installed at Sulphuric acid plant to keep the emission always under norms even during start up and shut down. **Now the unit is at M/s Greenstar Fertilizers Ltd**
6.	An action plan for providing proper dust controi systems at rock phosphate grinding unit in phosphoric acid plants/single super phosphate plants, so as to achieve particulate emission leveis of 150 mg/NM^3 will be submitted by September 2003 and complied with by march 2004.	In Rock grinding section of Phosphoric Acid plant improved pulsejet bag filter was provided in 1995 to remove the particulate matter in the exhaust gas. The concentration of particulate matter in RG mili exhaust is iess than the stipulated standard . **Now the unit is at M/s Greenstar Fertilizers Ltd**
7.	Particulate as well as gaseous fluoride will be monitored and adequate control systems will be installed by June 2004 to achieve the norms on total fluoride emissions (25	Four stage off gas recovery system has been installed in addition to turbulent contact absorber (TCA - 3) for scrubbing of fluoride present in emission gases The

Sl.No.	Charter Condition	Status of Compiiance
	mg/NM^3)	total fluoride concentration at the exit of TCA -3 and HH Off gas stack is maintained beiow Standards. Fluorine recovery unit is in operation since 1987 and the Hydro fluosilicic acid produced is converted into a value added product - Aluminium Fluoride. **Now the unit is at M/s Greenstar Fertilizers Ltd**
8.	Continuous SO_2 emission monitoring systems will be installed in sulphuric acid plants (having capacity 200 tpd and above) by March 2004. Action pian for this will be submitted by June 03.	We have provided continuous online anaiyzer for monitoring of SO_2 concentration in SA stack and is uploaded to TNPCB and CPCB **Now the unit is at M/s Greenstar Fertiiizers Ltd**
9.	Regular monitoring of ambient air quality with regard to SO_2, NOx, PM, SO_3, Fluoride and acid mist will be carried out.	Ambient air sampies are collected twice in a week in ali the 9 permanent ambient air stations. The parameters anaiysed are SO_2, NOx, PM, Fluoride and Ammonia. As part of CREP compliance, the parameters SO_3 and acid mist are also analyzed by the Unit in ambient air. As per Supreme Court Monitoring Committee directions online dispiay of Ambient Air Data has been started by the Unit. The parameters uploaded are Ambient temperature, relative humidity, Ambient Ammonia level, Ambient SO_2, Ambient HF, NO_2, NOx, PM_{10}, $PM_{2.5}$. Bi Annuai Ambient Air Quality survey is being conducted by CPCB empanelled laboratory as per NAAQS standards. **(Annexure – I)**

III. SOLID WASTE MANAGEMENT

S.No	Charter Condition	Status of Compiiance
1.	Gypsum will be effectively managed by providing proper lining, dykes with approach roads and monitoring of ground water quality	Gypsum is disposed to cement manufacturing units as a substitute to iime stone to enhance the calcium oxide

S.No	Charter Condition	Status of Compiiance
	around storage facilities. Accumulated gypsum will be properly capped. In this regard, action plan will be submitted by June 2003 and for compliance by Dec. 2003	concentration in cement. Gypsum is also utilized in agriculture as a soil conditioner. By continuous disposai methods, the quantity of gypsum utilized is higher than the generation quantity and thereby the accumulation is reduced. The dykes are provided with approach roads for transportation of the material. We have provided liner system for the dykes as per CPCB Guidelines. In gypsum dyke area monitoring wells have been provided to check the ground water quality. Fluoride levels in the monitoring wells are weli within the standard. **Now it is at M/s Greenstar Fertiiizers Ltd.**
2.	An action plan for proper handling, storage and disposal of spent catalyst having toxic metals wiil be submitted by June 2003 and implemented by September 2003. The industry wiil also explore recovery/buy-back of spent catalyst by Sep. 2003.	The spent catalysts are collected in mild steel sealed drums and disposed in compliance with Hazardous waste rules.
3.	Carbon slurry, sulphur muck and chalk will be properly managed and disposed of in properly designed landfill either within premises or in common faciiity. Action plan on this will be submitted by June 2003 and implemented by march 2004.	Carbon slurry is not generated in this Unit. Sulphur muck is used as a filier material in the complex fertilizer unit. Calcium carbonate (ETP Sludge) is being utilized in Complex fertilizer as filler and its generation is reduced by using imported lime. **(Now the unit at M/s Greenstar Fertilizers Ltd)**
4.	Existing stock of chromium and arsenic bearing sludge will be properly disposed by December 2003. Industries will also explore recovery of chromium from the sludge. CPCB will provide guideiines for proper disposal of the sludge.	We have adopted phosphate treatment system in cooling water system in 1998 and hence Chromium sludge generation has been avoided. The previously generated Chromium siudge in trivalent form is stored in an impervious pond inside the factory premises in an isolated area. The Chromium sludge from M/s.Tuticorin Alkali Chemicals and M/s.Tamiinad Petroproducts Limited is also stored along with our Chromium sludge as per our directions. The capping of the impervious Chromium pond was taken up based on CPCB guidelines. Glycine absorption system is adopted in ammonia plant carbon

S.No	Charter Condition	Status of Compliance
		dioxide removal section from 1998 and hence arsenic siudge generation has been eliminated compietely. As per Supreme Court monitoring committee directions, the Arsenic bearing sludge, which has been collected in miid steel drum, seal welded and stored in an isolated area inside the factory premises with lock and key arrangement is stabilized, solidified and encapsulated in a lined concrete pit as per CPCB guidelines.

SPIC
Nourishing growth

Ref : SE/E8-B2/24 **Date: 27.05.2024**

The Director (S)
Ministry of Environment, Forest & Climate Change
Additional Office Block for GPOA, Ist Floor
Shastri Bhavan ,Haddows Road,
Nungambakkam,
Chennai – 600 006.

Dear Sir,

Sub: Half yearly Monitoring Report – Reg.

Ref: 1. Ministry's Environmental Clearance letter No. J-11011/171/2007- IA II (I) dt: 05.03.2008

2. Ministry's Environmental Clearance letter No.J-11011/124/2015/IA II (I) dt: 28.03.2017

3. Ministry's Environmental Clearance letter No. J -11011/171/2007-IA II (I) dt: 20.05 2019

4. Ministry's Environmental Clearance letter No.J-11011/171/2007/IA II (I) dt: 07.01.2020

We are sending herewith the Half-yearly Monitoring Reports pertaining to our plants for the period **Oct 2023 to Mar 2024.**

Thanking you,

For **"M/s Southern Petrochemical Industries Corporation Limited"**

E.Balu-E
27/05/2024

E.Balu

Whole Time Director

Encl: 1) Ambient air monitoring.
2) Stack emission monitoring
3) Well water monitoring
4) Treated effluent monitoring
5) Sea water monitoring
6) Fugitive emission monitoring

Southern Petrochemical Industries Corporation Limited
(CIN: L11101TN1969PLC005778)
Factory: SPIC Nagar, Muthiahpuram Post, Tuticorin 628 005 Tamilnadu, India.
Phone : +91 (0461) 2355401 I Email : spiccorp@spic.co.in I www.spic.in

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: OCTOBER 2023

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
03.10.2023	NW	TANK FARM	6.1	4.9	77	58	34	BDL
		IETP AREA	4.3	4.0	95	45	31	BDL
		UREA BAGGING	5.3	4.5	72	60	33	BDL
		OFFICER'S CLUB	3.0	2.5	40	40	28	BDL
		JVP SHED	3.7	2.9	48	48	36	BDL
		AUTO SS	3.8	2.9	60	56	30	BDL
		AGRI CLINIC	2.6	2.1	36	38	24	BDL
		INST CHANGE ROOM	6.5	5.3	49	49	36	BDL
		SAFETY DEPATMENT	6.8	5.5	52	47	40	BDL
06.10.2023	NW	TANK FARM	6.3	5.3	81	56	30	BDL
		IETP AREA	5.4	4.2	72	47	28	BDL
		UREA BAGGING	5.8	4.4	98	59	38	BDL
		OFFICER'S CLUB	3.3	2.9	96	37	31	BDL
		JVP SHED	4.1	3.7	62	60	29	BDL
		AUTO SS	4.4	3.4	72	50	29	BDL
		AGRI CLINIC	3.8	2.4	32	44	32	BDL
		INST CHANGE ROOM	6.7	3.5	75	48	30	BDL
		SAFETY DEPATMENT	7.0	4.2	81	49	28	BDL
10.10.2023	NW	TANK FARM	6.5	5.3	93	48	29	BDL
		IETP AREA	6.0	5.2	68	52	30	BDL
		UREA BAGGING	5.6	4.8	90	48	27	BDL
		OFFICER'S CLUB	5.3	3.4	30	46	30	BDL
		JVP SHED	4.9	4.0	60	60	35	BDL
		AUTO SS	4.2	3.5	54	56	29	BDL
		AGRI CLINIC	4.7	3.1	36	44	21	BDL
		INST CHANGE ROOM	5.0	4.9	71	39	54	BDL
		SAFETY DEPATMENT	3.8	5.4	85	46	37	BDL
12.10.2023	NW	TANK FARM	6.4	6.1	70	60	32	BDL
		IETP AREA	6.0	4.8	62	55	37	BDL
		UREA BAGGING	6.5	5.4	77	48	34	BDL
		OFFICER'S CLUB	4.9	4.2	30	36	25	BDL
		JVP SHED	5.3	4.0	55	60	34	BDL
		AUTO SS	4.4	3.3	73	59	35	BDL
		AGRI CLINIC	3.9	2.9	49	45	30	BDL
		INST CHANGE ROOM	7.2	5.8	90	49	25	BDL
		SAFETY DEPATMENT	7.1	5.8	58	47	24	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /Nm3					
			SO2	NO2	NH3	PM 10	PM 2.5	CO / HC
16.10.2023	NW	TANK FARM	4.0	3.7	78	48	30	BDL
		IETP AREA	4.7	4.1	84	43	29	BDL
		UREA BAGGING	5.5	4.8	61	58	24	BDL
		OFFICER'S CLUB	5.3	2.9	94	46	34	BDL
		JVP SHED	4.5	3.0	50	55	36	BDL
		AUTO SS	3.8	3.0	65	56	34	BDL
		AGRI CLINIC	3.6	2.8	34	44	31	BDL
		INST CHANGE ROOM	7.0	4.0	63	48	25	BDL
		SAFETY DEPATMENT	6.7	4.2	59	54	31	BDL
19.10.2023	NW	TANK FARM	4.7	3.7	48	58	29	BDL
		IETP AREA	3.9	3.0	90	50	25	BDL
		UREA BAGGING	6.0	4.1	85	59	35	BDL
		OFFICER'S CLUB	3.3	2.6	35	41	24	BDL
		JVP SHED	5.1	3.9	66	52	30	BDL
		AUTO SS	4.0	3.0	50	57	34	BDL
		AGRI CLINIC	3.5	2.3	32	38	22	BDL
		INST CHANGE ROOM	6.9	4.6	90	72	37	BDL
		SAFETY DEPATMENT	7.3	5.2	81	51	26	BDL
25.10.2023	NW	TANK FARM	4.9	3.1	92	42	24	BDL
		IETP AREA	5.3	3.9	96	47	29	BDL
		UREA BAGGING	5.6	4.2	53	54	27	BDL
		OFFICER'S CLUB	5.5	2.7	77	41	30	BDL
		JVP SHED	3.6	3.3	39	55	32	BDL
		AUTO SS	5.0	2.9	52	49	26	BDL
		AGRI CLINIC	3.6	2.5	72	44	31	BDL
		INST CHANGE ROOM	3.2	4.4	42	47	29	BDL
		SAFETY DEPATMENT	7.0	4.0	71	54	24	BDL
27.10.2023	NW	TANK FARM	5.3	3.2	76	54	28	BDL
		IETP AREA	5.9	4.2	86	48	25	BDL
		UREA BAGGING	5.0	4.1	74	60	36	BDL
		OFFICER'S CLUB	4.5	2.8	42	50	25	BDL
		JVP SHED	3.2	2.3	65	44	23	BDL
		AUTO SS	3.6	2.5	57	42	26	BDL
		AGRI CLINIC	6.6	4.3	38	48	20	BDL
		INST CHANGE ROOM	6.9	4.5	83	42	37	BDL
		SAFETY DEPATMENT	4.5	2.8	67	60	26	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: NOVEMBER 2023

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
02.11.2023	NW	TANK FARM	7.4	6.4	90	60	39	BDL
		IETP AREA	7.0	6.6	95	58	29	BDL
		UREA BAGGING	7.2	6.7	94	60	40	BDL
		OFFICER'S CLUB	5.0	3.9	56	37	23	BDL
		JVP SHED	5.4	5.0	60	60	33	BDL
		AUTO SS	4.3	3.8	64	52	29	BDL
		AGRI CLINIC	4.1	3.5	44	40	22	BDL
		INST CHANGE ROOM	7.0	6.2	88	54	39	BDL
		SAFETY DEPATMENT	7.5	6.6	48	53	30	BDL
07.11.2023	NW	TANK FARM	7.0	6.1	94	53	34	BDL
		IETP AREA	6.8	5.9	97	52	30	BDL
		UREA BAGGING	7.3	6.2	97	54	37	BDL
		OFFICER'S CLUB	4.6	3.4	46	45	26	BDL
		JVP SHED	5.0	3.3	54	55	29	BDL
		AUTO SS	4.1	3.2	63	60	33	BDL
		AGRI CLINIC	3.8	3.0	40	48	32	BDL
		INST CHANGE ROOM	7.1	5.4	72	55	35	BDL
		SAFETY DEPATMENT	7.4	5.7	66	50	32	BDL
10.11.2023	NW	TANK FARM	6.9	6.0	79	54	28	BDL
		IETP AREA	7.3	6.3	92	59	32	BDL
		UREA BAGGING	7.0	5.9	98	60	38	BDL
		OFFICER'S CLUB	4.9	4.1	39	53	26	BDL
		JVP SHED	5.2	3.7	58	54	30	BDL
		AUTO SS	4.8	4.1	31	60	33	BDL
		AGRI CLINIC	3.6	2.9	43	48	23	BDL
		INST CHANGE ROOM	7.5	6.2	90	58	36	BDL
		SAFETY DEPATMENT	7.7	6.4	75	60	40	BDL
14.11.2023	NW	TANK FARM	7.2	5.9	92	52	40	BDL
		IETP AREA	6.5	6.0	98	58	35	BDL
		UREA BAGGING	6.8	5.9	30	56	37	BDL
		OFFICER'S CLUB	5.4	5.1	46	40	28	BDL
		JVP SHED	5.9	5.2	53	58	31	BDL
		AUTO SS	4.7	3.9	68	58	33	BDL
		AGRI CLINIC	4.2	3.8	60	50	33	BDL
		INST CHANGE ROOM	7.3	6.3	74	55	35	BDL
		SAFETY DEPATMENT	7.2	6.5	48	52	35	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /Nm3					
			SO2	NO2	NH3	PM 10	PM 2.5	CO / HC
17.11.2023	NW	TANK FARM	6.7	5.9	94	52	32	BDL
		IETP AREA	6.5	6.0	62	48	27	BDL
		UREA BAGGING	7.3	6.2	92	60	37	BDL
		OFFICER'S CLUB	4.6	3.6	50	40	27	BDL
		JVP SHED	5.1	4.2	47	58	32	BDL
		AUTO SS	4.6	4.1	75	51	28	BDL
		AGRI CLINIC	4.2	3.5	43	50	29	BDL
		INST CHANGE ROOM	7.6	6.5	81	54	38	BDL
		SAFETY DEPATMENT	7.9	6.4	65	44	25	BDL
21.11.2023	NW	TANK FARM	7.0	6.2	97	54	34	BDL
		IETP AREA	6.2	5.5	54	56	30	BDL
		UREA BAGGING	6.9	6.0	98	54	35	BDL
		OFFICER'S CLUB	5.4	4.8	43	45	31	BDL
		JVP SHED	5.0	4.3	50	58	35	BDL
		AUTO SS	4.5	3.8	67	52	30	BDL
		AGRI CLINIC	4.1	3.5	36	41	24	BDL
		INST CHANGE ROOM	7.1	6.3	74	58	40	BDL
		SAFETY DEPATMENT	7.5	6.6	72	54	29	BDL
24.11.2023	NW	TANK FARM	7.5	6.7	98	54	27	BDL
		IETP AREA	6.8	6.0	92	41	25	BDL
		UREA BAGGING	7.2	6.3	96	60	34	BDL
		OFFICER'S CLUB	4.9	4.2	46	48	29	BDL
		JVP SHED	5.9	5.0	58	52	33	BDL
		AUTO SS	4.8	4.1	60	55	27	BDL
		AGRI CLINIC	4.5	4.0	47	40	22	BDL
		INST CHANGE ROOM	7.4	6.4	90	53	39	BDL
		SAFETY DEPATMENT	7.7	6.8	67	56	30	BDL
28.11.2023	NW	TANK FARM	6.9	6.0	94	55	33	BDL
		IETP AREA	7.3	6.4	95	52	29	BDL
		UREA BAGGING	7.0	6.0	95	60	38	BDL
		OFFICER'S CLUB	5.4	4.3	65	48	27	BDL
		JVP SHED	5.1	4.0	60	45	27	BDL
		AUTO SS	4.6	4.0	66	52	29	BDL
		AGRI CLINIC	4.1	3.5	42	48	26	BDL
		INST CHANGE ROOM	7.2	5.9	92	59	35	BDL
		SAFETY DEPATMENT	7.8	6.6	78	52	32	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: DECEMBER 2023

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
01.12.2023	SW	TANK FARM	6.8	6.1	92	58	34	BDL
		IETP AREA	7.1	6.4	94	53	37	BDL
		UREA BAGGING	6.6	3.5	51	71	40	BDL
		OFFICER'S CLUB	4.7	5.8	93	35	20	BDL
		JVP SHED	5.0	4.7	55	60	31	BDL
		AUTO SS	4.0	3.4	60	57	27	BDL
		AGRI CLINIC	4.2	3.1	40	73	33	BDL
		INST CHANGE ROOM	7.3	6.1	98	62	35	BDL
		SAFETY DEPATMENT	7.7	6.0	61	50	28	BDL
04.12.2023	SW	TANK FARM	6.5	5.9	95	52	30	BDL
		IETP AREA	6.9	6.1	97	46	26	BDL
		UREA BAGGING	4.9	3.2	97	40	38	BDL
		OFFICER'S CLUB	4.7	3.1	40	51	24	BDL
		JVP SHED	4.0	2.9	51	54	28	BDL
		AUTO SS	4.1	2.6	54	42	30	BDL
		AGRI CLINIC	6.7	6.1	42	47	25	BDL
		INST CHANGE ROOM	7.0	6.3	78	44	41	BDL
		SAFETY DEPATMENT	7.1	2.9	54	48	30	BDL
07.12.2023	SW	TANK FARM	7.0	6.3	95	60	31	BDL
		IETP AREA	7.1	6.5	93	54	29	BDL
		UREA BAGGING	6.5	4.9	43	43	29	BDL
		OFFICER'S CLUB	5.3	4.0	54	54	33	BDL
		JVP SHED	5.4	4.5	35	35	35	BDL
		AUTO SS	5.3	3.5	54	54	26	BDL
		AGRI CLINIC	4.2	6.0	44	54	48	BDL
		INST CHANGE ROOM	7.1	5.9	70	47	40	BDL
		SAFETY DEPATMENT	7.4	6.0	49	50	31	BDL
12.12.2023	SW	TANK FARM	7.5	6.3	96	60	33	BDL
		IETP AREA	7.1	6.2	65	55	31	BDL
		UREA BAGGING	5.6	5.2	41	45	40	BDL
		OFFICER'S CLUB	5.1	4.5	58	54	33	BDL
		JVP SHED	6.9	4.1	61	64	33	BDL
		AUTO SS	4.5	3.6	65	54	26	BDL
		AGRI CLINIC	4.4	6.0	70	58	29	BDL
		INST CHANGE ROOM	7.5	6.1	62	56	35	BDL
		SAFETY DEPATMENT	7.0	4.1	41	48	29	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /Nm3					
			SO2	NO2	NH3	PM 10	PM 2.5	CO / HC
17.12.2023	SW	TANK FARM IETP AREA UREA BAGGING OFFICER'S CLUB JVP SHED AUTO SS AGRI CLINIC INST CHANGE ROOM SAFETY DEPATMENT	Not carried out due to flood					
20.12.2023	SW	TANK FARM IETP AREA UREA BAGGING OFFICER'S CLUB JVP SHED AUTO SS AGRI CLINIC INST CHANGE ROOM SAFETY DEPATMENT	Not carried out due to flood					
24.12.2023	SW	TANK FARM	2.3	2.7	26	22	6	BDL
		IETP AREA	1.9	3.0	19	23	17	BDL
		UREA BAGGING	1.2	3.3	12	22	18	BDL
		OFFICER'S CLUB	1.9	2.2	21	36	5	BDL
		JVP SHED	2.9	2.0	24	41	9	BDL
		AUTO SS	2.8	1.1	16	54	17	BDL
		AGRI CLINIC	3.5	3.0	17	61	3	BDL
		INST CHANGE ROOM	2.4	4.4	19	28	5	BDL
		SAFETY DEPATMENT	1.7	2.8	4	39	16	BDL
28.12.2023	SW	TANK FARM	1.9	3.1	21	22	15	BDL
		IETP AREA	2.4	2.5	17	25	18	BDL
		UREA BAGGING	1.7	1.5	14	28	7	BDL
		OFFICER'S CLUB	1.5	2.7	25	41	15	BDL
		JVP SHED	3.4	4.6	35	31	14	BDL
		AUTO SS	2.4	1.3	15	35	21	BDL
		AGRI CLINIC	3.2	1.8	14	28	12	BDL
		INST CHANGE ROOM	2.8	1.7	10	17	4	BDL
		SAFETY DEPATMENT	4.8	1.1	9	19	3	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: JANUARY 2024

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
02.01.2024	SW	TANK FARM	3.7	4.0	22	54	31	BDL
		IETP AREA	3.0	4.1	30	43	25	BDL
		UREA BAGGING	2.7	4.2	41	46	27	BDL
		OFFICER'S CLUB	1.4	3.3	11	34	20	BDL
		JVP SHED	1.3	3.4	20	45	21	BDL
		AUTO SS	2.8	3.5	25	43	21	BDL
		AGRI CLINIC	1.2	3.6	17	30	18	BDL
		INST CHANGE ROOM	2.0	3.7	30	57	30	BDL
		SAFETY DEPATMENT	2.3	3.8	36	53	28	BDL
05.01.2024	SW	TANK FARM	2.8	4.2	27	44	29	BDL
		IETP AREA	3.1	4.4	23	42	24	BDL
		UREA BAGGING	3.0	4.6	32	45	30	BDL
		OFFICER'S CLUB	1.6	3.8	25	46	22	BDL
		JVP SHED	1.5	3.0	22	42	25	BDL
		AUTO SS	2.0	3.8	11	35	21	BDL
		AGRI CLINIC	1.6	2.6	32	28	22	BDL
		INST CHANGE ROOM	2.7	3.4	38	47	25	BDL
		SAFETY DEPATMENT	2.9	3.2	31	44	24	BDL
08.01.2024	SW	TANK FARM	3.1	5.1	40	42	24	BDL
		IETP AREA	2.2	4.3	42	46	25	BDL
		UREA BAGGING	2.9	4.5	55	51	30	BDL
		OFFICER'S CLUB	2.7	4.7	28	30	24	BDL
		JVP SHED	1.2	4.7	34	48	32	BDL
		AUTO SS	1.3	4.5	50	47	25	BDL
		AGRI CLINIC	1.4	4.1	18	25	23	BDL
		INST CHANGE ROOM	2.5	4.3	56	48	22	BDL
		SAFETY DEPATMENT	3.0	4.1	52	51	31	BDL
13.01.2024	SW	TANK FARM	2.8	4.7	46	47	21	BDL
		IETP AREA	3.7	4.5	24	40	23	BDL
		UREA BAGGING	2.6	3.9	71	51	35	BDL
		OFFICER'S CLUB	2.5	3.5	25	37	23	BDL
		JVP SHED	2.4	4.0	32	51	30	BDL
		AUTO SS	2.3	3.5	66	43	19	BDL
		AGRI CLINIC	1.2	3.8	21	48	24	BDL
		INST CHANGE ROOM	3.1	4.5	32	57	30	BDL
		SAFETY DEPATMENT	3.0	5.0	49	52	29	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM_{10}	$PM_{2.5}$	CO / HC
18.01.2024	SW	TANK FARM	3.5	4.9	24	52	30	BDL
		IETP AREA	3.1	4.5	30	43	25	BDL
		UREA BAGGING	2.9	4.6	40	48	29	BDL
		OFFICER'S CLUB	1.5	3.5	10	34	20	BDL
		JVP SHED	1.5	3.3	20	40	22	BDL
		AUTO SS	2.0	3.0	23	44	21	BDL
		AGRI CLINIC	1.8	3.6	17	30	19	BDL
		INST CHANGE ROOM	2.3	3.2	56	55	32	BDL
		SAFETY DEPATMENT	2.5	3.6	36	52	29	BDL
22.01.2024	SW	TANK FARM	2.9	4.6	27	44	27	BDL
		IETP AREA	3.3	4.8	23	47	29	BDL
		UREA BAGGING	3.0	4.4	32	49	31	BDL
		OFFICER'S CLUB	1.8	3.3	15	45	20	BDL
		JVP SHED	1.7	3.0	22	42	23	BDL
		AUTO SS	2.1	3.2	21	34	21	BDL
		AGRI CLINIC	1.5	2.8	32	28	22	BDL
		INST CHANGE ROOM	2.0	3.3	48	49	22	BDL
		SAFETY DEPATMENT	2.4	3.8	31	44	24	BDL
25.01.2024	SW	TANK FARM	3.0	5.1	60	42	24	BDL
		IETP AREA	2.7	4.8	42	45	27	BDL
		UREA BAGGING	2.8	4.6	85	54	30	BDL
		OFFICER'S CLUB	2.0	4.6	28	30	21	BDL
		JVP SHED	1.7	4.5	24	50	31	BDL
		AUTO SS	1.9	4.7	60	47	25	BDL
		AGRI CLINIC	1.3	4.1	18	27	20	BDL
		INST CHANGE ROOM	2.9	4.6	86	48	22	BDL
		SAFETY DEPATMENT	3.1	4.8	52	53	33	BDL
30.01.2024	SW	TANK FARM	2.8	4.7	46	47	21	BDL
		IETP AREA	3.0	4.5	34	44	23	BDL
		UREA BAGGING	2.2	3.9	91	53	30	BDL
		OFFICER'S CLUB	2.0	3.8	25	38	23	BDL
		JVP SHED	2.2	4.0	22	52	30	BDL
		AUTO SS	2.5	3.9	56	40	18	BDL
		AGRI CLINIC	1.7	3.8	21	48	24	BDL
		INST CHANGE ROOM	3.0	4.8	42	58	32	BDL
		SAFETY DEPATMENT	3.2	5.0	49	52	29	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: FEBRUARY 2024

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
02.02.2024	SW	TANK FARM	6.9	6.0	48	48	30	BDL
		IETP AREA	6.5	5.7	40	42	23	BDL
		UREA BAGGING	7.4	6.5	68	50	35	BDL
		OFFICER'S CLUB	5.3	4.5	16	25	17	BDL
		JVP SHED	5.0	4.1	23	53	34	BDL
		AUTO SS	4.8	3.9	30	46	24	BDL
		AGRI CLINIC	3.7	2.9	14	34	21	BDL
		INST CHANGE ROOM	7.3	6.5	40	55	30	BDL
		SAFETY DEPATMENT	7.8	6.9	46	50	29	BDL
05.02.2024	SW	TANK FARM	6.4	5.5	40	51	27	BDL
		IETP AREA	6.1	5.2	30	40	23	BDL
		UREA BAGGING	7.2	6.2	57	55	32	BDL
		OFFICER'S CLUB	5.7	4.6	14	26	15	BDL
		JVP SHED	5.3	4.5	20	55	31	BDL
		AUTO SS	4.6	3.7	24	43	24	BDL
		AGRI CLINIC	3.5	2.9	21	25	15	BDL
		INST CHANGE ROOM	7.0	5.8	36	60	31	BDL
		SAFETY DEPATMENT	7.5	6.3	42	53	26	BDL
08.02.2024	SW	TANK FARM	6.8	5.2	32	41	23	BDL
		IETP AREA	6.2	5.3	20	35	18	BDL
		UREA BAGGING	7.1	6.2	59	59	31	BDL
		OFFICER'S CLUB	5.1	4.3	14	28	18	BDL
		JVP SHED	4.4	3.1	24	50	29	BDL
		AUTO SS	4.3	3.5	35	37	21	BDL
		AGRI CLINIC	3.2	2.1	18	18	15	BDL
		INST CHANGE ROOM	7.0	5.5	68	54	33	BDL
		SAFETY DEPATMENT	7.4	5.8	35	57	30	BDL
12.02.2024	SW	TANK FARM	5.3	6.1	58	46	25	BDL
		IETP AREA	5.7	6.4	36	38	23	BDL
		UREA BAGGING	6.3	5.9	51	54	34	BDL
		OFFICER'S CLUB	4.1	4.3	23	25	15	BDL
		JVP SHED	4.6	3.8	27	30	18	BDL
		AUTO SS	4.1	3.5	39	31	17	BDL
		AGRI CLINIC	4.5	3.8	22	22	16	BDL
		INST CHANGE ROOM	6.8	5.9	55	53	32	BDL
		SAFETY DEPATMENT	6.2	5.4	29	45	21	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
15.02.2024	SW	TANK FARM	5.2	5.8	35	56	34	BDL
		IETP AREA	5.5	6.0	42	50	28	BDL
		UREA BAGGING	6.1	6.4	53	54	31	BDL
		OFFICER'S CLUB	4.1	3.1	16	28	23	BDL
		JVP SHED	4.5	4.1	20	50	27	BDL
		AUTO SS	3.8	3.2	27	39	23	BDL
		AGRI CLINIC	2.9	2.4	14	21	15	BDL
		INST CHANGE ROOM	5.5	5.9	43	55	34	BDL
		SAFETY DEPATMENT	5.2	5.4	30	56	32	BDL
19.02.2024	SW	TANK FARM	4.1	5.5	45	43	24	BDL
		IETP AREA	4.4	5.2	21	37	28	BDL
		UREA BAGGING	5.2	6.9	93	57	34	BDL
		OFFICER'S CLUB	3.7	3.5	18	41	24	BDL
		JVP SHED	4.1	3.5	26	45	27	BDL
		AUTO SS	3.0	3.0	30	53	27	BDL
		AGRI CLINIC	2.4	3.1	14	32	26	BDL
		INST CHANGE ROOM	3.9	5.6	47	54	30	BDL
		SAFETY DEPATMENT	4.7	6.0	42	48	30	BDL
23.02.2024	SW	TANK FARM	6.2	5.5	40	48	21	BDL
		IETP AREA	6.5	5.2	22	40	24	BDL
		UREA BAGGING	6.1	5.5	56	56	32	BDL
		OFFICER'S CLUB	3.8	2.4	18	24	16	BDL
		JVP SHED	4.3	2.2	16	56	29	BDL
		AUTO SS	4.5	2.3	29	42	23	BDL
		AGRI CLINIC	2.4	1.6	15	14	10	BDL
		INST CHANGE ROOM	6.9	4.9	50	40	25	BDL
		SAFETY DEPATMENT	7.1	5.1	34	58	23	BDL
27.02.2024	SW	TANK FARM	5.6	4.2	38	35	18	BDL
		IETP AREA	5.9	4.6	45	42	25	BDL
		UREA BAGGING	5.5	3.5	48	60	34	BDL
		OFFICER'S CLUB	3.8	2.8	21	40	25	BDL
		JVP SHED	2.5	2.0	18	37	20	BDL
		AUTO SS	2.8	1.8	38	45	27	BDL
		AGRI CLINIC	2.0	1.4	15	48	25	BDL
		INST CHANGE ROOM	6.2	5.0	42	58	30	BDL
		SAFETY DEPATMENT	6.4	5.3	51	47	23	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

AMBIENT AIR QUALITY MONITORING

MONTH: MARCH 2024

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /m^3					
			SO_2	NO_2	NH_3	PM 10	PM 2.5	CO / HC
04.03.2024	E	TANK FARM	5.2	6.0	94	53	28	BDL
		IETP AREA	6.0	6.0	60	47	21	BDL
		UREA BAGGING	6.8	5.9	85	64	33	BDL
		OFFICER'S CLUB	4.2	3.5	34	30	21	BDL
		JVP SHED	5.0	4.3	28	60	36	BDL
		AUTO SS	4.5	3.7	54	44	27	BDL
		AGRI CLINIC	3.5	3.0	34	32	25	BDL
		INST CHANGE ROOM	6.5	6.9	36	60	33	BDL
		SAFETY DEPARTMENT	6.6	6.2	38	56	32	BDL
07.03.2024	E	TANK FARM	5.7	6.3	84	44	24	BDL
		IETP AREA	6.2	5.8	58	38	25	BDL
		UREA BAGGING	6.5	6.0	89	70	38	BDL
		OFFICER'S CLUB	5.4	4.7	58	36	22	BDL
		JVP SHED	4.2	5.0	40	60	35	BDL
		AUTO SS	4.4	3.5	33	49	27	BDL
		AGRI CLINIC	3.8	3.2	70	32	20	BDL
		INST CHANGE ROOM	6.4	7.2	96	68	36	BDL
		SAFETY DEPARTMENT	6.9	6.0	70	56	29	BDL
12.03.2024	E	TANK FARM	6.2	5.8	65	55	27	BDL
		IETP AREA	5.5	5.1	72	44	24	BDL
		UREA BAGGING	6.1	7.4	78	74	38	BDL
		OFFICER'S CLUB	4.7	2.9	28	34	21	BDL
		JVP SHED	5.5	4.2	34	54	32	BDL
		AUTO SS	4.6	3.1	38	43	24	BDL
		AGRI CLINIC	2.9	1.8	24	26	18	BDL
		INST CHANGE ROOM	6.7	7.5	38	60	36	BDL
		SAFETY DEPARTMENT	7.0	6.1	60	66	35	BDL
15.03.2024	E	TANK FARM	6.8	6.0	88	56	32	BDL
		IETP AREA	6.5	5.6	72	70	45	BDL
		UREA BAGGING	6.1	6.9	74	64	32	BDL
		OFFICER'S CLUB	4.5	4.0	40	42	25	BDL
		JVP SHED	4.6	4.1	36	58	32	BDL
		AUTO SS	4.1	3.2	60	45	24	BDL
		AGRI CLINIC	4.5	3.9	37	38	26	BDL
		INST CHANGE ROOM	6.8	7.1	75	73	35	BDL
		SAFETY DEPARTMENT	6.2	5.6	35	62	34	BDL

DATE	WIND DIRECTION TOWARDS	LOCATION	CONCENTRATION : Micrograms /Nm3					
			SO2	NO2	NH3	PM 10	PM 2.5	CO / HC
19.03.2024	E	TANK FARM	4.3	5.1	75	42	29	BDL
		IETP AREA	5.1	4.8	57	55	32	BDL
		UREA BAGGING	6.5	7.3	70	64	34	BDL
		OFFICER'S CLUB	4.6	3.5	34	33	19	BDL
		JVP SHED	5.1	4.6	39	55	25	BDL
		AUTO SS	4.4	3.5	64	47	24	BDL
		AGRI CLINIC	3.5	2.7	34	29	13	BDL
		INST CHANGE ROOM	6.1	5.6	89	62	30	BDL
		SAFETY DEPARTMENT	6.3	5.6	60	67	34	BDL
21.03.2024	E	TANK FARM	6.4	7	98	58	28	BDL
		IETP AREA	6.0	7.3	53	49	26	BDL
		UREA BAGGING	6.8	8.0	86	72	35	BDL
		OFFICER'S CLUB	4.1	3.9	29	34	19	BDL
		JVP SHED	4.8	6.0	41	56	29	BDL
		AUTO SS	4.0	5.2	38	55	29	BDL
		AGRI CLINIC	2.6	2.1	26	30	18	BDL
		INST CHANGE ROOM	7.1	7.9	77	65	33	BDL
		SAFETY DEPARTMENT	7.4	8.3	74	63	34	BDL
26.03.2024	E	TANK FARM	5.9	6.5	81	43	24	BDL
		IETP AREA	6.2	6.8	59	36	22	BDL
		UREA BAGGING	6.4	7.7	90	70	35	BDL
		OFFICER'S CLUB	3.4	2.1	26	30	21	BDL
		JVP SHED	5.8	2.5	30	52	28	BDL
		AUTO SS	5.9	3.0	39	44	25	BDL
		AGRI CLINIC	2.6	1.9	26	26	19	BDL
		INST CHANGE ROOM	6.2	6.8	78	48	27	BDL
		SAFETY DEPARTMENT	6.7	5.4	69	55	25	BDL
29.03.2024	E	TANK FARM	6.0	4.5	89	51	27	BDL
		IETP AREA	6.5	4.9	71	48	23	BDL
		UREA BAGGING	6.2	4.0	82	72	35	BDL
		OFFICER'S CLUB	4.0	3.5	40	46	27	BDL
		JVP SHED	3.1	2.4	32	48	23	BDL
		AUTO SS	3.7	2.5	47	52	27	BDL
		AGRI CLINIC	2.7	2.0	29	44	24	BDL
		INST CHANGE ROOM	7.0	6.1	85	75	35	BDL
		SAFETY DEPARTMENT	7.4	6.4	67	45	25	BDL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR : TUTICORIN-628 005

STACK EMISSION MONITORING

MONTH: OCTOBER 2023

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
20.10.23	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
20.10.23	Reformer	4	32	8	--	--	NO2 :400
06.10.23	Urea Prilling Tower	--	--	--	--	44	150
20.10.23	GT/HRSG Main	22	136	21	--	--	

MONTH: NOVEMBER 2023

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
20.11.23	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
20.11.23	Reformer	5	36	11	--	--	NO2 :400
08.11.23	Urea Prilling Tower	--	--	--	--	47	150
20.11.23	GT/HRSG Main	12	120	28	--	--	

MONTH: DECEMBER 2023

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
14.12.23	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
14.12.23	Reformer	5	36	11	--	--	NO2 :400
08.12.23	Urea Prilling Tower	--	--	--	--	46.5	150
14.12.23	GT/HRSG Main	11	108	9	--	--	

MONTH: JANUARY 2024

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
	Reformer	UNDER SHUTDOWN DUE TO FLOOD					NO2 :400
	Urea Prilling Tower						150
	GT/HRSG Main						

MONTH: FEBRUARY 2024

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
	Reformer	UNDER SHUTDOWN DUE TO FLOOD					NO2 :400
	Urea Prilling Tower						150
	GT/HRSG Main						

MONTH: MARCH 2024

DATE	SOURCE	CONCENTRATION: MILLIGRAMS/Nm^3					
		SO_2	NOx as NO_2	CO	HC	PM	STANDARDS
29.03.24	Auxiliary Boiler I&II	Not in Operation					SO2: 600 NOx : 300
29.03.24	Reformer	11	32	17	--	--	NO2 :400
26.03.24	Urea Prilling Tower	--	--	--	--	40	150
29.03.24	GT/HRSG Main	12	115	29	--	--	

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

OCTOBER 2023

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	6.9	BDL	BDL
Chromium sludge pond - West	6.6	BDL	BDL
Chromium sludge pond - North	6.5	BDL	BDL
Chromium sludge pond - East	6.9	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	6.9	BDL
Arsenic pit - SW	6.7	BDL
Arsenic pit - NE	6.8	BDL
Arsenic pit - SE	6.9	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	7.9	BDL	BDL	BDL	BDL	BDL	BDL	760
Nursery well	7.8	BDL	BDL	BDL	BDL	BDL	BDL	880
Temple well	7	BDL	BDL	BDL	BDL	BDL	BDL	930
Near north gate	7.5	BDL	BDL	BDL	BDL	BDL	BDL	820
SBC opposite	7.6	BDL	BDL	BDL	BDL	BDL	BDL	350

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

NOVEMBER 2023

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	6.3	BDL	BDL
Chromium sludge pond - West	6.4	BDL	BDL
Chromium sludge pond - North	6.1	BDL	BDL
Chromium sludge pond - East	6.0	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	6.8	BDL
Arsenic pit - SW	6.4	BDL
Arsenic pit - NE	6.5	BDL
Arsenic pit - SE	7.0	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	7.9	BDL	BDL	BDL	BDL	BDL	BDL	780
Nursery well	7.9	BDL	BDL	BDL	BDL	BDL	BDL	940
Temple well	7.2	BDL	BDL	BDL	BDL	BDL	BDL	940
Near north gate	7.8	BDL	BDL	BDL	BDL	BDL	BDL	960
SBC opposite	7.6	BDL	BDL	BDL	BDL	BDL	BDL	360

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

DECEMBER 2023

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	6.4	BDL	BDL
Chromium sludge pond - West	6.5	BDL	BDL
Chromium sludge pond - North	5.8	BDL	BDL
Chromium sludge pond - East	6.2	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	6.6	BDL
Arsenic pit - SW	6.3	BDL
Arsenic pit - NE	6.2	BDL
Arsenic pit - SE	7.0	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	7.5	BDL	BDL	BDL	BDL	BDL	BDL	420
Nursery well	7.9	BDL	BDL	BDL	BDL	BDL	BDL	800
Temple well	7.6	BDL	BDL	BDL	BDL	BDL	BDL	970
Near north gate	7.1	BDL	BDL	BDL	BDL	BDL	BDL	950
SBC opposite	7.6	BDL	BDL	BDL	BDL	BDL	BDL	560

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

JANUARY 2024

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	6.3	BDL	BDL
Chromium sludge pond - West	6.6	BDL	BDL
Chromium sludge pond - North	6.3	BDL	BDL
Chromium sludge pond - East	7.0	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	5.8	BDL
Arsenic pit - SW	6.3	BDL
Arsenic pit - NE	6.1	BDL
Arsenic pit - SE	6.0	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	8.2	BDL	BDL	BDL	BDL	BDL	BDL	840
Nursery well	8.3	BDL	BDL	BDL	BDL	BDL	BDL	980
Temple well	7.8	BDL	BDL	BDL	BDL	BDL	BDL	940
Near north gate	8.1	BDL	BDL	BDL	BDL	BDL	BDL	890
SBC opposite	8.2	BDL	BDL	BDL	BDL	BDL	BDL	660

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

FEBRUARY 2024

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	7.0	BDL	BDL
Chromium sludge pond - West	6.9	BDL	BDL
Chromium sludge pond - North	6.0	BDL	BDL
Chromium sludge pond - East	6.3	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	6.7	BDL
Arsenic pit - SW	6.7	BDL
Arsenic pit - NE	6.9	BDL
Arsenic pit - SE	7.3	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	7.4	BDL	BDL	BDL	BDL	BDL	BDL	870
Nursery well	8.1	BDL	BDL	BDL	BDL	BDL	BDL	950
Temple well	8.1	BDL	BDL	BDL	BDL	BDL	BDL	920
Near north gate	7.9	BDL	BDL	BDL	BDL	BDL	BDL	890
SBC opposite	7.7	BDL	BDL	BDL	BDL	BDL	BDL	690

SOUTIIERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

WELLWATER ANALYSIS

MARCH 2024

Location of wells	PH	Hexavalent Chromium	Total Chromium
Chromium sludge pond - South	6.8	BDL	BDL
Chromium sludge pond - West	6.8	BDL	BDL
Chromium sludge pond - North	6.9	BDL	BDL
Chromium sludge pond - East	7.3	BDL	BDL

Location of wells	PH	As
Arsenic pit - NW	7.2	BDL
Arsenic pit - SW	6.9	BDL
Arsenic pit NE	6.9	BDL
Arsenic pit - SE	6.7	BDL

Location of wells And Salt Pans	pH	AN	UN	PO_4	$F^{(-)}$	NO_3-N	As	TDS
ASR	7.5	BDL	BDL	BDL	BDL	BDL	BDL	720
Nursery well	7.2	BDL	BDL	BDL	BDL	BDL	BDL	840
Temple well	8.1	BDL	BDL	BDL	BDL	BDL	BDL	918
Near north gate	8.3	BDL	BDL	BDL	BDL	BDL	BDL	950
SBC opposite	7.8	BDL	BDL	BDL	BDL	BDL	BDL	820

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

OCTOBER 2023

Sl. No.	PARAMETERS	RESULTS	TNPCB STANDARDS
1.	PH	8.3	6.5-8.5
2.	Temperature Deg. C.	35	40
3.	Total Suspended Solids mg/l	11	100
4.	Total Dissolved Solids "	1578	2100
5.	Chlorides as Cl "	338	1000
6.	Sulphate as SO_4 "	59	1000
7.	Ammoniacal Nitrogen as N "	12	50
8.	Total Kjeldhal Nitrogen as N "	13	75
9.	Free Ammonia as NH_3 "	0.9	2
10.	Dissolved Phosphate as P "	4.2	5
11.	BOD 3 days at 27°C "	10	30
12.	Chemical Oxygen Demand "	163	250
13.	Oil and Grease "	5	10
14.	Fluoride "	1.9	10
15.	Arsenic "	BDL	0.2
16.	Chromium Hexavalent "	BDL	0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: 124.935 m^3

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

NOVEMBER 2023

Sl. No.	PARAMETERS	RESULTS	TNPCB STANDARDS
1.	PH	7.7	6.5-8.5
2.	Temperature Deg. C.	35	40
3.	Total Suspended Solids mg/l	13	100
4.	Total Dissolved Solids "	1560	2100
5.	Chlorides as Cl "	260	1000
6.	Sulphate as SO_4 "	120	1000
7.	Ammoniacal Nitrogen as N "	18	50
8.	Total Kjeldhal Nitrogen as N "	20	75
9.	Free Ammonia as NH_3 "	0.3	2
10.	Dissolved Phosphate as P "	4.3	5
11.	BOD 3 days at 27°C "	14	30
12.	Chemical Oxygen Demand "	178	250
13.	Oil and Grease "	3	10
14.	Fluoride "	1.5	10
15.	Arsenic "	BDL	0.2
16.	Chromium Hexavalent "	BDL	0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: 401.028 m^3

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

DECEMBER 2023

Sl. No.	PARAMETERS	RESULTS	TNPCB STANDARDS
1.	PH	7.3	6.5-8.5
2.	Temperature Deg. C.	35	40
3.	Total Suspended Solids mg/l	11	100
4.	Total Dissolved Solids "	1575	2100
5.	Chlorides as Cl "	290	1000
6.	Sulphate as SO_4 "	132	1000
7.	Ammoniacal Nitrogen as N "	24	50
8.	Total Kjeldhal Nitrogen as N "	26	75
9.	Free Ammonia as NH_3 "	0.3	2
10.	Dissolved Phosphate as P "	4.7	5
11.	BOD 3 days at 27°C "	13	30
12.	Chemical Oxygen Demand "	144	250
13.	Oil and Grease "	6	10
14.	Fluoride "	1.3	10
15.	Arsenic "	BDL	0.2
16.	Chromium Hexavalent "	BDL	0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: 440 m^3

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

JANUARY 2024

Sl. No.	PARAMETERS		RESULTS	TNPCB STANDARDS
1.	PH		UNDER SHUTDOWN DUE TO FLOOD	6.5-8.5
2.	Temperature	Deg. C.		40
3.	Total Suspended Solids	mg/l		100
4.	Total Dissolved Solids	"		2100
5.	Chlorides as Cl	"		1000
6.	Sulphate as SO_4	"		1000
7.	Ammoniacal Nitrogen as N	"		50
8.	**Total Kjeldhal Nitrogen as N**	"		75
9.	Free Ammonia as NH_3	"		2
10.	Dissolved Phosphate as P	"		5
11.	BOD 3 days at 27°C	"		30
12.	Chemical Oxygen Demand	"		250
13.	**Oil and Grease**	"		10
14.	Fluoride	"		10
15.	Arsenic	"		0.2
16.	Chromium Hexavalent	"		0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: NIL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

FEBRUARY 2024

Sl. No.	PARAMETERS	RESULTS	TNPCB STANDARDS
1.	PH	UNDER SHUTDOWN DUE TO FLOOD	6.5-8.5
2.	Temperature Deg. C.		40
3.	Total Suspended Solids mg/l		100
4.	Total Dissolved Solids "		2100
5.	Chlorides as Cl "		1000
6.	Sulphate as SO_4 "		1000
7.	Ammoniacal Nitrogen as N "		50
8.	Total Kjeldhal Nitrogen as N "		75
9.	Free Ammonia as NH_3 "		2
10.	Dissolved Phosphate as P "		5
11.	BOD 3 days at 27°C "		30
12.	Chemical Oxygen Demand "		250
13.	Oil and Grease "		10
14.	Fluoride "		10
15.	Arsenic "		0.2
16.	Chromium Hexavalent "		0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: NIL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

ANALYSIS OF FINAL TREATED EFFLUENT

MARCH 2024

Sl. No.	PARAMETERS	RESULTS	TNPCB STANDARDS
1.	PH	8.2	6.5-8.5
2.	Temperature Deg. C.	36	40
3.	Total Suspended Solids mg/l	12	100
4.	Total Dissolved Solids "	1030	2100
5.	Chlorides as Cl "	272	1000
6.	Sulphate as SO_4 "	140	1000
7.	Ammoniacal Nitrogen as N "	29	50
8.	**Total Kjeldhal Nitrogen as N** "	34	75
9.	Free Ammonia as NH_3 "	0.20	2
10.	Dissolved Phosphate as P "	4.2	5
11.	BOD 3 days at 27°C "	11	30
12.	Chemical Oxygen Demand "	153	250
13.	**Oil and Grease** "	3	10
14.	Fluoride "	1.3	10
15.	Arsenic "	BDL	0.2
16.	Chromium Hexavalent "	BDL	0.1

QUANTITY OF EFFLUENT DISPOSED TO SEA DURING THE MONTH: NIL

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

SEA WATER MONITORING

Sl. No.	PARAMETERS	Oct – 2023		Nov –2023		Dec – 2023	
		Before pumping	After pumping	Before pumping	After pumping	Before pumping	After pumping
1.	pH	7.6	7.6	7.3	7.3	7.5	7.5
2.	Ammoniacal Nitrogen as N - mg/l	NT	NT	NT	NT	N	NT
3.	Total Kjeldhal Nitrogen as N - mg/l	NT	NT	NT	NT	NT	NT
4.	Phosphate as P - mg/l	NT	NT	NT	NT	NT	NT
5.	Arsenic as As - mg/l	NT	NT	NT	NT	NT	NT
6.	BOD 3 days at 27°C - mg/l	11	11	8	8	7	7
7.	Chemical Oxygen Demand - mg/l	126	126	120	120	123	123
8.	Dissolved Oxygen . mg/l	2.9	2.9	2.7	2.7	2.8	2.8

SEA WATER MONITORING

Sl. No.	PARAMETERS	Jan - 2024		Feb –2024		Mar – 2024	
		Before pumping	After pumping	Before pumping	After pumping	Before pumping	After pumping
1.	pH	7.5	7.5	7.7	7.7	7.9	7.9
2.	Ammoniacal Nitrogen as N - mg/l	NT	NT	NT	NT	NT	NT
3.	Total Kjeldhal Nitrogen as N - mg/l	NT	NT	NT	NT	NT	NT
4.	Phosphate as P - mg/l	NT	NT	NT	NT	NT	NT
5.	Arsenic as As - mg/l	NT	NT	NT	NT	NT	NT
6.	BOD 3 days at 27°C - mg/l	8	8	7	7	4	4
7.	Chemical Oxygen Demand - mg/l	116	116	104	104	90	90
8.	Dissolved Oxygen . mg/l	2.4	2.4	2.1	2.1	2.4	2.4

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

FUGITIVE EMISION ANALYSIS AT WORK PLACE AREA

1. Ammonia Plant Area

S.No	Parameters	UOM	Date: 12.12.2023
1	PM 10	µgm/ m3	53
2	PM 2.5	µgm/ m3	33
3	SO2	µgm/ m3	6
4	NO2	µgm/ m3	5.1
5	NH3	µgm/ m3	93

2. Urea Plant Area

S.No	Parameters	UOM	Date: 12.12.2023
1	PM 10	µgm/ m3	51
2	PM 2.5	µgm/ m3	35
3	SO2	µgm/ m3	5.7
4	NO2	µgm/ m3	4.2
5	NH3	µgm/ m3	91

3. Urea Bagging Area

S.No	Parameters	UOM	Date: 12.12.2023
1	PM 10	µgm/ m3	55
2	PM 2.5	µgm/ m3	36
3	SO2	µgm/ m3	5.3
4	NO2	µgm/ m3	4.8
5	NH3	µgm/ m3	92

SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LTD

SPIC NAGAR, TUTICORIN-628 005

FUGITIVE EMISION ANALYSIS AT WORK PLACE AREA

1. Ammonia Plant Area

S.No	Parameters	UOM	Date: 13.03.2024
1	PM 10	µgm/ m3	53
2	PM 2.5	µgm/ m3	26
3	SO2	µgm/ m3	4.4
4	NO2	µgm/ m3	5.5
5	NH3	µgm/ m3	94

2. Urea Plant Area

S.No	Parameters	UOM	Date: 13.03.2024
1	PM 10	µgm/ m3	59
2	PM 2.5	µgm/ m3	34
3	SO2	µgm/ m3	5.3
4	NO2	µgm/ m3	6.4
5	NH3	µgm/ m3	96

3. Urea Bagging Area

S.No	Parameters	UOM	Date: 13.03.2024
1	PM 10	µgm/ m3	58
2	PM 2.5	µgm/ m3	36
3	SO2	µgm/ m3	4.9
4	NO2	µgm/ m3	6
5	NH3	µgm/ m3	94

GLens Innovation Labs Pvt Ltd.

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TC-8582

TEST REPORT

ULR NO:TC858224000002641F

Report No. : EN24040068

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Ambient Air Quality	Sampling From	: 28-Mar-2024 08:30 AM
Sample Description	: Ambient Air Quality	Sampling To	: 29-Mar-2024 08:30 AM
Sampling Location	: Top of Security Building	Received Date	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Commenced On	: 04-Apr-2024
Sample Condition	: Good	Completed On	: 12-Apr-2024
Humidity	: 66%	Report Date	: 12-Apr-2024
Temperature	: 34°C	Sampling Plan and Method	: IS 5182 Part V & XIV

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollutiou					
1	Sulphur Dioxide as SO2	µg/m3	13.1	IS 5182 (Part 2): 2017	Max 80
2	Nitrogen dioxide as NO2	µg/m3	24.5	IS 5182 (Part 6): 2006	Max 80
3	Particulate Matter (PM10)	µg/m3	56.2	IS 5182 (Part 23): 2006	Max 100
4	Particulate Matter (PM2.5)	µg/m3	22.4	GL/EN/SOP/062	Max 60
5	Ozone as O3	µg/m3	BLQ(LOQ : 20)	IS 5182 (Part 9): 1974	Max 100
6	Lead as Pb	µg/m3	BLQ(LOQ : 0.002)	IS 5182 (Part 22) :2014	Max 1.0
7	Carbon Monoxide as CO	mg/m3	BLQ(LOQ : 1.14)	IS 5182 (Part 10): 1999	Max 4.0
8	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	GL/EN/SOP/057	Max 400
9	Benzene (C6H6)	µg/m3	BLQ(LOQ : 4.0)	GL/EN/SOP/08	NA
10	Benzo (a) Pyrene (Particulate Phase)	ng/m3	BLQ(LOQ : 0.03)	GL/EN-INS/SOP/009	NA
11	Arsenic as As	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22): 2014	NA
12	Nickel as Ni	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22) : 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter./ NAAQS: National Ambient Air Quality Standard

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

GLens Innovation Labs Pvt Ltd.

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TEST REPORT

TC-8882

ULR NO:TC858224000002642F

Report No. : EN24040069

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Ambient Air Quality	Sampling From	: 28-Mar-2024 09:00 AM
Sample Description	: Ambient Air Quality	Sampling To	: 29-Mar-2024 09:00 AM
Sampling Location	: Instrument Change Room	Received Date	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Commenced On	: 04-Apr-2024
Sample Condition	: Good	Completed On	: 12-Apr-2024
Humidity	: 66%	Report Date	: 12-Apr-2024
Temperature	: 34°C	Sampling Plan and Method	: IS 5182 Part V & XIV

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO2	µg/m3	9.2	IS 5182 (Part 2): 2017	Max 80
2	Nitrogen dioxide as NO2	µg/m3	19.8	IS 5182 (Part 6): 2006	Max 80
3	Particulate Matter (PM10)	µg/m3	60.4	IS 5182 (Part 23): 2006	Max 100
4	Particulate Matter (PM2.5)	µg/m3	25.2	GL/EN/SOP/062	Max 60
5	Ozone as O3	µg/m3	BLQ(LOQ : 20)	IS 5182 (Part 9): 1974	Max 100
6	Lead as Pb	µg/m3	BLQ(LOQ : 0.002)	IS 5182 (Part 22) :2014	Max 1.0
7	Carbon Monoxide as CO	mg/m3	BLQ(LOQ : 1.14)	IS 5182 (Part 10): 1999	Max 4.0
8	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	GL/EN/SOP/057	Max 400
9	Benzene (C6H6)	µg/m3	BLQ(LOQ : 4.0)	GL/EN/SOP/08	NA
10	Benzo (a) Pyrene (Particulate Phase)	ng/m3	BLQ(LOQ : 0.03)	GL/EN-INS/SOP/009	NA
11	Arsenic as As	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22): 2014	NA
12	Nickel as Ni	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22) : 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter./ NAAQS: National Ambient Air Quality Standard

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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TC-9582

TEST REPORT

ULR NO:TC858224000002643F

Report No. : EN24040070

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Ambient Air Quality	Sampling From	: 28-Mar-2024 09:30 AM
Sample Description	: Ambient Air Quality	Sampling To	: 29-Mar-2024 09:30 AM
Sampling Location	: Urea Bagging Area	Received Date	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Commenced On	: 04-Apr-2024
Sample Condition	: Good	Completed On	: 12-Apr-2024
Humidity	: 66%	Report Date	: 12-Apr-2024
Temperature	: 34°C	Sampling Plan and Method	: IS 5182 Part V & XIV

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO2	µg/m3	12.7	IS 5182 (Part 2): 2017	Max 80
2	Nitrogen dioxide as NO2	µg/m3	24.7	IS 5182 (Part 6): 2006	Max 80
3	Particulate Matter (PM10)	µg/m3	61.5	IS 5182 (Part 23): 2006	Max 100
4	Particulate Matter (PM2.5)	µg/m3	24.6	GL/EN/SOP/062	Max 60
5	Ozone as O3	µg/m3	BLQ(LOQ : 20)	IS 5182 (Part 9): 1974	Max 100
6	Lead as Pb	µg/m3	BLQ(LOQ : 0.002)	IS 5182 (Part 22) :2014	Max 1.0
7	Carbon Monoxide as CO	mg/m3	BLQ(LOQ : 1.14)	IS 5182 (Part 10): 1999	Max 4.0
8	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	GL/EN/SOP/057	Max 400
9	Benzene (C6H6)	µg/m3	BLQ(LOQ : 4.0)	GL/EN/SOP/08	NA
10	Benzo (a) Pyrene (Particulate Phase)	ng/m3	BLQ(LOQ : 0.03)	GL/EN-INS/SOP/009	NA
11	Arsenic as As	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22): 2014	NA
12	Nickel as Ni	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22) : 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter./ NAAQS: National Ambient Air Quality Standard

End of Report

Verified By

Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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TEST REPORT

TC-8582

ULR NO:TC858224000002644F

Report No. : EN24040071

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Ambient Air Quality	Sampling From	: 28-Mar-2024 09:40 AM
Sample Description	: Ambient Air Quality	Sampling To	: 29-Mar-2024 09:40 AM
Sampling Location	: ETP Area	Received Date	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Commenced On	: 04-Apr-2024
Sample Condition	: Good	Completed On	: 12-Apr-2024
Humidity	: 66%	Report Date	: 12-Apr-2024
Temperature	: 34°C	Sampling Plan and Method	: IS 5182 Part V & XIV

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Requirement as per NAAQS Specification
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Sulphur Dioxide as SO2	µg/m3	11.5	IS 5182 (Part 2): 2017	Max 80
2	Nitrogen dioxide as NO2	µg/m3	25.5	IS 5182 (Part 6): 2006	Max 80
3	Particulate Matter (PM10)	µg/m3	54.5	IS 5182 (Part 23): 2006	Max 100
4	Particulate Matter (PM2.5)	µg/m3	20.6	GL/EN/SOP/062	Max 60
5	Ozone as O3	µg/m3	BLQ(LOQ : 20)	IS 5182 (Part 9): 1974	Max 100
6	Lead as Pb	µg/m3	BLQ(LOQ : 0.002)	IS 5182 (Part 22) :2014	Max 1.0
7	Carbon Monoxide as CO	mg/m3	BLQ(LOQ : 1.14)	IS 5182 (Part 10): 1999	Max 4.0
8	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	GL/EN/SOP/057	Max 400
9	Benzene (C6H6)	µg/m3	BLQ(LOQ : 4.0)	GL/EN/SOP/08	NA
10	Benzo (a) Pyrene (Particulate Phase)	ng/m3	BLQ(LOQ : 0.03)	GL/EN-INS/SOP/009	NA
11	Arsenic as As	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22): 2014	NA
12	Nickel as Ni	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22) : 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter./ NAAQS: National Ambient Air Quality Standard

End of Report

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Authorized Signature

E. PRITHIVIRAJAN
LAB MANAGER

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TC-6562

TEST REPORT

ULR NO:TC858224000002645F

Report No. : EN24040072

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Ambient Air Quality	Sampling From	: 28-Mar-2024 09:50 AM
Sample Description	: Ambient Air Quality	Sampling To	: 29-Mar-2024 09:50 AM
Sampling Location	: Near Tank Farm Area	Received Date	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Commenced On	: 04-Apr-2024
Sample Condition	: Good	Completed On	: 12-Apr-2024
Humidity	: 66%	Report Date	: 12-Apr-2024
Temperature	: 34°C	Sampling Plan and Method	: IS 5182 Part V & XIV

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Requirement as per NAAQS Specification
Discipline: Chemical					
Gronp: Atmospheric Pollution					
1	Sulphur Dioxide as SO2	µg/m3	10.1	IS 5182 (Part 2): 2017	Max 80
2	Nitrogen dioxide as NO2	µg/m3	23.1	IS 5182 (Part 6): 2006	Max 80
3	Particulate Matter (PM10)	µg/m3	58.6	IS 5182 (Part 23): 2006	Max 100
4	Particulate Matter (PM2.5)	µg/m3	20.2	GL/EN/SOP/062	Max 60
5	Ozone as O3	µg/m3	BLQ(LOQ : 20)	IS 5182 (Part 9): 1974	Max 100
6	Lead as Pb	µg/m3	BLQ(LOQ : 0.002)	IS 5182 (Part 22) :2014	Max 1.0
7	Carbon Monoxide as CO	mg/m3	BLQ(LOQ : 1.14)	IS 5182 (Part 10): 1999	Max 4.0
8	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	GL/EN/SOP/057	Max 400
9	Benzene (C6H6)	µg/m3	BLQ(LOQ : 4.0)	GL/EN/SOP/08	NA
10	Benzo (a) Pyrene (Particulate Phase)	ng/m3	BLQ(LOQ : 0.03)	GL/EN-INS/SOP/009	NA
11	Arsenic as As	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22): 2014	NA
12	Nickel as Ni	ng/m3	BLQ(LOQ : 2.0)	IS 5182 (Part 22) : 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter./ NAAQS: National Ambient Air Quality Standard

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TEST REPORT

TC-5002

Report No. : EN24040073

ULR NO:TC858224000002646F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Fugitive Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Fugitive Emission	Received Date	: 04-Apr-2024
Sampling Location	: Urea Plant Area	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/161		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Atmospheric Pollution				
1	Particulate Matter (PM10)	µg/m3	56.6	IS 5182 (Part 23): 2006
2	Particulate Matter (PM2.5)	µg/m3	26.3	GL/EN/SOP/062
3	Sulphur Dioxide as SO2	µg/m3	14.9	IS 5182 (Part 2): 2017
4	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	NIOSH – 6015

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification

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TEST REPORT

TC-8582

Report No. : EN24040074

ULR NO:TC858224000002647F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Fugitive Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Fugitive Emission	Received Date	: 04-Apr-2024
Sampling Location	: Ammonia Plant Area	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/161		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Diseipline: Chemical				
Group: Atmospheric Pollution				
1	Particulate Matter (PM10)	µg/m3	59.6	IS 5182 (Part 23): 2006
2	Particulate Matter (PM2.5)	µg/m3	27.2	GL/EN/SOP/062
3	Sulphur Dioxide as SO2	µg/m3	15.7	IS 5182 (Part 2): 2017
4	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	NIOSH – 6015

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

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TC-8582

TEST REPORT

ULR NO:TC858224000002648F

Report No. : EN24040075

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Fugitive Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Fugitive Emission	Received Date	: 04-Apr-2024
Sampling Location	: Urea Bagging Area	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/161		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Atmospheric Poilution				
1	Particulate Matter (PM10)	µg/m3	54.2	IS 5182 (Part 23): 2006
2	Particulate Matter (PM2.5)	µg/m3	23.5	GL/EN/SOP/062
3	Sulphur Dioxide as SO2	µg/m3	15.8	IS 5182 (Part 2): 2017
4	Ammonia as NH3	µg/m3	BLQ(LOQ : 20)	NIOSH – 6015

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification

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TEST REPORT

TC-8582

Report No. : EN24040084

ULR NO:TC858224000002657F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: ETP Inlet	Sampling Date	: 03-Apr-2024
Sample Description	: Waste Water	Received Date	: 04-Apr-2024
Sampling Location	: ETP Plant	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 27-Apr-2024
Sample Condition	: Good	Report Date	: 27-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.14	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	301	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	121.60	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	993.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	174.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	18.20	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	12.60	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ-0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	41.00	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040084

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.7	APHA 23rd Edition Part 2150 B
Group: Poilution and Euviroument				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	48.4	GL/EN/SOP/I47
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passing through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	40.20	APHA 23rd Edition Part 4500 NH3 C : 2017
Gronp: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/I4
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014

Note.- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TEST REPORT

TC-6082

Report No. : EN24040085

ULR NO:TC858224000002658F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: ETP Outlet	Sampling Date	: 03-Apr-2024
Sample Description	: Waste Water	Received Date	: 04-Apr-2024
Sampling Location	: ETP Plant	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 27-Apr-2024
Sample Condition	: Good	Report Date	: 27-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.61	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	395.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	198.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1444.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	120	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	13.6	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	16.40	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease .	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	16.30	APHA 23rd Edition Part 4500 Norg B:2017

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Report No. : EN24040085

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.6	APHA 23rd Edition Part 2150 B
Group: Pollution and Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Phosphate as PO4	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	29.8	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	1.20	IS 11624: 1986
20	Particle size	-	Passing through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	15.30	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litrer

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TEST REPORT

TC-8882

Report No. : EN24040086

ULR NO:TC858224000002659F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Waste Water	Sampling Date	: 03-Apr-2024
Sample Description	: STP Outlet Water	Received Date	: 04-Apr-2024
Sampling Location	: STP Plant	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 17-Apr-2024
Sample Condition	: Good	Report Date	: 27-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003,GL/MB/SOP/06		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	As per TNPCB Limit
Discipline: Chemical					
Group: Pollution and Environment					
1	pH Value	-	6.70	APHA 23rd Edition Part 4500 H+ B : 2017	5.5 to 9.0
2	Biochemical Oxygen demand at 27°C for 3 days	mg/L	13.2	IS 3025 (Part 44): 1993	30
3	Total Suspended Solids(TSS)	mg/L	19.1	APHA 23rd Edition Part 2540 D : 2017	50
Discipline: Biological					
Group: Pollntion and Environment					
4	Faecal Coliforms	MPN/100ml	110	APHA 23rd Edition 9221E:2017	1000-10000

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

mg/L - Milligram per liter

Remarks: The above STP Outlet water sample is below the (TNPCB) discharge limit against the above tested parameters for which the limit has been provided in the specification.

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TEST REPORT

TC-4882

ULR NO:TC858224000002661F

Report No. : EN24040088

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Stack Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Stack Emission	Received Date	: 04-Apr-2024
Sampling Location	: Reformer Stack	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/111		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Atmospheric Pollution				
1	Oxygen as O2	%	2.3	GL/EN/SOP/149
2	Carbon Monoxide as CO	mg/Nm3	32.0	GL/EN/SOP/149
3	Carbon Dioxide as CO2	%	11.0	GL/EN/SOP/149
4	Oxides of Nitrogen as NO2	mg/Nm3	31.0	GL/EN/SOP/149
5	Sulphur Dioxide as SO2	mg/Nm3	12.20	EPA Method 6

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

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TC-8552

TEST REPORT

Report No. : EN24040087

ULR NO:TC858224000002660F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Stack Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Stack Emission	Received Date	: 04-Apr-2024
Sampling Location	: Urea Prilling tower	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Dale	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/111		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
Discipline: Chemical					
Gronp: Atmospheric Pollution					
1	Particulate Matter	mg/Nm3	50.0	GL/ EN/SOP/113	150
2	Ammonia as NH3	mg/Nm3	18.9	IS 11255 (Part 6): 2014	NA

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification

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TC-8582

TEST REPORT

Report No. : EN24040089

ULR NO:TC858224000002662F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Stack Emssion	Sampling Date	: 29-Mar-2024
Sample Description	: Stack Emission	Received Date	: 04-Apr-2024
Sampling Location	: Auxiliary Boiler (120 TPH)	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/111		

Test Results

S. No.	Parameters	Units	ResultsObtained	Test Method
Discipline: Chemical				
Group: Atmospherie Pollution				
1	Carbon Monoxide as CO	mg/Nm3	6.9	GL/EN/SOP/149
2	Oxides of Nitrogen as NO2	mg/Nm3	169.0	GL/EN/SOP/149
3	Sulphur Dioxide as SO2	mg/m3	41.30	EPA Method 6

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

End of Report

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TEST REPORT

TC-5562

Report No. : EN24040090

ULR NO:TC858224000002663F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Stack Emission	Sampling Date	: 29-Mar-2024
Sample Description	: Stack Emission	Received Date	: 04-Apr-2024
Sampling Location	: GT HRSG Main	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 09-Apr-2024
Sample Condition	: Good	Report Date	: 12-Apr-2024
Sampling Plan and Method	: GL/EN/SOP/111		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method	Limit as per CPCB Standard
Discipline: Chemical					
Group: Atmospheric Pollution					
1	Oxygen as O2	%	12.8	GL/EN/SOP/149	NA
2	Carbon Monoxide as CO	mg/Nm3	112.0	GL/EN/SOP/149	NA
3	Carbon Dioxide as CO2	%	5.6	GL/EN/SOP/149	NA
4	Oxides of Nitrogen as NO2	mg/Nm3	137.60	GL/EN/SOP/149	NA
5	Sulphur Dioxide as SO2	mg/m3	20.70	EPA Method 6	NA

Note.- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

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TC-8582

TEST REPORT

Report No. : EN24040076

ULR NO:TC858224000002649F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: South of Chromium SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 27-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.38	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	243.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	219.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1186.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	15.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	2.36	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	2.1	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TC-8662

TEST REPORT

Report No. : EN24040076

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.3	APHA 23rd Edition Part 2150 B
Gronp: Pollntion aud Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0 05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	16.5	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0 001)	APHA 23rd Edition Part 5530 C : 2017
21	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
22	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
Group: Residucs in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0 0005)	EPA 200 8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TEST REPORT

Report No. : EN24040077

ULR NO:TC858224000002650F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: North of ChromiumSLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Diseipline: Chemieal				
Group: Water				
1	pH Value	-	7.48	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	283 0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	122.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0 03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1492.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0 01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	19.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	BLQ(LOQ : 2.0)	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	2.8	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0 5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040077

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.8	APHA 23rd Edition Part 2150 B
Group: Pollution and Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0 05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	17.1	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size		Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0 001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Gronp: Rcsidues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200 8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
Diseipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TC-8552

TEST REPORT

Report No. : EN24040078

ULR NO:TC858224000002651F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthialpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: West of Chromium SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.43	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	209.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	254.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1523.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	BLQ(LOQ : 4.0)	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	BLQ(LOQ : 2.0)	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	16.2	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040078

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	25.8	APHA 23rd Edition Part 2150 B
Group: Pollution aud Enviroumeut				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	13.0	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	18.15	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note - BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TC-8582

TEST REPORT

Report No. : EN24040079

ULR NO:TC858224000002652F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: East of Chromium SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.39	(S 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	219.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	244.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1692.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	13.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	BLQ(LOQ : 2.0)	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	27.0	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040079

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.0	APHA 23rd Edition Part 2150 B
Group: Pollutiou aud Euviroument				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	16.1	GL/EN/SOP/I47
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TC-8552

TEST REPORT

Report No. : EN24040080

ULR NO:TC858224000002653F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: North West of Arsenic Sludge SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.7	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	141.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	190.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0 03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1288.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0 01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	19.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	1.8	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	16.9	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040080

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.3	APHA 23rd Edition Part 2150 B
Gronp: Pollution and Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	9.5	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0 001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residnes in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0 0005)	EPA 200 8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Gronp: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TC-8552

TEST REPORT

Report No. : EN24040081

ULR NO:TC858224000002654F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: South west of Arsenic sludge SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.5	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	181.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	254.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1308.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	13.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	2.1	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	15.9	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040081

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.2	APHA 23rd Edition Part 2150 B
Group: Pollution and Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	17.3	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TC-8582

TEST REPORT

Report No. : EN24040082

ULR NO:TC858224000002655F

Name of the Client	: SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED		
Address of the Client	: Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005		
Sample Name	: Well Water	Sampling Date	: 02-Apr-2024
Sample Description	: Well Water	Received Date	: 04-Apr-2024
Sampling Location	: North East of Sludge SLF	Commenced On	: 04-Apr-2024
Sample Submission Type	: Collected by Lab Representative	Completed On	: 18-Apr-2024
Sample Condition	: Good	Report Date	: 20-Apr-2024
Sample Quantity	: 5.00 Litre		
Sampling Plan and Method	: GL/EN/SOP/001 & 003		

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.98	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	158.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	178.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1120.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	14.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	2.8	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	24.9	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040082

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	25.8	APHA 23rd Edition Part 2150 B
Gronp: Pollution and Euviroument				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0 05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	BLQ(LOQ : 5.0)	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0 001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Gronp: Residues in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0 0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0 002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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TEST REPORT

TC-8582

Report No. : EN24040083

ULR NO:TC858224000002656F

Name of the Client : SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED

Address of the Client : Spic Nagar, Muthiahpuram, Thoothukudi, Tamil Nadu 628005

Sample Name : Well Water

Sample Description : Well Water

Sampling Location : South East of Arsenic Sludge-SLF

Sample Submission Type : Collected by Lab Representative

Sample Condition : Good

Sample Quantity : 5.00 Litre

Sampling Plan and Method : GL/EN/SOP/001 & 003

Sampling Date : 02-Apr-2024

Received Date : 04-Apr-2024

Commenced On : 04-Apr-2024

Completed On : 18-Apr-2024

Report Date : 20-Apr-2024

Test Results

S. No.	Parameters	Units	Results Obtained	Test Method
Discipline: Chemical				
Group: Water				
1	pH Value	-	7.39	IS 3025 (Part 11): 1983
2	Chloride as Cl	mg/L	153.0	IS 3025 (Part 32): 1988
3	Fluoride as F	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 60): 2008
4	Free Residual Chlorine	mg/L	BLQ(LOQ : 0.1)	IS 3025 (Part 26): 1986
5	Sulphate as SO4	mg/L	198.0	IS 3025 (Part 24): 1986
6	Hexavalent Chromium as Cr6+	mg/L	BLQ(LOQ : 0.03)	IS 3025 (Part 52): 2003
7	Total Dissolved Solids	mg/L	1864.0	IS 3025 (Part 16): 1984
8	Cyanide as CN	mg/L	BLQ(LOQ : 0.01)	IS 3025 (Part 27): 1986
9	Chemical Oxygen Demand (COD)	mg/L	18.0	IS 3025 (Part 58): 2006
10	Biochemical Oxygen demand at 27°C for 3 days	mg/L	1.2	IS 3025 (Part 44): 1993
11	Total Suspended Solids(TSS)	mg/L	15.6	APHA 23rd Edition Part 2540 D:2017
12	Oil and Grease	mg/L	BLQ(LOQ : 4.0)	APHA 23rd Edition Part 5520 B (Partition Gravimetric method) : 2017
13	Free Ammonia as NH3	mg/L	BLQ(LOQ:0.5)	APHA 23rd Edition Part 4500 NH3 B,C : 2017
14	Total Kjeldahl Nitrogen as N	mg/L	BLQ(LOQ:1.0)	APHA 23rd Edition Part 4500 Norg B:2017

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TEST REPORT

Report No. : EN24040083

S. No.	Parameters	Units	Results Obtained	Test Method
15	Temperature	°C	26.7	APHA 23rd Edition Part 2150 B
Group: Pollution and Environment				
16	Sulphide as S	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 S-- F : 2017
17	Dissolved Phosphate as P	mg/L	BLQ(LOQ : 0.05)	APHA 23rd Edition Part 4500 P D: 2017
18	Percent Sodium (%)	%	10.6	GL/EN/SOP/147
19	Residual Sodium Carbonate	meq/L	BLQ(LOQ : 1.15)	IS 11624: 1986
20	Particle size	-	Passes through 850 micron	ISO 8573 (Part 4):2010 E
21	Phenolic Compound (as C6H5OH)	mg/L	BLQ(LOQ : 0.001)	APHA 23rd Edition Part 5530 C : 2017
22	Ammonical Nitrogen as NH3-N	mg/L	BLQ(LOQ : 1.0)	APHA 23rd Edition Part 4500 NH3 C : 2017
Group: Residnes in Water				
23	Total Pesticides	µg/L	BLQ(LOQ : 0.5)	GL/EN-INS/SOP/14
24	Boron as B	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
25	Copper as Cu	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
26	Selenium as Se	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
27	Zinc as Zn	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
28	Cadmium as Cd	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
29	Lead as Pb	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
30	Mercury as Hg	mg/L	BLQ(LOQ : 0.0005)	EPA 200.8
31	Nickel as Ni	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
32	Arsenic as As	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
33	Chromium as Cr	mg/L	BLQ(LOQ : 0.002)	IS 3025 (Part 65): 2014
Discipline: Biological				
Group: Water				
34	Faecal Coliforms	MPN/100ml	< 2	IS 1622:1981

Note:- BLQ - Below the Limit of Quantification, LOQ - Limit of Quantification.

meq/L - Molar equivalence used for cation and anion balance, mg/L - Milligram per liter, µg/L - Micrograms per litre

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